



**INVITATION FOR BID (IFB)**

**IFB NO. 500640-FY19-17  
CIP NO. 18002**

**WATER POLLUTION CONTROL FACILITY  
STORAGE STRUCTURE RENOVATIONS**

**BIDDING DOCUMENTS  
SUPPLEMENTAL SPECIFICATIONS**

**NOVEMBER 2, 2018**

NOTICE OF ADDENDA: Any addenda to this IFB will be posted on the Town's Bid Board (<http://www.leesburgva.gov/bidboard>) and will only be emailed to those firms who have REGISTERED on this site. It is the firm's responsibility to provide a correct email address and to be aware of any addenda.

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**TOWN OF LEESBURG  
ADVERTISEMENT FOR BID**

**IFB NO. 500640-FY19-17  
CIP NO. 18002**

**WATER POLLUTION CONTROL FACILITY STORAGE STRUCTURE RENOVATIONS**

SEALED BIDS to construct the above project will be received by the Town of Leesburg, either by mail or hand delivered, to the 1<sup>st</sup> floor receptionist at 25 West Market Street, Leesburg, VA 20176, **UNTIL BUT NO LATER THAN 3:00 P.M. ON THURSDAY, NOVEMBER 29, 2018.** Bids shall be marked “Sealed Bid For Water Pollution Control Facility Storage Structure Renovations, Bid Date: Thursday, November 29, 2018, 3:00 P.M.” Bids will be opened and read aloud at 25 West Market Street, Lower Level Conference Room 2, at that date and time.

**All questions regarding this bid must be submitted in writing by email to [bidquestions@leesburgva.gov](mailto:bidquestions@leesburgva.gov) until but no later than 5:00 P.M. on Friday, November 16, 2018.**

The project includes the rehabilitation of multiple storage structures at the Town’s Water Pollution Control Facility.

The Town reserves the right to perform all, part, or none of the work.

A non-mandatory pre-bid meeting will be held at on Tuesday, November 13, 2018 at 11:00 a.m. at the Utility Maintenance Building located at 1385 Russell Branch Parkway, Leesburg, Virginia 20175. It is strongly recommended that all bidders attend this meeting to gain a thorough understanding of the project.

Bid Documents are available for download from the Town’s Bid Board at <http://www.leesburgva.gov/bidboard>. Contact Octavia Andrew at 703-737-7176 or [bidquestions@leesburgva.gov](mailto:bidquestions@leesburgva.gov) with questions about obtaining these bid documents. **All addenda issued for this project will be posted on the Town’s Bid Board and will only be emailed to those firms who have registered on this site. It is the bidders’ responsibility to provide a correct email address and to be aware of any addenda.**

Octavia Andrew, CPPO, CPPB, VCO  
Chief Procurement Officer



**BID FORM**  
**IFB NO. 500640-FY19-17**  
**WATER POLLUTION CONTROL FACILITY STORAGE**  
**STRUCTURE RENOVATIONS**

**SUBMIT A SIGNED BID FORM BY MAIL OR IN PERSON**

**FORMAL BIDS ARE DUE NO LATER THAN:  
3:00 P.M. ON THURSDAY, NOVEMBER 29, 2018**

The undersigned agrees to furnish all necessary labor, equipment, materials, and all things necessary to perform the work as set forth in accordance with the plans and specifications at the following process.

---

**SUBMITTED BY:**

Vendor Name:	
Address:	
City/State/Zip:	
Authorized Signature:	
Print Name and Title:	
Telephone No.:	Fax No.:
State Corporation ID#:	
VA. Contractor License #:	
Tax ID Number (FIN/SSN):	
Vendor is a: (Insert name of state):	
<input type="checkbox"/> Corporation <input type="checkbox"/> Limited Partnership <input type="checkbox"/> Ltd. Liability Company	
<input type="checkbox"/> General Partnership <input type="checkbox"/> Unincorporated Assoc. <input type="checkbox"/> Sole Proprietorship	
E-mail:	Leesburg BPOL #:

**ACKNOWLEDGEMENT OF ADDENDA**

Bidder acknowledges receipt of the following ADDENDA, which have been considered in the preparation of this bid.

Addendum No. \_\_\_\_\_

Dated: \_\_\_\_\_

**BID FORM**

<b>Item No.</b>	<b>Description</b>	<b>Estimated Quantity</b>	<b>Unit of Measure</b>	<b>Unit Price</b>	<b>Extended Price</b>
1	Equalization Basin A renovations, as described in the CONTRACT DOCUMENTS, PLANS, AND SPECIFICATIONS, as necessary to furnish a complete operating facility	1	LS		
2	Equalization Basin B renovations, as described in the CONTRACT DOCUMENTS, PLANS, AND SPECIFICATIONS, as necessary to furnish a complete operating facility	1	LS		
3	Digested Sludge Storage Tank renovations, as described in the CONTRACT DOCUMENTS, PLANS, AND SPECIFICATIONS, as necessary to furnish a complete operating facility	1	LS		
4	Digester B renovations, as described in the CONTRACT DOCUMENTS, PLANS, AND SPECIFICATIONS, as necessary to furnish a complete operating facility	1	LS		
5	Secondary Clarifier B renovations, as described in the CONTRACT DOCUMENTS, PLANS, AND SPECIFICATIONS, as necessary to furnish a complete operating facility	1	LS		
6	ALLOWANCE – Secondary Clarifier welding repairs, as directed by the ENGINEER and OWNER and as negotiated with the CONTRACTOR – work not to exceed \$50,000.00 in repairs, unless agreed upon.	-	-	-	\$50,000.000
7	Equalization Basins A and B – Epoxy Crack Repair	50	LF		
8	Equalization Basins A and B – Waterproof Injection Grout	10	LF		

<b>Item No.</b>	<b>Description</b>	<b>Estimated Quantity</b>	<b>Unit of Measure</b>	<b>Unit Price</b>	<b>Extended Price</b>
9	Equalization Basins A and B – Surface Spall Repair	10	CF		
10	Digested Sludge Storage Tank – Epoxy Crack Repair	25	LF		
11	Digested Sludge Storage Tank – Surface Spall Repair	10	CF		
12	Digester B – Epoxy Crack Repair	250	LF		
13	Digester B – Surface Spall Repair	15	CF		
14	Secondary Clarifier B – Epoxy Crack Repair	300	LF		
15	Secondary Clarifier B – Waterproof Injection Grout	25	LF		
16	Secondary Clarifier B – Surface Spall Repair	20	CF		
<b>TOTAL BID PRICE (SUM OF EXTENDED PRICES OF ITEMS 1 – 16)</b>					\$ _____
_____ (in words)					(in figures)

## **ESCROW OF RETAINED FUNDS**

In accordance with Section 2.2-4334 of the Virginia Public Procurement Act (VPPA), any Contract valued at \$200,000.00 or more for construction of highways, roads, streets, bridges, parking lots, demolition, clearing, grading, excavating, paving, pile driving miscellaneous drainage structures, and the installation of water, gas, sewer lines and pumping stations where portions of the Contract price are to be retained, at the time of submitting a bid, the CONTRACTOR shall have the option to indicate preference for using the escrow account procedure for utilization of the Town retained funds by so indicating in the space provided in the proposal documents. In the event the successful Contract elects to use the escrow account procedure, the "Escrow Agreement" included in the Contract documents shall be executed and submitted within 15 days after receipt of the Notice to Award. If the "Escrow Agreement" form is not submitted, the CONTRACTOR shall forfeit his rights to the use of the escrow account procedure within the 15-day period.

In order to have retained funds paid to an escrow agent, the CONTRACTOR, the escrow agent, and the surety shall execute the "Escrow Agreement" furnished by the TOWN, and submit same to the Procurement Officer for approval. The CONTRACTOR's escrow agent shall be a trust company, approved bank or savings and loan institution with its principal office located in the Commonwealth of Virginia. The "Escrow Agreement" shall contain the complete address of the escrow agent and surety, and the executed "Escrow Agreement" will be authority for the TOWN to make payment of retained funds to the escrow agent. After approving the agreement, the TOWN will pay to the escrow agent the funds retained as provided herein, except that funds retained for lack of progress or other deficiencies on the part of the CONTRACTOR will not be paid to the escrow agent. The escrow agent may, in accordance with the stipulations contained in the "Escrow Agreement", invest the funds paid into the escrow account and pay earnings on such investments to the CONTRACTOR, or release the funds to the CONTRACTOR, provided such funds are fully secured by approved securities.

Retained funds invested, and securities held as collateral for retainage may be released only as and when directed by the Chief Procurement Officer. When the final estimate is released for payment, the Chief Procurement Officer will direct the escrow agent to settle the escrow amount by paying the CONTRACTOR or the TOWN monies due them as determined by the Procurement Office. The TOWN reserves the right to recall retained funds and to release same to the surety upon receipt of written request from the CONTRACTOR or in the event of default.

- We elect to use the escrow account procedure for the deposit of retained funds.
- We elect not to use the escrow account procedure for the deposit of retained funds.

**END OF SECTION**

**BID BOND**

BOND NO. \_\_\_\_\_

AMOUNT: \$ \_\_\_\_\_

KNOW ALL MEN BY THESE MEN PRESENTS, that \_\_\_\_\_

\_\_\_\_\_ hereinafter called the PRINCIPAL, and \_\_\_\_\_

a corporation duly organized under the laws of the State of \_\_\_\_\_ having

its principal place of business at \_\_\_\_\_ in the State of

\_\_\_\_\_ and authorized to do business in the Commonwealth of Virginia,

as SURETY, are held and firmly bound unto \_\_\_\_\_, as

OWNER, hereinafter called the OBLIGEE, in the sum of \_\_\_\_\_ DOLLARS

(\$ \_\_\_\_\_) for the payment for which we bind ourselves, our heirs,

executors, administrators, successors, and assigns, jointly and severally, firmly by these

presents.

THE CONDITION OF THIS BOND IS SUCH THAT:

WHEREAS, the PRINCIPAL is herewith submitting his or its Bid Proposal for \_\_\_\_\_ said Bid

Proposal, by reference thereto, being hereby made a part hereof.

NOW THEREFORE,

- (A) If the bid shall remain open for a period of not less than 60 days following opening of the bids and be rejected, or in the alternate,
- (B) If the bid shall remain open for a period of not less than 60 days following opening of the bids and be accepted and the PRINCIPAL shall execute and deliver a Contract in the form of Contract attached hereto (properly completed in accordance with the bid) and shall furnish a performance and payment deposit or surety bond for his faithful performance of the Contract, and for the payment of all persons performing labor or furnishing materials in connection therewith,
- (C) THEN, this obligation shall be void; otherwise the same shall remain in force and effect, it being expressly understood and agreed that the liability of the SURETY for any and all claims hereunder shall, in no event, exceed the said amount of this obligation as herein stated. Provided, however, that in addition to the amount of this obligation as herein stated, the SURETY shall be liable for all costs and attorney's fees incurred by the OBLIGEE in enforcing the obligations hereunder.

The SURETY, for value received, hereby stipulates and agrees that the obligation of the SURETY and its bond shall be in no way impaired or affected by any extension of the time within which the OWNER may accept such bid; and the SURETY does hereby waive notice of such extension.

IN WITNESS WHEREOF, the PRINCIPAL and the SURETY have hereunto set their hands and seals, and have executed this instrument and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.

Signed and sealed this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_

\_\_\_\_\_  
PRINCIPAL

By \_\_\_\_\_

\_\_\_\_\_  
SURETY

By \_\_\_\_\_

Attorney-In-Fact

IMPORTANT: The SURETY executing bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the Commonwealth of Virginia.

END OF SECTION

## SAMPLE AGREEMENT

THIS AGREEMENT, dated this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_ is between the Town of Leesburg (hereinafter called TOWN or Owner) and \_\_\_\_\_ (hereinafter called CONTRACTOR). TOWN AND CONTRACTOR, in consideration of the mutual covenants hereinafter set forth, agree as follows:

1. **WORK**

1.1 The project's name is: IFB No. 500640-FY19-17 Water Pollution Control Facility Structure Renovations (CIP Project# 18002).

1.2 CONTRACTOR shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows:

The project includes rehabilitation of multiple storage structures at the Town's Water Pollution Control Facility.

2. **OWNER'S REPRESENTATIVES**

2.1 All references to the Owner's Chief Procurement Officer shall mean: Octavia Andrew, Chief Procurement Officer.

2.2 All references to the Owner's Project Manager or ENGINEER shall mean: Brian Bailey, Plant Manager – Water Pollution Control Facility, who shall have the sole responsibility for clarifying any ambiguities.

3. **CONTRACT TIME AND LIQUIDATED DAMAGES**

3.1.1 Time of the Essence

A. All time limits for Interim Completion, Milestones, Substantial Completion, and Final Completion as stated in the Contract Documents are of the essence of the Contract.

B. Contract Time:

a. The Work to be performed under this Contract shall be commenced after issuance of the Notice to Proceed and Substantial Completion shall be achieved within 240 calendar days.

b. Final Completion shall be achieved within 60 calendar days.

3.2 Liquidated Damages

A. TOWN and CONTRACTOR recognize that time is of the essence of

this Agreement and the TOWN will suffer financial loss if the Work is not completed within the time specified in paragraph 3.1 above, plus any extensions thereof allowed in accordance with the General Conditions, Article 8, "TIME." Contractor recognizes the delays, expense, and difficulties involved in proving in a legal or other dispute resolution proceeding the actual loss suffered by TOWN if the Work is not completed on time. Accordingly, instead of requiring any such proof, TOWN and CONTRACTOR agree that as liquidated damages for delay, but not as a penalty, CONTRACTOR shall pay the TOWN as follows:

- a. For each day that expires after the time established to achieve Substantial Completion as specified above, CONTRACTOR shall pay TOWN liquidated damages in the amount of \$ 2,500 per day.
- b. For each day that expires after the time established to achieve Final Completion as specified above, CONTRACTOR shall pay TOWN liquidated damages in the amount of \$ 1,000 per day.

B. CONTRACTOR hereby waives any defense as to the validity of any liquidated damages stated in this Agreement as they may appear on the ground that such liquidated damages are void as penalties or are not reasonably related to actual damages.

C. TOWN may recover liquidated damages by deducting the amount owed from progress payments, final payment or retainage.

4. **CONTRACT PRICE**

4.1. ***[If Fixed Price]*** In consideration of the Performance of the Contract, the Owner agrees to pay the Contractor as compensation for his services the firm, fixed price of: \_\_\_\_\_ Dollars and \_\_\_\_\_ Cents (\$\_\_\_\_\_).

4.2. ***[If Unit Price]*** In consideration of the Performance of the Contract, the Owner agrees to pay the Contractor as compensation for his services in accordance with the Bid Form and Contract Documents, which are included as Exhibits to this Agreement, an amount equal to the sum of the itemized prices as shown for each item of work multiplied by the actual quantity of each item completed:

A. Total Computed Price used for Comparison and Award:

\_\_\_\_\_  
(Words)

\$ \_\_\_\_\_  
(Figures)

All specific cash allowances are included in the above price and have been computed to include the Contractors profit, overhead, all furnishing and installation charges.

This is a unit price contract and the estimated quantities are not guaranteed and are given only as a basis of calculation for comparing and awarding the project. The determinations of actual quantities and classifications are to be made by Project Manager, as provided in the General Conditions, Article 9. The Total Computed Price used for Comparison and Award will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately defined item times the estimated quantity for each item as indicated on the bid form. Notwithstanding the language of this paragraph, the contract price shall not exceed \$\_\_\_\_\_ without further authorization.

5. **INTEREST**

- 5.1 The TOWN will pay on all amounts owed to the CONTRACTOR accordance with Section 2.2-4355 of the Virginia Public Procurement Act.
- 5.2 The rate of interest charged shall be the base rate on corporate loans (prime rate) at large United States money center commercial banks as reported daily in the publication entitled The Wall Street Journal. Whenever a split prime rate is published, the lower of the two rates shall be used.

6. **CONTRACT DOCUMENTS**

- 6.1 The Contract Documents which comprise the entire Agreement between TOWN and CONTRACTOR concerning the Work are defined as follows:
  - A. This Agreement (pages 1 to \_\_\_\_\_, attached);
  - B. Performance Bond (pages 1 to 2, attached);
  - C. Payment Bond (pages 1 to 2, attached);
  - D. Insurance Certificate (pages 1 to 2, attached);
  - E. Bidding Documents (by reference) including:
    - 1. Advertisement for Bids;
    - 2. Instructions to Bidders;
    - 3. General Conditions;

4. Specifications;
5. Contract Drawings;
6. Addenda

F. CONTRACTOR'S Bid (attached);

G. Deliverables issued on or after the effective date of the Agreement and are not attached hereto:

1. Notice to Proceed
2. Written Amendments
3. Work Change Directives
4. Change Orders

7. **Notice**

The term "Notice" as used herein shall mean and include written notice. Any legal notice by any party shall be deemed to have been duly given if either delivered personally or enclosed in a registered, postage paid envelope addressed to:

The Owner:

Ms. Amy Wyks, P.E.  
Director  
Department of Utilities  
Town of Leesburg  
1385 Russell Branch Parkway SE  
Leesburg, VA 20176

The Owner's Project Manager

Mr. Brian Bailey  
Plant Manager – Water Pollution Control Facility  
Town of Leesburg – Water Pollution Control Facility  
1391 Russell Branch Parkway SE  
Leesburg, VA 20176

The Contractor:

IN WITNESS WHEREOF, TOWN and CONTRACTOR have signed two copies of this Agreement. All portions of the Contract Documents have been signed or identified by TOWN and CONTRACTOR.

OWNER  
TOWN OF LEESBURG  
25 West Market Street  
Leesburg, VA 20176

CONTRACTOR

By \_\_\_\_\_  
Town Manager

By \_\_\_\_\_  
President

Date \_\_\_\_\_

Date \_\_\_\_\_

License No: \_\_\_\_\_

[CORPORATE SEAL]

Approved as to Form:

\_\_\_\_\_  
Town Attorney

Resolution authorizing execution of Agreement is attached hereto.

Agent for service of process:

\_\_\_\_\_

(If CONTRACTOR is a corporation attach evidence of authority to sign.)

**VIRGINIA PAYMENT BOND**

BOND NO. \_\_\_\_\_

AMOUNT: \$ \_\_\_\_\_

KNOW ALL MEN BY THESE PRESENTS, that \_\_\_\_\_

of \_\_\_\_\_ hereinafter called the CONTRACTOR

(Principal), and \_\_\_\_\_

a corporation duly organized and existing under and by virtue of the laws of the State of \_\_\_\_\_, hereinafter called the SURETY, and authorized to

transact business \_\_\_\_\_ within the

Commonwealth of Virginia, as SURETY, are held and firmly bound unto The Town of Leesburg as OWNER (Obligee), in the sum of:

\_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_), lawful money

of the United States of America, for the payment of which, well and truly be made to the OWNER.

The CONTRACTOR and the SURETY bind themselves and each of their heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents as follows:

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH THAT:

WHEREAS, the CONTRACTOR has executed and entered into a certain Contract hereto attached with \_\_\_\_\_, naming the OWNER as beneficiary,

dated this \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_\_,

for: \_\_\_\_\_

NOW, THEREFORE, the CONTRACTOR shall promptly make payment to all persons, firms, subcontractors, and corporations furnishing materials for or performing labor in the prosecution of the work provided for in the Contract, and any authorized extension or modification thereof, including all amounts due for materials, lubricants, oil, gasoline, coal and coke, repairs on machinery, equipment, and tools consumed or used in connection with the construction of the work, and all insurance premiums on the work, and for all labor performed in the work, whether by subcontractor or otherwise, then this obligation shall be void; otherwise to remain in full force and effect.

Furthermore, the SURETY, for value received, hereby stipulates and agrees that no change, extension of time, alteration, or addition to the terms of the Contract Documents or to the work to be performed there under, or the Specifications accompanying the same, shall in any way affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration, or addition to the terms of the Contract Documents.

PROVIDED, FURTHER that no final settlement between the OWNER and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, the above parties bounded together have executed this instrument this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, the name and corporate seal of each corporate party being hereto affixed and those presents duly signed by its undersigned representative, pursuant to authority of its governing body.

CONTRACTOR

\_\_\_\_\_

By \_\_\_\_\_(Seal)

\_\_\_\_\_

Attest

SURETY

\_\_\_\_\_

By \_\_\_\_\_(Seal)

\_\_\_\_\_

Attest

NOTE: Date of bond must not be prior to date of Contract. If CONTRACTOR is a partnership, all partners should execute bond.

IMPORTANT: The SURETY named on this bond shall be one who is licensed to conduct business in the Commonwealth of Virginia, and named in the current list of Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies, as published in Circular 570 (amended) by the Audit Staff Bureau of Accounts, U.S. Treasury Department. All bonds signed by an agent must be accompanied by a certified copy of the authority to act for the SURETY at the time of the signing of this bond.

**VIRGINIA PERFORMANCE BOND**

BOND NO. \_\_\_\_\_

AMOUNT: \$\_\_\_\_\_

KNOW ALL MEN BY THESE PRESENTS, that \_\_\_\_\_

of \_\_\_\_\_

hereinafter called the CONTRACTOR (Principal), and \_\_\_\_\_

\_\_\_\_\_ a corporation duly organized and existing under and by virtue of the laws of the State of \_\_\_\_\_, hereinafter called the SURETY, and authorized to transact business \_\_\_\_\_ within the Commonwealth of Virginia, as SURETY, are held and firmly bound unto The Town of Leesburg as OWNER (Obligee), in the sum of:

\_\_\_\_\_ DOLLARS (\$\_\_\_\_\_), lawful money of the United States of America, for the payment of which, well and truly be made to the OWNER. The CONTRACTOR and the SURETY bind themselves and each of their heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents as follows:

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH THAT:

WHEREAS, the CONTRACTOR has executed and entered into a certain Contract hereto attached with \_\_\_\_\_, naming the OWNER as beneficiary, dated this \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_\_,

for: \_\_\_\_\_

NOW, THEREFORE, the CONTRACTOR shall at all times duly, promptly, and faithfully perform the Contract and any alteration in or addition to the obligations of the CONTRACTOR arising there under, including the matter of infringement, if any, of patents or other proprietary rights, and shall assure all guarantees against defective workmanship and materials, including the guarantee period following final completion by the CONTRACTOR and final acceptance by the OWNER and comply with all covenants therein contained in the Specifications, Drawings, and other Documents constituting a part of the Contract required to be performed by the CONTRACTOR, in the manner and within the times provided in the Contract, and shall fully indemnify and save harmless the OWNER from all cost and damage which it may suffer by reason or failure so to do, and shall fully reimburse and repay it all outlay and expenses which it may

incur in making good any default, and reasonable counsel fees incurred in the prosecution of or defense of any action arising out of or in connection with any such default, then this obligation shall be void; otherwise to remain in full force and effect.

Furthermore, the SURETY, for value received, hereby stipulates and agrees that no change, extension of time, alteration, or addition to the terms of the Contract Documents or to the work to be performed there under, shall in any way affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration, or addition to the terms of the Contract Documents.

PROVIDED, FURTHER that no final settlement between the OWNER and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, the above parties bounded together have executed this instrument this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, the name and corporate seal of each corporate party being hereto affixed and those presents duly signed by its undersigned representative, pursuant to authority of its governing body.

CONTRACTOR

\_\_\_\_\_

By \_\_\_\_\_(Seal)

\_\_\_\_\_  
Attest

SURETY

\_\_\_\_\_

By \_\_\_\_\_(Seal)

\_\_\_\_\_  
Attest

NOTE: Date of bond must not be prior to date of Contract. If CONTRACTOR is a partnership, all partners should execute bond.

IMPORTANT: The SURETY named on this bond shall be one who is licensed to conduct business in the Commonwealth of Virginia, and named in the current list of Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies, as published in Circular 570 (amended) by the Audit Staff Bureau of Accounts, U.S. Treasury Department. All bonds signed by an agent must be accompanied by a certified copy of the authority to act for the SURETY at the time of the signing of this bond.

## **INSTRUCTIONS TO BIDDERS**

### QUESTIONS CONCERNING SPECIFICATIONS (VPPA 2.2-4316)

General and Technical questions relating to this solicitation shall be submitted in writing to Octavia Andrew, Chief Procurement Officer, via email at [bidquestions@leesburgva.gov](mailto:bidquestions@leesburgva.gov). Please put the title of this IFB in the subject line of the email.

If any questions or responses require revisions to the solicitation as originally published, such revisions will be by formal amendment. Bidders are cautioned that any written or oral representations made by any Town representative or other person that appear to change materially any portion of the solicitation shall not be relied upon unless subsequently ratified by a written addendum to this solicitation issued by the Town. For determination as to whether an oral or written representation of any Town representative or other person requires that an addendum be issued, please contact the Chief Procurement Officer.

### INCOMPLETE DOCUMENTS

The Contractor, as a bidder, is responsible for having determined the accuracy and completeness of bid documents upon which it relied in making its bid, and having notified the Chief Procurement Officer immediately upon discovery of an apparent inaccuracy, error in, or omission of any pages, drawings, sections, or addenda whose omission from the documents was apparent from a reference or page numbering in the bidding documents.

If the Contractor proceeds with any activity that may be affected by an inaccuracy, error in, or omission described above, of which it has not notified the Chief Procurement Officer, the Contractor hereby agrees to perform any work described in such missing or incomplete documents at no additional cost to the Town.

### TOWN OF LEESBURG BUSINESS PROFESSIONAL AND OCCUPATION LICENSE (BPOL)

The successful bidder must comply with the provisions of Section 17-163 (License requirement) of the Town of Leesburg Code, if applicable. For information on the provisions of this chapter and its applicability to this Contract, contact the Town of Leesburg Staff Accountant, Finance Department, Town of Leesburg, Virginia, Telephone Number 703-771-6503.

### FORM AND STYLE OF BIDS

The Bids shall be submitted on forms identical to the Bid Form included with the Bidding Documents, and all blanks on the Bid Form shall be filled in by a typewriter or manually in ink. Where so indicated by the makeup of the Bid Form, sums shall be expressed in both words and figures, and in case of discrepancy between the two, the amount written in words shall govern. Any interlineations, alterations, and erasures must be initialed by the signer of the Bid.

Each copy of the Bid shall include the legal name of the Bidder and a statement that the Bidder is a sole proprietor, partnership, corporation, or other legal entity. Each copy shall be signed by the person or persons legally authorized to bind the Bidder to a contract. A Bid by a corporation shall further give the state of incorporation and have the corporate seal affixed. All names shall be typed or printed in ink below the signatures. The address

and phone number for communication regarding the bid shall be shown. Email address may be included at bidder's option.

The Bid shall contain evidence of the Bidder's authority to do business in the Commonwealth of Virginia. Bidder's Virginia State contractor license number shall also be shown on the Bid form.

### BID BOND

Each bid shall be accompanied by a bid security (on enclosed form or cashier's check), in the amount of five percent (5%) of the Bidder's Total Bid Price, pledging that the Bidder will enter into a Contract with the TOWN on the terms stated in the Bid. Should the Bidder refuse to enter into such Contract the amount of the bid security shall be forfeited to the TOWN as liquidated damages, not as a penalty.

The TOWN will have the right to retain the bid security of Bidders to whom an award is being considered until either (a) the Contract has been executed or (b) the specified time has elapsed so that Bids may be withdrawn, or (c) all Bids have been rejected.

### SUBMISSION OF BIDS

One (1) original copy of the Bid, the bid security, and other documents required to be submitted with the Bid and one (1) copy shall be submitted to the Town in a sealed, opaque envelope by the due date and time specified. The envelope is to be addressed to the party receiving the Bids and is to be identified with the Project name, the Bidder's name and address, and if applicable, the designated portion of the Work for which the Bid is submitted. **If the Bid is sent by mail, the sealed envelope is to be enclosed in a separate mailing envelope with the notation "SEALED BID ENCLOSED" on the face thereof.**

The Town of Leesburg will accept bids at the designated location prior to the time and date of the receipt of Bids. Bids received after the time and date for receipt of Bids will be returned unopened. The official time will be deemed to be that of the Town.

The Bidder shall assume full responsibility for timely delivery at the location designated for receipt of Bids. Bids received in any other format than specified are invalid and will not receive consideration.

### MODIFICATION/WITHDRAWAL OF BID

A Bid may not be modified, withdrawn, or cancelled by the Bidder during the stipulated time period following the time and date designated for the receipt of Bids, and each Bidder so agrees in submitting a Bid.

Prior to the time and date designated for receipt of Bids, a Bid submitted may be modified or withdrawn by notice to the party receiving Bids at the place designated for receipt of Bids. Such a notice shall be in writing over the signature of the Bidder and shall be received on or before the due date and time set for receipt of Bids. A change must indicate with Bid shall be governed and shall be so worded as to not reveal the amount of the original Bid.

Withdrawn Bids may be resubmitted up to the date and time designated for the receipt of Bids, provided that they are then fully in conformance with these Instructions to Bidders.

Bid security, if required, shall be in an amount sufficient for the Bid as modified or resubmitted.

If within two (2) business days after Bids are opened any Bidder files a duly signed written notice, accompanied by original work papers, with the TOWN 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. This procedure shall follow Section 2.2-4330(B)(1) of the Virginia Public Procurement Act (VPPA). Thereafter, if the Work is re-bid, that Bidder will be disqualified from further bidding on the Work.

### CONSIDERATION OF BIDS

The TOWN shall have the right to reject any or all Bids, reject a Bid not accompanied by a required bid security or by other data required by the Bidding Documents, or reject a Bid, which is in any way incomplete or irregular.

After the bids are opened and publicly read aloud, the town will recalculate the arithmetic of all bids. The recalculation will consist of the following:

1. The Extended Price will be the Quantity x Unit Price. The accuracy of this calculation will be verified for all unit price items of work. All mathematical errors will be corrected to arrive at the correct extended price. If no price is shown for the Unit Price, it is assumed to be zero.
2. The sum of all extensions will be calculated and any mathematical errors will be corrected.
3. If there are multiple sections to the bid, for example the Total Base Bid = Section 'A' + 'B', the sum of the sections will be calculated. All mathematical errors will be corrected.

The corrected numbers will be the totals used to compare all bids and in the case of these adjustments to the lowest responsive, responsible bidder will become the value of the recommended contract award.

Bidder agrees to commence work under this contract on or before a date to be specified in the Notice to Proceed. Bidder agrees that the Work will be substantially completed and the work ready for final payment in accordance with the Contract Times noted in these documents. The Total Bid Price for the Contract will be determined as the sum of the lump sum Bid Items, the sum of the products of the estimated quantity of each unit price bid item and the unit price bid for each unit price bid item for the respective Contract, and the sum of any allowances. The Total Bid Price will be used as a basis for evaluation of the Bids and award of each Contract, which will be made to the lowest, responsible, responsive Bidder within the time specified for Bids to remain irrevocable.

Bidder accepts the provisions of the Instructions to Bidders as to liquidated damages in the event of failure to complete the Work within the times specified.

### AWARD

It is the intent of the TOWN to award a Contract to the lowest responsive and responsible Bidder, provided the low bid does not exceed the funds available. The TOWN shall have the right to waive informalities in a Bid received and to accept the Bid, which, in its judgment, is in the TOWN's best interest. The Notice of Intent to Award a contract resulting from this Invitation For Bid will be posted on the Public Notice Board, located at 25 W. Market Street, Leesburg, VA 20176, and on the Town's Bid Board (<http://www.leesburgva.gov/bidboard>).

### NEGOTIATIONS WITH THE LOWEST BIDDER

Unless all bids are cancelled or rejected, the Town reserves the right granted by 2.2-4318 of the *Code of Virginia* to negotiate with the lowest responsive, responsible bidder to obtain a contract price within the funds available. Funds available shall mean those funds, which were budgeted for this contract prior to the issuance of the written Invitation for Bids. Negotiations with the low bidder may include both modifications of the bid price and the Scope of Work/Specifications to be performed. The Town shall initiate such negotiations by written notice to the lowest responsive, responsible bidder that its bid exceeds the available funds and the Town wishes to negotiate a lower contract price. The times, places, and manner of negotiating shall be agreed to by the Town and the lowest responsive, responsible bidder.

### QUALIFICATIONS OF THE LOWEST RESPONSIVE BIDDER

The Contractor performing the work shall be fully qualified, experienced and equipped to complete this work expeditiously and in a satisfactory manner.

- a. Contractor shall refer to the technical specifications for additional qualification requirements, which may exceed those listed herein.
- b. The Contractor shall have successfully completed similar structural repair work at other similarly sized wastewater treatment facilities, as documented by verifiable references and documented in Appendix B.
- c. The Superintendent assigned to this contract shall have successfully worked on five (5) similarly sized projects in the past ten (10) years.
- d. Provide name of the coating manufacturer and list of prior work for the coating manufacturer and supplier. Acceptable manufacturers are noted in the technical specifications.
- e. Provide certified statement from the coating manufacturer that the Contractor is certified and / or licensed to install the proposed coating system (and lining system for the Equalization Basins).
- f. Provide list of municipal clients for whom the Contractor has performed this type of work. Include reference contact information and a description of work that includes wastewater treatment facility size (in MGD), size of the facility (in diameter, dimensions, and volume), and work items included.

## PROTEST

Any bidder who desires to protest the award or decision to award a contract shall submit such protest in writing to the TOWN, no later than 10 days after public notice of award or the announcement of the decision to award, whichever occurs first, pursuant to Section 2.2-4360 of the VPPA.

## ACCEPTANCE OF BID (VPPA 2.2-4337)

The bids received shall be open to acceptance and is irrevocable for **sixty (60) days** from the Bid Closing date.

If the bid is accepted by the Town within the period specified above, the Contractor shall provide a certificate of insurance, Payment bond, and Performance Bond within 10 days of the Notice of Award or Notice of Intent to Award. Each bond, the Performance Bond and the Payment Bond, shall be in the amount of 100% of the Contract Amount. The bonds shall be corporate surety bonds issued by a surety company authorized to do business in the Commonwealth of Virginia and acceptable to the Town. The Performance Bond will be conditioned upon the faithful performance of all of the work shown, described and required in the Contract Documents. The Payment Bond will be conditioned upon the payment of all persons who have and fulfill contracts for the Contractor for providing labor, equipment of material in the performance of the work provided for in the Contract Documents.

If this bid is accepted within the time stated, and the Contractor fails to provide the required Bonds, or commence the project as directed, the security deposit shall be forfeited as damages to the Town by reason or failure, limited in amount to the lesser of the face value of the security deposit or the difference between this Bid and the Bid upon which the Contract is signed.

## SCC IDENTIFICATION NUMBER (VPPA 2.2-4311.2)

Every Bidder must include their State Corporation Commission (SCC) Identification Number or reason for exemption with his/her bid. If this information is not included, the Bid may be rejected.

## VIRGINIA CONTRACTOR'S LICENSE NUMBER (Code of Virginia §54.1-1115, A1 and A6)

Bidder certifies that he/she is properly registered as a licensed Contractor under Title 54 of the Code of Virginia. Bidder shall provide his/her Virginia Contractor's License Number in the designated location on the Bid Form or the Bid may be rejected.

## STIPULATED PRICES

The term "STIPULATED PRICE ITEM" means and includes an item of Work,

unanticipated at the time of issuance of the solicitation for a Bid and determined to be executed, based on the actual field conditions during the progress of Work under the contract, mutually by the Engineer and the Contractor. The Unit Price for the “STIPULATED PRICE ITEM”, as identified in the “Stipulated Price Items” section of the Bid Form, is predetermined by the Town as the current reasonably workable rate for the Item inclusive of all necessary labor, equipment, materials, overhead (provision and installation), and the contractor’s profit. Work on the “STIPULATED PRICE ITEM” shall be carried out either at the written request of the Contractor followed by a written approval by the Engineer or at the written order by the ENGINEER to the Contractor. The payment for a “STIPULATED PRICE ITEM” shall be made by the Town to the Contractor at the related Unit Price specified in the ‘Stipulated Price Items’ section of the Bid Form on the same basis as the payment for any other regular Bid Item.

### COORDINATION WITH UTILITIES

The Contractor shall notify Brian Bailey, Town of Leesburg Plant Manager – Water Pollution Control Facility or his designee before investigating any structures for the purpose of responding to this invitation to bid. The Town reserves the right to deny access for investigation or inspection of the system.

The Contractor shall coordinate the work of his forces with Brian Bailey, Town of Leesburg Plant Manager – Water Pollution Control Facility or his designee during the contract to ensure the continuing progress of all work to be performed within the project area.

The Contractor shall notify “MISS UTILITY” at 1-800-552-7001 or 811, 72 hours prior to beginning construction.

It shall be the responsibility of the Contractor to notify Third Party Utilities who maintain utility lines in the area of proposed work at least five (5) working days prior to any construction, subsequent maintenance, or repair.

The Contractor shall dig test holes over all existing utilities prior to construction to determine their exact location and shall notify the Project Manager of any necessity for redesign.

### TREES

In the event that a tree is injured or damaged, the Contractor should contact the Town’s inspector immediately.

### CONTRACT TIME

Substantial Completion:	240 calendar days from Notice to Proceed
Final Completion:	60 calendar days from Substantial Completion
Liquidated Damages:	\$2,500 and \$1,000.00 per day, as noted in this Agreement

## MAINTENANCE OF TRAFFIC

The Contractor shall conduct its operations in a manner that will ensure that traffic will be uninterrupted except as approved by the Town. At the close of each workday, the contractor shall make all private entrances and driveways accessible. The contractor shall make provisions to maintain a safe area for pedestrian traffic at all times during the project. No excavation shall remain open within the roadway without the approval of the Town except when the excavation can be safely bridged with the use of steel plates or other materials acceptable to the Town. When areas of excavation outside of the roadway do remain open, the area shall be barricaded and warning signs shall be posted.

At all times the Contractor shall use the personnel and traffic control signs and devices necessary to comply with Part VI of the "National Manual on Uniform Traffic Control Devices". During the progress of the work when the street may be obstructed to any extent by construction equipment or construction operations, in addition to the signs and barricades, special workers, equipped with VDOT required "STOP\SLOW" double-sided traffic control paddles, shall be designated by the Contractor to direct traffic. These workers so designated shall not be assigned to any other duties while engaged in directing traffic. The workers assigned to the flagging duties shall be VDOT-certified. The Contractor has sole responsibility for ensuring that its operations are conducted in a safe manner and notwithstanding any other provision to the contrary, shall fully indemnify the Town of Leesburg, its officers, agents and employees for any damage or injury related to traffic operations which is caused by negligent or otherwise improper or deficient performance under the Contract or nonperformance of the terms of the Contract.

1. All personnel, signs, barricades and any other items necessary for the maintenance of traffic and safety shall be provided by the Contractor. This item is to be considered incidental to all other items of work.
2. The contractor will not be permitted to work on Town Holidays or during the following Town events:
  - Annual Flower and Garden Show
  - Town observed Independence Day Holidays
  - Town observed Labor Day Holidays
  - Town observed Columbus Day Holidays
  - Town observed Veteran's Day Holidays
  - Town observed Thanksgiving Holidays
  - Town observed Thanksgiving Holidays
  - Town observed Christmas Holidays
  - Town observed New Year's Day Holidays
  - Town observed Martin Luther King Day Holidays
  - Town observed President's Day Holidays
  - Town observed Memorial Day Holidays
3. Work hours on the project will be limited to 7:00 a.m. to 4:00 p.m., Monday through

Friday. Weekend and/or night work will not be allowed without written permission from the Project Manager.

4. The Contractor is required to submit a Maintenance of Traffic Plan for review and approval. Utility Department Approval of the Maintenance of Traffic Plan is required prior to beginning any construction activities on the project. The Maintenance of Traffic Plan is required for the issuance of the required right-of-way permit issued by the Town of Leesburg.

#### CONTRACT ITEMS OF WORK

Refer to Contract Technical Specifications and Contract Drawings for work items.

**END OF INSTRUCTIONS TO BIDDERS**

**THE TOWN OF LEESBURG**

**GENERAL CONDITIONS**

**PROJECT:**

**IFB NO. 500640-FY19-17**

**CIP NO. 18002**

**WATER POLLUTION CONTROL FACILITY STRUCTURE  
RENOVATIONS**

# GENERAL CONDITIONS

## THE TOWN OF LEESBURG

### GENERAL CONDITIONS

#### ARTICLE 1: CONTRACT DOCUMENTS

##### 1.1 DEFINITIONS

###### 1.1.1 The Contract Documents

The Contract Documents consist of the Advertisement or Invitation for Bids, Request for Proposals, Information for Bidders, Insurance Certificates, Official Bid Form, Offeror's Bid or Proposal, Bonds, the Notice of Award, the Project Manual, the Owner/Contractor Agreement, the General and Special Conditions, the Drawings, the Specifications, all Addenda issued prior to and all Modifications issued after execution of the Agreement. A Modification is either a written Change Order issued pursuant to the provisions of Article 12.5, or a Field Order issued pursuant to Article 12.2.

###### 1.1.2 The Contract

The Contract is the sum of all the Contract Documents. This Contract represents the entire and integrated agreement between the Owner and the Contractor and supersedes all prior negotiations, representations, or agreements, either written or oral. The Contract may be changed only by a Modification as defined in Article 1.1.1.

###### 1.1.3 The Work

The Work comprises the completed construction required by the Contract Documents and includes all labor, material, equipment, supplies and other facilities or things necessary to produce such construction, and all materials, equipment and supplies incorporated or to be incorporated in such construction.

###### 1.1.4 The Project

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part.

###### 1.1.5 Furnish, Install, Provide

The terms "Furnish", "Install" or "Provide," unless specifically limited in context, mean: furnishing and incorporating a specified item, product or material in the Work, including all labor, materials, and equipment necessary to perform the Work required, ready for intended use.

###### 1.1.6 Firm, Fixed Price or Lump Sum

The terms "Firm, Fixed Price" or "Lump Sum" mean that the Contract Work shall be performed for the price stated in the Contract without any adjustment based on

## **GENERAL CONDITIONS**

the Contractor's actual costs unless such adjustment is made by a properly executed Contract Change or Modification.

### **1.1.7 Schedule of Values**

The term "Schedule of Values" means the unit prices for portions of the Work submitted by the Contractor and approved by the Owner's Project Manager for use in preparing Applications for Payment and pricing Contract Changes in accordance with Article 9.2. The Schedule of Values shall not alter the Firm, Fixed Price or Lump Sum value of the Contract.

### **1.1.8 Miscellaneous Words or Terms**

Whenever they refer to the Work or its performance, "Directed," "Required," "Permitted," "Ordered," "Designated," "Prescribed," and words of like import shall imply the direction, requirements, permission, order, designation or prescription of the Owner and/or the Owner's Project Manager, and "Approved," "Acceptable," "Satisfactory," "in the judgment of," and words of like import shall mean approved by or acceptable to or satisfactory to or in the judgment of the Owner and/or the Owner's Project Manager. "Approved" means approved in writing, including subsequent written confirmation of prior oral approval and "Approval" means approval in writing, including all aforesaid.

## **1.2 EXECUTION, CORRELATION AND INTENT**

**1.2.1** The Contract Documents may be signed in duplicate originals by the Owner and the Contractor and each set shall be deemed an original, but all sets shall constitute one and the same instrument.

**1.2.2** By executing the Contract, the Contractor represents that he has familiarized himself with, and assumes full responsibility for having familiarized himself with, the nature and extent of the Contract Documents, Work, locality, and with all local conditions and federal, state and local laws, ordinances, rules and regulations that may in any manner affect performance of the Work, and represents that his study and observations have been correlated with the requirements of the Contract Documents. The Contractor also represents that he has studied all surveys and investigation reports of subsurface and latent physical conditions referred to in the Contract Documents and made such additional surveys and investigations as he deems necessary for the performance of the Work at the Contract Price in accordance with the requirements of the Contract Documents and that he has correlated the results of all such data with the requirements of the Contract Documents. Failure to make an examination necessary for this determination shall not release the Contractor from the obligations of this Contract nor be grounds for any claim based upon unforeseen conditions.

## GENERAL CONDITIONS

The Owner assumes no responsibility for any conclusions or interpretations made by the Contractor based on the information made available by the Owner. The Owner assumes no responsibility for any understanding reached or representation made concerning conditions that can affect the Work by any of its officers or agents before the execution of this contract, unless that understanding or representation is expressly stated in this contract.

- 1.2.3** The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work. The Contract Documents are complementary, and what is required by any one shall be as binding as if required by all. Should any work or material be required which is not denoted in the drawings and specifications either directly or indirectly, but which is nevertheless necessary for the proper carrying out of the intent thereof, it is understood and agreed that the same is implied and required and that the Contractor shall perform such work and furnish such materials as fully as if they were completely delineated and prescribed.

Words and abbreviations which have well-known technical or trade meanings are used in the Contract Documents in accordance with such recognized meanings unless otherwise specifically defined herein. The Table of Articles, titles, headings, and running headlines are solely to facilitate reference to various provisions of the Contract Documents and in no way affect, limit or cast light upon the interpretation of the provisions to which they refer.

- 1.2.4** The organization of the specifications into divisions, sections and articles, and the arrangement of drawings are for clarity only, and shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade. The Contractor may subcontract the Work in such divisions as he sees fit and he is ultimately responsible for furnishing all work shown on the drawings and/or in the specifications.

- 1.2.5** Unless otherwise provided for or amended herein, work shall be performed in accordance with the VDOT Road and Bridge Specifications, current edition; the Town of Leesburg Design and Construction Standards Manual (DCSM), current edition; the Virginia Erosion and Sediment Control Handbook; and the Special Provisions, Special Conditions, and Special Designs as may be described on the plans for the project or in this solicitation. Where there is a conflict between the VDOT Road and Bridge Specifications and the DCSM, the most stringent shall take precedence. A copy of the DCSM may be purchased from the Department of Plan Review at the current standard rate.

Anything shown on the drawings and not mentioned in the specifications or mentioned in the specifications and not shown on the drawings shall have the same effect as if shown or mentioned respectively in both. Technical specifications take priority over general specifications and detail drawings take

## **GENERAL CONDITIONS**

precedence over general drawings. Any work shown on one drawing shall be construed to be shown in all drawings and the Contractor will coordinate the Work and the drawings. If any portion of the Contract Documents shall be in conflict with any other portion, the various documents comprising the Contract Documents shall govern in the following order of precedence: The Owner/Contractor Agreement; Modifications; Changes; Addenda; the Supplementary Conditions; the General Conditions; the Specifications; the drawings; the Town DCSM; other published construction standards and specifications; the bonds; the advertisement for bids or invitation or request for proposal; information for bidders; bids; the notice of award. As between schedules and information given on drawings and the scaled measurements, the figures shall govern. As between large-scale drawings and small-scale drawings, the larger scale shall govern. Any such conflict or inconsistency between or in the drawings shall be submitted to the Project Manager whose decision thereon shall be final and conclusive.

**1.2.6** This Contract is not intended to create, nor shall any provision be interpreted as creating, any contractual relationship between the Owner and any third parties including all Subcontractors.

**1.2.7** The Provisions of this Contract cannot be changed, varied or waived in any respect except by a written Modification or Change Order. No person has authority to orally waive, or to release the Contractor from any of the Contractor's duties or obligations under or arising out of this Contract. Any waiver, approval or consent granted by Changes to the Contractor shall be limited to those matters specifically and expressly stated thereby to be waived, approved or consented to and shall not relieve the Contractor of the obligation to obtain any future waiver, approval or consent.

### **1.3 OWNERSHIP AND USE OF DOCUMENTS**

**1.3.1** All drawings, specifications, and copies thereof furnished by or to the Owner under this Contract are and shall remain the property of the Owner. They are to be used only with respect to this Project and are not to be used in whole or in part for any other purpose.

**1.3.2** The Contractor shall be provided five sets of the Contract Documents by the Owner's Project Manager. Additional sets of Drawings and Specifications may be obtained from the Owner's Project Manager by paying the then current and regular printing, mailing and handling charges.

### **END OF ARTICLE 1**

## **GENERAL CONDITIONS**

### **ARTICLE 2: OWNER'S PROJECT MANAGER**

#### **2.1 DEFINITIONS**

**2.1.1** The term "Project Manager" as used in the Contract Documents, shall mean the entity so identified in the Owner/Contractor Agreement or its duly authorized representatives.

**2.1.2** The Project Manager is referred to throughout the Contract Documents as if singular in number and masculine in gender.

#### **2.2 SERVICES OF THE OWNER'S PROJECT MANAGER**

**2.2.1** The Owner's Project Manager will serve during construction and until the end of the warranty period. The Owner's Project Manager will advise and consult with the Owner and will have the authority to act on behalf of the Owner only to the extent provided in the Contract Documents. The Owner may identify a substitute Owner's Project Manager at any time by providing written notice to the Contractor.

**2.2.2** The Owner's Project Manager will inform the Owner and the Contractor whenever in his reasonable opinion any of the Work is proceeding contrary to the requirements of the Contract Documents and will be unacceptable. Failure of the Contractor to take corrective action to make the Work conform to the Contract Documents will subject the Contractor to any and all remedies available to the Owner, including, without limitation, termination pursuant to Article 14. Such notification by the Owner's Project Manager will not be a cause for the Contractor to claim either delay of the Work or any increase in the Contract Price.

**2.2.3** The Owner, the Owner's Project Manager and other government representatives shall at all times have access to the Work wherever it is in preparation or progress, to include off-site facilities of Subcontractors and suppliers at any tier. The Contractor shall provide safe facilities for such access so the Owner's Project Manager may perform his functions under the Contract Documents.

**2.2.4** All communications, correspondence, submittals and documents exchanged between the Owner's Project Manager and the Contractor in connection with the Project shall be through or in the manner prescribed by the Owner and consistent with the Owner/Contractor Agreement.

**2.2.5** The Owner's Project Manager shall make decisions on all matters relating to aesthetic effect, which decision shall be final.

**END OF ARTICLE 2**

## **GENERAL CONDITIONS**

### **ARTICLE 3: OWNER**

#### **3.1 DEFINITIONS**

- 3.1.1** "Owner" means the Town of Leesburg, Virginia, unless the Owner/Contractor Agreement provides otherwise. The Owner shall be referred to as the "Town," or as the "Owner."
- 3.1.2** The term "Owner" or "Owner's Project Manager" specifically excludes any and all inspectors having building code or Town ordinance responsibilities or jurisdiction under the requirements of the Building Permit, unless the Owner designates such person to serve as the Owner's Representative.
- 3.1.3** "Contractor" means the person or persons, firm or company whose bid or proposal has been accepted by the Owner and includes the Contractor's representatives, successors and assigns as permitted by the Owner.

#### **3.2 INFORMATION, SERVICES AND RIGHTS OF THE OWNER**

- 3.2.1** The Project Manager will provide administration of the Contract as described below.
- 3.2.2** The Owner or, at the Owner's sole discretion, the Owner's Project Manager or Project Manager, will review and process all Progress Payments, including the Final Payment.
- 3.2.3** The Project/Manager shall have the authority to reject the Work when, in his opinion, the Work does not conform to the Contract Documents.
- 3.2.4** Whenever in the Project Manager's reasonable opinion it is necessary or advisable for the implementation of the Contract Documents, the Project Manager will have authority to require special inspection or testing of the Work in accordance with the provisions of the Contract Documents, whether or not such Work is then fabricated, installed or completed.
- 3.2.5** The Owner or the Owner's Project Manager shall at all times have access to the Work wherever it is in preparation or progress. The Contractor shall provide safe facilities for such access.
- 3.2.6** The Owner, the Owner's Project Manager and the Engineer shall not be responsible for or have control or charge of the construction means, methods, techniques, sequences, or procedures, or for the safety precautions and programs in connection with the Work, and will not be responsible for the Contractor's failure to carry out the Work in accordance with the Contract Documents.

## **GENERAL CONDITIONS**

- 3.2.7** The Owner or the Owner's Project Manager shall not be responsible or liable to the Contractor for the acts, errors or omissions of the Contractor, any separate Subcontractor, any separate Contractor or any Contractor's or Subcontractor's agents or employees, or any other persons performing any of the Work.
- 3.2.8** The Owner assumes no responsibility for any conclusions or interpretations made by the Contractor based on the information made available by the Owner. The Owner assumes no responsibility for any understanding reached or representation made concerning conditions that can affect the Work by any of its officers or agents before the execution of this Contract, unless that understanding or representation is expressly set forth in this Contract.
- 3.2.9** The Owner shall not be held responsible for failure to perform the duties and responsibilities imposed by the Contract if such failure is due to strikes, fires, riots, rebellions, or Force Majeure, beyond the control of the Owner, that make performance impossible or illegal, unless otherwise specified in the Contract.
- 3.2.10** The Owner will, throughout the Contract Time and any extension thereof have the right of reasonable rejection and approval of staff assigned to the project by the Contractor. If the Owner reasonably rejects staff or Subcontractors, the Contractor must provide replacement staff or Subcontractors satisfactory to the Owner in a timely manner and at no additional cost to the Owner.
- 3.2.11** The foregoing rights are in addition to other rights of the Owner enumerated herein and those provided by law.

### **3.3 OWNER'S RIGHT TO STOP OR TO SUSPEND WORK**

- 3.3.1** If the Contractor fails to correct defective Work as required by Article 13.2 "CORRECTION OF WORK," or fails to carry out the Work or supply labor and materials in accordance with the Contract Documents, the Owner by written order may order the Contractor to stop the Work, or any portion thereof, without monetary compensation to the Contractor until the cause for such order has been eliminated.
- 3.3.2** The Owner may order the Contractor in writing to suspend, delay, or interrupt all or any part of the Work for such period of time as he may determine to be appropriate for the convenience of the Owner.
- 3.3.3** If the performance of all or any part of the Work is suspended, delayed, or interrupted by the Owner or the Owner's Project Manager for an unreasonable period of time, or by failure of either of them to act within the time specified (or if no time is specified, within a reasonable time), an adjustment increasing the time of performance of the Work shall be made. Such adjustments will be made solely for unreasonable suspension, delay, or interruption. The Contract shall be

## **GENERAL CONDITIONS**

modified in writing accordingly. However, no claim for an extension of time shall be made under this Article 3.3.3 for any suspension, delay, or interruption pursuant to Article 3.4.1, or for which claim is provided or excluded under any other provision of this Contract.

No claim under this Article 3.3.3 shall be allowed for any claim for an extension of time required for performance, unless within twenty days after the act or failure to act involved, the Contractor submits to the Owner's Project Manager a written statement setting forth, as then practicable, the extent of such claimed time extension and unless the claim for an extension of time is submitted with supporting data within thirty days after the termination of such suspension, delay, or interruption.

**3.3.4** In the event of a suspension of work or delay or interruption of work, the Contractor will and will cause his Subcontractors to protect carefully his, and their, materials and work against damage from the weather and maintain completed and uncompleted portions of the work as required by the Contract Documents. If, in the opinion of the Owner's Project Manager, any work or material shall have been damaged by reason of failure on the part of the Contractor or any of his Subcontractors to protect same, such work and materials shall be removed and replaced at the expense of the Contractor.

**3.3.5** No claim by the Contractor under Article 3.3.3 shall be allowed if asserted after Final Payment under this Contract.

### **3.4 OWNER'S RIGHT TO CARRY OUT THE WORK**

**3.4.1** If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a seven day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may after the seven day period give the Contractor a second written notice to correct the deficiencies within a three day period. If the Contractor fails to commence and continue to correct any deficiencies within the second notice's three day period, the Owner may, without prejudice to other remedies the Owner may have, correct such deficiencies. In such a case an appropriate Change Order shall be issued pursuant to Article 12 deducting from the payments then or thereafter due the Contractor the cost of correcting such deficiencies, including compensation for services of the Owner's Project Manager, the Engineer and any other additional services made necessary by such default, neglect or failure. If the payments then or thereafter due the Contractor are not sufficient to cover such amount, the Contractor shall pay on demand the difference to the Owner.

**3.4.2** The Owner will not be liable or accountable to the Contractor for the method by which the Work, or any portion thereof, performed by the Owner or by separate

## **GENERAL CONDITIONS**

contractors pursuant to Article 3.4 is accomplished or for the price paid therefor. Notwithstanding the Owner's right to carry out a portion of the Work, maintenance and protection of the Work remains the Contractor's responsibility.

### **3.5 EXAMINATION OF RECORDS**

**3.5.1** The Owner, or any duly authorized representative, shall, until the expiration of five years after final payment hereunder, have access to and the right to examine, audit and copy any directly pertinent books, documents, as-builts, papers and records of the Contractor involving transactions related to this Contract. Any audit or examination shall occur during regular business hours and not exceed a reasonable period of time under the circumstances.

**3.5.2** The Contractor further agrees to include in any subcontract for more than \$10,000 entered into as a result of this Contract, a provision to the effect that the Subcontractor agrees that the Owner or any duly authorized representative shall, until the expiration of three years after final payment under the Contract, have access to and the right to examine, audit and copy, without charge, any directly pertinent books, documents, papers and records of such contractor involved in transactions related to such subcontract, or this Contract. The term subcontract shall exclude subcontracts or purchase orders for public utility services at rates established for uniform applicability to the general public.

**3.5.3** The period of access provided in Subparagraphs 3.5.1 and 3.5.2 above shall continue for all contracts and subcontracts until any appeals, litigation, or claims have been finally concluded.

**3.5.4** Nothing in these General Conditions shall be deemed to modify in any manner any applicable statute of limitations.

### **END OF ARTICLE 3**

## **GENERAL CONDITIONS**

### **ARTICLE 4: CONTRACTOR**

#### **4.1 DEFINITION**

**4.1.1** The Contractor is the person or organization identified as such in the Owner/Contractor Agreement. The term Contractor means the Contractor or his authorized representative, who shall have authority to bind the Contractor in all matters pertinent to this Contract.

**4.1.2** The Contractor is not an agent for the Owner but is an independent contractor engaged in the business of providing the services and performing the Work described in the Contract Documents.

#### **4.2 REVIEW OF CONTRACT DOCUMENTS**

**4.2.1** Before submitting his bid or proposal to the Owner, and continuously after execution of the Contract, the Contractor shall carefully study and compare the Contract Documents and shall at once report to the Owner any error, inconsistency or omission he may discover, including any requirement that may be contrary to any law, ordinance, rule, regulation or order of any public authority bearing on the performance of the Work. By submitting his bid or proposal for the Contract and the Work under it, the Contractor agrees that the Contract Documents are accurate, consistent and complete. The Contractor shall perform no portion of the Work at any time without Contract Documents and, where required, approved Shop Drawings, product data, samples, mock ups or other submittals for such portion of the Work

#### **4.3 SUPERVISION AND CONSTRUCTION PROCEDURES**

**4.3.1** The Contractor shall supervise and direct the Work, using his best skill and attention. He shall be solely responsible for and have control over all construction means, uses, sequences, procedures, safety precautions and programs, and coordination of all portions of the Work under the Contract.

**4.3.2** The Contractor shall be responsible to the Owner for the acts and omissions of his employees, Subcontractors, Suppliers, their agents and employees, and other persons performing any of the Work and for their compliance with each and every requirement of the Contract Documents, in the same manner as if they were fully employed by the Contractor.

**4.3.3** The Contractor shall not be relieved from his obligations to perform the Work in accordance with the Contract Documents either by acts, failures to act or duties of the Owner or the Owner's Project Manager in their administration of the Contract, or by inspections, tests, or approvals (or the lack thereof) required or

## **GENERAL CONDITIONS**

performed under Article 4.4 "INSPECTION OF CONSTRUCTION" or Article 7.5 "TESTS" by persons other than the Contractor.

- 4.3.4** The Contractor shall employ no plant, equipment, materials, methods or persons to which the Owner or Owner's Project Manager reasonably objects.
- 4.3.5** The Contractor shall not remove any portion of the Work or stored materials from the site of the Work, if payment for such was requested or received from the Owner.
- 4.3.6** The Contractor shall at all times so conduct its work as to ensure the least possible obstruction to traffic and inconvenience to the general public and the residents in the vicinity of the Work. No road or street shall be closed to the public except with the permission of the Town Traffic Engineer and proper governmental authority. Fire hydrants on or adjacent to the Work shall be kept accessible to fire fighting equipment at all times. Temporary provisions shall be made by the Contractor to ensure the use of sidewalks and the proper functioning of all gutters, drainage inlets, drainage ditches, and irrigation ditches, which shall not be obstructed except as approved by the Owner's Project Manager.
- 4.3.7** When construction crosses highways, railroads, streets, or utilities under the jurisdiction of State, County, Town, or other public agency, public utility, or private entity, the Contractor shall secure written permission where necessary from the proper authority before executing such new construction. A copy of such written permission must be filed with the Owner before any work is started. The Contractor shall be required to furnish a release from the proper authority before final acceptance of the Work.
- 4.3.8** The Contractor shall provide and maintain such sanitary accommodations for the use of the Contractor's employees and those of its Subcontractors as may be necessary to comply with the requirements and regulations of the local and State departments of health and where additional accommodations are necessary for a reasonably sanitary activity, then such additional accommodations shall be made by the Contractor.

### **4.4 INSPECTION OF CONSTRUCTION**

- 4.4.1** The Contractor shall maintain an adequate inspection system and perform such inspections as will ensure that the Work called for by this Contract conforms to Contract requirements. The Contractor shall maintain complete inspection records and make them available to the Owner and Owner's Project Manager. All work is subject to inspection and testing at all places and at all reasonable times before acceptance to ensure strict compliance with the terms of the Contract.

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### **4.5 CONTRACTOR'S REPRESENTATIONS**

**4.5.1** By entering into this Contract with the Owner, the Contractor represents and warrants the following, together with all other representations and warranties in the Contract Documents:

- .1 That he is experienced in and competent to perform the type of work required and to furnish the plant, materials, supplies or equipment to be so performed or furnished by him;
- .2 That he is financially solvent, able to pay his debts as they mature, and possessed of sufficient working capital to initiate and complete the Work and Changes required under the Contract;
- .3 That he is familiar with all laws, ordinances, permits, regulations and resolutions that may in any way affect the Work or those employed therein, including but not limited to any special laws or regulations related to contractor licenses and/or registrations for the Work or any part thereof;
- .4 That such temporary and permanent work required by the Contract Documents that is to be done by him will be satisfactorily constructed and fit for use for its intended purpose and that such construction will not injure any person, or damage any property;
- .5 That he will fully comply with all requirements of the Contract Documents;
- .6 That he will perform the Work in a skillful manner consistent with good workmanship, sound business practice, and in the most expeditious and economical manner consistent with the best interests of the Owner;
- .7 That he will furnish efficient business administration and experienced superintendence and an adequate supply of workers, equipment, tools, and materials at all times;
- .8 That he has carefully reviewed the Work required and that the Work can be planned and executed in a normal and orderly sequence and be reasonably scheduled so as to insure completion of the Work in accordance with the Contract Documents, allowing for normal and reasonably foreseeable weather, labor

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and other delays, interruptions and disruptions of the Work at the site designated;

- .9 That he will complete the Work within the Contract Time and all portions thereof within any required Contract milestones;
- .10 That his Contract Price is based upon the labor, materials, systems and equipment required by the Contract Documents, without exception;
- .11 That he does not and will not during the performance of the Contract violate the provisions of the Federal Immigration Reform and Control Act of 1986, as amended, which prohibits the employment of illegal aliens, and Federal and State employment and wage hour laws;
- .12 That he has taken steps reasonably necessary to ascertain the nature and locations of the Work of the Contract, has investigated and satisfied himself as to the general and local conditions which can affect the Work or its cost, including but not limited to: conditions bearing upon transportation, disposal, handling, and storage of materials; the availability of labor, water, electric power, and roads; uncertainties of weather, river stages, tides, or similar physical conditions at the site; the conformation and conditions of the ground; and the character of equipment and facilities needed before and during work performance;
- .13 That no employee of the Owner shall be admitted to any share or part of this Contract or to any benefit that may arise therefrom which is not available to the general public; and
- .14 That Contractor's bid or offer was made without collusion or fraud and that it has not offered or received any kickbacks or inducements from any other offeror, supplier, manufacturer, or Subcontractor and that it has not conferred on any public employee having official responsibility for this purchase any payment, loan, subscription, advance, deposit of money, services, or anything of more than nominal value, present or promised unless consideration of substantially equal or greater value was exchanged. Contractor acknowledges that this Contract incorporates by reference the Virginia Public Procurement Act, VA Code Sect. 2.2-4300 *et seq.* (VPPA), as well as any state or federal law related to ethics, conflicts of interest, or bribery, including by way of illustration and not limitation, the Virginia State and Local Government Conflict of Interests Act, the

## **GENERAL CONDITIONS**

Virginia Governmental Frauds Act, and Articles 2 and 3 of Chapter 10 of Title 18.2 of the Virginia Code, as amended.

### **4.6 LABOR AND MATERIALS**

**4.6.1** Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for all labor, materials, equipment, supplies, tools, construction equipment and machinery, heat, utilities, transportation, and other facilities and services necessary or proper for or incidental to the execution and completion of the Work required by and in accordance with the Contract Documents and any applicable code or statute, whether specifically required by the Contract Documents, or whether their provision may reasonably be inferred as necessary to produce the intended results, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work. Unless otherwise specified, all materials and equipment incorporated in the Work under the Contract shall be new. All work performed, shall be accomplished by persons qualified in the respective trades. Final Payment will not be made until the Work is so completed.

**4.6.2** Whenever materials or equipment are specified or described in the Drawings or Specifications by using the name of a proprietary item or the name of a particular manufacturer, fabricator, supplier, or distributor, the naming of the item is intended to establish the type, function, and quality required. Unless the name is followed by words indicating that no substitution is permitted, materials or equipment of other manufacturers, fabricators, suppliers or distributors may be accepted by the Owner's Project Manager if sufficient information is submitted by the Contractor to allow the Owner's Project Manager to determine that the material or equipment proposed is equivalent to that name.

**4.6.3** Requests for review of substitute items of material and equipment will not be accepted by the Owner's Project Manager from anyone other than the Contractor. If the Contractor wishes to furnish or use a substitute item of material or equipment, the Contractor shall make written application to the Owner's Project Manager for acceptance thereof, certifying that the proposed substitute will perform adequately the functions called for by the general design, be similar and of equal or better substance to that specified, and be suited to the same use and capable of performing the same or better function as that specified. The application shall state whether or not acceptance of the substitute for use in the Work will require a change in the drawings or specifications to adapt the design to the substitute and whether or not incorporation or use of the substitute in connection with the Work is subject to payment of a license fee or royalty. All variations of the proposed substitute from that specified shall be identified in the application and available maintenance, repair, and replacement service shall be indicated.

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**4.6.4** The Contractor shall submit complete data substantiating compliance of the proposed substitution with the Contract Documents, including:

- .1 Product identification including manufacturer's name, address and phone number;
- .2 Manufacturer's literature showing complete product description, performance and test data, and all reference standards;
- .3 Samples and colors in the case of articles or products;
- .4 Name and address of similar projects on which the product was used and date of installation;
- .5 For construction methods, include a detailed description for the proposed method and drawings illustrating same;
- .6 Itemized comparison of proposed substitution with product or method specified and any cost reduction which shall benefit the Owner;
- .7 Accurate cost data on proposed substitution with product or method specified and any cost reduction which shall benefit the Owner;
- .8 All directions, specifications and recommendations by manufacturers for installation, handling, storing, adjustment and operation; and
- .9 A mock up if determined necessary by the Project Manager.

**4.6.5** The Contractor shall also submit with his request for approval a sworn and notarized statement that shall include the following representations:

- .1 That he has investigated the proposed product or method and determined that it is equal or better in all respects to that specified and that it fully complies with all requirements of the Contract Documents;
- .2 That he will meet all Contract obligations with regard to the substitution;
- .3 That he will coordinate installation of accepted substitutions into the Work, making all such changes and any required schedule

## GENERAL CONDITIONS

adjustment, at no additional cost to the Owner, as may be required for the Work to be complete in all respects;

- .4 He waives all claims for additional costs and additional time related to substitutions which consequently become apparent. He also agrees to hold the Owner harmless from claims for extra costs and time incurred by other Subcontractors and suppliers, or additional services which may have to be performed by the Owner's Project Manager, for changes or extra work that may, at some later date, be determined to be necessary in order for Work to function in the manner intended in the Contract Documents;
- .5 He will provide the same warranty and guarantee, and perform any work required in accordance therewith, for the substitution that is applicable to the specified item for which the substitution is requested;
- .6 Material will be installed, handled, stored, adjusted, tested, and operated in accordance with the manufacturers' recommendations and as specified in the Contract Documents;
- .7 In all cases new materials will be used unless this provision is waived by notice from the Owner or the Owner's Project Manager or unless otherwise specified in the Contract Documents;
- .8 All material and workmanship will be in every respect in accordance with that which, in the opinion of the Owner or the Owner's Project Manager, is in conformity with approved current practice;
- .9 He has provided accurate cost data on the proposed substitution in comparison with the product or method specified; and
- .10 He has taken into consideration the necessary adjustment, relocation and/or installation of public utilities in areas within the limits of this Contract. No additional compensation will be paid to the Contractor for delays to the project schedule, work interruptions, changes in construction sequences, changes in handling excavation, drainage or paving, or for changes in types of equipment used, etc., caused by complying with the provisions of this statement. The Contractor shall include activities in its initial schedule indicating the utility relocation necessary to complete the Work. Delays to the project schedule caused by untimely relocations of utilities will not be considered a compensable delay, but if supported in accordance with the

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provisions of Article 8.3, may entitle the Contractor to a non-compensable time extension. The Contractor shall assume all responsibility for coordinating with the various utility companies to verify their relocation schedules, determine the anticipated duration to complete the respective utility relocations, and to facilitate utility relocations to minimize the impact to the project schedule upon notification of being named the apparent low bidder.

- 4.6.6** The application shall also contain an itemized estimate of all costs that will result directly or indirectly from acceptance of such substitute, including costs of redesign and claims of other contractors affected by the resulting change. All of the foregoing shall be considered by the Owner's Project Manager in evaluating the proposed substitute. The Owner's Project Manager may require the Contractor to furnish at the Contractor's expense additional data about the proposed substitute. The Owner shall be the sole judge of acceptability, and no substitute shall be ordered or installed without the Owner's prior written acceptance. The Owner may require the Contractor to furnish at the Contractor's expense a special performance guarantee or other surety with respect to any substitute.
- 4.6.7** If a substitution is approved, no additional change in brand or make will be permitted unless satisfactory written evidence is presented to and approved by the Owner showing that the manufacturer cannot make scheduled delivery of the approved substituted item. Substitutions will not be considered by the Owner if:
- .1 The proposed substitution is indicated or implied on the Contractor's shop drawing or product data submittals and has not been formally submitted for approval by the Contractor in accordance with the above-stated requirement; or
  - .2 Acceptance of the proposed substitution will require substantial revisions to the Contract Document or is otherwise not acceptable to the Owner or his authorized representative.
- 4.6.8** The Contractor shall not have any right of appeal from the decision of the Project Manager rejecting any materials submittal.
- 4.6.9** Manufactured articles, material and equipment shall be applied, installed, connected, erected, used, cleaned, and conditioned as directed by the manufacturer unless herein specified to the contrary.
- 4.6.10** Any material specified by reference to the number, symbol or title of a specific standard, such as a Commercial Standard, a Federal Specification, a Trade Association Standard, or other similar standard, shall comply with the

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requirements in the latest revision of the standards or specification and any amendment or supplement, except as limited to type, class or grade, or as modified in such reference. The standard referred to, except as modified in the Specifications, shall have full force and effect as though printed in the Specifications.

- .1 Reference in the Specifications or on the Drawings to any article, device, product, material, fixture, form or type of construction by name, make or catalog number shall be interpreted as establishing a standard of quality and shall not be construed as eliminating from competition other products of equal or better quality by other manufacturers where fully suitable, as approved by the Owner's Project Manager. Applications for approval of substitutions for the specified items will be considered only upon request of the Contractor, not of individuals, trades or suppliers, and only for a specific purpose; no blanket approvals will be granted. No approval of a substitution shall be valid unless it is in written form and signed by the Owner's Project Manager.
- .2 If any proposed substitution will affect a correlated function, adjacent construction or the work of other contractors, then the necessary changes and modifications to the affected work shall be considered as an essential part of the proposed substitution, to be accomplished by the Contractor without additional expense to the Owner, if and when approved. Detail drawings and other information necessary to show and explain the proposed modifications shall be submitted with the request for approval of the substitution.

**4.6.11** All equipment, apparatus, or devices of any kind to be incorporated into the Work that are shown or indicated on the drawings or called for in the specifications or required for the completion of the Work shall be entirely satisfactory to the Owner's Project Manager as regards operations, capacity, or performance. No approval, either written or oral, of any drawings, descriptive data, or samples of such equipment, apparatus, or device shall relieve the Contractor of his responsibility to turn over the same in good working order for its intended purpose at the completion of the Work in complete accordance with the Contract Documents. Any equipment, apparatus and/or device not fulfilling these requirements shall be removed and replaced by proper and acceptable equipment, or put in good working order satisfactory to the Owner's Project Manager without additional cost to the Owner.

**4.6.12** The Contractor shall at all times enforce strict discipline and good order among his employees and shall not employ on the Work any unfit person or anyone not skilled in the task assigned to him. The Owner may, by written notice, require

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the Contractor to remove from the Work any employee the Owner deems incompetent, careless or otherwise objectionable.

### **4.7 WARRANTY**

**4.7.1** The Contractor guarantees and warrants to the Owner all work as follows:

- .1 That all materials and equipment furnished under this Contract will be new and the best of its respective kind unless otherwise specified;
- .2 That all Work will comply with or exceed industry standards and be free of omissions and faulty, poor quality, imperfect or defective materials or workmanship;
- .3 That where no standard is specified for such workmanship or materials, they shall be the best of their respective kinds;
- .4 That all applicable Work shall be entirely watertight and leakproof in accordance with all applicable industry customs and practices, and shall be free of shrinkage and settlement;
- .5 That the Work, including but not limited to, mechanical and electrical machines, devices and equipment shall be fit and fully usable for its intended and specified purpose and shall operate satisfactorily with ordinary care;
- .6 That consistent with requirements of the Contract Documents, the Work shall be installed and oriented in such a manner as to facilitate unrestricted access for the operation and maintenance of fixed equipment; and
- .7 That the Work will be free of abnormal or unusual deterioration that occurs because of poor quality materials, workmanship or unsuitable storage.

**4.7.2** All work not conforming to guarantees and warranties specified in the Contract Documents, including substitutions not properly approved and authorized, may be considered defective. If required by the Owner's Project Manager, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment. This warranty is not limited by the provisions of Article 13 "UNCOVERING AND CORRECTION OF WORK."

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- 4.7.3** The warranties set forth in this Article 4.7 and elsewhere in the Contract Documents shall survive Final Completion of the Work under Article 9.8 "FINAL COMPLETION AND FINAL PAYMENT."
- 4.7.4** If, within one year after the Date of Final Acceptance of the Work or designated portion thereof or within one year after acceptance by the Owner of designated equipment or within such longer period as may be prescribed by law or by the terms of the applicable special warranty required by the Contract Documents, any of the Work is found to be defective, not in accordance with the Contract Documents, or not in accordance with the guarantees and warranties specified in the Contract Documents, the Contractor shall correct it within five working days, or such other period as agreed, after receipt of written notice from the Owner or Owner's Project Manager to do so.
- 4.7.5** If at any time deficiencies in the Work are discovered that are found to have resulted from latent defects, gross mistakes, fraud or misrepresentation by the Contractor, any Subcontractor or Supplier, the Contractor will be liable for replacement or correction of such Work or any damage that the Owner has incurred, or will incur, related thereto, regardless of the time limit of any guarantees or warranty.
- 4.7.6** Any materials or other portions of the Work, installed, furnished, or stored on site that are not of the character or quality required by the specifications, or are otherwise not acceptable to the Owner's Project Manager shall be immediately removed and replaced by the Contractor to the satisfaction of the Owner's Project Manager when notified to do so by the Owner's Project Manager.
- 4.7.7** If the Contractor fails to correct defective or nonconforming Work as required by Article 4.7.4 or Article 4.7.5 or, if the Contractor fails to remove defective or nonconforming Work from the site, as required by Article 4.7.6, the Owner may elect to either correct such Work in accordance with Article 3.4 "OWNER'S RIGHT TO CARRY OUT THE WORK" or remove and store materials and equipment at the expense of the Contractor.
- 4.7.8** The Contractor shall bear the cost of making good all work of the Owner, separate contractors or others, destroyed or damaged by such correction or removal required under this Article, Article 13 "UNCOVERING AND CORRECTION OF WORK" or elsewhere in the Contract Documents.
- 4.8 TAXES**
- 4.8.1** The Contractor shall pay all applicable Federal, State, and local taxes and duties for the Work or portions thereof provided by the Contractor that are legally enacted at the time the Contract is awarded, whether or not yet effective.

## **GENERAL CONDITIONS**

Increases in the rates of such taxes and duties during performance of the Contract shall be the responsibility of the Contractor.

### **4.9 PERMITS, FEES AND NOTICES**

**4.9.1** The Contractor shall secure and pay for all permits, fees, licenses and inspections necessary for the proper execution and completion of the Work that are legally required at the time the proposals are received.

**4.9.2** The Contractor shall give all notices and comply with all laws, ordinances, rules, regulations and lawful orders of any public authority bearing on the performance of the Work.

**4.9.3** The Contractor shall have personnel on site that are qualified and have the proper certifications for Erosion and Sedimentation Control, Best Management Practice (BMP), and Storm Water Management (SWM), or any other Department of Environmental Quality (DEQ) certifications as required for any and all permits issued and/or required by the Work.

### **4.10 SUPERINTENDENT**

**4.10.1** The Contractor shall employ a competent Superintendent and necessary assistants who shall be in attendance at the Project site during the progress of the Work. The Superintendent shall be an authorized representative of the Contractor and all communications given to the Superintendent shall be as binding as if given to the Contractor.

**4.10.2** The Superintendent shall be in attendance at the Project site not less than eight hours per day, five days per week, unless the job is closed down due to a general strike or conditions beyond the control of the Contractor or until termination of the Contract in accordance with the Contract Documents. It is understood that such Superintendent shall be approved in writing by the Owner and shall be the one who will continue in that capacity for the duration of the Project, unless the Superintendent ceases to be on the Contractor's payroll or his withdrawal is required or approved by the Owner. The Superintendent shall not be employed on any other project for or by the Contractor or any other entity during the course of the Work.

**4.10.3** Such Superintendent shall be fluent in English and in such other languages as may be necessary to communicate effectively with all owner's representatives, employees and Subcontractors of the Contractor. This requirement may be satisfied by the on-site presence of a competent foreign language interpreter to English interpreter. Any costs associated with foreign language interpretation shall be borne by the Contractor.

## GENERAL CONDITIONS

**4.10.4** Any and all project documents, including but not limited to daily reports and logs, maintained by the Superintendent or the Contractor's employees or Subcontractors shall be in English. Any costs of foreign language translation shall be borne solely by the Contractor and shall not be a basis for any additional compensation or time extension from the Owner.

### **4.11 PROJECT SCHEDULES**

**4.11.1** The Schedule of Completion shall consist of the Contractor planning, scheduling, and constructing this project by using a Critical Path Method Project Schedule (CPM). The CPM shall be used for coordinating and monitoring all the Work specified in the Contract Documents including all activities of subcontractors, vendors, suppliers, utilities, and all other parties associated with the construction of the project. The CPM shall be based upon the entirety of the Contract Documents. All physical work and major procurement activities shall be included. The CPM shall be the Activity-On-Arrow type. The Contractor shall use either Primavera or SureTrak scheduling software.

The CPM utilized float: Float is defined as the amount of time between when an activity "can start" (the early start) and when an activity "must start" (the late start). Float is a shared commodity for the Owner and the Contractor and is not for the exclusive use or financial benefit of either party. Either party has the full use of the float until it is depleted.

**4.11.2** Initial Critical Path Method Project Schedule (ICPM) shall consist of the following:

- a. Activity-On-Arrow Time Scale Diagram
- b. Total Float Computer sort
- c. Written Narrative (WN)
- d. Printed calendars. The printed calendars shall include a listing, description, and calendar form tabulation of all calendars used in the ICPM. The calendars shall contain the total number of anticipated work days required to complete all the Work required in the Contract. The calendars shall delineate the holidays, anticipated nonwork days, and bad weather days. An explanation of the Contractor's basis for determining nonwork and bad weather days shall be included with the calendars.
- e. Data disc containing all of the information for (a) thru (d). The format shall be compatible with the Owner's computer software.

The ICPM diagram shall be drafted to a scale that allows the I node and J node numbers of each activity to be printed adjacent to that activity. The activities shall be clearly defined. All restraints between activities shall be shown.

## GENERAL CONDITIONS

The Contractor shall expend the entire Contract time specified in this Invitation for Bids. On Contracts with calendar date completions or calendar day durations, all planned activities shall have durations not exceeding 14 calendar days, except the activities required for the Owner's review and approval of the working drawings and material sources which shall be given a duration of not less than 30 calendar days. On Contracts with working day durations, these time periods shall be 10 working days and 25 working days.

All activities in the Contract Documents along with a written narrative explanation shall be identified in the ICPM. The Project Manager reserves the right to specify the number of activities, and to require at any time additional breakdown of the activities.

The Contractor shall provide a written narrative as part of the ICPM describing the original critical path, the sequence of work, number of shifts per day, number of hours per shift, composition and number of crews, and the equipment to be utilized on each activity. Subcontracting activities shall be listed and identified by activity number. Each activity shall be identified by physical location and phase of work. Abbreviations used in preparing the ICPM shall be explained in the written narrative.

The Contractor shall complete the proposed ICPM within 14 calendar days after receiving the Notice of Award and submit 5 sets to the Project Manager for review and approval. The Project Manager will review the Contractor's ICPM within 5 calendar days after the submittal. If required, the Project Manager will convene a Joint Review Conference at which time the Project Manager and Contractor may make corrections and adjustments to the proposed ICPM. If a revision is necessary due to the Project Manager's review or the Joint Review Conference, the proposed revisions shall be submitted, by the Contractor, within 7 calendar days after the initial review date to the Project Manager for another review. Revisions shall conform to the format used in the ICPM. The Project Manager will respond to the revised ICPM within seven calendar days after its receipt.

No construction work shall begin until the Project Manager has accepted the ICPM. Time charges shall begin no later than the on or before date of the Notice to Proceed. Any delay in starting work caused by the acceptance of the ICPM by the Project Manager will not be a basis for any monetary claim.

- 4.11.3** When the Project Manager notifies the Contractor that the ICPM has been accepted, that document will become the CPM of Record (CPMR). The Contractor shall be responsible for implementing and executing the Work specified in the Contract in strict conformance with the CPMR. The CPMR shall be the Contractor's work plan for completing the entire Contract as specified in the Contract Documents.

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Failure of the Contractor to adhere to the latest approved CPMR will be cause for the Owner to deny any and all requests for additional compensation or extensions of the Contract duration.

### 4.11.4 Revisions to the CPMR shall consist of one or more of the following:

- a. A change in duration of an activity.
- b. A change in the logic of the schedule.
- c. A change in the calendars.
- d. The deletion or addition of one or more activities.

The Contractor may submit a proposed revision to the CPMR at any time during the life of the Contract.

The Contractor shall submit a proposed revision to the CPMR whenever the activities differ from the accepted CPMR. Proposed revisions shall be submitted by the Contractor within 30-calendar days from the date on which the Contractor's activities deviated from the accepted CPMR. The revisions shall be submitted to the Project Manager in the same format used for the ICPM. The revisions shall include data from all CPMR Updates, which have been accepted by the Administration. The Written Narrative accompanying the revision shall describe the reason for the revisions, the critical path, and all logic and duration modifications to the CPMR. These shall include, but not be limited to, changes in the method or manner of the Work, changes in Specifications, extra work, addition or deletion of work, increased or decreased quantities, defective work and acceleration of the Work.

The Project Manager will review the CPMR and respond to the Contractor's proposed revision within 5 calendar days after its receipt. The Project Manager reserves the right to deny any proposed revision which adversely impacts the Owner, utilities, or other interested parties.

### 4.11.5 Any written request for an extension of time or change in incentive/disincentive date (if applicable) shall be accompanied by a revised CPMR, which documents the actual delay to the Contract completion date or incentive/disincentive date. The request shall include a written narrative of the events which would require an extension of the Contract time or incentive/disincentive date.

Only delays to activities, which affect the Contract completion date or incentive/disincentive date will be considered for a time extension. The extension of the specified Contract completion date or incentive/disincentive date will be based upon the actual number of calendar days the Contract completion date or incentive/disincentive date is adjusted. No extensions of the specified Contract completion date will be issued for work performed on activities with float.

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- 4.11.6 Monthly updates of the CPMR are required.** CPMR update submissions shall contain the activity data as specified in (a) thru (e) of the ICPM. The update shall describe the progress of the project to date. It shall include a description of the current critical path, the amount of float on the critical path, any delays or disruptions experienced by the Contractor during the period of the update, any change in manpower or equipment, the inclusion of any schedule revisions, and any potential delays or disruptions.

When a delay or a disruption to the Work is identified in the Written Narrative, which the Contractor believes to be the responsibility of the Owner, the Contractor shall submit a revision to the CPMR within 30 calendar days after the submittal of the updates.

- 4.11.7** The Owner and the Contractor will hold monthly job site progress meetings to discuss the progress of the project and update the CPMR. The Contractor shall arrange to have a representative of each subcontractor currently working on the project in attendance. The Contractor shall submit to the Project Manager the CPMR updates within 14 calendar days from the date of the monthly meeting. The Project Manager will review the update and advise the Contractor of its acceptability prior to the next monthly meeting.

## **4.12 RESPONSIBILITY FOR COMPLETION**

- 4.12.1** The Contractor shall furnish such labor, materials, tools, equipment, and professional services and shall work such hours, including night shifts, overtime operations and Sundays and holidays, as may be necessary to ensure the performance of the Work within Milestone and Completion dates specified in the Owner/Contractor Agreement. If it becomes apparent to the Owner's Project Manager that the Work will not be completed within required Milestone or Completion dates, the Contractor agrees to undertake some or all of the following actions, at no additional cost to the Owner, in order to ensure, in the opinion of the Owner's Project Manager, that the Contractor will comply with all Milestone and Completion date requirements:

- .1 Increase labor, materials, tools, equipment and professional services;
- .2 Increase the number of working hours per shift, shifts per working day, working days per week, or any combination of the foregoing; and
- .3 Reschedule activities to achieve maximum practical concurrency of accomplishment of activities.

- 4.12.2** If the actions taken by the Contractor are not satisfactory, the Owner or the Owner's Project Manager may direct the Contractor to take any and all actions

## **GENERAL CONDITIONS**

necessary to ensure completion within the required completion dates, without additional cost to the Owner. In such event, the Contractor shall continue to assume responsibility for his performance and for completion within the required dates.

**4.12.3** If, in the opinion of the Project Manager, the actions taken by the Contractor pursuant to this Agreement or the progress or sequence of work are not accurately reflected on the Construction schedule, the Contractor shall revise such schedule to accurately reflect the actual progress and sequence of work.

**4.12.4** This provision does not eliminate the Contractor's responsibility to comply with the Town noise ordinances, all Town permit requirements and all other applicable laws, regulations, rules, ordinances, resolutions, and permit requirements.

### **4.13 DOCUMENTS, OTHER SUBMITTALS AT THE SITE; AS-BUILT DRAWINGS**

**4.13.1** The Contractor and his Subcontractors shall maintain at the site, and at all times make available to the Owner and the Owner's Project Manager one record copy of all Drawings, Specifications, Addenda, Change Orders, and other Modifications, in good order and marked currently to record all changes made during construction, and approved Shop Drawings, Product Data, Samples, Mock Ups and other Submittals ("as-built drawings").

**4.13.2** The Contractor shall prepare the as-built drawings by marking up two sets of prints and one electronic copy of the applicable Contract Drawings to portray as-built construction, in conformance with the DCSM. The prints shall be neatly and clearly marked to show all variations between the Work actually provided and that indicated on the Contract Drawings, and all utilities encountered in the Work. All drafting shall conform to good drafting practice and shall include such supplementary notes, legends and details as may be necessary for legibility and clear portrayal of the as-built construction. These drawings shall be marked promptly at the completion of the project and shall be turned over the Owner prior to Final Payment.

### **4.14 SHOP DRAWINGS, PRODUCT DATA, SAMPLES AND OTHER SUBMITTALS**

**4.14.1** The term "Shop Drawings" shall mean all drawings, diagrams, illustrations, brochures, schedules and other data which are prepared by Contractor, a Subcontractor, manufacturer, supplier or distributor and which illustrate the equipment, material or some portion of the Work.

**4.14.2** The Contractor shall submit with reasonable promptness and in such sequence as to cause no delay in the Work or in the work of the Owner or any separate

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Contractor, all Shop Drawings, Product Data, Manuals, Samples, and Submittals required by the Contract Documents. All such submissions shall be made so as to cause no delay in the project, allowing the Owner or his designated representative fourteen (14) working days for review and checking.

- 4.14.3** By approving and submitting Shop Drawings, Product Data, Manuals, Samples and Submittals, the Contractor represents that he has determined and verified all materials, field measurements, and field construction criteria related thereto, and that he has checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents. The Contractor shall adhere to any supplementary processing and scheduling instructions pertaining to any submittals that may be issued by the Owner's Project Manager.
- 4.14.4** Parts and details not fully indicated on the Contract Drawings shall be detailed by the Contractor in accordance with standard engineering practice. Dimensions on the Contract Drawings, as well as detailed drawings themselves, are subject in every case to measurements of existing, adjacent, incorporated and completed work that shall be taken by the Contractor before undertaking any work dependent on such data.
- 4.14.5** Where the Contract Documents call for the submittal of manufacturer's data to the Owner or the Owner's Project Manager for information only, such submittals shall be made before the commencement of any portion of the Work requiring such submission.
- 4.14.6** The Contractor shall not be relieved of responsibility for any deviation from the requirements of the Contract Documents by virtue of the review by the Owner or the Owner's Project Manager of Shop Drawings, Product Data, Samples or Manuals unless the Contractor has specifically informed the Owner's Project Manager in writing of such deviation at the time of submission and the Owner's Project Manager has given written approval to the specific deviation. The Contractor shall not be relieved from responsibility for errors or omissions in the Shop Drawings, Product Data, Samples or Manuals by the Owner or Owner's Project Manager's review thereof.
- 4.14.7** Shop drawings shall be submitted in such number of copies that three copies may be retained by the Project Manager or his designee after approval. Each submission shall be accompanied by a letter of transmittal in duplicate, listing the contents of the submission and identifying each item by reference to specification section or drawing. All Shop Drawings shall be clearly labeled with the name of the project and such information as may be necessary to enable their complete review by the Project Manager or his designee. Catalog plates and other similar material that cannot be so labeled conveniently shall be bound in suitable covers bearing the identifying data.

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- 4.14.8** Shop drawings shall be accompanied by all required certifications and other such supporting material, and shall be submitted in such sequence or in such groups that all related items may be checked together. When Shop Drawings cannot be checked because a submission is not complete, or because Shop Drawings on related items have not been received by the Project Manager or his designee, such Shop Drawings will be returned without action, and marked 'rejected' with the reason for rejection clearly stated. Incomplete or defective submittals shall also be returned without action, and marked 'rejected' with the reason for rejection clearly stated.
- 4.14.9** Shop Drawings shall have been reviewed by the Contractor and coordinated with all other related or affected work before they are submitted for approval and shall bear the Contractor's certification that the Contractor has checked and approved them as complying with all relevant information in the Contract Documents. Shop Drawings submitted without such certification and coordination will be returned to the Contractor without action and will be considered not a formal submission.
- 4.14.10** SAMPLES required by the specifications or requested by the Project Manager or his designee shall be submitted for approval. Samples shall be submitted in single units only, unless the Contractor desires additional units for the Contractor's own use. Each sample shall bear a label indicating the material represented, the name of the producer and the title of the Project. Approval of a sample shall be only for conformance with the design concept of the Project and compliance with the information given in the Contract Documents, and only for the characteristics or use named in such approval. Such approval shall not be construed to change or modify any Contract requirements or the Contract Price. Materials and equipment incorporated in the Work shall match the approved samples.
- 4.14.11** All TESTS of materials and finished articles shall be made by bureaus, laboratories or agencies approved by the Project Manager or his designee, and the certified reports of such tests shall be submitted to the Project Manager. All costs in connection with the testing shall be borne by the Contractor. Failure of any material to pass the specified tests or any test performed by the Project Manager or his designee will be sufficient cause for refusal to consider, under this Contract, any further materials of the same brand or make of that material. Samples of various materials delivered on the site or in place may be taken by the Project Manager or his designee for testing. Samples failing to meet the requirements of the Contract Documents will automatically void previous approvals of the items tested. See Article 7.5 for additional test requirements.

Unless otherwise specified, testing for soil compaction, soil suitability, concrete testing, etc. will be performed by or on behalf of the Contractor at the

## **GENERAL CONDITIONS**

Contractor's expense. The Contractor shall furnish copies of all test results or related reports or documents to the Project Manager.

### **4.15 CUTTING AND PATCHING OF WORK**

**4.15.1** The Contractor shall be responsible for all cutting, fitting or patching that may be required to complete the Work and to make its several parts fit properly and in accordance with the Contract Documents.

**4.15.2** The Contractor shall not damage or endanger any portion of the Work or the work of the Owner or any separate Contractors by cutting, patching or otherwise altering any work, or by excavation. The Contractor shall not cut or otherwise alter the work of the Owner or any separate Contractor except with the written consent of the Owner and of such separate Contractor. The Contractor shall not unreasonably withhold from the Owner or any separate Contractor his consent to cutting or otherwise altering the Work. The Owner shall not be required to accept work with a cut, a splice, or patch when such cut, splice or patch is not generally accepted practice for the particular work involved or is otherwise unworkmanlike in the opinion of the Owner or the Owner's Project Manager.

### **4.16 DRUG-FREE WORKPLACE**

During the performance of this contract, the Contractor agrees as follows:

- .1 The Contractor will provide a drug-free workplace for the Contractor's employees. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, a statement notifying employees that the unlawful manufacture, sale, distribution, dispensation, possession, or use of a controlled substance or marijuana is prohibited in the Contractor's workplace and specifying the actions that will be taken against employees for violations of such prohibition.
- .2 The Contractor shall state in all solicitations or advertisements for employees placed by or on behalf of the Contractor that the Contractor maintains a drug-free workplace.
- .3 The Contractor will include the provisions of the foregoing clauses in every subcontract or purchase order of over \$10,000, so that the provisions will be binding upon each Subcontractor or vendor.

For the purposes of this section, "drug-free workplace" means a site for the performance of work done in connection with a specific contract awarded to a Contractor in accordance with the VPPA Section 2.2-4312, the employees of

## **GENERAL CONDITIONS**

whom are prohibited from engaging in the unlawful manufacture, sale, distribution, dispensation, possession or use of any controlled substance or marijuana during the performance of the contract.

### **4.17 NON-DISCRIMINATION IN EMPLOYMENT**

During the performance of this Contract, the Contractor agrees to comply fully with VPPA § 2.2-4201 and § 2.2-4343.1 as follows:

- .1 The Contractor will not discriminate against any employee or applicant for employment because of race, religion, disability, color, sex or national origin, except where religion, sex or national origin is a bona fide occupational qualification reasonably necessary to the normal operation of the Contractor and the Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause;
- .2 The Contractor, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, will state that such Contractor is an equal opportunity employer;
- .3 Notices, advertisements and solicitations placed in accordance with Federal law, rule or regulation, shall be deemed sufficient for the purpose of meeting the requirements of this provision; and
- .4 The Contractor will include the provisions of paragraphs .1, .2, .3 above in every subcontract or purchase order of over \$10,000 so that the provisions will be binding upon every Subcontractor or vendor.
- .5 The Contractor will comply with the requirements VPPA Section 2.2-4343.1, Permitted Contracts with Certain Religious Organizations, as applicable.

### **4.18 SIGNS**

The Contractor may at his option and without cost to the Owner, erect signs acceptable to the Owner on the site of the Contract for the purpose of identifying and giving directions to the job. No signs shall be erected without prior approval of the Owner as to design and location.

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### **4.19 CLEANING UP**

**4.19.1** The Contractor at all times shall keep the project site and all surrounding public streets and neighboring property free from accumulation of waste materials or rubbish caused by his operations. At the completion of the Work and before Final Payment is made, he shall remove all his waste materials and rubbish from and about the Project as well as all his tools, equipment and surplus materials. The Contractor shall also thoroughly clean and leave reasonably dust free all interior of all buildings included in the Contract, and thoroughly clean all glass installed under the Contract including the removal of all paint and mortar splatters and other defacements.

**4.19.2** If the Contractor fails to clean up during or at the completion of the Work, the Owner may do so as provided in Article 6.3 "OWNER'S RIGHT TO PERFORM DISPUTED WORK" and the cost thereof shall be charged to the Contractor.

**4.19.3** The Contractor shall take all reasonable steps, including but not limited to providing a wash down area, to prevent mud, dirt, and other material from accumulating upon the public streets.

**4.19.4** During and at the completion of the Work, the Contractor shall prevent site soil erosion, the runoff of silt or debris carrying water from the site, and the blowing of debris off the site in accordance with the applicable requirements and standards of the Virginia Erosion and Sediment Control Handbook, latest edition, and the Contract Documents.

### **4.20 ROYALTIES AND PATENTS**

**4.20.1** Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of 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 the Owner or Owner's Project Manager 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. Contractor shall indemnify, defend and hold harmless Owner and Owner's Project Manager and anyone directly or indirectly employed by either of them from and against all claims, damages, losses and expenses (including attorneys' fees) arising out of any infringement of patent rights or copyrights incident to the use in the performance of the Work of any invention, design, process, product or device not specified in the Contract Documents, and shall defend all such claims in connection with any alleged infringement of such rights.

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### **4.21 ANTITRUST**

By entering into a contract Contractor conveys sells assigns and transfers to the Owner all rights, title and interest in and to all causes of the action it now may have or hereafter acquire under the antitrust laws of the United States and the Commonwealth of Virginia, relating to the particular good(s) or service(s) purchased or acquired by the Owner under this contract.

### **4.22 INDEMNIFICATION**

**4.22.1** To the fullest extent permitted by law, the Contractor shall, at his sole cost and expense, indemnify, defend, and hold harmless the Owner, the Owner's Project Manager, their agents, representatives, employees, successors and assigns from and against all claims, actions, judgments, costs, liabilities, penalties, damages, losses and expenses, including but not limited to, attorneys' fees, arising out of or resulting from the performance of the Work, provided that any such claim, action, judgment, cost, liability, penalty, damage, loss or expense:

- .1 Is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself) including loss of use resulting therefrom; and
- .2 Is caused in whole or in part by any negligent act or omission of the Contractor, any Subcontractor or supplier, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder.

The Contractor shall not be obligated to indemnify the Owner or the Owner's Project Manager hereunder for any damages or injuries, including death, the proximate cause of which is the sole negligence of the Owner or the Owner's Project Manager, consistent with Va. Code § 11-4.1.

Such obligation shall not be construed to negate, abridge, or otherwise reduce any other right or obligation of indemnity that would otherwise exist as to any party or person described in this Article 4.22

**4.22.2** In any and all claims against the Owner and the Owner's Project Manager or any of their agents, representatives, or employees by any employee of the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, the indemnification obligation under this Article 4.22 shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Contractor or any Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

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**4.22.3** No provision of Article 4.22 shall give rise to any duties on the part of the Owner or the Owner's Project Manager, or any of their agents, representatives or employees.

**4.22.4** The obligations of the Contractor under Article 4.22 shall not extend to the liability of the Owner's Project Manager, or the Owner's design architect or engineers, their agents or employees arising out of (a) the preparation or approval of maps, drawings, opinions, reports, surveys, Change Orders, designs or specifications, or (b) the giving of or the failure to give directions or instructions by Owner's Project Manager, his agents or employees provided such giving or failure to give is the primary cause of injury or damage.

### **4.23 PERSONS AUTHORIZED TO SIGN DOCUMENTS**

The Contractor, within five days after the earlier of the date of a Notice to Proceed or the date of the Owner/Contractor Agreement shall file with the Owner's Project Manager a list of all persons who are authorized to sign documents such as contracts, certificates and affidavits on behalf of the Contractor and to fully bind the Contractor to all the conditions and provisions of such documents.

### **4.24 ASBESTOS AND OTHER HAZARDOUS SUBSTANCES**

**4.24.1** Whenever and wherever during the course of performing any work under this contract, the Contractor discovers the presence of asbestos or other hazardous substances or suspects the presence of any hazardous substances, he shall stop the work immediately, secure the area, notify the Owner and await positive identification of the suspect material. During the downtime in such a case, the Contractor shall not disturb any surrounding surfaces but shall protect the area with suitable dust covers. In the event the Contractor is delayed due to the discovery of asbestos, suspected asbestos or any other hazardous or suspected hazardous substances, then a mutually agreed extension of time to perform the Work shall be allowed the Contractor.

**4.24.2** Any claims for extension of time shall be subject to the provisions of Article 8.

**4.24.3** If the items/products to be purchased are "Hazardous Substances" as defined by 15 U.S.C. § 1261, then the Contractor certifies and warrants that the items or products to be delivered under the Contract shall be properly labeled as required by the foregoing sections and that by delivering the items/products, the Bidder does not violate any of the prohibitions of 15 U.S.C. § 1263.

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**4.24.4** Material Safety Data Sheets (MSDS) and descriptive literature shall be provided with the submittal or delivery of each chemical and/or compound subject to Article 4.24.3. Failure on the part of the Contractor to submit such data may be cause for termination in accordance with Article 14.3.

### **4.25 RIGHT TO PUBLISH**

The Contractor otherwise agrees that he will not publish, cause to be published, or otherwise disseminate any information of any nature relating to the Work performed under this Contract, except as may be approved by the Owner in writing.

### **4.26 MATERIALS AND EQUIPMENT LIST**

**4.26.1** At least ten (10) working days before the start of construction the Contractor shall submit to the Project Manager for approval a complete list of materials and equipment proposed for use in connection with the project. Partial lists submitted from time to time will not be considered.

**4.26.2** After any material or piece of equipment has been approved, no change in brand or make will be permitted unless satisfactory written evidence is presented to prove that the manufacturer cannot make scheduled delivery of the approved material, or that material delivered has been rejected and the substitution of a suitable material is an urgent necessity, or that other conditions have become apparent which indicate that approval of such other material is in the best interest of the Owner.

**END OF ARTICLE 4**

## **GENERAL CONDITIONS**

### **ARTICLE 5: SUBCONTRACTORS**

#### **5.1 DEFINITIONS**

**5.1.1** A Subcontractor is any firm, supplier, distributor or vendor that performs work for or furnishes services, equipment or supplies to or for the Contractor or another Subcontractor in conjunction with the Contract. The term Subcontractor is referred to throughout the Contract Documents as if singular in number and masculine in gender and means a Subcontractor or his authorized representative. Although the term Sub-subcontractor may appear within the Contract Documents, the term Subcontractor includes any person or entity that has a direct or indirect contract with the Contractor to perform any of the Work.

**5.1.2** The Contractor shall be fully responsible to the Owner for all acts and omissions of his Subcontractors, and of persons and organizations directly or indirectly employed by them, and of persons and organizations for whose acts any of them may be liable, to the same extent that he is responsible for the acts and omissions of persons directly employed by him.

**5.1.3** Nothing contained in the Contract Documents is intended to, nor shall it create, any contractual relationship between the Owner, the Owner's Project Manager, or any of their agents, consultants, employees, independent contractors, or representatives and any Subcontractor, but the Owner shall be entitled to performance of all obligations intended for its benefit, and to enforcement thereof.

**5.1.4** The Owner's Project Manager will not deal directly with any Subcontractor. Communication will be made only through the Contractor. Subcontractors shall route requests for information or clarification through the Contractor to the Owner's Project Manager.

#### **5.2 AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK**

**5.2.1** The Contractor shall within fourteen days after award of the Contract furnish to the Owner's Project Manager in writing the names of the persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each of the principal portions of the Work. The Owner's Project Manager will promptly reply to the Contractor in writing stating whether the Owner has objection to any such proposed person or entity.

**5.2.2** The Contractor shall not contract with any such proposed Subcontractor to whom the Owner has made objection under the provisions of Article 5.2.1. The Contractor shall not be required to contract with anyone to whom he has an objection.

## **GENERAL CONDITIONS**

**5.2.3** If the Owner objects to any proposed Subcontractor under Article 5.2.1, the Contractor shall name a substitute to whom the Owner has no objection within fifteen days.

**5.2.4** The Contractor shall make no substitution for any Subcontractor previously proposed by the Contractor and not objected to by the Owner's Project Manager if the Owner makes objection to such substitution.

### **5.3 SUBCONTRACTUAL RELATIONS**

**5.3.1** By an appropriate agreement, written where legally required for validity, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by the terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities that the Contractor, by these Documents, assumes toward the Owner.

This agreement shall preserve and protect the rights of the Owner under the Contract Documents with respect to the Work to be performed by the Subcontractor. The subcontracting will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the Contractor-Subcontractor Agreements, the benefit of all rights, remedies and redress against the Contractor that the Contractor, by these Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with his Subcontractors.

The Contractor shall make available to each proposed Subcontractor, prior to the execution of the Subcontract, copies of the Contract Documents to which the Subcontractor will be bound by this Article 5.3, and identify to the Subcontractor any terms and conditions of the proposed Subcontract that may be at variance with the Contract Documents. Each Subcontractor shall similarly make copies of such Contract Documents available to his Sub-subcontractors or Suppliers.

**5.3.2** The Contractor shall be liable to and indemnify, defend and hold the Owner harmless from all costs, expenses, fees, attorney's fees, accountant's fees, damages and claims arising because of the Contractor's failure to comply with the provisions of this Article 5.3.

### **5.4 QUALIFICATION SUBMITTALS**

**5.4.1** Specific qualification submittals may be required of Subcontractors for certain critical items of the Work. Required qualification submittals are set forth in detail in the Contract Documents and shall be collected and submitted by the Contractor to the Owner's Project Manager for review and approval by the

## **GENERAL CONDITIONS**

Owner and Owner's Project Manager. All information required of a single Subcontractor shall be contained in a single, complete submittal. The Contractor shall submit the required qualification information within ten days after receipt of the Owner's Project Manager's request.

**5.4.2** The Owner may reject any proposed Subcontractor, or any qualification submittals related thereto, for the following reasons:

- .1 The Contractor's failure to submit requested information within the specified time; or
- .2 The Contractor's failure to provide all of the requested information; or
- .3 The Contractor's submission of a Subcontractor, or its qualifications, that are unacceptable to the Owner.

**5.4.3** Should the Owner have objection to any proposed Subcontractor, the Contractor shall submit another firm for approval within fifteen days.

**END OF ARTICLE 5**

## **GENERAL CONDITIONS**

### **ARTICLE 6: WORK BY OWNER OR BY SEPARATE CONTRACTORS**

#### **6.1 OWNER'S RIGHT TO PERFORM WORK AND TO AWARD SEPARATE CONTRACTS**

**6.1.1** The Owner reserves the right to perform work related to the Project with its own forces, and to award separate contracts in connection with other portions of the Project or other work on the site.

**6.1.2** When separate contracts are awarded for different portions of the Project or other work on the site, the term Contractor in the Contract Documents in each case shall mean the Contractor who executes each separate Owner/Contractor Agreement.

#### **6.2 MUTUAL RESPONSIBILITY**

**6.2.1** The Contractor shall afford other Contractors and the Owner reasonable opportunity for the introduction and storage of their materials and equipment and the execution of their work and shall properly connect and coordinate the Work with that of the Owner and other Contractors, to store his tools, materials and equipment in such orderly fashion at the site of the Work as will not unduly or unreasonably interfere with the progress of the Work or the work of any other Contractors.

**6.2.2** If the execution or result of any part of the Work depends upon any work of the Owner or of any separate Contractor, the Contractor shall, prior to proceeding with the Work, inspect and promptly report in writing to the Owner's Project Manager any apparent discrepancies or defects in such work of the Owner or of any separate Contractor that render it unsuitable for such proper execution or result of any part of the Work under this Contract.

**6.2.3** Failure of the Contractor to so inspect and report shall constitute an acceptance of the Owner or separate Contractor's work as fit and proper to receive the Work, except as to defects that may develop in the Owner's or separate Contractor's work after completion of the Work, and that the Contractor could not have discovered by its inspection prior to completion of the Work under this Contract.

**6.2.4** Should the Contractor cause damage to the Work or property of the Owner or of any separate Contractor on the Project, or to other work on the site, or delay or interfere with the Owner's work on ongoing operations or facilities or adjacent facilities of the Contractor's work, the Contractor shall be liable for the same and, in the case of another Contractor, the Contractor shall attempt to settle such claim with such Contractor prior to such other Contractor's institution of litigation.

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### **6.3 OWNER'S RIGHT TO PERFORM DISPUTED WORK**

**6.3.1** If a dispute arises between the Contractor and separate Contractors as to their responsibility for cleaning up as required by Article 4.19 "CLEANING UP" or for accomplishing coordination as required by Article 6.4 "COORDINATION OF THE WORK," the Owner may carry out such Work and charge the cost thereof to the Contractors responsible therefor as the Owner's Project Manager shall determine.

### **6.4 COORDINATION OF THE WORK**

**6.4.1** By entering into this Contract, Contractor acknowledges that there may be separate Contractors on the Site whose work will be coordinated with that of his own. Contractor warrants and guarantees that he will cooperate with separate Contractors, and will do nothing to delay, hinder or interfere with the Work of other separate Contractors, the Owner or the Owner's Project Manager.

**END OF ARTICLE 6**

## **GENERAL CONDITIONS**

### **ARTICLE 7: MISCELLANEOUS PROVISIONS**

#### **7.1 GOVERNING LAW**

**7.1.1** The Contract shall be governed by the law of the Commonwealth of Virginia, and shall be performed in accordance with the laws, ordinances, regulations, permits and resolutions of the Town of Leesburg. The sole venue for any litigation under this Contract shall be the Circuit Court of Loudoun County, Virginia. The conflicts of law provisions shall not be employed to apply the laws of any state other than those of the Commonwealth of Virginia to this Contract.

**7.1.2** Each provision of law required to be inserted in this Contract shall be deemed inserted. If through mistake or otherwise, any provision is not properly inserted, the Contract shall be modified to include such provision upon the application of either party.

**7.1.3** Where applicable, the Contractor shall meet or exceed all requirements of the Town of Leesburg Design and Construction Standards Manual and all other local, state and federal building codes.

#### **7.2 SUCCESSORS AND ASSIGNS**

**7.2.1** The Contractor binds himself, his partners, successors, assigns and legal representatives to the Owner, its partners, successors, assigns and legal representatives in respect to all covenants, agreements and obligations contained in the Contract Documents. The Contractor shall not assign the Contract or sublet it as a whole without the written consent of the Owner, nor shall the Contractor assign any monies due or to become due to him under the Contract, without the previous written consent of the Owner and the Contractor's Surety. Nor shall any contract be entered into or assigned to any party that is debarred from doing business with or in the Commonwealth of Virginia.

**7.2.2** In the event the Contractor desires to make an assignment of all or part of the contract or any monies due or to become due under this Contract, the Contractor shall file a written consent of Surety, together with a copy of the proposed Assignment with the Owner or the Owner's Project Manager. In the event the Contractor assigns all or any part of the monies due or to become due under this Contract, the instrument or assignment shall state that the right of assignees in and to any monies due to or to become due to the Contractor shall be subject to prior liens and claims of all persons, firms and corporations that provided labor, services, or furnished material and equipment during the performance of the Work. The rights of assignees shall further be subject to the payment of any liens, claims or amounts due to Federal or State governments, and to all rights of retention and set-off granted to the Owner by the Contract Documents.

## **GENERAL CONDITIONS**

### **7.3 CLAIMS FOR DAMAGES**

**7.3.1** Should the Contractor suffer injury or damage to person or property because of any act or omission of the Owner or of any of its employees, agents or others for whose acts either is legally liable, claim shall be made in writing to the Owner within thirty days after the first observance of such injury or damage; otherwise, the Contractor shall have waived any and all rights he may have against the Owner, or its employees, representatives and agents.

### **7.4 DISPUTES**

**7.4.1** A claim, if any, shall be made in writing and submitted by the Contractor to the Owner, the Project Manager and the Leesburg Town Attorney within ten calendar days after the occurrence of events giving rise to the claim. A claim is limited to events rising out of or relating to the Contract. Failure to file a written claim as required herein shall constitute an absolute waiver of any claim of any sort.

**7.4.2** The parties shall first endeavor to resolve any disputes, claims or other matters in question between them through direct negotiations, and if such direct negotiations fail, by non-binding mediation, with the site of the mediation being the Town of Leesburg, Virginia.

**7.4.3** If the procedures of subparagraph 7.4.2 have been followed, but more than 90 days have passed since a party has requested mediation, and the dispute, claim or matter in question remains unresolved, then either party may institute a lawsuit in the Circuit Court of Loudoun County, Virginia, which is agreed to be the sole and exclusive venue, and may pursue all available appeals in Virginia state courts, to the extent they have jurisdiction.

**7.4.4** Nothing in paragraphs 7.4.1 or 7.4.2 shall prevent a party from seeking temporary injunctive or other temporary equitable relief in the Loudoun County Circuit Court if circumstances so warrant.

**7.4.5** In the event of any dispute, claim, or other matter in question arising, Contractor shall continue its performance diligently during its pendency as if no dispute, claim or other matter in question had arisen. During the pendency of any dispute in connection with the payment of moneys, Contractor shall be entitled to receive payments for non-disputed items.

**7.4.6** Notwithstanding any other provision hereof, the Contractor expressly waives all claims against the Owner for consequential damages arising out of or relating to this Contract. This waiver includes losses of financing, business and reputation, bonding capacity, and loss of profit other than profit arising directly from the Work where otherwise permitted in the Contract.

## **GENERAL CONDITIONS**

### **7.5 TESTS**

**7.5.1** If the Contract Documents, laws, ordinances, rules, regulations or orders of any public authority having jurisdiction require any portion of the Work to be inspected, tested, or approved, the Contractor shall give the Owner's Project Manager five days notice of its readiness so the Owner's Project Manager may observe such inspection, testing, or approval. The Contractor shall bear all costs of such inspections, tests or approvals conducted by public authorities.

**7.5.2** If the Owner's Project Manager determines that any Work requires special inspection, testing, or approval that Article 7.5.1 does not include, the Owner's Project Manager will order the Contractor to make arrangements for such special inspection, testing or approval, and the Contractor shall give the Owner's Project Manager five days notice of such inspection. If such special inspection or testing reveals a failure of the Work to comply with:

- .1 The requirements of the Contract Documents, or
- .2 The conformance of the Work with laws, ordinances, rules, regulations, or orders of any public authority having jurisdiction.

The Contractor shall bear all costs of the Work, including compensation for the Owner's Project Manager and any additional services made necessary by such failure.

**7.5.3** Inspections and tests required under Article 7.5.2 to establish compliance with the Contract Documents will be made by a testing agency employed by the Owner. If the initial tests indicate non-compliance with the Contract Documents, the Contractor shall bear the costs thereof and any subsequent testing occasioned by non-compliance shall be performed by the same agency and the cost thereof shall be borne by the Contractor. Representatives of the testing agency shall have access to the Work at all times. The Contractor shall provide facilities for such access in order that the agency may properly perform its functions.

**7.5.4** Certificates of inspection, testing or approval required by public authorities shall be secured by the Contractor and promptly delivered by him to the Owner's Project Manager, in adequate time to avoid delays in the Work or Final Payment.

**7.5.5** The Contractor shall pay for and have sole responsibility for inspection or testing performed exclusively for his own convenience and for tests necessary because of Contractor's or Subcontractor's errors, omission, or noncompliance with Contract Documents.

## **GENERAL CONDITIONS**

**7.5.6** All materials and workmanship (if not otherwise designated by the specifications) shall be subject to inspection, examination and test by the Owner or the Owner's Project Manager, at any time during the manufacture or construction and at any place where such manufacture or construction are carried on. Special, full-sized and performance tests shall be described in the specifications. Without additional charge, the Contractor shall furnish promptly all reasonable facilities, labor and materials necessary to make tests safe and convenient.

**7.5.7** It is specifically understood and agreed that an inspection and approval of the materials or work by the Owner or the Owner's Project Manager shall not in any way subject the Owner to pay for the said materials or work or any portion thereof, even though incorporated in the Work, if said materials or work shall in fact turn out to be not in compliance with the Contract Documents or otherwise defective.

### **7.6 UNENFORCEABILITY OF ANY PROVISION**

**7.6.1** If any provision of this Contract is held as a matter of law to be unenforceable or unconscionable, the remainder of the Contract shall be enforceable without such provision.

### **7.7 AVAILABILITY OF LANDS**

**7.7.1** Owner shall furnish, as indicated in the Contract Documents, the lands upon which the Work is to be done, rights-of-way or easements for access thereto. The Owner reserves the right to delay the notice to proceed with the Contract Work in order to secure rights of way, easements or to relocate utilities, such as sewer, water, gas, electricity, cable television and other services.

**7.7.2** If the Contractor requires additional land for temporary construction facilities and for storage of materials and equipment other than the areas available on the site or right-of-way, or as otherwise furnished by the Owner, the Contractor shall provide such other lands and access thereto entirely at the Contractor's own expense and without liability to the Owner. The Contractor shall not enter upon private property for any purpose without written permission. The contractor shall provide to the Owner evidence of written permission for entry onto private property for the purpose of temporary construction facilities and/or storage of materials and equipment.

### **7.8 NONEXCLUSIVITY OF REMEDIES**

All remedies available to the Owner under the Contract are cumulative and no such remedy shall be exclusive of any other remedy available to the Owner.

## **END OF ARTICLE 7**

## **GENERAL CONDITIONS**

### **ARTICLE 8: TIME**

#### **8.1 DEFINITIONS**

**8.1.1** The Contract Time is the period set forth in the Owner/Contractor Agreement for Final Completion of the Work as defined in Article 8.1.4, including authorized extensions thereto.

**8.1.2** The date of commencement of the Work is the date established in the Notice to Proceed issued by the Owner.

Submission by the Contractor of all Certificates of Insurance, Performance and Payment Bonds and their approval by the Owner are conditions precedent to the issuance of the Notice to Proceed. Availability of lands under Article 7.7 is also a condition precedent to the issuance of the Notice to Proceed. The Contractor shall not commence the Work or store materials or equipment on site until written Notice to Proceed is issued or until the Contractor otherwise receives the written consent of the Owner.

**8.1.3** The date of Substantial Completion of the Work or designated portion thereof is the date certified by the Owner's Project Manager that the Work or a designated portion thereof is sufficiently complete, in accordance with the Contract Documents, so the Owner can fully occupy or utilize the Work or designated portion thereof for the use for which it is intended, with all of the Project's parts and systems operable as required by the Contract Documents. Only punch list work and any final cleaning beyond that needed for the Owner's full use may remain for Final Completion.

**8.1.4** The date of Final Completion of the Work is the date certified by the Owner's Project Manager when the Work is complete, to include punch list work and final clean up, in accordance with the Contract Documents and the Owner may fully occupy or fully utilize the Work for the use for which it is intended.

**8.1.5** If the date or time of completion is included in the Contract, it shall be the Date of Final Completion as defined in Article 8.1.4, including authorized extensions thereto, unless otherwise provided.

**8.1.6** The term Day as used in the Contract Documents shall mean calendar day unless otherwise specifically designated. All dates shall mean midnight of the indicated day unless otherwise stipulated.

## **GENERAL CONDITIONS**

### **8.2 PROGRESS AND COMPLETION**

**8.2.1** All time limits stated in the Contract Documents are of the essence of this Contract.

**8.2.2** The Contractor shall prosecute the Work diligently to Final Completion.

### **8.3 DELAYS AND EXTENSIONS OF TIME**

**8.3.1** The time during which the Contractor is delayed in the performance of the Work, by the acts or omissions of the Owner, the Owner's Project Manager or their employees or agents, acts of God, unusually severe and abnormal climatic conditions, fires, floods, epidemics, quarantine restrictions, strikes (not to exceed the actual duration of the strike), riots, terrorism, civil commotions, war or freight embargoes, or other conditions beyond the Contractor's control and that the Contractor could not reasonably have foreseen and provided against, shall be added to the Contract Time; provided, however, that no claim by the Contractor for an extension of time for delays will be considered unless made in compliance with the requirements of this Article and other provisions of the Contract Documents.

**8.3.2** The Contract Time shall be adjusted only for Change Orders pursuant to Article 12, "CHANGES IN THE WORK," Article 3.3, "OWNER'S RIGHT TO STOP OR SUSPEND THE WORK," and Article 8.3, "DELAYS AND EXTENSIONS OF TIME." If the Contractor requests an extension of the Contract Time, he shall furnish such justification and supporting evidence as the Owner's Project Manager may deem necessary for a determination of whether the Contractor is entitled to an extension of time under the provisions of the Contract.

**8.3.3** The burden of proof to substantiate a claim for an extension of the Contract Time shall rest with the Contractor, including evidence that the cause was beyond his control. The Owner's Project Manager shall base his findings of fact and decision on such justification and supporting evidence and shall advise the Contractor in writing thereof.

**8.3.4** The Contractor shall not be entitled to and hereby expressly waives any extension of time resulting from any condition or cause unless the request for an extension of time is made in writing to the Owner's Project Manager within seven days of the first instance of delay.

**8.3.5** Any claim for an extension of time for a delay for any cause shall be made by filing a written notice of claim with the Owner and the Owner's Project Manager at the beginning of the occurrence or within seven days thereafter if the resulting delay was not reasonably foreseeable. If the asserted cause of delay is weather,

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such notice shall be given within seven days after asserted commencement of the claim delayed. The notice of claim shall state the circumstances of the occurrence, the justification for the delay and for the extension of time, and the estimated duration of the delay and of the extension requested. The claim for an extension of time for weather delays shall be further substantiated by weather data collected during the period of delay at the construction site. Said data must demonstrate that an actual departure from normal weather occurred at the work site during the dates in question. Within seven days after the cause of delay has been remedied, the Contractor shall give written notice to the Owner and the Owner's Project Manager of the actual time extension requested as a result of the claimed delay. Failure to file either of the notices as required herein shall constitute an absolute waiver of any claims resulting from a delay or any sort.

The anticipated adverse weather days per month are shown in the chart below.

<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug</u>	<u>Sept</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>
8	7	7	8	8	7	5	6	4	6	5	5

The above chart will constitute the base line for monthly weather time evaluations. Actual adverse weather days will be recorded on a calendar day basis (including holidays and weekends), and compared to the anticipated monthly adverse monthly days based on the above chart. The number of actual adverse weather days shall be calculated chronologically from the first day to the last day in each month.

- 8.3.6** Any extension of time beyond the date of completion fixed by the Contract shall not be effective unless granted in writing, signed by the Owner.
- 8.3.7** The Contractor shall be entitled to an extension of time for delay which in the opinion of the Owner is entirely beyond the expectation and control of the Contractor by suspension of work pursuant to Article 3, or by strikes, lockouts, fire, insurrection, war, lightning, hurricane, and tornado. The Contractor shall be entitled to an extension of time for such causes only for the number of days of delay that the Owner may determine to be due solely to such causes and only to the extent that such occurrences actually delay the completion of the Project. Any request for extension of time shall be accompanied by detailed documentation of which specific schedule activities were affected, when they were affected and for what duration.
- 8.3.8** No extension of time will be granted to the Contractor for delays occurring to parts of the Work that have no measurable impact on the completion of the total Work under this Contract; nor will extension of time be granted for delays to

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parts of the Work that are not located on the Critical Path as reflected on the approved construction schedule at the time of such delay.

- 8.3.9** Delays in the delivery of equipment or material purchased by the Contractor or his Subcontractors (including Owner-selected equipment), or in the submission of required drawings or specifications by the Contractor's or its Subcontractor's materialmen, manufacturers or dealers, or in the performance of any of the Contractor's Subcontractors or caused by the performance of any of the Contractor's Subcontractors, shall not be considered as a just cause for delay. The Contractor shall be fully responsible for the timely submission, ordering, scheduling, expediting, delivery and installation of all equipment, materials and drawings.
- 8.3.10** Within sixty days after the Contractor files the notice of the actual duration of the extension of time as required herein, the Owner's Project Manager shall present his written opinion to the Owner as to whether an extension of time is justified, and, if so, his recommendation as to the number of days for time extension. The Owner will make the final decision on all requests for extension of time. The Owner's written decision shall be presented to the Contractor within thirty days from receipt of the Owner's Project Manager's recommendation. All such decisions made by the Owner shall be binding and conclusive upon the Contractor.
- 8.3.11** With respect to suspensions of work under Article 3, the Contractor may be entitled to an extension of time if the claim for such extension is submitted in accordance with the requirements of this Article, and if the suspension is not due to any act or omission of the Contractor, any Subcontractor or Sub-subcontractor or any other person or organization for whose acts or omission the Contractor may be liable.
- 8.3.12** An extension of time shall be the sole remedy under this Contract for any reasonable delay caused by any reason or occurrence. The Contractor acknowledges such extension of time to be its sole remedy hereunder, and agrees to make no claim for monetary damages of any sort for delay in the performance of this Contract occasioned by or in any way related to or arising from any act or omission to act of the Owner or the Owner's Project Manager or any representatives of the Owner or any representatives of the Owner's Project Manager, or because of any injunction which may be brought against the Owner or the Owner's Project Manager.
- 8.3.13** As a condition precedent to such additional compensation for unreasonable delay, the Contractor shall satisfy all notice and submission requirements set forth in the Contract Documents for approval of any extension of Contract Time or any change in the Contract Price.

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**8.3.14** If the Contractor asserts an unwarranted claim for additional compensation for unreasonable delay, the Contractor shall be liable to the Owner and shall pay the Owner all costs incurred by the Owner in investigating, analyzing, negotiating, and litigating the claim.

**8.3.15** This Article shall be construed to be included where applicable in every portion of the Contract Documents regardless of whether or not it is specifically referenced therein.

**END OF ARTICLE 8**

## **GENERAL CONDITIONS**

### **ARTICLE 9: PAYMENTS AND COMPLETION**

#### **9.1 CONTRACT PRICE**

**9.1.1** Unless all or a part of the Contract is based on unit prices, the Contract Price is stated in the Contract and, including authorized adjustments thereto, is the firm, fixed price amount payable by the Owner to the Contractor for the performance of the Work under the Contract Documents. The Contract Price includes, but is not limited to, the Contractor's profits and general overhead and all costs and expenses of any nature whatsoever (including without limitation taxes, labor and materials), foreseen or unforeseen, and any increases in said costs and expenses, foreseen and unforeseen, incurred by the Contractor on this project. The Contractor agrees to assume all increases in costs of any nature whatsoever that may develop during the performance of the Work. The Contract Price includes all applicable Federal, State and local taxes and duties.

#### **9.2 SCHEDULE OF VALUES**

**9.2.1** Within ten days after the Notice to Proceed is issued, the Contractor shall submit to the Owner's Project Manager a Schedule of Values, allocated to the various portions of the Work including mobilization and demobilization. This schedule, supported by data from the approved Progress Schedule, shall be used as a basis for the Contractor's Applications for Payment upon approval by the Owner's Project Manager. The Schedule of Values shall not alter in any way the firm, fixed price or lump sum contract price. The Contractor shall not front-end load or otherwise assign disproportionate amounts to the Schedule of Values.

**9.2.2** If at any time the Contractor expects to receive an amount for a monthly progress payment larger than that indicated by the Schedule of Values and the approved Construction Schedule, the Contractor shall notify the Owner at least thirty days in advance of that payment so that the necessary allocation of funds can be processed. If the Contractor fails to give such notice, the Owner may defer such excess payment to the following progress payment.

**9.2.3** With respect to any portion of the Contract subject to unit prices, the schedule of unit prices in the accepted bid shall be used as the basis for preparing Applications for Payment, and each partial payment shall represent the total value of all units of work completed, computed at the unit prices stated in the Contract, less the aggregate of previous payments and retainage. Final payment will be based on the actual quantities performed and justified on as-built drawings.

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### **9.3 APPLICATIONS FOR PAYMENT**

- 9.3.1** The Owner shall make progress payments monthly as the Work proceeds on Applications for Payment approved by the Owner's Project Manager.
- 9.3.2** Prior to the date for each progress payment established in the Contract, the Contractor, in accordance with any Supplementary Conditions concerning schedules or payments, shall submit to the Owner's Project Manager an itemized Application for Payment, supported by such data substantiating the Contractor's right to payment as the Owner's Project Manager may require, including but not limited to the Contractor's certification that all work for which payment is requested has been completed in full accordance with the Contract Documents, copies of requisitions from Subcontractors and reflecting retainage, if any, as provided elsewhere in the Contract Documents. The Contractor shall certify that he has paid all due and payable amounts for which previous Certificates for Payment were issued and payments received from the Owner.
- 9.3.3** The Owner will retain five percent of the amount of all progress payments until the Work is substantially completed and accepted, whether or not the Owner has occupied any or all of the Project before such time.
- 9.3.4** The Contractor warrants that title to all Work, materials and equipment covered by an Application for Payment will pass to the Owner either by incorporation in the construction or upon the receipt of payment by the Contractor, whichever occurs first, free and clear of all liens, claims, security interests or encumbrances, hereinafter referred to in this Article 9 as "LIENS". The Contractor further warrants that no Work, materials or equipment covered by an Application for Payment will have been acquired by the Contractor, or by any other person performing Work at the site or furnishing materials and equipment for the Project, subject to an agreement under which an interest therein or an encumbrance thereon is retained by the seller or otherwise imposed by the Contractor or such other person.
- 9.3.5** Unless otherwise provided in the specifications the Owner will make partial payments to the Contractor on the basis of a duly certified and approved estimate of the Work performed during the preceding calendar month as certified by the Owner's Project Manager.
- 9.3.6** The Contractor may, in preparing estimates, take into consideration the material delivered on site and preparatory work done, if properly documented as required by this Contract, or as may be required by the Owner or the Owner's Project Manager so that the quantities may be verified.
- 9.3.7** The Contractor may, in preparing estimates, take into consideration material such as large pieces of equipment and items purchased specifically for the project, but

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stored off the site within the Commonwealth of Virginia, and these items may be considered for payment at the sole discretion of the Owner, provided that all of the following are accomplished prior to the submission of the monthly payment request in which payment for such materials is requested:

- .1 The Contractor must notify the Owner in writing at least ten days prior to the submission of the payment request, through the Owner's Project Manager, that specific items will be stored off site in a designated secure place within the Commonwealth of Virginia. The Schedule of Values must be detailed to separately indicate both the value of the material and of the labor/installation for trades requesting payment for stored materials. The Contractor warrants by giving such notification and by requesting payment for material stored off-site that the storage location is safe and suitable for the type of material stored and agrees that loss of such material shall not relieve him of the obligation to furnish these types and quantities of materials for the project and on a schedule to meet the time completion requirements of the Contract, subject to Article 8.
- .2 Such notification, as well as the payment request, shall:
  - a. itemize the quantity of such materials, and document with invoices the cost of said materials;
  - b. indicate the identification markings used on the materials. Such markings shall clearly reference the materials to the Project;
  - c. State the specific location of the materials. The location must be within reasonable proximity to the job site within the Commonwealth of Virginia;
  - d. State that the Surety on the Performance Bond and the Labor and Material Payment Bond has been notified of the request for payment of materials stored off the site and is agreeable to such payment;
  - e. Certify that adequate all-risk insurance has been obtained by the Contractor on the materials. Such insurance shall be in the name of the Owner and the Contractor.
- .3 The Owner's Project Manager shall indicate, in writing, to the Owner that submittals for such materials have been reviewed and meet the requirements of the drawings and specifications of the

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Contract documents, that the stored materials meet the requirement of the drawings and specifications, and that such material conforms to the approved submittals.

- .4 The Owner, through the Owner's Project Manager, shall notify the Contractor in writing of his agreement to prepayment for materials.
- .5 The Contractor shall notify the Owner in writing, through the Owner's Project Manager, when the materials are to be transferred to the site and when the materials are received at the site.
- .6 No partial payment shall be made until the appropriate Certificates of Insurance have been provided.
- .7 All material and Work for which partial payments are made shall thereupon become the sole property of the Owner, but this provision shall not relieve the Contractor from the sole responsibility for all materials and Work, including those for which payment has been made, or the restoration of any damaged Work or as a waiver of the right of the Owner to require the fulfillment of all the terms of the Contract.

### **9.4 CERTIFICATES FOR PAYMENT**

**9.4.1** The Owner's Project Manager will within ten days after receipt of the Contractor's Application for Payment, either approve the Application for Payment for such amount as he determines is properly due, or notify the Contractor in writing of his reasons for not approving the Application for Payment as provided in Article 9.6 "PAYMENTS WITHHELD."

**9.4.2** The submission and approval of the Progress Schedule and monthly updates thereof, as required by any Supplementary Conditions concerning Schedules, shall be part of the application upon which progress payment shall be made. The Contractor shall be entitled to progress payments only as determined from the currently Approved and Updated Progress Schedule.

### **9.5 PROGRESS PAYMENTS**

**9.5.1** After an Application for Payment has been approved by the Owner's Project Manager, the Owner shall make payment in the manner and within the time provided in the Contract Documents.

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**9.5.2** In accordance with Title 2.2-4354, Va. Code. Ann., Contractor is obligated to take one of the two following actions within seven (7) days after receipt of amounts paid to the Contractor by the Owner for work performed by any Subcontractor under this Contract:

- .1 Pay the subcontractor for the proportionate share of the total payment received from the Owner attributable to the Work performed by the Subcontractor under this Contract; or
- .2. Notify the Owner and the Subcontractor, in writing, of the Contractor's intention to withhold all or a part of the Subcontractor's payment with the reason for nonpayment.

The Contractor is obligated to provide its social security numbers and if a proprietorship, partnership, or corporation, they must provide its federal employer identification number.

The Contractor is obligated to pay interest to Subcontractors on all amounts owed by the Contractor that remain unpaid after seven (7) days following receipt by the Contractor of payment from the Owner for Work performed by the Subcontractor under this Contract, except for amounts withheld as allowed in Article 9.5.2.2, above. It is herewith provided that interest shall accrue at the base rate on corporate loans (prime rate) at large United States money center commercial banks as reported daily in the publication entitled The Wall Street Journal.

The Contractor shall include in each of its subcontracts a provision requiring each Subcontractor to include or otherwise be subject to the same payment and interest requirements with respect to each lower-tier Subcontractor.

The Contractor's obligation to pay an interest charge to a Subcontractor pursuant to the above provisions shall not be construed to be an obligation of the Owner. A Contract modification may not be made for the purpose of providing reimbursement for such interest charge. A cost reimbursement claim may not include any amount for reimbursement for such interest charge.

**9.5.3** The Owner's Project Manager may, on request and at his discretion, furnish to any Subcontractor, if practicable, information regarding the percentages of completion or the amounts applied for by the Contractor, and the action taken thereon by the Owner's Project Manager on account of Work done by such Subcontractor.

**9.5.4** The Owner has no obligation to pay or to see to the payment of any monies to any Subcontractor except as may otherwise be required by law.

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**9.5.5** No Application for Payment, nor any progress payment, nor any partial or entire use or occupancy of the Project by the Owner, shall constitute an acceptance of any Work that is not in accordance with the Contract Documents.

**9.5.6** In the event of disputes, payment shall be mailed on or before the Payment date for amounts and Work not in dispute, subject to any set-offs claimed by the Owner; except in instances where further appropriations are required by the Owner or where the issuance of further bonds is required, in which case, payment shall be made within thirty days after the effective date of such appropriation or within thirty days after receipt of bond proceeds by the Owner.

### **9.6 PAYMENTS WITHHELD**

**9.6.1** The Owner's Project Manager may decline to approve the Application for Payment or reduce payment or because of subsequently discovered evidence or subsequent observations, he may nullify the whole or any part of any Application for Payment previously approved to such extent as may be necessary in his opinion to protect the Owner from loss, because of:

- .1 Defective Work not remedied;
- .2 Third party claims filed, whether in court, in arbitration or otherwise, or reasonable evidence indicating probable filing of such claims;
- .3 Failure of the Contractor to make payments properly to Subcontractors;
- .4 Reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Price;
- .5 Damage to the Owner or to a separate contractor;
- .6 Reasonable evidence that the Work will not be completed within the Contract Time, or within any Contract Milestones as established in the Contract Documents;
- .7 Failure or refusal of the Contractor to carry out the Work in accordance with or to otherwise substantially or materially comply with the Contract Documents;
- .8 Failure or refusal of the Contractor to properly schedule and coordinate the Work, or to provide Progress Schedules, reports and updates; and

## **GENERAL CONDITIONS**

.9 Failure or refusal of the Contractor to fully comply with the provisions of Article 4.13 "DOCUMENTS, OTHER SUBMITTALS AT THE SITE; AS-BUILT DRAWINGS."

**9.6.2** When the above grounds in Article 9.6.1 are removed, payment shall be made for amounts withheld because of them.

### **9.7 SUBSTANTIAL COMPLETION**

**9.7.1** When the Contractor considers that the Work, or a designated portion thereof which is acceptable to the Owner's Project Manager, is substantially complete as defined in Article 8.1.3, the Contractor shall prepare for submission to the Owner's Project Manager a list of items that in his opinion are to be completed or corrected and shall request in writing that the Owner's Project Manager perform a Substantial Completion inspection. The Owner's Project Manager shall review the Contractor's list and will compile a punch list of items to be corrected and completed. The failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents. When the Owner's Project Manager on the basis of an inspection determines that the Work or designated portion thereof is substantially complete, he will then prepare a Certificate of Substantial Completion that will establish the Date of Substantial Completion, state the responsibilities of the Owner and the Contractor for security, maintenance, heat, utilities, damage to the Work, and insurance, and shall fix the time within which the Contractor shall complete the items listed.

The Certificate of Substantial Completion shall be issued to the Contractor for his written acceptance of the responsibilities assigned to him in such Certificate and returned to the Owner's Project Manager within five days after issuance

**9.7.2** The Contractor shall have thirty days from the Date of Substantial Completion to complete all items on the punch list to the satisfaction of the Owner's Project Manager. The Owner's Project Manager shall have the option to correct any and all punch list items not completed by the Contractor within thirty days from the Date of Substantial Completion by utilizing his own forces, those of the Owner, or by a separate Contractor. The cost of such correction of remaining punch list items by the Owner or others shall be deducted from the Final Payment to the Contractor.

**9.7.3** The issuance of the Certificate of Substantial Completion does not indicate final acceptance of the Project by the Owner, and the Contractor is not relieved of any responsibility for the Project except as specifically stated in the Certificate of Substantial Completion.

## **GENERAL CONDITIONS**

**9.7.4** Should the Owner's Project Manager determine that the Work or a designated portion thereof is not substantially complete, he shall provide the Contractor a written notice stating why the project or designated portion is not substantially complete. The Contractor shall expeditiously complete the Work and shall request in writing that the Owner's Project Manager perform a Substantial Completion reinspection and the costs, if any, associated with such reinspection shall be assessed to the Contractor.

### **9.8 FINAL COMPLETION AND FINAL PAYMENT**

**9.8.1** Upon receipt of the documentation required by Article 9.8.3, and of written notice that the Work is ready for final inspection and acceptance, the Owner's Project Manager will promptly make such inspection and, when he finds the Work acceptable under the Contract Documents and the Contract fully performed, he will issue a Certificate of Final Completion to the Contractor. Upon his receipt of the Final Completion Certificate, the Contractor may submit his Application for Final Payment to the Owner's Project Manager for his approval. Final Payment shall be made in full to the Contractor within thirty calendar days after the approval by the Owner's Project Manager of the Application for Final Payment provided that the requirements of Article 9 have been fulfilled, except for an amount agreed upon for any Work remaining uncompleted for which the Owner is entitled a credit under the Contract Documents.

**9.8.2** Should the Owner's Project Manager determine that the Work or a designated portion thereof is not complete, he shall provide the Contractor a written notice stating why the Project or designated portion is not complete. The Contractor shall expeditiously complete the Work and shall request in writing that the Owner's Project Manager perform a Final Completion reinspection and the costs, if any, associated with such reinspection shall be assessed to the Contractor.

**9.8.3** Neither the Final Payment nor the remaining retained percentage shall become due until the Work is free and clear of any and all Liens and the Contractor submits to the Owner's Project Manager:

- .1 An affidavit that all payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or its property might in any way be responsible, have been paid or otherwise satisfied;
- .2 Consent of surety to Final Payment, if necessary;
- .3 As-built drawings, operation and maintenance manuals and other project closeout submittals, as required by the Contract Documents;

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- .4 A fully executed and notarized Release of claims in such form as may be designated by the Owner; and
- .5 A written certification that:
  - a. the Contractor has reviewed the requirements of the Contract Documents;
  - b. the Work has been inspected by the Contractor for compliance with all requirements of the Contract Documents;
  - c. pursuant to this inspection, the Contractor certifies and represents that the Work complies in all respects with the requirements of the Contract Documents;
  - d. the Contractor further certifies and represents that all equipment and systems have been installed and tested in accordance with the Contract Documents and the Owner personnel training in the proper operation and maintenance of equipment is complete; and
  - e. the Contractor provides construction releases as required by the Contract Documents from each property owner on whose property an easement for construction of this project has been obtained by the Owner, such release to be in the forms to be provided by the Owner. This release is for the purpose of releasing the Owner and the Contractor from liability, claims, and damages arising from construction operations on or adjacent to the easement and includes proper restoration of the property after construction. It shall be the Contractor's sole responsibility to obtain all such releases and furnish them to the Owner.

**9.8.4** The making of Final Payment shall constitute a waiver of all claims by the Owner against the Contractor except those arising from:

- .1 Unsettled liens and claims against the Owner;
- .2 Faulty, defective or non-conforming Work discovered or appearing after Substantial or Final Completion;
- .3 Failure of Work to comply with the requirements of the Contract Documents; and

## **GENERAL CONDITIONS**

.4 Terms of any warranties contained in or required by the Contract Documents.

**9.8.5** The acceptance of Final Payment shall constitute a waiver of all claims by the Contractor except those previously made in writing and identified by the Contractor as unsettled at the time of the Application for Final Payment.

**9.8.6** Warranties required by the Contract Documents shall commence on the Date of Final Acceptance of the Work or designated portion thereof unless otherwise provided in writing.

### **9.9 PARTIAL OCCUPANCY OR USE**

**9.9.1** The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer as required under Article 11.2.8 and authorized by public authorities having jurisdiction over the Work. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and the Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Owner's Project Manager as provided under Article 9.7. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner's Project Manager and the Contractor or, if no agreement is reached, by decision of the Owner's Project Manager.

**9.9.2** Immediately prior to such partial occupancy or use, the Owner or the Owner's Project Manager, and the Contractor shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

**9.9.3** Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

### **END OF ARTICLE 9**

## **GENERAL CONDITIONS**

### **ARTICLE 10: PROTECTION OF PERSONS AND PROPERTY**

#### **10.1 SAFETY PRECAUTIONS AND PROGRAMS**

**10.1.1** The Owner and the Owner's Project Manager are not responsible for the means, methods, techniques, sequences or procedures utilized by the Contractor, or for safety precautions and programs in connection with the Work. The Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. This requirement applies continuously throughout the Contract performance, until Final Payment is made, and is not limited to regular working hours.

#### **10.2 SAFETY OF PERSONS AND PROPERTY**

**10.2.1** The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury or loss, to:

- .1 All employees on the Work and other persons who may be affected thereby;
- .2 All the Work and materials and equipment to be incorporated therein whether in storage off the site, under the care, custody or control of the Contractor or any of his Subcontractors, machinery and equipment. The Contractor shall comply with, and ensure that the Contractor's personnel and subcontracted personnel comply with all current applicable local, state and federal policies, regulations and standards relating to safety and health, including, by way of illustration and not limitation, the standards of the Virginia Occupational Safety and Health Administration for the General Industry and for the Construction Industry, the Federal Environmental Protection Agency Standards, the Manual of Accident Prevention in Construction published by the Associated General Contractors of America and the applicable standards of the Virginia Department of Environmental Quality.
- .3 Other property at or adjacent to the Work, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

**10.2.2** The Contractor shall give all notices and comply with applicable laws, ordinances, permits, rules, regulations and orders of any public authority bearing on the safety of persons or property or their protection from damage, injury or loss.

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- 10.2.3** The Contractor shall at all times safely guard the Owner's property from injury or losses in connection with this Contract. He shall at all times safely guard and protect his own work and adjacent property as provided by law and the Contract Documents from damage. All security personnel, passageways, guard fences, lights, and other facilities required for protection of the property and the Work described herein shall be provided and maintained at the Contractor's expense.
- 10.2.4** The Contractor shall erect and maintain, as required by existing conditions and progress of the Work, all reasonable safeguards for safety and protection, including danger signs and other warnings against hazards, promulgating safety regulations and notifying owners and users of adjacent utilities.
- 10.2.5** When the use or storage of explosives or other hazardous materials or equipment is necessary for the execution of the Work, the Contractor shall exercise the utmost care and shall carry on such activities under the supervision of properly qualified personnel.
- 10.2.6** The Contractor shall promptly remedy at his own cost and expense all damage or loss to any property referred to in Articles 10.2.1.2 and 10.2.1.3. The Contractor shall perform such restoration by underpinning, repainting, rebuilding, replanting, or otherwise restoring as may be required or directed by the Owner's Project Manager or shall make good such damage in a satisfactory and acceptable manner. In case of failure on the part of the Contractor to promptly restore such property or make good such damage, the Owner may, upon two days written notice, proceed to repair, rebuild or otherwise restore such property as may be necessary, and the cost thereof will be deducted from any monies due or to become due to the Contractor under the Contract.
- 10.2.7** The Contractor shall give notice in writing at least 48 hours before breaking ground, to the Owner, all persons, Public Utility Companies, superintendents, inspectors or those otherwise in charge of property, streets, water pipes, gas pipes, sewer pipes, telephone cables, electric cables, railroads or otherwise, who may be affected by the Contractor's operation, in order that they may remove any obstruction for which they are responsible and have a representative on site to see that their property is properly protected. The Contractor is responsible for any damages or claims resulting from any excavation and shall defend, fully indemnify, and hold harmless the Owner from all actions resulting from such work regardless of whether the Contractor gave proper notice under this clause.
- 10.2.8** The Contractor shall protect all utilities encountered while performing its work, whether indicated on the Contract Documents or not. The Contractor shall maintain utilities in service until moved or abandoned. The Contractor shall exercise due care when excavating around utilities and shall restore any damaged utilities to the same condition or better as existed prior to starting the Work, at no cost to the Owner. The Contractor shall maintain operating utilities or other

## GENERAL CONDITIONS

services, even if they are shown to be abandoned on the Contract Drawings, in service until new facilities are provided, tested and ready for use.

- 10.2.9** The Contractor shall return all improvements on or about the site and adjacent property that are not shown to be altered, removed or otherwise changed to conditions that existed prior to starting work.
- 10.2.10** The Contractor shall protect the Work, including but not limited to, the site, stored materials and equipment, excavations, and excavated or stockpiled soil or other material, intended for use in the Work, and shall take all necessary precautions to prevent or minimize damage to same or detrimental effect upon his performance or that of his Subcontractors, caused by or due to rain, run-off, floods, temperature, wind, dust, sand, and flying debris. For example, but not by way of limitation, Contractor shall, when necessary, utilize temporary dikes, channels or pumping to carry-off, divert or drain water, and as necessary tie-down or otherwise secure the Work and employ appropriate covers and screens.
- 10.2.11** The Contractor shall be responsible for the prevention of accidents and the protection of material, equipment and property.
- 10.2.12** The Contractor shall not load or permit any part of the Work to be loaded so as to endanger the safety of the Work, persons or adjacent property.
- 10.2.13** The Contractor has sole and complete responsibility for the correction of any safety violation and sole liability for the consequences of the violation. The Contractor shall give prompt written notice of any safety violation to the Owner's Project Manager.
- 10.2.14** The Contractor shall provide, or cause to be provided, all technical expertise, qualified personnel, equipment, tools and material to safely accomplish the Work, specified to be performed by the Contractor and Subcontractor(s).
- 10.2.15** The Contractor shall be responsible for the preservation of all public and private property, trees, monuments, etc., along and adjacent to the street and/or right-of-way, and shall use every precaution to prevent damage to pipes, conduits and other underground structures, curbs, pavements, etc., except those to be removed or abandoned in place and shall protect carefully from disturbance or damage all monuments and property marks until an authorized agent has witnessed or otherwise referenced their location and shall not remove them until directed. Any damage which occurs by reason of the operations under this Contract shall be completely repaired by the Contractor at the Contractor's expense.
- 10.2.16** The Contractor shall shore, brace, underpin, secure, and protect, as may be necessary, all foundations and other parts of existing structures adjacent to,

## **GENERAL CONDITIONS**

adjoining, and in the vicinity of the site that may be affected in any way by excavations or other operations connected with the Work contained in this Contract. The Contractor shall be responsible for the giving of any and all required notices to any adjoining or adjacent property owned or other party before commencement of any Work. The Contractor shall indemnify and save the Owner harmless from any damages on account of settlements or loss of all damages for which the Owner may become liable in consequence of such injury or damage to adjoining and adjacent structures and their premises.

**10.2.17** The Contractor shall identify to the Owner's Project Manager at least one on-site person who is the Contractor's competent, qualified, and authorized person on the worksite and who is, by training or experience, familiar with policies, regulations and standards applicable to the Work being performed. The competent, qualified and authorized person must be capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous or dangerous to employees, shall be capable of ensuring that applicable safety regulations are complied with, and shall have the authority and responsibility to take prompt corrective measures, which may include removal of the Contractor's personnel from the work site.

**10.2.18** The Contractor shall provide to the Owner's Project Manager, a copy of the Contractor's written safety policies and safety procedures applicable to the Work within seven (7) days of the issuance of the Notice to Proceed.

### **10.3 EMERGENCIES**

**10.3.1** In any emergency affecting the safety of persons or property, the Contractor shall act to prevent threatened damage, injury, or loss to the Owner. The Contractor shall notify the Owner's Project Manager of the situation and all actions taken immediately thereafter. If, in the opinion of the Contractor, immediate action is not required, the Contractor shall notify the Owner's Project Manager of the emergency situation and take necessary steps. If any loss, damage, injury or death occurs that could have been prevented by the Contractor's prompt and immediate action or the emergency resulted from acts or omissions of the Contractor or his Subcontractors, or anyone directly or indirectly employed by any of them, or by anyone whose acts any of them may be liable, the Contractor shall defend, fully indemnify and hold harmless the Owner (including attorneys' fees) from all actions resulting from the emergency. Any additional compensation or extension of time claimed by the Contractor on account of emergency work shall be determined as provided in Article 12 "CHANGES IN THE WORK."

**10.3.2** Prior to commencing his work and at all times during the performance of the Work, the Contractor shall provide the Owner with two, 24-hour emergency phone numbers where his representatives can be contacted.

**END OF ARTICLE 10**

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### **ARTICLE 11: BONDS AND INSURANCE**

#### **11.1 BONDS**

- 11.1.1** The Contractor shall furnish to the Owner a performance bond in the sum of the contract price executed by a surety authorized to do business in Virginia, payable to the Town of Leesburg, Virginia, or such other entity as may be identified in the Contract, and conditioned upon the faithful performance of the contract in strict conformity with the plans, specifications, and conditions of the Contract Documents.
- 11.1.2** The Contractor shall furnish to the Owner a payment bond in the amount of the contract price payable to the Town of Leesburg or such other entity as may be identified in the Contract, and executed by a surety authorized to do business in Virginia. Such bond shall be conditioned on the prompt payment to all claimants who have and fulfill contracts to supply labor or materials to the Contractor for all material furnished or labor supplied or performed in the prosecution of the Work. "Labor and materials" shall include public utility services and reasonable rentals of equipment, but only for periods when the equipment rented is actually used at the project site.
- 11.1.3** If the amount of all Work subcontracted to any one Subcontractor is in excess of \$10,000, the Contractor may at his option require the Subcontractor to furnish a Labor and Material Payment Bond with surety thereon, in the amount of fifty percent of the amount of the Subcontract.
- 11.1.4** The Contractor shall ensure that all sureties providing bonds for the Project will give written notice to the Owner, at least thirty days prior to expiration or termination of the bond(s).
- 11.1.5** If the surety on any Bond furnished by the Contractor is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located, the Contractor shall within five days thereafter substitute another Bond and surety, both of which shall be acceptable to the Owner.
- 11.1.6** If at any time, the Owner shall be or become dissatisfied with any surety or sureties then upon the Performance and Labor and Materials Payment Bonds, or if for any other reason, such bond shall cease to be adequate security to the Owner, the Contractor shall within five days after notice from the Owner to do so, substitute an acceptable bond(s) in such form and sum and signed by such other sureties as may be satisfactory to the Owner. The premium on such bond(s) shall be paid by the Contractor. No further payment shall be deemed due nor shall be made until the new sureties have been qualified and accepted by the Owner.
- 11.1.7** If more than one surety executes a bond, each shall be jointly and severally liable to the Owner for the entire amount of the bond.

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### 11.2 CONTRACTOR'S LIABILITY INSURANCE

**11.2.1** The Contractor shall provide to the Owner, a Certificate of Insurance indicating that the Contractor has in force the coverage below prior to the start of any Work under this Contract. The Contractor agrees to maintain such insurance until the completion of this Contract. All required insurance coverages must be acquired from insurers authorized to do business in the Commonwealth of Virginia and acceptable to the Owner. The minimum insurance coverage shall be:

- .1 Workers Compensation Insurance – as required by federal, state, and municipal laws for the protection of all Contractors' employees working on or in connection with the project, shall be in accordance with Title, 2.2-4332, Va. Code Ann.
- .2 Comprehensive General Liability Bodily Injury and Property Damage: \$3,000,000 combined single limit/each occurrence in the primary policy or through the use of Umbrella or Excess Limits.

The General Liability Insurance shall include the following coverages; comprehensive form, premises-operations, explosion and collapse hazard, underground hazard, products/completed operations hazard, contractual liability insurance, broad form property damage including completed operations, contractors protective liability, personal injury (all insuring agreements) deleting the employee exclusion, and owners protective liability.

- .3 Contractor's Automobile Liability (Bodily Injury and Property Damage):

\$3,000,000 combined single limit per occurrence in the primary policy or through the use of Umbrella or Excess Limit

The Automobile Liability Insurance shall include the following coverages; comprehensive form, owned, hired, and non-owned.

- .4 Property insurance written on a builder's risk "all-risk" or equivalent policy form in the amount of the initial Contract Sum, plus value of subsequent Contract modifications and cost of materials supplied or installed by others, comprising total value for the entire Project at the site on a replacement cost basis without optional deductibles. Such property insurance shall be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until final payment has been made as provided in Article 9.8 or until no person or entity other than the Owner has

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an insurable interest in the property required by this Article 11.5 to be covered, whichever is later. This insurance shall include interests of the Owner, the Contractor, Subcontractors and Sub-subcontractors in the Project. The property insurance shall be on an "all-risk" or equivalent policy form and shall include, without limitation, insurance against the perils of fire (with extended coverage) and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse, earthquake, flood, windstorm, falsework, testing and startup, temporary buildings and debris removal including demolition occasioned by enforcement of any applicable legal requirements.

If the liability insurance purchased by the Corporation has been issued on a "claims made" basis, the Corporation must comply with the following additional conditions. The limits of liability and the extensions to be included as described previously in these provisions, remain the same.

The Corporation must either:

1. Agree to provide certificates of insurance evidencing the above coverage for a period of two (2) years after final payment for the Agreement for General Liability policies. This certificate shall evidence a "retroactive date" no later than the beginning of the Corporation's work under this Agreement, or
2. Purchase the extended reporting period endorsement for the policy or policies in force during the term of this Agreement and evidence the purchase of this extended reporting period endorsement by means of a certificate of insurance or a copy of the endorsement itself.

**11.2.2** Additional Insured – The Owner, its officers, elected and appointed officials, and employees shall be named as an additional insured in the Contractor's Commercial General Liability policy; evidence of the Additional Insured endorsement shall be typed on the certificate and a copy of the additional insured endorsement shall be forwarded to the Owner along with the copy of the insurance certificate.

**11.2.3** Contract Identification – The insurance certificate shall state this Contract's number and title.

**11.2.4** The Contractor shall secure and maintain until all work required under the Contract is accepted, such insurance as will protect the Contractor and the Owner from claims directly or indirectly arising or alleged to arise out of the performance of, or failure to perform the Work, or the condition of the Work or the jobsite, from claims by workers, suppliers, Subcontractors, and the general public; from claims made under safe place laws, or any law with respect to protection of adjacent landowners; and from any other claims for damages to property from operations by the Contractor or any Subcontractor,

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or anyone directly or indirectly employed by either of them.

The Contractor assumes all risks for direct and indirect damage or injury to the property or persons used or employed on or in connection with the Work contracted for, and of all damage or injury to any person or property wherever located, resulting from any action, omission, commission or operation under the Contract, or in connection in any way whatsoever with the contracted Work.

No acceptance or approval of any insurance by the Owner shall be construed as relieving or excusing the Contractor from any liability or obligation imposed upon the Contractor by the provisions of the Contract Documents.

- 11.2.5** These certificates and the insurance policies required by Article 11.2 shall contain a provision that coverages afforded under the policies will not be canceled or allowed to expire until at least thirty days prior written notice has been given to the Owner. If any of the foregoing insurance coverages are required to remain in force after final payment and are reasonably available, an additional certificate evidencing continuation of such coverage shall be submitted with the final Application for Payment as required by Article 9.8. Information concerning reduction of coverage on account of revised limits or claims paid under the General Aggregate, or both, shall be furnished by the Contractor with reasonable promptness in accordance with the Contractor's information and belief.
- 11.2.6** Neither the Owner nor the Owner's Project Manager shall have any obligation to review any Certificates of Insurance provided by the Contractor or to check or verify the Contractor's compliance with any and all requirements regarding insurance imposed by the Contract. The Contractor is fully liable for the amounts and types of insurance required herein and is not excused should any policy or Certificate of Insurance provided by the Contractor not comply with the Contract's insurance requirements.
- 11.2.7** If the Contractor fails to comply with the Contract's insurance requirements, the Owner shall be entitled to recover all amounts payable as a matter of law to the Owner or any other parties, including but not limited to the Owner's Project Manager, had the insurance coverage been in effect. Any recovery shall include but is not limited to interest for the loss of the use of such amounts of money, attorneys' fees, costs and expenses incurred in securing such determination and any other consequential damages.
- 11.2.8** Partial occupancy or use in accordance with Article 9.9 shall not commence until the insurance company or companies providing property insurance have consented to such partial occupancy or use by endorsement or otherwise. The Owner and the Contractor shall take reasonable steps to obtain consent of the insurance company or companies and shall, without mutual written consent, take no action with respect to partial occupancy or use that would cause cancellation, lapse or reduction of insurance.

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### **11.3 WAIVERS OF SUBROGATION**

**11.3.1** The Owner and Contractor waive all rights against (1) each other and any of the Subcontractors, Sub-subcontractors, agents and employees, each of the other, and (2) the Owner's Project Manager and Engineer or Architect or their consultants, separate contractors, if any, and any of their Subcontractors, Sub-subcontractors, agents and employees, for damages caused by fire or other causes of loss to the extent covered by property insurance obtained pursuant to this Article 11.5 or other property insurance applicable to the Work, except such rights as they have to proceeds of such insurance held by the Owner as fiduciary. The Owner or Contractor, as appropriate, shall require of his consultants, separate contractors, if any, and the Subcontractors, Sub-subcontractors, agents and employees of any of them, by appropriate agreements, written where legally required for validity, similar waivers each in favor of other parties enumerated herein. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective as to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged.

### **11.4 ADDITIONAL INSURANCE PROVISIONS**

**11.4.1** A loss insured under Owner's property insurance shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Article 11.5.10. The Contractor shall pay Subcontractors their just shares of insurance proceeds received by the Contractor, and by appropriate agreements, written where legally required for validity, shall require Subcontractors to make payments to their Sub-subcontractors in similar manner.

**11.4.2** If required in writing by a party in interest, the Owner as fiduciary shall, upon occurrence of an insured loss, give bond for proper performance of the Owner's duties. The cost of required bonds shall be charged against proceeds received as fiduciary. The Owner shall deposit in a separate account proceeds so received, which the Owner shall distribute in accordance with such agreement as the parties in interest may reach. If after such loss no other special agreement is made and unless the Owner terminates the Contract for convenience, replacement of damaged property shall be performed by the Contractor after notification of a Change in the Work in accordance with Article 12.

**11.4.3** The Owner as fiduciary shall have power to adjust and settle a loss with insurers unless one of the parties in interest shall object in writing within five days after occurrence of loss to the Owner's exercise of this power; if such objection is made, the dispute shall be resolved as provided in Article 7.4. The Owner as fiduciary shall, in the case of disputes, make settlement with insurers in accordance with orders of the Court.

### **END OF ARTICLE 11**

## **GENERAL CONDITIONS**

### **ARTICLE 12: CHANGES IN THE WORK**

#### **12.1 CHANGES IN THE WORK**

**12.1.1** The Owner, without invalidating the Contract and without notice to the surety, may order a Change in the Work consisting of additions, deletions, modifications or other revisions to the general scope of the Contract, or changes in the sequence of the performance of the Work. The Contract Price and the Contract Time shall be adjusted accordingly. All such Changes in the Work shall be authorized by written Change Order, and all Work involved in a Change shall be performed in accordance with the terms and conditions of this Contract. If the Contractor should proceed with a Change in the Work upon an oral order, by whomever given, it shall constitute a waiver by the Contractor of any claim for an increase in the Contract Price or Contract Time, on account thereof.

**12.1.2** When the Owner and the Contractor have agreed upon a Change in the Work, but a written Change Order Document has not yet been executed, the Owner may, at its sole discretion and option, direct in writing the Contractor to proceed with the Change in the Work pending the execution of the formal Change Order. Contractor shall proceed in accordance with such direction.

**12.1.3** The Contractor shall not begin work on any alteration requiring a modification until such modification has been executed by the Owner and the Contractor. If a satisfactory agreement cannot be agreed to for any item requiring a modification, the Owner reserves the right to terminate the contract as it applies to the items in question and make such arrangements as may be deemed necessary to complete the Work.

#### **12.2 FIELD ORDER**

**12.2.1** A Field Order is a written order to the Contractor signed by the Owner or the Owner's Project Manager interpreting or clarifying the Contract Documents or directing the Contractor to perform minor changes in the Work. Any work relating to the issuance of a Field Order shall be performed promptly and expeditiously and without additional cost to the Owner and within the Contract Time, unless the Contractor submits a Proposed Change Order, defined below, which is approved by the Owner. Field Orders shall be numbered consecutively by date of issuance by the Owner or the Owner's Project Manager.

#### **12.3 REQUEST FOR PROPOSAL**

**12.3.1** A Request For Proposal ("RFP") describes a proposed Change in the Work. In response to a Request for Proposal issued by the Owner or the Owner's Project Manager, the Contractor is required to submit a complete Proposal for the total cost and additional time, if any, necessary to perform the proposed Change in the

## **GENERAL CONDITIONS**

Work. Requests For Proposals shall be numbered consecutively by date of issuance by the Owner or the Owner's Project Manager.

**12.3.2** The Contractor's Proposal in response to an RFP shall be in the form prescribed by the Owner's Project Manager, including all appropriate back-up material.

### **12.4 PROPOSED CHANGE ORDER**

**12.4.1** A Proposed Change Order is a written request from the Contractor to the Owner requesting a change in the Contract Price and/or Contract Time. A Proposed Change Order may be submitted as a proposal in response to a Request For Proposal issued by the Owner or as a claim for an increase in the Contract Price and/or Contract Time pursuant to the issuance of a Field Order. A Proposed Change Order must be submitted within twenty days of the issuance of a Request For Proposal or a Field Order. Proposed Change Orders shall be numbered consecutively by date of issuance by the Contractor. The Contractor shall also indicate on the Proposed Change Order the number of the Request For Proposal or the Field Order to which it responds.

**12.4.2** If a Request for Proposal provides for an adjustment to the Contract Price, the adjustment shall be based on one of the following methods:

- .1 mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- .2 unit prices stated in the Contract Documents or subsequently agreed upon;
- .3 cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
- .4 as provided in Articles 12.5.3 and 12.5.4.

**12.4.3** If it is necessary in this subparagraph to increase the Contract Time to perform the Change in the Work, the Contractor shall provide an estimate of the increase in the Contract Time which shall be negotiated by the parties to the Contract. The Contractor's request for a time extension shall be evaluated in accordance with the criteria described in Article 8.

**12.4.4** If the Contractor's Proposed Change Order is rejected by the Owner as being within the scope of the Work required by the Contract Documents the Owner may, at its sole option and discretion, direct the Contractor to perform the Work which is the subject of the Proposed Change Order; the Contractor shall then promptly proceed with the Work. Nothing shall excuse the timely performance by the Contractor of the Work because any Proposed Change Order is pending.

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### **12.5 CHANGE ORDER**

**12.5.1** A Change Order is a written order to the Contractor signed by the Contractor and the Owner's Project Manager, issued after execution of the Contract, authorizing a Change in the Work or an adjustment in the Contract Price and/or the Contract Time. The Contract Price and the Contract Time may be changed only by Change Order. A Change Order signed by the Contractor indicates his agreement therein, including the adjustment in the Contract Price and/or the Contract Time. Change Orders shall be numbered consecutively by date of issuance by the Owner or the Owner's Project Manager and shall, if applicable, indicate the number of the Field Order(s), Request For Proposal(s) and/or Proposed Change Order(s) to which it relates.

**12.5.2** If the Owner and the Owner's Project Manager determine that the Contractor's Proposed Change Order, submitted pursuant to Article 12.4 for a change in the Contract Price or Contract Time, is acceptable, the Owner's Project Manager shall prepare and issue, or cause to be prepared and issued, a Change Order which will authorize the Contractor to proceed with the Change in the Work for the cost and time stated in the Proposed Change Order, or as otherwise may be agreed upon by the parties. The amounts stated in the Change Order for the cost and time to perform the Change in the Work shall be binding on the parties.

.1 The contractors markup for allowable profit and overhead shall be limited to 10%.

**12.5.3** After issuance of the Change Order, the Contractor shall ensure that the amount of the Performance and Payment Bond coverage has been revised to reflect the increase in the Contract Price due to the Change Order.

**12.5.4** If the Contractor's Proposed Change Order is not acceptable to the Owner and the Owner's Project Manager or if the parties are unable to otherwise agree as to the cost and time necessary to perform the Change in the Work, the Owner may, at its sole option and discretion, direct the Contractor to perform the Work on a time and material basis. The Contractor shall then promptly proceed with the Work.

**12.5.5** If the Owner and the Owner's Project Manager elect to have the Change in the Work performed on a time and material basis, the same shall be performed, whether by the Contractor's forces or the forces of any of his Subcontractors or Sub-subcontractor's, at actual cost to the entity performing the Change in accordance with the time and material provisions included in the Road and Bridge Specifications of the Virginia Department of Transportation, current edition.

**12.5.6** Prior to starting the work on a time and material basis, the Contractor shall notify the Owner's Project Manager in writing as to what labor, materials, equipment or

## GENERAL CONDITIONS

rentals are to be used for the Change in the Work. During the performance of the Change, the Contractor shall submit to the Owner daily time and material tickets, which shall list the categories and amounts of labor and equipment for which Change Order compensation is to be charged for the previous work day. Such tickets shall be submitted in strict accordance with the time and material provisions included in the Road and Bridge Specifications of the Virginia Department of Transportation.

- 12.5.7** The Contractor shall commence submission of daily time and material tickets immediately upon commencement of the Change Order Work and continue to submit them until completion of the Change Order Work. The Owner may require authentication of all time and material tickets and invoices by persons designated by the Owner for such purpose.
- 12.5.8** The failure of the Contractor to provide any required authentication shall, if the Owner elects to treat it as such, constitute a waiver by the Contractor of any claim for the cost of that portion of the Change in the Work covered by a non-authenticated ticket or invoice; provided, however, that the authentication of any such ticket or invoice by the Owner shall not constitute an acknowledgment by the Owner that the items thereon were reasonably required for the Change in the Work.
- 12.5.9** The Contractor shall submit his complete submission of the reasonable actual cost and time to perform the Change in the Work within twenty days of the request of the Owner's Project Manager to do so. The Owner and the Owner's Project Manager shall review the costs and time submitted by the Contractor on the basis of reasonable expenditures and savings of those performing the Change in the Work. If such costs and time are acceptable to the Owner and the Owner's Project Manager, or if the parties otherwise agree to the actual reasonable cost to perform the Change in the Work, the Owner's Project Manager shall issue a Change Order for the cost and time agreed upon. The amounts stated in the Change Order for the cost and time to perform the Change in the Work shall be binding upon the parties.
- 12.5.10** The Contractor shall be entitled to costs as provided for in Article 12.4 which the Contractor, or his Subcontractors, may incur as a result of delays, interferences, suspensions, changes in sequence or the like, which are unreasonable, arising from the performance of any and all changes in the Work, caused by acts or omissions of the Owner, performed pursuant to this Article 12.
- 12.5.11** If any dispute should arise between the parties with respect to an increase or decrease in the Contract Price or an extension or reduction in the Contract Time or as a result of a Change in the Work, the Contractor shall not suspend performance of a Change in the Work or the Work itself unless otherwise so ordered by the Owner's Project Manager in writing. Disputes must be resolved

## **GENERAL CONDITIONS**

pursuant to Article 7.4 of the Contract. The Owner will, however, pay the Contractor up to the Owner's Project Manager's estimated value of the Change in the Work, regardless of the dispute, if the Change in the Work results in an increase in the Contract Price; and the Owner will have the right to decrease the Contract Price up to the Owner's Project Manager's estimated value of the Change in the Work, regardless of the dispute, if the Change in the Work results in a decrease in the Contract Price.

### **12.6 UNILATERAL CHANGE ORDER**

**12.6.1** In the event that the parties are unable to agree as to the reasonable cost and time to perform the Change in the Work and the Owner does not elect to have the Change in the Work performed on a time and material basis, the Owner and the Owner's Project Manager shall make a unilateral determination of the reasonable cost and time to perform the Change in the Work, based upon their own estimates, the Contractor's submission or a combination thereof. A Change Order shall be issued for the amounts of cost and time determined by the Owner and the Owner's Project Manager and shall become binding upon the Contractor unless the Contractor submits his protest in writing to the Owner within ten days of the issuance of the Change Order. The procedure for the resolution of the Contractor's protest shall be as described in Article 12.10. The Owner has the right to direct in writing the Contractor to perform the Change in the Work, which is the subject of such Unilateral Change Order. Failure of the parties to reach an agreement regarding the cost and time of performing the Change in the Work, or any pending protest, shall not relieve the Contractor from performing the Change in the Work promptly and expeditiously.

### **12.7 DECREASES AND WORK NOT PERFORMED**

**12.7.1** Should it be deemed expedient by the Owner or the Owner's Project Manager at any time that the Contract Work is in progress to decrease the dimensions, quantity of material or work, or vary in any other way the Work herein contracted for, the Owner or the Owner's Project Manager shall have the full power to do so, and shall order, in writing, such decreases to be made or performed without affecting the enforcement of the Contract. The Contractor shall, in pursuance of such written orders and directions from the Owner or the Owner's Project Manager, execute the work ordered, and the difference in expense occasioned by such decrease so ordered shall be deducted from the amount payable under this Contract.

**12.7.2** If Work is not performed, and such deletion of Work is not approved by the Owner, the Owner's Project Manager shall ascertain the amount of the credit due the Owner, based on the reasonable value of the labor and materials so deleted, for the lesser amount of materials and labor required.

## **GENERAL CONDITIONS**

**12.7.3** If Work is deleted from the Contract by Change Order, the amounts to be credited to the Owner shall reflect the same current pricing as if the Work were being added to the Contract at the time the deletion is ordered, and documentation will be required for a credit as specified in Article 12.4. If such deleted materials and equipment shall have already been purchased and stored on site and cannot be used in other projects or returned for credit or cannot be returned for credit at the price paid by the Contractor at the time of purchase, the Contractor shall be entitled, upon proper documentation and certification, to an adjustment in the pricing of the credit to avoid hardship to the Contractor. If necessary in order to establish such reasonable value, the Contractor may be required to submit a detailed breakdown of his original bid for the items or Work involved.

### **12.8 CHANGES IN LINE AND GRADE**

**12.8.1** The Owner reserves the right through the Owner's Project Manager to make such alterations in the line and grade of various structures or pipelines shown on the drawings, as may be necessitated by conditions found during construction or that in the judgment of the Owner's Project Manager appears advisable. The Contractor shall not claim forfeiture of Contract by reason of such changes by the Owner's Project Manager.

**12.8.2** In case of a fixed price contract, the price of the Work shall be negotiated as herein provided. If such alterations or changes diminish the quantity of Work to be done, they shall not constitute a claim for damages or for loss of anticipated profits in the Work which may be dispensed with, and the Work as constructed shall be paid for in accordance with the Contract prices as established for such Work under this Contract. In the case of a unit price, or partial unit price, contract, the altered Work shall be performed at the appropriate unit price.

**12.8.3** The Contractor shall employ a certified Land Surveyor to establish a base line and set bench marks for the Contractor's use as necessary to stake the basic layout of the Work. Where new construction connects to existing facilities, it shall be the responsibility of the Contractor to check and establish the location of all existing facilities prior to construction of the new facilities.

**12.8.4** All stakes, bench marks, and other base line information provided by the Owner or the Owner's Project Manager shall be carefully preserved by the Contractor, and in case of their removal by any cause without prior written consent from the Owner, such stakes, bench marks, and other base line information will be replaced by the Contractor at the Contractor's sole expense.

**12.8.5** The dimensions for lines and elevations for grades of the structures, appurtenances, and utilities are indicated on the Drawings, together with pertinent information required for laying out the Work. Utility locations are approximate and it shall be the Contractor's responsibility to determine the exact location of

## **GENERAL CONDITIONS**

the utilities prior to commencing Work in all areas where conflicts with utility installations are possible. If site conditions vary from those indicated, the Contractor shall notify the Owner immediately, who will promptly direct any adjustment as required. The locations of existing utilities, including underground utilities, which may affect the Work, are indicated on the drawings or in the specifications insofar as their existence and location were known at the time of preparation of the drawings. However, nothing in these drawings or specifications shall be construed as a guarantee that such utilities are in the location indicated or that they actually exist, or that other utilities are not within the area of the operations. The Contractor shall make all necessary investigations to determine the existence and locations of such utilities. The Contractor will be held responsible for any damage to and maintenance and protection of existing utilities and structures, of both public and private ownership. Acceptability of restored utility installation shall be determined by the respective utility Owner. All utilities shall remain in service during the construction of this project unless written authorization of interruption of service is received from the respective utility Owner and the interruption is approved by the Project Manager.

- 12.8.6** Contractor shall notify the Owner immediately upon discovery of any apparent errors in the lines or grades. If Contractor proceeds with knowledge of such apparent error without first receiving written clarification from the Owner's Project Manager, the Contractor does so at his own risk.

### **12.9 DIFFERING SITE CONDITIONS**

- 12.9.1** The Contractor shall promptly, and before the conditions are disturbed, give written notice to the Owner's Project Manager of (a) subsurface or latent physical conditions at the site which differ materially from those indicated in the Contract Documents, or (b) unknown physical conditions at the site, of an unusual nature, which differ materially from those ordinarily encountered and generally recognized as inhering in work of the character provided for in the Contract and which were not reasonably anticipated as a result of the investigation required by Article 1.2.2.
- 12.9.2** The Owner's Project Manager shall investigate the site conditions promptly after receiving the notice. If the conditions do materially so differ and cause an increase or decrease in the cost or time of performance, the provisions of Article 12 "Changes in the Work" shall apply.
- 12.9.3** No request by the Contractor for a Change Order under this Article shall be allowed, unless the Contractor has given the required written notice.
- 12.9.4** No request by the Contractor for a Change Order under this Article shall be allowed if made after final payment under the Contract.

## **GENERAL CONDITIONS**

### **12.10 CLAIMS FOR ADDITIONAL COST AND/OR TIME**

**12.10.1** If the Contractor wishes to make a claim for an increase in the Contract Price and/or Contract Time, he shall give the Owner written notice thereof within seven calendar days after the occurrence of the event giving rise to such claim. This notice shall be given by the Contractor before proceeding to execute the Work, except in an emergency endangering life or property in which case the Contractor shall proceed as provided in Article 10. No claim shall be allowed and no amounts shall be paid for any costs incurred more than ten calendar days prior to the time notice is given to the Owner. Any change in the Contract Price or Contract Time resulting from such claim must be authorized by Change Order. The Contractor's complete claim submittal for an increase in the Contract Price shall be submitted no later than twenty calendar days after the Work for which the claim is made has been completed or after the request of the Owner or the Owner's Project Manager, whichever is earlier.

**12.10.2** If the Contractor claims that additional cost or time is involved because of, but not limited to, any of the following circumstances, the Contractor shall make such claim as provided in Subparagraph 12.10.1: (1) any written interpretation pursuant to Article 2, (2) any order by the Owner to stop the Work pursuant to Article 3.3 where the Contractor was not at fault, (3) failure of payment by the Owner pursuant to Article 9, or (4) any written order for a minor change in the Work issued pursuant to Article 12.8.1.

### **12.11 ATTORNEYS' FEES AND OTHER EXPENSES**

**12.11.1** In recognition of the public monies being administered by the Owner to fund this Contract, the Contractor agrees that he will not submit, assert, litigate or otherwise pursue any frivolous or unsubstantiated delay claims. If the Contractor's delay claim, or any separate item of a delay claim, is determined through litigation or other dispute resolution process to be false or to have no basis in law or fact, the Contractor shall be liable to the Owner and shall pay it for all Investigation Costs incurred by the Owner. These costs include investigating, analyzing, negotiating, appealing, defending, and litigating the false or baseless delay claims, attorneys' fees, audit costs, accountants' fees, expert witness' fees, additional architect/engineer expenses and any other consultant costs. The amount to be paid hereunder to the Owner shall be the percentage of the Owner's total Investigation Costs in an amount equal to the percentage of the Contractor's total delay claim which is determined to be false or to have no basis in fact.

**12.11.2** If the Contractor breaches any obligation under the Contract Documents, the Contractor shall reimburse the Owner for all costs and expenses incurred by the Owner relating to such breach, including but not limited to, attorneys' fees, audit

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costs, accountants' fees, expert witness' fees, additional architectural or engineering expenses, and any other consultant costs.

- 12.11.3** If the Owner prevails in a claim brought against the Contractor, including but not limited to, claims for fraud or misrepresentation, overpayment, defective work, delay damages, and recovery of termination expenses, the Contractor shall reimburse the Owner for all costs and expenses incurred by the Owner relating to such claim, including but not limited to, attorneys' fees, audit costs, accountants' fees, expert witness' fees, additional architect or engineering expenses, and any other consultant costs.

**END OF ARTICLE 12**

## **GENERAL CONDITIONS**

### **ARTICLE 13: UNCOVERING AND CORRECTION OF WORK**

#### **13.1 UNCOVERING OF WORK**

**13.1.1** If any portion of the Work should be covered contrary to the request of the Owner's Project Manager or to requirements specifically expressed in the Contract Documents or to requirements of applicable Construction Permits, it must, if required in writing by the Owner's Project Manager, be uncovered for its observation and shall be replaced at the Contractor's expense.

**13.1.2** If any portion of the Work has been covered that the Owner's Project Manager has not specifically requested to observe prior to being covered, the Owner's Project Manager may request to see such Work and it shall be uncovered by the Contractor. If such Work complies with the Contract Documents, the cost of uncovering and replacement shall, by appropriate Change Order, be charged to the Owner. If such Work does not comply with the Contract Documents, the Contractor shall pay such costs unless the Owner caused this condition, in which event the Owner shall pay such costs.

#### **13.2 CORRECTION OF WORK**

**13.2.1** The Contractor shall promptly reconstruct, replace or correct all Work rejected by the Owner's Project Manager as defective or as failing to conform to the Contract Documents or as not in accordance with the guarantees and warranties specified in the Contract Documents whether observed before or after Substantial Completion and whether or not fabricated, installed or completed. The Contractor shall bear all costs of correcting such rejected Work, including compensation for the Owner's Project Manager and any other additional services made necessary thereby.

**13.2.2** The Contractor, unless removal is waived by the Owner, shall remove from the site all portions of the Work that are defective or non-conforming, or if permitted or required, he shall correct such Work in place at his own expense promptly after receipt of notice, and such rejected Work shall not thereafter be tendered for acceptance unless the former rejection or requirement for correction is disclosed.

**13.2.3** If the Contractor does not proceed with the correction of such defective or non-conforming Work within a reasonable time fixed by written notice from the Owner's Project Manager, the Owner may either:

- .1 By separate contract or otherwise replace or correct such Work and charge the Contractor the cost occasioned the Owner thereby and remove and store the materials or equipment at the expense of the Contractor; or

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.2 Terminate this Contract as provided in Article 14.3 "DEFAULT TERMINATION."

**13.2.4** The Contractor shall bear the cost of making good all work of the Owner or separate Contractors destroyed or damaged by such correction or removal.

**13.2.5** Nothing contained in this Article 13.2 shall be construed to establish a period of limitation with respect to any other obligation that the Contractor might have under the Contract Documents, including Article 4.7 "WARRANTY" hereof. The establishment of the period of one year after the Date of Final Completion or such longer period of time as may be prescribed by law or by the terms of any warranty required by the Contract Documents relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which his obligation to comply with the Contract Documents may be sought to be enforced, or to the time within which proceedings may be commenced to establish the Contractor's liability with respect to his obligations other than specifically to correct the Work.

### **13.3 ACCEPTANCE OF DEFECTIVE OR NON-CONFORMING WORK**

**13.3.1** If the Owner or its Project Manager prefers to accept defective or non-conforming Work, it may do so instead of requiring its removal and correction. In this case, a Change Order will be issued to reflect a reduction in the Contract Price where appropriate and equitable, or the Owner may elect to accept payment in materials or services, in lieu of a reduction in the Contract Price. If the amount of a reduction is determined after Final Payment, it shall be paid on demand to the Owner by the Contractor.

**END OF ARTICLE 13**

## **GENERAL CONDITIONS**

### **ARTICLE 14: TERMINATION OF THE CONTRACT**

#### **14.1 TERMINATION FOR THE CONVENIENCE OF THE OWNER**

**14.1.1** The Owner may, at any time upon ten days written notice to the Contractor, terminate, without prejudice to any right or remedy of the Owner, the whole or any portion of the Work for the convenience of the Owner. This Notice of Termination shall specify that portion of the Work to be terminated and the effective date of termination. The Contractor's sole remedy, in the event of such termination, will be the allowable termination costs permitted by Article 14.2 "ALLOWABLE CONVENIENCE TERMINATION COSTS."

**14.1.2** The Contractor shall include termination clauses identical to Article 14 in all subcontracts and purchase orders related to the Work. Failure to include these termination clauses in any subcontracts or purchase orders shall preclude recovery of any termination costs related to that subcontract or purchase order.

#### **14.1.3 Non-appropriation Clause**

Notwithstanding anything contained herein to the contrary, this contract shall be terminated if all of the following events shall have occurred:

1. Funds are not appropriated for a subsequent fiscal period during the term of this contract for the acquisition of substantially the same functions as provided for herein, and written notice thereof is given to CONTRACTOR at least thirty (30) days prior to the first day of such subsequent fiscal periods or within five (5) days of the approval of the final budget for such fiscal year, whichever occurs later.

2. Town has exhausted all funds legally available for payment under this contract.

Upon such termination, Contractor's only remedy shall be to terminate the contract at the end of the fiscal period during which notice is given. Payment in compliance with the contract for materials, goods, and services rendered hereunder during the fiscal year at the end of which termination occurs, without penalty, termination, profit or overhead expenses of any kind shall constitute full performance on the part of the Town.

#### **14.2 ALLOWABLE CONVENIENCE TERMINATION COSTS**

**14.2.1** After complying with the provisions of Article 14.4, the Contractor may submit a termination claim, not later than six months after the effective date of its

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termination, unless one or more extensions of three months each are granted by the Owner in response to the Contractor's written request.

**14.2.2** The Owner shall pay the Contractor's reasonable costs of termination, plus a mark-up of ten percent for profit and overhead. This amount will not exceed the original contract price, reduced by any payments made prior to Notice of Termination, and further reduced by the price of the supplies not delivered, or the service not provided. This Contract shall be amended accordingly, and the Contractor shall be paid the agreed amount.

**14.2.3** If the parties cannot agree on the amount to be paid to the Contractor by reason of termination under this clause, the Owner shall pay to the Contractor the amounts, as determined by the Owner's Project Manager as follows, without duplicating any amounts which may have already been paid under the preceding paragraph of this clause:

.1 With respect to all Contract performance prior to the effective date of Notice of Termination, the total of:

- a. cost of work performed or supplies delivered;
- b. the costs of settling and paying any reasonable claims as provided in Article 14.4; and
- c. a mark-up of ten percent for profit and overhead. Neither the Contractor nor any Subcontractor shall be entitled to profit or overhead associated with the portion of the work not performed, nor to profit associated with costs of demobilization.

.2 The total sum to be paid under .1 above shall not exceed the contract price, as reduced by the amount of payments otherwise made, and as further reduced by the contract price of work not done or supplies not delivered. The Owner may subtract from the amount claimed by the Contractor any claim the Owner has against the Contractor

**14.2.4** If the Contractor is not satisfied with any payments that the Owner's Project Manager shall determine to be due under this clause, the Contractor may proceed in accordance with Article 7.4 "DISPUTES."

**14.2.5** If the Contractor would have sustained a loss on the entire Contract had it been completed, no profit shall be included or allowed and an appropriate adjustment shall be made reducing the amount of the settlement to reflect the indicated rate of loss.

## **GENERAL CONDITIONS**

### **14.3 DEFAULT TERMINATION**

**14.3.1** The Owner may, upon ten days written notice to the Contractor, terminate, without prejudice to any right or remedy of the Owner, the Contract for default, in whole or in part, and may take possession of the Work and complete the Work by contract or otherwise in any of the following circumstances:

- .1 The Contractor refuses or fails to prosecute the Work or any separable part thereof with such diligence as will ensure the Substantial Completion of the Work within the Contract Time, or fails to meet any milestones established in the Contract Documents or fails to substantially complete the Work within this period;
- .2 The Contractor is in default in carrying out any provision of the Contract for a cause within his or his Subcontractors' control;
- .3 The Contractor fails to supply a sufficient number of properly skilled workers or proper equipment or materials;
- .4 The Contractor fails to make prompt payment to Subcontractors or for materials or labor;
- .5 The Contractor disregards laws, permits, ordinances, rules, regulations, or orders of any public authority having jurisdiction;
- .6 The Contractor breaches any provision of the Contract Documents;
- .7 The Contractor voluntarily abandons the Project;
- .8 Upon at least thirty calendar days prior written notice by the Owner to the Contractor, at any time during the term of the Agreement, the Owner determines that maintaining the Agreement in force will harm, bring into disrepute, or affect the integrity of the Owner.

**14.3.2** Upon termination of this Agreement under this Article, the Contractor shall remove all of his employees and property from the Project in a smooth, orderly, and cooperative manner.

**14.3.3** The right of the Contractor to proceed shall not be terminated under Article 14.2 because of any delays in the completion of the Work due to unforeseeable causes beyond the control and without the fault or negligence of the Contractor or his Subcontractors as specifically set forth in Article 8, "DELAYS AND EXTENSIONS OF TIME."

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**14.3.4** If, after the Contractor has been terminated for default pursuant to Article 14.3, it is determined that none of the circumstances set forth in Article 14.3.1 exist, then such termination shall be considered a termination for convenience pursuant to Article 14.1. In such case, the Contractor's sole remedy will be costs permitted by Article 14.2.

**14.3.5** If the Owner terminates the Contract, the Contractor shall not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the Contract Price exceeds the cost of completing the Work including compensation for additional managerial, administrative and inspection services and any damages for delay, such excess amount shall be paid to the Contractor. If such expenses exceed the unpaid balance, the Contractor and his sureties shall be liable to the Owner for such excess amount.

**14.3.6** If the right of the Contractor to proceed with the Work is partially or fully terminated, the Owner may take possession of and utilize in completing the Work such materials, appliances, supplies, plant and equipment as may be on the site of the terminated portion of the Work and necessary for the completion of the Work. If the Owner does not fully terminate the right of the Contractor to proceed, the Contractor shall continue to perform the part of the Work that is not terminated.

### **14.4 GENERAL TERMINATION PROVISIONS**

**14.4.1** After receipt of a Notice of Termination from the Owner, pursuant to Article 14.1 or 14.3, and except as otherwise directed by the Owner, the Contractor shall:

- .1 Stop Work under the Contract on the date and to the extent specified in the Notice of Termination;
- .2 Place no further purchase orders or subcontracts for materials, services, or facilities, except as may be necessary for completion of such portion of the Work under the Contract that is not terminated;
- .3 Terminate all purchase orders and subcontracts to the extent that they relate to the performance of Work terminated by the Notice of Termination;
- .4 At the option of the Owner, assign to the Owner in the manner, at the times and to the extent directed by the Owner, all of the rights in the contracts so terminated, in which case, the Owner shall have the right, at his discretion, to settle or pay any or all claims arising out of the termination of such purchase orders and subcontracts;
- .5 Settle all outstanding liabilities and all claims arising out of such termination of purchase orders and subcontracts, with the approval

## GENERAL CONDITIONS

or ratification of the Owner, to the extent he may require, which approval or ratification shall be final for all the purposes of this Article;

- .6 Transfer title and deliver to the entity or entities designated by the Owner, in the manner, at the times and to the extent directed by the Owner to the extent specifically produced or specifically acquired by the Contractor for the performance of such portion of the Work as has been terminated, the following:
  - a. The fabricated or unfabricated parts, Work in progress, partially completed supplies and equipment, materials, parts, tools, dies, jigs, and other fixtures, completed work, supplies and other material produced as part of, or acquired in connection with the performance of, the Work terminated by the Notice of Termination; and
  - b. The completed or partially completed plans, drawings, Shop Drawings, submittals, information, releases, manuals, and other property related to the Work and which, if the Contract had been completed, would have been required to be furnished to the Owner.
- .7 Use his best efforts to sell, in the manner, at the times, to the extent and at the price or prices directed or authorized by the Owner or Owner's Project Manager, any property of the types referred to in Article 14.4.1.6; provided, however, that the Contractor:
  - a. Shall not be required to extend credit to any buyer; and
  - b. May acquire such property under the conditions prescribed by and at a price or prices approved by the Owner; and provided further that the proceeds of any such transfer or disposition shall be applied in reduction of any payments to be made by the Owner to the Contractor under the Contract or shall otherwise be credited to the Contract Price covered by the Contract or paid in such other manner as the Owner may direct;
- .8 Complete performance of such part of the Work as shall not have been terminated by the Notice of Termination; and
- .9 Take such action as may be necessary, or as the Owner or Owner's Project Manager may direct for the protection and preservation of

the property related to the Contract that is in the possession of the Contractor and in which the Owner has or may acquire an interest.

- 14.4.2** If the convenience termination, pursuant to Article 14.1, is partial, the Contractor may file with the Owner a claim for an equitable adjustment of the Contract Price relating to the continued portion of the Contract (the portion not terminated by the Notice of Termination) for costs increased because of such partial termination. Such equitable adjustment as may be agreed upon shall be made in the Contract Price. Any claim by the Contractor for an equitable adjustment under this Article must be submitted in writing to the Owner's Project Manager within sixty days from the Notice of Termination.
- 14.4.3** The Contractor shall refund to the Owner any amounts paid by the Owner to the Contractor in excess of costs reimbursed under Article 14.4 within sixty days of receipt of a written request from the Owner to do so.

**END OF ARTICLE 14**

SECTION 01010  
SUMMARY OF WORK

PART 1 -- GENERAL

1.01 GENERAL

A. The Requirement

1. The Work to be done under this Contract and in accordance with these Specifications consists of furnishing all equipment, superintendence, labor, skill, material and all other items necessary for performing repair work at the specified process structures in paragraph B.

The Contractor shall perform all work required for such construction in accordance with the Contract Documents and subject to the terms and conditions of the Contract, complete and ready for use.

B. Scope of Work

1. The principal features of the Work to be performed under this contract includes but are not limited to:
  - a. The process structures that require concrete repairs are as follows:
    - (1) Digested Storage Tank A
    - (2) Secondary Clarifier B
    - (3) Digester B
    - (4) Emergency Storage Basins A and B

1.02 DESCRIPTION OF UNIT PRICE ITEMS

A. Concrete Repairs

1. Structural Crack or Construction Joint Repair

This item consists of all work necessary for crack or construction joint repair with an epoxy crack repair binder in accordance with specification section 03732 as deemed necessary by the Engineer and directed by owner. Total length of crack or construction joint repair required shall be determined during a joint field inspection with the Owner, Contractor, and Engineer. The quantity of crack repair to be paid for shall be the actual number of linear feet of crack which has been repaired and accepted. Work shall be measured in place and paid for on a per linear foot basis.

2. Sealing leaking cracks

This item consists of all work necessary for sealing leaking cracks with waterproof injection grout in accordance with specification section 03732 as deemed necessary by the Engineer. Total length of leaking crack repair required shall be determined during a joint field inspection with the Owner, Contractor, and Engineer. The quantity of leaking crack repair to be paid for shall be the actual number of linear feet of cracks which have been repaired and accepted. Work shall be measured in place and paid for on a per linear foot basis.

3. Concrete surface restoration requiring formwork

This item consists of all work necessary for concrete surface restoration requiring formwork with spall repair patching material in accordance with specification section 03732 as deemed necessary by the Engineer. Total extent of concrete surface restoration required shall be determined during a joint field inspection with the Owner, Contractor, and Engineer. The quantity of concrete surface restoration to be paid for shall be the actual number of square feet of repair material placed and accepted. Work shall be measured in place and paid for on a per square foot basis.

4. Concrete surface restoration not requiring formwork

This item consists of all work necessary for concrete surface restoration that does not require formwork with spall repair patching material in accordance with specification section 03732 as deemed necessary by the Engineer. Total extent of concrete surface restoration required shall be determined during a joint field inspection with the Owner, Contractor, and Engineer. The quantity of concrete surface restoration to be paid for shall be the actual number of cubic feet of repair material placed and accepted. Work shall be measured in place and paid for on a per cubic foot basis.

1.03 SEQUENCE OF CONSTRUCTION

A. Sequence of Construction

Sequence of construction and construction constraints shall be in accordance with Section 01040.

- END OF SECTION -

## SECTION 01040

### COORDINATION, SCHEDULING, AND SEQUENCING

#### PART 1 -- GENERAL

##### 1.01 Coordination and Interferences

- A. Installation and Setting Drawings and Submittals: The Contract Documents cannot show actual construction conditions. Perform modifications in the work to compensate for minor interferences and structural obstructions as part of the work at no increase in Contract Price.
- B. Material Handling and Storage Interferences: Do not unload or store material where it will interfere with the progress of the Project or with the normal operation of the wastewater treatment facility.

##### 1.02 General Requirements

- A. The flow of wastewater to the wastewater treatment facility will continue uninterrupted throughout the course of the Project. Consequently, the wastewater treatment facility shall be maintained in continuous operation during the course of work performed on this Project. Shutdown of certain process structures, equipment and systems will be necessary to complete the work. The structures, equipment and systems shall be shut down as indicated paragraph 1.04.
- B. Each shutdown shall be arranged and coordinated at least two weeks in advance to minimize the impact of the shutdown on the Owner's operations, as determined by the Owner. At least fifteen (15) days prior to the date of the proposed shutdown, the Contractor shall submit to the Owner and Engineer, in writing, a plan for said shutdown. The plan shall include detailed descriptions and schedules of the proposed procedures during the shutdown period, a complete inventory of materials and equipment needed to perform the work. No shutdown will be permitted until the proposed plan has been approved in writing.
- C. No shutdown will be permitted until the materials; labor; tools; and other items necessary to accomplish work are on hand and ready for installation or use.
- D. All work that can be completed without shutdown of any structure, equipment unit or system shall be completed prior to the shutdown in order to minimize shutdown time.
- E. No increase in the Contract Price will be made for labor, materials, tools, equipment required during the shutdown periods. Contractor shall submit the shut down plan at the same time they notify the Owner for the shut down.

- F. Contractor shall furnish and install temporary equipment including bulkheads, necessary to maintain the existing plant in service during construction.
- G. Operation of wastewater treatment facility equipment, including valves, gates, motors, controls, etc. shall be done only by the Owner's personnel. The Engineer and Owner will coordinate this work. The Contractor shall provide the Owner and Engineer with at least five (5) days notice in advance of the need for operation of equipment, valves, or gates or other actions that could affect the operation of the facility. This notification requirement shall include any interface with mechanical or electrical systems.
- H. The Contractor shall provide the Owner's personnel with safe and reliable access for operation and maintenance of equipment at all times, including ladders, platforms, grating, walkways, and lifts conforming to OSHA requirements.
- I. Construction may require the closing of various valves to isolate tanks and equipment. The Owner does not guarantee that the valves will be completely watertight. The Contractor shall take whatever measures are necessary to proceed with work in the event that valves leak.
- M. Draining of the process structures and channels will be performed by the Owner's personnel to the lowest level practical using the existing facilities. Draining shall be arranged and coordinated at least two weeks in advance such that the least impact is made on wastewater treatment facility operations as determined by the Owner. The Contractor shall be responsible for completion of draining and cleaning of the process structures and channels as required for performance of the work.
- J. The Contractor shall be responsible for draining and cleaning of wastewater piping, tanks, equipment, and other facilities as required for performance of the work, and for disposal of fluids drained from said facilities in accordance with local, State, and Federal regulations and requirements.
- K. The Contractor shall be solely responsible for the means, manpower, methods, techniques, sequences and procedures of construction.

#### 1.03 Construction and Sequencing Constraints

- A. Concrete repair work shall not be performed when the ambient air temperature is below minimum temperature required by the coating-repair system manufacturer.
- B. Repair work for equalization basins shall be performed sequentially and shall not be allowed to be performed concurrently.

#### 1.04 Construction Sequencing

A. General: The Contractor shall develop a comprehensive sequence of construction detailing the successive elements of his plan for completion work. The sequence of construction shall be submitted to the Engineer for comment within 30 days of receipt of the Notice of Award. The following outline is a general listing of the principle work tasks, and is not intended to identify all components of the work. The Contractor may proceed concurrently with work on several tasks listed sequentially in the outline, provided that the overall progress of the work is in accordance with the Contract Documents. The Contractor's sequence of construction shall be consistent with the outline; however, the Contractor shall be responsible for effectively sequencing and coordinating all aspects of the work in accordance with the general requirements of the Contract Documents. The approved sequence of construction shall be incorporated into the project schedule to be developed in accordance with the Contract Documents.

1. Equalization Basin A
2. Equalization Basin B
3. Digested Sludge Storage Tank
4. Digester B
5. Secondary Clarifier B

#### PART 2 -- PRODUCTS

(NOT USED)

#### PART 3 -- EXECUTION

##### 3.01 Measurement and Payment

- A. Coordination, scheduling, and sequencing will not be measured.
- B. Coordination, scheduling, and sequencing will not be paid separately and shall be incidental to other items.

END OF SECTION

## SECTION 01520

### MAINTENANCE OF UTILITY OPERATIONS DURING CONSTRUCTION

#### PART 1 -- GENERAL

##### 1.01 The Requirement

- A. The existing wastewater treatment facility will be maintained in continuous operation by Owner during the entire construction period of this Contract. The intent of this section is to outline the minimum requirements necessary to provide continuous facility operation throughout the Contract time.
- B. Work under this Contract shall be scheduled and conducted by the Contractor so as not to impede wastewater treatment or cause odor or other nuisance except as explicitly permitted herein. In performing the work shown and specified, Contractor shall plan and schedule his work to meet the treatment system operating requirements, and the constraints and construction requirements as outlined in this Section. No discharge or spill of raw wastewater shall be allowed. Contractor shall pay all civil penalties, costs, assessments, etc., associated with any discharge of raw wastewater associated with Contractor's work. Contractor shall reimburse the Owner any funds issued to regulatory agencies resulting from this project related to unplanned raw wastewater discharge.
- C. Contractor shall be responsible for coordinating the construction schedules and for ensuring that temporary facilities that are required to be on line at any given time are available.
- D. Contractor has the option of providing additional temporary facilities that can eliminate a constraint provided it is done without cost to Owner and provided that all requirements of these Specifications are fulfilled. Work not specifically covered in the following paragraphs may, in general, be done at any time during the contract period, subject to the operating requirements and constraints and construction requirements outlined herein. All references to days in this Section shall be consecutive calendar days.

##### 1.02 General Constraints

- A. Contractor shall schedule the Work so that the existing wastewater treatment facility is maintained in continuous operation except during approved shutdowns. All system or partial systems shutdowns and diversions shall be

approved by the Engineer and Owner. The Contractor shall submit a written shutdown request to the Owner a minimum of three (3) weeks prior to the requested shutdown. If, in the judgment of the Engineer, a requested shutdown is not required for Contractor to perform the Work, the Contractor shall utilize approved alternative methods to accomplish the Work. Upon receiving the Owner's approval, it is the Contractor's sole responsibility to schedule and coordinate the shutdown. All shutdowns shall be coordinated with and scheduled at times suitable to the Owner. Shutdowns shall not begin until all required materials, equipment and personnel are on hand and ready for installation. Contractor shall provide and maintain temporary work facilities, roads, walks, protection of existing structures, piping, blind flanges, valves and equipment required to maintain continuous treatment capabilities during the shutdown. Each shutdown period shall commence at a time approved by Owner, and Contractor shall proceed with the Work continuously, start to finish, until the Work is completed and normal operation is restored. If Contractor completes all required Work before the specified shutdown period has ended, Owner may immediately place the existing system back into service.

- B. Shutdowns shall be fully coordinated with the Engineer and Owner at least five (5) days before the scheduled shutdown. Owner personnel shall operate Owner's facilities involved in the shutdowns.
- C. Owner shall have the authority to order Work stopped or prohibited that would, in his opinion, unreasonably result in interrupting the necessary functions of the wastewater treatment facility operations.
- D. If Contractor impairs performance or operation of the wastewater treatment facility as a result of not complying with Contract Documents, the Contractor shall immediately make all repairs or replacements and do all work necessary to restore the facilities to the satisfaction of Engineer and Owner. Such work shall progress continuously to completion on a 24-hours per day, seven work days per week basis, at no cost to the Owner.
- E. Contractor shall provide the services of emergency repair crews on call 24-hours per day, as necessary.
- F. Closing of streets and roads during progress of the work shall be in compliance with the requirements of the Owner and other authorities having jurisdiction. Access shall be provided to facilities remaining in operation.

### 1.03 Operating Requirements, Constraints, and Construction Requirements

#### A. Access to Wastewater Treatment Facility Site, Roadways, and Parking Areas

1. An unobstructed traffic route to the existing process structure that is being repaired shall be maintained at all times for Owner's operations personnel and maintenance equipment. The limits of construction indicated on the drawings will be strictly enforced for Contractor operations.
2. Contractor shall make arrangements to provide and maintain suitable parking areas for the use of all construction workers and others performing work or furnishing services in connection with the Project, as required to avoid any need for parking personnel vehicles where they may interfere with public traffic, or Owner's operations.
3. Contractor shall provide temporary measures to protect the existing pavement by filling over with earthen material or supplying other measures acceptable to the Engineer, and Contractor shall restore the existing paved surfaces along the wastewater treatment facility roads to pre-existing conditions. Areas disturbed along the shoulders of the access road and interior roads and elsewhere inside and outside of the plant shall be repaired, graded, seeded, etc. as necessary to match pre-existing conditions.
4. Contractor shall not undertake the restoration of paved surfaces until Contract work has been completed or unless approved by the Owner.

#### B. Personnel Access

1. Owner's personnel shall have access to all areas which remain in operation throughout the construction period. Contractor shall locate stored material, dispose of construction debris and trash, provide temporary walkways, provide temporary lighting, and other such work as directed by Engineer to maintain safe personnel access to all areas of the wastewater treatment facility. Access and adequate parking areas for Owner's personnel must be maintained throughout construction.

#### C. Plumbing Facilities

1. Unless otherwise allowed by the Engineer, sanitary facilities in the existing building shall be operational at all times for plant operating

personnel. All other building plumbing systems such as roof and floor drains, pumping, etc., shall be maintained for all structures.

D. Draining Process Pipes and Conduits

1. The contents of all pipes and conduits to be removed, replaced or relocated (or dewatered for a specific purpose) shall be transferred to a suitable facility or structure in a manner approved by the Engineer through hoses or piping, or by using pumps if hydraulic conditions so require them. Contractor shall provide the pumps, piping and hoses at no additional cost to Owner. No spillage of a pipe or conduit contents shall be permitted. Any spillage, other than potable water, shall be disposed of appropriately.

PART 2 -- PRODUCTS

(NOT USED)

PART 3 -- EXECUTION

3.01 Measurement and Payment

- A. Maintenance of utility operations during construction will not be measured.
- B. Maintenance of utility operations during construction will not be paid separately. Costs shall be considered incidental.

END OF SECTION

SECTION 02200

EARTHWORK

PART 1 -- GENERAL

1.01 THE REQUIREMENT

- A. Furnish all labor, equipment and materials required to complete all work associated with soil remediation as required beneath existing equalization basin liners.
- B. It is the intent of this Specification that the Contractor conduct the construction activities in such a manner to ensure all organic material is removed from beneath existing equalization basin liner, and soil is remediated with select fill meeting all requirements as set forth in this specification.
- C. This specification is related to all earthwork required at equalization basins prior to installation of new lining system.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. 02274-Geotextiles

1.03 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

- A. Without limiting the generality of the other requirements of the Specifications, all work herein shall conform to the applicable requirements of the following documents. All referenced Specifications, codes, and standards refer to the most current issue available at the time of Bid.

- 1. Virginia Department of Transportation Standard Specifications for Roads and Structures, latest edition.
- 2. American Society for Testing and Materials (ASTM):

ASTM C 127      Test for Specific Gravity and Absorption of Coarse Aggregate.

ASTM C 136      Test for Sieve Analysis of Fine and Coarse Aggregates.

ASTM D 422      Particle Size Analysis of Soils.

ASTM D 423      Test for Liquid Limit of Soils.

ASTM D 424      Test for Plastic Limit and Plasticity Index of Soils.

ASTM C 535      Test for Resistance to Degradation of Large Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.

ASTM D 698	Standard Method of Test for the Moisture - Density Relations of Soils Using a 5.5 lb. (2.5 kg) Rammer and a 12-inch (305 mm) Drop.
ASTM D1556	Test for Density of Soil in Place by the Sand-Cone Method.
ASTM D1557	Test for Moisture-Density Relations of Soils and Soil Aggregate Mixtures Using 10-lbs. (4.5 kg) Rammer and 18-inch (457 mm) Drop.
ASTM D2049	Test Method for Relative Density of Cohesionless Soils.
ASTM D2167	Test for Density of Soil in Place by the Rubber-Balloon Method.
ASTM D2216	Test for Laboratory Determination of Water (Moisture) Content of Soil, Rock, and Soil Aggregate Mixtures.
ASTM D2487	Test for Classification of Soils for Engineering Purposes.
ASTM D2922	Test for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).

#### 1.04 SUBMITTALS

- A. In accordance with the procedures and requirements set forth in Section 01300 - Submittals, the Contractor shall submit the following:
  - 1. Name and location of all material suppliers.
  - 2. Certificate of compliance with the standards specified above for each source of each material.
  - 3. Samples of synthetic filter fabric and reinforced plastic membrane with manufacturer's certificates or catalog cuts stating the mechanical and physical properties. Samples shall be at least one (1) foot wide and four (4) feet long taken across the roll with the warp direction appropriately marked.

### PART 2 -- PRODUCTS

#### 2.01 SELECT FILL

- A. Soils from the excavations meeting requirements stipulated herein with the exceptions of topsoil and organic material may be used as select fill for backfilling, constructing embankments, reconstructing existing embankments, and as structural subgrade support.
- B. Select fill used for embankment construction shall be a silty or clayey soil material with a Maximum Liquid Limit (LL) of 50 and a Plasticity Index (PI) between 7 and 20.
- C. Select fill used for backfilling shall either be material as described in Paragraph B above or a granular soil material with a Maximum Plasticity Index (PI) of 6.

- D. Regardless of material used as select fill, materials shall be compacted at a moisture content satisfactory to the Engineer, which shall be approximately that required to produce the maximum density except that the moisture content shall not be more than 1% below nor more than 4% above the optimum moisture content for the particular material tested in accordance with the ASTM D698.
- E. Where excavated material does not meet requirements for select fill, Contractor shall furnish off-site borrow material meeting the specified requirements herein. When the excavated material from required excavations is suitable for use as backfill, bedding, or embankments, but is replaced with off-site borrow material for the Contractor's convenience, the costs associated with such work and material shall be borne by the Contractor.

## 2.02 GEOTEXTILES

- A. The Contractor shall provide geotextiles as indicated on the Drawings and specified herein. The materials and placement shall be as indicated under Section 02274 - Geotextiles.

## PART 3 -- EXECUTION

### 3.01 PROTECTION OF SUBGRADE

- A. To minimize the disturbance of bearing materials and provide a firm foundation, the Contractor shall comply with the following requirements:
  - 1. Use of heavy rubber-tired construction equipment shall not be permitted on the final subgrade unless it can be demonstrated that drawdown of groundwater throughout the entire area of the structure is at least 3 feet below the bottom of the excavation (subgrade). Even then, the use of such equipment shall be prohibited should subgrade disturbance result from concentrated wheel loads.
  - 2. Subgrade soils disturbed through the operations of the Contractor shall be excavated and replaced with compacted select fill or crushed stone at the Contractor's expense as indicated by the Engineer.
  - 3. The Contractor shall provide positive protection against penetration of frost into materials below the bearing level during work in winter months. This protection can consist of a temporary blanket of straw or salt hay covered with a plastic membrane or other acceptable means.

### 3.02 EMBANKMENTS

- A. The Contractor shall perform the construction of embankments in such a manner that cut and fill slopes will be completed to final slopes and grade in a continuous operation. The operation of removing excavation material from any cut and the placement of embankment in any fill shall be a continuous operation to completion unless otherwise permitted by the Engineer.
- B. Surfaces upon which embankments are to be constructed shall be stripped of topsoil, organic material, rubbish and other extraneous materials. After stripping and prior to placing

embankment material, the Contractor shall compact the top 12-inches of in place soil as specified under Paragraph 3.03, COMPACTION.

- C. Any soft or unsuitable materials revealed before or during the in place compaction shall be removed as indicated by the Engineer and/or materials testing consultant and replaced with select fill.
- D. Ground surfaces on which embankment is to be placed, shall be scarified or stepped in a manner which will permit bonding of the embankment with the existing surface. The embankment soils shall be as specified under Part 2 - Products, and shall be deposited and spread in successive, uniform, approximately horizontal layers not exceeding 8-inches in compacted depth for the full width of the cross section, and shall be kept approximately level by the use of effective spreading equipment. Hauling shall be distributed over the full width of the embankment, and in no case will deep ruts be allowed to form during the construction of the embankment. The embankment shall be properly drained at all times. Each layer of the embankment shall be thoroughly compacted to the density specified under Paragraph 3.03, COMPACTION.
- E. The embankment or fill material in the layers shall be of the proper moisture content before rolling to obtain the prescribed compaction. Wetting or drying of the material and manipulation when necessary to secure a uniform moisture content throughout the layer shall be required. Should the material be too wet to permit proper compaction or rolling, all work on all portions of the embankment thus affected shall be delayed until the material has dried to the required moisture content. Samples of all embankment materials for testing, both before and after placement and compaction, will be taken at frequent intervals. From these tests, corrections, adjustments, and modifications of methods, materials, and moisture content will be made to construct the embankment.
- F. Where embankments are to be placed and compacted on hillsides, or when new embankment is to be compacted against embankments, or when embankment is built in part widths, the slopes that are steeper than 4:1 shall be loosened or plowed to a minimum depth of 6 inches or, if in the opinion of the Engineer, the nature of the ground is such that greater precautions should be taken to bind the fill to the original ground then benches shall be cut in the existing ground as indicated by Engineer.
- G. When rock and other embankment material are excavated at approximately the same time, the rock shall be incorporated into the outer portions of the embankments and the other material which meets the requirements for select fill shall be incorporated into the formation of the embankments. Stones or fragmentary rock larger than 4-inches in their greatest dimension will not be allowed within the top 6-inches of the final grade. Stones, fragmentary rock, or boulders larger than 12-inches in their greatest dimension will not be allowed in any portions of embankments and shall be disposed of by the Contractor as indicated by the Engineer. When rock fragments or stone are used in embankments, the material shall be brought up in layers as specified or directed and every effort shall be exerted to fill the voids with finer material to form a dense, compact mass which meets the densities specified for embankment compaction.

### 3.03 COMPACTION

- A. The Contractor shall compact embankments, backfill, crushed stone, aggregate base, and in place subgrade in accordance with the requirements of this Section. The densities specified

herein refer to percentages of maximum density as determined by the noted test methods. Compaction of materials on the project shall be in accordance with the following schedule:

	Density % Std. Proctor (D698)	Density % Mod. Proctor (D1557)	Max. Lift Thickness as Compacted Inches
Embankments Beneath Structures*	98	95	8
Other Embankments	95	92	8
Backfill Around Structures	95	92	8
Backfill in Pipe Trenches	95	92	8
Crushed Stone Beneath Structures	**	**	12
Select Sand	--	98	8
Aggregate Base Course (ABC) Beneath Pavements and Structures	--	98	8
Crushed Stone Backfill	**	**	12
Crushed Stone Pipe Bedding	**	**	12
In place Subgrade Beneath Structures	98	95	Top 12-inches

\* Embankments beneath structures shall be considered to include a zone 10 feet out from the foundation of the structure extending down to the natural ground on a 45° slope.

\*\* The aggregate shall be compacted to a degree acceptable to the Engineer by use of a vibratory compactor and/or crawler tractor.

- B. Field density tests will be made by the materials testing consultant to determine if the specified densities have been achieved, and these tests shall be the basis for accepting or rejecting the compaction. In-place density tests will be performed in accordance with ASTM D 1556, ASTM D 2167, or ASTM D 2922. The Engineer in conjunction with the materials testing consultant will be the judge as to which test method will be the most appropriate. Failure to achieve the specified densities shall require the Contractor to re-compact the material or remove it as required. The Contractor shall, if necessary, increase his compactive effort by increasing the number of passes, using heavier or more suitable compaction equipment, or by reducing the thickness of the layers. The Contractor shall adjust the moisture contents of the soils to bring them within the optimum range by drying them or adding water as required.
- C. Testing will be performed as frequently as deemed necessary by the Engineer and/or materials testing consultant. As a minimum, one in-place density test shall be performed for each 1000 cubic yards of embankment placed and 500 cubic yards of backfill placed or one test performed each day for either.

### 3.04 REMOVAL OF EXCESS AND UNSUITABLE MATERIALS

- A. The Contractor shall remove and dispose of off-site all unsuitable materials. Within thirty (30) consecutive days after Notice to Proceed, the Contractor shall submit to the Engineer

for review all required permits and a list of disposal sites for the unsuitable materials. If the disposal site is located on private property, the submittal shall also include written permission from the owner of record.

- B. All unsuitable materials shall be disposed of in locations and under conditions that comply with federal, state and local laws and regulations.
- C. The Contractor shall obtain an off-site disposal area prior to beginning demolition or excavation operations.
- D. All excess and unsuitable materials shall be hauled in trucks of sufficient capacity and tight construction to prevent spillage. Trucks shall be covered to prevent the propagation of dust.
- E. When all excess and unsuitable material disposal operations are completed, the Contractor shall leave the disposal sites in a condition acceptable to the Owner and Owner(s) of the disposal site(s).

- END OF SECTION -

## SECTION 02274

### GEOTEXTILES

#### PART 1 -- GENERAL

##### 1.01 THE REQUIREMENT

- A. The Contractor shall furnish and install all Geotextiles, including all necessary and incidental items, as detailed or required for the Contractor to complete the installation in accordance with the Drawings and these Specifications.
- B. Cushion Geotextile shall be provided beneath new equalization basin liners. See specification section 02200 for earthwork requirements beneath new liner system.

##### 1.02 REFERENCES

- A. AASHTO Standards
  - 1. AASHTO M 288-06 (2011) Geotextile Specification for Highway Applications

##### 1.03 SUBMITTALS

- A. Prior to shipping to the site, the Contractor shall submit to the Engineer two copies of a mill certificate or affidavit signed by a legally authorized official of the Manufacturer for each type of Geotextile. The Supplier shall also submit three Geotextile samples of each product, 1 yard square each, seamed and unseamed as appropriate, with the mill certificate for each Geotextile type supplied. The mill certificate or affidavit shall attest that the Geotextile meets the chemical, physical and manufacturing requirements stated in the specifications. The samples shall be labeled with the manufacturer's lot number, machine direction, date of sampling, project number, specifications, manufacturer and product name.
- B. The Engineer shall be furnished copies of the delivery tickets or other acceptable receipts as evidence for materials received that will be incorporated into construction.

#### PART 2 -- MATERIALS

##### 2.01 MATERIALS

- A. Filter Geotextile shall be a minimum 6-ounce per square yard (nominal) nonwoven needle punched synthetic fabric consisting of staple or continuous filament polyester or polypropylene manufactured in a manner accepted by the Engineer and the Owner. The Geotextiles shall be inert and unaffected by long-term exposure to chemicals or liquids with a pH range from 3 to 10. The Geotextiles shall have a minimum threshold water head of 0.25-inches in the "as received" condition.

1. Filter Geotextile shall have a Survivability Class of Class 1, 2 or 3 in accordance with AASHTO M288, unless otherwise specified herein.
- B. Cushion Geotextile shall be a minimum 16-ounce per square yard nonwoven needle punched synthetic fabric consisting of continuous filament or staple polyester or polypropylene manufactured in a manner accepted by the Engineer and the Owner. The Geotextiles shall be inert and unaffected by long-term exposure to chemicals or liquids with a pH range from 3 to 10.
  1. Cushion Geotextile shall have a Survivability Class of Class 1 in accordance with AASHTO M288.
- C. Type I Separator Geotextile shall be a minimum 8-ounce per square yard (nominal) nonwoven needlepunched synthetic fabric consisting of staple or continuous filament polyester or polypropylene manufactured in a manner accepted by the Engineer and the Owner. The Geotextiles shall be inert and unaffected by long term exposure to chemicals or liquids with a pH range from 3 to 10.
  1. Type I Separator Geotextile shall have a Survivability Class of Class 1 or 2 in accordance with AASHTO M288, unless otherwise specified herein.
- D. Type II Separator Geotextile shall be a woven slit film or monofilament synthetic fabric consisting of polyester or polypropylene in a manner approved by the Engineer. Geotextile shall be treated to resist degradation due to exposure to ultraviolet light.
  1. Type II Separator Geotextile shall have a Survivability Class of Class 1 in accordance with AASHTO M288, unless otherwise specified herein.
- E. All Geotextiles shall conform to the properties listed using the test methods listed in Table 1. The Contractor shall be responsible for timely submittals of all confirmation test data for Geotextiles.

## PART 3 -- EXECUTION

### 3.01 SHIPPING, HANDLING AND STORAGE

- A. During all periods of shipment and storage, all Geotextiles shall be protected from direct sunlight, temperature greater than 140°F water, mud, dirt, dust, and debris.
- B. To the extent possible, the Geotextile shall be maintained wrapped in heavy-duty protective covering until use. Geotextile delivered to the project site without protective covering shall be rejected. After the protective covering has been removed, the Geotextile shall not be left uncovered for longer than fourteen (14) days, under any circumstances.
- C. The Owner shall approve the shipping and delivery schedule prior to shipment. The Owner shall designate the on-site storage area for the Geotextiles. Unloading and storage of Geotextiles shall be the responsibility of the Contractor.
- D. Geotextiles that are damaged during shipping or storage shall be rejected and replaced at Contractor expense.

### 3.02 QUALITY ASSURANCE CONFORMANCE TESTING

- A. At the option of the Engineer representative samples of Geotextiles shall be obtained and tested by the Engineer to assure that the material properties conform to these Specifications. Conformance testing shall be conducted by the Engineer and paid for by the Owner.
- B. Conformance testing shall be completed at a minimum frequency of one sample per 100,000 square feet of Geotextile delivered to the project site. Sampling and testing shall be as directed by the Engineer.
- C. Conformance testing of the Geotextiles shall include but not be limited to the following properties:
  - 1. Mass Per Unit Area (ASTM D5261)
  - 2. Grab Tensile Strength (ASTM D4632)
  - 3. Trapezoidal Tear (ASTM D4533)
  - 4. Puncture Resistance (ASTM D6241)
- D. The Engineer may add to, remove or revise the test methods used for determination of conformance properties to allow for use of improved methods.
- E. All Geotextile conformance test data shall meet or exceed requirements outlined in Table 1 of these Specifications for the particular category of Geotextile prior to installation. Any materials that do not conform to these requirements shall be retested or rejected at the direction of the Engineer.
- F. Each roll of Geotextile will be visually inspected by the Engineer or his representative. The Engineer reserves the right to sample and test at any time and reject, if necessary, any material based on visual inspection or verification tests.
- G. A Geotextile that is rejected shall be removed from the project site and replaced at the Contractor's expense. Sampling and conformance testing of the Geotextile supplied as replacement for rejected material shall be performed by the Engineer at Contractor's expense.

### 3.03 INSTALLATION

- A. Geotextiles shall be placed to the lines and grades shown on the Drawings. At the time of installation, the Geotextile shall be rejected by the Engineer if it has defects, rips, holes, flaws, evidence of deterioration, or other damage.
- B. It is the intent of these Specifications that Geotextiles used to protect natural drainage media be placed the same day as the drainage media to prevent soil, sediment or windblown soils to make contact with the drainage media.
- C. The Geotextiles shall be placed smooth and free of excessive wrinkles. Geotextiles shall conform to and be in contact with the approved subgrade.
- D. When the Geotextiles are placed on slopes, the upslope fabric portion shall be lapped such that it is the upper or exposed Geotextile.

- E. Geotextiles shall be temporarily secured in a manner accepted by the Engineer prior to placement of overlying materials.
- F. In the absence of specific requirements shown on the Drawings, the following shall be used for overlaps of adjacent rolls of Geotextile:

GEOTEXTILE TYPE/ APPLICATION	OVERLAP OF ADJACENT ROLLS <sup>(1)</sup> (INCHES)	TRANSVERSE END OVERLAP (INCHES)
Filter Geotextile	6 min	12 min
Cushion Geotextile	12 min	12 min
Separator-Roadway Applications	12 min	24 min
Separator-Slope Protection	18 min	24 min
Separator Geotextile	12 min	18 min

<sup>(1)</sup> Overlaps may be reduced if adjacent panels are sewn or heat bonded where approved by the Engineer.

- G. Any Geotextile that is torn or punctured shall be repaired or replaced as directed by the Engineer by the Contractor at no additional cost to the Owner. The repair shall consist of a patch of the same type of Geotextile placed over the failed areas and shall overlap the existing Geotextile a minimum of 12-inches from any point of the rupture.
- H. Any Geotextile that is subjected to excessive sediment buildup on its surface during construction shall be replaced by the Contractor prior to placement of overlying material.

TABLE 1 - MINIMUM REQUIRED GEOTEXTILE PROPERTIES\*

GEOTEXTILE PROPERTY	FILTER GEOTEXTILE	CUSHION GEOTEXTILE	TYPE I SEPARATOR GEOTEXTILE	TYPE II SEPARATOR GEOTEXTILE
Geotextile Construction	Nonwoven Needlepunched	Nonwoven Needlepunched	Nonwoven Needlepunched	Woven
Mass per Unit Area (Unit Weight), ASTM D5261 (oz/yd <sup>2</sup> )	5.6	15.7	7.8	N/A
Ultraviolet Resistance, (500 hrs.) ASTM D4355, Average % Strength Retention	70	70	70	70
Grab Tensile Strength (lbs.), ASTM D4632	150	60	200	390 <sup>(1)</sup> X250 <sup>(2)</sup>
Grab Tensile elongation (%) ASTM D4632	50	50	50	20 MAX
Wide Width Tensile Strength, (lbs./in.) ASTM D4595	N/A	N/A	N/A	N/A
Trapezoid Tear Strength (lbs) ASTM D4533	65	65	90	100
Apparent Opening Size (AOS), (mm), ASTM D4751	0.25	N/A	0.25	0.4
Permittivity at 50 mm constant head (sec <sup>-1</sup> ), ASTM D4491	1.6	N/A	1.2	0.1
Puncture Resistance, ASTM D6241 (lb)	430	450	575	950

\* **MINIMUM AVERAGE ROLL VALUE (MARV)**

(1) Warp Direction

(2) Fill Direction

- END OF SECTION -

SECTION 03732  
CONCRETE REPAIRS

PART 1 -- GENERAL

1.01 THE REQUIREMENT

- A. The Contractor shall furnish all materials, labor, equipment, tools, etc., required for the repair, renovation, and replacement of concrete and/or reinforcing steel as indicated on the Drawings, specified herein, and determined by field survey.

The Contractor, in conjunction with the Engineer, shall determine the extent of cracked or deteriorated concrete to be rehabilitated and/or resurfaced. A summary of the work to be performed shall be submitted to the Engineer for review, and such summary shall be approved by the Engineer prior to commencement of the Work.

- B. Estimated concrete repairs include the following; The contractor shall reference the contract drawings for specific details and estimated repair quantities:
1. Equalization Basins A & B: Crack repair and surface spall repair.
  2. Digested Sludge Storage Tank: Crack repair and surface spall at concrete foundation.
  3. Digester B: Crack repair at digester tank walls and slab. Spall repair on concrete walls.
  4. Secondary Clarifier B: Crack repair and spall repair on interior and exterior walls.

1.02 SUBCONTRACTOR/APPLICATOR QUALIFICATIONS

The Contractor shall furnish the name of all subcontractors/applicators which he proposes to use for this work, including necessary evidence and/or experience records to ascertain their qualifications in the application of epoxy, urethane, and polymer-modified mortars and grouts. Approved applicator qualifications shall include:

- A. A minimum of 5 years experience in applying epoxy, urethane, and polymer-modified and cement-based compounds similar to those specified in this Section.
- B. A letter from the manufacturer of the specified materials, on the manufacturer's letterhead, signed by an officer of the company, stating that the subcontractor/applicator has been trained in the proper techniques for applying the product, including surface preparation and mixing, placing, curing, and caring for the manufacturer's products. This letter shall further state that the subcontractor/applicator is on the manufacturer's approved list of contractors.

### 1.03 SUBMITTALS

- A. Material certifications and technical data sheets on all grouts, mortars, epoxy resins, aggregates and repair products specified in this Section.
- B. Subcontractor/Applicator qualifications as specified in Section 1.02.
- C. Shop Drawings detailing any planned deviation from the proposed construction sequence and/or method of repair.
- D. The Contractor, based on their experience in their profession, may submit to the Engineer for approval, alternative materials and/or methods of work to assure the durability and watertight integrity of the repair work performed.

### 1.04 ADDITIONAL GUARANTEE

- A. The Contractor shall guarantee all repair work performed under this Contract against defects in workmanship resulting in leakage and/or failure of concrete bond for a period of two years from the date of the Certificate of Substantial Completion.

## PART 2 -- MATERIALS

### 2.01 GENERAL

- A. All concrete repair materials shall conform to NSF Standards for contact with potable water supplies.

### 2.02 WATER

- A. The water used for mixing concrete repair products shall be clear, potable, and free of deleterious substances.

### 2.03 AGGREGATE

- A. All aggregate shall conform to ASTM C-33. The aggregate supplier shall submit to the Engineer documentation that the proposed aggregates comply with ASTM C-33 and the requirements listed below:
- B. Pea Gravel - Pea gravel shall meet the gradation and material requirements of Standard Size 14 as defined by ASTM C-33. Pea gravel shall be clean and free from deleterious matter and shall contain no limestone.

#### 2.04 EPOXY BONDING AGENT

- A. An epoxy bonding agent shall be used when applying fresh concrete to previously placed concrete. Epoxy bonding agent shall conform to ASTM C-881 Type I, II, IV or V; Grade 2 for epoxy resin adhesives, depending on the application. The class of epoxy bonding agent shall be suitable for all ambient and substrate temperatures. The epoxy resin shall be "Sikadur Hi-Mod Series" as manufactured by the Sika Corp, Lyndhurst, NJ, "CR 246" as manufactured by Sto Corporation, Atlanta, GA, "Duralbond" as manufactured by Euclid Chemical Company, Cleveland, OH, "Euco #452 Series" by the Euclid Chemical Company, or "MasterEmaco ADH series" by BASF Master Builder Solutions.

#### 2.05 ANTI-CORROSION REBAR COATING

- A. All reinforcing steel cut or exposed during demolition and/or repair operations shall be protected with an anti-corrosive coating. The anti-corrosive coating shall be a two-component, polymer-modified cementitious material such as "Sika Armatec 110 EpoCem" manufactured by Sika Corp., Lyndhurst, NJ, "CR 246" manufactured by Sto Corporation, Atlanta, GA, "Duralprep A.C." by the Euclid Chemical Company, or "MasterEmaco P 124" by BASF Master Builder Solutions.

#### 2.06 EPOXY CRACK REPAIR BINDER

- A. Epoxy crack repair binder shall be a two-component, 100% solids, high-modulus, low viscosity epoxy adhesive designed for structural repair. The epoxy adhesive shall be "Sikadur 52" manufactured by Sika Corp., Lyndhurst, NJ, "Duralcrete LV" manufactured by Euclid Chemical Company, Cleveland, OH, "Sto Poxxy Binder CR633" manufactured by Sto Corporation, Atlanta, GA, "Euco epoxy Injection Resin" by the Euclid Chemical Company, or "MasterInject 1500" by BASF Master Builder Solutions.

#### 2.07 WATERPROOF INJECTION GROUT

- A. Waterproof crack repair material shall be a one-component, water-activated polyurethane hydrophilic/hydrophobic injection grout capable of 700% expansion. Polyurethane grout shall form a tough flexible/rigid foam seal that is impenetrable to water. Hydrophilic injection grout shall be "Prime Flex 900 XLV" manufactured by Prime Resins, Conyers, GA, "AV-333 Injectaflex" manufactured by Avanti International, Webster, TX, or "DeNeef Sealfoam" manufactured by Grace Construction Products. Hydrophobic injection grout shall be "Prime Flex 920" manufactured by Prime Resins, Conyers, GA, "Sikafix HHLV or "Sikafix HH+" manufactured by Sika Corp., Lyndhurst, NJ, or "DeNeef Flex PURE" manufactured by Grace Construction Products.

## 2.08 SPALL REPAIR PATCHING MATERIAL

- A. All spall repairs not requiring formwork shall be repaired using a two-component, polymer-modified non-shrink cementitious mortar and shall have a minimum 28-day compressive strength of 7,000 psi. Spall repair mortar for use in horizontal applications shall be "Sikatop 122 Plus" manufactured by Sika Corp., Lyndhurst, NJ, "CR 700" manufactured by Sto Corporation, Atlanta, GA, "Eucocrete Supreme" by the Euclid Chemical Company, or MBT SD-2 or Emaco R310 by BASF Construction Chemicals. Spall repair mortar for use in vertical applications shall be "Sikatop 123 Plus" manufactured by Sika Corp., Lyndhurst, NJ, "Duraltop Gel" manufactured by Euclid Chemical Company, "CR 702" manufactured by Sto Concrete Restoration Division, Atlanta, GA, "Verticoat or Verticoat Supreme" by the Euclid Chemical Company, or "MasterEmaco N 425" or "MasterEmaco N 400" by BASF Master Builder Solutions.
- B. All spall repairs requiring formwork shall be repaired using a two-component, polymer-modified cementitious mortar/pea gravel mixture and shall have a minimum 28-day compressive strength of 7,000 psi. Spall repair mortar shall be "SikaTop 111 PLUS" manufactured by Sika Corp., Lyndhurst, NJ, "Eucocrete Supreme" manufactured by Euclid Chemical Company, Cleveland, OH, "Sto Flowable Mortar CR730" manufactured by Sto Corporation, Atlanta, GA, or "MasterEmaco T 310 CI" by BASF Master Builder Solutions.
- C. All spall repair materials shall conform to EPA/USPHS standards for surface contact with potable water supplies.

## 2.09 STORAGE OF MATERIALS

- A. The Contractor shall provide an area for repair material storage free from exposure to moisture in any form, before, during, and after delivery to the site. Manufactured materials shall be delivered in unbroken containers labeled with the manufacturer's name and product type. All mortar products shall be stored on raised platforms. Materials susceptible to damage by freezing shall be stored in a dry, heated, insulated area. Any material that has hardened, partially set, become caked and/or has been contaminated or deteriorated shall be rejected. All aggregates shall be stored in clean bins, scows or platforms.

## PART 3 -- INSTALLATION

### 3.01 GENERAL REQUIREMENTS

- A. No repair work shall be undertaken when ambient temperatures are below manufacturer's safe recommendations. No admixtures, except those required by the manufacturer, shall be used in the repairs specified herein. All products shall be applied in strict accordance with manufacturer's recommendations. The Contractor shall furnish and install safe scaffolding and ladders for the Engineer's prework inspection, the repair work activities, and the Engineer's final inspection
- B. Sandblast or waterblast (3000-4000 psi waterjet) deteriorated areas to remove all loose concrete, existing coatings, unsound material, debris, and laitance. All surfaces shall be clean, free of dirt, grease, loose particles, and deleterious substances and shall be prepared according to manufacturer's requirements.

### 3.02 EPOXY BONDING AGENT

- A. Existing concrete surfaces shall be roughened prior to application of bonding agent. Concrete surface shall be clean and sound, free of all foreign particles and laitance. Repair material shall be placed while bonding agent is still tacky. If bonding agent cures prior to placement of repair material, bonding agent shall be reapplied.
- B. Repairing concrete with epoxy mortars shall conform to all the requirements of ACI 503.4 "Standard Specification for Repairing Concrete with Epoxy Mortars" (latest edition), except as modified herein.

### 3.03 ANTI-CORROSION REBAR COATING

- A. Reinforcing steel cut or exposed during demolition and/or repair operations shall be sandblasted and cleaned prior to coating with an anti-corrosive coating. Anti-corrosive coating shall be applied as soon as the reinforcement is exposed and cleaned. Coating shall thoroughly cover all exposed parts of the steel and shall be applied according to manufacturer's recommendations.

### 3.04 EPOXY CRACK REPAIR BINDER

- A. Where indicated on the Drawings, all existing structural cracks 1/4" or smaller shall be repaired by pressure injecting an epoxy crack repair binder into the prepared crack. Seal crack surface and install injection ports per manufacturer's recommendations. Holes drilled for injection ports shall not cut rebar. If rebar is encountered during drilling, the hole shall be abandoned and relocated, and the abandoned hole shall be patched immediately with non-shrink grout flush with the surface of the existing concrete. Once the surface sealing material has cured, inject crack with epoxy crack repair binder using standard pressure injection equipment as directed by the manufacturer.
- B. Where indicated on the Drawings, all existing structural cracks wider than 1/4" shall be repaired by gravity feeding an epoxy crack repair binder into the prepared crack. First rout the concrete surface to form a 1/4" wide by 1/4" deep v-notch and clean the crack to remove all loose and foreign particles. Fill the crack with clean, dry sand and then pour epoxy crack repair binder into V-notch, completely filling crack. As binder penetrates into crack, additional binder shall be applied to the V-notch.

### 3.05 WATERPROOF INJECTION GROUT

- A. All existing, leaking cracks 1/4" or smaller shall be repaired by pressure injecting a waterproof injection grout into the prepared crack. Seal crack surface and install injection ports per manufacturer's recommendations. Holes drilled for injection ports shall not cut rebar. If rebar is encountered during drilling, the hole shall be abandoned and relocated, and the abandoned hole shall be patched immediately with non-shrink grout flush with the surface of the existing concrete. Once the surface sealing material has cured, inject crack with waterproof injection grout using standard pressure injection equipment as directed by the manufacturer.

### 3.06 SPALL REPAIR PATCHING MATERIAL

- A. All voids or spalled areas to be repaired shall be chipped back to sound concrete a minimum 1/8" deep, cleaned and repaired with spall repair patching material according to manufacturer's recommendations. All patching shall provide a final finished surface which is flat, level and even with the existing concrete surface. Repair mortar shall not be feathered to meet existing concrete surface. Final patching on horizontal surfaces shall receive a broom finish consistent with the finish on the existing structure.

### 3.07 CURING

- A. All repair products shall be cured in strict accordance with manufacturer recommendations.

### 3.08 WORK IN CONFINED SPACES

- A. The Contractor shall provide and maintain safe working conditions for all employees and subcontractors. Fresh air shall be supplied continuously to confined spaces through the combined use of existing openings, forced-draft fans and temporary ducts to the outside, or by direct air supply to individual workers. Fumes shall be exhausted to the outside from the lowest level of the confined space. Electrical fan motors shall be explosion-proof if in contact with fumes. No smoking or open fires shall be permitted in or near areas where volatile fumes may accumulate.

- END OF SECTION -



- b. Certify concrete repair and coating products have been checked for compatibility.
  - c. Certification from manufacturer stating the applicator and applicator's assigned personnel are certified and have received specific training for the application of the concrete coating system.
  - d. Certificate from applicator stating the assigned personnel have received specific training for the application of the concrete coating system.
  - e. Submit manufacturer's representative or independent inspector's NACE or SSPC certification.
- 5. Submit manufacturer's representative name, address and telephone number who will inspect work.
  - 6. Provide list of at least 10 applications in high H<sub>2</sub>S environments in Southeast States including contact names, address, phone numbers and date of installation for both the concrete coating system and the applicator.
  - 7. Field Data Records and Installation Reports.
  - 8. Product Warranty.
  - 9. Closeout Submittals:
    - a. As-built drawings which include coating application limits, transitions, and terminations.
    - b. Photos
    - c. Quality assurance records, field data records and installation reports
    - d. Test and evaluation reports including pull-off strength (adhesion) and spark testing.
    - e. Certificate of Surface Preparation
    - f. Certificate of Proper Installation
    - g. Final Report
    - h. Final Certified Warranty

#### 1.05 QUALIFICATIONS

- A. Products shall be manufactured by company specializing in manufacturing the products specified in this section with a minimum of five continuous years of experience for performance in similar applications in wastewater treatment plants or water treatment plants.
- B. The Contractor performing the work shall be fully qualified, experienced and equipped to complete this work expeditiously and in a satisfactory manner and shall be an approved installer of the concrete coating system as certified and licensed by the manufacturer. The Contractor shall have successfully installed a minimum of 5,000 square feet of the proposed system and shall have a minimum of two years service as documented by verifiable references. The Contractor shall submit the following information to the Engineer for review and approval before any work is performed. The following information is required.
  - 1. The number of years of experience in performing this type of specialized work and in installing the specified coating system.

2. Name of the manufacturer and supplier for this work and previous work listed below.
3. A list of municipal clients that the Contractor has performed this type of work including names, phone numbers, and square feet of material installed.
4. The Contractor shall submit a certified statement from the manufacturer that he/she is a certified and/or licensed installer of the coating system.

#### 1.06 QUALITY ASSURANCE

- A. The supplier shall be responsible for the provisions of all test requirements specified in the referenced ASTM Standards as applicable. The supplier shall also bear the cost of all tests specified in Paragraph 3.05, Field Testing and Acceptance of Coating. In addition, all coating products to be installed under this Contract may be inspected at the plant for compliance with these specifications by an independent testing laboratory provided by the Owner. The Contractor shall require the manufacturer's cooperation in these inspections.
- B. Inspections of the coating products and materials may also be made by the Engineer or other representatives of the Owner after delivery. The products and materials shall be subject to rejection at any time on account of failure to meet any of the Specification requirements, even though samples may have been accepted as satisfactory at the place of manufacture. Materials rejected after delivery shall be marked for identification and shall be removed from the job at once.
  1. Provide adequate time and access for inspections for the following major activities:
    - a. Pre-surface preparation
    - b. Monitoring of surface preparation
    - c. Post-surface preparation
    - d. Monitoring of repair and resurfacing product application
    - e. Post repair and resurfacing products
    - f. Monitoring of coating application
    - g. Post application inspection and testing
    - h. Corrective actions and final inspection
- C. Pre-installation Meeting
  1. At least two weeks prior to beginning work, the Contractor shall conduct a Pre-installation Meeting to discuss coating procedures and submittals. Attendees shall include the Coating Applicator, Owner, Engineer, Manufacturer's Technical Representative, Testing and Inspection Agencies (if applicable), Concrete Repair subcontractor (if applicable) and the Contractor. The minimum agenda includes:
    - a. Environmental condition requirements
    - b. Surface temperature requirements
    - c. Surface pH requirements
    - d. Surface preparation procedures
    - e. Cleaning procedures
    - f. Testing procedures to determine moisture content of concrete
    - g. Proper procedures to fill substrate
    - h. Application equipment

- i. Proper application of primer
- j. Proper application of coating system
- k. Proper termination and transition details
- l. Inspection of coating during and after application
- m. Testing of coating.
- n. Repair methods
- o. Documentation requirements
- p. Approval Procedures

#### D. Field Data Records

- 1. Maintain daily Quality Assurance Records including the following:
  - a. Date
  - b. Atmospheric Temperature and Humidity
  - c. Substrate pH
  - d. Substrate Temperature
  - e. Dew Point
  - f. Product Batch Numbers
  - g. Mixing Time for Each Part and the Combined Parts of a Coating System
  - h. Pot Life
  - i. Curing Time of Primer and Finish Layers
  - j. Holiday Test Results and Repair Data
  - k. Foreman or Supervisor's Signature

#### 1.07 SERVICES OF MANUFACTURER'S REPRESENTATIVE

- A. Provide the services of a qualified manufacturer's technical representative who shall adequately supervise the surface preparation and application of the coating and lining products. The manufacturer's representative shall be available to evaluate the coating at each step through the process and shall supervise the lining or coating application until the installer has shown through the proper surface preparation and application of the lining or coating that the system will be installed in accordance with all manufacturer recommendations.
- B. Manufacturer's technical representative or authorized inspector shall be currently certified by NACE or SSPC.
- C. The manufacturer's technical representative shall submit to the Engineer a final report, at the completion of the work, identifying the products used, verifying and certifying that surfaces and lining systems were properly applied, free of pinholes, blisters or other blemishes that will compromise the coating performance, and that the paint systems were proper for the exposure and surface. Discrepancies that are found during the final inspection shall be repaired and another inspection performed until the system is completely satisfactory.

#### 1.08 DELIVERY, STORAGE AND HANDLING

- A. Care shall be taken in shipping, handling and placing to avoid damaging the products. Extra care may be necessary during cold weather construction. Any product or material damaged in shipment shall be replaced as directed by the Engineer.

- B. Products shall be delivered to the site in clearly labeled unopened containers and packaging. While stored, the products shall be adequately packaged and protected. Products shall be stored in a manner as recommended by the manufacturer. Any product showing deterioration, or which has been exposed to any other adverse storage condition that may have caused damage, even though no such damage can be seen, shall be marked as rejected and removed at once from the work.

#### 1.09 WARRANTY

- A. All coatings installed shall be guaranteed by the Contractor for a period of five (5) years from the date of final acceptance. During this period, all defects discovered in the coating, as determined by the Owner or Owner's Engineer shall be repaired or replaced in a satisfactory manner by the Contractor at no cost to the Owner.
- B. The Contractor is responsible for properly preparing the structures for coating prior to the installation of the systems, including stopping all leaks, patching voids, protecting or removing and handling all mechanical equipment such as valves and valve assemblies and weirs, cleaning surfaces, removing rubble, etc.

### PART 2 – PRODUCTS

#### 2.01 PRIMER

- A. Primer shall be as recommended by the coating manufacturer to achieve a superior coating system performance. Manufacturer to select primer based on substrates moisture, environmental conditions and humidity, substrate temperature, pH, and other properties.

#### 2.02 PATCHING / RESURFACING MATERIAL

- A. Patching and resurfacing material shall be self-priming, high performance, aggregate reinforced, epoxy modified cement mortar as recommended by the coating manufacturer.

#### 2.03 COATING

- A. Provide a Microbiologically Induced Corrosion (MIC) resistant Elastomeric Polyurethane Concrete Coating on surfaces indicated to receive Coatings in this specification and on drawings.
- B. The Coating shall be Reactamine 760 by Carboline, Series 406 by Tnemec, Polibrid 705 by International, Amerthane 490 by PPG or Approved Equal.
- C. The Coating shall be applied to a total DFT of 60 to 80 mils. In addition to Coating, fill bugholes, depressions, and irregularities in surfaces with any dimension greater than 0.0625 inch with epoxy modified cement mortar recommended by manufacturer and apply primer at 10 mils recommended by manufacturer to achieve superior performance.
- D. Coating shall meet the following minimum characteristics:
  - 1. Total Film Thickness of System including primers shall not be less than 70 mils (unless otherwise noted).

2. Water Vapor Permeance of 0.23 perms per ASTM E96, Method E.
3. Concrete Tensile Pull Strength 350 psi ASTM D4541.
4. Tensile Strength of 2,000 psi ASTM D412.
5. Abrasion Resistance, CS17 Wheel <40mg loss, ASTM D4060, 1000 gm load/1000 cycles.
6. Minimum Shore Hardness D of 60, ASTM D2240.
7. Resistant to negative water infiltration.

### PART 3 -- EXECUTION

#### 3.01 PROTECTION OF IN-PLACE CONDITIONS

- A. Equipment, vehicles, buildings, and other finished items shall be protected from damage and overspray. Sensitive equipment shall be wrapped in plastic and tape.

#### 3.02 SURFACE PREPARATION

- A. Surfaces to receive coating shall be clean and free of dirt, oil, grease, and other foreign materials.
- B. Concrete and masonry surfaces shall cure for 28 days minimum prior to coating. pH and moisture content of concrete and masonry surfaces shall conform to manufacturer's recommended limits. Test surfaces to ensure they are within requirements of the manufacturer. Test methods shall include, but not limited to, Relative Humidity testing by drilling holes into the concrete surface. Do not begin coating work until moisture and pH is within manufacturer's recommended range and other contaminants are removed. Any leak shall be repaired as all surfaces shall be free of floating water.
- C. Minimum surface preparation of concrete shall be per SSPC 13, and provide a surface profile as required by the coating manufacturer. Remove all laitance, weak concrete, dirt, and other contaminants. Remove all fins, protrusions, and similar imperfections to allow a uniform surface after surface preparation. Under no circumstance shall surface preparation be less than manufacturer's recommendation to provide the best possible installation. Moisture levels, pH, and other surface conditions that are considered detrimental to the proper bond to the concrete shall be tested and documented and within acceptable ranges prior to application of coating.
- D. Bugholes, depressions, and irregularities in surfaces with any dimension greater than 0.0625 inch shall be filled with epoxy filler recommended by manufacturer.
- E. Skim coats of epoxy modified mortar shall be applied to restore and smooth surface irregularities to the final finished surface.

- F. Where manufacturer requires additional surface preparation, to provide best possible installation, additional requirements shall be preformed.
- G. Provided written certification on the coating manufacturer's letterhead, signed by an officer of the company that the surface preparation meets the requirements of the coating manufacturer.

### 3.03 PRIMER APPLICATION

- A. Apply moisture tolerant primer at 10 mils or as recommended by manufacturer to achieve superior performance. Test moisture and pH levels of concrete and document. Apply primer when surface is within acceptable ranges prior to application of primer.

### 3.04 COATING APPLICATION

- A. All methods, procedures of mixing, application and curing of the coating material shall be accomplished in strict accordance with manufacturer's printed instructions and recommendations.
- B. Apply Coating to a total DFT of 60 to 80 mils in strict accordance with manufacturer's printed instructions and recommendations.
- C. Application shall be by certified and experienced personnel only. Application of coating systems shall take place when the temperature of the concrete is stable or falling to ensure a minimal amount of out gassing by concrete. Use dehumidification units, fans or other means to provide an adequate environment for application and cure when the environment is not adequate for application or cure.
- D. Application shall produce at a minimum a totally bonded coating, corrosion proof, free of blisters, pinholes and any and all blemishes that may be precursors to failure. Promptly correct or remove, and repair areas that fail visual inspection or testing. Recoat time between coats shall be documented and shall not exceed manufacturer's requirements. Where recoat times are exceeded the coating shall be prepared in strict accordance with manufacturer's recommendations including scarification to provide sufficient profile.
- E. Follow manufacturer's recommendations for terminating coating into a chase and providing 1" radius inside corners, and easing outside corners. Provide cant strips or cove sealant at wall corners and wall to slab intersections as recommended by the manufacturer.

### 3.05 FIELD TESTING AND ACCEPTANCE OF COATING

- A. Field acceptance of the coating system shall be based on the Engineer's evaluation of the appropriate installation of each coat per field inspections, on observation of the measurements of the wet film thickness, and on the observation of spark testing and adhesion testing conducted on the cured liner.
- B. Pre-application testing shall be conducted by applying the Coating at 20 mil thickness over a 5 square foot area where directed to demonstrate the coating application to the inspector(s).

- C. During application of each layer of the coating, the Contractor shall measure the thickness and uniformity of the coating by the use of a wet film thickness gage meeting the requirements of ASTM D4414. The wet film thickness shall be tested continuously for the Contractor's own use. At least three such tests will be observed by the Engineer or Owner for each coat in each 500 square feet.
- D. The coating shall provide a continuous monolithic surfacing with uniform thickness throughout and be free of pinholes, slumps and drips.
- E. All surfaces shall be inspected via high voltage spark testing when all coating work is complete and the coating is hard to the touch.
  - 1. The structure environment shall be properly vented prior to testing to ensure hazardous conditions do not exist.
  - 2. High voltage spark testing shall be performed in accordance with ASTM D4787. The spark testing equipment shall be initially set at 100 volts per 1 mil of applied film thickness of the coating and then adjusted as necessary per ASTM D 4787.
  - 3. All detected holidays shall be marked and the area of the liner shall be repaired. The surface area around the coating shall first be abraded using an appropriate grit paper or other hand abrasion tool. After abrading and cleaning the area, the area shall be patched by hand application of the coating material. All repair procedures shall follow manufacturer's recommended procedures.
- F. The pull-off strength (adhesion) of the liner shall be tested using any one of the five Test Methods (A, B, C, D or E) described in ASTM D-4541. The Contractor shall propose the method and equipment to be used in the tests. The liner adhesion shall be tested in one area for each tank or each 1000 square feet of coated area. At least three replicate pull-off tests shall be performed for each area. The Contractor shall also submit his proposed method for reinstatement of the area of the coating affected by the test. Repair of test areas shall be made by the Contractor at no additional cost to the Owner.
- G. There shall be no groundwater infiltration or other leakage through the structure walls after coating. If leakage is found, it shall be eliminated with an appropriate method as recommended by the coating manufacturer and approved by the Engineer at no additional cost to the Owner.
- H. All pipe connections shall be open and clear.
- I. There shall be no cracks, voids, pinholes, uncured spots, dry spots, lifts, delaminations or other type defects in the lining.
- J. If any defective coating is discovered after it has been installed, it shall be repaired or replaced in a satisfactory manner within 72 hours and at no additional cost to the Owner. This requirement shall apply for the entire guarantee period.

- END OF SECTION -

SECTION 09900

PAINTING

PART 1 -- GENERAL

1.01 THE REQUIREMENT

- A. Furnish labor, materials, equipment and appliances required for complete execution of Work shown on Drawings and Specified herein.
- B. Section Includes:
  - 1. Paint Materials
  - 2. Shop Painting
  - 3. Field Painting
    - a. Surface Preparation
    - b. Piping and Equipment Identification
    - c. Schedule of Colors
    - d. Work in Confined Spaces
    - e. OSHA Safety Colors

1.02 RELATED SECTIONS

- A. Section 03732-Concrete Repairs
- B. Section 09802 – Polyurethane MIC coating

1.03 REFERENCE SPECIFICATIONS, CODES AND STANDARDS

- A. Without limiting the generality of these specifications, the Work shall conform to the applicable requirements of the following documents:
  - 1. SSPC – The Society for Protective Coatings Standards
    - a. SSPC-Vis 1 Pictorial Surface Preparation Standards for Painting Steel Structures
    - b. SSPC-SP2 Hand Tool Cleaning
    - c. SSPC-SP3 Power Tool Cleaning
    - d. SSPC-SP5 White Metal Blast Cleaning
    - e. SSPC-SP6 Commercial Blast Cleaning

- f. SSPC-SP10                      Near-White Metal Blast
  - g.    SSPC-SP13/NACE6      Surface Preparation of Concrete
2.    NACE                      -    National Association of Corrosion Engineers
  3.    ASTM D1737               -    Test Method for Elongation of Attached Organic Coatings with Cylindrical Mandrel Apparatus
  4.    ASTM B117                -    Method of Salt Spray (Fog) Testing
  5.    ASTM D4060               -    Test Method for Abrasion Resistance of Organic Coating by the Taber Abraser
  6.    ASTM D3359               -    Method for Measuring Adhesion by Tape Test

#### 1.04 SUBMITTALS

- A. In accordance with the procedures and requirements set forth in Section 01300 - Submittals, submit the following:
  1.    Manufacturer's literature and Material Safety Data Sheets for each product.
  2.    Painting schedule identifying surface preparation and paint systems proposed. Cross-reference with Tables 9-1 and 9-2. Provide the name of the paint manufacturer, and name, address, and telephone number of manufacturer's representative who will inspect the work. Submit schedule for approval as soon as possible following the Award of Contract, so approved schedule may be used to identify colors and specify shop paint systems for fabricated items.
  3.    Surfaces shall be classified as follows based off Table 9-1:
    - a) Equalization Basins A & B Steel & Piping – Submerged Wastewater
    - b) Digested Sludge Storage Tank
      - Exterior Steel – Structural Steel
      - Interior Steel – Submerged Wastewater
      - Interior Piping – Submerged Wastewater
      - Concrete Foundation- Submerged Wastewater
    - c) Digester B
      - Exterior Steel Roof Cap- Interior-non-submerged
      - Interior Steel Roof Cap – Submerged Wastewater
      - Interior Concrete floor & sidewall- See Spec 09802
      - Interior Piping & Misc. Metals – Submerged Wastewater
    - d) Secondary Clarifier B
      - Catwalk Steel – Structural Steel Misc.
      - Interior Concrete floor and walls – See Spec 09802

## 1.05 SYSTEM DESCRIPTION

- A. Work shall include surface preparation, paint application, inspection of painted surfaces and corrective action required, protection of adjacent surfaces, cleanup and appurtenant work required for the proper painting of all surfaces to be painted. Surfaces to be painted are designated within the Painting Schedule and may include new and existing piping, miscellaneous metals, equipment, buildings, exterior fiberglass, exposed electrical conduit and appurtenance.
- B. Perform Work in strict accordance with manufacturer's published recommendations and instructions, unless the Engineer stipulates that deviations will be for the benefit of the project.
- C. Paint surfaces which are customarily painted, whether indicated to be painted or not, with painting system applied to similar surfaces, areas and environments, and as approved by Engineer.
- D. Piping and equipment shall receive color coding and identification. Equipment shall be the same color as the piping system.

## 1.06 QUALITY ASSURANCE

- A. Painting operations shall be accomplished by skilled craftsman and licensed by the state to perform painting work.
- B. Provide a letter indicating that the painting applicator has five years of experience, and 5 references which show previously successful application of the specified or comparable painting systems. Include the name, address, and the telephone number for the Owner of each installation for which the painting applicator provided services.

## 1.07 STORAGE AND DELIVERY

- A. Bring materials to the job site in the original sealed and labeled containers.
- B. Container label to include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.
- C. Store paint materials at minimum ambient temperature of 45 degrees F (7 degrees C) and a maximum of 90 degrees F (32 degrees C), in ventilated area, and as required by manufacturer's instructions.

## PART 2 -- MATERIALS

### 2.01 GENERAL INFORMATION

- A. The term "paint" is defined as both paints and coatings including emulsions, enamels, stains, varnishes, sealers, and other coatings whether organic or inorganic and whether used as prime, intermediate, or finish coats.

- B. Purchase paint from an approved manufacturer. Manufacturer shall assign a representative to inspect application of their product both in the shop and field. The manufacturer's representative shall submit a report to the Engineer at the completion the Work identifying products used and verifying that surfaces were properly prepared, products were properly applied, and the paint systems were proper for the exposure and service.
- C. Provide primers and intermediate coats produced by same manufacturer as finish coat. Use only thinners approved by paint manufacturer, and only within manufacturer's recommended limits.
- D. Ensure compatibility of total paint system for each substrate. Test shop primed equipment delivered to the site for compatibility with final paint system. Provide an acceptable barrier coat or totally remove shop applied paint system when incompatible with system specified, and repaint with specified paint system.
- E. Use painting materials suitable for the intended use and recommended by paint manufacturer for the intended use.
- F. Require that personnel perform work in strict accordance with the latest requirements of OSHA Safety and Health Standards for construction. Meet or exceed requirements of regulatory agencies having jurisdiction and the manufacturer's published instructions and recommendations. Maintain a copy of all Material Safety Data Sheets at the job site of each product being used prior to commencement of work. Provide and require that personnel use protective and safety equipment in or about the project site. Provide respiratory devices, eye and face protection, ventilation, ear protection, illumination and other safety devices required to provide a safe work environment.

## 2.02 ACCEPTABLE MANUFACTURERS

- A. Subject to compliance with the Specifications, provide products from one of the following manufacturers:
  - 1. Tnemec Company Inc.
  - 2. Ameron
  - 3. CARBOLINE
  - 4. Sherwin-Williams

## PART 3 -- EXECUTION

### 3.01 SURFACE PREPARATION

- A. General
  - 1. Surfaces to be painted shall be clean and dry, and free of dust, rust, scale, and foreign matter. No solvent cleaning, power or hand tool cleaning shall be permitted unless approved by the Engineer.

2. Protect or remove, during painting operations, hardware, accessories, machined surfaces, nameplates, lighting fixtures, and similar items not intended to be painted prior to cleaning and painting. Reposition items removed upon completion of painting operations.
3. Examine surfaces to be coated to determine that surfaces are suitable for specified surface preparation and painting. Report to Engineer surfaces found to be unsuitable in writing. Do not start surface preparation until unsuitable surfaces have been corrected. Starting surface preparation precludes subsequent claim that such surfaces were unsuitable for the specified surface preparation or painting.
4. Surface preparation shall be in accordance with specifications and manufacturer's recommendations. Provide additional surface preparation, and fill coats where manufacturer recommends additional surface preparation, in addition to requirements of specification.
5. Touch-up shop or field applied coatings damaged by surface preparation or any other activity, with the same shop or field applied coating; even to the extent of applying an entire coat when required to correct damage prior to application of the next coating. Touch-up coats are in addition to the specified applied systems, and not considered a field coat.
6. Protect motors and other equipment during blasting operation to ensure blasting material is not blown into motors or other equipment. Inspect motors and other equipment after blasting operations and certify that no damage occurred, or where damage occurred, the proper remedial action was taken.
7. Field paint shop painted equipment in compliance with Color Coding and as approved by Engineer.

#### B. Metal Surface Preparation

1. Conform to current The Society for Protective Coatings Standards (SSPC) Specifications for metal surface preparation. Use SSPC-Vis-1 pictorial standards or NACE visual standards TM-01-70 or TM-01-75 to determine cleanliness of abrasive blast cleaned steel.
2. Perform blast cleaning operations for metal when following conditions exist:
  - a. Moisture is not present on the surface.
  - b. Relative humidity is below 80%.
  - c. Ambient and surface temperatures are 5°F or greater than the dew point temperature.
  - d. Painting or drying of paint is not being performed in the area.
  - e. Equipment is in good operating condition.

- f. Proper ventilation, illumination, and other safety procedures and equipment are being provided and followed.
3. Sandblast ferrous metals to be shop primed, or component mechanical equipment in accordance with SSPC-SP5, White Metal Blast.
4. Sandblast field prepared ferrous metals in accordance with SSPC-SP10, Near White Metal Blast, where metal is to be submerged, in a corrosive environment, or in severe service.
5. Sandblast field prepared ferrous metals in accordance with SSPC-SP6 Commercial Blast, where metal is to be used in mild or moderate service, or non-corrosive environment.
6. Clean nonferrous metals, copper, or galvanized metal surfaces in accordance to SSPC-SP1, Solvent Cleaning, or give one coat of metal passivator or metal conditioner compatible with the complete paint system.
7. Prime cleaned metals immediately after cleaning to prevent rusting.
8. Clean rusted metals down to bright metal by sandblasting and immediately field primed.

#### C. Concrete Surface Preparation

1. Cure concrete a minimum of 30 days before surface preparation, and painting begins.
2. Test concrete for moisture content, pH and salts using test method recommended by the paint manufacturer. Do not begin surface preparation, or painting until moisture content is acceptable to manufacturer.
3. Prepare concrete surfaces to receive coatings in accordance with SSPC-13 – Concrete Surface Preparation. Remove contaminants, open bugholes, surface voids, air pockets, and other subsurface irregularities using blasting or grinding. Do not expose underlying aggregate. Use dry, oil-free air for blasting operations. Surface texture after blasting shall achieve profile as required by manufacturer or where not defined by manufacturer similar to that of medium grit sandpaper. Remove residual abrasives, dust, and loose particles by vacuuming or other approved method.
4. Surface defects, such as hollow areas, bugholes, honeycombs, and voids shall be filled with polymeric filler compatible with painting system. Complete fill coats may be used in addition to specified painting system and as approved by the Engineer. Fins, form marks, and all protrusions or rough edges shall be removed.
5. Repair existing concrete surfaces which are deteriorated to the point that surface preparation exposes aggregate with fill coats or patching mortar as recommended by paint manufacturer and as directed by the Engineer.
6. Clean concrete of all dust, form oils, curing compounds, oil, tar, laitance, efflorescence, loose mortar, and other foreign materials before paints are applied.

#### D. Previously-Painted Surfaces

1. Totally remove existing paint when: surface is to be submerged in a severe environment, paint is less than 75% intact, brittle, eroded or has underfilm rusting.
2. Surfaces which are greater than 75% intact require removal of failed paints and then spot primed. Spot priming is in addition to coats specified.
3. Remove surface contamination such as oil, grease, loose paint, mill scale, dirt, foreign matter, rust, mold, mildew, mortar, efflorescence, and sealers.
4. Clean and dull glossy surfaces prior to painting in accordance with the manufacturer's recommendations.
5. Check existing paints for compatibility with new paint system. If incompatible, totally remove existing paint system or apply a barrier coat recommended by the paint manufacturer. Remove existing paints of undetermined origin. Prepare a test patch of approximately 3 square feet over existing paint. Allow test patch to dry thoroughly and test for adhesion. If proper adhesion is not achieved remove existing paint and repaint.

#### 3.02 APPLICATION OF PAINT

- A. Apply paint by experienced painters with brushes or other applicators approved by the Engineer, and paint manufacturer.
- B. Apply paint without runs, sags, thin spots, or unacceptable marks.
- C. Apply at rate specified by the manufacturer to achieve at least the minimum dry mil thickness specified. Apply additional coats, if necessary, to obtain thickness.
- D. Special attention shall be given to nuts, bolts, edges, angles, flanges, etc., where insufficient film thicknesses are likely. Stripe paint prior to applying prime coat. Stripe painting shall be in addition to coats specified.
- E. Perform thinning in strict accordance with the manufacturer's instructions, and with the full knowledge and approval of the Engineer and paint manufacturer.
- F. Allow paint to dry a minimum of twenty-four hours between application of any two coats of paint on a particular surface, unless shorter time periods are a requirement by the manufacturer. Longer drying times may be required for abnormal conditions as defined by the Engineer and paint manufacturer. Do not exceed manufacturer's recommended drying time between coats.
- G. Suspend painting when any of the following conditions exist:
  1. Rainy or excessively damp weather.
  2. Relative humidity exceeds 85%.

3. General air temperature cannot be maintained at 50°F or above through the drying period, except on approval by the Engineer and paint manufacturer.
4. Relative humidity will exceed 85% or air temperature will drop below 40°F within 18 hours after application of paint.
5. Surface temperature of item is within 5 degrees of dewpoint.
6. Dew or moisture condensation are anticipated.
7. Surface temperature exceeds the manufacturer's recommendations.

### 3.03 INSPECTION

- A. Each field coat of paint will be inspected and approved by the Engineer or his authorized representative before succeeding coat is applied. Tint successive coats so that no two coats for a given surface are exactly the same color. Tick-mark surfaces to receive black paint in white between coats.
- B. Use magnetic dry film thickness gauges and wet film thickness gauges for quality control. Furnish magnetic dry film thickness gauge for use by the Engineer.
- C. Coatings shall pass a holiday detector test.
- D. Determination of Film Thickness: Randomly selected areas, each of at least 107.5 contiguous square feet, totaling at least 5% of the entire control area shall be tested. Within this area, at least 5 squares, each of 7.75 square inches, shall be randomly selected. Three readings shall be taken in each square, from which the mean film thickness shall be calculated. No more than 20 percent of the mean film thickness measurements shall be below the specified thickness. No single measurement shall be below 80 percent of the specified film thickness. Total dry film thickness greater than twice the specified film thickness shall not be acceptable. Areas where the measured dry film thickness exceeds twice that specified shall be completely redone unless otherwise approved by the Engineer. When measured dry film thickness is less than that specified additional coats shall be applied as required.
- E. Holiday Testing: Holiday test painted ferrous metal surfaces which will be submerged in water or other liquids, or surfaces which are enclosed in a vapor space in such structures. Mark areas which contain holidays. Repair or repaint in accordance with paint manufacturer's printed instructions and retest.
  1. Dry Film Thickness Exceeding 20 Mils: For surfaces having a total dry film thickness exceeding 20 mils: Pulse-type holiday detector such as Tinker & Razor Model AP-W, D.E. Stearns Co. Model 14/20, shall be used. The unit shall be adjusted to operate at the voltage required to cause a spark jump across an air gap equal to twice the specified coating thickness.
  2. Dry Film Thickness of 20 Mils or Less: For surfaces having a total dry film thickness of 20 mils or less: Tinker & Razor Model M1 non-destructive type holiday detector, K-D Bird Dog, shall be used. The unit shall operate at less than 75-volts. For thicknesses between 10 and 20 mils, a non-sudsing type wetting agent, such

as Kodak Photo-Flow, shall be added to the water prior to wetting the detector sponge.

- F. Paint manufacturer or his representative shall provide their services as required by the Engineer. Services shall include, but not be limited to, inspecting existing paint, determination of best means of surface preparation, inspection of completed work, and final inspection of painted work 11 months after the job is completed.

#### 3.04 PROTECTION OF ADJACENT PAINT AND FINISHED SURFACES

- A. Use covers, masking tape, other method when protection is necessary, or requested by Owner or Engineer. Remove unwanted paint carefully without damage to finished paint or surface. If damage does occur, repair the entire surface adjacent to and including the damaged area without visible lapmarks and without additional cost to the Owner.
- B. Take all necessary precautions to contain dispersion of sandblasting debris and paint to the limits of the work. Take into account the effect of wind and other factors which may cause dispersion of the sandblasting debris and paint. Suspend painting operations when sanding debris or paint cannot be properly confined. Assume all responsibilities and cost associated with damage to adjacent structures, vehicles, or surfaces caused by the surface preparation and painting operations.

#### 3.05 SCHEDULE OF COLORS

- A. Match colors indicated. Colors which are not indicated shall be selected from the manufacturer's full range of colors by the Engineer. No variation shall be made in colors without the Engineer's approval. Color names and numbers shall be identified according to the appropriate color chart issued by the manufacturer of the particular product in question.

#### 3.06 WORK IN CONFINED SPACES

- A. Provide and maintain safe working conditions for all employees. Supply fresh air continuously to confined spaces through the combined use of existing openings, forced-draft fans and temporary ducts to the outside, or direct air supply to individual workers. Exhaust paint fumes to the outside from the lowest level in the contained space. Provide explosion-proof electrical fans, if in contact with fumes. No smoking or open fires will be permitted in, or near, confined spaces where painting is being done. Follow OSHA, state and local regulations at all times.

**TABLE 9-1**  
**PAINING SCHEDULE**

SURFACE	APPLICATION	PAINTING SYSTEM & NO. OF COATS	PRODUCT REFERENCE (TABLE 9.2)	TOTAL MIN. DRY FILM THICKNESS (MILS)
<u>Concrete and Masonry</u>				
Submerged wastewater	Concrete Surfaces, See Paragraph 1.04 (3)	2 coats high solids epoxy  Provide filler as required and recommended by manufacturer	119	6-10/coat
<u>Metals</u>				
Interior and exterior nonsubmerged (gloss)	Structural Steel, pumps, motors and mechanical equipment, piping, etc. See Paragraph 1.04 (3)	1 coat epoxy polyamide primer	104	4-6
		1 coat epoxy polyamide 1 coat aliphatic polyurethane	102 115	4-6 3-5
Submerged Wastewater	Steel and Piping See Paragraph 1.04 (3)	2 coats high solids epoxy	119	8-10/coat

TABLE 9-2  
PRODUCT LISTING

Substitutions related to VOC compliance shall be made where specified coating does not meet local, state or Federal VOC limits.  
 Provide coating systems that comply with VOC regulations and provide equal or better protection for items being coated.

REF.	SYSTEM	PURPOSE	PRODUCT			
			<u>Tnemec Series</u>	<u>PPG/AMERON</u>	<u>CARBOLINE</u>	<u>Sherwin-Williams</u>
101	Acrylic filler	Primer-sealer	130-6601	BLOXFIL 4000	Sanitile 100	Cement-Plex 875
102	Epoxy polyamide	Finish coat semi-gloss or gloss	N69	AMERLOCK 2	Carboguard 890	Dura-Plate 235
103	Acrylic latex	Sealer	1028/1029	PITT TECH PLUS	Carbocrylic 3359DTM	DTM Acrylic Primer/Finish
104	Epoxy Polyamide – metal	Primer	66	AMERCOAT 385	Carboguard 893SG	Macropoxy 646
105	Epoxy	Primer/Finish	20	AMERLOCK 2	Carboguard 561/56LT	Macropoxy 646 PW
106	Coal tar epoxy	Finish high-coat build	46H-413	AMERCOAT 78HB	Bitumastic 300M	Hi-Mil Sher Tar Epoxy
107	Coal tar	Sealer	46-465	AMERCOAT 78HB	Bitumastic 300M	Hi-Mil Sher Tar Epoxy
108	Alkyd-medium oil	Finish coat	2H	DEVGUARD 4308	Carbocoat 8215	Industrial Enamel
109	Alkyd-long oil	Finish coat	1029	DEVGUARD 4308	Carbocoat 8215	Industrial Enamel
110	Epoxy polyamide	Primer	66-1211	AMERCOAT 385	Carboguard 893SG	Macropoxy 646
112	Epoxy polyamide	Sealer	66-1211	AMERCOAT 385	Carboguard 893SG	Macropoxy 920 Pre-Prime
113	Urethane	Barrier coat	530	AMERLOCK SEALER	Rustbond	--
114	Polyamine Epoxy	Intermediate coat	27	AMERLOCK 385	Carboguard 893SG	--
115	Aliphatic Polyurethane	Finish coat	1074 or 1075	AMERCOAT 450 HS	Carbothane 134HG	Acrolon 218HS
116	Acrylic epoxy	Finish coat	113 or 114	AQUAPON WB	Sanitile 255	Water-Based Catalyzed Epoxy
117	Epoxy block filler	Sealer	1254	AMERLOCK 114	Sanitile 600	Kem Cati-Coat HS Epoxy Filler
118	Catalyzed epoxy	Finish coat	84	AMERLOCK 2/400	Carboguard 890	Macropoxy 646
119	High solids epoxy	Finish coat	104	AMERLOCK 400	Carboguard 890	Dura-Plate 235
120	Epoxy	Top coat	N69	AMERLOCK 2/400	Carboguard 890	--

- END OF SECTION -

## SECTION 13350

### EQUALIZATION BASIN REINFORCED GEOMEMBRANE LINER SYSTEM

#### PART 1 - GENERAL

##### 1.01 SCOPE

- A. This specification describes the requirements for the product supply and installation of the new Reinforced Geomembrane Liner (RGL) liner system for the existing equalization basins consisting of a 40 mil. (min.) RGL liner, a Cushion Geotextile, and all associated equipment and appurtenances. All procedures, operations, and methods shall be in strict accordance with the specifications, plans, and engineering drawings.
- B. Earthwork shall be done in accordance with all requirements of Section 02200 - Earthwork.
- C. Cushion Geotextile shall be provided in accordance with all requirements of Section - 02274 Geotextiles.

##### 1.02 PERFORMANCE REQUIREMENTS

- A. The RGL liner shall be designed and installed in accordance with the plans and specifications and the following regulations. Where the requirements of the following regulations differ from elements of the design documents, the following regulations shall take precedence:
  - a. 9VAC25-790-720. Sewage Stabilization Ponds and Aerated Lagoons

##### 1.03 REFERENCE STANDARDS

- A. American Society for Testing and Materials (ASTM):
  - a. C-33 Standard Specification for Concrete Aggregates
  - b. C-88 Standard Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate
  - c. C-295 Standard Guide for Petrographic Examination of Aggregates for Concrete
  - d. D-638 Standard Test Method for Tensile Properties of Plastic
  - e. D-751 Standard Test Method for Coated Plastics
  - f. D-792 Standard Test Methods for Density and Specific Gravity (Relative Density) of Plastics by Displacement

- g. D-1004 Test Method for Initial Tear Resistance of Plastic Film and Sheeting
- h. D-1204 Standard Test Methods for Initial Tear Resistance of Plastic Film and Sheeting
- i. D-1238 Standard Test Method for Flow Rates of Thermoplastics by Extrusion Plastometer
- j. D-1505 Test Method for Density of Plastics by the Density-Gradient Technique
- k. D-1603 Test Method for Carbon Black in Olefin Plastics
- l. D-2434 Standard Test Method for Permeability of Granular Soils (Constant Head
- m. D-2488 Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)
- n. D-3895 Standard Test Method for Oxidative-Induction Time of Polyolefins by Differential Scanning Calorimetry
- o. D-4218 Standard Test Method for Determination of Carbon Black in Polyethylene Compounds
- p. D-4355 Standard Test Method for Deterioration of Geotextiles by Exposure to Light, Moisture and Heat in a Xenon Arc Type Apparatus
- q. D-4437 Standard Practice for Determining Integrity of Field Seams Used in Joining Flexible Polymeric Sheet Geomembrane
- r. D-4491 Standard Test Methods for Water Permeability of Geotextiles by Permittivity
- s. D-4533 Standard Test Method for Trapezoid Tearing Strength of Geotextiles
- t. D-4632 Standard Test Method for Grab Breaking Load and Elongation of Geotextiles
- u. D-4751 Standard Test Method for Determining Apparent Opening Size of a Geotextile
- v. D-4833 Standard Test Method for Index Puncture Resistance of Geotextiles, Geomembranes, and Related Products
- w. D-5199 Standard Test Method for Measuring Nominal Thickness of Geotextiles and Geomembranes
- x. D-5261 Standard Test Method for Measuring Mass per Unit Area of Geotextiles
- y. D-5397 Standard Test Method for Evaluation of Stress Crack Resistance of Polyolefin Geomembranes Using Notched Constant Tensile Load Test

- z. D-5596 Standard Test Method for Microscopic Evaluation of the Dispersion of Carbon Black in Polyolefin Geosynthetics
  - aa. D-5641 Standard Practice for Geomembrane Seam Evaluation by Vacuum Chamber
  - bb. D-5721 Practice for Air-Oven Aging of Polyolefin Geomembranes
  - cc. D-5820-95 Pressurized Air Channel Test for Dual Seamed Geomembranes
  - dd. D-5885 Test Method for Oxidative Induction Time of Polyolefin Geosynthetics by High Pressure Differential Scanning Calorimetry
  - ee. D-5994 Standard Test Method for Measuring Core Thickness of Textured Geomembranes
  - ff. D-6241 Standard Test Method for Static Puncture Strength of Geotextiles and Geotextile-Related Products Using a 50-mm Probe
  - gg. D-6365 Standard Practice for the Nondestructive Testing of Geomembrane Seams using the Spark Test
  - hh. D-6392 Standard Test Method for Determining the Integrity of Nonreinforced Geomembrane Seams Produced Using Thermo-Fusion Methods
  - ii. D-6693 Standard Test Method for Determining Tensile Properties of Nonreinforced Polyethylene and Nonreinforced Flexible Polypropylene Geomembranes
  - jj. D-7240 Standard Practice for Leak Location using Geomembranes with an Insulating Layer in Intimate Contact with a Conductive Layer via Electrical Capacitance Technique (Conductive Geomembrane Spark Test)
  - kk. D-7428 Standard Test Method for Resistance of Fine Aggregate to Degradation by Abrasion in the Micro-Deval Apparatus
- B. Concrete Standards Association (CSA):
- a. A23.1-14/A23.2-14 - Concrete materials and methods of concrete construction / Test methods and standard practices for concrete
- C. Geosynthetic Research Institute:
- a. GRI GM 9 Cold Weather Seaming of Geomembranes
  - b. GRI GM 10 The Stress Crack Resistance of HDPE Geomembrane Sheet
  - c. GRI GM 12 Measurement of Asperity Height of Textured Geomembranes Using a Depth Gauge
  - d. GRI GM 13 Test Properties, Testing Frequency and Recommended Warranty for

## High Density Polyethylene (HDPE) Smooth and Textured Geomembranes

- e. GRI GM 14 Test Frequencies for Destructive Seam Testing Selecting Variable Intervals for Taking Geomembrane Destructive Samples Using the Method of Attributes
- f. GRI GM 17 Test Properties, Testing Frequency and Recommended Warranty for Linear Low Density Polyethylene (LLDPE) Smooth and Textured Geomembranes
- g. GRI GM 19 Seam Strength and Related Properties of Thermally Bonded Polyolefin Geomembranes

### 1.04 SUBMITTALS

A. Furnish the following product data, in writing, prior to installation of the RGL material:

- a. Submit copies of shop drawings for Engineer's approval within a reasonable timeframe so as not to delay the start of geomembrane installation. Shop drawings shall show the proposed panel layout identifying seams and details. Seams should generally follow the direction of the slope. Butt seams or roll end seams should not occur on a slope unless approved by Engineer. If allowed, Butt Seams on a slope shall be staggered.

- i. Placement of Geomembranes shall not be allowed to proceed until Engineer has reviewed and approved the shop drawings.

~~e.b.~~ Documentation of Manufacturer and Installer's Qualifications:

- ii. Installer's Qualifications: Submit a list of at least ten completed facilities. For each facility provide: name and type of facility, location, date of installation, name and telephone number of contact<sup>6</sup> at the facility, type and thickness of geomembrane and surface area of installed geomembrane.

~~iv.iii.~~ Submit qualifications or resumes of the Installation Supervisor, Master Seamer and Technicians to be assigned to the project.

~~e.c.~~ Liner Manufacturer's Quality Control Program Manual or Descriptive Documentation

~~f.d.~~ Installer's Geosynthetic Field Installation Quality Assurance Plan

~~g.e.~~ Material Properties Sheet include at a minimum all properties specified in GRI GM 13, including test methods used.

~~h.f.~~ Resin Data shall include Certification stating that the liner resin is new, first quality, compounded and manufactured specifically for producing geomembrane.

~~i.g.~~ Material Samples for Geomembrane and Geotextile Materials Specified Herein

~~j.h.~~ Seaming Procedures: Provide standard and low temperature procedures if low temperature conditions are expected during the liner installation.

k.i. Example Material Warranty and Liner Installation Warranty

- j. Geomembrane Roll: Statement certifying no recycled polymer and no more than 10% rework of the same type of material is added to the resin (product run may be recycled).

j.k. Installation layout drawings: Approved drawings will be for concept only and actual panel placement will be determined by site conditions.

B. The Installer will submit the following upon completion of installation:

- a. Certificate stating the geomembrane has been installed in accordance with the Contract Documents
- b. Daily Written Acceptance of Subgrade Surface Conditions and Daily Installation Reports
- c. Field Seam Destructive and Non-Destructive Test Results
- d. Material and installation warranties
- e. As-built drawings showing actual geomembrane placement and seams including typical anchor trench detail

1.05 QUALIFICATIONS

A. GEOMEMBRANE INSTALLER: The pond liner system shall be installed by an Installer regularly engaged in the installation of pond lining systems. Pond liner Installer shall have at least five (5) years of continuous experience in the installation of such geomembrane and have installed more than ten reference facilities, with experience in at least one facility of similarly sized ponds and more than 5,000,000 square feet of installed geomembrane within the last five (5) years. Installer shall provide references from the facilities to verify the quality of the installed pond lining system.

- a. Approved Installers:
  - i. Erosion Control Systems of Florida
  - ii. GSE Lining Technology LLC
  - iii. Chesapeake Containment Systems
  - iv. Approved Equal

b. The installer shall provide the owner / engineer with the resumes or credentials of the “master welder” and other welding technicians to be used on the project. At a minimum, the “master welder” must hold an International Association of Geosynthetic Installers (IAGI) Certified Welding Technician (CWT) certification in reinforced geomembranes

B. GEOMEMBRANE MANUFACTURER: Pond liner manufacturer shall have manufactured a minimum of 10,000,000 square feet of pond liner during the last year. Manufacturer shall have been regularly engaged in pond liner manufacturing for the past five years.

- C. GEOMEMBRANE FABRICATOR (if applicable): The fabricator shall be a company approved by the manufacturer, or specializing in the fabrication of reinforced polyethylene geomembranes. The fabricator shall have at least five (5) years of continuous experience in the fabrication of such geomembrane. Fabricator shall have fabricated at least 5,000,000 square feet of the specified type of geomembrane over the last five (5) years. The fabricator shall provide the owner / engineer with documentation of such.

#### 1.06 QUALITY CONTROL AND QUALITY ASSURANCES

- A. Installer shall be certified by the International Association of Geosynthetic Installers (IAGI). The Installer's company shall be certified Approved Installation Contractors (AIC) and Installer's Welders shall be Certified Welding Technicians (CWT).
- B. Liner seaming shall be performed under the direction of a certified Master Seamer, who has seamed a minimum of 3,000,000 square feet of geomembrane of the type specified or similar product using the seaming method specified for the project. The Field Installation Supervisor shall be present whenever seaming is performed.
- C. Installation:
  - a. Ground surface shall be cleaned and free of any debris prior to installation. Remove any debris that may damage the geomembrane, piping, net, cables, or poles.
  - b. Geomembrane shall not be installed in the presence of standing water, while precipitation is occurring, during excessive winds or when temperatures are outside the limits specified in Part 3 of this Specification.
  - c. All seaming, patching, other welding operations and testing shall be performed by qualified technicians employed by the Installer.
- D. Source Quality Control:
  - a. The test methods and frequencies used by the Liner Manufacturer for quality control/quality assurance of the project geomembrane performed prior to delivery, shall be in accordance with GRI GM 13 for HDPE geomembrane, or as modified for project specific conditions.
  - b. The Manufacturer's geomembrane quality control certifications, including results of quality control testing of the products, as specified in the Section, must be supplied to Engineer to verify that the materials supplied for the project are in compliance with all product and or project specifications in this Section. The certification shall be signed by a responsible party employed by the Manufacturer such as the QA/QC Manager, Production Manager or Technical Services Manager. Certification shall include lot and roll numbers and corresponding shipping information.
  - c. Manufacturer shall provide Certification that the geomembrane and welding rod supplied for the project are made from the same material type and are compatible.

## 1.07 WARRANTIES

- A. The RCG manufacturer shall provide a written warranty directly to the owner, which warrants that the 40 mil (min.) geomembrane is free from defects in materials and/or workmanship for a period of 10 years in an exposed applications, and 20 years in a buried application.
- B. The manufacturer's warranty applies only to material defects, and does not cover welding or seaming, or any damages to the geomembrane once it has been delivered to the fabricator (if applicable) and/or the installer.
- C. The fabricator and/or installer are responsible for negotiating specific welding and/or installation warranties directly with the owner.

## 1.08 COORDINATION

### A. Pre-Installation Meeting

- a. An Equalization Basin Pre-Installation Meeting shall be held onsite prior to the installation of the geomembrane. At a minimum, the meeting shall be attended by the Contractor, Installer, Owner, Engineer and Earthwork Contractor.
- b. Pre-Installation Meeting Topics shall include:
  - i. Health and Safety
  - ii. Lines of Authority and Communication: Resolution of any project document ambiguity.
  - iii. Methods of documenting, reporting and distributing documents and reports.
  - iv. Procedures for packaging and storing archive samples.
  - v. Review of time schedule for all installation and testing.
  - vi. Review of panel layout and numbering systems for panels and seams including details for marking on geomembrane.
  - vii. Procedures and responsibilities for preparation and submission of as-built panel and seam drawings.
  - viii. Temperature, site and weather limitations: Installation procedures for adverse weather conditions. Defining acceptable subgrade, geomembrane, or ambient moisture and temperature conditions for working during liner installation.
  - ix. Subgrade conditions, dewatering responsibilities and subgrade dewatering plan.
  - x. Deployment techniques including allowable subgrade for geomembrane.
  - xi. Plan for controlling expansion/contraction and wrinkling of the geomembrane.
  - xii. Covering of the geomembrane and cover soil placement.
  - xiii. Measurement and payment schedules.
  - xiv. Responsibilities of each party.

- c. The meeting shall be documented by a person designated at the beginning of the meeting and minutes shall be transmitted to all parties.

PART 2 – PRODUCTS

2.01 REINFORCED POLYPROPYLENE GEOMEMBRANE MATERIAL

- A. The RGL material shall be a 40 mil. (min.) material such as RhinoMat® 1000 as manufactured by Owens Corning, or approved equal.
- B. Any substitutions or variations from the Basis of Design shall be an equivalent product, requiring express written approval from the engineer of record on the project.

2.02 GEOMEMBRANE PROPERTIES

The 40 mil RCG shall have the following properties:

PROPERTY	TEST METHOD	TYPICAL VALUE
Thickness	ASTM D751	40 mil
Strip Tensile Strength (min)	ASTM D7003	265 lbf
Strip Tensile Elongation (min)	ASTM D7003	22%
Tongue Tear (min)	ASTM D5884	60 lbf
CBR Puncture	ASTM D6241	1400 lbf
Index Puncture Resistance	ASTM D4833	242 lbf
Dimensional Stability <sup>3</sup>	ASTM D1204	2.86%
Water Vapor Transmission <sup>3</sup>	ASTM E96	0.08 g/m <sup>2</sup> -day
Strength & Elongation retained after 10,000 light hours	ASTM D7003	> 90% retained
Grab Tensile Strength (min)	ASTM D751	397 lbf
Trapezoidal Tear (min)	ASTM D4533	69 lbf
Hydraulic Conductivity	ASTM E96 ('B')	1.0 x 10 <sup>-14</sup> cm/sec
Carbon Black Content	ASTM D4218	> 2%
Accelerated UV Weathering <sup>7</sup>	ASTM G154	> 90% @ 10,000 hrs.
a) Low Temperature Brittleness	ASTM D2136	Pass (@ - 60°F)

Notes:

<sup>1</sup> Typical values represent an average test result for the sample size, with + 10% variance

<sup>2</sup> Minimum Average Roll Values (MARV) are shown (unless otherwise noted), in accordance with GRI-GM30

<sup>3</sup> Dimensional Stability and Water Vapor Transmission values shown are maximum test result values

<sup>4</sup> Test samples were exposed to UV radiation using this method prior to evaluating changes in material properties

<sup>5</sup> Test values reflect single-track wedge welding at approximately 750° F and 14 ft/sec

<sup>6</sup> Test values reflect single-track wedge welding at approximately 750° F and 14 ft/sec

<sup>7</sup> Test valued based on A-340 lamps, 8 hours UV @ 60° C, 4 hours condensation @ 40° C

## 2.02 OTHER PRODUCTS

- A. Any extrusion welding performed on the geomembrane shall use an extrudate manufactured from the same base polymer(s) of the parent RGL.
- B. Any boots, skirts, or sleeves fabricated for pipes or other penetrations shall be made from the same thickness parent material as the RGL liner.
- C. Any batten strips used to connect the RGL to concrete (or other material) shall be manufactured using stainless steel, or other appropriate material as approved by the engineer of record. Fastening bolts shall be manufactured using steel, aluminum, or other corrosion-resistant material.
- D. Any cushioning material used below or above the RPCG shall meet the requirements as stated in Section 02274 – Geotextiles and be approved by the engineer based on site conditions. At a minimum, the material shall be a needle-punched, non-woven polypropylene geotextile with a minimum average roll value mass per unit area no less than six (6) ounces per square yard.

## PART 3 – EXECUTION

### 3.01 LABELING, DELIVERY, STORAGE, AND HANDLING

- A. Each roll and/or panel of RGL shall be delivered to the site with appropriate labeling, to include:
  - a. Original Manufacturer's Name
  - b. Fabricator's Name (if applicable)
  - c. Product Identification
  - d. Date of Production and/or Fabrication (if applicable)
  - e. Material Thickness
  - f. Roll Length, Width, and Gross Weight
  - g. Roll Number (or Panel Number, if fabricated)
  - h. Instructions on Deployment Orientation / Direction (if fabricated)

Any RGL roll and/or panel delivered to the site without all of the labeling described above shall be rejected by the owner / engineer and /or installer

- B. Each roll and/or panel of RGL shall be delivered to the site by appropriate means to prevent damage to the material and facilitate off-loading.
- C. Off-loading and storage of the geomembrane is the responsibility of the installer. Any damage caused or observed during off-loading shall be immediately reported to the owner / engineer.
- D. All damaged rolls must be separated from the undamaged rolls until the proper disposition of that material has been determined by the owner / engineer, who will be the final authority on determination of damage.
- E. The geomembrane shall be stored so as to be protected from puncture, dirt, grease, water, moisture, mud, mechanical abrasions, excessive heat, or other damage. A sacrificial cover must be used to protect the geomembrane if stored on site more than six (6) months. The rolls shall be stored in such a manner as to avoid shifting, abrasion, or other adverse movements that can damage the geomembrane liner material.
- F. The rolls shall be stored on a prepared surface (not wooden pallets) and should not be stacked more than three rolls high.
- G. RGL shall be transported on the site with spreader bars and slings, or other equipment that prevents potential damage to the rolls or panels.
- H. Product Labeling: Each roll of geomembrane delivered to the site shall be labeled by the Manufacturer. The label shall be firmly affixed and shall clearly state the Manufacturer's name, product identification, material thickness, roll number, roll dimensions and roll weight.
- I. Geomembrane shall be protected from mud, dirt, dust, puncture, cutting or any other damaging or deleterious conditions.
- J. Rolls shall be stored away from high traffic areas. Continuously and uniformly support rolls on a smooth, level prepared surface.

### 3.02 SUBGRADE PREPARATION

- A. The subgrade shall be prepared in accordance with the project specifications. The geomembrane subgrade shall be uniform and free of sharp or angular objects that may damage the geomembrane during installation.
- B. The geomembrane Installer and Owner's Representative shall inspect the surface to be covered with the geomembrane on each day's operations prior to placement of the geomembrane to verify suitability.
- C. The geomembrane Installer and Owner's Representative shall provide daily written acceptance for the surface to be covered by the geomembrane in that day's operations.

The surface shall be maintained in a manner, during geomembrane installation, to ensure subgrade suitability.

- D. All subgrade damaged by water, settlement, or construction equipment and deemed unsuitable for geomembrane deployment shall be repaired prior to placement of the geomembrane. If necessary in the opinion of the Engineer, repairs to subgrade shall include undercutting and replacement with Select Fill and compaction as per embankment requirements as noted in Section 02200 - Earthwork. All repairs shall be approved by the Owner's Representative and the geomembrane Installer. The damage, repair and responsibilities of the geomembrane Installer shall be defined during the pre-installation meeting.

### 3.03 GEOMEMBRANE PLACEMENT

- A. No geomembrane shall be deployed until the applicable certifications and quality control certificates listed in Part 1 of this Section are submitted to and approved by the Owner's Representative. If the material does not meet the project specification it shall be removed from the work area at the expense of the Contractor.
- B. The geomembrane shall be installed to the limits shown on the project drawings and essentially as shown on the approved panel layouts.
- C. No geomembrane material shall be unrolled and deployed if the material temperatures are lower than 32°F unless otherwise approved by the Owner's Representative. The specified minimum temperature for material deployment may be adjusted by the Owner's Representative. Temperature limitations shall be defined during the preconstruction meeting. Only the quantity of geomembrane that will be seamed together and anchored in one day shall be deployed.
- D. No vehicular traffic shall travel on the geomembrane other than an approved low ground pressure Vehicle.
- E. Sand Bags or equivalent ballast shall be used as necessary to temporarily hold the geomembrane material in position under the foreseeable and reasonably expected wind conditions. Sand bag material shall be sufficiently close knit to prevent soil fines from working through the bags and discharging onto the geomembranes.
- F. Geomembrane placement shall not be done if moisture prevents proper subgrade preparation, panel placement or panel seaming. Moisture limitations shall be defined during the pre-installation meeting.
- G. Damaged panels or portions of the damaged panels which have been rejected shall be marked and their removal from the work area recorded.
- H. The geomembrane shall not be allowed to "bridge over" voids or low areas in the subgrade. The geomembrane shall rest in intimate contact with the subgrade.
- I. Wrinkles caused by panel placement or thermal expansion shall be minimized as much as reasonably possible.

- J. Site Geometry Considerations: In general, seams shall be oriented parallel to the line of maximum slope. In corners or odd geometric locations, the total length of field seams shall be minimized. Seams shall not be located at low points in the subgrade unless geometry requires seaming at such locations and only if approved by the Owner's Representative.
- K. Overlapping: The panels shall be overlapped prior to seaming to whatever extent is necessary to affect a good weld and allow for proper testing. In no case shall the overlap be less than 3 inches.

### 3.04 SEAMING PROCEDURES

- A. Cold weather installations shall follow guidelines as outlined in GRI GM9.
- B. No geomembrane material shall be seamed when liner temperatures are less than 32°F unless the following conditions are complied with:
  - a. Seaming of the geomembrane at material temperatures below 32°F is allowed if the geomembrane Installer can demonstrate to the Owner's Representative, using prequalification test seams, that field seams comply with the project specifications, the safety of the crew is ensured and geomembrane material can be fabricated (i.e. pipeboots, penetrations, repairs, etc.) at subfreezing temperatures.
  - b. The geomembrane Installer shall submit to the Owner's Representative for approval, detailed procedures for seaming at low temperatures, possibly including the following:
    - i. Preheating the geomembrane
    - ii. The provision of a tent or other device if necessary to prevent heat losses during seaming and rapid heat losses subsequent to seaming.
    - iii. Number of test welds to determine appropriate seaming parameters.
- C. No geomembrane material shall be seamed when the sheet temperature is above 170°F as measured by an infrared thermometer or surface thermocouple unless otherwise approved by the Owner's Representative. This approval will be based on recommendations by the geomembrane Manufacturer and on a field demonstration by the geomembrane Installer using prequalification test seams to demonstrate that the seams comply with the specification.
- D. Seaming shall primarily be performed using automatic fusion welding equipment and techniques. Extrusion welding shall be used where fusion welding is not possible such as at pipe penetrations, patches, repairs and short (less than a rolls width) runs of seams.
- E. Fishmouths or excessive wrinkles at the seam overlaps shall be minimized and when necessary cut along the ridge of the wrinkles back into the panel so as to effect a flat overlap. The cut shall be terminated with a keyhole cut (nominal ½-inch diameter hole) so as to minimize crack/tear propagation. The overlay shall subsequently be seamed.

The keyhole cut shall be patched with an oval or round patch of the same base geomembrane material extending a minimum of 6 inches beyond the cut in all directions.

### 3.05 PIPE AND STRUCTURE PENTRATION SEALING SYSTEM

- A. Provide penetration sealing systems as shown in the project drawings.
- B. Penetrations shall be constructed from the base geomembrane material, flat stock, prefabricated boots and accessories as shown on the Project Drawings. The prefabricated or field fabricated assemblies shall be field welded to the geomembrane as shown on the Project Drawings so as to prevent leakage. The assembly shall be field tested as specified in this Section. Alternatively, where field non-destructive testing cannot be performed, attachments will be field spark tested by standard holiday leak detectors in accordance with ASTM 6365.
  - a. Equipment for spark testing shall be comprised of but not limited to: a hand held holiday spark tester and conductive wand that generates high voltage.
  - b. The testing activities shall be performed by the geomembrane Installer by placing an electrically conductive tape or wire beneath the seam prior to welding. A trail seam containing a non-welded segment shall be subject to a calibration test to ensure that such a defect (non-welded segment) will be identified under the planned machine settings and procedures. Upon completion of the weld, enable the spark tester and hold approximately 1-inch above the weld moving slowly over the entire length of the weld in accordance with ASTM 6365. If there is no spark, the weld is considered to be leak free.
  - c. A spark indicates a hole in the seam. The faulty area shall be located, repaired and retested by the geomembrane Installer.
  - d. Care should be taken if flammable gasses are present in the area to be tested.

### 3.06 FIELD QUALITY CONTROL

- A. The Owner's Representative shall be notified prior to all prequalification and production welding and testing, or as agreed upon in the pre-installation meeting.
- B. Prequalification Test Seams:
  - a. Test seams shall be prepared and tested by the geomembrane Installer to verify that seaming parameters (speed, temperature, and pressure of welding equipment) are adequate.
  - b. Test seams shall be made by each welding technician and tested in accordance with ASTM D-4437 at the beginning of each seaming period. Test seaming shall be performed under the same conditions and with the same equipment and operator combination as producing the seaming. The test seam shall be approximately 10 feet long for fusion welding and 3 feet long for extrusion welding with the seam centered lengthwise. At a minimum, test seams shall be made by each technician one time every 4-6 hours. Additional tests may be required with

changes in environmental conditions.

- c. Two 1-inch wide specimens shall be die cut by the geomembrane installer from each end of the test seam. These specimens shall be tested by the geomembrane Installer using a field tensiometer testing both tracks for peel strength and also for shear strength. Each specimen should fail in the parent material and not the weld. Seam separation to or greater than 25% of the track width shall be considered a failing test.
- d. The minimum acceptable seam strength values to be obtained are listed in Part 2.01.A of this specification. Four specimens shall pass for the test seam to be a passing seam.
- e. If a test seam fails, an additional test seam shall be immediately conducted. If the additional test seam fails, the seaming apparatus shall be rejected and not used for production seaming until the deficiencies are corrected and a successful test seam can be produced.
- f. A sample from each test seam shall be labeled. The label shall indicate the date, geomembrane temperature, number of seaming unit, technician performing the test seam and pass/fail description. The sample shall then be given to the owner's representative for archiving.

C. Field Seam Non-Destructive Testing:

- a. All field seams shall be non-destructively tested by the geomembrane Installer over the full seam length before the seams are covered. Each seam shall be numbered or otherwise designated. The location, date, test unit, name of tester and outcome of all non-destructive testing shall be given to the Owner's Representative for archiving.
- b. Testing shall be done as the seaming work progresses, not at the completion of all field seaming, unless agreed to in advance by the Owner's Representative, All defects found during testing shall be numbered and marked immediately after detection. All defects shall be repaired, retested and remarked to indicate acceptable completion of the repair.
- c. Non-destructive testing shall be performed using a vacuum box, air pressure or spark testing equipment.
- d. Non-destructive tests shall be performed by experienced technicians familiar with the specified test methods. The geomembrane Installer shall demonstrate to the Owner's Representative all test methods to verify the test procedures are valid.
- e. Extrusion seams shall be vacuum box tested by the geomembrane Installer in accordance with ASTM D-4337 and ASTM D-5641 with the following equipment procedures:
  - i. Equipment for testing extrusion seams shall be comprised of but not limited to:

1. a vacuum box assembly consisting of a rigid housing, a transparent viewing window, a soft rubber gasket attached to the base, port hole or valve assembly and a vacuum gauge
  2. a vacuum pump assembly equipped with a pressure controller and pipe connections
  3. a rubber pressure/vacuum hose with fittings and connections
  4. a plastic bucket
  5. wide paint brush or mop and soapy solution
- ii. The vacuum pump shall be charged and the tank pressure adjusted to approximately 35-kPa (5-psig)
  - iii. The geomembrane Installer shall create a leak tight seal between the gasket and geomembrane interface by wetting a strip of geomembrane approximately 12-inches by 48-inches (length and width of box) with a soapy solution, placing the box over the wetted area and then compressing the box against the geomembrane. The geomembrane Installer shall then close the bleed valve, open the vacuum valve, maintain initial pressure of approximately 35-kPa (5-psig) for approximately five seconds. The geomembrane should be continuously examined through the viewing window for the presence of soap bubbles, which indicate a leak. If no bubbles appear after five seconds, the area shall be considered leak free. The box shall be depressurized and moved over the next adjoining area with an appropriate overlap and the process shall be repeated.
  - iv. All areas where soap bubbles appear shall be marked, repaired and then retested.
  - v. At locations where seams cannot be non-destructively tested, such as pipe penetrations, alternative non-destructive spark testing or equivalent test method shall be substituted.
  - vi. All seams that are vacuum tested shall be marked with the date tested, the name of technician performing the test and the test result.
- f. Double Fusion seams with an enclosed channel shall be air pressure tested by the geomembrane Installer in accordance with ASTM D-5820 and ASTM D-4437 and the following equipment and procedures:
    - i. Equipment for testing double fusion seam welds shall be comprised of but not limited to:
      1. An air pump equipped with a pressure gauge capable of generating and sustaining a pressure of 30-psig, mounted on a cushion to protect the geomembrane
      2. A manometer equipped with a sharp hollow needle or other approved pressure feed device
    - ii. The Testing activities shall be performed by the geomembrane Installer.

Both ends of the seam to be tested shall be sealed and a needle or other approved pressure feed device inserted into the tunnel created by the double wedge fusion weld. The air pump shall be adjusted to a pressure of 30-psig and the valve closed. Allow two minutes for the injected air to equilibrate in the channel, and then sustain pressure for five minutes. If pressure loss does not exceed 4-psig after the five minute period then the seam shall be considered leak tight. Release pressure from the opposite end verifying pressure drop on the needle to ensure testing of the entire seam. The needle or other approved pressure device shall be removed and the feed hole sealed.

- iii. If loss of pressure exceeds 4-psig during the testing period or pressure does not stabilize, the faulty area shall be located, repaired and retested by the geomembrane Installer.
- iv. Results of the pressure testing shall be recorded on the liner at the tested seam and on a pressure testing record.

D. Destructive Field Seam Testing:

- a. One destructive test sample per 500 linear feet of seam length shall be collected in accordance with GRI GM 14 by the geomembrane Installer from a location specified by the Owner's Representative. The geomembrane Installer shall not be informed in advance of the sample location. In order to obtain test results prior to completion of geomembrane installation, samples shall be cut by the geomembrane Installer as directed by the Owner's Representative as seaming progresses.
- b. All field samples shall be marked with their sample number and seam number. The sample number, date, time, location and seam number shall be recorded. The geomembrane Installer shall repair all holes in the geomembrane resulting from obtaining the seam samples. All patches shall be vacuum box tested or spark tested. If a patch cannot be permanently installed over the test location the same day as sample collection, a temporary patch shall be tack welded or hot air welded over the opening until a permanent patch can be affixed.
- c. The destructive sample size shall be 12-inches wide by 36-inches long with the seam centered lengthwise. The samples shall be cut into three equal sections and distributed as follows: one section given to the Owner's Representative as an archive sample, one section given to the Owner's Representative for laboratory testing in accordance with Part (e) below and one section retained by geomembrane Installer for field testing as specified in Part (d) below.
- d. For field testing, the geomembrane Installer shall cut ten identical 1-inch wide replicate specimens from the sample. The geomembrane Installer shall test five specimens for seam shear strength and five for peel strength. Peel test shall be performed on both inside and outside weld tracks. To be acceptable, four of five test specimens must pass the criteria stated in Part 2 of this section with less than 25% separation. If four of five specimens pass, the sample qualifies for testing by the testing laboratory.

- e. If independent seam testing is required by the specifications, it shall be conducted in accordance with ASTM D-5820 or ASTM D-4437.
  - f. Reports of the results of examinations and testing shall be prepared and submitted to the Owner's representative.
  - g. For field seams, if a laboratory test fails, that shall be considered as an indicator of the possible inadequacy of the entire seamed length corresponding to the test sample. Additional destructive test portions shall then be taken by the geomembrane Installer at locations indicated by the Engineer, typically 10-feet on either side of the failed sample and then laboratory seam tests shall be performed. Passing tests shall be an indicator of adequate seams. Failing tests shall be an indicator of inadequate seams and all seams represented by the destructive test location shall be repaired with a cap strip extrusion welded to all sides of the capped area. All cap-strip seams shall be non-destructively vacuum box tested until complete seam adequacy is achieved. Cap strip seams exceeding 150-feet shall be destructively tested.
- E. Identification of Defects: Panels and seams shall be inspected by the geomembrane Installer and Owner's Representative during and after panel deployment to identify all defects, including holes, blisters, undispersed raw materials and signs of contamination of foreign matter.
- F. Evaluation of Defects: Each suspect location on the liner (both in geomembrane seams and non-seam areas) shall be non-destructively tested using one of the methods described in Section 3.05B. Each location which fails non-destructive testing shall be marked, numbered, measured and posted on the daily "installation" drawings and subsequently repaired.
- a. If a destructive sample fails the field or laboratory test, the geomembrane Installer shall repair the seam between two nearest passed locations on both sides of the failed destructive sample location.
  - b. Defective seams, tears or holes shall be repaired by reseaming or applying an extrusion weld cap strip.
  - c. Re-seaming may consist of one of the following:
    - i. Removing the defective weld area and rewelding the parent material using the original welding equipment.
    - ii. Re-seaming by extrusion welding along the overlap at the outside seam edge left by the fusion welding process.
  - d. Blisters, laRGLer holes and contamination by foreign matter shall be repaired by patches and/or extrusion weld beads as required. Each patch shall extend a minimum of 6 inches beyond all edges of the defects.
  - e. All repairs shall be measured, located and recorded.

- G. Verification Of Repairs On Seams: Each repair shall be non-destructively tested using either vacuum box or spark testing methods. Tests which pass the non-destructive test shall be taken as an indication of a successful repair. Failed tests shall be re-seamed and retested until a passing test result is achieved. The number, date, location, technician and test outcome of each patch shall be recorded.
- H. Daily Field Installation Reports: At the beginning of each day's work, the Installer shall provide the Engineer with daily reports for all work accomplished on the previous day. Reports shall include the following:
  - a. Total amount and location of geomembrane replaced.
  - b. Total length and location of seams completed, name of technicians doing seaming and welding unit numbers.
  - c. Drawings of the previous day's installed geomembrane panel numbers, seam numbers and locations of non-destructive and destructive testing
  - d. Results of pre-qualification test seams
  - e. Results of non-destructive testing
  - f. Results of vacuum testing repairs
- I. Destructive test results shall be reported prior to covering of liner or within 48 hours.

### 3.07 LINER ACCEPTANCE

- A. Geomembrane liner will be accepted by Owner's Representative when:
  - a. The entire installation is finished or an agreed upon subsection of the installation is finished.
  - b. All Installer's QC documentation is completed and submitted to the Owner.
  - c. Verification of the adequacy of all field seams and repairs and associated geomembrane testing is completed.

### 3.08 ANCHOR TRENCH

- A. Construct as shown on the Project Drawings.

### 3.09 DISPOSAL OF SCRAP MATERIALS

- A. Upon completion of installation, the geomembrane Installer shall dispose of all trash and scrap material in a location approved by the Owner, remove equipment used in connection with the work herein, and shall leave the premises in a neat acceptable manner. No scrap material shall be allowed to remain on the geomembrane surface.

### 3.11 WARRANTY

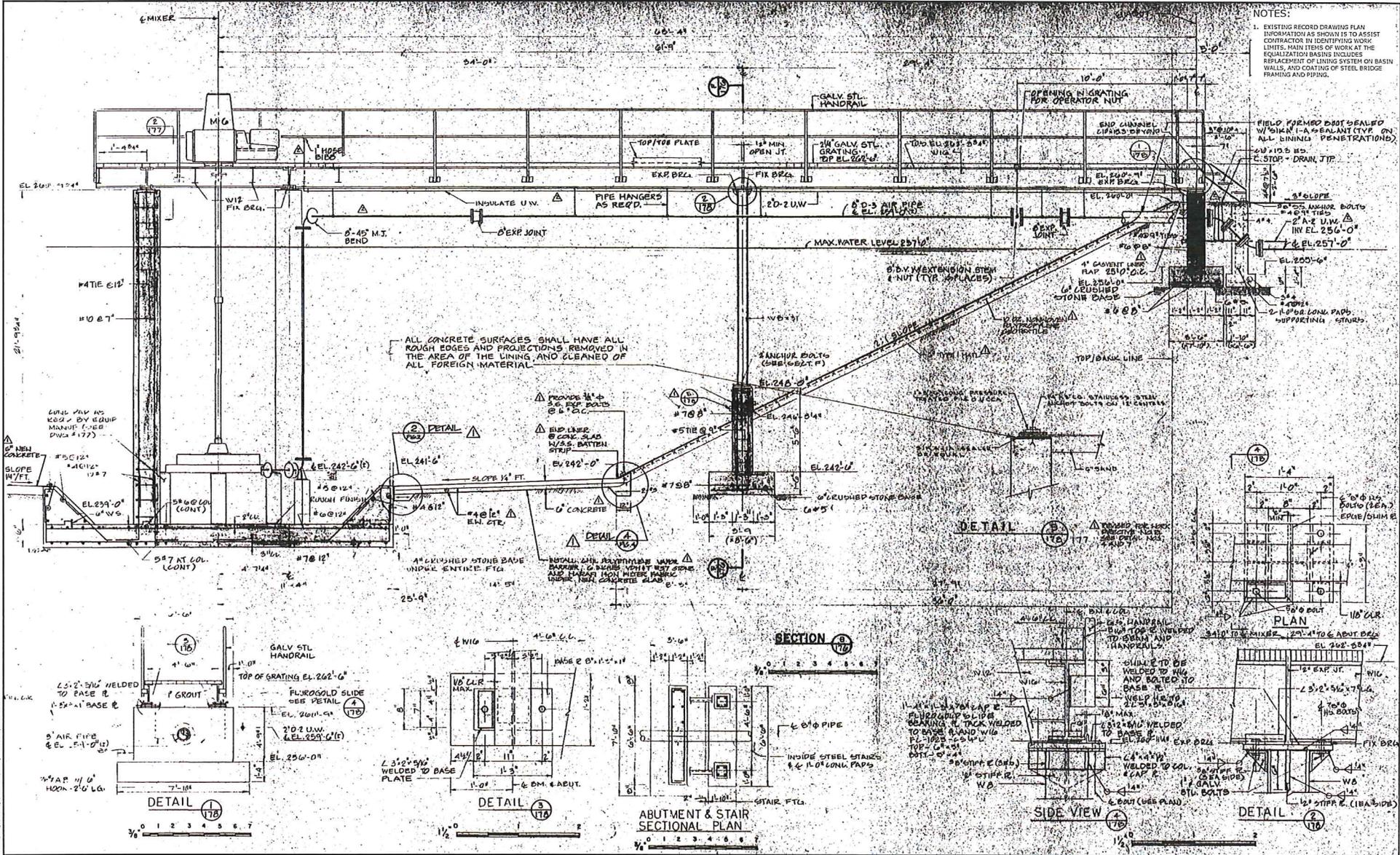
- A. Contractor shall provide a material and installation warranty.
- B. Geomembrane Installation Warranty:
  - a. The Installer shall guarantee the geomembrane installation against defects in the installation and workmanship for one year commencing with the date of final acceptance.

- END OF SECTION -









**NOTES:**

- EXISTING RECORD DRAWING PLAN INFORMATION AS SHOWN IS TO ASSIST CONTRACTOR IN IDENTIFYING WORK LIMITS. MAIN ITEMS OF WORK AT THE EQUALIZATION BASINS INCLUDES REPLACEMENT OF LINING SYSTEM ON BASIN WALLS, AND COATING OF STEEL BRIDGE FRAMING AND PILING.

ALL CONCRETE SURFACES SHALL HAVE ALL ROUGH EDGES AND PROJECTIONS REMOVED IN THE AREA OF THE LINING AND CLEANED OF ALL FOREIGN MATERIAL.

**DETAIL 1**

**PLAN**

**SIDE VIEW**

**ABUTMENT & STAIR SECTIONAL PLAN**

NO.	ISSUED FOR	DATE	BY	APPROVED

DESIGNED MCM  
 DRAWN MCM/ZMC  
 CHECKED JTH  
 PROJ. ENGR. JTH



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TOWN OF LEESBURG  
 LEESBURG, VIRGINIA  
 LEESBURG WATER POLLUTION CONTROL FACILITY  
 STRUCTURE RENOVATIONS

STRUCTURAL  
 EQUALIZATION BASINS A & B  
 SECTIONS AND DETAILS

DATE: SEPTEMBER 2018	R & S JOB NUMBER: 31113-032	TOWN CIP NUMBER: 18002	DRAWING NUMBER: S2
THE SCALE BAR SHOWN BELOW MEASURES ONE HUNDRED FEET ON THE ORIGINAL DRAWING.		SHEET 3 OF 19	



**NOTES:**

- CONTRACTOR SHALL REMOVE EXISTING BATTEN STRIPS DURING EXISTING LINER REMOVAL AND PROVIDE NEW BATTEN STRIPS FOR NEW REINFORCED GEOMEMBRANE LINER. BATTEN STRIPS SHALL BE TYPE 316 STAINLESS STEEL. BATTEN STRIPS SHALL BE 4 INCHES WIDE AND 3/8" THICK AND SHALL BE CONTINUOUS AROUND PERIMETER OF LINER. ANCHOR NEW BATTEN STRIPS INTO EXISTING CONCRETE WITH 3/8" DIAMETER STAINLESS STEEL EXPANSION ANCHORS AS MANUFACTURED BY HILTI OR EQUAL. ANCHORS SHALL BE SPACED AT 4 INCHES ON CENTER. NEW ANCHORS SHALL BE LOCATED TO NOT INTERFERE WITH EXISTING ANCHORS. DURING REMOVAL OF EXISTING LINER AND EXISTING BATTEN STRIPS, CONTRACTOR SHALL CUT, AND BURR BACK EXISTING ANCHORS A MINIMUM OF 1/2" BELOW THE SURFACE, RESULTING VOIDS SHALL BE PATCHED WITH AN EPOXY RESIN BINDER SUCH AS SIKADUR 32 OR SIMILAR.
- EXISTING BASIN LINER IS TORN AND NEEDS REPLACEMENT. CONTRACTOR SHALL COMPLETELY REMOVE LINER AT BOTH BASINS. CONTRACTOR SHALL COORDINATE WORK SEQUENCING AT EACH INDIVIDUAL BASIN WITH OWNER. FOLLOWING REMOVAL OF LINER, CONTRACTOR SHALL REMOVE ANY VEGETATION, ORGANIC MATTER, AND PROTRUDING ELEMENTS THAT COULD POTENTIALLY RUPTURE NEW LINER. THE EXISTING SOIL SUBGRADE SHALL BE INSPECTED AND REMEDIATED AS DIRECTED BY THE ENGINEER BEFORE INSTALLATION OF NEW LINER. ANY SOILS USED TO REMEDIATE EXISTING SUBGRADE SHALL MEET REQUIREMENTS OF SELECT FILL AS DEFINED IN SPECIFICATION SECTION 02200. UPON APPROVAL AND ACCEPTANCE OF SUBGRADE, CONTRACTOR SHALL FIRST INSTALL A NEW CUSHION GEOTEXTILE PER SPECIFICATION SECTION 02274. FOLLOWING INSTALLATION AND ACCEPTANCE OF CUSHION GEOTEXTILE, CONTRACTOR SHALL PROVIDE A 40 MIL (MIN) REINFORCED GEOMEMBRANE LINER MEETING THE REQUIREMENTS OF, AND INSTALLED PER, THE REQUIREMENTS OF SPECIFICATION SECTION 13350.
- NEW LINER SEAMS SHALL BE JOINED AS RECOMMENDED BY LINER MANUFACTURER. ALL WRINKLES IN LINER SHALL BE REMOVED, AND NEW LINER SHALL SIT TIGHTLY AGAINST SUBGRADE. BOTTOM EDGE OF NEW LINER SHALL BE SECURED WITH NEW BATTEN STRIPS, AND THE TOP OF THE LINER SHALL BE BURIED AND ANCHORED TO THE SUBGRADE. CONTRACTOR SHALL SUBMIT TO ENGINEER PROPOSED METHODS FOR JOINING SEAMS, AND ANCHORING LINER AT TOP AND BOTTOM OF SLOPED SURFACES. REFERENCE DRAWING 01 FOR BATTEN STRIP AND ANCHOR TRENCH DETAILS.
- CONTRACTOR SHALL REFERENCE DRAWING 517 FOR INFORMATION RELATED TO ANY CONCRETE REPAIRS THAT MAY BE ENCOUNTERED.



RUBBER LINER AT BOTTOM  
 DETAIL 7  
 NTS S4

REMOVE AND REPLACE LINER BATTEN STRIPS AT BOTTOM, SEE NOTE 1/54, FOR BATTEN STRIP DETAIL, SEE 3/01



RUBBER LINER BATTEN STRIPS  
 DETAIL 8  
 NTS S4



RUBBER LINER TEARS  
 DETAIL 9  
 NTS S4

TEARS IN EXISTING LINER, SEE NOTE 2/54



RUBBER LINER TEARS  
 DETAIL 10  
 NTS S4

VEGETATION TO BE REMOVED, SEE NOTE 2/54



RUBBER LINER LEAKING BATTEN STRIPS  
 DETAIL 11  
 NTS S4

BATTEN STRIPS AND ANCHORS TO BE REMOVED



RUBBER LINER AT CORNER  
 DETAIL 12  
 NTS S4

RUBBER LINER TO BE REPLACED, SEE NOTE 3/54

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PROJECT MGR.	JTH			
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TOWN OF LEESBURG  
 LEESBURG, VIRGINIA  
 LEESBURG WATER POLLUTION CONTROL FACILITY  
 STRUCTURE RENOVATIONS

STRUCTURAL  
 EQ BASIN PICTURES SHEET 2 OF 2

DATE:	SEPTEMBER 2018
THE SCALE BAR SHOWN BELOW	N & S JOB NUMBER 31111-032
MEASURES ON INCH LONG ON THE ORIGINAL DRAWING.	TOWN CIP NUMBER 18002 DRAWING NUMBER S4
	SHEET 5 OF 19





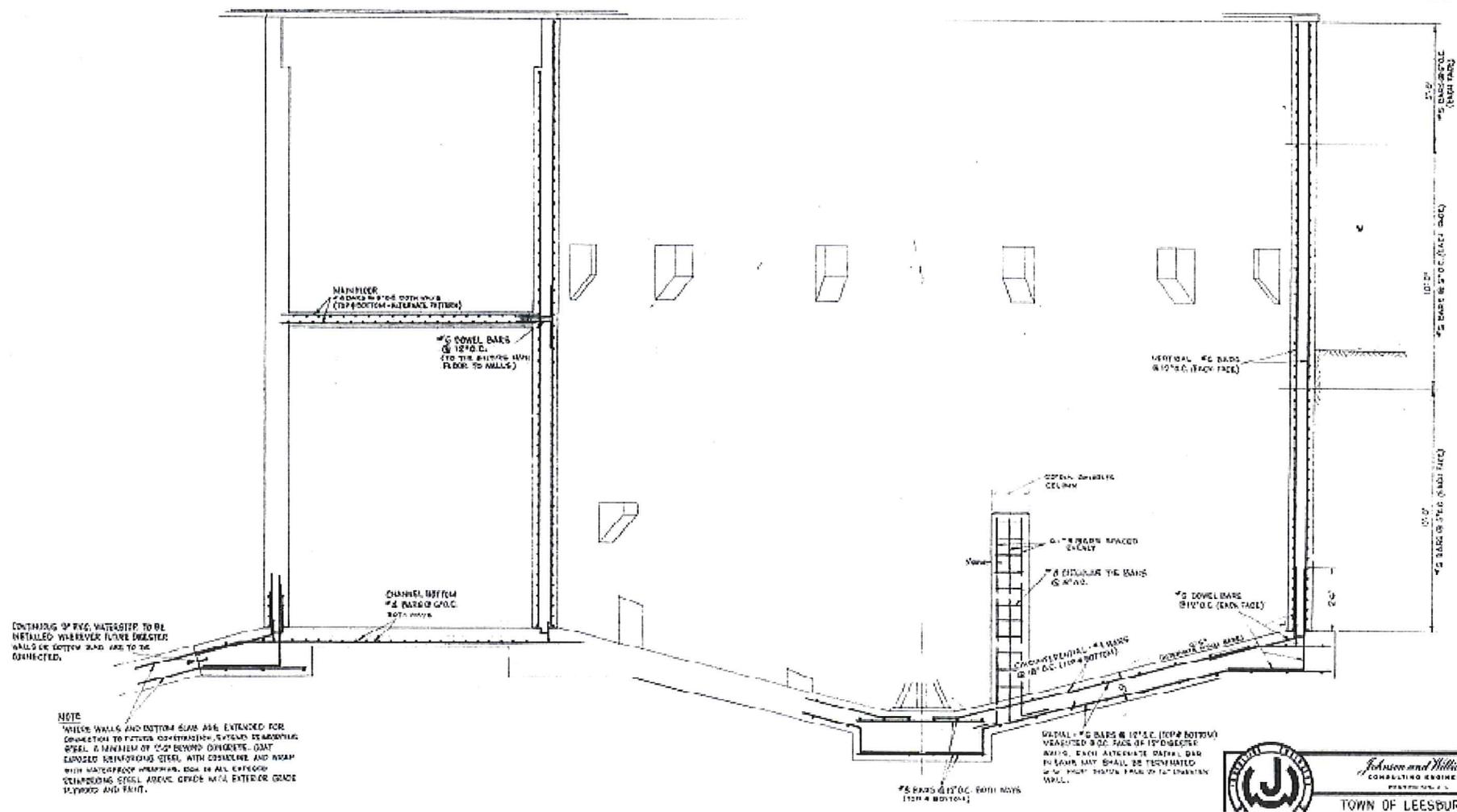






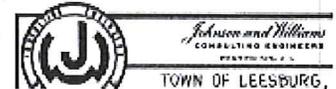
**NOTES:**

- DIGESTER B HAS AN INSIDE DIAMETER OF APPROXIMATELY 30 FEET, AND TANK WALLS ARE APPROXIMATELY 25 FEET IN HEIGHT. EXISTING DRAWINGS AS PROVIDED ARE FOR GENERAL REFERENCE ONLY. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS. MAIN ITEMS OF WORK AT DIGESTER B INCLUDES COATINGS ON STEEL ROOF CAP, CONCRETE REPAIRS ON INTERIOR & EXTERIOR WALLS, COATINGS ON INTERIOR CONCRETE AND COATINGS ON ALL INTERIOR STEEL PIPING AND FRAMING MEMBERS.



CONTINUING OF PVC WATERSTOP TO BE INSTALLED WHEREVER FUTURE DIGESTER WALLS OR BOTTOM SLAB ARE TO BE CONNECTED.

**NOTE**  
 WALLS AND BOTTOM SLAB ARE EXTENDED FOR CONNECTION TO FUTURE DIGESTERS. EXTENDS TO ADJOINING WALLS & MINIMUM OF 12" BEYOND DIGESTER. CAST EXPOSED REINFORCING STEEL WITH CONCRETE AND WRAAP WITH WATERPROOF MEMBRANE. DOB IN ALL EXTERIOR REINFORCING STEEL ABOVE GRADE WITH EXTERIOR GRADE FLUORIDED AND PAINT.



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 LEESBURG WATER POLLUTION CONTROL FACILITY  
 STRUCTURE RENOVATIONS

STRUCTURAL  
 DIGESTER B SECTION

DATE: SEPTEMBER 2018	R & S JOB NUMBER: 21111-032
THE SCALE BAR SHOWN BELOW MEASURES ONE INCH LONG ON THE ORIGINAL DRAWING.	TOWN CIP NUMBER: 18002
DRAWING NUMBER: S10	SHEET 11 OF 19



**NOTES:**

1. CONTRACTOR SHALL ABRASIVE BLAST CLEAN ALL INTERIOR PIPING, SUPPORT RODS AND CENTER CYLINDER TO ACHIEVE SURFACE PROFILE AS REQUIRED IN SPECIFICATION SECTION 09500. FOLLOWING BLAST CLEANING CONTRACTOR SHALL APPLY A NEW COATING SYSTEM TO ALL COMPONENTS.
2. CONTRACTOR SHALL ABRASIVE BLAST CLEAN INTERIOR STEEL ROOF CAP TO REMOVE ALL EXISTING COATINGS, FOLLOWING COATING REMOVAL AND ACHIEVING A SURFACE PROFILE AS REQUIRED IN SPECIFICATION SECTION 09500. CONTRACTOR SHALL APPLY A NEW COATING SYSTEM, NEW COATING SYSTEM SHALL BE AS SPECIFIED IN 09500 AND CONSIST OF A HIGH SOLIDS EPOXY.
3. CONTRACTOR SHALL BLAST CLEAN ALL INTERIOR CONCRETE WALLS AND FLOOR SLAB TO REMOVE ALL EXISTING COATINGS, FOLLOWING BLAST CLEANING OPERATIONS CONTRACTOR SHALL SCHEDULE A JOINT SURVEY WITH ENGINEER AND OWNER TO DETERMINE EXTENTS OF CONCRETE REPAIR WHICH MAY BE REQUIRED. ANTICIPATED CONCRETE REPAIRS INCLUDE: SPALL REPAIR AND CRACK REPAIR. REFERENCE CONTRACT DRAWING S17 FOR CONCRETE REPAIR DETAILS AND ESTIMATED QUANTITIES, FOLLOWING COMPLETION OF CONCRETE REPAIRS WHICH MAY BE REQUIRED CONTRACTOR SHALL APPLY A NEW COATING SYSTEM ON ALL CONCRETE SURFACES. SEE SPECIFICATION SECTION 09500 FOR COATING REQUIREMENTS.



INTERIOR CONCRETE WALLS AND PIPING

DETAIL 7  
HTS S12

BLAST CLEAN INTERIOR PIPING, SUPPORT RODS AND CENTER CYLINDER, SEE NOTE 1/S12



INTERIOR CONCRETE SLAB AND PIPING

DETAIL 8  
HTS S12



INTERIOR ROOF AND CONCRETE SIDEWALLS

DETAIL 9  
HTS S12

BLAST CLEAN INTERIOR ROOF CAP, SEE NOTE 2/S12



INTERIOR CONCRETE WALL COATING

DETAIL 10  
HTS S12



INTERIOR CONCRETE FLOOR SLAB

DETAIL 11  
HTS S12

BLAST CLEAN INTERIOR CONCRETE WALLS AND FLOOR SLAB, SEE NOTE 3/S12



INTERIOR ROOF CAP COATING

DETAIL 12  
HTS S12

BLAST CLEAN INTERIOR ROOF CAP, SEE NOTE 2/S12

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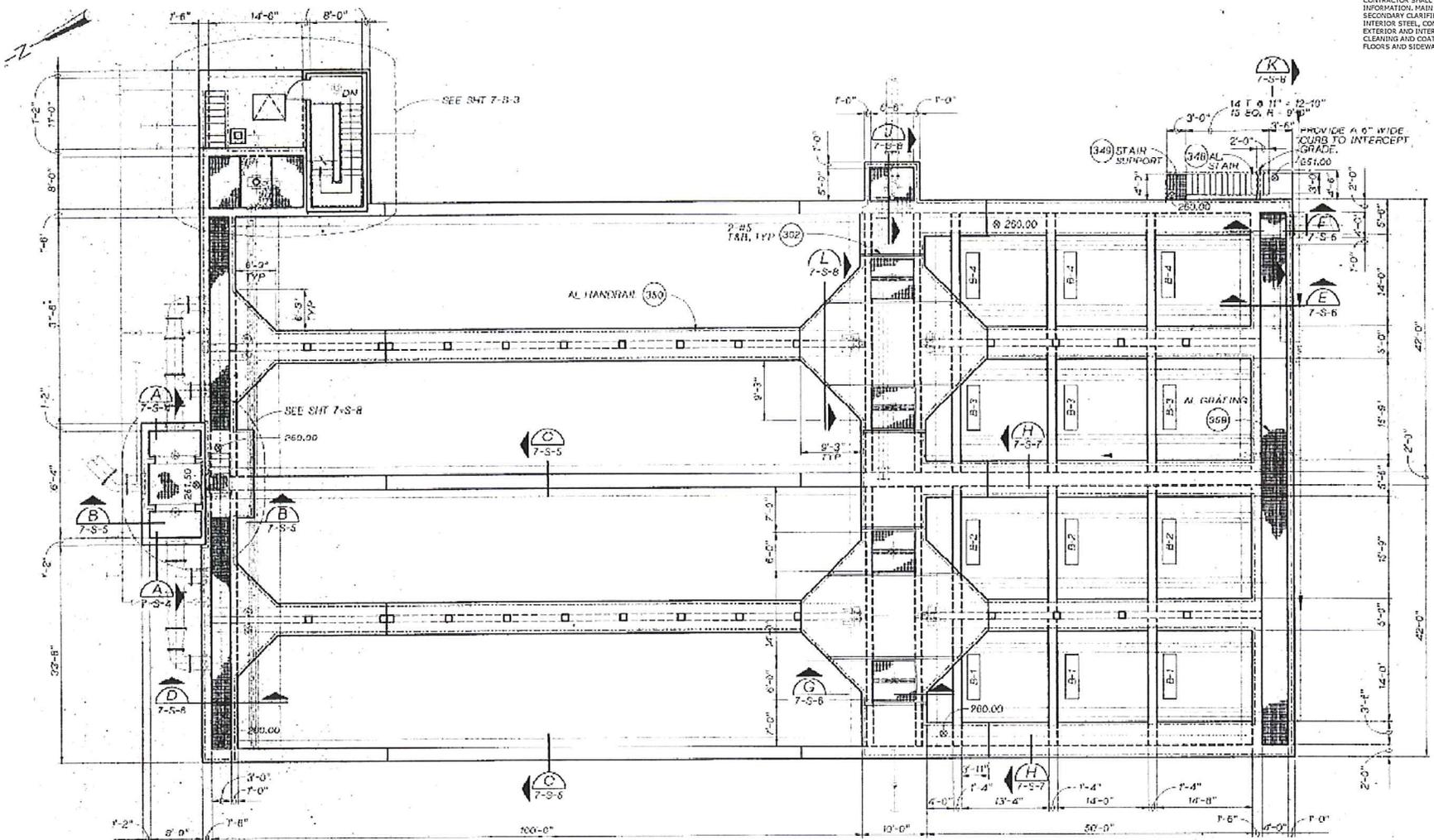
TOWN OF LEESBURG  
LEESBURG, VIRGINIA  
LEESBURG WATER POLLUTION CONTROL FACILITY  
STRUCTURE RENOVATIONS

STRUCTURAL  
DIGESTER B PICTURES SHEET 2 OF 2

DATE: SEPTEMBER 2018	
THE SCALE BAR SHOWN BELOW MEASURES ONE INCH LONG ON THE ORIGINAL DRAWING.	
H & S JOB NUMBER 31111-032	DRAWING NUMBER S12
TOWN CIP NUMBER 18002	
SHEET 13	OF 19

**NOTES:**

- DRAWINGS PROVIDED FOR SECONDARY CLARIFIER B ARE FOR CONTRACTOR REFERENCE. CONTRACTOR SHALL FIELD VERIFY ALL INFORMATION. MAIN ITEMS OF WORK AT SECONDARY CLARIFIER B INCLUDE COSSINGS OF INTERIOR STEEL, CONCRETE REPAIRS ON EXTERIOR AND INTERIOR WALLS, AND ELAST CLEANING AND COATING INTERIOR CONCRETE FLOORS AND SIDEWALLS.



**TOP PLAN**

**RECORD DRAWING**

Revised Drawn By: J. EISENBERG, Date:

DESIGNED	MCM			
DRAWN	MCM/ZMC			
CHECKED	JTH			
PROJ. ENGR.	JTH			
NO.	ISSUED FOR	DATE	BY	APPROVED



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TOWN OF LEESBURG  
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 LEESBURG WATER POLLUTION CONTROL FACILITY  
 STRUCTURE RENOVATIONS

STRUCTURAL  
 SECONDARY CLARIFIER B  
 OVERALL PLAN

DATE:	SEPTEMBER 2018
THE SCALE BAR SHOWN BELOW MEASURES ONE INCH LONG ON THE ORIGINAL DRAWING.	
N & S JOB NUMBER	31111-032
TOWN CIP NUMBER	18002
DRAWING NUMBER	S13
SHEET	14 OF 19



**NOTES:**

1. CONTRACTOR SHALL BLAST CLEAN ALL EXISTING STEEL FRAMING AROUND CATWALK AND INSIDE CLARIFIER TO ACHIEVE A MINIMUM SSFC-SP10 SURFACE PROFILE. FOLLOWING CLEANING CONTRACTOR SHALL INSTALL NEW COATING SYSTEM. NEW COATING SYSTEM SHALL BE AS REQUIRED BY 09900.
2. CONTRACTOR SHALL BLAST CLEAN INTERIOR CONCRETE WALLS AND FLOORS TO FULLY REMOVE ALL EXISTING COATINGS AND LANTAGE. UPON REMOVAL OF DEBRIS FROM CLEANING OPERATIONS, CONTRACTOR SHALL SCHEDULE A JOINT SURVEY WITH ENGINEER AND OWNER TO DETERMINE THE EXTENS OF CONCRETE REPAIRS THAT WILL BE REQUIRED PRIOR TO COATING INSTALLATIONS. CONTRACTOR SHALL REFERENCE CONTRACT DRAWING S17 FOR ESTIMATED CONCRETE REPAIR DETAILS AND QUANTITIES. CONTRACTOR SHALL REFERENCE SPECIFICATION SECTION 09900 FOR COATING REQUIREMENTS.
3. CONTRACTOR SHALL REFERENCE DRAWING S17 FOR CONCRETE REPAIR DETAILS AND ESTIMATED QUANTITIES. ANTICIPATED CONCRETE REPAIRS INCLUDES SPALL REPAIRS ON INTERIOR WALLS, CRACK REPAIR ON INTERIOR WALLS AND SLABS, AND CRACK REPAIR ON EXTERIOR WALLS.



INTERIOR STEEL FRAMING

DETAIL 1  
NTS S15



INTERIOR STEEL FRAMING

DETAIL 2  
NTS S15



INTERIOR CONCRETE WALLS AT FRP WEIRS

DETAIL 3  
NTS S15

BLAST CLEAN INTERIOR STEEL FRAMING SEE NOTE 1/S15

BLAST CLEAN INTERIOR CONCRETE WALLS, SEE NOTE 2/S15



INTERIOR CONCRETE WALL SPALLING

DETAIL 4  
NTS S15



INTERIOR CONCRETE WALL CRACKING

DETAIL 5  
NTS S15

CONCRETE CRACK REPAIR, SEE NOTE 3/S15



COATING FAILURES AT CONCRETE FLOOR

DETAIL 6  
NTS S15

BLAST CLEAN INTERIOR CONCRETE FLOORS NOTE 2/S15



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STRUCTURAL  
SECONDARY CLARIFIER B PICTURES SHEET 1 OF 2

THE SCALE BAR SHOWN BELOW MEASURES ONE INCH LONG ON THE ORIGINAL DRAWING.	DATE: SEPTEMBER 2018
TOWN CIP NUMBER: 18002	H & S JOB NUMBER: 31111-032
DRAWING NUMBER: S15	
SHEET 16 OF 19	



COATING FAILURES AT CONCRETE FLOOR

DETAIL 7  
NTS S16



INTERIOR CONCRETE WALL COATING BLISTERING

DETAIL 8  
NTS S16



INTERIOR CONCRETE WALL COATING DELAMINATION

DETAIL 9  
NTS S16

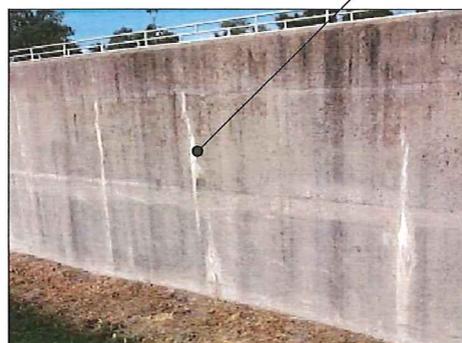
BLAST CLEAN AND REMOVE ALL EXISTING COATINGS, SEE NOTE 2/S16

CONCRETE CRACKING SEE NOTE 1/S16



BASE SLAB WITH SLUDGE MECHANISMS

DETAIL 10  
NTS S16



EXTERIOR CONCRETE WALL CRACKING

DETAIL 11  
NTS S16



EXTERIOR CONCRETE WALL CRACKING

DETAIL 12  
NTS S16

NOTES:

- CONTRACTOR SHALL REFERENCE DRAWING S17 FOR CONCRETE REPAIR DETAILS AND ESTIMATED QUANTITIES. ANTICIPATED CONCRETE REPAIRS INCLUDE SPALL REPAIRS ON INTERIOR WALLS, CRACK REPAIR ON INTERIOR WALLS AND SLABS, AND CRACK REPAIR ON EXTERIOR WALLS. PRIOR TO COMMENCING WITH CONCRETE REPAIRS, CONTRACTOR SHALL SCHEDULE A JOINT SURVEY WITH ENGINEER AND OWNER TO DETERMINE THE EXTENTS OF REPAIRS THAT WILL BE REQUIRED.
- CONTRACTOR SHALL BLAST CLEAN INTERIOR CONCRETE WALLS AND FLOORS TO FULLY REMOVE ALL EXISTING COATINGS AND LANTANCE. UPON REMOVAL OF DEBRIS FROM CLEANING OPERATIONS, CONTRACTOR SHALL SCHEDULE A JOINT SURVEY WITH ENGINEER AND OWNER TO DETERMINE THE EXTENTS OF CONCRETE REPAIRS THAT WILL BE REQUIRED PRIOR TO COATING INSTALLATIONS. CONTRACTOR SHALL REFERENCE CONTRACT DRAWING S17 FOR ESTIMATED CONCRETE REPAIR DETAILS AND QUANTITIES. CONTRACTOR SHALL REFERENCE SPECIFICATION SECTION 09300 FOR COATING REQUIREMENTS.

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STRUCTURE RENOVATIONS

STRUCTURAL  
SECONDARY CLARIFIER B PICTURES SHEET 2 OF 2

DATE:	SEPTEMBER 2018
THE SCALE BAR SHOWN BELOW MEASURES ONE INCH LONG ON THE ORIGINAL DRAWING.	N & S JOB NUMBER 31111-032
TOWN CIP NUMBER 18002	DRAWING NUMBER S16
SHEET 17 OF 19	





APPENDIX B

**IFB NO. 500640-FY19-17**

**CIP NO. 18002**

**WATER POLLUTION CONTROL FACILITY STRUCTURE RENOVATIONS**

**BIDDER QUALIFICATION STATEMENT**

GENERAL INFORMATION ABOUT BIDDER

1. A. Identify years BIDDER has been in business as a:  
General Contractor: From \_\_\_\_\_ to \_\_\_\_\_;  
Subcontractor: From \_\_\_\_\_ to \_\_\_\_\_;
- B. Identify years your organization has been in business under its present name:  
From: \_\_\_\_\_ to \_\_\_\_\_.
- C. Indicate other or former names under which your organization has operated:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
2. BIDDER'S Virginia General Contractor's License Number: \_\_\_\_\_  
If not currently licensed in Virginia indicate BIDDER'S ability to acquire same prior to BID submission on a separate sheet.
3. List the categories of work that your organization normally performs with its own forces:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
4. Identify the portions of the WORK as identified herein that are expected to be subcontracted:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

5. Identify the construction experience of the BIDDER'S principals.

Principal's Name	Present Position	Years of Construction Experience**	Last Employer	Last Position

\*\*Describe on separate pages the specific experience on projects most similar in size, scope and complexity to this project.

6. Give the complete name, address and telephone number under which the BIDDER does business and is seeking prequalification:

Name: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Telephone No: \_\_\_\_\_

7. Submit a copy of the BIDDER'S current organization chart showing numbers of employees by discipline and project and the names and titles down through project field superintendents.

8. Total Bonding Capacity \$\_\_\_\_\_. Available bonding capacity \$\_\_\_\_\_. Attach certified document from BIDDER'S regular bonding company indicating availability of bid, performance and payment bonds for this project corporate surety approved on U.S. Treasury list.

9. Indicate name, firm and telephone number for the following financial references:

A. Bonding Company  
 Name of Contact Person: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Telephone No.: \_\_\_\_\_

B. Bank  
 Name of Contact Person: \_\_\_\_\_  
 Firm: \_\_\_\_\_  
 Telephone No.: \_\_\_\_\_

C. Insurance Company

Name of Contact Person: \_\_\_\_\_

Firm: \_\_\_\_\_

Telephone No.: \_\_\_\_\_

10. State the total worth of work in progress and under contract

(a) total: \$ \_\_\_\_\_,

(b) of the type called for in this project: \$ \_\_\_\_\_.

11. State the average annual amount of construction work performed during the last five years

(a) total: \$ \_\_\_\_\_,

(b) of the type called for in this project: \$ \_\_\_\_\_.

12. Claims and Suits: (If the answer to any of the questions below is yes, please attach a summary of all relevant details).

A. Has your organization had judgments entered against it for the breach of any construction contract? Yes \_\_\_\_\_ No \_\_\_\_\_

B. Has any court or arbitrator ever ruled that your organization was in substantial non-compliance with the terms and conditions of a construction contract with another public body on a job comparable in size, scope or complexity to the project which is the subject of this pre-qualification? Yes \_\_\_\_\_ No \_\_\_\_\_

C. Has any officer of your organization been convicted within the past five (5) years of a felony involving moral turpitude regarding the procurement of or performance of a construction contract? Yes \_\_\_\_\_ No \_\_\_\_\_

13. List any citation received for violation of failure to abate safety violations or construction safety violations received in the past three years of (a) the United States Occupational Safety and Health Administration; (b) the Virginia Occupational Safety and Health Administration; (c) the occupational and health plan of any other state.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

14. Has your firm, in either its present name or former name, filed for bankruptcy under the United State

Bankruptcy Act within the past seven years?

Yes\_\_\_\_\_

No\_\_\_\_\_

15. Complete the form attached as Attachment A-1 for each of the projects completed by your organization in the last five years which were most closely comparable in size and complexity to the work described in the CONTRACT DOCUMENTS.

\_\_\_\_\_  
Bidder's Name

\_\_\_\_\_  
Signature

BIDDER QUALIFICATION FORM

PAST PROJECTS  
(All Similar Work for the Last 5 Years)

1. Name of Project: \_\_\_\_\_  
Contract No.: \_\_\_\_\_  
Project No. \_\_\_\_\_
  
2. Bidder Name: \_\_\_\_\_  
Project Manager Name: \_\_\_\_\_  
Superintendent Name: \_\_\_\_\_
  
3. Owner Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
\_\_\_\_\_  
Contact Person: \_\_\_\_\_  
Telephone No.: \_\_\_\_\_
  
4. Engineer Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
\_\_\_\_\_  
Contact Person: \_\_\_\_\_  
Telephone No.: \_\_\_\_\_
  
5. Contract Dates:      Started: \_\_\_\_\_  
                                 Contractual Completion: \_\_\_\_\_  
                                 Actual Completion: \_\_\_\_\_  
                                 Final Payment Received: \_\_\_\_\_
  
6. Description of Project: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
  
7. Contract Value: Original:                    \$ \_\_\_\_\_  
                                 Final:    \$ \_\_\_\_\_  
                                 Value of Change Orders to Date: \$ \_\_\_\_\_  
                                 Outstanding Claims to Date:      \$ \_\_\_\_\_

8. Legal action or arbitration resulting in finding of substantial non-compliance with or breach of contract by your organization?

Yes \_\_\_\_\_ No \_\_\_\_\_  
*If yes, explain on additional sheet.*

9. Name of Bonding Company: \_\_\_\_\_  
Address of Bonding Company: \_\_\_\_\_

Contact Person: \_\_\_\_\_

Telephone No.: \_\_\_\_\_

Bond Nos.: \_\_\_\_\_

10. Major Subcontractor: \_\_\_\_\_  
Address: \_\_\_\_\_

11. Major Supplier: \_\_\_\_\_  
Address: \_\_\_\_\_

Contact Person: \_\_\_\_\_

Telephone No.: \_\_\_\_\_

12. What percent of work \_\_\_\_\_ % was related to the type of work called for in this project?

\_\_\_\_\_  
Applicant's Name

\_\_\_\_\_  
Signature

**END OF SECTION**