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ADDENDUM NO. 3

Date: July 29, 2022
Project Name: Wilbarger Creek Regional Wastewater Treatment Facility (RWWTF) Phase 1
Construction – UV Disinfection System Pre-Selection Package
Owner: City of Pflugerville
Garver Project No. 19W07191

This addendum shall be a part of the Plans, Contract Documents, and Specifications to the same extent as though it were originally included therein, and it shall supersede anything contained in the Plans, Contract Documents, and Specifications with which it might conflict. This addendum, including all attachments, shall become part of the Contract and all provisions of the Contract shall apply thereto. The time provided for completion of the Contract has not been changed as noted in this addendum. Acknowledgment of receipt of this addendum must be noted in the appropriate section of the Proposal and Bid Schedule and included with the Contract Documents.

I. SPECIFICATIONS

1. Remove the following specifications sections in their entirety, and replace with the same, attached hereto:
 - a. 00 00 10 Table of Contents
 - b. 02 Instructions to Offerors
 - c. 03.1 Attachment A Contract Time
 - d. 08.1 Insurance
 - e. 10 Notice to Proceed
 - f. 11 Standard CIP Procurement Agreement
 - g. 44 44 73 UV Disinfection Equipment
2. Remove the following specifications sections in their entirety:
 - a. 15 Pflugerville CIP General Conditions
3. Add the following specification sections in their entirety, attached hereto:
 - a. 08.2 Insurance Requirements
 - b. 15 Pflugerville CIP General Conditions for Procurement Contracts

By: Greg T. Swoboda

Greg Swoboda, P.E.
Project Manager



Digitally Signed on 7/29/2022

Attachments:

A. Specifications

1. 00 00 10 Table of Contents – For Addendum No. 3
2. 02 Instructions to Offerors – For Addendum No. 3
3. 03.1 Attachment A Contract Time – For Addendum No. 3
4. 08.1 Insurance – For Addendum No. 3
5. 08.2 Insurance Requirements – For Addendum No. 3
6. 10 Notice to Proceed – For Addendum No. 3
7. 11 Standard CIP Procurement Agreement – For Addendum No. 3

8. 15 Pflugerville CIP General Conditions for Procurement Contracts – For Addendum No. 3
9. 44 44 73 UV Disinfection Equipment – For Addendum No. 3



END OF ADDENDUM NO. 3

**CITY OF PFLUGERVILLE
WILBARGER CREEK REGIONAL WASTEWATER TREATMENT FACILITY (RWWTF)
PHASE 1 CONSTRUCTION**

UV DISINFECTION SYSTEM PRE-SELECTION PACKAGE

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CITY OF PFLUGERVILLE INSTRUCTIONS TO OFFERORS

1. PROPOSAL FORMS: All Offerors shall use only the proposal form furnished, which will state the description of the proposed work, approximate quantities of the various items of work to be performed and materials to be furnished for which unit bid prices are asked. Terms not defined herein shall have the same meanings assigned thereto in the City's General Conditions.
2. ESTIMATES OF QUANTITIES: The quantities listed in the proposal form shall be considered as approximate and will be used for comparison of proposals. Payment to the selected Offeror will be made only for the actual quantities of work performed or materials furnished in accordance with the contract, and it is understood that the quantities may be increased or decreased as provided in the General Conditions without invalidating the unit bid prices.
3. PLAN SPECIFICATIONS AND SITE OF WORK: Before submitting a proposal, the Offeror shall examine the Project's Contract Documents carefully, including without limitation, the proposal, plans, specifications, special conditions of agreement, special provisions, and site of the proposed work. Offeror shall satisfy itself as to the character, quality and quantities of work to be performed and materials to be furnished. The submission of a proposal by an Offeror shall be conclusive evidence that offeror has complied with these requirements. Claims for additional compensation due to variations between conditions actually encountered in construction and as indicated by the plans will not be allowed unless otherwise authorized by the Contract Documents.
4. PREPARATION OF PROPOSAL AND BID PACKAGE: Offeror must submit their proposal on the form furnished. The blank spaces for each item in the proposal form shall be correctly filled in, by writing in words and numerals, in ink. The Offeror must submit a price for each item in the proposal. In case of conflict between words and numerals, the words shall govern unless otherwise addressed in the General Conditions. The proposal shall be executed with ink in the complete and correct name of the individual, firm or corporation making the proposal and signed by the person or persons authorized to bind the individual, firm or corporation. The Offeror shall properly acknowledge all addenda in the spaces provided therefore on the proposal form.

The following forms shall be completed in their entirety and included with the bid package:

1. City of Pflugerville Proposal and Bid Schedule
2. City of Pflugerville State of Texas Tax Code, Chapter 151 Compliance Certificate
3. Compliance to Texas State Law Regarding Nonresident Bidders
4. Conflict of Interest Questionnaire
5. City of Pflugerville Non-Collusion Certificate
6. City of Pflugerville Bid Bond

The Offeror shall provide confirmation of warranty in compliance with requirements of the specifications on company letterhead.

Questions regarding proposals shall be submitted electronically at <https://www.civcastusa.com/project/62d850c7d0e119613a247255/questions>. The deadline



for such requests is **3:00 p.m. on August 1, 2022**. The person submitting the request will be responsible for its prompt delivery. Responses to questions will be made within CivCast, generally; some questions may be addressed as addenda as well.

5. **REJECTION OF PROPOSALS:** Proposals containing any omission, alteration of form, additions or conditions not called for, incomplete proposals, or proposals otherwise regular, but that are not accompanied by acceptable proposal security will be considered irregular and may be rejected. In any case of ambiguity or lack of clearness in stating the prices in the proposal, the Owner reserves the right to consider the most advantageous construction thereof, or to reject the proposal. Unreasonable or unbalanced unit bid prices will be cause to reject any proposal.
6. **BID SECURITY:** Each proposal must be accompanied by a cashier's or certified check, payable to the City of Pflugerville or an acceptable bid bond in the amount of not less than five percent (5%) of the total amount bid, as a guarantee that Offeror will enter into a contract and furnish bonds, if required, on the forms provided within ten (10) days after Notice of Award of the contract.
7. **DELIVERY OF PROPOSAL:** In addition to one (1) physical copy of the completed proposal, identical copies of the completed proposal shall be provided in two (2) USB flash drives delivered in a sealed envelope clearly identified on the outside as a proposal for City of Pflugerville Wilbarger Creek Regional Wastewater Treatment Facility – UV Disinfection System Pre-Selection and shall be delivered to City of Pflugerville City Hall, 100 East Main, Suite 100, Pflugerville, TX 78660 either by person or by mail. Acknowledgement of all issued Addenda shall be made on the Proposal Form. Proposals will not be considered unless submitted on or before the time designated in the Invitation for Proposals. Proposals will be acknowledged as received at that time and place. Proposals received after that time will be returned unopened.
8. **WITHDRAWAL OF PROPOSALS:** Any Offeror, upon written request, will be permitted to withdraw the Offeror's proposal not later than the time set for the opening thereof. No Offeror may withdraw a proposal within sixty (60) days after the date of the opening of proposals.
9. **DISQUALIFICATION OF OFFERORS:** The following causes may be considered as sufficient for the disqualification of an Offeror and the rejection of the Offeror's proposal:
 - a. Submittal of more than one proposal for the same work from an individual, firm, partnership or corporation, or affiliate or subsidiary thereof.
 - b. Evidence of collusion among Offerors or evidence of impermissible ex parte communications initiated by the Offeror to City officials or employees not in accordance with the terms of the City's proposal processes.
 - c. Poor performance in the execution of work under previous contracts.
 - d. For being in arrears on existing contracts, in litigation with Owner, or

having defaulted on a previous contract.

- e. An Offeror, proposer, or other person interested in receiving the award of a contract from the city or entering into any other transaction with the city shall be deemed non-responsible and shall be denied any contract or other transaction with the city if that Offeror, proposer, or other person is indebted to the city or is delinquent in any payment owed to the city under a contract or other legal obligation, or otherwise is not eligible to contract with the city under Chapter 38 of the City’s adopted Code of Ordinances.

10. EVALUATION OF PROPOSALS:

- a. The City will evaluate and rank each Proposal with respect to the selection criteria within 45 days after the date Proposals are received using procurement procedures that conform to Texas Government Code Chapter 2269. In evaluating Proposals, the City will consider whether or not the Proposals comply with the prescribed requirements, and such alternatives, prices, and other data, as may be requested in the Proposal Form or may be requested from Offerors prior to a Notice of Award.
- b. The City will consider the proposed Contract Price, proposed Contract Times, qualifications of the Offerors and their Subcontractors, and other factors as described in this Article to determine which Proposal offers the best value to the Owner. The Proposals will be evaluated for each rating category with the maximum point value for each category as indicated in the following Table.

Rating Category	Evaluation Criteria	Point Value
A	Phase 1 UV Disinfection System Goods and Services Capital Costs	35
B	Phase 2 UV Disinfection System Goods and Services Capital Costs	15
C	Phase 1 Annual Operation and Maintenance Cost	10
D	Phase 2 Annual Operation and Maintenance Cost	10
E	Total Head Loss Across the UV Banks at Maximum Phase 2 Flow Rate	5
F	Volume of Each Channel	10
G	Offeror-Led Workshop	10
H	Previous Experience	5
	Total	100

- c. The proposed Contract Price and proposed Contract Time are to be provided in Section 03 “Proposal and Bid Schedule”. Points will be awarded for each rating category.
 - a. The Offeror shall provide the price for the goods and services for the Phase 1 UV Disinfection System Goods and Services Capital Costs (Contract Price). This is Item A from Attachment C as calculated in 4A

from Attachment D.

- i. The Contract Price will be used in the best value determination and will be the Contract Price awarded unless this amount is changed during negotiations between the selected Offeror and City. Negotiations, if any, will only be for changes in scope or the terms and conditions of the Procurement Contract. The Contract Price will be adjusted according to the CPI index as indicated in Attachment C.
- b. The Offeror shall provide the estimated price for the Phase 2 UV Disinfection System Goods and Services Capital Costs as specified. This is Item 5A from Attachment D.
- c. The Offeror shall provide the total costs for operations and maintenance of Phase 1 and Phase 2 equipment. This is Item 13L and 20L from Attachment D, respectively.
- d. The Offeror shall provide maximum Phase 2 head loss at peak Phase 2 design flow. This is Item 1Y from Attachment D.
- e. The Offeror shall provide the minimum channel volume for the UV Disinfection System equipment. This is Item 1T from Attachment D.
- d. The City may conduct such investigations as it deems necessary to establish the responsibility, qualifications, and financial ability of consultants, individuals, or entities proposed to furnish parts of the Work in accordance with the Contract Documents.
- e. The City will provide the selected Offerors an opportunity to demonstrate they can provide the best value to the City for this Project at a formal interview (Offeror-Led Workshop). At a minimum, one representative of the Offeror shall attend in person.
 - a. The workshops are currently planned to occur on **Monday, August 8th** and will be approximately 1-hour in duration with 30-minutes allotted for a formal presentation and 30-minutes for questions and open forum discussion. The presentation should include, but not be limited to:
 - i. Background information describing the system being proposed.
 - ii. A detailed overview of the design being proposed including equipment and electrical layouts. In addition to describing the Phase 1 system being proposed, this overview should describe how the system is anticipated to be expanded to meet Phase 2 flow requirements.
 - iii. A detailed summary of all equipment and appurtenances

(including description and quantity) included with the proposal.

- iv. A list of spare parts included with the proposal.
 - v. A summary of anticipated operations and maintenance costs associated with the proposed system (Phase 1 and Phase 2).
 - vi. A summary of references provided for item 10.f of this Section. If references are provided for a previous generation of equipment, the Offeror will be expected to describe similarities and differences between equipment generations.
- b. Failure to participate in the workshop will result in disqualification from consideration of the Project.
- f. The Offeror shall provide references of at least three (3) operating systems in Texas using the identical generation of UV Disinfection System equipment provided in the Offeror's Proposal. If the minimum number of references are not available for the proposed generation of equipment, the Offeror may instead provide references of at least five (5) operating systems in Texas using the prior generation of UV Disinfection equipment.
- a. The references shall include a brief summary (not to exceed two pages) of the UV Disinfection System's design criteria and operation history, indicating compliance with design requirements and TCEQ regulations.
 - b. In the case where the Offeror provides references for a previous generation of equipment, the Offeror shall provide a comprehensive comparison between the two generations of equipment fully detailing similarities and differences between equipment including UV Lamps, UV Banks, and Control Panels.
- g. Submission of a Proposal indicates the Offeror's acceptance of the evaluation technique and methodology as well as the Offeror's recognition that some subjective judgements must be made by the City during the evaluation.
- h. Offerors are advised that the calculated operating cost will be used in the evaluation of Bids. The Offeror assumes responsibility for the accuracy of the calculations provided in Attachment D. The Offeror's calculations will be reviewed by the City and/or the Engineer who may request additional information to verify calculations that appear abnormal or erroneous. The lack, incompleteness, or inaccuracy of data or calculations furnished by the Offeror as required herein may be considered as a non-responsive Bid and constitute basis for Bid rejection.
11. AWARD OF CONTRACT: The procurement agreement that will be executed between the City and the selected Offeror will be assigned to the General Contractor (Prime Contractor) that will construct the Wilbarger Creek Regional Wastewater Treatment

Facility project (Prime Project). The assignment will occur concurrently with the execution of the construction agreement by the City with the Prime Contractor. All payments to the selected Offeror will be provided by the Prime Contractor.

The Offeror selected for Award of Contract will be the Offeror whose offer provides the best value to the City based on the selection criteria and the ranking. The City is not bound to accept the lowest priced Proposal if that Proposal is not in the best interest of the City as determined by the City. If the City determines that it is unable to reach an agreement satisfactory to the City with the selected Offeror, then the City will terminate discussions with the selected Offeror and proceed to the next Offeror in order of selection ranking until an agreement is reached or the Owner has rejected all Proposals.

- a. The City reserves the right to reject any and all Proposals, including non-conforming, non-responsive, or conditional Proposals. The Owner may also reject the Proposal of any Offeror if the Owner believes that it would not be in the best interest of the Owner to make an award to that Offeror. The Owner reserves the right to waive all formalities.
- b. More than one Proposal for the same Work from an individual or entity under the same or different names will not be considered. Reasonable grounds for believing that any Offeror has an interest in more than one Proposal for the Work will be cause for disqualification of that Offeror and the rejection of all Proposals in which that Offeror has an interest.
- c. Evaluation scoring will be made public no later than 7 days after Notice of Award.

12. EXECUTION OF CONTRACT AND BONDS: The contract will include the Invitation for Proposals, Instructions to Offerors, Offeror's Proposal, any Addenda issued, and all other Contract Documents specified within the City of Pflugerville Standard Capital Improvement Project (CIP) Procurement Agreement between City and Contractor. Within ten (10) days after issuance of a Notice of Award of the contract, the successful Offeror shall execute the contract and furnish City of Pflugerville with a Performance Bond and, if applicable, labor and materials payment bond, each in the full amount of the contract price. The bonds are to be furnished as a guarantee of the faithful performance of the work for the protection of the Owner against defective workmanship or materials, and as a guarantee that Offeror shall pay all sums for labor and materials incorporated therein.
13. APPROVAL OF CONTRACT: Upon receipt of the selected Offeror's executed contract and required security bonds, the contract will be executed by the Owner and delivered to the selected Offeror. The contract will not be binding upon the Owner until it has been executed by the Owner and delivered to the selected Offeror.
14. FAILURE TO EXECUTE CONTRACT AND BONDS: Should the Offeror to whom the contract is awarded refuse or neglect to execute the contract and furnish the required bonds within ten (10) days after issuance of the Notice of Award of the contract, the bid security shall become the property of the Owner, not as a penalty but as liquidated damages.
15. PURSUING THE WORK: The selected Offeror shall commence work on or before, if

agreed to by the City, a date to be specified in a written Notice to Proceed issued by the Owner and shall substantially complete the work within the number of days set forth in the Proposal, in accordance with the Contract Documents.

16. PROPOSAL AND BID SCHEDULE: A proposal and bid schedule is included in Section 03 “Proposal and Bid Schedule” and shall be completed by the Offeror in conjunction with the Proposal. Information regarding the Proposal are as follows:
- a. Attachment A Contract Time: The Offeror shall deliver the goods as per the project schedule. Include a statement in the proposal.
 - b. Attachment B Design Criteria: Attachment B presents design criteria for the UV Disinfection System.
 - c. Attachment C Proposal: The Offeror shall provide all information in this schedule for a UV Disinfection System designed to meet disinfection requirements defined in Attachment B Design Criteria.
 - a. Item A – Phase 1 UV Disinfection System Goods and Services Capital Costs (Contract Price): The Offeror shall provide the Price for the goods and services for the Phase 1 UV Disinfection System as specified. This is Item 4A from Attachment D.
 - d. Attachment D Worksheet Form: The Offeror shall provide all information in this form. This form shall be used as a reference when completing Attachment C.
17. DESIGN CALCULATIONS: Calculations and equipment sizing and selection as described in the following Paragraphs shall be provided in a word-searchable PDF with all major subsections bookmarked for simplified navigation. All calculations shall be provided in English units, unless otherwise specified. The Proposal shall include the following information, prepared and presented as specified.
- a. **Responsibility and Subcontractors:** Offerors shall designate who shall be responsible for fabrication of Units, names of major equipment manufacturers, and design of the electrical, controls and operator interface for completion of the project. Qualifications of proposed subcontractors, if used, shall be submitted with the Bid.
 - b. **Drawings:** Offerors shall prepare and include with the Proposal the drawings specified below. All drawings shall be generated in AutoCAD and show the equipment and floor space and height requirements within a designated area for the specified capacity. 3D models of all equipment including UV banks and control panels shall be provided.
 - a. Plan, elevation, and arrangement drawings of each of the UV Disinfection System components, detailing physical dimensions, UV channels, channel grating, UV banks, cable trays, control panels, and all

other ancillary equipment. The plan, elevation, and arrangement drawings shall include considerations for Owner requirements within the UV Disinfection area.

- b. Hydraulic, pneumatic, and electrical process and instrumentation diagrams for the System. Diagrams and schematics shall detail the equipment supplied by the Offeror.
- c. Estimated floor loads of all equipment as shipped and during operation may be provided in the Proposal drawings or in the shop drawing submittals.
- d. Clearances required above the equipment and other ancillary equipment such as hoists and other lifting devices. Maintenance clearance around equipment will be illustrated as well.

c. **Capital Costs:** Offeror shall calculate capital costs of the Phase 1 UV Disinfection System for the following items as specified:

- a. Goods and Services: The Contract Price for Goods and Services shall be based upon the requirements of the Bid Documents.
- b. The Contract Price for the provision of Goods and Services shall be entered into the Bid Proposal.

Approximate Phase 2 capital costs shall be calculated according to Attachment D of the Proposal by multiplying the Phase 1 capital cost by the ratio of lamps added in Phase 2 to total number of lamps in Phase 1 for the UV Disinfection System.

- d. **Operation and Maintenance Cost:** Offerors shall calculate the operation and maintenance costs for all equipment for the Phase 1 and Phase 2 UV Disinfection Systems by following the instructions detailed in Attachment D of the Proposal.
- e. **Design Parameters:** Design parameters for all equipment as specified in the individual specification sections. This information shall be provided in the form of printed documentation in addition to any required inputs into the Bid Proposal.
- f. **Equipment:** Proposed list of all equipment with sufficient specifications to describe the equipment offering.
- g. **Functional Description:** A functional description of System including control logic, flow and level management, and system cleaning requirements.
- h. Offeror shall specify the sizing and materials of construction and provide a

list of the Offeror-supplied equipment and appurtenances to be located by the Prime Contractor.

- i. **Contacts:** Name and address of the factory authorized service organization nearest to the project site, and statement of maximum time to have serviceman at plant site after notification of equipment malfunction.
- j. **Spare Parts:** Provide a spare parts list including prices for all replaceable parts associated with the UV Disinfection System.



18. **EXCEPTIONS TAKEN: Any and all exceptions taken to these Pre-Selection Documents must be clearly stated outright in the submitted proposal.**

End of Instructions to Offerors.

Attachment A Contract Time

All time limits for Milestones, if any, including the submittal of Shop Drawings, the Delivery of Goods, and the furnishing of Services as stated in the Procurement Contract Documents, are of the essence of the Contract.

The following defines the milestones to be met with regard to the Contract Time. The time shown below is based upon calendar days.

Work Task	Time to Complete Task	Comments
Milestone A – Shop Drawings		
Submission of Shop Drawings	8 weeks from receipt of Purchase Order from the  Prime Contractor.	Shop Drawings Include: <ul style="list-style-type: none"> • P&IDs • UV Equipment and Layout Drawings • Electrical One Line Diagram • Network Diagram/System Interconnection Detail Drawings • Electrical Panel Drawings • Component Equipment Drawings
Submission of Final Shop Drawings and Additional Drawings	2 weeks from receipt of review comments of shop  drawings	Additional Shop Drawings shall include, but are not limited to: <ul style="list-style-type: none"> • O&M Manual • Installation Data
Milestone B – Equipment Fabrication, Delivery, and Installation Oversight		
Complete Manufacturing and Shipment of Entire UV Disinfection System	40 weeks after final approval of shop drawings	Provide a complete set of shop drawings reflecting any changes made to the system during the manufacturing process
Milestone C – Start-up, Commissioning, Testing, and Training		
Field startup, testing, and training services	30 days from date of issuing “Notice of Completed Installation”	

Shipment of the UV Disinfection System shall be coordinated with the RWWTF overall construction schedule. Commissioning and Startup of equipment is expected to occur in or around November of 2024.

Substantial Completion is defined as start-up and production of water in accordance with permitted discharge limits for at least 30-days. The definition of Substantial Completion in the Prime Contractor's contract will take precedence over this definition, if different.

Final Completion will match the definition for Final Completion in the Prime Contractor's contract.

CITY OF PFLUGERVILLE CERTIFICATE OF INSURANCE

Contractor shall establish and provide certificates of insurance to the City satisfying the requirements for coverages established by **Section 08.2**. Delivery of said proof of insurance coverages shall be no later than the date of the Pre-Construction meeting and prior to the commencement of any Work under the Contract.



END OF SECTION

CITY OF PFLUGERVILLE INSURANCE REQUIREMENTS

ARTICLE 1 – INSURANCE COVERAGE AMOUNTS AND POLICY REQUIREMENTS

18.01 INSURANCE COVERAGE AMOUNTS

- A. Provide insurance coverage for at least the amounts shown in the table below, unless greater amounts are required by Laws and Regulations.

Policy	Coverage Amount
Workers' Compensation	
State	Statutory
Applicable Federal (e.g., Longshore)	Statutory
Employers' Liability	
Bodily Injury by Accident	\$500,000
Bodily Injury by Disease - Each Employee	\$500,000
Bodily Injury by Disease - Policy Limit	\$500,000
Seller's Liability Insurance	
General Aggregate (Except Products - Completed Operations)	\$1,000,000 / Occurrence \$2,000,000 / Aggregate
Products - Completed Operations (Aggregate)	\$1,000,000 / Occurrence \$2,000,000 / Aggregate
Personal and Advertising Injury (One Person/Organization)	\$1,000,000
Bodily Injury and Property Damage (Each Occurrence)	\$1,000,000
Medical Expense (Limit Per Person)	\$5000
Personal Injury Liability (include coverage for claims arising out of Employment Practices Liability, limited to coverage provided under standard contract)	\$1,000,000
Property Damage Liability (include coverage for explosion, collapse and underground hazards where applicable)	\$1,000,000

Excess Liability, Umbrella Form (include coverage of watercraft liability. General Aggregate - Each Occurrence)	\$1,000,000
Seller's Automobile Liability Insurance	
Bodily Injury - Each Person / Each Accident	\$1,000,000 / \$1,000,000
Property Damage - Each Accident or Combined Single Limit (Bodily Injury and Property Damage)	\$1,000,000 / \$1,000,000
Seller's Contractual Liability Insurance	
General Aggregate	\$1,000,000
Each Occurrence (Bodily Injury and Property Damage)	\$1,000,000
Buyer's Liability Insurance	
General Aggregate	\$1,000,000
Each Occurrence (Bodily Injury and Property Damage)	\$1,000,000

18.02 POLICY REQUIREMENTS

- A. Provide insurance meeting the requirements for insurance in accordance with the General Conditions and this Section.
- B. Provide endorsements to the policies as outlined in this Section.
- C. Obtain insurance from companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue insurance policies for the required limits and coverages. Provide insurance from companies that have an A.M. Best rating of A-VIII or better.
- D. Furnish copies of certificate of Insurance endorsements, upon request by BPT or any named insured or additional insured. Seller may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished

under this Procurement Contract.

- E. The name and number of the Project must be referenced on the certificate of insurance.
- F. BPT's failure to demand such certificates or other evidence of the Seller's full compliance with the insurance requirements or failure to identify a deficiency in compliance from the evidence provided is not a waiver of the Seller's obligation to obtain and maintain the insurance required by the Procurement Contract Documents.
- G. Notify the Buyer if the Seller fails to purchase or maintain the insurance required by the Procurement Contract Documents. Do not perform any work on the Project unless the required insurance policies are in effect.
- H. Buyer may exclude the Seller from the Site and exercise Buyer's termination rights under the General Conditions if Seller fails to obtain or maintain the required insurance.
- I. Buyer does not represent that the insurance coverage and limits established in this Section are adequate to protect Seller or Seller's interests.
- J. The required insurance and insurance limits do not limit the Seller's liability under the indemnities granted to Buyer's Indemnitees in the Procurement Contract Documents.
- K. Provide for an endorsement that the "other insurance" clause does not apply to the BPT where the BPT is an additional insured shown on the policy. Seller's insurance is primary and non-contributory with respect to any insurance or self-insurance carried by the BPT for liability arising out of operations under this Procurement Contract.

18.03 SELLER'S INSURANCE

A. Purchase and maintain workers' compensation and employer's liability insurance for:

1. Claims under workers' compensation, disability benefits, and other similar employee benefit acts. Obtain workers' compensation coverage through a licensed insurance company in accordance with Texas law and written on a policy and endorsements approved by the Texas Department of Insurance. Provide insurance in amounts to meet all workers' compensation obligations. Provide an "all states" endorsement if Seller is not domiciled in Texas.
2. Claims for damages because of bodily injury, occupational sickness or disease, or death of Seller's employees.
3. United States Longshoreman and Harbor Workers' Compensation Act and Jones Act coverage (if applicable).
4. Foreign voluntary worker compensation (if applicable).

B. Purchase and maintain commercial general liability insurance covering all operations by or on behalf of Seller. Provide coverage on an occurrence basis, against:

1. Claims for damages because of bodily injury, sickness or disease, or death of any person other than Seller's employees;
2. Claims for damages insured by reasonably available personal injury liability coverage which are sustained;
3. By any person because of an offense directly or indirectly related to the employment of such person by Seller;

By any other person for any other reason; and

4. Claims for damages, other than to the work itself, because of injury to or destruction of tangible property wherever located, including any resulting loss of use.

- C. Provide a certificate of insurance for Seller's commercial general liability policy that is written on a 1996 (or later) ISO commercial general liability form (occurrence form) and include the following coverages and endorsements:
1. Products and completed operations coverage as required in this Section. Insurance is to remain in effective for 3 years after final payment. Furnish evidence of the continuation of this insurance at final payment and again each year for 3 years after final payment to Buyer and each named insured or additional insured.
 - a. Eliminate the exclusion with respect to property under the care, custody, and control of Seller. Provide and maintain installation floater insurance for property under the care, custody, or control of Seller in lieu of elimination of the exclusion, or if required by this Section. Provide installation floater insurance that is a broad form or "All Peril" policy providing coverage for all materials, supplies, machinery, fixtures, and equipment which will be incorporated into the work.
 - 1) Provide coverage under the Seller's Installation Floater that includes:
 - a) Faulty or defective workmanship, materials, maintenance, or construction;
 - b) Cost to remove Defective or damaged work from the Site or to protect it from loss or damage;
 - c) Cost to cleanup and remove pollutants;
 - d) Coverage for testing and startup;
 - e) Any loss to property while in transit;
 - f) Any loss at the Site;
 - g) Any loss while in storage, both on and off the Site; and
 - h) Any loss to temporary Project works if their value is included in the Procurement Contract Price.
 - 2) Coverage cannot be contingent on an external cause or risk or

limited to property for which the Seller is legally liable. Provide limits of insurance adequate to cover the value of the installation. Pay any deductible carried under this coverage and assume responsibility for claims on materials, supplies, machinery, fixture, and equipment which will be incorporated into the work while in transit or in storage.

2. Blanket contractual liability coverage for Seller's contractual indemnity obligations in Paragraph 5.12 of the General Conditions, and all other contractual indemnity obligations of Seller in the Procurement Contract Documents.
 3. Broad form property damage coverage.
 4. Severability of interest.
 5. Underground explosion and collapse coverage.
 6. Personal injury coverage.
 7. Endorsement CG 2032, "Additional Insured - Engineers, Architects or Surveyors Not Engaged by the Named Insured" or its equivalent.
- D. Purchase and maintain automobile liability insurance against claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance, or use of any motor vehicle.

- E. Purchase and maintain umbrella or excess liability insurance written over the underlying employer's liability, commercial general liability, and automobile liability insurance described in the paragraphs above. Provide coverage that is at least as broad as all underlying policies. Provide a policy that provides first-dollar liability coverage as needed.
- F. Provide a certificate of insurance for Seller's commercial general liability and automobile liability policies that:
 - 1. Are written on an occurrence basis;
 - 2. Include coverage for the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors for each named insured or additional insured;
 - 3. Provide primary coverage for all claims covered by the policies, including those arising from both ongoing and completed operations.
- G. Purchase and maintain applicable professional liability insurance, or have subcontractors and suppliers do so, if Seller or any subcontractor or supplier will provide or furnish professional services under this Procurement Contract.
- H. The policies of insurance required by this Section must:
 - 1. Include at least the specific coverages and be written for not less than the limits of liability provided in this Section or required by Laws or Regulations, whichever is greater.

2. Remain in effect always when Seller is performing work or is at the Site to conduct tasks arising from the Procurement Contract Documents.
 3. Be appropriate for the work being performed and provide protection from claims resulting from the Seller's performance of the work and Seller's other obligations under the Procurement Contract Documents, whether performed by Seller, , supplier, anyone directly or indirectly employed or retained by any of them, or by anyone for whose acts they may be liable.
- I. The coverage requirements for specific policies of insurance may be met directly by those policies and may not rely on excess or umbrella insurance provided in other policies to meet the coverage requirement.

18.04 BUYER'S LIABILITY INSURANCE

- A. Purchase and maintain a Buyer's protective liability insurance policy with the Buyer as the named insured and other members of the BPT as additional insureds. Provide a policy that will protect the BPT from claims which arise from operations under the Procurement Contract Documents. Provide this coverage in the same amounts required for the Seller's liability insurance and from the same company that provides the Seller's liability insurance.

18.05 PROPERTY INSURANCE

- A. Purchase and maintain builder's risk insurance in the amount of the full replacement cost of the Project. This policy is subject to the deductible amounts requirements in this Section or those required by Laws and Regulations and must comply with the requirements of Paragraph 1.06. This insurance must:
1. Include the BPT, Seller, and all subcontractors as named insureds.
 2. Be written on a builder's risk "all risk" policy form that includes insurance for physical loss or damage to the work, temporary buildings, falsework, and materials and equipment in transit, and insures against at least the following perils or causes of loss: fire; lightning; windstorm; riot; civil commotion; terrorism; vehicle impact; aircraft; smoke; theft; vandalism and malicious

mischief; mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; flood; collapse; explosion; debris removal; demolition occasioned by enforcement of Laws and Regulations; water damage (other than that caused by flood); and such other perils or causes of loss as may be specifically required by this Section. If insurance against mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; or flood, are not commercially available under builder's risk, by endorsement or otherwise, this insurance may be provided through other insurance policies acceptable to Buyer and Seller.

3. Cover expenses incurred in the repair or replacement of any insured property.
4. Cover materials and equipment in transit or stored prior to being incorporated in the work.
5. Cover Buyer-furnished or assigned property.
6. Allow use of the Goods by Buyer on a limited basis prior to Substantial Completion for testing or other purposes.
7. Allow for the waiver of the insurer's subrogation rights as set forth below.
8. Provide primary coverage for all losses and damages caused by the perils or causes of loss covered.
9. Not include a co-insurance clause.
10. Include a broad exception for ensuing losses from physical damage or loss with respect to any Defective workmanship, design, or materials exclusions.
11. Include testing and startup.
12. Be maintained in effect until the work is complete, unless otherwise agreed to in writing by Buyer and Seller.
13. Pay for costs not covered by the policy deductible.
14. Seller may purchase other special insurance to be included in or to supplement the builder's risk or property insurance policies provided

under this Section.

15. Seller, subcontractors, or employees of the Seller or a subcontractor owning property items, such as tools, construction equipment, or other private property not expressly covered in the insurance required by the Procurement Contract Documents are responsible for providing their own insurance.

ARTICLE 2 – SELLER’S EVIDENCE OF INSURANCE

2.01 ACCEPTABLE EVIDENCE OF INSURANCE

- A. Provide evidence of insurance acceptable to the Buyer with the executed Procurement Contract Documents. Provide the following as evidence of insurance:
 1. Certificates of insurance on an acceptable form;
 2. Riders or endorsements to policies; and
 3. Policy limits and deductibles.
- B. Provide a list of Buyer’s additional insureds for each policy.
- C. Provide an endorsement from the insurance carrier permitting use of Goods during construction of the Project.
- D. Provide evidence that each policy is endorsed to provide primary and non-contributory coverage.

2.02 INSURANCE POLICIES

- A. Provide a copy of certificates of insurance, declaration pages and endorsements.
- B. Buyer may require the deletion, revision, or modification of policy terms, conditions, limitations, or exclusions (except where policy provisions are established by Laws or Regulations binding upon either of the parties hereto or the underwriter of any such policies). Comply with these requests and submit a copy of the replacement certificate of insurance to Buyer at the address provided below within 10 days of the requested change.

2.03 CERTIFICATES OF INSURANCE

- A. Submit certificates of insurance meeting the applicable requirements of the state department of insurance. No requirements of this Procurement Contract may be interpreted as requiring the issuance of a certificate of insurance on a certificate of insurance form that has not first been filed with and/or approved by the state department of insurance.
- B. Include the name of the Project in the description of operations box on the certificate of insurance.

2.04 CONTINUING EVIDENCE OF COVERAGE

- A. Provide updated, revised, or new evidence of insurance in accordance with this Section prior to the expiration of existing policies.
- B. Provide evidence of continuation of insurance coverage at final payment and for the following 3 years.

2.05 NOTICES REGARDING INSURANCE

- A. Submit notices regarding insurance are to be sent to the Buyer at the following address:

City of Pflugerville, Texas

Attn: **CIP**

Engineering PO
Box 589
Pflugerville, TX 78691-0589

END OF SECTION

CITY OF PFLUGERVILLE NOTICE TO PROCEED

To: _____ Date: _____

Project: City of Pflugerville Wilbarger Creek

Regional Wastewater Treatment Facility – UV

Disinfection System Pre-Selection

You are hereby notified, in accordance with **Section 2.3** of the General Conditions to commence Work in accordance with the Contract dated _____ 20_____, on or before _____, 20_____, and you are to substantially and Finally Complete the Work within _____ and _____ consecutive calendar days thereafter.



The dates of Substantial and Final Completion of all WORK is therefore _____, 20_ and _____, 20_, respectively, unless otherwise extended in accordance with the Contract.

Owner: City of Pflugerville
Signature: _____
(individual's signature)
Name: _____
(typed or printed)
Title: _____
(typed or printed)

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE TO PROCEED is hereby acknowledged and accepted

Contractor: _____
(typed or printed name of organization)
Signature: _____
(individual's signature)
Name: _____
(typed or printed)
Title: _____
(typed or printed)
Date: _____
(typed or printed)

**CITY OF PFLUGERVILLE STANDARD CAPITAL IMPROVEMENT PROJECT (CIP)
PROCUREMENT AGREEMENT BETWEEN CITY AND SUPPLIER**

THIS AGREEMENT is entered into by and between City of Pflugerville, Texas (CITY) and Trojan Technologies Group ULC (SUPPLIER). CITY and SUPPLIER, agree as follows:

SECTION I. Generally.

Terms. Terms used in this Agreement, unless the context clearly indicates otherwise, will have the meanings indicated in the General Conditions attached hereto.

Work. SUPPLIER shall complete all Work as defined in the General Conditions, and as specified or indicated in the other Contract Documents. The Work is generally referred to as City of Pflugerville Wilbarger Creek Regional Wastewater Treatment Facility – UV Disinfection System Pre-Selection regardless of whether the Work may only be a part of the Project, with the Work being generally described as follows:

Major items of the Work includes all Goods and Services required for the Phase 1 UV Disinfection equipment associated with the City of Pflugerville Wilbarger Creek Regional Wastewater Treatment Facility project

The Project. The Project, for which the Work under the Contract Documents may be the whole or only a part of, is generally described under Article I above.

Design Consultant. The Design Consultant for the Project is:

Garver
Greg Swoboda
GTSwoboda@GarverUSA.com
210-268-4707
3755 S Capital of Texas Hwy #325
Austin, TX 78704

who is referred to as such in the Contract Documents for the purposes stated therein. The CITY shall provide written notice to the SUPPLIER if any information regarding this designation should change during the course of this Agreement.

The Project will require the purchase of specialized equipment, based on the final engineering design for the Wilbarger Regional Wastewater Treatment Facility. Due to the highly specialized nature of the required equipment, the CITY and SUPPLIER hereby agree to the following special terms and conditions:

1. Assignment of Agreement to Prime Contractor: Concurrently with the execution of the Construction Agreement between CITY and Prime Contractor, all rights, interests and responsibilities (“contractual obligations”) belonging to the CITY shall be assigned to the Prime Contractor.

SECTION II. Contract Times/Liquidated Damages.

Time of the Essence. All time limits for Milestones, if any, Substantial Completion, and Final Completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.

Milestones, Substantial Completion and Final Completion. The Work will be Substantially Completed within [Insert] days after the date when the Contract Times commence to run as provided in the General Conditions, and Finally Completed and ready for final payment in accordance with **Section 10.2** of the General Conditions within [Insert] days after the date when the Contract Times commence to run.



Liquidated Damages. SUPPLIER and CITY recognize that time is of importance to this Agreement and that CITY will suffer financial loss if the Work is not completed within the times specified in **Section II** herein above, plus any extensions thereof allowed in accordance with the General Conditions. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by CITY if the Work is not completed on time. Accordingly, instead of requiring any such proof, CITY and SUPPLIER agree that as liquidated damages for delay, but expressly acknowledged herein as not being a penalty, **SUPPLIER shall pay CITY \$300 for each day that expires after the time specified in Section II herein for Substantial Completion until the Work is Substantially Complete, not to exceed five percent (5%) of the value of the Agreement.** After Substantial Completion, if SUPPLIER shall neglect, refuse, or fail to complete the remaining Work within the Contract Time or any proper extension thereof granted by CITY for Final Completion, **SUPPLIER shall pay CITY \$300 for each day that expires after the time specified in Section II herein for Final Completion and readiness for final payment until the Work is completed and ready for final payment, not to exceed five percent (5%) of the value of the Agreement.**



SECTION III. Contract Sum.

CITY shall pay SUPPLIER (through the Prime Contractor) for completion of the Work in accordance with the Contract Documents an amount equal to the sum of the following, as applicable:

- (1) For all Work other than Unit Price Work, a Lump Sum of:

_____ Zero (\$_____0).



- (2) For all Unit Price Work, an amount equal to the sum of the established unit price for each separately identified item of Unit Price Work times the estimated quantity of that item as follows:

See SUPPLIER’S SUBMITTED BID PROPOSAL, which is incorporated herein by reference for all purposes.

Sum of all Unit Prices: Six Hundred, Fifty-Five Thousand, Five Hundred and Twenty \$655,520 (dollars).



SECTION IV. Payments.

- 1. *Submittal and Processing of Payments.* SUPPLIER shall submit Applications for Payment in accordance with **Article X** of the General Conditions. CITY shall make progress payments on account of the Contract Sum on the basis of SUPPLIER’s Applications for Payment in accordance with **Article X** of the General Conditions. Prior to Final Completion, progress payments will be made in accordance with **Article X** of the General Conditions.



SECTION V. Representations.

Representations. In order to induce CITY to enter into this Agreement SUPPLIER makes the following representations in addition to those otherwise provided in the Contract Documents:

(1) SUPPLIER has comprehensively evaluated the Contract Documents and the other information identified in the Bidding Documents and has visited the Project Site and is satisfied as to the Site conditions that may affect completion of the Work.

(2) SUPPLIER has further carefully evaluated all: (a) information regarding subsurface conditions at or contiguous to the Site and all drawings relating to existing surface or subsurface structures at or contiguous to the Site that have been identified in the Contract Documents, if any; and (b) information regarding a Hazardous Environmental Condition, if any, at the Site as identified in Contract Documents.

(3) SUPPLIER has obtained and carefully evaluated all additional or supplementary information concerning surface and subsurface conditions at or contiguous to the Site that may affect SUPPLIER's completion of the Work for the stated Contract Sum within the stated Contract Time. Accordingly, based on said evaluations, SUPPLIER hereby acknowledges and confirms that no additional information is necessary for the performance of the Work at the Contract Sum, within the Contract Times, and in accordance with the conditions of the Contract Documents.

(4) Finally, SUPPLIER has provided written notice of all discrepancies that SUPPLIER has discovered in the Contract Documents to the City or Design Consultant, and hereby acknowledges that all such discrepancies have been resolved sufficiently by the Design Consultant

SECTION VI. Additional Terms.

Controlling Law/Venue. This Agreement shall be governed by the laws of the State of Texas without regard to its conflicts of laws. Venue for any dispute resolution or legal proceedings lies exclusively in the Courts of Travis County, Texas.

Waiver. The failure of either Party hereto to enforce any provision of this Agreement does not constitute a waiver of that provision, affect the enforceability of that provision, or the enforceability of the remainder of this Agreement.

Third Party Beneficiaries. Nothing in this Agreement is intended to by the Parties hereto or shall be construed to create rights in any person or entity other than the Parties hereto.

Execution. This Agreement may be executed in one or more counterparts and may be exchanged by facsimile or other electronic means. It is stipulated and agreed that any counterpart containing a signature or facsimile signature of the authorized representatives of the respective Party will be deemed an original for all purposes.

Authorization. SUPPLIER represents that SUPPLIER has the power and authority to execute and enter into this Agreement. The execution and delivery of this Agreement and the performance of the Work hereunder has been duly authorized by all necessary corporate action, if applicable. Upon execution, this Agreement will constitute the binding and valid obligations of SUPPLIER and shall be enforceable in accordance with its terms. SUPPLIER further represents that it is in good standing in and qualified to do business in the State of Texas.

CITY Ordinance Compliance and Certification. SUPPLIER represents that SUPPLIER has fully read and understood the terms and conditions for eligibility to contract with the CITY pursuant to Chapter 38 of the

CITY'S Code of Ordinances and by entering into this Agreement certifies that SUPPLIER is qualified to contract with the CITY compliance with all applicable requirements.

Texas Government Code Compliance. SUPPLIER acknowledges that the CITY may not enter into an Agreement with a company for goods and services unless the Agreement contains a written verification from the company that it; (i) does not boycott Israel; (ii) will not boycott Israel during the term of the contract; (iii) does not boycott energy companies; (iv) will not boycott energy companies during the term of the contract; (v) does not have a practice, policy, guidance or directive that discriminates against a firearm entity or firearm trade association; and (vi) will not discriminate during the term of the contract against a firearm entity or firearm trade association (Texas Government Code, Chapter 2271.002; 2274.002).

Certificate of Interested Parties (TEC Form 1295). SUPPLIER acknowledges that for contracts needing City Council approval, the CITY may not accept or enter into a contract until it has received from the SUPPLIER a completed, signed, and notarized TEC Form 1295 complete with a certificate number assigned by the Texas Ethics Commission ("TEC"), pursuant to Texas Government Code § 2252.908 and the rules promulgated thereunder by the TEC. SUPPLIER understands that failure to provide said form complete with a certificate number assigned by the TEC may prohibit the City from entering into this Agreement. Pursuant to the rules prescribed by the TEC, the TEC Form 1295 must be completed online through the TEC's website, assigned a certificate number, printed, signed and notarized, and provided to the CITY. The TEC Form 1295 may accompany the bid or may be submitted separately but must be provided to the CITY prior to the award of this Agreement. Neither the City nor its Design Consultant have the ability to verify the information included in a TEC Form 1295, and neither have an obligation nor undertake responsibility for advising SUPPLIER with respect to the proper completion of the TEC Form 1295.

Assignment of Contract. Subject to the special terms and conditions as stated above in Section 1, no assignment by a party hereto of any rights under or interests in the Contract will be binding on another party hereto without the written consent of the party sought to be bound in accordance with the General Conditions.

Successors and Assigns. CITY and SUPPLIER each binds itself, its partners, successors, assigns, and legal representatives to the other party hereto, its partners, successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

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

Remainder of this Page left Intentionally Blank

In consideration for the mutual obligations, representations, terms and conditions herein recited, CITY and SUPPLIER have agreed to and signed this Agreement to be effective on September 19, 2022 (Effective Date).

CITY OF PFUGERVILLE, TEXAS:

TROJAN TECHNOLOGIES GROUP ULC:

By: _____

Sereniah Breland, City Manager

By: Josh Richardson

Josh Richardson / Director, NA Municipal Sales

Attest _____

Trista Evans, City Secretary

Attest Lee Cassey

By: Lee Cassey / Corporate Secretary
Name/Title

Address for giving notices:

Pflugerville, Texas 78660

Address for giving notices:

3020 Gore Road, London, Ontario Canada, N5V4T7

CITY'S Designated Representative:

Name: [Project Manager Name]

Title: Project Manager

Address: _____

Phone/Fax: _____

Email: _____

SUPPLIER'S Designated Representative:

Name: Somer Differding Somer Differding

Title: Regional Sales Manager

Address: 3020 Gore Rd London, Ontario N5V 4T7

Phone/Fax: (519) 457-3400 _____

Email: sdifferding@trojantechnologies.com

**GENERAL CONDITIONS FOR
CITY OF PFLUGERVILLE CIP PROCUREMENT CONTRACTS**

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ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

1.1 Defined Terms

- A. A term with initial capital letters, including the term’s singular and plural forms, has the meaning indicated in this paragraph wherever used in the Bidding Requirements, Proposal Requirements, or Procurement Contract Documents. In addition to the terms specifically defined, terms with initial capital letters in the Procurement Contract Documents may include references to identified articles and paragraphs, and the titles of other documents or forms.
1. *Addenda* - Documents issued prior to the receipt of Bids or Proposals which clarify or modify the Bidding Requirements or Proposal Requirements or the proposed Procurement Contract Documents.
 2. *Agreement* - The document executed between Buyer and Seller covering the purchase of Goods and Special Services.
 3. *Application for Payment* - The form used by Seller to request payments from Buyer and the supporting documentation required by the Procurement Contract Documents.
 4. *Bid; Proposal* - The documents submitted by an Offeror to establish the proposed Procurement Contract Price and Procurement Contract Times and provide other information and certifications as required by the Bidding Requirements or Proposal Requirements.
 5. *Bidding Documents; Proposal Documents* - The Bidding Requirements or Proposal Requirements, the proposed Procurement Contract Documents, and Addenda.
 6. *Bidding Requirements; Proposal Requirements* - The Invitation to Bid or Request for Proposals, Instructions to Offerors, Bid Security or Proposal Security, Bid Form or Proposal Form and attachments, and required certifications and affidavits.
 7. *Bid Security; Proposal Security* - The financial security in the form of a bid bond provided by Offeror at the time the Bid or Proposal is submitted and held by Buyer until the Agreement is executed and insurance, performance, payment, and other bonds required by the Procurement Contract Documents are provided.
 8. *Buyer* - The individual or entity with whom Seller has entered into the Agreement with to provide the Goods and Special Services.
 9. *Buyer’s Indemnitees* – Buyer and its officers, directors, members, partners, employees, agents, consultants, and subcontractors.
 10. *Buyer’s Project Team or BPT* - The Buyer, Program Manager, Project Construction Manager, Resident Project Representative, Design Professional, and the consultants, subconsultants, individuals or entities directly or indirectly employed or retained by them to provide services to the Buyer.
 11. *Change Directive* - A written directive issued to Seller on or after the Effective Date of the Procurement Contract requesting an addition, deletion, or revision in the Goods and Special Services. The Goods and Special Services Change Directive serves as a memorandum of understanding regarding the Change Directive until a Change Order can be issued.

12. *Change Order* - A document issued on or after the Effective Date of the Procurement Contract and signed by Buyer and Seller which modifies the Goods and Special Services, Procurement Contract Price, Procurement Contract Times, or terms and conditions of the Procurement Contract.
13. *Change Proposal* - A document submitted by Seller in accordance with the requirements of the Procurement Contract Documents:
 - a. Requesting an adjustment in Procurement Contract Price or Procurement Contract Times;
 - b. Contesting an initial decision concerning the requirements of the Procurement Contract Documents or the acceptability of Goods and Special Services under the Procurement Contract Documents;
 - c. Challenging a Set-off against payment due; or
 - d. Seeking a Modification with respect to the terms of the Procurement Contract.
14. *Claim* - A demand or assertion by Buyer or Seller submitted in accordance with the requirements of the Procurement Contract Documents. A demand for money or services by an entity other than the Buyer or Seller is not a Claim.
15. *Constituent of Concern* - Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), lead-based paint (as defined by the HUD/EPA standard), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to Laws and Regulations regulating, relating to, or imposing liability or standards of conduct concerning any hazardous, toxic, or dangerous waste, substance, or material.
16. *Procurement Contract* - The entire integrated set of documents concerning the Goods and Special Services describing the relationship between the Buyer and Seller. The Procurement Contract supersedes prior negotiations, representations, or agreements, whether written or oral.
17. *Contract Amendment* - A document issued on or after the Effective Date of the Procurement Contract and signed by Buyer and Seller which modifies the terms and conditions of the Procurement Contract but does not make changes in the Goods and Special Services.
18. *Procurement Contract Documents* - Those items designated as Procurement Contract Documents in the Agreement.
19. *Procurement Contract Price* - The money that Buyer has agreed to pay Seller for furnishing the Goods and Special Services in accordance with the Procurement Contract Documents.
20. *Procurement Contract Times* - The number of days or the dates stated in the Agreement by which Seller must deliver the Goods and provide the Special Services.
21. *Contractor* - The individual or entity with which Buyer has contracted for installing the Goods and coordinating the delivery of Special Services.
22. *Day* - A calendar day of 24 hours measured from midnight to the next midnight.

23. *Defective* - When applied to Goods and Special Services, Defective refers to Goods and Special Services that are unsatisfactory, faulty, or deficient in that they:
 - a. Do not conform with the Procurement Contract Documents;
 - b. Do not meet the requirements of applicable inspections, reference standards, tests, or approvals referred to in the Procurement Contract Documents; or
 - c. Have been damaged prior to PCM's recommendation of final payment unless responsibility for the protection of the Goods and Special Services has been assumed by Buyer.
24. *Drawings* - The part of the Procurement Contract Documents that graphically shows the scope, extent, and character of the Goods and Special Services. Shop Drawings and other Seller submittals are not Drawings.
25. *Effective Date of the Procurement Contract* - The date indicated in the Agreement on which the Procurement Contract becomes effective.
26. *Design Professional* - The individual or entity named as Design Professional in the Agreement and the subconsultants, individuals or entities directly or indirectly employed or retained by Design Professional to provide design or other technical services to the Buyer. Design Professional has responsibility for design and technical issues related to the Procurement Contract Documents.
27. *Field Order* - A document issued by PCM or Design Professional requiring changes in the Goods and Special Services that do not change the Procurement Contract Price or the Procurement Contract Times.
28. *General Requirements* - Sections of Division 01 of the Specifications. The General Requirements pertain to all Sections of the Specifications.
29. *Goods* - The materials, products, or equipment to be provided by the Seller in accordance with the Procurement Contract Documents.
30. *Hazardous Environmental Condition* - The presence of Constituents of Concern at the Site in quantities or circumstances that may present a danger to persons or property exposed to Constituents of Concern. The presence of Constituents of Concern at the Site necessary for the provision of the Goods and Special Services or to be incorporated in the Goods and Special Services is not a Hazardous Environmental Condition provided these Constituents of Concern are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Procurement Contract.
31. *Indemnified Costs* - All costs, losses, damages, and legal or other dispute resolution costs resulting from claims or demands against Buyer's Indemnitees to the proportional extent caused by Seller's or Seller's employees', agents', or representatives negligent or intentionally wrongful acts or omissions. These costs may include fees for design professionals, architects, attorneys, and other professionals.
32. *Laws and Regulations; Laws or Regulations* - Applicable laws, statutes, rules, regulations, ordinances, codes, and orders of governmental bodies, agencies, authorities, and courts having jurisdiction over the Project.
33. *Liens* - Charges, security interests, or encumbrances upon Procurement Contract related funds, real property, or private property.

34. *Manufacturer* - The individual or entity that designs, casts, fabricates, manufactures, assembles, tests and provides Goods to Seller that Buyer has contracted with for providing Goods and Special Services.
35. *Milestone* - A principal event in the delivery of the Goods and Special Services that Seller is required by Procurement Contract to complete by a specified date or within a specified period.
36. *Modification* - Change made to the Procurement Contract Documents by one of the following methods:
 - a. Contract Amendment;
 - b. Change Order; or
 - c. Field Order
37. *Notice* – As allowed by Texas state law, notifications from one party to another may be provided or accomplished via electronic email.
38. *Notice of Award* - The notice by PCM to an Offeror of Buyer’s acceptance of the Bid or Proposal.
39. *Notice to Proceed* - A notice to Seller of the date Goods and Special Services is to begin and of the Procurement Contract Times.
40. *Offeror* - An individual or entity that submits a Bid or Proposal to Buyer.
41. *Point of Destination* - The specific location indicated in the Procurement Contract Documents where Goods and Special Services are to be delivered.
42. *Project Construction Manager or PCM* - The individual or entity named as the Project Construction Manager in the Agreement and the consultants, subconsultants, individuals or entities directly or indirectly employed or retained by them to provide construction management services to the Buyer. The Project Construction Manager may be an employee of the Buyer.
43. *Project Management Information System or PMIS* - The online project management system that will be used by BPT and Contractor to submit and share documentation and other related communications and information for this Project.
44. *Program Manager* - The individual or entity named as Program Manager in the Agreement and the consultants, subconsultants, individuals or entities directly or indirectly employed or retained by them to provide program management services to the Buyer.
45. *Progress Schedule* - A schedule prepared and maintained by Seller, describing the sequence and duration of the activities comprising the Seller’s plan to provide the Goods and Special Services within the Procurement Contract Times.
46. *Project* - The total undertaking to be accomplished by Buyer for which the Goods and Special Services are to be provided.
47. *Resident Project Representative or RPR* - The authorized representative of BPT assigned to assist PCM at the Site. As used herein, the term Resident Project Representative includes assistants and field staff of the PCM.

48. *Samples* - Physical examples of Goods, or workmanship representing some portion of the Goods and Special Services that are used to establish the standards for that portion of the Goods and Special Services.
49. *Schedule of Submittals* - A schedule of required submittals, prepared and maintained by Seller.
50. *Schedule of Values* - A schedule, prepared and maintained by Seller, allocating portions of the Procurement Contract Price to various portions of the Goods and Special Services and used as the basis for Seller's Applications for Payment.
51. *Seller* - The individual or entity with which Buyer has contracted for providing Goods and Special Services.
52. *Set-off* - A reduction in the amount Buyer pays to Seller that is imposed based on one or more provisions of the Procurement Contract and is undisputed by both Buyer and Seller as to value and scope.
53. *Shop Drawings* - All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled and submitted by Seller to illustrate some portion of the Goods and Special Services. Shop Drawings, whether approved or not, are not Drawings and are not Procurement Contract Documents.
54. *Site* - Location indicated in the Procurement Contract Documents where Goods are to be installed by Contractor and where Special Services are to be provided.
55. *Special Services* - Services associated with the Goods to be furnished by Seller as required by the Procurement Contract Documents.
56. *Specifications* - The part of the Procurement Contract Document that describes the requirements for the Goods and Special Services, and certain administrative requirements and procedural matters applicable to providing Goods and Special Services.
57. *Substantial Completion* - Substantial Completion is defined as start-up and production of water in accordance with permitted discharge limits for at least 30-days. The definition of Substantial Completion in the Prime Contractor's contract will take precedence over this definition, if different
58. *Successful Offeror* - The Offeror to which Buyer awards a contract.
59. *Supplementary Conditions* - The part of the Procurement Contract that amends or supplements the General Conditions.

1.2 Terminology

- A. The words and terms discussed in this paragraph are not defined, but when used in the Bidding Requirements, Proposal Requirements or Procurement Contract Documents have the indicated meaning.
- B. It is understood that the cost for providing Goods and Special Services is included in the Procurement Contract Price and no additional compensation is to be paid by Buyer unless specifically stated otherwise in the Procurement Contract Documents. Expressions including or like "at no additional cost to Buyer," "at Seller's expense," or similar words mean that the Seller is to provide the Goods and Special Services without an increase in the Procurement Contract Price.

- C. The meaning and intent of certain terms or adjectives are described as follows:
1. The terms “as allowed,” “as approved,” “as ordered,” “as directed,” or similar terms in the Procurement Contract Documents indicate an exercise of professional judgment by the BPT.
 2. Adjectives including or similar to “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or similar adjectives are used to describe a determination of BPT regarding the Goods and Special Services.
 3. Any exercise of professional judgment by the BPT will be made solely to evaluate the Goods and Special Services for general compliance with the Procurement Contract Documents unless there is a specific statement in the Procurement Contract Documents indicating otherwise.
 4. The use of these or similar terms or adjectives does not assign a duty or give BPT authority to supervise or direct the provision of the Goods and Special Services or assign a duty or give authority to the BPT to undertake responsibilities contrary to the provisions of Articles 9 or 10 or other provisions of the Procurement Contract Documents.
- D. The use of the words “furnish,” “install,” “perform,” and “provide” have the following meanings when used in connection with Goods and Special Services:
1. Furnish means to supply and deliver the Goods and Special Services to the Site or other specified location ready for use or installation.
 2. Install means to complete construction or assembly of the Goods so they are ready for their intended use.
 3. Perform or provide means to furnish and install specified Goods, complete and ready for their intended use, and to provide Special Services.
 4. Perform or provide the specified Goods, complete and ready for their intended use, and provide Special Services if the Procurement Contract Documents require Goods and Special Services but do not expressly use the words “furnish,” “install,” “perform,” or “provide.”
- E. Procurement Contract Documents are written in modified brief style:
1. Requirements apply to all Goods and Special Services of the same kind, class, and type even though the word “all” is not stated.
 2. Simple imperative sentence structure is used which places a verb as the first word in the sentence. It is understood that the words “furnish,” “install,” “perform,” “provide,” or similar words include the meaning of the phrase “The Seller must...” before these words.
 3. Unless specifically stated that action is to be taken by the BPT or others, it is understood that the action described is a requirement of the Seller.
- F. Words or phrases that have a well-known technical or construction industry or trade meaning are used in the Procurement Contract Documents in accordance with this recognized meaning unless stated otherwise in the Procurement Contract Documents.

- G. Written documents are required where reference is made to notices, reports, approvals, consents, submittals, statements, instructions, opinions, or other types of communications required by the Procurement Contract Documents. Approval and consent documents must be received by Seller prior to the action or decision for which approval or consent is given. These may be made in printed or electronic format through the BPT's project management information system or other electronic media as required by the Procurement Contract Documents or approved by the PCM.
- H. Giving notice as required by the Procurement Contract Documents may be by printed or electronic media using a method that requires acknowledgment of the receipt of that notice.

ARTICLE 2 – PRELIMINARY MATTERS

2.1 Delivery of Bonds and Evidence of Insurance

- A. Provide required bonds and copies of certificates of insurance, declaration pages, and endorsements required by the Procurement Contract Documents to the PCM with the executed Agreement.

2.2 Copies of Documents

- A. BPT is to furnish one fully executed Agreement and one copy of the executed Procurement Contract Documents in electronic portable document format (PDF). This document is the Project Record Copy of the Procurement Contract Documents.

2.3 Commencement of Procurement Contract Times; Notice to Proceed

- A. The Procurement Contract Times commence to run on the date indicated in the Notice to Proceed. Begin production of the Goods and Special Services on the date indicated in the Notice to Proceed.
- B. Do not begin prior to having the required insurance in force or before the date indicated in the Notice to Proceed.

2.4 Seller's Review

- A. Carefully study the Procurement Contract Documents. Check and verify manufacturing and fabrication requirements and make all applicable field measurements before starting fabrication or assembly of the Goods. Promptly report any conflict, error, ambiguity, or discrepancy of which Seller has knowledge and obtain an interpretation or clarification from PCM before proceeding with any affected work.

2.5 Preliminary Conference; Designation of Authorized Representatives

- A. Attend a preliminary conference as required by the Procurement Contract Documents.
- B. Provide the following preliminary documents within 10 days after the Effective Date of the Procurement Contract:
 - 1. Progress Schedule;
 - 2. Schedule of Submittals; and
 - 3. Schedule of Values and anticipated date of each payment.

- C. Designate the specific individuals authorized to act as representatives of the Seller. These individuals must have the authority to transmit and receive information, render decisions relative to the Procurement Contract, and otherwise act on behalf of the Seller.
- D. Buyer is to designate the specific individuals authorized to act as representatives of the Buyer and the limits of their authority with regard to acting on behalf of the Buyer.

2.6 Progress Schedule

- A. Provide the Goods and Special Services in accordance with the Progress Schedule established in accordance with the Procurement Contract Documents. Adjust the Progress Schedule as required to reflect actual progress.
- B. Provide a Progress Schedule that shows an orderly progression of the submittals, tests, and deliveries to completion within the specified Milestones and the Procurement Contract Times. Accepting this schedule does not impose responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the work on BPT or relieve Seller from full responsibility for meeting the schedule.

2.7 Schedule of Submittals

- A. Provide a schedule showing when each submittal will be delivered to the PCM for review and approval in accordance with the Procurement Contract Document on the form provided by the PCM. Incorporate this information into the Progress Schedule as well.
- B. Notify the PCM if submittals will not comply with the schedule and adjust the schedule as necessary.

2.8 Schedule of Payments

- A. Provide a schedule showing when each Application for Payment will be delivered to the PCM for review and approval in accordance with the Procurement Contract Documents, and the anticipated amount of the Application for Payment.

ARTICLE 3 – PROCUREMENT CONTRACT DOCUMENTS: INTENT, REQUIREMENTS, REUSE

3.1 Intent

- A. Requirements of components of the Procurement Contract Documents are as binding as if required by all Procurement Contract Documents. It is the intent of the Procurement Contract Documents to describe a functionally complete project. The Procurement Contract Documents do not indicate or describe all the Goods and Special Services required to complete the Project. Additional details required for the correct installation of selected Goods are to be provided by the Seller and coordinated with the BPT.
 - 1. The Procurement Contract requirements described in the General Conditions, Supplementary Conditions and General Requirements apply to Goods and Special Services regardless of where it is described in the Procurement Contract Documents, unless specifically noted otherwise.

2. In offering a Bid or Proposal for this Project and in entering into this Procurement Contract, Seller represents:
 - a. Seller has studied the Procurement Contract Documents, the Goods and Special Services, the Point of Destination, local conditions, Laws and Regulations, and other conditions that may affect the Goods and Special Services;
 - b. Seller has taken all this information into consideration in developing the Procurement Contract Price offered and that the Procurement Contract Price offered provides full compensation for providing the Goods and Special Services in accordance with the Procurement Contract Documents.
 3. Specifications or details do not need to be indicated or specified in each Specification or Drawing. Items shown in the Procurement Contract Documents are applicable regardless of their location in the Procurement Contract Documents.
 4. Standard paragraph titles and other identifications of subject matter in the Specifications are intended to aid in locating and recognizing various requirements of the Specifications. Titles do not define, limit, or otherwise restrict Specification text.
 5. Provide the labor, documentation, services, materials, or equipment that may be inferred from the Procurement Contract Documents or from prevailing custom or trade usage as being required to produce the indicated result, whether specifically called for in the Procurement Contract Documents or not. Include these related costs in the offered Procurement Contract Price.
- B. Provide Goods that are functionally complete as described in the Procurement Contract Documents. The Drawings and Specifications do not indicate or describe all of the Goods and Special Services required to complete the installation of Goods purchased by the Buyer or Seller. Additional details required for the correct installation of selected Goods are to be provided by the Seller and coordinated with the Design Professional through the PCM.
 - C. Comply with the most stringent requirements where compliance with two or more standards is specified and they establish different or conflicting requirements for the Goods and Special Services, unless the Procurement Contract Documents indicate otherwise.
 - D. Provide Goods comparable in quality to similar Goods incorporated in the Goods or as required to meet the minimum requirements of the application if the Goods are shown in the Drawings but are not included in the Specifications.
 - E. The Project Record Copy of the Procurement Contract Documents governs if there is a discrepancy between the Project Record Copy of the Procurement Contract Documents and subsequent electronic or digital versions of the Procurement Contract Documents, including printed copies derived from these electronic or digital versions.
 - F. The Procurement Contract supersedes all prior written or oral negotiations, representations, and agreements. The Procurement Contract Documents comprise the entire Agreement between Buyer and Seller. The Procurement Contract Documents may be modified only by a Modification.
 - G. Request clarification from PCM for a decision before proceeding if Seller is not clear on the meaning of the Procurement Contract Documents. PCM is to issue clarifications and interpretations of the Procurement Contract Documents in accordance with the Procurement Contract Documents.

3.2 Reference Standards

A. Standard Specifications, Codes, Laws and Regulations:

1. Reference in the Procurement Contract Documents to standard specifications, manuals, reference standards, or codes of technical societies, organizations, or associations, or to Laws or Regulations, whether specific or implied, are those in effect at the time the Bid or Proposal is submitted or when Seller negotiates the Procurement Contract Price unless specifically stated otherwise in the Procurement Contract Documents.
2. No provision of referenced standard specifications, manuals, reference standards, codes, or instructions of Seller changes the duties or responsibilities of BPT or Seller from those described in the Procurement Contract Documents or assigns a duty to or gives authority to the BPT to supervise or direct the provision of the Goods and Special Services or undertake responsibilities inconsistent with the Procurement Contract Documents.
3. The provisions of the Procurement Contract Documents take precedence over standard specifications, manuals, reference standards, codes, or instructions of Seller unless specifically stated otherwise in the Procurement Contract Documents.

B. Comply with applicable construction industry standards, whether referenced or not.

1. Standards referenced in the Procurement Contract Documents govern over standards not referenced but recognized as applicable in the construction industry.
2. Comply with the requirements of the Procurement Contract Documents if they produce a higher quality of Goods and Special Services than the applicable construction industry standards.
3. Design Professional determines whether a code or standard is applicable, which of several are applicable, or if the Procurement Contract Documents produce a higher quality of Goods and Special Services.

3.3 Reporting and Resolving Discrepancies

A. Reporting Discrepancies:

1. Carefully study the Drawings and verify pertinent figures and dimensions with respect to actual field measurements before fabricating or assembling the Goods and providing Special Services. Immediately, but in no event later than 3 days, report conflicts, errors, ambiguities, or discrepancies to the PCM. Do not proceed with affected Goods and Special Services until the conflict, error, ambiguity, or discrepancy is resolved by a clarification or interpretation from the PCM or by a Modification to the Procurement Contract Documents issued pursuant to Paragraph 7.01.
2. Immediately, but in no event later than 3 days, notify the PCM of conflicts, errors, ambiguities, or discrepancies in the Procurement Contract Documents or discrepancies between the Procurement Contract Documents and:
 - a. Applicable Laws or Regulations;
 - b. Actual field conditions;

- c. Standard specifications, manuals, reference standards, or codes; or
 - d. Instructions of Seller.
3. Do not proceed with affected Goods and Special Services until the conflict, error, ambiguity, or discrepancy is resolved by a clarification or interpretation from the PCM or by a Modification to the Procurement Contract Documents issued pursuant to Paragraph 7.01.
 4. Seller is liable to the Buyer for failure to report conflicts, errors, ambiguities, or discrepancies in the Procurement Contract Documents of which Seller has knowledge.
 5. Seller is deemed to have included the most expensive item, system, procedure, etc. in the Procurement Contract Price if a conflict, error, ambiguity, or discrepancy in components of the Procurement Contract Documents was known, but not reported prior to submitting the Bid or Proposal or when Seller negotiates the Procurement Contract Price.

3.4 Interpretation of the Procurement Contract Documents

- A. Submit questions concerning the design requirements of the Procurement Contract Documents or relating to the acceptability of the Goods and Special Services to the PCM immediately after the question arises. Design Professional is to be the initial interpreter of the design requirements of the Procurement Contract Documents and judge of the acceptability of the Goods and Special Services. Design Professional is to render an interpretation of the Procurement Contract Documents or initiate a Modification to the Procurement Contract Documents through the PCM if a change is required in the Procurement Contract Documents. Seller may appeal Design Professional's interpretation by submitting a Change Proposal.
- B. Submit questions concerning the non-technical or contractual / administrative requirements of the Procurement Contract Documents to the PCM immediately after the question arises. PCM is to be the initial interpreter of these requirements of the Procurement Contract Documents. PCM is to render an interpretation of the Procurement Contract Documents or initiate a Modification to the Procurement Contract Documents if a change is required in the Procurement Contract Documents. Seller may appeal PCM's interpretation by submitting a Change Proposal.

ARTICLE 4 – BONDS AND INSURANCE

4.1 Bonds

- A. Furnish performance and payment bonds, each in an amount equal to the Procurement Contract Price, as security for the faithful performance and payment of Seller's obligations under the Procurement Contract Documents. These bonds are to remain in effect until one year after the date of final payment. Furnish other bonds as required by the Procurement Contract Documents.
- B. Provide bonds in the form prescribed by the Procurement Contract Documents from sureties named in the 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 Financial Management Service, Surety Bond Branch, U.S.

Department of the Treasury. All bonds signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual's authority to bind the surety. The evidence of authority must show that it is effective on the date the agent or attorney-in-fact signed each bond.

- C. Provide bonds required by the Procurement Contract Documents from surety companies that are duly licensed or authorized to provide bonds in the State of Texas.
- D. Notify PCM immediately if the surety on bonds furnished by Seller:
 - 1. Is declared bankrupt or becomes insolvent;
 - 2. Has its right to do business in Texas terminated; or
 - 3. Ceases to meet the requirements of Paragraphs 4.01.B or 4.01.C.
- E. Provide a bond and surety which comply with the requirements of Paragraphs 4.01.B and 4.01.C within 20 days after the event giving rise to this notification.
- F. Seller is to use amounts paid by Buyer to Seller under the Procurement Contract for the performance of the Procurement Contract and to satisfy claims against the payment bond.
- G. Notify the PCM of claims filed against the payment bond. Notify the claimant and PCM of undisputed amounts and the basis for challenging disputed amounts when a claimant has satisfied the conditions prescribed by Texas Government Code Chapter 2253. Promptly pay undisputed amount.
- H. Buyer is not liable for payment of costs or expenses of claimants under the payment bond. Buyer has no obligations to pay, give notice, or take other action to claimants under the payment bond.
- I. Buyer may exercise Buyer's termination rights under Article 12 if Seller fails to obtain or maintain required bonds.
- J. BPT will provide a copy of the payment bond to entities claiming to have furnished labor or materials used in providing the Goods and Special Services that request this information in accordance with Texas Government Code Chapter 2253.

4.2 Insurance

- A. Seller must provide insurance of the types and coverages and in the amounts stipulated in the Procurement Contract Documents.

ARTICLE 5 – SELLER'S RESPONSIBILITIES

5.1 Supervision and Superintendence

- A. Supervise, inspect, and direct the provision of the Goods and Special Services competently and efficiently, devoting such attention and applying such skills and expertise as are necessary to perform its obligations in accordance with the Procurement Contract Documents. Seller is solely responsible for the means, methods, techniques, sequences, and procedures used in performing its obligations.

5.2 Goods and Special Services

- A. Seller must provide competent, qualified, and trained personnel in all aspects of its performance of the Procurement Contract.
- B. Use only new materials and equipment in producing the Goods. Protect, assemble, connect, clean, and condition materials and equipment in accordance with the original manufacturer's instructions. Provide special warranties and guarantees required by the Procurement Contract Documents. Provide satisfactory evidence, including reports of required tests, as to the source, kind, and quality of materials and equipment used to produce the Goods as required by the Procurement Contract Documents or as requested by the PCM.
- C. Be responsible for the services, materials, equipment, labor, transportation, machinery, tools, appliances, fuel, utilities, and other facilities and incidentals necessary for the performance, testing, startup, and completion of the Goods and Special Services, even if these items are not specifically called for in the Procurement Contract Documents.
- D. Assume, pay, and discharge all liabilities, claims, or demands of suppliers, subcontractors, or others under contract with Seller relating to its performance of the Procurement Contract.

5.3 Compliance with Laws and Regulations, Standards, Specifications, and Codes

- A. Comply with all Laws and Regulations applicable to providing the Goods and Special Services. Neither Buyer nor BPT are responsible for monitoring Seller's compliance with any Laws or Regulations.
- B. Pay all claims, costs, losses, and damages, including but not limited to all fees and charges of design professionals, attorneys, and other professionals and all court or arbitration or other dispute resolution costs to the proportional extent caused by Seller's or Seller's employees', agents', or representatives negligent or intentionally wrongful acts or omissions in furnishing Goods and Special Services contrary to Laws or Regulations. Seller shall not in any event be liable for special, indirect, incidental or consequential damages resulting from Seller's or Seller's employees', agents', or representatives negligent or intentionally wrongful acts or omissions in furnishing Goods and Special Service.
- C. Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Procurement Contract if there were no Bids) influencing the cost or time of performance is subject of an equitable adjustment in Procurement Contract Price or Procurement Contract Times.

5.4 Safety and Protection

- A. Seller is solely responsible for initiating, maintaining, and supervising safety precautions and programs in connection with providing the Goods and Special Services.
- B. Take necessary precautions for the safety of persons on the Site who are providing Special Services.
- C. Comply with Contractor and BPT's safety requirement when working on the Site.
- D. Comply with applicable Laws and Regulations relating to the safety and protection of persons or property. Erect and maintain necessary safeguards for safety and protection. Notify BPT and Contractor when providing Goods and Special Services that may affect them. Cooperate with them in the protection, removal, relocation, and replacement of their property or work in progress.

- E. Remedy damage, injury, or loss to property caused by Seller. Pay remediation costs unless the damage or loss is attributable to the fault of the Procurement Contract Documents or to the acts or omissions of BPT or Contractor and is not attributable to the fault of the Seller.
- F. Seller's duties and responsibilities for safety and protection of persons and property continues until the provision of Goods and Special Services is completed and resumes whenever Seller returns to the Site to fulfill warranty or correction obligations or to conduct other tasks.

5.5 Hazard Communication Programs

- A. Coordinate the exchange of material safety data sheets or other hazard communication information required to be made available or exchanged between or among employers at the Site in accordance with Laws or Regulations.

5.6 Hazardous Environmental Conditions at Site

- A. Seller is not responsible for removing or remediating Hazardous Environmental Conditions encountered, uncovered, or revealed at the Site.
- B. Seller is responsible for controlling, containing, and duly removing and remediating Constituents of Concern brought to the Site by Seller and paying associated costs.
 - 1. Buyer may remove and remediate the Hazardous Environmental Condition and impose a Set-off against payments to Seller for associated costs if Seller creates a Hazardous Environmental Condition and Seller does not take acceptable action to remove and remediate the Hazardous Environmental Condition.
 - 2. **TO THE FULLEST EXTENT PERMITTED BY LAWS AND REGULATIONS, SELLER INDEMNIFIES AND HOLDS HARMLESS BUYER'S INDEMNITEES FROM ALL ENVIRONMENTAL DAMAGES WHICH ARISE FROM SELLER'S NEGLIGENCE IN CONNECTION WITH THE PRESENCE OF ANY CONSTITUENT OF CONCERN BROUGHT TO THE SITE BY SELLER, , TO THE EXTENT, AND ONLY TO THE EXTENT, THAT SUCH CONSTITUENT OF CONCERN CAUSES ANY DAMAGE DUE TO SELLER'S NEGLIGENCE OR WILLFUL MISCONDUCT. NOTHING IN THIS PARAGRAPH OBLIGATES SELLER TO INDEMNIFY ANY INDIVIDUAL OR ENTITY FROM AND AGAINST THE CONSEQUENCES OF THAT INDIVIDUAL'S OR ENTITY'S OWN NEGLIGENCE.**
- C. Immediately notify the PCM and take the following action if Seller uncovers or reveals a Hazardous Environmental Condition at the Site that was not created by the Seller:
 - 1. Notify the PCM and secure or otherwise isolate this condition;
 - 2. Stop work in affected areas; and
 - 3. Do not resume work in the affected areas until after BPT has obtained required permits and PCM sends notice to the Contractor:
 - a. Specifying that this condition and affected areas are or have been rendered safe for the resumption of work; or
 - b. Specifying special conditions under which work may be safely resumed.
 - 4. Buyer may order the portion of the work that is in the area affected by the Hazardous Environmental Condition to be deleted from the Procurement Contract. Buyer may

have this deleted portion of the Procurement Contract performed by Buyer's own forces or others.

- D. Seller may submit a Change Proposal if an agreement is not reached within 10 days of PCM's notice regarding the resumption of work as to whether Seller is entitled to an adjustment in Procurement Contract Price or Procurement Contract Times or on the amount or extent of adjustments resulting from this work stoppage or special conditions under which Seller agrees to resume work.

5.7 Taxes

- A. Seller is responsible for all taxes and duties arising out of providing the Goods and Special Services. The Buyer generally qualifies as a tax exempt agency as defined by the statutes of the State of Texas and is usually not subject to any city or state sales or use taxes, however certain items such as rented equipment may be taxable even though Buyer is a tax-exempt agency. Seller is responsible for including any applicable sales and use taxes in the Procurement Contract Price and is responsible for complying with all applicable statutes and rulings of the State Comptroller. Pay sales, consumer, use, and other similar taxes required to be paid by Seller in accordance with the Laws and Regulations. Include on each invoice submitted hereunder (i) the amount of any applicable sales and/or use tax and (ii) a statement on said invoice verifying that the amount submitted for payment includes the stated and applicable sales and/or use tax. Provide to Buyer copies of any audits by the Texas State Comptroller of Seller's payment of sales taxes applicable to transactions under this Agreement. Further, Seller, in consideration of the rights, duties and obligations contained herein, hereby waives confidentiality of audits conducted by the Texas State Comptroller pertaining to transactions under this Agreement and authorizes the Texas State Comptroller, upon request of the Buyer, to release to Buyer copies of Seller's audits pertaining to transactions under this Agreement. **IN ADDITION TO OTHER INDEMNITIES CONTAINED HEREIN, SELLER INDEMNIFIES, RELEASES AND HOLDS HARMLESS BUYER FROM ALL COSTS, LOSSES OR EXPENSES CAUSED BY SELLER'S FAILURE TO (I) INCLUDE THE SALES AND/OR USE TAXES IN THE STATED PURCHASE AMOUNT, (II) SEPARATELY STATE THE SALES AND/OR USE TAXES ON INVOICES, AND/OR (III) PROVIDE WRITTEN VERIFICATION ON INVOICES THAT THE SALES TAX IS INCLUDED IN THE PROCUREMENT CONTRACT PRICE.**

5.8 Delegation of Professional Design Services

- A. Seller is not required to provide professional design services unless these services are specifically required by the Procurement Contract Documents for a portion of the Goods and Special Services or unless these services are required to carry out Seller's responsibilities. Seller is not required to provide professional services in violation of applicable Laws and Regulations.
- B. The Procurement Contract Documents specify performance and design criteria related to Goods and Special Services if professional design services or certifications by a design professional related to Goods and Special Services are specifically required of Seller. These services or certifications must be provided by the licensed Design Professional who prepares, signs and seals drawings, calculations, specifications, certifications, Shop Drawings, and other submittals.

- C. BPT is entitled to rely upon the adequacy, accuracy and completeness of the services, certifications, or approvals performed by Seller's design professionals, provided BPT has specified to Seller the performance and design criteria that these services must satisfy.
- D. Design Professional's review and approval of design calculations and design drawings pursuant to this paragraph is for the limited purpose of checking for conformance with the performance and design criteria given and the design concepts expressed in the Procurement Contract Documents. Design Professional's review and approval of Shop Drawings and other submittals is only for the purpose stated in the Procurement Contract Documents.
- E. Seller is not responsible for the adequacy of the performance or design criteria specified by BPT. Advise BPT if the performance or design criteria are known or considered likely to be inadequate or otherwise deficient.

5.9 Continuing Performance

- A. Adhere to the Progress Schedule established in accordance with Paragraph 2.06.A to deliver the Goods and furnish the Special Services within the Procurement Contract Times specified in the Agreement.
- B. Carry on the work and adhere to the Progress Schedule during all disputes or disagreements with Buyer. Do not delay or postpone providing the Goods and Special Services while disputes or disagreements are being resolved.

5.10 Seller's Warranties and Guarantees

- A. Seller warrants and guarantees that it has the means, capability, experience, registration, licenses, permits and all necessary governmental approvals and authorizations required to provide the Goods and Special Services.
- B. Seller warrants and guarantees to Buyer that the Goods and Special Services are in accordance with the Procurement Contract Documents and the warranties for the consumable goods TrojanUVSigna UV Intensity Sensor, TrojanUVSigna Sleeve, TrojanUVSigna TrojanUV Solo Lamp, and TrojanUVSigna Lamp Driver, as set forth in the Attachments X through X to the Agreement. Buyer is entitled to rely on Seller's warranty and guarantee.
- C. Seller's warranty and guarantee excludes damage caused by improper maintenance or operation, abuse, or modification by BPT; or normal wear and tear under normal usage.
- D. The Procurement Contract Documents may require the Seller to accept the assignment of the Procurement Contract between the Buyer and Seller to the Contractor. The specific warranties, guarantees, and correction obligations contained in this Procurement Contract govern with respect to Seller's performance obligations to Buyer for the Goods and Special Services described in an assigned contract.
- E. Seller's obligation to provide the Goods and Special Services in accordance with the Procurement Contract Documents is absolute. None of the following constitutes an acceptance of Defective Goods and Special Services or a release of Seller's obligation to provide Goods and Special Services in accordance with the Procurement Contract Documents:
 1. Observations by BPT;

2. Recommendation by PCM or payment by Buyer of progress or final payments;
 3. Use of the Goods by Buyer;
 4. Acceptance by Buyer (subject to the provisions of Paragraph 8.02.D) or any failure to do so;
 5. Review and approval of a Shop Drawing or Sample;
 6. Inspections, tests, or approvals by others; or
 7. Correction of Defective Goods and Special Services by Buyer.
- F. Seller warrants that Goods sold hereunder will be free from defects in material and workmanship and will, when used in accordance with the manufacturer's operating and maintenance instructions, conform to any express written warranty pertaining to the specific goods purchased, which for Goods is for a period of twenty-four (24) months from Substantial Completion. Seller warrants that Special Services furnished hereunder will be free from defects in workmanship for a period of ninety (90) days from the completion of the services. Goods repaired or replaced are not covered by any warranty except to the extent repaired or replaced by Seller, an authorized representative of Seller, or under specific instructions by Seller, in which cases, the Goods will be covered under warranty up to the end of the warranty period applicable to the original Goods. The above warranties do not include the cost of shipping and handling of returned items. Any non-functioning parts that are repaired by Seller shall become the property of Seller. The warranties for the consumable goods TrojanUVSigna UV Intensity Sensor, TrojanUVSigna Sleeve, TrojanUVSigna TrojanUV Solo Lamp, and TrojanUVSigna Lamp Driver, as set forth in the Attachments X through X to the Agreement. All other guarantees, warranties, conditions and representations, either express or implied, whether arising under any statute, law, commercial usage or otherwise, including implied warranties of merchantability and fitness for a particular purpose, are hereby excluded. The sole remedy for Goods not meeting this warranty is repair, replacement, credit or refund of the purchase price. This remedy will not be deemed to have failed of its essential purpose so long as Seller is willing to provide such replacement, credit or refund. To make a warranty claim, Buyer must notify Seller in writing within 15 days of discovery of the defect in question. This notification must include a description of the problem, a copy of the applicable operator's log, a copy of Buyer's maintenance record and any analytical results detailing the problem. Any warranty hereunder or performance guarantees shall only be enforceable if (a) all equipment is properly installed, inspected regularly, and is in good working order, (b) all operations are consistent with Seller recommendations, (c) operating conditions at the installation site have not materially changed and remain within anticipated specifications, and (d) no reasonably unforeseeable circumstances exist or arise.

5.11 Seller's Warranty of Title

- A. Seller warrants and guarantees that title to Goods furnished under the Procurement Contract is to pass to Buyer free and clear of Liens, title defects, and patent, licensing, copyright, or royalty obligations no later than 7 days after the time of payment by Buyer of the Application for Payment which includes these items.

5.12 Indemnification

- A. **TO THE FULLEST EXTENT PERMITTED BY LAWS AND REGULATIONS, AND IN ADDITION TO ANY OTHER OBLIGATIONS OF SELLER UNDER THE PROCUREMENT CONTRACT OR OTHERWISE, SELLER INDEMNIFIES AND HOLDS HARMLESS BUYER'S INDEMNITEES FROM AND AGAINST ALL CLAIMS AND INDEMNIFIED COSTS ARISING OUT OF OR RELATING TO THE PERFORMANCE OF THE WORK, PROVIDED THAT ANY SUCH CLAIM, ACTION, LOSS, OR DAMAGE IS ATTRIBUTABLE TO BODILY INJURY, SICKNESS, DISEASE, OR DEATH, OR TO DAMAGE TO OR DESTRUCTION OF TANGIBLE PROPERTY (OTHER THAN THE WORK**

ITSELF), BUT ONLY TO THE EXTENT CAUSED BY ANY NEGLIGENT ACT OR OMISSION OF SELLER.

- B. The indemnification obligation under paragraph 5.12.A is not limited by the amount or type of damages, compensation, or benefits payable by or for members of the Seller or other individuals or entities under workers' compensation acts, disability benefit acts, or other employee benefit acts in claims against Buyer's Indemnitees or Contractor by an employee or the survivor or personal representative of employee of Seller.
- C. The indemnification obligations of Seller under Paragraph 5.12.A do not extend to the liability of Design Professional arising out of the preparation of the Procurement Contract Documents or giving directions or instructions, or failing to give them, to the extent they are obligated to do so if that is the primary cause of the injury or damage.

ARTICLE 6 – SHIPPING AND DELIVERY

6.1 Shipping

- A. Select the carrier and pay all costs for packaging, transporting, insuring, special handling, and any other costs associated with shipment and delivery.

6.2 Delivery

- A. Deliver the Goods F.O.B. to the Point of Destination in accordance with the Procurement Contract Times set forth in the Agreement, or other date agreed to by Buyer and Seller.

- B. Notify the Buyer and Contractor of the method of shipment and the anticipated delivery date at least 15 days before shipment. Include instructions concerning special equipment or services required at the Point of Destination to unload and care for the Goods at least 15 days before shipment. Require the carrier to give PCM or Contractor at least 24 hours' notice by telephone prior to the anticipated hour of delivery.
- C. Buyer will be responsible for unloading the Goods from carrier and paying costs for unloading the Goods.
- D. Buyer will ensure that adequate facilities are available to receive delivery of the Goods during the Procurement Contract Times set forth in the Agreement, or on another date agreed by Buyer and Seller.

6.3 Risk of Loss

- A. Risk of loss and insurable interests transfer from Seller to Buyer upon Buyer's acceptance of the Goods.
- B. Assume the risk of loss if Buyer rejects the Goods as Defective until these defects are corrected or the Buyer accepts the Goods, even if Buyer has received the Goods as described in Paragraph 6.03.A.

ARTICLE 7 – CHANGES, SCHEDULE, AND DELAYS

7.1 Amending the Procurement Contract Documents

- A. The Procurement Contract Documents may be modified by a Contract Amendment, Change Order or Field Order.
 1. Contract Amendment: Buyer and Seller may modify the terms and conditions of the Procurement Contract Documents without the recommendation of the Design Professional using a Contract Amendment. A Contract Amendment may be used for changes that do not involve:
 - a. The performance or acceptability of the Goods and Special Services;
 - b. The design as described in the Drawings, Specifications, or otherwise; or
 - c. Other design or technical matters.
 2. Change Order: All changes to the Procurement Contract Documents that include a change in the Procurement Contract Price or the Procurement Contract Times for previously authorized Goods and Special Services, or changes to the Goods and Special Services requiring Design Professional's approval must be made by Change Order. A Change Order may also be used to establish modifications of the Procurement Contract Documents that do not affect the Procurement Contract Price or Procurement Contract Times.
 3. Change Directive: A Change Directive does not change the Procurement Contract Price or the Procurement Contract Times but is evidence that the parties expect that the modifications requested by a Change Directive are to be incorporated in a subsequently issued Change Order following negotiations on the Procurement Contract Price and Procurement Contract Times. The parties agree to move as promptly and swiftly as possible to move from a Change Directive to Change Order.
 4. Field Order: Design Professional may authorize minor changes in the Goods and Special Services that do not change the Procurement Contract Price or Procurement Contract Times using a Field Order. PCM may issue a Field Order for non-technical,

administrative issues. Submit a Change Proposal if Seller believes that a Field Order justifies an adjustment in the Procurement Contract Price or Procurement Contract Times before proceeding with the Goods and Special Services described in the Field Order.

- B. Provide added or revised Goods and Special Services under the applicable provisions of the Procurement Contract Documents for the same or similar Goods and Special Services unless different Drawings, Specifications or directions are provided in the Contract Amendment, Change Order, or Field Order.

7.2 Changes in the Goods and Special Services

- A. Buyer may order additions, deletions, or revisions in the Goods and Special Services at any time as recommended by the Design Professional to the extent the change:
 - 1. Involves the design as described in the Procurement Contract Documents;
 - 2. Involves acceptance of the Goods and Special Services; or
 - 3. Involves other design or technical matters.
- B. These changes may be authorized by a Change Order requested by a Change Directive. Proceed with the Goods and Special Services involved or, in the case of a deletion in the Goods and Special Services, immediately cease production activities with respect to the deleted Goods and Special Services upon receipt of a Change Order. Nothing in this paragraph obligates the Seller to undertake work that Seller reasonably concludes cannot be performed in a manner consistent with Seller's safety obligations under the Procurement Contract Documents or Laws and Regulations.
- C. Seller is not entitled to an increase in the Procurement Contract Price or an extension of the Procurement Contract Times with respect to Goods and Special Services provided that are not required by the Procurement Contract Documents.
- D. Seller is responsible for costs and time delays associated with variations from the requirements of the Procurement Contract Documents unless the variations are specifically approved by Change Order.

7.3 Change in Procurement Contract Price

- A. The Procurement Contract Price can only be changed by a Change Order. Any Change Proposal for an adjustment in the Procurement Contract Price must comply with the provisions of Paragraph 7.05. Any Claim for an adjustment of Procurement Contract Price must comply with the provisions of Article 11.
- B. An adjustment in the Procurement Contract Price is to be determined by a mutually agreed lump sum.

7.4 Change of Procurement Contract Times

- A. The Procurement Contract Times can only be changed by Change Order. Any Change Proposal for an adjustment in the Procurement Contract Times must comply with the provisions of Paragraph 7.05. Any Claim for an adjustment in the Procurement Contract Times must comply with the provisions of Article 11.
- B. Delays in Seller's Progress:
 - 1. Seller is entitled to an equitable adjustment in the Procurement Contract Times if BPT directly delays, disrupts, or interferes with providing the Goods and Special Services. The Seller agrees to make no Claim for damages for delay in the performance of the Procurement Contract occasioned by an act or omission to act of the BPT and agrees that the extension of time provides an equitable adjustment.
 - 2. Seller is not entitled to an adjustment in Procurement Contract Price or Procurement Contract Times for delays, disruptions, or interference caused by or within the control of Seller, including but not limited to labor strife, transportation, shortages, or delays at Seller's facilities. Delays attributable to and within the control of Seller's subcontractors or suppliers are deemed within control of Seller.
 - 3. Seller is entitled to an equitable adjustment in Procurement Contract Times if Seller's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of BPT or Seller. These unanticipated causes include, but are not limited to:
 - a. Severe and unavoidable natural catastrophes e.g. fires, floods, epidemics, and earthquakes; or
 - b. Acts of war or terrorism.
 - 4. These adjustments in Procurement Contract Times are the Seller's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph.
 - 5. Notify the PCM immediately of a potential delaying, disrupting, or interfering event. Submit a Change Proposal seeking an adjustment in Procurement Contract Times within 15 days of the commencement of the delaying, disrupting, or interfering event.
 - 6. Seller is only entitled to an adjustment of the Procurement Contract Times for specific delays, disruptions, and interference to providing the Goods and Special Services that can be demonstrated to directly impact the ability of the Seller to complete the Goods and Special Services within the Procurement Contract Times and which are not caused by delays set forth in Paragraph 7.04.B.2. No adjustments in Procurement Contract Times are allowed for delays on components of the Goods and Special Services which were or could have been completed without impacting the Procurement Contract Times.
 - 7. Seller is not entitled to an adjustment in Procurement Contract Price or Procurement Contract Times for delay, disruption, or interference caused by or within the control of Buyer if this delay is concurrent with a delay, disruption, or interference attributable to or within the control of the Seller.
- C. Continue providing Goods and Special Services and adhere to the Progress Schedule during disputes or disagreements with Buyer. Do not delay or postpone the provision of Goods

and Special Services pending resolution of disputes or disagreements, or during an appeal process, unless Buyer and Seller agree otherwise.

7.5 Change Proposals

- A. Submit a Change Proposal to the PCM to:
 - 1. Request an adjustment in the Procurement Contract Price or Procurement Contract Times;
 - 2. Appeal an initial decision by BPT concerning the requirements of the Procurement Contract Documents or relating to the acceptability of the Goods and Special Services under the Procurement Contract Documents;
 - 3. Contest a Set-off against payment due; or
 - 4. Seek other relief under the Procurement Contract Documents.
- B. Notify the PCM immediately if a Change Proposal is to be submitted. Submit each Change Proposal to PCM no later than 30 days after the event initiating the Change Proposal. Submit the following as part of the Change Proposal:
 - 1. Any proposed change in Procurement Contract Price, Procurement Contract Times, or other relief, accompanied by a statement that the requested Change Order is the entire adjustment to which Seller believes it is entitled.
 - 2. The reason for the proposed change.
 - 3. Supporting data, accompanied by a statement that the supporting data is accurate and complete.
- C. PCM is to advise BPT regarding the Change Proposal. BPT is to review each Change Proposal and Seller's supporting data, and within 30 days after receipt of the documents, direct the PCM to either approve or deny the Change Proposal in whole or in part. PCM is to issue a Change Order for an approved Change Proposal. The Seller may deem the Change Proposal to be denied if PCM does not take action on the Change Proposal within 30 days and start the time for appeal of the denial under Article 11.

7.6 Execution of Change Orders

- A. Buyer and Seller are to execute Change Orders covering:
 - 1. Changes in the Procurement Contract Price or Procurement Contract Times which are agreed to by Buyer and Seller, including undisputed sums or amount of time for Goods and Special Services provided in accordance with a Change Directive;
 - 2. Changes in Procurement Contract Price resulting from Buyer Set-offs unless the Set-off has been successfully challenged by Seller;
 - 3. Changes in the Goods and Special Services which are:
 - a. Ordered by Buyer pursuant to Paragraph 7.01.A,
 - b. Required because Defective Goods and Special Services were accepted under Paragraph 8.02 or Buyer's correction of Defective Goods and Special Services under Paragraph 8.03, or

- c. Agreed to by the Buyer and Seller.

A Change Order is deemed to be in full force as if executed by Seller if the Seller refuses to execute a Change Order that is required to be executed under the terms of this paragraph.

7.7 Notice to Surety

- A. Notify the surety of Change Orders or Contract Amendments affecting the general scope for providing Goods and Special Services, changes in the provisions of the Procurement Contract Documents, or changes in Procurement Contract Price or Procurement Contract Times. Adjust the amount of each bond required by a Change Order.

7.8 Laws and Regulations

- A. Give required notices and comply with Laws and Regulations applicable to the provision of the Goods and Special Services. BPT is not responsible for monitoring Seller's compliance with Laws or Regulations except where expressly required by applicable Laws and Regulations.
- B. Pay costs to the proportional extent caused by actions taken by Seller that are contrary to Laws or Regulations. Seller is not responsible for determining that the design aspects of the Goods and Special Services described in the Procurement Contract Documents is in accordance with Laws and Regulations. This does not relieve Seller of its obligations under Paragraph 3.03.
- C. Buyer or Seller may give notice to the other party of changes in Laws or Regulations that may affect the cost or time of provision of the Goods and Special Services, including:
 - 1. Changes in Laws or Regulations affecting procurement of permits; and
 - 2. Sales, use, value-added, consumption, and other similar taxes which come into effect after Seller's Bid or Proposal is submitted or when Seller negotiates the Procurement Contract Price.
- D. Seller may submit a Change Proposal or Buyer may initiate a Claim within 30 days of this notice if Buyer and Seller are unable to agree on entitlement to or on the amount or extent of adjustments in Procurement Contract Price or Procurement Contract Times resulting from these changes.

ARTICLE 8 – BUYER'S RIGHTS

8.1 Inspections and Testing

- A. General:
 - 1. Provide inspections and require tests of the Goods at Seller's facility and at the Point of Destination in accordance with the Procurement Contract Documents as part of the Special Services.
 - 2. Reserved. .

3. Include all expenses for inspections and tests at the Point of Destination in the Procurement Contract Price. Procurement Contract Price is also to include expenses of Seller's representatives for all subsequent inspections and tests if the Goods are Defective until inspections and tests indicate that Goods meet the requirements of the Procurement Contract Documents.
4. Notify Buyer 30 days in advance of the readiness of the Goods for all inspections, tests, or approvals specified in the Procurement Contract Documents.
5. PCM is to notify Seller of all specified tests, inspections, and approvals of the Goods which are to be conducted at the Point of Destination.
6. PCM is to notify Seller of any tests or inspections conducted and the results of the tests or inspections. PCM is to notify the Seller if Goods appear to be Defective on the basis of inspections or tests. Seller is to respond with a description of corrective work to be done to bring the Goods into conformance with the Procurement Contract Documents.
7. Neither payments made by Buyer to Seller nor any tests or inspections constitute acceptance of non-conforming Goods, or prejudice Buyer's rights under the Procurement Contract.
8. BPT will inspect the Goods upon delivery solely for purposes of identifying the Goods and general verification of quantities and observation of apparent condition in order to provide a basis for a progress payment. This inspection does not constitute acceptance of the Goods that, as a result of subsequent inspections and tests, are determined to be Defective.

8.2 Defective Goods or Special Services

- A. It is Seller's obligation to ensure that the Goods and Special Services are not Defective.
 1. BPT has the authority to determine whether Goods and Special Services are Defective and to reject Defective Goods and Special Services, in whole or in part.
 2. PCM will notify Seller of Defective Goods and Special Services of which BPT has actual knowledge in accordance with 5.10F.
 3. Promptly correct, or remove and replace Defective Goods and Special Services if requested by the Buyer.
 4. Buyer's special warranties or guarantees are to remain in force after Defective Goods and Special Services are corrected in accordance with 5.10F.
 5. Pay the following reasonable and substantiated , costs, losses, and damages arising out of or relating to Defective Goods and Special Services: the cost for correction, removal, and replacement of Defective Goods and Special Services and cost for additional inspection and testing to verify the correction of Defective Goods and Special Services.
- B. Buyer's Rejection of Non-Conforming Goods:
 1. Buyer's notification to Seller of Defective Goods, in whole or in part, is to describe the reason Goods are Defective. Seller is to promptly remove and replace the Defective Goods if they have been delivered to Buyer, so the Procurement Contract will be completed within the Procurement Contract Times.

2. Pay reasonable and actually incurred costs and losses , and damages attributable to Seller's removal and replacement of the Defective Goods as provided in Paragraph 8.02.E.
 3. Buyer retains a security interest in the Goods to the extent of payments made and expenses incurred in testing and inspections.
- C. Remedying Defective Goods or Special Services:
1. Promptly provide a schedule for modifications to be made to correct Defective Goods if Buyer elects to permit the Seller to correct the Defective Goods.
 2. Provide Special Services conforming to the Procurement Contract Documents and acceptable to BPT.
- D. Buyer may elect to accept Defective Goods instead of requiring correction or removal and replacement of Defective Goods provided all of the following occur:
1. This acceptance occurs prior to final payment;
 2. Design Professional confirms that the Defective Goods are in general accordance with the design intent and applicable design principles;
 3. Design Professional confirms that acceptance of the Defective Goods does not endanger public health or safety; and
 4. Seller pays costs, losses, and damages attributable to Buyer's evaluation of and determination to accept the Defective Goods as provided in Paragraph 8.02.E.
- E. Seller shall provide remedies for Defective Goods and Special Services in accordance with Paragraph 5.10F.
- 1.
- F. Buyer may impose a reasonable Set-off against:
1. Payments due under Article 10 for costs associated with BPT's evaluation of Defective Goods and Special Services to determine if it can be accepted and to determine the diminished value of the Goods and Special Services.
- G. PCM is to issue a Modification for acceptance of the Defective Goods and Special Services prior to final payment. Pay an appropriate amount to Buyer if the acceptance of Defective Goods and Special Services occurs after final payment.

8.3 Correction Period

- B. A. Promptly correct Defective Goods and Special Services in Paragraph 5.10F. Buyer may have the Defective Goods and Special Services corrected in accordance with Paragraph 5.10F.
- C. **NOTWITHSTANDING ANYTHING TO THE CONTRARY IN THIS AGREEMENT OR THE PROCUREMENT CONTRACT DOCUMENTS AND TO THE FULLEST EXTENT PERMITTED BY LAWS AND REGULATIONS, THE SELLER INDEMNIFIES AND HOLDS BUYERS'S INDEMNITEES HARMLESS FROM AND AGAINST ALL CLAIMS ARISING OUT OF OR RELATING TO THE SELLER'S NEGLIGENCE OR WILLFUL MISCONDUCT IN SELLER'S CORRECTION OF DEFECTIVE GOODS AND SPECIAL SERVICES.**

ARTICLE 9 – ROLE OF THE PCM AND DESIGN PROFESSIONAL

9.1 Duties and Responsibilities

- A. BPT issues communications to Seller through PCM except as otherwise provided in the Procurement Contract Documents.
- B. PCM is Buyer's representative. The duties and responsibilities and the limitations of authority of PCM as Buyer's representative are described in the Procurement Contract Documents.
- C. BPT is not responsible for the acts or omissions of Seller. No actions or failure to act, or decisions made in good faith to exercise or not exercise the authority or responsibility available under the Procurement Contract Documents creates a duty in contract, tort, or otherwise of the BPT to the Seller.

9.2 Clarifications and Interpretations

- A. Submit questions concerning the design requirements of the Procurement Contract Documents or relating to the acceptability of the Goods and Special Services to the PCM immediately after the question arises. Design Professional is to interpret the design requirements of the Procurement Contract Documents and judge the acceptability of the Goods and Special Services. Design Professional is to render an interpretation of the Procurement Contract Documents or initiate a Modification to the Procurement Contract Documents through the PCM if a change is required in the Procurement Contract

Documents. Seller may appeal Design Professional's interpretation by submitting a Change Proposal.

- B. Submit questions concerning the non-technical or contractual / administrative requirements of the Procurement Contract Documents to the PCM immediately after the question arises. PCM is to interpret these requirements of the Procurement Contract Documents. PCM is to render an interpretation of the Procurement Contract Documents or initiate a Modification to the Procurement Contract Documents if a change is required in the Procurement Contract Documents. Contractor may appeal PCM's interpretation by submitting a Change Proposal.

9.3 Rejecting Defective Goods and Special Services

- A. BPT has the authority to reject Defective Goods and Special Services, in whole or in part, in accordance with 5.10F. PCM is to notify the Seller of the defect and document when Defective Goods and Special Services have been corrected or accepted.

9.4 Decisions on Requirements of Procurement Contract Documents and Acceptability of Goods and Special Services

- A. Design Professional is to render decisions regarding compliance with the design requirements of the Procurement Contract Documents or relating to the acceptability of the Goods and Special Services. Design Professional is to render decisions regarding the Procurement Contract Documents through the PCM. Design Professional will provide documentation for a Modification if a change is required in the Procurement Contract Documents. PCM will issue a Request for a Change Proposal if a Modification is required. Seller may appeal Design Professional's decision by submitting a Change Proposal if Seller does not agree with the Design Professional's decision.
- B. PCM is to render decisions regarding non-technical or contractual / administrative requirements of the Procurement Contract Documents. PCM will prepare documentation for a Modification if a change is required in the Procurement Contract Documents. Seller may appeal PCM's interpretation by submitting a Change Proposal.

ARTICLE 10 – PAYMENT

10.1 Applications for Progress Payments

- A. Progress payments are to be paid on the basis of the Schedule of Values as set forth in the Agreement and as incorporated into the form for Applications for Payment provided by the PCM.
- B. Submit Applications for Payment using the following procedures:
 - 1. Submit Application for Payment to the PCM at least 20 days before the payment Milestones established in the Agreement for Buyer to make progress payments. The Application for Payment is to be completed following the procedures in the Procurement Contract Documents and accompanied by the supporting documentation required by the Procurement Contract Documents.

2. Provide a bill of sale, invoice, or other documentation warranting that Buyer has received the Goods free and clear of Liens with the Application for Payment following delivery of Goods.
 3. Provide evidence that the Goods are covered by insurance specified in the Procurement Contract Documents or other arrangements to protect Buyer's interest.
 4. Provide an affidavit stating that previous progress payments received for Goods and Special Services have been used to pay Seller's obligations associated with prior Applications for Payment.
- C. The PCM is to review the Application for Payment following the procedures described in the Procurement Contract Documents:
1. PCM is to either recommend payment of the Application for Payment to Buyer or notify the Seller of the BPT's reasons for not recommending payment. Seller may make necessary corrections and resubmit the Application for Payment within 10 days after receipt of the notice.
 2. PCM's recommendation of the Application for Payment constitutes a representation by BPT that based on their experience and the information available:
 - a. The provision of Goods and Special Services has progressed to the point indicated;
 - b. The quality of the Goods and Special Services is generally in accordance with the Procurement Contract Documents; and
 - c. Requirements prerequisite to payment have been met.
 3. This representation is subject to:
 - a. Further evaluation of the Goods and Special Services as a functioning whole;
 - b. The results of subsequent tests called for in the Procurement Contract Documents; or
 - c. Any other qualifications stated in the recommendation.
 4. BPT does not represent by recommending payment:
 - a. Inspections made to check the quality or the quantity of the Goods and Special Services have been exhaustive, extended to every aspect of the Goods and Special Services in progress, or involved detailed inspections of the Goods and Special Services; or
 - b. Other matters or issues between the parties that might entitle Seller to additional compensation or entitle Buyer to withhold payment to Seller may or may not exist.
 5. Neither BPT's review of Seller's Goods and Special Services for the purposes of recommending payments nor PCM's recommendation of payment imposes responsibility on BPT:
 - a. To supervise, direct, or control the provision of Goods and Special Services;
 - b. For the Seller's means, methods, techniques, sequences, or procedures of production, or safety precautions and programs;

- c. For Seller's failure to comply with Laws and Regulations applicable to Seller's Goods and Special Services;
 - d. To make examinations to ascertain how or for what purposes Seller has used the monies paid on account of the Procurement Contract Price; or
 - e. To determine that title to the Goods has passed to Buyer free and clear of Liens.
- D. Buyer is to pay the amount recommended for payment within 30 days after receipt of the PCM's recommended Application for Payment.
- E. Reduction in Payment by Buyer:
1. Buyer is entitled to impose a Set-off, to the proportional extent of Seller's negligent or willful misconduct. against payment based on the following:
 - a. Claims made against Buyer or costs, losses, or damages incurred by Buyer related to:
 - 1) Seller's conduct in providing the Goods and Special Services, including, but not limited to, workplace injuries, non-compliance with Laws and Regulations, or patent infringement; or
 - 2) Seller's failure to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Site, including, but not limited, to workplace injuries, property damage, and non-compliance with Laws and Regulations.
 - b. Buyer has been required to remove or remediate a Hazardous Environmental Condition for which Seller is responsible;
 - c. Goods and Special Services are Defective or completed Goods have been damaged by Seller, requiring correction or replacement;
 - d. Buyer has been required to correct Defective Goods and Special Services;
 - e. The Procurement Contract Price has been reduced by Change Orders;
 - f. Liquidated damages have accrued because of Seller's failure to achieve Milestones or completion of the Goods and Special Services within the Procurement Contract Times;
 - g. Liens have been filed in connection with the Goods and Special Services, except where Seller has delivered a specific bond satisfactory to Buyer to secure the satisfaction and discharge of these Liens;
 - h. Buyer has been notified of Seller's failure to make payments to entities with contracts to provide labor, materials or equipment to the Seller for this Procurement Contract, or Seller's employees;
 - i. Failure to submit Progress Schedule updates or revised schedules as requested by the PCM;

- j. tested and found to be Defective have been corrected; or
 - k. Payment would result in an over-payment of the Procurement Contract Price.
2. Compensation for services of BPT staff is to be at the rates established in the Supplementary Conditions.
 3. PCM is to notify Seller stating the amount and the reasons for an imposed Set-off. The Buyer is to pay the Seller amounts remaining after deduction of the Set-off. Buyer is to pay the Set-off amount agreed to by Buyer and Seller if Seller remedies the reasons for the Set-off. Seller may submit a Change Proposal contesting the Set-off.

10.2 Final Payment

- A. Make Application for Final Payment after Seller has corrected all Defective Goods to the satisfaction of BPT, furnished all Special Services, provided all specified spare parts, delivered all documents required by the Procurement Contract Documents, and PCM has issued a notice of acceptability to Seller. Provide the following with the final Application for Payment:
 1. Consent of Surety to Final Payment acknowledging unsettled disputes; and
 2. Affidavit of Payment of Debts and Claims or Affidavit of Release of Liens or furnish receipts or releases in full from entities under contract with Seller to provide materials, labor or equipment for providing the Goods and Special Services.
- B. PCM is to either recommend payment of the final Application for Payment to Buyer if BPT is satisfied that the Goods and Special Services has been completed and Seller's other obligations under the Procurement Contract Documents have been fulfilled or notify the Seller of the BPT's reasons for not recommending final payment.
- C. Provision of the Goods and Special Services is complete, subject to surviving obligations, when it is ready for final payment as established by the PCM's recommendation of payment of the final Application for Payment to Buyer.
- D. The Buyer is to pay the amount of final payment recommended by the PCM within 30 days after receipt of the final Application for Payment and accompanying documentation from the PCM.

10.3 Waiver of Claims

- A. The making of final payment does not constitute a waiver by Buyer of Claims or rights against Seller. Buyer expressly reserves Claims and rights arising from:
 1. Unsettled Liens or claims for non-payment;
 2. Defective Goods and Special Services appearing after final payment;

3. Seller's failure to comply with the Procurement Contract Documents or the terms of specified special guarantees; or
4. Seller's continuing obligations under the Procurement Contract Documents.

ARTICLE 11 – CLAIMS

11.1 Claims Process

- A. Follow the Claims process described in this Article for the following disputes between Buyer and Seller:
 1. A demand or assertion by Buyer to Seller, submitted in accordance with the requirements of the Procurement Contract Documents:
 - a. Seeking an adjustment of Procurement Contract Price or Procurement Contract Times;
 - b. Contesting an initial decision by Design Professional concerning the requirements of the Procurement Contract Documents or the acceptability of Goods and Special Services under the Procurement Contract Documents;
 - c. Contesting Design Professional's decision regarding a Change Proposal;
 - d. Seeking resolution of a contractual issue that BPT has declined to address; or
 - e. Seeking other relief with respect to the terms of the Procurement Contract;
 2. A demand or assertion by Seller to Buyer, submitted in accordance with the requirements of the Procurement Contract Documents:
 - a. Contesting BPT's decision regarding a Change Proposal; or
 - b. Seeking resolution of a contractual issue that BPT has declined to address.
- B. Deliver notice of the Claim to the PCM no later than 7 days after the start of the event giving rise to the Claim or, in the case of appeals regarding Change Proposals, within 7 days of the decision under appeal. The responsibility to substantiate a Claim rests with the entity making the Claim. In the case of a Claim by Seller seeking an increase in the Procurement Contract Price or Procurement Contract Times, Seller must certify that the Claim is made in good faith, that the supporting data is accurate and complete, and that to the best of Seller's knowledge and belief, the amount of time or money requested accurately reflects the full amount to which Seller is entitled.
- C. The entity receiving a Claim is to review the Claim giving full consideration to its merits. The Buyer and Seller are to seek to resolve the Claim through the exchange of information and direct negotiations. The Buyer and Seller may extend the time for resolving the Claim by mutual agreement. Notify PCM of actions taken on a Claim.
- D. Buyer and Seller may mutually agree to mediate the underlying dispute at any time after initiation of a Claim.
 1. The agreement to mediate suspends the Claim submittal and response process.

2. Buyer or Seller may unilaterally terminate the mediation process after 60 days from the agreement to mediate and resume the Claim submittal and decision process as of the date of the termination. The Claim process resumes as of the date of the conclusion of the mediation, as determined by the mediator, if the mediation is unsuccessful in resolving the dispute.
 3. Buyer and Seller are to each pay one-half of the mediator's fees and costs.
- E. If the entity receiving a Claim approves the Claim in part or denies it in part, this action is final and binding unless the other entity invokes the procedure described in Article 14 for final resolution of disputes within 30 days of this action.
 - F. Notify the PCM if efforts to resolve the Claim are not successful and the Claim is denied. A denial of the Claim is final and binding unless the other entity invokes the procedure described in Article 14 for the final resolution of disputes within 30 days of the denial.
 - G. The results of the agreement or action on the Claim is to be incorporated in a Change Order by the PCM to the extent they affect the Procurement Contract Documents, the Procurement Contract Price, or the Procurement Contract Times if the Buyer and Seller reach an agreement regarding a Claim.

ARTICLE 12 – CANCELLATION, SUSPENSION, AND TERMINATION

12.1 Suspension of Performance by Buyer

- A. Buyer may suspend performance of the Procurement Contract without cause by providing ten (10) days prior written notice to Seller. Buyer will notify the Seller of the date of suspension and set the date on which Seller is to resume performance of the Procurement Contract. Seller may be entitled to adjustments in the Procurement Contract Price and Procurement Contract Times directly attributable to this suspension. Submit a Change Proposal seeking an adjustment no later than 30 days after the date fixed for resumption of the Procurement Contract.

12.2 Cancellation

- A. Buyer has the right to cancel the Procurement Contract, without cause, at any time prior to delivery of the Goods by notifying Seller of the effective date of termination. Cancellation pursuant to the terms of this paragraph is not a breach of contract by Buyer. Buyer will pay Seller for reasonable documented direct costs incurred by Seller in producing Goods fabricated or assembled specifically to fulfill this Procurement Contract in the event of cancellation.
- B. Seller will not be paid for loss of anticipated overhead, profits, or revenue, or other economic loss arising out of or resulting from this cancellation.

12.3 Buyer May Terminate for Cause

- A. The occurrence of one or more of the following events may constitute a default by Seller and justifies termination for cause:
 1. Seller's failure to provide the Goods and Special Services in accordance with the Procurement Contract Documents;
 2. Failure to adhere to the Progress Schedule;

3. Failure of the Seller to provide a satisfactory replacement bond or insurance in the event either is lost or canceled;
 4. Failure of Seller to maintain financial solvency to adequately perform the Procurement Contract as indicated by one or more of the following:
 - a. A petition of bankruptcy is filed by or against Seller,
 - b. Seller is adjudged as bankrupt or insolvent,
 - c. Seller or surety makes a general assignment for the benefit of creditors,
 - d. A receiver is appointed for the benefit of Seller's creditors, or
 - e. A receiver is appointed on account of Seller's insolvency;
 5. Seller's violations of Laws or Regulations;
 6. Seller's repeated disregard of the authority of BPT;
 7. Wrongful repudiation of the Procurement Contract; or
 8. Violation of any provisions of the Procurement Contract Documents.
- B. Seller and surety must provide adequate assurance of future performance of the Procurement Contract in accordance with the Procurement Contract Documents that is satisfactory to Buyer. If Seller is reasonably believed by Buyer to be in financial distress due to the existence of one or more of the indicators listed in Paragraph 12.3.A.4. Buyer may terminate this Procurement Contract if Seller and surety fail to provide adequate documentation satisfactory to Buyer within 10 days of PCM's written request for this information.
- C. Buyer may declare Seller to be in default, give notice to Seller and surety that the Procurement Contract is terminated, and enforce the rights available to Buyer under the performance bond after giving Seller and surety 10 days' notice that one or more of the events identified in Paragraph 12.3.A has occurred.
- D. Buyer may take possession of the Goods, incorporate the Goods stored, and complete the Special Services as Buyer may deem expedient if Buyer has terminated the Procurement Contract for cause.
- E. Buyer may elect not to proceed with termination of the Procurement Contract under this paragraph if Seller begins to cure the cause for termination within 7 days of receipt of written notice of intent to terminate.
- F. To the extent not covered by the performance bond, Seller agrees to the following: Seller is not entitled to receive further payments until the Goods and Special Services are provided if Buyer proceeds as provided in this paragraph. The amount of the Procurement Contract Price remaining is to be paid to the Seller if the unpaid balance exceeds the cost to complete the Procurement Contract. This cost to complete the Procurement Contract may include related claims, costs, losses, damages, and the fees and charges of design professionals, attorneys, and other professionals retained by Buyer. Pay the difference to Buyer if the cost to complete the Procurement Contract including related claims, costs, losses, and damages exceeds the unpaid balance of the Procurement Contract Price. Claims, costs, losses, and damages incurred by Buyer are to be reviewed as to their reasonableness and incorporated in a Change Order by PCM. Buyer is not required to obtain the lowest price to complete this Procurement Contract when exercising its rights or remedies under this paragraph.

- G. Termination does not affect the rights or remedies of Buyer against Seller or against surety under the payment bond or performance bond. Buyer does not release Seller from liability by paying or retaining money due Seller.

12.4 Seller May Suspend Performance of the Procurement Contract or Terminate

- A. Seller may terminate the Procurement Contract and issue a Change Proposal requesting payment from Buyer on the same terms as provided in Paragraph 12.03 after 10 days' notice to PCM provided that, through no act or fault of Seller:
 - 1. Buyer wrongfully rejects the Goods;
 - 2. Buyer suspends performance of the Procurement Contract for more than 90 consecutive days;
 - 3. PCM fails to act on an Application for Payment within 30 days after it is submitted; or
 - 4. Buyer fails to pay Seller sums determined to be due, other than the final payment, within 30 days after payment is recommended by PCM; and
 - 5. BPT does not remedy this suspension or failure within 10 days after receipt of the notice.
- B. Seller may stop providing Goods and Special Services, without prejudice to other rights or remedies in lieu of terminating the Procurement Contract, if PCM has failed to act on an Application for Payment within 30 days after it is submitted, or Buyer has failed to pay Seller within 30 days after payment is recommended by PCM. The provisions of this paragraph are not intended to preclude Seller from submitting a Change Proposal for an adjustment in Procurement Contract Price or Procurement Contract Times for damage attributable to Seller's actions as permitted by this paragraph.

ARTICLE 13 – LICENSES AND FEES

13.1 Intellectual Property and License Fees

- A. Seller retains all rights in and to any intellectual property and confidential information created or procured by it or its representatives at any time, and Buyer receives licenses to use such intellectual property and information only to the extent provided by implied license under applicable law. No Buyer information technology requirements apply, except the extent such requirements specifically apply to equipment being sold to Buyer. To help ensure mutual compliance with applicable privacy laws, Buyer will not provide to or share with Seller any personal data or personally identifiable information.
- B. Pay license fees, royalties, and costs incident to the use of inventions, designs, processes, products, or devices which are patented or copyrighted by others in the provision of the Goods and Special Services, or to incorporate these inventions, designs, processes, products, or devices which are patented or copyrighted by others in the Goods and Special Services. The Procurement Contract Documents identify inventions, designs, processes, products, or devices BPT knows are patented or copyrighted by others or that its use is subject to patent rights or copyrights calling for the payment of a license fee or royalty to others. Seller is to include the cost associated with the use of patented or copyrighted products or processes, whether specified or selected by the Seller, in the Procurement Contract Price.

13.2 Seller's Infringement

- A. Buyer will notify Seller, or Seller will notify Buyer, promptly if either Buyer or Seller receive notice of a suit or threat of suit for intellectual property infringement.
- B. Subject to all limitations of liability provided herein, Seller will, with respect to any Goods of Seller's design or manufacture, indemnify Buyer and Buyer's Indemnitees from any and all damages and costs as finally determined by a court of competent jurisdiction in any suit for infringement of any U.S. or Canadian patent (or European patent for Goods that Supplier sells to Buyer for end use in a member state of the E.U. or the U.K.) that has issued as of the delivery date, solely by reason of the sale or normal use of any Goods sold to Buyer hereunder and from reasonable expenses incurred by Buyer or Buyer's Indemnitees in defense of such suit if Seller does not undertake the defense thereof, provided that Buyer promptly notifies Seller of such suit and offers Seller either (i) full and exclusive control of the defense of such suit when Goods of Seller only are involved, or (ii) the right to participate in the defense of such suit when products other than those of Seller are also involved. Seller's warranty as to use patents only applies to infringement arising solely Buyer's specifications. .
- C. In case the Goods are in such suit held to constitute infringement and the use of the Goods is enjoined, Seller will, at its own expense and at its option, either procure for Buyer the right to continue using such Goods or replace them with non-infringing products, or modify them so they become non-infringing, or remove the Goods and refund the purchase price (prorated for depreciation) and the transportation costs thereof.
- D. The foregoing states the entire liability of Seller for patent infringement by the Goods. To the extent allowed by the Constitution and the laws of the State of Texas, to the same extent as set forth in Seller's above obligation to Buyer, Buyer agrees to defend, indemnify and hold harmless Seller for patent infringement related to (x) any goods manufactured to the Buyer's design, (y) services provided in accordance with Buyer instructions, or (z) Seller's Goods when used in combination with any other devices, parts or software not provided by Seller hereunder.

13.3 Reuse of Documents

- A. Seller has no rights to the Procurement Contract Documents and may not use the Procurement Contract Documents, or copies or electronic media editions of the Procurement Contract Documents, other than for providing the Goods and Special Services under the Procurement Contract. This provision survives final payment or termination of the Procurement Contract.
- B. Seller can retain a copy of the Procurement Contract Documents for record purposes, unless specifically prohibited by the Buyer for security reasons. Surrender paper and digital copies of the Procurement Contract Documents and other related documents and remove these documents from computer equipment or storage devices as a condition of final payment if the Buyer so directs.

ARTICLE 14 – FINAL RESOLUTION OF DISPUTES

14.1 Methods and Procedures

- A. The Buyer or Seller may appeal a Claim, approved or denied in part or in full, by:
 - 1. Electing to invoke the dispute resolution process if one is provided for in the Supplementary Conditions;

2. Agreeing with the other party to submit the dispute to a dispute resolution process; or
3. Notifying the other party of the intent to submit the dispute to a court of competent jurisdiction if no dispute resolution process is provided for in the Supplementary Conditions or mutually agreed to.

ARTICLE 15 – MISCELLANEOUS

15.1 Independent Contractor

- A. Seller is to perform its duties under this Procurement Contract as an independent contractor. The Seller and its personnel are not considered to be employees or agents of the Buyer. Nothing in this Procurement Contract is to be interpreted as granting Seller the right or authority to make commitments for the Buyer. This Procurement Contract does not constitute or create a joint venture, partnership, or formal business organization of any kind.

15.2 Controlling Law

- A. This Procurement Contract is governed by the laws of the State of Texas without regard to its conflicts of laws. Venue for legal proceedings lies exclusively in jurisdiction of the Buyers offices.

15.3 Computation of Times

- A. Exclude the first day and include the last day when determining dates for times referred to in the Procurement Contract Documents by days. The last day of this period is to be omitted from the determination if it falls on a Saturday, Sunday, or a legal holiday.
- B. All references and conditions for a Calendar Day Contract in the Procurement Contract Documents apply for a Fixed Date Contract. A Fixed Date Contract is one in which the calendar dates for reaching Substantial Completion and/or final completion are specified in lieu of identifying the number of calendar days involved.

15.4 Cumulative Remedies

- A. The duties and obligations imposed by these General Conditions and the rights and remedies available to the Buyer or Seller by these General Conditions are in addition to, and are not a limitation of, the rights and remedies which are otherwise imposed or available by:
 - 1. Laws or Regulations;
 - 2. Special warranties or guarantees; or
 - 3. Other provisions of the Procurement Contract Documents.
- B. The provisions of Paragraph 15.04.A are as effective as if repeated specifically in the Procurement Contract Documents in connection with each duty, obligation, right, and remedy to which they apply.

15.5 Limitation of Damages

- A. Buyer's Indemnitees are not liable to Seller for claims, costs, losses, or damages sustained by Seller associated with other projects or anticipated projects.
- B. To the extent allowed by state law, none of Seller, its successors-in-interest, assignees, affiliates, directors, officers, and employees will be liable to Buyer or Buyer's Indemnitees under any circumstances for any special, treble, incidental, indirect, or consequential damages, including without limitation, damage to or loss of property other than for the Goods purchased hereunder; damages incurred in installation, repair, or replacement; lost profits, revenue, or opportunity; loss of use; losses resulting from or related to downtime of the Goods or inaccurate measurements or reporting; the cost of substitute products; or claims of Buyer's customers for such damages, howsoever caused, and whether based on warranty, contract, and/or tort (including negligence, strict liability or otherwise). The total liability of

Seller, its successors-in-interest, assignees, affiliates, directors, officers, and employees arising out of the performance or nonperformance hereunder, or Seller's obligations in connection with the design, manufacture, sale, delivery, and/or use of Goods, will in no circumstance exceed three times the Procurement Contract Price, except only in the case of damages arising due to Seller's willful misconduct.

- 15.6 No Waiver
- A. The failure of Buyer or Seller to enforce any provision of this Procurement Contract does not constitute a waiver of that provision, affect the enforceability of that provision, or the enforceability of the remainder of this Procurement Contract.
- 15.7 Severability
- A. If a court of competent jurisdiction renders a part of this Procurement Contract invalid or unenforceable, that part is to be severed and the remainder of this Procurement Contract continues in full force.
- 15.8 Survival of Obligations
- A. Representations, indemnifications, warranties, guarantees, and continuing obligations required by the Procurement Contract Documents survive completion and acceptance of the Goods and Special Services or termination of the Procurement Contract.
- 15.9 No Third Party Beneficiaries
- A. Nothing in this Procurement Contract can be construed to create rights in any entity other than the Buyer and Seller. Neither the Buyer nor Seller intends to create third party beneficiaries by entering into this Procurement Contract.
- 15.10 Assignment of Procurement Contract
- A. This Procurement Contract may not be assigned in whole or in part by the Seller without the consent of the Buyer.
- 15.11 Successors and Assigns
- A. The Buyer and the Seller each binds itself, its partners, successors, assigns, and legal representatives to the other party hereto, its partners, successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Procurement Contract Documents.
- 15.12 No Waiver of Sovereign Immunity
- A. The Buyer has not waived its sovereign immunity by entering into and performing its obligations under this Procurement Contract.
- 15.13 Accrual of Claims
- A. To the fullest extent permitted by law, all causes of action arising under this Procurement Contract will be deemed to have accrued, and all statutory periods of limitations will commence, no later than the date of final acceptance.
- 15.14 Execution
- A. This Procurement Contract may be executed in one or more counterparts and may be exchanged by facsimile or other electronic means. It is stipulated and agreed that any

counterpart containing a signature or facsimile signature of the authorized representatives of Buyer and Seller will be deemed an original for all purposes.

15.15 Non-Exclusivity

- A. Seller acknowledges and agrees that this Procurement Contract constitutes a non-exclusive agreement for the provision of the Goods and Special Services to Buyer. Seller further acknowledges and agrees that Buyer has not made any representations that Seller will be the sole or exclusive provider of the Goods or Special Services to Buyer during the course of the Project. Due to the extensiveness and complexity of the Project, Buyer, in its sole and absolute discretion, reserves the right to award multiple contracts for the provision of Goods or Special Services.

15.16 Conflicts of Interest

- A. Neither Seller, nor any consultant, will have other interests which conflict with the interests of Buyer, specifically including, but not limited to, a connection with the sale or promotion of equipment or material which may be used on the Project. Seller agrees to make reasonable inquiry of all consultants concerning the existence of or potential for such conflicts.

15.17 Due Authorization; Good Standing

- A. Seller has the power and authority to enter into this Procurement Contract. The execution and delivery of this Procurement Contract and the performance of the work hereunder has been duly authorized by all necessary corporate action. Upon execution, this Procurement Contract will constitute the binding and valid obligations of Seller enforceable in accordance with its terms. Seller is in good standing in and qualified to do business in the State of Texas.

15.18 Conflict

- A. In the event any document submitted by the Seller (Offeror) conflicts with the terms of the Agreement, the Supplementary Conditions, or the General Conditions, it is understood and agreed that the terms of the Agreement, the Supplementary Conditions, and the General Conditions will prevail.

END OF SECTION

SECTION 44 44 73 – ULTRAVIOLET DISINFECTION SYSTEM

PART 1 - GENERAL

1.1 SUMMARY

- A. The Owner intends to pre-select the UV disinfection equipment for the Wilbarger Creek Regional Wastewater Treatment Facility project. The equipment will be assigned to the successful bidder for the project, referred to as the Contractor, for purchase, unloading, storage, and installation of the UV equipment.
- B. Section Includes:
 - 1. The Work necessary to completely furnish, install, factory test prior to shipment to the field, field test, and place into operation the UV disinfection equipment including the inclined UV modules, power distribution centers, system control center, and all related equipment, material, and appurtenances.
 - 2. The Work requires that the UV disinfection system, power distribution panels, control panel, instruments, and components complete with all accessories and appurtenances be the end product of one responsible system Supplier. Unless otherwise indicated, the Contractor shall obtain each system from the Supplier of the equipment. The Supplier shall furnish all components and accessories of the system to enhance compatibility, ease of operation and maintenance, and as necessary to place the equipment in operation in conformance with the specified performance, features, and functions without altering or modifying the Contractor's responsibilities under the Contract Documents. The Contractor is responsible to the Owner for providing the equipment systems as specified herein.
- C. Related Sections:
 - 1. Section 01 33 00 – Submittal Procedures
 - 2. Section 01 78 23 – Operation and Maintenance Data
 - 3. Section 01 79 00 – Demonstration and Training
 - 4. 26 05 19 – Wires and Cables (1000 Volts and Above)
 - 5. 26 05 33 – Raceway, Boxes, Enclosures, and fittings
 - 6. 26 22 13 – Distribution dry-type transformers
 - 7. 26 29 86 – Mechanical Manufacturer's Provided Control Panels (MEMs)
 - 8. 26 33 53 – Single Phase Uninterruptible Power Supply System (UPS)

1.2 GENERAL

- A. Like items of equipment provided hereinafter shall be the end products of one Supplier to achieve standardization of appearance, operation, maintenance, spare parts, and Supplier's services
- B. General Requirements: See Division 01, GENERAL REQUIREMENTS, which contains information and requirements that apply to the work specified herein and are mandatory for this project.

1.3 SUBMITTALS

- A. General: Administrative, shop drawings, samples, quality control, and contract closeout shall conform to the requirements of Section 01 33 00, SUBMITTAL PROCEDURES.
- B. In addition to the requirements of Section 01 33 00, SUBMITTAL PROCEDURES, submit the following additional information:

1. Shop Drawings:
 - a. Make, model, weight, and power draw of each component.
 - b. Supplier's catalog information, descriptive literature, specifications, and identification of materials of construction.
 - c. Detailed mechanical and electrical drawings showing the equipment fabrications and interface with other items. Include dimensions, size, and details of anchorage and of connections to other work, and weights of associated equipment.
 - d. Complete details of proposed UV disinfection system, including but not limited to: banks per channel, modules per bank, lamps per module, total UV lamps, and power consumption at peak flow and average flow conditions.
 - e. External utility requirements (quantity and connection details) such as air, water, power, drain piping, etc. for each component.
 - f. Motor nameplate data, motor manufacturer, and any motor modifications.
 - g. Wiring diagrams for motors, including terminals and numbers.
 - h. Spare parts list to maintain the equipment in service for a period of 1 year and 5 years. Include a list of special tools required for checking, testing, parts replacement, and maintenance with current price information.
 - i. List of special tools, materials, and supplies furnished with equipment for use prior to and during startup and for future maintenance.
 - j. Front exterior and interior panel layout drawings with bill of materials for all electrical and control panels.
 - k. Control schematics.
 - l. Detailed electrical wiring diagrams as required for the Contractor to install a complete operational system. Electrical wiring diagrams shall include, but not be limited to:
 - 1) Source power feeder conductor quantities and sizes.
 - 2) Control wiring quantities and sizes.
 - 3) Signal cable quantities and sizes.
 - 4) Power (kW), power factor, and apparent power (kVA) for each UV train.
 - 5) Master UV PLC power requirements.
 - 6) Cut sheets for each electrical power and control device
 - 7) Applicable submittals required by the following electrical sections shall be included as part of the UV Disinfection Equipment submittal:
 - a) 26 05 19 – Wires and Cables (1000 Volts and Above)
 - b) 26 05 33 – Raceway, Boxes, Enclosures, and fittings
 - c) 26 22 13 – Distribution dry-type transformers
 - d) 26 29 86 – Mechanical Manufacturer's Provided Control Panels (MEMs)
 - e) 26 33 53 – Single Phase Uninterruptible Power Supply System (UPS)
 - m. Submittal information on control panel hardware including but not limited to PLCs, switches, displays, power supplies, terminals, and relays.
 - n. Instrumentation and Control Submittals including, but not limited to:
 - 1) Loop drawings
 - 2) Control philosophy narrative with integration of the Third-Party Validation Testing results, including the use of sensors to monitor and alarm the combined effect of lamp aging and sleeve fouling and/or the use of the sensors to continuously monitor UV dose based on inputs of flow, UV intensity sensor, and UV transmittance (UVT).
 - 3) Procedures of SCADA communications and graphics test to be performed in the presence of the Contractor's Process Control System Integrator prior to shipment to the field.
 - 4) Results of SCADA communications and graphics test to be performed in the presence of the Contractor's Process Control System Integrator prior to shipment to the field.

2. Calculations

- a. Theoretical harmonic analysis study for UV disinfection system which verifies compliance with harmonics and line notching requirements per IEEE Standard 519, performed in accordance with this Section.
 - 1) Include information on filter system, if required, to achieve requirements of IEEE Standard 519. The UV Manufacturer is responsible for gathering input data to conduct the study.
 - 2) The study must also contain the following:
 - a) Input data and assumptions (including backup data)
 - b) Explanation of method used to perform study
 - c) Calculations and/or computer printouts used to arrive at recommendations
 - d) Proof of coordination with equipment, conductors, etc.
 - b. Employ an independent contractor experienced in making electrical system harmonic content field measurements and analysis to measure the harmonic content of the system. Provide additional filters or harmonic mitigating equipment at no increase in contract price if field measurements show an excess of harmonic content.
3. Quality Control Submittals:
- a. Supplier's Certificate of Compliance: Commercial products, including painting/coating systems.
 - b. Special shipping, storage and protection, and handling instructions.
 - c. Detailed plan for functional and performance testing.
 - d. Test results, reports, and certifications including 3rd-party bioassay testing results for UV dose determination.
 - e. Supplier's Certificate of Proper Installation.
 - f. Operation and maintenance manual.
4. Contract Closeout Submittals: Service records for maintenance performed during construction.

1.4 DEFINITIONS

- A. Bioassay: A procedure used to determine the response of a specific microorganism after exposure to UV light for various delivered UV doses.
- B. Delivered UV dose: The dose that is assigned to the UV train under a given set of operating conditions that is based on Third-party Validation Testing. The delivered UV does is equivalent to that measured with the collimated-beam apparatus for the same degree of inactivation of the target microorganism. UV does is stated as millijoules per square centimeter (mJ/cm²) or milliwatt-second per square centimeter (mW-s/cm²).
- C. Design UV dose: The UV dose delivered for a specific log inactivation of the target microorganism, also known as Reduction Equivalent Dose (RED). The design UV dose is used for sizing the UV Disinfection System, and represents the minimum applied UV dose under the design operating conditions.
- D. Validation report: A report summarizing the third-party validation testing in accordance with National Water Research Institute ('NWRI 2012') guidelines.
- E. End-of-Lamp-Life factor: A UV lamp is considered to have reached the end of its life when the UV output has reached a percentage of specified new lamp output. This percentage is called the end of lamp life (EOLL) factor.
- F. Normalized lamp velocity: Flow velocity across a lamp (in gpm per lamp), calculated by the total expected flow in a train (gpm) divided by the total number of lamps in one train.

- G. Sleeve fouling factor (FF): Between two mechanical and/or chemical cleanings, organic and inorganic foulants accumulate on the sleeve and reduce the effective UV irradiance. The sleeve fouling factor is a measure of this loss of irradiance and expressed as a percentage of irradiance from a new quartz sleeve.
 - H. Third-party validation testing: Testing completed on a pilot-scale or full-scale UV system in accordance with NWRI guidelines that serves as the basis of design for other UV systems within the scale-up limitations outlined in the NWRI guidelines. Testing is conducted to develop dose delivery relationships by bioassay, lamp sleeve fouling rates, etc.
 - I. Ultraviolet transmittance (UVT): A parameter that defines the percent of UV light energy that is transmitted through the water in a 1 cm (pathlength) quartz cell at 254 nm.
 - J. UV Module: A frame consisting of individual lamps ready for installation in a UV disinfection channel. Each module shall include:
 1. Low pressure, high output ('LPHO') UV lamps (each lamp >300 W).
 2. High purity, quartz sleeves (1 sleeve per lamp) to protect lamps from direct contact with the influent to the UV system,
 3. UV intensity (UVI) sensors to provide continuous monitoring of the reactor performance. Sensors must be identical in type and performance to those employed during the third-party Validation testing.
 4. Automatic mechanical wiping system for periodic cleaning of the quartz sleeves.
 5. Factory assembled interconnection of electrical and control cabling between the UV lamps, sensors, cleaning mechanism, and ballast enclosures.
 6. A module may consist of one bank or multiple banks.
 - K. UV disinfection system: Major equipment associated with the UV Disinfection System will include the following:
 1. UV modules including lamps and appurtenances.
 2. All electrical panels, power distribution equipment, harmonic filtering equipment, transformers, instruments, and controls associated with UV equipment including power distribution centers, system control center, and ballast enclosures.
 3. Automatic on-line wiping system including mechanical wiper systems, and/or mechanical-chemical equipment, as well as other appurtenances such as local cleaning system electrical and control panels.
 4. On-line UV transmittance (UVT) monitor – to be located for sampling of UV influent.
 - L. UV train: A combination of UV modules in series.
 - M. Process Control System Integrator (PCSI): The Contractor's designated individual responsible for integrating the controls across all components of the main project.
- 1.5 QUALITY CONTROL:
- A. The inclined UV disinfection system shall be capable of disinfecting the specified flows based on the minimum influent water quality specified in Section 2.4.
- 1.6 OPERATION AND MAINTENANCE DATA
- A. O&M Manuals: Content, format, and schedule for providing as specified in Section 01 78 23 OPERATION AND MAINTENANCE DATA.
 - B. Maintenance Summary Forms: As specified in Section 01 78 23, OPERATION AND MAINTENANCE DATA.

1.7 WARRANTY

- A. Performance Guarantee:
1. If the UV Disinfection System fails to meet the performance requirements under the service conditions specified herein, the Supplier shall modify, change, or add equipment to correct system deficiencies.
 2. The Supplier shall be responsible for any additional costs due to changes, including piping, mechanical, structural, or electrical changes, or additional equipment as necessary to meet performance requirements. In addition to equipment, this includes design, engineering, and construction.
 3. The Supplier shall provide a written guarantee that the equipment will continuously meet the specified performance requirements which shall include:
 - a. The required performance guarantees.
 - b. Equipment warranties and guarantees as defined in this Section.
 - c. Signature by 2 authorized officers.
 - d. Seal and signature of Notary Public
- B. Physical UV Equipment Warranty: Provide warranty for a period of 24 months beginning at the date of substantial completion. The warranty shall stipulate that the equipment furnished is suitable for the purpose intended and free from defects of material and workmanship for the duration of the warranty. In the event the equipment fails to perform as specified, the Supplier will promptly repair or replace the defective equipment without additional cost to the Owner.
- C. UV Lamps
1. The Supplier shall provide a warranty for the performance of the UV lamps stipulating that, after a minimum of 14,000 hours of operation, the average UV lamp output will be no less than 85% of a new lamp (after 100 hours of initial burn-in).
 2. After 8,760 hours of useful life, the lamp warranty shall be pro-rated against the actual lamp use.
 3. The Supplier shall replace, at no cost to the Owner, any UV lamps that fail within the first 8,760 hours of operation based on SCADA/PLC-logged run-times.
 4. UV module starts and stops shall be limited to less than 4 times in a 24-hour period.
- D. UV Ballasts
1. The Supplier shall guarantee against ballast failure for a period of 5 years after beginning at date of substantial completion.
 2. The Supplier shall replace any ballast that fails prior to the end of the 5 year warranty period. If failure occurs prior to 1 year after substantial completion, replacement shall occur at no cost to the Owner. The replacement cost thereafter shall be prorated.
- E. Spare parts identified within this specification shall not be used to address warranty repairs or will be replaced at no cost to the Owner if used and warrant is determined.

PART 2 - PRODUCTS

2.1 SUPPLIERS

- A. Where a manufacturer's standard equipment name and/or model number is listed, the equipment system shall be provided as required to conform to the performance, functions, features, and materials of construction as specified herein.
- B. Materials, equipment, components, and accessories specified in this section shall be products of:
1. The Supplier determined by this equipment Pre-Selection process, prior to the later design phase

2. Materials, equipment, components, and accessories specified in this Section shall be products of:
 - a. Trojan Technologies
 - b. Xylem/Wedeco

2.2 GENERAL REQUIREMENTS

- A. Noise Level: When in operation, no piece of equipment shall exceed the OSHA noise level requirements for a one (1) hour exposure, 105 dBA.
- B. Safety Devices: The completed work shall include all necessary permanent safety devices, such as machinery guards, emergency stops and similar items required by OSHA, and other federal, state, and local health and safety regulations
- C. Anchor Bolts: Anchor bolts shall be specified in Section 05 50 00, METAL FABRICATIONS, and provided by others. Number and size as recommended by Supplier.
- D. Stainless Steel: Stainless steel components shall be 316 stainless steel, or as specified.
- E. Nameplates: Equipment nameplates of stainless steel shall be engraved and fastened to the equipment in accessible locations with stainless steel screws or drive pins or fastened with adhesive. Nameplates shall contain the manufacturer's name, model, serial number, size, characteristics, and appropriate data describing the machine performance ratings.

2.3 SERVICE CONDITIONS

- A. The UV disinfection system (all components) will operate outdoors under a canopy roof to be provided by the construction contractor. The supplied equipment must meet system performance requirements (Section 2.4) under the following local ambient environmental conditions:
 1. Air Temperature: 20 to 110 deg F
 2. Relative % Humidity: 5 to 85%

2.4 SYSTEM PERFORMANCE AND FUNCTIONAL REQUIREMENTS

- A. The supplied UV equipment shall disinfect wastewater with the following characteristics and effluent requirements:

Parameter	Value
Peak Flow	24 MGD
Average Day Flow	6 MGD
Min. Flow at Startup	1 MGD
Number of UV Trains	2
Level Controllers	Finger Weirs
Min. UV Transmittance (@ $\lambda=254$ nm)	65%
Max. Total Suspended Solids	25 mg/L
Effluent <i>E.coli</i>	≤ 126 CFU/100 mL – 30 Day Average ≤ 399 CFU/100 mL – Daily Maximum

- B. The design shall account for future expansion of the UV Disinfection System through the addition of identical UV modules to disinfect wastewater with the following characteristics and effluent requirements:

Parameter	Value
Peak Flow	48 MGD
Average Day Flow	12 MGD
Number of UV Trains	2

Level Controllers	Finger Weirs
Min. UV Transmittance (@ $\lambda=253.7$ nm)	65%
Total Suspended Solids	25 mg/L
Effluent <i>E.coli</i>	≤ 126 CFU/100 mL – 30 Day Average ≤ 399 CFU/100 mL – Daily Maximum

- C. The UV Disinfection System shall meet the following performance requirements under all operating conditions described in Sections 2.4A and 2.4B:

Parameter	Value
Min. Delivered Dose, as MS2 RED (per the NWRI (2012) validation)	30 mJ/cm ²
UV Dose Correction Factor	1.0
Fouling Factor (FF) & End of Lamp Life Factor (EOLL)	3 rd -Party Certified (for use with NWRI validation (2012))
Redundancy Requirement	Provide one (1) redundant bank, which is equivalent in number of lamps to each bank in service, in each train (at Peak Flow)
Total Allowable Head Loss through the UV Banks (at 48 MGD through Phase 2 system)	≤ 9 inches

- D. The *end of lamp life* UV dose produced by the system shall not be less than 30,000 microwatt-secs/cm² at peak flow with 65% UV transmittance ($\lambda=253.7$ nm).
- E. Dose calculations based on the Point Source Summation Method will not be accepted
- F. Energy and Lamp Conversion (Automatic Flow Pacing)
1. The UV Disinfection System shall be capable of dose pacing to reduce electrical energy consumption in response to the disinfection demand based on a combination of UV influent flow signal, UV intensity, and the online measured UV transmittance (of UV influent flow).
 - a. Influent flow signal will be provided by a new ultrasonic flow meter located immediately upstream of the UV disinfection facility.
 2. For determining UV dose during operation and for dose pacing, the UV intensity signal shall be incorporated into the UV control system's validated operating equation.
- G. The system shall be supplied with level sensing devices in each channel to indicate low water level. Each channel shall have a single low-level probe.

2.5 EQUIPMENT AND MATERIALS

- A. UV Module:
1. Each inclined UV module shall be precision fabricated in type 316L stainless steel to meet the NEMA-4X standards.
 2. All electrical connections shall be above maximum operating water elevations to protect against electrical hazard.
 3. The UV module has components in addition to the UV lamps, such as a photo sensor and a jacket cleaning system. These components are controlled & monitored remotely from the Ballast Cabinet through the System Control Panel.
 4. Automatic interlock protection will be incorporated into each module such that when a module is raised, power to the lamps will be automatically shut off.
- B. Wiping System:
1. To minimize manual cleaning frequency of the UV system, each high output module must be equipped with mechanical wipers. The mechanical wipers must be motor (hydraulic or electric) driven and can be operated in either manual or automatic mode. The cleaning

wipers shall be automatically initiated and controlled from the operator interface. Cleaning cycle intervals shall be field adjustable within the range of once per day to once per week. Each module shall be provided with an independent cleaning system which is actuated by an AC motor housed in the module (or electric motor or hydraulic pump located in a second cabinet), along with all required monitoring and control components so that each module's cleaning system is independent, only requiring an initiate cycle command from the main controller.

2. Wipers shall be designed such that they will provide effective and uniform cleaning performance, long service life, low replacement & maintenance costs, and compensation for wear over the life of the wiper.
3. Wipers shall be fabricated of UV resistant material and installed in a manner that accommodates any irregularities associated with the quartz sleeves and precludes any binding during operation.
4. The wipers shall be replaceable without having to dismantle the wiper drive system.
5. To further extend the life of the wipers, they shall be normally parked above the water level elevation when not in use. This will also prevent disturbance to the hydraulics of the module during normal operation.
6. The wipers shall travel the full length of the UV lamp sleeves. Designs in which the wipers only travel part way along the sleeves will not be acceptable.

C. Lifting System:

1. The lifting device shall be capable of lifting the UV modules out of the channel for access and maintenance using an integral lifting mechanism without use of ancillary equipment.
2. The lifting device shall provide access to components without breaking electrical connections.

D. UV Lamps:

1. Lamps shall meet the following requirements:
 - a. Low Pressure High Output Amalgam UV lamps. Each lamp shall produce UV light with at least 90% of the UV emission at 253.7 nanometer wavelength.
 - b. Lamp filaments shall be pre-heated prior to the striking of the arc in order to promote lamp longevity.
 - c. Each lamp shall be tested in UV-output, lamp current and lamp voltage from the supplier. All results shall be stored in a database referencing the individual batch number. The lamp batch number shall be printed on the lamp surface.
 - d. Each lamp base shall incorporate a dielectric barrier or pin isolator. The pin isolator shall consist of a non-conductive divider placed between the lamp pins to prevent direct arcing across the pins in moist conditions. The barrier shall be dielectrically tested for 2,500 volts.
2. Electrical:
3. The electronic ballasts shall comply with the CE & UL requirements, specifically the IEEE519 and the IEC 61000-3-2.
4. Lamp Cables from lamp termination at the module to control enclosure termination shall be a minimum 60-ft length.
5. The ballasts shall be electronic microprocessor controlled, designed as slot cards fitting into a rack system with a plug connector for ease of maintenance.
6. Each ballast shall drive a single lamp, or a pair of lamps with independent control and monitoring circuits and provide individual lamp status information to the system control.
7. The ballast shall detect lamp failures and initiate a re-strike sequence, independently from any external influence. The ballast shall attempt three re-starts before shutting off.
8. The ballast shall incorporate galvanic separation of the input and output circuits. In case of the output circuit operating in abnormal conditions regarding voltage and/or amperage, the ballast shall shut off the lamp concerned. Ballasts without this feature shall be equipped with one GFC per ballast.
9. The operating power factor for the ballasts shall be minimum 0.98 over the entire power range of the ballast.

10. One power factor correction circuit shall power a maximum of two UV lamps to increase system reliability.
11. The ballast shall, at a minimum, be capable of varying power between 50 – 100%.
12. The lamps shall be driven by the ballasts for optimum UVC output efficiency and lamp life.
13. The ballast THD shall be less than 5%. Ballast enclosures exceeding this THD value shall be equipped with an active harmonic filter.
14. Enclosures shall be a NEMA-rated Stainless Steel
 - a. All panels shall be self-supporting
 - b. Provide air-conditioning and a cabinet heater in panels as required (for outdoor locations)

E. Accessories

1. Online UV Transmittance (UVT) Monitoring System
 - a. An online UVT monitoring system shall be provided for the UV disinfection system to report the transmittance of the tertiary filtration effluent automatically and continuously.
 - b. The UVT meter must be REAL S2100 Probe with Real Controller, and Air Clean.
 - c. A NEMA 4X wall mounted enclosure shall be provided to house the controller and cleaning unit. The controller shall have:
 - 1) On-board memory capable of storing not less than 1 month of measurement data
 - 2) LCD digital display capable of showing the measured value, alarms, and status menus.
 - d. Each UV channel shall be equipped with a low water level sensor to prevent operation of the UV lamps in air. The level sensor shall be wired to the Ballast Cabinet and shut the UV modules down and initiate a critical alarm condition when low water level is detected.

F. Materials

1. General
 - a. All metal components in contact with effluent shall be Type 316L stainless steel.
 - b. All material exposed to UV light shall be Type 316L stainless steel, Type 214 quartz, Teflon, or other suitably UV resistant material.
2. UV Lamp Sleeves
 - a. The UV lamps are to be protected from contact with the effluent by a 99.9% silicon dioxide quartz sleeve with a minimum of 90% transmission of UV radiation at the 253.7 nanometer wavelength. The nominal wall thickness of the quartz sleeve will be at least 1.5 mm.

2.6 ELECTRICAL COMPONENTS AND ACCESSORIES

A. General

1. Provide all necessary electrical components and wiring for a complete, functional system.
2. Provide electrical components meeting the requirements of the following sections:
 - a. 26 05 19 – Wires and Cables (1000 Volts and Above)
 - b. 26 05 33 – Raceway, Boxes, Enclosures, and Fittings
 - c. 26 22 13 – Distribution dry-type transformers
 - d. 26 29 86 – Mechanical Manufacturer's Provided Control Panels (MEMs)
 - e. 26 33 53 – Single Phase Uninterruptible Power Supply System (UPS)
3. Submittals for the UV Disinfection Equipment shall include the submittals listed in Section 1 of the above specifications.

2.7 INSTRUMENTATION AND CONTROLS

A. Control Panels, General

1. All enclosures shall be NEMA 4X, 316 stainless steel floor-mounted panels. Instruments and control devices mounted on the enclosure door shall be rated for or installed in such a manner as to maintain NEMA 4X integrity. The enclosures shall meet the requirements of Section 26 05 33 Raceway, Boxes, Enclosures, and Fittings.
2. The UV control panels shall be equipped with the necessary inputs and outputs for complete control of the UV system.
3. Power Supply to the System Control Panel shall be 120 VAC, single phase, 60-Hz. The System Control Panel shall be powered from two power circuits including:
 - a. One circuit shall be directly powered for general UV system appurtenances (heaters, lights, air conditioning, etc.)
 - b. One circuit shall be powered from the UPS-UV distribution panel to power the PLC components.
4. Main Disconnect: A circuit breaker- door interlocked main disconnect shall be provided to completely isolate all controls and lighting equipment from incoming power. Main disconnect shall have a through the door operator and shall be sized as required to handle all anticipated working conditions including horsepower rating. Main disconnect and protective device shall be interlocked with door. Cabinet shall be lockable. Refer to Specification 26 29 86 for additional requirements.
5. The control panels shall include a space heater and air conditioner, with thermostat sized to maintain temperature and humidity inside the enclosures within rated tolerances of installed devices. Heat and conditioning components shall be sized based on service condition requirements listed in Section 2.3 of this specification.
6. A schedule of required panels (to be Supplier supplied) will be provided during a later design phase.
7. Provide Type 1 surge protective devices for all 480V control panels and Type 3 surge protection devices for all 120V control panels in accordance to UL 1449 and UL 1283. Externally mounted SPD's are not acceptable.



B. Ballast Cabinet

1. The floor mounted Ballast Cabinets shall be NEMA 4X rated for outdoor use and will be conveniently located as shown on the drawings (to be developed in later design phase).
2. Power will enter the Ballast Cabinets from below and terminate in load centers that are mounted inside the Ballast Cabinets. Each load center provides power to a module in each UV disinfection train.
3. Power supply to the Ballast Cabinets shall be 480Y/277 volts, three-phase, 60-Hz.
4. Ballast Cabinets shall be rated for 35KA SCCR Minimum.
5. A single 480VAC, 3 phase, 3 wire plus ground, 60Hz, 65kAIC, wye configuration power service will be supplied to each of the manufacturer's system to power the entire system, including the wiper system. The UV system supplier shall be responsible to provide any power supplies or step-down transformers, or transformers to carry the neutral if required for operation of their equipment from a single power supply. Transformer provided must limit the harmonic distortion from the UV system to comply with the latest edition of IEEE 519 using a "k-13" rated transformer or harmonic mitigation transformer and 80 degree C heat rise. The point of common coupling must be measured on the line side of the provided transformer. Refer to Specification 26 22 13 for additional requirements.

C. UV System Control Panel

1. The UV system shall be supplied with one (1) complete UV System Control Panel (SCP) (Master UV PLC Enclosure (PLC-UVA)) to house the UV system PLC, operator interface, control and instrumentation equipment and plant interface termination points. All UV monitoring and control functions shall be carried out by the SCP.
2. The system PLC shall be an Allen-Bradley CompactLogix with minimum 4MB memory.
3. The system Operator Interface Terminal (OIT) (531-OIT-100) shall be an Allen-Bradley Panelview plus (10-inch size, minimum) with SCADA communication suitable for all UV equipment.

4. System operating information will be displayed on the OIT screen in both color graphic and text format. The information must be continuously updated. As a minimum, the following information shall be displayed on the main screen simultaneously:
 - a. Number of banks/lamps in service
 - b. UV intensity
 - c. Communication link status
 - d. System flow pace mode (hand or auto)
 - e. UV lamp hours of operation
 5. System Command, control and status shall be accomplished through the OIT main screen display. In the event of a fault, the alarm color display will change from green to red until the alarm has been manually or automatically cleared.
 6. The SCP shall be allowed to be remotely monitored by the SCADA Control System for full monitoring and control purposes.
 7. Components:
 - a. Supplier shall provide PLC-based SCP with operator interface and interconnects for monitoring of system through plant SCADA system.
 - b. The PLC communication to/from the plant SCADA system shall be via Ethernet/IP communications.
 - c. Provide a memory map of available PLC data for remote monitoring and remote control commands from SCADA.
 - d. Provide Allen Bradley CompactLogix PLC and all required hardware/software and programming.
 8. The vendor shall coordinate a workshop with Owner, Engineer, Process Control System Integrator, etc. to coordinate and determine the specific points to be brought up to the HMI, the specific points that are used for control, and the graphics to be generated at the HMI level.
- D. System Control Panel Features – System control panel shall contain the following features:
1. Current Loop Surge Protection Devices: The 4-20mA signal loop channels on all analog inputs and outputs shall be protected against static discharge, lightning, and faulty wiring with three stage surge protection terminal block devices. Devices shall be pluggable with indication status lights. Devices shall be PLUGTRAB series as manufactured by Phoenix Contact of equal.
 2. Discrete Output Relays: Terminal block style interposing relays shall be used for all controller outputs. Provide pull-up or pull-down resistors on all digital outputs as required for proper orientation.
 3. Grounding: Each panel shall be provided with a copper equipment grounding bar, ground lugs, and bonding cable and fittings as required.
 4. Nameplates: Each enclosure shall be identified by a nameplate including its designation and service name as specified. Panel mounted instruments and control devices shall be identified by a nameplate including the tag number and service name. Control devices shall be provided with Supplier's standard legends indicating function (example: STOP, START, HAND-OFF-AUTO, etc.). Provide engraved, acrylic plastic laminate nameplates, 1/16" thick, 1" x 6" minimum for junction boxes and panels, sized to fit for control devices and stations, engraved in black letters on white face and punched for and fastened with self-tapping 10/32 stainless steel screws and silicone adhesive or fastened with adhesive.
 5. Panel Interface Connector (PIC): Each PLC enclosure shall include a PIC mounted on the outside of the enclosure for providing a Ethernet connection to internal devices. The PIC shall include a 120 VAC single phase duplex receptacle with 3 Ampere externally resettable circuit breaker and an RJ45 pass-through connector.
 6. Provide panel with ethernet switch with minimum (4) RJ-45 ports for connection to the plant SCADA system. The proposed ethernet switch shall meet the City of Pflugerville IT department requirements,

- E. Other Instrumentation and Controls: Provide all items not specifically called out which are required to implement the functions described herein.

2.8 ELECTRICAL CONNECTIONS AND WIRING

A. Internal Wiring

- 1. The UV s shall furnish power and control wiring within manufacturer control panel in the following manner:
 - a. Power and control wiring shall be tinned stranded copper, minimum size #14 AWG, with 600-volt, 90°C, flame retardant, Type MTW thermoplastic insulation.
 - b. Line side power wiring shall be sized for the full rating or frame size of the connected device, and as shown on the Drawings.
 - c. Analog signal wires shall be 600 Volt Class, insulated stranded tinned copper, twisted shielded #16 AWG or #18 AWG pair.

B. External wiring

- 1. The UV Supplier shall furnish power, control wire and data cabling between the UV modules and the PDDC and the UV modules and control panel. Refer to Specification Section 26 05 19 – Wires and Cables (1000 Volts and Above) for additional information.
- 2. The incoming power supply, conduit, and field terminations will be the responsibility of the Contractor.

- C. Equipment shall be delivered to site requiring minimal on-site labor for installation. Systems requiring extensive on-site wiring of the modules, and systems with more than one power and one data connection per module shall not be allowed.

2.9 CONTROL SYSTEM AND STRATEGY

A. Control Strategy

- 1. Process Description:
 - a. The UV system consists of a series of reactors containing UV lamps that emit the proper light spectrum to disinfect the filtered secondary effluent.
 - b. SCP shall control the entire UV system including the wiper system.
 - c. The UV system has an automated wiping system to clean the lamps. A wiper control panel powered from the SCP, or an alternate plant power source, will operate the wiping system and can control the wiping system when in local mode.
 - d. The UV modules are powered by ballast panels. The SCP PLC shall communicate with each ballast panel to power the required number of UV lamps and modules for the required UV delivered dose.
- 2. General Philosophy:
 - a. The system shall utilize active MS2 RED dose-pacing control based on the following parameters (data signals):
 - 1) Water flow rate
 - 2) Water UV transmittance
 - 3) UV Intensity in mW/cm²
 - b. Based on the parameters above, the system shall automatically vary the UV lamp power, according to the appropriate validated dose equation from the approved bioassay. The dose target shall be Owner-adjustable.
 - c. The lamp power (“ballast power”) delivered to the UV system shall be variable within a range of 50 to 100 percent (greater turn-down is permissible) of maximum power in both manual and automatic operating modes (at a minimum). If the variability differs between modes, the automatic mode of operation shall be the sole mode considered.
 - d. With the hand-off-auto selector in “auto” position, the UV system is controlled by the SCP flow pacing mode:

- 1) The PLC selects the number of modules and trains in service and lamps to be turned on as well as the required power setting in each operating bank or module based on the influent flow entering each train.
- 2) The plant provided influent flow signal shall report the total instantaneous flow sent to the UV disinfection system. The associated flow per UV train shall be calculated as the total flow divided by the number of trains in service.
- 3) The PLC shall open and close the channel isolation gates as necessary depending upon the number of trains required. Under normal operating conditions and up to a flow of 80 percent of the train design flow, one train shall be in operation and the other shall be in lag mode. This percentage shall be adjustable.
- 4) The PLC shall minimize the number of operating UV lamps. Each UV lamp is monitored by its input power current.
- e. When a train is brought into service, the following procedure shall be initiated:
 - 1) The required lamps shall be turned on and warmed up for an adjustable duration (default 10 minutes).
 - 2) After the lamps have warmed up, the isolation gate shall be fully opened.
- f. When a module is out of service, the wiping cycle shall continue to initiate.
- g. With the hand-off-remote switch in "hand" position, the UV system shall operate through the local SCP HMI in accordance with the following:
 - 1) The Operator shall have the ability to manually turn lamps on and off.
 - 2) The PLCs shall continue to monitor the UV lamps and dose even in manual mode.
 - 3) The safety devices shall be active to prevent any potential damages to the system.
- h. Upon high Priority Alarm, such as UV intensity sensor, ballast, or any equipment related to an operating unit, the control system shall automatically increase the number of lamps and/or lamp output as necessary to ensure that the target dose is exceeded.
- i. The UV control system shall monitor the UV lamps to ensure that the operational UV dose is achieved and is at least equal to the UV design dose for the given flow, UVT, and lamp life and fouling conditions.
- j. The mechanical cleaning system shall be controlled by the SCP and is operated on a time basis without stopping production,
- k. Provide HMI alarms and monitoring as indicated below and make alarms available to the plant SCADA system.
- l. All analog values (setpoints) shall be operator adjustable via the HMI and available for remote adjustment from the plant SCADA system.
3. Monitoring: In general, the following parameters, at a minimum, shall be monitored continuously:
 - a. Flowrate.
 - b. UV Intensity (each bank).
 - c. UV Transmittance.
 - d. Operational UV Dose.
 - e. Bank/Module ON/OFF status (each bank/module)
 - f. Lamp ON/OFF status (each lamp).
 - g. Lamp elapsed time (each lamp) with ability to reset counter on individual lamp without resetting the rest of the bank.
 - h. Cumulative Number of Bank/Module ON/OFF cycles (each bank/module).
 - i. Bank (Ballast) Power Setpoint (each bank).
 - j. Inlet slide gate OPEN/CLOSE status

B. Provide all alarms and monitoring at the local HMI and SCADA Control System as follows. For bidding purposes, a minimum of 750 signals shall be available for monitoring and control

purposes. The specific number of signals shall be determined at the required workshop as described in Section 2.7.C.8.

1. High Priority Alarms: A major alarm must activate if:
 - a. The UV intensity of the system is less than 25%, relative to the peak intensity after 100 hour burn in;
 - b. Multiple lamp FAIL (when more than 10% of lamps fail per bank/module);
 - c. Flow signal fault (when the signal from the upstream flow measuring device is lost);
 - d. Inlet slide gate failure;
 - e. There is any outage of any module or bank;
 - f. The transmissivity is low, based on the Supplier's recommendations; or
 - g. Power FAIL Alarm.
2. Low Priority Alarms: A minor alarm must activate if:
 - a. The UV intensity of the system is less than 45%, relative to the peak intensity after 100 hour burn in;
 - b. There is a lamp outage;
 - c. More than 10% of the lamps fail;
 - d. Wiper system failure; or
 - e. Lamp hours exceeded
3. Screen Indicators and Alarms:
 - a. Bank/Module On/Off Status.
 - b. Bank/Module Manual-Automatic Status.
 - c. Bank/Module UV Intensity Indication.
 - d. LOW Intensity Alarm.
 - e. Bank/Module FAIL Alarm.
 - f. Bank/Module Elapsed Time.
 - g. Lamp FAIL Alarm.
 - h. Train Elapsed Time.
 - i. LOW Level Alarm in UV Channel (Each).
 - j. Number of Banks/Modules ON (each channel).
 - k. UV Transmittance Alarm.
 - l. UV Dose Indication.
 - m. UV Transmittance Indication.
 - n. LOW UV Dose Alarm
 - o. Not Enough Banks/Modules Available Alarm.
 - p. Wiper System FAIL Alarm.

C. External Data Interface

1. The UV Disinfection System shall provide remote control and monitoring interface with the Owner's SCADA system via Ethernet utilizing an Ethernet switch. The Supplier shall coordinate Ethernet/IP address with the Owner and the Engineer.
2. The Supplier shall submit, to the Owner and Engineer, a back-up copy of the controls software application and a PLC memory map of all control and monitoring values.

2.10 SPARE PARTS

- A. All equipment shall be furnished with OEM spare parts, as indicated in the individual equipment sections.
- B. Spare parts shall be tagged by project equipment number and identified as to part number, equipment Supplier, and subassembly component (if appropriate). Spare parts subject to deterioration such as ferrous metal items and electrical components shall be properly protected by lubricants or desiccants and encapsulated in hermetically sealed plastic wrapping.
- C. Provide, at a minimum, the following spare parts for the equipment (rounding up to the nearest whole number for each spare part required):

1. UV Sensors: Five (5) percent additional
 2. UV Lamps: Five (5) percent additional
 3. Quartz Sleeves: Five (5) percent additional
 4. UV Ballasts: Two (2) percent additional
 5. Wiper or Wiper Rings: Ten(10) percent additional
 6. Lamp Sealing Rings or Holder Seals: Sufficient for one (1) module
 7. Lamp Plugs: five (5) percent additional
 8. Cleaning Solution (if applicable): One (1) full charge for one year following completion of performance test.
 9. Pump or Electric Motor with Gearbox used to drive cleaning system and/or UV module lift system: One (1) of each type used, if required.
 10. Operator Safety Kits: Four (4) safety kits including goggles, face shield, and gloves
 11. Control Panel Components:
 - a. One (1) PLC I/O module of each type provided.
 - b. One (1) pre-programmed PLC CPU.
 - c. One (1) pre-programmed HMI.
 - d. Two (2) control relays of each type provided.
 - e. One (1) power supply of each type provided.
 - f. One (1) communication module of each type provided.
- D. Signage: Provide the following number and type of (durable, UV-resistant, all-weather) highly visible sign to be posted in the vicinity of UV modules:
1. Two (2) "Wear UV Rated Eye Protection"; One (1) in English and One (1) in Spanish
 2. Two (2) "Do Not Look at UV Lamps"; One (1) in English and One (1) in Spanish
- E. Mercury Spill Kit: Provide one (1), complete kit (MERCONKIT I by Fischer Scientific or equal).

PART 3 - EXECUTION

3.1 GENERAL

- A. Coordination shall include space and structural requirements, clearances, utility connections, signals, outputs, and features required by the Supplier including safety interlocks.

3.2 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Delivery of Materials: Products shall be delivered in original, unbroken packages, containers, or bundles bearing the name of the Supplier.
- B. Storage: Products shall be carefully stored in a manner that will prevent damage and in an area that is protected from the elements.
- C. Protection of Equipment: Equipment shall be boxed, crated, or otherwise protected from damage and moisture during shipment, handling, and storage. Equipment shall be protected from exposure to corrosive fumes and shall be kept thoroughly dry at all times. Pumps, motors, drives, electrical equipment, and other equipment with anti-friction or sleeve bearings shall be stored in weathertight and heated storage facilities prior to installation. For extended storage periods, plastic equipment wrappers shall not be used to prevent accumulation of condensate in gears and bearings.

3.3 INSTALLATION

- A. The Contractor, in accordance with the Contract Documents and per the recommendations of the Supplier, shall install the equipment.

- B. The UV Supplier shall furnish power and data cabling between the UV lamps and reactors and the SCP/ballast panel(s) for contractor installation.
- C. The UV Supplier shall provide installation assistance per Section 3.5.

3.4 FACTORY AND FIELD QUALITY CONTROL

- A. In addition to testing requirements specified herein, all tests and certification shall be specified and in accordance with Section 01 79 00 DEMONSTRATION AND TRAINING.
- B. Factory Testing:
 - 1. The equipment shall be factory tested with the power supplies and main control panels that will be supplied with the equipment. The Supplier shall perform a certified test at the factory. The Supplier shall thoroughly inspect the complete system prior to shipment to ensure the proper interface and adjustment of all parts.
 - 2. The Supplier shall perform a test at the factory with the Process Control System Integrator present to test SCADA communications and all SCADA generated graphics that mimic the Supplier's SCP.
- C. On-Site Equipment Checks:
 - 1. Prior to Performance Test, the Contractor shall check that all equipment is installed properly, and functions as specified herein. The following UV equipment checks shall be conducted by the Contractor prior to conducting functional and/or performance testing:
 - a. Proper installation and alignment of UV support structure.
 - b. Proper placement of UV lamp to assure complete immersion of the lamps.
 - c. Water tightness of all submerged equipment.
 - d. Electrical wiring and connections.
 - e. Proper operation of instrumentation, alarms, interlocks, and operating indicators associated with the UV equipment.
 - f. Proper placement and operation of ballasts, cooling fans, and other equipment in the control cabinets.
 - g. Adequate ventilation in the control cabinets.
 - h. Proper operation of the lamp shutoff switches and ground fault circuit interrupters.
 - i. Proper operation of the monitoring and control system, including Owner SCADA system.
 - 2. Supplier Commissioning Services:
 - 3. Supplier shall perform and complete their standard commissioning process prior to performance testing. If so desired, Supplier commissioning may be performed in conjunction with the Contractor equipment checks.
 - 4. The commissioning process, as performed by the Supplier, shall include but not be limited to:
 - a. Inspection and certification of:
 - b. UV Modules
 - c. Power distribution panels
 - d. System control center
 - e. Additional equipment that is necessary for the operation of the UV System
 - 5. System startup
 - 6. System commissioning including:
 - a. SCADA
 - b. Dose pacing
 - c. Operator training
- D. Performance Testing
 - 1. Upon acceptance by the Engineer of the certification letter from the Contractor verifying equipment checks and Supplier documentation of successful commissioning, field

- performance testing shall be performed to determine whether the equipment meets the performance criteria specified herein.
2. The testing period shall be conducted over a continuous thirty (30) day period by OWNER's personnel, as supervised off-site (via email and phone) by the Supplier. The Supplier shall provide 24-hour access by phone to supervise OWNER. The Supplier shall provide the protocol for testing. The Supplier's personnel shall instruct the OWNER's personnel on the testing protocol. The OWNER will collect UV disinfection system influent and effluent samples two (2) times per day for the testing period described. Both influent and effluent samples will be tested for E.coli (in MPN or CFU per 100 mL – Using an EPA-approved method and sampling protocol for enumeration of E.coli in treated effluent) while influent samples will be tested for total suspended solids and UV transmittance (%) for the testing periods described. The OWNER will submit a copy of the test results to the Engineer, and the Supplier at the end of the testing period.
 3. No major changes in equipment or apparatus will be permitted during the Performance Testing period. However, minor adjustments of equipment that would normally be expected during regular operation of the equipment in plant use may be made.
 4. The Supplier shall complete all modifications required to meet the Performance Testing specification requirements and shall supply all materials, equipment, labor, and services, as may be needed for those modifications. The Supplier shall submit a detailed protocol to be followed for the Performance Testing at least 60 days in advance. This will require written approval by the OWNER before initiating the tests. The protocol shall specifically detail the operational mode of the UV disinfections system, sampling program, method and schedule, equipment and system monitoring data to be collected with each sampling, the daily (manual) log format, and all sampling and analytical procedures. Upon acceptance of the protocol by the ENGINEER, the OWNER shall commence the Performance Testing. OWNER is not responsible if testing does not conform to the project requirements.
 5. If during the initial Performance Testing, the UV disinfection system does not perform as designed, the Performance Testing shall then be re-run, as described above. Additional testing, labor, materials, equipment, etc., associated with correcting deficiencies in the UV system, including the repeated Performance Test, shall be borne by the Supplier. Each repetition of the Performance Testing shall be for a continuous thirty (30) day period, unless failure has been documented and modifications accomplished.
 6. If equipment, when tested for a second period, fails to meet all of the performance requirements as specified herein, the Supplier shall make any and all modifications to the UV disinfection system including additional equipment and appurtenances including piping, valves, additional lamps, concrete tankage, control wiring, electrical system modifications, etc., necessary to cause the system to meet the performance specifications without any additional cost to the OWNER. The Supplier shall cover the cost of additional performance testing in accordance with Paragraph 3.4.D.5.

3.5 SUPPLIER'S SERVICES

- A. A Supplier's representative for the equipment specified herein shall be present at the job site for the minimum person-days listed for the services, travel time excluded:
 1. Installation, Startup, and Testing Services:
 - a. Three (3) person-days for installation assistance, inspection, and Certificate of Proper Installation.
 - b. Two (2) person-days for functional and performance testing.
 - c. Provide Qualifications of Supplier's Representative.
 2. Training Services:
 - a. Two (2) person-days of prestart training of Owner's personnel; One (1) person-day in classroom and One (1) person-day on jobsite.
 - b. One (1) person-day of operator refresher training (12 months after start-up)
 - c. Training of Owner's personnel shall be at such times and at such locations as required and approved by the Owner.

B. See Section 01 79 00, DEMONSTRATION & TRAINING

3.6 SUPPLIER'S CERTIFICATES

A. Provide Supplier's certificate(s) in accordance with Section 01 79 00.

END OF SECTION