
**Contract Documents
Leonardtwn Production Well No. 6
Commissioners of Leonardtown, Maryland**



16701 Melford Boulevard
Suite 221
Bowie, Maryland 20715
Phone: (240) 206-6810
GHD Project No. 12636553

Contract No. 100-15G



3/17/2025

BID DOCUMENTS

MARCH 2025

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FIGURES

FIGURE 1	WELL SITE PLAN
FIGURE 2	WELL DETAIL DRAWING

ADVERTISEMENT FOR BIDS
LEONARDTOWN PRODUCTION WELL NO. 6
TOWN OF LEONARDTOWN, MARYLAND

Sealed bids for construction of the Leonardtown Production Well No. 6 Project will be received by the Town of Leonardtown ("Town"), c/o Mrs. Laschelle McKay, Town Administrator, at the Town offices at 22670 Washington Street, P.O. Box 1, Leonardtown, MD 20650 until 10:00 a.m. local time on April 29, 2025. Said bids will then be publicly opened and read aloud. Bids received after the designated date and time will not be accepted under any circumstances.

The Work is described in Bidding Documents prepared by GHD Inc. ("GHD"). In general, the Work consists of furnishing and installing a new 1,100 gpm production well, in accordance with the Contract Documents.

A pre-bid conference will be held at 10:00 a.m. local time on March 27, 2025 at the Town offices at 22670 Washington Street, Leonardtown, MD 20650. Representatives from the Town and GHD will be present to discuss the proposed project. Attendance by prospective bidders is encouraged but is not mandatory.

The Issuing Office for the Bidding Documents is:

Commissioners of Leonardtown
22670 Washington Street
P.O. Box 1
Leonardtown, Maryland 20650

The Bidding Documents may be examined at the following locations:

Town Hall
22670 Washington Street
Leonardtown, Maryland 20650

GHD Inc.
16701 Melford Boulevard
Suite 221
Bowie, Maryland 20715

Digital sets of Bidding Documents may be requested email at laschelle.mckay@leonardtownmd.gov or by phone at 301-475-9791. If mailing of documents is requested, it will be done at cost. No refunds will be made for the return of Bid Documents.

Direct all questions regarding distribution of Bidding Documents to:

Mrs. Laschelle McKay, Town Administrator
laschelle.mckay@leonardtownmd.gov
301-475-9791 (phone)

All other questions regarding the Bidding Documents shall be submitted in writing to:

Rachel deBrabander
rachel.debrabander@ghd.com
240- 206-6849 - Phone

The subject heading for all e-mails and faxes shall be:

Subject: Leonardtown Production Well No. 6

No response will be given to questions received less than 7 days before the Bid opening date.

Bidders are required to certify, under penalty of perjury, that bids have been prepared without collusion with other bidders, subcontractors, suppliers, etc. This certification is included with the Bidding Documents which each Bidder must sign in the space provided.

The Commissioners of Leonardtown reserve the right to reject any and all bids or proposals, and to accept any proposals deemed to be in the best interest of the Town.

By Authority:
Laschelle McKay, Town Administrator
March 17, 2025

SECTION 00200

INSTRUCTIONS TO BIDDERS

ARTICLE 1 - DEFINED TERMS

- 1.01. Terms used in these Instructions to Bidders have the meanings indicated in the General Conditions and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below:
 - A. Issuing Office - The office from which the Bidding Documents are to be issued and where the bidding procedures are to be administered. The Issuing Office for this project is: Town of Leonardtown offices, 22670 Washington Street, Leonardtown, MD 20650.
 - B. Prefixes to Referenced Paragraph Numbers are as follows:

General Conditions; "GC-____."

Supplementary Conditions; "SC-____."

ARTICLE 2 - COPIES OF BIDDING DOCUMENTS

- 2.01. Complete sets of the Bidding Documents may be obtained from the Issuing Office in the number and format and for the deposit sum, if any, stated in the advertisement or invitation to bid.
- 2.02. Complete sets of Bidding Documents shall be used in preparing Bids; neither Owner nor Engineer assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.
- 2.03. Owner and Engineer, in making of Bidding Documents available on the above terms, do so only for the purpose of obtaining Bids for the Work and do not authorize or confer a license for any other use.

ARTICLE 3 - QUALIFICATIONS OF BIDDERS

- 3.01. To demonstrate Bidder's qualifications to perform the Work, within 5 days of Owner's and/or Engineer's request, Bidder shall submit written evidence establishing its qualifications such as financial data, previous experience, present commitments, and such other data as may be identified herein or requested by Owner and/or Engineer.
- 3.02. A Bidder's failure to submit required qualification information within the times indicated may disqualify Bidder from receiving an award of the Contract
- 3.03. No requirement in this Article 3 to submit information will prejudice the right of Owner to seek additional pertinent information regarding Bidder's qualifications
- 3.04. Bidder is advised to carefully review those portions of the Bid Form requiring Bidder's representations and certifications.
- 3.05. Bidder is not disbarred from doing work in the State of Maryland.

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ARTICLE 4 - EXAMINATION OF BIDDING DOCUMENTS, OTHER RELATED DATA, AND SITE

4.01. Site and Other Areas

- A. The Site is identified in the Bidding Documents. By definition, the Site includes rights-of-way, easements, and other lands furnished by Owner for the use of the Contractor. Any additional lands required for temporary construction facilities, construction equipment, or storage of materials and equipment, and any access needed for such additional lands, are to be obtained and paid for by Contractor.

4.02. Existing Site Conditions

A. Subsurface and Physical Conditions

- 1. The Supplementary Conditions identify:
 - a. those reports known to Owner of explorations and tests of subsurface conditions at or adjacent to the Site.
 - b. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities).
 - c. reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site.
- 2. Copies of reports and drawings referenced above will be made available by Owner to any Bidder on request. Those reports and drawings are not part of the Contract Documents. Bidder is responsible for any interpretation or conclusion Bidder draws from any data, interpretations, opinions or information contained in such reports or shown or indicated in such drawings.

B. Underground Facilities

- 1. Information and data shown or indicated in the Bidding Documents with respect to existing Underground Facilities at or contiguous to the Site is based upon information and data furnished to Owner and Engineer by owners of such Underground Facilities, including Owner or others.

C. Adequacy of Data

- 1. Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to subsurface conditions, other physical conditions, and Underground Facilities, and possible changes in the Bidding Documents due to differing or unanticipated subsurface or physical conditions appear in Paragraphs 5.03, 5.04, and 5.05 of the General Conditions. Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to a Hazardous Environmental Condition at the Site, if any, and possible changes in the Contract Documents due to any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work, appear in Paragraph 5.06 of the General Conditions.

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4.03. Site Visit and Testing by Bidders

- A. On written request, and to the extent Owner has control over the Site, and schedule permitting, Owner will provide Bidder access to the Site to conduct such examinations, investigations, explorations, tests, and studies as Bidder deems necessary for submission of a Bid. Owner will not have any obligation to grant such access if doing so is not practical because of existing operations, security or safety concerns, or restraints on Owner's authority regarding the Site.
- B. Bidder shall comply with all applicable Laws and Regulations regarding excavation and location of utilities, obtain all permits, and comply with all terms and conditions established by Owner or by property owners or other entities controlling the Site with respect to schedule, access, existing operations, security, liability insurance, and applicable safety programs.
- C. Bidder shall fill all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies.

4.04. Owner's Safety Program

- A. Site visits and work at the Site may be governed by an Owner safety program. As the General Conditions indicate, if an Owner safety program exists, it will be noted in the Supplementary Conditions.

4.05. Other Work at the Site

- A. Reference is made to Article 8 of the Supplementary Conditions for the identification of the general nature of other work of which Owner is aware (if any) that is to be performed at the Site by Owner or others (such as utilities and other prime contractors) and relates to the Work contemplated by these Bidding Documents. If Owner is party to a written contract for such other work, then on request, Owner will provide to each Bidder access to examine such contracts (other than portions thereof related to price and other confidential matters), if any.

ARTICLE 5 - BIDDER'S REPRESENTATIONS

5.01. It is the responsibility of each Bidder before submitting a Bid to:

- A. examine and carefully study the Bidding Documents, and the other related data identified in the Bidding Documents;
- B. visit the Site, conduct a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and satisfy itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work;
- C. become familiar with and satisfy itself as to all Laws and Regulations that may affect cost, progress, and performance of the Work ;
- D. carefully study all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions;

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- E. consider the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder; and (3) Bidder's safety precautions and programs;
- F. agree, based on the information and observations referred to in the preceding paragraph, that at the time of submitting its Bid 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 bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents;
- G. become aware of the general nature of the work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents;
- H. promptly give 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 Engineer is acceptable to Bidder;
- I. determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work; and
- J. agree that the submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

ARTICLE 6 - PRE-BID CONFERENCE

- 6.01. A pre-Bid conference will be held as indicated in the Invitation to Bid. Engineer will transmit to all prospective Bidders of record such Addenda as Engineer considers necessary in response to questions arising at the conference. Oral statements may not be relied upon and will not be binding or legally effective.

ARTICLE 7 - INTERPRETATIONS AND ADDENDA

- 7.01. All questions about the meaning or intent of the Bidding Documents are to be submitted to Engineer in writing. Interpretations or clarifications considered necessary by Engineer in response to such questions will be issued by Addenda mailed or delivered to all parties recorded by Engineer as having received the Bidding Documents. Only questions answered by Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect. Questions received after the deadline stated at the Pre-Bid Meeting or as modified in subsequent Addenda will not be answered.
- 7.02. Addenda may be issued to clarify, correct, or change the Bidding Documents as deemed advisable by Owner or Engineer.

ARTICLE 8 - BID SECURITY

- 8.01. A Bid must be accompanied by Bid security made payable to Owner in an amount of 5 percent of Bidder's maximum Bid price and in the form of a certified check, bank money order, or a Bid

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Bond (on the form attached) issued by a surety meeting the requirements of Paragraphs 6.01 and 6.02 of the General Conditions.

- 8.02. The Bid security of the apparent Successful Bidder will be retained until Owner awards the contract to such Bidder, and such Bidder has executed the Contract Documents, furnished the required contract security, and met the other conditions of the Notice of Award, whereupon the Bid security will be released. If the Successful Bidder fails to execute and deliver the Contract Documents and furnish the required contract security within 15 days after the Notice of Award, Owner may consider Bidder to be in default, annul the Notice of Award, and the Bid security of that Bidder will be forfeited. Such forfeiture shall be Owner's exclusive remedy if Bidder defaults.
- 8.03. The Bid security of other Bidders that Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the earlier of seven days after the Effective Date of the Contract or 120 days after the Bid opening, whereupon Bid security furnished by such Bidders will be released.
- 8.04. Bid security of other Bidders whom Owner believes do not have a reasonable chance of receiving the award will be returned within seven days after the Bid opening.

ARTICLE 9 - CONTRACT TIMES

- 9.01. The number of days within which, or the dates by which, the Work is to be substantially completed and ready for final payment are set forth in the Agreement.

ARTICLE 10 - LIQUIDATED DAMAGES

- 10.01. Provisions for liquidated damages, if any, are set forth in the Agreement.

ARTICLE 11 - SUBSTITUTE AND "OR-EQUAL" ITEMS

- 11.01. The Contract, if awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents without consideration of possible substitute or "or-equal" items. Whenever it is specified or described in the Bidding Documents 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 Effective Date of the Agreement unless the item is listed on the Major Products Schedule appended to the Bid Form.
- 11.02. All prices that Bidder sets forth in its Bid shall be based on the presumption that the Contractor will furnish the materials and equipment specified or described in the Bidding Documents, as supplemented by Addenda. Any assumptions regarding the possibility of post-Bid approvals of "or-equal" or substitution requests are made at Bidder's sole risk.

ARTICLE 12 - SUBCONTRACTORS, SUPPLIERS AND OTHERS

- 12.01. A Bidder shall be prepared to retain specific Subcontractors, Suppliers, or other individuals or entities for the performance of the Work if required by the Bidding Documents (most commonly in the Specifications) to do so. If a prospective Bidder objects to retaining any such Subcontractor, Supplier, or other individual or entity, and the concern is not relieved by an Addendum, then the prospective Bidder should refrain from submitting a Bid.
- 12.02. Subsequent to the submittal of the Bid, Owner may not require the Successful Bidder or Contractor to retain any Subcontractor, Supplier, or other individual or entity against which Contractor has reasonable objection.

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- 12.03. The Bid Form requires identification of Subcontractors on the form provided. In addition, if the Bidding Documents require the identity of certain Subcontractors, Suppliers, individuals, or entities to be submitted to Owner in advance of a specified date prior to the Effective Date of the Agreement, the apparent Successful Bidder, and any other Bidder so requested, shall within five days after Bid opening unless otherwise noted, submit to Owner a list of all such Subcontractors, Suppliers, individuals, or entities proposed for those portions of the Work for which such identification is required. Such list shall be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor, Supplier, individual, or entity if requested by Owner. If Owner or Engineer, after due investigation, has reasonable objection to any proposed Subcontractor, Supplier, individual, or entity, Owner may, before the Notice of Award is given, request apparent Successful Bidder to submit an acceptable substitute, in which case apparent Successful Bidder shall submit a substitute, Bidder's Bid price will be increased (or decreased) by the difference in cost occasioned by such substitution, and Owner may consider such price adjustment in evaluating Bids and making the Contract award.
- 12.04. If apparent Successful Bidder declines to make any such substitution, Owner may award the Contract to the next lowest Bidder that proposes to use acceptable Subcontractors, Suppliers, individuals, or entities. Declining to make requested substitutions will not constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor, Supplier, individual, or entity so listed and against which Owner or Engineer makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner and Engineer subject to revocation of such acceptance after the Effective Date of the Agreement as provided in Paragraph 7.06 of the General Conditions.

ARTICLE 13 - PREPARATION OF BID

- 13.01. The Bid Form is included with the Bidding Documents. Additional copies may be obtained from Engineer.
- A. All blanks on the Bid Form shall be completed in ink and the Bid Form signed in ink. Erasures or alterations shall be initialed in ink by the person signing the Bid Form. A Bid price shall be indicated for each section, Bid Item, alternative, adjustment unit price item, and unit price item listed therein.
- B. If the Bid Form expressly indicates that submitting pricing on a specific alternate item is optional, and Bidder elects to not furnish pricing for such optional alternate item, then Bidder may enter the words "No Bid" or "Not Applicable."
- 13.02. A Bid by a corporation shall be executed in the corporate name by the president or a vice-president or other corporate officer accompanied by evidence of authority to sign. The corporate seal shall be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporation shall be shown.
- 13.03. A Bid by a limited liability company shall be executed in the name of the firm by a member and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm must be shown.
- 13.04. A Bid by a joint venture shall be executed by each joint venture in the manner indicated on the Bid form. The official address of the joint venture must be shown.
- 13.05. All names shall be printed in ink below the signatures.
- 13.06. The Bid shall contain an acknowledgment of receipt of all Addenda, the numbers of which shall be filled in on the Bid Form.

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- 13.07. Postal and e-mail addresses and telephone number for communications regarding the Bid shall be shown.
- 13.08. The Bid shall contain evidence of Bidder's authority and qualification to do business in the state where the Project is located, or Bidder shall covenant in writing to obtain such authority and qualification prior to award of the Contract and attach such covenant to the Bid. Bidder's state Contractor license number, if any, shall also be shown on the Bid Form.
- 13.09. The Bid shall be based on equipment supplied by the equipment manufacturers named in the Contract Specifications and identified by the Bidder on the Major Products Schedule, where applicable. Bidders may propose a substitute or alternative "or-equal" product or system for each item for consideration by Owner, when not indicated otherwise. Whenever the bidder proposes an "or equal" or substitute item, the Bidder shall provide an amount to add or deduct from the Contract Price if the "or equal" is accepted. If a Bidder-proposed product or system, other than the named equipment, is selected by the Owner, the Contract Price will be adjusted by the amount provided in the Bid Form for the same substitution. Additional associated costs, including all redesign efforts by Engineer to facilitate an "or-equal" or substitute proposed by Bidder and accepted by Owner, shall be borne by the Contractor as described in the General Conditions.
- 13.10. If a proposed "or-equal" or substitution is not accepted, the Bidder shall furnish and install the specified named equipment manufacturer's product or system with no increase in the Contract Price.

ARTICLE 14 - BASIS OF BID; COMPARISON OF BIDS

14.01. Lump Sum

- A. Bidders shall submit a Bid on a lump sum basis as set forth in the Bid Form.

14.02. Unit Price

- A. Bidders shall submit a Bid on a unit price basis for each item of Work listed in the Bid schedule.
- B. The "Bid Price" (sometimes referred to as the extended price) for each unit price Bid item will be the product of the "Estimated Quantity" (which Owner or its representative has set forth in the Bid Form) for the item and the corresponding "Bid Unit Price" offered by the Bidder. The total of all unit price Bid items will be the sum of these "Bid Prices"; such total will be used by Owner for Bid comparison purposes. The final quantities and Contract Price will be determined in accordance with Paragraph 13.03 of the General Conditions.
- C. Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.

14.03. Allowances

- A. For cash allowances the Bid price shall include such amounts as the Bidder deems proper for Contractor's overhead, costs, profit, and other expenses on account of cash allowances, if any, named in the Contract Documents, in accordance with Paragraph 13.02.B of the General Conditions.

ARTICLE 15 - SUBMITTAL OF BID

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- 15.01. With each copy of the Bidding Documents, a Bidder is furnished one copy of the Bid Form, and, if required, the Bid Bond Form. The copy of the Bid Form is to be completed and submitted with the Bid security and all required attachments to the Bid stated in the Bid Form.
- 15.02. A Bid shall be submitted no later than the date and time prescribed and at the place indicated in the advertisement or invitation to bid and shall be enclosed in a plainly marked package with the Project title (and, if applicable, the designated portion of the Project for which the Bid is submitted), the name and address of Bidder, and shall be accompanied by the Bid security and other required documents. If a Bid is sent by mail or other delivery system, the sealed envelope containing the Bid shall be enclosed in a separate envelope plainly marked on the outside with the notation "BID ENCLOSED."
- 15.03. Bids received after the date and time prescribed for the opening of bids, or not submitted at the correct location or in the designated manner, will not be accepted and will be returned to the Bidder unopened.

ARTICLE 16 - MODIFICATION AND WITHDRAWAL OF BID

- 16.01. A Bid may be modified or withdrawn by an appropriate document duly executed in the same manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids.
- 16.02. If a Bidder wishes to modify its Bid prior to Bid opening, Bidder must withdraw its initial Bid in the manner specified in Paragraph 16.01 and submit a new Bid prior to the date and time for the opening of Bids.
- 16.03. If within 24 hours after Bids are opened any Bidder files a duly signed written notice with Owner and promptly thereafter demonstrates to the reasonable satisfaction of Owner that there was a material and substantial mistake in the preparation of its Bid, that Bidder may withdraw its Bid, and the Bid security will be returned. Thereafter, if the Work is rebid, that Bidder will be disqualified from further bidding on the Work.

ARTICLE 17 - OPENING OF BIDS

- 17.01. Bids will be opened at the time and place indicated in the Advertisement or Invitation to Bid and, unless obviously non-responsive, read aloud publicly. An abstract of the amounts of the base Bids and major alternates, if any, will be made available to Bidders after the opening of Bids.

ARTICLE 18 - BIDS TO REMAIN SUBJECT TO ACCEPTANCE

- 18.01. All Bids will remain subject to acceptance for the period of time stated in the Bid Form, but Owner may, in its sole discretion, release any Bid and return the Bid Security prior to the end of this period.

ARTICLE 19 - EVALUATION OF BIDS AND AWARD OF CONTRACT

- 19.01. Owner reserves the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Owner reserves the right to reject the Bid of any Bidder that Owner finds, after reasonable inquiry and evaluation, to not be responsible. If Bidder purports to add terms or conditions to its Bid, takes exception to any provision of the Bidding Documents, or attempts to alter the contents of the Contract Documents for purposes of the Bid, then the Owner may reject the Bid as nonresponsive. Owner may also reject the Bid of any Bidder if Owner believes that it would not be in the best interest of the Project to make an award to that Bidder. Owner also reserves the right to waive all informalities not involving

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price, time, or changes in the Work and to negotiate contract terms with the Successful Bidder. Owner further reserves the right to negotiate with the apparent Successful Bidder to meet budget constraints.

- 19.02. If the Contract is to be awarded, Owner will award the Contract to the responsible and responsive Bidder who submits the lowest Total Base Bid Price, and whose evaluation by Owner, indicates that the award will be in the best interests of the Project.
- 19.03. In evaluating Bids, Owner will consider whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices, and other data, as may be requested in the Bid Form or prior to the Notice of Award.
- 19.04. In evaluating whether a Bidder is responsible, Owner will consider the qualifications of the Bidder and may consider the qualifications and experience of Subcontractors and Suppliers proposed for those portions of the Work for which the identity of Subcontractors and Suppliers must be submitted as provided in the Bidding Documents.
- 19.05. Owner may conduct such investigations as Owner deems necessary to establish the responsibility, qualifications, and financial ability of Bidders and any proposed Subcontractors or Suppliers.
- 19.06. More than one Bid for the same Work from an individual or entity under the same or different names will not be considered. Reasonable grounds for believing that any Bidder has an interest in more than one Bid for the Work may be cause for disqualification of that Bidder and the rejection of all Bids in which that Bidder has an interest.
- 19.07. Within seven days after the Bid opening, the apparent Successful Bidder shall submit to Owner two sets of information for each proposed "or-equal" product or system listed in the Major Products Schedule to demonstrate compliance with the specified requirements. Information shall be clearly identified by Specification Section and product or system. Failure to submit the requested information shall be considered appropriate cause for rejection of the "or-equal" alternate. Any ambiguities shall also be cause for rejecting an "or-equal" proposed alternate.
- 19.08. The apparent Successful Bidder will be notified in writing as to the preliminary approval, or rejection, of the submitted proposed "or-equal" alternate(s). Preliminary approval of an "or-equal" alternate shall not be construed to indicate final approval by Owner, nor relieve the Bidder from providing any additional submittal information required by the Contract Documents.

ARTICLE 20 - BONDS AND INSURANCE

- 20.01. Article 6 of the General Conditions, as may be modified by the Supplementary Conditions, sets forth Owner's requirements as to performance and payment bonds and insurance. When the Successful Bidder delivers the executed Agreement to Owner, it shall be accompanied by required bonds and insurance documentation.

ARTICLE 21 - SIGNING OF AGREEMENT

- 21.01. When Owner issues a Notice of Award to the Successful Bidder, it shall be accompanied by the required number of unsigned counterparts of the Agreement along with the other Contract Documents which are identified in the Agreement as attached thereto. Within fifteen days thereafter, Successful Bidder shall sign and deliver the required number of counterparts of the Agreement and attached documents to Owner. Within ten days thereafter, Owner shall deliver one fully signed counterpart to Successful Bidder.

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- 21.02. Owner shall furnish to Contractor one set of the Contract Drawings and Specifications in electronic format upon execution of the Agreement. Additional copies will be furnished upon request at the cost of reproduction.

ARTICLE 22 - SALES AND USE TAXES

- 22.01. Owner is exempt from Maryland state sales and use taxes on purchase of tangible personal property such as equipment and structures to be incorporated in the Work. State of Maryland Comptroller of the Treasury Sales and Use Tax Exemption Certificate, Account No. 30042726. Said taxes shall not be included in the Bid. Refer to Paragraph SC-7.09 of the Supplementary Conditions for additional information.

END OF SECTION

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CONTRACTOR'S BID
FOR
CONSTRUCTION OF CONTRACT NO. 100-15G
TOWN OF LEONARDTOWN, MARYLAND
LEONARDTOWN PRODUCTION WELL NO. 6

ARTICLE 1 - BID RECIPIENT

1.01. This Bid is submitted to:

Commissioners of Leonardtown
22670 Washington Street
P.O. Box 1
Leonardtown, MD 20650

1.02. The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

ARTICLE 2 - BIDDER'S ACKNOWLEDGEMENTS

2.01. Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for 120 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

ARTICLE 3 - BIDDER'S REPRESENTATIONS

3.01. In submitting this Bid, Bidder represents that:

A. Bidder has examined and carefully studied the Bidding Documents, other related data identified in the Bidding Documents, and the following Addenda, receipt of all which is hereby acknowledged:

Addendum No.	Addendum Date
_____	_____
_____	_____
_____	_____
_____	_____

- B. Bidder has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and satisfied itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
- C. Bidder is familiar with and is satisfied as to all Laws and Regulations that may affect cost, progress, and performance of the Work.
- D. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions.

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- E. Bidder has considered the information known to Bidder; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including applying the specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents; and (3) Bidder's safety precautions and programs.
- F. Bidder agrees, based on the information and observations referred to in the preceding paragraph, that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this 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.
- G. Bidder is aware of the general nature of work to be performed by others at the Site that relates to the Work as indicated in the Bidding Documents.
- H. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and the written resolution thereof by Engineer is acceptable to Bidder.
- I. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work for which this Bid is submitted.
- J. The submission of this Bid constitutes an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, and that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

ARTICLE 4 - BIDDER'S CERTIFICATION

4.01. Bidder certifies that:

- A. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation;
- B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;
- C. Bidder has not solicited or induced any individual or entity to refrain from bidding; and
- D. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Article:
 - 1. "corrupt practice" means the offering, giving, receiving, or soliciting of any thing of value likely to influence the action of a public official in the bidding process;
 - 2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;

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3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels; and
4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

ARTICLE 5 - BASIS OF BID

5.01. Bidder will perform the Work in accordance with the Contract Documents for the prices shown in the Bid Schedules that follow.

A. Bid Schedule A: Lump Sum Bid Items

1. Lump Sum Bid Items include all Work required to complete the Project indicated by the Bidding Documents, except any items specifically identified as separate Additive Alternate Bid Items.
2. Bid Item A-1 for mobilization and site preparation shall not be greater than ten (10) percent of the Total Base Bid Price from Bid Schedule C.

ITEM NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE	TOTAL PRICE
A-1	Mobilization and General Conditions	Lump Sum	1	\$	\$
A-2	Furnish, install and maintain Erosion and Sediment Control Measures	Lump Sum	1	\$	\$
A-3	Drill pilot hole to 900 feet, obtain formation samples, perform sieve analysis and prepare pilot hole for geophysical logging by the Engineer	Lump Sum	1	\$	\$
A-4	Construct new Leonardtown Well No. 6 including well casing and screen installation, well development, 24-hour pumping test and water quality sampling, as specified	Lump Sum	1	\$	\$
A-5	Furnish and install 1,100 gpm @ 500' TDH submersible pump; 1800 RPM standard construction, as specified	Lump Sum	1	\$	\$
A-6	Furnish and install 200 HP, 1800 RPM submersible motor; standard construction, as specified	Lump Sum	1	\$	\$
A-7	Furnish and install 400 feet of 8-inch steel T&C pump column & submersible pump cable, as specified	Lump Sum	1	\$	\$

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ITEM NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE	TOTAL PRICE
A-8	Furnish and install two new 8-inch ductile iron check valves, as specified	Lump Sum	1	\$	\$
A-9	Furnish and install Baker Monitor pitless unit, as specified	Lump Sum	1	\$	\$
A-10	Demobilization and site restoration	Lump Sum	1	\$	\$
Subtotal					\$ _____

3. Bidder acknowledges that Bidder's prices for the Lump Sum Bid Items in Bid Schedule A constitute Bidder's sole compensation for performing all Work required to complete the Project indicated by the Bidding Documents, and if a particular part of the Work is not listed specifically in the Bid Item Descriptions, Bidder has included that part of the Work in the Bid Item Description to which it most logically belongs.

B. Bid Schedule B: Contingent Unit Price Bid Items

1. Bidder proposes to accept as full payment for the Contingent Unit Price Bid Items listed in Bid Schedule B, the amounts computed under the conditions of the Bidding Documents, it being expressly understood that the unit prices are independent of the exact quantities involved, and the associated work will be performed only at the express written authorization of Owner or Engineer. Refer to Section 01025 for further details for each Contingent Unit Price Bid Item.
2. Work performed under the Contingent Unit Price Bid Items shall represent only the specific quantities requested in writing by Owner or Engineer above and beyond that required to complete the Project indicated by the Bidding Documents.

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ITEM NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE	TOTAL PRICE
B-1	For drilling the pilot hole to a greater or lesser depth than specified, plus or minus, per foot.	Linear Foot	50	\$	\$
B-2	For drilling, supplying, installing and grouting in place 16-inch diameter steel well casing to a greater or lesser depth than specified, plus or minus, per foot.	Linear Foot	50	\$	\$
B-3	For drilling, supplying, installing and gravel packing in place 12-inch diameter stainless steel well screen or blank sections, greater or lesser than the amount specified, plus or minus, per foot.	Linear Foot	50	\$	\$
B-4	For test pumping the new well, greater or less than 40 hours, plus or minus, per hour.	Hour	30	\$	\$
B-5	For supplying and installing 8-inch steel T&C pump column & submersible pump cable to a greater or lesser depth than specified, plus or minus, per foot.	Linear Foot		\$	\$
B-6	For abandonment of the pilot hole or well, if directed, in accordance with Maryland state regulations.	Lump Sum	1	\$	\$
B-7	Off-site disposal of drilling fluids	Gal	50,000	\$	\$
Subtotal					\$ _____

C. Bid Schedule C: Total Base Bid Price

- Determination of the apparent Successful Bidder shall be based on the Total Base Bid Price listed in Bid Schedule C** as follows and in accordance with the Instructions to Bidders.

BID SCHEDULE C		
ITEM NO.	DESCRIPTION	TOTAL PRICE
C-1	Bid Schedule A Subtotal (Lump Sum Bid Items)	\$
C-2	Bid Schedule B Subtotal (Contingent Unit Price Work)	\$
Total Base Bid Price (Sum of Items C-1 and C-2)		\$

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TOTAL BASE BID PRICE (in words)

- D. All mathematical errors will be corrected. In case of a discrepancy between unit prices bid and extended totals, unit prices will govern. In case of discrepancy between the correct sum of individual bid items and the (incorrectly) calculated sum, the correct sum of individual bid items will govern.

5.02. Major Products Schedule

- A. The design of the Project is based on the named manufacturers for each equipment type. Bidder shall circle one manufacturer/supplier per Specification Section. Should the Bidder fail to circle a manufacturer or circle more than one named manufacturer for a given Specification Section or if the Owner is unable to determine which manufacturer was circled, this shall mean the Bidder will provide the first listed manufacturer or the only manufacturer when only one is listed.
- B. Bidder agrees that any delay caused by the need for redesign necessary as a result of the use of an item other than one of the named manufacturers/Suppliers shall not constitute grounds for any increase in the Contract Price or extension of Contract Times and hereby waives any and all claims arising from or related to such redesign.

ARTICLE 6 - TIME OF COMPLETION

- 6.01. Bidder agrees that the Work will be substantially complete and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.
- 6.02. Bidder accepts the provisions of the Agreement as to liquidated damages.

ARTICLE 7 - ATTACHMENTS TO THIS BID

- 7.01. The following documents are submitted with and made a condition of this Bid:
 - A. List of Proposed Subcontractors.
 - B. Contractor's License No. or Evidence of Bidder's Ability to Obtain a State Contractor's License.
 - C. Non-Collusive Bidding Certification.
 - D. Certification by Bidder Regarding Equal Employment Opportunity.
 - E. Required Bid Security in the form of a certified check, bank money order, or a Bid Bond.
 - F. Statement of Surety's Intent, if applicable.
 - G. Bidder's Qualification Statement.
 - H. Documentation required for compliance with the project funding requirements, if applicable.

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ARTICLE 8 - DEFINED TERMS

- A. The terms used in this Bid with initial capital letters have the meanings indicated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

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ARTICLE 9 - BID SUBMITTAL

This Bid is submitted by:

If Bidder is:

An Individual

Name (typed or printed): _____

By _____
(Individual's Name)

Doing business as: _____

A Partnership

Partnership Name: _____ (SEAL)

By _____
(Signature of general partner--attach evidence of authority to sign)

Name (typed or printed): _____

A Corporation

Corporation Name: _____ (SEAL)

State of Incorporation: _____

Type (General Business, Professional, Service, Limited Liability): _____

By _____
(Signature--attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

Attest: _____ (CORPORATE SEAL)
(Signature of Corporate Secretary)

Date of Qualification to do business in [State where Project is located] is: _____

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A Joint Venture

Name of Joint Venture: _____

First Joint Venturer Name: _____(SEAL)

By _____
(Signature of joint venturer partner--attach evidence of authority to sign)

Name (typed or printed): _____
Title: _____

Second Joint Venturer Name: _____ (SEAL)

By _____
(Signature--attach evidence of authority to sign)

Name (typed or printed): _____
Title: _____

(Each joint venturer must sign. The manner of signing for each individual, partnership and corporation that is a party to the joint venture should be in the manner indicated above.)

Bidder's Business Address _____

Phone No. _____ Fax No. _____
Email _____

SUBMITTED on _____, 20_____

State Contractor License No. _____ [if applicable].

END OF SECTION

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LIST OF PROPOSED SUBCONTRACTORS

This document is an Attachment to the Bid Form and is a legally binding part thereof;

Each Bidder shall complete this "List of Proposed Subcontractors" in its entirety. Failure to do so shall render the Bid Form non-responsive and be grounds for its rejection by Owner. If Bidder intends to self perform the type of work indicates, write "Self Perform" under Subcontractor Name.

Type of Work	Subcontractor Name & Address	Certified Disadvantage Business Enterprise?	Subcontract Amount	State Contractor License Number

Total Subcontracted Amount: \$ _____

Percent of Total Contract: _____ %

CONTRACTOR'S LICENSE NO.

OR

**EVIDENCE OF BIDDER'S ABILITY TO
OBTAIN STATE CONTRACTOR'S LICENSE**

Leonardtwn Production Well No. 6
12636553

00410A-2

**CONTRACTOR'S LICENSE NO. OR
EVIDENCE OF BIDDER'S ABILITY TO OBTAIN
STATE CONTRACTOR'S LICENSE**

NON-COLLUSIVE BIDDING CERTIFICATION

Section 103-d of the General Municipal Law requires the following statement subscribed by the bidder as true under the penalties of perjury: Non-Collusive Bidding Certification.

(a) By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in a case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that to the best of his knowledge and belief:

(1) The prices in this bid have been arrived at independently without collusion, consultation, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor.

(2) Unless otherwise required by law, the prices which have been quoted in this bid have not been knowingly disclosed by the bidder and will not knowingly be disclosed by the bidder prior to opening, directly or indirectly, to any other bidder or to any competitor; and

(3) No attempt has been made or will be made by the bidder to induce any other person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition.

Section 103-d of the General Municipal Law, as amended by Chapter 675 L 1966, in addition to requiring the above certification, provides as follows:

(b) A bid shall not be considered for award nor shall any award be made where (1), (2) and (3) above have not been complied with; provided however, that if in any case the bidder cannot make the foregoing certification, the bidder shall so state and shall furnish with the bid a signed statement which sets forth in detail the reasons therefore. Where (1), (2) and (3) above have not been complied with, the bid shall not be considered for award nor shall any award be made unless the head of the purchasing unit of the political subdivision, public department, agency or official thereof to which the bid is made, or his designee, determines that such disclosure was not made for the purpose of restricting competition.

The fact that a bidder (a) has published price lists, rates or tariffs covering items being procured, (b) has informed prospective customers of proposed or pending publication of new or revised price lists for such items or has sold the same items to other customers at the same prices being bid, does not constitute, without more, a disclosure within the meaning of subparagraph one (a).

Any bid hereafter made to any political subdivision of the state or any public department, agency or official thereof by a corporate bidder for work or services performed or to be performed or goods sold or to be sold, where competitive bidding is required by statute, rule, regulation, or local law, and where such bid contains the certification referred to in subdivision one of this section, shall be deemed to have been authorized by the board of directors of the bidder, and such authorization shall be deemed to include the signing and submission of the bids and the inclusion therein of the certificate as to non-collusion as the act and deed of the corporation.

Dated: _____, 20____

Signed: _____ Signature

_____ Name

_____ Title

_____ Company

Corporate Seal

_____ Address

**CERTIFICATION BY BIDDER REGARDING
EQUAL EMPLOYMENT OPPORTUNITY**

Name of Bidder _____

Project No. _____

INSTRUCTIONS

This certification is required pursuant to Executive Order 11246, Part II, Section 203(b), (30 C.F.R. 12319-25). Each bidder shall state in his Bid Proposal whether he has participated in any previous contract or subcontract subject to the equal opportunity clause; and, if so, whether he has filed all compliance reports due under applicable filing requirements.

CONTRACTOR'S CERTIFICATION

Contractor's Name: _____

Address: _____

1. Bidder has participated in a previous contract or subcontract subject to the Equal Opportunity Clause. YES___ NO___
2. Compliance reports were required to be filed in connection with such contract or subcontract. YES___ NO___
If YES, state what reports were filed and with what agency.
3. Bidder has filed all compliance reports due under applicable instructions, including SF-100. YES___ NO___
4. If answer to item 3 is "NO", please explain in detail on reverse side of this certification.

Certification - The information above is true and complete to the best of my knowledge and belief. A willfully false statement is punishable by law. (U.S. Code, Title 18, Section 1001.)

(NAME AND TITLE OF SIGNER – PLEASE TYPE)

(SIGNATURE)

(DATE)

Required for Federally Assisted Projects

BID BOND

Any singular reference to Bidder, Surety, Owner or other party shall be considered plural where applicable.

BIDDER (*Name and Address*):

SURETY (*Name, and Address of Principal Place of Business*):

OWNER (*Name and Address*):

BID

Bid Due Date:

Description (*Project Name— Include Location*):

BOND

Bond Number:

Date:

Penal sum _____ \$ _____
(Words) (Figures)

Surety and Bidder, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Bid Bond to be duly executed by an authorized officer, agent, or representative.

BIDDER

SURETY

Bidder's Name and Corporate Seal (Seal)

Surety's Name and Corporate Seal (Seal)

By: _____
Signature

By: _____
Signature (Attach Power of Attorney)

Print Name

Print Name

Title

Title

Attest: _____
Signature

Attest: _____
Signature

Title

Title

Note: Addresses are to be used for giving any required notice.

Provide execution by any additional parties, such as joint venturers, if necessary.

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to pay to Owner upon default of Bidder the penal sum set forth on the face of this Bond. Payment of the penal sum is the extent of Bidder's and Surety's liability. Recovery of such penal sum under the terms of this Bond shall be Owner's sole and exclusive remedy upon default of Bidder.
2. Default of Bidder shall occur upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents.
3. This obligation shall be null and void if:
 - 3.1 Owner accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents, or
 - 3.2 All Bids are rejected by Owner, or
 - 3.3 Owner fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by Paragraph 5 hereof).
4. Payment under this Bond will be due and payable upon default of Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from Owner, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.
5. Surety waives notice of any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by Owner and Bidder, provided that the total time for issuing Notice of Award including extensions shall not in the aggregate exceed 120 days from the Bid due date without Surety's written consent.
6. No suit or action shall be commenced under this Bond prior to 30 calendar days after the notice of default required in Paragraph 4 above is received by Bidder and Surety and in no case later than one year after the Bid due date.
7. Any suit or action under this Bond shall be commenced only in a court of competent jurisdiction located in the state in which the Project is located.
8. Notices required hereunder shall be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier, or by United States Registered or Certified Mail, return receipt requested, postage pre-paid, and shall be deemed to be effective upon receipt by the party concerned.
9. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent, or representative who executed this Bond on behalf of Surety to execute, seal, and deliver such Bond and bind the Surety thereby.

10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond shall be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute shall govern and the remainder of this Bond that is not in conflict therewith shall continue in full force and effect.

11. The term "Bid" as used herein includes a Bid, offer, or proposal as applicable.

BID SECURITY

(ATTACH BID SECURITY TO THIS PAGE IF CERTIFIED CHECK.)

STATEMENT OF SURETY'S INTENT

(To be completed if Bid Security is to be
Certified or Bank Cashier's Check)

To: _____
(Owner)

We have reviewed the Bid of _____
(Contractor)

of _____
(Address)

for _____
(Project)

Bids for which will be received on _____
(Bid Opening Date)

and wish to advise that should this Bid of the Contractor be accepted and the Contract awarded to him, it is our present intention to become surety on the performance bond and labor and material bond required by the Contract.

Any arrangement for the bonds required by the Contract is a matter between the Contractor and ourselves and we assume no liability to you or third parties if for any reason we do not execute the requisite bonds.

We are duly authorized to do business in the State of _____.

Attest:

Surety's Authorized Signature(s)

Attach Power of Attorney

(Corporate seal if any. If no seal, write "No Seal" across this place and sign.)

(This form must be completed prior to the submission of the bid.)

BIDDER'S QUALIFICATION STATEMENT

To induce the making of this Contract, the Bidder represents to the Owner the following, as evidence of Bidder's Qualifications to perform the work herein specified:

1. How many years has your organization been in business under the name in which you propose to execute this Contract? How many years of relevant experience with marine construction work does your organization have?
 ___ years in business ___ years of relevant experience

2. What projects of character similar to that proposed has your present organization completed? Give the information indicated by the following tabulations:

NAME, ADDRESS, AND PHONE NO. OF OWNER FOR WHOM WORK WAS DONE	DESCRIPTION OF WORK	APPROXIMATE AMOUNT OF CONTRACT	APPROXIMATE DATE WORK WAS DONE

3. Has your present organization ever failed to complete any work awarded to it? If so, state when, where and why.

4. Do you have, or can you procure the necessary personnel, equipment, facilities and financial resources to immediately undertake and satisfactorily complete the work contemplated in this Contract?

AGREEMENT

THIS AGREEMENT is by and between The Town of Leonardtown ("Owner") and

("Contractor").

Owner and Contractor, hereby agree as follows:

ARTICLE 1 - WORK

- 1.01. Contractor shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows:
- A. Furnishing and installing a new 1,100 gpm production well as mentioned within the Contract Documents.
- 1.02. Contractor shall perform a minimum of 50% of the Work, excluding material and equipment purchases, with its own labor force.

ARTICLE 2 - THE PROJECT

- 2.01. The Project, of which the Work under the Contract Documents may be the whole or only a part, is generally described as follows:
- Leonardtown Production Well No. 6

ARTICLE 3 - ENGINEER

- 3.01. The Project has been designed by GHD Inc. ("Engineer"), which is also to act as Owner's representative, assume all duties and responsibilities, and have the rights and authority assigned to Engineer in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

ARTICLE 4 - CONTRACT TIMES

- 4.01. Time of the Essence
- A. All time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.
- 4.02. Contract Times
- A. The Work shall be substantially completed within 90 days after the date when the Contract Times commence to run as provided in paragraph 4.01 of the General Conditions, and completed and ready for final payment in accordance with paragraph 15.06 of the General Conditions within 120 days after the date when the Contract Times commence to run.
- 4.03. Liquidated Damages
- A. Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.01 above of this Agreement and that Owner will suffer financial loss if the Work is not completed within the times specified in paragraph 4.02 above, plus any extensions thereof allowed in accordance with the Contract. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by Owner if the

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Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty):

1. Substantial Completion: Contractor shall pay Owner \$1,000 for each day that expires after the time (as duly adjusted pursuant to the Contract) specified in Paragraph 4.02 above for Substantial Completion until the Work is substantially complete.
2. Completion of Remaining Work: After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Time (as duly adjusted pursuant to the Contract) specified in Paragraph 4.02 above for completion and readiness for final payment, Contractor shall pay Owner \$500 for each day that expires after such time until the Work is completed and ready for final payment.
3. Liquidated damages for failing to timely attain Substantial Completion and final completion are not additive and will not be imposed concurrently.

ARTICLE 5 - CONTRACT PRICE

- 5.01. Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents an amount in current funds equal to the amounts stated in the Schedule of Bid Items in the Contractor's Bid.
- 5.02. The Bid prices for Contingent Unit Price Work set forth in the Bid Proposal are based on estimated quantities. As provided in Paragraph 13.03 of the General Conditions, estimated quantities are not guaranteed, and determinations of actual quantities and classifications are to be made by Engineer.

ARTICLE 6 - PAYMENT PROCEDURES

- 6.01. Submittal and Processing of Payments
 - A. Contractor shall submit Applications for Payment in accordance with Article 15 of the General Conditions. Applications for Payment will be processed by Engineer as provided in the General Conditions.
- 6.02. Progress Payments; Retainage
 - A. Owner shall make progress payments on account of the Contract Price on the basis of Contractor's Applications for Payment on or about the 15 day of each month during performance of the Work as provided in the following subparagraph, provided that such Applications for Payment have been submitted in a timely manner and otherwise meet the requirements of the Contract. All such payments will be measured by the Schedule of Values established as provided in the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no Schedule of Values, as provided elsewhere in the Contract.
 1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Engineer may determine or Owner may withhold, including but not limited to liquidated damages, in accordance with the Contract.
 - a. 95% of the Work completed (with the balance being retained) and 95% of the value of undamaged materials and equipment not incorporated in the Work

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but delivered, suitably stored, and accompanied by documentation satisfactory to Owner in accordance with Paragraph 15.01 of the General Conditions and Supplementary Conditions, less in each case the aggregate of payments previously made, and less such amounts which may be lawfully deducted.

- B. Upon Substantial Completion, Owner shall pay an amount sufficient to increase total payments to Contractor to 100% of the Work completed, less such amounts as Engineer shall determine in accordance with Paragraph 15.01.E of the General Conditions, and less 200% of Engineer's estimate of the value of Work to be completed or corrected as shown on the tentative list of items to be completed or corrected prior to final payment ("punch list").

6.03. Final Payment

- A. Upon final completion and acceptance of the Work in accordance with Paragraph 15.06 of the General Conditions, Owner shall pay the remainder of the Contract Price as recommended by Engineer as provided in said Paragraph 15.06.

ARTICLE 7 - INTEREST

7.01. Not used.

ARTICLE 8 - CONTRACTOR'S REPRESENTATIONS

8.01. In order to induce Owner to enter into this Contract, Contractor makes the following representations:

- A. Contractor has examined and carefully studied the Contract Documents and the other related data identified in the Contract Documents.
- B. Contractor has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
- C. Contractor is familiar with and is satisfied as to all federal, state, and local Laws and Regulations that may affect cost, progress, and performance of the Work.
- D. Contractor has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions.
- E. Contractor has considered the information known to Contractor itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the Site-related reports and drawings identified in the Contract Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor; and (3) Contractor's safety precautions and programs.
- F. Based on the information and observations referred to in the preceding paragraph, Contractor agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.

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- G. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.
- H. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
- I. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
- J. Contractor's entry into this Contract constitutes an incontrovertible representation by Contractor that without exception all prices in the Agreement are premised upon performing and furnishing the Work required by the Contract Documents.

ARTICLE 9 - CONTRACT DOCUMENTS

9.01. Contents

- A. The Contract Documents consist of the following:
 - 1. Bid Form (Section 00410).
 - 2. This Agreement (Section 00520).
 - 3. Exhibits to this Agreement (enumerated as follows):
 - a. Exhibit A: Notice of Award
 - b. Exhibit B: Performance and Payment Bond
 - c. Exhibit C: Certificates of Insurance
 - d. Exhibit D: Contractor's Bid.
 - 4. Standard General Conditions (Section 00700).
 - 5. Supplementary Conditions (Section 00800).
 - 6. Specifications as listed in the table of contents of the Project Manual.
 - 7. Drawings consisting of 10 sheets with each sheet bearing the following general Project title: Leonardtown Wharf Floating Dock.
 - 8. Addenda (Nos. __ to __, inclusive).
 - 9. The following which may be delivered or issued on or after the Effective Date of the Agreement and are not attached hereto:
 - a. Notice to Proceed.
 - b. Work Change Directives.
 - c. Change Orders.
- B. There are no Contract Documents other than those listed herein.

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- C. The Contract Documents may only be amended, modified, or supplemented as provided in the General Conditions.

ARTICLE 10 - MISCELLANEOUS

10.01. Terms

- A. Terms used in this Agreement have the meanings stated in the General Conditions and the Supplementary Conditions.

10.02. Assignment of Contract

- A. Unless expressly agreed to elsewhere in the Contract, no assignment by a party hereto of any rights under or interests in the Contract will be binding on another party hereto without the written consent of the party sought to be bound; and, specifically but without limitation, money that may become due and money that is 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.

10.03. Successors and Assigns

- A. Owner and Contractor each binds itself, its partners, successors, assigns, and legal representatives to the other party hereto, its partners, successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

10.04. Severability

- A. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon Owner and Contractor, who agree that the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

10.05. Contractor's Certifications

- A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 10.05:
 1. "corrupt practice" means the offering, giving, receiving, or soliciting of any thing of value likely to influence the action of a public official in the bidding process or in the Contract execution;
 2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
 3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of owner, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and

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4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

(continued)

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IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement. Counterparts have been delivered to Owner and Contractor. All portions of the Contract Documents have been signed or have been identified by Owner and Contractor or on their behalf.

This Agreement will be effective on _____, 20____, (which is the Effective Date of the Agreement).

Owner _____ Contractor _____

By _____ By _____

Title: _____ Title: _____

(If Contractor is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)

Attest _____ Attest _____

Title _____ Title _____

Address for giving notices:

Address for giving notices:

License No. _____
(where applicable)

(If Owner is a corporation, attach evidence of authority to sign. If Owner is a public body, attach evidence of authority to sign and resolution or other documents authorizing execution of this Agreement.)

END OF SECTION

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EXHIBIT A

NOTICE OF AWARD

NOTICE OF AWARD

Date of Issuance:

Owner: Owner's Contract No.:

Engineer: Engineer's Project No.:

Project: Contract Name:

Bidder:

Bidder's Address:

TO BIDDER:

You are notified that Owner has accepted your Bid dated [_____] for the above Contract, and that you are the Successful Bidder and are awarded a Contract for:

[describe Work, alternates, or sections of Work awarded]

The Contract Price of the awarded Contract is: \$ _____

[] unexecuted counterparts of the Agreement accompany this Notice of Award, and one copy of the Contract Documents accompanies this Notice of Award, or has been transmitted or made available to Bidder electronically.

a set of the Drawings will be delivered separately from the other Contract Documents.

You must comply with the following conditions precedent within 15 days of the date of receipt of this Notice of Award:

1. Deliver to Owner [] counterparts of the Agreement, fully executed by Bidder.
2. Deliver with the executed Agreement(s) the Contract security (e.g., performance and payment bonds) and insurance documentation as specified in the Instructions to Bidders and General Conditions, Articles 2 and 6.
3. Other conditions precedent (if any):

Failure to comply with these conditions within the time specified will entitle Owner to consider you in default, annul this Notice of Award, and declare your Bid security forfeited.

Within ten days after you comply with the above conditions, Owner will return to you one fully executed counterpart of the Agreement, together with any additional copies of the Contract Documents as indicated in Paragraph 2.02 of the General Conditions.

Owner:

Authorized Signature

By:

Title:

Copy: Engineer

EXHIBIT B

PERFORMANCE AND PAYMENT BONDS

PERFORMANCE BOND

CONTRACTOR *(name and address):*

SURETY *(name and address of principal place of business):*

OWNER *(name and address):*

CONSTRUCTION CONTRACT

Effective Date of the Agreement:

Amount:

Description *(name and location):*

BOND

Bond Number:

Date *(not earlier than the Effective Date of the Agreement of the Construction Contract):*

Amount:

Modifications to this Bond Form: None See Paragraph 16

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Performance Bond to be duly executed by an authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL

SURETY

Contractor's Name and Corporate Seal *(seal)*

Surety's Name and Corporate Seal *(seal)*

By: _____
Signature

By: _____
Signature *(attach power of attorney)*

Print Name

Print Name

Title

Title

Attest: _____
Signature

Attest: _____
Signature

Title

Title

Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers, if applicable. (2) Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.

2. If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Paragraph 3.

3. If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond shall arise after:

3.1 The Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice shall indicate whether the Owner is requesting a conference among the Owner, Contractor, and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Paragraph 3.1 shall be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor, and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default;

3.2 The Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and

3.3 The Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.

4. Failure on the part of the Owner to comply with the notice requirement in Paragraph 3.1 shall not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.

5. When the Owner has satisfied the conditions of Paragraph 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

5.1 Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;

5.2 Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;

5.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owners concurrence,

to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Paragraph 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

5.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor, and with reasonable promptness under the circumstances:

5.4.1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or

5.4.2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

6. If the Surety does not proceed as provided in Paragraph 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Paragraph 5.4, and the Owner refuses the payment or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.

7. If the Surety elects to act under Paragraph 5.1, 5.2, or 5.3, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication for:

7.1 the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;

7.2 additional legal, design professional, and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Paragraph 5; and

7.3 liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.

8. If the Surety elects to act under Paragraph 5.1, 5.3, or 5.4, the Surety's liability is limited to the amount of this Bond.

9. The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors, and assigns.

10. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.

11. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum periods of limitations available to sureties as a defense in the jurisdiction of the suit shall be applicable.

12. Notice to the Surety, the Owner, or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears.

13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

14. Definitions

14.1 Balance of the Contract Price: The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made including allowance for the Contractor for any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

14.2 Construction Contract: The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.

14.3 Contractor Default: Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.

14.4 Owner Default: Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

14.5 Contract Documents: All the documents that comprise the agreement between the Owner and Contractor.

15. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

PAYMENT BOND

CONTRACTOR *(name and address)*:

SURETY *(name and address of principal place of business)*:

OWNER *(name and address)*:

CONSTRUCTION CONTRACT

Effective Date of the Agreement:

Amount:

Description *(name and location)*:

BOND

Bond Number:

Date *(not earlier than the Effective Date of the Agreement of the Construction Contract)*:

Amount:

Modifications to this Bond Form: None See Paragraph 18

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Payment Bond to be duly executed by an authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL

SURETY

_____ *(seal)*

Contractor's Name and Corporate Seal

_____ *(seal)*

Surety's Name and Corporate Seal

By: _____

Signature

By: _____

Signature *(attach power of attorney)*

Print Name

Print Name

Title

Title

Attest: _____

Signature

Attest: _____

Signature

Title

Title

Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers, if applicable. (2) Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner to pay for labor, materials, and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.
2. If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies, and holds harmless the Owner from claims, demands, liens, or suits by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.
3. If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond shall arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Paragraph 13) of claims, demands, liens, or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, and tendered defense of such claims, demands, liens, or suits to the Contractor and the Surety.
4. When the Owner has satisfied the conditions in Paragraph 3, the Surety shall promptly and at the Surety's expense defend, indemnify, and hold harmless the Owner against a duly tendered claim, demand, lien, or suit.
5. The Surety's obligations to a Claimant under this Bond shall arise after the following:
 - 5.1 Claimants who do not have a direct contract with the Contractor,
 - 5.1.1 have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
 - 5.1.2 have sent a Claim to the Surety (at the address described in Paragraph 13).
 - 5.2 Claimants who are employed by or have a direct contract with the Contractor have sent a Claim to the Surety (at the address described in Paragraph 13).
6. If a notice of non-payment required by Paragraph 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Paragraph 5.1.1.
7. When a Claimant has satisfied the conditions of Paragraph 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:
 - 7.1 Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and
 - 7.2 Pay or arrange for payment of any undisputed amounts.
 - 7.3 The Surety's failure to discharge its obligations under Paragraph 7.1 or 7.2 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Paragraph 7.1 or 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.
8. The Surety's total obligation shall not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Paragraph 7.3, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.
9. Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.
10. The Surety shall not be liable to the Owner, Claimants, or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to or give notice on behalf of Claimants, or otherwise have any obligations to Claimants under this Bond.
11. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.

12. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Paragraph 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.
13. Notice and Claims to the Surety, the Owner, or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.
14. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.
15. Upon requests by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.
16. **Definitions**
 - 16.1 **Claim:** A written statement by the Claimant including at a minimum:
 1. The name of the Claimant;
 2. The name of the person for whom the labor was done, or materials or equipment furnished;
 3. A copy of the agreement or purchase order pursuant to which labor, materials, or equipment was furnished for use in the performance of the Construction Contract;
 4. A brief description of the labor, materials, or equipment furnished;
 5. The date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
 6. The total amount earned by the Claimant for labor, materials, or equipment furnished as of the date of the Claim;
 7. The total amount of previous payments received by the Claimant; and
 - 16.2 **Claimant:** An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials, or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond shall be to include without limitation in the terms of "labor, materials, or equipment" that part of the water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials, or equipment were furnished.
 - 16.3 **Construction Contract:** The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.
 - 16.4 **Owner Default:** Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.
 - 16.5 **Contract Documents:** All the documents that comprise the agreement between the Owner and Contractor.
8. The total amount due and unpaid to the Claimant for labor, materials, or equipment furnished as of the date of the Claim.
17. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

EXHIBIT C

CERTIFICATES OF INSURANCE

NOTICE TO PROCEED

Owner: Owner's Contract No.:
Contractor: Contractor's Project No.:
Engineer: Engineer's Project No.:
Project: Contract Name:
Effective Date of Contract:

TO CONTRACTOR:

Owner hereby notifies Contractor that the Contract Times under the above Contract will commence to run on _____, 20__.

On that date, Contractor shall start performing its obligations under the Contract Documents. No Work shall be done at the Site prior to such date. In accordance with the Agreement, the number of days to achieve Substantial Completion is _____, and the number of days to achieve readiness for final payment is _____.

Before starting any Work at the Site, Contractor must comply with the following:

Owner:

Authorized Signature

By:

Title:

Date Issued:

Copy: Engineer

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

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ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

- A. Wherever used in the Bidding Requirements or Contract Documents, a term printed with initial capital letters, including the term's singular and plural forms, will have the meaning indicated in the definitions below. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.
1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.
 2. *Agreement*—The written instrument, executed by Owner and Contractor, that sets forth the Contract Price and Contract Times, identifies the parties and the Engineer, and designates the specific items that are Contract Documents.
 3. *Application for Payment*—The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
 4. *Bid*—The offer of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
 5. *Bidder*—An individual or entity that submits a Bid to Owner.
 6. *Bidding Documents*—The Bidding Requirements, the proposed Contract Documents, and all Addenda.
 7. *Bidding Requirements*—The advertisement or invitation to bid, Instructions to Bidders, Bid Bond or other Bid security, if any, the Bid Form, and the Bid with any attachments.
 8. *Change Order*—A document which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, or other revision to the Contract, issued on or after the Effective Date of the Contract.
 9. *Change Proposal*—A written request by Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment in Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Contract.
 10. *Claim*—(a) A demand or assertion by Owner directly to Contractor, duly submitted in compliance with the procedural requirements set forth herein: seeking an adjustment of Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; contesting Engineer's decision regarding a Change Proposal; seeking resolution of a contractual issue that Engineer has declined to address; or seeking other relief with respect to the terms of the Contract; or (b) a demand or assertion by Contractor directly to Owner, duly submitted in compliance with the procedural requirements set forth herein, contesting Engineer's decision regarding a Change Proposal; or seeking resolution of a contractual issue that Engineer

has declined to address. A demand for money or services by a third party is not a Claim.

11. *Constituent of Concern*—Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to (a) the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. §§9601 et seq. (“CERCLA”); (b) the Hazardous Materials Transportation Act, 49 U.S.C. §§5501 et seq.; (c) the Resource Conservation and Recovery Act, 42 U.S.C. §§6901 et seq. (“RCRA”); (d) the Toxic Substances Control Act, 15 U.S.C. §§2601 et seq.; (e) the Clean Water Act, 33 U.S.C. §§1251 et seq.; (f) the Clean Air Act, 42 U.S.C. §§7401 et seq.; or (g) any other federal, state, or local statute, law, rule, regulation, ordinance, resolution, code, order, or decree regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.
12. *Contract*—The entire and integrated written contract between the Owner and Contractor concerning the Work.
13. *Contract Documents*—Those items so designated in the Agreement, and which together comprise the Contract.
14. *Contract Price*—The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Contract Documents. .
15. *Contract Times*—The number of days or the dates by which Contractor shall: (a) achieve Milestones, if any; (b) achieve Substantial Completion; and (c) complete the Work.
16. *Contractor*—The individual or entity with which Owner has contracted for performance of the Work.
17. *Cost of the Work*—See Paragraph 13.01 for definition.
18. *Drawings*—The part of the Contract that graphically shows the scope, extent, and character of the Work to be performed by Contractor.
19. *Effective Date of the Contract*—The date, indicated in the Agreement, on which the Contract becomes effective.
20. *Engineer*—The individual or entity named as such in the Agreement.
21. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but does not change the Contract Price or the Contract Times.
22. *Hazardous Environmental Condition*—The presence at the Site of Constituents of Concern in such quantities or circumstances that may present a danger to persons or property exposed thereto. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated in the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, does not establish a Hazardous Environmental Condition.
23. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

24. *Liens*—Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.
25. *Milestone*—A principal event in the performance of the Work that the Contract requires Contractor to achieve by an intermediate completion date or by a time prior to Substantial Completion of all the Work.
26. *Notice of Award*—The written notice by Owner to a Bidder of Owner’s acceptance of the Bid.
27. *Notice to Proceed*—A written notice by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work.
28. *Owner*—The individual or entity with which Contractor has contracted regarding the Work, and which has agreed to pay Contractor for the performance of the Work, pursuant to the terms of the Contract.
29. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor’s plan to accomplish the Work within the Contract Times.
30. *Project*—The total undertaking to be accomplished for Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the Work to be performed under the Contract Documents is a part.
31. *Project Manual*—The written documents prepared for, or made available for, procuring and constructing the Work, including but not limited to the Bidding Documents or other construction procurement documents, geotechnical and existing conditions information, the Agreement, bond forms, General Conditions, Supplementary Conditions, and Specifications. The contents of the Project Manual may be bound in one or more volumes.
32. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative or “RPR” includes any assistants or field staff of Resident Project Representative.
33. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and that establish the standards by which such portion of the Work will be judged.
34. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements for Engineer’s review of the submittals and the performance of related construction activities.
35. *Schedule of Values*—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor’s Applications for Payment.
36. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work. Shop Drawings, whether approved or not, are not Drawings and are not Contract Documents.

37. *Site*—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements, and such other lands furnished by Owner which are designated for the use of Contractor.
38. *Specifications*—The part of the Contract that consists of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable to the Work.
39. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work.
40. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms “substantially complete” and “substantially completed” as applied to all or part of the Work refer to Substantial Completion thereof.
41. *Successful Bidder*—The Bidder whose Bid the Owner accepts, and to which the Owner makes an award of contract, subject to stated conditions.
42. *Supplementary Conditions*—The part of the Contract that amends or supplements these General Conditions.
43. *Supplier*—A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or a Subcontractor.
44. *Technical Data*—Those items expressly identified as Technical Data in the Supplementary Conditions, with respect to either (a) subsurface conditions at the Site, or physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities) or (b) Hazardous Environmental Conditions at the Site. If no such express identifications of Technical Data have been made with respect to conditions at the Site, then the data contained in boring logs, recorded measurements of subsurface water levels, laboratory test results, and other factual, objective information regarding conditions at the Site that are set forth in any geotechnical or environmental report prepared for the Project and made available to Contractor are hereby defined as Technical Data with respect to conditions at the Site under Paragraphs 5.03, 5.04, and 5.06.
45. *Underground Facilities*—All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including but not limited to those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, fiber optic transmissions, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.
46. *Unit Price Work*—Work to be paid for on the basis of unit prices.
47. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction; furnishing, installing, and incorporating all materials and equipment into such construction; and may include related services such as testing, start-up, and commissioning, all as required by the Contract Documents.

48. *Work Change Directive*—A written directive to Contractor issued on or after the Effective Date of the Contract, signed by Owner and recommended by Engineer, ordering an addition, deletion, or revision in the Work.

1.02 Terminology

- A. The words and terms discussed in the following paragraphs are not defined but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.
- B. *Intent of Certain Terms or Adjectives:*
 1. The Contract Documents include the terms “as allowed,” “as approved,” “as ordered,” “as directed” or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Article 10 or any other provision of the Contract Documents.
- C. *Day:*
 1. The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.
- D. *Defective:*
 1. The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
 - a. does not conform to the Contract Documents; or
 - b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
 - c. has been damaged prior to Engineer’s recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 15.03 or 15.04).
- E. *Furnish, Install, Perform, Provide:*
 1. The word “furnish,” when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.
 2. The word “install,” when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.

3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.
 4. If the Contract Documents establish an obligation of Contractor with respect to specific services, materials, or equipment, but do not expressly use any of the four words “furnish,” “install,” “perform,” or “provide,” then Contractor shall furnish and install said services, materials, or equipment complete and ready for intended use.
- F. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2 – PRELIMINARY MATTERS

2.01 *Delivery of Bonds and Evidence of Insurance*

- A. *Bonds*: When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.
- B. *Evidence of Contractor’s Insurance*: When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract), the certificates and other evidence of insurance required to be provided by Contractor in accordance with Article 6.
- C. *Evidence of Owner’s Insurance*: After receipt of the executed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or otherwise), the certificates and other evidence of insurance required to be provided by Owner under Article 6.

2.02 *Copies of Documents*

- A. Owner shall furnish to Contractor four printed copies of the Contract (including one fully executed counterpart of the Agreement), and one copy in electronic portable document format (PDF). Additional printed copies will be furnished upon request at the cost of reproduction.
- B. Owner shall maintain and safeguard at least one original printed record version of the Contract, including Drawings and Specifications signed and sealed by Engineer and other design professionals. Owner shall make such original printed record version of the Contract available to Contractor for review. Owner may delegate the responsibilities under this provision to Engineer.

2.03 *Before Starting Construction*

- A. *Preliminary Schedules*: Within 10 days after the Effective Date of the Contract (or as otherwise specifically required by the Contract Documents), Contractor shall submit to Engineer for timely review:
 1. a preliminary Progress Schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract;
 2. a preliminary Schedule of Submittals; and

3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.04 *Preconstruction Conference; Designation of Authorized Representatives*

- A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.03.A, procedures for handling Shop Drawings, Samples, and other submittals, processing Applications for Payment, electronic or digital transmittals, and maintaining required records.
- B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit and receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

2.05 *Initial Acceptance of Schedules*

- A. At least 10 days before submission of the first Application for Payment a conference, attended by Contractor, Engineer, and others as appropriate, will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.03.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.
 1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work, nor interfere with or relieve Contractor from Contractor's full responsibility therefor.
 2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.
 3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to the component parts of the Work.

2.06 *Electronic Transmittals*

- A. Except as otherwise stated elsewhere in the Contract, the Owner, Engineer, and Contractor may transmit, and shall accept, Project-related correspondence, text, data, documents, drawings, information, and graphics, including but not limited to Shop Drawings and other submittals, in electronic media or digital format, either directly, or through access to a secure Project website.
- B. If the Contract does not establish protocols for electronic or digital transmittals, then Owner, Engineer, and Contractor shall jointly develop such protocols.
- C. When transmitting items in electronic media or digital format, the transmitting party makes no representations as to long term compatibility, usability, or readability of the items resulting from the recipient's use of software application packages, operating systems, or

computer hardware differing from those used in the drafting or transmittal of the items, or from those established in applicable transmittal protocols.

ARTICLE 3 – DOCUMENTS: INTENT, REQUIREMENTS, REUSE

3.01 *Intent*

- A. The Contract Documents are complementary; what is required by one is as binding as if required by all.
- B. It is the intent of the Contract Documents to describe a functionally complete project (or part thereof) to be constructed in accordance with the Contract Documents.
- C. Unless otherwise stated in the Contract Documents, if there is a discrepancy between the electronic or digital versions of the Contract Documents (including any printed copies derived from such electronic or digital versions) and the printed record version, the printed record version shall govern.
- D. The Contract supersedes prior negotiations, representations, and agreements, whether written or oral.
- E. Engineer will issue clarifications and interpretations of the Contract Documents as provided herein.

3.02 *Reference Standards*

- A. Standards, Specifications, Codes, Laws, and Regulations
 - 1. Reference in the Contract Documents to standard specifications, manuals, reference standards, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard specification, manual, reference standard, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Contract if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.
 - 2. No provision of any such standard specification, manual, reference standard, or code, or any instruction of a Supplier, shall be effective to change the duties or responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees, from those set forth in the part of the Contract Documents prepared by or for Engineer. No such provision or instruction shall be effective to assign to Owner, Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the part of the Contract Documents prepared by or for Engineer.

3.03 *Reporting and Resolving Discrepancies*

- A. *Reporting Discrepancies:*
 - 1. *Contractor's Verification of Figures and Field Measurements:* Before undertaking each part of the Work, Contractor shall carefully study the Contract Documents, and check and verify pertinent figures and dimensions therein, particularly with respect to applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy that Contractor discovers, or has actual knowledge of, and shall not proceed with any Work affected thereby until the conflict,

error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract Documents issued pursuant to Paragraph 11.01.

2. *Contractor's Review of Contract Documents:* If, before or during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) actual field conditions, (c) any standard specification, manual, reference standard, or code, or (d) any instruction of any Supplier, then Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 7.15) until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract Documents issued pursuant to Paragraph 11.01.
3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof.

B. *Resolving Discrepancies:*

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the part of the Contract Documents prepared by or for Engineer shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between such provisions of the Contract Documents and:
 - a. the provisions of any standard specification, manual, reference standard, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference as a Contract Document); or
 - b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 *Requirements of the Contract Documents*

- A. During the performance of the Work and until final payment, Contractor and Owner shall submit to the Engineer all matters in question concerning the requirements of the Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Contract Documents, as soon as possible after such matters arise. Engineer will be the initial interpreter of the requirements of the Contract Documents, and judge of the acceptability of the Work thereunder.
- B. Engineer will, with reasonable promptness, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Contract Documents. Engineer's written clarification, interpretation, or decision will be final and binding on Contractor, unless it appeals by submitting a Change Proposal, and on Owner, unless it appeals by filing a Claim.
- C. If a submitted matter in question concerns terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work under the Contract Documents, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly give written notice to Owner and Contractor that Engineer is unable to provide a decision or interpretation. If Owner and Contractor are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in Article 12.

3.05 *Reuse of Documents*

- A. Contractor and its Subcontractors and Suppliers shall not:
 - 1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media editions, or reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer; or
 - 2. have or acquire any title or ownership rights in any other Contract Documents, reuse any such Contract Documents for any purpose without Owner's express written consent, or violate any copyrights pertaining to such Contract Documents.
- B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

ARTICLE 4 – COMMENCEMENT AND PROGRESS OF THE WORK

4.01 *Commencement of Contract Times; Notice to Proceed*

- A. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Contract or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Contract. In no event will the Contract Times commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Contract, whichever date is earlier.

4.02 *Starting the Work*

- A. Contractor shall start to perform the Work on the date when the Contract Times commence to run. No Work shall be done at the Site prior to such date.

4.03 *Reference Points*

- A. Owner shall provide engineering surveys to establish reference points for construction which in Engineer's judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Engineer whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

4.04 *Progress Schedule*

- A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.05 as it may be adjusted from time to time as provided below.
 - 1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.05) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times.

2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 11.
- B. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, or during any appeal process, except as permitted by Paragraph 16.04, or as Owner and Contractor may otherwise agree in writing.

4.05 *Delays in Contractor's Progress*

- A. If Owner, Engineer, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Times and Contract Price. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
- B. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delay, disruption, or interference caused by or within the control of Contractor. Delay, disruption, and interference attributable to and within the control of a Subcontractor or Supplier shall be deemed to be within the control of Contractor.
- C. If Contractor's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Owner, Contractor, and those for which they are responsible, then Contractor shall be entitled to an equitable adjustment in Contract Times. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Contract Times under this paragraph include but are not limited to the following:
1. severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;
 2. abnormal weather conditions;
 3. acts or failures to act of utility owners (other than those performing other work at or adjacent to the Site by arrangement with the Owner, as contemplated in Article 8); and
 4. acts of war or terrorism.
- D. Delays, disruption, and interference to the performance or progress of the Work resulting from the existence of a differing subsurface or physical condition, an Underground Facility that was not shown or indicated by the Contract Documents, or not shown or indicated with reasonable accuracy, and those resulting from Hazardous Environmental Conditions, are governed by Article 5.
- E. Paragraph 8.03 governs delays, disruption, and interference to the performance or progress of the Work resulting from the performance of certain other work at or adjacent to the Site.
- F. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Contractor.

- G. Contractor must submit any Change Proposal seeking an adjustment in Contract Price or Contract Times under this paragraph within 30 days of the commencement of the delaying, disrupting, or interfering event.

ARTICLE 5 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS

5.01 Availability of Lands

- A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work.
- B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which permanent improvements are to be made and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.
- C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

5.02 Use of Site and Other Areas

- A. *Limitation on Use of Site and Other Areas:*
 - 1. Contractor shall confine construction equipment, temporary construction facilities, the storage of materials and equipment, and the operations of workers to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and such other adjacent areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for (a) damage to the Site; (b) damage to any such other adjacent areas used for Contractor's operations; (c) damage to any other adjacent land or areas; and (d) for injuries and losses sustained by the owners or occupants of any such land or areas; provided that such damage or injuries result from the performance of the Work or from other actions or conduct of the Contractor or those for which Contractor is responsible.
 - 2. If a damage or injury claim is made by the owner or occupant of any such land or area because of the performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible, Contractor shall (a) take immediate corrective or remedial action as required by Paragraph 7.12, or otherwise; (b) promptly attempt to settle the claim as to all parties through negotiations with such owner or occupant, or otherwise resolve the claim by arbitration or other dispute resolution proceeding, or at law; and (c) to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claim, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused directly or indirectly, in whole or in part

by, or based upon, Contractor's performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible.

- B. *Removal of Debris During Performance of the Work:* During the progress of the Work the Contractor shall keep the Site and other adjacent areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.
- C. *Cleaning:* Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site and adjacent areas all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.
- D. *Loading of Structures:* Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent structures or land to stresses or pressures that will endanger them.

5.03 *Subsurface and Physical Conditions*

- A. *Reports and Drawings:* The Supplementary Conditions identify:
 - 1. those reports known to Owner of explorations and tests of subsurface conditions at or adjacent to the Site;
 - 2. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities); and
 - 3. Technical Data contained in such reports and drawings.
- B. *Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely upon the accuracy of the Technical Data (as defined in Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:
 - 1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or
 - 2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
 - 3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions, or information.

5.04 *Differing Subsurface or Physical Conditions*

- A. *Notice by Contractor:* If Contractor believes that any subsurface or physical condition that is uncovered or revealed at the Site either:
1. is of such a nature as to establish that any Technical Data on which Contractor is entitled to rely as provided in Paragraph 5.03 is materially inaccurate; or
 2. is of such a nature as to require a change in the Drawings or Specifications; or
 3. differs materially from that shown or indicated in the Contract Documents; or
 4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except with respect to an emergency) until receipt of a written statement permitting Contractor to do so.

- B. *Engineer's Review:* After receipt of written notice as required by the preceding paragraph, Engineer will promptly review the subsurface or physical condition in question; determine the necessity of Owner's obtaining additional exploration or tests with respect to the condition; conclude whether the condition falls within any one or more of the differing site condition categories in Paragraph 5.04.A above; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the subsurface or physical condition in question and the need for any change in the Drawings or Specifications; and advise Owner in writing of Engineer's findings, conclusions, and recommendations.
- C. *Owner's Statement to Contractor Regarding Site Condition:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the subsurface or physical condition in question, addressing the resumption of Work in connection with such condition, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations, in whole or in part.
- D. *Possible Price and Times Adjustments:*
1. Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, or both, to the extent that the existence of a differing subsurface or physical condition, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:
 - a. such condition must fall within any one or more of the categories described in Paragraph 5.04.A;
 - b. with respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03; and,

- c. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times with respect to a subsurface or physical condition if:
 - a. Contractor knew of the existence of such condition at the time Contractor made a commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract, or otherwise; or
 - b. the existence of such condition reasonably could have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas expressly required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such commitment; or
 - c. Contractor failed to give the written notice as required by Paragraph 5.04.A.
 3. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.
 4. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the subsurface or physical condition in question.

5.05 *Underground Facilities*

- A. *Contractor's Responsibilities:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or adjacent to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:
 1. Owner and Engineer do not warrant or guarantee the accuracy or completeness of any such information or data provided by others; and
 2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:
 - a. reviewing and checking all information and data regarding existing Underground Facilities at the Site;
 - b. locating all Underground Facilities shown or indicated in the Contract Documents as being at the Site;
 - c. coordination of the Work with the owners (including Owner) of such Underground Facilities, during construction; and
 - d. the safety and protection of all existing Underground Facilities at the Site, and repairing any damage thereto resulting from the Work.
- B. *Notice by Contractor:* If Contractor believes that an Underground Facility that is uncovered or revealed at the Site was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, then Contractor shall, promptly after

becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer.

- C. *Engineer's Review:* Engineer will promptly review the Underground Facility and conclude whether such Underground Facility was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the Underground Facility in question; determine the extent, if any, to which a change is required in the Drawings or Specifications to reflect and document the consequences of the existence or location of the Underground Facility; and advise Owner in writing of Engineer's findings, conclusions, and recommendations. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.
- D. *Owner's Statement to Contractor Regarding Underground Facility:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the Underground Facility in question, addressing the resumption of Work in connection with such Underground Facility, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations in whole or in part.
- E. *Possible Price and Times Adjustments:*
 - 1. Contractor shall be entitled to an equitable adjustment in the Contract Price or Contract Times, or both, to the extent that any existing Underground Facility at the Site that was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:
 - a. Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated the existence or actual location of the Underground Facility in question;
 - b. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03;
 - c. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times; and
 - d. Contractor gave the notice required in Paragraph 5.05.B.
 - 2. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.
 - 3. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the Underground Facility in question.

5.06 *Hazardous Environmental Conditions at Site*

- A. *Reports and Drawings*: The Supplementary Conditions identify:
1. those reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site; and
 2. Technical Data contained in such reports and drawings.
- B. *Reliance by Contractor on Technical Data Authorized*: Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely on the accuracy of the Technical Data (as defined in Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:
1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto; or
 2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or
 3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions or information.
- C. Contractor shall not be responsible for removing or remediating any Hazardous Environmental Condition encountered, uncovered, or revealed at the Site unless such removal or remediation is expressly identified in the Contract Documents to be within the scope of the Work.
- D. Contractor shall be responsible for controlling, containing, and duly removing all Constituents of Concern brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible, and for any associated costs; and for the costs of removing and remediating any Hazardous Environmental Condition created by the presence of any such Constituents of Concern.
- E. If Contractor encounters, uncovers, or reveals a Hazardous Environmental Condition whose removal or remediation is not expressly identified in the Contract Documents as being within the scope of the Work, or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, then Contractor shall immediately: (1) secure or otherwise isolate such condition; (2) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 7.15); and (3) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 5.06.F. If Contractor or anyone for whom Contractor is responsible created the Hazardous Environmental Condition in question, then Owner may remove and remediate the Hazardous Environmental Condition, and impose a set-off against payments to account for the associated costs.

- F. Contractor shall not resume Work in connection with such Hazardous Environmental Condition or in any affected area until after Owner has obtained any required permits related thereto, and delivered written notice to Contractor either (1) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (2) specifying any special conditions under which such Work may be resumed safely.
- G. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, then within 30 days of Owner's written notice regarding the resumption of Work, Contractor may submit a Change Proposal, or Owner may impose a set-off.
- H. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work, following the contractual change procedures in Article 11. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 8.
- I. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition (1) was not shown or indicated in the Drawings, Specifications, or other Contract Documents, identified as Technical Data entitled to limited reliance pursuant to Paragraph 5.06.B, or identified in the Contract Documents to be included within the scope of the Work, and (2) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.H shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- J. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the failure to control, contain, or remove a Constituent of Concern brought to the Site by Contractor or by anyone for whom Contractor is responsible, or to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.J shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- K. The provisions of Paragraphs 5.03, 5.04, and 5.05 do not apply to the presence of Constituents of Concern or to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 6 – BONDS AND INSURANCE

6.01 *Performance, Payment, and Other Bonds*

- A. Contractor shall furnish a performance bond and a payment bond, each in an amount at least equal to the Contract Price, as security for the faithful performance and payment of all of Contractor's obligations under the Contract. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 15.08, whichever is later, except as provided otherwise by Laws or Regulations, the Supplementary Conditions, or other specific provisions of the Contract. Contractor shall also furnish such other bonds as are required by the Supplementary Conditions or other specific provisions of the Contract.
- B. All bonds shall be in the form prescribed by the Contract except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (as amended and supplemented) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. A bond signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual's authority to bind the surety. The evidence of authority shall show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.
- C. Contractor shall obtain the required bonds from surety companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds in the required amounts.
- D. If the surety on a bond furnished by Contractor is declared bankrupt or becomes insolvent, or its right to do business is terminated in any state or jurisdiction where any part of the Project is located, or the surety ceases to meet the requirements above, then Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the bond and surety requirements above.
- E. If Contractor has failed to obtain a required bond, Owner may exclude the Contractor from the Site and exercise Owner's termination rights under Article 16.
- F. Upon request, Owner shall provide a copy of the payment bond to any Subcontractor, Supplier, or other person or entity claiming to have furnished labor or materials used in the performance of the Work.

6.02 *Insurance—General Provisions*

- A. Owner and Contractor shall obtain and maintain insurance as required in this Article and in the Supplementary Conditions.
- B. All insurance required by the Contract to be purchased and maintained by Owner or Contractor shall be obtained from insurance companies that are duly licensed or authorized, in the state or jurisdiction in which the Project is located, to issue insurance policies for the required limits and coverages. Unless a different standard is indicated in the Supplementary Conditions, all companies that provide insurance policies required under this Contract shall have an A.M. Best rating of A-VII or better.
- C. Contractor shall deliver to Owner, with copies to each named insured and additional insured (as identified in this Article, in the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Contractor has obtained and is

maintaining the policies, coverages, and endorsements required by the Contract. Upon request by Owner or any other insured, Contractor shall also furnish other evidence of such required insurance, including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Contractor may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.

- D. Owner shall deliver to Contractor, with copies to each named insured and additional insured (as identified in this Article, the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Owner has obtained and is maintaining the policies, coverages, and endorsements required of Owner by the Contract (if any). Upon request by Contractor or any other insured, Owner shall also provide other evidence of such required insurance (if any), including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Owner may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.
- E. Failure of Owner or Contractor to demand such certificates or other evidence of the other party's full compliance with these insurance requirements, or failure of Owner or Contractor to identify a deficiency in compliance from the evidence provided, shall not be construed as a waiver of the other party's obligation to obtain and maintain such insurance.
- F. If either party does not purchase or maintain all of the insurance required of such party by the Contract, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage.
- G. If Contractor has failed to obtain and maintain required insurance, Owner may exclude the Contractor from the Site, impose an appropriate set-off against payment, and exercise Owner's termination rights under Article 16.
- H. Without prejudice to any other right or remedy, if a party has failed to obtain required insurance, the other party may elect to obtain equivalent insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and the Contract Price shall be adjusted accordingly.
- I. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor or Contractor's interests.
- J. The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor's liability under the indemnities granted to Owner and other individuals and entities in the Contract.

6.03 *Contractor's Insurance*

- A. *Workers' Compensation:* Contractor shall purchase and maintain workers' compensation and employer's liability insurance for:
 - 1. claims under workers' compensation, disability benefits, and other similar employee benefit acts.
 - 2. United States Longshoreman and Harbor Workers' Compensation Act and Jones Act coverage (if applicable).
 - 3. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees (by stop-gap endorsement in monopolist worker's compensation states).

4. Foreign voluntary worker compensation (if applicable).
- B. *Commercial General Liability—Claims Covered:* Contractor shall purchase and maintain commercial general liability insurance, covering all operations by or on behalf of Contractor, on an occurrence basis, against:
1. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees.
 2. claims for damages insured by reasonably available personal injury liability coverage.
 3. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom.
- C. *Commercial General Liability—Form and Content:* Contractor's commercial liability policy shall be written on a 1996 (or later) ISO commercial general liability form (occurrence form) and include the following coverages and endorsements:
1. Products and completed operations coverage:
 - a. Such insurance shall be maintained for three years after final payment.
 - b. Contractor shall furnish Owner and each other additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract) evidence of continuation of such insurance at final payment and three years thereafter.
 2. Blanket contractual liability coverage, to the extent permitted by law, including but not limited to coverage of Contractor's contractual indemnity obligations in Paragraph 7.18.
 3. Broad form property damage coverage.
 4. Severability of interest.
 5. Underground, explosion, and collapse coverage.
 6. Personal injury coverage.
 7. Additional insured endorsements that include both ongoing operations and products and completed operations coverage through ISO Endorsements CG 20 10 10 01 and CG 20 37 10 01 (together); or CG 20 10 07 04 and CG 20 37 07 04 (together); or their equivalent.
 8. For design professional additional insureds, ISO Endorsement CG 20 32 07 04, "Additional Insured—Engineers, Architects or Surveyors Not Engaged by the Named Insured" or its equivalent.
- D. *Automobile liability:* Contractor shall purchase and maintain automobile liability insurance against claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance, or use of any motor vehicle. The automobile liability policy shall be written on an occurrence basis.
- E. *Umbrella or excess liability:* Contractor shall purchase and maintain umbrella or excess liability insurance written over the underlying employer's liability, commercial general liability, and automobile liability insurance described in the paragraphs above. Subject to industry-standard exclusions, the coverage afforded shall follow form as to each and every one of the underlying policies.
- F. *Contractor's pollution liability insurance:* Contractor shall purchase and maintain a policy covering third-party injury and property damage claims, including clean-up costs, as a result

of pollution conditions arising from Contractor's operations and completed operations. This insurance shall be maintained for no less than three years after final completion.

- G. *Additional insureds*: The Contractor's commercial general liability, automobile liability, umbrella or excess, and pollution liability policies shall include and list as additional insureds Owner and Engineer, and any individuals or entities identified in the Supplementary Conditions; include coverage for the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of all such additional insureds; and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby (including as applicable those arising from both ongoing and completed operations) on a non-contributory basis. Contractor shall obtain all necessary endorsements to support these requirements.
- H. *Contractor's professional liability insurance*: If Contractor will provide or furnish professional services under this Contract, through a delegation of professional design services or otherwise, then Contractor shall be responsible for purchasing and maintaining applicable professional liability insurance. This insurance shall provide protection against claims arising out of performance of professional design or related services, and caused by a negligent error, omission, or act for which the insured party is legally liable. It shall be maintained throughout the duration of the Contract and for a minimum of two years after Substantial Completion. If such professional design services are performed by a Subcontractor, and not by Contractor itself, then the requirements of this paragraph may be satisfied through the purchasing and maintenance of such insurance by such Subcontractor.
- I. *General provisions*: The policies of insurance required by this Paragraph 6.03 shall:
 - 1. include at least the specific coverages provided in this Article.
 - 2. be written for not less than the limits of liability provided in this Article and in the Supplementary Conditions, or required by Laws or Regulations, whichever is greater.
 - 3. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed, or renewal refused until at least 10 days prior written notice has been given to Contractor. Within three days of receipt of any such written notice, Contractor shall provide a copy of the notice to Owner, Engineer, and each other insured under the policy.
 - 4. remain in effect at least until final payment (and longer if expressly required in this Article) and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work as a warranty or correction obligation, or otherwise, or returning to the Site to conduct other tasks arising from the Contract Documents.
 - 5. be appropriate for the Work being performed and provide protection from claims that may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable.
- J. The coverage requirements for specific policies of insurance must be met by such policies, and not by reference to excess or umbrella insurance provided in other policies.

6.04 *Owner's Liability Insurance*

- A. In addition to the insurance required to be provided by Contractor under Paragraph 6.03, Owner, at Owner's option, may purchase and maintain at Owner's expense Owner's own liability insurance as will protect Owner against claims which may arise from operations under the Contract Documents.
- B. Owner's liability policies, if any, operate separately and independently from policies required to be provided by Contractor, and Contractor cannot rely upon Owner's liability policies for any of Contractor's obligations to the Owner, Engineer, or third parties.

6.05 *Property Insurance*

- A. *Builder's Risk*: Unless otherwise provided in the Supplementary Conditions, Contractor shall purchase and maintain builder's risk insurance upon the Work on a completed value basis, in the amount of the full insurable replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:
 - 1. include the Owner and Contractor as named insureds, and all Subcontractors, and any individuals or entities required by the Supplementary Conditions to be insured under such builder's risk policy, as insureds or named insureds. For purposes of the remainder of this Paragraph 6.05, Paragraphs 6.06 and 6.07, and any corresponding Supplementary Conditions, the parties required to be insured shall collectively be referred to as "insureds."
 - 2. be written on a builder's risk "all risk" policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire; lightning; windstorm; riot; civil commotion; terrorism; vehicle impact; aircraft; smoke; theft; vandalism and malicious mischief; mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; flood; collapse; explosion; debris removal; demolition occasioned by enforcement of Laws and Regulations; water damage (other than that caused by flood); and such other perils or causes of loss as may be specifically required by the Supplementary Conditions. If insurance against mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; or flood, are not commercially available under builder's risk policies, by endorsement or otherwise, such insurance may be provided through other insurance policies acceptable to Owner and Contractor.
 - 3. cover, as insured property, at least the following: (a) the Work and all materials, supplies, machinery, apparatus, equipment, fixtures, and other property of a similar nature that are to be incorporated into or used in the preparation, fabrication, construction, erection, or completion of the Work, including Owner-furnished or assigned property; (b) spare parts inventory required within the scope of the Contract; and (c) temporary works which are not intended to form part of the permanent constructed Work but which are intended to provide working access to the Site, or to the Work under construction, or which are intended to provide temporary support for the Work under construction, including scaffolding, form work, fences, shoring, falsework, and temporary structures.
 - 4. cover expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects).

5. extend to cover damage or loss to insured property while in temporary storage at the Site or in a storage location outside the Site (but not including property stored at the premises of a manufacturer or Supplier).
 6. extend to cover damage or loss to insured property while in transit.
 7. allow for partial occupation or use of the Work by Owner, such that those portions of the Work that are not yet occupied or used by Owner shall remain covered by the builder's risk insurance.
 8. allow for the waiver of the insurer's subrogation rights, as set forth below.
 9. provide primary coverage for all losses and damages caused by the perils or causes of loss covered.
 10. not include a co-insurance clause.
 11. include an exception for ensuing losses from physical damage or loss with respect to any defective workmanship, design, or materials exclusions.
 12. include performance/hot testing and start-up.
 13. be maintained in effect, subject to the provisions herein regarding Substantial Completion and partial occupancy or use of the Work by Owner, until the Work is complete.
- B. *Notice of Cancellation or Change:* All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with this Paragraph 6.05 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 10 days prior written notice has been given to the purchasing policyholder. Within three days of receipt of any such written notice, the purchasing policyholder shall provide a copy of the notice to each other insured.
- C. *Deductibles:* The purchaser of any required builder's risk or property insurance shall pay for costs not covered because of the application of a policy deductible.
- D. *Partial Occupancy or Use by Owner:* If Owner will occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 15.04, then Owner (directly, if it is the purchaser of the builder's risk policy, or through Contractor) will provide notice of such occupancy or use to the builder's risk insurer. The builder's risk insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy; rather, those portions of the Work that are occupied or used by Owner may come off the builder's risk policy, while those portions of the Work not yet occupied or used by Owner shall remain covered by the builder's risk insurance.
- E. *Additional Insurance:* If Contractor elects to obtain other special insurance to be included in or supplement the builder's risk or property insurance policies provided under this Paragraph 6.05, it may do so at Contractor's expense.
- F. *Insurance of Other Property:* If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, such as tools, construction equipment, or other personal property owned by Contractor, a Subcontractor, or an employee of Contractor or a Subcontractor, then the entity or individual owning such property item will be responsible for deciding whether to insure it, and if so in what amount.

6.06 *Waiver of Rights*

- A. All policies purchased in accordance with Paragraph 6.05, expressly including the builder's risk policy, shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any insureds thereunder, or against Engineer or its consultants, or their officers, directors, members, partners, employees, agents, consultants, or subcontractors. Owner and Contractor waive all rights against each other and the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Engineer, its consultants, all Subcontractors, all individuals or entities identified in the Supplementary Conditions as insureds, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by Owner or Contractor as trustee or fiduciary, or otherwise payable under any policy so issued.
- B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, for:
 - 1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other perils whether or not insured by Owner; and
 - 2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner during partial occupancy or use pursuant to Paragraph 15.04, after Substantial Completion pursuant to Paragraph 15.03, or after final payment pursuant to Paragraph 15.06.
- C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 6.06.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Engineer, or the officers, directors, members, partners, employees, agents, consultants, or subcontractors of each and any of them.
- D. Contractor shall be responsible for assuring that the agreement under which a Subcontractor performs a portion of the Work contains provisions whereby the Subcontractor waives all rights against Owner, Contractor, all individuals or entities identified in the Supplementary Conditions as insureds, the Engineer and its consultants, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by builder's risk insurance and any other property insurance applicable to the Work.

6.07 *Receipt and Application of Property Insurance Proceeds*

- A. Any insured loss under the builder's risk and other policies of insurance required by Paragraph 6.05 will be adjusted and settled with the named insured that purchased the

policy. Such named insured shall act as fiduciary for the other insureds, and give notice to such other insureds that adjustment and settlement of a claim is in progress. Any other insured may state its position regarding a claim for insured loss in writing within 15 days after notice of such claim.

- B. Proceeds for such insured losses may be made payable by the insurer either jointly to multiple insureds, or to the named insured that purchased the policy in its own right and as fiduciary for other insureds, subject to the requirements of any applicable mortgage clause. A named insured receiving insurance proceeds under the builder's risk and other policies of insurance required by Paragraph 6.05 shall distribute such proceeds in accordance with such agreement as the parties in interest may reach, or as otherwise required under the dispute resolution provisions of this Contract or applicable Laws and Regulations.
- C. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the money so received applied on account thereof, and the Work and the cost thereof covered by Change Order, if needed.

ARTICLE 7 – CONTRACTOR'S RESPONSIBILITIES

7.01 Supervision and Superintendence

- A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction.
- B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who shall not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

7.02 Labor; Working Hours

- A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.
- B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours, Monday through Friday. Contractor will not perform Work on a Saturday, Sunday, or any legal holiday. Contractor may perform Work outside regular working hours or on Saturdays, Sundays, or legal holidays only with Owner's written consent, which will not be unreasonably withheld.

7.03 Services, Materials, and Equipment

- A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start up, and completion of the Work, whether or not such items are specifically called for in the Contract Documents.
- B. All materials and equipment incorporated into the Work shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and

guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.

- C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

7.04 "Or Equals"

- A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the Contract Price has been based upon Contractor furnishing such item as specified. The specification or description of such an item is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or equal" item is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment, or items from other proposed suppliers under the circumstances described below.
 - 1. If Engineer in its sole discretion determines that an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, Engineer shall deem it an "or equal" item. For the purposes of this paragraph, a proposed item of material or equipment will be considered functionally equal to an item so named if:
 - a. in the exercise of reasonable judgment Engineer determines that:
 - 1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;
 - 2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole;
 - 3) it has a proven record of performance and availability of responsive service; and
 - 4) it is not objectionable to Owner.
 - b. Contractor certifies that, if approved and incorporated into the Work:
 - 1) there will be no increase in cost to the Owner or increase in Contract Times; and
 - 2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.
- B. *Contractor's Expense:* Contractor shall provide all data in support of any proposed "or equal" item at Contractor's expense.
- C. *Engineer's Evaluation and Determination:* Engineer will be allowed a reasonable time to evaluate each "or-equal" request. Engineer may require Contractor to furnish additional data about the proposed "or-equal" item. Engineer will be the sole judge of acceptability. No "or-equal" item will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an "or-equal", which will be evidenced by an approved Shop Drawing or other written communication. Engineer will advise Contractor in writing of any negative determination.

- D. *Effect of Engineer's Determination:* Neither approval nor denial of an "or-equal" request shall result in any change in Contract Price. The Engineer's denial of an "or-equal" request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents.
- E. *Treatment as a Substitution Request:* If Engineer determines that an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item, Contractor may request that Engineer considered the proposed item as a substitute pursuant to Paragraph 7.05.

7.05 *Substitutes*

- A. Unless the specification or description of an item of material or equipment required to be furnished under the Contract Documents contains or is followed by words reading that no substitution is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment under the circumstances described below. To the extent possible such requests shall be made before commencement of related construction at the Site.
 - 1. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is functionally equivalent to that named and an acceptable substitute therefor. Engineer will not accept requests for review of proposed substitute items of material or equipment from anyone other than Contractor.
 - 2. The requirements for review by Engineer will be as set forth in Paragraph 7.05.B, as supplemented by the Specifications, and as Engineer may decide is appropriate under the circumstances.
 - 3. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:
 - a. shall certify that the proposed substitute item will:
 - 1) perform adequately the functions and achieve the results called for by the general design,
 - 2) be similar in substance to that specified, and
 - 3) be suited to the same use as that specified.
 - b. will state:
 - 1) the extent, if any, to which the use of the proposed substitute item will necessitate a change in Contract Times,
 - 2) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item, and
 - 3) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty.
 - c. will identify:
 - 1) all variations of the proposed substitute item from that specified, and

- 2) available engineering, sales, maintenance, repair, and replacement services.
 - d. shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including but not limited to changes in Contract Price, shared savings, costs of redesign, and claims of other contractors affected by any resulting change.
- B. *Engineer's Evaluation and Determination:* Engineer will be allowed a reasonable time to evaluate each substitute request, and to obtain comments and direction from Owner. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No substitute will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an acceptable substitute. Engineer's determination will be evidenced by a Field Order or a proposed Change Order accounting for the substitution itself and all related impacts, including changes in Contract Price or Contract Times. Engineer will advise Contractor in writing of any negative determination.
- C. *Special Guarantee:* Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.
- D. *Reimbursement of Engineer's Cost:* Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.
- E. *Contractor's Expense:* Contractor shall provide all data in support of any proposed substitute at Contractor's expense.
- F. *Effect of Engineer's Determination:* If Engineer approves the substitution request, Contractor shall execute the proposed Change Order and proceed with the substitution. The Engineer's denial of a substitution request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents. Contractor may challenge the scope of reimbursement costs imposed under Paragraph 7.05.D, by timely submittal of a Change Proposal.

7.06 *Concerning Subcontractors, Suppliers, and Others*

- A. Contractor may retain Subcontractors and Suppliers for the performance of parts of the Work. Such Subcontractors and Suppliers must be acceptable to Owner.
- B. Contractor shall retain specific Subcontractors, Suppliers, or other individuals or entities for the performance of designated parts of the Work if required by the Contract to do so.
- C. Subsequent to the submittal of Contractor's Bid or final negotiation of the terms of the Contract, Owner may not require Contractor to retain any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against which Contractor has reasonable objection.
- D. Prior to entry into any binding subcontract or purchase order, Contractor shall submit to Owner the identity of the proposed Subcontractor or Supplier (unless Owner has already deemed such proposed Subcontractor or Supplier acceptable, during the bidding process or otherwise). Such proposed Subcontractor or Supplier shall be deemed acceptable to Owner unless Owner raises a substantive, reasonable objection within five days.

- E. Owner may require the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work. Owner also may require Contractor to retain specific replacements; provided, however, that Owner may not require a replacement to which Contractor has a reasonable objection. If Contractor has submitted the identity of certain Subcontractors, Suppliers, or other individuals or entities for acceptance by Owner, and Owner has accepted it (either in writing or by failing to make written objection thereto), then Owner may subsequently revoke the acceptance of any such Subcontractor, Supplier, or other individual or entity so identified solely on the basis of substantive, reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity.
- F. If Owner requires the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work, then Contractor shall be entitled to an adjustment in Contract Price or Contract Times, or both, with respect to the replacement; and Contractor shall initiate a Change Proposal for such adjustment within 30 days of Owner's requirement of replacement.
- G. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of the right of Owner to the completion of the Work in accordance with the Contract Documents.
- H. On a monthly basis Contractor shall submit to Engineer a complete list of all Subcontractors and Suppliers having a direct contract with Contractor, and of all other Subcontractors and Suppliers known to Contractor at the time of submittal.
- I. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions.
- J. Contractor shall be solely responsible for scheduling and coordinating the work of Subcontractors, Suppliers, and all other individuals or entities performing or furnishing any of the Work.
- K. Contractor shall restrict all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work from communicating with Engineer or Owner, except through Contractor or in case of an emergency, or as otherwise expressly allowed herein.
- L. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.
- M. All Work performed for Contractor by a Subcontractor or Supplier shall be pursuant to an appropriate contractual agreement that specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer.
- N. Owner may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor on account of Work performed for Contractor by the particular Subcontractor or Supplier.

- O. Nothing in the Contract Documents:
1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier, or other individual or entity; nor
 2. shall create any obligation on the part of Owner or Engineer to pay or to see to the payment of any money due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

7.07 *Patent Fees and Royalties*

- A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if, to the actual knowledge of Owner or Engineer, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by Owner in the Contract Documents.
- B. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.
- C. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

7.08 *Permits*

- A. Unless otherwise provided in the Contract Documents, Contractor shall obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of the submission of Contractor's Bid (or when Contractor became bound under a negotiated contract). Owner shall pay all charges of utility owners for connections for providing permanent service to the Work

7.09 *Taxes*

- A. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

7.10 *Laws and Regulations*

- A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.
- B. If Contractor performs any Work or takes any other action knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all resulting costs and losses, and shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work or other action. It shall not be Contractor's responsibility to make certain that the Work described in the Contract Documents is in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.
- C. Owner or Contractor may give notice to the other party of any changes after the submission of Contractor's Bid (or after the date when Contractor became bound under a negotiated contract) in Laws or Regulations having an effect on the cost or time of performance of the Work, including but not limited to changes in Laws or Regulations having an effect on procuring permits and on sales, use, value-added, consumption, and other similar taxes. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times resulting from such changes, then within 30 days of such notice Contractor may submit a Change Proposal, or Owner may initiate a Claim.

7.11 *Record Documents*

- A. Contractor shall maintain in a safe place at the Site one printed record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, written interpretations and clarifications, and approved Shop Drawings. Contractor shall keep such record documents in good order and annotate them to show changes made during construction. These record documents, together with all approved Samples, will be available to Engineer for reference. Upon completion of the Work, Contractor shall deliver these record documents to Engineer.

7.12 *Safety and Protection*

- A. Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury, or loss to:
 - 1. all persons on the Site or who may be affected by the Work;

2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
 3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, other work in progress, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.
- B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify Owner; the owners of adjacent property, Underground Facilities, and other utilities; and other contractors and utility owners performing work at or adjacent to the Site, when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property or work in progress.
 - C. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. The Supplementary Conditions identify any Owner's safety programs that are applicable to the Work.
 - D. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety program with which Owner's and Engineer's employees and representatives must comply while at the Site.
 - E. All damage, injury, or loss to any property referred to in Paragraph 7.12.A.2 or 7.12.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor at its expense (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).
 - F. Contractor's duties and responsibilities for safety and protection shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor in accordance with Paragraph 15.06.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).
 - G. Contractor's duties and responsibilities for safety and protection shall resume whenever Contractor or any Subcontractor or Supplier returns to the Site to fulfill warranty or correction obligations, or to conduct other tasks arising from the Contract Documents.

7.13 *Safety Representative*

- A. Contractor shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

7.14 *Hazard Communication Programs*

- A. Contractor shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or

exchanged between or among employers at the Site in accordance with Laws or Regulations.

7.15 *Emergencies*

- A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent threatened damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If Engineer determines that a change in the Contract Documents is required because of the action taken by Contractor in response to such an emergency, a Work Change Directive or Change Order will be issued.

7.16 *Shop Drawings, Samples, and Other Submittals*

A. *Shop Drawing and Sample Submittal Requirements:*

1. Before submitting a Shop Drawing or Sample, Contractor shall have:
 - a. reviewed and coordinated the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;
 - b. determined and verified all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;
 - c. determined and verified the suitability of all materials and equipment offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and
 - d. determined and verified all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto.
2. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review of that submittal, and that Contractor approves the submittal.
3. With each submittal, Contractor shall give Engineer specific written notice of any variations that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be set forth in a written communication separate from the Shop Drawings or Sample submittal; and, in addition, in the case of Shop Drawings by a specific notation made on each Shop Drawing submitted to Engineer for review and approval of each such variation.

- B. *Submittal Procedures for Shop Drawings and Samples:* Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals. Each submittal will be identified as Engineer may require.

1. *Shop Drawings:*

- a. Contractor shall submit the number of copies required in the Specifications.
- b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to

provide and to enable Engineer to review the information for the limited purposes required by Paragraph 7.16.D.

2. *Samples:*
 - a. Contractor shall submit the number of Samples required in the Specifications.
 - b. Contractor shall clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the submittal for the limited purposes required by Paragraph 7.16.D.
 3. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.
- C. *Other Submittals:* Contractor shall submit other submittals to Engineer in accordance with the accepted Schedule of Submittals, and pursuant to the applicable terms of the Specifications.
- D. *Engineer's Review:*
1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.
 2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction or to safety precautions or programs incident thereto.
 3. Engineer's review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
 4. Engineer's review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 7.16.A.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer will document any such approved variation from the requirements of the Contract Documents in a Field Order.
 5. Engineer's review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 7.16.A and B.
 6. Engineer's review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Contract Documents, shall not, under any circumstances, change the Contract Times or Contract Price, unless such changes are included in a Change Order.
 7. Neither Engineer's receipt, review, acceptance or approval of a Shop Drawing, Sample, or other submittal shall result in such item becoming a Contract Document.

8. Contractor shall perform the Work in compliance with the requirements and commitments set forth in approved Shop Drawings and Samples, subject to the provisions of Paragraph 7.16.D.4.

E. *Resubmittal Procedures:*

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.
2. Contractor shall furnish required submittals with sufficient information and accuracy to obtain required approval of an item with no more than three submittals. Engineer will record Engineer's time for reviewing a fourth or subsequent submittal of a Shop Drawings, sample, or other item requiring approval, and Contractor shall be responsible for Engineer's charges to Owner for such time. Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges.
3. If Contractor requests a change of a previously approved submittal item, Contractor shall be responsible for Engineer's charges to Owner for its review time, and Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges, unless the need for such change is beyond the control of Contractor.

7.17 *Contractor's General Warranty and Guarantee*

- A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its officers, directors, members, partners, employees, agents, consultants, and subcontractors shall be entitled to rely on Contractor's warranty and guarantee.
- B. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:
 1. abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or
 2. normal wear and tear under normal usage.
- C. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:
 1. observations by Engineer;
 2. recommendation by Engineer or payment by Owner of any progress or final payment;
 3. the issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;
 4. use or occupancy of the Work or any part thereof by Owner;
 5. any review and approval of a Shop Drawing or Sample submittal;
 6. the issuance of a notice of acceptability by Engineer;
 7. any inspection, test, or approval by others; or
 8. any correction of defective Work by Owner.

- D. If the Contract requires the Contractor to accept the assignment of a contract entered into by Owner, then the specific warranties, guarantees, and correction obligations contained in the assigned contract shall govern with respect to Contractor's performance obligations to Owner for the Work described in the assigned contract.

7.18 *Indemnification*

- A. To the fullest extent permitted by Laws and Regulations, and in addition to any other obligations of Contractor under the Contract or otherwise, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage 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 but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable.
- B. In any and all claims against Owner or Engineer or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 7.18.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.
- C. The indemnification obligations of Contractor under Paragraph 7.18.A shall not extend to the liability of Engineer and Engineer's officers, directors, members, partners, employees, agents, consultants and subcontractors arising out of:
 - 1. the preparation or approval of, or the failure to prepare or approve maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or
 - 2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

7.19 *Delegation of Professional Design Services*

- A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable Laws and Regulations.
- B. If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, and other submittals prepared by such professional. Shop

Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to Engineer.

- C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy, and completeness of the services, certifications, or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.
- D. Pursuant to this paragraph, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 7.16.D.1.
- E. Contractor shall not be responsible for the adequacy of the performance or design criteria specified by Owner or Engineer.

ARTICLE 8 – OTHER WORK AT THE SITE

8.01 *Other Work*

- A. In addition to and apart from the Work under the Contract Documents, the Owner may perform other work at or adjacent to the Site. Such other work may be performed by Owner's employees, or through contracts between the Owner and third parties. Owner may also arrange to have third-party utility owners perform work on their utilities and facilities at or adjacent to the Site.
- B. If Owner performs other work at or adjacent to the Site with Owner's employees, or through contracts for such other work, then Owner shall give Contractor written notice thereof prior to starting any such other work. If Owner has advance information regarding the start of any utility work at or adjacent to the Site, Owner shall provide such information to Contractor.
- C. Contractor shall afford each other contractor that performs such other work, each utility owner performing other work, and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, and provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be affected.
- D. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 8, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

8.02 *Coordination*

- A. If Owner intends to contract with others for the performance of other work at or adjacent to the Site, to perform other work at or adjacent to the Site with Owner's employees, or to arrange to have utility owners perform work at or adjacent to the Site, the following will be set forth in the Supplementary Conditions or provided to Contractor prior to the start of any such other work:
 - 1. the identity of the individual or entity that will have authority and responsibility for coordination of the activities among the various contractors;
 - 2. an itemization of the specific matters to be covered by such authority and responsibility; and
 - 3. the extent of such authority and responsibilities.
- B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

8.03 *Legal Relationships*

- A. If, in the course of performing other work at or adjacent to the Site for Owner, the Owner's employees, any other contractor working for Owner, or any utility owner causes damage to the Work or to the property of Contractor or its Subcontractors, or delays, disrupts, interferes with, or increases the scope or cost of the performance of the Work, through actions or inaction, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor must submit any Change Proposal seeking an equitable adjustment in the Contract Price or the Contract Times under this paragraph within 30 days of the damaging, delaying, disrupting, or interfering event. The entitlement to, and extent of, any such equitable adjustment shall take into account information (if any) regarding such other work that was provided to Contractor in the Contract Documents prior to the submittal of the Bid or the final negotiation of the terms of the Contract. When applicable, any such equitable adjustment in Contract Price shall be conditioned on Contractor assigning to Owner all Contractor's rights against such other contractor or utility owner with respect to the damage, delay, disruption, or interference that is the subject of the adjustment. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
- B. Contractor shall take reasonable and customary measures to avoid damaging, delaying, disrupting, or interfering with the work of Owner, any other contractor, or any utility owner performing other work at or adjacent to the Site. If Contractor fails to take such measures and as a result damages, delays, disrupts, or interferes with the work of any such other contractor or utility owner, then Owner may impose a set-off against payments due to Contractor, and assign to such other contractor or utility owner the Owner's contractual rights against Contractor with respect to the breach of the obligations set forth in this paragraph.
- C. When Owner is performing other work at or adjacent to the Site with Owner's employees, Contractor shall be liable to Owner for damage to such other work, and for the reasonable direct delay, disruption, and interference costs incurred by Owner as a result of Contractor's failure to take reasonable and customary measures with respect to Owner's other work. In response to such damage, delay, disruption, or interference, Owner may impose a set-off against payments due to Contractor.

- D. If Contractor damages, delays, disrupts, or interferes with the work of any other contractor, or any utility owner performing other work at or adjacent to the Site, through Contractor's failure to take reasonable and customary measures to avoid such impacts, or if any claim arising out of Contractor's actions, inactions, or negligence in performance of the Work at or adjacent to the Site is made by any such other contractor or utility owner against Contractor, Owner, or Engineer, then Contractor shall (1) promptly attempt to settle the claim as to all parties through negotiations with such other contractor or utility owner, or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law, and (2) indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claims, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such damage, delay, disruption, or interference.

ARTICLE 9 – OWNER'S RESPONSIBILITIES

9.01 *Communications to Contractor*

- A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer.

9.02 *Replacement of Engineer*

- A. Owner may at its discretion appoint an engineer to replace Engineer, provided Contractor makes no reasonable objection to the replacement engineer. The replacement engineer's status under the Contract Documents shall be that of the former Engineer.

9.03 *Furnish Data*

- A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

9.04 *Pay When Due*

- A. Owner shall make payments to Contractor when they are due as provided in the Agreement.

9.05 *Lands and Easements; Reports, Tests, and Drawings*

- A. Owner's duties with respect to providing lands and easements are set forth in Paragraph 5.01.
- B. Owner's duties with respect to providing engineering surveys to establish reference points are set forth in Paragraph 4.03.
- C. Article 5 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of conditions at the Site, and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

9.06 *Insurance*

- A. Owner's responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 6.

9.07 *Change Orders*

- A. Owner's responsibilities with respect to Change Orders are set forth in Article 11.

9.08 *Inspections, Tests, and Approvals*

- A. Owner's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 14.02.B.

9.09 *Limitations on Owner's Responsibilities*

- A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

9.10 *Undisclosed Hazardous Environmental Condition*

- A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 5.06.

9.11 *Evidence of Financial Arrangements*

- A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract Documents (including obligations under proposed changes in the Work).

9.12 *Safety Programs*

- A. While at the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed.
- B. Owner shall furnish copies of any applicable Owner safety programs to Contractor.

ARTICLE 10 – ENGINEER'S STATUS DURING CONSTRUCTION

10.01 *Owner's Representative*

- A. Engineer will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in the Contract.

10.02 *Visits to Site*

- A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.
- B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 10.08. Particularly, but without limitation, during

or as a result of Engineer's visits or observations of Contractor's Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

10.03 *Project Representative*

- A. If Owner and Engineer have agreed that Engineer will furnish a Resident Project Representative to represent Engineer at the Site and assist Engineer in observing the progress and quality of the Work, then the authority and responsibilities of any such Resident Project Representative will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 10.08. If Owner designates another representative or agent to represent Owner at the Site who is not Engineer's consultant, agent, or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

10.04 *Rejecting Defective Work*

- A. Engineer has the authority to reject Work in accordance with Article 14.

10.05 *Shop Drawings, Change Orders and Payments*

- A. Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, are set forth in Paragraph 7.16.
- B. Engineer's authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, are set forth in Paragraph 7.19.
- C. Engineer's authority as to Change Orders is set forth in Article 11.
- D. Engineer's authority as to Applications for Payment is set forth in Article 15.

10.06 *Determinations for Unit Price Work*

- A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor as set forth in Paragraph 13.03.

10.07 *Decisions on Requirements of Contract Documents and Acceptability of Work*

- A. Engineer will render decisions regarding the requirements of the Contract Documents, and judge the acceptability of the Work, pursuant to the specific procedures set forth herein for initial interpretations, Change Proposals, and acceptance of the Work. In rendering such decisions and judgments, Engineer will not show partiality to Owner or Contractor, and will not be liable to Owner, Contractor, or others in connection with any proceedings, interpretations, decisions, or judgments conducted or rendered in good faith.

10.08 *Limitations on Engineer's Authority and Responsibilities*

- A. Neither Engineer's authority or responsibility under this Article 10 or under any other provision of the Contract, nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer, shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

- B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.
- C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.
- D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 15.06.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals, that the results certified indicate compliance with the Contract Documents.
- E. The limitations upon authority and responsibility set forth in this Paragraph 10.08 shall also apply to the Resident Project Representative, if any.

10.09 *Compliance with Safety Program*

- A. While at the Site, Engineer's employees and representatives will comply with the specific applicable requirements of Owner's and Contractor's safety programs (if any) of which Engineer has been informed.

ARTICLE 11 – AMENDING THE CONTRACT DOCUMENTS; CHANGES IN THE WORK

11.01 *Amending and Supplementing Contract Documents*

- A. The Contract Documents may be amended or supplemented by a Change Order, a Work Change Directive, or a Field Order.
 - 1. *Change Orders:*
 - a. If an amendment or supplement to the Contract Documents includes a change in the Contract Price or the Contract Times, such amendment or supplement must be set forth in a Change Order. A Change Order also may be used to establish amendments and supplements of the Contract Documents that do not affect the Contract Price or Contract Times.
 - b. Owner and Contractor may amend those terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, without the recommendation of the Engineer. Such an amendment shall be set forth in a Change Order.
 - 2. *Work Change Directives:* A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the modification ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Work Change Directive's effect, if any, on the Contract Price and Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Contract Documents governing adjustments, expressly including Paragraph 11.04 regarding change of Contract Price. Contractor must submit any Change Proposal seeking an

adjustment of the Contract Price or the Contract Times, or both, no later than 30 days after the completion of the Work set out in the Work Change Directive. Owner must submit any Claim seeking an adjustment of the Contract Price or the Contract Times, or both, no later than 60 days after issuance of the Work Change Directive.

3. *Field Orders*: Engineer may authorize minor changes in the Work if the changes do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Such changes will be accomplished by a Field Order and will be binding on Owner and also on Contractor, which shall perform the Work involved promptly. If Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, then before proceeding with the Work at issue, Contractor shall submit a Change Proposal as provided herein.

11.02 *Owner-Authorized Changes in the Work*

- A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work. Such changes shall be supported by Engineer's recommendation, to the extent the change involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters. Such changes may be accomplished by a Change Order, if Owner and Contractor have agreed as to the effect, if any, of the changes on Contract Times or Contract Price; or by a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved; or, in the case of a deletion in the Work, promptly cease construction activities with respect to such deleted Work. Added or revised Work shall be performed under the applicable conditions of the Contract Documents. Nothing in this paragraph shall obligate Contractor to undertake work that Contractor reasonably concludes cannot be performed in a manner consistent with Contractor's safety obligations under the Contract Documents or Laws and Regulations.

11.03 *Unauthorized Changes in the Work*

- A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents, as amended, modified, or supplemented, except in the case of an emergency as provided in Paragraph 7.15 or in the case of uncovering Work as provided in Paragraph 14.05.

11.04 *Change of Contract Price*

- A. The Contract Price may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Price shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment of Contract Price shall comply with the provisions of Article 12.
- B. An adjustment in the Contract Price will be determined as follows:
 1. where the Work involved is covered by unit prices contained in the Contract Documents, then by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 13.03); or
 2. where the Work involved is not covered by unit prices contained in the Contract Documents, then by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.04.C.2); or
 3. where the Work involved is not covered by unit prices contained in the Contract Documents and the parties do not reach mutual agreement to a lump sum, then on

the basis of the Cost of the Work (determined as provided in Paragraph 13.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 11.04.C).

- C. *Contractor's Fee*: When applicable, the Contractor's fee for overhead and profit shall be determined as follows:
1. a mutually acceptable fixed fee; or
 2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
 - a. for costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2, the Contractor's fee shall be 15 percent;
 - b. for costs incurred under Paragraph 13.01.B.3, the Contractor's fee shall be five percent;
 - c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 11.01.C.2.a and 11.01.C.2.b is that the Contractor's fee shall be based on: (1) a fee of 15 percent of the costs incurred under Paragraphs 13.01.A.1 and 13.01.A.2 by the Subcontractor that actually performs the Work, at whatever tier, and (2) with respect to Contractor itself and to any Subcontractors of a tier higher than that of the Subcontractor that actually performs the Work, a fee of five percent of the amount (fee plus underlying costs incurred) attributable to the next lower tier Subcontractor; provided, however, that for any such subcontracted work the maximum total fee to be paid by Owner shall be no greater than 27 percent of the costs incurred by the Subcontractor that actually performs the work;
 - d. no fee shall be payable on the basis of costs itemized under Paragraphs 13.01.B.4, 13.01.B.5, and 13.01.C;
 - e. the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in Contractor's fee by an amount equal to five percent of such net decrease; and
 - f. when both additions and credits are involved in any one change, the adjustment in Contractor's fee shall be computed on the basis of the net change in accordance with Paragraphs 11.04.C.2.a through 11.04.C.2.e, inclusive.

11.05 *Change of Contract Times*

- A. The Contract Times may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Times shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment in the Contract Times shall comply with the provisions of Article 12.
- B. An adjustment of the Contract Times shall be subject to the limitations set forth in Paragraph 4.05, concerning delays in Contractor's progress.

11.06 *Change Proposals*

- A. Contractor shall submit a Change Proposal to Engineer to request an adjustment in the Contract Times or Contract Price; appeal an initial decision by Engineer concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents; contest a set-off against payment due; or seek other relief under

the Contract. The Change Proposal shall specify any proposed change in Contract Times or Contract Price, or both, or other proposed relief, and explain the reason for the proposed change, with citations to any governing or applicable provisions of the Contract Documents.

1. *Procedures:* Contractor shall submit each Change Proposal to Engineer promptly (but in no event later than 30 days) after the start of the event giving rise thereto, or after such initial decision. The Contractor shall submit supporting data, including the proposed change in Contract Price or Contract Time (if any), to the Engineer and Owner within 15 days after the submittal of the Change Proposal. The supporting data shall be accompanied by a written statement that the supporting data are accurate and complete, and that any requested time or price adjustment is the entire adjustment to which Contractor believes it is entitled as a result of said event. Engineer will advise Owner regarding the Change Proposal, and consider any comments or response from Owner regarding the Change Proposal.
 2. *Engineer's Action:* Engineer will review each Change Proposal and, within 30 days after receipt of the Contractor's supporting data, either deny the Change Proposal in whole, approve it in whole, or deny it in part and approve it in part. Such actions shall be in writing, with a copy provided to Owner and Contractor. If Engineer does not take action on the Change Proposal within 30 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of Engineer's inaction the Change Proposal is deemed denied, thereby commencing the time for appeal of the denial under Article 12.
 3. *Binding Decision:* Engineer's decision will be final and binding upon Owner and Contractor, unless Owner or Contractor appeals the decision by filing a Claim under Article 12.
- B. *Resolution of Certain Change Proposals:* If the Change Proposal does not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters, then Engineer will notify the parties that the Engineer is unable to resolve the Change Proposal. For purposes of further resolution of such a Change Proposal, such notice shall be deemed a denial, and Contractor may choose to seek resolution under the terms of Article 12.

11.07 Execution of Change Orders

- A. Owner and Contractor shall execute appropriate Change Orders covering:
1. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive;
 2. changes in Contract Price resulting from an Owner set-off, unless Contractor has duly contested such set-off;
 3. changes in the Work which are: (a) ordered by Owner pursuant to Paragraph 11.02, (b) required because of Owner's acceptance of defective Work under Paragraph 14.04 or Owner's correction of defective Work under Paragraph 14.07, or (c) agreed to by the parties, subject to the need for Engineer's recommendation if the change in the Work involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters; and
 4. changes in the Contract Price or Contract Times, or other changes, which embody the substance of any final and binding results under Paragraph 11.06, or Article 12.

- B. If Owner or Contractor refuses to execute a Change Order that is required to be executed under the terms of this Paragraph 11.07, it shall be deemed to be of full force and effect, as if fully executed.

11.08 *Notification to Surety*

- A. If the provisions of any bond require notice to be given to a surety of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times), the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

ARTICLE 12 – CLAIMS

12.01 *Claims*

- A. *Claims Process:* The following disputes between Owner and Contractor shall be submitted to the Claims process set forth in this Article:
 - 1. Appeals by Owner or Contractor of Engineer's decisions regarding Change Proposals;
 - 2. Owner demands for adjustments in the Contract Price or Contract Times, or other relief under the Contract Documents; and
 - 3. Disputes that Engineer has been unable to address because they do not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters.
- B. *Submittal of Claim:* The party submitting a Claim shall deliver it directly to the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto; in the case of appeals regarding Change Proposals within 30 days of the decision under appeal. The party submitting the Claim shall also furnish a copy to the Engineer, for its information only. The responsibility to substantiate a Claim shall rest with the party making the Claim. In the case of a Claim by Contractor seeking an increase in the Contract Times or Contract Price, or both, Contractor shall certify that the Claim is made in good faith, that the supporting data are accurate and complete, and that to the best of Contractor's knowledge and belief the amount of time or money requested accurately reflects the full amount to which Contractor is entitled.
- C. *Review and Resolution:* The party receiving a Claim shall review it thoroughly, giving full consideration to its merits. The two parties shall seek to resolve the Claim through the exchange of information and direct negotiations. The parties may extend the time for resolving the Claim by mutual agreement. All actions taken on a Claim shall be stated in writing and submitted to the other party, with a copy to Engineer.
- D. *Mediation:*
 - 1. At any time after initiation of a Claim, Owner and Contractor may mutually agree to mediation of the underlying dispute. The agreement to mediate shall stay the Claim submittal and response process.
 - 2. If Owner and Contractor agree to mediation, then after 60 days from such agreement, either Owner or Contractor may unilaterally terminate the mediation process, and the Claim submittal and decision process shall resume as of the date of the termination. If the mediation proceeds but is unsuccessful in resolving the dispute, the Claim

submittal and decision process shall resume as of the date of the conclusion of the mediation, as determined by the mediator.

3. Owner and Contractor shall each pay one-half of the mediator's fees and costs.
- E. *Partial Approval*: If the party receiving a Claim approves the Claim in part and denies it in part, such action shall be final and binding unless within 30 days of such action the other party invokes the procedure set forth in Article 17 for final resolution of disputes.
- F. *Denial of Claim*: If efforts to resolve a Claim are not successful, the party receiving the Claim may deny it by giving written notice of denial to the other party. If the receiving party does not take action on the Claim within 90 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of the inaction, the Claim is deemed denied, thereby commencing the time for appeal of the denial. A denial of the Claim shall be final and binding unless within 30 days of the denial the other party invokes the procedure set forth in Article 17 for the final resolution of disputes.
- G. *Final and Binding Results*: If the parties reach a mutual agreement regarding a Claim, whether through approval of the Claim, direct negotiations, mediation, or otherwise; or if a Claim is approved in part and denied in part, or denied in full, and such actions become final and binding; then the results of the agreement or action on the Claim shall be incorporated in a Change Order to the extent they affect the Contract, including the Work, the Contract Times, or the Contract Price.

ARTICLE 13 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

13.01 *Cost of the Work*

- A. *Purposes for Determination of Cost of the Work*: The term Cost of the Work means the sum of all costs necessary for the proper performance of the Work at issue, as further defined below. The provisions of this Paragraph 13.01 are used for two distinct purposes:
 1. To determine Cost of the Work when Cost of the Work is a component of the Contract Price, under cost-plus-fee, time-and-materials, or other cost-based terms; or
 2. To determine the value of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price. When the value of any such adjustment is determined on the basis of Cost of the Work, Contractor is entitled only to those additional or incremental costs required because of the change in the Work or because of the event giving rise to the adjustment.
- B. *Costs Included*: Except as otherwise may be agreed to in writing by Owner, costs included in the Cost of the Work shall be in amounts no higher than those prevailing in the locality of the Project, shall not include any of the costs itemized in Paragraph 13.01.C, and shall include only the following items:
 1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, and vacation and holiday pay applicable

thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.

2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates, and refunds and returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.
3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 13.01.
4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.
5. Supplemental costs including the following:
 - a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.
 - b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.
 - c. Rentals of all construction equipment and machinery, and the parts thereof, whether rented from Contractor or others in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.
 - d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.
 - e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.
 - f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 6.05), provided such losses and damages have resulted from causes

other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's fee.

- g. The cost of utilities, fuel, and sanitary facilities at the Site.
- h. Minor expenses such as communication service at the Site, express and courier services, and similar petty cash items in connection with the Work.
- i. The costs of premiums for all bonds and insurance that Contractor is required by the Contract Documents to purchase and maintain.

C. *Costs Excluded:* The term Cost of the Work shall not include any of the following items:

- 1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 13.01.B.1 or specifically covered by Paragraph 13.01.B.4. The payroll costs and other compensation excluded here are to be considered administrative costs covered by the Contractor's fee.
- 2. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.
- 3. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.
- 4. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.
- 5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraph 13.01.B.

D. *Contractor's Fee:* When the Work as a whole is performed on the basis of cost-plus, Contractor's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 11.04.C.

E. *Documentation:* Whenever the Cost of the Work for any purpose is to be determined pursuant to this Article 13, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data.

13.02 Allowances

- A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.

- B. *Cash Allowances*: Contractor agrees that:
 - 1. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and
 - 2. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.
- C. *Contingency Allowance*: Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.
- D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

13.03 *Unit Price Work*

- A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.
- B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Payments to Contractor for Unit Price Work will be based on actual quantities.
- C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.
- D. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, subject to the provisions of the following paragraph.
- E. Within 30 days of Engineer's written decision under the preceding paragraph, Contractor may submit a Change Proposal, or Owner may file a Claim, seeking an adjustment in the Contract Price if:
 - 1. the quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement;
 - 2. there is no corresponding adjustment with respect to any other item of Work; and
 - 3. Contractor believes that it is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price, and the parties are unable to agree as to the amount of any such increase or decrease.

ARTICLE 14 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

14.01 *Access to Work*

- A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and authorities having jurisdiction will have access to the Site and the Work at reasonable times for their observation, inspection, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's safety procedures and programs so that they may comply therewith as applicable.

14.02 *Tests, Inspections, and Approvals*

- A. Contractor shall give Engineer timely notice of readiness of the Work (or specific parts thereof) for all required inspections and tests, and shall cooperate with inspection and testing personnel to facilitate required inspections and tests.
- B. Owner shall retain and pay for the services of an independent inspector, testing laboratory, or other qualified individual or entity to perform all inspections and tests expressly required by the Contract Documents to be furnished and paid for by Owner, except that costs incurred in connection with tests or inspections of covered Work shall be governed by the provisions of Paragraph 14.05.
- C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.
- D. Contractor shall be responsible for arranging, obtaining, and paying for all inspections and tests required:
 - 1. by the Contract Documents, unless the Contract Documents expressly allocate responsibility for a specific inspection or test to Owner;
 - 2. to attain Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work;
 - 3. by manufacturers of equipment furnished under the Contract Documents;
 - 4. for testing, adjusting, and balancing of mechanical, electrical, and other equipment to be incorporated into the Work; and
 - 5. for acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work.

Such inspections and tests shall be performed by independent inspectors, testing laboratories, or other qualified individuals or entities acceptable to Owner and Engineer.

- E. If the Contract Documents require the Work (or part thereof) to be approved by Owner, Engineer, or another designated individual or entity, then Contractor shall assume full responsibility for arranging and obtaining such approvals.
- F. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation. Such uncovering shall be at Contractor's expense unless Contractor had given Engineer timely notice of Contractor's intention to

cover the same and Engineer had not acted with reasonable promptness in response to such notice.

14.03 *Defective Work*

- A. *Contractor's Obligation:* It is Contractor's obligation to assure that the Work is not defective.
- B. *Engineer's Authority:* Engineer has the authority to determine whether Work is defective, and to reject defective Work.
- C. *Notice of Defects:* Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor.
- D. *Correction, or Removal and Replacement:* Promptly after receipt of written notice of defective Work, Contractor shall correct all such defective Work, whether or not fabricated, installed, or completed, or, if Engineer has rejected the defective Work, remove it from the Project and replace it with Work that is not defective.
- E. *Preservation of Warranties:* When correcting defective Work, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.
- F. *Costs and Damages:* In addition to its correction, removal, and replacement obligations with respect to defective Work, Contractor shall pay all claims, costs, losses, and damages arising out of or relating to defective Work, including but not limited to the cost of the inspection, testing, correction, removal, replacement, or reconstruction of such defective Work, fines levied against Owner by governmental authorities because the Work is defective, and the costs of repair or replacement of work of others resulting from defective Work. Prior to final payment, if Owner and Contractor are unable to agree as to the measure of such claims, costs, losses, and damages resulting from defective Work, then Owner may impose a reasonable set-off against payments due under Article 15.

14.04 *Acceptance of Defective Work*

- A. If, instead of requiring correction or removal and replacement of defective Work, Owner prefers to accept it, Owner may do so (subject, if such acceptance occurs prior to final payment, to Engineer's confirmation that such acceptance is in general accord with the design intent and applicable engineering principles, and will not endanger public safety). Contractor shall pay all claims, costs, losses, and damages attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness), and for the diminished value of the Work to the extent not otherwise paid by Contractor. If any such acceptance occurs prior to final payment, the necessary revisions in the Contract Documents with respect to the Work shall be incorporated in a Change Order. If the parties are unable to agree as to the decrease in the Contract Price, reflecting the diminished value of Work so accepted, then Owner may impose a reasonable set-off against payments due under Article 15. If the acceptance of defective Work occurs after final payment, Contractor shall pay an appropriate amount to Owner.

14.05 *Uncovering Work*

- A. Engineer has the authority to require special inspection or testing of the Work, whether or not the Work is fabricated, installed, or completed.

- B. If any Work is covered contrary to the written request of Engineer, then Contractor shall, if requested by Engineer, uncover such Work for Engineer's observation, and then replace the covering, all at Contractor's expense.
- C. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, then Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, and provide all necessary labor, material, and equipment.
 - 1. If it is found that the uncovered Work is defective, Contractor shall be responsible for all claims, costs, losses, and damages arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and pending Contractor's full discharge of this responsibility the Owner shall be entitled to impose a reasonable set-off against payments due under Article 15.
 - 2. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, then Contractor may submit a Change Proposal within 30 days of the determination that the Work is not defective.

14.06 *Owner May Stop the Work*

- A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, then Owner may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work shall not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

14.07 *Owner May Correct Defective Work*

- A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace rejected Work as required by Engineer, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, then Owner may, after seven days written notice to Contractor, correct or remedy any such deficiency.
- B. In exercising the rights and remedies under this Paragraph 14.07, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this paragraph.
- C. All claims, costs, losses, and damages incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 14.07 will be charged against Contractor as set-offs against payments due under Article 15. Such claims, costs, losses and damages will

include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.

- D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 14.07.

ARTICLE 15 – PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD

15.01 Progress Payments

- A. *Basis for Progress Payments:* The Schedule of Values established as provided in Article 2 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed during the pay period, as determined under the provisions of Paragraph 13.03. Progress payments for cost-based Work will be based on Cost of the Work completed by Contractor during the pay period.
- B. *Applications for Payments:*
1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens, and evidence that the materials and equipment are covered by appropriate property insurance, a warehouse bond, or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.
 2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment.
 3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.
- C. *Review of Applications:*
1. Engineer will, within 10 days after receipt of each Application for Payment, including each resubmittal, either indicate in writing a recommendation of payment and present the Application to Owner, or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.
 2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations of the executed Work as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:

- a. the Work has progressed to the point indicated;
 - b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 13.03, and any other qualifications stated in the recommendation); and
 - c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.
3. By recommending any such payment Engineer will not thereby be deemed to have represented that:
- a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract; or
 - b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.
4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:
- a. to supervise, direct, or control the Work, or
 - b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or
 - c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or
 - d. to make any examination to ascertain how or for what purposes Contractor has used the money paid on account of the Contract Price, or
 - e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.
5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 15.01.C.2.
6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer's opinion to protect Owner from loss because:
- a. the Work is defective, requiring correction or replacement;
 - b. the Contract Price has been reduced by Change Orders;
 - c. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
 - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible; or

- e. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Contractor and therefore justify termination for cause under the Contract Documents.

D. *Payment Becomes Due:*

- 1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended (subject to any Owner set-offs) will become due, and when due will be paid by Owner to Contractor.

E. *Reductions in Payment by Owner:*

- 1. In addition to any reductions in payment (set-offs) recommended by Engineer, Owner is entitled to impose a set-off against payment based on any of the following:
 - a. claims have been made against Owner on account of Contractor's conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages on account of Contractor's conduct in the performance or furnishing of the Work, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;
 - b. Contractor has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Site;
 - c. Contractor has failed to provide and maintain required bonds or insurance;
 - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible;
 - e. Owner has incurred extra charges or engineering costs related to submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;
 - f. the Work is defective, requiring correction or replacement;
 - g. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
 - h. the Contract Price has been reduced by Change Orders;
 - i. an event that would constitute a default by Contractor and therefore justify a termination for cause has occurred;
 - j. liquidated damages have accrued as a result of Contractor's failure to achieve Milestones, Substantial Completion, or final completion of the Work;
 - k. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;
 - l. there are other items entitling Owner to a set off against the amount recommended.
- 2. If Owner imposes any set-off against payment, whether based on its own knowledge or on the written recommendations of Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and the specific amount of the reduction, and promptly pay Contractor any amount

remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, if Contractor remedies the reasons for such action. The reduction imposed shall be binding on Contractor unless it duly submits a Change Proposal contesting the reduction.

3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 15.01.C.1 and subject to interest as provided in the Agreement.

15.02 *Contractor's Warranty of Title*

- A. Contractor warrants and guarantees that title to all Work, materials, and equipment furnished under the Contract will pass to Owner free and clear of (1) all Liens and other title defects, and (2) all patent, licensing, copyright, or royalty obligations, no later than seven days after the time of payment by Owner.

15.03 *Substantial Completion*

- A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete and request that Engineer issue a certificate of Substantial Completion. Contractor shall at the same time submit to Owner and Engineer an initial draft of punch list items to be completed or corrected before final payment.
- B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.
- C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a preliminary certificate of Substantial Completion which shall fix the date of Substantial Completion. Engineer shall attach to the certificate a punch list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the preliminary certificate during which to make written objection to Engineer as to any provisions of the certificate or attached punch list. If, after considering the objections to the provisions of the preliminary certificate, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the preliminary certificate to Owner, notify Contractor in writing that the Work is not substantially complete, stating the reasons therefor. If Owner does not object to the provisions of the certificate, or if despite consideration of Owner's objections Engineer concludes that the Work is substantially complete, then Engineer will, within said 14 days, execute and deliver to Owner and Contractor a final certificate of Substantial Completion (with a revised punch list of items to be completed or corrected) reflecting such changes from the preliminary certificate as Engineer believes justified after consideration of any objections from Owner.
- D. At the time of receipt of the preliminary certificate of Substantial Completion, Owner and Contractor will confer regarding Owner's use or occupancy of the Work following Substantial Completion, review the builder's risk insurance policy with respect to the end of the builder's risk coverage, and confirm the transition to coverage of the Work under a permanent property insurance policy held by Owner. Unless Owner and Contractor agree otherwise in writing, Owner shall bear responsibility for security, operation, protection of the Work, property insurance, maintenance, heat, and utilities upon Owner's use or occupancy of the Work.

- E. After Substantial Completion the Contractor shall promptly begin work on the punch list of items to be completed or corrected prior to final payment. In appropriate cases Contractor may submit monthly Applications for Payment for completed punch list items, following the progress payment procedures set forth above.
- F. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the punch list.

15.04 *Partial Use or Occupancy*

- A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:
 - 1. At any time Owner may request in writing that Contractor permit Owner to use or occupy any such part of the Work that Owner believes to be substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 15.03.A through E for that part of the Work.
 - 2. At any time Contractor may notify Owner and Engineer in writing that Contractor considers any such part of the Work substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.
 - 3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 15.03 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.
 - 4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 6.05 regarding builder's risk or other property insurance.

15.05 *Final Inspection*

- A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work, or agreed portion thereof, is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

15.06 *Final Payment*

- A. *Application for Payment:*
 - 1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of

inspection, annotated record documents (as provided in Paragraph 7.11), and other documents, Contractor may make application for final payment.

2. The final Application for Payment shall be accompanied (except as previously delivered) by:
 - a. all documentation called for in the Contract Documents;
 - b. consent of the surety, if any, to final payment;
 - c. satisfactory evidence that all title issues have been resolved such that title to all Work, materials, and equipment has passed to Owner free and clear of any Liens or other title defects, or will so pass upon final payment.
 - d. a list of all disputes that Contractor believes are unsettled; and
 - e. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of the Work, and of Liens filed in connection with the Work.
3. In lieu of the releases or waivers of Liens specified in Paragraph 15.06.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (a) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (b) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien, or Owner at its option may issue joint checks payable to Contractor and specified Subcontractors and Suppliers.

B. *Engineer's Review of Application and Acceptance:*

1. If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of final payment and present the Application for Payment to Owner for payment. Such recommendation shall account for any set-offs against payment that are necessary in Engineer's opinion to protect Owner from loss for the reasons stated above with respect to progress payments. At the same time Engineer will also give written notice to Owner and Contractor that the Work is acceptable, subject to the provisions of Paragraph 15.07. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

C. *Completion of Work:* The Work is complete (subject to surviving obligations) when it is ready for final payment as established by the Engineer's written recommendation of final payment.

D. *Payment Becomes Due:* Thirty days after the presentation to Owner of the final Application for Payment and accompanying documentation, the amount recommended by Engineer (less any further sum Owner is entitled to set off against Engineer's recommendation,

including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions above with respect to progress payments) will become due and shall be paid by Owner to Contractor.

15.07 *Waiver of Claims*

- A. The making of final payment will not constitute a waiver by Owner of claims or rights against Contractor. Owner expressly reserves claims and rights arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 15.05, from Contractor's failure to comply with the Contract Documents or the terms of any special guarantees specified therein, from outstanding Claims by Owner, or from Contractor's continuing obligations under the Contract Documents.
- B. The acceptance of final payment by Contractor will constitute a waiver by Contractor of all claims and rights against Owner other than those pending matters that have been duly submitted or appealed under the provisions of Article 17.

15.08 *Correction Period*

- A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents, or by any specific provision of the Contract Documents), any Work is found to be defective, or if the repair of any damages to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas used by Contractor as permitted by Laws and Regulations, is found to be defective, then Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:
 - 1. correct the defective repairs to the Site or such other adjacent areas;
 - 2. correct such defective Work;
 - 3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and
 - 4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others, or to other land or areas resulting therefrom.
- B. If Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others).
- C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.
- D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

- E. Contractor's obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph shall not be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

ARTICLE 16 – SUSPENSION OF WORK AND TERMINATION

16.01 *Owner May Suspend Work*

- A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by written notice to Contractor and Engineer. Such notice will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be entitled to an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension. Any Change Proposal seeking such adjustments shall be submitted no later than 30 days after the date fixed for resumption of Work.

16.02 *Owner May Terminate for Cause*

- A. The occurrence of any one or more of the following events will constitute a default by Contractor and justify termination for cause:
 - 1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule);
 - 2. Failure of Contractor to perform or otherwise to comply with a material term of the Contract Documents;
 - 3. Contractor's disregard of Laws or Regulations of any public body having jurisdiction; or
 - 4. Contractor's repeated disregard of the authority of Owner or Engineer.
- B. If one or more of the events identified in Paragraph 16.02.A occurs, then after giving Contractor (and any surety) ten days written notice that Owner is considering a declaration that Contractor is in default and termination of the contract, Owner may proceed to:
 - 1. declare Contractor to be in default, and give Contractor (and any surety) notice that the Contract is terminated; and
 - 2. enforce the rights available to Owner under any applicable performance bond.
- C. Subject to the terms and operation of any applicable performance bond, if Owner has terminated the Contract for cause, Owner may exclude Contractor from the Site, take possession of the Work, incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and complete the Work as Owner may deem expedient.
- D. Owner may not proceed with termination of the Contract under Paragraph 16.02.B if Contractor within seven days of receipt of notice of intent to terminate begins to correct its failure to perform and proceeds diligently to cure such failure.
- E. If Owner proceeds as provided in Paragraph 16.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds the cost to complete the Work, including all related claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals) sustained by Owner, such excess will be paid to Contractor. If the cost to complete the Work including such related claims, costs, losses,

and damages exceeds such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this paragraph, Owner shall not be required to obtain the lowest price for the Work performed.

- F. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue, or any rights or remedies of Owner against Contractor or any surety under any payment bond or performance bond. Any retention or payment of money due Contractor by Owner will not release Contractor from liability.
- G. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 6.01.A, the provisions of that bond shall govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

16.03 *Owner May Terminate For Convenience*

- A. Upon seven days written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):
 - 1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;
 - 2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses; and
 - 3. other reasonable expenses directly attributable to termination, including costs incurred to prepare a termination for convenience cost proposal.
- B. Contractor shall not be paid on account of loss of anticipated overhead, profits, or revenue, or other economic loss arising out of or resulting from such termination.

16.04 *Contractor May Stop Work or Terminate*

- A. If, through no act or fault of Contractor, (1) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (2) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (3) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the contract and recover from Owner payment on the same terms as provided in Paragraph 16.03.
- B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this paragraph are not intended to preclude Contractor from submitting a Change Proposal for an adjustment in Contract Price or Contract Times or otherwise for

expenses or damage directly attributable to Contractor's stopping the Work as permitted by this paragraph.

ARTICLE 17 – FINAL RESOLUTION OF DISPUTES

17.01 *Methods and Procedures*

- A. *Disputes Subject to Final Resolution:* The following disputed matters are subject to final resolution under the provisions of this Article:
 - 1. A timely appeal of an approval in part and denial in part of a Claim, or of a denial in full; and
 - 2. Disputes between Owner and Contractor concerning the Work or obligations under the Contract Documents, and arising after final payment has been made.
- B. *Final Resolution of Disputes:* For any dispute subject to resolution under this Article, Owner or Contractor may:
 - 1. elect in writing to invoke the dispute resolution process provided for in the Supplementary Conditions; or
 - 2. agree with the other party to submit the dispute to another dispute resolution process; or
 - 3. if no dispute resolution process is provided for in the Supplementary Conditions or mutually agreed to, give written notice to the other party of the intent to submit the dispute to a court of competent jurisdiction.

ARTICLE 18 – MISCELLANEOUS

18.01 *Giving Notice*

- A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:
 - 1. delivered in person, by a commercial courier service or otherwise, to the individual or to a member of the firm or to an officer of the corporation for which it is intended; or
 - 2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the sender of the notice.

18.02 *Computation of Times*

- A. When any period of time is referred to in the Contract by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

18.03 *Cumulative Remedies*

- A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract. The provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

18.04 *Limitation of Damages*

- A. With respect to any and all Change Proposals, Claims, disputes subject to final resolution, and other matters at issue, neither Owner nor Engineer, nor any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, shall be liable to Contractor for any claims, costs, losses, or damages sustained by Contractor on or in connection with any other project or anticipated project.

18.05 *No Waiver*

- A. A party's non-enforcement of any provision shall not constitute a waiver of that provision, nor shall it affect the enforceability of that provision or of the remainder of this Contract.

18.06 *Survival of Obligations*

- A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract, as well as all continuing obligations indicated in the Contract, will survive final payment, completion, and acceptance of the Work or termination or completion of the Contract or termination of the services of Contractor.

18.07 *Controlling Law*

- A. This Contract is to be governed by the law of the state in which the Project is located.

18.08 *Headings*

- A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

SUPPLEMENTARY CONDITIONS

These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract, EJCDC® C-700, 2013 Edition (Section 00700). All provisions that are not so amended or supplemented remain in full force and effect.

The terms used in these Supplementary Conditions have the meanings stated in the General Conditions. Additional terms used in these Supplementary Conditions have the meanings stated below, which are applicable to both the singular and plural thereof.

The address system used in these Supplementary Conditions is the same as the address system used in the General Conditions, with the prefix "SC" added thereto.

ARTICLE 2 – PRELIMINARY MATTERS

SC-2.02 Copies of Documents

- SC-2.02 Delete Paragraph 2.02.A in its entirety and insert the following in its place:
- A. Owner shall furnish to Contractor one copy of the Drawings and Project Manual in electronic format. Additional copies can be furnished upon request at the cost of reproduction.
- SC-2.02 Delete Paragraph 2.02.B in its entirety.

SC-2.03 Before Starting Construction

- SC-2.03 Delete Paragraph 2.03.A.1 in its entirety and insert the following in its place:
1. a preliminary 30-day or 90-day Progress Schedule, as required under Specification Section 01310, Progress Schedule;
- SC-2.03 Add the following language at the end of the second sentence of Paragraph 2.03.A.3: "The Schedule of Values shall be subdivided into categories matching each line item on the Bid Form. Additional requirements for the Schedule of Values are supplemented in Specification Section 01019, Contract Considerations."

ARTICLE 3 – DOCUMENTS: INTENT, REQUIREMENTS, REUSE

SC-3.01 Intent

- SC-3.01 Add the following language at the end of the second sentence of Paragraph 3.01.B: "Any labor, documentation, services, materials, or equipment that reasonably may be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the indicated result will be provided whether or not specifically called for, at no additional cost to Owner."
- SC-3.01 Add the following new paragraph immediately after Paragraph 3.01.E:
- F. The Contract Documents are written in imperative mood. When direction is given, it shall be understood that the direction is given to Contractor unless otherwise noted. For example, the phrase "Provide two pumps" shall be understood to mean "Contractor shall provide two pumps."

SC-3.03 Reporting and Resolving Discrepancies

SC-3.03 Add the following new paragraph immediately after Paragraph 3.03.B.1.b:

2. In determining the Contract Price with respect to a conflict, error, or discrepancy within the Contract Documents, the Contract Documents shall be given precedence in the following order with Change Orders being the highest precedence:
 - a. Change Orders
 - b. Work Change Directives
 - c. Field Orders
 - d. Agreement
 - e. Addenda
 - f. Laws and Regulations
 - g. Supplementary Conditions
 - h. General Conditions
 - i. Drawings
 - j. Specifications
 - k. Bid Form

ARTICLE 4 – COMMENCEMENT AND PROGRESS OF THE WORK

SC-4.01 Commencement of Contract Times; Notice to Proceed

SC-4.01 Amend the last sentence of Paragraph 4.01.A to read as follows: “In no event will the Contract Times commence to run later than the one hundred twentieth day after the day of Bid Opening or the thirtieth day after the Effective Date of the Contract, whichever date is earlier.”

SC-4.03 Delays in Contractor’s Progress

SC-4.03 Add the following new paragraph immediately after Paragraph 4.03.G:

- H. When establishing the Progress Schedule, an allowance shall be made for 4 days of lost work per month due to inclement weather. Contractor, at the time of an Application for Payment, shall submit to Engineer and Owner a list of all working days lost due to either inclement weather or Site conditions caused by inclement weather during the period covered by the Application for Payment for any months where the 4 days allowance is exceeded. Accompanying this list shall be a summary of the specific conditions which caused the loss. This request will be reviewed by the Engineer in light of observations made by Owner, Engineer, and resident inspector, if any. Approval of the Application for Payment by Owner and Funding Agency, if any, will also include approval of the weather delay request, if acceptable. After Substantial Completion, a Change Order will be executed if a time extension for weather related delays is approved. Any time extension granted for inclement weather will be based solely on the time approved in Applications for Payment.

ARTICLE 5 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS

SC-5.03 Subsurface and Physical Conditions

SC-5.03 Add the following new paragraphs immediately after Paragraph 5.03.B:

- C. The following reports of explorations and tests of subsurface conditions at or adjacent to the Site are known to Owner:
 - 1. Report dated October 10, 2023, prepared by GHD, Inc., Bowie, MD, entitled: “Geotechnical Summary, Leonardtown Meadow Run Water Tank”, consisting of 25 pages.
- D. The following drawings of physical conditions relating to existing surface or subsurface structures at or adjacent to the Site (except Underground Facilities) are known to Owner:
 - 1. None known.
- E. Contractor may request electronic copies of reports and drawings identified in SC 5.03.C and SC 5.03.D that were not included with the Bidding Documents from Engineer.

SC-5.04 Differing Subsurface or Physical Conditions

SC 5.04 Delete Paragraph 5.04.C in its entirety and insert the following:

- C. *Statement to Contractor Regarding Site Condition:* Owner or Engineer shall issue a written statement to Contractor regarding the subsurface or physical condition in question, addressing the resumption of Work in connection with such condition, and indicating whether any change in the Drawings or Specifications will be made.

SC-5.05 Underground Facilities

SC 5.05 Delete Paragraph 5.05.D in its entirety and insert the following:

- C. *Statement to Contractor Regarding Underground Facility:* Owner or Engineer shall issue a written statement to Contractor regarding the Underground Facility in question, addressing the resumption of Work in connection with such Underground Facility, and indicating whether any change in the Drawings or Specifications will be made.

SC-5.06 Hazardous Environmental Conditions

SC 5.06 Delete Paragraphs 5.06.A and 5.06.B in their entirety and insert the following:

- A. No reports or drawings related to Hazardous Environmental Conditions at the Site are known to Owner.
- B. Not used.

ARTICLE 6 – BONDS AND INSURANCE

SC-6.02 Insurance – General Provisions

SC 6.02 Add the following paragraph immediately after Paragraph 6.02.B:

1. Contractor may obtain worker’s compensation insurance from an insurance company that has not been rated by A.M. Best, provided that such company (a) is domiciled in the state in which the project is located, (b) is certified or authorized as a worker’s compensation insurance provider by the appropriate state agency, and (c) has been accepted to provide worker’s compensation insurance for similar projects by the state within the last 12 months.

SC-6.03 Contractor’s Insurance

SC 6.03 Add the following new Paragraph immediately after Paragraph 6.03.I.5:

6. The provisions or endorsements necessary to comply with paragraph 6.03 of the General Conditions shall include the obligation to notify the Owner and Engineer when an aggregate limit of liability required or certified has been reduced by the payment of claim(s).

SC 6.03 Add the following new paragraph immediately after Paragraph 6.03.J:

- K. The limits of liability for the insurance required by Paragraph 6.03 of the General Conditions shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations:

1. Workers’ Compensation, and related coverages under Paragraphs 6.03.A.1 and A.2 of the General Conditions:

State:	<u>Statutory</u>
Federal, if applicable (e.g., Longshoreman’s):	<u>Statutory</u>
Employer’s Liability:	\$ <u>1,000,000</u>

2. Contractor’s Commercial General Liability under Paragraphs 6.03.B and 6.03.C of the General Conditions:

General Aggregate	\$ <u>2,000,000</u>
Products - Completed Operations Aggregate	\$ <u>1,000,000</u>
Personal and Advertising Injury	\$ <u>1,000,000</u>
Each Occurrence (Bodily Injury and Property Damage)	\$ <u>1,000,000</u>

3. Automobile Liability under Paragraph 6.03.D. of the General Conditions:

Combined Single Limit of	\$ <u>1,000,000</u>
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4. Excess or Umbrella Liability:
- | | |
|-------------------|-------------------|
| Per Occurrence | \$ <u> n/a </u> |
| General Aggregate | \$ <u> n/a </u> |
5. Contractor's Pollution Liability:
- | | |
|-------------------|----------|
| Each Occurrence | \$ _____ |
| General Aggregate | \$ _____ |
- If box is checked, Contractor is not required to provide Contractor's Pollution Liability insurance under this Contract
6. Additional Insureds: In addition to Owner and Engineer, include as additional insureds the following:
- Maryland Department of Natural Resources
7. Contractor's Professional Liability:
- | | |
|------------------|-------------------------|
| Each Claim | \$ <u> 1,000,000 </u> |
| Annual Aggregate | \$ <u> 1,000,000 </u> |

ARTICLE 7 – CONTRACTOR'S RESPONSIBILITIES

SC-7.02 Labor; Working Hours

- SC-7.02 Add the following new subparagraphs immediately after Paragraph 7.02.B:
1. Regular working hours will be 7:00 a.m. to 5:00 p.m.
 2. Owner's legal holidays are New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving, the day after Thanksgiving, and Christmas.
- SC-7.02 Add the following new paragraph immediately after Paragraph 7.02.B:
- C. Contractor shall be responsible for the cost of any overtime pay or other expense incurred by the Owner for Engineer's services (including those of the Resident Project Representative, if any), Owner's representative, and construction observation services, occasioned by the performance of Work on Saturday, Sunday, any legal holiday, or as overtime on any regular work day. If Contractor is responsible but does not pay, or if the parties are unable to agree as to the amount owed, then Owner may impose a reasonable set-off against payments due under Article 15.
 1. For purposes of administering the foregoing requirement, additional overtime costs are defined as \$100 per hour for each representative of the Owner or Engineer required. In addition, Contractor shall pay for all travel costs for the

above parties to reach the site on weekends, Holidays, and/or after hours work.

SC-7.04 "Or Equals"

SC-7.04 Add the following language after the last sentence of Paragraph 7.04.A: "After award of the Contract, no 'or-equals' may be submitted for items listed in the Major Products Schedule included in the Bid Form, unless otherwise instructed by Owner. Requests for 'or equals' shall include a line-by-line comparison of the proposed product to the specified product. Line-by-line comparisons shall not only include all specified features, but shall also include all other design and/or manufacturing differences between the proposed product and the specified product. Line-by-line comparison shall show no significant design or manufacturing differences that, in the Engineer's opinion, could result in lesser quality, performance, or reliability of the proposed product compared to the specified product."

SC-7.08 Permits

SC-7.08 Add the following new subparagraphs immediately after Paragraph 7.08.A:

1. Owner has obtained the following permits and licenses in connection with this Project, which are included in Appendix II:
 - a. Maryland Department of the Environment General Tidal Wetlands License
 - b. Department of the Army Permit
2. Contractor is required to comply with all requirements of permits and licenses imposed upon Owner in the same manner required by Owner.

SC-7.09 Taxes

SC 7.09 Add the following new paragraphs immediately after Paragraph 7.09.A:

- B. Owner is exempt from payment of sales and compensating use taxes of the State of Maryland and of cities and counties thereof on all materials to be incorporated into the Work.
 1. Owner will furnish the required certificates of tax exemption to Contractor upon request for use in the purchase of supplies and materials to be incorporated into the Work.
 2. Owner's exemption does not apply to construction tools, machinery, equipment, or other property purchased by or leased by Contractor, or to supplies or materials not incorporated into the Work.

SC-7.15 Emergencies

SC-7.15 Add the following new paragraph immediately after Paragraph 7.15.A:

- B. Contractor shall designate at least one competent person to respond to emergencies and act on the Contractor's behalf during off-work hours at the Site. The person's name, address, and telephone number shall be provided to Owner during the preconstruction conference and the designated person shall be on call during off-work hours. If necessary, Contractor shall designate multiple people for this emergency response duty and the chronological order in which they should

be contacted in the event that an on call person cannot be reached. Response time shall not exceed one hour after notification is given by Owner and/or Engineer that an emergency exists at the Site.

SC-7.16 Shop Drawings, Samples, and Other Submittals

SC-7.16 Amend the second sentence of Paragraph 7.16.B to read as follows: “*Submittal Procedures for Shop Drawings and Samples*: Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the Contract Documents.”

SC-7.16 Amend the first sentence of Paragraph 7.16.D.1 to read as follows: “Engineer will provide timely review of Shop Drawings and Samples in accordance with the Contract Documents.”

ARTICLE 9 – OWNER’S RESPONSIBILITIES

SC-9.13 Owner’s Site Representative

SC-9.13 Add the following new paragraphs immediately after Paragraph 9.12 of the General Conditions:

SC-9.13 Owner’s Site Representative

- A. Owner will furnish an “Owner’s Site Representative” to represent Owner at the Site and assist Owner in observing the progress and quality of the Work. The Owner’s Site Representative may or may not be Engineer’s consultant, agent, or employee. Owner’s Site Representative will be identified at the preconstruction conference.
- B. Owner’s Site Representative will act as directed by and under the supervision of Owner and Engineer. The authority and responsibilities of Owner’s Site Representative shall be as follows:
 - 1. General: Dealings in matters pertaining to the Work in general shall be with Owner, Engineer, and Contractor. RPR’s dealings with Subcontractors shall only be through or with the full knowledge and approval of Contractor.
 - 2. Schedules: Review the schedules prepared by Contractor.
 - 3. Conferences and Meetings: Attend meetings with Contractor, such as preconstruction conferences, progress meetings, job conferences, and other Project-related meetings.
 - 4. Liaison:
 - a. Serve as Owner’s and Engineer’s liaison with Contractor. Working principally through Contractor’s authorized representative or designee, assist in providing information regarding the provisions and intent of the Contract Documents.
 - b. Assist in obtaining from Owner and Engineer additional details or information, when required for proper execution of the Work.

5. Interpretation of Contract Documents: Report to Engineer when clarifications and interpretations of the Contract Documents are needed and transmit to Contractor clarifications and interpretations as issued by Engineer.
6. Shop Drawings and Samples:
 - a. Receive Samples which are furnished at the Site by Contractor, and notify Engineer of availability of Samples for examination.
 - b. Advise Engineer and Contractor of the commencement of any portion of the Work requiring a Shop Drawing or Sample submittal for which RPR believes that the submittal has not been approved by Engineer.
7. Modifications: Consider and evaluate Contractor's suggestions for modifications in Drawings or Specifications and report on such suggestions to Owner and Engineer.
8. Review of Work and Rejection of Defective Work:
 - a. Conduct on-Site observations of Contractor's work in progress to assist Owner and Engineer in determining if the Work is in general proceeding in accordance with the Contract Documents.
 - b. Report to Owner and Engineer whenever it is believed that any part of Contractor's work in progress is defective, will not produce a completed Project that conforms generally to the Contract Documents, or will imperil the integrity of the design concept of the completed Project as a functioning whole as indicated in the Contract Documents, or has been damaged, or does not meet the requirements of any inspection, test or approval required to be made.
9. Inspections, Tests, and Start-ups:
 - a. Verify that inspections, tests, start-ups, and training are conducted in the presence of appropriate personnel as required, and that Contractor maintains adequate records thereof.
 - b. Observe, record, and report to Owner and Engineer appropriate details relative to the test procedures and start-ups.
10. Records:
 - a. Prepare reports or keep a diary or log book, recording relevant information from the Site such as Contractor's hours, Subcontractors present, weather conditions, data relative to questions of Change Orders, Field Orders, Work Change Directives, or changed conditions, visitors, deliveries of equipment or materials, daily activities, decisions, observations in general, and specific observations in more detail as in the case of observing test procedures; and send copies to Owner and Engineer as necessary.
11. Reports:
 - a. Furnish to Owner and Engineer periodic reports as required of progress of the Work and of Contractor's compliance.

- b. Notify Owner and Engineer as soon as possible of the occurrence of any Site accidents, emergencies, acts of God endangering the Work, force majeure or delay events, damage to property by fire or other causes, or the discovery of any Constituent of Concern or Hazardous Environmental Condition.
 12. Payment Requests: Review applications for payment with Contractor for compliance with the established procedure for their submission and forward with recommendations to Engineer, noting particularly the relationship of the payment requested to the Schedule of Values, Work completed, and materials and equipment delivered at the Site but not incorporated in the Work.
 13. Certificates, Operation and Maintenance Manuals: During the course of the Work, verify that materials and equipment certificates, operation and maintenance manuals and other data required by the Contract Documents to be assembled and furnished by Contractor are applicable to the items actually installed.
 14. Completion:
 - a. Participate in Engineer's visits to the Site to determine Substantial Completion, assist in the determination of Substantial Completion and the preparation of a punch list of items to be completed or corrected.
 - b. Participate in Engineer's final visit to the Site to determine completion of the Work, in the company of Owner and Contractor, and prepare a final punch list of items to be completed and deficiencies to be remedied.
 - c. Assist Engineer in observing whether all items on the final list have been completed or corrected.
- C. The Owner's Site Representative shall not:
1. Authorize any deviation from the Contract Documents or substitution of materials or equipment (including "or-equal" items).
 2. Exceed limitations of authority for Owner's Site Representative as set forth in the Contract Documents.
 3. Undertake any of the responsibilities of Contractor, Subcontractors, or Suppliers.
 4. Advise on, issue directions relative to, or assume control over any aspect of the means, methods, techniques, sequences or procedures of Contractor's work.
 5. Advise on, issue directions regarding, or assume control over security or safety practices, precautions, and programs in connection with the activities or operations of Owner or Contractor.
 6. Participate in specialized field or laboratory tests or inspections conducted off-site by others except as specifically authorized by Owner.
 7. Accept Shop Drawing or Sample submittals from anyone other than Contractor.

8. Authorize Owner to occupy the Project in whole or in part.

ARTICLE 10 – ENGINEER’S STATUS DURING CONSTRUCTION

SC-10.03 Project Representative

SC-10.03 Add the following new paragraphs immediately after Paragraph 10.03.A:

- B. If a Resident Project Representative is furnished by Engineer for this project they will have the same authority and responsibilities as listed for Owner’s Site Representative in the Supplementary Conditions.

ARTICLE 13 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

SC-13.01 Cost of the Work

SC 13.01 Delete Paragraph 13.01.B.5.c in its entirety and insert the following in its place:

- c. Construction Equipment and Machinery:
 - 1) Rentals of all construction equipment and machinery, and the parts thereof, in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.
 - 2) Costs for equipment and machinery owned by Contractor will be paid at a rate shown for such equipment in the latest version of RSMeans Data, or other industry publication approved by Engineer. An hourly rate will be computed by dividing the monthly rates by 176. These computed rates will include all operating costs. Costs will include the time the equipment or machinery is in use on the changed Work and the costs of transportation, loading, unloading, assembly, dismantling, and removal when directly attributable to the changed Work. The cost of any such equipment or machinery, or parts thereof, shall cease to accrue when the use thereof is no longer necessary for the changed Work. Equipment or machinery with a value of less than \$1,000 will be considered small tools.

SC-13.03 Unit Price Work

SC 13.03 Delete Paragraph 13.03.E in its entirety and insert the following in its place:

- E. The unit price of an item of Unit Price Work shall be subject to reevaluation and adjustment under the following conditions:
 1. if the extended price of a particular item of Unit Price Work amounts to 5 percent or more of the Contract Price (based on estimated quantities at the time of Contract formation) and the variation in the quantity of that particular item of Unit Price Work actually furnished or performed by Contractor differs by more than 25 percent from the estimated quantity of such item indicated in the Agreement; and

2. if there is no corresponding adjustment with respect to any other item of Work; and
3. if Contractor believes that Contractor has incurred additional expense as a result thereof, Contractor may submit a Change Proposal, or if Owner believes that the quantity variation entitles Owner to an adjustment in the unit price, Owner may make a Claim, seeking an adjustment in the Contract Price.

ARTICLE 15 – PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD

SC-15.01 Progress Payments

SC 15.01 Add the following new paragraph immediately after Paragraph 15.01.B.3:

4. By signing the Application for Payment, Contractor certifies that all items, units, quantities, and prices of Work and material in the estimate are correct, that all claimed Work has been performed and materials supplied in full accordance with the Contract, and that Contractor has no claims for damages, losses or expense against Owner for compensation in addition to that provided for in the application except such claims for change of Contract Price as Contractor has filed with Engineer and Owner in writing (in accordance with Article 10) prior to the date of his certifying the application.

SC 15.01 Add the following new paragraph immediately after Paragraph 15.01.C.6.e:

- f. Contractor has failed to submit certifications, affidavits, schedules, or other written information when and as required by the Contract Documents.

SC 15.01 Amend the first sentence of Paragraph 15.01.D.1 to read as follows: "Thirty (30) days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended (subject to any Owner set-offs) will become due, and when due will be paid by Owner to Contractor."

SC-15.03 Substantial Completion

SC 15.03 Add the following new subparagraph to Paragraph 15.03.B:

1. If some or all of the Work has been determined not to be at a point of Substantial Completion and will require re-inspection or re-testing by Engineer, the cost of such re-inspection or re-testing, including the cost of time, travel and living expenses, shall be paid by Contractor to Owner. If Contractor does not pay, or the parties are unable to agree as to the amount owed, then Owner may impose a reasonable set-off against payments due under Article 15.

SC-15.06 Final Payment

SC 15.06 Add the following new paragraph immediately after Paragraph 15.06.A.3:

4. By signing the application and certificate for payment, Contractor certifies that the total cost of the Work and the amount due Contractor for payment is full compensation for all Work done under the terms of the Contract in its original form; that the payment is full compensation for all Work ordered to be done under Change Orders; and that the payment is full compensation for all other

Work done by Contractor and for all damages, losses, and expense incurred by Contractor for doing and furnishing everything relating to or arising out of the Work, and that Contractor waives all right to claim or receive any further compensation in addition to that provided for in the final payment except as provided in Paragraph 15.07.

ARTICLE 17 – FINAL RESOLUTION OF DISPUTES

SC-17.02 Arbitration

SC-17.02 Add the following new paragraph immediately after Paragraph 17.01.

SC-17.02 Arbitration

- A. All matters subject to final resolution under this Article will be decided by arbitration in accordance with the rules of the American Arbitration Association (AAA) or other mutually agreed upon arbitration agency, subject to the conditions and limitations of this paragraph. This agreement to arbitrate and any other agreement or consent to arbitrate entered into will be specifically enforceable under the prevailing law of any court having jurisdiction.
- B. The demand for arbitration will be filed in writing with the other party to the Contract and with the selected arbitrator or arbitration provider, and a copy will be sent to Engineer for information. The demand for arbitration will be made within the specific time required in this Article, or if no specified time is applicable within a reasonable time after the matter in question has arisen, and in no event shall any such demand be made after the date when institution of legal or equitable proceedings based on such matter in question would be barred by the applicable statute of limitations. The demand for arbitration should include specific reference to Paragraph SC-17.02.D below.
- C. No arbitration arising out of or relating to the Contract shall include by consolidation, joinder, or in any other manner any other individual or entity (including Engineer, and Engineer's consultants and the officers, directors, partners, agents, employees or consultants of any of them) who is not a party to this Contract unless:
 1. the inclusion of such other individual or entity is necessary if complete relief is to be afforded among those who are already parties to the arbitration; and
 2. such other individual or entity is substantially involved in a question of law or fact which is common to those who are already parties to the arbitration and which will arise in such proceedings.
- D. The award rendered by the arbitrator(s) shall be consistent with the agreement of the parties, in writing, and include a concise breakdown of the award, and a written explanation of the award specifically citing the Contract provisions deemed applicable and relied on in making the award.
- E. The award will be final. Judgment may be entered upon it in any court having jurisdiction thereof, and it will not be subject to modification or appeal, subject to provisions of the Laws and Regulations relating to vacating or modifying an arbitral award.

- F. The fees and expenses of the arbitrators and any arbitration service shall be shared equally by Owner and Contractor.

ARTICLE 18 – MISCELLANEOUS

SC-18.08 Labor and Legal Requirements

SC 18.08 Add the following new paragraphs immediately after Paragraph 18.07:

SC-18.08 Labor and Legal Requirements

- A. Contractor shall abide by all regulations and laws that may affect the Work of this Contract, including Federal, State, and local regulations. If any clause of this Contract does not conform to any such law, such clause shall be void insofar as it conflicts with such law, and such law shall be operative in lieu thereof.
- B. If any provision herein shall be as to destroy the mutuality of this Contract or to render it invalid or illegal, then if such provision shall not appear to have been so material that without it the Contract would not have been made by the parties, it shall not be deemed to form part thereof but the balance of the Contract shall remain in full force and effect.

SECTION 01010
SUMMARY OF WORK

PART 1 GENERAL

1.01. SECTION INCLUDES

- A. Work covered by Contract Documents
- B. Work by others
- C. Contractor's use of Site
- D. Limits of Work area
- E. Sequence of Work
- F. Connections to existing facilities
- G. Alteration Project Procedures
- H. Cutting and Patching
- I. Requests to work outside normal working hours

1.02. PROJECT – WORK COVERED BY CONTRACT DOCUMENTS

- A. Work covered by the Contract Documents includes all Work shown in the attached Figures and specified in the Technical Provisions of the Contract Documents.
- B. Work not specifically identified in the Bid Item Descriptions, but nevertheless required in the Contract Documents, shall be performed as shown and/or specified.

1.03. WORK BY OTHERS

- A. Contractor shall cooperate and coordinate with Owner and all others performing other work at the Site.

1.04. CONTRACTOR USE OF SITE

- A. Limit use of Site to allow:
 - 1. Owner occupancy and/or partial utilization
 - 2. Work by others and work by Owner
- B. Limits of Contractor staging, storage, and stockpile areas are shown on the attached Figures. All additional areas required to complete the Work shall be located off Site at Contractor's expense.

1.05. LIMITS OF WORK AREA

- A. Confine construction operations within the Limits of Work as shown on the attached Figures.

- B. Storage of equipment and materials, or erection and use of sheds outside of the Limits of Disturbance, if such areas are the property of Owner, shall be used only with Owner's approval. Such storage or temporary structures, even within the Limits of Disturbance, shall be confined to Owner's property or temporary construction easement and shall not be placed on properties designated as easements or rights-of-way.
- C. Where storage of equipment, materials, job trailers, etc. are proposed outside the approved Limits of Disturbance, obtain permits including erosion and sedimentation control plan approval for those areas at no additional cost to Owner.

1.06. SEQUENCE OF WORK

A. General

1. Provide an intended sequence of construction in accordance with Specification Section 01310 (Progress Schedule).
2. Contractor shall be solely responsible for the means, manpower, methods, techniques, sequences and procedures of construction unless specifically identified in the Contract Documents.
3. Contractor shall be responsible for sequencing and coordinating the Work in accordance with the Contract Documents.
4. Contractor shall provide temporary facilities to maintain continuous operation of all existing facilities and utilities unless scheduled facility shutdowns are identified in the Contract Documents.
5. Work shall be performed in a manner that minimizes impact to normal operation of existing facilities and utilities.
6. Contractor's operations shall not cause Owner to violate operating permit requirements.
7. If Contractor's operations cause Owner to receive a notice of violation for a sewage spill or erosion and sedimentation practices, all costs including fines, legal notices, mailings, administrative tasks, and engineering associated with resolving the notice shall be borne by Contractor.

B. Sequence Constraints

1. Work may not commence until the permittee or the responsible personnel have met on site with the erosion and sediment control inspector to review the approved plans. Existing topography must be field verified by the sediment and erosion control inspector prior to commencing work.
2. All erosion and sediment control devices shall be installed and approved by inspector prior to construction.

1.07. CONNECTIONS TO EXISTING FACILITIES

- A. Contractor shall provide all cutting and patching required for connection to existing facilities.
- B. Temporary connections to existing facilities are covered in Section 01500 (Temporary Facilities).

1.08. ALTERATION PROJECT PROCEDURES

- A. Materials: As specified in individual Specification sections, match existing products and work for patching and extending work.
- B. Close openings in exterior surfaces to protect existing work from weather and extremes of temperature and humidity.
- C. Remove, cut, and patch work in a manner to minimize damage and to provide a means of restoring products and finishes to original or specified conditions.
- D. Refinish visible existing surfaces to remain in renovated rooms and spaces, to specified condition for each material, with a neat transition to adjacent finishes.
- E. Where new work abuts or aligns with existing, perform a smooth and even transition. Patch work to match existing adjacent work in texture and appearance.
- F. When finished surfaces are cut so that a smooth transition with new work is not possible, make a recommendation to Engineer for location to terminate existing surface along a straight line at a natural line of division.
- G. Where a change of plane of 1/4-inch or more occurs, submit recommendation for providing a smooth transition for Engineer review.
- H. Patch or replace portions of existing surfaces which are damaged, lifted, discolored, or show other imperfections.
- I. Finish surfaces as specified in individual Specification sections. Where not specified, match original conditions.

1.09. CUTTING AND PATCHING

- A. Employ skilled and experienced installer to perform cutting and patching. When cutting and patching is required for new Work, employ the original installer to perform cutting and patching.
- B. Submit written request in advance of cutting or altering elements which affects:
 - 1. Structural integrity of element
 - 2. Integrity of weather-exposed or moisture-resistant elements
 - 3. Efficiency, maintenance, or safety of element
 - 4. Visual qualities of sight-exposed elements
 - 5. Work of Owner or separate contractor
- C. Execute cutting, fitting, and patching including excavation and fill, to complete Work, and to:
 - 1. Fit the several parts together, to integrate with other work.
 - 2. Uncover work to install or correct ill-timed work.
 - 3. Remove and replace defective and non-conforming work.

- 4. Remove samples of installed work for testing.
- 5. Provide openings in elements of work for penetrations of mechanical and electrical work.
- D. Execute work by methods which will avoid damage to other work, and provide proper surfaces to receive patching and finishing.
- E. Cut rigid materials using masonry saw or core drill.
- F. Restore work with new products in accordance with requirements of Contract Documents.
- G. Fit work tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- H. Maintain integrity of wall, ceiling, or floor construction; completely sealing voids.
- I. Refinish surfaces to match adjacent finishes. For continuous surfaces, refinish to nearest intersection; for an assembly, refinish entire unit.
- J. Identify hazardous substances or conditions exposed to Engineer in writing for decision or remedy.

1.10. REQUESTS TO WORK OUTSIDE OF NORMAL WORKING HOURS

- A. Submit requests to work outside normal working hours at least one week in advance. Requests to work outside normal working hours must be approved in advance by Owner and Engineer.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

END OF SECTION

SECTION 01019

CONTRACT CONSIDERATIONS

PART 1 GENERAL

1.01. SECTION INCLUDES

- A. Definitions
- B. Schedule of Values
- C. Application for Payment
- D. Change procedures

1.02. DEFINITIONS

- A. Mobilization: Mobilization includes, but is not limited to, performance of preparatory construction operations, including the movement of personnel and equipment to the Project Site; application, fee payment, and acquisition of all required permits (i.e. erosion and sediment control plans, temporary and permanent building and trade permits, utility connections, etc.); and the establishment of Engineer's and Contractor's offices, buildings, and other facilities required at the Site in order to begin work on a substantial phase of the Contract. Mobilization also includes the cost of insurance and bonds.

1.03. SCHEDULE OF VALUES

- A. Submit one electronic copy in Microsoft Excel for review and approval.
- B. Line items shall be subdivided into the Bid Items shown on the Bid Form.
- C. The sum of all line items in the Schedule of Values shall equal the Total Bid Price included on the Bid Form.
- D. Each line item shall include a directly proportional amount of the Contractor's overhead and profit.
- E. Schedule of Values shall serve as a breakdown Work used to establish cost loading of the Progress Schedule. Progress payments for lump sum items will be made based on the percentages of completion of the work items included in the approved cost loaded Progress Schedule. Progress payments for Unit Price Work will be based on actual quantities of work performed. Progress payments for Contingent Unit Price work will only be made if work is authorized by Owner and/Engineer. Progress payments for Allowances will be made as described elsewhere in the Contract Documents.
- F. For Lump Sum Bid Items, the following Format shall be followed when developing the Schedule of Values.
 - 1. If Mobilization is not identified in the Bid Form as a separate Bid Item, Contractor may include in the Schedule of Values a line item for Mobilization as part of a Lump Sum Bid Item.

- a. Lump sum line item shall include all work described in the definition of mobilization included herein.
 - b. Costs for bonds and insurance shall be included in the lump sum mobilization line item.
 - c. When Contractor has made utility connections, installed Contractor's field offices, Owner's and/or Engineer's field offices, and all other facilities required to begin work on a substantial portion of the Project, a payment of 50 percent of the lump sum mobilization Bid item will be approved provided Contractor has already satisfied the requirements of General Condition Article GC-2.07. The remaining 50 percent can be prorated over the next five monthly progress payments.
 - d. Mobilization cost shall not be greater than five percent of the Total Bid Price less the sum of any Contingent Unit Price Bid Items.
2. Include separate line items for demobilization and Contract closeout, including labor.
3. Sitework shall be subdivided into itemized quantities and unit costs for all individual construction components. Items shall be separated according to Specification section titles listed in the Table of Contents and shall include labor.
- a. Sitework shall not include earthwork (such as excavation) or structural work (such as foundations) specific to a particular structure or process.
 - b. Include erosion and sediment control under sitework.
 - c. Include temporary pumping under sitework and include daily, weekly, or monthly unit costs for providing and operating the temporary pumping system(s).
 - d. Include dewatering under sitework and include daily costs for each structure.
 - e. Include off-site hauling of fill material under sitework.
 - f. Include site restoration.
 - g. Include yard piping and ductbanks.
 - 1) Yard piping and ductbanks shall be subdivided into itemized quantities and unit costs for individual components.
 - 2) Identify major yard piping by pipe diameter and material as individual line items (e.g. 12-inch ductile iron pipe) and by specific pipe segments where possible (e.g. 12-inch ductile iron pipe from pumping station to storage tank). Minor yard piping components not exceeding 5% of overall yard piping costs may be identified as lump sum items.
 - 3) Identify major ductbanks by specific segments where possible (e.g. ductbank from control building to filters).

- 4) Piping and ductbank costs shall be stated as cost per unit length, based on the number of linear feet for each piping system estimated by Contractor.
- 5) Piping and ductbank installation costs shall include labor, excavation, bedding, encasement, and/or backfill if desired.
- h. Include valves and hydrants based on valve type and size.
4. Each major construction component such as a structure or building (i.e. tank column, tank bowl, tank foundation, etc.) shall have its own subsection and shall be subdivided into line items for individual construction components itemized by unit costs and quantities. Include yard piping, earthwork, or foundations specific to the major construction component with that construction component (e.g. excavation for a tank foundation). Items shall be separated according to Specification section titles listed in the Table of Contents. Contractor may provide further divisions within each Specification section if desired or needed for clarity.
 - a. Separate line items shall be included for testing and startup including:
 - 1) Functional Testing
 - 2) Startup
 - 3) Troubleshooting
 - 4) Training
5. Electrical, instrumentation, and controls should be listed under the major construction component (structure or building) in which it is installed. Major electrical components not located in a specific structure or building, such as a transformer, may have its own line items under the category of "Power Distribution".
6. Revise the Schedule of Values to include executed Change Orders with each Application for Payment. List each Proposed Change Order (PCO) that is incorporated into executed Change Orders.

1.04. APPLICATIONS FOR PAYMENT

- A. Submit one original signature version and three copies of each application on forms furnished by Engineer.
- B. Contractor must have all progress photos and as-built drawings current and up to date prior to submitting Applications for Payment.

1.05. CHANGE PROCEDURES

- A. Supplementing the General Conditions and Supplementary Conditions, Engineer may issue a Proposal Request or Notice of Change which includes a detailed description of a proposed change with supplementary or revised drawings and specifications, a change in Contract Time for executing the change and the period of time during which the requested price will be considered valid. Contractor shall prepare and submit a proposal to perform the indicated work indicating a proposed adjustment in Contract Price and Contract Times within 14 days.

- B. Contractor may propose changes by submitting a request for change to Owner, describing the proposed change and its full effect on the Work. Include a statement describing the reason for the proposed change, and the effect on the Contract Price and Contract Time with full documentation and a statement describing the effect on work by separate or other contractors.
- C. Execution of Change Orders - Owner will issue Change Orders for signatures of parties in the following order: Contractor, Owner.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

END OF SECTION

SECTION 01039

COORDINATION

PART 1 GENERAL

1.01. SECTION INCLUDES

- A. Coordination
- B. Field engineering
- C. Preconstruction conference
- D. Progress meetings
- E. Pre-installation conferences

1.02. COORDINATION

- A. Coordinate scheduled work sequences and related operations beforehand with appropriate local, county, or state officials and agencies including affected property owners, when Project is to be located in or adjacent to a public right-of-way.
- B. Coordinate scheduling, submittals, and Work of the various Specification sections to assure efficient and orderly sequence of installation of interdependent construction elements.
- C. Verify that utility requirement characteristics of operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such items.
- D. Coordinate space requirements and installation of mechanical and electrical work which are indicated diagrammatically on attached Figures. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel with line of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- E. In finished areas, except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.
- F. Coordinate completion and cleanup of work of separate sections in preparation for Substantial Completion and for portions of work designated for Owner's partial utilization.
- G. After Owner use of facilities, coordinate access to Site for correction of defective Work and Work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

1.03. FIELD ENGINEERING

- A. Provide control loop to verify datum before beginning construction activities.
- B. Engineer reserves right to inspect or check results of Contractor field engineering services specified herein for conformance with the Contract Documents.

- C. Contractor shall provide field engineering services as follows:
1. Employ a land surveyor licensed in the State of Maryland.
 2. Protect all control and reference points. Accurately replace any such point which is damaged or moved.
 3. Provide correct lines, grades, locations and elevations for construction of all Project components.
 4. Provide correct information for preparation of Project record documents.
 5. Submit a copy of a registered Site drawing and certificate signed by the land surveyor who provided field engineering services that the locations and elevations of the Work are in conformance with the Contract Documents.

1.04. PRECONSTRUCTION CONFERENCE

- A. Engineer will schedule a conference after the Effective Date of Agreement.
- B. Attendance Required: Owner, Engineer, and Contractor.
- C. Agenda
1. Distribution of extra sets of Contract Documents.
 2. Submission of list of Subcontractors, list of products, Schedule of Submittals, Schedule of Values, and Progress Schedule.
 3. Designation of personnel representing the parties in Contract, and Engineer.
 4. Procedures and processing of field decisions, submittals, substitutions, Applications for Payments, proposal requests, Change Orders and Contract closeout procedures.
 5. Scheduling.
 6. Scheduling activities of testing laboratory.
 7. Requirements of regulatory agencies.
 8. Use of premises by Owner and Contractor.
 9. Temporary facilities to be provided by Owner and by Contractor.
 10. Procedures for testing.
 11. Procedures for maintaining record documents.
 12. Maintenance of vehicular traffic.
 13. Periodic cleanup of Site.
 14. Notification of utility owners.
 15. Electronic communications.

- D. Engineer will record minutes and distribute copies to participants.

1.05. PROGRESS MEETINGS

- A. Contractor shall schedule and administer meetings throughout progress of the Work at maximum monthly intervals. Contractor to coordinate with Owner on location.
- B. Contractor shall make arrangements for meetings, prepare agenda with copies for participants, preside at meetings, record minutes, and distribute copies within seven days to participants, and those affected by decisions made.
- C. Attendance Required: Engineer, Job superintendent, major Subcontractors and Suppliers, as appropriate to agenda topics for each meeting.
- D. Agenda
 1. Review minutes of previous meetings.
 2. Review of Work progress.
 3. Field observations, problems, and decisions.
 4. Identification of problems which impede planned progress.
 5. Review of submittals schedule and status of submittals.
 6. Review of off-site fabrication and delivery schedules.
 7. Maintenance of Progress Schedule.
 8. Corrective measures to regain projected schedules.
 9. Planned progress during succeeding work period.
 10. Coordination of projected progress.
 11. Maintenance of quality and work standards.
 12. Effect of proposed changes on Progress Schedule and coordination.
 13. Other business relating to Work.

1.06. PRE-INSTALLATION CONFERENCES

- A. When required in individual specification Sections, Contractor shall convene a preinstallation conference at the Site prior to commencing specified related work of the section.
- B. Require attendance of parties directly affecting, or affected by, work of the specific section.
- C. Notify Engineer 14 days in advance of meeting date.
- D. Prepare agenda, preside at conference, record minutes, and distribute copies within seven days after conference to participants, with two copies to Engineer.

- E. Review conditions of installation, preparation and installation procedures, and coordination with related work.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

END OF SECTION

SECTION 01101

DEFINITIONS

PART 1 GENERAL

- 1.01. **Additional work** – increase in quantities of work.
- 1.02. **Administration** – Leonardtown, acting through its authorized representatives at agency, department, or executive level.
- 1.03. **As-built** – field conditions as they appear after all construction has taken place and Town has approved and recommended the site for final acceptance.
- 1.04. **Base course** – the layer or layers of specified selected material of designed thickness placed on a subbase or a subgrade to support a surface course.
- 1.05. **Culvert** – any structure not classified as a bridge, which provides an opening under any roadway.
- 1.06. **Domestic manufacture** – when referring to metallic items such as structural steel, pipe, reinforcement, bridge rails, etc., the term “domestic manufacture” is intended to mean those metals whose final alloying has taken place within the confines of the continental United States.
- 1.07. **Drainage ditch** – in general, any open watercourse other than gutters, constructed beyond the limits of cut or fill slopes for excavation or embankment as indicated by the typical section shown on the plans.
- 1.08. **Engineer** – Leonardtown’s authorized approving agency or designated representative.
- 1.09. **Equipment** – all machinery, tools and apparatus necessary for the proper construction and acceptable completion of the work, together with the necessary supplies for upkeep and maintenance.
- 1.10. **Extra work** – work which was not provided for in the original contract.
- 1.11. **Extra work order** – a special form covering extra work, the performance of said extra work or furnishing of materials involving extra work. Such work may be performed at agreed prices or on a force account basis as provided elsewhere herein.
- 1.12. **Federal agencies** – whenever, in these specifications, reference is made to any federal agency or officer, such reference shall be deemed made to any agency or officer succeeding in accordance with law to the powers, duties, jurisdictions and authority of the agency or officer mentioned.
- 1.13. **Holidays** – holidays occur on:
 - A. New Year’s Day – January 1
 - B. Martin Luther king Day – January 15, if Monday, if not, first Monday Following the 15th.
 - C. George Washington’s birthday – 3rd Monday of February
 - D. Good Friday
 - E. Memorial Day – May 30
 - F. Juneteenth

- G. Independence Day – July 4
- H. Labor Day – 1st Monday in September
- I. Columbus Day
- J. Veterans Day – November 11
- K. Thanksgiving Day
- L. Friday after Thanksgiving - Native American Heritage Day (Town only)
- M. Christmas Day – December 25

If a legal holiday falls on a Sunday, the Monday next following shall be deemed and treated as a holiday, or as designated by the Town.

If a legal holiday falls on a Saturday, the Friday immediately preceding shall be deemed and treated as a holiday, or as designated by the Town.

- 1.14. **Invitation for bids** – the advertisement of proposals for all work and/or materials on which bids are required. Such advertisement will indicate, with reasonable accuracy, location and magnitude of the work to be done and/or the character and quantity of the material to be furnished and the time and place of the opening of proposals.
- 1.15. **Major and minor contract items** – major contract items shall be the original contract item of greatest cost, computed from the original contract price and estimated quantity or lump sum price and such other contract items next in sequence of lower cost, computed in like manner, necessary to show a total cost at original prices and quantities of not less than 60 percent of the original contract cost, and all other contract items shall be considered as minor items.
- 1.16. **Median** – the portion of a divided highway separating the traveled ways for traffic in opposite directions.
- 1.17. **Minor structure** – any structure not classed as a bridge or a culvert. It shall include catch basins, inlets, manholes, retaining walls, steps, fences and other miscellaneous items.
- 1.18. **Non-permanent structure** – a structure whose condition and location is affected more readily by severe weather conditions, home repairs, renovations, accidents, etc.
- 1.19. **Permanent structure** – a structure which is not expected to change in location vertically or horizontally.
- 1.20. **Plans** – the official drawings issued by the administration as part of the contract documents, including those incorporated in the contract documents by reference. These include the official approved plans, profiles, typical cross sections, working drawings and supplemental drawings or exact reproduction thereof which show the location, character, dimensions and details of the work to be done and which are to be considered as a part of the contract supplementary to these specifications and which are identified as such.
- 1.21. **Right-of-way** – the area which has been acquired and reserved by the administration for the use in constructing the proposed improvement and appurtenances thereto.
- 1.22. **Special provisions** – special directions, provisions or requirements peculiar to the project and not otherwise thoroughly or satisfactorily detailed or set forth herein.
- 1.23. **Specifications** – the general term comprising all directions, provisions, and requirements contained herein, together with such as may be added or adopted as supplemental specifications.

- 1.24. **Structures** – bridges, culverts, catch basins, drop inlets, retaining walls, cribbing, manholes, endwalls, buildings, sewers, service pipes, underdrains, foundation drains and other features which may be encountered in the work and not otherwise classed herein.
- 1.25. **Subbase** – the layer or layers of specified selected material of designed thickness placed on a subgrade to support a base course.
- 1.26. **Subgrade** – the material in excavation (cuts) and embankments (fills) immediately below any subbase, base, pavement, shoulder or other improved course.
- 1.27. **Substructure** – all of that part of the structure below bottoms of bearings of simple and continuous spans, skewbacks of arches and tops of footings of rigid frames, together with the backwalls and wingwalls.
- 1.28. **Superstructure** - all of that part of the structure above bottoms of bearings of simple and continuous spans, skewbacks of arches and tops of footings of rigid frames, except as noted above for substructure.
- 1.29. **Supplemental specifications** – additions and revisions to the standard specifications. Generally include new or improved procedures, construction items or materials developed subsequent to the publication of standard specification. Supplemental specifications will prevail over those published in this book whenever in conflict therewith except the general provisions.
- 1.30. **Trench** – an excavation made for the purpose of installing or removing pipes, drains, catch basins, etc. and which is later refilled.
- 1.31. **Working day** – a calendar day upon which, in the opinion of the engineer, weather and soil conditions are such that the contractor can advantageously work more than half of his current normal force for more than five consecutive hours on a major contract item or a controlling operation. Working days will not be charged on Saturdays, Sundays and state recognized holidays unless the contractor actually works more than five hours on a major item or a controlling operation.
- 1.32. **Working drawings** – stress sheets, shop drawings, fabrication details, erection plans, plans for false work, forms, centering, and masonry layouts, bending and placing drawings and bar schedules for reinforcing steel and any other supplementary plans or similar data which the contractor may be required to furnish.

END OF SECTION

SECTION 01300

SUBMITTALS

PART 1 GENERAL

1.01. SECTION INCLUDES

- A. Submittal procedures
- B. Review of Submittals
- C. Schedule of Submittals
- D. Shop Drawings
- E. Samples
- F. Manufacturer's instructions

1.02. SUBMITTAL PROCEDURES

- A. Transmit each required submittal using Engineer furnished form.
- B. Number the submittals as follows:
 - 1. First: Specification section number
 - 2. Submittal number within the Specification section
 - 3. Review cycle number
 - 4. Title of submittal
 - 5. For example:
 - a. 15073-01-01 – Field lock gaskets for DIP (first review cycle)
 - b. 15073-01-02 – Field lock gaskets for DIP (second review cycle)
 - c. 15073-02-01 – Flange pipe and fittings (first review cycle)
 - d. 15073-02-02 – Flange pipe and fittings (second review cycle)
 - e. 15073-02-03 – Flange pipe and fittings (third review cycle)
- C. Identify Project, Contractor, Subcontractor, and Supplier; pertinent Drawing number and detail number(s), and Specification sections, as appropriate.
- D. Apply stamp, signed or initialed providing certification that Contractor has satisfied Contractor's obligation under the Contract Documents with respect to Contractor's review and approval of that submittal. At a minimum, stamp shall include the following information:

1. Submittal Number
2. Deviations: None _____; As Listed
3. Reference Specification Section
4. Reference Drawing Number
5. Space Requirement: As Designed _____ Different, As Listed
6. Representation is made to Owner and Engineer that Contractor has satisfied the requirements of the Contract Documents, and that the Contractor hereby approves this submittal.
Contractor
Signature
Date
Date

- E. Schedule submittals to expedite the Project, and deliver to parties in the quantities and at the locations identified during the Preconstruction Conference.
- F. With each submittal, Contractor shall give Engineer specific written notice of any variations that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be both a written communication separate from the Shop Drawings or Sample submittal; and, in addition, by a specific notation made on each Shop Drawing or Sample submitted to Engineer for review and approval of each such variation.
- G. Identify product and/or system limitations that may be detrimental to successful performance of the completed Work.
- H. Identify space requirements that differ from those designed and/or shown on the Contract Documents.
- I. Provide space for Contractor and Engineer review stamps.
- J. Revise and resubmit corrected copies of Shop Drawings for review and approval. Identify all changes made since previous submittal in a cover letter or memorandum.
- K. Distribute copies of reviewed submittals to concerned parties. Instruct parties to promptly report inability to comply with provisions.
- L. Submittals not required will not be recognized or processed.
- M. Items shall not be fabricated or delivered without fully approved Shop Drawings.
- N. Ensure no associated work begins until associated Shop Drawings are fully approved.
- O. Fabrication prior to receiving a "No Exceptions Noted" or "Exceptions Noted – No Resubmittal Required" is at Contractor's risk.

1.03. REVIEW OF SUBMITTALS

- A. Engineer will provide timely review of Shop Drawings in accordance with the Schedule of Submittals acceptable to Engineer. Engineer's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

- B. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
- C. Engineer's review and approval shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless the Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing.
- D. Review times:
 - 1. No less than 28 days shall be allowed for Engineer's review of submittals and resubmittals unless otherwise specified in the Contract Documents.
- E. Review Codes:
 - 1. No Exceptions Noted
 - 2. Exceptions Noted – No Resubmittal Required
 - 3. Exceptions Noted – Resubmit Written Responses and Requested Information
 - 4. Revise and Resubmit
 - 5. Rejected
 - 6. Informational Purposes Only
- F. Payment will not be made for any items requiring submittals until no further submittals are required for the item.

1.04. SCHEDULE OF SUBMITTALS

- A. Submit three copies of preliminary Schedule of Submittals.
- B. Revise and resubmit until acceptable to Engineer.

1.05. SHOP DRAWINGS

- A. Provide information in accordance with this Section and as required by individual Specification sections.
- B. Shop Drawing submittals shall include all descriptive data, performance characteristics, material specifications, spare parts list, drawings, piping diagrams, wiring schematics, and shall be complete and accurate to indicate item-by-item compliance with the Contract Documents.
- C. Shop Drawings shall be drawn at scales matching those on the Drawings depicting the same items.
- D. All catalog cuts, manufacturer's specifications, drawings, and verbal descriptions shall be clearly marked to allow identification of the specific products used.

- E. If the submittal deviates from the requirements of the Specifications in any way, it shall be clearly marked in the submittal with the justifying reason stated for evaluation by Engineer.
- F. Electrical and control submittals shall include a verbal description of the functions, metering equipment, alarm points, alarm sequences, and any other specific features provided.

1.06. SAMPLES

- A. Provide as required by individual Specification sections.
- B. Submit Samples to illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate Sample submittals for interfacing work.
- C. Submit Samples of finishes from the full range of manufacturers' standard colors, textures, and patterns for Engineer's selection.
- D. Include identification on each Sample, with full Project information.
- E. Submit the number of Samples specified in individual Specification sections; one of which will be retained by Engineer.
- F. Reviewed Samples which may be used in the Work are indicated in individual Specification sections.

1.07. MANUFACTURER'S INSTRUCTIONS

- A. When specified in individual Specification sections, submit manufacturers' printed instructions for delivery, storage, assembly, installation, startup, adjusting, and finishing, in quantities specified for Shop Drawings.
- B. When specified in the Contract Documents, submit manufacturer's operation and maintenance instructions for equipment supplied under this Contract.
- C. Identify conflicts between manufacturers' instructions and Contract Documents.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

END OF SECTION

SECTION 01310
PROGRESS SCHEDULE

PART 1 GENERAL

1.01. SUMMARY

- A. This Specification section covers the development and utilization of the Progress Schedule. In the event of conflicts or discrepancies with any other provisions of the Contract Documents relating to such, this section shall govern.

1.02. DEFINITIONS

- A. Terms used herein shall be in accordance with the definitions set forth in the Associated General Contractors of America (AGC) publication, "Construction Planning & Scheduling Manual".

1.03. BASIC REQUIREMENTS

- A. Schedule and monitor all Work using Critical Path Method (CPM) techniques. Scheduling software shall be Microsoft Project.
- B. Progress Schedule shall be maintained throughout entire Contract and shall be used by Contractor to schedule, plan, organize, and execute the Work.
- C. Progress Schedule shall:
 - 1. Comply with Contract Times identified in the Agreement.
 - 2. Reflect all mandated sequencing identified in Contract Documents.
 - 3. Include adequate time for Engineer's review of submittals. Under no circumstances will the Progress Schedule be allowed to include Engineer review times shorter than those prescribed in Section 01300 (Submittals) and individual Specification sections. The need for resubmittals based on Engineer's review will not entitle Contractor to Contract Time extensions and the Progress Schedule must include adequate time for resubmittals.
 - 4. Include time required by Contract Documents based on workdays lost due to inclement weather.
 - 5. Progress Schedule shall include adequate time for testing and Startup.
- D. Each activity, except Notice to Proceed, shall have at least one predecessor. Each activity, except final completion, shall have at least one successor.
- E. Construction activities shall have a maximum duration of 20 workdays except for activities that cover mandated greater durations (e.g. submittal reviews, etc.) or fabrication times. All durations shall be developed based on definitive manpower and resource planning.
- F. Float is not for the exclusive benefit of the Owner or Contractor and must be used in the best interest of the Project in order to maintain Contract Times. Contractor will not be allowed to

sequester float through such strategies as extended activity durations, extensive crew/resource sequencing, etc.

1.04. QUALITY ASSURANCE

- A. CPM scheduler shall be skilled in the time and cost application of CPM scheduling techniques for multi-disciplined construction projects.
- B. CPM scheduler shall have a minimum of five years' experience in preparing CPM schedules for projects of similar size and complexity.
- C. Engineer reserves the right to reject proposed CPM scheduler if, in Engineer's opinion, the proposed CPM scheduler does not meet the qualifications specified herein. Engineer will notify Contractor in writing of decision concerning acceptability of proposed CPM scheduler within 14 days of receipt of proposed CPM scheduler qualifications submittal. If Engineer rejects proposed CPM scheduler, resubmit another proposed CPM scheduler within seven days of receipt of Engineer's rejection notice. Such rejection by Engineer does not release Contractor from its obligations under this Contract and will not entitle Contractor to an adjustment of Contract Price and/or Contract Times.

1.05. SUBMITTALS

- A. Submit the following in accordance with the procedures identified in Section 01300 (Submittals):
 - 1. CPM scheduler's qualifications within ten days of Notice of Award including:
 - a. Name and address of proposed CPM scheduler.
 - b. Sufficient information showing proposed CPM scheduler's qualifications including:
 - 1) List of prior construction projects of similar size and complexity.
 - 2) At least one sample network analysis demonstrating complete project planning similar to those required under this Contract, prepared by, or under the direction of, the proposed CPM scheduler.
 - 3) Letter from proposed CPM scheduler indicated they have reviewed this Specification section and understand the requirements specified herein.
 - 2. Detailed Baseline Progress Schedule:
 - a. Submit one electronic version within 10 days after Notice to Proceed.
 - b. Bar chart shall clearly identify the critical path and shall provide a tabulated listing of the following for each activity:
 - 1) Activity ID
 - 2) Activity description
 - 3) Original duration

- 4) Percent complete
- 5) Remaining duration
- 6) Early start
- 7) Early finish
- 8) Late start
- 9) Late finish
- 10) Total float

3. Monthly Updates

- a. After acceptance of the baseline Progress Schedule, submit monthly updates with each Application for Payment. The cutoff date for each monthly update shall be mutually agreed upon by Engineer and Contractor prior to submittal of first monthly update.
- b. Submit one electronic version.
- c. The monthly updates shall include, but not be limited to, three copies of a tabulated listing all activities showing the following:
 - 1) Activity ID.
 - 2) Activity description.
 - 3) Original duration.
 - 4) Percent complete.
 - 5) Remaining duration.
 - 6) Early start or actual start if activity has been started.
 - 7) Early finish or actual finish if activity has been finished.
 - 8) Late start or actual start if activity has been started.
 - 9) Late finish or actual finish if activity has been started.
 - 10) Total float.
- d. Written report including the following:
 - 1) Summary of Work accomplished during period.
 - 2) Summary of Work to be accomplished during next period.
 - 3) Milestone comparison chart.
 - 4) Critical path analysis.

- 5) Analysis of work paths with less than 20 days total float.
 - 6) Analysis of time lost or gained during the period.
 - 7) Identification of problem areas.
 - 8) Identification of issues potentially having an adverse impact on the Progress Schedule.
- B. Engineer's review of Progress Schedule submissions is solely to determine if Progress Schedule has been prepared in accordance with Contract Documents. Such acceptance will not impose on Engineer and/or Owner responsibility for the Progress Schedule, sequencing of Work, progress of Work, nor will it interfere with and/or relieve Contractor full responsibility for the Progress Schedule, means, methods, and sequence of construction when not specifically dictated by the Contract Documents.
- C. Should Contractor fail to provide submittals, and/or revised submittals, within the time frames prescribed, Contractor will be in default and Owner is not obligated to provide progress payments to Contractor until such time as acceptability of submittals can be verified.

1.06. PROGRESS SCHEDULE ARCHITECTURE

- A. Each activity in the Progress Schedule shall include:
1. A unique activity identification (ID) number.
 2. Activity description.
 3. Original Duration.
 4. Responsibility code assigning activities to Contractor, Subcontractors, Engineer, Owner, or other entity.
- B. Calendars: At a minimum, establish the following calendars:
1. Work day calendar excluding all holidays identified in the Contract Documents.
 2. Calendar days for activities with durations based on calendar days.

1.07. DETAILED BASELINE PROGRESS SCHEDULE

- A. Baseline Progress Schedule shall include no activity progress.
- B. Provide sufficient detail to allow use for planning, scheduling, and control all Work included in Contract. The degree of detail shall be to the satisfaction of the Engineer, and shall account for the following Project specific items:
1. Structural breakdown of Project
 2. Required phasing
 3. Milestones
 4. Trades involved

5. Maintaining operation of existing facilities
 6. Subcontractor work plans
 7. Crew flows and sizes
 8. Access to Site and work areas
 9. Identification of coordination between Contractor, Subcontractors, and Suppliers
 10. Testing and Startup
 11. Partial utilization by Owner
- C. In addition to a breakdown of physical construction activities specified herein, include activities for the following:
1. Submittals
 2. Engineer's review of submittals
 3. Fabrication and delivery of materials and equipment
- D. Update to include revisions to the System Delivery Plan identified in Section 01660 (Testing and Startup).
- E. The accepted baseline Progress Schedule will form the basis of the first monthly update.

1.08. SCHEDULING MEETINGS

- A. Attend monthly meetings with Engineer and submit monthly Progress Schedule updates.
- B. Review proposed activity progress completed during the period, current status of the Project, planned work for the next period, and areas where Contractor needs to coordinate with Owner and/or Engineer.

1.09. REVISIONS

- A. The Owner, Engineer, and Contractor shall have the right to propose revisions to the Progress Schedule if it is deemed to be in the best interest of the Project.
- B. All Owner, Engineer, and Contractor proposed revisions must be submitted to each party no later than seven days prior to the date by which Contractor must submit monthly updates in order for proposed revisions to be considered for that update.
- C. Objections to Proposed Revisions:
 1. If Owner, Engineer, and/or Contractor object to proposed revisions made by any other party, the objecting party shall provide written notice to each other party within seven days of receipt of proposed revisions, stating objections.
 2. Proposed revisions that are not mutually agreeable shall be discussed at the monthly scheduling meetings.

- D. Engineer shall have final say on acceptance or rejection of all proposed Progress Schedule revisions based solely on requirements of the Contract Documents.
- E. All Engineer accepted revisions will be incorporated into the next Progress Schedule update.

1.10. RECOVERY SCHEDULES

- A. If Contractor fails to achieve planned progress, as indicated in the Progress Schedule, and lack of progress delays the critical path or an intermediate Milestone by more than 10 work days, submit a proposed recovery schedule to Engineer identifying how Contractor will recover lost time.
- B. Failure to submit a recovery schedule and failure to cooperate with the Owner and/or Engineer in the recovery schedule process shall allow Owner the right to order Contractor to increase manpower to recover lost time, without adjustment to the Contract Price. Furthermore, Owner has the right to withhold progress payments until such time as Contractor's progress is brought into compliance with Progress Schedule.

1.11. DELAYS AND EXTENSIONS OF CONTRACT TIMES

- A. When Contractor believes that Contract Times will be delayed by circumstances outside of its control, Contractor shall include with its notice of Claim, a forward-looking Time Impact Analysis (TIA) identifying the anticipated impact to Contract Times. Forward looking Time Impact Analysis shall include the following;
 - 1. A fragnet prepared using the Progress Schedule submitted with the most recent Application for Payment.
 - 2. A report identifying all new activities included with the fragnet and all proposed logic changes associated with the fragnet.
 - 3. Summary of all requested extensions to Contract Times.
 - 4. Cause of the delay, actions Contractor proposes to take to minimize delays, and actions Contractor proposes for Owner and/or Engineer to minimize delays.
- B. Engineer will review each forward-looking TIA after submission. If acceptable to Engineer, Engineer will provide written notice to Owner within 14 days of submission, copying Contractor on correspondence, recommending that the fragnet should be incorporated into the Progress Schedule and a Change Order should be issued providing requested extension of Contract Times. Owner will provide written notice to Contractor within 14 days of receipt of Engineer's recommendation, either concurring or denying Engineer's recommendation.
- C. If a forward-looking TIA submittal is not acceptable to Engineer, Engineer will provide written notice to Contractor identifying deficiencies with TIA. Contractor will have 7 days from receipt of Engineer's written notice to submit a revised TIA addressing deficiencies.
- D. Contract Time extensions will only be considered for events that impact Contract Times as demonstrated by acceptable forward-looking TIAs.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01380

CONSTRUCTION DOCUMENTATION

PART 1 GENERAL

1.01. SECTION INCLUDES

- A. Construction Photographs
- B. Construction Videography

1.02. DESCRIPTION

- A. Take construction record photographs and videography prior to mobilization and periodically during the course of the Work.

1.03. CONSTRUCTION PHOTOGRAPHS

- A. Digital construction photographs shall be taken at each of the major stages on construction listed below and shall be furnished to Engineer and Owner with each Application for Payment.

- 1. Site before mobilization.
- 2. Completion of Underground Facilities prior to backfilling.
- 3. Completion of Site clearing for each structure.
- 4. Completion of excavations for each structure.
- 5. Completion of reinforcing and formwork prior to concrete pours.
- 6. Completion of foundations of each structure.
- 7. Completion of framing of each structure.
- 8. Completion of enclosure for each structure.
- 9. Interior of tanks prior to filling with liquid.
- 10. Installation of all interior and exposed exterior piping, equipment, and electrical components.
- 11. Testing of all piping, equipment, and systems.
- 12. Completion of Site restoration and landscaping.

- B. Views and Quantities Required

- 1. Two views of each item.
- 2. At least five views of overall Project Site monthly.

- C. Camera used for digital photography shall be a 12.0 megapixel or greater.

D. Electronic Copies

1. Maintain database of pictures for the entire length of the Project.
2. Each month, provide two CDs with electronic versions of all prints taken in the past month.
3. Provide two CDs with electronic versions of all prints taken in during the course of the Project (in .jpg format) with final Application for Payment.
4. All electronic copies of photos shall be in .jpg format. All electronic copies of photos shall be arranged on CDs by date and subject. Each .jpg photo file name shall include the subject description and date.

1.04. CONSTRUCTION VIDEOGRAPHY

- A. Digital video shall be made to document the condition of the Site prior to mobilization.
- B. Video shall show the entire Site and shall show sufficient detail to discern existing Site conditions.
- C. Video shall identify time and date electronically on each frame.
- D. Provide four DVDs of video. Identify location, date, and time video was made.

1.05. REUSE OF CONSTRUCTION DOCUMENTATION

- A. All construction documentation furnished to Owner shall become the property of the Owner and cannot be copyright or otherwise protected in a manner that prevents free reuse by either the Owner and/or Engineer.

PART 2 PRODUCTS

2.01. PRINTS

A. Digital Progress Photos

1. Printer
 - a. Printer shall be designed to print digital photos.
 - b. Printer shall have a minimum 4800 x 1200 dpi resolution.
2. Color Prints
 - a. Paper: Single weight, smooth, photo-quality paper.
 - b. Finish: Smooth matte-finish.
 - c. Size: 8-inch x 10-inch.
 - d. Enclosure: Each print shall be provided in an acid-free plastic sleeve, three hole punched, for insertion into a three ring binder. Provide a suitable quantity of three-ring binders for containing all prints, labeled on the front and spine of the binder with the name and Owner's Contract number.

3. Identify each print on front, listing:
 - a. Name and Owner's Contract number.
 - b. Subject and orientation of view (for example, "Aeration Tank Foundation, looking north").
 - c. Date and time of exposure.
 - d. Contractor's numbered identification of exposure (i.e., December 2013, Photo #1).

PART 3 EXECUTION

3.01. DELIVERY OF PRINTS

- A. Preconstruction photos shall accompany the first Application for Payment. This Application for Payment will not be approved without receipt of such materials.
- B. Monthly construction photos (in both print and CD format) shall accompany each monthly Application for Payment. Monthly Applications for Payment will not be approved without receipt of such materials.
- C. Final construction photos shall accompany the final Application for Payment. This Application for Payment will not be approved without receipt of such materials.

END OF SECTION

SECTION 01400
QUALITY CONTROL

PART 1 GENERAL

1.01. SECTION INCLUDES

- A. Quality assurance and control of installation
- B. References and standards
- C. Tolerances
- D. Field samples
- E. Mock-up
- F. Inspection and testing services
- G. Manufacturers' field services

1.02. QUALITY ASSURANCE/CONTROL OF INSTALLATION

- A. Monitor quality control over Suppliers, manufacturers, products, services, Site conditions, and workmanship, to produce Work of specified quality.
- B. Comply fully with manufacturers' instructions.
- C. Verify that field measurements are as indicated on Shop Drawings and as instructed by the manufacturer.
- D. If manufacturers' instructions conflict with Contract Documents, request clarification from Engineer before proceeding.
- E. Comply with specified standards as a minimum quality for the Work except when code requirements or equipment manufacturer requires more stringent standards.
- F. Perform Work by persons qualified to produce workmanship of specified quality.
- G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion and disfigurement.

1.03. REFERENCES AND STANDARDS

- A. For products and workmanship specified by association, trade, or other consensus standards, comply with requirements of the standard, except when more rigid requirements are specified and/or are required by applicable codes.
- B. Obtain copies of standards where required by individual Specification sections.
- C. If specified reference standards conflict with Contract Documents, request clarification from Engineer before proceeding.

1.04. TOLERANCES

- A. Monitor fabrication and installation tolerance control to produce acceptable Work. Do not permit tolerances to accumulate.
- B. Comply with manufacturers' tolerances. If manufacturers' tolerances conflict with Contract Documents, request clarification from Engineer before proceeding.
- C. Adjust products to appropriate dimensions; position before securing products in place.

1.05. FIELD SAMPLES

- A. Furnish field Samples at the Site as required by individual Specification sections.
- B. Acceptable Samples represent a quality level for the Work.
- C. Where field Sample is specified in individual Specification sections to be removed, clear area after field Sample has been accepted by Engineer.

1.06. MOCK-UP

- A. Tests will be performed under provisions identified in this section and as identified in the individual Specification sections.
- B. Assemble and erect specified items, with specified attachment and anchorage devices, flashings, seals, and finishes.
- C. Where mock-up is specified in individual Specification sections to be removed, mock-up shall remain until Engineer provides notice to Contractor that it is acceptable to remove mock-up.
- D. Accepted mock-ups shall be a comparison standard for quality required for the remaining Work.

1.07. TESTS AND INSPECTIONS

- A. Owner shall employ an independent testing laboratory to perform inspections, tests, and approvals required by this Contract. Contractor shall pay for the services and the employed independent testing laboratory.
- B. Independent testing laboratory will:
 - 1. Perform inspections, tests, and other services specified in the individual specification sections and as required by Engineer and Owner.
 - 2. Perform inspecting, testing, and source quality control which may occur on or off Project Site, as required by Engineer or Owner.
 - 3. Prepare and submit reports to the Engineer, in triplicate, indicating observations and results of tests and indicating compliance or non-compliance with Contract Documents. Engineer will forward copy of report(s) to Contractor.
- C. Contractor shall:
 - 1. Cooperate with independent firm; furnish samples of materials; furnish design mix, equipment, tools, storage and assistance as requested.

2. Notify Engineer and independent firm 48 hours prior to expected time for operations requiring services.
 3. Make arrangements with independent firm and pay for additional samples and tests required for Contractor's own use.
- D. Retesting required because of non-conformance to specified requirements shall be performed, on instructions by the Engineer, by the same independent firm which performed the initial tests and inspections.
- E. Costs for retesting and re-inspection incurred by Owner will be deducted from progress payments to Contractor.

1.08. MANUFACTURERS' FIELD SERVICES

- A. Manufacturer field services for equipment are specified in Section 01640 (Equipment – General).
- B. When additional manufacturer services are specified in other individual Specification sections, require material or product Suppliers or manufacturers to provide qualified personnel to observe Site conditions, conditions of surfaces and installation, quality of workmanship, testing, and adjusting as applicable, and to initiate instructions when necessary.
- C. Submit qualifications of observer to Engineer a minimum of 30 days in advance of required observations. Observers are subject to approval of Engineer.
- D. Report observations, Site conditions, or instructions given to applicators or installers, that are supplemental or contrary to manufacturers' written instructions.
- E. Submit report to Engineer in duplicate within 30 days of observation.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

END OF SECTION

SECTION 01500

TEMPORARY FACILITIES

PART 1 GENERAL

1.01. SECTION INCLUDES

- A. Continuity of Service.
- B. Temporary Utilities - Electricity, lighting, heating, cooling, ventilation, telecommunications service, water, and sanitary facilities.
- C. Temporary Controls - Barriers, enclosures and fencing, protection of the Work, water control and pollution controls.
- D. Construction Facilities - Access roads, parking, maintenance of traffic, progress cleaning, project signage, and temporary buildings.

1.02. CONTINUITY OF SERVICE

- A. Provide temporary equipment including pumps, piping, valves, bulkheads, electrical equipment and all system components necessary to maintain the existing facilities in service during construction.
- B. Provide temporary power, instrumentation, controls, and alarms necessary to assure continued facilities operation during the alterations of existing facilities components or installation of new equipment.
- C. Construction may require the closing of various gates and valves to isolate tanks, channels, and equipment. Owner does not guarantee that the gates and valves will be completely watertight. It is Contractor's responsibility to take whatever measures are necessary to proceed with construction in the event that valves or gates leak.
- D. Provide temporary access required, including ladders, platforms, grating, walkways, and awails which comply with OSHA laws, for necessary facilities operations.
- E. Provide all line stops and temporary bypass piping and valves required to connect new piping to existing piping, unless otherwise specified.
- F. No extra payment shall be made for labor, materials, tools, equipment or temporary facilities required during construction. All costs therefore shall be considered to have been included in the Bid.

1.03. TEMPORARY ELECTRICITY

- A. Connect to existing electrical power service. Contractor's power consumption shall not disrupt Owner's need for continuous service.

1.04. TEMPORARY LIGHTING

- A. Provide and maintain lighting for Contractor operations to achieve:
 - 1. A minimum lighting level of 2 watt/sq.ft. for construction operations.

2. 1 watt/sq.ft. lighting to exterior staging and storage areas after dark for security purposes.
 3. 0.25 watt/sq.ft. H.I.D. lighting to interior work areas after dark for security purposes.
- B. Provide branch wiring from power source to distribution boxes with lighting conductors, pigtails, and lamps as required for Contractor's operations.
 - C. Maintain lighting and provide routine repairs.
 - D. Permanent building lighting may be utilized during construction.
- 1.05. TEMPORARY HEATING
- A. Provide and pay for temporary heating devices and temporary heating as needed to maintain specified conditions for Contractor's construction operations.
- 1.06. TEMPORARY COOLING
- A. Provide and pay for cooling devices and cooling as needed to maintain specified conditions for Contractor's construction operations.
- 1.07. TEMPORARY VENTILATION
- A. Ventilate enclosed areas to achieve cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases for Contractor's operations.
- 1.08. TEMPORARY WATER SERVICE
- A. Provide and maintain suitable quality water service required for Contractor's construction operations.
 - B. Owner will pay cost of water used. Exercise measures to conserve water. Provide separate metering.
 - C. Extend branch piping with outlets located so water is available by hoses with threaded connections for Contractor's use. Provide temporary pipe insulation and heat tracing to prevent freezing. Provide backflow preventer for all connections to existing potable water.
 - D. Provide sufficient potable quality drinking water for construction workers at the Project Site.
- 1.09. TEMPORARY SANITARY FACILITIES
- A. Provide and maintain required sanitary facilities and enclosures for use by all persons employed at the Site. Provide at time of mobilization. Existing facilities shall not be used.
 - B. Remove facilities from Site at end of construction.
 - C. Facilities shall be maintained in conformance with applicable State Regulations and Local ordinances. Contents shall be removed and disposed of in satisfactory manner as occasion requires.
 - D. Enforce sanitary regulations amongst employees and take precautions against infectious diseases. Isolate infected employee(s) and arrange for immediate removal of such person(s) from Site.

1.10. BARRIERS

- A. Provide barriers to prevent unauthorized entry to construction areas to allow for Owner's use of Site, and to protect existing facilities and adjacent properties from damage from construction operations and demolition. Maintain Owner access to all areas of existing site in up to demolition.
- B. Provide protection for plant life designated to remain. Replace damaged plant life.
- C. Protect vehicles, stored materials, Site, and structures from damage.
- D. Supplement barriers with suitable signs, railings and night lights, as necessary to conform with governing authorities and regulations.

1.11. TEMPORARY FENCING

- A. Provide 6-foot high fence around construction Site; equip with vehicular and pedestrian gates with locks. Procedures for locking construction areas that must be accessed by Owner staff shall be coordinated with Owner and Engineer prior to installation of fence.
- B. Construction - Commercial grade chain link fence.

1.12. WATER CONTROL

- A. Grade Site to drain. Maintain excavations free of water. Provide, operate, and maintain pumping equipment.
- B. Protect Site from puddling or running water. Provide water barriers as required to protect Site from soil erosion.

1.13. EXTERIOR ENCLOSURES

- A. Provide temporary insulated weather-tight closure of exterior openings to accommodate acceptable working conditions and protection for products, to allow for temporary heating and maintenance of required ambient temperatures identified in individual Specification sections, and to prevent entry of unauthorized persons. Provide access doors with self-closing hardware and locks.

1.14. INTERIOR ENCLOSURES

- A. Provide temporary partitions as required to separate work areas from Owner occupied areas, to prevent penetration of dust and moisture into Owner occupied areas, and to prevent damage to existing materials and equipment.
- B. Construction - Framing and reinforced polyethylene, plywood, or gypsum board sheet materials with closed joints and sealed edges at intersections with existing surfaces in accordance with ASTM E90.

1.15. PROTECTION OF INSTALLED WORK

- A. Protect installed Work from damage and deterioration due to construction activities, traffic, birds, pests, vermin, wild-life, pets, pedestrians, visitors, vandals, dust, vapors, floods, precipitation, driving rain, wind, snow storms, melting temperatures, or freezing temperatures; provide special protection where specified in individual Specification sections.

- B. Provide temporary and removable protection for installed products. Control activity in immediate work area to minimize damage.
- C. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.
- D. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
- E. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.
- F. Prohibit traffic over landscaped areas. Provide adequate barriers, directional signs, and/or guards, if necessary to provide adequate protection of landscaped areas.
- G. Owner reserves right to order that additional protective measures be taken beyond those proposed by Contractor, to safeguard the existing facilities and Work at no additional cost to Owner.

1.16. SECURITY

- A. Provide security and facilities to protect Work and Owner's operations from unauthorized entry, vandalism, or theft.
- B. Coordinate security measures with Owner's security program.

1.17. ACCESS ROADS

- A. Confine construction traffic to roads designated for such use on attached Figures.

1.18. PARKING

- A. Provide temporary surface parking areas to accommodate all construction personnel involved with Project.
- B. When designated space at Site is not adequate, provide additional off-site parking at Contractor's expense.
- C. Do not allow vehicle parking on pavement not designated as such on the attached Figures.

1.19. PROGRESS CLEANING

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain Site and structures in a clean and orderly condition, as follows:
 1. Remove debris and rubbish from pipe chases, plenums, attics, crawlspaces, and other closed or remote spaces, prior to enclosing the space.
 2. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.
 3. Collect and remove waste materials, debris, and rubbish from Site daily and at a minimum dispose off-site weekly.
- B. Store unused tools and equipment offsite at construction yard or base of operations.

1.20. POLLUTION CONTROLS

- A. Dust Control
 - 1. Execute Work by methods to minimize raising dust from construction operations.
 - 2. Provide positive means to prevent air-borne dust from dispersing into atmosphere.
 - 3. Wash down disturbed areas daily.
 - 4. Implement best management practices in accordance with requirements of agencies have jurisdiction over dust control.

- B. Erosion and Sediment Control shall be provided in accordance with the Contract Documents and the requirements of governing regulatory agencies.
 - 1. Plan and execute construction by methods to control surface drainage from cuts and fills, from borrow and waste disposal areas.
 - 2. Minimize amount of bare soil exposed at one time.
 - 3. Provide temporary measures such as berms, dikes, and drains, to regulate water flow and prevent soil erosion.
 - 4. Periodically inspect earthwork in disturbed areas to detect evidence of erosion and sedimentation; promptly apply corrective measures.
 - 5. Implement best management practices in accordance with requirements of agencies have jurisdiction over erosion and sediment control.

- C. Noise Control
 - 1. All construction equipment and tools exhibiting potential noise nuisance shall be provided with noise muffling devices.
 - 2. Confine use of such equipment and tools during regular working hours.
 - 3. Implement best management practices in accordance with requirements of agencies having jurisdiction over noise control.

- D. Pollutants Control: Provide methods, means and facilities to prevent contamination of soil, water and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations.

1.21. PROJECT IDENTIFICATION

- A. Provide Project identification sign in accordance with Owner requirements.
- B. List title of Project, names of Owner, Engineer and Contractor.
- C. Erect on Site at location established by Engineer.
- D. No other signs are allowed without Owner permission except those required by law or specified elsewhere in the Contract Documents.

1.22. REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

- A. Remove temporary utilities, equipment, facilities, controls, materials, prior to Substantial Completion.
- B. Remove temporary barriers, enclosures, etc. in concert with completion of those segments of Work which no longer require such measures.
- C. Remove temporary underground installations to a minimum depth of 2 feet. Grade Site as indicated.
- D. Clean and repair damage caused by installation or use of temporary work.
- E. Restore existing facilities used during construction to original condition. Restore permanent facilities used during construction to specified condition.

1.23. CONTRACTOR'S FIELD OFFICE

- A. Provide weather tight field office with lighting, electrical outlets, heating, cooling and ventilating equipment, and equipped with sturdy furniture, drawing rack, drawing display table, and filing cabinets for Contractor's use.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

END OF SECTION

SECTION 01600
MATERIALS AND EQUIPMENT

PART 1 GENERAL

1.01. SECTION INCLUDES

- A. Products
- B. Shipping and handling
- C. Storage and protection
- D. "Or Equal" Items

1.02. PRODUCTS

- A. Do not use materials and equipment removed from existing premises, except as specifically permitted by the Contract Documents.
- B. Provide interchangeable components of the same manufacturer, for components being replaced.

1.03. SHIPPING AND HANDLING

- A. Arrange deliveries in accordance with the Progress Schedule.
- B. Coordinate deliveries to avoid conflicts with Work, conditions at the Site, work of other contractors, work of Owner, and availability of personnel and handling equipment.
- C. Transport by methods to avoid damage.
- D. Deliver in manufacturer's unopened containers or packaging, dry, with identifying labels intact and legible.
- E. Provide equipment and personnel for handling to prevent soiling and damage.
- F. Protect sensitive equipment and finishes against impact, abrasion and other damage.
- G. Promptly inspect shipments to assure compliance with requirements, correct quantities, and identify damage.

1.04. STORAGE AND PROTECTION

- A. Store and protect in accordance with manufacturer's instructions, with seals and labels intact and legible. Store sensitive items in weather-tight, climate controlled enclosures in an environment favorable to item.
- B. For exterior storage of fabricated items, place on sloped supports, above ground.
- C. Provide bonded offsite storage and protection when storage and protection cannot be provided on Site.

- D. Cover items subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation.
- E. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.
- F. Provide equipment and personnel to store items by methods that prevent soiling, disfigurement, and damage.
- G. Arrange storage to permit access for inspection. Periodically inspect to assure items are undamaged and are maintained in acceptable conditions.

1.05. "OR EQUAL" ITEMS

- A. *"Or-Equal" Items:* If in Engineer's sole discretion an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by Engineer as an "or-equal" item, in which case review and approval of the proposed item may, in Engineer's sole discretion, be accomplished without compliance with some or all of the requirements for approval of proposed substitute items. For the purposes of this paragraph, a proposed item of material or equipment will be considered functionally equal to an item so named if, in the exercise of reasonable judgment Engineer determines that: 1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics; 2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole; and 3) it has a proven record of performance and availability of responsive service AND Contractor certifies that, if approved and incorporated into the Work: 1) there will be no increase in cost to the Owner or increase in Contract Times; and 2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

END OF SECTION

SECTION 01640
EQUIPMENT - GENERAL

PART 1 GENERAL

1.01. SECTION INCLUDES

- A. Submittals
- B. Performance affidavits
- C. Equipment design
- D. Spare parts
- E. Equipment identification
- F. Standardization of grease fittings
- G. Shop tests
- H. Installation of equipment
- I. Services of manufacturer's representative
- J. Operation and maintenance manuals
- K. Lubrication
- L. Guarantees

1.02. SUBMITTALS

- A. Submit Shop Drawings in accordance with Section 01300 (Submittals).
- B. Submit performance affidavits prior to or with Shop Drawings.
- C. Installation Certificates.
- D. Certification of Equipment Compliance.
- E. Operations and Maintenance Manuals.
- F. Training Plans
 - 1. Submit no less than 30 days prior to proposed date for training in accordance with procedures identified in Section 01300 (Submittals).
 - 2. Training plan must be approved by Engineer prior to scheduling actual date for training.

- 3. Provide syllabus with sufficient detail to establish content of training, duration of each topic, and demonstrate adequate content to train Owner's staff on proper operation and maintenance of equipment.
- G. DVD recordings of training sessions.
- H. Written training reports.
- I. Guarantees.

1.03. PERFORMANCE AFFIDAVITS

- A. Provide performance affidavits for items required in the individual specifications sections.
- B. Performance affidavits shall be developed by each manufacturer and shall certify to Contractor and Owner, jointly, that manufacturer has examined the Contract Documents and that the equipment, apparatus, process, or system will meet the performance requirements set forth in the Contract Documents in every way. Equipment design, manufacturing, and assembly specifications are an integral part of the performance requirements.
- C. Shop Drawings will not be reviewed prior to receipt by Engineer of an acceptable performance affidavit.
- D. The performance affidavit shall be signed by an officer (vice president or higher) of the basic corporation, partnership or company manufacturing the equipment, and witnessed by a notary public.
- E. Performance affidavits shall be in the following format:

Addressed to: (Contractor) and (Owner)
Reference: Contract No.
(Project)
Text "(manufacturer's name) has examined the Contract Documents and verified that the (product) meets in every way the performance and design requirements set forth in Specification Section(s) of the Contract Documents and related Drawings."
Signature: Corporate officers shall be vice president or higher (unless statement authorizing signature is attached).
Notary: Signature(s) must be notarized.

1.04. EQUIPMENT DESIGN

- A. Equipment and appurtenances shall be designed in conformity with ANSI, ASME, IEEE, NEMA and other generally accepted applicable standards.
- B. Equipment and appurtenances shall be of rugged construction and of sufficient strength to withstand all stresses which may occur during fabrication, testing, shipping, handling, installation, all conditions of operation, and as required by the Contract Documents.
- C. All bearings and moving parts shall be adequately protected by bushings or other approved means against wear, and provisions shall be made for adequate lubrication by readily accessible devices.

- D. Details shall be designed for appearance as well as function. Protruding members, joints, corners, gear covers, etc., shall be finished in appearance. All exposed welds on machinery shall be ground smooth and the corners of structural shapes shall be rounded or chamfered.
- E. Machinery parts shall conform within allowable tolerances to the dimensions shown on the Shop Drawings. The corresponding parts of identical machines shall be made interchangeable.
- F. All machinery and equipment shall be safeguarded in accordance with the safety codes of the ANSI, OSHA, and local Laws and Regulations. All rotating shafts, couplings, and other moving parts of equipment shall be provided with suitable protective guards of sheet metal or wire mesh neatly and rigidly supported. Guards shall be removable to provide access for repairs.
- G. Details promoting maintenance, ease of replacing parts, and lubrication shall be a prime consideration in design.
- H. Products shall be designed for corrosion resistance and shall not be constructed of materials which may prohibit ease of maintenance due to corrosion. All fasteners on areas requiring access for maintenance and lubrication shall be Type 316 stainless steel unless otherwise specified. Zinc or cadmium plated fasteners for these areas shall not be used.

1.05. SPARE PARTS

- A. Provide spare parts as required by individual Specification sections.
- B. Provide spare parts that are identical and interchangeable with original parts.
- C. For each part (or group of small parts), provide a tag indicating the following:
 - 1. Name and associated tag number(s) of equipment
 - 2. Name of the part
 - 3. Manufacturer's name and the date of manufacture
 - 4. Identification number of the part

1.06. EQUIPMENT IDENTIFICATION

- A. Each piece of equipment shall be provided with a substantial stainless steel nameplate, securely fastened in a conspicuous place and clearly inscribed with the manufacturer's name, year of manufacture, serial number, and principal rating data.

1.07. STANDARDIZATION OF GREASE FITTINGS

- A. Provide grease fittings of the hydraulic type, Alemite #1600 Series or Lincoln.
- B. Coordinate grease fittings on all mechanical equipment to be compatible with a single type of grease gun.

1.08. SHOP TESTS

- A. Arrange shop tests of the equipment indicated in individual Specification sections.

- B. Arrange for the Engineer to witness shop tests in the manufacturer's shop, if required by the individual Specification sections.
- C. Demonstrate equipment characteristics, including any specified pressure, duty, capacity, rating, efficiency, performance, function, and other special requirements, comply fully with the requirements of the Contract Documents and that the item will operate in the manner specified.
- D. Submit certified copies of the manufacturer's test data and interpreted results in accordance with the procedures identified in Section 01300 (Submittals).

1.09. INSTALLATION OF EQUIPMENT

- A. Field modifications shall not be made without prior approval from Engineer.
- B. Provide all necessary guides, bearing plates, anchors, and attachment bolts, working drawings for installation, templates, and all other appurtenances necessary for the installation of the equipment specified.
- C. Anchor bolts shall be of size and strength suitable for purpose intended and shall be in accordance with the individual Specification sections.
- D. Pipe sleeves or other means of adjusting anchor bolts shall be provided where indicated and where needed. Equipment shall be leveled by first using sitting nuts on the anchor bolts and then filling the space between the equipment base and concrete pedestal with grout. Where equipment bases (i.e., pumps) are installed with grout holes, those bases shall be totally filled with grout after successful completion of Functional Testing and prior to System Demonstration Testing.
- E. Provide equipment and housekeeping pads for equipment in accordance with the attached Figures.

1.10. SERVICES OF MANUFACTURER'S REPRESENTATIVE

- A. Arrange for the equipment manufacturer to furnish the services of a qualified representative where specified in the individual Specification sections. The manufacturer's representative shall visit the Site as many times as needed to fulfill its obligations required by the Contract Documents.
- B. Contractor shall be responsible for any additional time required for the manufacturer's representative to resolve equipment installation and/or operation problems due to a lack of coordination between the supplied equipment and the Contract Documents such as, but not limited to, dimensions, electrical problems or performance.
- C. Arrange for the equipment representative to visit the Site on occasions after Startup and during the first year of operation if required by the individual Specification sections. The purpose of these visits shall be to review equipment operation, assist the operators in correcting operational problems and basic inspection of the equipment.
- D. Manufacturer's representative shall assist and supervise Contractor during installation, testing, and operation of equipment where specified in individual Specification sections.
- E. Manufacturer's representative shall provide all certificates specified in individual Specification sections.

1. Installation Certificate: Submit one copy to both Owner and Engineer of manufacturer representative's Installation Certificate indicating that the manufacturer's representative has inspected the installation and that the equipment provided by their organization has been properly installed, aligned, lubricated, and is ready for operation.
2. Certification of Equipment Compliance: Submit one copy to both Owner and Engineer of manufacturer representative's written Certification of Equipment Compliance indicating that the manufacturer's representative has witnessed the Functional Test for the equipment provided by their organization, final adjustments to the equipment have been made, the equipment has been tested to their satisfaction, and the equipment meets all performance and testing requirements included in the Contract Documents, excluding testing to be performed either during or after Startup.

F. Testing Reports

1. Functional Test Reports - Submit one copy to both Owner and Engineer of manufacturer representative's written Functional Test reports including performance test results unless otherwise noted.
2. Performance Testing During or After Startup - When the Contract Documents require performance testing to be conducted during or after Startup, submit one copy of performance test results with an updated Certification of Equipment Compliance as previously specified.

G. Training

1. Manufacturer shall provide services of qualified, factory trained, operations and maintenance personnel to instruct Owner personnel in proper care, operation, and maintenance of equipment. At a minimum, training shall include:
 - a. Theory of operation.
 - b. Actual operation.
 - c. Mechanical maintenance.
 - d. Electrical maintenance.
 - e. Instrumentation and alarms.
 - f. Optimization of operation.
 - g. Safe operating and working practices and operation of safety devices.
 - h. Troubleshooting.
 - i. Demonstration of equipment startup procedures, operation, and shutdown procedures using equipment installed under this Contract.
2. Training sessions shall be conducted at the Site on weekdays between the hours of 9:00 a.m. and 2:00 p.m. Actual times, locations, and durations of training sessions shall be approved by Owner.

3. Trainer shall provide all materials and training manuals required for training in quantities required by Owner.
4. Trainer shall develop a written report for each training session. At a minimum, reports shall summarize training sessions, indicate any problems that may have been encountered during operation of equipment, and include a sign-in sheet identifying all attendees. Contractor shall submit one copy of each training report to both Owner and Engineer.

1.11. OPERATION AND MAINTENANCE MANUALS

A. General

1. Submit operation and maintenance manuals as required by the individual Specification sections in accordance with the procedures identified in Section 01300 (Submittals).
2. Prior to completion of the Work, and at least 30 days prior to the 50 percent payment, submit for Engineer's review three copies of all preliminary draft operation and maintenance manuals. Preliminary draft operations and maintenance manuals may be submitted separately for individual items.
3. Prior to completion of the Work, and at least 60 days prior to the 85 percent payment, submit for Engineer's review three copies of all final draft operation and maintenance manuals. Preliminary draft operations and maintenance manuals may be submitted separately for individual items.
 - a. All comments generated by Engineer during review of preliminary draft operation and maintenance manuals must be adequately addressed prior to submission of final draft operation and maintenance manuals. Final draft operation and maintenance manuals shall be complete in their entirety except for specific information related to testing and startup. Final draft operations and maintenance manuals must be approved by Engineer prior to the following:
 - 1) System Demonstration Testing
 - 2) Training of associated items
4. Prior to final payment, provide five copies of the final operation and maintenance manual. The final operation and maintenance manual shall include all required operations and maintenance information consolidated into one manual with multiple volumes. The final operation and maintenance manual shall include testing and Startup results where applicable.

- B. Manual Preparation: Manuals shall include operation and maintenance information on all systems and items of equipment. The data shall consist of catalogs, brochures, bulletins, charts, schedules, approved Shop Drawings corrected to as-built conditions and assembly drawings and wiring diagrams describing location, operation, maintenance, lubrication, operating weight, lubrication charts and schedules showing manufacturer's recommended lubricants for each rotating or reciprocating unit, and other information necessary for Owner to establish effective operating and maintenance programs. The following shall also be included:

1. Title page giving name and location of facility, Drawing number where shown, and Specification section where described.
2. Equipment cover sheet listing the supplied equipment manufacturer's name, brand name, model numbers, serial numbers, equipment installer (provide contact name, address, phone and fax numbers, and e-mail address), equipment Supplier (provide contact name, address, phone and fax numbers, and e-mail address), and equipment manufacturer (provide contact name, address, phone and fax numbers, e-mail address, and website address).
3. Performance curves for all pumps and equipment.
4. Approved Shop Drawings of each piece of equipment.
5. Manufacturer's cut sheets and dimensional drawings of each piece of equipment, and details of all replacement parts.
6. Manufacturer's erection, operation, and maintenance instructions for all equipment and apparatus, and complete listing of nameplate data.
7. Complete electrical and control schematics with labeled terminations for all individual pieces of equipment and systems including one line diagrams, schematic or elementary diagrams, and interconnection and terminal board identification diagrams.
8. Complete piping and interconnecting drawings.
9. Complete parts list with parts assembly drawings (preferably by exploded view), names and addresses of spare parts suppliers, recommended list of spare parts to be kept "in stock" and sample order forms. Lead time requirements for ordering parts shall be estimated.
10. Instructions with easily understood schematics or diagrams for disassembling and assembling equipment for overhaul and repair.
11. Shop testing results where applicable.
12. Manufacturer's Installation Certificate.
13. Manufacturer's Certificate of Equipment Compliance.
14. Field testing/performance reports where applicable.
15. Manufacturer's equipment warranty.
16. Information not applicable to a specific piece of equipment installed on this Project shall be removed from or crossed out on the submissions.
17. Illegible data due to any cause, including poor copy quality or reduction, will not be accepted. Manuals with illegible data will be rejected and returned for correction.

C. Organization - O&M manuals shall be organized as follows:

1. All instructions shall be bound into a series of identical 3- or 4-inch, heavy-duty, three-ring binders. All black covers with transparent exterior leaves for inserting cover pages. Where necessary, more than one binder may be used to assemble the data.

When two or more binders are used, each book or volume shall be titled to indicate its particular book or volume number and the total number of volumes per set (i.e., Volume 2 of 12). The Contractor shall plan manual content and shall "break" the data between volumes at reasonable locations so no loss in continuity of data presentation occurs.

2. Information shall be organized by Specification section, each covering an individual equipment item.
 3. Sections shall be listed in a Table of Contents at the front of each volume.
 4. Binders shall be Vernon Line Royal No. R-6372 or R-372, Sparco Brand Slanted Ring Presentation Binder 68140, Universal D-Ring View Binder 20747, K&M Division VS11-40, or equal. Pages shall be linen reinforced on the binding edge.
 5. Shop Drawings 24 inches by 36 inches in size shall be folded to approximately 12 inches by 9 inches with drawing title box exposed along either edge. Shop Drawings descriptive of a single item of equipment shall be grouped together. All Shop Drawings shall be placed in accordion-type folders similar to File Pocket No. 74CG (9-1/2 inches by 14-3/4 inches) as manufactured by the Cooke and Cobb Company, or equal, and fully indexed on the outside of the folders in a neat and uniform manner.
 6. All Shop Drawings included in the binders and/or folders shall be those previously submitted for review and approval and shall bear Engineer's stamp of approval and comments as originally noted thereon.
- D. Electronic Operations and Maintenance Data
1. In addition to the specified printed operations and maintenance materials, furnish all specified operations and maintenance materials in electronic format prior to Substantial Completion. Electronic equipment manual files shall be submitted in Adobe Acrobat Reader (.PDF) format.
 2. Electronic files shall be submitted on one or more thumbdrives. Two sets of thumbdrives shall be provided, one for Owner and one for Engineer. Thumbdrives shall be labeled with the Project name, Supplier, equipment identification, and Specification section.

1.12. LUBRICATION

- A. Retain the services of a qualified lubrication specialist, acceptable to Owner, to review the lubrication and maintenance instructions and schedules provided by the various equipment manufacturers. The lubrication specialist shall represent a major oil company and shall have an office within a 40-mile radius of the Site.
- B. Arrange for the lubrication specialist to prepare revised lubrication schedules for all equipment utilizing lubricants from as few companies as possible (preferably single source).
- C. Include revised lubrication schedule(s) in final O&M manuals.

1.13. GUARANTEES

A. Manufacturer Warranties During Correction Period:

1. Where indicated in the individual Specification sections, provide a one year manufacturer warranty made out in the name of the Owner, coinciding with the correction period defined in General Conditions Article 15.08 for the particular piece of equipment.
2. One copy of each manufacturer warranty shall be provided to both Owner and Engineer within 30 days of successful completion of Startup.
3. All requirements of the of the correction period defined in General Conditions Article 15.08 shall apply to the manufacturer's warranty and the equipment Supplier obligations shall be the same as Contractor obligations defined in General Conditions Article 15.08 for the particular piece of equipment covered by the warranty.

B. Special Guarantees - Provide both Owner and Engineer one copy of special guarantees required in individual Specification sections. Special guarantees shall be made out in the Owner's name.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

END OF SECTION

SECTION 01660

TESTING AND STARTUP

PART 1 GENERAL

1.01. SECTION INCLUDES

- A. Definitions
- B. Submittals
- C. Preliminary Field Testing
- D. Functional Testing
- E. Startup
- F. Meetings

1.02. DEFINITIONS

- A. System: The combination of Subsystems that will collectively undergo sequential Startup, and delivery to the Owner. Each System includes all components necessary for that System to function as intended, including structural/architectural components, HVAC, plumbing, process equipment, piping, power, automated controls, life safety, etc.
- B. Subsystem: The multiple components of a System. Subsystems are generally defined as unit processes and support systems, including structural/architectural components, HVAC, plumbing, process equipment, piping, power, automated controls, life safety, etc.
- C. System Delivery Plan: Contractor's schedule for delivering Systems to the Owner.
- D. Preliminary Field Test: Field test to demonstrate that equipment is properly installed and ready for operation.
- E. Functional Test: Field test to demonstrate successful operation and performance of equipment in all intended modes of operation.
- F. PCS Programming Phase: Period of time for PCS programmer to load, test, and debug PCS application software.
- G. Startup: Continuous successful online operation of a System in its entirety utilizing actual process fluid and at actual service conditions prior to delivery of that System to the Owner. The duration of Startup shall be fourteen (14) consecutive days for each system unless a longer duration is specified elsewhere.

1.03. SUBMITTALS

- A. Functional Testing Plans.
 - 1. Submit at least 30 days prior to proposed Functional Testing date in accordance with procedures identified in Section 01300 (Submittals).

2. Submit individual plans for each piece of equipment requiring a Functional Test.
 3. Coordinate with Owner to determine testing fluid sources and include in Functional Testing Plans.
- B. System Delivery Plan:
1. Submit within 30 days of Notice to Proceed in accordance with procedures identified in Section 01300 (Submittals).
 2. Well and all associated components shall be defined as one System.
 3. Include proposed start and finish dates for all Functional Testing and Startup.
 4. Incorporate into Progress Schedule.
 5. Resubmit proposed changes in accordance with procedures identified in Section 01300 (Submittals).

1.04. GENERAL

- A. Provide a minimum of 14 days' notice to the Owner and Engineer prior to all testing. The Owner and Engineer reserve the right to witness all testing.
- B. Materials, Supplies, and Utilities:
1. Owner Furnished
 - a. None
 2. Contractor Furnished
 - a. All required tools, materials, and spare parts.
 - b. All required instrumentation and monitoring devices, including temporary devices required for testing (i.e. flow meters, pressure gauges, level sensors, etc.).
 - c. All required lubricants, energy, equipment, and instruments.
 - d. All required utilities not furnished by the Owner.
 - e. Provide means to convey designated testing fluid to testing location and to disposal location unless otherwise indicated, including all temporary facilities required (i.e. pumps, piping, etc.).
- C. Connection to Existing Equipment and Facilities: Test all equipment and facilities to ensure that they are in operating condition before the final tie-ins are made which connect new equipment and facilities to existing equipment and facilities.
- D. Contractor Operating Personnel:
1. Functional Testing and Startup:

- a. Provide appropriate personnel to operate and maintain the System during Functional Testing and Startup.
- b. Provide an on-call designated representative of the Contractor at all times during Functional Testing, and Startup who is familiar with the operations and maintenance of the System being testing and is capable of arriving on site within one hour after activation of any alarm or failure of any equipment or System.

1.05. FUNCTIONAL TESTING AND STARTUP MEETINGS

- A. At least 14 days prior to the proposed start date for Functional Testing and Startup, conduct a meeting with Owner and Engineer to review testing plans, finalize testing procedures, verify status of associated equipment and prerequisites, and coordinate all aspects of Functional Testing and Startup. Representatives of the Owner, Engineer, and Contractor shall attend the conference.
- B. Prerequisites:
 1. Accepted Functional Testing Plan

1.06. PRELIMINARY FIELD TESTING

- A. Demonstrate the following:
 1. Equipment is permanently installed in the correct location and orientation.
 2. Equipment is properly adjusted, aligned, and lubricated.
 3. Equipment is prepared for operation in strict accordance with the Contract Documents and with manufacturer's recommendations.
- B. Make all changes, adjustments and replacements required to comply with the requirements of the Contract Documents.
- C. Preliminary field testing shall be witnessed by the manufacturer's representative where required by individual Specification sections.
- D. Prerequisites:
 1. Accepted System Delivery Plan.
 2. Permanent power has been connected and unit is ready for operation.
 3. All testing as required in individual Specification sections.

1.07. FUNCTIONAL TESTING

- A. At a minimum, Functional Tests shall include the following:
 1. Verification that equipment meets the specified performance requirements in every detail and performs its intended function without any unusual vibration, noise or other signs of possible malfunction. Unless specifically identified otherwise in individual Specification sections, all performance testing shall be conducted during Functional Testing.

2. Motor testing where required.
 3. Vibration testing where required.
 4. Demonstration of successful operation in all control modes.
 5. Simulation of all instrumentation and controls including extreme conditions so as to check the response of instrumentation and control devices, bypass functions, pumping cycles, etc.
- B. Prerequisites:
1. Accepted Functional Testing plan.
 2. Associated Functional Testing and Startup meeting.
 3. Preliminary Field Testing.
 4. Manufacturer's Installation Certificate.
 5. Final Draft Operations and Maintenance Manual.
 6. Leakage testing of associated piping and tanks.
 7. Permanent safety and protection devices installed and operational. Safety devices shall include, but not be limited to, fall protection, hand railing, grating and floor plates, leak detection, motor thermal and overload protection, emergency power generation, equipment lockouts, floatation devices, fire alarms and systems, ventilation systems, and lighting in operational areas in or directly related to the System being tested. All open excavations in or adjacent to the operational areas shall be covered.
 8. System piping, valves, instruments, control panels, and electrical equipment properly labeled in accordance with the Contract Documents.
 9. Control System Testing.

1.08. STARTUP

- A. During Startup, Owner will operate the System under actual operating conditions and test for successful operation in the various operating modes required by the Contract Documents under the direction and responsibility of the Contractor. Owner will provide all required sampling and laboratory testing required for operation of System during Startup unless otherwise noted. If no rainfall is received during the Startup period, Owner may elect to simulate operating conditions using alternative water sources.
1. Provide the following support to Owner:
 - a. Routine maintenance of new equipment and devices.
 - b. Non-routine operations and maintenance, such as cleaning clogged pumps, etc.

- c. Notify Owner prior to performing actions related to Startup or shutdown of Systems including, but not limited to, valve and gate operation, electrical shutdown, change in process flow configuration, etc.
- B. If any component of the System fails to operate in accordance with the Contract Documents during Startup, provide all necessary repairs, maintenance, replacement of parts, corrections, adjustments, and other actions necessary to restore proper operation of the System. Required adjustments to equipment shall be made by a qualified manufacturer's representative. After the System is restored to proper operating conditions, restart the test. No credit will be given for operating time prior to System failures when calculating test durations. Examples of System failures include, but are not limited to the following:
 1. Tank overflows
 2. Equipment failures and/or malfunctions
 3. Instrumentation failures and/or malfunctions
 4. Tank or piping failures and/or leakage
 5. Loss of power to equipment and/or devices
 6. Controls malfunctions
- C. Upon successful completion of Startup, the System shall be delivered to the Owner for partial utilization.
- D. Prerequisites:
 1. Functional Testing of all System components.
 2. Manufacturer's Certification of Equipment Compliance for all associated equipment.
 3. Required training for all System components not specifically identified in individual Specifications sections as post Startup training.
 4. Verification that all required lubrication equipment and materials are readily available to Contractor at the Site.
 5. Provide Owner with up-to-date record Drawings showing all components as they are installed. The record Drawings shall cover all major components of the System including power feed, control and alarm annunciation, and piping.
 6. Seven days written notice prior to proposed actual beginning of Startup date. Startup cannot commence without Owner and Engineer acceptance of proposed actual beginning of Startup date.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

END OF SECTION

SECTION 01700
RECORD DOCUMENTS

PART 1 GENERAL

1.01. SECTION INCLUDES

- A. Record documents.

1.02. RECORD DOCUMENTS

- A. Record Drawings:

1. Record, keep, and monitor up to date record documents of work constructed in the field. Legibly mark in red ink or red pencil to show all changes in, or directly associated with, the Work of this Contract. Keep entire set or record documents current on a day to day basis. Record documents shall be kept on hand in the Contractor's field office and shall be available for periodic examination by Engineer upon request. Contractor is responsible for securing a surveyor to survey site during construction and at the end of the project. Elevations, horizontal control, structures, clearing limits, pavements and others shall be shown on plan. Contractor shall incorporate red lines within final as-built from surveyor and then submit to Engineer for approval.
2. Examples of annotations that could occur are as follows:
 - a. Change in location or elevation of structures.
 - b. Change in dimensions of structures.
 - c. Elimination of structures.
 - d. Unforeseen modifications to existing structures.
 - e. Relocation of equipment.
 - f. Additions to or expansion of structures.
 - g. Changes in mechanical trades components; (electrical, heating, ventilating, plumbing).
 - h. Measured location of internal utilities or mechanical trade items, which are to be concealed from view, referenced to visible and accessible features of the structure.
 - i. Change in location or elevations of Underground Facilities installed under this Contract.
 - j. Change in materials, such as pipe materials.
 - k. Relocation of existing Underground Facilities.
 - l. Change in topographical contours of finished earth and paved surfaces.

- m. Change in elevations of finished surfaces along route of installed Underground Facilities.
- B. Spare Parts
 - 1. At Substantial Completion, Contractor to provide a single list of spare parts that are required for all components installed.
- C. At Substantial Completion, affix Contractor's red identification stamp to front cover of each set of record documents and label them as "Record Documents". One set of record documents shall be given to Engineer no later than 14 days after the date of Substantial Completion. Engineer will either approve record documents or return them to Contractor with comments. Contractor shall resubmit record documents until Engineer has no further comments. Affix Contractor's identification stamp, together with the label "Record Documents," as follows:
 - 1. On each Figure, just above the Engineer's title block.
 - 2. On each Shop Drawing, just above the preparer's title block.
 - 3. On the front cover or front page of all other documents.
- D. Final payment to Contractor will not be considered until acceptable record documents have been turned over to Owner.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

END OF SECTION

SECTION 02520
PRODUCTION WELL

PART 1 GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. Section 01300 Submittals
- C. Section 02760 Geophysical Logging and Borehole Video Surveys
- D. Section 02762 Pumping Tests
- E. Section 02766 Well Acceptance Standards
- F. Section 02767 Well Casing and Blank
- G. Section 02768 Well Screen
- H. Section 02772 Pitless Unit

1.02 SUMMARY

- A. This section covers the work, materials and equipment necessary for drilling, testing and sampling the new Leonardtown production Well No. 6.
 - 1. The new well will be screened adjacent to the permeable sediments of the Upper Patapsco Aquifer.

1.03 COMPETENT WORKMEN

- A. The Contractor shall employ only competent workmen for the execution of this Work, and all such Work shall be performed under the direct in-field supervision of an experienced Master well driller licensed by the State of Maryland.
- B. Provide experience and qualification references for work on at least three similar projects in the past six years that involve drilling, developing and testing production wells in unconsolidated sediments of the Atlantic Coastal Plain. On-site driller must have completed similar projects.
 - 1. Minimum well depth of 1,000 feet.

1.04 SITE LOCATION AND LAYOUT

- A. The well site is located south of Boondock Ln of Meadow St. in Leonardtown, MD
 - 1. Protect all property at and in the vicinity of the well site and make sure no environmental damage results from the discharge of water from the well during the construction activities.

2. Secure and restrict access to the site at all times to prevent unauthorized entry or vandalism.
- B. Prior to mobilization the Contractor shall inspect the site and make all necessary arrangements for physical access and to identify space requirements for setting up and storing rigs, equipment, materials, piping, and other appurtenant items.
- C. Comply with all applicable Town of Leonardtown and St. Mary's County safety and security guidelines for conducting Work at the site.

1.05 NOISE CONTROL AND LIGHTING

- A. Conduct operations in accordance with Town of Leonardtown and St. Mary's County noise ordinances, as applicable.
- B. All temporary lighting at the site provided by the Contractor must be concentrated in the work area and shall not illuminate or disturb adjacent property.

1.06 DATUM AND REFERENCES

- A. All measurements indicated in these specifications are from the surface of the ground at the sites. Actual depths used during the proposed Work will be dependent upon information obtained during drilling.
- B. The Contractor shall make all field measurements during drilling and testing from a well-defined reference point. A complete description of the reference or sampling point shall be included on all submittals.
 1. All depth measurements shall be plus or minus 0.1 feet, except water level measurements, which shall be plus or minus 0.01 feet.

1.07 REGULATIONS AND PROTECTION

- A. The Contractor shall apply for and obtain a State of Maryland drilling permit.
 1. Provide a copy of the drilling permit to the Engineer prior to the start of Work.
- B. Undertake all Work in accordance with all applicable sections of AWWA (American Water Works Association) Standard for Water Wells A100-20, except as noted herein; Code of Maryland (COMAR) 26.04.04: Title 26 Department of the Environment; Subtitle 04 of Water Supply Sewage Disposal and Solid Waste, Chapter 04 Well Construction.
- C. Perform all Work in accordance with all applicable safety requirements and codes of all governing bodies having jurisdiction.

1.08 CONTRACTOR REPORTING

- A. During construction the Contractor shall maintain daily reports of all activities pertinent to the Work.
 1. Provide a complete description of all formations encountered, number of feet drilled, number of hours on the jobs, shutdowns due to breakdown, materials used, water levels measured, weather conditions, and other such pertinent data as may be requested by the Engineer.

- B. The Contractor shall prepare and maintain a complete log setting forth, as a minimum, the following items. All logs shall be submitted to the Engineer within 10 days of completion of the new well.
1. The reference point for all depth measurements.
 2. The depth at which each change of lithology occurs.
 3. The thickness of each stratum.
 4. Identification of the material of which each stratum is composed.
 5. The depth interval from which each water and formation sample is taken.
 6. The depth at which the diameter of the drilled hole changes.
 7. The composition and time of use of all drilling fluids used.
 8. The depth or location of any lost drilling fluid, drilling materials or tools.
 9. A complete description of all materials including pipe, screen, couplings, reducers, blanks and bottom plates.
 10. The depth, thickness, locations, and type of all well filter pack.
 11. The depth, thickness, locations, and type of all grout used.
 12. The amount, times of application, and composition of all materials and fluids used during well development.
- C. The Contractor shall provide a sieve analysis of the samples collected while drilling the pilot hole through the aquifer.
- D. Prior to the installation of any well material the Contractor shall submit a detailed cross section of the proposed well to the Engineer for review and acceptance. The drawing shall indicate the length, diameter, slot size, depth and other dimensions of the casing, screen, adapters, riser pipe, grout and all other appurtenances pertaining to the well.
1. Accurately measure and record the individual lengths of well casing, inner casing, couplings, screens, and blank pipe sections. The length of each piece shall be clearly marked on each item in a permanent manner acceptable to the Engineer.

1.09 WATER QUALITY SAMPLING AND ANALYSIS

- A. The Contractor shall collect water quality samples from the well near the end of the long-term constant rate pumping test.
1. The Contractor shall provide the Engineer with not less than 48-hour notice prior to sample collection.
 2. All water quality analysis will be performed by the Contractor.
- B. The Owner and Engineer may conduct additional field sampling to supplement the laboratory analysis.

1. The Contractor shall cooperate with and assist in these additional field sampling efforts.
- C. Water samples collected near the end of the long-term pumping tests will be tested for all parameters as identified in Appendix A.

1.10 CONTAINMENT & DISPOSAL OF DRILLING FLUIDS AND WATER

- A. The Contractor shall use portable above-ground mud tanks.
1. The tank capacity shall be sized to accommodate drilling fluids and drill cuttings that are not removed and disposed of during drilling operations.
- B. The Contractor shall be responsible for the disposal of all water, drilling mud, drill cuttings, and initial well development fluids removed from the wells during this project in accordance with all local, state, and federal regulations.
1. All drill cuttings, drilling fluid and initial development water must be disposed of off-site.
- C. The Contractor shall obtain all local, state or federal discharge permits that may be required to facilitate proper disposal of all water generated as part of this project.
1. On-site disposal of all fluids, if any, shall be coordinated with the Engineer.
 2. Obtain General Discharge Permit 17-HT as further specified and in accordance with Appendix C.
 3. Provide a copy of the NOI response documentation to the Engineer prior to the discharge of any fluids whatsoever at the project site.
- D. Disposal of all well development fluids and pumping test water shall be coordinated through the Engineer.
1. If any chemicals are used to assist in development, subject to the approval of the Engineer, arrangements must be made with Town of Leonardtown operations personnel to pump the initial discharge of chemical laden water (if any) into a sanitary sewer or hauled off site for safe and proper disposal.
 2. All discharges shall be in full compliance with all applicable provisions of MDE General Discharge Permit No. 17-HT or the most current version.
 3. During all Work install and maintain proper sediment and erosion control measures satisfactory to the Engineer.

1.11 SITE RELATIONS AND CONDITIONS

- A. The Contractor shall notify the Engineer at least 24 hours prior to all Work.
1. The Contractor shall cooperate with the Owner, Engineer and any other contractors that may be working at the project site.
 2. If asked by the Owner to vacate the site, the Contractor shall do so within 48 hours of receiving written notice.

- B. The Contractor shall be required to keep its Work area and adjacent areas clean at all times. Upon completion of the work restore the working area. Clean up and repairs will only be considered acceptable when approved by the Engineer.
- C. Provide and maintain sanitary facilities at the sites for its crews for the duration of the project.
 - 1. Locate temporary sanitary facilities so as not to create a public nuisance or hinder access to the sites.
- D. Standard work hours shall be in accordance with General Conditions 7.02 and Supplementary Conditions SC-7.02.
- E. Additional work hour considerations:
 - 1. The Contractor will be allowed a maximum of three consecutive 24-hour shifts for final reaming and installation of the well casing.
 - 2. The Contractor will be allowed a maximum of three additional consecutive 24-hour shifts to install the well screen and filter pack and perform initial well development.
 - 3. The Contractor will be allowed one 24-hour shift to perform the constant rate pumping test.
 - 4. Coordination and scheduling of the additional work hours must be approved in advance by the Owner and Engineer.
- F. When the Contractor believes it has substantially completed the Work specified herein notify the Engineer to request a conditional acceptance inspection. The Engineer shall determine whether the work completed is acceptable and warrants conditional acceptance as further defined.

1.12 CONFIDENTIAL INFORMATION

- A. All data and information generated as part of the Work shall be considered confidential and shall not be released by the Contractor to any third party without the prior written consent of the Owner.
 - 1. Excludes information to be provided on completion reports sent to state and/or local agencies at the conclusion of the Work.

PART 2 PRODUCTS

2.01 GENERAL

- A. Provide all materials and equipment necessary to drill, develop, test and sample the well.
 - 1. All materials furnished as part of the Work shall be new, unused and free from defects.
 - 2. All equipment shall be in good condition and of such capacity to complete the work.

2.02 SUBMITTALS

- A. Provide shop drawings and submittal data for the following items.

1. Drilling fluid plan
2. Filter pack material and grain size analysis
3. Formation grain size analysis
4. Neat cement grout
5. Supplemental well development additives
6. Steel surface casing
7. Steel outer casing
8. SST inner casing, blank and sump
9. SST well screen
10. Proposed well construction diagram to include:
 - a. Reamed hole diameters
 - b. Outer casing length
 - c. Inner casing length
 - d. Screen placement
 - e. Screen slot size and filter pack gradation
 - f. Grout and filter pack intervals
11. Submersible pump cable
12. Pump column
13. Submersible pump and motor
14. Pitless unit

2.03 DRILLING EQUIPMENT

- A. All drilling and support equipment shall be in good working condition. Operate and maintain equipment in conformance with manufacturer's recommendations and industry standards.
- B. Provide drilling rigs and support equipment capable of completing the well as specified.
 1. The drilling unit shall be capable of drilling and reaming boreholes to the specified diameters and depths and installing casing and screen as specified.

2.04 MAKE UP WATER FOR DRILLING

- A. Only potable water from an approved source shall be used during construction.

1. Water for construction will be provided by the Owner at no cost to the Contractor. The Contractor shall furnish, install and maintain an approved flow meter and backflow preventer for use during the project.
- B. The Contractor is responsible for hauling water from an approved source to the site or installing temporary piping and/or hoses to convey water to the drilling site if a nearby hydrant is available.
 1. Remove all hoses, pipe, valves, meters, etc., and secure the hydrant at the end of each workday and upon completion of the Work.

2.05 DRILLING FLUID

- A. The Contractor shall prepare and execute a drilling fluid program compatible with the characteristics of the native groundwater.
- B. Drilling fluid shall be composed of potable water and drilling additives commercially processed to meet or surpass the viscosity specifications in the American Petroleum Institute "Standard 13-A for Drilling Fluid Materials".
 1. Drilling fluid additives shall comply with industry standards and practices and be used as prescribed by the manufacturer.
 2. All drilling fluid material and additives shall be NSF approved.
- C. The Contractor shall maintain the quality of the drilling fluid.
 1. Assure the protection of water bearing formations exposed in the borehole.
 2. Facilitate the collection of representative samples of the formation materials.
 3. Minimize the introduction of non-native clays, additives and water into the formation during drilling and development.

2.06 FILTER PACK

- A. The filter pack shall be composed of thoroughly washed, sound, durable, sub-rounded to rounded material consisting mainly of quartz and/or quartzite.
 1. Filter pack shall contain no calcareous or organic material.
- B. The material shall be purchased from a commercial supplier who shall certify the material is suitable for use in public supply wells.
 1. The average specific gravity of the filter pack material shall be greater than 2.5, with no more than 1 percent (by weight) of the material with a specific gravity of 2.25 or less.
 2. The uniformity coefficient of the filter pack shall be less than 2.5.
- C. The material shall be graded and sized to be suitable and compatible with the formations present and screen slot size(s) selected and shall meet industry standards for sorting and size distribution within the stated range.
 1. Submit representative samples for grain size distribution analysis.

2. At a minimum the Contractor shall use appropriate American Sieve sizes such as No. 4, 10, 20, 30, 50, 70, 100, 120, 150, 200, 230 and pan to analyze the grain size distribution.
- D. Storage of Material- The filter pack material shall be delivered to the site in bags or in bulk (Super Sacks). It shall be placed on plastic sheeting at a raised location so as not to be subjected to any type of surface runoff. The material shall be kept clean and dry at all times.

2.07 CEMENT GROUT

- A. Neat cement grout consisting of API Spec. 10, Class B or ASTM C-150 Type II cement mixed with not more than 7 gallons of potable water per 94-pound bag of cement shall be used.
- B. The use of special cement or other admixtures (ASTM C-494) to reduce permeability, increase fluidity, and/or control time of set and the composition of the resultant slurry must be submitted to the Engineer for review and approval.

2.08 WELL DEVELOPMENT AIDS

- A. Chemicals and other development materials to improve the efficiency of the well and assist in development may be used, subject to the approval of the Engineer.
- B. The Contractor shall be solely responsible for the safe use and disposal of all development chemicals and demonstrate to the satisfaction of the Engineer that all chemicals have been satisfactorily neutralized prior to disposal in strict accordance with all applicable provision of MDE General Discharge Permit No. 17-HT.

PART 3 EXECUTION

3.01 SITE PREPARATION AND SET UP

- A. The Contractor shall be prepared to complete all the Work on a continuous basis and in an expeditious manner.
- B. All erosion and sedimentation controls required by The Town of Leonardtown, St. Mary's County, the State of Maryland and all other applicable regulatory agencies having jurisdiction shall be approved and in place prior to the start of drilling.
 1. At a minimum install silt fencing around the perimeter of the construction site.
 2. Maintain controls for the duration of the project so that any water leaving the site will meet all applicable discharge requirements.
- C. If deemed necessary by the Contractor, furnish and install a suitable length of minimum 24-inch diameter surface casing to prevent caving of the upper portion of the drilled hole during construction.
 1. If used, the surface casing shall be completely grouted and left in place and shall be included in the lump sum base bid price for well construction.
 2. The use of surface casing shall in no way infringe upon the required drilling of the pilot hole, grouting of the well casing, or obtaining a proper seal.

3. Surface casing may be installed with an auger or bucket rig and grouted in place in advance of the drilling rig.

3.02 PILOT HOLE DRILLING

- A. The Contractor shall drill a pilot hole from ground surface to the total depth specified, or as otherwise directed by the Engineer, to facilitate formation sampling and geophysical logging.
 1. Base bid pilot hole depth is 900 feet.
- B. The pilot hole shall be drilled using the mud rotary method.
 1. Minimum pilot hole diameter is 8-inches; maximum diameter is 12 ¼-inches
 2. Maintain drilling fluid at such weight and viscosity to carry the cuttings out of the drilled hole and to prevent caving.
- C. Collect sediment samples from ground surface to the total depth drilled.
 1. Collection Intervals:
 - a. 10-foot intervals or at any pronounced change of formation from ground surface to near the top of the Upper Patapsco aquifer.
 - b. 5-foot intervals when drilling the aquifer.
 2. Number of Samples:
 - a. One representative sample from each 10-foot sampling interval.
 - b. Two representative samples from each 5-foot sampling interval.
 - c. Minimum sample size is one U.S. pint.
 3. The Contractor shall obtain return flow (ditch) samples by removing from the circulating drilling fluid a representative sample of the formation by either collecting the samples in a cutting sample box, sediment shaker, a baffle in a ditch, or in some other manner approved by the Engineer.
 - a. Verify the depth at which samples are being collected.
 - b. Drill the specified sample interval and allow adequate time for a representative sample to be pumped up the borehole to ground surface.
 - c. Immediately after collection thoroughly wash each sample with clean water before placing in containers.
 - 1) Special care shall be taken when washing the samples to preserve the integrity of each formation sample.
 4. Immediately after collection place samples in suitable containers
 - a. Affix lids to avoid spillage and contamination and clearly labeled in a permanent manner with at least the following information:

- 1) Well I.D.
- 2) Depth interval represented by the sample.
- 3) Date collected.

5. Delivery of samples

- a. One set of samples collected while drilling the aquifer, selected in conjunction with the Engineer, shall be delivered by the Contractor to a qualified testing facility for sieve analysis.
- b. One set of samples shall be safely stored on-site by the Contractor until they are accepted by the Engineer for additional analysis, processing and distribution.

D. The Engineer will run a geophysical log and deviation survey on the completed pilot hole in accordance with Section 02760 Geophysical Logging & Borehole Video Surveys.

1. The Contractor shall assist and cooperate with the geophysical logging as required.

3.03 WELL CONSTRUCTION

A. The well shall be completed with 16-inch diameter outer casing and 12-inch diameter inner casing and well screen (one piece construction).

1. The well shall be constructed and developed to achieve maximum efficiency.

B. Method of Drilling

1. The Contractor shall use the mud rotary drilling method to drill the pilot hole and for reaming the hole to accept the well casings and screens.
2. The Contractor may utilize the reverse circulation method on the final reaming pass prior to installing well screens and filter pack.

C. The drilled hole for the surface casing, 16-inch diameter outer casing and 12-inch diameter SST inner casing and screen shall be reamed to the minimum diameters as specified below. The finished hole diameter is necessary to allow sufficient room for installation of the well casing, 2-inch diameter external monitoring pipe, filter pack and cement grout.

	Min. Hole Dia. (in.)
Drilling for 24-inch surface casing	30
Drilling for 16-inch outer casing	23
Drilling for 12-inch inner casing and screen	19

D. The sections of casing and screen shall be set in the drilled hole in such a manner that they will be round, plumb, and true to alignment.

1. Centralizers shall be installed on the screen and riser pipe at intervals as specified.

2. Casing joint connections shall be welded in accordance with the latest procedures set forth by the American Welding Society.
 3. The 2-inch diameter SST monitoring pipe shall be attached to the outside of the SST concentric reducer between the steel outer casing and SST transition blank and installed as the casing is lowered into the drilled hole.
- E. The Contractor shall conduct an alignment test in the outer casing after the casing has been installed in the drilled hole and prior to grouting the annular space.
1. Alignment shall be tested by lowering a 40-foot-long section of 6-inch diameter (or larger) pipe with guides on each end and in the middle. The outer diameter of the guides shall not be more than ½-inch smaller than the diameter of the casing being tested. The guides shall be a minimum of one foot long. The alignment tool shall be furnished by the Contractor.
 2. The alignment tool shall be lowered into the well on a cable. Installation of the alignment tool on rigid pipe will not be allowed.
 3. If the alignment tool fails to move freely throughout the length of the casing being tested, the alignment of the well shall be corrected by the Contractor at its expense. If the Contractor fails to correct the faulty alignment the Owner may refuse to accept the well and require another well be constructed at the site.
 - a. The Owner may waive the requirements for alignment if, in its judgment and based on the Engineer's recommendation, the defect is due to circumstances beyond the Contractor's control and/or the utility of the completed well will not be materially affected.
- F. Installation of Filter Pack- After the casing and screen are properly and securely positioned in the well bore the Contractor shall furnish and install filter pack in the annular space.
1. Contractor shall disinfect the filter pack prior to and during installation.
 2. The filter pack shall be placed adjacent to the well screen using the tremie pipe method.
 3. Uniformly fill the annular space to depth approximately forty feet above the top of the uppermost well screen.
 - a. Continually flush the borehole with clean water prior to and during filter pack placement to remove drilling fluid residual and natural clays.
 - b. Confirm filter pack level prior to placing grout.
- G. Initial Development- After installation of the filter pack and prior to grouting the casing the Contractor shall develop the well to remove heavy drilling fluid residuals and establish hydraulic communication between the well screen and borehole.
- H. Installation of Grout- Following initial development the Contractor shall grout the annular space between the drilled hole and the outer casing from the top of the filter pack to ground surface.
1. This shall be accomplished by pumping bentonite grout through a tremie pipe set outside the casing to near the top of the filter pack.

2. Establish circulation in the annular space prior to the start of grouting operations by pumping conditioned drilling fluid or clean water through the tremie pipe to clear obstructions.
3. After circulation has been established in the borehole, without significant interruption fill the entire annular space with grout pumped down the tremie pipe under pressure. Pumping shall continue until returns are observed at the ground surface.
4. No work shall be allowed to be performed in the well for at least 24 hours after completion of grouting operations to allow adequate time for the grout to set.
 - a. Notify the Engineer a minimum of 24 hours prior to the start of grouting operations.

3.04 WELL DEVELOPMENT

- A. Comprehensive Development- After the well casing has been grouted the Contractor shall thoroughly develop the well to remove fine material in the vicinity of the well screen, increase the material porosity of the undisturbed formation and remove the mud cake and drilling fluid from the borehole.
 1. This shall be accomplished by utilizing a method which will cause a reversal of flow through the well screens, combined with pumping, to remove color and fine materials.
- B. Acceptable development methods include dry swabbing, riser swabbing, mechanical surging, airlift pumping, air surging, high velocity jetting and pumping, chemical addition, over-pumping or other methods recommended by the Contractor and approved by the Engineer.
 1. The well screen shall be evenly developed over its entire length in approximate 5-foot increments starting at the deepest set screen interval and progressing systematically to the upper-most screen.
 2. Include vigorous development over each 5-foot interval.
 3. Development must be completed prior to installation of the test pump.
- C. Development shall result in the wells meeting minimum acceptable efficiency as specified in Section 02766 Well Acceptance Standards.
 1. If required, after the pumping tests the Contractor may continue development to achieve the minimum specified acceptance standards.
 2. The Contractor shall not receive any compensation for additional development to meet well efficiency requirements.

3.05 SUPPLEMENTAL WELL DEVELOPMENT

- A. Chemicals and other development aids to improve the efficiency of the well may be permitted, subject to the approval of the Engineer.
 1. The Contractor shall be solely responsible for the safe use and disposal of all development chemicals.

3.06 WELL COMPLETION

- A. Well Disinfection- The Contractor shall furnish all labor and materials to disinfect the well.
 - 1. Disinfection shall be per AWWA Standards for Deep Wells.
 - 2. The Contractor shall perform bacteriological compliance sampling in conjunction with the water quality sampling event during the constant rate pumping test.
- B. Video Survey of the Completed Well- At the conclusion of testing the Engineer shall perform a color borehole video survey in the well to confirm construction details and dimensions and document the depth and condition of the casings and screens in accordance with Section 02760 Geophysical Logging & Borehole Video Surveys
 - 1. The borehole video survey will be performed after the Contractor has removed the test pump from the well.
 - 2. The Contractor shall cooperate with and assist the Engineer as required.
 - 3. To help ensure a clear video image the Contractor shall run a minimum 1-inch diameter water line into the well to a point approximately 10 feet below the static water level.
 - a. Introduce potable water from the Owner's system into the well.
- C. Removal of Sediment Fill from Wells- If the video survey shows more than 1 foot of sediment fill in the bottom of the well the Contractor shall remove the fill.

3.07 RESTORED CONDITIONS

- A. Upon completion of the Work the Contractor shall restore the site in accordance with Section 02260 Finish Grading and Landscaping.

3.08 WELL ABANDONMENT

- A. If instructed by the Engineer that the drilled hole or new well must be abandoned, it shall be done in accordance with regulations of the State of Maryland.
 - 1. Cut off the well casing approximately 2-feet below ground surface and rake smooth the area.
 - 2. Provide all well abandonment reports and documentation.

END OF SECTION

SECTION 02540

EROSION AND SEDIMENT CONTROL

Part 1 GENERAL

1.01 DESCRIPTION

- A. Includes requirements for temporary soil erosion and sediment control at project site.

1.02 GENERAL

- A. The erosion and sediment (E & S) control permit for the project site where the well is to be drilled will be obtained by the elevated tank contractor under a separate contract.
 - 1. The Well Contractor shall communicate and coordinate with the tank contractor to ensure compliance with all elements of the overall E & S permit.
- B. As part of its site work the elevated tank contractor will install a stabilized construction entrance and rough grade the area identified for well construction activities.
- C. At a minimum, the Well Contractor shall provide necessary equipment, labor and supplies to furnish, install, maintain and remove silt fencing around the area identified for well construction activities in accordance with the project E & S permit and current Maryland Department of the Environment Standards and Specifications for Soil Erosion and Sediment Control manual.
 - 1. The receipt of a proposal by a bona-fide bidder shall be interpreted to mean the Contractor has familiarized himself with these regulations and rules of procedure and is fully cognizant of all requirements.

1.03 EROSION AND SEDIMENT CONTROL PLAN

- A. Prior to the start of construction, the Well Contractor shall submit to the Engineer for acceptance a schedule and plan for accomplishment of its required E & S work.
 - 1. No work shall be started until the E & S schedules and work plan have been accepted by the Engineer.
- B. No changes or revision to the approved E & S Plan shall be made without prior approval by the Engineer.

1.04 PERMITS

- A. The Well Contractor shall comply with all applicable provisions of the approved E & S permit obtained by the elevated tank contractor for the project.

Part 2 PRODUCTS (Not used)

Part 3 EXECUTION (Not used)

END OF SECTION

SECTION 02760

GEOPHYSICAL LOGGING AND BOREHOLE VIDEO SURVEYS

PART 1 GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections apply to this Section.
- B. Section 02520 Production Well

1.02 SUMMARY

- A. Scope: This section covers the Work, materials and equipment necessary to assist the Engineer in performing borehole geophysical and video surveys in the new Leonardtown production Well No. 6.
- B. Geophysical Logging and Borehole Video Survey Events- The Engineer will conduct borehole geophysical and video surveys in the production well in general accordance with the following schedule.

Item	Description	Logging Parameters
1	Initial pilot hole	Gamma, SP, Single-point resistivity, poly-electric, borehole deviation
2	Verify reamed hole for installation of 16-inch diameter casing and 12-inch diameter screen in the production well	Borehole deviation
3	Verify plumbness of the outer casing.	AWWA mechanical plumbness
4	Verify final as-built condition of the production well	Color borehole video survey

1.03 QUALITY ASSURANCE

- A. All borehole geophysical logs and video surveys will be performed by the Engineer to promote consistency and accuracy throughout the project.
 - 1. The Contractor will assist the Engineer in those efforts as required.
- B. The Engineer will provide the Contractor with up to three paper copies of each geophysical log in the field. All log data will be presented in ASCII format.
- C. The Engineer will provide the borehole video surveys to the Contractor in a digital media (flash drive or equivalent) format.
- D. The Contractor shall make sure any un-cased hole is drilled to full diameter as specified and is not impacted by intrusion into the borehole from swelling clays or any other reason.
- E. The Contractor shall be responsible for retrieving any geophysical tools lost due to the collapse of a drilled hole.
- F. At the direction of the Engineer the Contractor will properly abandon any drilled hole containing

lost geophysical tools and will re-drill the hole to the designated depth and diameter at no additional cost to the Owner for abandonment or re-drilling.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION

3.01 GENERAL

- A. The Contractor shall notify the Engineer not less than 24-hours prior to the time the Contractor would have the Engineer initiate logging activities.
- B. The Contractor shall have the pilot hole, reamed hole and well casings prepared for logging with geophysical survey equipment from ground surface to total depth.
- C. Upon completion of well construction, development and testing and prior to installation of the permanent pumping equipment, the Engineer will conduct a color borehole video survey in the well to confirm construction details and dimensions.
 - 1. The Contractor shall take appropriate steps to help make sure a clear video image can be obtained.
 - 2. At a minimum, run a 1-inch diameter hose or temporary water line into the well to a depth approximately 10 feet below the static water level and introduce potable water from the Owner's system into the well.
 - 3. Assist the Engineer in conducting the video survey as required.

END OF SECTION

SECTION 02762

PUMPING TESTS

PART 1 GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. Section 02520 Production Well
- C. Section 02760 Geophysical Logging & Borehole Video Surveys
- D. Water Quality Sampling and Analysis
- E. Section 02766 Well Acceptance Standards

1.02 SUMMARY

- A. The Contractor shall pump the well to determine aquifer characteristics, well efficiency, and to collect representative water samples from the aquifer.
 - 1. Pumping tests shall occur at the rates, times and for durations as summarized in the following table or as otherwise directed by the Engineer:

	Est. Duration (Hrs.)	Est. Rates (gpm)
Step-rate pumping test following development	6	600; 800; 1,000; 1,300
24-hour constant rate pumping test	24	1,200

PART 2 PRODUCTS

2.01 GENERAL

- A. Provide all materials, equipment and incidentals, including test pump and column pipe, temporary power, and flow measurement equipment to perform pumping tests in the completed production well as specified.

2.02 SUBMITTALS

- A. Provide shop drawings and submittal data for the following items.
 - 1. Test pump performance curve.
 - 2. Rossum sand content testing device.

2.03 TEST PUMPS

- A. Submersible test pumps for step-rate and constant rate pumping tests.
 - 1. Furnish and install a complete submersible pumping system, including pump, motor, column pipe, power unit (generator) and all ancillary items.
 - 2. Install test pump to an estimated depth of approximately 400 feet bgs. Test pump shall be capable of operating between the approximate pumping rates of 600 gpm and 1,300 gpm.

2.04 FLOW & WATER LEVEL MEASURING DEVICE

- A. Furnish and install an industry-standard orifice pipe and machined orifice plate and piezometer tube or flow meters capable of measuring the pump discharge within plus or minus 3 percent accuracy over the required flow range.
- B. Furnish and install pressure transducer and data logger in the pumped well to measure and record water level response in the well at intervals as specified.
 - 1. Provide separate manual water level measuring devices (well probes) to collect backup readings.
 - 2. Pressure transducers and well probes shall be capable of measuring water level changes of 0.01 feet.

2.05 SAND CONTENT MEASURING DEVICE

- A. Furnish and install a sand content measuring device such as a centrifugal sand separator as manufactured by Roscoe Moss Company or equal. The measuring device shall be capable of measuring a minimum sand content of 2 parts per million.

2.06 DISCHARGE PIPING

- A. Furnish, install and maintain temporary discharge hose and piping of sufficient size and length to convey water discharged from the well during pumping tests to the approved discharge location.
 - 1. Maintain integrity of hoses and piping to eliminate leakage.
 - 2. Direct pump discharge into sediment bags prior to disposal.

PART 3 EXECUTION

3.01 PUMPING TESTS

- A. The Contractor shall provide the Engineer with not less than 48- hour notice prior to the start of all pumping tests.
- B. Initial Step-Rate Pumping Test- The Contractor shall run an initial step-rate pumping test as directed by the Engineer.
 - 1. The results of the step-rate test will be used to determine the appropriate rate for the constant rate pumping test to follow.

- a. 6-hour step-rate pumping test upon completion of well development.
- 2. During testing the Contractor shall operate the pump and vary the discharge as directed by the Engineer.
- C. Constant Rate Test: After a rest period of at least 12 hours, during which time the well has recovered from the step-rate test, the Contractor shall conduct a constant rate pumping test as directed by the Engineer.
 - 1. 24-hour constant rate pumping test upon completion of step-rate pumping test.
 - a. 24-hour recovery period or as otherwise directed by the Engineer.
- D. Collection of Water-Level Data: The Contractor shall collect water level measurements in the pumped well during both the pumping and recovery portions of the long-term pumping test as follows:

Time Interval	Frequency
0-20 Minutes	Every minute
21-40 Minutes	Every 2 minutes
41-100 Minutes	Every 5 minutes
101-240 Minutes	Every 10 minutes
241-1440 Minutes	Every 30 minutes

- 1. During testing the Engineer may designate a frequency which varies somewhat from the above.
- E. At the start of testing the Contractor shall provide at least two people to monitor the proper operation of the test pumping equipment, maintain a constant pumping rate, and measure and record pumping test data for the first two hours of the test.
 - 1. The Contractor shall have at least one person on site at all times during the remainder of the pumping and recovery portions of the pumping tests.
 - 2. The Contractor shall provide adequate safe, dry access to the well, test pump, power unit and pump discharge sampling point to allow for the timely and uninterrupted collection of water level readings and samples during the pumping and recovery portion of all pumping tests.
- F. Pump Failure: During both the step-rate and constant rate pumping tests, failure of pump operation during the first 120 minutes of pumping, or for more than 5 minutes at any time thereafter, shall require suspension of the test until the water level in the pumped well has recovered to its original level.
 - 1. The time of the restart of the test shall be approved by the Engineer and shall consider staff scheduling and water sampling.
 - 2. The Engineer shall be the sole judge as to whether recovery has been completed and when the pump shall be restarted.

3. During testing the pumping rate shall not fluctuate more than two percent of the designated rate or the test may be terminated and run again at the Contractor's expense.
- G. Discharge of Water: The Contractor shall comply with all provisions of all applicable discharge permits required for the project and correct at its expense any erosion or other damage caused by the water discharged during the pumping tests.

3.02 WATER QUALITY SAMPLING

- A. The Contractor shall collect water samples near the end of the long-term pumping test as specified.
1. The Engineer may conduct separate field testing for turbidity, pH, temperature and conductivity to supplement the laboratory analysis. The contractor shall cooperate with and assist in these field sampling efforts, as required.

END OF SECTION

SECTION 02766

WELL ACCEPTANCE STANDARDS

PART 1 GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. Section 02520 Production Well
- C. Section 02760 Geophysical Logging & Borehole Video Surveys
- D. Section 02762 Pumping Tests

1.02 SUMMARY

- A. In order that the Owner is provided with a sand and silt free, bacteria free, turbidity free and efficient well, certain minimum standards must be met before the new well is accepted. The Contractor shall meet these standards within its bid price.
 - 1. The Owner may waive the acceptance level of certain standards if it determines failure to meet the standard was beyond the Contractor's reasonable control and/or will not materially affect the long-term use of the completed well.
- B. Minimum Acceptance Standards:
 - 1. Well Construction: The well must be constructed in accordance with the plans and specifications for this project.
 - 2. Sand and Silt Content: Water samples collected during the constant rate pumping test shall have a concentration of less than 2.0 mg/l of total suspended and settleable solids.
 - 3. Turbidity: Water samples collected during the constant rate pumping test shall have a turbidity concentration of 1.0 NTU or less. This result must be obtained within 5 minutes of starting the pump and thereafter while pumping.
 - 4. Chlorine Residual: The chlorine residual shall be less than 0.1 mg/l as determined in the field at the time of all bacteriological sampling.
 - 5. Efficiency: The well shall be at least 75 percent efficient as determined by the Engineer based on the results of the 24-hour constant rate pumping test.
 - a. The values of aquifer transmissivity (T) and storativity (S) used in the determination of well efficiency will be based on data gathered during the construction and long-term pumping test.
 - b. The efficiency will be determined by comparing the actual drawdown in the pumped well with the theoretical drawdown calculated at a distance equal to the inside diameter of the well screen.

- 1) The time for the analysis will be between 10 minutes and 24 hours during the drawdown and/or recovery portion of the pumping tests.
 - 2) The time interval and methods necessary for the calculations will be selected by the Engineer. The theoretical drawdown in the well will be calculated using the Theis non- equilibrium well equation. Partial penetration of the aquifers will not be considered in the determination of efficiency if 80 percent or more of the aquifer is screened.
6. Alignment: The well shall be properly aligned and have a sufficient diameter to allow the insertion of test pumps and development tools from the ground surface to the bottom of the well without binding.
- C. Additional Work to Meet Acceptance Standards- If the Contractor fails to meet any of the acceptance standards it may be allowed to continue development and test pumping for a period of time as agreed upon by the Owner. The well shall then be retested if necessary.
1. No additional payment shall be made for additional development or continued test pumping.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

END OF SECTION

SECTION 02767

WELL CASING AND BLANK

PART 1 GENERAL

1.01. RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. Section 01300 Submittals
- C. Section 02520 Production Well
- D. Section 02768 Well Screen

1.02. SUMMARY

- A. This section covers the work, materials and equipment necessary for furnishing and installing the well casing for Leonardtown Well No. 6.
- B. Mill Markings: All material shall bear mill markings that will readily identify it.
- C. Prior to the installation of any material the Contractor shall submit a detailed cross section of the proposed well to the Engineer for review and acceptance.
 - 1. The drawing shall indicate the length, diameter, wall thickness of the casing to be installed.
- D. Pipe Tally Sheets: The Contractor shall accurately measure and record the individual lengths of casing prior to installation.
 - 1. The length of each piece of casing shall be clearly marked on each item in a permanent manner acceptable to the Engineer.
 - 2. Tally sheet to include mill/heat number and length listed in the sequence of installation. The tally sheet shall be provided to the Engineer at least 24 hours prior to installation.
 - 3. A sketch of the proposed well is shown on the Well Detail Drawing, Figure 2.

PART 2 PRODUCTS

2.01. GENERAL

- A. The Contractor shall provide all materials and equipment necessary for joining and installing the casing as specified.

2.02. SUBMITTALS

- A. Provide shop drawings and submittal data for the following items.

1. Steel surface casing
2. 16-inch diameter steel outer casing
3. 12-inch diameter SST inner casing
4. 2-inch diameter SST external monitoring pipe
5. 2-inch diameter SST external socket-weld pipe couplings

2.03. WELL CASING & BLANK

- A. Provide all casing of acceptable types, thicknesses, schedules, diameters and weights.
 1. All casing shall be new, first quality material and free from defects.
- B. All well casing and blank pipes shall be made of factory machine beveled, plain-end pipe which conforms to ASTM Class A-53 and AWWA A-100.
 1. Field beveling of the pipe will not be allowed.
 2. The casing and blank pipe shall have the following characteristics and dimensions.

<u>Item</u>	<u>Nominal Dia. (in.)</u>	<u>API Standard</u>	<u>Wall Thickness (in.)</u>	<u>Material</u>
Surface casing	24	5L	0.375	Steel (ASTM A53, Grd. B)
Outer casing	16	5L	0.375	Steel (ASTM A53, Grd. B)
External Monitoring Pipe	2	5L	0.154 (Sch. 40)	T304L SST
Inner casing, lap pipe & sump	12	5L	0.375	T304L SST

2.04. FITTINGS AND ACCESSORIES

- A. Provide all fittings, centering guides and other items as may be necessary for complete installation.
- B. End Plate- The bottom of the sump installed below the deepest set well screen shall be fitted with a sand tight end plate made of the same SST material as the sump to prevent electrolysis and corrosion.
- C. Centering Guides
 1. Centralizers shall meet the requirements of API Specification 10D.
 2. Furnish and install bow-spring type centralizers.
 3. Centralizer material shall be compatible with the casing to which they are fastened.
- D. 2-Inch Diameter Stainless-Steel Monitoring Pipe.
 1. Furnish and install a 2-inch diameter Schedule 40 Type 304 SST monitoring pipe

attached to the outside of the steel outer casing.

PART 3 EXECUTION

3.01. GENERAL

- A. The base bid length for 16-inch diameter steel outer casing shall be 650 feet.
- B. Casing and blank lengths to be installed shall be submitted by the Contractor for review and acceptance by the Engineer.
 - 1. Lengths shall be based on driller's log, formation samples and geophysical log.
 - 2. Casing shall be clearly numbered to correspond with the order of installation presented in the tally sheet using an indelible marker or crayon. Joints shall be laid out in the order of installation with the joint numbers clearly visible.
- C. All casing and blank sections shall be installed in a manner selected by the Contractor and reviewed by the Engineer that is appropriate for the construction of the well as specified.
 - 1. Casing and blank sections shall be installed in the drilled hole in such a manner that they will be round, plumb and true to alignment.
 - 2. The 2-inch diameter external SST monitoring pipe shall be attached to the outside of the outer casing to a depth and in a manner specified and installed as the casing is lowered into the drilled hole.
 - a. Field connections of the external monitoring pipe shall be made with unthreaded socket-weld SST couplings. Butt-weld or threaded and coupled (T & C) pipe will not be allowed.
 - b. Attach monitoring pipe securely to the outer casing every 20 feet in a manner approved by the Engineer.
 - c. Terminate external monitoring pipe with a threaded connection and SST cap not less than 24-inches above finished grade or as otherwise directed by the Engineer.
- D. Casing, blank and screen connections shall be welded, with all welds conforming to the latest standards of the American Welding Society. Resulting casing joints shall have the same structural integrity as the casing itself.
- E. Attach centering guides to the casing spaced at 120-degree intervals around the casing 5 feet from the bottom end and thereafter every 100 feet.
- F. Casing and blank sections which fail, collapse or separate during construction shall be removed from the hole and repaired or replaced at the Contractor's sole expense.

END OF SECTION

SECTION 02768

WELL SCREEN

PART 1 GENERAL

1.01. RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. Section 01300 Submittals
- C. Section 02520 Production Well
- D. Section 02767 Well Casing & Blank

1.02. SUMMARY

- A. This section covers the work, materials and equipment necessary for furnishing and installing the well screen for the Leonardtown production Well No. 6.
- B. Mill Markings: All screen sections shall bear mill markings that will readily identify it.
- C. Prior to the installation of any material the Contractor shall submit a detailed cross section of the proposed well to the Engineer for review and acceptance.
 - 1. The drawing shall indicate the length, configuration, diameter and slot size of the screen to be installed.
- D. Screen Length Talley Sheets: The Contractor shall accurately measure and record the individual lengths of individual screen sections prior to installation.
 - 1. The length of each piece of screen shall be clearly marked on each item in a permanent manner acceptable to the Engineer.

PART 2 PRODUCTS

2.01. GENERAL

- A. The Contractor shall provide all materials and equipment necessary for joining and installing the screen as specified.
- B. All materials to be furnished as part of the Work specified herein shall be new and of acceptable quality and free from defects.

2.02. SUBMITTALS

- A. Provide shop drawings and submittal data for the following items.
 - 1. SST relief screen.
 - 2. SST well screen.

2.03. WELL SCREEN

- A. Provide the well screen and all material and equipment necessary to install the well screen as specified.
 - 1. All well screens shall be new, first quality material and free from defects.
- B. Rod-based screen- All SST rod based well screens shall consist of welded, continuous gauge wedge wire and rib wire.
 - 1. Furnish 12-inch diameter rod-based well screen.
 - 2. The screen shall be completely fabricated of Type 304 SST wound wire reinforced by longitudinal bars. The bars shall have a cross section that will form an opening between each adjacent coil of wire that is shaped in such a manner as to increase in size inward. The wire shall be firmly attached to the bars, which in turn will be attached to a coupling adapter.
 - 3. Screen slot size will be determined based on the sieve analysis of the formation samples collected during pilot hole drilling and the type and size of filter media used.

2.04. FITTINGS AND ACCESSORIES

- A. Provide weld rings, fittings, centering guides, etc., as necessary for a complete installation.
- B. Centering Guides
 - 1. Centralizers shall meet the requirements of API Specification 10D.
 - 2. Furnish and install SST bow-spring type centralizers compatible with the material to which they are fastened.

PART 3 EXECUTION

3.01. GENERAL

- A. The base bid screen lengths shall be 130 feet.
- B. The base bid inner casing/blank section length shall be 150 feet.
 - 1. 10-foot transition blank between concentric reducer and uppermost well screen.
 - 2. 10-foot sump at the base of the deepest set well screen.
 - 3. Additional blank sections as required.
- C. The final screen and blank lengths to be installed shall be submitted by the Contractor for review and acceptance by the Engineer.
 - 1. To be based on driller's log, formation samples and geophysical logs.
 - 2. Screen shall be clearly numbered to correspond with the order of installation presented in tally sheet using indelible marker or crayon. Joints shall be laid out in the order of installation with the joint numbers easily visible.

- D. All screen sections shall be installed in a manner selected by the Contractor and reviewed by the Engineer that is appropriate for the construction of the well as specified.
 - 1. Screen sections shall be installed in the drilled hole in such a manner that they will be round, plumb and true to alignment.
- E. Screen connections and screen to blank section connections shall be welded, with all welds conforming to the latest standards of the American Welding Society.
 - 1. Resulting joints shall have the same structural integrity as the casing and screen weld rings.
- F. Attach centering guides to the screen spaced at 120-degree intervals around the screen and blank sections every 100 feet or at a minimum at the top and bottom of screen if less than 100 feet in length.
- G. Screen sections which fail, collapse or separate during construction shall be removed from the hole and repaired or replaced at the Contractor's sole expense.

END OF SECTION

SECTION 02770

SUBMERSIBLE PUMP AND MOTOR

PART 1 GENERAL

1.01. RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. Section 01300 Submittals
- C. Section 02520 Production Well
- D. Section 02772 Pitless Unit
- E. Section 02766 Well Acceptance Standards

1.02. SUMMARY

- A. Furnish all material, equipment and appurtenances necessary for the complete and satisfactory installation and testing of a new submersible pump and motor.
 - 1. All materials and equipment furnished as part of this section shall be new and of acceptable quality and free from defects.

Pump Type	Submersible
Column Type	Steel T & C
Column Size (in.)	8
Column Length (ft.)	400
Design GPM	1,100
Design TDH	500
Motor Horsepower	200
Max. Motor Speed (RPM)	1,800
Pump Material	Cast Iron
Motor Material	SST

1.03. PUMP WARRANTY

- A. The pump manufacturer shall warrant the unit being supplied to the Owner against defects in material and workmanship for the greater period of one year or 6,000 hours under normal use, operation and service.

PART 2 PRODUCTS

2.01. GENERAL

- A. Provide all materials as specified.

2.02. SUBMITTALS

- A. Provide shop drawings and submittal data for the following items.
1. Pump performance curve showing head vs. capacity; pump efficiency vs. capacity; and horsepower vs. capacity.
 2. Electrical characteristics of the motor.
 3. Drawings of the column piping giving all dimensions and connection details between the pitless unit spool pieces and pump column pipe.
 4. Pump check valves.
 5. Submersible pump cable.
 6. Column pipe.
- B. Manufacturer's Statement of Competency: The manufacturer of the pump shall demonstrate it has built pump units of the same general type and size that have been in successful operation for at least the past ten years

2.03. COLUMN PIPE

- A. Furnish and install new steel pump column pipe in standard 20-foot lengths suitable for submersible pump applications.
1. One piece of column pipe may be a random length, if required, to accommodate the required intake setting.
 2. The discharge column pipe shall be made of standard wall steel pipe. The dimensions for the column pipe shall be as indicated in the table below.

Column Size (in.)	8
Type	T & C
Column pipe O.D. (in.)	8.625
Column pipe I.D. (in.)	7.981
Wall Thickness (in.)	0.322
Weight of column (lb/ft.)	28.55
Approx. coupling O.D. (in.)	9.75

2.04. CHECK VALVES

- A. Furnish and install new standard ductile iron threaded in-line check valves at the first piece of column pipe above the pump discharge and every 200 feet in the pump column setting thereafter, or as recommended by the pump and/or check valve manufacturer and approved by the Engineer.

- B. The valves shall be Flomatic Model 80 as manufactured by Flomatic Corporation of Glen Falls, NY or approved equal. A minimum of two check valves shall be installed.

2.05 SUBMERSIBLE PUMP CABLE

- A. Provide new submersible pump cable type XHHW/PVC, UL Type TC, 600-volt copper XHHW2, single cable assembly with three conductors and a ground wire.
 - 1. Each conductor shall be insulated by synthetic plastic insulation suitable for continuous immersion in water.
 - 2. The cable shall be protected with a stainless-steel guard where it passes the bowl assembly to prevent damage from contact with the well casing.
 - 3. The minimum size of cable shall be as stated in ASA specification B-58.1, Section B4.3. The ground wire will be connected to the pumping unit and surface ground as required by current codes and regulations.
- B. The cable shall have class "B" stranding or better and be capable of fitting through the pitless unit.
 - 1. Connect ground wire to the pumping unit and surface ground as required by current codes and regulations.
 - 2. The cable shall conform to U.L. Standard 83 for submersible cable.
 - 3. Provide cable in sufficient length to extend from the proposed motor location to the well head junction box.

2.06 SUBMERSIBLE PUMP

- A. Provide submersible well pump designed to meet the conditions of service (pump capacity and total dynamic head) as specified.
 - 1. The final total dynamic head condition for the new pump shall be determined based on the results of the long-term pumping test in the well.
 - 2. If changes in discharge head require a larger or smaller horsepower motor than specified, or more or fewer pump bowl stages than included for the original conditions of service as specified, the additional or lesser cost will be adjusted by way of a contract change order.
- B. Pump Bowl Assembly: The pump bowl assembly shall be cast iron construction, with bowls, suction case and discharge case made of close-grained cast iron equivalent to ASTM, A- 48 Class 30.
 - 1. The bowl water passages shall be porcelain lined and machined and fitted to close tolerance.
 - 2. The bowls shall be equipped with replaceable bronze wear rings on the suction side of the impellers and bronze sleeve-type bushings to support the shaft. The bronze alloy shall be ASTM B505-8369.
 - 3. The bowls shall be of the flanged type and connected with Type 316, strain hardened, stainless steel studs or cap screws, nuts and washers.

4. The impellers shall be of the enclosed design and be cast from bronze alloy ASTM B584-875, accurately machined and balanced for optimum performance. Impellers shall be fastened to a Type 410 SST bowl shaft with Type 416 SST tapered collets. The bowl shaft shall be coupled to the motor shaft with SST steel coupling.
 5. The discharge outlet of the pump shall be threaded and suitable for connection to the steel T & C column pipe.
 6. The exterior of the pump bowl assembly shall be coated with an NSF-61 Certified epoxy coating approved for potable water use.
 7. Acceptable manufacturers are Simflo, Goulds, Flowserve, Peerless, Byron-Jackson, and other Owner-approved equals.
- C. The suction adapter shall be made of the same material as the pump bowl assembly and provide a long bearing profile to stabilize the shaft and to ensure accurate alignment between the pump shaft and motor shaft and to avoid radial thrust on the motor bearing.
1. The suction case shall incorporate a SST screen having a minimum open area equal to four times the open area of the impeller.
 2. The flanges for connection to the motor and the pump must provide an accurate rabbet fit to insure positive alignment of the pump and motor.

2.07 SUBMERSIBLE MOTOR

- A. The motor shall be of the vertical submersible induction type designed for continuous underwater duty operation using 3-phase, 60 cycle, 460-volt alternating current.
1. The motor shall be inverter-duty rated suitable for use with a VFD. The motor shall not be loaded in excess of its nameplate rating at design, or in excess of 110% of its nameplate rating at any operating condition.
 2. The motor shall be the water filled type with encapsulated windings and be equipped with a mechanical seal to prevent the water from leaking from the motor. Mercury seals are not acceptable.
 3. Motor thrust bearing shall be of carbon disc design and be of ample capacity to carry the weight of all rotating parts plus the hydraulic thrust.
 - a. The bearing shall be of such size that the average life rating is based on 10 years of continuous operation and shall be capable of operating with rotation in either direction.
 - b. Thrust capacity, when operated in reverse rotation, shall not be less than 75% of rated thrust capacity.
 - c. The motor shall have a separate carbon bearing capable of sustaining the temporary up- thrust conditions experienced each time the pump is started. The motor shall be totally enclosed, utilizing an elastomer expansion diaphragm for the equalization of internal and external pressure.
 - d. The motor jacket, end bells, motor shaft and coupling shall be 300 series stainless steel. Motors with mercury seals are not acceptable. Motor efficiency shall be a minimum of 85% at full load. The motor horsepower shall

be as indicated above.

4. Acceptable motor manufacturers are Centri-Pro, Franklin, Hitachi, and other Owner-approved equals

PART 3 EXECUTION

3.01. INSTALLATION OF PUMP AND MOTOR

- A. The submersible pump and motor shall be set to the indicated depth and connected to the new Baker Monitor pitless unit.
- B. The power cable shall be spliced to the motor leads by a qualified electrician or factory trained technician. The power cable shall be attached to each section of column pipe at a minimum of three points utilizing a commercial banding tool and SST banding material or some other manner acceptable to the Engineer.
- C. Provide 20 feet of extra submersible pump cable for future connection and tie-in by others.
 1. Coil additional cable inside pitless adapter.
- D. The Contractor shall install with the pump, to the top of the pump bowl assembly, one 1¼ - inch O.D. polyethylene tubing. The tubing shall be secured to the column pipe at not less than two points on each column section and shall terminate in the new pitless adapter unit to be installed on the well.
 1. The Contractor shall take precautions to ensure that the continuous poly tubing is not bent or kinked and will allow free access of a water level measuring probe.
- E. The Contractor shall thoroughly disinfect the new well and pump during installation.
- F. Collect water samples during equipment field testing and acceptance for bacteriological compliance sampling. The Contractor shall be required to re-chlorinate and sample the well, if required, until satisfactory bacteriological results are achieved.

3.02. EQUIPMENT TESTING AND ACCEPTANCE

- A. Step/Pressure Test: After the pumping equipment is installed the Contractor shall furnish all required equipment and perform a step/pressure pumping test to open discharge as directed by the Engineer.
 1. As a result of the step/pressure pumping test the pump shall be within +/- 2 % of the manufacturers certified test curve at all points within 15% of either side of peak efficiency.
 2. Total time for start-up and testing will not exceed four hours. The cost for equipment testing and acceptance shall be included in the lump sum price for the pump and motor.

END OF SECTION

SECTION 02772

PITLESS UNIT

PART 1 PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section
- B. Section 01300 Submittals
- C. Section 02520 Production Well
- D. Section 02766 Well Acceptance Standards

PART 2 PRODUCTS

2.01. PITLESS UNIT

- A. The Contractor shall furnish and install a heavy-duty pitless unit as manufactured by Baker Manufacturing Company, Monitor Division.
 - 1. Standard Industrial pitless unit constructed of Schedule 40 steel pipe designed to fit the specified well casing.
 - 2. The pitless unit shall have a machine beveled, plain end to be welded to the well casing. The discharge orientation and bury depth as required to connect the well to the new raw water piping to be installed by others under separate contract.
 - a. Provide mechanical joint discharge connection.
 - b. The discharge center line (bury depth) shall be approximate five feet below existing grade and the pitless upper casing shall extend two feet above grade, or as otherwise directed by the Engineer.
 - 3. The upper casing shall be factory assembled to the discharge body, and the lift out and hold down mechanism shall be factory assembled to the spool. The upper casing shall be coated with a catalytic epoxy paint and provide a watertight connection from the discharge body to the well cap.
 - a. The hold down mechanism shall prevent rotation of the pitless spool relative to the discharge body at full rated locked rotor torque of the submersible pump motor.
 - b. The spool must also have a factory assembled lift out pipe and bail to allow lifting a water filled drop pipe and pump out of the well.
 - 4. All internal (wetted) surfaces shall be constructed of Schedule 40 Type 304 SST including the internal spool piece, which shall be the same diameter as the pump column.
 - a. The internal working components of the pitless unit shall have a bronze locking type wedge with an "o" ring forced against a Type 304, non-magnetic,

SST seat.

5. The pitless unit shall be equipped with a watertight cast iron well cap and down-turned air vent with screen.
 - a. The watertight cap shall be secured to the pitless casing with a compression gasket.
 - b. The top of the cap shall be removable without affecting the sealed conduit or wiring and have a separate protected downward facing stainless steel screened well vent with pipe nipple.

PART 3 EXECUTION

3.01 INSTALLATION OF PITLESS UNIT

- A. The pitless unit case shall be joined by welding the unit to the steel well casing.
- B. The ground shall slope away from pitless unit case in all directions.
- C. Excavate around the well casing as required and in accordance with all Federal, State and local regulations to the depth where well casing is to be cut off.
- D. Cut off the well casing perpendicular to the casing centerline.
- E. Install the pitless unit in accordance with manufacturer's recommendations.
 1. Lower the pitless unit into place and rotate the discharge outlet to the desired orientation and weld the pitless unit to the well casing.
- F. Complete electrical service and install pitless cap.
- G. Connect discharge outlet to distribution line and complete all wiring.
- H. Operate the unit under power for a sufficiently long time as determined by the Engineer to verify no leaks are present.
- I. Once it has been determined the system is operating satisfactorily backfill the hole.
 1. Exercise care when installing fill under the discharge line before back filling.

END OF SECTION

APPENDIX A

MDE-SAMPLING PROCEDURES FOR NEW WELLS

Water Supply Program

New Public Well Procedures

- 1) If the well is for an existing system that requires new treatment or storage facilities, or if it is an entirely new water system, a Maryland Department of the Environment (MDE) water construction permit is required. The water system's engineer should contact the Water Quality Infrastructure Program (WQIP) at (410) 537-3757, to inquire about the construction permit process. New water systems must also submit a capacity development plan as a part of the construction permit process. Contact the Water Supply Program (WSP) for questions concerning capacity development at (410) 537-3706.
- 2) The water system should notify the WSP Source Protection and Appropriation Division at (410) 537-3590 to request a modification, or obtain a new Ground Water Appropriation Permit if necessary.
- 3) The water system (or driller) needs to apply for a well drilling permit from the local county environmental health department.
- 4) The local health department should forward the well drilling application to the WSP for wells serving Community and Non-Community Non-Transient Water Systems.
- 5) The WSP Source Protection and Appropriation Division, at (410) 537-3714, will review the well site to ensure its suitability as a potential water supply source. This consists of reviewing the proximity of the well to potential contamination sources (which may take up to two weeks from the time of application) and, in most cases, a site visit. If the site is approved, the WSP (Source Protection & Appropriation Division) will issue new well sampling requirements.
- 6) The driller must drill and develop well according to well construction regulations. The Ground Water Permits Program (GWPP) may request to supervise the grouting to ensure compliance with well construction regulations. A copy of the well completion report should be sent to the GWPP, and they will forward it to the WSP.
- 7) The new well must be sampled for all required water quality parameters. A copy of the sample results on MDE forms is required be sent to the WSP.
- 8) The WSP Engineering & Technical Assistance Division will review the sample results. If necessary, the WSP will issue treatment requirements and request a pre-design meeting with the system or its consultant, to discuss appropriate treatment of the raw water.
- 9) The water system will submit design and specification plans to WQIP for the construction of proposed treatment (if necessary). Water system operators should be certified in the appropriate class.
- 10) Upon receipt and approval of water quality data and the well completion report, WSP will issue a Certificate of Potability.
- 11) The well, with treatment if necessary, can now be put into use.

**MARYLAND DEPARTMENT OF THE ENVIRONMENT
WATER SUPPLY PROGRAM**

SAMPLING PROCEDURES FOR NEW PUBLIC SUPPLY WELLS (CWS)

The current requirements for testing of new water supply wells for community water systems are summarized in this document. The tests must be completed and submitted to the Water Supply Program (WSP) for approval prior to placing a well in operation. This testing is also required prior to issuance of MDE's Water Treatment Facilities construction permit. **The samples must be collected by a State-certified sampler and the tests performed by a State-certified lab using approved drinking water methods.** *The labs are required to submit data using MDE self-monitoring report forms for all primary standards. Please organize the data according to the headings A through I described below. In addition, laboratory reports and chain of custody forms are to be submitted from all laboratories performing analyses.* It is important that the sample be representative of the water in the aquifer, that there is no contamination from water used during drilling or well development, and that the well is fully developed prior to sample collection. To ensure the collected water sample is representative of the water in the aquifer, at least three times (3x) the well volume should be pumped out of the well by a method other than air. *The best time to sample is typically near the conclusion of an aquifer test or well yield test.* Stable turbidity, temperature, pH and conductivity are good indicators to determine when to sample. The well and any down-hole equipment must be disinfected and dechlorinated prior to bacteriological sampling. The water needs to be free of chlorine prior to collection.

There often are site specific conditions which could warrant testing additional parameters, testing certain parameters over an extended period or testing a more limited number of parameters. Requests for reduction in testing parameters must be made in writing with reasons provided. If the new well is in an existing well field or replacing an existing well, the required testing may be reduced.

For proper sampling containers, preservation and holding times consult with an approved laboratory. Testing for all parameters is to be performed on unfiltered samples.

The following parameters are required to be tested for new sources:

- A. Bacteriological** - test for enumeration (MPN) of total coliform and *E.coli*, if total coliform is present (include check for chlorine residual).
Final bacteriological testing will be required for raw and finished water after the water treatment facility has been constructed and disinfected.
- ** Additional bacteriological results will be required within 1 month prior to the issuance of the Certificate of Potability.**
- B. Turbidity, Temperature, pH, Conductivity** - it is often useful to determine if the pH rises with stirring. Temperature, pH, and conductivity are required to be analyzed at the time of collection in the field. Report initial (field) and final (laboratory) values.
- C. Secondary Constituents/Other Constituents**
- | | | |
|---------------------------------|---|--------------------------------|
| 1) Chloride | 7) Iron | 12) Sodium |
| 2) Alkalinity | 8) Manganese | 13) Bromide |
| 3) Hardness | 9) Zinc | 14) Total Organic Carbon (TOC) |
| 4) Total Dissolved Solids (TDS) | 10) Color | |
| 5) Total Sulfide | 11) free CO ₂ required for sources with pH less than 6.0
(as based upon pH analysis collected in the field) | |
| 6) Calcium | | |

D. Inorganic Compounds (IOCs)

Test for all contaminants listed on Inorganic Self-Monitoring Report (IOC/MDE/WMA/COM.008) except as noted below. Detection levels for testing are in every case ½ the Maximum Contaminant Level (MCL) or less and can be found in 40 CFR 141.

**Nitrate samples will be required within 3 months prior to the issuance of the Certificate of Potability for all sources when levels are 5 mg/l or greater.

- 1) Also test for lead and copper. Detection level for lead is 5 parts per billion (ppb) and is 50 ppb for copper.
- 2) Asbestos and cyanide testing are required for sources vulnerable to these contaminants, as determined by the Water Supply Program.

E. Volatile Organic Compounds (VOCs)

Test for all contaminants listed on Volatile Organic Self-Monitoring Report (VOC/MDE/WWMA/COM.032). Required detection level for all VOC contaminants is 0.5 ppb.

F. Synthetic Organic Compounds (SOCs)

The SOCs are listed on Organic Self-Monitoring Report (SOC/MDE/WMA/COM.007). Wells are classified by the WSP to be in confined or unconfined aquifers. *Testing for SOCs is not required for wells in confined aquifers and is not required for CH-21-0063.*

Testing for SOCs is required for wells in unconfined aquifers. Diquat, dioxin, endothall and glyphosate testing is not required at unconfined sources. Dioxin testing, however may be required at unconfined sources near military installations or superfund sites.

G. Radiological Contaminants

- 1) Gross alpha particle radioactivity.
- 2) Radium-226 and radium-228.
- 3) Uranium (total).
- 4) Gross beta and photon radioactivity from man-made radionuclides*** is only required when a supply is potentially affected by a source of radioactive contamination.
- 5) Radon testing is required for wells in Baltimore, Carroll, Cecil, Frederick, Harford, Howard, Montgomery, and Washington Counties.

H. Testing for Surface Water Influence

If your cover letter specifies testing for Groundwater Under the Direct Influence (GWUDI), please see the attached sampling protocol with directions on the sampling and analyses. Any questions regarding this requirement should be directed to Source Protection and Water Appropriation Division of the Water Supply Program. *Testing for GWUDI is not required for wells in Coastal Plain confined aquifers and is not required for CH-21-0063.*

I. Per- and Polyfluoroalkyl Substances (PFAS)

If your cover letter specifies testing for per- and polyfluoroalkyl substances (PFAS), test for the twenty-five (25) PFAS listed under EPA Method 533.

Contact the Water Supply Program (410-537-3714) with any questions.

Mail to:

MARYLAND DEPARTMENT OF THE ENVIRONMENT
WATER SUPPLY PROGRAM
 1800 Washington Blvd., STE. 450, Baltimore, Maryland 21230-1708
 (410) 537-3729 (800) 633-6101ext. 3729 <http://www.mde.maryland.gov>

INORGANIC SELF-MONITORING REPORT

PWSID _____	SYSTEM NAME _____	COUNTY _____
PLANT ID _____	PLANT NAME _____	
SAMPLE SITE ADDRESS _____		
SAMPLE TYPE: RAW _____ FINISHED _____ SAMPLE LOCATION (well, sample tap, sink, etc.) _____		
DATE COLLECTED _____ TIME _____		
SAMPLER ID _____	SAMPLER NAME _____	PHONE _____
LAB CERT#: _____	LABORATORY _____	PHONE _____
LAB SAMPLE ID _____	DATE RECEIVED _____	DATE REPORTED _____
REMARKS: _____		

Contaminant	EPA ID	MCL (mg/l)	Actual Level (mg/l)	Detection Limit (mg/l)	EPA Analytic Method Used	Analysis Date
Nitrate.....	1040	10	_____	_____	_____	_____
Nitrite.....	1041	1	_____	_____	_____	_____
Nitrate+Nitrite.....	1038	10	_____	_____	_____	_____
Antimony.....	1074	0.006	_____	_____	_____	_____
Arsenic.....	1005	0.010	_____	_____	_____	_____
Asbestos.....	1094	7MFL*	_____	_____	_____	_____
Barium.....	1010	2	_____	_____	_____	_____
Beryllium.....	1075	0.004	_____	_____	_____	_____
Cadmium.....	1015	0.005	_____	_____	_____	_____
Chromium.....	1020	0.1	_____	_____	_____	_____
Cyanide.....	1024	0.2	_____	_____	_____	_____
Fluoride.....	1025	4.0	_____	_____	_____	_____
Mercury.....	1035	0.002	_____	_____	_____	_____
Nickel.....	1036	0.1	_____	_____	_____	_____
Selenium.....	1045	0.05	_____	_____	_____	_____
Sodium.....	1052	----	_____	_____	_____	_____
Thallium.....	1085	0.002	_____	_____	_____	_____
Unregulated						
Sulfate.....	1055		_____	_____	_____	_____

* million fibers/liter greater than 10 microns

I do hereby affirm that this record contains no willful misrepresentations or falsifications and that this information given by me is true to the best of my knowledge and belief. I further certify that the methods and quality control measures used to produce these laboratory results were implemented in accordance with the requirements of this laboratory's certification under COMAR 26.08.05.

SIGNATURE _____ DATE _____

IOC/MDE/WMA/COM.008 (Revised 10/13) TTY Users 1-800-735-2258

MARYLAND DEPARTMENT OF THE ENVIRONMENT

1800 Washington Boulevard • Baltimore Maryland 21230
(410) 537-3000 • (800) 633-6101 • <http://www.mde.maryland.gov>

MAIL TO: Water Supply Program, MDE, 1800 Washington Blvd., Ste. 450, Baltimore, MD 21230-1708
For Inquiries, Please call (410) 537-3729 or (800) 633-6101 ext. 3729

VOLATILE ORGANIC SELF-MONITORING REPORT

PWSID _____	SYSTEM NAME _____	COUNTY _____
PLANT ID _____	PLANT NAME _____	
SAMPLE SITE ADDRESS _____		
SAMPLE TYPE: RAW _____ FINISHED _____ SAMPLE LOCATION (well, sample tap, sink, etc.) _____		
DATE COLLECTED _____		TIME _____
SAMPLER ID _____	SAMPLER NAME _____	PHONE _____
LAB CERT#: _____	LABORATORY _____	PHONE _____
LAB SAMPLE ID _____	DATE RECEIVED _____	REPORTED _____ EPA TEST METHOD _____
REMARKS: _____		

CONTAMINANT	EPA ID	MCL ppb	ACTUAL LEVEL(ppb)	CONTAMINANT	EPA ID	ACTUAL LEVEL(ppb)
REGULATED				UNREGULATED		
Benzene	2990	5	_____	Chloromethane	2210	_____
Carbon Tetrachloride	2982	5	_____	Bromobenzene	2993	_____
o-Dichlorobenzene	2968	600	_____	Bromochloromethane	2430	_____
p-Dichlorobenzene	2969	75	_____	Bromomethane	2214	_____
1,2-Dichloroethane	2980	5	_____	n-Butylbenzene	2422	_____
1,1-Dichloroethene	2977	7	_____	Sec-butylbenzene	2428	_____
cis-1,2-Dichloroethene	2380	70	_____	Tert-butylbenzene	2426	_____
trans-1,2-Dichloroethene	2979	100	_____	Chloroethane	2216	_____
Dichloromethane	2964	5	_____	o-Chlorotoluene	2965	_____
1,2-Dichloropropane	2983	5	_____	p-Chlorotoluene	2966	_____
Ethylbenzene	2992	700	_____	m-Dichlorobenzene	2967	_____
Monochlorobenzene	2989	100	_____	Dibromomethane	2408	_____
Styrene	2996	100	_____	1,1-Dichloroethane	2978	_____
Tetrachloroethene (PCE)	2987	5	_____	1,3-Dichloropropane	2412	_____
Toluene	2991	1000	_____	2,2-Dichloropropane	2416	_____
1,2,4-Trichlorobenzene	2378	70	_____	1,1-Dichloropropene	2410	_____
1,1,1-Trichloroethane	2981	200	_____	1,3-Dichloropropene	2413	_____
1,1,2-Trichloroethane	2985	5	_____	Dichlorodifluoromethane	2212	_____
Trichloroethene (TCE)	2984	5	_____	Hexachlorobutadiene	2246	_____
Vinyl Chloride	2976	2	_____	Isopropylbenzene	2994	_____
Xylenes (Total)	2955	10000	_____	p-Isopropyltoluene	2030	_____
TRIALOMETHANES				MTBE	2251	_____
Bromodichloromethane	2943		_____	Naphthalene	2248	_____
Bromoform	2942		_____	n-Propylbenzene	2998	_____
Chloroform	2941		_____	1,1,1,2-Tetrachloroethane	2986	_____
Dibromochloromethane	2944		_____	1,1,2,2-Tetrachloroethane	2988	_____
				1,2,3-Trichlorobenzene	2420	_____
				Trichlorofluoromethane	2218	_____
				1,2,3-Trichloropropane	2414	_____
				1,2,4-Trimethylbenzene	2418	_____
				1,3,5-Trimethylbenzene	2424	_____
				m-xylene	2995	_____
				o-xylene	2997	_____
				p-xylene	2962	_____

MCL - Maximum Contaminant Level
Detection limit = (< 0.5 ppb)
NT - Not Tested
ppb - parts per billion (micrograms per liter)

I do hereby certify that this record contains no willful misrepresentations or falsifications and that this information given by me is true to the best of my knowledge and belief. I further certify that the methods and quality control measures used to produce these laboratory results were implemented in accordance with the requirements of this laboratory's certification under COMAR 26.08.05.

SIGNATURE _____ **DATE** _____

APPENDIX B

**DISCHARGE PERMIT NO. 17-HT (NPDES NO.
MDG67)**



**GENERAL PERMIT FOR DISCHARGES FROM TANKS, PIPES, OTHER LIQUID
CONTAINMENT STRUCTURES, DEWATERING ACTIVITIES, AND GROUNDWATER
REMEDATION**

GENERAL DISCHARGE PERMIT NO. 17HT

NPDES PERMIT NO. MDG67

Effective Date: August 1, 2020

Expiration Date: July 31, 2025

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Appendix A – Specific Requirements for Discharge Categories

Appendix B – Definitions, Abbreviations, and Acronyms

PART I. PERMIT APPLICABILITY

Pursuant to the provisions of Title 9 of the Environment Article, Annotated Code of Maryland, and the provisions of the Federal Clean Water Act (CWA), 33 U.S.C. §1251 et seq. and implementing regulations 40 CFR Parts 122, 123, 124, and 125, the Maryland Department of the Environment, hereinafter referred to as the “Department”, hereby authorizes operators located in the state of Maryland, who have submitted a notice of intent (NOI) and received written approval from the Department (where applicable), to discharge wastewater from activities specified and described herein to Waters of this State in accordance with the eligibility requirements and other conditions set forth in this permit and consistent with the permittees’ NOI on file with the Department (where applicable). “You” and “Your” are used in this permit to refer to the permittee or the permit applicant, as the context indicates, and that party’s facility or responsibilities.

A. Geographic Coverage

This permit covers discharges to surface or groundwater located within the territorial boundaries of the state of Maryland.

B. Eligible Discharges

This permit covers the following discharges:

1. **Discharge Category A:** Wastewater from the disinfection (only disinfection agents containing bromide or chloride are authorized) or hydrostatic testing of pipes, pipelines or tanks, excluding sources from potable water systems;
2. **Discharge Category B:** Discharges from potable water systems resulting from the overflow, flushing, disinfection, hydrostatic testing, mechanical cleaning, or dewatering of vessels or structures used to store or convey potable water;
3. **Discharge Category C:** Dewatering from construction activities¹;
4. **Discharge Category D:** Groundwater which has been contaminated by volatile or semi-volatile organics, including that resulting from foundation drainage, which has been treated to remove organic compounds by air stripping, air sparging, activated carbon absorption, or equivalently treated wastewater from groundwater remediation sites not covered by the General Discharge Permit of Treated Ground Water From Oil Contaminated Ground Water Sources to Surface or Ground Waters of the State;
5. **Discharge Category E:** Wastewater from draining or flushing of fire control systems;
6. **Discharge Category F:** Untreated “water” from water storage or distribution systems, including but not limited to hydrogeologic/aquifer/well head yield-testing; where the effluent flow is greater 10,000 gallons per day (as a monthly average)²;

¹ Submission of a Notice of Intent is only required for discharges of uncontaminated dewatering which are not covered under another permit and are either greater than 10,000 gallons per day (as a monthly average) or require the use of chemical additives to meet water quality standards. See the section for Discharge Category C in Appendix A for further details.

² Submission of a Notice of Intent is only required for discharges of untreated “water” where the effluent flow is greater than 100,000 gallons per day (as a monthly average). See the section for Discharge Category F in Appendix A for further details.

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7. **Discharge Category G:** Treated tank bottom wastewater from petroleum (i.e., gasoline, kerosene, fuel oil, 'Number 6 oil' and aviation fuel only) storage tanks to surface waters; and
8. **Discharge Category H:** Stormwater discharges from storage tank containment structures³.
9. **Other allowable discharges:** These types of discharge may be covered under this permit as ancillary discharges, but do not require coverage under this permit as standalone discharges. They are not subject to a category found in Appendix A, but should adhere to all other permit terms, particularly those in Part III.C:
 - a. water used to fight active fires (not from fire system cleaning or testing),
 - b. pavement wash waters where no detergents are used and no spills or leaks of toxic or hazardous materials have occurred (unless all spilled material has been removed);
 - c. landscape watering, only if all pesticides, herbicides, and fertilizer have been applied in accordance with the approved labeling;
 - d. routine external wash down of buildings or other structures in the absence of detergent use and where any dislodged paint chips are filtered (so long as the wash water discharges are not influenced by process activities);
 - e. uncontaminated condensate from air conditioners, coolers, and other compressors and from the outside storage of refrigerated gases or liquids;
 - f. irrigation drainage;
 - g. uncontaminated ground water or spring water;
 - h. foundation or footing drains where flows are not contaminated with process materials; and
 - i. emergency discharges of potable water.
10. **Use of Chemical Additives:** Use of any chemical additives for sediment control (defined in Appendix B) requires prior notice, indicating your intent to use them on your NOI and listing the additives and any pertinent associated documentation in your Pollution Prevention Plan. In addition, the use of additives for sediment control is subject to the Department's approval policy as outlined in Part III.C.4 of this permit. Any substances not approved by the Department are prohibited.

C. Limitations on Coverage

The following discharges are not eligible for coverage under this general permit:

1. Discharges of any type from oil terminals;
2. Tank bottom wastewater discharges to groundwater of the state;
3. Wastewater from the washing of the interior of chemical and/or petroleum storage tanks, pipes and pipelines; and
4. Wastewater discharges to groundwater that, before treatment, contain concentrations of benzene, lead, or other substances in excess of Toxicity Characteristic Leaching Procedures (TCLP) concentrations as defined in COMAR 26.13.02.14.

³ Unless specifically directed by the Department, facilities containing no other source of discharges which require coverage under this general permit OR an NPDES permit for industrial stormwater are not required to obtain permit coverage for stormwater discharges from aboveground tank containment structures. See the section for Discharge Category H in Appendix A for additional details.

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D. No Permit Required

No discharge permit is required for the discharge of water from impoundments formed by the damming of natural drainage paths, or for the discharge of any untreated "waters" (see Appendix B for definition) less than 10,000 gallons per day (unless specifically directed by the Department to obtain coverage). No discharge permit is required for discharge of stormwater or groundwater from collection devices such as vaults, manholes, and conduit so long as such discharges have not been impacted by other activities ongoing at the site.

E. Alternative Permit Coverage

The Department may require you to obtain, or you may also request, coverage under an individual permit or registration under another general permit (such as those identified in Part I.G) for reasons including, but not limited to, those described below. If the Department requires you to apply for and obtain an alternative permit and you do not comply, the Department may terminate your coverage under this permit. Permit termination shall be effective at the end of the day that the Department specified as a deadline for the application or Notice of Intent (NOI) to be submitted. After the date of termination, any discharges that were previously covered by this permit are no longer authorized and may be subject to enforcement action.

1. If the Department determines that a discharge may cause water quality standards to be exceeded in the receiving water, then the Department may require additional actions which may include the submission of an individual NPDES discharge permit application. The Department may process an NOI for this permit as an application for an individual permit if the information submitted is deemed sufficient.
2. If site specific conditions, such as proposed discharge(s) to impaired waters or high quality waters, do not allow the facility to be covered under the general permit without compromising water quality, an individual permit may be required.
3. You may request to be excluded from coverage under this permit by applying for an individual state or NPDES discharge permit or submitting an NOI for coverage under another general permit. The Department may grant your request if the Department determines your reasons are adequate. If you are issued an individual NPDES permit or apply for coverage under an industry-specific general permit, the Department may terminate your coverage under this permit.

F. Continuation of an Expired General Permit

Unless your permit or authorization is revoked or terminated by the Department, the terms and conditions of this permit and its authorized dischargers are automatically continued and remain fully effective and enforceable upon expiration of this permit until the date(s) specified under a reissued general permit.

G. Related Permits

1. Construction activities which result in a land disturbance of greater than one acre must obtain coverage under the General Permit for Stormwater Associated with Construction Activities (NPDES Permit Number MDRC, State Permit Number 14GP or its successor), which may include authorization to discharge water from uncontaminated construction dewatering. Information regarding this permit can be found on the MDE website at <https://mdewwp.page.link/CGP>. If the proposed dewatering activities are not eligible for coverage under that permit, you must obtain coverage under Discharge Category C/D
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of this permit or an individual permit.

2. Any person or facility which stores 10,000 gallons or more of oil intended to be used as a motor fuel, lubricant, or fuel source in above ground tanks, who stores 1,000 gallons or more of used oil, which transports oil in or out of Maryland or which operates an oil transfer facility must obtain an Oil Operations Permit. Information regarding the Oil Control Program can be found on the MDE website at <https://mdewwp.page.link/OCPPermits>.
3. Tank bottom discharges to groundwater of the State must be regulated by an individual groundwater discharge permit. Information regarding groundwater permits can be found on the MDE website at <https://mdewwp.page.link/GWDP>.
4. Discharges of treated groundwater which has been impacted only by oil sources (not other volatiles such as TCE, TCA, DCE, etc.) are covered by the Department's General Permit for the Discharge of Treated Ground Water from Oil Contaminated Ground Water Sources to Surface or Ground Waters of the State, which is implemented by MDE's Oil Control Program. Information regarding this permit can be found on the MDE website at <https://mdewwp.page.link/OCPPermits>.
5. If water used is obtained from surface or groundwaters of the State, you may require a water appropriation permit from the Department. For information regarding appropriations permits and/or to determine if you require one, consult the Department's Water Supply Program, found on the MDE website at <https://mdewwp.page.link/Appropriations>.

PART II. AUTHORIZATION UNDER THIS PERMIT

A. How to Obtain Authorization

1. Notice of Intent (NOI) and Transfer Requests

a. Notice of Intent (NOI)

You must complete all information required on this permit's corresponding NOI form (MDE-WMA-PER011), or an equivalent electronic form provided by the Department. Detailed instructions are included on the NOI form. If you operate multiple facilities you must submit an NOI for each noncontiguous site or attach a list of sites which fit the same description as the facility on the original NOI (particularly for large distribution systems). Requiring multiple permits/NOIs for separate sites shall be at the Department's discretion on a case-by-case basis.

When submitting paper forms, a signed copy of the NOI and the required fee, made payable to the Maryland Department of the Environment, must be submitted to the following address:

Maryland Department of the Environment
P.O. Box 2057
Baltimore MD 21203-2057

You are required to provide the following information on the appropriate NOI form:

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- *Owner or Operator Information:* company name, facility contact, telephone number, email address, mailing address, IRS Employer Identification Number (EIN) and Worker's Comp Insurance carrier and policy number.
- *Facility Information:* name of facility, location, including physical address and coordinates in degrees decimal; selection of new or renewal permit and previous 11HT permit number (if applicable), identification of any other NPDES permits for the facility,
- *Discharge Information:* You must identify:
 - *Water characteristics:* Discharge Category(ies) and any applicable associated information (e.g. cleaning methods, disinfection, etc.), estimated volume, frequency, and duration
 - *Receiving Waters:* groundwater or surface water; *if surface water:* name of receiving stream, identification of designated use class and whether they qualify as Tier II waters, and coordinates in degrees decimal for each outfall.
- *Chemical Additives:* identification of any additives proposed for use, proposed dosing rates, and whether they are anionic or cationic (see Part III.C.4 for more information on the process for additive approval)
- *Permit Fee:* selection of applicable permit fee
- *Certification:* printed name, title, and signature of signatory and date. If the person who prepared the NOI is different from the facility contact, you shall attach the preparer's name, phone number, and email address to the NOI.

You must also attach a site map to the NOI. The map should identify the outfall(s) and/or facilities associated with discharges. The map should provide significant points of reference (i.e. roads, buildings, etc.) near each point of discharge and identify all surface waters within a quarter mile of the discharge location(s). For publicly owned potable water systems, you may provide a map of the entire system bounded by the community with identification of all major discharge points (e.g. storage tanks, wells, etc.). All outfall locations should correspond to those identified on the NOI. The Department may use discretion in determining specific map requirements as needed on a case-by-case basis.

For hydrostatic testing and potable water system discharges, you must include an approximate schedule of discharges (if available) and contact information for a responsible party who can provide updated scheduling information upon request.

For discharges of non-contaminated construction dewatering, you may be asked to submit groundwater testing data which exhibits no contamination or an environmental assessment which indicates there is no reasonable expectation for contamination.

For groundwater remediation, you will be required to either indicate the source of the contamination and/or submit testing results of the untreated groundwater so the Department can identify appropriate limitations for your registration.

b. Transfer of Authorization.

For transfer of ownership, you can complete the Permit Transfer Request Form for General NPDES Permits found on the Department's website at <https://mdewwp.page.link/GPXferForm>. Detailed instructions are included with the form. If you are the owner or operator of multiple permits, you must submit a separate Permit Transfer Request Form for each permit you wish to transfer. The authorization under this permit is not transferable to any person except in

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accordance with this section. Authorization to discharge under this permit may be transferred to another person if:

- The current permittee notifies the Department in writing of the proposed transfer.
- A written agreement, indicating the specific date of the proposed transfer of permit coverage and acknowledging the responsibilities of the current and new permittee for compliance with the terms and conditions of this permit, is submitted to the Department.
- The new permittee either confirms in writing that the type of discharge, number of outfalls, and other information given on the original NOI remain correct or updates this information.
- Neither the current permittee nor the new permittee receives notification from the Department, within 30 days of receipt of items above, of intent to terminate coverage under this permit.

2. Permit Fee

- a. Pursuant to COMAR 26.08.04.09-1(G), persons who intend to obtain coverage under this general permit are subject to an initial permit fee (submitted with the NOI) and an annual fee each additional year the permit is held (billed annually by the Department). Since permittees who are renewing their permit will already be subject to billing for the annual fee for the calendar year of permit issuance, the initial fee for renewals shall be the difference between the “one year fee” and “fee each additional year” as defined in COMAR 26.08.04.09-1(G).
- b. To pay the initial permit fee by check, it must be made payable to the Maryland Department of the Environment and sent with the completed NOI as instructed in Part II.A.1.a of this permit.
- c. If you pay the initial permit fee by a check that does not clear for any reason, you will have 30 calendar days to make proper payment, including any interest and other charges. If payment is not received by the 31st calendar day, your coverage under this permit must be considered void from the outset. You should save the cancelled check, a copy of the completed NOI, and the letter confirming your authorization from the Department. These documents must be provided to the Department upon request.
- d. A new owner of a facility as a result of a transfer of ownership is responsible for any fees unpaid by the former owner.
- e. Any changes in operations that may increase fees are required to give notice as described in Part II.E.1.c.

B. Deadlines for Coverage

You will be in violation of state and federal requirements to obtain a permit and subject to enforcement action by the Department if you fail to submit an NOI and fee payment or a transfer request in a timely manner as provided in the following table. Late NOIs will be accepted, but authorization to discharge will not be retroactive.

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Category	Coverage Submittal Deadline
<i>Existing Dischargers</i> – in operation as of the effective date of this permit and previously authorized for coverage under 11-HT	Within 6 months after the effective date of this permit. Authorization to discharge under 11-HT continues in the interim.
<i>New Dischargers or New Sources</i>	A minimum of 60 days prior to commencing discharge.
<i>New Owner/Operator of Existing Discharger</i> - transfer of ownership and/or operation of a facility whose discharge is authorized under this permit	A minimum of 30 days prior to date that the transfer will take place to the new owner/operator.
<i>Other Eligible Dischargers</i> – in operation prior to permit effective date, but not covered under the 11-HT or another NPDES permit.	Immediately, to minimize the time discharges from the facility will continue to be unauthorized.

C. Required Signatures

1. Certification

Any person signing documents in accordance with Parts II.C.2 and II.C.3 of this permit must include the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

2. Signatories

All applications, including NOIs, transfer requests, and No Exposure Certifications must be signed by a Signatory as follows:

- a. *For a corporation:* By a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:
 - i.) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation; or
 - ii.) the manager of one or more properties belonging to the owner, provided the manager is authorized to make management decisions which govern the operation of the regulated facility having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

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- b. *For a partnership or sole proprietorship:* By a general partner or the proprietor, respectively
- c. *For a municipality, State, Federal, or other public agency:* By either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes:
 - i.) the chief executive officer of the agency; or
 - ii.) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of the EPA).

3. Report Submission

- a. All reports required by permits, and other information requested by the Department shall be signed by a person described in Part II.C.2 of this permit or by a duly authorized representative of that person. A person is a duly authorized representative only if:
 - i.) The authorization is made in writing by a person described in Part II.C.2;
 - ii.) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility or an individual or position having overall responsibility for environmental matters for the company; and
 - iii.) The written authorization is submitted to the Department.
- b. If an authorization under this subsection is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Part II.C.3.a of this permit must be submitted to the Department prior to or together with any reports, information or applications to be signed by an authorized representative.

D. **Failure to Notify**

If you (1) engage in an activity covered under this permit, (2) fail to notify the Department of your intent (Part II.A) to be covered under this permit within the deadlines established in this permit (Part II.B), and (3) discharge to waters of the state without an individual NPDES discharge permit, then you are in violation of the Federal Clean Water Act and of the Environment Article, Annotated Code of Maryland, and may be subject to penalties.

E. **Changes in Permit Coverage**

Certain planned changes in stormwater discharge or termination of permit coverage, both described below in this section, require notification to the Department's Wastewater Permits Program at this address:

Maryland Department of the Environment
Wastewater Permits Program
1800 Washington Blvd, Ste 455

Baltimore, MD 21230

1. Changes in Discharge

- a.** All discharges authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any pollutant identified in this permit at a level in excess of that authorized shall constitute a violation of the terms and conditions of this permit. You must submit a revised NOI to the Department if there are anticipated facility expansions, additional or relocated outfalls, or facility modifications which will result in new categories of discharge, change in potential pollutants, or increased concentrations of pollutants. The revised NOI should be submitted a minimum of 90 days prior to commencement of the changed discharges.
- b.** Based upon its evaluation of the revised NOI, the Department may:
- i.)* Continue to authorize the discharge under your current registration, or
 - ii.)* Issue a modification to your registration under this permit, or
 - iii.)* Require you to apply for an individual permit
- c.** Facility changes which have not altered or will not alter the type or quality of the discharge, but alter the average daily discharge volume do not require submission of a revised NOI, unless specifically requested by the Department. You must provide written notice of any volume change which has occurred or will occur if it corresponds with an increase of the annual permit fee pursuant to COMAR 26.08.04.09-1(G). Facilities with a flow exceeding one million gallons per day must submit a written update any time their flow increases by 25% or greater.

2. Termination of Permit Coverage

a. Submitting a Notice of Termination

To terminate permit coverage, you must submit a complete and accurate Notice of Termination (NOT), found at <https://mdewwp.page.link/GPNOT>, to the Wastewater Permits Program. Your authorization to discharge under this permit terminates at midnight of the day that a complete Notice of Termination is processed and acknowledged by the Department. If you submit a Notice of Termination without meeting one or more of the conditions identified in Part II.E.2.b of this permit, then your Notice of Termination is not valid. You are responsible for meeting the terms of this permit until your authorization is terminated.

b. When to Submit a Notice of Termination

You must submit a Notice of Termination within 30 days after one or more of the following conditions have been met:

- i.)* All discharges at your facility that are covered by your registration under this permit have permanently ceased; or
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- ii.)* For Discharge Category H, all product has been permanently removed from storage tanks and any residual contamination in the containment structure has been removed; or
 - iii.)* You move your operation to a new location (after submitting an NOT you must then apply for coverage at the new location per Part II.A through II.C of this permit); or
 - iv.)* A new owner or operator has taken over responsibility for the facility; or
 - v.)* You have obtained coverage under an individual or alternative general permit for all discharges required to be covered by an NPDES permit, unless the Department has required that you obtain such coverage under Part I.E, in which case coverage under this permit will terminate automatically.
- c. The Department may terminate your coverage under this general permit if the Department finds good cause to do so.

PART III. SPECIAL CONDITIONS for DISCHARGES

A. Notification Requirements

1. Notification for Large Discharges

If the total wastewater discharge from any single discharge event will exceed 100,000 gallons within a 24-hour period, you shall notify the Water and Science Administration's Compliance Program by phone at 410-537-3510 no later than 48 hours prior to the first discharge. For unanticipated discharges (e.g. water main breaks) which exceed or are expected to exceed 100,000 gallons, notification shall be provided as soon as possible.

2. Notification of the Discharge of a Pollutant Not Limited in This Permit

You shall notify the Department as soon as it is known or suspected that any toxic pollutants which are not specifically limited by this permit have been discharged at or above levels specified in 40 CFR Part 122.42. This notification requirement may be modified by the Department at its discretion.

3. Submittal of Notifications

All notifications shall be made to the Water and Science Administration Compliance Program at 410-537-3510 or, where permissible, in writing to:

Maryland Department of the Environment
WSA – Compliance Program
1800 Washington Blvd., Suite 425
Baltimore, MD 21230

B. Effluent Limitations and Monitoring Requirements

Discharges which are permitted by this permit have been categorized by type, as specified in Part I.B. Numerical limits, monitoring requirements, and narrative criteria which apply specifically to one category of discharge have been outlined in Appendix A. Once your

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registration is approved for discharges under a given Discharge Category, you must follow all terms of this permit, including those presented in each applicable section of Appendix A. Applicable technology-based limits for each discharge category must be met prior to dilution/commingling with a discharge from a different category.

C. Narrative Requirements Applicable to All Discharges

1. Erosion and Sediment Control

You must minimize erosion a) consistent with the facility's approved erosion and sediment control (E&SC) plan or b) by stabilizing exposed soils at your facility in order to minimize pollutant discharges and placing flow velocity dissipation devices at discharge locations to minimize channel and streambank erosion and scour in the immediate vicinity of discharge points. Any gulying greater than six inches in depth should be considered excessive erosion. These requirements include timeframes for the temporary and permanent stabilization of all inactive, disturbed areas; which are either identified on your E&SC plan or if you don't have an approved E&SC plan, stabilization is to be completed within three (3) calendar days for perimeter sediment controls and slopes steeper than 3:1 and seven (7) calendar days for all other areas not under active grading. You must also use structural and non-structural control measures to minimize the discharge of sediment. In selecting, designing, installing, and implementing appropriate control measures, you are encouraged to consult with the Department's Soil Erosion & Sediment Control resources (<https://mdewwp.page.link/ESCRegs>).

2. Pollution Prevention Plan

You must develop a Pollution Prevention Plan (PPP) for any discharges which are subject to numeric effluent limitations, may pollute via erosion (discharge across land), or have a reasonable potential to cause an in-stream exceedance of a water quality standard. The PPP must include a description of any means of wastewater treatment (including a list of any chemical additives and corresponding Safety Data Sheets, if applicable), instructions on operation of the treatment system, a description of any erosion and sediment controls (if not already required by an E&SC plan), and any other information relative to pollution prevention specific to your site.

You are responsible for keeping the plan current, including identifying any lapses in pollution controls, responses to any exceedances, and changes to the overall process, if applicable. An updated copy of the PPP must be kept on site and made available upon request of any Department personnel.

3. Training and/or Use of Contractors

It is the responsibility of the permittee to ensure that the personnel who is working on the site where discharges are occurring are trained properly in implementation of the PPP. Training records should be maintained by the permittee to document as such.

Should the permittee desire to hire a contractor to perform any such work, it is at the discretion of the permittee as to whether to allow said contractor to operate under the terms of the permittee's registration under this permit or to require said contractor to obtain a separate registration. Should the permittee allow a contractor to operate under the permittee's registration, it is the permittee's responsibility to train said contractor on proper implementation of the PPP and make said contractor aware of all

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permit requirements. Terms of which registration a contractor is operating under should be clear in any agreement between parties.

4. Use of Chemical Additives for Sediment Control

If you are using chemical additives (defined in Appendix B) for control of sediment (such as polymers or flocculants) at your site, you must comply with the requirements identified in this section. You shall refer to the most current version of *Standards for Use of Chemical Additives for Sediment Control* document available on the Department's website at <https://mdewwp.page.link/ChemAddStandards> for specific instructions on information which must be included in your PPP, additional requirements, and assistance in applying for additive use.

- The use of chemical additives for sediment control should only be considered in the event that water quality standards cannot be met using conventional best management practices.
 - Should the use of chemical additives be necessary, you must utilize conventional best management practices for erosion and sediment controls prior to and after the application of chemical additives.
 - Additives may only be applied where treated stormwater is directed to a sediment control (e.g., sediment basin, perimeter control) prior to discharge. This permit intends to authorize additives used to create flocculation of suspended materials in stormwater or groundwater.
 - Chemical additives must be approved by the Department prior to use. The Department maintains a current list of pre-approved polymers/flocculants including approved application method and maximum allowable dosage concentration or application rate on its website (<https://mdewwp.page.link/MDFlocs>).
 - If you wish to use a chemical additive which is not found on the approved list, you must request approval according to *Procedures for Review of Chemical Additives for Sediment Control* (<https://mdewwp.page.link/ChemAddReview>). You may not begin use of any chemical additive absent from the pre-approved list until you receive express written approval for that additive from the Department.
 - You are required to identify all additives you will be using on your Notice of Intent (pursuant to Part II.A.1 of this permit). Any initial approval of additives shall be expressly identified in your permit registration letter and you may not commence use of additives absent such approval.
 - If you wish to change or add another preapproved anionic chemical, you shall provide notification to the Industrial and General Permits Division within 30 days of commencing the use of the new pre-approved additive. If you wish to change or add another preapproved cationic chemical, you must obtain express written approval for that specific cationic additive prior to use.
 - You must minimize exposure of stored chemicals to stormwater.
 - You must comply with relevant local requirements affecting the use of chemical additives. If requested by the E&SC plan approval authority, provide an SDS
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with your E&SC plan.

- You must use chemical additives and chemical treatment systems in accordance with good engineering practices, and with dosing specifications and sediment removal design specifications provided by the provider/supplier of the applicable chemicals, or document specific departures from these practices or specifications and how they reflect good engineering practice. Selection of additives and dosing rates should be determined based on site-specific test results. Documentation of the chemical selection process and dosing rate determination shall be included in your PPP. Dosing rates cannot exceed those found on the Department's list of pre-approved additives.
- Ensure that all persons who handle and use chemical additives at the site are provided with appropriate, product-specific training. Among other things, the training must cover proper dosing requirements and safe handling practices.
- If you plan to use cationic chemical additives (as defined in Appendix B), you are ineligible for coverage under this permit unless you notify the Department's Industrial and General Permits Division at least 30 days in advance and the Department authorizes coverage under this permit. To receive authorization under this permit, you must identify in your PPP appropriate controls and implementation procedures (including where the chemical is applied, description of active treatment systems required, dosing, filtering, pH monitoring, etc.) designed to ensure that your use of cationic additives chemicals will not lead to a violation of water quality standards. See the *Standards for Use of Chemical Additives for Sediment Control* document (<https://mdewwp.page.link/ChemAddStandards>) for additional instructions for completing your PPP and requesting use of cationic chemical additives. A copy of the PPP section regarding use of cationic chemical additives must be submitted along with the NOI and *Request for Use of Cationic Chemical Additives* form (<https://mdewwp.page.link/CationicForm>). You are required to comply with all such requirements if you have been authorized to use cationic chemicals at your site by the Department.
- Depending on the additive selected for use, you may be required to sample discharges and test for residuals or other components. Any such monitoring requirement will be laid out in your registration letter. Results of required monitoring shall be maintained with the PPP and made available if requested by Department personnel.

Authorization is conditioned on your compliance with additional requirements necessary to ensure that the use of such chemicals will not cause an exceedance of water quality standards. If you use polymers and/or other chemical treatments as part of your controls, you must identify the polymers and/or chemicals used and the purpose in your PPP.

5. Visual Inspection of Discharges

You shall visually inspect discharges as frequently as possible, but a minimum of once daily when discharges are occurring. You shall log results of visual monitoring events in the PPP. The Department maintains a standard form for logging of visual monitoring on its website at <https://mdewwp.page.link/VisualForm>. Discharges of oil sheen, floating solids, visible plumes of sediment or color, and/or persistent foam are

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prohibited and shall be reported to the Water and Science Administration Compliance Program, pursuant to Part IV.H.1 of this permit.

D. Tier II Antidegradation Requirements for New or Increased Dischargers

If you are a new discharger, have increased your discharge volumes from previous permit registration(s), or are required to notify the Department of a modified discharge (Part II.E.1), and you discharge directly to waters designated by the State as Tier II for antidegradation purposes under 40 CFR 131.12(a), the Department may notify you that additional analyses, control measures, or other permit conditions are necessary to comply with the applicable antidegradation requirements, or notify you that an individual permit application is necessary in accordance with Part I.E of this permit.

PART IV. MONITORING and REPORTING

A. Representative Sampling

1. Sample Collection

Required samples and measurements shall be taken at such times as to be representative of the quantity and quality of the discharges during the specified monitoring periods. Where effluent authorized by this general permit mingles with other permitted discharges of wastewaters or waters, the time and place of sampling shall be chosen to uniquely represent the effluent authorized by this permit.

2. Flow Estimation

If flow measurement equipment is not present at a given outfall, you may estimate flows and submit the following information with the corresponding discharge monitoring report:

- a. a description of the methodology used to estimate flow (for each applicable outfall);
- b. documentation appropriate to the methodology utilized which provides information necessary to support the validity of the reported flow estimate. If actual measurements or observations are made, a description of typical sampling times, locations, and persons performing the measurements/observations should be provided; and
- c. a description of the factors (e.g. batch discharges, intermittent operation, etc.) which cause flow at the outfall to fluctuate significantly from the estimate provided.

B. Sampling and Analytical Methods

The sampling and analytical methods used shall conform to procedures for the analysis of pollutants as identified in 40 CFR 136 - "Guidelines Establishing Test Procedures for the Analysis of Pollutants" unless otherwise specified.

C. Data Recording Requirements

For each sample taken to satisfy requirements of this permit, you must record the following information:

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1. The exact place, date, and time of sampling or measurement;
2. The person(s) who performed the sampling or measurement;
3. The dates and times the analyses were performed;
4. The person(s) who performed the analyses;
5. The analytical techniques or methods used; and
6. The results of all required analyses.

D. Monitoring Equipment Maintenance

You must periodically calibrate and perform maintenance procedures on all monitoring and analytical instrumentation to insure accuracy of measurements.

E. Additional Monitoring by Permittee

If you choose to monitor any pollutant more frequently than required by this permit, you shall use approved analytical methods as specified in Part IV.B of this permit, and shall report the results of such monitoring, including the increased frequency, in the calculation and reporting of the values as specified in Part IV.F of this permit (for parameters which reporting is already applicable under that section)..

F. Reporting Monitoring Results (DMRs)

This section is only applicable if you are subject to numerical limits or monitoring (including "REPORT" parameters) or submission of reports/documents which the Department specifies are to be submitted as attachments to DMRs.

1. Discharge Monitoring Reports (DMRs) Submitted via NetDMR

Unless a different reporting mechanism is specified, you must submit all monitoring results electronically using NetDMR once you are granted access to this tool, unless you demonstrate a reasonable basis that precludes the use of NetDMR. Specific requirements regarding submittal of data and reports in hard copy form and for submittal using NetDMR are described below:

- a. NetDMR is a U.S. EPA tool allowing regulated Clean Water Act permittees to submit monitoring reports electronically via a secure Internet application. You must apply for access to NetDMR at www.epa.gov/netdmr and register for a NetDMR Webinar. Before you can submit official DMRs using NetDMR, you must attend a training Webinar and successfully set-up and submit test monitoring results electronically. You must complete all requirements to gain access to NetDMR within one (1) month of authorization under this permit.
 - b. You may be eligible for a temporary waiver by MDE from NPDES electronic reporting requirements if the permittee has no current internet access and is physically located in a geographic area (i.e., zip code) that is identified as under-served for broadband internet access in the most recent National Broadband Map from the Federal Communications Commission (FCC); or if the permittee can demonstrate that such electronic reporting of the monitoring data and reports would
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pose an unreasonable burden or expense to the NPDES-permitted facility. Waiver requests must be submitted in writing to the Department for written approval at least 120 days prior to the date the permittee would be required under this permit to begin using NetDMR. This demonstration shall be valid for one (1) year from the date of the Department approval and shall thereupon expire. At such time, DMRs and reports shall be submitted electronically to the Department unless the permittee submits a renewed waiver request and such request is approved by the Department. The application form for a waiver from electronic reporting requirements can be found at <https://mdewwp.page.link/eReportWaiver>. All subsequent hardcopy DMRs shall be sent to the following address:

Attention: DMRs
Maryland Department of the Environment
WSA – Compliance Program
1800 Washington Blvd., Suite 425
Baltimore, MD 21230-1708

- c. You must report the data at least quarterly, with submissions received no later than 28 days following the final month of the given quarter (March, June, September, or December).
- d. At a minimum, each category of discharge shall be assigned its own “Outfall Number” for simple tracking. If one category of discharge is planned to occur across several locations, monitoring shall occur at each discharge (as specified in the appropriate category in Appendix A), with the absolute maximums, minimums, and averages reported as a single Outfall Number. Individual monitoring results shall be included as an attachment to each submission in NetDMR and shall also document the time, date, and location of each discharge.

For example, if you are performing hydrostatic testing of new piping at five different locations in the course of a quarter, you shall complete the required monitoring for Discharge Category A in Appendix A at each event (flow, TSS, pH). On your quarterly DMR, you will report the maximum and average flows in gallons per day, the maximum TSS concentration in mg/L, and the minimum and maximum pH as measured across all five events for that quarter. Then, you shall include an attachment to the quarterly DMR which includes monitoring results for flow, TSS, and pH for each of the five individual events – and this attachment shall also specify date, time, and location of each individual event.

2. Laboratory Identification

You shall submit the name and address of any laboratory which you use to perform analyses (including your own laboratory, if applicable) as an attachment to your first DMR submission. If you change or add laboratories during the permit term, the Department shall be notified by attaching a letter identifying the change with the ensuing DMR submission.

G. **Records Retention**

You must retain all records and information resulting from the monitoring activities required by this permit, including all records of analyses performed, calibration and maintenance of instrumentation, and original recordings from continuous monitoring instrumentation, for a minimum of five (5) years. This period shall be extended automatically during the course of litigation, or when requested by the Department.

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H. Non-compliance with Discharge Limitations

The discharge of any pollutant identified in this permit at a level in excess of the level authorized shall constitute a violation of the terms and conditions of this permit.

1. If, for any reason, you do not comply with or will be unable to comply with any of the effluent limitations in this permit, you shall notify, within 24 hours of discovery of the noncompliance, the Water and Science Administration Compliance Program at:

Maryland Department of the Environment
WSA – Compliance Program
1800 Washington Boulevard, Suite 420
Baltimore MD 21230
Phone: (410) 537-3510 Fax: (410) 537-4883

2. Within five calendar days, you shall provide the Department with the following information in writing at the above address:
 - a. A description of the noncompliant discharge, including the date and time of its occurrence and its impact on the receiving water;
 - b. The cause of the noncompliance;
 - c. The anticipated time the cause of the noncompliance is expected to continue, or, if the condition has been corrected, the duration of the period of the noncompliance;
 - d. Steps taken by the permittee to eliminate the noncompliant discharge;
 - e. Steps planned and implemented by the permittee to prevent the recurrence of the noncompliance; and
 - f. A description of the permittee's accelerated or additional monitoring to determine the nature and impact of the noncompliant discharge.
3. You shall take all reasonable steps to minimize or prevent any adverse impact to the waters of this state or to human health from noncompliance with any effluent limitations specified in this permit.

PART V. STANDARD PERMIT CONDITIONS

A. Facility Operation and Maintenance

You must at all times properly operate and maintain all facilities and systems of treatment and control which are installed or used to achieve compliance with the conditions of the permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or a similar system that you have installed only when the operation is necessary to achieve compliance with the conditions of the permit.

B. Submitting Additional or Corrected Information

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When you become aware that you failed to submit any relevant facts or submitted incorrect information in the NOI or in any other report to the Department, you must submit the facts or information to the Department within 30 days.

C. Adverse Impact

The permittee shall take all reasonable steps to minimize or prevent any adverse impact to waters of the State or to human health resulting from noncompliance with any effluent limitations specified in this permit, including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge.

D. Bypass

Any bypass of treatment facilities necessary to maintain compliance with the terms and conditions of this permit is prohibited unless:

1. the bypass is unavoidable to prevent a loss of life, personal injury or substantial physical damage to property, damage to the treatment facilities which would cause them to become inoperable, or substantial and permanent loss of natural resources;
2. there are no feasible alternatives;
3. notification is received by the Department within 24 hours (if orally notified, then followed by a written submission within five calendar days of the permittee's becoming aware of the bypass). Where the need for a bypass is known (or should have been known) in advance, this notification shall be submitted to the Department for approval at least ten calendar days before the date of bypass or at the earliest possible date if the period of advance knowledge is less than ten calendar days; and
4. the bypass is allowed under conditions determined by the Department to be necessary to minimize adverse effects.

E. Conditions Necessary for Demonstration of an Upset

An upset shall constitute an affirmative defense to an action brought for noncompliance with technology-based effluent limitations only if the permittee demonstrates, through properly signed, contemporaneous operating logs, or other relevant evidence, that:

1. an upset occurred and that the permittee can identify the specific cause(s) of the upset;
 2. the permitted facility was at the time being operated in a prudent and workman-like manner and in compliance with proper operation and maintenance procedures;
 3. the permittee submitted a 24-hour notification of upset in accordance with the reporting requirements of Corrective Actions above;
 4. the permittee submitted, within five (5) calendar days of becoming aware of the upset, documentation to support and justify the upset; and
 5. the permittee complied with any remedial measures required to minimize adverse impact.
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F. Removed Substances

Wastes such as solids, sludges, or other pollutants removed from or resulting from treatment or control of wastewaters or facility operations, must be disposed of in a manner to prevent any wastes or runoff from wastes from contacting waters of the State.

G. Right of Entry

You must permit the Secretary of the Department, the Regional Administrator for the EPA, or their authorized representatives, upon the presentation of credentials, to:

1. enter upon your premises where a discharges' source is located or where any records are required to be kept under the terms and conditions of this permit;
2. access and copy, at reasonable times, any records required to be kept under the terms and conditions of this permit;
3. inspect, at reasonable times, any monitoring equipment or monitoring method required in this permit;
4. inspect, at reasonable times, any collection, treatment, pollution management, or discharge facilities required under this permit;
5. sample, at reasonable times, any discharge of pollutants; and
6. take photographs (which may require direction for reasons of national security).

H. Availability of Reports

Except for data determined to be confidential under the Maryland Public Information Act and/or Section 308 of the Clean Water Act, 33 U.S.C. § 1318, all submitted data must be available for public inspection at the offices of the Department and the Regional Administrator of the Environmental Protection Agency.

I. Permit Modification

The Department may revoke this permit or modify this permit to include different limitations and requirements, in accordance with the procedures contained in COMAR 26.08.04.10 and 40 C.F.R. §§ 122.62, 122.63, 122.64 and 124.5.

J. Total Maximum Daily Load (TMDL)

The permit may be reopened in accordance with Maryland's Administrative Procedures Act to incorporate future Total Maximum Daily Load requirements.

K. Toxic Pollutants

You must comply with effluent standards or prohibitions for toxic pollutants established under the Federal Clean Water Act, or under Section 9-314 and Sections 9-322 to 9-328 of the Environment Article, Annotated Code of Maryland. You must be in compliance within the time provided in the regulations that establish these standards or prohibitions, even if this permit has not yet been modified to incorporate the requirement.

L. Oil and Hazardous Substances Prohibited

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Nothing in this permit shall be construed to preclude the institution of any legal action or relieve you from any responsibility, liability, or penalties to which the permittee may be subject under Section 311 of the Clean Water Act (33 U.S.C. § 1321), or under the Annotated Code of Maryland.

M. Civil and Criminal Liability

Nothing in this permit shall be construed to preclude the institution of any legal action nor relieve you from any civil or criminal responsibilities, liabilities, and/or penalties for noncompliance with Title 9 of the Environment Article, Annotated Code of Maryland or any federal, local or other state law or regulation.

N. Property Rights/Compliance with Other Requirements

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations.

O. Severability

The provisions of this permit are severable. If any provisions of this permit must be held invalid for any reason, the remaining provisions must remain in full force and effect. If the application of any provision of this permit to any circumstances is held invalid, its application to other circumstances must not be affected.

P. Water Construction and Obstruction

This permit does not authorize you to construct or place physical structures, facilities, or debris or undertake related activities in any waters of the State.

Q. Compliance with this General Permit and Water Pollution Abatement Statutes

You must comply at all times with the terms and conditions of this permit, the provisions of the Environment Article, Title 7, Subtitle 2 and Title 9, Subtitles 2 and 3 of the Annotated Code of Maryland, and the Clean Water Act, 33 U.S.C. § 1251 *et seq.* Any noncompliance with any of the requirements of this permit constitutes a violation of the Clean Water Act.

R. Action on Violations

The issuance or reissuance of this permit does not constitute a decision by the State not to proceed in an administrative, civil, or criminal action for any violations of State law or regulations occurring before the issuance or re-issuance of this permit, nor a waiver of the State's right to do so.

S. Civil Penalties for Violations of Permit Conditions

In addition to civil penalties for violations of State water pollution control laws set forth in Section 9-342 of the Environment Article, Annotated Code of Maryland, the Clean Water Act provides that any person who violates Section 301, 302, 306, 307, 308, 318, or 405 of the Act, or any permit condition or limitation implementing any of such sections in a permit issued under Section 402 of the Act or in a permit issued under Section 404 of the Act, is subject to a civil penalty not to exceed \$37,500 per day for each violation. Statutory

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penalties of the CWA are subject to the Civil Monetary Penalty Inflation Adjustment Rule (40 CFR 19.4).

T. Criminal Penalties for Violations of Permit Conditions

In addition to criminal penalties for violations of State water pollution control laws set forth in Section 9-343 of the Environment Article, Annotated Code of Maryland, the Clean Water Act provides that:

1. Any person who negligently violates Section 301, 302, 306, 307, 308, 318, or 405 of the Act, or any permit condition or limitation implementing any of such sections in a permit issued under Section 402 of the Act, or in a permit issued under Section 404 of the Act, is subject to a fine of not less than \$2,500 nor more than \$25,000 per day of violation, or by imprisonment for not more than one (1) year, or by both.
2. Any person who knowingly violates Section 301, 302, 306, 307, 308, 318, or 405 of the Act, or any permit condition or limitation implementing any of such sections in a permit issued under Section 402 of the Act, or in a permit issued under Section 404 of the Act, is subject to a fine of not less than \$5,000 nor more than \$50,000 per day of violation, or by imprisonment for not more than three (3) years, or by both.
3. Any person who knowingly violates Section 301, 302, 306, 307, 308, 318, or 405 of the Act, or any permit condition or limitation implementing any of such sections in a permit issued under Section 402 of the Act, or in a permit issued under Section 404 of the Act, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, is subject to a fine of not more than \$250,000 or imprisonment of not more than fifteen (15) years, or both. A person that is a corporation, must, upon conviction, be subject to a penalty of not more than \$1,000,000.
4. Any person who knowingly makes any false material statement, representation, or certification in any application, record, report, plan, or other document filed or required to be maintained under the Act or who knowingly falsifies, tampers with or renders inaccurate any monitoring device or method required to be maintained under the Act, is subject to a fine of not more than \$10,000 or by imprisonment for not more than two (2) years, or by both.

U. Duty to Provide Information

You must provide within a reasonable time, any information which the Department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit to the Department. You must also provide copies of records required to be kept by this permit to the Department, upon request.

V. Reopener Clause for Permits

This permit must be modified, or alternatively, revoked and reissued, to comply with any applicable effluent standard or limitation issued or approved under Sections 301, 304, and 307 of the Clean Water Act [33 USCS §§ 1311, 1314, 1317] if the effluent standard or limitation issued or approved:

1. contains different conditions or is otherwise more stringent than any effluent limitation in this permit; or
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Provides discharge authorization only upon Maryland Department of the Environment notification of registration.

2. controls any pollutant not limited in this permit. This permit, as modified or reissued under this section, must also contain any other requirements of the Act then applicable.

Part VI. AUTHORITY TO ISSUE GENERAL NPDES PERMITS

On September 5, 1974, the Administrator of the EPA approved the proposal submitted by the State of Maryland for the operation of a permit program for discharges into navigable waters under Section §402 of the federal Clean Water Act, 33 U.S.C. §Section 1342.

On September 30, 1990, the Administrator of the EPA approved the proposal submitted by the State of Maryland for the operation of a general permit program.

Under the approvals described above, this general discharge permit is both a State of Maryland general discharge permit and an NPDES general discharge permit.



Heather W. Barthel for (Jun 11, 2020 20:05 EDT)

D. Lee Currey, Director
Water and Science Administration

Appendix A: Specific Requirements for Discharge Categories

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You must comply with Appendix A discharge-category-specific requirements associated with each discharge category applicable to your facility. These requirements are in addition to any requirements specified elsewhere in this permit, particularly those specified in Part III.

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Discharge Category A: Disinfection or Hydrostatic Testing of Tanks, Pipes or Pipelines

Eligible Discharges:

Wastewater from disinfection (using only chlorine or bromine as a disinfecting agent) or hydrostatic testing of new or used tanks, pipes, or pipelines. This section does not include potable water systems operations (refer to Category B).

Notice of Intent Requirements:

All dischargers under this category are required to submit a Notice of Intent (see Part II.A).

Numerical Limitations (Applicable for Discharges to Surface Waters or Groundwater Under this Category):

The following numerical limitations are to be summarized on discharge monitoring reports and submitted via NetDMR in accordance with Part IV.F of this permit. Limitations presented in each table below are applicable only if the condition in the heading (i.e. chlorinated test water) has occurred for the wastewater being discharged. Should you have a quarter where you are discharging, but some limitations are not applicable (i.e. you did not use chlorinated test water those instances), you should report “NODI 9” for the parameters not required.

NOTE: Discharges under this category which occur to groundwater only are exempt from all numerical limits, monitoring, and reporting except for flow and oil & grease (where applicable).

Requirements for all discharges of hydrostatic test water under this category:

Parameter	Daily Minimum	Daily Maximum	Monthly Average	Units	Monitoring Frequency	Sample Type	Notes
Flow		REPORT	REPORT	gpd	1/Discharge	Measured	(1)
Total Suspended Solids		60		mg/L	See Note 2	Grab	(2)
pH	6.0	9.0		s.u.	See Note 2	Grab	(2)

Additional requirements for discharges from tanks previously used to store oils (i.e. animal or vegetable oils, petroleum products, natural gas):

Parameter	Daily Maximum	Units	Monitoring Frequency	Sample Type	Notes
Oil & Grease	15	mg/L	See Note 2	Grab	(2)

Additional requirements if test or disinfection water is chlorinated or comes from a chlorinated water supply:

Parameter	Daily Maximum	Units	Monitoring Frequency	Sample Type	Notes
Total Residual Chlorine	0.1	mg/L	See Note 2	Grab	(2) (3)

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Additional requirements if test or disinfection water is chemically dechlorinated⁽⁴⁾:

Parameter	Daily MINIMUM	Units	Monitoring Frequency	Sample Type	Notes
Dissolved Oxygen [y] - (Class I, I-P, II)	5.0	mg/L	See Note 2	Grab	(2) (5)
Dissolved Oxygen [z] - (Class III, III-P, IV, IV-P)	6.0	mg/L	See Note 2	Grab	(2) (6)

Additional requirements if discharges occur into Class III, III-P, IV, or IV-P water, as defined by the Specific Designated Use Classes at COMAR 26.08.02.02B. (Required only from May through October)

Parameter	Daily Minimum	Daily Maximum	Units	Monitoring Frequency	Sample Type	Notes
Temperature		REPORT	°F	2/Discharge	i-s	(7)
Temperature Difference	0		°F	2/Discharge	i-s	(7) (8)

Notes (for all tables)

- (1) Total volume of flow shall be measured and divided by the time over which the entire discharge occurred.
- (2) Required monitoring frequencies shall be based on volume of hydrostatic testing event as follows:
 - If effluent is 2,500 gallons or less for the event, minimum monitoring frequency shall be 1/discharge.
 - If effluent is 2,501-50,000 gallons for the event, minimum monitoring frequency shall be 2/discharge.
 - If effluent is 50,001 gallons or more for the event, minimum monitoring frequency shall be 3/discharge.
- (3) Even though to water quality standard for chlorine is 13 µg/L for salt water and 19 µg/L for fresh water, the permit limitation is based upon the nondetectable level for total residual chlorine per COMAR 26.08.03.06. Report results below 0.10 mg/L as “NODI B” in NetDMR.
- (4) For the purposes of this permit, the use of dechlorination tablets does not constitute chemical dechlorination. See Appendix B for the full definition.
- (5) Limit is applicable if the receiving stream for the discharges is Class I, I-P, or II, as defined by the Specific Designated Use Classes at COMAR 26.08.02.02B. The [y] designation is for reporting reasons to group these Use Classes.
- (6) Limit is applicable if the receiving stream for the discharges is Class III, III-P, IV, or IV-P, as defined by the Specific Designated Use Classes at COMAR 26.08.02.02B. The [z] designation is for reporting reasons to group these Use Classes.
- (7) Two grab samples required: one at the beginning of discharge and one approximately midway through the discharge.
- (8) “Temperature Difference” is the arithmetic result of subtracting the water quality standard temperature or the ambient stream temperature upstream of the discharges (whichever is higher) from the effluent temperature or the temperature at the edge of a 50-foot mixing zone from the point of discharge. The water quality standard temperature is 68°F for Class III and III-P streams and 75°F for Class IV and IV-P streams. (Note: If the effluent temperature is below the water quality standard temperature, no in-stream measurements would be required to demonstrate compliance.)

Narrative Limitations:

1. ***Cleaning of Used Vessels:*** All used tanks, pipes, or pipelines shall be cleaned before being filled with test water. All wastewater and removed solids resulting from cleaning operations shall be properly disposed in a manner which will not result in a discharge to waters of the State.
 2. ***Appropriations:*** If you are utilizing surface or ground waters of the State to perform hydrostatic testing, note the potential for additional requirements outlined in Part I.G.5 of this permit.
 3. ***Treatment Systems:*** If discharges are directed into an oil/water separator, settling basin, or any other treatment system, the rate of discharge shall not exceed the design capacity of the treatment system.
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Provides discharge authorization only upon Maryland Department of the Environment notification of registration.

Discharge Category B: Discharges from Potable Water Systems

Eligible Discharges:

Wastewater discharged from potable water utilities, including those from overflow, draining, or dewatering of reservoirs, vessels, or structures used to store or convey potable water for consumption. This category includes standing water and water from flushing, hydrostatic testing, mechanical cleaning (as defined in Appendix B), water main breaks, leaks, or other releases, as well as flushing of fire hydrants.

Discharges under this category that do not require effluent monitoring per the tables below are subject to narrative criteria found in this section and in other applicable sections of the permit.

Notice of Intent Requirements:

All dischargers under this category are required to submit a Notice of Intent (see Part II.A).

Numerical Limitations for Discharges to Surface Waters Under this Category:

The following numerical limitations are to be summarized on discharge monitoring reports and submitted via NetDMR in accordance with Part IV.F of this permit. Limitations presented in each table below are applicable only if the condition in the heading (i.e. mechanical cleaning) has occurred for the wastewater being discharged. Should you have a quarter where you are discharging, but some limitations are not applicable (i.e. you did not execute mechanical cleaning during that quarter), you should report “NODI 9” for the parameters not required.

NOTE: Discharges under this category which occur to groundwater only are exempt from all numerical limits, monitoring, and reporting.

Requirements for potable water sources where mechanical cleaning has occurred:

Parameter	Daily Minimum	Daily Maximum	Monthly Average	Units	Monitoring Frequency	Sample Type	Notes
Flow		REPORT	REPORT	gpd	1/Discharge	Measured	(1)
Total Suspended Solids		60		mg/L	3/Discharge	Grab	(2)
pH	6.0	9.0		s.u.	3/Discharge	Grab	(2)

Requirements for potable water sources which have been super chlorinated:

Parameter	Daily Minimum	Daily Maximum	Monthly Average	Units	Monitoring Frequency	Sample Type	Notes
Flow		REPORT	REPORT	gpd	1/Discharge	Measured	(1)
pH	6.0	9.0		s.u.	3/Discharge	Grab	(2)
Total Residual Chlorine		0.1		mg/L	3/Discharge	Grab	(2) (3)

Provides discharge authorization only upon Maryland Department of the Environment notification of registration.

Requirements for potable water sources which have been chemically dechlorinated⁽⁴⁾:

Parameter	Daily Minimum	Daily Maximum	Units	Monitoring Frequency	Sample Type	Notes
pH	6.0	9.0	s.u.	3/Discharge	Grab	(2)
Dissolved Oxygen [y] - (Class I, I-P, II)	5.0		mg/L	3/Discharge	Grab	(2) (5)
Dissolved Oxygen [z] - (Class III, III-P, IV, IV-P)	6.0		mg/L	3/Discharge	Grab	(2) (6)

Notes (for all tables)

- (1) Total volume of flow shall be measured and divided by the time over which the entire discharge occurred.
- (2) Three grab samples shall be collected at approximate even intervals and analyzed separately.
- (3) Even though to water quality standard for chlorine is 13 µg/L for salt water and 19 µg/L for fresh water, the permit limitation is based upon the nondetectable level for total residual chlorine per COMAR 26.08.03.06. Report results below 0.10 mg/L as “NODI B” in NetDMR.
- (4) For the purposes of this permit, the use of dechlorination tablets does not constitute chemical dechlorination. See Appendix B for the full definition.
- (5) Limit is applicable if the receiving stream for the discharges is Class I, I-P, or II, as defined by the Specific Designated Use Classes at COMAR 26.08.02.02B. The [y] designation is for reporting reasons to group these Use Classes.
- (6) Limit is applicable if the receiving stream for the discharges is Class III, III-P, IV, or IV-P, as defined by the Specific Designated Use Classes at COMAR 26.08.02.02B. The [z] designation is for reporting reasons to group these Use Classes.

Narrative Requirements:

1. **Pollution Prevention Plan.** While all discharge categories under this permit are required to develop and implement a Pollution Prevention Plan (PPP) in accordance with Part III.B.2, the PPP for this category are subject to specific inclusions (mostly due to the likelihood of multiple discharge points), such as:
 - a. **Discharge Inventory:** The PPP must include a list of anticipated discharges which identifies type (flushing, line maintenance, etc.), expected quantity, quality, and location of each discharge.
 - b. **Potential Alternatives:** Identification of any alternative to surface discharge, such as sanitary sewer disposal, overland flow, storm sewer discharge or any other possible alternative.
 - c. **Prior Data:** Identification of any data regarding quality of previous discharges at the point of discharge and/or the point of entry into surface waters which may provide guidance for future activities.
 - d. **Treatment Options:** Identification of treatment options for different discharge types and locations.
 - e. **Receiving Stream Information:** Stream designated uses, relevant TMDLs, or other in-stream information which may reflect on impact of these discharges on waters of the State.
 - f. **Protective of Water Quality:** The permittee is responsible for ensuring that their PPP includes practices sufficient enough for receiving waters to meet conditions associated with COMAR 26.08.03.06. If the Department identifies

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deficiencies in the PPP, the permittee shall have 90 days after receiving such a notification to update the PPP and provide written certification of such updates to the Department.

2. **Chlorine:** Per COMAR 26.08.03.06, discharges to surface waters cannot contain chlorine or chlorine-containing compounds except in nondetectable levels, which is less than 0.1 mg/L as determined using either the DPD titrimetric or colorimetric method or an alternate method approved by the Department. In order to comply with this requirement, you may consider dechlorination via chemical addition, absorption onto activated carbon, and/or control of discharge rates/holding of the effluent to that chlorine residuals naturally dissipate. Any other removal technology must be approved by the Department prior to use.

While monitoring and reporting of chlorine is not required for all types of discharges under this category, you remain responsible for ensuring that your discharges meet the terms of this narrative condition. You must be prepared to demonstrate that your best management practices (BMPs) and treatment technologies are sufficient to meet the requirements of this condition if requested by the Department. All BMPs, treatment methods, and any monitoring results collected to demonstrate compliance with this narrative condition must be documented in your PPP.

3. **Notification:** Dischargers under this category should take particular note of notification requirements in Part III.A for discharges exceeding 100,000 gallons and Part IV.H regarding permit non-compliance. Part IV.H of this permit is applicable to non-compliance with narrative effluent limitations in addition to numerical, so discharges of chlorinated water outside the spec of COMAR 26.08.03.06 (per narrative condition #2 of this category, above) shall be reported.
-

Discharge Category C: Dewatering from Construction Activities

Eligible Discharges:

Wastewater discharges from construction dewatering activities and foundation drainage, so long as the water being discharged is uncontaminated (such as by organics or metallic elements in the groundwater - contaminated groundwater may be eligible for coverage under Discharge Category D at the Department's discretion). Groundwater may be pumped out via a well-point system or removed from the excavation. Commingled stormwater is also permissible under this permit. Dewatering from basins consisting of solely stormwater may be regulated under this section if activities are beyond the scope of a different stormwater permit (i.e. flocculent use). (Unless otherwise directed by the Department on a case-by-case basis, dewatering of sediment basins containing stormwater only does not require permit coverage under any permit if there is less than one acre of land disturbance and you are not using additives for treatment,)

Notice of Intent Requirements:

Submission of a Notice of Intent for discharges under Discharge Category C shall only be required if you:

- a) discharge greater than 10,000 gallons per day,
- b) use a chemical additive as part of your management practices for erosion and sediment control (pursuant to Part III.C.4 of this permit), OR
- c) discharge into a Tier II stream or catchment (consult COMAR 26.08.02.04-10 and/or search the map at <https://mdewwp.page.link/Tier2Map> to determine if your receiving stream is Tier II)

All other dischargers under this category shall meet the narrative effluent limitations for this category (as well as the other applicable portions of the permit), but are not subject to submission of an NOI. Dischargers which are not required to submit an NOI are automatically authorized to discharge in compliance with the requirements of this permit. **NOTE:** This does not absolve the need to obtain and adhere to the terms other permits including but not limited to the General Permit for Stormwater Associated with Construction Activities or other permits identified in Part I.G of this permit where applicable.

Numerical Limitations for Discharges under this Category:

There are no applicable numerical limitations for this category. Please note the monitoring provisions for pH identified in the narrative requirements below.

Narrative Requirements:

1. **Monitoring for Flow and pH:** All dischargers to surface water under this category are required to monitor flow and pH a minimum of once per week. For discharges which are not subject to the numerical limitations/monitoring/reporting above, you are required to document flow measurements/estimations and pH measurements as part of your Pollution Prevention Plan (PPP). Should pH be outside the range of 6.0 to 9.0 for two consecutive weeks, you must implement a corrective action to restore pH
-

to the range specified. All necessary corrective actions shall be documented in the PPP.

- 2. Erosion and Sediment Control:** Take particular note of Parts III.C.1 and III.C.3 of this permit regarding requirements for management of erosion and sediment. Also take note of Part III.C.4 regarding the use of chemical additives (if applicable). Discharges which cause a noticeable sediment plume in the receiving waters are not permitted. If such a condition is observed, you shall cease discharge as soon as possible and implement a corrective action.
 - 3. Concrete/Cement Use:** If raw materials for concrete or cement are present on site and/or you are actively utilizing concrete or cement in your construction, you shall minimize contact with stormwater or groundwater. During such times, the monitoring for pH required under Narrative Requirement #1 in this section shall be increased to a minimum of once daily and the sample collected must be representative of when the concrete/cement materials are present. Any result outside of the range of 6.0 to 9.0 shall require follow-up monitoring every 30 minutes until the pH returns to a range of 6.0 to 9.0. If an excursion occurs for longer than three consecutive hours, you shall cease discharge and implement a corrective action. Discharge may resume again once pH is between 6.0 and 9.0. Documentation of concrete/cement use, appropriate controls, and monitoring results shall be maintained in your PPP.
 - 4. Organics/Metals Monitoring:** If you are discharging to surface water, as part of your application for registration under this general permit, you must indicate if there is any cause for belief that the groundwater to be discharged has a reasonable potential to contain volatile organic compounds, metallic elements, or any other pollutant other than sediment. Any data which you have obtained or know to exist from environmental assessments or well point monitoring must be included as part of your application. If no data is available, the Department may require additional monitoring upon commencement of discharge (or before, if accessible) if it is deemed necessary by a best professional judgment analysis.
 - 5. Conclusion of Construction Dewatering Activities:** Once you conclude activities at the site which lead to discharges from dewatering, you may terminate coverage under this permit. Until you terminate coverage, you will continue to be responsible for submission of required discharge monitoring reports via NetDMR (if applicable), even if you are reporting “No Discharge.”
-

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Discharge Category D: Groundwater Remediation

Eligible Discharges:

Discharges of groundwater which has been contaminated by volatile or semi-volatile organics, including that from foundation drainage, which has been treated using air stripping, air sparging, or carbon absorption to remove volatile organic compounds.

Discharges of groundwater which is contaminated solely by petroleum-based contaminants shall be covered under the General Discharge Permit of Treated Ground Water from Oil Contaminated Ground Water Sources to Surface or Ground Waters of the State, which is administered by the Department’s Oil Control Program (see Part I.G.4).

Notice of Intent Requirements:

All dischargers under this category are required to submit a Notice of Intent (see Part II.A).

Numerical Limitations for Discharges to Surface Waters Not Classified for Drinking Water:

The following numerical limitations apply to discharges to Class I, II, III, and IV streams (as defined by the Specific Designated Use Classes at COMAR 26.08.02.02B) and are to be summarized on discharge monitoring reports and submitted via NetDMR in accordance with Part IV.F of this permit.

Discharges of groundwater remediated to adjust pH

Parameter	Daily Minimum	Daily Maximum	Monthly Average	Units	Monitoring Frequency	Sample Type	Notes
Flow		REPORT	REPORT	gpd	1/Month	Measured	(1)
pH	6.0	9.0		s.u.	See Note 2	Grab	(2)

All discharges of remediated groundwater impacted by organics

Parameter	Daily Maximum	Monthly Average	Units	Monitoring Frequency	Sample Type	Notes
Flow	REPORT	REPORT	gpd	1/Month	Measured	(1)
Total Volatile Organics	100	REPORT	µg/L	See Note 2	Grab	(2) (3)

Discharges which include contamination by all gasoline, leaded or unleaded (among other contaminants)

Parameter	Daily Maximum	Monthly Average	Units	Monitoring Frequency	Sample Type	Notes
BTEX	100	REPORT	µg/L	See Note 2	Calculated	(2) (4)
Benzene	22	REPORT	µg/L	See Note 2	Grab	(2)

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Parameter	Daily Maximum	Monthly Average	Units	Monitoring Frequency	Sample Type	Notes
Toluene	REPORT	REPORT	µg/L	See Note 2	Grab	(2)
Ethylbenzene	REPORT	REPORT	µg/L	See Note 2	Grab	(2)
Xylene	REPORT	REPORT	µg/L	See Note 2	Grab	(2)

Discharges which include contamination by leaded gasoline (among other contaminants)

Parameter	Daily Maximum	Monthly Average	Units	Monitoring Frequency	Sample Type	Notes
Total Lead (fresh)	REPORT	2.5	µg/L	See Note 2	Calculated	(2) (5)
Total Lead (salt)	REPORT	8.1	µg/L	See Note 2	Grab	(2) (6)

Discharges which include contamination by petroleum-based products other than gasoline (among other constituents)

Parameter	Daily Maximum	Monthly Average	Units	Monitoring Frequency	Sample Type	Notes
Total Petroleum Hydrocarbons	15	REPORT	mg/L	See Note 2	Grab	(2) (8)
MTBE	REPORT	REPORT	µg/L	See Note 2	Grab	(2)
Naphthalene	REPORT	REPORT	µg/L	See Note 2	Grab	(2)

Discharges which include contamination by other organics

Parameter	CAS No. ⁴	STORET ⁵	Daily Max	Monthly Average	Units	Monitoring Frequency	Sample Type	Notes
Benzene	71-43-2	34030	22	REPORT	µg/L	See Note 2	Grab	(2)
Bromodichloromethane	75-27-4	32101	27	REPORT	µg/L	See Note 2	Grab	(2)
Chlorodibromomethane	124-48-1	32105	21	REPORT	µg/L	See Note 2	Grab	(2)
Carbon Tetrachloride	56-23-5	32102	5	REPORT	µg/L	See Note 2	Grab	(2)
1,3-Dichlorobenzene	541-73-1	34566	10	REPORT	µg/L	See Note 2	Grab	(2)
1,2-Dichloropropane	78-87-5	34541	31	REPORT	µg/L	See Note 2	Grab	(2)
1,1,2,2-Tetrachloroethane	79-34-5	34516	3	REPORT	µg/L	See Note 2	Grab	(2)
Tetrachloroethene	127-18-4	34475	29	REPORT	µg/L	See Note 2	Grab	(2)

⁴ CAS Number is a unique number identifier assigned by the Chemical Abstracts Service to every chemical substance. They have been provided to avoid confusion due to naming variations of organics.

⁵ The STORET code is an EPA identifier for use by WSA Compliance in assembling reporting spreadsheets.

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Parameter	CAS No. ⁴	STORET ⁵	Daily Max	Monthly Average	Units	Monitoring Frequency	Sample Type	Notes
1,1,2-Trichloroethane	79-00-5	34511	8.9	REPORT	µg/L	See Note 2	Grab	(2)
Trichloroethylene	79-01-6	39180	7	REPORT	µg/L	See Note 2	Grab	(2)
1,2,4-Trichlorobenzene	120-82-1	34551	0.03	REPORT	µg/L	See Note 2	Grab	(2)
Vinyl chloride	75-01-4	39175	1.6	REPORT	µg/L	See Note 2	Grab	(2)

Numerical Limitations for Discharges to Surface Waters Classified for Drinking Water or Discharges to Groundwater:

The following numerical limitations apply to discharges to Class I-P, II-P, III-P, and IV-P streams (as defined by the Specific Designated Use Classes at COMAR 26.08.02.02B) and are to be summarized on discharge monitoring reports and submitted via NetDMR in accordance with Part IV.F of this permit.

Discharges of groundwater remediated to adjust pH

Parameter	Daily Minimum	Daily Maximum	Monthly Average	Units	Monitoring Frequency	Sample Type	Notes
Flow		REPORT	REPORT	gpd	1/Month	Measured	(1)

All discharges of remediated groundwater impacted by organics

Parameter	Daily Maximum	Monthly Average	Units	Monitoring Frequency	Sample Type	Notes
Flow	REPORT	REPORT	gpd	1/Month	Measured	(1)
Total Volatile Organics	100	REPORT	µg/L	See Note 2	Grab	(2) (3)

Discharges which include contamination by all gasoline, leaded or unleaded (among other contaminants)

Parameter	Daily Maximum	Monthly Average	Units	Monitoring Frequency	Sample Type	Notes
BTEX	100	REPORT	µg/L	See Note 2	Calculated	(2) (4)
Benzene	2.1	REPORT	µg/L	See Note 2	Grab	(2)
Toluene	57	REPORT	µg/L	See Note 2	Grab	(2)
Ethylbenzene	68	REPORT	µg/L	See Note 2	Grab	(2)
Xylenes	REPORT	REPORT	µg/L	See Note 2	Grab	(2)

Discharges which include contamination by leaded gasoline (among other contaminants)

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Parameter	Daily Maximum	Monthly Average	Units	Monitoring Frequency	Sample Type	Notes
Total Lead (fresh)	4.10	2.04	µg/L	See Note 2	Grab	(2) (5)
Total Lead (salt)	13.28	6.62	µg/L	See Note 2	Grab	(2) (6)
Total Lead (ground)	30.15	15	µg/L	See Note 2	Grab	(2) (7)
1,2-Dichloroethane	5	REPORT	µg/L	See Note 2	Grab	(2)
Ethylene dibromide	0.05	REPORT	µg/L	See Note 2	Grab	(2)

Discharges which include contamination by petroleum-based products other than gasoline (among other constituents)

Parameter	Daily Maximum	Monthly Average	Units	Monitoring Frequency	Sample Type	Notes
Total Petroleum Hydrocarbons	15	REPORT	mg/L	See Note 2	Grab	(2) (8)
MTBE	REPORT	REPORT	µg/L	See Note 2	Grab	(2)
Naphthalene	REPORT	REPORT	µg/L	See Note 2	Grab	(2)

Discharges which include contamination by other organics

Parameter	CAS No.	STORET	Daily Max	Monthly Average	Units	Monitoring Frequency	Sample Type	Notes
Benzene	71-43-2	34030	2.1	REPORT	µg/L	See Note 2	Grab	(2)
Bromoform	75-25-2	32104	7	REPORT	µg/L	See Note 2	Grab	(2)
Bromodichloromethane	75-27-4	32101	0.95	REPORT	µg/L	See Note 2	Grab	(2)
Chlorodibromomethane	124-48-1	32105	0.8	REPORT	µg/L	See Note 2	Grab	(2)
Chloroform	67-66-3	32106	60	REPORT	µg/L	See Note 2	Grab	(2)
Bromomethane	74-83-9	34413	47	REPORT	µg/L	See Note 2	Grab	(2)
Carbon Tetrachloride	56-23-5	32102	0.4	REPORT	µg/L	See Note 2	Grab	(2)
1,3-Dichlorobenzene	541-73-1	34566	7	REPORT	µg/L	See Note 2	Grab	(2)
1,2-Dichloroethane	107-06-2	34531	5	REPORT	µg/L	See Note 2	Grab	(2)
1,1-Dichloroethylene	75-35-4	34501	7	REPORT	µg/L	See Note 2	Grab	(2)
1,2-Dichloropropane	78-87-5	34541	0.9	REPORT	µg/L	See Note 2	Grab	(2)
Ethyl benzene	100-41-4	34371	68	REPORT	µg/L	See Note 2	Grab	(2)
Methylene chloride	75-09-2	34423	20	REPORT	µg/L	See Note 2	Grab	(2)
1,1,2,2-Tetrachloroethane	79-34-5	34516	0.2	REPORT	µg/L	See Note 2	Grab	(2)

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Parameter	CAS No.	STORET	Daily Max	Monthly Average	Units	Monitoring Frequency	Sample Type	Notes
Tetrachloroethene	127-18-4	34475	5	REPORT	µg/L	See Note 2	Grab	(2)
Toluene	108-88-3	34010	57	REPORT	µg/L	See Note 2	Grab	(2)
1,1,2-Trichloroethane	79-00-5	34511	0.55	REPORT	µg/L	See Note 2	Grab	(2)
Trichloroethylene	79-01-6	39180	0.6	REPORT	µg/L	See Note 2	Grab	(2)
1,2,4-Trichlorobenzene	120-82-1	34551	0.03	REPORT	µg/L	See Note 2	Grab	(2)
Vinyl chloride	75-01-4	39175	0.022	REPORT	µg/L	See Note 2	Grab	(2)

Notes (for all tables)

- (1) Total volume of flow shall be measured and divided by the time over which the entire discharge occurred.
- (2) Required monitoring frequencies shall be based on volume of treated effluent as follows:
 - If effluent is 25,000 gallons or less per month, minimum monitoring frequency shall be 1/month.
 - If effluent is 25,001-500,000 gallons per month, minimum monitoring frequency shall be 2/month.
 - If effluent is 500,001 gallons or more per month, minimum monitoring frequency shall be 1/week.

The frequency shall be determined based on an expected typical month, not necessarily each month on its own. For example, if you routinely treat 50,000 gallons each month, but happen to treat only 24,000 in a given month, you should still monitor twice that month and each month going forward until you're routinely treating less than 25,000 each month.
- (3) "Total Volatile Organics" is the sum of all parameters measured by EPA Test Method 624. You shall attach a complete list of monitoring results for all parameters of Method 624 for each sample result when submitting results in NetDMR.
- (4) "Total BTEX" is the sum of benzene, toluene, ethyl benzene, and xylenes.
- (5) Limit is applicable if the receiving stream for the discharges is fresh water.
- (6) Limit is applicable if the receiving stream for the discharges is salt water.
- (7) Limit is applicable if the discharges are to groundwater.
- (8) "Total Petroleum Hydrocarbons" is the sum of all parameters measured by EPA Test Method 8015B.

Narrative Requirements:

1. **Treatment Method:** The technology-based limitations for this category are based on what the Department has determined is achievable for air stripping, air sparging, and/or carbon adsorption. You must maintain a full description of your treatment system in your PPP, including a log of system inspections and/or repairs.

If you desire to use a different treatment method, you must submit system specifications and certifications which demonstrate to the Department that the system is capable of meeting all applicable numerical limits for the wastewater at your site. Documents which complete this demonstration must be attached to the NOI. The Department reserves the right to require an individual permit if it is not satisfied that the technology is sufficient.

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- 2. Additional Application Requirement:** In addition to a completed Notice of Intent (NOI), dischargers under this category must collect a minimum of one sample of the water to be discharged prior to any treatment and submit the results using EPA Form 3510-2C. Sampling results must be included for all parameters listed in Form 3510-2C Part V.B (except radioactivity parameters) and the “Metals, Cyanide, and Total Phenols” and “Volatile Compounds” section of Part V.C at a minimum. Parameters which are below the detection limits for their respective test method must indicate the value of the detection limit. Any parameters not tested as a result of the permittee believing there is no reasonable potential must be marked as “Believed Absent.”

The complete, signed EPA Form 3510-2C shall be attached to the Notice of Intent upon submission. Analysis reports from the laboratory are not required for attachment unless requested by Department personnel. The Department reserves the right to require additional testing beyond what is submitted if it has reason to believe there is reasonable potential for any pollutants not included in the sampling analysis.

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Discharge Category E: Draining or Flushing of Fire Control Systems

Eligible Discharges:

Wastewater from draining or flushing of fire control or fire suppression systems. This section does not include the flushing of fire hydrants, which are permitted under Discharge Category B of this permit.

Notice of Intent Requirements:

All dischargers under this category are required to submit a Notice of Intent (see Part II.A). If it is foreseeable that discharges could exceed half the flow of the receiving stream (max discharge vs. stream low flow conditions), this must be indicated by selecting the applicable checkbox on the Notice of Intent.

Numerical Limitations for Discharges to Surface Waters Under this Category:

The following tables list requirements which are to be monitored as directed, with results maintained on site along with the permit registration letter and to be made available upon request of Department personnel.

NOTE: Discharges under this category which occur to groundwater only are exempt from all numerical limits, monitoring, and reporting.

Requirements for all discharges under this category:

Parameter	Daily Minimum	Daily Maximum	Monthly Average	Units	Monitoring Frequency	Sample Type	Notes
Flow		REPORT	REPORT	gpd	1/Discharge	Measured	(1)
Total Residual Chlorine		ND		mg/L	2/Discharge	Grab	(2) (3) (4)

Requirements for discharges which either exceed 100,000 gpd or half the flow of the receiving stream (Required only from May through October):

Parameter	Daily Minimum	Daily Maximum	Units	Monitoring Frequency	Sample Type	Notes
Temperature		See Note 5	°F	See Note 5	i-s	(5)

Requirements for potable water sources which have been chemically dechlorinated⁽⁶⁾:

Parameter	Daily Minimum	Daily Maximum	Units	Monitoring Frequency	Sample Type	Notes
Dissolved Oxygen (Class I, I-P, II)	5.0		mg/L	2/Discharge	Grab	(3) (7)
Dissolved Oxygen (Class III, III-P, IV, IV-P)	6.0		mg/L	2/Discharge	Grab	(3) (8)

Notes (for all tables)

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- (1) Total volume of flow shall be measured and divided by the time (in days) over which the entire discharge occurred.
- (2) Testing for total residual chlorine is only required when the source water has been chlorinated. If sampling is not applicable, you must maintain a note indicating the reason in your records.
- (3) Two grab samples required: one at the beginning of discharge and one approximately midway through the discharge.
- (4) The limitation is identified as “ND,” which indicates that chlorine must be below the minimum quantification level, which for total residual chlorine is 0.10 mg/L using either the DPD titrimetric or colorimetric method (or an alternative method, if approved by the Department). All results below 0.10 mg/L may be recorded as “< 0.10” or “ND” in your records.
- (5) This limitation is applicable when flows exceed 100,000 gpd or half of the receiving stream during current conditions. You should err on the side of caution and collect samples for reporting if this may be the case. If sampling is not applicable based on discharge volume (vs. flow conditions, if applicable), you must maintain a note in your records. You must verify compliance with the water quality standard by measuring temperature of the water to be discharged within thirty minutes prior to commencing discharge. If the temperature exceeds the water quality standard for the receiving stream (68°F for Class III and III-P; 75°F for Class IV and IV-P; and 90°F for Class I, I-P, and II), then during the discharge, you must monitor temperatures in even intervals (at least three measurements) at the edge of the 50-foot mixing zone, as identified in Note 3, above.
- (6) For the purposes of this permit, the use of dechlorination tablets does not constitute chemical dechlorination. See Appendix B for the full definition.
- (7) Limit is applicable if the receiving stream for the discharges is Class I, I-P, or II, as defined by the Specific Designated Use Classes at COMAR 26.08.02.02B.
- (8) Limit is applicable if the receiving stream for the discharges is Class III, III-P, IV, or IV-P, as defined by the Specific Designated Use Classes at COMAR 26.08.02.02B.

Narrative Requirements:

1. **Chlorine:** Per COMAR 26.08.03.06, discharges cannot contain chlorine or chlorine-containing compounds except in nondetectable levels. In order to comply with the numerical limitation outlined above, you may consider dechlorination via chemical addition (subject to numerical limitations above) or the use of dechlorination tablets, absorption onto activated carbon, and/or control of discharge rates/holding of the effluent to that chlorine residuals naturally dissipate. Any other removal technology must be approved by the Department prior to use.
2. **Temperature:** Discharges shall not cause the temperature of the receiving waters, beyond a mixing zone which extends 50 feet radially (in still water) or 50 feet downstream (in flowing water), to exceed the applicable water quality standard for the receiving stream (68°F for Use III or III-P, 75°F for Use IV or IV-P, or 90°F for all other Uses). If the ambient temperature of the receiving waters exceeds these standards, then the temperature shall not exceed the ambient temperature of the stream.

You must apply controls to your discharge to prevent temperature exceedances and be able to demonstrate compliance with this condition if requested. Any monitoring results for temperature must be maintained on site and made available if requested by the Department. If your discharge is causing an exceedance for temperature, you shall either reduce flows or decrease effluent temperatures to a level where in-stream dilution is sufficient for the water quality standards to be met at the edge of the allowable mixing zone. In addition to this narrative requirement, please note the numerical monitoring

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required for discharges which exceed 100,000 gallons per day or half the flow of the receiving stream (above).

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Discharge Category F: Untreated “Water” Discharges

Eligible Discharges:

Discharges of untreated “water” in excess of 10,000 gallons per day (as a monthly average), or untreated “water” otherwise specifically required for coverage by the Department on a case-by-case basis from water storage or distribution systems, including but not limited to hydrogeologic/aquifer/well head yield testing. This category is designed primarily to cover discharges of raw water overflows from intakes or aqueducts. This category excludes any water sources which have been chlorinated.

Notice of Intent Requirements:

Submission of a Notice of Intent for discharges under Discharge Category F shall only be required if you

- a) discharge 100,000 gallons per day or greater (as a monthly average), OR
- b) discharge into a Tier II stream or catchment (consult COMAR 26.08.02.04-1O and/or search the map at <https://mdewwp.page.link/Tier2Map> to determine if your receiving stream is Tier II)

All other dischargers under this category shall meet the numerical (if applicable) and narrative effluent limitations for this category (as well as other applicable portions of the permit), but are not subject to submission of an NOI. Dischargers which are not required to submit an NOI are automatically authorized to discharge in compliance with the requirements of this permit.

Numerical Requirements:

The following table and associated language identifies temperature requirements which is to be monitored as directed, during the months of May through October. Monitoring results shall be maintained on site (along with the permit registration letter – if applicable) and to be made available upon request of Department personnel. *This Discharge Category is not subject to submission of discharge monitoring reports via NetDMR.*

Requirements for discharges which either exceed 100,000 gpd or half the flow of the receiving stream (Required only from May through October):

Parameter	Daily Minimum	Daily Maximum	Units	Monitoring Frequency	Sample Type	Notes
Temperature		See Below	°F	See Below	i-s	

You must verify compliance with the water quality standard by measuring temperature of the water to be discharged within thirty minutes prior to commencing discharge. If the temperature exceeds the water quality standard for the receiving stream (68°F for Class III and III-P; 75°F for Class IV and IV-P; and 90°F for Class I, I-P, and II), then during the discharge, you must monitor temperatures in even intervals (at least three measurements) at the edge of a mixing zone which extends 50-feet radially from the outfall and, in flowing water, 50-feet in the direction of flow.

Provides discharge authorization only upon Maryland Department of the Environment notification of registration.

If an in-stream exceedance is occurring outside of the mixing zone, you shall take corrective action(s) such as decreasing the flow to meet water quality standards or ceasing discharge until cooler temperatures exist. You shall note any corrective actions taken in a log and maintain such log alongside the required monitoring results.

Narrative Requirements:

Discharges which create a visual plume of sediments or noticeably alter the color of the receiving stream are not permitted.

You shall reference the requirements of Part III.C.1 regarding erosion and sediment control, particularly if discharges comprise a significant portion of the receiving stream and/or typically occur over dry land or into shallow standing or flowing waters.

Provides discharge authorization only upon Maryland Department of the Environment notification of registration.

Discharge Category G: Tank Bottom Wastewater

Eligible Discharges:

Treated tank bottom wastewater from petroleum (i.e. gasoline, kerosene, fuel oil, 'No. 6 oil,' and aviation fuel only) storage tanks to surface waters. "Tank bottoms" is a term used to describe the combination of water, contaminated water, and sediments that collect on the bottom of storage tanks.

Notice of Intent Requirements:

All dischargers under this category are required to submit a Notice of Intent (see Part II.A).

Numerical Limitations:

The following numerical limitations are to be summarized on discharge monitoring reports and submitted via NetDMR in accordance with Part IV.F of this permit.

Parameter	Daily Maximum	Monthly Average	Units	Monitoring Frequency	Sample Type	Notes
Flow	REPORT	REPORT	gpd	1/Discharge	Measured	(1)
Oil & Grease	15	REPORT	mg/L	3/Discharge	Grab	(2)
BTEX	100	REPORT	µg/L	3/Discharge	Calculated	(2) (3)
Benzene	22	REPORT	µg/L	3/Discharge	Grab	(2)
Toluene	REPORT	REPORT	µg/L	3/Discharge	Grab	(2)
Ethylbenzene	REPORT	REPORT	µg/L	3/Discharge	Grab	(2)
Xylene	REPORT	REPORT	µg/L	3/Discharge	Grab	(2)
Total Suspended Solids (TSS)	60	REPORT	mg/L	3/Discharge	Grab	(2)

Notes

- (1) Total volume of flow shall be measured and divided by the time over which the entire discharge occurred.
- (2) Three grab samples shall be collected at approximate even intervals and analyzed separately.
- (3) BTEX is the sum of benzene, toluene, ethylbenzene, and xylene concentrations.

Narrative Limitations:

1. **Biomonitoring:** You may only discharge tank bottoms wastewater after confirming via biomonitoring (subject to the testing terms in item 2 of this section, below) that each batch is not acutely toxic. Results from biomonitoring must be submitted to and approved by the Department prior to commencement of discharges.

Provides discharge authorization only upon Maryland Department of the Environment notification of registration.

- 2. *Biomonitoring Plan Approval:*** Within three months after registration for Discharge Category G under this permit, you must submit a study plan for evaluation of effluent toxicity by using biomonitoring, accounting for the following terms at a minimum:
- a. The study plan should discuss (1) sample and sample handling, (2) source and age of test organisms, (3) source of dilution water, (4) testing procedure/experimental design, (5) data analysis, (6) quality control/quality assurance, and (7) report preparation.
 - b. The testing program shall consist of one definitive acute testing event. This testing shall not be performed before the Department's acceptance of the study plan, as indicated by written approval.
 - i. The testing event shall include a 48-hour static renewal test using fathead minnow and a 48-hour static renewal test using a daphnid species.
 - ii. If the receiving water is estuarine, you may substitute estuarine species for those species specified above. Approved estuarine species for acute testing are sheepshead minnows, silversides, grass shrimp, and mysid shrimp. In all cases, testing must include one vertebrate species and one invertebrate species.
 - c. The sample used for biomonitoring shall be collected in the same manner and location as the samples analyzed for the effluent limitations and monitoring requirements for this outfall, and shall not be chlorinated. Testing shall be conducted in accordance with the procedures described in the EPA's Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, October 2002 and further revisions found on the EPA's website (<https://mdewwp.page.link/acuteWET>).
 - d. Test results shall be submitted to the Department within one month of completion.
 - e. Test results shall be reported in accordance with MDE/WMA "Reporting Requirements for Effluent Biomonitoring Data".
 - f. If testing is not performed in accordance with MDE-approved study plan, additional testing may be required by the Department.
 - g. If the test results indicate that the effluent is toxic, the discharge will not be authorized by this permit.
 - h. Submit all biomonitoring-related materials to:

Maryland Department of the Environment
WSA - Compliance Program
1800 Washington Boulevard, Suite 420
Baltimore, Maryland 21230
Attn: Biomonitoring

Discharge Category H: Stormwater Discharges from Aboveground Tank Containment

Eligible Discharges:

Discharges of stormwater from within dikes, berms, walls, or any other containment structure for sites of actively-used aboveground storage tanks which are not already covered by a different NPDES permit. This permit does not authorize discharges resulting from a spill event including any spilled material or stormwater which is impacted by any spilled material.

The presence of a containment structure for aboveground tanks does not in and of itself trigger a requirement for coverage under this or any other discharge permit.⁶ If your facility seeks coverage under this permit for other types of discharges and your facility has tanks within a containment structure, you must also obtain coverage under this section for discharges of stormwater from that containment structure for the duration of time you hold this general permit.

Notice of Intent Requirements:

All dischargers registering for coverage under this category are required to submit a Notice of Intent (see Part II.A).

Visual Monitoring:

If no known spill or leak has occurred within the containment area since the time of the most recent prior stormwater discharge, the permittee shall visually inspect collected stormwater prior to opening the valve to the outfall. If a visible oily sheen is observed on the surface of the water, the following sampling and numerical monitoring is required. If any other product which had been previously contained in the tank is visible or otherwise detected, the permittee should defer to Narrative Criteria below.

If a known spill or leak has occurred within the containment area since the time of the most recent prior stormwater discharge, the sampling and numerical monitoring presented below are automatically required regardless of the findings resulting from visual monitoring.

Requirement #4 under Narrative Monitoring, below, regards logging of visual monitoring results.

Monitoring Requirements Following a Spill or Leak Event:

If a spill or leak event occurs within a containment area, the permittee shall not discharge any spilled materials and shall take actions such as but not limited to pumping and hauling, power washing, and scrubbing of the surface to ensure removal of all spilled material. Prior to discharging any stormwater collected within a containment area for the first time after a spill event and clean up, the permittee must collect a sample from the containment area and ensure that no visible or odorous pollutants are discharged. If a sample contains a visible sheen, floating solids, or a noxious smell, then the water collected in the containment area should be

⁶ Unless specifically directed by the Department, facilities containing no other source of discharges which require coverage under this general permit or an NPDES permit for industrial stormwater are not required to obtain permit coverage for stormwater discharges from aboveground tank containment structures. Such facilities are, however, advised to follow the requirements of this section and implement good housekeeping to ensure protection of receiving waters.

Provides discharge authorization only upon Maryland Department of the Environment notification of registration.

discharged into a sanitary sewer system or hauled to a treatment facility and clean up should be re-initiated.

If a known spill or leak has occurred within a containment area and the material spilled was petroleum-based, the following numerical guidelines are provided to determine if water is suitable for discharge. The first time stormwater is collected in the containment area following a spill or leak of a petroleum based product, the permittee shall collect a sample from the containment area or during discharge to verify compliance with the following limitations. This process shall continue for every subsequent rain event which necessitates a discharge until a compliant test has occurred. Even if the water is not ultimately discharged (the permittee tests collected stormwater, but hauls it away for treatment or discharges to sanitary sewer as a precaution), a compliant sample fulfills this requirement and the permittee may resume discharging without numerical monitoring (still subject to visual monitoring) until an additional spill or leak has occurred. If a discharge of water occurs where the water is determined to exceed a numerical limit outlined below, the permittee shall notify the Department’s Compliance program per Part IV.H.1 of this permit.

This Discharge Category is not subject to submission of discharge monitoring reports via NetDMR. Records of all numerical and/or visual monitoring shall be maintained on site and must be made available upon request of Department personnel.

Guidelines for stormwater from all petroleum tank containment structures

Parameter	Daily Maximum	Units	Monitoring Frequency	Sample Type	Notes
Oil & Grease	15	mg/L	1/Discharge	Grab	

Additional guidelines for tanks containing gasoline:

Parameter	Daily Maximum	Units	Monitoring Frequency	Sample Type	Notes
BTEX	100	µg/L	1/Discharge	Calculated	(1)
Benzene	22	µg/L	1/Discharge	Grab	
Toluene	REPORT	µg/L	1/Discharge	Grab	
Ethylbenzene	REPORT	µg/L	1/Discharge	Grab	
Xylene	REPORT	µg/L	1/Discharge	Grab	

Notes (for all tables):

(1) BTEX is the sum of benzene, toluene, ethylbenzene, and xylene concentrations.

Narrative Requirements:

- 1. Notification:** Notification must be provided to the Water and Science Administration’s Compliance Program prior to commencing the initial discharge from stormwater containment after clean up has occurred following a spill event.

Provides discharge authorization only upon Maryland Department of the Environment notification of registration.

- 2. Water Quality Limitations:** In addition to meeting any applicable numerical limitations specified for this Discharge Category, your discharge must be controlled as necessary to meet applicable water quality standards, as specified in COMAR 26.08.02. If at any time you become aware, or the Department determines, that your discharge causes or contributes to an exceedance of applicable water quality standards, then you must (1) notify the Department in accordance with Part IV.H of this permit, (2) develop a corrective action plan to prevent future discharges from exceeding water quality standards, and (3) report corrective actions to the Department. The Department reserves the right to impose water quality-based limitations on a site-specific basis (based on criteria in COMAR 26.08.02.03) or require you to obtain coverage under an individual permit if necessary for the protection of water quality standards.
 - 3. Outfall Valve:** The outlet from all containment structures must be maintained in the closed position at all times, except during deliberate stormwater drainage operations.
 - 4. Inspections/Logbook:** You shall inspect the containment area a minimum of once per month and shall maintain a logbook of observations, particularly noting any observed spills or leaks. Any spilled or leaked product shall be properly cleaned up and removed as soon as possible. The logbook shall also contain results from all visual inspections prior to discharge of stormwater, as required in the “Visual Monitoring” section above. At a minimum, the log shall include the name of the person performing the inspection, date and time, and a brief description of observations of the containment area.
 - 5. Spill Prevention and Response Procedures:** You must minimize the potential for leaks, spills and other releases that may be exposed to stormwater and develop plans for effective response to such spills if or when they occur. These procedures are complementary to and do not replace any requirements of RCRA (42 U.S.C. §6901), the Department’s Land and Materials Administration Oil Control Program, NFPA 30 Flammable and Combustible Liquids Code or the Spill Prevention, Control and Countermeasure (SPCC) Plan (as a requirement of 40 CFR § 112), At a minimum, you must implement:

 - a. Procedures for plainly labeling containers (e.g., “Used Oil,” “Spent Solvents,” “Fertilizers and Pesticides,” etc.) that could be susceptible to spillage or leakage to encourage proper handling and facilitate rapid response if spills or leaks occur;
 - b. Quarterly inspection procedures for containers that are susceptible to spillage or leakage (e.g., used oil) to ensure the containment structures have no leaks/cracks, and that the outlets are properly sealed. Check that plugs are properly affixed, that valves are in working condition, and that neither are leaking;
 - c. Procedure for the discharge of any stormwater from a containment structure, requiring that a sample is taken to ensure that no visible or odorous pollutants are discharged. If a sample contains a visible sheen, floating solids or a noxious smell, then you must discharge the remaining wastewater as directed by the “Numerical Monitoring” section above (for oily sheen) or to a sanitary sewer system or haul it to a recycler or TSDF (Treatment Storage & Disposal Facilities) or disposal facility;
-

Provides discharge authorization only upon Maryland Department of the Environment notification of registration.

- d. Preventative measures such as barriers between material storage and traffic areas, secondary containment provisions, and procedures for material storage and handling;
 - e. Procedures for expeditiously stopping, containing, and cleaning up leaks, spills, and other releases. Employees who may cause, detect, or respond to a spill or leak must be trained in these procedures and have necessary spill response equipment available. If possible, one of these individuals should be a member of your stormwater pollution prevention team as described in Part III.C.1; and
 - f. Procedures for notification of appropriate facility personnel, emergency response agencies, and regulatory agencies. Where a leak, spill, or other release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity established under either 40 CFR Part 110, 40 CFR Part 117, or 40 CFR Part 302, occurs during a 24-hour period, you must notify the Department's Emergency Spill Response number at (866) 633-4686 and EPA's National Response Center (NRC) at (800) 424-8802 or, in the Washington, DC, metropolitan area, call (202) 267-2675 in accordance with the requirements of 40 CFR Part 110, 40 CFR Part 117, and 40 CFR Part 302 as soon as you have knowledge of the discharge. Local requirements may necessitate reporting spills or discharges to local emergency response, public health, or drinking water supply agencies. Contact information must be in locations that are readily accessible and available
-

Appendix B: Definitions, Abbreviations, and Acronyms

Additive or Chemical additive - waste water treatment chemicals or products added to water prior to discharge, such as polymers or flocculants. Additives are added to the water so that the discharge water is in compliance with the permit limits.

Bypass - the intentional diversion of wastes from any portion of a treatment facility.

CFR - Code of Federal Regulations

Chemical dechlorination – refers to the use of an additive (e.g. sodium bisulfite, sodium thiosulfate) which, if over added, may cause scavenging of dissolved oxygen. Specifically, for the purposes of this permit, this does not include the use of dechlorination tablets.

COMAR - Code of Maryland Regulations

Construction Activities – earth-disturbing activities, such as the clearing, grading, and excavation of land, and other construction activities (e.g. stockpiling of fill material, placement of raw materials at the site) that could lead to the generation of pollutants.

Control measure – refers to any BMP or other method (including narrative effluent limitations) used to prevent or reduce the discharge of pollutants to waters of the State.

CWA – Clean Water Act (or the Federal Water Pollution Control Act, 33 U.S.C. §1251 et seq)

Corrective action – for the purposes of the permit, any action taken, or required to be taken, to (1) repair, modify, or replace any stormwater control used at the site; (2) clean up and dispose of spills, releases, or other deposits found on the site; and (3) remedy a permit violation.

Daily determination of concentration - one analysis performed on any given sample representing flow during a calendar day, with one number in mg/L or other appropriate units as an outcome.

Daily maximum effluent concentration - the highest reading of any daily determination of concentration.

Daily maximum temperature - the highest temperature observed during a 24-hour period, or if flows are of shorter duration, during the operating day.

Department - the Maryland Department of the Environment. Unless stated otherwise, all submissions to the Department shall be directed to the attention of the Wastewater Permits Program.

Dewatering – the act of draining rainwater and/or ground water from building foundations, vaults, and trenches

Discharge – when used without qualification, means the "discharge of a pollutant." See 40 CFR 122.2.

Discharge of a pollutant – any addition of any "pollutant" or combination of pollutants to "waters of this State" from any "point source," or any addition of any pollutant or combination of pollutants to the waters of the "contiguous zone" or the ocean from any point source other than a vessel or other floating craft which is being used as a means of transportation. This includes

additions of pollutants into waters of this State from: surface runoff which is collected or channeled by man; discharges through pipes, sewers, or other conveyances, leading into privately owned treatment works. See 40 CFR 122.2.

Discharge-related activities – activities that cause, contribute to, or result in stormwater and allowable non-stormwater point source discharges, and measures such as the siting, construction and operation of BMPs to control, reduce, or prevent pollution in the discharges.

Disinfectant - any oxidant, including but not limited to chlorine, chlorine dioxide, chloramines, and ozone, added to the water in any part of the treatment or distribution process that is intended to inactivate pathogenic microorganisms. For the purposes of this permit, this shall be identified as a post washing activity.

Drawdown - the draining of a pool or spa in its entirety.

DMR – Discharge Monitoring Report, which is a report submitted by a permittee to the Department summarizing the effluent monitoring results obtained by the permittee over periods of time as specified in the permit.

Effluent limitation - any restriction or prohibition that:

- Is established under federal law or a law of this State;
- Specifies quantities, rates or concentrations of chemical, physical, biological, or other constituents that are discharged into the waters of this State; and
- Includes parameters for the discharge of toxic and nontoxic substances and standards of performance for new sources.

EPA – U. S. Environmental Protection Agency

Estimated flow – a calculated volume or discharge rate that is based on a technical evaluation of the sources contributing to the discharge including, but not limited to, pump capabilities, water meters, and batch discharge volumes.

Existing discharger – an operator applying for coverage under this permit for discharges authorized previously under an NPDES general or individual permit.

Facility or Activity – any NPDES “point source” (including land or appurtenances thereto) that is subject to regulation under the NPDES program. See 40 CFR 122.2.

Federal Act or Federal Clean Water Act - the federal Water Pollution Control Act (33 U.S.C. §1251 et seq.), its amendments, and all rules and regulations adopted under the Act.

Flushing - the rinsing of pipes, tanks, or reservoirs with untreated “water” or with potable water to remove solids that have accumulated during construction or from settling. Flushing does not include any introduction of cleaners or chemicals into the pipes or tanks.

GPD or gpd - an abbreviation for gallons per day, and is used as unit of measurement for flow.

Grab sample - an individual sample collected in less than 15 minutes. Grab samples for pH and total residual chlorine shall be analyzed within 15 minutes of sample collection.

Groundwater - underground water in a zone of saturation.

Provides discharge authorization only upon Maryland Department of the Environment notification of registration.

Impaired Water (or “Water Quality Impaired Water”) – a body of water identified by the Department or EPA pursuant to Section 303(d) of the Clean Water Act as not meeting applicable State water quality standards (these waters are called “water quality limited segments” under 40 CFR 30.2(j)). Impaired waters include both waters with approved or established TMDLs, and those for which a TMDL has not yet been approved or established. Impaired waters compilations are included in Maryland’s most current List of Impaired Surface Waters as Category 4a, 4b, 4c or 5 waterbodies.

Includes or including - includes or including by way of illustration and not by way of limitation.

Mechanical cleaning – cleaning of a vessel, pipe, or tank using either manual force by scrubbing or force from pressurized washing. Spraying with a typical garden hose does not constitute mechanical cleaning.

Minimize – to reduce and/or eliminate to the extent achievable using control measures (including best management practices) that are technologically available and economically practicable and achievable in light of best industry practice

Monthly average – The arithmetic average of all sample results collected in a given month.

NetDMR – a nationally-available electronic reporting tool, initially designed by states and later adapted for national use by EPA, which can be used by NPDES-regulated facilities to submit discharge monitoring reports (DMRs) electronically to EPA through a secure Internet application over the National Environmental Information Exchange Network (NEIEN). EPA can then share this information with authorized states, tribes, and territories.

NOI – Notice of Intent to be covered by this permit (see Part II.A.1.a of this permit).

NPDES – National Pollutant Discharge Elimination System

Operator – means that person or those persons with responsibility for the management and performance of each facility.

Outfall – locations where collected and concentrated stormwater flows are discharged from the facility, including pipes, ditches, swales, and other structures that transport stormwater.

Owner - a person who has a legal interest in the facility or in the property on which the facility is located, or the owner’s agent.

Permittee - the person holding a permit issued by the Department, or authorized for coverage under a general permit by the department.

Persistent Foam - foam that does not dissipate within one half-hour of point of discharge and: forms objectionable deposits on the receiving water; forms floating masses producing a nuisance; produces objectionable color or odor; or interferes with a designated use of the water body. It does not mean foaming of the receiving water body caused by natural conditions.

Person – an individual, association, partnership, corporation, municipality, State or Federal agency, or an agent or employee thereof. See 40 CFR 122.2.

Point source – any discernible, confined and discrete conveyance, including any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, large animal feeding

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operation, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are, or may be, discharged.

Pollutant – dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal and agricultural waste discharged into water. See 40 CFR 122.2.

Pollutant of concern – A pollutant which causes or contributes to a violation of a water quality standard, including a pollutant which is identified as causing an impairment in a state's 303(d) list.

Pollution – means any contamination or other alteration of the physical, chemical, or biological properties of any waters of this State, including a change in temperature, taste, color, turbidity, or odor of the waters or the discharge or deposit of any organic matter, harmful organism, or liquid, gaseous, solid, radioactive, or other substance into any waters of this State that will render the waters harmful, or detrimental to

- (a) public health, safety, or welfare;
- (b) domestic, commercial, industrial, agricultural, recreational, or other legitimate beneficial uses;
- (c) livestock, wild animals, birds; or
- (d) fish or other aquatic life.

Sewage – water-carried human, domestic and other wastes and includes all human and animal excreta from residences, buildings, industrial establishments, or other places.

State discharge permit - the discharge permit issued under the Environment Article, Title 9, Subtitle 3, Annotated Code of Maryland.

Super chlorination - the addition of chlorine resulting in levels exceeding four parts per million (4ppm).

Surface waters - all waters of this State which are not groundwaters.

Tier II waters – For antidegradation purposes, pursuant to 40 CFR 131.12(a)(2), Tier II waters are characterized as having water quality that exceeds the levels necessary to support the propagation of fish, shellfish, and wildlife and recreation in and on the water. Maryland Tier II waters are identified at COMAR 26.08.02.04-10.

Total Maximum Daily Loads (TMDLs) – A TMDL is a calculation of the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards, and an allocation of that amount to the pollutant's sources. A TMDL includes wasteload allocations (WLAs) for point source discharges; load allocations (LAs) for nonpoint sources and/or natural background, and must include a margin of safety (MOS) and account for seasonal variations. (See section 303(d) of the Clean Water Act and 40 CFR 130.2 and 130.7).

Total Residual Chlorine (TRC) - the total amount of chlorine present in a sample. This is the sum of the free chlorine residual and the combined available chlorine residual.

Upset - the exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by

Provides discharge authorization only upon Maryland Department of the Environment notification of registration.

operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

Wastewater - any:

- liquid waste substance derived from industrial, commercial, municipal, residential, agricultural, recreational, or other operations or establishments; and
- other liquid waste substance containing liquid, gaseous or solid matter and having characteristics that will pollute any waters of the State.

Water or **Untreated water** – the liquid substance which is derived from a groundwater source, a surface water source, or any combination of these sources, and which will be discharged, without change in quality, into waters of this state, with the exception of storm water runoff.

Water quality standards – A water quality standard defines the water quality goals of a water body, or portion thereof, by designating the use or uses to be made of the water and by setting criteria necessary to protect the uses. The Department as promulgated in COMAR 26.08.02 and EPA adopt water quality standards to protect public health or welfare, enhance the quality of water and serve the purposes of the Clean Water Act (See CWA sections 101(a)2 and 303(c)). Water quality standards also include an antidegradation policy. See P.U.D. o. 1 of Jefferson County et al v. Wash Dept of Ecology et al, 511 US 701, 705 (1994).

Waters of this State – includes both surface and underground waters within the boundaries of this State subject to its jurisdiction, including that part of the Atlantic Ocean within the boundaries of this State, the Chesapeake Bay and its tributaries, and all ponds, lakes, rivers, streams, tidal and nontidal wetlands, public ditches, tax ditches, and public drainage systems within this State, other than those designed and used to collect, convey, or dispose of sanitary sewage; and the flood plain of free-flowing waters determined by the Department of Natural Resources on the basis of the 100-year flood frequency.

APPENDIX C

**NOTICE OF INTENT FORM
(MDE/WMA/PER.011, REVISED JUNE 29,
2020)**

MARYLAND DEPARTMENT OF THE ENVIRONMENT

General Discharge Permit For Discharges from Tanks, Pipes, Other Liquid Containment Structures, Dewatering Activities, and Groundwater Remediation
 Notice of Intent (NOI) for Maryland General Permit No. 17-HT

DISCHARGE PERMIT NO. 17-HT**NPDES PERMIT NO. MDG67**

Submission of this NOI constitutes notice that the party identified in Section I of this form intends to be authorized by a State/National Pollutant Discharge Elimination System (NPDES) permit issued for discharges from tanks, pipes, other liquid containment structures, dewatering activities, and groundwater remediation identified in Sections II and III of this form. All information requested must be provided in order to be considered for authorization to discharge under this permit. Instructions are provided at the end of this form.

SECTION I: Facility Operator Information

(A) Owner/Operator Name		
(B) Primary Contact Name	Title	
Telephone Number	Email Address	
(C) Mailing Address		
Street		
City	State	ZIP Code
(D) IRS Employer Identification Number (EIN)	(E) Ownership Type - check below	
	<input type="checkbox"/> Private	<input type="checkbox"/> Federal <input type="checkbox"/> State/Local
(F) Worker's Compensation Insurance:	Insurance Company Name	Policy Number

SECTION II: Facility Information

(A) Name of Facility			
(B) Facility Address (if different than your mailing address)			
Street			
City	State	ZIP Code	County
	MD		
(C) Has this facility registered under a previous HT permit (11HTXXXX) or any other NPDES permit? If so, provide those permit numbers:			
For MDE use only:	Facility #	Receipt #	Date:
PCA 13710	Comp Object 5710	Suffix 411	

MARYLAND DEPARTMENT OF THE ENVIRONMENT
NOI for Permit No. 17-HT

SECTION III: Discharge Information

(A) Identify applicable Discharge Categories and specific information relative to each. For multiple types of discharges within one Discharge Category, please use additional copies of this page.

- Discharge Category A:** Disinfection or Hydrostatic Testing of Tanks, Pipes, or Pipelines
 Discharges are from tanks previously used to store oils. Chlorinated water
 Chemical dechlorination Receiving stream is Class III, III-P, IV, or IV-P
- Discharge Category B:** Potable Water Systems
 Mechanical cleaning . Super Chlorination. Chemical Dechlorination.
- Discharge Category C:** Dewatering from Construction Activities
 Check if you propose to use chemical additives for sediment control - *if yes, see Section IV*
 Check if there cause for belief that discharges are impacted by pollutants other than sediment
 Site Assessment Available/Attached No Site Assessment Available
(see permit Appendix A, page A-9, Narrative Requirement #4)
- Discharge Category D:** Groundwater Remediation (identify contaminant types - check all that apply)
 Receiving stream is protected for drinking water OR discharge is to groundwater
 Contaminants: Low/high pH Organic compounds Gasoline, unleaded
 Gasoline, leaded Petroleum-based products (other than gasoline)
 Other organic materials (please specify): _____
 Check here to indicate you have attached EPA Form 2C *(see permit Appendix A, page A-15)*
- Discharge Category E:** Draining or Flushing of Fire Control Systems
 Potential to exceed 100,000 gpd or half the flow of receiving stream Chemical dechlorination
- Discharge Category F:** Untreated "Water" – flow exceeding 100,000 gallons per day*
 *No NOI required if less than 100,000 gallons per day, see Appendix A – Discharge Category F for more information
- Discharge Category G:** Tank Bottom Wastewater
- Discharge Category H:** Stormwater from Aboveground Tank Containment
 Storage tanks contain petroleum-based products . Storage tanks contain gasoline

(B) Identical Outfalls

Check here if you have identical outfalls. If so, how many? _____ Which category(ies)? _____

(C) Outfall Identification (attach additional pages as needed)

Site map attached?

See page 7 of permit for map requirements.

Discharge Category	Receiving Stream & 8-Digit Identifier (or Groundwater)	Designated Use Class	Tier II?	Latitude	Longitude
			<input type="checkbox"/>		
			<input type="checkbox"/>		
			<input type="checkbox"/>		

(D) Discharge Flow/Volume (attach additional pages as needed)

Discharge Category	Flow (gpd) or Volume (gal)	Duration	Single Event?
			<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No

MARYLAND DEPARTMENT OF THE ENVIRONMENT
NOI for Permit No. 17-HT

SECTION IV: Chemical Additives for Sediment Control

You must identify any chemical additives you are proposing to use for sediment control at your site. You are not approved for use of such additives until and unless explicit written approval is provided in your permit registration letter. Note that there are additional requirements for cationic chemical additives. See NOI Instructions for additional details.

Name of Additive	Proposed Dosing Rate:	Type of Polymer	
		<input type="checkbox"/> Anionic	<input type="checkbox"/> Cationic
		<input type="checkbox"/> Anionic	<input type="checkbox"/> Cationic
		<input type="checkbox"/> Anionic	<input type="checkbox"/> Cationic

SECTION V: Permit Fee Selection

Average Daily Discharge Volume	Renewal Fee		New Permit Fee	
State/Local Gov't or Public Drinking Water Suppliers	No Fee	<input type="checkbox"/>	No Fee	<input type="checkbox"/>
Less than 1,000 Gallons Per Day	\$75	<input type="checkbox"/>	\$175	<input type="checkbox"/>
1,000—5,000 Gallons Per Day	\$150	<input type="checkbox"/>	\$250	<input type="checkbox"/>
5,001—50,000 Gallons Per Day	\$225	<input type="checkbox"/>	\$325	<input type="checkbox"/>
50,001—100,000 Gallons Per Day	\$100	<input type="checkbox"/>	\$500	<input type="checkbox"/>
100,001—250,000 Gallons Per Day	\$550	<input type="checkbox"/>	\$950	<input type="checkbox"/>
250,001—1,000,000 Gallons Per Day	\$1600	<input type="checkbox"/>	\$2000	<input type="checkbox"/>
Greater than 1,000,000 Gallons Per Day	\$3000	<input type="checkbox"/>	\$4000	<input type="checkbox"/>

SECTION VI: Type of Registration Letter

In an effort to streamline registrations and expedite turnaround times, the Department is asking registrants to accept emailed copies of registration letters only.

If you require a hard copy of your letter to be mailed, please check this box:

SECTION VII: Certification

To be completed by a responsible corporate officer, proprietor, general partner, principal executive officer, or ranking elected official or their duly authorized representative, as detailed in Part II.C of the permit.

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Signature/Certifier		Date	
Signatory Name/Title: Typed or Printed		Telephone Number	
NOI Preparer (Complete if NOI was prepared by someone other than the certifier)			
Prepared by:			
Telephone Number		Email Address	

Submit completed form and FEE (payable to Maryland Department of the Environment) to:
Maryland Department of the Environment, P.O. Box 2057, Baltimore, MD 21203-2057

MARYLAND DEPARTMENT OF THE ENVIRONMENT
NOI for Permit No. 17-HT, NPDES PERMIT NO. MDG67
FORM INSTRUCTIONS

WHO MUST FILE

The operator of a facility that is requesting to discharge water from tanks, pipes, other liquid containment structures, dewatering activities, and groundwater remediation must submit a Notice of Intent (NOI) to obtain coverage under the National Pollutant Discharge Elimination System (NPDES) General Discharge Permit No. 17-HT. If you have a question about whether you need this permit or any NPDES permit, contact the Maryland Department of the Environment (MDE), Wastewater Permits Program, at 410-537-3323.

Submission of this NOI constitutes notice that the party identified in Section I of this form intends to be authorized by a State/NPDES permit issued for discharges from facilities identified in Section II of this form. Authorization to discharge begins upon notification of registration by MDE. The permit is available using this link (<https://mdewwp.page.link/HTGP>) via MDE's website.

SECTION I: Owner/Operator Information

- (A) Provide the legal name of the person, firm, public organization, or other entity that operates the industrial facility described in Section II of this application. An operator of a facility is a legal entity that controls the operation of the facility.
- (B) Provide the name, title, telephone number, and email address of the Primary Contact.
- (C) Provide the mailing address for the primary contact including street, city; state; and zip code. All correspondence will be sent to this address.
- (D) Provide the IRS Employer Identification Number (EIN).
- (E) Identify whether the owner/operator is private, federal or state/local government.
- (F) Provide worker's compensation insurance information for the facility identified in this section of the application.

SECTION II: Facility Information

- (A) Provide the name of facility – enter “same” if the name does not differ from the information in Section I(A).
- (B) Provide the physical address; city; state; zip – enter “same” if the address does not differ from the information in Section I(C); Provide the County where the facility is located. If this is a contiguous system spanning multiple counties or cities, list all counties and cities.
- (C) Identify any previously obtained general or individual NPDES permit numbers (e.g., 10MM1234 general permit or 12DP1234 individual permit, where 1234 was the unique 4 digit designation for your coverage).for the facility for which you are seeking coverage, including those permits for other types of discharge.

SECTION III: Discharge Information

- (A) Identify each of the types of discharge from your facility by selecting all of the applicable Discharge Categories. If you have multiple types of discharge within a single discharge category (i.e. two separate outfalls where one has hydrostatic test water that is chlorinated and the other has hydrostatic test water that is not chlorinated), you must attach additional copies of Section III. For cases where you have multiple outfalls for the same exact type of discharge, refer to Section III.B of this form for “Identical Outfalls.”

Within each Discharge Category that is applicable to your facility, you must check all boxes which correspond with your wastewater. Each selection within a Discharge Category signifies a specific set of limitations, as outlined in Appendix A of the permit. For assistance in defining terms such as “mechanical cleaning” or “super chlorination,” please refer to the definitions in Appendix B of the permit.

For assistance in determining the Designated Use Class (Discharge Category A), refer to Section III.C of this form and its instructions. If the source of groundwater contamination has been determined to be organic-based but no source has been specifically identified, please indicate “unknown” under the “Other organic materials” selection.

MARYLAND DEPARTMENT OF THE ENVIRONMENT
NOI for Permit No. 17-HT, NPDES PERMIT NO. MDG67
FORM INSTRUCTIONS

- (B)** If you have multiple outfalls for your facility that consist of wastewater which has all of the exact same selections within the corresponding Discharge Category in Section III.A of this form (above), check the box indicating you have identical outfalls. You must also identify the number of outfalls which are identical and the category(ies) under which they fall. Note that if you have multiple sets of identical outfalls (i.e. two identical outfalls under Discharge Category B and three identical outfalls under Discharge Category F), do not lump those together as a single entry; rather enter “2,3” for the number of identical outfalls and “B,F” for which categories.

If you have several identical outfalls, the Department may require that you monitor and report as described in Part IV.F.1.d of the permit where each of those outfalls is conglomerated under a single “Outfall Number,” maximums and averages are reported from monitoring across all of the identical outfalls, and a summary of each individual monitoring occurrence is attached to the discharge monitoring report.

You must also attach a site map identifying the facility/system, outfalls, and significant points of reference. See page 3 of the permit for a full description of map requirements.

- (C)** For each outfall, you must identify the discharge category, receiving stream, Designated Use Class, and coordinates (in degrees decimal), including for each identical outfall (if applicable). If you have more than three outfalls, you should attach additional copies of this page or a spreadsheet with the required information. For large distribution systems with a large number of potential discharge points (i.e. hydrant flushing), you should submit a map of your entire system and provide attached information to clarify the type(s) of discharges which may occur.

Identify the name(s) of the receiving stream(s) (or indicate storm sewer or groundwater) and 8 digit identifier of the watershed (e.g., for the Gwynns Falls watershed, it is 02130905). The 8 digit identifier is best found using MDE's “FindMyWatershed” tool at <https://mdewwp.page.link/MDWatershedMap>. When using the “FindMyWatershed” tool type in your address, and then place your mouse at your discharge points and left-click to bring up the identifier and receiving water. To determine the name of a receiving stream and/or Designated Use Class for the receiving stream, use the Department’s “Designated Use” map at <https://mdewwp.page.link/MDUseMap>. Designated Use Classes are defined at COMAR 26.08.02.02B. To determine if the receiving stream is designated as “Tier II” or lies in a Tier II catchment, use MDE’s “Tier II High Quality Waters Map” at <https://mdewwp.page.link/Tier2Map>.

To obtain coordinates, you may use a GPS to find location within your site. There are internet options that you can also use, such as Google’s Tool. A step by step method can be found at <https://mdewwp.page.link/FindGPS>. We require the coordinates be in degrees decimal. An example of this for Maryland Department of the Environment at 1800 Washington Blvd, Baltimore, MD 21230 would be latitude of 39.276027, longitude of -76.644779.

- (D)** For each Discharge Category, you must provide the estimated flow rate (in gallons per day) or volume (in gallons) per event. You must also provide an approximation of the typical duration of each discharge in a measurement of time, usually expressed in hours, days, or months in addition to the use of “>” or “<” symbols. If the flow rates/volumes will differ between identical outfalls, you must provide an entry for each outfall. If some, but not all, of the identical outfalls share a similar flow rate/volume, you may indicate the number of applicable outfalls for each entry in parentheses next to the Discharge Category (e.g., enter A(3) if three outfalls share the same table parameters). You must also specify if each type of discharge will be a single event. For discharges that are not single events, provide an attachment indicating an approximate schedule for discharges at each outfall or a description of the scenario which leads to a required discharge.

If you opt to use a separate spreadsheet in lieu of or in addition to the tables on this form, the information from parts (C) and (D) of this section may be combined into one document, if you wish.

MARYLAND DEPARTMENT OF THE ENVIRONMENT
NOI for Permit No. 17-HT, NPDES PERMIT NO. MDG67
FORM INSTRUCTIONS

SECTION IV: Chemical Additives

You must list any chemical additives that you are proposing to use for sediment control at your site, the proposed dosing rate, and indicate if they are anionic or cationic. Additives must be included on the Department's pre-approved list (<https://mdewwp.page.link/MDFlocs>) to be considered for authorization. Consult the Department's *Procedures for Review of Chemical Additives for Sediment Control* (<https://mdewwp.page.link/ChemAddReview>) if you wish to request addition of a new additive to the pre-approved list. Refer to Parts I.B.10 and III.C.4 of the permit for information regarding chemical additives and requirements for documentation of their use in your Pollution Prevention Plan (PPP). You should also consult the *Standards for Use of Chemical Additives for Sediment Control* document (<https://mdewwp.page.link/ChemAddStandards>) for specific instructions on information to be included in your PPP, additional requirements regarding additive use, and assistance in applying for additive use.

If you are requesting the use of cationic chemical additives, you must complete the Request for Use of Cationic Chemical Additives form (<https://mdewwp.page.link/CationicForm>) and attach it, as well as the section of your PPP which addresses the use of chemical additives, to your NOI.

You shall not be authorized to use any chemical additives for sediment control until and unless explicit authorization is included in a signed registration letter for your permit.

SECTION V: Permit Fee

Select the appropriate fee for your permit application, dependent upon the annual average discharge volume and whether you are applying for renewal or new coverage. You must submit the appropriate fee (if applicable) along with your NOI.

Pursuant to COMAR 26.08.04.09-1G(1), discharges under this permit that are associated with drinking water supplies are exempt from the permit fee. Pursuant to COMAR 26.08.04.09-1A(2), facilities owned by State or Local Government are also exempt from the permit fee.

Other discharges under this permit are subject to a first year fee, which effectively include an application fee and subsequent annual fees. Facilities which are submitting a timely renewal of registration from the 11-HT will have already paid their annual fee for this year, so they are only responsible for the application fee portion (represented by the difference between the first year fee and subsequent annual fee). Renewal applications which are submitted after the deadline specified in Part II.B of the permit will be considered new applications and be required to pay the entire first year fee.

The annual rate and NOI fee may change over time, so you are encouraged to check COMAR 26.08.04.09-1G(2) at the time of your application.

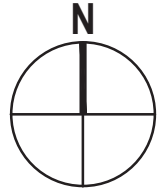
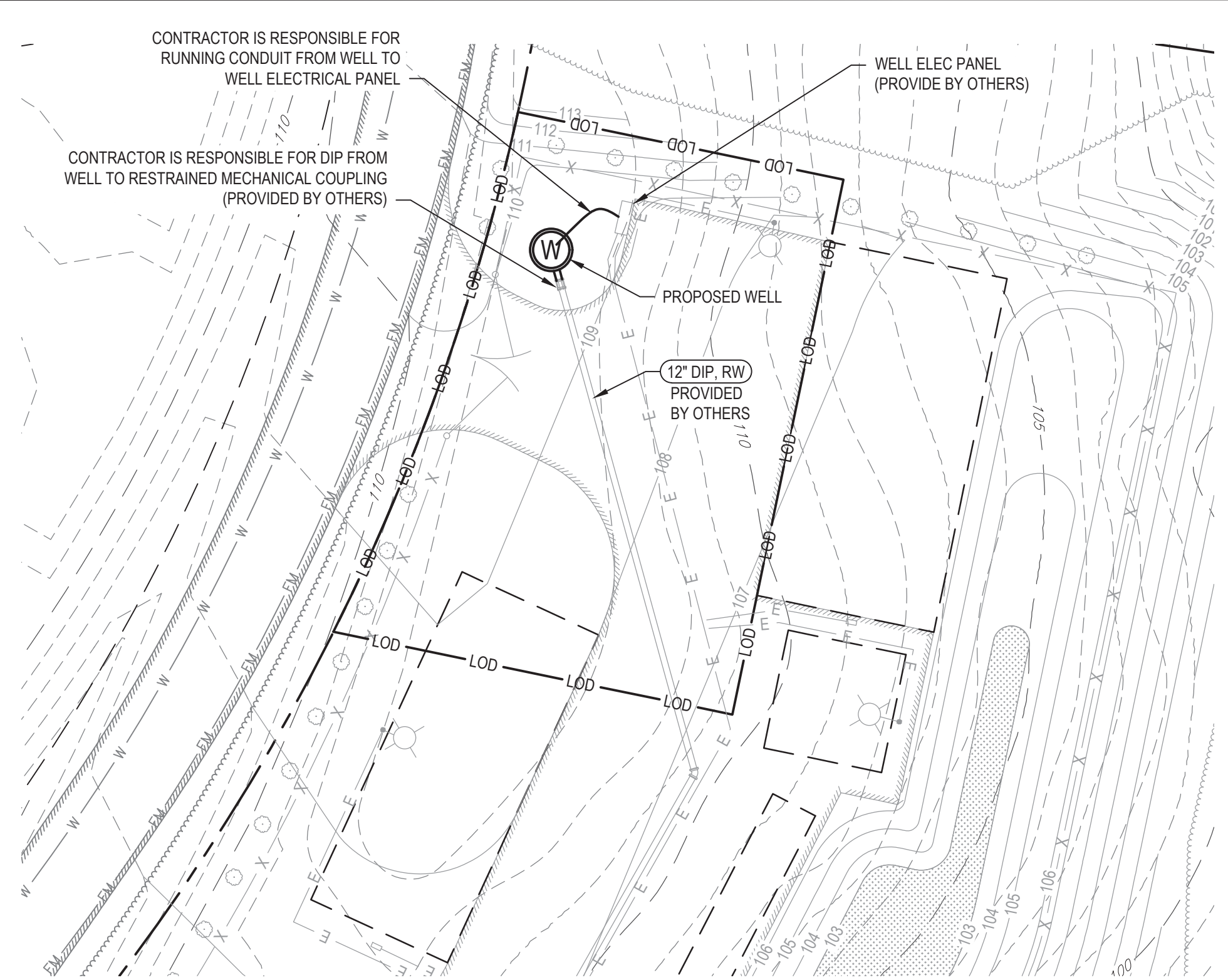
SECTION VII: Certification

Signatures and Certifications are detailed in the permit Part II.C. Individuals who discharge to waters of the State without an individual State or general State/NPDES discharge permit, are in violation of the Federal Clean Water Act and of the Environment Article, Annotated Code of Maryland, and may be subject to penalties. An original signature and date is required.

A completed form will not be processed until the fee has been paid-in-full.

HOW TO SUBMIT:

Send the completed NOI, fee, and any necessary attachments (see permit) to **Maryland Department of the Environment, P.O. Box 2057, Baltimore, MD 21203-2057**. You must ensure that the form is completely filled out and payment is enclosed. Your permit application will be handled as efficiently as possible; however, if you fail to provide all required information, we will be unable to process your registration for the permit.



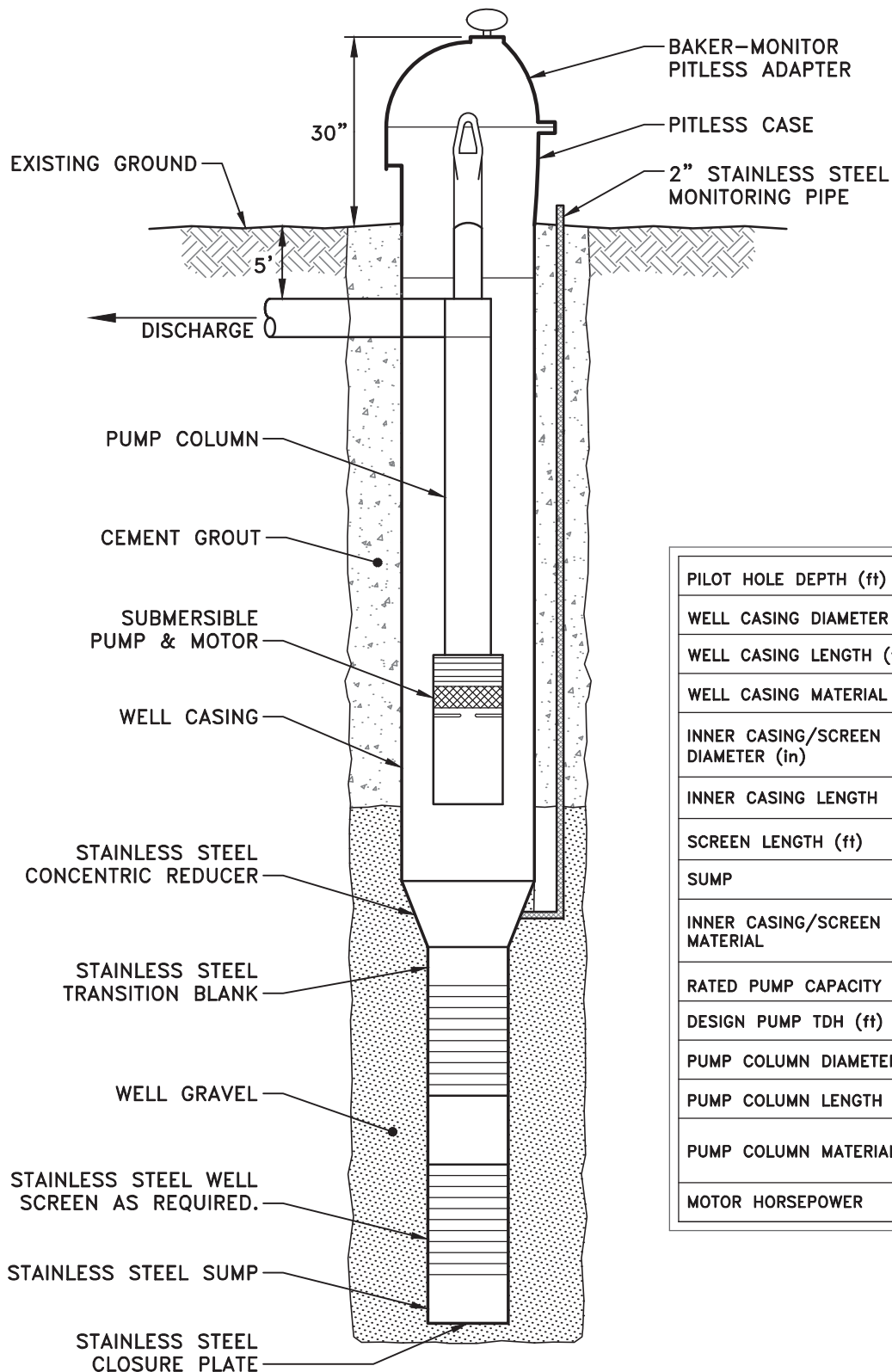
1 SITE PLAN
SCALE: 1" = 20'-0"

LOCATION MAP



TOWN OF LEONARDTOWN, MARYLAND
LEONARDTOWN PRODUCTION
WELL NO.6
WELL SITE PLAN

Project No. 12636553
Date 03/17/2025



PILOT HOLE DEPTH (ft)	900'
WELL CASING DIAMETER (in)	16
WELL CASING LENGTH (ft)	650'
WELL CASING MATERIAL	STEEL
INNER CASING/SCREEN DIAMETER (in)	12"
INNER CASING LENGTH	150'
SCREEN LENGTH (ft)	130'
SUMP	10'
INNER CASING/SCREEN MATERIAL	STAINLESS STEEL
RATED PUMP CAPACITY (gpm)	1100'
DESIGN PUMP TDH (ft)	500'
PUMP COLUMN DIAMETER (in)	8"
PUMP COLUMN LENGTH (ft)	400'
PUMP COLUMN MATERIAL	STEEL T&C
MOTOR HORSEPOWER	200

DRAWING NOT TO SCALE



PROPOSED DESIGN
FOR
LEONARDTOWN WELL No. 6
PRODUCTION WELL
ST. MARY'S COUNTY, MARYLAND

PROJ. MGR.:	M. WILLIAMS
DATE:	8/26/2024
SCALE:	NTS
EDI #:	5363
DRAWN BY:	S. LAYDEN

FIGURE 2 - WELL DETAIL DRAWING