



**NOTICE OF 30-DAY PUBLIC COMMENT PERIOD  
AND NOTICE OF PUBLIC HEARING**

**COMPREHENSIVE AGREEMENT  
SANDY RIVER RESERVOIR  
WATER TREATMENT AND DISTRIBUTION PROJECT**

Prince Edward County received an unsolicited proposal (Proposal) on or about November 22, 2021 from Prince Edward County Infrastructure, LLC (PECI) under the Public-Private Educational Facilities and Infrastructure Act of 2002, as amended (PPEA), which Proposal offered a public-private partnership to provide the County engineering design and construction services for the development of a water intake and pump station, water treatment facility, and water distribution system that would utilize the existing Sandy River Reservoir as the water supply.

At its meeting on August 23, 2022, the Prince Edward County Board of Supervisors approved an Interim Agreement for the project. Since that time, the County has expended the maximum of \$1 million on the services identified in the Interim Agreement. At this time, PEGI has submitted a draft Comprehensive Agreement to the County for review. County staff, with the assistance of the County's PPEA Legal Counsel and Engineering Consultant, has reviewed the agreement and recommended that the Board consider entering into it. Given the Board's intent to develop a water supply system and based on the foregoing recommendation, the Board of Supervisors has voted to proceed and establish a 30-day period for public comment.

Per Section IX.C of the County of Prince Edward, Virginia, Guidelines and Procedures for the Public-Private Education Facilities and Infrastructure Act of 2002, as amended, 30 days prior to entering into a Comprehensive Agreement the County shall provide an opportunity for public comment on the proposal. Such public comment period shall include a Public Hearing held by the Board of Supervisors. Accordingly, the County is requesting public comment on the draft Comprehensive Agreement for a period of 30 days, commencing May 12, 2023, and requests that any written comments the public may have be submitted to the County Administrator by 4:00 p.m. on Tuesday, June 13, 2023. Comments may be sent electronically to the Board of Supervisors' e-mail address: [board@co.prince-edward.va.us](mailto:board@co.prince-edward.va.us) or by mail sent to: County of Prince Edward, ATTN: Douglas P. Stanley, County Administrator, P.O. Box 382, Farmville, VA 23901. If you have questions, you may contact the County Administrator's Office at 434-392-8837.

Notice is also given that the Board of Supervisors will receive public comment on the draft Comprehensive Agreement at a **PUBLIC HEARING**, which may be continued or adjourned, to be held at 7:30 p.m., or as soon thereafter as the matter may be heard, on Tuesday, June 13, 2023, in the Board of Supervisors' Meeting Room, Prince Edward County Courthouse, 111 N. South Street, 3<sup>rd</sup> Floor, Farmville, Virginia. Any person interested in the Comprehensive Agreement may appear and be heard. A copy of the full text of the draft Comprehensive Agreement is available for public inspection on the County's website at [www.co.prince-edward.va.us](http://www.co.prince-edward.va.us) or during regular business hours (Monday-Friday, 8:30 a.m. – 4:30 p.m.) in the Prince Edward County Administrator's office, 111 N. South Street, 3<sup>rd</sup> Floor, Farmville, VA 23901.

It is the County's intent to comply with the requirements of the Americans with Disabilities Act. Should you need special accommodations for the June 13, 2023 Public Hearing, please contact the Prince Edward County Administrator's Office at 434-392-8837, prior to June 9, 2023.

By Order of the Board of Supervisors  
Douglas P. Stanley, County Administrator

**COMPREHENSIVE AGREEMENT**

**BY AND BETWEEN**

**COUNTY OF PRINCE EDWARD, VIRGINIA**

**AND**

**PRINCE EDWARD COUNTY INFRASTRUCTURE, LLC**

**\_\_\_ May 2023**

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List of Attachments:

- A Design-Build Agreement (DBIA 525)
- B Project Location and Site Map

**COMPREHENSIVE AGREEMENT BY AND BETWEEN  
THE COUNTY OF PRINCE EDWARD, VIRGINIA AND  
PRINCE EDWARD COUNTY INFRASTRUCTURE, LLC**

This Comprehensive Agreement (the "Agreement") is made and entered into as of this \_\_\_\_\_ day of May, 2023, ("the Effective Date") by and between the County of Prince Edward, Virginia, a political subdivision of the Commonwealth of Virginia (the "County"), and Prince Edward County Infrastructure, LLC, a joint venture of MEB General Contractors, Inc., and Faulconer Construction, Inc. (referred to herein variously as the "Private Entity," "Design-Builder," or "PECI").

**Recitals**

A. In enacting the Public-Private Education Facilities and Infrastructure Act of 2002 (as amended, the "PPEA"), which became effective on July 1, 2002, the Virginia General Assembly found and declared, among other things, that:

(i) there is a public need for timely acquisition, design, construction, improvement, renovation, expansion, equipping, maintenance, operation, implementation, or installation of education facilities and other public infrastructure and government facilities within the Commonwealth of Virginia that serve a public need and purpose;

(ii) such public need may not be wholly satisfied by existing methods of procurement in which qualifying projects are acquired, designed, constructed, improved, renovated, expanded, equipped, maintained, operated, implemented, or installed; and

(iii) authorizing private entities to develop or operate one or more qualifying projects may result in the availability of such projects to the public in a more timely or less costly fashion, thereby serving the public safety, benefit, and welfare.

B. The PPEA grants the County the authority to approve the development or operation by a private entity of an education facility, technology infrastructure or other public infrastructure or government facility needed by the County as a qualifying project, or the design or equipping of a qualifying project so developed or operated, if the County determines that the qualifying project serves the public purpose of the PPEA.

C. The PPEA permits a private entity to initiate the approval process for a qualifying project in accordance with the provisions of the PPEA.

D. Under the PPEA, the County may determine that a qualifying project serves the public purpose of the PPEA if:

(i) there is a public need for or benefit derived from the qualifying



project of the type the private entity proposes as a qualifying project;

(ii) the estimated cost of the qualifying project is reasonable in relation to similar facilities; and

(iii) the private entity's plans will result in the timely development or operation of the qualifying project.

E. On July 8, 2008, the County enacted "Guidelines and Procedures," implementing the Public-Private Education Facilities and Infrastructure Act of 2002 (Va. Code §56-575.1, *et seq.*) ("PPEA"), and establishing procedures for the development of public facilities through public-private partnerships ("Guidelines").

F. On or about November 22, 2021, the County received an unsolicited proposal ("Proposal" or "Conceptual Phase Proposal") from PECI to develop, design and construct the Sandy River Reservoir Water Treatment and Distribution Project ("Project"). For the purposes of this Comprehensive Agreement, the term "Private Entity," as utilized in the PPEA, shall be the Design-Builder or PECI.

G. Pursuant to the Guidelines, the County subsequently posted notice of and advertised its decision to accept Design-Builder's Proposal for conceptual stage consideration.

H. On or about December 9, 2021, the County Board of Supervisors, finding that it would be advantageous for the County to proceed with the Project (as defined below) using procedures for competitive negotiation, rather than sealed, competitive bids, given the probable scope, complexity and urgency of the Project, voted to accept the proposal for publication and conceptual stage consideration and directed the County Administrator to advertise for competing proposals.

I. On or about December 19, 2021, the County elected to solicit, for consideration, competing proposals for the Project, in accordance with the PPEA and the Guidelines. No competing proposals were submitted within the time period established for receipt of same.

J. On or about September 6, 2022, the County and PECI executed an Interim Agreement for the Project.

K. Following execution of the Interim Agreement, PECI has presented the County with further designs and pricing information for the Project.

L. The County and the Private Entity have now negotiated a Comprehensive Agreement consistent with the PPEA, the Guidelines, and other applicable law, the terms of which are set out in this Agreement.

M. The County has determined that the Project to be delivered by the Private Entity in accordance with the terms of this Agreement serves the public purpose of the PPEA under the criteria of Va, Code §56-575.4(C), and the Board of Supervisors has approved this Agreement.

NOW, THEREFORE, in consideration of the foregoing Recitals and covenants contained herein, and for other good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, the County and the Private Entity agree as follows:

1. Incorporation of Recitals. The foregoing recitals are true and correct and are incorporated herein by reference.

2. Definitions. The following definitions apply to this Agreement:

(a) “Contract Documents” means:

(i) this Agreement (together with all of its attachments and exhibits thereto) and any written amendments thereto;

(ii) the Design-Build Agreement (Attachment A to this Agreement) together with all Exhibits thereto and documents referenced in Article 2 thereof, and any written amendments, modifications thereto, and any Change Orders issued thereunder. The General Conditions of the Design-Build Agreement are attached to Attachment A as Exhibit A; and

(iii) Construction Documents prepared and approved in accordance with Section 2.4 of the General Conditions of Design-Build Agreement.

At the time of the execution of this Agreement, the structure of the Contract Documents is as follows:

1.	The Comprehensive Agreement		
1.A	Attachment A	The Design-Build Agreement (DBIA 525)	
1.A.A		Ex A.	General Conditions of the Design-Build Agreement (DBIA 535)
1.A.B		Ex B	Basis of Design Report
1.A.C		Ex C	Scope of Services
1.A.D		Ex D	Project Schedule
1.A.E		Ex E	Required Insurance Policies
1.A.F		Ex F	Economic Price Adjustment provisions – List of Materials Included
1.A.G		Ex G	Permit List
1.A.H		Ex H	Performance Bond
1.A.I		Ex I	Payment Bond
1.A.J		Ex J	Allowance Items
1.A.K		Ex K	Schedule of Values
1.B	Attachment B	Project Location and Site Map	

“Contract Document” means any one of these documents. In the event of any discrepancies between or among any of the Contract Documents, the language in this Agreement (and any amendments thereto) shall take priority. The priority of the other Contract Documents shall be as follows:

1. This Comprehensive Agreement;
2. All written modifications, amendments, minor changes and Change Orders to the Design-Build Agreement issued in accordance with DBIA Document No. 535, (“General Conditions of Contract”);
3. The Basis of Design Report (Ex. B to the Design-Build Agreement);
4. The Design-Build Agreement (DBIA 525) (Att. A to this Comprehensive Agreement), including all exhibits and attachments, executed by Owner and Design-Builder;
5. The General Conditions of Contract (DBIA 535) (Ex. A to the Design-Build Agreement); and
6. Construction Documents prepared and approved in accordance with Section 2.4 of the General Conditions of Contract (Ex A. to the Design-Build Agreement, DBIA 525).

(b) “Contract Price” means the aggregate amount of compensation that the County will be obligated to pay to the Private Entity pursuant to this Agreement and the Design-Build Agreement. The Contract Price is subject to upward or downward adjustment pursuant only to the Contract Documents.

(c) “Design-Build Agreement” means DBIA Document No. 525 Standard Form of Agreement Between Owner and Design-Builder – Lump Sum, as modified and set forth as Attachment A, by and between the County (referenced to therein as “Owner”) and the Private Entity (referenced to therein as “Design-Builder”), including all Exhibits thereto.

(d) “General Conditions” means DBIA Document No. 535 Standard Form of General Conditions of Contract Between Owner and Design-Builder, as modified and set forth as Exhibit A to Attachment A, the Design-Build Agreement.

(e) “Project” means all the labor, materials, and other work necessary to complete the following work:

Design and construction of the Sandy River Reservoir Water Treatment and Distribution Project, consisting of a new Raw Water Intake and Pump Station (RWPS) located at the Sandy River Reservoir, a new Water Treatment Plant (WTP) located adjacent to the Reservoir, a raw water pipeline to convey water from the RWPS to the WTP, and the Finished Water distribution systems serving Prince Edward County, Nottoway County and the Commonwealth of Virginia to the East (“Eastern Service Area Distribution System”).

Any change to the Scope of Work to expand the Project to include a Western Service Area Distribution System or Northern Service Area Distribution System shall be done on the basis of a mutually agreed, negotiated Change Order.

“Project” shall include both the entirety of the Project as well as any part thereof. It is intended that the term “Project” will be construed consistently in this Comprehensive Agreement and in the Design-Build Agreement.

(f) “Project Schedule” means the schedule for the Project as approved by the parties, as set forth in Section 6 below.

(g) “Site” means the real property on which the Project is to be located, all of which is owned by the County, the Commonwealth of Virginia, or located on easements to be obtained by the County, as further described by the drawings attached as Attachment B.

(h) “Work” means all the architectural, engineering, construction, and other duties and services to be furnished and provided by the Private Entity as required by the Contract Documents. “Work” may include the entirety of the Work or a portion thereof.

(i) “Work Product” means all the data, information, documentation, and other work product produced, prepared, obtained, or deliverable by or on behalf of the Private Entity and in any way related to the Project.

3. Scope of Work. Under this Agreement, the County and the Private Entity agree that the Project shall be designed and constructed by the Private Entity for the benefit of the County in accordance with the Contract Documents. The general scope of the Work to be provided by the Private Entity is defined in Article 1 of Attachment A. The Private Entity shall be paid by the County for the Work in accordance with the Contract Documents. The Private Entity shall furnish all necessary personnel, material, equipment, and services (except as otherwise specified in the Contract Documents) to fully and properly perform the Work in accordance with the Contract Documents.

Upon the execution of this Agreement, the Private Entity shall engage the services of a Virginia licensed architect or engineer to prepare detailed drawings and plans fully describing the work to be performed as listed in Attachment A. The plans, drawings, specifications, and other design documentation shall be prepared in Design Packages corresponding to one or more significant parts of the Project. As each Design Package is completed, the County staff shall have thirty (30) days to review said Design Package and identify any changes that need to be made to the plans, specifications, and/or drawings. Once the County staff has concurred with a Design Package, work may commence on the part of the Project described in the respective Design Package.

4. Term. The term of this Agreement shall begin on the date of this Agreement and shall end on three (3) years from the date the County issues the Notice to Proceed to Private Entity, unless extended or earlier terminated pursuant to: (i) the terms of this Agreement or any other Contract Document, or (ii) by law.

5. Notice to Proceed. The County’s delivery to the Private Entity of this executed Agreement shall constitute notice to proceed with the Work in accordance with the Project Schedule.

6. Project Schedule. The Project Schedule shall be as set forth in the Design-Build Agreement, Ex. D of the Design-Build Agreement, Attachment A. This schedule shall be modified under the circumstances set forth in the Design-Build Agreement and the General Conditions. The County and Private Entity shall use reasonable efforts to maintain the Project

Schedule and each of them shall (a) execute and deliver in a timely fashion all instruments and documents as contemplated by the terms of this Agreement and the other Contract Documents, and (b) perform obligations in accordance therewith. The County shall give prompt attention to acquiring any State or Federal permits, acquisition of Right of Way (ROW), reviews, and approvals required for the Project.

7. Compensation to Private Entity; Appropriation of Funds.

(a) The amount of compensation to be paid by the County to the Private Entity shall be established pursuant to the terms of the Design-Build Agreement and shall be referred to herein as the "Contract Price." The Contract Price is **FIFTY-TWO MILLION ONE HUNDRED FIFTY-THREE THOUSAND, SEVEN HUNDRED FIFTY-NINE AND 00/100 DOLLARS (\$ 52,153,759.00)** subject to adjustments as specified in the Contract Documents. Payment of the Contract Price by the County to the Private Entity shall be made in accordance with the terms of the Design-Build Agreement.

(b) The County shall arrange to finance the costs of the Project in a manner that results in the availability of funds in the amounts and at the times required to meet the projected needs for the Project and this Agreement. Prior to the execution of this Comprehensive Agreement, the County shall have provided to the Private Entity reasonable and adequate evidence of the existence of the financial arrangements for the funding of the Project, and will update or supplement such evidence of financial arrangements during the course of the Project as additional work is authorized by a Notice to Proceed.

8. Representations and Warranties.

(a) County Representations and Warranties. The County hereby represents and warrants to the Private Entity as follows:

(i) The County is the "responsible public entity," as that term is used in the PPEA and the Guidelines, for the Project. As such, the County has full power, right and authority to execute, deliver and perform its obligations in accordance with and subject to the terms and conditions of this Agreement and the other Contract Documents.

(ii) The County has taken or caused to be taken all requisite action to authorize the execution and delivery of, and the performance of its obligations under this Agreement and the other Contract Documents.

(iii) Each person executing this Agreement or any other Contract Document, or any other agreement, instrument, or document on behalf of the County to which the County is a party has been or at such time of execution will be duly authorized to execute each such document on behalf of the County.

(iv) Neither the execution and delivery by the County of this Agreement and the other Contract Documents executed by the County concurrently herewith, nor the consummation of the transactions contemplated hereby or thereby, is in conflict with

or will result in a default under or violation of any other agreements or instruments to which it is a party or by which it is bound.

(v) There is no action, suit, proceeding, investigation, or litigation pending and served on the County which challenges the County's authority to execute, deliver or perform, or the validity or enforceability of, this Agreement and the other Contract Documents to which the County is a party, or which challenges the authority of the County official executing this Agreement or the other Contract Documents to which the County is a party, and the County has disclosed to the Private Entity any pending and unserved or threatened action, suit, proceeding, investigation, or litigation with respect to such matters of which the County is aware.

(vi) The zoning of the Site is not inconsistent with the requirements of the Project or a barrier to the development of the Project.

(vii) The County has sufficient funds on hand to pay for any portion of the Work ordered from the Private Entity under a Notice to Proceed.

(b) Private Entity Representations and Warranties. The Private Entity hereby represents and warrants to the County as follows:

(i) The Private Entity is a duly organized and lawful limited liability company created under the laws of the Commonwealth of Virginia. It has and will maintain throughout the term of this Agreement the requisite power and all required licenses (or it or its subcontractors will have all required licenses prior to the time activities which require licenses are undertaken) to carry on its present and proposed Project activities, and has full power, right and authority to execute, deliver and perform its obligations under, in accordance with and subject to the terms and conditions of this Agreement and the other Contract Documents.

(ii) The Private Entity has taken or caused to be taken all requisite action to authorize the execution and delivery of, and the performance of its obligations under, this Agreement and the other Contract Documents.

(iii) Each person executing this Agreement or any other Contract Document on behalf of the Private Entity to which the Private Entity is a party has been or at such time of execution will be duly authorized to execute each such document on behalf of the Private Entity.

(iv) Neither the execution and delivery by the Private Entity of this Agreement and the other Contract Documents executed by the Private Entity concurrently herewith, nor the consummation of the transactions contemplated thereby, is in conflict with or will result in a default under or violation of any other agreements or instruments to which it is a party or by which it is bound.

(v) There is no action, suit, proceeding, investigation, indictment, or litigation pending and served on the Private Entity which challenges the Private Entity's authority to execute, deliver or perform, or the validity or enforceability of, this Agreement

and the other Contract Documents to which the Private Entity is a party, or which challenges the authority of the Private Entity official executing this Agreement or the other Contract Documents to which the Private Entity is a party, and the Private Entity has disclosed to the County any pending and unserved or threatened action, suit, proceeding, investigation, indictment or litigation with respect to such matters of which the Private Entity is aware.

(vi) Private Entity represents and warrants that it has the requisite experience, skills, capabilities, and manpower to perform the Work in a good and workmanlike fashion, and that the person signing any of the Contract Documents has been fully authorized to do so, and that its representative's signature will legally bind Private Entity to perform its obligations under this Agreement.

(vii) Private Entity warrants to the County that all materials and equipment furnished shall be new, unless otherwise specified, and that its Work and that of its subcontractors, shall be of good quality, free from faults and defects in accordance with standard practice in the industry, and in conformance with the Contract Documents. All materials, equipment or Work not conforming to these requirements, including substitutions not properly approved and authorized, will be considered defective.

(viii) Private Entity warrants to the County that the construction, including all materials and equipment furnished during the construction, shall be new, unless otherwise specified, and shall be of good quality, in conformance with the terms of this Agreement, and free of defects in materials and workmanship.

The County's remedies in this Agreement for Private Entity's breach or warranties are in addition to and do not limit those rights and remedies otherwise available to the County. and shall survive the County's payment, acceptance, inspection, or failure to inspect the Work, and review of any Plans and Specifications.

9. Termination.

(a) If a party to this Agreement defaults or fails or neglects to carry out a material obligation under this Agreement (for purposes of this section, the "Defaulting Party") and if the other party (for purposes of this section, the "Non-Defaulting Party") is not in material breach of this Agreement at the time, the Non-Defaulting Party may give written notice in accordance with the Design-Build Agreement.

(b) If not sooner terminated pursuant to the terms of subsection (a) above, or by mutual agreement, the Agreement shall terminate when all terms and conditions of all the Contract Documents (exclusive of warranty and indemnity obligations and any other obligation which continues after termination) have been satisfied and all the Private Entity's construction obligations under this Agreement have been fulfilled.

10. Cooperation; Resolution of Disputes, Claims and Other Matters.

(a) The parties agree to cooperate to achieve the objectives of this Agreement, and to use reasonable and good-faith efforts to resolve all disputes and

disagreements that may arise hereunder. Each party agrees to designate representatives with the authority to make decisions binding upon such party (subject in the case of the County to those matters requiring a vote of the Board of Supervisors) so as to not delay the Project Schedule.

(b) All disputes, claims and other matters in question between the parties arising out of or in relation to this Comprehensive Agreement, including disputes arising under the Design-Build Agreement shall be resolved in accordance with the terms thereof.

(i) A party shall give to the other party written notice of any claim for any additional compensation, damages or delay, or of any other claim, dispute or other matter in question, within fifteen (15) days of the reasonable discovery of the occurrence of the event leading to the dispute, claim or question, and shall submit any supporting data within thirty (30) days after the occurrence giving rise to the dispute, claim or question ends.

(ii) The parties shall first endeavor to resolve any disputes, claims or other matters in question between them through direct negotiations, and if such direct negotiations fail, may engage in non-binding mediation which, if agreed upon between the parties at the time, shall be conducted pursuant to the Construction Industry Mediation Procedure of the American Arbitration Association, with the site of the mediation being in the County of Prince Edward, Virginia, or such other site as may be agreed upon by the parties. Should the dispute, claim or other matter in question remain unresolved for the shorter of (A) ninety (90) days following negotiation or, if negotiation has failed, from the date of the matter giving rise to the dispute, or (B) ninety (90) days after mediation is invoked by a party, either party may proceed in accordance with subsection (iii) below.

(iii) If the procedures of subsection (ii) above have been followed, and the dispute, claim or matter in question remains unresolved, then either party may institute a lawsuit or chancery action, as appropriate, only in: [1] the Circuit Court of the County of Prince Edward, Virginia; [2] if the subject or amount in controversy is within its jurisdiction, the General District Court of the County of Prince Edward, Virginia; or [3] U.S. District Court for the Eastern District of Virginia, if grounds for federal jurisdiction apply.

(iv) Nothing in subsections (ii) or (iii) shall prevent a party from seeking temporary injunctive or other temporary equitable relief in the Circuit Court of the County of Prince Edward, Virginia, if circumstances so warrant.

## 11. Records.

(a) Protected Records. If the Private Entity believes that any Work Product or any other document or item subject to transmittal to or review by the County under the terms of this Agreement or any other Contract Document contains trade secrets or other information exempt or protected from disclosure pursuant to applicable law, the Private Entity shall use its reasonable efforts to identify such information in writing prior to such transmittal or review, and the County shall take steps for ensuring confidentiality consistent with applicable laws prior to transmittal or review.



(b) Requests for Public Disclosure. The County recognizes that certain Work Product and other documents or materials of which the County obtains a copy may contain trade secrets or other information exempt from disclosure under applicable law, or may include information that is otherwise subject to protection from misappropriation or disclosure under law. The Private Entity shall identify such items in writing. Should any such items become the subject of a request for public disclosure, the County shall respond as follows:

(i) The County shall use reasonable efforts to immediately notify the Private Entity of such request and the date by which it anticipates responding.

(ii) The Private Entity must then indicate in writing to the County any claim that such items are protected from disclosure and the applicable authority for such protection.

(iii) If the Private Entity fails to make such assertion within three (3) business days after the County notifies the Private Entity of its intended response, the County shall have the right to make such disclosure.

(iv) If the Private Entity makes a timely assertion with documented authority that the requested items contain trade secrets or other information exempt from disclosure or otherwise protected under applicable law, the County and the Private Entity shall seek judicial declaration of which items may be withheld. Until such declaration is made, the County will maintain the confidentiality of such items. If the requested items are determined to be releasable notwithstanding the Private Entity's claim of confidentiality, the Private Entity will indemnify the County for any damages assessed, and the County's reasonable costs and attorneys' fees in seeking such judicial declaration.

(v) If the County's denial of a request for disclosure of items is challenged in court, the Private Entity shall assist the County in its defense and shall indemnify the County for direct damages assessed and reasonable costs and attorney's fees which the County incurs in such defense, excluding any damages or costs resulting from the County's negligence.

12. Conditions Precedent and Subsequent to Agreement's Effectiveness.

(a) Board of Supervisors' Approval. It shall be a condition precedent to this Agreement's effectiveness that entry into this Comprehensive Agreement between the County and the Private Entity for the Project pursuant to the terms hereof has first been approved by the Board of Supervisors; and that this Agreement has been properly executed by the County; and that the approved, executed Agreement has been delivered to the Private Entity no later than ten (10) days prior to the Effective Date hereof

(b) Entry into Design-Build Agreement. It shall be a condition subsequent to this Agreement's effectiveness that the parties enter into the referenced Attachment A

Design-Build Agreement 525 and Exhibit A General Conditions 535 for the Project in form and substance satisfactory to the County and the Private Entity consistent with the provisions of this Agreement.

13. Copy of Agreement to Auditor of Public Accounts. The County shall submit a copy of this Agreement to the Auditor of Public Accounts of the Commonwealth of Virginia within thirty (30) days of its effective date.

14. State Corporation Commission Identification Number. Private Entity must be authorized to transact business in the Commonwealth as a domestic or foreign business as required by Title 13.1 or Title 50 of the Code of Virginia, as amended, Va. Code § 2.2-4311.2, or as otherwise required by law. Private Entity shall provide the identification number issued to it by the State Corporation Commission.

Private Entity shall not allow its existence to lapse or its certificate of authority or registration to transact business in the Commonwealth, if so required under Title 13.1 or Title 50, to be revoked or cancelled at any time during the term of the Agreement. Doing so shall be deemed to be a violation of this Agreement.

15. Employment Discrimination/Drug-Free Workplace By Contractor. Private Entity certifies to the County that it will conform to the provisions of the Federal Civil Rights Act of 1964, as amended, as well as the Virginia Fair Employment Contracting Act of 1975, as amended, where applicable, the Virginians with Disabilities Act, the Americans with Disabilities Act and Va. Code §§ 2.2-4311, - 4312 of the Virginia Public Procurement Act. During the performance of this Agreement, the Private Entity agrees as follows:

a. The Private Entity will not discriminate against any employee or applicant for employment because of race, religion, color, sex, national origin, age, disability or other basis prohibited by state law related discrimination employment, except where there is a bona fide occupational qualification reasonably necessary to the normal operation of the contractor. The Private Entity agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this non- discrimination clause.

b. The Private Entity, in all solicitations or advertisements for employees placed by or on behalf of the Private Entity, will state that such Private Entity is an equal opportunity employer.

c. Notices, advertisements and solicitations placed in accordance with federal law, rule or regulation shall be deemed sufficient for the purpose of meeting these requirements of this section.

d. To provide a drug-free workplace for the Private Entity's employees as required by Va. Code § 2.2-4312.

e. To post in conspicuous places, available to employees and applicants for employment, a statement notifying employees that the unlawful manufacture, sale,

distribution, dispensation, possession, or use of a controlled substance or marijuana is prohibited in the Private Entity's workplace and specifying the actions that will be taken against employees for violations of such prohibition.

f. To state in all solicitations or advertisements for employees placed by or on behalf of the Private Entity that it maintains a drug-free workplace.

16. Compliance with Immigration Laws. Private Entity shall comply with Va. Code § 2.2-4311.1 of the Virginia Public Procurement Act and any other applicable immigration laws.

17. Miscellaneous.

(a) Successors and Assigns. Except as expressly otherwise provided, all of the terms, covenants and conditions hereof shall be binding upon and inure to the benefit of the parties hereto and their respective successors and assigns. This Agreement may not be assigned without the prior written consent of the parties to this Agreement.

(b) Notices. All notices and demands by either party to the other shall be given in one or more of the following means: (i) delivered in person to the individual intended to receive such notice with a signed receipt therefore, (ii) sent by registered or certified mail, postage prepaid to the address indicated below, (iii) sent by a nationally recognized overnight courier to the individual listed below at the address listed below; or (iv) transmitted by electronic mail to the address below where there is an electronic confirmation of receipt by the recipient., and addressed as follows:

To the County: Douglas P. Stanley  
County Administrator  
PO Box 382  
Farmville, VA 23901  
Email: dstanley@co.prince-edward.va.us

With copies to: Office of the County Attorney  
Prince Edward County, Virginia  
PO Box 382  
Farmville, VA 23901  
Email: tawilson@tawlaw.net

To Design-Builder John Thornton  
Project Manager  
Prince Edward County Infrastructure, LLC  
4016 Holland Boulevard  
Chesapeake, Virginia 23323  
Email: jthornton@meb.group

With copies to: David Ervin, Vice President  
MEB General Contractors, Inc.  
4016 Holland Boulevard  
Chesapeake, Virginia 23323  
Email: dervin@meb.group

and Ed Stelter, Vice President  
Faulconer Construction Company, Inc.  
2496 Old Ivy Road  
Charlottesville, VA 22903  
Email: estelter@faulconerconstruction.com

(c) Binding Effect. Subject to the limitations of subsection (a) above, this Agreement shall be binding upon and shall inure to the benefit of the parties hereto and their respective legal representatives, successors and permitted assigns, and wherever a reference in this Agreement is made to any of the parties hereto, such reference also shall be deemed to include, wherever applicable, a reference to the legal representatives, successors and permitted assigns of such party, as if in every case so expressed.

(d) Relationship of Parties. The relationship of the Private Entity to the County shall be one of an independent contractor, not an agent, partner, joint venturer or employee, and the County shall have no rights to direct or control the activities of the Private Entity in its execution of the Work under this Agreement except as otherwise permitted in this Agreement or an incorporated document to allow the County to issue a "Stop Work Order" until corrective action is taken in the limited situation where the Private Entity is observed in activity that is contrary to law or in breach of the terms of the Contract Documents.

(e) No Third-Party Beneficiaries. Nothing contained in this Agreement is intended or shall be construed as creating or conferring any rights, benefits or remedies upon, or creating any obligations of the parties hereto toward, any person or entity not a party to this Agreement.

(f) Waiver. No waiver by any party of any right or remedy under this Agreement or the other Contract Documents shall be deemed to be a waiver of any other or subsequent right or remedy under this Agreement or the other Contract Documents. The consent by one party to any act by the other party requiring such consent shall not be deemed to render unnecessary the obtaining of consent to any subsequent act for which consent is required, regardless of whether similar to the act for which consent is given. No provision of this Agreement shall be deemed to have been waived unless such waiver shall be in writing signed by the party to be charged.

(g) Severability. If any term or provision of this Agreement shall be determined to be invalid or unenforceable in any respect, it shall be replaced with a substantially similar provision to the greatest extent possible, and the Agreement shall remain in full force and effect.

(h) Counterparts. This Agreement may be executed in two or more counterparts, each of which shall be deemed an original, but both of which such counterparts together shall be deemed to be one and the same instrument. It shall not be necessary in making proof of this Agreement or any counterpart hereof to produce or account for the other counterpart.

(i) Entire Agreement. This Agreement, and the Attachments and their Exhibits, attached hereto and forming a part hereof set forth all the covenants, promises, agreements, conditions and understandings between the Private Entity and the County concerning the Project, and there are no covenants, promises, agreements, conditions, or understandings, either oral or written, between them other than are herein set forth. No alteration, amendment, change or addition to this Agreement shall be binding upon either party unless reduced to writing and signed by each party. Upon execution of this Comprehensive Agreement, the Interim Agreement shall be considered terminated and of no further effect.

(i) Headings. The section and paragraph headings appearing in this Agreement are for convenience of reference only and shall not be deemed to alter or affect the meaning or interpretation of any provision hereof.

(k) Governing Law. This Agreement shall be governed by and construed in accordance with the laws of the Commonwealth of Virginia.

IN WITNESS WHEREOF, the parties have executed this Comprehensive Agreement as of the day and year first above written.

COUNTY OF PRINCE EDWARD, VIRGINIA, a  
municipal corporation of the Commonwealth of

\_\_\_\_\_  
Douglas P. Stanley, County Administrator

PRINCE EDWARD COUNTY  
INFRASTRUCTURE, LLC, a Joint Venture

\_\_\_\_\_  
David Ervin, Manager

Sandy River Water Treatment and Distribution System Project

Attachment A to Comprehensive Agreement between  
Prince Edward County, Virginia and  
Prince Edward County Infrastructure, LLC

# Standard Form of Agreement Between Owner and Design- Builder – Lump Sum

**Document No. 525**

Second Edition, 2010

© Design-Build Institute of America  
Washington, D.C.





## Design-Build Institute of America - Contract Documents LICENSE AGREEMENT

By using the DBIA Contract Documents, you agree to and are bound by the terms of this License Agreement.

- 1. License.** The Design-Build Institute of America ("DBIA") provides DBIA Contract Documents and licenses their use worldwide. You acknowledge that DBIA Contract Documents are protected by the copyright laws of the United States. You have a limited nonexclusive license to: (a) Use DBIA Contract Documents on any number of machines owned, leased or rented by your company or organization; (b) Use DBIA Contract Documents in printed form for bona fide contract purposes; and (c) Copy DBIA Contract Documents into any machine-readable or printed form for backup or modification purposes in support of your permitted use.
- 2. User Responsibility.** You assume sole responsibility for the selection of specific documents or portions thereof to achieve your intended results, and for the installation, use, and results obtained from the DBIA Contract Documents. You acknowledge that you understand that the text of the DBIA Contract Documents has important legal consequences and that consultation with an attorney is recommended with respect to use or modification of the text. You will not represent that any of the contract documents you generate from DBIA Contract Documents are DBIA documents unless (a) the document text is used without alteration or (b) all additions and changes to, and deletions from, the text are clearly shown.
- 3. Copies.** You may not use, copy, modify, or transfer DBIA Contract Documents, or any copy, modification or merged portion, in whole or in part, except as expressly provided for in this license. Reproduction of DBIA Contract Documents in printed or machine-readable format for resale or educational purposes is expressly prohibited. You will reproduce and include DBIA's copyright notice on any printed or machine-readable copy, modification, or portion merged into another document or program.
- 4. Transfers.** You may not transfer possession of any copy, modification or merged portion of DBIA Contract Documents to another party, except that a party with whom you are contracting may receive and use such transferred material solely for purposes of its contract with you. You may not sublicense, assign, or transfer this license except as expressly provided in this Agreement, and any attempt to do so is void.
- 5. Term.** The license is effective for one year from the date of purchase. DBIA may elect to terminate it earlier, by written notice to you, if you fail to comply with any term or condition of this Agreement.
- 6. Limited Warranty.** DBIA warrants the electronic files or other media by which DBIA Contract Documents are furnished to be free from defects in materials and workmanship under normal use during the Term. There is no other warranty of any kind, expressed or implied, including, but not limited to the implied warranties of merchantability and fitness for a particular purpose. Some states do not allow the exclusion of implied warranties, so the above exclusion may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state. DBIA does not warrant that the DBIA Contract Documents will meet your requirements or that the operation of DBIA Contract Documents will be uninterrupted or error free.
- 7. Limitations of Remedies.** DBIA's entire liability and your exclusive remedy shall be: the replacement of any document not meeting DBIA's "Limited Warranty" which is returned to DBIA with a copy of your receipt, or at DBIA's election, your money will be refunded. In no event will DBIA be liable to you for any damages, including any lost profits, lost savings or other incidental or consequential damages arising out of the use or inability to use DBIA Contract Documents even if DBIA has been advised of the possibility of such damages, or for any claim by any other party. Some states do not allow the limitation or exclusion of liability for incidental or consequential damages, so the above limitation or exclusion may not apply to you.
- 8. Acknowledgement.** You acknowledge that you have read this agreement, understand it and agree to be bound by its terms and conditions and that it will be governed by the laws of the District of Columbia. You further agree that it is the complete and exclusive statement of your agreement with DBIA which supersedes any proposal or prior agreement, oral or written, and any other communications between the parties relating to the subject matter of this agreement.

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**Standard Form of Agreement  
Between  
Owner and Design-Builder - Lump Sum**

*This document has important legal consequences. Consultation with an attorney is recommended with respect to its completion or modification.*

---

This **DESIGN-BUILD AGREEMENT** is made as of the \_\_\_\_\_ day of \_\_\_\_\_ in the year of 2023, by and between the following parties, for services in connection with the Project identified below.

**OWNER:**

*(Name and address)*

County of Prince Edward, Virginia  
P.O. Box 382  
Farmville, VA 23901

**DESIGN-BUILDER:**

*(Name and address)*

Prince Edward County Infrastructure, LLC  
C/O MEB General Contractors, Inc.  
4016 Holland Boulevard  
Chesapeake, Virginia 23323

**PROJECT DESIGNER:**

*(Name and address)*

Timmons Group, Inc.  
1001 Boulders Parkway  
Suite 300  
Richmond, Virginia 23225

**PROJECT:**

*(Include Project name and location as it will appear in the Contract Documents)*

Sandy River Water Project, Prince Edward County, Virginia

In consideration of the mutual covenants and obligations contained herein, Owner and Design-Builder agree as set forth herein.

## **RECITALS**

1. Contemporaneously with the execution of this Agreement, the County and Design-Builder have executed a Comprehensive Agreement for the design and construction of the Project. This Agreement is attached to and part of the Comprehensive Agreement.

## **Article 1**

### **Scope of Work**

1.1 Design-Builder shall perform all design and construction services, and provide all material, equipment, tools and labor, necessary to complete the Work defined and detailed in Exhibit B – Basis of Design to the extent of the following:

- Project 1 – Raw Water Facilities
- Project 2 – Water Treatment Facilities (includes Article 2.E– Disinfection By-Product)
- Project 3 – Finished Water Pipeline Facilities – East Distribution System

The Scope of Work shall not include the following sections defined and detailed in Exhibit B unless added by the County as a future Amendment to this Agreement:

- Project 3A – Finished Water Pipeline Facilities – Rice Distribution System
- Project 4 - Finished Water Pipeline Facilities – West Distribution System

## **Article 2**

### **Contract Documents**

- 2.1 The Contract Documents shall be as specified in the Comprehensive Agreement, paragraph 2.(a):

## **Article 3**

### **Interpretation and Intent**

3.1 Design-Builder and Owner, prior to execution of the Agreement, shall carefully review all the Contract Documents, including the various documents comprising the Basis of Design Documents, for any conflicts or ambiguities. Design-Builder and Owner will discuss and resolve any identified conflicts or ambiguities prior to execution of the Agreement.

3.2 The Contract Documents are intended to permit the parties to complete the Work and all obligations required by the Contract Documents within the Contract Time(s) for the Contract Price. The Contract Documents are intended to be complementary and interpreted in harmony so as to avoid conflict, with words and phrases interpreted in a manner consistent with construction and design industry standards. In the event inconsistencies, conflicts, or ambiguities between or among the Contract Documents are discovered after execution of the Agreement, Design-Builder and Owner shall attempt to resolve any ambiguity, conflict or inconsistency informally, recognizing that the Contract Documents shall take precedence in the order in which they are listed in paragraph 2(a) of the Comprehensive Agreement.

3.3 Terms, words and phrases used in the Contract Documents, including this Agreement, shall have the meanings given them in the General Conditions of Contract.

3.4 Deleted.

3.5 The Contract Documents form the entire agreement between Owner and Design-Builder and by incorporation herein are as fully binding on the parties as if repeated herein. No oral representations or other agreements have been made by the parties except as specifically stated in the Contract Documents.

## Article 4

### **Ownership of Work Product**

**4.1 Work Product.** All drawings, specifications and other documents and electronic data, including such documents identified in the General Conditions of Contract, furnished by Design-Builder to Owner under this Agreement (“Work Product”) are deemed to be instruments of service and Design-Builder shall retain the ownership and property interests therein, including but not limited to any intellectual property rights, copyrights and/or patents, subject to the provisions set forth in Sections 4.2 through 4.5 below.

**4.2 Owner’s Rights in Work Product Upon Project Completion and Payment in Full to Design-Builder.**

Upon Owner’s payment in full for all Work performed under the Contract Documents, Design-Builder transfers to Owner all ownership and property interests, including but not limited to any intellectual property rights, copyrights and/or patents, in the Work Product. Such transfer is conditioned on Owner’s express understanding that its alteration of the Work Product without the involvement of Design-Builder is at Owner’s sole risk and without liability or legal exposure to Design-Builder or anyone working by or through Design-Builder, including Design Consultants of any tier (collectively the “Indemnified Parties”), and on the Owner’s obligations to provide the indemnity set forth in Section 4.5 below.

**4.3 Owner’s Limited License upon Owner’s Termination for Convenience or Design-Builder’s Election to Terminate.** If Owner terminates this Agreement for its convenience as set forth in Article 8 hereof, or if Design-Builder elects to terminate this Agreement in accordance with Section 11.4 of the General Conditions of Contract, Design-Builder shall, upon Owner’s payment in full of the amounts due Design-Builder under the Contract Documents, grant Owner a limited license to use the Work Product to complete the Project and subsequently occupy the Project, and Owner shall thereafter have the same rights as set forth in Section 4.2 above, conditioned on the following:

**4.3.1** Use of the Work Product is at Owner’s sole risk without liability or legal exposure to any Indemnified Party and on the Owner’s obligation to provide the indemnity set forth in Section 4.5 below.

**4.4 Owner’s Limited License upon Design-Builder’s Default.** If this Agreement is terminated due to Design-Builder’s default pursuant to Section 11.2 of the General Conditions of Contract, then Design-Builder grants Owner a limited license to use the Work Product to complete the Project and subsequently occupy the Project, and Owner shall thereafter have the same rights and obligations as set forth in Section 4.2 above. Notwithstanding the preceding sentence, if it is ultimately determined that Design-Builder was not in default, Owner shall be deemed to have terminated the Agreement for convenience, and Design-Builder shall be entitled to the rights and remedies set forth in Section 4.3 above.

**4.5 Owner’s Indemnification for Use of Work Product.** If Owner is required to compensate any Indemnified Parties based on the Owner’s use or alteration of the Work Product under any of the circumstances identified in this Article 4, Owner shall defend and compensate such Parties from and against any and all claims, damages, liabilities, losses and expenses, to the extent caused by the use or alteration of the Work Product by, or on behalf of, Owner to the extent permitted by law.

## Article 5

### Contract Time

**5.1 Date of Commencement.** The Work shall commence within five (5) days of Design-Builder's receipt of Owner's Notice to Proceed ("Date of Commencement") unless the parties mutually agree otherwise in writing.

**5.2 Substantial Completion and Final Completion.**

**5.2.1** Substantial Completion of the entire Work shall be achieved no later than three (3) years following the Date of Commencement ("Scheduled Substantial Completion Date"). Further, any delays in the County's acquisition of real estate or easements for the Project will be grounds for extensions of the Scheduled Substantial Completion Date.

*[At the parties' option, the following supplemental language may be inserted at the end of Section 5.2.1. if the Project is subject to a Temporary Certificate of Occupancy]*

The parties agree that the definition for Substantial Completion set forth in Section 1.2.18 of the General Conditions of Contract is hereby modified to read as follows:

*"Substantial Completion is the date on which the Work, or an agreed upon portion of the Work, is sufficiently complete in accordance with the Contract Documents so that Owner can occupy and use the Project or a portion thereof for its intended purposes."*

**5.2.2** Interim milestones and/or Substantial Completion of identified portions of the Work ("Scheduled Interim Milestone Dates") shall be achieved as follows: *(Insert any interim milestones for portions of the Work with different scheduled dates for Substantial Completion)*

[NONE]

**5.2.3** Final Completion of the Work or identified portions of the Work shall be achieved as expeditiously as reasonably practicable. Final Completion is the date when all Work is complete pursuant to the definition of Final Completion set forth in Section 1.2.7 of the General Conditions of Contract. Final Completion shall be achieved within sixty (60) days following Owner's issuance of a Certificate of Substantial Completion.

**5.2.4** All of the dates set forth in this Article 5 (collectively the "Contract Time(s)") shall be subject to adjustment in accordance with the General Conditions of Contract.

**5.3 Time is of the Essence.** Owner and Design-Builder mutually agree that time is of the essence with respect to the dates and times set forth in the Contract Documents.

**5.4 Liquidated Damages.** Design-Builder understands that if Substantial Completion is not attained by the Scheduled Substantial Completion Date, Owner will suffer damages due to delay which are difficult to determine and accurately specify. Design-Builder agrees that if Substantial Completion is not attained by thirty (30) days after the Scheduled Substantial Completion Date, as adjusted (the "LD Date"), Designer-Builder shall pay Owner Two Thousand Five Hundred Dollars (\$ 2,500.00.00) as liquidated damages for each day that Substantial Completion extends beyond the LD Date.

**5.5** Any liquidated damages assessed pursuant to this Agreement for delay shall be in lieu of all liability for any and all extra costs, losses, expenses, claims, penalties and any other damages, whether special or consequential, and of whatsoever nature incurred by Owner which are occasioned by any delay in achieving

the Contract Time(s) but shall not limit Owner's damages for any other breaches of this Agreement, the Comprehensive Agreement or any other agreement incorporated into the Comprehensive Agreement.

Owner and Design-Builder agree that the maximum aggregate liability Design-Builder has for any liquidated damages that may be assessed under this Agreement for failure to achieve the Contract Time(s) alone shall be Two Hundred and Fifty Thousand and 00/100 Dollars (\$250,000.00) provided, however, that this provision shall not limit Owner's damages for any breaches of this Agreement other than for delay in completion of the Work, the Comprehensive Agreement or any other agreement incorporated into the Comprehensive Agreement.

#### 5.6 NOT APPLICABLE)

5.7 *[The Parties may also desire to modify Article 8.2.2 of the General Conditions of Contract relative to compensability of delays that would cause the Contract Time(s) to be extended. In such case, the following option can be used.]*

In addition to Design-Builder's right to a time extension for those events set forth in Section 8.2.1 of the General Conditions of Contract, Design-Builder shall also be entitled to an appropriate adjustment as may be agreed to by the parties based on documentation, submitted by the Design-Builder and accepted by the Owner, of the Contract Price for those events set forth in Section 8.2.1 of the General Conditions of Contract, provided, however, for Force Majeure Events, Design-Builder shall only be entitled to an increase in the Contract Price if said events exceed sixty (60) cumulative days over the term of the Contract. No such adjustment in Contract Price shall be made: (i) to the extent such loss is compensated by a policy of insurance required under this Agreement; or (ii) if Design-Builder had warning of a predicted Force Majeure Event and failed to take reasonable measures to protect the Site. Said additional compensation shall be limited to:

*[Check one box only]*

\$ \_\_\_\_\_ dollars a day for each day work is delayed beyond the Scheduled Substantial Completion Date.

or

the direct costs and expenses, plus ten percent (10%) markup for overhead and profit on such costs agreed to by the parties, Design-Builder can demonstrate it has reasonably and actually incurred as a result of such event.

## Article 6

### Contract Price

6.1 **Contract Price.** Owner shall pay Design-Builder in accordance with Article 6 of the General Conditions of Contract the Contract Price specified in Sec. 7(a) of the Comprehensive Agreement ("Contract Price"), subject to adjustments made in accordance with the General Conditions of Contract. Unless otherwise provided in the Contract Documents, the Contract Price is deemed to include all sales, use, consumer and other taxes mandated by applicable Legal Requirements.

6.2 **Markups for Changes.** If the Contract Price requires an adjustment due to changes in the Work, and the cost of such changes is determined under Sections 9.4.1.3 or 9.4.1.4 of the General Conditions of Contract, the following markups shall be allowed on such changes:

**6.2.1** For additive Change Orders, including additive Change Orders arising from both additive and deductive items, it is agreed that Design-Builder shall receive a Fee of Ten percent (10.0 %) of the additional costs incurred for that Change Order for overhead and profit, plus any other markups set forth at Exhibit C hereto.

**6.2.2** For deductive Change Orders, including deductive Change Orders arising from both additive and deductive items, the deductive amounts shall include:

No additional reduction to account for Design-Builder's Fee or any other markup.

or

An amount equal to the sum of: (a) five percent (5.0 %) applied to the direct costs of the net reduction (which amount will account for a reduction associated with Design-Builder's Fee); plus (b) any other markups set forth at Exhibit C hereto applied to the direct costs of the net reduction.

### **6.3 Allowance Items and Allowance Values.**

**6.3.1** Any and all Allowance Items, as well as their corresponding Allowance Values and methods of Contract Price adjustment for variations, are set forth in Exhibit J hereto.

**6.3.2** Design-Builder and Owner have worked together to review the Allowance Items and Allowance Values based on design information then available to determine that the Allowance Values constitute reasonable estimates for the Allowance Items. Design-Builder and Owner will continue working closely together during the preparation of the design to develop Construction Documents consistent with the Allowance Values. Nothing herein is intended in any way to constitute a guarantee by Design-Builder that the Allowance Item in question can be performed for the Allowance Value.

**6.3.3** No work shall be performed on any Allowance Item without Design-Builder first obtaining in writing advanced authorization to proceed from Owner. Owner agrees that if Design-Builder is not provided written authorization to proceed on an Allowance Item by the date set forth in the Project schedule, due to no fault of Design-Builder, Design-Builder may be entitled to an adjustment of the Contract Time(s) and Contract Price.

**6.3.4** The Allowance Value for an Allowance Item includes the direct cost of labor, materials, equipment, transportation, taxes and insurance associated with the applicable Allowance Item. All other costs, including design fees, Design-Builder's overall project management and general conditions costs, overhead and fee, are deemed to be included in the original Contract Price, and are not subject to adjustment, regardless of the actual amount of the Allowance Item.

**6.3.5** Whenever the quantities of the Work performed, for an Allowance Item is more than or less than the stated Allowance Value, the Contract Price shall be adjusted accordingly by Change Order as provided in Exhibit J, subject to Section 6.3.4. The amount of the Change Order shall reflect the Unit Price specified in Exhibit J for the particular Allowance Item times the quantity by which the Allowance Quantity is exceeded or underrun.

## Article 7

### Procedure for Payment

#### 7.1 Progress Payments.

7.1.1 Design-Builder shall submit to Owner on the tenth (10<sup>th</sup>) day of each month, beginning with the first month after the Date of Commencement, Design-Builder's Application for Payment in accordance with Article 6 of the General Conditions of Contract, based on the percentage completion that month of line items on the Schedule of Values, Exhibit K.

7.1.2 Owner shall have 20 days from the receipt of an invoice to conduct an inspection of the Work for which the invoice was submitted. Owner shall make payment within thirty (30) days after Owner has received and addressed with inspection the work attendant to each Application for Payment and deemed it properly submitted and accurate in accordance with Article 6 of the General Conditions of Contract, but in each case less the total of payments previously made, and less amounts properly withheld under Section 6.3 of the General Conditions of Contract.

#### 7.2 Retainage on Progress Payments.

7.2.1 Owner will retain five percent (5.0 %) of each Application for Payment provided, however, that when fifty percent (50%) of the Work has been satisfactorily completed by Design-Builder and Design-Builder is otherwise in compliance with its contractual obligations, Owner will not retain any additional retention amounts from Design-Builder's subsequent Applications for Payment. Owner will also reasonably consider reducing retainage for Subcontractors completing their work early in the Project.

7.2.2 The Owner shall have 20 days to review and address with inspection the Work at the time of notification of Substantial Completion of any portion of the Work. Once the Owner and its inspector have concurred regarding the work and the issuance of the Certificate of Substantial Completion or any portion of the Work, and have also concurred with the Design-Builder, then payment shall be made as provided herein.

Within fifty (50) days after Substantial Completion of the entire Work or, if applicable, any portion of the Work, pursuant to Section 6.6 of the General Conditions of Contract, Owner shall release to Design-Builder all retained amounts relating, as applicable, to the entire Work or completed portion of the Work, less an amount equal to (a) the reasonable value of all remaining or incomplete items of Work as noted in the Certificate of Substantial Completion and (b) all other amounts Owner is entitled to withhold pursuant to Section 6.3 of the General Conditions of Contract.

7.3 **Final Payment.** Design-Builder shall submit its Final Application for Payment to Owner in accordance with Section 6.7 of the General Conditions of Contract. Owner shall make payment on Design-Builder's properly submitted and accurate Final Application for Payment within thirty (30) days after Owner's receipt of the Final Application for Payment, provided that Design-Builder has satisfied the requirements for final payment set forth in Section 6.7.2 of the General Conditions of Contract.

7.4 **Interest.** Payments due and unpaid by Owner to Design-Builder, whether progress payments or final payment, shall bear interest commencing thirty (30) days after payment is due at the rate of one percent (1%) per month until paid.

7.5 **Record Keeping and Finance Controls; Examination of Records.** With respect to changes in the Work performed on a cost basis by Design-Builder pursuant to the Contract Documents, Design-Builder shall keep full and detailed accounts and exercise such controls as may be necessary for proper financial management, using accounting and control systems in accordance with generally accepted accounting principles and as may be provided in the Contract Documents.



During the performance of the Work and for a period of three (3) years after Final Payment, Owner and Owner's accountants shall be afforded access to, and the right to audit from time-to-time, upon reasonable notice, Design-Builder shall preserve its records, books, correspondence, receipts, subcontracts, purchase orders, vouchers, memoranda and other data relating to changes in the Work for a period of three (3) years after Final Payment, and until any appeals, litigation, mediation, ADR, or claims have been finally concluded. Such inspection shall take place at Design-Builder's offices during normal business hours unless another location and time is agreed to by the parties.

**7.5.1** Design-Builder also agrees that Owner, or any duly authorized representative of Owner, shall, until the expiration of three (3) years after Final Payment hereunder, have access to and the right to examine and copy any directly pertinent books, documents, papers, and records of Design-Builder involving transactions relating to the Contract Documents.

**7.5.2** Design-Builder shall include in any subcontract for more than \$10,000 entered into as a result of the Contract Documents, a provision to the effect that the subcontractor agrees that Owner, or any duly authorized representative of Owner, shall until the expiration of three (3) years after final payment under Contract have access to and the right to examine and copy any directly pertinent books, documents, papers, and records of such subcontractor involved in the transactions related to such subcontract or the Contract Documents. The term "subcontract" as used herein shall exclude subcontracts or purchase orders for public utility services at rates established for uniform applicability to the public.

**7.5.3** The period of access provided in subparagraphs 7.5.1 and 7.5.2 above for books, documents, papers, and records which may relate to any litigation, mediation or other alternative dispute resolution ("ADR"), or the settlement of claims arising out of performance of the Contract Documents or any subcontract shall continue until any appeals, litigation, mediation, ADR, or claims have been finally concluded.

## **Article 8**

### **Termination for Convenience**

**8.1** Upon ten (10) days' written notice to Design-Builder, Owner may, for its convenience and without cause, elect to terminate this Agreement. In such event, Owner shall pay Design-Builder for the following:

**8.1.1** All Work executed and for proven loss, cost or expense in connection with the Work;

**8.1.2** The agreed to reasonable costs and expenses attributable to such termination, including demobilization costs and amounts due in settlement of terminated contracts with Subcontractors and Design Consultants; and

**8.1.3** *(Choose one of the following:)*

The fair and reasonable, agreed to sums for overhead and profit on the sum of items 8.1.1 and 8.1.2 above.

or

Overhead and profit in the amount of Ten percent (10%) on the sum of items 8.1.1 and 8.1.2 above.



8.2 If Owner terminates this Agreement pursuant to Section 8.1 above and proceeds to design and construct the Project through its employees, agents or third parties, Owner's rights to use the Work Product shall be as set forth in Section 4.3 hereof. Such rights may not be transferred or assigned to others without Design-Builder's express written consent and such third parties' agreement to the terms of Article 4.

## **Article 9**

### **Representatives of the Parties**

#### **9.1 Owner's Representatives.**

9.1.1 Owner designates the individual listed below as its Senior Representative ("Owner's Senior Representative"), which individual has the authority and responsibility for avoiding and resolving disputes under Section 10.2.3 of the General Conditions of Contract: *(Identify individual's name, title, address and telephone numbers)*

The County Administrator.

9.1.2 Owner designates the individual listed below as its Owner's Representative, which individual has the authority and responsibility set forth in Section 3.4 of the General Conditions of Contract: *(Identify individual's name, title, address and telephone numbers)*

The County Administrator or other individual designated in writing by the Administrator to perform this function.

#### **9.2 Design-Builder's Representatives.**

9.2.1 Design-Builder designates the individual listed below as its Senior Representative ("Design-Builder's Senior Representative"), which individual has the authority and responsibility for avoiding and resolving disputes under Section 10.2.3 of the General Conditions of Contract: *(Identify individual's name, title, address and telephone numbers)*

David Ervin, Vice President  
MEB General Contractors, Inc.  
4016 Holland Boulevard  
Chesapeake, Virginia 23323

9.2.2 Design-Builder designates the individual listed below as its Design-Builder's Representative, which individual has the authority and responsibility set forth in Section 2.1.1 of the General Conditions of Contract: *(Identify individual's name, title, address and telephone numbers)*

John Thornton  
Project Manager  
Prince Edward County Infrastructure, LLC  
4016 Holland Boulevard  
Chesapeake, Virginia 23323

## **Article 10**

### **Bonds and Insurance**

**10.1 Insurance.** Design-Builder and Owner shall procure the insurance coverages set forth in the Insurance Exhibit (Exhibit E) attached hereto and in accordance with Article 5 of the General Conditions of Contract. If the amount of the Change Orders or otherwise relevant adjustments are more than five percent (5%) of the Contract Price, and the Owner requests that Design-Builder obtain additional or increased insurance coverage, the additional coverage required shall be specified in a Change Order.

**10.2 Bonds and Other Performance Security.** Design-Builder shall provide the following performance bond and labor and material payment bond or other performance security:

**Performance Bond.**

*[Check one box only. If no box is checked, then no bond is required.]*

Required                       Not Required

**Payment Bond.**

*[Check one box only. If no box is checked, then no bond is required.]*

Required                       Not Required

## Article 11

### Limitation of Liability

To the fullest extent permitted by law, and notwithstanding any other provision of this Agreement, the total liability, in the aggregate, of Design-Builder, its Design Consultants, and Subcontractors, surety (if any) and their respective officers, directors, employees, and agents, and any of them, to Owner and anyone claiming by, through or under Owner, for any and all claims, losses, liabilities, costs, or damages whatsoever arising out of, resulting from, or in any way related to, the Project or this Agreement from any cause, including but not limited to the negligence, indemnity, professional errors or omissions, strict liability, breach of contract, or warranty (express or implied) shall not exceed the insurance limits required under this agreement or 95% of the Contract Price, as adjusted by executed change orders, whichever is greater.

## Article 12

### **Other Provisions**

**12.1 Other provisions, if any, are as follows:** *(Insert any additional provisions)*

12.1.1 All disputes arising under the Design-Build Agreement shall be resolved in accordance with Sec. 10 of the Comprehensive Agreement.

12.1.2 In executing this Agreement, Owner and Design-Builder each individually represents that it has the necessary financial resources to fulfill its obligations under this Agreement, and each has the necessary corporate approvals to execute this Agreement, and perform the services described herein.

12.1.3 Economic Price Adjustment Provisions. In consideration of the volatile markets for certain materials and equipment, the Parties have agreed to incorporate appropriate Economic Price Adjustment provisions providing an equitable adjustment to the Contract Price to account for changes in prices for designated materials or equipment between the date of VRA approval of the loan which will fund the County's commitments under the Comprehensive Agreement and the date of purchase of those materials

or equipment. The items of goods and services eligible for such price adjustments (“the EPA Contracts”), are specified in Exhibit F. Items as specified in Exhibit F will be secured under Contract by PECEI upon receiving Notice from the County that VRA has approved the loan. The Contracts will allow for pricing to be confirmed and for preparation of shop drawings for inclusion into the final design. Items will not be released for fabrication or production until the design is approved and released for construction. The method of adjusting prices for .EPA Contracts shall be as follows:

- a. The prices shown in the EPA Contracts shall be the Baseline Prices. PECEI will attempt to acquire all goods and services under the EPA Contracts at the Baseline Prices from the listed Vendors.
- b. If PECEI determines that the goods and services to be acquired under the EPA Contracts cannot be acquired from the listed Vendors at the Baseline Prices, PECEI will obtain competitive estimates from at least one additional vendor offering the same or equal goods or services.
- c. PECEI will provide the County with copies of the contracts or quotations from the listed Vendors showing the Baseline Prices, the updated contracts or quotations from the listed Vendors showing the escalated pricing, and the quotations from alternative vendors of the same or equal products.
- d. In consultation with the County, PECEI will select the Vendor providing the best value to PECEI and the County, considering the available pricing, quality, delivery schedule, warranty, and other relevant considerations.
- e. The County agrees to issue a Change Order to PECEI increasing the Contract Price by the amount by which the selected Vendor’s price exceeds the Baseline Price for the goods or services to be purchased under the EPA Contract. The increase in the Contract Price will include the increase in direct cost to PECEI plus any associated increase in taxes. No markup for overhead or profit will be allowed to PECEI for the increase in direct cost or taxes.
- f. In addition, the Change Order shall include any necessary adjustments to the Contract Schedule if the delivery and/or installation schedule for the selected Vendor is different from the delivery and/or installation schedule from the listed Vendor.

12.1.4 Exhibit G is a list of permits that are or may be required to be obtained for the construction of the Project. Exhibit G assigns responsibility between Design-Builder and Owner for obtaining each listed Permit. The costs of all permits shall be paid directly by the Owner.

12.1.5 Owner will pay the cost for any utility connections fees to new plant facilities (i.e. Dominion Power, Verizon, etc.)

12.1.6 Owner will provide, and take all necessary steps to acquire, all land, and interests in lands (to include easements and rights of way), necessary for construction of the Project.

12.2 Listing of Exhibits and documents incorporated herein:

A	General Conditions of the Design-Build Agreement (DBIA 535)
B	Basis of Design Report
C	Scope of Services
D	Project Schedule
E	Required Insurance Policies
F	Economic Price Adjustment provisions – List of Materials Included

G	Permit List
H	Performance Bond
I	Payment Bond
J	Allowance Items
K	Schedule of Values

In executing this Agreement, Owner and Design-Builder each individually represents that it has the necessary financial resources to fulfill its obligations under this Agreement, and each has the necessary corporate approvals to execute this Agreement, and perform the services described herein.

**OWNER:**

**DESIGN-BUILDER:**

\_\_\_\_\_  
*(Name of Owner)*

\_\_\_\_\_  
*(Name of Design-Builder)*

\_\_\_\_\_  
*(Signature)*

\_\_\_\_\_  
*(Signature)*

\_\_\_\_\_  
*(Printed Name)*

\_\_\_\_\_  
*(Printed Name)*

\_\_\_\_\_  
*(Title)*

\_\_\_\_\_  
*(Title)*

Date: \_\_\_\_\_

Date: \_\_\_\_\_

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Exhibit A to DBIA 525, Design-Build Agreement  
For the  
Sandy River Water Treatment and Distribution System Project  
Prince Edward County Infrastructure, LLC

# Standard Form of General Conditions of Agreement Between Owner and Design-Builder

**Document No. 535**

Second Edition, 2010

© Design-Build Institute of America  
Washington, D.C.





## Design-Build Institute of America - Contract Documents

### LICENSE AGREEMENT

By using the DBIA Contract Documents, you agree to and are bound by the terms of this License Agreement.

- 1. License.** The Design-Build Institute of America ("DBIA") provides DBIA Contract Documents and licenses their use worldwide. You acknowledge that DBIA Contract Documents are protected by the copyright laws of the United States. You have a limited nonexclusive license to: (a) Use DBIA Contract Documents on any number of machines owned, leased or rented by your company or organization; (b) Use DBIA Contract Documents in printed form for bona fide contract purposes; and (c) Copy DBIA Contract Documents into any machine-readable or printed form for backup or modification purposes in support of your permitted use.
- 2. User Responsibility.** You assume sole responsibility for the selection of specific documents or portions thereof to achieve your intended results, and for the installation, use, and results obtained from the DBIA Contract Documents. You acknowledge that you understand that the text of the DBIA Contract Documents has important legal consequences and that consultation with an attorney is recommended with respect to use or modification of the text. You will not represent that any of the contract documents you generate from DBIA Contract Documents are DBIA documents unless (a) the document text is used without alteration or (b) all additions and changes to, and deletions from, the text are clearly shown.
- 3. Copies.** You may not use, copy, modify, or transfer DBIA Contract Documents, or any copy, modification or merged portion, in whole or in part, except as expressly provided for in this license. Reproduction of DBIA Contract Documents in printed or machine-readable format for resale or educational purposes is expressly prohibited. You will reproduce and include DBIA's copyright notice on any printed or machine-readable copy, modification, or portion merged into another document or program.
- 4. Transfers.** You may not transfer possession of any copy, modification or merged portion of DBIA Contract Documents to another party, except that a party with whom you are contracting may receive and use such transferred material solely for purposes of its contract with you. You may not sublicense, assign, or transfer this license except as expressly provided in this Agreement, and any attempt to do so is void.
- 5. Term.** The license is effective for one year from the date of purchase. DBIA may elect to terminate it earlier, by written notice to you, if you fail to comply with any term or condition of this Agreement.
- 6. Limited Warranty.** DBIA warrants the electronic files or other media by which DBIA Contract Documents are furnished to be free from defects in materials and workmanship under normal use during the Term. There is no other warranty of any kind, expressed or implied, including, but not limited to the implied warranties of merchantability and fitness for a particular purpose. Some states do not allow the exclusion of implied warranties, so the above exclusion may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state. DBIA does not warrant that the DBIA Contract Documents will meet your requirements or that the operation of DBIA Contract Documents will be uninterrupted or error free.
- 7. Limitations of Remedies.** DBIA's entire liability and your exclusive remedy shall be: the replacement of any document not meeting DBIA's "Limited Warranty" which is returned to DBIA with a copy of your receipt, or at DBIA's election, your money will be refunded. In no event will DBIA be liable to you for any damages, including any lost profits, lost savings or other incidental or consequential damages arising out of the use or inability to use DBIA Contract Documents even if DBIA has been advised of the possibility of such damages, or for any claim by any other party. Some states do not allow the limitation or exclusion of liability for incidental or consequential damages, so the above limitation or exclusion may not apply to you.
- 8. Acknowledgement.** You acknowledge that you have read this agreement, understand it and agree to be bound by its terms and conditions and that it will be governed by the laws of the District of Columbia. You further agree that it is the complete and exclusive statement of your agreement with DBIA which supersedes any proposal or prior agreement, oral or written, and any other communications between the parties relating to the subject matter of this agreement.



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# **Article 1**

## **General**

### **1.1 Mutual Obligations**

**1.1.1** *Owner and Design-Builder* commit at all times to cooperate fully with each other, and proceed on the basis of trust and good faith.

### **1.2 Basic Definitions**

**1.2.1** *Agreement* refers to the executed contract between Owner and Design-Builder under either DBIA Document No. 525, *Standard Form of Agreement Between Owner and Design-Builder - Lump Sum* (2010 Edition) or DBIA Document No. 530, *Standard Form of Agreement Between Owner and Design-Builder - Cost Plus Fee with an Option for a Guaranteed Maximum Price* (2010 Edition) as amended by agreement of the Parties.

**1.2.2** *Basis of Design Documents* are as follows: For DBIA Document No. 525, *Standard Form of Agreement Between Owner and Design-Builder – Lump Sum*, the Basis of Design Document is the Design-Builder's Basis of Design Report Exhibit B to the Design-Build Agreement.

**1.2.3** *Construction Documents* are the documents, consisting of Drawings and Specifications, to be prepared or assembled by the Design-Builder consistent with the Basis of Design Documents to the extent of the Scope of Work, unless a deviation from the Basis of Design Documents is specifically set forth in a Change Order executed by both the Owner and Design-Builder, as part of the design review process contemplated by Section 2.4 of these General Conditions of Contract.

**1.2.4** *Day or Days* shall mean calendar days unless otherwise specifically noted in the Contract Documents.

**1.2.5** *Design-Build Team* is comprised of the Design-Builder, the Designer, and key Subcontractors identified by the Design-Builder.

**1.2.6** *Designer* is a qualified, licensed design professional who is not an employee of Design-Builder, but is retained by Design-Builder, or employed or retained by anyone under contract with Design-Builder, to furnish design services required under the Contract Documents. A Design Subcontractor is a qualified, licensed design professional who is not an employee of the Designer, but is retained by the Designer or employed or retained by anyone under contract to Designer, to furnish design services required under the Contract Documents.

**1.2.7** *Final Completion* is the date on which all Work is complete in accordance with the Contract Documents, including but not limited to, any items identified in the punch list prepared under Section 6.6.1 and the submission of all documents set forth in Section 6.7.2.

**1.2.8** *Force Majeure Events* are those events that are beyond the control of both Design-Builder and Owner, including the events of war, floods, labor disputes, earthquakes, pandemics, epidemics, adverse weather conditions not reasonably anticipated, and other acts of God.

**1.2.9** *General Conditions of Contract* refer to this DBIA Document No. 535, *Standard Form of General Conditions of Contract Between Owner and Design-Builder* (2010 Edition).

**1.2.10 Deleted**

**1.2.11 Deleted.**

**1.2.12** *Hazardous Conditions* are any materials, wastes, substances and chemicals deemed to be hazardous under applicable Legal Requirements, or the handling, storage, remediation, or

disposal of which are regulated by applicable Legal Requirements.

**1.2.13** *Legal Requirements* are all applicable federal, state and local laws, codes, ordinances, rules, regulations, orders and decrees of any government or quasi-government entity having jurisdiction over the Project or Site, the practices involved in the Project or Site, or any Work.

**1.2.14** *Owner's Project Criteria* are developed by or for Owner to describe Owner's program requirements and objectives for the Project, including use, space, price, time, site and expandability requirements, as well as submittal requirements and other requirements governing Design-Builder's performance of the Work. The Owner acknowledges that Ex B to the Design-Build Agreement incorporates the Owner's Project Criteria.

**1.2.15** *Site* is the land or premises on which the Project is located.

**1.2.16** *Subcontractor* is any person or entity retained by Design-Builder as an independent contractor to perform a portion of the Work and shall include materialmen and suppliers.

**1.2.17** *Sub-Subcontractor* is any person or entity retained by a Subcontractor as an independent contractor to perform any portion of a Subcontractor's Work and shall include materialmen and suppliers.

**1.2.18** *Substantial Completion* or *Substantially Complete* means the date on which the Work, or an agreed upon portion of the Work, is sufficiently complete in accordance with the Contract Documents so that Owner can occupy and use the Project or a portion thereof for its intended purposes.

**1.2.19** *Work* is comprised of all Design-Builder's design, construction and other services required by the Contract Documents, including procuring and furnishing all materials, equipment, services and labor reasonably inferable from the Contract Documents.

## **Article 2**

### **Design-Builder's Services and Responsibilities**

#### **2.1 General Services.**

**2.1.1** Design-Builder's Representative shall be reasonably available to Owner and shall have the necessary expertise and experience required to supervise the Work. Design-Builder's Representative shall communicate regularly with Owner and shall be vested with the authority to act on behalf of Design-Builder. Design-Builder's Representative may be replaced only with the mutual agreement of Owner and Design-Builder.

**2.1.2** Design-Builder shall provide Owner with a monthly status report detailing the progress of the Work, including (i) whether the Work is proceeding according to schedule, (ii) whether discrepancies, conflicts, or ambiguities exist in the Contract Documents that require resolution, (iii) whether health and safety issues exist in connection with the Work;; and (iv) other items that require resolution so as not to jeopardize Design-Builder's ability to complete the Work for the Contract Price and within the Contract Time(s).

**2.1.3** Exhibit D to the Design-Build Agreement shall constitute the initial schedule for the Project. The Schedule shall indicate the dates for the start and completion of the various stages of Work, including the dates when Owner information and approvals are required to enable Design-Builder to achieve the Contract Time(s). The Schedule shall be revised as required by conditions and progress of the Work, but such revisions shall not relieve Design-Builder of its obligations to

complete the Work within the Contract Time(s), as such dates may be adjusted in accordance with the Contract Documents. Owner's review of, and response to, the Schedule shall not be construed as relieving Design-Builder of its complete and exclusive control over the means, methods, sequences and techniques for executing the Work.

**2.1.4** The parties will meet within seven (7) days after execution of the Agreement to discuss issues affecting the administration of the Work and to implement the necessary procedures, including those relating to submittals and payment, to facilitate the ability of the parties to perform their obligations under the Contract Documents.

## **2.2 Design Professional Services.**

**2.2.1** Design-Builder shall, consistent with applicable state licensing laws, provide through qualified, licensed design professionals employed by Designer, or procured from qualified, independent licensed Designer, the necessary design services, including architectural, engineering and other design professional services, for the preparation of the required drawings, specifications and other design submittals to permit Design-Builder to complete the Work consistent with the Contract Documents. Nothing in the Contract Documents is intended or deemed to create any legal or contractual relationship between Owner and the Designer.

## **2.3 Standard of Care for Design Professional Services.**

**2.3.1** The standard of care for all design professional services performed to execute the Work shall be the care and skill ordinarily used by members of the design profession practicing under similar conditions at the same time in the Commonwealth of Virginia

## **2.4 Design Development Services.**

**2.4.1** Design-Builder and Owner shall, consistent with any applicable provision of the Contract Documents, agree upon any interim design submissions that Owner may want to review, which interim design submissions may include design criteria, drawings, diagrams and specifications setting forth the Project requirements. Interim design submissions shall be consistent with the Basis of Design Documents, as the Basis of Design Documents may have been changed through the design process set forth in this Section 2.4.1. On or about the time of the scheduled submissions, Design-Builder and Owner shall meet and confer about the submissions, with Design-Builder identifying during such meetings, among other things, the evolution of the design and any changes to the Basis of Design Documents, or, if applicable, previously submitted design submissions. Changes to the Basis of Design Documents, including those that are deemed minor changes under Section 9.3.1, shall be processed in accordance with Article 9. Minutes of the meetings, including a full listing of all changes, will be maintained by Design-Builder and provided promptly (no more than 7 days) after the meeting to all attendees for review. Following the design review meeting, Owner shall review the interim design submissions and meeting minutes in a time that is consistent with the turnaround times set forth in Design-Builder's schedule.

**2.4.2** Design-Builder shall submit to Owner Construction Documents setting forth in detail drawings and specifications describing the requirements for construction of the Work. The Construction Documents shall be consistent with the latest set of interim design submissions, as such submissions may have been modified in a design review meeting and recorded in the meetings minutes. The parties shall have a design review meeting to discuss, and Owner shall review and concur in, the Construction Documents in accordance with the procedures set forth in Section 2.4.1 above. The Construction Documents will be submitted for Owner review and concurrence in two or more "Design Packages," each for a subset of the Project Work. Design-Builder shall proceed with construction in accordance with the Construction Documents as concurred in by the Owner, and shall submit one set of approved "Release for Construction" Documents for each Design Package to Owner prior to commencement of construction on the Work described in such Design Package.

**2.4.3** Owner's review and concurrence in interim design submissions, meeting minutes, and the Construction Documents is for the purpose of mutually establishing a conformed set of Contract Documents compatible with the requirements of the Work. Neither Owner's review nor approval of any interim design submissions, meeting minutes, and Construction Documents shall be deemed to transfer any design liability from Design-Builder to Owner.

**2.4.4** To the extent not prohibited by the Contract Documents or Legal Requirements, Design-Builder may prepare interim design submissions and Construction Documents for a portion of the Work to permit construction to proceed on that portion of the Work prior to completion of the Construction Documents for the entire Work.

## **2.5 Legal Requirements.**

**2.5.1** Design-Builder shall perform the Work in accordance with all Legal Requirements and shall provide all notices applicable to the Work as required by the Legal Requirements.

**2.5.2** As agreed to by the parties in writing, the Contract Price and/or Contract Time(s) shall be adjusted to compensate Design-Builder for the effects of any changes in the Legal Requirements enacted after the date of the Agreement affecting the performance of the Work, or if a Guaranteed Maximum Price is established after the date of the Agreement, the date the parties agree upon the Guaranteed Maximum Price. Such effects may include, without limitation, revisions Design-Builder is required to make to the Construction Documents because of changes in Legal Requirements.

## **2.6 Government Approvals and Permits.**

**2.6.1** Except for those permits identified as Design-Builder's responsibility in Exhibit G to the Design-Build Agreement, Owner shall obtain for all necessary permits, approvals, licenses, government charges and inspection fees required for the prosecution of the Work by any government or quasi-government entity having jurisdiction over the Project. The cost of all permits shall be paid by Owner.

**2.6.2** Design-Builder shall provide reasonable assistance to Owner in obtaining those permits, approvals and licenses that are Owner's responsibility.

## **2.7 Design-Builder's Construction Phase Services.**

**2.7.1** Unless otherwise provided in the Contract Documents to be the responsibility of Owner or a separate contractor, Design-Builder shall provide through itself or Subcontractors the necessary supervision, labor, inspection, testing, start-up, material, equipment, machinery, temporary utilities and other temporary facilities to permit Design-Builder to complete construction of the Project consistent with the Contract Documents.

**2.7.2** Design-Builder shall perform all construction activities efficiently and with the requisite expertise, skill and competence to satisfy the requirements of the Contract Documents. Design-Builder shall at all times exercise complete and exclusive control over the means, methods, sequences and techniques of construction.

**2.7.3** Design-Builder shall employ only Subcontractors who are duly licensed and qualified to perform the Work consistent with the Contract Documents. Owner may reasonably object to Design-Builder's selection of any Subcontractor, provided that the Contract Price and/or Contract Time(s) shall be adjusted by written agreement of the parties to the extent that Owner's decision impacts Design-Builder's cost and/or time of performance and the proposed Subcontractor was otherwise duly licensed and qualified to perform the Work.

**2.7.4** Design-Builder assumes responsibility to Owner for the proper performance of the Work of Subcontractors and any acts and omissions in connection with such performance. Nothing in the

Contract Documents is intended or deemed to create any legal or contractual relationship between Owner and any Subcontractor or Sub-Subcontractor, including but not limited to any third-party beneficiary rights.

**2.7.5** Design-Builder shall coordinate the activities of all Subcontractors. If Owner performs other work on the Project or at the Site with separate contractors under Owner's control, Design-Builder agrees to reasonably cooperate and coordinate its activities with those of such separate contractors so that the Project can be completed in an orderly and coordinated manner without unreasonable disruption.

**2.7.6** Design-Builder shall keep the Site reasonably free from debris, trash and construction wastes to permit Design-Builder to perform its construction services efficiently, safely and without interfering with the use of adjacent land areas. Upon Substantial Completion of the Work, or a portion of the Work, Design-Builder shall remove all debris, trash, construction wastes, materials, equipment, machinery and tools arising from the Work or applicable portions thereof to permit Owner to occupy the Project or a portion of the Project for its intended use.

## **2.8 Design-Builder's Responsibility for Project Safety.**

**2.8.1** Design-Builder recognizes the importance of performing the Work in a safe manner so as to prevent damage, injury or loss to (i) all individuals at the Site, whether working or visiting, (ii) the Work, including materials and equipment incorporated into the Work or stored on-Site or off-Site, and (iii) all other property at the Site or adjacent thereto. Design-Builder assumes responsibility for implementing and monitoring all safety precautions and programs related to the performance of the Work. Design-Builder shall, prior to commencing construction, designate a Safety Representative with the necessary qualifications and experience to supervise the implementation and monitoring of all safety precautions and programs related to the Work. Unless otherwise required by the Contract Documents, Design-Builder's Safety Representative shall be an individual stationed at the Site who may have responsibilities on the Project in addition to safety. The Safety Representative shall make routine daily inspections of the Site and shall hold weekly safety meetings with Design-Builder's personnel, Subcontractors and others as applicable.

**2.8.2** Design-Builder and Subcontractors shall comply with all Legal Requirements relating to safety, as well as any Owner-specific safety requirements set forth in the Contract Documents, provided that such Owner-specific requirements do not violate any applicable Legal Requirement. Design-Builder will immediately report in writing any safety-related injury, loss, damage or accident arising from the Work to Owner's Representative and, to the extent mandated by Legal Requirements, to all government or quasi-government authorities having jurisdiction over safety-related matters involving the Project or the Work.

**2.8.3** Design-Builder's responsibility for safety under this Section 2.8 is not intended in any way to relieve Subcontractors and Sub-Subcontractors of their own contractual and legal obligations and responsibility for (i) complying with all Legal Requirements, including those related to health and safety matters, and (ii) taking all necessary measures to implement and monitor all safety precautions and programs to guard against injuries, losses, damages or accidents resulting from their performance of the Work.

## **2.9 Design-Builder's Warranty.**

**2.9.1** Design-Builder warrants to Owner that the construction, including all materials and equipment furnished as part of the construction, shall be new unless otherwise specified in the Contract Documents, of good quality, in conformance with the Contract Documents and free of defects in materials and workmanship. Design-Builder's warranty obligation excludes defects caused by abuse, alterations, or failure to maintain the Work in a commercially reasonable manner. Nothing in this warranty is intended to limit any manufacturer's warranty which provides Owner with greater warranty rights than set forth in this Section 2.9 or the Contract Documents. Design-Builder will provide Owner with all manufacturers' warranties upon Substantial Completion. All supplier or

manufacturer warranties shall be for the benefit of the Owner or be otherwise enforceable by Owner. PECI shall provide copies of such manufacturer warranties to Owner evidencing the Owner's rights to enforce such warranties.

## **2.10 Correction of Defective Work.**

**2.10.1** Design-Builder agrees to correct any Work that is found to not be in conformance with the Contract Documents, including that part of the Work subject to Section 2.9 hereof, within a period of one year from the date of Substantial Completion of the Work or any portion of the Work, or within such longer period to the extent required by any specific warranty included in the Contract Documents.

**2.10.2** Design-Builder shall, within seven (7) days of receipt of written notice from Owner that the Work is not in conformance with the Contract Documents, take meaningful steps to commence correction of such nonconforming Work, including the correction, removal or replacement of the nonconforming Work and any damage caused to other parts of the Work affected by the nonconforming Work. If Design-Builder fails to commence the necessary steps within such seven (7) day period, Owner, in addition to any other remedies provided under the Contract Documents, may provide Design-Builder with written notice that Owner will commence correction of such nonconforming Work with its own forces. If Owner does perform such corrective Work, Design-Builder shall be responsible for all reasonable costs incurred by Owner in performing such correction. If the nonconforming Work creates an emergency requiring an immediate response, the seven (7) day period identified herein shall be deemed inapplicable.

**2.10.3** The one-year period referenced in Section 2.10.1 above applies only to Design-Builder's obligation to correct nonconforming Work and is not intended to constitute a period of limitations for any other rights or remedies Owner may have regarding Design-Builder's other obligations under the Contract Documents or any warranties.

## **Article 3**

### **Owner's Services and Responsibilities**

#### **3.1 Duty to Cooperate.**

**3.1.1** Owner shall, throughout the performance of the Work, cooperate with Design-Builder and perform its responsibilities, obligations and services in a timely manner to facilitate Design-Builder's timely and efficient performance of the Work and so as not to delay or interfere with Design-Builder's performance of its obligations under the Contract Documents.

**3.1.2** Owner shall provide timely reviews and approvals of interim design submissions and Construction Documents consistent with the turnaround times set forth in Design-Builder's schedule.

**3.1.3** Owner shall give Design-Builder timely notice of any Work that Owner notices to be defective or not in compliance with the Contract Documents.

#### **3.2 Furnishing of Services and Information.**

**3.2.1** Owner shall provide, at its own cost and expense, for Design-Builder's information and use the following, all of which Design-Builder is entitled to rely upon in performing the

**3.2.1.1** For all property or easements provided by the County for the Project, provide surveys describing the property, and boundaries, , including existing service and utility lines;

**3.2.1.2** To the extent available, Geotechnical studies describing subsurface conditions, and other surveys describing other latent or concealed physical conditions at the Site;

**3.2.1.3** Temporary and permanent easements, zoning and other requirements and encumbrances affecting land use, or necessary to permit the proper design and construction of the Project and enable Design-Builder to perform the Work;

**3.2.1.4** NOT USED

**3.2.1.5** To the extent available, record drawings of any existing structures at the Site; and

**3.2.1.6** To the extent available, environmental studies, reports and impact statements describing the environmental conditions, including Hazardous Conditions, in existence at the Site.

**3.2.2** Owner is responsible for securing and executing all necessary agreements with adjacent land or property owners that are necessary to enable Design-Builder to perform the Work. Owner is further responsible for all costs, including attorneys' fees, incurred in securing these necessary agreements.

### **3.3 Financial Information.**

**3.3.1** Owner commits to Design-Builder that at Design-Builder's request, Owner shall promptly furnish reasonable evidence satisfactory to Design-Builder that Owner has adequate funds available and is committed to fulfill all of Owner's contractual obligations under the Contract Documents.

**3.3.2** Design-Builder shall cooperate with the reasonable requirements of Owner's financial sources. Notwithstanding the preceding sentence, after execution of the Agreement Design-Builder shall have no obligation to execute for Owner or Owner's lenders or other financial sources any documents or agreements that require Design-Builder to assume obligations or responsibilities greater than those existing obligations Design-Builder has under the Contract Documents.

### **3.4 Owner's Representative.**

**3.4.1** Owner's Representative shall be responsible for providing Owner-supplied information and approvals in a timely manner to permit Design-Builder to fulfill its obligations under the Contract Documents. Owner's Representative shall also provide Design-Builder with prompt notice if it observes any failure on the part of Design-Builder to fulfill its contractual obligations, including any errors, omissions or defects in the performance of the Work. Owner's Representative shall communicate regularly with Design-Builder and shall be vested with the authority to act on behalf of Owner or, as necessary for specific decisions, to obtain that authority.

**3.4.2** Owner's Inspection. The Owner's Representative, or persons contracted by the Owner's Representative, shall have the right to inspect the Work during construction for the purpose of ensuring conformance of the Work to the plans, specifications, and Contract Documents. The costs of such Owner's inspections shall be borne by the Owner. Any deviations or nonconformance with the Contract Documents discovered by such inspections shall be brought to the attention of the Design-Builder verbally as soon as practicable and not later than seven (7) days.

### **3.5 Government Approvals and Permits.**

**3.5.1** Owner shall obtain and pay for all necessary permits, approvals, licenses, government charges and inspection fees set forth in the Owner's Permit List attached as an exhibit to the Agreement.

**3.5.2** Owner shall provide reasonable assistance to Design-Builder in obtaining those permits, approvals and licenses that are Design-Builder's responsibility.

**3.6** **Owner's Separate Contractors.** Not applicable.

## Article 4

### **Hazardous Conditions and Differing Site Conditions**

#### **4.1 Hazardous Conditions.**

**4.1.1** Unless otherwise expressly provided in the Contract Documents to be part of the Work, Design-Builder is not responsible for any Hazardous Conditions encountered at the Site. Upon encountering any Hazardous Conditions, Design-Builder will stop Work immediately in the affected area and duly notify Owner and, if required by Legal Requirements, all government or quasi-government entities with jurisdiction over the Project or Site.

**4.1.2** Upon receiving notice of the presence of suspected Hazardous Conditions, Owner shall take the necessary measures required to ensure that the Hazardous Conditions are remediated or rendered harmless. Such necessary measures shall include Owner retaining qualified independent experts to (i) ascertain whether Hazardous Conditions have actually been encountered, and, if they have been encountered, (ii) prescribe the remedial measures that Owner must take either to remove the Hazardous Conditions or render the Hazardous Conditions harmless.

**4.1.3** Design-Builder shall be obligated to resume Work at the affected area of the Project only after Owner's expert provides it with written certification that (i) the Hazardous Conditions have been removed or rendered harmless and (ii) all necessary approvals have been obtained from all government and quasi-government entities having jurisdiction over the Project or Site.

**4.1.4** Design-Builder will be entitled, in accordance with these General Conditions of Contract, to an agreed to adjustment in its Contract Price and/or Contract Time(s) to the extent Design-Builder's cost and/or time of performance have been adversely impacted by the presence of Hazardous Conditions.

**4.1.5** Owner shall be responsible for all costs arising out of, or resulting from the presence, removal or remediation of Hazardous Conditions at the Site existing prior to construction. To the fullest extent permitted by law, Owner shall be responsible for any and all claims, losses, damages, liabilities and expenses, arising out of or resulting from the presence, removal or remediation of Hazardous Conditions at the Site.

**4.1.6** Notwithstanding the preceding provisions of this Section 4.1, Owner is not responsible for Hazardous Conditions introduced to the Site by Design-Builder, Subcontractors or anyone for whose acts they may be liable. To the fullest extent permitted by law, Design-Builder shall indemnify, defend and hold harmless Owner and Owner's officers, directors, employees and agents from and against all claims, losses, damages, liabilities and expenses, including attorneys' fees and expenses, arising out of or resulting from those Hazardous Conditions introduced to the Site by Design-Builder, Subcontractors or anyone for whose acts they may be liable.

#### **4.2 Differing Site Conditions.**

**4.2.1** Concealed or latent physical conditions or subsurface conditions at the Site that (i) materially differ from the conditions indicated in the Contract Documents or (ii) are of an unusual nature, differing materially from the conditions ordinarily encountered and generally recognized as



inherent in the Work are collectively referred to herein as "Differing Site Conditions." If Design-Builder encounters a Differing Site Condition, Design-Builder will be entitled to an adjustment in the Contract Price and/or Contract Time(s) to the extent Design-Builder's cost and/or time of performance are adversely impacted by the Differing Site Condition pursuant to documentation acceptable to the Owner of the requested adjustment.

**4.2.2** Upon encountering a Differing Site Condition, Design-Builder shall provide prompt written notice to Owner of such condition, which notice shall not be later than fourteen (14) days after such condition has been encountered. Design-Builder shall, to the extent reasonably possible, provide such notice before the Differing Site Condition has been substantially disturbed or altered.

## **Article 5**

### **Insurance and Bonds**

#### **5.1 Design-Builder's Insurance Requirements.**

**5.1.1** Design-Builder is responsible for procuring and maintaining the insurance for the coverage amounts all as set forth in the Insurance Exhibit to the Agreement. Coverage shall be secured from insurance companies authorized to do business in the state in which the Project is located, and with a minimum rating set forth in the Agreement. The Owner shall be made an additional insured on the certificate. Design-Builder is responsible for the payment of any deductible under the insurance.

**5.1.2** Design-Builder's insurance shall specifically delete any design-build or similar exclusions that could compromise coverages because of the design-build delivery of the Project.

**5.1.3** Prior to commencing any construction services hereunder, Design-Builder shall provide Owner with certificates evidencing that (i) all insurance obligations required by the Contract Documents are in full force and in effect and will remain in effect for the duration required by the Contract Documents and (ii) no insurance coverage will be canceled, renewal refused, or materially changed unless at least thirty (30) days prior written notice is given to Owner. If any of the foregoing insurance coverages are required to remain in force after final payment are reasonably available, an additional certificate evidencing continuation of such coverage shall be submitted with the Final Application for Payment. If any information concerning reduction of coverage is not furnished by the insurer, it shall be furnished by the Design-Builder with reasonable promptness according to the Design-Builder's information and belief.

#### **5.2 Owner's Liability Insurance.**

**5.2.1** Owner shall procure and maintain from insurance companies or other insurer authorized to do business in the state in which the Project is located such liability insurance as set forth in the Insurance Exhibit E to the Agreement to protect Owner from claims which may arise from the performance of Owner's obligations under the Contract Documents or Owner's conduct during the course of the Project.

#### **5.3 Property Insurance.**

**5.3.1** Unless otherwise provided in the Contract Documents, Design-Builder shall procure and maintain from insurance companies or other insurer authorized to do business in the state in which the Project is located property, on a builder's risk "all-risk" or equivalent policy form in the amount of the initial Contract Sum, plus the value of subsequent Modifications, comprising the total value for the entire Project at the site on a replacement cost basis without optional deductibles. The builder's risk insurance obtained by Design-Builder shall include as additional insureds the interests

of Owner, Design-Builder, Design -Builder's Subcontractors of any tier. Such insurance shall include but not be limited to the perils of fire and extended coverage, theft, vandalism, malicious mischief, collapse, flood, earthquake, debris removal and other perils or causes of loss as called for in the Contract Documents. The property insurance shall include physical loss or damage to the Work, including materials and equipment in transit, at the Site or at another location as may be indicated in Design-Builder's Application for Payment and approved by Owner. The Owner is responsible for the payment of any deductibles under the insurance required by this Section 5.3.1. The builder's risk insurance shall be maintained, unless otherwise provided in the Design-Build Agreement until the Owner has issued a Certificate of Substantial Completion. Unless the parties agree otherwise, upon issuance of a Certificate of Substantial Completion, the Owner shall replace the insurance policy required under this Section with another property insurance policy written for the total value of the Project that shall remain in effect until expiration of the period for correction of the Work set forth in the Design-Build Agreement.

**5.3.2** Effective upon Substantial Completion of all or part of the Project, Owner shall procure and maintain boiler and machinery insurance that will include the interests of Owner, Design-Builder, Design Consultants, and Subcontractors of any tier. The Owner is responsible for the payment of any deductibles under the insurance required by this Section 5.3.2

**5.3.3** NOT APPLICABLE.

**5.3.4** Any loss covered under property insurance shall be adjusted with Owner and Design-Builder and made payable to both of them as trustees for the insureds as their interests may appear, subject to any applicable mortgage clause. All insurance proceeds received as a result of any loss will be placed in a separate account and distributed in accordance with such agreement as the interested parties may reach. Any disagreement concerning the distribution of any proceeds will be resolved in accordance with Article 10 hereof.

**5.3.5** Owner and Design-Builder waive against each other and Owner's separate contractors, Designer, Subcontractors, agents and employees of each and all of them, all damages covered by property insurance provided herein, except such rights as they may have to the proceeds of such insurance. Design-Builder and Owner shall, where appropriate, require similar waivers of subrogation from Owner's separate contractors, Design -Builder's Subcontractors and shall require each of them to include similar waivers in their contracts. These waivers of subrogation shall not contain any restriction or limitation that will impair the full and complete extent of its applicability to any person or entity unless agreed to in writing prior to the execution of this Agreement.

#### **5.4 Bonds and Other Performance Security.**

**5.4.1** If Owner requires Design-Builder to obtain performance and labor and material payment bonds, or other forms of performance security, the amount, form and other conditions of such security shall be as set forth in the Agreement.

**5.4.2** All bonds furnished by Design-Builder shall be in a form satisfactory to Owner. The surety shall be a company qualified and registered to conduct business in the state in which the Project is located.

## **Article 6**

### **Payment**

#### **6.1 Schedule of Values.**

**6.1.1** Exhibit K, the Schedule of Values, will (i) subdivide the Work into its respective parts, (ii) include values for all items comprising the Work and (iii) serve as the basis for monthly progress payments made to Design-Builder throughout the Work.

## **6.2 Monthly Progress Payments.**

**6.2.1** On or before the date established in the Agreement, Design-Builder shall submit for Owner's review and approval its Application for Payment requesting payment for all Work performed as of the date of the Application for Payment. The Application for Payment shall be accompanied by all supporting documentation required by the Contract Documents and/or established at the meeting required by Section 2.1.4 hereof.

**6.2.2** The Application for Payment may request payment for equipment and materials not yet incorporated into the Project, provided that (i) Owner is satisfied that the equipment and materials are suitably stored at either the Site or another acceptable location, (ii) the equipment and materials are protected by suitable insurance and (iii) upon payment, Owner will receive the equipment and materials free and clear of all liens and encumbrances.

**6.2.3** All discounts offered by Subcontractor, Sub-Subcontractors and suppliers to Design-Builder for early payment shall accrue one hundred percent to Design-Builder to the extent Design-Builder advances payment. Unless Owner advances payment to Design-Builder specifically to receive the discount, Design-Builder may include in its Application for Payment the full undiscounted cost of the item for which payment is sought.

**6.2.4** The Application for Payment shall constitute Design-Builder's representation that the Work described herein has been performed consistent with the Contract Documents, has progressed to the point indicated in the Application for Payment, and that title to all Work will pass to Owner free and clear of all claims, liens, encumbrances, and security interests upon the incorporation of the Work into the Project, or upon Design-Builder's receipt of payment, whichever occurs earlier.

## **6.3 Withholding of Payments.**

**6.3.1** On or before the date established in the Agreement, Owner shall pay Design-Builder all amounts properly due. If Owner determines that Design-Builder is not entitled to all or part of an Application for Payment as a result of Design-Builder's failure to meet its obligations hereunder, it will notify Design-Builder in writing at least ten (10) days prior to the date payment is due. The notice shall indicate the specific amounts Owner intends to withhold, the reasons and contractual basis for the withholding, and the specific measures Design-Builder must take to rectify Owner's concerns. Design-Builder and Owner will attempt to resolve Owner's concerns prior to the date payment is due. If the parties cannot resolve such concerns, Design-Builder may pursue its rights under the Contract Documents, including those under Article 10 hereof.

**6.3.2** Notwithstanding anything to the contrary in the Contract Documents, Owner shall pay Design-Builder all undisputed amounts in an Application for Payment within the times required by the Agreement.

## **6.4 Right to Stop Work and Interest.**

**6.4.1** If Owner fails to pay timely Design-Builder any amount that becomes due, Design-Builder, in addition to all other remedies provided in the Contract Documents, may stop Work pursuant to Section 11.3 hereof. All payments due and unpaid shall bear interest at the rate set forth in the Agreement.

## **6.5 Design-Builder's Payment Obligations.**

**6.5.1** Design-Builder will pay Design -Builder's Subcontractors, in accordance with applicable law and its contractual obligations to such parties, all the amounts Design-Builder has received from Owner on account of their work. Design-Builder will impose similar requirements on Design -Builder's Subcontractors to pay those parties with whom they have contracted. Design-Builder will indemnify and defend Owner against any claims for payment and mechanic's liens as set forth in Section 7.3 hereof.

**6.6 Substantial Completion.** This provision shall be in accordance with Article 7 of DBIA Contract form #525 as amended by the Parties.

**6.6.1** Design-Builder shall notify Owner when it believes the Work, or to the extent permitted in the Contract Documents, a portion of the Work, is Substantially Complete. In addition to any inspection by Owner with its inspector, within twenty (20) days of Owner's receipt of Design-Builder's notice, Owner and Design-Builder will jointly inspect such Work to verify that it is Substantially Complete in accordance with the requirements of the Contract Documents. If such Work is Substantially Complete, Owner shall prepare and issue a Certificate of Substantial Completion that will set forth (i) the date of Substantial Completion of the Work or portion thereof, (ii) the remaining items of Work that have to be completed before final payment, (iii) provisions (to the extent not already provided in the Contract Documents) establishing Owner's and Design-Builder's responsibility for the Project's security, maintenance, utilities and insurance pending final payment, and (iv) an acknowledgment that warranties commence to run on the date of Substantial Completion, except as may otherwise be noted in the Certificate of Substantial Completion.

**6.6.2** Within fifty (50) days after Substantial Completion of the entire Work, Owner shall release to Design-Builder all retained amounts relating, as applicable, to the entire Work, less an amount equal to the reasonable value of all remaining or incomplete items of Work as noted in the Certificate of Substantial Completion.

**6.6.3** Owner, at its option, may use a portion of the Work which has been determined to be Substantially Complete, provided, however, that (i) a Certificate of Substantial Completion has been issued for the portion of Work addressing the items set forth in Section 6.6.1 above, (ii) Design-Builder and Owner have obtained the consent of their sureties and insurers, and to the extent applicable, the appropriate government authorities having jurisdiction over the Project, and (iii) Owner and Design-Builder agree that Owner's use or occupancy will not interfere with Design-Builder's completion of the remaining Work.

## **6.7 Final Payment.**

**6.7.1** After receipt of a Final Application for Payment from Design-Builder, Owner shall make final payment by the time required in the Agreement, provided that Design-Builder has achieved Final Completion.

**6.7.2** At the time of submission of its Final Application for Payment, Design-Builder shall provide the following information:

**6.7.2.1** An affidavit that there are no claims, obligations or liens outstanding or unsatisfied for labor, services, material, equipment, taxes or other items performed, furnished or incurred for or in connection with the Work which will in any way affect Owner's interests;

**6.7.2.2** A general release executed by Design-Builder waiving, upon receipt of final payment by Design-Builder, all claims, except those claims previously made in writing to Owner and remaining unsettled at the time of final payment;

**6.7.2.3** Consent of Design-Builder's surety, if any, to final payment;

**6.7.2.4** All operating manuals, written warranty documents, and other deliverables required by the Contract Documents; and

**6.7.2.5** Certificates of insurance confirming that required coverages will remain in effect consistent with the requirements of the Contract Documents.

**6.7.3** Upon making final payment, Owner waives all claims against Design-Builder except claims relating to (i) Design-Builder's failure to satisfy its payment obligations, if such failure affects Owner's interests, (ii) Design-Builder's failure to complete the Work consistent with the Contract

Documents, including defects appearing after Substantial Completion, and (iii) the terms of any special warranties required by the Contract Documents.

**6.7.4** Deficiencies in the Work discovered after Substantial Completion, whether or not such deficiencies would have been included on the Punch List if discovered earlier, shall be deemed warranty Work. Such deficiencies shall be corrected by Design-Builder under Sections 2.9 and 2.10 herein, and shall not be a reason to withhold final payment from Design-Builder, provided, however, that Owner shall be entitled to withhold from the Final Payment the reasonable value of completion of such deficient work until such work is completed.

## Article 7

### Indemnification

#### **7.1 Patent and Copyright Infringement.**

**7.1.1** Design-Builder shall defend any action or proceeding brought against Owner based on any claim that the Work, or any part thereof, or the operation or use of the Work or any part thereof, constitutes infringement of any United States patent or copyright, now or hereafter issued. Owner shall give prompt written notice to Design-Builder of any such action or proceeding and will reasonably provide authority, information and assistance in the defense of same. Design-Builder shall indemnify and hold harmless Owner from and against all damages and costs, including but not limited to attorneys' fees and expenses awarded against Owner or Design-Builder in any such action or proceeding. Design-Builder agrees to keep Owner informed of all developments in the defense of such actions.

**7.1.2** If Owner is enjoined from the operation or use of the Work, or any part thereof, as the result of any patent or copyright suit, claim, or proceeding, Design-Builder shall at its sole expense take reasonable steps to procure the right to operate or use the Work. If Design-Builder cannot so procure such right within a reasonable time, Design-Builder shall promptly, at Design-Builder's option and at Design-Builder's expense, (i) modify the Work so as to avoid infringement of any such patent or copyright or (ii) replace said Work with Work that does not infringe or violate any such patent or copyright.

**7.1.3** Sections 7.1.1 and 7.1.2 above shall not be applicable to any suit, claim or proceeding based on infringement or violation of a patent or copyright (i) relating solely to a particular process or product of a particular manufacturer specified by Owner and not offered or recommended by Design-Builder to Owner or (ii) arising from modifications to the Work by Owner or its agents after acceptance of the Work. If the suit, claim or proceeding is based upon events set forth in the preceding sentence, Owner shall be responsible for any such violations and Owner will defend, and hold harmless Design-Builder to the same extent Design-Builder is obligated to defend and hold harmless Owner in Section 7.1.1 above.

**7.1.4** The obligations set forth in this Section 7.1 shall constitute the sole agreement between the parties relating to liability for infringement or violation of any patent or copyright.

#### **7.2 Tax Claim Indemnification.**

**7.2.1** Owner shall furnish Design-Builder with any applicable tax exemption certificates necessary to obtain an exemption, if available, for use of the property or services from any taxes based on their incorporation into a public project, upon which Design-Builder may rely.

#### **7.3 Payment Claim Indemnification.**

**7.3.1** Provided that Owner is not in material breach of its contractual obligation to make payments to Design-Builder for the Work, Design-Builder shall indemnify, defend and hold harmless Owner from any claims or mechanic's liens brought against Owner or against the Project as a result of the failure of Design-Builder, or those for whose acts it is responsible, to pay for any services, materials, labor, equipment, taxes or other items or obligations furnished or incurred for or in connection with the Work. Within three (3) days of receiving written notice from Owner that such a claim or mechanic's lien has been filed, Design-Builder shall commence to take the steps necessary to discharge said claim or lien, including, if necessary, the furnishing of a mechanic's lien bond. If Design-Builder fails to do so, Owner will have the right to discharge the claim or lien and hold Design-Builder liable for costs and expenses incurred, including attorneys' fees.

#### **7.4 Design-Builder's General Indemnification.**

**7.4.1** Design-Builder, to the fullest extent permitted by law, shall indemnify, hold harmless and defend Owner, its officers, directors, and employees from and against claims, losses, damages, liabilities, including attorneys' fees and expenses, for bodily injury, sickness or death, and property damage or destruction (other than to the Work itself) to the extent resulting from the negligent acts or omissions of Design-Builder, Design -Builder's Subcontractors, anyone employed directly or indirectly by any of them or anyone for whose acts any of them may be liable.

**7.4.2** If an employee of Design-Builder, Design -Builder's Subcontractors, anyone employed directly or indirectly by any of them or anyone for whose acts any of them may be liable has a claim against Owner, its officers, directors, employees, or agents, Design-Builder's indemnity obligation set forth in Section 7.4.1 above shall not be limited by any limitation on the amount of damages, compensation or benefits payable by or for Design-Builder, Design -Builder's Subcontractors, or other entity under any employee benefit acts, including workers' compensation or disability acts.

## **Article 8**

### **Time**

#### **8.1 Obligation to Achieve the Contract Times.**

**8.1.1** Design-Builder agrees that it will commence performance of the Work and achieve the Contract Time(s) in accordance with Article 5 of the Agreement.

#### **8.2 Delays to the Work.**

**8.2.1** If Design-Builder is delayed in the performance of the Work due to acts, omissions, conditions, events, or circumstances beyond its control and due to no fault of its own or those for whom Design-Builder is responsible, the Contract Time(s) for performance shall be reasonably extended by Change Order by agreement of the parties. By way of example, events that will entitle Design-Builder to an extension of the Contract Time(s) include acts or omissions of Owner or anyone under Owner's control (including separate contractors), changes in the Work, Differing Site Conditions, Hazardous Conditions, and Force Majeure Events.

**8.2.2** In addition to Design-Builder's right to a time extension for those events set forth in Section 8.2.1 above, Design-Builder shall also be entitled to an appropriate adjustment of the Contract Price by agreement of the parties, provided, however, that the Contract Price shall not be adjusted for Force Majeure Events unless otherwise provided in the Agreement.

## **Article 9**

### **Changes to the Contract Price and Time**

#### **9.1 Change Orders.**

**9.1.1** A Change Order is a written instrument issued after execution of the Agreement signed by Owner and Design-Builder, stating their agreement upon all of the following:

**9.1.1.1** The scope of the change in the Work;

**9.1.1.2** The amount of the adjustment to the Contract Price; and

**9.1.1.3** The extent of the adjustment to the Contract Time(s).

**9.1.2** All changes in the Work authorized by applicable Change Order shall be performed under the applicable conditions of the Contract Documents. Owner and Design-Builder shall negotiate in good faith and as expeditiously as possible the appropriate adjustments for such changes.

**9.1.3** If Owner requests a proposal for a change in the Work from Design-Builder and subsequently elects not to proceed with the change, a Change Order shall be issued to reimburse Design-Builder for reasonable costs incurred for estimating services, design services and services involved in the preparation of proposed revisions to the Contract Documents.

**9.1.4.** If the amount of the Change Orders or otherwise relevant adjustments are more than five percent (5%) of the Contract Price, and the Owner requests that Design-Builder obtain additional or increased insurance coverage, the additional coverage required shall be specified in a Change Order and the Design-Builder shall be compensated for any additional costs of obtaining such coverage.

#### **9.2 Work Change Directives.**

**9.2.1** A Work Change Directive is a written order prepared and signed by Owner directing a change in the Work prior to agreement on an adjustment in the Contract Price and/or the Contract Time(s).

**9.2.2** Owner and Design-Builder shall negotiate in good faith and as expeditiously as possible the appropriate adjustments for the Work Change Directive. Upon reaching an agreement, the parties shall prepare and execute an appropriate Change Order reflecting the terms of the agreement.

#### **9.3 Minor Changes in the Work.**

**9.3.1** Minor changes in the Work do not involve an adjustment in the Contract Price and/or Contract Time(s) and do not materially and adversely affect the Work, including the design, quality, performance, and workmanship required by the Contract Documents. Design-Builder may make minor changes in the Work consistent with the intent of the Contract Documents, provided, however, that Design-Builder shall promptly inform Owner, in writing, of any such changes and record such changes on the documents maintained by Design-Builder which are to be provided to Owner upon Completion of the Project Work.

#### **9.4 Contract Price Adjustments.**

**9.4.1** The increase or decrease in Contract Price resulting from a change in the Work shall be determined by one or more of the following methods:

**9.4.1.1** Unit prices set forth in the Agreement or as subsequently agreed to between the parties;

**9.4.1.2** A mutually accepted lump sum, properly itemized and supported by sufficient substantiating data to permit evaluation by Owner;

**9.4.1.3** Costs, fees and any other markups set forth in the Agreement; or

**9.4.1.4** If an increase or decrease cannot be agreed to as set forth in items 9.4.1.1 through 9.4.1.3 above and Owner issues a Work Change Directive, the cost of the change of the Work shall be determined by the reasonable expense and savings in the performance of the Work resulting from the change, including a reasonable overhead and profit, as may be set forth in the Agreement.

**9.4.2** If unit prices are set forth in the Contract Documents or are subsequently agreed to by the parties, but application of such unit prices will cause substantial inequity to Owner or Design-Builder because of differences in the character or quantity of such unit items as originally contemplated, such unit prices shall be equitably adjusted as agreed upon by the parties.

**9.4.3** If Owner and Design-Builder disagree upon whether Design-Builder is entitled to be paid for any services required by Owner, or if there are any other disagreements over the scope of Work or proposed changes to the Work, Owner and Design-Builder shall resolve the disagreement pursuant to Article 10 hereof. As part of the negotiation process, Design-Builder shall furnish Owner with a good faith estimate of the costs to perform the disputed services in accordance with Owner's interpretations with appropriate documentation. If the parties are unable to agree and Owner expects Design-Builder to perform the services in accordance with Owner's interpretations, Design-Builder shall proceed to perform the disputed services, conditioned upon Owner issuing a written order to Design-Builder (i) directing Design-Builder to proceed and (ii) specifying Owner's interpretation of the services that are to be performed. If this occurs, Design-Builder shall be entitled to submit in its Applications for Payment an amount equal to fifty percent (50%) of its reasonable estimated direct cost to perform the services, and Owner agrees to pay such amounts, with the express understanding that (i) such payment by Owner does not prejudice Owner's right to argue that it has no responsibility to pay for such services and (ii) receipt of such payment by Design-Builder does not prejudice Design-Builder's right to seek full payment of the disputed services if Owner's order is deemed to be a change to the Work.

## **9.5 Emergencies.**

**9.5.1** In any emergency affecting the safety of persons and/or property, Design-Builder shall act, at its discretion, to prevent threatened damage, injury or loss. Any change in the Contract Price and/or Contract Time(s) on account of emergency work shall be determined as provided in this Article 9.

# **Article 10**

## **Contract Adjustments and Disputes**

### **10.1 Requests for Contract Adjustments and Relief.**

**10.1.1** If either Design-Builder or Owner believes that it is entitled to relief against the other for any event arising out of or related to the Work or Project, such party shall provide written notice to the other party of the basis for its claim for relief. Such notice shall, if possible, be made prior to incurring any cost or expense and in accordance with any specific notice requirements contained in applicable sections of these General Conditions of Contract. In the absence of any specific notice



requirement, written notice shall be given within a reasonable time, not to exceed twenty-one (21) days, after the occurrence giving rise to the claim for relief or after the claiming party reasonably should have recognized the event or condition giving rise to the request, whichever is later. Such notice shall include sufficient information to advise the other party of the circumstances giving rise to the claim for relief, the specific contractual adjustment or relief requested and the basis of such request.

## **10.2 Dispute Avoidance and Resolution.**

**10.2.1** The parties are committed to working with each other throughout the Project and agree to communicate regularly with each other so as to avoid or minimize disputes or disagreements. If disputes or disagreements do arise, Design-Builder and Owner each commit to resolving such disputes or disagreements in an amicable, professional and expeditious manner so as to avoid unnecessary losses, delays and disruptions to the Work.

**10.2.2** All disputes between Design-Builder and Owner shall be resolved in accordance with the dispute resolution procedures in the Comprehensive Agreement, Section. 10.

## **10.3 Not Used.**

## **10.4 Duty to Continue Performance.**

**10.4.1** Unless provided to the contrary in the Contract Documents or the Design-Builder is suspended or terminated by Owner, Design-Builder shall continue to perform the Work and Owner shall continue to satisfy its payment obligations to Design-Builder, pending the final resolution of any dispute or disagreement between Design-Builder and Owner.

## **10.5 CONSEQUENTIAL DAMAGES.**

**10.5.1** NOTWITHSTANDING ANYTHING HEREIN TO THE CONTRARY (EXCEPT AS SET FORTH IN SECTION 10.5.2 BELOW), NEITHER DESIGN-BUILDER NOR OWNER SHALL BE LIABLE TO THE OTHER FOR ANY CONSEQUENTIAL LOSSES OR DAMAGES, WHETHER ARISING IN CONTRACT, WARRANTY, TORT (INCLUDING NEGLIGENCE), STRICT LIABILITY OR OTHERWISE, INCLUDING BUT NOT LIMITED TO LOSSES OF USE, PROFITS, BUSINESS, REPUTATION OR FINANCING.

**10.5.2** The consequential damages limitation set forth in Section 10.5.1 above is not intended to affect the payment of liquidated damages or lost early completion bonus, if any, set forth in Article 5 of the Agreement, which both parties recognize has been established, in part, to reimburse Owner or reward Design-Builder for some damages that might otherwise be deemed to be consequential.

# **Article 11**

## **Stop Work and Termination for Cause**

### **11.1 Owner's Right to Stop Work.**

**11.1.1** Owner may, without cause and for its convenience, order Design-Builder in writing to stop and suspend the Work. Such suspension shall not exceed ninety (90) days in the aggregate during the duration of the Project which period shall not include a stop work for Design-Builder's violation of law. During the period of any such suspension of Work, Design-Builder will continue to perform such portions of the Work as are necessary to maintain compliance with applicable permits or other legal requirements.

**11.1.2** Design-Builder is entitled to seek an adjustment of the Contract Price and/or Contract Time(s) if its cost or time to perform the Work has been adversely impacted by any suspension of

stoppage of the Work by Owner, and shall provide documentation acceptable to the County if it does so.

## **11.2 Owner's Right to Perform and Terminate for Cause.**

**11.2.1** If Design-Builder persistently fails to (i) provide a sufficient number of skilled workers, (ii) supply the materials required by the Contract Documents, (iii) comply with applicable Legal Requirements, (iv) timely pay, without cause, Design -Builder's Subcontractors, (v) prosecute the Work with promptness and diligence to ensure that the Work is completed by the Contract Time(s), as such times may be adjusted, or (vi) perform obligations under the Contract Documents, then Owner, in addition to any other rights and remedies provided in the Contract Documents or by law, shall have the rights set forth in Sections 11.2.2 and 11.2.3 below.

**11.2.2** Upon the occurrence of an event set forth in Section 11.2.1 above, Owner may provide written notice to Design-Builder that it intends to terminate the Agreement unless the problem cited is cured, or commenced to be cured, within seven (7) days of Design-Builder's receipt of such notice. If Design-Builder fails to cure, or reasonably commence to cure, such problem, then Owner may give a second written notice to Design-Builder of its intent to terminate within an additional seven (7) day period. If Design-Builder, within such second seven (7) day period, fails to cure, or reasonably commence to cure, such problem, then Owner may declare the Agreement terminated for default by providing written notice to Design-Builder of such declaration.

**11.2.3** Upon declaring the Agreement terminated pursuant to Section 11.2.2 above, Owner may enter upon the premises and take possession, for the purpose of completing the Work, of all materials, equipment, scaffolds, tools, appliances and other items thereon, which have been purchased or provided for the performance of the Work, all of which Design-Builder hereby transfers, assigns and sets over to Owner for such purpose, and to employ any person or persons to complete the Work and provide all of the required labor, services, materials, equipment and other items. In the event of such termination, Design-Builder shall not be entitled to receive any further payments under the Contract Documents until the Work shall be finally completed in accordance with the Contract Documents. Such costs and expense shall include not only the cost of completing the Work, but also losses, damages, costs and expense, including attorneys' fees and expenses, incurred by Owner in connection with the reprocurement and defense of claims arising from Design-Builder's default, subject to the waiver of consequential damages set forth in Section 10.5 hereof.

**11.2.4** If Owner improperly terminates the Agreement for cause, the termination for cause will be converted to a termination for convenience in accordance with the provisions of Article 8 of the Agreement.

## **11.3 Design-Builder's Right to Stop Work.**

**11.3.1** Design-Builder may, in addition to any other rights afforded under the Contract Documents or at law, stop the Work for the following reasons:

**11.3.1.1** Owner's failure to provide financial assurances as required under Section 3.3 hereof; or

**11.3.1.2** Owner's failure to pay amounts properly due under Design-Builder's Application for Payment.

**11.3.2** Should any of the events set forth in Section 11.3.1 above occur, Design-Builder has the right to provide Owner with written notice that Design-Builder will stop the Work unless said event is cured within seven (7) days from Owner's receipt of Design-Builder's notice. If Owner does not cure the problem within such seven (7) day period, Design-Builder may stop the Work. In such case, Design-Builder shall be entitled to make a claim for adjustment to the Contract Price and Contract Time(s) to the extent it has been adversely impacted by such stoppage.

## **11.4 Design-Builder's Right to Terminate for Cause.**

**11.4.1** Design-Builder, in addition to any other rights and remedies provided in the Contract Documents or by law, may terminate the Agreement for cause for the following reasons:

**11.4.1.1** The Work has been stopped for sixty (60) consecutive days, or more than ninety (90) days during the duration of the Project, because of court order, any government authority having jurisdiction over the Work, or orders by Owner under Section 11.1.1 hereof, provided that such stoppages are not due to the acts or omissions, or violations of the law of Design-Builder or anyone for whose acts Design-Builder may be responsible.

**11.4.1.2** Owner's failure to provide Design-Builder with any information, permits or approvals that are Owner's responsibility under the Contract Documents which result in the Work being stopped for sixty (60) consecutive days, or more than ninety (90) days during the duration of the Project, even though Owner has not ordered Design-Builder in writing to stop and suspend the Work pursuant to Section 11.1.1 hereof.

**11.4.1.3** Owner's failure to cure the problems set forth in Section 11.3.1 above after Design-Builder has stopped the Work.

**11.4.2** Upon the occurrence of an event set forth in Section 11.4.1 above, Design-Builder may provide written notice to Owner that it intends to terminate the Agreement unless the problem cited is cured, or commenced to be cured, within seven (7) days of Owner's receipt of such notice. If Owner fails to cure, or reasonably commence to cure, such problem, then Design-Builder may give a second written notice to Owner of its intent to terminate within an additional seven (7) day period. If Owner, within such second seven (7) day period, fails to cure, or reasonably commence to cure, such problem, then Design-Builder may declare the Agreement terminated for default by providing written notice to Owner of such declaration. In such case, Design-Builder shall be entitled to recover in the same manner as if Owner had terminated the Agreement for its convenience under Article 8 of the Agreement.

## **11.5 Bankruptcy Design-Builder.**

**11.5.1** If Design-Builder institutes or has instituted against it a case under the United States Bankruptcy Code (such party being referred to as the "Bankrupt Party"), such event may impair or frustrate the Bankrupt Party's ability to perform its obligations under the Contract Documents. Accordingly, should such event occur:

**11.5.1.1** The Bankrupt Party, its trustee or other successor, shall furnish, upon request of the non-Bankrupt Party, adequate assurance of the ability of the Bankrupt Party to perform all future material obligations under the Contract Documents, which assurances shall be provided within ten (10) days after receiving notice of the request; and

**11.5.1.2** The Bankrupt Party shall file an appropriate action within the bankruptcy court to seek assumption or rejection of the Agreement within sixty (60) days of the institution of the bankruptcy filing and shall diligently prosecute such action.

If the Bankrupt Party fails to comply with its foregoing obligations, the non-Bankrupt Party shall be entitled to request the bankruptcy court to reject the Agreement, declare the Agreement terminated and pursue any other recourse available to the non-Bankrupt Party under this Article 11.

**11.5.2** The rights and remedies under Section 11.5.1 above shall not be deemed to limit the ability of the non-Bankrupt Party to seek any other rights and remedies provided by the Contract Documents or by law, including its ability to seek relief from any automatic stays under the United States Bankruptcy Code or the right of Design-Builder to stop Work under any applicable provision of these General Conditions of Contract.

## Article 12

### **Electronic Data**

#### **12.1 Electronic Data.**

**12.1.1** The parties recognize that Contract Documents, including drawings, specifications and three-dimensional modeling (such as Building Information Models) and other Work Product may be transmitted among Owner, Design-Builder and others in electronic media as an alternative to paper hard copies (collectively "Electronic Data").

#### **12.2 Transmission of Electronic Data.**

**12.2.1** Owner and Design-Builder shall agree upon the software and the format for the transmission of Electronic Data. Each party shall be responsible for securing the legal rights to access the agreed-upon format, including, if necessary, obtaining appropriately licensed copies of the applicable software or electronic program to display, interpret and/or generate the Electronic Data.

**12.2.2** Neither party makes any representations or warranties to the other with respect to the functionality of the software or computer program associated with the electronic transmission of Work Product. Unless specifically set forth in the Agreement, ownership of the Electronic Data does not include ownership of the software or computer program with which it is associated, transmitted, generated or interpreted.

**12.2.3** By transmitting Work Product in electronic form, the transmitting party does not transfer or assign its rights in the Work Product. The rights in the Electronic Data shall be as set forth in Article 4 of the Agreement. Under no circumstances shall the transfer of ownership of Electronic Data be deemed to be a sale by the transmitting party of tangible goods.

#### **12.3 Electronic Data Protocol.**

**12.3.1** The parties acknowledge that Electronic Data may be altered or corrupted, intentionally or otherwise, due to occurrences beyond their reasonable control or knowledge, including but not limited to compatibility issues with user software, manipulation by the recipient, errors in transcription or transmission, machine error, environmental factors, and operator error. Consequently, the parties understand that there is some level of increased risk in the use of Electronic Data for the communication of design and construction information and, in consideration of this, agree, and shall require their independent contractors, and Subcontractors to agree, to the following protocols, terms and conditions set forth in this Section 12.3.

**12.3.2** Electronic Data will be transmitted in the format agreed upon in Section 12.2.1 above, including file conventions and document properties, unless prior arrangements are made in advance in writing.

**12.3.3** The Electronic Data represents the information at a particular point in time and is subject to change. Therefore, the parties shall agree upon protocols for notification by the author to the recipient of any changes which may thereafter be made to the Electronic Data, which protocol shall also address the duty, if any, to update such information, data or other information contained in the electronic media if such information changes prior to Final Completion of the Project.

**12.3.4** The transmitting party specifically disclaims all warranties, expressed or implied, including, but not limited to, implied warranties of merchantability and fitness for a particular purpose, with respect to the media transmitting the Electronic Data. However, transmission of the Electronic Data

via electronic means shall not invalidate or negate any duties pursuant to the applicable standard of care with respect to the creation of the Electronic Data, unless such data is materially changed or altered after it is transmitted to the receiving party, and the transmitting party did not participate in such change or alteration.

## **Article 13**

### **Miscellaneous**

#### **13.1 Confidential Information.**

**13.1.1** Confidential Information is defined as information which is determined by the transmitting party to be of a confidential or proprietary nature and: (i) the transmitting party identifies as either confidential or proprietary; (ii) the transmitting party takes steps to maintain the confidential or proprietary nature of the information; and (iii) the document is not otherwise available in or considered to be in the public domain. The receiving party agrees to maintain the confidentiality of the Confidential Information and agrees to use the Confidential Information solely in connection with the Project, unless release of such information is required by the Virginia Freedom of Information Act or other law or court order or proceeding.

#### **13.2 Assignment.**

**13.2.1** Neither Design-Builder nor Owner shall, without the written consent of the other assign, transfer or sublet any portion or part of the Work or the obligations required by the Contract Documents.

#### **13.3 Successorship.**

**13.3.1** Design-Builder and Owner intend that the provisions of the Contract Documents are binding upon the parties, their employees, agents, heirs, successors and assigns.

#### **13.4 Governing Law.**

**13.4.1** The Agreement and all Contract Documents shall be governed by the laws of the place of the Project, without giving effect to its conflict of law principles.

#### **13.5 Severability.**

**13.5.1** If any provision or any part of a provision of the Contract Documents shall be finally determined to be superseded, invalid, illegal, or otherwise unenforceable pursuant to any applicable Legal Requirements, such determination shall not impair or otherwise affect the validity, legality, or enforceability of the remaining provision or parts of the provision of the Contract Documents, which shall remain in full force and effect as if the unenforceable provision or part were deleted.

#### **13.6 No Waiver.**

**13.6.1** The failure of either Design-Builder or Owner to insist, in any one or more instances, on the performance of any of the obligations required by the other under the Contract Documents shall not be construed as a waiver or relinquishment of such obligation or right with respect to future performance.

### **13.7 Headings.**

**13.7.1** The headings used in these General Conditions of Contract, or any other Contract Document, are for ease of reference only and shall not in any way be construed to limit or alter the meaning of any provision.

### **13.8 Notice.**

**13.8.1** Unless set forth otherwise in the Comprehensive Agreement, whenever the Contract Documents require that notice be provided to the other party, notice will be deemed to have been validly given (i) if delivered in person to the individual intended to receive such notice, (ii) four (4) days after being sent by registered or certified mail, postage prepaid to the address indicated in the Agreement, r (iii) sent by a nationally recognized overnight courier to the individual designated by a Party to receive notice; or (iv) transmitted by electronic mail to the Party designated to receive notice where there is an electronic confirmation of receipt by the recipient transmitted by electronic mail where there is an electronic confirmation of delivery.

### **13.9 Amendments.**

**13.9.1** The Contract Documents may not be changed, altered, or amended in any way except in writing signed by a duly authorized representative of each party.

**13.10 Non-Discrimination: Substitute for Section 14.15 of the Agreement:** During the performance of this Agreement, Design-Builder agrees that it will not discriminate against any employee or applicant for employment because of race, religion, color, sex, national origin, age, disability, or any other basis prohibited by state law relating to discrimination in employment except when there is a bona fide occupational qualification reasonably necessary to the normal operation of Design-Builder. Design-Builder agrees to post in conspicuous places available to employees and applicants for employment notices setting forth the provisions of this non-discrimination clause. Design-Builder in all solicitations or advertisements for employees placed by or on behalf of Design-Builder will state that Design-Builder is an equal opportunity employer. Design-Builder will include the provisions of this paragraph in every sub-contract or purchase order of over \$10,000.00 so that the provisions will be binding upon each sub-contractor or vendor.

**13.11 Licenses:** Unless provided otherwise in the Contract Documents, Design-Builder agrees that it has procured all licenses, or other like permission required by law for it to conduct or engage in the activity provided for in this Agreement: that it will procure all additional licenses, or like permission required by law during the term of this Agreement; and that it will keep such licenses and permissions in full force and effect during the term of this Agreement.

**13.12 Independent Contractor:** Design-Builder understands and agrees that the relationship of service provider to Owner arising out of the Contract Documents shall be that of independent contractor. It is understood that the Design-Builder, or its staff and employees, are not employees of Owner and are, therefore, not entitled to any benefits provided employees of the Owner. Design-Builder shall be responsible for reporting and accounting for all State, Federal, Social Security, and local taxes, where applicable.

**3.13 Compliance with Immigration Laws:** In accordance with Va. Code § 2.2-4311.1, Design-Builder agrees and represents that it does not now, nor will it during the performance of the Work, knowingly employ an unauthorized alien as defined in the federal Immigration Reform and Control Act of 1986.

**13.14 Drug-free Workplace to be Maintained by Design-Builder:** During the performance of the Work, Design-Builder agrees to (i) provide a drug-free workplace for Design-Builder's employees; (ii) post in conspicuous places, available to employees and applicants for employment, a statement notifying employees that the unlawful manufacture, sale, distribution, dispensation, possession, or use of marijuana or any other controlled substance is prohibited in Design-Builder's workplace, and specifying the actions that will be taken against employees for violations of such prohibition; (iii) state in all solicitations or advertisements for employees placed by or on behalf of Design-Builder that Design-Builder maintains a drug-free workplace; and (iv) include the provisions of the foregoing clauses in every subcontract or purchase order of over ten thousand dollars (\$10,000) relating to the Contract Documents, so that the provisions will be binding upon each subcontractor or vendor.

For the purposes of this section, "drug-free workplace" means a site for the performance of Work done in connection with a specific contract awarded Design-Builder by Owner, the employees of whom are prohibited in engaging in the unlawful manufacture, sale, distribution, dispensation, possession or use of any controlled substance or marijuana during the performance of the Work.

**13.15 Design-Builder Authorized to Transact Business in Virginia:** During the performance of this Work, Design-Builder shall be authorized to transact business in the Commonwealth of Virginia as a domestic or foreign business entity if so required by Title 13.1 or Title 50 of the Code of Virginia or as otherwise required by law.

**13.16 Examination of Records:**

**13.16.1** Design-Builder agrees that Owner, or any duly authorized representative of Owner, shall, until the expiration of three (3) years after final payment hereunder, have access to and the right to examine and copy any directly pertinent books, documents, papers, and records of Design-Builder involving transactions relating to the Contract Documents.

**13.16.2** Design-Builder shall include in any subcontract for more than \$10,000 entered into as a result of the Contract Documents, a provision to the effect that the subcontractor agrees that Owner, or any duly authorized representative of Owner, shall until the expiration of three (3) years after final payment under Contract have access to and the right to examine and copy any directly pertinent books, documents, papers, and records of such subcontractor involved in the transactions related to such subcontract or the Contract Documents. The term "subcontract" as used herein shall exclude subcontracts or purchase orders for public utility services at rates established for uniform applicability to the public.

**13.16.3** The period of access provided in subparagraphs 13.18.1 and 13.18.2 above for books, documents, papers, and records which may relate to any litigation, mediation or other alternative dispute resolution ("ADR"), or the settlement of claims arising out of performance of the Contract Documents or any subcontract shall continue until any appeals, litigation, mediation, ADR, or claims have been finally concluded.

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**EXHIBIT B**  
**Basis of Design Report**

# Prince Edward County – Sandy River Water Project

## 15% Design Narrative

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**December 5, 2022**

**Prepared for:**

**Prince Edward County**

**PO Box 382**

**111 South Street, 3<sup>rd</sup> Floor**

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## **SECTION 1 – 15% DESIGN NARRATIVE**

## 1.0 Introduction

The following is a detailed description of the project components being proposed by the **PECI** team. The Appendices provide the major equipment selections that are the basis of design.

This narrative outlines the implementation of the **Sandy River Water Project** to provide a reliable and sustainable water supply to Prince Edward County.

### 1.1 Project History

Currently, a small portion of Prince Edward County is served by the Town of Farmville Water System. The Appomattox River supplies all of the water for the Town of Farmville water treatment plant. The Town currently has very limited raw water storage and is reliant upon the river.

The Sandy River Reservoir (SRR) is a 740 acre existing reservoir located about 6 miles east of the Town of Farmville. In 1984, the permit to construct the dam was issued with a dry dam restriction. Construction of the dam commenced in 1985 and was completed in 1988. The county received authorization to fill the SRR in 1993, and the gates to the dam were closed in 1994. The 740-acre reservoir was filled in 1995, providing 3.2 billion gallons of water storage.

The Virginia Water Protection (VWP) Water Withdrawal Permit was issued in 2006. Subsequently, a potable water system was not constructed due to the economic downturn of 2008-2009. At this time, Prince Edward County has resolved to supply potable water to the region by constructing a water system utilizing the SRR as the source.

## 2.0 Sandy River Water Project

This narrative is based on the design and construction (**Design-Build**) of the **Sandy River Water Project** consisting of the follow components:

- Project 1 – Raw Water Facilities
- Project 2 – Water Treatment Facilities
- Project 3 – Finished Water Pipeline Facilities: East Distribution System
- Project 3A – Finished Water Pipeline Facilities: Rice Distribution System
- Project 4 – Finished Water Pipeline Facilities: West Distribution System

The new Raw Water Intake and Pump Station will be located at the Sandy River Reservoir. A Raw Water Transmission Main will cross County owned property to convey water from the Raw Water Pump Station. A Water Treatment Plant (WTP) will be located on County owned property adjacent to the Reservoir. Two separate Finished Water Distribution Systems will be constructed. The West Distribution System will serve Prince Edward County and Hampden Sydney and will include one Water Booster Pump Station. The East Distribution System will serve regional partners in Nottoway County including Burkeville, Crewe, and State Facilities.

## 2.1 System Capacity Assumptions

The raw water withdrawal rates and permit conditions are based on the existing water withdrawal permit #04-1464, dated September 7, 2006. This permit was issued to Prince Edward County. This proposal is based on the re-issuance of this permit with similar withdrawal allowances. Timmons Group is currently under contract to assist the County in renewing the VWP Permit.

Permit #04-1464 was issued with the following conditions:

1. *Maximum Daily Withdrawal = 6.3 (MGD) million gallons per day*
2. *Maximum Annual Withdrawal = 1.36 billion gallons*
3. *Minimum instream flowby release below the Sandy River Dam is required in accordance with the table provided in the Permit under Part I, Section F.3.*

Based on the permit conditions and expected water demands, the **Sandy River Water Project** has been configured as follows:

### Project 1 – Raw Water Facilities

#### **Intake:**

Initial Configuration Intake Rate:	2.0 (MGD) Million Gallons per Day
Future Configuration Intake Rate:	8.0 MGD
Number of Installed Screens:	3
Capacity per Screen:	8.0 MGD

#### **Pump Station:**

Initial Configuration Pump Rate:	2.0 MGD
Future Configuration Pump Rate:	2.67 MGD
Initial Number of Installed Pumps:	2
Future Number of Installed Pumps:	4
Initial Station Capacity:	2.0 MGD
Future Station Capacity:	8.0 MGD

**Project 2 – Water Treatment Facilities**

**Raw Water Pipeline:**

Initial Configuration Pump Rate:	2.0 MGD
Future Configuration Pump Rate:	8.0 MGD
Pipe Size:	20-inch

WTP Initial Configuration Capacity:	1.5 MGD
-------------------------------------	---------

*Note: this is based on an 18 hours per day operation time. Down time is required to perform routine maintenance on the facility. Instantaneous throughput (or 24 hours per day operation) is rated at 2.0 MGD initially.*

WTP Future Configuration Capacity:	6.0 MGD
------------------------------------	---------

*Note: this is based on an 18 hours per day operation time. Down time is required to perform routine maintenance on the facility. Instantaneous throughput (or 24 hours per day operation) is rated at 8.0 MGD at buildout.*

***All unit process capacities listed below for the treatment process are presented on the basis of instantaneous throughput.***

**Chemical Addition for Oxidation (Pre-Coagulation) & Rapid Mixing**

Chemical Feed Abilities:	Oxidant, pH Adjustment
Rapid Mixing Method:	In-Line Static Mixer
Initial Configuration:	One 20-inch static mixer with bypass
Future Configuration:	Two 20-inch static mixers in parallel

**Chemical Addition (Pre-Clarification & Pre-Filtration) & Rapid Mixing**

Chemical Feed Abilities:	Coagulant, Polymer, pH Adjustment
Rapid Mixing Method:	Rapid Mix Chamber

**Flocculation Basins**

Initial Configuration Capacity:	4.0 MGD
Future Configuration Capacity:	8.0 MGD
Initial Number of Basins:	2
Future Number of Basins:	4
Number of Trains per Basin:	2
Flocculation Method:	Two Stage Tapered Flocculation

**Sedimentation Basins**

Initial Configuration Capacity:	4.0 MGD
Future Configuration Capacity:	8.0 MGD
Initial Number of Basins:	1

Future Number of Basins:	2
Number of Trains per Basin:	2
Clarification Method:	Inclined Plate Settlers

**Filtration**

Initial Configuration Capacity:	2.0 MGD
Future Configuration Capacity:	8.0 MGD
Initial Number of Skids:	2
Future Number of Skids:	4
Initial Capacity per Skid:	1.0 MGD
Future Capacity per Skid (with Modules Addition):	2.0 MGD
Filtration Method:	Microfiltration Membranes

**ADDER: Disinfection Byproduct Treatment**

*Treatment to prevent the formation of disinfection byproducts is likely to be required, and will be confirmed upon conclusion of the sampling program and treatability study.*

Treatment Type:	Granular Activated Carbon Filtration
Treatment Method:	Pressure Vessels
Empty Bed Contact Time Provided:	10 Minutes
Initial Configuration Capacity:	2.0 MGD
Future Configuration Capacity:	8.0 MGD
Initial Number of Tanks:	2
Future Number of Tanks:	8
Capacity per Tank:	1.0 MGD

**Chemical Addition (Post-Clarification & Post-Filtration)**

Chemical Feed Abilities:	Disinfection, Corrosion Control, Fluoridation, pH Adjustment
Rapid Mixing Method:	In-Line Static Mixer

**Clearwell**

Total Volume:	1.0 (MMG) Million Gallons
Initial Storage Volume:	0.85 MMG
Future Storage Volume:	0.40 MMG

*Remainder of Storage Volume Reserved for Disinfection Contact Time.*



**Finished Water Pump Station**

Capacity per Pump:	1,500 GPM (2.16 MGD)
Initial Number of Installed Pumps:	2
Future Number of Installed Pumps:	5
Initial Station Capacity:	2.16 MGD
Future Station Capacity:	8.64 MGD (6,000 GPM)

**Project 3 – Finished Water Pipeline Facilities: East Distribution System**

Customers	Burkeville, Crewe, State Facilities
Total Length	Approx. 33,500 Feet

**Project 3A – Finished Water Pipeline Facilities: Rice Distribution System**

Customers	Community of Rice
Total Length	Approx. 3,000 Feet

**Project 4 – Finished Water Pipeline Facilities: West Distribution System**

Customers	Prince Edward, Hampden Sydney
Total Length	Approx. 52,000 Feet

The design of the **Sandy River Water Project** accounts for necessary peaking factors, favorable operation duty cycle and the provision of redundant equipment where applicable. The facilities have been configured to allow expansion to the future configuration without disruption of service.

Pending renewal of the withdrawal permit and conditions set forth in the permit, along with finalization of future customers of the Sandy River Water System, adjustments to the above stated design parameters will be taken into consideration during the Comprehensive (Design) Phase of the project.

***The following sections of this proposal describe the principal components of the Sandy River Water Project:***

## **2.2 Project 1 - Raw Water Facilities**

The Raw Water Intake and Pumping Facilities will provide a source of Raw (Reservoir) Water to Prince Edward County through the new Sandy River Water Project.

*The Raw Water Intake and Pumping Facilities are described in detail in the following sections of the proposal:*

### **A. Raw Water Intake:**

The layout proposes the construction of an intake utilizing a cylindrical stainless steel wedgewire intake screen connected to the pump station wet well by a gravity pipe. The intake screen will be provided with an air burst cleaning manifold supplied by a blower. The intake screen will prevent large debris from entering the wet well and thus protect the pump equipment and improve raw water quality. The intake screen openings will be sized to protect aquatic life and be compliant with EPA 316 (b) for intake velocities for avoidance of impingement and entrainment. The intake screen will be sized for the ultimate capacity of the **Sandy River Water Project**.

### **B. Wetwell Influent Pipe:**

The pipe connecting the Intake to the pump station wet well will be approximately 100 feet long and will and will be constructed with Ductile Iron pipe.

### **C. Pump Station Wetwell:**

The layout proposes the construction of a concrete pump wet well to permit proper submergence of the pumps when the reservoir is drawn down ten feet from the normal pool elevation of 339.7'. The top of the wet well will be elevated above the high water level, which occurs at elevation 352' when the emergency spillway is activated (emergency spillway elevation of 349.65'). The wet well will be provided with appropriate access hatch and grated opening over pumps.

### **D. Pump, Piping and Valve Equipment:**

The project will include the installation of submersible centrifugal pumps and motors. Each pump will be connected to a common discharge manifold and will be provided with a check valve and gate valve. The valving will be located in a dry valve vault located adjacent to the wet well. An emergency pump connection will be provided to permit the use of a portable pump in the event of an equipment failure. The flow meter to measure raw water flow will be located in a vault on the WTP site,

### **E. Electrical and Pump Control Equipment:**

The layout proposes the construction of a pump control building. The building will be elevated above the high water level, which occurs at elevation 352'. The electrical and pump control equipment will provide for variable speed control of pumps, alternation of lead and lag pumps and duplex, triplex or quadplex pump operation. A stand-by generator will not be provided, but a manual transfer switch will be included in the electrical infrastructure so that a temporary generator may be brought in when needed. Power will be supplied to the intake site separately from the power source for the WTP site.

### **F. Process Monitoring Equipment**

Process monitoring equipment to monitor water quality, flow and levels will be provided. Process monitoring equipment will assure that water quality requirements of the Virginia Department of Health are met and that the Raw Water Pump Station is operating in an efficient manner.

Monitoring equipment will be provided to monitor the following:

- Turbidity

- Reservoir Raw Water
- Flow Meter
  - Raw Water Main
- Level
  - Reservoir (measured in wet well)
- Pressure
  - Raw Water Pump Discharge
- Alarms
  - High Water
  - Low Water
  - Power Outage
  - Pump Alarms (from pump control panel)

#### **G. Communication**

Either Telemetry equipment or a hard wired connection will be provided to allow remote monitoring of the Intake and Pump Station operation at the Water Treatment Plant and to provide start/stop signals to the pump control panel.

## **2.3 Project 2 - Water Treatment Facilities (WTP)**

The Water Treatment Facilities will utilize state of the art treatment technology configured to treat surface water. The primary treatment process is based on the use of modular skid mount membrane filtration. This technology is approved by the Virginia Department of Health (VDH) and has been successfully employed at treatment plants throughout the Commonwealth of Virginia. Most importantly, the system components represent a selection of technologies that offer the best value to the County of Prince Edward.

All system components have been configured to consider ease of operation, operational duty cycle, ease of expansion to ultimate capacities and provision of redundant equipment where applicable.

***The Water Treatment Facilities are described in detail in the following sections of the proposal:***

### **A. Raw Water Pipeline**

The Raw Water Pipeline will run approximately 2,000' cross country from the raw water pump station to the water treatment plant. This portion of the pipeline will be sized to convey anticipated flows for the ultimate capacity of the Raw Water Intake and Pump Station. The pipeline construction will require a stream crossing that will require permitting with the U.S. Army Corps of Engineers.

Where operating pressures and installation conditions allow, the majority of the pipeline will be constructed of Polyvinyl Chloride (PVC) pipe manufactured in accordance with AWWA C900. Other portions of the pipeline will either be Ductile Iron or HDPE.

The pipeline will be provided with butterfly valves and blow off hydrants to aid in maintenance; and air release valves at high points along the main.

### **A. Chemical Addition for Oxidation (Pre-Coagulation) & Rapid Mixing**

Before the raw water conveyed by the raw water pump station reaches the flocculation basin, chemical addition will be required to ensure proper treatment prior to filtration and disinfection. As the source water quality may vary from day to day, these chemicals will be employed on as needed basis. Two common chemical addition strategies to be included in the design are described briefly below. Conventional chemical addition systems primarily consist of the bulk chemical storage tote, metering pumps, and some means of dosing the chemical (e.g. an injection quill). These systems will be housed in the main treatment building.

An in-line static mixer will be included to provide rapid mixing of the chemicals prior to coagulation, flocculation, and clarification. An oxidation chamber will be provided before the coagulation and flocculation stage to allow for 10 to 15 minutes of contact time.

- ***pH Adjustment***

Generally, pH is a measurement that is used to identify a given water solution as acidic, basic, or neutral. In order to increase pH, and prevent issues associated with overly acidic finished water, chemicals like sodium hydroxide (NaOH) are typically added to finished water. In order to decrease pH, and prevent issues associated with overly basic finished water, chemicals like hydrochloric acid may be added. pH and alkalinity adjustment of the raw water will be available to optimize the oxidation and coagulation processes.

- **Permanganate Oxidation**

Oxidation, a chemical process that effectively converts nuisance substances present in raw water into innocuous water constituents, is typically required to enhance taste, odor, and color of drinking water. Oxidation is also an effective strategy for mitigating disinfection byproduct formation and undesirable biological activity. Common oxidants that are often added during the water treatment process to oxidize nuisance inorganic and organic substances are potassium permanganate (KMnO<sub>4</sub>) and Sodium Permanganate (NaMnO<sub>4</sub>).

Perhaps the most common of these nuisance substances are iron and manganese, which are common in ground water and surface water sources and may negatively impact water taste and color at elevated concentrations. Potassium permanganate addition converts iron and manganese from the nuisance, reduced forms to oxidized solids that settle out during the conventional treatment process.

Furthermore, oxidants such as Permanganate may aid in the coagulation and flocculation process and removal of natural organic matter (NOM) in several ways:

- (1) Oxidant reacts with NOM that is adsorbed to other negatively charged particles to desorb some NOM and lower the net negative surface charge on the particle, thereby making it easier to coagulate the NOM and particle,
- (2) Oxidant reacts with some forms of NOM that leads to the direct precipitation of NOM from the water,
- (3) Depending on conditions, chemical oxidants may reduce NOM metal complexation sites which effectively reduce the dose of metal coagulant normally required.

Refer to the section on disinfection byproduct treatment for additional discussion on removal of NOM.

## **B. Chemical Addition (Pre-Clarification & Pre-Filtration) & Rapid Mixing**

After oxidation and before flocculation, chemical addition will be required to ensure proper treatment prior to filtration and disinfection. As the source water quality may vary from day to day, these chemicals will be employed on as needed basis. Two common chemical addition strategies to be included in the design are described briefly below. Conventional chemical addition systems primarily consist of the bulk chemical storage tote, metering pumps, and some means of dosing the chemical (e.g. an injection quill). These systems will be housed in the main treatment building. An in-line static mixer will be included to provide rapid mixing of the chemicals prior to coagulation, flocculation, and clarification.

A rapid mix chamber will be included to provide rapid mixing of the chemicals prior to flocculation and clarification. A contact time of less than 60 seconds will be provided.

- **Coagulation**

Coagulation involves the addition of a chemical coagulant for the purpose of conditioning the suspended, colloidal, and dissolved matter for subsequent processing by flocculation and sedimentation to allow for the removal of particulate and dissolved matter. The exact coagulant to be recommended for treatment will be determined during the design phase.

- **pH Adjustment**

Generally, pH is a measurement that is used to identify a given water solution as acidic, basic, or neutral. In order to increase pH, and prevent issues associated with overly acidic finished water, chemicals like sodium hydroxide (NaOH) are typically added to finished water. In order to decrease pH, and prevent issues associated with overly basic finished water, chemicals like hydrochloric acid may be added. pH

and alkalinity adjustment of the raw water will be available to optimize the oxidation and coagulation processes.

### **C. Flocculation & Sedimentation Basin**

Flocculation involves the aggregation of destabilized particles and the precipitation products formed by the addition of coagulants into larger particles known as flocculant particles that can be removed by gravity sedimentation and/or filtration. Sedimentation is the process of separating suspended material from water using gravity separation under quiescent conditions.

A flocculation and sedimentation basin will be constructed to treat the water prior to filtration. Initially, a single basin with two parallel treatment trains will be constructed. Each treatment train will be capable of treating a 2.0 MGD throughput, for a total basin capacity of 4.0 MGD. The WTP site footprint will allow for the addition of an identical second flocculation and sedimentation basin adjacent to the first one for a total future capacity of 8.0 MGD.

The flocculation treatment step will be composed of two identically sized tanks in series to allow for tapered flocculation. Mixing will be performed by low speed, low power, vertical shaft turbines or paddlewheels.

Subsequently, the sedimentation treatment step will be composed of a single tank in each train that houses an inclined plate settler system. The inclined plate settler is composed of rows of inclined plates installed at 55 to 60 degrees from the horizontal. The inclined plate settler effectively decreases the distance a particle must fall prior to removal and increases settling surface area which decreases the required volume of the sedimentation basin. A sludge collection system will be included in the sedimentation basin.

The concrete basin will be constructed with either the cast-in-place method or precast, post-tensioned method.

### **D. Filtration**

The Filtration process of the Water Treatment Plant will utilize PALL ARIA™ Microfiltration system as manufactured by the PALL® Corporation. The PALL ARIA™ Microfiltration system is a skid mounted hollow-fiber low pressure membrane system with multiple filtration modules arrayed in a vertical configuration that are mounted on a common influent and effluent manifold.

The PALL ARIA™ Microfiltration process is utilized at numerous locations throughout the Commonwealth of Virginia and have a proven track record and allow the operator to easily maintain the membranes with automated cleaning and backwashing systems.

Filtration by hollow-fiber fine-pore membranes has been demonstrated as a reliable technology for the removal of a wide range of solids including naturally occurring silt, clay, and particulate organic carbon. Membrane filtration offers several advantages over more conventional dual media filtration beds; for instance, the small pores of the membrane (0.1 µm) allow for the capture of particles that a conventional filter would miss and the membranes allow for a much smaller footprint than a conventional filtration system.

This proposal includes the installation of two AP-6 PALL ARIA™ Microfiltration skids, each rated at 1 MGD; equating to 2 MGD total treatment capacity. These skids have an ultimate capacity of 2 MGD each with the expansion of the filter module skids, equating to 4 MGD total treatment capacity. The treatment building footprint is sized to accommodate two more skids for a total treatment rate of 8 MGD.

To assure an efficient operation of the filtration process, the PALL ARIA™ Microfiltration system is provided with an Enhanced Flux Maintenance (EFM) system to periodically cleanse the hollow-fibers and critical piping components with a mild mixture of chlorine to remove accumulated deposits. The EFM will maintain a high fiber Flux rate which is a measure of the hollow-fiber filtration treatment capacity.

For a deeper cleaning of the hollow-fibers and filtration components, the PALL ARIA™ Microfiltration system is provided with a Clean-In-Place (CIP) process. The CIP process utilizes hot water and a stronger mixture of chlorine and other chemicals to provide a more thorough cleansing than provided by the EFM processes. The EFM and CIP process share some common equipment and will be shared by all filtration skids.

Waste streams from the CIP and EFM processes will be discharged to the CIP observation tank and will be conveyed to the onsite Waste Lagoons.

The PALL ARIA™ Microfiltration system will be provided with the following:

- Skid Mounted (each unit);
  - Rack (skid) mounted hollow-fiber modules
  - Programmable Logic Controller (PLC)
  - Turbidimeter
  - Filter Feed Pump
  - Flow Meter
  - Inlet, Outlet, Backwash Waste and CIP Waste pipe connections with isolation valves
  - Filter module influent and effluent manifold with isolation valves
  - Influent Feed Tank
  - Backwash Feed Tank
  - Influent Strainer
  
- Shared by all filtration units;
  - CIP and EFM tanks and chemical feed system
  - Hot Water Heater(s) for CIP process

Filtration process piping will be arranged for extension to future treatment units without interruption of the WTP operation.

The PECl team members have experience designing and constructing Water Treatment Plants utilizing the PALL ARIA™ Microfiltration process.

#### **E. ADDER: Disinfection by Product (DBP) Treatment**

*Treatment to prevent the formation of disinfection byproducts is likely to be required, and will be confirmed upon conclusion of the sampling program and treatability study.*

Disinfection byproducts are carcinogenic and have the potential to form when natural organic matter (NOM) in the raw water combines with chlorine that has been added for disinfection purposes. Therefore,

the treatment goal will be to remove as much NOM from the raw water as practicable. It is anticipated that an advanced filtration treatment process after microfiltration will be required. It is proposed to use granular activated carbon (GAC) in pressure filters to remove additional total organic carbon and dissolved organic carbon from the filtered water.

The filters will be placed in the main treatment building and will be manually operated. No automatic control of the GAC system is required for successful operation. Provisions for backwashing the GAC filters will be included in the piping and valving design. GAC filters will be backwashed from the Pall filter forward feed using filtered water. During normal operation, Pall feed pumps will pump flow through the Pall filters, GAC filters, and into the clearwell. This will avoid the need for repumping and an additional intermediate pump station. Disinfection will occur after GAC treatment.

#### **F. Chemical Addition (Post-Filtration & Post-GAC)**

Chemical addition may be required to ensure optimal finished water quality prior to distribution. The chemicals added depend on source water quality, treatment objectives, etc. Three common chemical addition strategies are described briefly below. Conventional chemical addition systems primarily consist of the bulk chemical storage tote, metering pumps, and some means of dosing the chemical (e.g. an injection quill).

The WTP will include a Chemical Feed Room with equipment to feed chemicals for the following purposes:

- ***pH Adjustment***

Generally, pH is a measurement that is used to identify a given water solution as acidic, basic, or neutral. Overly acidic or basic finished water may detrimentally impact public health, water infrastructure (i.e. distribution piping), or both. In order to increase pH, and prevent issues associated with overly acidic finished water, chemicals like sodium hydroxide (NaOH) are typically added to finished water. In order to decrease pH, and prevent issues associated with overly basic finished water, chemicals like hydrochloric acid may be added.

- ***Fluoridation***

Fluoride is typically added to finished water to enhance dental health for those that consume the public water supply. Fluoride will be added as sodium fluoride in a saturator.

- ***Corrosion Inhibition***

Corrosion is the chemical deterioration of metal surfaces in the presence of a chemically abrasive medium (in this case water). Due to the natural corrosivity of treated drinking water, corrosion prevention measures are often required to abate deterioration of metal distribution system piping, the consequences of which include: pinhole leaks, excessive pipe scale accumulation, elevated metals concentrations in drinking water, elevated metals concentrations at the wastewater treatment plant, etc.

One such corrosion prevention measure is the addition of a corrosion inhibitor, for example zinc orthophosphate. Corrosion inhibitors passivate water conveyance piping by forming a thin, indiscernible film on the inner pipe surface, preventing excessive corrosion.

#### **G. Disinfection**

Chlorine disinfection of the finished water is required to prevent the growth of pathogens in the water from the time the water leaves the treatment plant until it reaches the customer's tap. Disinfection by chlorine gas is considered conventional, but there are obvious safety concerns with the handling and storage of chlorine gas. The selected alternative is to purchase high strength sodium hypochlorite solution in bulk



containers. Chemical feed pumps will meter the sodium hypochlorite into the water stream for disinfection prior to the Clearwell.

Chlorine storage and feed pump skids will be housed in a dedicated room with separate ventilation from the rest of the treatment building.

**H. Clearwell On-Site Storage**

It is proposed that Clearwell tank be a domed top tank constructed by the Crom Corporation. This tank will be constructed of pre-stressed concrete walls and a cast-in-place concrete roof and floor. This is the same tank design utilized at the following locations:

<u>James River Water Project</u>	
Ferncliff Water Treatment Plant	2.0 Million Gallons
<u>Frederick County Sanitation Authority (FCSA)</u>	
Diehl Water Treatment Plant	2.0 Million Gallons
James Anderson Water Treatment Plant	3.0 Million Gallons
Northwest Storage Tank	4.0 Million Gallons
<u>Town of Luray, Virginia</u>	
Luray Water Treatment Plant	2.0 Million Gallons
<u>Rapidan Service Authority</u>	
Greene County Water Treatment Plant	1.2 Million Gallons
Wilderness Water Treatment Plant	0.5 Million Gallons

David Saunders of Timmons Group was the engineer of record and/or the principal in charge of all of the above listed tank projects. Each of these tanks was provided with baffle curtains to improve chlorine contact efficiency and mitigate short cycling of water within the tank. Each of these tanks are located at treatment plants and were sized to provide chlorine contact volume plus sufficient volume to permit at least a full day of plant production without shut down due to lack of storage. The Town of Luray tank was sized to permit plant shut down on weekends.

The Crom Corporation has constructed numerous other potable water storage tanks of similar design throughout the Commonwealth of Virginia. The pre-stressed concrete design can accommodate soil backfill loading and therefore permit the finished grade contours to tie into the tank walls.

The tank will be constructed using the following appurtenances and features:

- Fiberglass accessories including dome ventilator, dome access hatch cover, interior ladder, liquid level indicator and eyelid covers over precast vents.
- Aluminum accessories including exterior ladder and dome handrail around access hatch cover.
- Stainless steel accessories including access wall manhole, wall sleeve and modular-seals for overflow pipe and pipe brackets.
- Precast overflow vents with 24/24 polyester screen mesh, minimum three required and PVC dome pipe with concrete curb.

- Concrete base support with thickened floor for overflow pipe.
- Geomembrane baffle curtains
- Fall protection in compliance with OSHA requirements for the exterior and interior ladders.

#### **I. Finished Water Pump Station**

The Finished Water Pump Station will be provided to transfer finished water from the Clearwell and Storage Tank to the water distribution system. The pump station will consist of pumps arranged on a common suction header. There will be one pumping system within the Finished Water Pump Station Building to serve both the East Distribution System and the West Distribution System.

The finished water pump station building will be sized to provide space for five pumps. In the initial configuration, two pumps will be installed. Each pump will be provided with an isolation valve on the suction and an isolation and check valve on the discharge side of the pump. All finished water pumps will be split-case centrifugal pumps with above-grade connections for both suction and discharge piping.

Finished Water Pumps will be sized to deliver peak flows under initial demand conditions (with one pump acting as a spare). This approach allows the replenishment of system storage in the event of a high demand such as a fire or main break. This approach will also allow the efficient use of the Clearwell and Storage Tank and increase operational flexibility of the WTP.

The duty cycle of the Finished Water Pumps will be controlled by a common control panel to assure equal usage and wear of the pump equipment.

#### **J. Process Monitoring Equipment**

Process Monitoring equipment to monitor water quality, flow and levels will be provided. Where appropriate, manual sampling taps will also be provided for equipment calibration. Process monitoring equipment will be assure that water quality requirements of the Virginia Department of Health are met and that the WTP is operating in an efficient manner. Monitoring equipment will be provided to monitor the following:

- Turbidity
  - Raw Water
  - Settled Water
  - Filter Influent (each filter unit)
  - Filter Filtrate (each filter unit)
  - Finished Water
- pH
  - Raw Water
  - Finished Water
- Chlorine Residual
  - Finished Water

- Flow Meters
  - Raw Water
  - Filtrate (each unit)
  - Filtrate (Combined)
  - Finished Water
  - Non-Potable
  
- Level
  - Sedimentation Basin
  - Clearwell and Storage Tank
  - CIP Waste Neutralization Tank
  
- Pressure
  - Raw Water Discharge
  - Finished Water Discharge

Additional process and/or alarm parameters will be monitored for the following process components through their own Control Panels:

- Flocculation Mixing Units
- Filtration Units
- Sanitary Wastewater Pump Station
- Generator

Output data from the Process Monitoring Equipment will be collected in a WTP Supervisory Control and Data Acquisition (SCADA) system which will control the WTP processes. The SCADA system will consist of the following principal components:

- Master Programmable Logic Controller (PLC); the Master PLC will provide control to those WTP process units that do not have their own integral control panels. These components include the following:
  - Raw Water Pump Station
  - Finished Water Pump Station

When appropriate, the Master PLC will provide start/stop signals to other Control Panels and will initiate alarm conditions when process parameters are out of normal operating range.

- Central Processing Unit (CPU) with SCADA software programed specifically to the requirements of the WTP and to collect data for regulatory compliance.

#### **K. Water Treatment Plant Buildings**

The construction of the WTP will include the construction of two buildings as follows:

- WTP Operations and Treatment Building
- Finished Water Pump Station Building

These buildings will be constructed of a combination of pre-engineered metal building components and masonry as indicated on the Project Exhibits. This design configuration offers a very cost effective method of building construction that is suitable for the intended use. Buildings will be constructed with spread footings and cast-in-place slab on grade floors. The foundation and floor design will incorporate covered pipe trenches to accommodate plant process piping and to allow access to plant equipment by operations staff.

Additional building features are as follows:

- **WTP Operations and Treatment Building**

The Operations portion of the building will house spaces for operations staff and operations activities as follows:

- Office Room
- Laboratory Room
- Locker Room
- Bath Room
- Break Room
- Electrical Room

These rooms will be constructed to a one story height and will have split-face CMU block exterior walls with and a metal roof system to match the Treatment portion of the building. Interior walls will either be CMU or metal stud GWB construction. These rooms will be finished as follows:

- Floor: Vinyl Composite Tile
- Walls: Painted Gypsum Wall Board (GWB) or CMU (masonry)
- Ceiling: Acoustical Ceiling Tile (drop in ceiling)

The Treatment portion of the building will house the following spaces for plant process equipment:

- Treatment Room
- Chlorine Feed Room
- Fluoride Feed Room
- Chemical Feed Room (pH Adjustment & Corrosion Inhibition)
- Chlorine Storage Room
- Compressor Equipment Room

The Treatment, Chlorine Feed, and Chemical Feed Rooms will be contained within the footprint of a pre-engineered building frame with metal wall panels and roof system. These spaces will include a heavy duty vinyl-faced insulation blanket with R-19 in the roof and R-13 in the walls. Interior partitions forming the Chlorine Feed and Chemical Feed Rooms will either be of masonry or metal stud and GWB construction.

The Chlorine Feed Room and Compressor Equipment Rooms will be constructed in a similar fashion to the Operations portion of the building and will be finished similar to other portions of the Treatment spaces.

The pre-engineered building frame will be designed to permit the Treatment Room to be expanded in the future without interruption of plant operations.

- **Finished Water Pump Station Building**

The Finished Water Pump Station Building will be constructed of split-faced CMU block walls and have a roof system to match the Operations and Treatment Building. The building will be sized to accommodate expansion of the treatment plant capacity to 8 MGD without further improvement. The building will include the installation of an overhead hoist and rail to permit the removal of pump equipment. Interior building walls will be CMU. Ceilings will be insulated to match the Treatment Room and will be otherwise unfinished.

#### **L. Site Improvements**

The Raw Water Intake Site and the Water Treatment Plant are proposed to be constructed on existing County property adjacent to the Reservoir. Per the plat and deed descriptions, the site statistics are as follows:

PIN:	054-A-1B
Deed Book:	308 Page: 163
Owner:	Prince Edward County
Area:	418 Acres
Frontage:	Reservoir Road, State Route 792; 30' R/W and, Monroe Church Road, State Route 640; 50' R/W

Timmons Group has prepared a detailed plant layout and grading plan as indicated in the Project Exhibits.

Principal Site Improvements include the following:

- Commercial entrance on Reservoir Road
- Access road to treatment plant buildings with a roadway down the center of the site to permit safe and efficient delivery of equipment and chemicals to the WTP and safe access of operations staff.
- Parking to accommodate operations staff and visitors. Parking and sidewalks include requisite provisions for handicap access.
- Graded pad site for future treatment plant building expansion.

The site improvements take existing wetlands and streams into consideration and are proposed to be constructed without adverse impact to wetlands or streams where possible.

The development of the site will take into consideration applicable regulations for erosion & sediment control and related requirements.

#### **M. Process Waste Disposal**

Waste generated from the WTP site will be conveyed by gravity to the onsite Waste Lagoons. The Lagoons will be piped in parallel and will allow captured solids to settle out in the Lagoons. When necessary, settled reject process water may be decanted by gravity from the Lagoons to the Sandy River downstream of the Dam.

Primary waste streams will be as follows:

- Backwash waste water from the Filter Backwash System
- Waste from the Filter Clean-In-Place and Enhanced Flux Maintenance cycles
- Settled Sludge from the Sedimentation Basin
- Miscellaneous waste occurring from plant maintenance, process monitoring equipment, water softener, backflow prevention devices, etc.

#### **N. Sanitary Waste Disposal**

Domestic waste generated from the WTP operations staff will be conveyed by a small sanitary wastewater pump station to an onsite drainfield. The drainfield has been previously approved, but has not yet been constructed.

The Sanitary Wastewater Pump Station will consist of an E-One pump.

## **2.4 Project 3, 3A, & 4 – Finished Water Pipeline Facilities**

Finished Water Pipelines will be constructed to convey finished water from the Water Treatment Plant to the system's customers. The pipeline construction will require numerous road and environmental feature crossings that will require permitting by the Virginia Department of Transportation (VDOT) and the U.S. Army Corps of Engineers. Where practical, environmental feature crossings will be constructed by Horizontal Directional Drilling (HDD) method with the use of either Steel or HDPE pipe.

In areas where the pipelines cannot be installed within VDOT right-of-ways, construction and use of these pipelines will require the acquisition of easements from all impacted property owners.

Where operating pressures and installation conditions allow, the majority of the pipeline installed by the open-cut method will be constructed of Polyvinyl Chloride (PVC) pipe manufactured in accordance with AWWA C900. The appropriate pressure class of PVC pipe will be selected for each section of the alignment as based on buildout working pressures. Prince Edward County may elect to use higher pressure class pipe, or ductile iron pipe, for increased reliability, but this will require additional material and construction costs not currently reflected in the project pricing.

The pipeline will be provided with fire hydrants and butterfly valves or gate valves to aid in maintenance and operation of the pipelines. Air release valves will be provided at high points along the pipeline.

These pipelines will include the following sections:

### **Project 3 – Finished Water Pipeline Facilities: East Distribution System**

Finished Water Pipelines heading East will be constructed to convey finished water from the Water Treatment Plant to demand centers within Prince Edward and to the Nottoway County line. The initial phase of construction will include facilities to serve the Towns of Crewe and Burkeville in Nottoway County, along with the DGS facilities. The Finished Water Pipelines will be sized to convey finished water at a peak rate of 2.2 MGD (approximately 1,500 GPM). The total pipeline length to the county line is proposed to be approximately 33,300-feet consisting of 16-inch pipeline.

Under initial conditions, there will not be an elevated water storage tank on the East Distribution System to maintain static pressure while the finished water pumps are off. Therefore, a triplex booster pump station will be installed to run continuously to maintain the required pressure in the main.

At buildout, it is planned that the Heartland Innovative Technology (HIT) Park tank will have been constructed and connected to the East Distribution System. If the HIT Park tank is constructed with a sufficient high water elevation, then the booster pump station will not be required.

### **Project 3A – Finished Water Pipeline Facilities: Rice Distribution System**

A portion of the Finished Water Pipelines will branch off of the East Distribution System and follow Fairlea Road to serve the Community of Rice. Approximately 3,000-feet of 12-inch pipeline will run along Fairlea Road and Rices Depot Road and terminate at Route 460.

### **Project 4 – Finished Water Pipeline Facilities: West Distribution System**

Finished Water Pipelines heading West will be constructed to convey finished water from the Water Treatment Plant to demand centers within Prince Edward County. The initial phase of construction will include facilities to serve the Heartland Innovative Technology (HIT) Park, the Town of Farmville, and Hampden Sydney. The Finished Water Pipelines will be sized to convey finished water at a peak rate of 6.5 MGD (approximately 4,500 GPM) to the West at buildout. To service Hampden Sydney, a new booster pump station is proposed. The total pipeline length is proposed to be approximately 52,000-feet consisting of approximately 12,000-feet of 20-inch pipeline and approximately 40,000-feet of 12-inch pipeline. The main will down size from 20-inch to 12-inch near the intersection of Route 460 and the Bush River.

The booster pump station will sit on an approximately 0.25 acre site with a gravel drive and perimeter fencing. The booster pumps will be housed in a precast, concrete building with double doors, unit heater, and exhaust fan. The station will consist of a triplex booster pump skid with each pump rated for 500 GPM. Included in the construction is site piping to connect the pump skid to the west water main, necessary isolation valves, and an emergency pump connection. An autodialer for dialing out during an alarm condition is included in the design. A generator has not been incorporated into the pricing, but can be included as an adder to the pricing schedule if desired.

### **Hydraulic Modeling Results**

Timmons Group performed preliminary hydraulic modeling of the water distribution system to size the finished water pumps and ensure that the pressure requirements are met per the Virginia Department of Health – Office of Drinking Water (VDH) standards. That is, 20 pounds per square inch (psi) of pressure must be maintained in the system at all times. The water model was developed using Bentley's WaterGEMS V8i software.

Appendix **Section 2-3** presents the hydraulic modeling results. A water model layout sheet presenting the junctions and pipes in the model, as well as modeling assumptions, is provided for both the eastern and western alignments. Two model scenarios were simulated: (1) A junction report table and pipe report table is presented for the eastern alignment at 500 GPM increment demands, from 0 GPM to 2,500 GPM, all simulated under steady state conditions. (2) A buildout scenario for the eastern and western alignments was simulated at one steady-state condition with 1,500 GPM demand at Crewe, 500 GPM demand at the Route 15 tank (Hampden-Sydney), and a 4,000 GPM demand to the HIT Park. The junction tables present elevation, hydraulic grade, and working pressure. The pipe tables present pipe length, inner diameter, Hazen-Williams C factor, flow rate, velocity, and section headloss. Results indicate the finished water pumps have been sized appropriately and pressure classes selected for each section of water main alignment are also adequate.



## **2.5 Stormwater Management**

The following Timmons Group's Stormwater Management professionals are dedicated to developing sites that are sensitive to low-impact and sustainable development and, as well, are comfortable for human use. By incorporating the latest technologies into our sites, we design sites that are responsible and functional. We have considerable experience implementing Low Impact Development (LID) measures and sustainable design practices. In fact, Timmons Group has completed comprehensive watershed management studies incorporating the most progressive BMP technologies and LID practices available.

The southeast portion of the proposed WTP Site has been reserved for Stormwater Management features.

The design concept approach will be based on the following:

### **A. Water Quality Analysis**

PER 9VAC25-870-63 and 9VAC25-870-65 of the Virginia Stormwater Management Program regulations, water quality requirements for the project will be determined using the Virginia Runoff Reduction Method (VRRM) and the "Redevelopment" design criteria. The soil/area data will be determined using NRCS TR-55 methodology and input into the VRRM Redevelopment spreadsheet (v3.0) to obtain the phosphorous reduction requirements.

### **B. Water Quantity Analysis**

PER 9VAC25-870-66 of the Virginia Stormwater Management Regulations, when concentrated stormwater from a development is discharged to a natural stormwater conveyance system, the maximum peak flow rate from the one year 24-hour storm flowing from the land disturbing activity shall be determined in accordance with the Energy Balance equation. Portions of the site will be evaluated for options to minimize impacts and to reduce or eliminate runoff from disturbed areas using sheet flow or soil amendments. Portions of the site that are drained by concentrated discharge from either pipes or ditches will be evaluated at the point of discharge for compliance with the channel and flood protection criteria.

## 2.6 Other Design Assumptions

The following are additional assumptions taken into consideration while configuring the Project design and pricing included in this proposal:

- **WTP Site Geotechnical Conditions**
  - The WTP site contains suitable soils for the construction of all buildings, basins and tanks on conventional spread footings.
  - At the WTP site, no consideration for undercut of unsuitable soils is included in this proposal.
  - At the WTP site, no consideration for rock removal is included in this proposal.
  - At the WTP site, groundwater will not be encountered in excavations.
  
- **Raw Water Intake Site Geotechnical Conditions**
  - The site contains suitable soils for the construction of all buildings, basins and tanks on conventional spread footings.
  - At the site, no consideration for undercut of unsuitable soils is included in this proposal.
  - At the site, no consideration for rock removal is included in this proposal.
  - At the site, groundwater will be encountered in excavations.
  - The foundation for the intake screens will be supported by driven piles.
  
- **Property Acquisition**
  - The County of Prince Edward will acquire right-of-ways in a timely manner to permit the project to be constructed without delay.
  
- **County Controlled Issues**
  - The County of Prince Edward will resolve all Zoning, Comprehensive Plan, and other County regulated issues that may impact the use of sites and right-of-ways indicated in this proposal. This includes applicable Nottoway County regulated issues.

## SECTION 2 – SUPPORTING CALCULATIONS

## **SECTION 2-1: Water Treatment Calculations**

## PROJECT 1 - INTAKE AND RAW WATER PUMP STATION

<b>RAW WATER INTAKE</b>	
NUMBER OF INTAKE SCREENS	3 -
INTAKE SCREEN STYLE	FULL BARREL STAINLESS STEEL
DESIGN FLOW PER SCREEN	8 MGD
INITIAL FLOW PER SCREEN	2 MGD
SCREEN LENGTH	15 FT
SCREEN DIAMETER	4.5 FT
SCREEN SIZE	1.0 MM
INTAKE VELOCITY	< 0.25 FT/S
INTAKE PIPE DIAMETER	24 INCH
VELOCITY (HIGH END)	3.9 FT/S
VELOCITY (LOW END)	1.0 FT/S
<b>RAW WATER PUMP STATION</b>	
NUMBER OF TOTAL PUMPS	4 -
NUMBER OF ACTIVE PUMPS AT BUILDOUT	3 -
NUMBER OF TOTAL PUMPS AT INITIAL PHASE	2 -
PUMP CAPACITY	2.67 MGD
PUMP CAPACITY	1,900 GPM
PUMP SET POINT AT INITIAL PHASE	2.0 MGD
PUMP SET POINT AT INITIAL PHASE	1,400 GPM
PUMP STYLE	CENTRIFUGAL SUBMERSIBLE
PUMP OPERATION	VFD
DISCHARGE PIPE DIAMETER	12 INCH
VELOCITY (HIGH END)	5.3 FT/S
VELOCITY (LOW END)	3.9 FT/S
<b>RAW WATER MAIN</b>	
PIPE DIAMETER	20 INCH
VELOCITY (HIGH END)	5.7 FT/S
VELOCITY (LOW END)	1.4 FT/S

**PROJECT 2 - WATER TREATMENT PLANT**

**OXIDATION CONTACT CHAMBER**

NUMBER OF TRAINS AT BUILDOUT	4 -
NUMBER OF TRAINS AT INITIAL PHASE	2 -
DESIGN CAPACITY PER TRAIN	2 MGD
LENGTH	8 FT
WIDTH	16 FT
SIDE WATER DEPTH	15 FT
VOLUME	1,920 FT <sup>3</sup>
VOLUME	14,362 GAL
HYDRAULIC RESIDENCE TIME	10 MIN
ADD BAFFLES TO TANK FOR PLUG LIKE FLOW	1 -

**RAPID MIX CHAMBER**

NUMBER OF TRAINS AT BUILDOUT	4 -	
NUMBER OF TRAINS AT INITIAL PHASE	2 -	
DESIGN CAPACITY PER TRAIN	2 MGD	
LENGTH	4.75 FT	
WIDTH	4.75 FT	
SIDE WATER DEPTH	5.5 FT	
VOLUME	124 FT <sup>3</sup>	
VOLUME	928 GAL	
HYDRAULIC RESIDENCE TIME	0.7 MIN	
HYDRAULIC RESIDENCE TIME	40 S	
MOTOR POWER	2 HP	
MOTOR POWER	1100 FT-LB/S	
ABSOLUTE VISCOSITY OF WATER	2.73E-05 LB-S/FT <sup>2</sup>	
VELOCITY GRADIENT, G	570 FPS/FT (1/S)	
IMPELLER SPEED	100 RPM	
IMPELLER TYPE	TURBINE, 6 CURVED BLADES	
IMPELLER COEFFICIENT	4.8 -	
IMPELLER DIAMETER	1.9 FT	
REYNOLDS NUMBER	432,681 -	> 10,000 Re, OK
USE VERTICAL BAFFLES	X4 @ 0.1D OF TANK	

**PRINCE EDWARD COUNTY  
SANDY RIVER WATER PROJECT  
SUPPORTING CALCULATIONS FOR 15% DESIGN**

**TIMMONS GROUP  
11/11/2022**

**FLOCCULATION BASIN**

NUMBER OF TRAINS AT BUILDOUT	4 -
NUMBER OF TRAINS AT INITIAL PHASE	2 -
DESIGN CAPACITY PER TRAIN	2 MGD
NUMBER OF STAGES	2 -
FLOCCULATION TYPE	TAPERED FLOCCULATION
FLOCCULATOR OPERATION	VFD

**FIRST STAGE**

LENGTH	11.5 FT
WIDTH	16 FT
SIDE WATER DEPTH	15 FT
VOLUME	2,760 FT <sup>3</sup>
VOLUME	20,645 GAL
HYDRAULIC RESIDENCE TIME	15 MIN
MOTOR POWER	1 HP
MOTOR POWER	550 FT-LB/S
ABSOLUTE VISCOSITY OF WATER	2.73E-05 LB-S/FT <sup>2</sup>
VELOCITY GRADIENT, G	85 FPS/FT (1/S)

**SECOND STAGE**

LENGTH	11.5 FT
WIDTH	16 FT
SIDE WATER DEPTH	15 FT
VOLUME	2,760 FT <sup>3</sup>
VOLUME	20,645 GAL
HYDRAULIC RESIDENCE TIME	15 MIN
MOTOR POWER	0.125 HP
MOTOR POWER	68.75 FT-LB/S
ABSOLUTE VISCOSITY OF WATER	2.73E-05 LB-S/FT <sup>2</sup>
VELOCITY GRADIENT, G	30 FPS/FT (1/S)

**FLOCCULATION SUMMARY**

TOTAL HRT	30 MIN
MEAN VELOCITY GRADIENT	43 1/S
GT VALUE	75,808 -
HORIZONTAL VELOCITY	46.4 FT/S

**SEDIMENTATION BASIN**

NUMBER OF TRAINS AT BUILDOUT	4 -
NUMBER OF TRAINS AT INITIAL PHASE	2 -
DESIGN CAPACITY PER TRAIN	2 MGD
SETTLING TYPE	INCLINED PLATE SETTLER
LENGTH	40 FT
WIDTH	16 FT
SIDE WATER DEPTH	15 FT
VOLUME	9,600 FT <sup>3</sup>
VOLUME	71,808 GAL
HYDRAULIC RESIDENCE TIME	52 MIN
SURFACE AREA	640 FT <sup>2</sup>
CROSS SECTIONAL AREA	240 FT <sup>2</sup>
HYDRAULIC SURFACE LOADING RATE	3,125 GPD/FT <sup>2</sup>
HORIZONTAL VELOCITY	46 FT/HR
LENGTH TO WIDTH RATIO	2.5 -

PLATE LOADING RATE	0.3 GPM/SQ FT
PLATE EFFICIENCY FACTOR	80 %
PLATE ANGLE	55 DEGREES
PROJECTED EFFECTIVE PLATE AREA PER TRAIN	4630 SQ FT
NUMBER OF PLATES PER TRAIN	232 -

**MEMBRANE MICROFILTRATION**

NUMBER OF TRAINS AT BUILDOUT	4 -
NUMBER OF TRAINS AT INITIAL PHASE	2 -
NUMBER OF MEMBRANE MODULES PER TRAIN	2 -
DESIGN CAPACITY PER MODULE	1 MGD

**GRANULAR ACTIVATED CARBON (GAC) FILTRATION**

NUMBER OF TANKS AT BUILDOUT	8 -
NUMBER OF TANKS AT INITIAL PHASE	2 -
CAPACITY PER TANK (PRESSURE VESSEL)	1 MGD
TANK DIAMETER	12 FT
HYDRAULIC CROSS-SECTIONAL LOADING RATE	6.1 GPM/SQ FT
TOTAL TANK HEIGHT	21 FT
GAC MEDIA BED DEPTH	104 INCH
EMPTY BED CONTACT TIME (EBCT)	10.6 MINUTES



**DISINFECTION**

CHEMICAL	SODIUM OR POTASSIUM PERMANGANATE
STORAGE/DELIVERY TYPE	55 GAL DRUMS, 275 GAL TOTES, OR DRY

**DISINFECTION**

CHEMICAL	SODIUM HYPOCHLORITE
STORAGE/DELIVERY TYPE	275 GALLON TOTES

**CORROSION CONTROL**

CHEMICAL	ORTHOPHOSPHATE
STORAGE/DELIVERY TYPE	55 GALLOON DRUMS

**COAGULANT**

CHEMICAL	ALUM, FERRIC SULFATE, OR PACL
STORAGE/DELIVERY TYPE	BULK DELIVERY

**FLUORIDATION**

CHEMICAL	SODIUM FLUORIDE
STORAGE/DELIVERY TYPE	SATURATOR

**pH ADJUSTMENT**

CHEMICAL	SODA ASH OR SODIUM HYDROXIDE
STORAGE/DELIVERY TYPE	55 GAL DRUMS, 275 GAL TOTES, OR DRY

**PRINCE EDWARD COUNTY  
SANDY RIVER WATER PROJECT  
SUPPORTING CALCULATIONS FOR 15% DESIGN**

**TIMMONS GROUP  
11/11/2022**

**CLEARWELL**

SWD	19.5 FT
DIAMETER	95 FT
TOTAL VOLUME	1.0 MMG

**DISINFECTION AT 2 MGD**

VOLUME REQUIRED FOR DISINFECTION	0.15 MMG
HRT	108 MIN
BAFFLING FACTOR	0.5 -
T10	54 MIN
TEMP	5 DEG C
pH	8 -
CHLORINE RESIDUAL (AFTER CONTACT TIME)	1 MG/L
CT PROVIDED	54 MG-MIN/L
CT VALUE PER TABLE 500.3 (12VAC5-590-500)	216 MG-MIN/L
INACTIVATION RATIO	0.3 -
REQUIRED ADDITIONAL GIARDIA INACTIVATION	0.5 LOG
TOTAL LOGS INACTIVATION ACHIEVED	0.75 LOG
VOLUME AVAILABLE FOR SYSTEM STORAGE	0.85 MMG

**DISINFECTION AT 8 MGD**

VOLUME REQUIRED FOR DISINFECTION	0.6 MMG
HRT	108 MIN
BAFFLING FACTOR	0.5 -
T10	54 MIN
TEMP	5 DEG C
pH	8 -
CHLORINE RESIDUAL (AFTER CONTACT TIME)	1 MG/L
CT PROVIDED	54 MG-MIN/L
CT VALUE PER TABLE 500.3 (12VAC5-590-500)	216 MG-MIN/L
INACTIVATION RATIO	0.3 -
REQUIRED ADDITIONAL GIARDIA INACTIVATION	0.5 LOG
TOTAL LOGS INACTIVATION ACHIEVED	0.75 LOG
VOLUME AVAILABLE FOR SYSTEM STORAGE	0.25 MMG

**PRINCE EDWARD COUNTY  
SANDY RIVER WATER PROJECT  
SUPPORTING CALCULATIONS FOR 15% DESIGN**

**TIMMONS GROUP  
11/11/2022**

**FINISHED WATER PUMP STATION**

NUMBER OF PUMPS AT BUILDOUT	5 -
NUMBER OF PUMPS AT INITIAL PHASE	2
STATION CAPACITY AT BUILDOUT	6,000 GPM
INDIVIDUAL PUMP CAPACITY	1,500 GPM
PUMP STYLE	SPLIT-CASE CENTRIFUGAL
PUMP OPERATION	VFD

COMMON SUCTION PIPE DIAMETER	24 INCH
VELOCITY (HIGH END)	4.3 FT/S
VELOCITY (LOW END)	1.1 FT/S

INDIVIDUAL PUMP HEADER DIAMETER	12 INCH
VELOCITY	4.3 FT/S

COMMON DISCHARGE HEADER	20 INCH
VELOCITY (HIGH END)	6.1 FT/S
VELOCITY (LOW END)	1.5 FT/S

**WASTE LAGOON**

NUMBER OF LAGOONS	2
VOLUME OF ONE LAGOON	105,000 GALLONS
DISCHARGE	SANDY RIVER

## SECTION 2-2: Electrical Load List

	2 MGD			4 MGD			8 MGD		
	N/A	Amps	AMPS	N/A	Amps	AMPS	N/A	Amps	AMPS
WATER HEATER	N/A	65	0	N/A	65	0	N/A	65	0
HEATER-5	6.8kW	9	9	6.8kW	9	9	6.8kW	9	9
MIXER 1	5	7.6	7.6	5	7.6	7.6	5	7.6	7.6
MIXER 2	5	7.6	7.6	5	7.6	7.6	5	7.6	7.6
MIXER 3	480						5		
MIXER 4	480						5		
FILTRATOR 1	480	1.5	3	3	3	3	1.5	3	3
FILTRATOR 2	480	1.5	3	3	3	3	1.5	3	3
FILTRATOR 3	480	1	2.1	2.1	2.1	2.1	1	2.1	2.1
FILTRATOR 4	480	1	2.1	2.1	2.1	2.1	1	2.1	2.1
FILTRATOR 5	480						1.5		
FILTRATOR 6	480						1.5		
FILTRATOR 7	480						1		
FILTRATOR 8	480						1		
VACUUM 1	480	0.25	0.9	0.9	0.9	0.9	0.25	0.9	0.9
VACUUM 2	480	0.25	0.9	0.9	0.9	0.9	0.25	0.9	0.9
VACUUM 3	480						0.25		
VACUUM 4	480						0.25		
FILTRATION UNIT 1	480	60	75	75	75	75	60	75	75
FILTRATION UNIT 2	480	60	75	75	75	75	60	75	75
FILTRATION UNIT 3	480								
FILTRATION UNIT 4	480								
MP SKID	480	10	14	0	0	0	10	14	0
MP SKID HEATER	480	45 kW	54	0	0	0	45 kW	54	0
ASH RF SKID Pump-1	480	30	34	0	0	0	30	34	0
ASH RF SKID Pump-2	480	30	34	0	0	0	30	34	0
SH MIXER	120	0.33	1	1	1	1	30	34	0
WATER-6	480	6.8kW	9	9	9	9	6.8kW	9	9
WATER HEATER	480		65	0	0	0		65	0
DR LIGHTING	0		0	0	0	0		0	0
WATER-7	480	6.8kW	9	9	9	9		9	9
WATER HEATER	480		65	0	0	0		65	0
MPRESSOR 1	480	7.5	11	11	11	11		11	11
MPRESSOR 2	480	7.5	11	0	0	0		11	0
MPRESSOR 3	480	7.5	11	0	0	0		11	0
WATER-8	480	6.8kW	9	9	9	9	6.8kW	9	9

	N/A	2 MGD			4 MGD			8 MGD		
	N/A	Amps	AMPS	N/A	Amps	AMPS	N/A	Amps	AMPS	
WATER HEATER	480	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
HEATER-5	480	54kW	0	0	65	0	6.8kW	65	0	
MIXER 1	480	6.8kW	9	9	9	9	6.8kW	9	9	
MIXER 2	480	5	7.6	7.6	7.6	7.6	5	7.6	7.6	
MIXER 3	480	5	7.6	7.6	7.6	7.6	5	7.6	7.6	
MIXER 4	480									
FILTRATOR 1	480	1.5	3	3	3	3	1.5	3	3	
FILTRATOR 2	480	1.5	3	3	3	3	1.5	3	3	
FILTRATOR 3	480	1	2.1	2.1	2.1	2.1	1	2.1	2.1	
FILTRATOR 4	480	1	2.1	2.1	2.1	2.1	1	2.1	2.1	
FILTRATOR 5	480									
FILTRATOR 6	480									
FILTRATOR 7	480									
FILTRATOR 8	480									
VACUUM 1	480	0.25	0.9	0.9	0.9	0.9	0.25	0.9	0.9	
VACUUM 2	480	0.25	0.9	0.9	0.9	0.9	0.25	0.9	0.9	
VACUUM 3	480									
VACUUM 4	480									
FILTRATION UNIT 1	480	60	75	75	75	75	60	75	75	
FILTRATION UNIT 2	480	60	75	75	75	75	60	75	75	
FILTRATION UNIT 3	480									
FILTRATION UNIT 4	480									
MP SKID	480	10	14	0	0	0	10	14	0	
MP SKID HEATER	480	45 kW	54	0	0	0	45 kW	54	0	
ASH RF SKID Pump-1	480	30	34	0	0	0	30	34	0	
ASH RF SKID Pump-2	480	30	34	0	0	0	30	34	0	
SH MIXER	120	0.33	1	1	1	1	30	34	0	
WATER-6	480	6.8kW	9	9	9	9	6.8kW	9	9	
WATER HEATER	480		65	0	0	0		65	0	
DR LIGHTING	0		0	0	0	0		0	0	
WATER-7	480	6.8kW	9	9	9	9		9	9	
WATER HEATER	480		65	0	0	0		65	0	
MPRESSOR 1	480	7.5	11	11	11	11		11	11	
MPRESSOR 2	480	7.5	11	0	0	0		11	0	
MPRESSOR 3	480	7.5	11	0	0	0		11	0	
WATER-8	480	6.8kW	9	9	9	9	6.8kW	9	9	





Equipment	4 MGD	2 MGD	4 MGD	2 MGD	8 MGD
FAST COMPRESSOR SYSTEM	15	15	15	15	15
FILTER	6.8kW	6.8kW	6.8kW	6.8kW	6.8kW
RSIBLE PUMP 1	60	60	60	60	60
RSIBLE PUMP 2	60	60	60	60	60
RSIBLE PUMP 3	60	60	60	60	60
RSIBLE PUMP 4	60	60	60	60	60
Water					
Water (80% Loaded)					
<b>TOTALS</b>	<b>195</b>	<b>135</b>	<b>195</b>	<b>135</b>	<b>255</b>
	Phase 2 - 4 MGD	Phase 1 - 2 MGD	Phase 2 - 4 MGD	Phase 1 - 2 MGD	Phase 3 8 MGD
	Connected AMPS	Connected AMPS	Connected AMPS	Connected AMPS	Connected AMPS
	301	223	301	223	223
	Running AMPS	Running AMPS	Running AMPS	Running AMPS	Running AMPS
	78	145	78	145	78
	Generator	Generator	Generator	Generator	Generator
	223	145	223	145	223
	Utility	Utility	Utility	Utility	Utility
	223	145	223	145	223
	Estimated Gen Size: 250 kW				
	Estimated Gen Size: 150 kW				

## **SECTION 2-3: Hydraulic Modeling Results**





EAST COLONIAL TRAIL HIGH

NOTTOWAY COUNTY  
PRINCE EDWARD COUNTY

HIGH BRIDGE TRAIL

MORAN ROAD

J-519

J-518

J-520

DWP RW

**Scenario: Static (0 GPM Demand)**  
**Current Time Step: 0.000 h**  
**FlexTable: Junction Table**

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-500	328.49	0	629.99	130.45
J-500A	305.16	0	629.99	140.54
J-500B	348.93	0	629.99	121.60
J-501	396.06	0	629.99	101.21
J-502	370.67	0	629.99	112.19
J-502A	360.89	0	629.99	116.43
J-503	338.04	0	629.99	126.31
J-503A	362.12	0	629.99	115.89
J-504	392.98	0	629.99	102.54
J-505	466.48	0	629.99	70.74
J-506	389.57	0	629.99	104.02
J-506A	375.45	0	629.99	110.13
J-507	486.91	0	629.99	61.90
J-508	383.80	0	629.99	106.52
J-509	476.48	0	629.99	66.42
J-510	397.99	0	629.99	100.38
J-511	465.57	0	629.99	71.14
J-512	396.98	0	629.99	100.81
J-513	477.40	0	629.99	66.02
J-514	490.50	0	629.99	60.35
J-515	507.12	0	629.99	53.16
J-516	428.11	0	629.99	87.34
J-517	471.50	0	629.99	68.57
J-518	418.56	0	629.99	91.48
J-519	474.93	0	629.99	67.09
J-520	575.48	0	629.99	23.58
J-520A	560.63	0	629.99	30.01
J-521	447.62	0	629.99	78.90
J-522	505.00	0	629.99	54.08
J-523	456.53	0	629.99	75.05
J-524	545.00	0	629.99	36.77
J-525	427.09	0	629.99	87.79
J-526	509.87	0	629.99	51.97
J-527	516.04	0	629.99	49.30
J-528	510.67	0	629.99	51.62
J-529	494.83	0	629.99	58.48
J-530	470.29	0	629.99	69.10
J-531	541.54	0	629.99	38.27
J-532	496.05	0	629.99	57.95
J-533	521.79	0	629.99	46.81
J-534	474.29	0	629.99	67.36
J-535	501.86	0	629.99	55.44
J-WTP	374.00	0	629.99	110.75

**Scenario: 500 GPM Demand from WTP**  
**Current Time Step: 0.000 h**  
**FlexTable: Junction Table**

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-500	328.49	0	640.87	135.15
J-500A	305.16	0	640.77	145.20
J-500B	348.93	0	640.41	126.11
J-501	396.06	0	640.09	105.58
J-502	370.67	0	639.55	116.33
J-502A	360.89	0	639.47	120.53
J-503	338.04	0	639.24	130.31
J-503A	362.12	0	638.95	119.77
J-504	392.98	0	638.67	106.30
J-505	466.48	0	638.53	74.44
J-506	389.57	0	638.33	107.63
J-506A	375.45	0	638.18	113.67
J-507	486.91	0	638.06	65.39
J-508	383.80	0	637.85	109.92
J-509	476.48	0	637.73	69.76
J-510	397.99	0	637.57	103.66
J-511	465.57	0	637.46	74.37
J-512	396.98	0	637.36	104.00
J-513	477.40	0	637.08	69.09
J-514	490.50	0	636.95	63.36
J-515	507.12	0	636.54	56.00
J-516	428.11	0	636.37	90.10
J-517	471.50	0	636.24	71.27
J-518	418.56	0	635.82	94.00
J-519	474.93	0	635.49	69.47
J-520	575.48	0	634.62	25.59
J-520A	560.63	0	634.11	31.79
J-521	447.62	0	633.42	80.39
J-522	505.00	0	633.27	55.50
J-523	456.53	0	633.14	76.41
J-524	545.00	0	632.91	38.04
J-525	427.09	0	632.48	88.87
J-526	509.87	0	632.29	52.97
J-527	516.04	0	632.12	50.22
J-528	510.67	0	632.03	52.51
J-529	494.83	0	631.88	59.29
J-530	470.29	0	631.78	69.87
J-531	541.54	0	631.04	38.72
J-532	496.05	0	630.72	58.27
J-533	521.79	0	630.51	47.04
J-534	474.29	0	630.15	67.43
J-535	501.86	0	629.99	55.44
J-WTP	374.00	-500	640.93	115.49

**Scenario: 1,000 GPM Demand from WTP**  
**Current Time Step: 0.000 h**  
**FlexTable: Junction Table**

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-500	328.49	0	669.27	147.44
J-500A	305.16	0	668.91	157.38
J-500B	348.93	0	667.59	137.87
J-501	396.06	0	666.46	116.99
J-502	370.67	0	664.49	127.12
J-502A	360.89	0	664.21	131.23
J-503	338.04	0	663.38	140.76
J-503A	362.12	0	662.32	129.88
J-504	392.98	0	661.33	116.10
J-505	466.48	0	660.81	84.08
J-506	389.57	0	660.10	117.05
J-506A	375.45	0	659.55	122.92
J-507	486.91	0	659.12	74.50
J-508	383.80	0	658.37	118.79
J-509	476.48	0	657.92	78.50
J-510	397.99	0	657.36	112.22
J-511	465.57	0	656.96	82.80
J-512	396.98	0	656.60	112.33
J-513	477.40	0	655.58	77.09
J-514	490.50	0	655.12	71.22
J-515	507.12	0	653.65	63.40
J-516	428.11	0	653.01	97.30
J-517	471.50	0	652.55	78.33
J-518	418.56	0	651.02	100.58
J-519	474.93	0	649.84	75.68
J-520	575.48	0	646.71	30.82
J-520A	560.63	0	644.85	36.44
J-521	447.62	0	642.39	84.26
J-522	505.00	0	641.82	59.20
J-523	456.53	0	641.38	79.98
J-524	545.00	0	640.55	41.34
J-525	427.09	0	639.00	91.68
J-526	509.87	0	638.30	55.57
J-527	516.04	0	637.66	52.62
J-528	510.67	0	637.34	54.80
J-529	494.83	0	636.80	61.42
J-530	470.29	0	636.44	71.89
J-531	541.54	0	633.77	39.90
J-532	496.05	0	632.64	59.09
J-533	521.79	0	631.87	47.63
J-534	474.29	0	630.57	67.62
J-535	501.86	0	629.99	55.44
J-WTP	374.00	-1,000	669.50	127.85

**Scenario: 1,500 GPM Demand from WTP**  
**Current Time Step: 0.000 h**  
**FlexTable: Junction Table**

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-500	328.49	0	713.22	166.46
J-500A	305.16	0	712.47	176.22
J-500B	348.93	0	709.66	156.07
J-501	396.06	0	707.28	134.65
J-502	370.67	0	703.09	143.82
J-502A	360.89	0	702.50	147.80
J-503	338.04	0	700.75	156.93
J-503A	362.12	0	698.50	145.53
J-504	392.98	0	696.40	131.28
J-505	466.48	0	695.30	99.00
J-506	389.57	0	693.78	131.62
J-506A	375.45	0	692.62	137.23
J-507	486.91	0	691.71	88.60
J-508	383.80	0	690.12	132.53
J-509	476.48	0	689.17	92.02
J-510	397.99	0	687.98	125.47
J-511	465.57	0	687.13	95.86
J-512	396.98	0	686.38	125.21
J-513	477.40	0	684.22	89.48
J-514	490.50	0	683.24	83.39
J-515	507.12	0	680.12	74.85
J-516	428.11	0	678.76	108.44
J-517	471.50	0	677.79	89.25
J-518	418.56	0	674.56	110.76
J-519	474.93	0	672.05	85.29
J-520	575.48	0	665.42	38.91
J-520A	560.63	0	661.48	43.63
J-521	447.62	0	656.26	90.27
J-522	505.00	0	655.07	64.93
J-523	456.53	0	654.12	85.49
J-524	545.00	0	652.36	46.45
J-525	427.09	0	649.07	96.04
J-526	509.87	0	647.60	59.59
J-527	516.04	0	646.25	56.33
J-528	510.67	0	645.57	58.36
J-529	494.83	0	644.43	64.72
J-530	470.29	0	643.66	75.01
J-531	541.54	0	637.99	41.73
J-532	496.05	0	635.60	60.38
J-533	521.79	0	633.96	48.53
J-534	474.29	0	631.22	67.90
J-535	501.86	0	629.99	55.44
J-WTP	374.00	-1,500	713.71	146.98

**Scenario: 2,000 GPM Demand from WTP**  
**Current Time Step: 0.000 h**  
**FlexTable: Junction Table**

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-500	328.49	0	771.79	191.80
J-500A	305.16	0	770.50	201.33
J-500B	348.93	0	765.73	180.33
J-501	396.06	0	761.66	158.18
J-502	370.67	0	754.53	166.07
J-502A	360.89	0	753.52	169.87
J-503	338.04	0	750.54	178.47
J-503A	362.12	0	746.70	166.39
J-504	392.98	0	743.14	151.50
J-505	466.48	0	741.25	118.88
J-506	389.57	0	738.67	151.04
J-506A	375.45	0	736.70	156.30
J-507	486.91	0	735.14	107.39
J-508	383.80	0	732.43	150.84
J-509	476.48	0	730.82	110.04
J-510	397.99	0	728.78	143.12
J-511	465.57	0	727.34	113.26
J-512	396.98	0	726.06	142.38
J-513	477.40	0	722.38	105.99
J-514	490.50	0	720.70	99.60
J-515	507.12	0	715.39	90.11
J-516	428.11	0	713.08	123.29
J-517	471.50	0	711.43	103.81
J-518	418.56	0	705.92	124.33
J-519	474.93	0	701.65	98.09
J-520	575.48	0	690.35	49.70
J-520A	560.63	0	683.63	53.22
J-521	447.62	0	674.74	98.26
J-522	505.00	0	672.71	72.56
J-523	456.53	0	671.10	92.84
J-524	545.00	0	668.10	53.26
J-525	427.09	0	662.50	101.85
J-526	509.87	0	659.99	64.95
J-527	516.04	0	657.69	61.29
J-528	510.67	0	656.53	63.11
J-529	494.83	0	654.59	69.12
J-530	470.29	0	653.29	79.17
J-531	541.54	0	643.63	44.17
J-532	496.05	0	639.55	62.08
J-533	521.79	0	636.76	49.74
J-534	474.29	0	632.09	68.27
J-535	501.86	0	629.99	55.44
J-WTP	374.00	-2,000	772.62	172.47

**Scenario: 2,500 GPM Demand from WTP**  
**Current Time Step: 0.000 h**  
**FlexTable: Junction Table**

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-500	328.49	0	844.36	223.19
J-500A	305.16	0	842.41	232.44
J-500B	348.93	0	835.19	210.38
J-501	396.06	0	829.04	187.33
J-502	370.67	0	818.26	193.65
J-502A	360.89	0	816.73	197.22
J-503	338.04	0	812.22	205.16
J-503A	362.12	0	806.43	192.23
J-504	392.98	0	801.04	176.55
J-505	466.48	0	798.19	143.51
J-506	389.57	0	794.29	175.10
J-506A	375.45	0	791.31	179.92
J-507	486.91	0	788.94	130.67
J-508	383.80	0	784.86	173.52
J-509	476.48	0	782.42	132.36
J-510	397.99	0	779.34	164.99
J-511	465.57	0	777.16	134.81
J-512	396.98	0	775.22	163.65
J-513	477.40	0	769.65	126.45
J-514	490.50	0	767.13	119.68
J-515	507.12	0	759.10	109.02
J-516	428.11	0	755.60	141.69
J-517	471.50	0	753.10	121.84
J-518	418.56	0	744.78	141.14
J-519	474.93	0	738.33	113.96
J-520	575.48	0	721.24	63.07
J-520A	560.63	0	711.08	65.09
J-521	447.62	0	697.64	108.17
J-522	505.00	0	694.58	82.02
J-523	456.53	0	692.14	101.94
J-524	545.00	0	687.61	61.70
J-525	427.09	0	679.13	109.05
J-526	509.87	0	675.34	71.59
J-527	516.04	0	671.87	67.42
J-528	510.67	0	670.11	68.98
J-529	494.83	0	667.17	74.56
J-530	470.29	0	665.21	84.33
J-531	541.54	0	650.61	47.19
J-532	496.05	0	644.44	64.20
J-533	521.79	0	640.23	51.24
J-534	474.29	0	633.16	68.74
J-535	501.86	0	629.99	55.44
J-WTP	374.00	-2,500	845.62	204.05

**Scenario: Static (0 GPM Demand)**  
**Current Time Step: 0.000 h**  
**FlexTable: Pipe Table**

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Hazen- Williams C	Flow (gpm)	Velocity (ft/s)	Headloss (ft)
P-500	305	J-WTP	J-500	15.6	124.5	0	0.00	0.00
P-500A	375	J-500	J-500A	14.9	124.5	0	0.00	0.00
P-500B	1,385	J-500A	J-500B	14.9	124.5	0	0.00	0.00
P-501	1,491	J-500B	J-501	15.6	124.5	0	0.00	0.00
P-502	2,616	J-501	J-502	15.6	124.5	0	0.00	0.00
P-502A	371	J-502	J-502A	15.6	124.5	0	0.00	0.00
P-503	865	J-502A	J-503	14.9	124.5	0	0.00	0.00
P-503A	1,112	J-503	J-503A	14.9	124.5	0	0.00	0.00
P-504	1,425	J-503A	J-504	15.9	124.5	0	0.00	0.00
P-505	754	J-504	J-505	15.9	124.5	0	0.00	0.00
P-506	1,031	J-505	J-506	15.9	124.5	0	0.00	0.00
P-506A	789	J-506	J-506A	15.9	124.5	0	0.00	0.00
P-507	625	J-506A	J-507	15.9	124.5	0	0.00	0.00
P-508	1,080	J-507	J-508	15.9	124.5	0	0.00	0.00
P-509	645	J-508	J-509	15.9	124.5	0	0.00	0.00
P-510	815	J-509	J-510	15.9	124.5	0	0.00	0.00
P-511	574	J-510	J-511	15.9	124.5	0	0.00	0.00
P-512	514	J-511	J-512	15.9	124.5	0	0.00	0.00
P-513	1,472	J-512	J-513	15.9	124.5	0	0.00	0.00
P-514	669	J-513	J-514	15.9	124.5	0	0.00	0.00
P-515	2,122	J-514	J-515	15.9	124.5	0	0.00	0.00
P-516	925	J-515	J-516	15.9	124.5	0	0.00	0.00
P-517	660	J-516	J-517	15.9	124.5	0	0.00	0.00
P-518	2,201	J-517	J-518	15.9	124.5	0	0.00	0.00
P-519	1,707	J-518	J-519	15.9	124.5	0	0.00	0.00
P-520	4,517	J-519	J-520	15.9	124.5	0	0.00	0.00
P-520A	2,687	J-520	J-520A	15.9	124.5	0	0.00	0.00
P-521	3,554	J-520A	J-521	15.9	124.5	0	0.00	0.00
P-522	811	J-521	J-522	15.9	124.5	0	0.00	0.00
P-523	645	J-522	J-523	15.9	124.5	0	0.00	0.00
P-524	1,197	J-523	J-524	15.9	124.5	0	0.00	0.00
P-525	2,241	J-524	J-525	15.9	124.5	0	0.00	0.00
P-526	1,004	J-525	J-526	15.9	124.5	0	0.00	0.00
P-527	917	J-526	J-527	15.9	124.5	0	0.00	0.00
P-528	466	J-527	J-528	15.9	124.5	0	0.00	0.00
P-529	776	J-528	J-529	15.9	124.5	0	0.00	0.00
P-530	520	J-529	J-530	15.9	124.5	0	0.00	0.00
P-531	3,861	J-530	J-531	15.9	124.5	0	0.00	0.00
P-532	1,630	J-531	J-532	15.9	124.5	0	0.00	0.00
P-533	1,114	J-532	J-533	15.9	124.5	0	0.00	0.00
P-534	1,868	J-533	J-534	15.9	124.5	0	0.00	0.00
P-535	838	J-534	J-535	15.9	124.5	0	0.00	0.00
P-536	1	J-535	Point of Connection	15.9	124.5	0	0.00	0.00



**Scenario: 500 GPM Demand from WTP**  
**Current Time Step: 0.000 h**  
**FlexTable: Pipe Table**

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss (ft)
P-500	305	J-WTP	J-500	15.6	124.5	500	0.83	0.06
P-500A	375	J-500	J-500A	14.9	124.5	500	0.92	0.10
P-500B	1,385	J-500A	J-500B	14.9	124.5	500	0.92	0.37
P-501	1,491	J-500B	J-501	15.6	124.5	500	0.83	0.31
P-502	2,616	J-501	J-502	15.6	124.5	500	0.83	0.55
P-502A	371	J-502	J-502A	15.6	124.5	500	0.83	0.08
P-503	865	J-502A	J-503	14.9	124.5	500	0.92	0.23
P-503A	1,112	J-503	J-503A	14.9	124.5	500	0.92	0.29
P-504	1,425	J-503A	J-504	15.9	124.5	500	0.81	0.27
P-505	754	J-504	J-505	15.9	124.5	500	0.81	0.14
P-506	1,031	J-505	J-506	15.9	124.5	500	0.81	0.20
P-506A	789	J-506	J-506A	15.9	124.5	500	0.81	0.15
P-507	625	J-506A	J-507	15.9	124.5	500	0.81	0.12
P-508	1,080	J-507	J-508	15.9	124.5	500	0.81	0.21
P-509	645	J-508	J-509	15.9	124.5	500	0.81	0.12
P-510	815	J-509	J-510	15.9	124.5	500	0.81	0.16
P-511	574	J-510	J-511	15.9	124.5	500	0.81	0.11
P-512	514	J-511	J-512	15.9	124.5	500	0.81	0.10
P-513	1,472	J-512	J-513	15.9	124.5	500	0.81	0.28
P-514	669	J-513	J-514	15.9	124.5	500	0.81	0.13
P-515	2,122	J-514	J-515	15.9	124.5	500	0.81	0.41
P-516	925	J-515	J-516	15.9	124.5	500	0.81	0.18
P-517	660	J-516	J-517	15.9	124.5	500	0.81	0.13
P-518	2,201	J-517	J-518	15.9	124.5	500	0.81	0.42
P-519	1,707	J-518	J-519	15.9	124.5	500	0.81	0.33
P-520	4,517	J-519	J-520	15.9	124.5	500	0.81	0.87
P-520A	2,687	J-520	J-520A	15.9	124.5	500	0.81	0.52
P-521	3,554	J-520A	J-521	15.9	124.5	500	0.81	0.68
P-522	811	J-521	J-522	15.9	124.5	500	0.81	0.16
P-523	645	J-522	J-523	15.9	124.5	500	0.81	0.12
P-524	1,197	J-523	J-524	15.9	124.5	500	0.81	0.23
P-525	2,241	J-524	J-525	15.9	124.5	500	0.81	0.43
P-526	1,004	J-525	J-526	15.9	124.5	500	0.81	0.19
P-527	917	J-526	J-527	15.9	124.5	500	0.81	0.18
P-528	466	J-527	J-528	15.9	124.5	500	0.81	0.09
P-529	776	J-528	J-529	15.9	124.5	500	0.81	0.15
P-530	520	J-529	J-530	15.9	124.5	500	0.81	0.10
P-531	3,861	J-530	J-531	15.9	124.5	500	0.81	0.74
P-532	1,630	J-531	J-532	15.9	124.5	500	0.81	0.31
P-533	1,114	J-532	J-533	15.9	124.5	500	0.81	0.21
P-534	1,868	J-533	J-534	15.9	124.5	500	0.81	0.36
P-535	838	J-534	J-535	15.9	124.5	500	0.81	0.16
P-536	1	J-535	Point of Connection	15.9	124.5	500	0.81	0.00

**Scenario: 1,000 GPM Demand from WTP**  
**Current Time Step: 0.000 h**  
**FlexTable: Pipe Table**

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Hazen- Williams C	Flow (gpm)	Velocity (ft/s)	Headloss (ft)
P-500	305	J-WTP	J-500	15.6	124.5	1,000	1.67	0.23
P-500A	375	J-500	J-500A	14.9	124.5	1,000	1.84	0.36
P-500B	1,385	J-500A	J-500B	14.9	124.5	1,000	1.84	1.32
P-501	1,491	J-500B	J-501	15.6	124.5	1,000	1.67	1.13
P-502	2,616	J-501	J-502	15.6	124.5	1,000	1.67	1.98
P-502A	371	J-502	J-502A	15.6	124.5	1,000	1.67	0.28
P-503	865	J-502A	J-503	14.9	124.5	1,000	1.84	0.83
P-503A	1,112	J-503	J-503A	14.9	124.5	1,000	1.84	1.06
P-504	1,425	J-503A	J-504	15.9	124.5	1,000	1.61	0.99
P-505	754	J-504	J-505	15.9	124.5	1,000	1.61	0.52
P-506	1,031	J-505	J-506	15.9	124.5	1,000	1.61	0.71
P-506A	789	J-506	J-506A	15.9	124.5	1,000	1.61	0.55
P-507	625	J-506A	J-507	15.9	124.5	1,000	1.61	0.43
P-508	1,080	J-507	J-508	15.9	124.5	1,000	1.61	0.75
P-509	645	J-508	J-509	15.9	124.5	1,000	1.61	0.45
P-510	815	J-509	J-510	15.9	124.5	1,000	1.61	0.56
P-511	574	J-510	J-511	15.9	124.5	1,000	1.61	0.40
P-512	514	J-511	J-512	15.9	124.5	1,000	1.61	0.36
P-513	1,472	J-512	J-513	15.9	124.5	1,000	1.61	1.02
P-514	669	J-513	J-514	15.9	124.5	1,000	1.61	0.46
P-515	2,122	J-514	J-515	15.9	124.5	1,000	1.61	1.47
P-516	925	J-515	J-516	15.9	124.5	1,000	1.61	0.64
P-517	660	J-516	J-517	15.9	124.5	1,000	1.61	0.46
P-518	2,201	J-517	J-518	15.9	124.5	1,000	1.61	1.52
P-519	1,707	J-518	J-519	15.9	124.5	1,000	1.61	1.18
P-520	4,517	J-519	J-520	15.9	124.5	1,000	1.61	3.13
P-520A	2,687	J-520	J-520A	15.9	124.5	1,000	1.61	1.86
P-521	3,554	J-520A	J-521	15.9	124.5	1,000	1.61	2.46
P-522	811	J-521	J-522	15.9	124.5	1,000	1.61	0.56
P-523	645	J-522	J-523	15.9	124.5	1,000	1.61	0.45
P-524	1,197	J-523	J-524	15.9	124.5	1,000	1.61	0.83
P-525	2,241	J-524	J-525	15.9	124.5	1,000	1.61	1.55
P-526	1,004	J-525	J-526	15.9	124.5	1,000	1.61	0.70
P-527	917	J-526	J-527	15.9	124.5	1,000	1.61	0.64
P-528	466	J-527	J-528	15.9	124.5	1,000	1.61	0.32
P-529	776	J-528	J-529	15.9	124.5	1,000	1.61	0.54
P-530	520	J-529	J-530	15.9	124.5	1,000	1.61	0.36
P-531	3,861	J-530	J-531	15.9	124.5	1,000	1.61	2.68
P-532	1,630	J-531	J-532	15.9	124.5	1,000	1.61	1.13
P-533	1,114	J-532	J-533	15.9	124.5	1,000	1.61	0.77
P-534	1,868	J-533	J-534	15.9	124.5	1,000	1.61	1.29
P-535	838	J-534	J-535	15.9	124.5	1,000	1.61	0.58
P-536	1	J-535	Point of Connection	15.9	124.5	1,000	1.61	0.00

**Scenario: 1,500 GPM Demand from WTP**  
**Current Time Step: 0.000 h**  
**FlexTable: Pipe Table**

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Hazen- Williams C	Flow (gpm)	Velocity (ft/s)	Headloss (ft)
P-500	305	J-WTP	J-500	15.6	124.5	1,500	2.50	0.49
P-500A	375	J-500	J-500A	14.9	124.5	1,500	2.76	0.76
P-500B	1,385	J-500A	J-500B	14.9	124.5	1,500	2.76	2.80
P-501	1,491	J-500B	J-501	15.6	124.5	1,500	2.50	2.39
P-502	2,616	J-501	J-502	15.6	124.5	1,500	2.50	4.19
P-502A	371	J-502	J-502A	15.6	124.5	1,500	2.50	0.59
P-503	865	J-502A	J-503	14.9	124.5	1,500	2.76	1.75
P-503A	1,112	J-503	J-503A	14.9	124.5	1,500	2.76	2.25
P-504	1,425	J-503A	J-504	15.9	124.5	1,500	2.42	2.09
P-505	754	J-504	J-505	15.9	124.5	1,500	2.42	1.11
P-506	1,031	J-505	J-506	15.9	124.5	1,500	2.42	1.51
P-506A	789	J-506	J-506A	15.9	124.5	1,500	2.42	1.16
P-507	625	J-506A	J-507	15.9	124.5	1,500	2.42	0.92
P-508	1,080	J-507	J-508	15.9	124.5	1,500	2.42	1.59
P-509	645	J-508	J-509	15.9	124.5	1,500	2.42	0.95
P-510	815	J-509	J-510	15.9	124.5	1,500	2.42	1.20
P-511	574	J-510	J-511	15.9	124.5	1,500	2.42	0.84
P-512	514	J-511	J-512	15.9	124.5	1,500	2.42	0.76
P-513	1,472	J-512	J-513	15.9	124.5	1,500	2.42	2.16
P-514	669	J-513	J-514	15.9	124.5	1,500	2.42	0.98
P-515	2,122	J-514	J-515	15.9	124.5	1,500	2.42	3.12
P-516	925	J-515	J-516	15.9	124.5	1,500	2.42	1.36
P-517	660	J-516	J-517	15.9	124.5	1,500	2.42	0.97
P-518	2,201	J-517	J-518	15.9	124.5	1,500	2.42	3.23
P-519	1,707	J-518	J-519	15.9	124.5	1,500	2.42	2.51
P-520	4,517	J-519	J-520	15.9	124.5	1,500	2.42	6.63
P-520A	2,687	J-520	J-520A	15.9	124.5	1,500	2.42	3.95
P-521	3,554	J-520A	J-521	15.9	124.5	1,500	2.42	5.22
P-522	811	J-521	J-522	15.9	124.5	1,500	2.42	1.19
P-523	645	J-522	J-523	15.9	124.5	1,500	2.42	0.95
P-524	1,197	J-523	J-524	15.9	124.5	1,500	2.42	1.76
P-525	2,241	J-524	J-525	15.9	124.5	1,500	2.42	3.29
P-526	1,004	J-525	J-526	15.9	124.5	1,500	2.42	1.47
P-527	917	J-526	J-527	15.9	124.5	1,500	2.42	1.35
P-528	466	J-527	J-528	15.9	124.5	1,500	2.42	0.68
P-529	776	J-528	J-529	15.9	124.5	1,500	2.42	1.14
P-530	520	J-529	J-530	15.9	124.5	1,500	2.42	0.76
P-531	3,861	J-530	J-531	15.9	124.5	1,500	2.42	5.67
P-532	1,630	J-531	J-532	15.9	124.5	1,500	2.42	2.39
P-533	1,114	J-532	J-533	15.9	124.5	1,500	2.42	1.64
P-534	1,868	J-533	J-534	15.9	124.5	1,500	2.42	2.74
P-535	838	J-534	J-535	15.9	124.5	1,500	2.42	1.23
P-536	1	J-535	Point of Connection	15.9	124.5	1,500	2.42	0.00

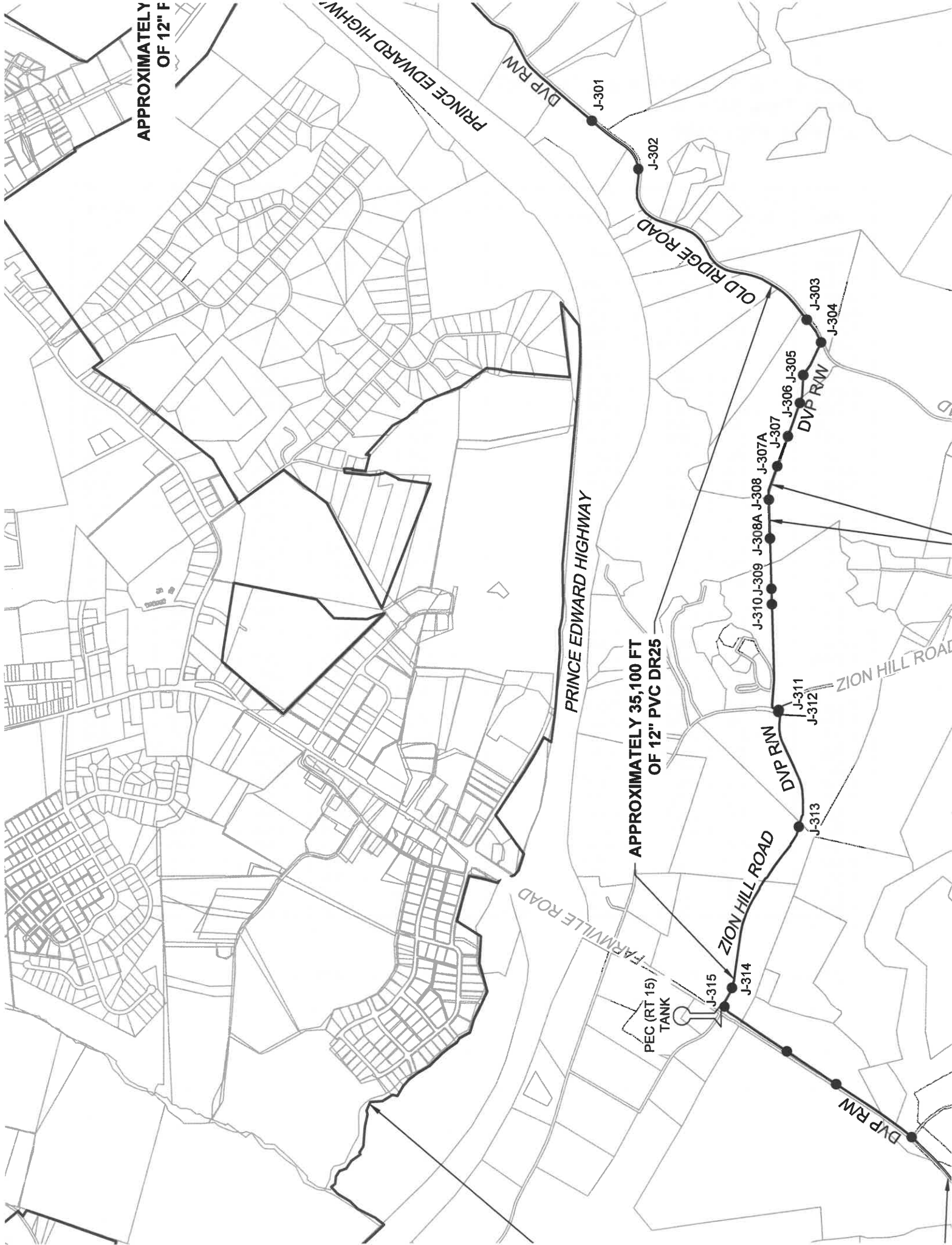
**Scenario: 2,000 GPM Demand from WTP**  
**Current Time Step: 0.000 h**  
**FlexTable: Pipe Table**

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Hazen- Williams C	Flow (gpm)	Velocity (ft/s)	Headloss (ft)
P-500	305	J-WTP	J-500	15.6	124.5	2,000	3.34	0.83
P-500A	375	J-500	J-500A	14.9	124.5	2,000	3.68	1.29
P-500B	1,385	J-500A	J-500B	14.9	124.5	2,000	3.68	4.77
P-501	1,491	J-500B	J-501	15.6	124.5	2,000	3.34	4.07
P-502	2,616	J-501	J-502	15.6	124.5	2,000	3.34	7.14
P-502A	371	J-502	J-502A	15.6	124.5	2,000	3.34	1.01
P-503	865	J-502A	J-503	14.9	124.5	2,000	3.68	2.98
P-503A	1,112	J-503	J-503A	14.9	124.5	2,000	3.68	3.83
P-504	1,425	J-503A	J-504	15.9	124.5	2,000	3.22	3.56
P-505	754	J-504	J-505	15.9	124.5	2,000	3.22	1.89
P-506	1,031	J-505	J-506	15.9	124.5	2,000	3.22	2.58
P-506A	789	J-506	J-506A	15.9	124.5	2,000	3.22	1.97
P-507	625	J-506A	J-507	15.9	124.5	2,000	3.22	1.56
P-508	1,080	J-507	J-508	15.9	124.5	2,000	3.22	2.70
P-509	645	J-508	J-509	15.9	124.5	2,000	3.22	1.61
P-510	815	J-509	J-510	15.9	124.5	2,000	3.22	2.04
P-511	574	J-510	J-511	15.9	124.5	2,000	3.22	1.44
P-512	514	J-511	J-512	15.9	124.5	2,000	3.22	1.29
P-513	1,472	J-512	J-513	15.9	124.5	2,000	3.22	3.68
P-514	669	J-513	J-514	15.9	124.5	2,000	3.22	1.67
P-515	2,122	J-514	J-515	15.9	124.5	2,000	3.22	5.31
P-516	925	J-515	J-516	15.9	124.5	2,000	3.22	2.31
P-517	660	J-516	J-517	15.9	124.5	2,000	3.22	1.65
P-518	2,201	J-517	J-518	15.9	124.5	2,000	3.22	5.51
P-519	1,707	J-518	J-519	15.9	124.5	2,000	3.22	4.27
P-520	4,517	J-519	J-520	15.9	124.5	2,000	3.22	11.30
P-520A	2,687	J-520	J-520A	15.9	124.5	2,000	3.22	6.72
P-521	3,554	J-520A	J-521	15.9	124.5	2,000	3.22	8.89
P-522	811	J-521	J-522	15.9	124.5	2,000	3.22	2.03
P-523	645	J-522	J-523	15.9	124.5	2,000	3.22	1.61
P-524	1,197	J-523	J-524	15.9	124.5	2,000	3.22	2.99
P-525	2,241	J-524	J-525	15.9	124.5	2,000	3.22	5.61
P-526	1,004	J-525	J-526	15.9	124.5	2,000	3.22	2.51
P-527	917	J-526	J-527	15.9	124.5	2,000	3.22	2.29
P-528	466	J-527	J-528	15.9	124.5	2,000	3.22	1.16
P-529	776	J-528	J-529	15.9	124.5	2,000	3.22	1.94
P-530	520	J-529	J-530	15.9	124.5	2,000	3.22	1.30
P-531	3,861	J-530	J-531	15.9	124.5	2,000	3.22	9.66
P-532	1,630	J-531	J-532	15.9	124.5	2,000	3.22	4.08
P-533	1,114	J-532	J-533	15.9	124.5	2,000	3.22	2.79
P-534	1,868	J-533	J-534	15.9	124.5	2,000	3.22	4.67
P-535	838	J-534	J-535	15.9	124.5	2,000	3.22	2.10
P-536	1	J-535	Point of Connection	15.9	124.5	2,000	3.22	0.00

**Scenario: 2,500 GPM Demand from WTP**  
**Current Time Step: 0.000 h**  
**FlexTable: Pipe Table**

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss (ft)
P-500	305	J-WTP	J-500	15.6	124.5	2,500	4.17	1.26
P-500A	375	J-500	J-500A	14.9	124.5	2,500	4.60	1.95
P-500B	1,385	J-500A	J-500B	14.9	124.5	2,500	4.60	7.22
P-501	1,491	J-500B	J-501	15.6	124.5	2,500	4.17	6.15
P-502	2,616	J-501	J-502	15.6	124.5	2,500	4.17	10.79
P-502A	371	J-502	J-502A	15.6	124.5	2,500	4.17	1.53
P-503	865	J-502A	J-503	14.9	124.5	2,500	4.60	4.51
P-503A	1,112	J-503	J-503A	14.9	124.5	2,500	4.60	5.80
P-504	1,425	J-503A	J-504	15.9	124.5	2,500	4.03	5.39
P-505	754	J-504	J-505	15.9	124.5	2,500	4.03	2.85
P-506	1,031	J-505	J-506	15.9	124.5	2,500	4.03	3.90
P-506A	789	J-506	J-506A	15.9	124.5	2,500	4.03	2.98
P-507	625	J-506A	J-507	15.9	124.5	2,500	4.03	2.36
P-508	1,080	J-507	J-508	15.9	124.5	2,500	4.03	4.09
P-509	645	J-508	J-509	15.9	124.5	2,500	4.03	2.44
P-510	815	J-509	J-510	15.9	124.5	2,500	4.03	3.08
P-511	574	J-510	J-511	15.9	124.5	2,500	4.03	2.17
P-512	514	J-511	J-512	15.9	124.5	2,500	4.03	1.94
P-513	1,472	J-512	J-513	15.9	124.5	2,500	4.03	5.56
P-514	669	J-513	J-514	15.9	124.5	2,500	4.03	2.53
P-515	2,122	J-514	J-515	15.9	124.5	2,500	4.03	8.03
P-516	925	J-515	J-516	15.9	124.5	2,500	4.03	3.50
P-517	660	J-516	J-517	15.9	124.5	2,500	4.03	2.50
P-518	2,201	J-517	J-518	15.9	124.5	2,500	4.03	8.32
P-519	1,707	J-518	J-519	15.9	124.5	2,500	4.03	6.45
P-520	4,517	J-519	J-520	15.9	124.5	2,500	4.03	17.08
P-520A	2,687	J-520	J-520A	15.9	124.5	2,500	4.03	10.16
P-521	3,554	J-520A	J-521	15.9	124.5	2,500	4.03	13.44
P-522	811	J-521	J-522	15.9	124.5	2,500	4.03	3.07
P-523	645	J-522	J-523	15.9	124.5	2,500	4.03	2.44
P-524	1,197	J-523	J-524	15.9	124.5	2,500	4.03	4.53
P-525	2,241	J-524	J-525	15.9	124.5	2,500	4.03	8.48
P-526	1,004	J-525	J-526	15.9	124.5	2,500	4.03	3.80
P-527	917	J-526	J-527	15.9	124.5	2,500	4.03	3.47
P-528	466	J-527	J-528	15.9	124.5	2,500	4.03	1.76
P-529	776	J-528	J-529	15.9	124.5	2,500	4.03	2.93
P-530	520	J-529	J-530	15.9	124.5	2,500	4.03	1.97
P-531	3,861	J-530	J-531	15.9	124.5	2,500	4.03	14.60
P-532	1,630	J-531	J-532	15.9	124.5	2,500	4.03	6.17
P-533	1,114	J-532	J-533	15.9	124.5	2,500	4.03	4.21
P-534	1,868	J-533	J-534	15.9	124.5	2,500	4.03	7.06
P-535	838	J-534	J-535	15.9	124.5	2,500	4.03	3.17
P-536	1	J-535	Point of Connection	15.9	124.5	2,500	4.03	0.00

APPROXIMATELY  
OF 12" F



APPROXIMATELY 35,100 FT  
OF 12" PVC DR25

PRINCE EDWARD HIGHWAY

OLD RIDGE ROAD

ZION HILL ROAD

FARMVILLE ROAD

ZION HILL ROAD

PRINCE EDWARD HIGHWAY

PEC (RT 15)  
TANK

J-303  
J-304

J-301

J-302

J-307A

J-306

J-305

J-310

J-309

J-308

J-308A

J-311

J-312

J-313

J-314

J-315

DVP RM

DVP RAW

DVP RM

DVP RM

**Scenario: 6,000 GPM Demand from WTP - Full Buildout**  
**Current Time Step: 0.000 h**  
**FlexTable: Junction Table**

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-100	382.56	0	713.96	143.38
J-101	430.49	0	710.79	121.28
J-102	374.03	0	703.54	142.56
J-103	330.48	0	689.67	155.41
J-103A	385.25	0	681.60	128.22
J-104	401.34	0	679.23	120.23
J-104A	339.42	0	672.22	143.99
J-105	304.82	0	668.00	157.13
J-106	301.81	0	663.25	156.38
J-200	290.00	0	658.46	159.42
J-201	290.00	0	655.78	158.25
J-202	307.36	0	648.94	147.78
J-203	292.86	0	647.38	153.38
J-204	381.88	0	639.44	111.43
J-205	354.11	0	637.93	122.80
J-206	401.34	0	635.06	101.12
J-207	387.30	0	634.23	106.84
J-300	304.27	0	662.59	155.03
J-300A	369.38	0	659.07	125.34
J-301	427.28	0	656.71	99.26
J-302	404.84	0	656.05	108.69
J-303	398.98	0	653.69	110.20
J-304	401.91	0	653.44	108.82
J-305	417.55	0	653.08	101.90
J-306	368.41	0	652.81	123.05
J-307	386.55	0	652.48	115.05
J-307A	349.05	0	652.18	131.15
J-308	307.50	0	651.79	148.96
J-308A	355.47	0	651.36	128.02
J-309	417.47	0	650.88	100.99
J-310	387.88	0	650.73	113.73
J-311	443.61	0	649.69	89.16
J-312	444.14	0	649.67	88.92
J-313	367.68	0	648.52	121.51
J-314	462.51	0	646.82	79.74
J-315	461.08	500	646.61	80.27
J-500	328.49	0	715.38	167.39
J-500A	305.16	0	714.60	177.15
J-500B	348.93	0	711.72	156.96
J-501	396.06	0	709.27	135.51
J-502	370.67	0	704.98	144.64
J-502A	360.89	0	704.37	148.61
J-503	338.04	0	702.57	157.72
J-503A	362.12	0	700.27	146.30
J-504	392.98	0	698.12	132.02
J-505	466.48	0	696.98	99.73
J-506	389.57	0	695.43	132.33
J-506A	375.45	0	694.24	137.93
J-507	486.91	0	693.30	89.29
J-508	383.80	0	691.67	133.20
J-509	476.48	0	690.70	92.68
J-510	397.99	0	689.48	126.11
J-511	465.57	0	688.61	96.50
J-512	396.98	0	687.84	125.84
J-513	477.40	0	685.62	90.09
J-514	490.50	0	684.61	83.98
J-515	507.12	0	681.42	75.41

J-516	428.11	0	680.02	108.99
J-517	471.50	0	679.03	89.79
J-518	418.56	0	675.71	111.26
J-519	474.93	0	673.14	85.76
J-520	575.48	0	666.34	39.31
J-520A	560.63	0	662.29	43.98
J-521	447.62	0	656.94	90.56
J-522	505.00	0	655.71	65.21
J-523	456.53	0	654.74	85.76
J-524	545.00	0	652.94	46.70
J-525	427.09	0	649.56	96.26
J-526	509.87	0	648.05	59.79
J-527	516.04	0	646.67	56.52
J-528	510.67	0	645.97	58.54
J-529	494.83	0	644.80	64.88
J-530	470.29	0	644.02	75.16
J-531	541.54	0	638.20	41.82
J-532	496.05	0	635.75	60.44
J-533	521.79	0	634.07	48.58
J-534	474.29	0	631.25	67.91
J-535	501.86	0	629.99	55.44
J-WTP	374.00	-6,000	715.88	147.91

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**Scenario: 6,000 GPM Demand from WTP - Full Buildout**  
**Current Time Step: 0.000 h**  
**FlexTable: Pipe Table**

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Hazen- Williams C	Flow (gpm)	Velocity (ft/s)	Headloss (ft)
P-100	453	J-WTP	J-100	19.4	124.5	4,479	4.85	1.92
P-101	748	J-100	J-101	19.4	124.5	4,479	4.85	3.16
P-102	1,716	J-101	J-102	19.4	124.5	4,479	4.85	7.26
P-103	3,278	J-102	J-103	19.4	124.5	4,479	4.85	13.87
P-104	1,908	J-103	J-103A	19.4	124.5	4,479	4.85	8.07
P-104A	560	J-103A	J-104	19.4	124.5	4,479	4.85	2.37
P-105	1,786	J-104	J-104A	19.7	124.5	4,479	4.70	7.01
P-105A	999	J-104A	J-105	19.4	124.5	4,479	4.85	4.22
P-106	1,209	J-105	J-106	19.7	124.5	4,479	4.70	4.75
P-106A	157	J-106	J-300	19.4	124.5	4,479	4.85	0.66
P-200	1,214	J-300	J-200	19.4	124.5	3,979	4.31	4.13
P-201	791	J-200	J-201	19.4	124.5	3,979	4.31	2.69
P-202	2,013	J-201	J-202	19.4	124.5	3,979	4.31	6.84
P-203	459	J-202	J-203	19.4	124.5	3,979	4.31	1.56
P-204	2,337	J-203	J-204	19.4	124.5	3,979	4.31	7.94
P-205	443	J-204	J-205	19.4	124.5	3,979	4.31	1.51
P-206	845	J-205	J-206	19.4	124.5	3,979	4.31	2.87
P-207	243	J-206	J-207	19.4	124.5	3,979	4.31	0.83
P-208	1,249	J-207	HIT Park Tank	19.4	124.5	3,979	4.31	4.24
P-300	4,000	J-300	J-300A	11.7	124.5	500	1.50	3.51
P-301	3,214	J-300A	J-301	12.1	124.5	500	1.40	2.37
P-302	892	J-301	J-302	12.1	124.5	500	1.40	0.66
P-303	3,200	J-302	J-303	12.1	124.5	500	1.40	2.36
P-304	348	J-303	J-304	12.1	124.5	500	1.40	0.26
P-305	481	J-304	J-305	12.1	124.5	500	1.40	0.35
P-306	367	J-305	J-306	12.1	124.5	500	1.40	0.27
P-307	457	J-306	J-307	12.1	124.5	500	1.40	0.34
P-308	409	J-307	J-307A	12.1	124.5	500	1.40	0.30
P-308A	453	J-307A	J-308	11.7	124.5	500	1.49	0.39
P-309	500	J-308	J-308A	11.7	124.5	500	1.49	0.43
P-309A	646	J-308A	J-309	12.1	124.5	500	1.40	0.48
P-310	200	J-309	J-310	12.1	124.5	500	1.40	0.15
P-311	1,420	J-310	J-311	12.1	124.5	500	1.40	1.05
P-312	24	J-311	J-312	12.1	124.5	500	1.40	0.02
P-313	1,564	J-312	J-313	12.1	124.5	500	1.40	1.15
P-314	2,300	J-313	J-314	12.1	124.5	500	1.40	1.69
P-315	291	J-314	J-315	12.1	124.5	500	1.40	0.21
P-500	305	J-WTP	J-500	15.6	124.5	1,521	2.54	0.50
P-500A	375	J-500	J-500A	14.9	124.5	1,521	2.80	0.78
P-500B	1,385	J-500A	J-500B	14.9	124.5	1,521	2.80	2.87
P-501	1,491	J-500B	J-501	15.6	124.5	1,521	2.54	2.45
P-502	2,616	J-501	J-502	15.6	124.5	1,521	2.54	4.30
P-502A	371	J-502	J-502A	15.6	124.5	1,521	2.54	0.61
P-503	865	J-502A	J-503	14.9	124.5	1,521	2.80	1.79
P-503A	1,112	J-503	J-503A	14.9	124.5	1,521	2.80	2.31
P-504	1,425	J-503A	J-504	15.9	124.5	1,521	2.45	2.15
P-505	754	J-504	J-505	15.9	124.5	1,521	2.45	1.14
P-506	1,031	J-505	J-506	15.9	124.5	1,521	2.45	1.55
P-506A	789	J-506	J-506A	15.9	124.5	1,521	2.45	1.19
P-507	625	J-506A	J-507	15.9	124.5	1,521	2.45	0.94
P-508	1,080	J-507	J-508	15.9	124.5	1,521	2.45	1.63
P-509	645	J-508	J-509	15.9	124.5	1,521	2.45	0.97
P-510	815	J-509	J-510	15.9	124.5	1,521	2.45	1.23
P-511	574	J-510	J-511	15.9	124.5	1,521	2.45	0.87
P-512	514	J-511	J-512	15.9	124.5	1,521	2.45	0.77
P-513	1,472	J-512	J-513	15.9	124.5	1,521	2.45	2.22
P-514	669	J-513	J-514	15.9	124.5	1,521	2.45	1.01
P-515	2,122	J-514	J-515	15.9	124.5	1,521	2.45	3.20
P-516	925	J-515	J-516	15.9	124.5	1,521	2.45	1.39
P-517	660	J-516	J-517	15.9	124.5	1,521	2.45	0.99
P-518	2,201	J-517	J-518	15.9	124.5	1,521	2.45	3.31
P-519	1,707	J-518	J-519	15.9	124.5	1,521	2.45	2.57
P-520	4,517	J-519	J-520	15.9	124.5	1,521	2.45	6.80
P-520A	2,687	J-520	J-520A	15.9	124.5	1,521	2.45	4.05
P-521	3,554	J-520A	J-521	15.9	124.5	1,521	2.45	5.35

P-522	811	J-521	J-522	15.9	124.5	1,521	2.45	1.22
P-523	645	J-522	J-523	15.9	124.5	1,521	2.45	0.97
P-524	1,197	J-523	J-524	15.9	124.5	1,521	2.45	1.80
P-525	2,241	J-524	J-525	15.9	124.5	1,521	2.45	3.38
P-526	1,004	J-525	J-526	15.9	124.5	1,521	2.45	1.51
P-527	917	J-526	J-527	15.9	124.5	1,521	2.45	1.38
P-528	466	J-527	J-528	15.9	124.5	1,521	2.45	0.70
P-529	776	J-528	J-529	15.9	124.5	1,521	2.45	1.17
P-530	520	J-529	J-530	15.9	124.5	1,521	2.45	0.78
P-531	3,861	J-530	J-531	15.9	124.5	1,521	2.45	5.82
P-532	1,630	J-531	J-532	15.9	124.5	1,521	2.45	2.46
P-533	1,114	J-532	J-533	15.9	124.5	1,521	2.45	1.68
P-534	1,868	J-533	J-534	15.9	124.5	1,521	2.45	2.81
P-535	838	J-534	J-535	15.9	124.5	1,521	2.45	1.26
P-536	1	J-535	Point of Connection	15.9	124.5	1,521	2.45	0.00

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EXHIBIT C  
Scope of Services

The Design-Builder shall provide all design services, and all labor, materials, equipment, subcontracted services, or other requirements outside of the Owner's responsibility for the design and construction of the Project ("the Work").

**A. Services to be performed by the Designer for the Design-Builder:**

1. Final Design Phase will include the following:

- a. The Designer will advance all Construction Documents (Drawings and Technical Specifications) to 100% completion and submit applicable Construction Documents with supporting documentation to regulatory agencies for issuance of construction permits. (See Exhibit G – Permit List)

*Note: Services related to permitting of Water Withdrawal Permit (VWP Permit) are being provided under separate agreement and thus are not part of this Design-Build agreement.*

- b. The Designer will address comments from regulatory agencies and make resubmittals as necessary for issuance of construction permits.
- c. The Designer will continue to attend and participate in meetings as requested by Design-Builder and Owner as necessary to facilitate the efficient and timely delivery of the Project.
- d. The Designer may prepare multiple sets of plans for permitting of project components as may be advantageous in maintaining project schedule and purchase of materials and equipment.
- e. Deliverables:
  - i. 100% Construction Drawings
  - ii. Technical Specifications
  - iii. Design Manual to include technical narrative, design calculations and manufacturers equipment data in support of the design

2. Construction Phase

The Designer will provide the following Construction Phase services:

- a. Review Shop Drawings and maintain a submittal log.
- b. Address RFIs from Design-Builder and Owner.

- c. Make periodic site visits to visually observe construction progress. Full-time construction inspections services are excluded.
- d. Notify the Design-Builder of any concerns observed during site visits.
- e. Review test reports for concrete and soil compaction.
- f. Attend periodic progress meetings with Design-Builder, Owner, or other stakeholder as applicable to the construction stage.
- g. Assist the Design-Builder and Owner in reconciling punch list at the end of the Construction Phase.
- h. Submit Engineer's Certification forms and statements to VDEQ and VDH at the completion of construction. Partial certifications may be submitted if requested by the Owner.

### 3. Operation Phase

Assist the Design-Builder and Owner in startup of new infrastructure improvements to include the following:

- a. Assist in coordinating startup of water supply, treatment and pump equipment and provision of Operations and Maintenance (O&M) training by equipment vendors and/or factory representatives.
- b. Assist in confirming proper treatment and hydraulic performance of water infrastructure.
- c. Assemble O&M manuals and shop drawings into an electronic document (PDF) for future use by the Owner.

## B. Services to be performed by the Design-Builder:

### 1. Construction Management

### 2. Scheduling

- a. Design Schedule. The Design-Builder shall produce, monitor, and update a design stage schedule in Primavera (P6).
- b. Construction Schedule. The Design-Builder shall produce, monitor, and update a construction stage schedule in Primavera (P6).

### 3. Construction of the Project, consisting of the following components and as defined in the Basis of Design (Attachment B):

- a. Project 1 – Raw Water Facilities
- b. Project 2 – Water Treatment Facilities

c. Project 3 – Finished Water Pipeline Facilities: East Distribution System

4. Quality Control

- a. Site clearing, erosion control and restoration according to the Virginia Soil Erosion and Sediment Control Regulations
- b. Preparation, submittal and approval of VDOT Land Use Permits for road crossings and construction entrances.
- c. Installation, maintenance, and removal of required construction entrances and staging areas.
- d. Maintenance of Traffic (MOT) as necessary for the support and construction of the finished water pipeline.
- e. Waterline pressure testing, chlorination, and flushing as necessary
- f. Installation and commissioning of equipment and processes in accordance with the Manufacturer's recommendations

5. Record Drawings

6. Owner Training

C. Exclusions.

The following services are excluded from the Design-Build contract:

1. Consent agreement for collocating within the Dominion Virginia Power right-of-way. The Designer will assist the Owner in preparation of exhibits to facilitate his obtaining this agreement.
2. Easement acquisition services and preparation of easement plats.
3. Septic drainfield permitting. It is understood that the Owner already has this permit.
4. Preparation of a Special Use Permit for the project.
5. Full time construction inspection.
6. Special inspections for structures.
7. Preparation of a Source Water Protection plan.
8. Preparation of a Waterworks Business Operation Plan.
9. Preparation of sludge hauling permit.
10. Modifications to reservoir outlet structure or dam.



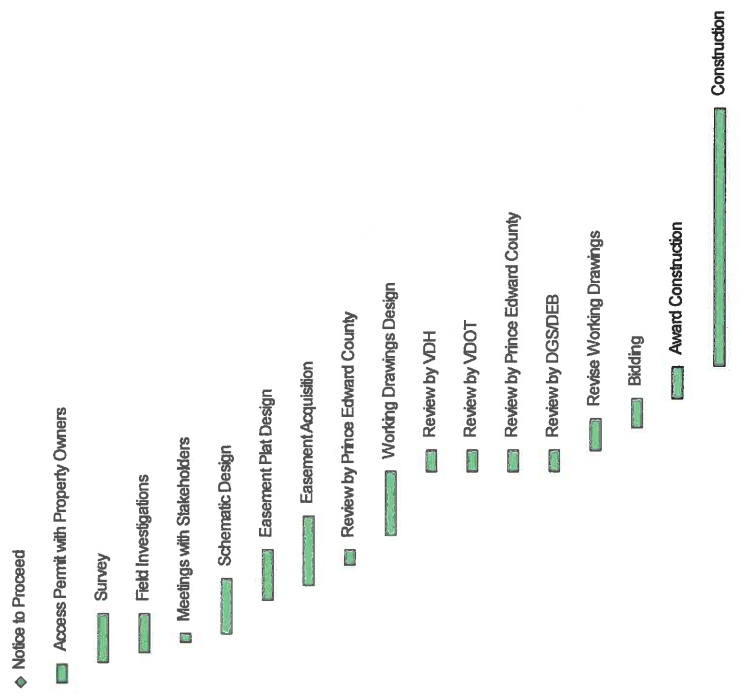


Activity Description		Dur	Start	Finish	Total Float
DGS1	Notice to Proceed	0	03-Jan-23*		294
DGS2	Access Permit with Property Owners	21	03-Jan-23	31-Jan-23	294
DGS3	Survey	50	01-Feb-23	11-Apr-23	294
DGS4	Field Investigations	40	15-Feb-23	11-Apr-23	294
DGS5	Meetings with Stakeholders	10	01-Mar-23	14-Mar-23	294
DGS6	Schematic Design	55	15-Mar-23	31-May-23	294
DGS7	Easement Plat Design	50	01-May-23	11-Jul-23	294
DGS8	Easement Acquisition	70	22-May-23	29-Aug-23	294
DGS9	Review by Prince Edward County	15	20-Jun-23	11-Jul-23	309
DGS10	Working Drawings Design	64	02-Aug-23	31-Oct-23	294
DGS11	Review by VDH	21	01-Nov-23	30-Nov-23	294
DGS12	Review by VDOT	21	01-Nov-23	30-Nov-23	294
DGS13	Review by Prince Edward County	21	01-Nov-23	30-Nov-23	294
DGS14	Review by DGS/DEB	21	01-Nov-23	30-Nov-23	294
DGS15	Revise Working Drawings	30	01-Dec-23	15-Jan-24	294
DGS16	Bidding	30	02-Jan-24	12-Feb-24	294
DGS17	Award Construction	34	13-Feb-24	29-Mar-24	294
DGS18	Construction	256	01-Apr-24	01-Apr-25	294

**DGS Nottoway County Project**

**Project Code 194-AA194-002**

**Design & Construction Schedule**



Act ID	Activity Description	Dur	Start	Finish	Total Float
DGS1	Notice to Proceed	0	03-Jan-23*		294
DGS2	Access Permit with Property Owners	21	03-Jan-23	31-Jan-23	294
DGS3	Survey	50	01-Feb-23	11-Apr-23	294
DGS4	Field Investigations	40	15-Feb-23	11-Apr-23	294
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DGS10	Working Drawings Design	64	02-Aug-23	31-Oct-23	294
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DGS12	Review by VDOT	21	01-Nov-23	30-Nov-23	294
DGS13	Review by Prince Edward County	21	01-Nov-23	30-Nov-23	294
DGS14	Review by DGS/DEB	21	01-Nov-23	30-Nov-23	294
DGS15	Revise Working Drawings	30	01-Dec-23	15-Jan-24	294
DGS16	Bidding	30	02-Jan-24	12-Feb-24	294
DGS17	Award Construction	34	13-Feb-24	29-Mar-24	294
DGS18	Construction	256	01-Apr-24	01-Apr-25	294



# Design-Builder's Insurance Requirements

*(The Parties should consult their insurance advisors prior to completing this Exhibit)*

## 1.1 Insurance Types and Limits.

1.1.1 Design-Builder shall purchase and maintain insurance of the types, with limits of liability, containing such endorsements and subject to such terms and conditions as follows, as well as Article 5 of DBIA Document No. 535, *Standard Form of General Conditions of Contract Between Owner and Design-Builder* (2010 Edition):

Type of Insurance [Insert Rating of Carrier]	Minimum Limits Required Per Claim/Occurrence	Minimum Limits Required Aggregate Policy Limits
1. Worker's Compensation	Statutory Limits	Statutory Limits
2. Employer's Liability (Bodily Injury by Accident)	\$1,000,000	\$1,000,000
a. By Disease	\$1,000,000	\$1,000,000
b. Each Accident	\$1,000,000	\$1,000,000
c. Each Employee	\$1,000,000	\$1,000,000
3. Commercial General Liability	\$1,000,000	\$2,000,000
a. Bodily Injury/Property Damage per occurrence limit	\$1,000,000	n/a
b. Bodily Injury/Property Damage aggregate limit	n/a	\$2,000,000
c. Products/Completed Operation aggregate limit	n/a	\$2,000,000
d. Personal and Advertising Injury aggregate limit	n/a	\$2,000,000
e. Medical Expense limit (any one person)	\$10,000	n/a
4. Contractor's Protective Liability (if applicable)	\$	\$
5. Commercial Automobile Liability	\$1,000,000	\$1,000,000
6. Professional Errors and Omissions pursuant to Section <input type="checkbox"/> 1.3 (A) or <input type="checkbox"/> 1.3 (B) below (per claim/aggregate) providing coverage for services performed by the named insured and any person or entity for whom the named insured is responsible	\$5,000,000	\$5,000,000
7. Contractor's Pollution Liability including coverage for microbial matter (if applicable)	\$1,000,000	\$3,000,000
8. Umbrella Excess Liability Insurance	\$10,000,000	\$10,000,000
9. Other Coverages Required on a Project Specific Basis (e.g. Aircraft Liability)	\$NA	\$NA

Type of Insurance [Insert Rating of Carrier]	Minimum Limits Required <i>Per Claim/Occurrence</i>	Minimum Limits Required <i>Aggregate Policy Limits</i>
10. Builders risk insurance provided pursuant to DBIA 535, sec. 5.3.1	\$50,000,000	50,000,000

***(Specify each type of insurance as applicable, minimum ratings of the carriers, applicable limits and deductible amounts, required endorsements, and other terms and conditions, as applicable.)***

**1.1.2** The insurance required by this Section 1.1.1 shall be written for not less than limits of liability specified in the table above or required by law, whichever coverage is greater. Coverages, whether written on an occurrence or claims-made basis, shall be maintained without interruption from date of commencement of the Work until date of Final Payment.

**1.1.3 IDENTIFY IN ITEM 6 OF THE ABOVE-REFERENCED INSURANCE MATRIX WHETHER 1.1.3(A) OR 1.1.3(B) IS TO APPLY.**

**1.1.3(A) Professional Liability Insurance Is To Be Provided By Design Consultant.** Such policies must provide coverage for the scope of professional services to be provided by or on behalf of the Design Consultant. *[Note: Even if this coverage part is selected, the Design-Builder should consider obtaining its own professional liability coverage.]*

**Select One**

- The professional liability policy required pursuant to Section 1.1.3(A) above shall be written on a Project specific basis and the policy premium shall be paid by Owner.
- The requirement for professional liability coverage on this Project shall be the standard form practice policy provided by Design Consultant.

Design-Builder shall provide Owner with prior written notice of any cancellation or non-renewal of the Design Consultant's practice policy and shall include in the Design Consultant Agreement a provision requiring the Design Consultant to give the Design-Builder 30 Days written notice of any cancellation or non-renewal.

**1.1.3(A).1** The only permissible exclusion, limitation or restriction with respect to construction means, methods and techniques is one that applies to the implementation of such construction means, methods, techniques, sequences, or procedures by the Design Consultant or any person or entity providing design or other professional services as its Sub-Consultant. This exclusion is permissible only if such entities are not performing any construction activities. Notwithstanding the above, a Design Consultant's professional liability policy also cannot contain any restriction, limitation or exclusion pertaining to the design of construction means, methods, techniques, sequences or procedures.

**1.1.3(A).2** Any exclusion, limitation or restriction related to Products or Product Design must be modified so as to provide coverage for goods or products installed.

**1.1.3(A).3** Faulty Work exclusion, limitation or restriction can only be applicable to the work self-performed by the Design Consultant.

**1.1.3(A).4** The policy must provide coverage for damages resulting from delays, including delays in project completion and cost overruns that result from the rendering or failure to render professional services.

**1.1.3(A).5** If any portion of the design or other professional service is to be performed by any person or entity other than Design Consultant then it is the responsibility of

Design Consultant to ensure that such person or entity provide Design-Builder and Design Consultant with evidence of insurance to comport with this Exhibit.

**1.1.3(B) Professional Liability Insurance Is To Be Provided By Design-Builder.** Such policies must provide coverage for the scope of professional services to be provided by or on behalf of the Design-Builder.

**Select One**

The professional liability policy required pursuant to Section 1.1.3(B) above shall be written on a Project specific basis and the policy premium shall be paid by Owner.

The requirement for professional liability coverage on this Project shall be the standard form practice policy provided by Design-Builder.

Design-Builder shall provide Owner with prior written notice of any cancellation or non-renewal of the Design-Builder's practice policy.

**1.1.3(B).1** The Design-Builder's policy cannot contain any restriction, limitation or exclusion pertaining to construction means, methods, techniques, sequences or procedures except that the professional liability policy can exclude, limit or restrict coverage for claims, but only to the same extent that such coverage is provided by the Design-Builder's valid and collectible commercial general liability/umbrella excess liability policies. Notwithstanding the above, a Design-Builder's professional liability policy also cannot contain any restriction, limitation or exclusion pertaining to the design of construction means, methods, techniques, sequences, or procedures.

**1.1.3(B).2** Any exclusion, limitation or restriction related to Products or Product Design must be modified so as to provide coverage for goods or products installed.

**1.1.3(B).3** Faulty Work exclusion, limitation or restriction can only be applicable to the work self-performed by the Design-Builder.

**1.1.3(B).4** The policy must provide coverage for damages resulting from delays, including delays in project completion, and cost overruns that result from the rendering or failure to render professional services.

**1.1.3(B).5** If any portion of the design or other professional service is to be performed by any person or entity other than Design-Builder then it is the responsibility of Design-Builder to ensure that person or entity provide Design-Builder with evidence of insurance to comport with this Exhibit.

**1.1.3(B).6** Waiver of subrogation is to be provided in favor of Design-Builder and Owner (if commercially available) and their respective officers, directors and employees.

**1.1.4** Any coverage required to be maintained after Final Payment shall be identified below. *(List here any coverages required to be maintained after Final Payment is made)*

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

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

period endorsement by means of a certificate of insurance or a copy of the endorsement itself.

## **2.1 Coverage Parameters and Endorsements.**

**2.1.1** Commercial General Liability Insurance shall be written on an occurrence basis, utilizing standard ISO unmodified coverage form (December 2004 Edition) or equivalent. Endorsements excluding, restricting, or limiting coverage may be acceptable under certain circumstances provided the same are agreed upon by Owner and Design-Builder.

**2.1.1.1** Acceptable professional liability exclusions to the Design-Builder's commercial general liability insurance are limited to ISO endorsements CG 2280 or CG 2279 or their equivalent.

**2.1.2** General Liability, Automobile Liability, Worker's Compensation/Employers Liability and Umbrella Excess Liability policies shall each include the following endorsements:

**2.1.2.1** Unintentional Errors and Omissions Endorsement

**2.1.2.2** Notice of Occurrence Endorsement

**2.1.2.3** Knowledge of Occurrence Endorsement

**2.1.3** Commercial Automobile Liability coverage shall be provided by standard ISO Commercial Automobile or Truckers Policy covering all Owned, Non-Owned and Hired Vehicles.

**2.1.4** Umbrella/Excess Liability must schedule Commercial General Liability, Automobile/Truckers Liability and Employers Liability as underlying policies. The Umbrella/Excess Liability policies shall be written in accordance with the scheduled underlying policies and must be as broad as the underlying policies.

**2.1.5** Contractors Pollution Liability shall either be written on an occurrence or claims-made basis. If written on a claims-made basis, the policy must comport to Section 4.1.5.

**2.1.5.1** The policy is to provide coverage for off-site transportation by all applicable modes of conveyance. When required, coverage is also to be provided for claims involving materials removed from the site and brought to off-site disposal, treatment and storage facilities.

**2.1.5.2** Any restriction, limitation, or exclusion related to Naturally Occurring Substances must be modified so as not to apply to microbial matter and the release of such Naturally Occurring Substances as a result of the performance of Operations.

## **3.1 Additional Insureds**

**3.1.1** Owner and Owner's officers, directors and employees shall be included as an additional insured on general liability, umbrella and automobile liability policies of insurance of the Design-Builder and its Subcontractors and Design Consultants at any tier. If required, as set forth above, Owner shall also be included as an additional insured on the Design-Builder's Contractor's Pollution Liability policy of insurance. No person shall be named as an additional insured on any professional liability policy. Any coverage granted to an additional insured shall be primary and that coverage independently carried by an additional insured shall not contribute. Design-Builder shall furnish to Owner a copy of all Certificates of Insurance showing the Owner as additional insured as set forth above. Design-Builder shall require Subcontractors and Design Consultants of any tier to furnish such certificates, and upon request of the same will furnish them to the Owner. Owner shall not be an additional insured on any other of Design-Builder's policies except for those which are

specifically listed below: *(List here any other policies for which the Owner will be an additional insured, as well as other entities who are to be named an additional insured.)*

**3.1.2** Each of the policies designated in section 3.1 is to provide a waiver of subrogation in favor of those persons or entities included as additional insureds. A waiver of subrogation is also to be provided to such entities under Worker's Compensation/Employer's Liability policies.

**3.1.3** Additional Insured coverage provided under the Commercial General Liability/Umbrella/Excess and, if applicable, Design-Builder's Contractor's Pollution Liability policies, shall cover both the premises/operations and completed operations hazards.

#### **4.1 Terms and Effective Dates.**

**4.1.1** If the General Liability coverages are provided by a Commercial General Liability Policy on a claims-made basis, the policy date or Retroactive Date shall predate the Agreement. The termination date of the policy or applicable extended reporting period shall be no earlier than the termination date of coverages required to be maintained after Final Payment is made.

**4.1.2** If the Contractor's Pollution Policy is made on a claims-made basis, the policy date or Retroactive Date shall predate the Agreement. The termination date of the policy or applicable extended reporting period shall be no earlier than the termination date of coverages required to be maintained after Final Payment is made.

**4.1.3** Professional Liability coverage shall be retroactive to the date that professional services first commenced.

**4.1.4** NOT APPLICABLE

**4.1.5** All Claims-Made Policies must: (a) permit reporting of circumstances that could give rise to a claim; and (b) provide coverage for post-expiration claims resulting from such circumstances.

**4.1.6** List here any coverage required to be maintained after Final Payment:  
None.

# Owner's Insurance Requirements

***(The Parties should consult their insurance advisors  
prior to completing this Exhibit)***

## 1.1 Insurance Types and Limits.

1.1.1 Owner shall purchase and maintain insurance of the types, with limits of liability, containing such endorsements and subject to such terms and conditions as follows, as well as Article 5 of DBIA Document No. 535, *Standard Form of General Conditions of Contract Between Owner and Design-Builder* (2010 Edition):

***(Specify each type of insurance as applicable, minimum ratings of the carriers, applicable limits and deductible amounts, required endorsements, and other terms and conditions, as applicable.***

***Note: waivers of subrogation should be carefully considered with insurance advisor)***

Type of Insurance [Insert Rating of Carrier]	Minimum Limits Required <i>Per Claim/Occurrence</i>	Minimum Limits Required <i>Aggregate Policy Limits</i>
1. Worker's Compensation	Statutory Limits	Statutory Limits
2. Employer's Liability (Bodily Injury by Accident)	\$ 1,000,000	\$ 1,000,000
a. By Disease	\$ 1,000,000	\$ 1,000,000
b. Each Accident	\$ 1,000,000	\$ 1,000,000
c. Each Employee	\$ 1,000,000	\$ 1,000,000
3. Commercial General Liability	\$ 1,000,000	\$ 2,000,000
a. Bodily Injury/Property Damage per occurrence limit	\$ 1,000,000	n/a
b. Bodily Injury/Property Damage aggregate limit	n/a	\$ 2,000,000
c. Products/Completed Operation aggregate limit	n/a	\$ 2,000,000
d. Personal and Advertising Injury aggregate limit	n/a	\$ 2,000,000
e. Medical Expense limit (any one person)	\$ 10,000	\$
4. Commercial Automobile Liability	\$ 1,000,000	\$ 1,000,000
5. Umbrella Excess Liability Insurance	\$ 10,000,000	\$ 10,000,000
7. Other Coverages Required on a Project Specific Basis (e.g. Site Pollution)	\$ 5,000,000	\$ 5,000,000

1.1.2 The insurance required by this Section 1.1.1 shall be written for not less than limits of liability specified in the table above or required by law, whichever coverage is greater. Coverages,



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whether written on an occurrence or claims-made basis, shall be maintained without interruption from date of commencement of the Work until date of Final Payment.

**1.1.3** Any coverage required to be maintained after Final Payment shall be identified below. *(List here any coverages required to be maintained after Final Payment is made)*

**1.1.4** In the event the Owner is providing any design or other professional service (either in-house or through a separate person or entity contracted by Owner), the Owner shall provide to Design-Builder evidence of professional liability coverage for that scope of work.

## **2.1 Coverage Parameters and Endorsements.**

**2.1.1** Commercial General Liability Insurance shall be written on an occurrence basis, utilizing standard ISO unmodified coverage form (December 2004 Edition) or equivalent. Endorsements excluding, restricting, or limiting coverage may be acceptable under certain circumstances provided the same are agreed upon by Owner and Design-Builder.

**2.1.2** General Liability, Automobile Liability, Worker's Compensation/Employers Liability and Umbrella Excess Liability policies shall each include the following endorsements:

**2.1.2.1** Unintentional Errors and Omissions Endorsement

**2.1.2.2** Notice of Occurrence Endorsement

**2.1.2.3** Knowledge of Occurrence Endorsement

**2.1.3** Commercial Automobile Liability coverage shall be provided by standard ISO Commercial Automobile or Truckers Policy covering all Owned, Non-Owned and Hired Vehicles.

**2.1.4** Umbrella/Excess Liability must schedule Commercial General Liability, Automobile/Truckers Liability and Employers Liability as underlying policies. The Umbrella/Excess Liability policies shall be written in accordance with the scheduled underlying policies and must be as broad as underlying policies.

## **3.1 Additional Insureds.**

**3.1.1** Design-Builder and Design-Builder's officers, directors and employees and Subcontractors and Design Consultants of any tier shall be included as an additional insured on general liability, umbrella liability and automobile liability policies of insurance of the Owner. Any coverage granted to an additional insured shall be primary and that coverage independently carried by an additional insured shall not contribute. Owner shall furnish to Design-Builder a copy of all Certificates of Insurance showing the parties named as an additional insured as set forth above. Design-Builder shall not be an additional insured on any other of Owner's policies except for those which are specifically listed below: *(List here any other policies for which the Design-Builder will be an additional insured, as well as other entities who are to be named as an additional insured on any of the specified policies.)*

**3.1.2** Additional Insured coverage provided under the Commercial General Liability and Umbrella/Excess policies shall cover both the premises/operations and completed operations hazards.

## **4.1 Claims-Made Policies**

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**4.1.1** All claims-made policies must: (a) permit reporting of circumstances that could give rise to a claim; and (b) provide coverage for post-expiration claims resulting from such circumstances.



**EXHIBIT F**  
**Economic Price Adjustment Provisions**

1. Contracts between PECl and vendors whose products and/or services are subject to the Economic Price Adjustment provisions herein, are solely between the vendor and PECl. Such contracts have not been reviewed by Prince Edward County, and the County is not a party thereto. Other than as provided in the economic price adjustment provisions the Design-Build Agreement, those contracts do not restrict or limit any rights or remedies that either PECl or the County have under the Comprehensive Agreement.
2. The Economic Price Adjustment (EPA) provisions are contained in section 12. 1.3 of the Design-Build Agreement (Attachment A to the Comprehensive Agreement). The contracts or purchase orders subject to the EPA Provisions are following (“the EPA Contracts”):

Vendor	Contract Date	Description of Goods or Services Subject to EPA Provisions
Pall	TBD	Membrane Filter Equipment
Calgon / Sherwood Logan	TBD	GAC Filter Equipment
Crom	TBD	Concrete Clearwell Tank
Goulds /Tencarva	TBD	Finished Water Pumps
Goulds / Tencarva	TBD	Finished Water Booster Skid
KSB / Tencarva	TBD	Raw Water Pumps
JMS	TBD	Floc/Sed Equipment
Hendrick / Sherwood Logan	TBD	Raw Water Intake Screens
AR Chesson	TBD	Metal Building & Roof Systems
ICSE / Various	TBD	Electrical Gear
Ferguson Waterworks	TBD	Pipe, Valves & Fittings
Hajoca	TBD	Pipe, Valves & Fittings

3. Upon the execution of any EPA Contract listed above, the Design-Builder will update this Exhibit F to include the Contract Dates, and provide the updated Exhibit F to Owner.

## Sandy River Water Project Permitting Matrix

### Permits and Regulatory Approvals for Project<sup>1</sup>

Permit/Approval	Issuing or Responsible Authority <sup>2</sup>	Related Surveys, Studies, Plans, or Consultations <sup>3</sup>	Triggering Requirement	Responsible Party	Applicable Infrastructure (Water Mains and/or Water Treatment Plant)
<b>Federal</b>					
Clean Water Act Sec. 404 Permit <sup>4</sup>	USACE	Environmental Permitting	Stream or wetland impacts	Design-Build Team	Water Mains, permitting on these items for the Water Treatment Plant already initiated under separate contract
	USACE	Stream & wetland delineation / Jurisdictional determination request	Application requirement	Design-Build Team	
	USACE	Compensatory mitigation plan <sup>3</sup>	If stream or wetland loss exceed threshold	Design-Build Team	
	USACE/USFWS	Federal Threatened and Endangered Species Review	Application requirement	Design-Build Team	
	USACE/USFWS	Endangered Species Act Sec. 7 Consultation	If listed species may be affected	Excluded from Scope	All
	USACE/USFWS	Migratory Bird Treaty Act (MBTA) and Bald & Golden Eagle Protection Act Compliance	If potential to affect	Excluded from Scope	All
	USACE/DHR	Cultural Resources Survey	If historic resources may be affected	Excluded from Scope	Water Main

Permit/Approval	Issuing or Responsible Authority <sup>2</sup>	Related Surveys, Studies, Plans, or Consultations <sup>3</sup>	Triggering Requirement	Responsible Party	Applicable Infrastructure (Water Mains and/or Water Treatment Plant)
	USACE/DHR	Cultural Resources Survey	If historic resources may be affected	Excluded from Scope	Phase I Survey already completed for Water Treatment Plant under separate contract
	USACE/DHR	Nat. Historic Preservation Act Sec. 106 Consultation & Mitigation	If historic resources may be affected	Excluded from Scope	All
<b>State</b>					
Virginia Water Protection Permit (VWP)	DEQ	JPA for Surface Water Withdrawal Permit	Withdrawal from Surface Water	Excluded from Scope	All, permitting in progress under separate contract
Subaqueous Lands Permit	VMRC	As required	Impact or crossing of stream with >5 sq. miles of drainage area	Excluded from Scope	Water Treatment Plant, permitting in progress under separate contract
Subaqueous Lands Permit	VMRC	As required	Impact or crossing of stream with >5 sq. miles of drainage area	Design-Build Team	Water Mains
Land Use Permit / Construction Entrance Permits	VDOT	As required	Use of VDOT rights-of-way	Design-Build Team	All
VPDES Construction General Permit /	DEQ	Partial list below	Land disturbance	Design-Build Team	All
	DEQ	Stormwater Management Plan	Application requirement	Design-Build Team	Water Treatment Plant

Permit/Approval	Issuing or Responsible Authority <sup>2</sup>	Related Surveys, Studies, Plans, or Consultations <sup>3</sup>	Triggering Requirement	Responsible Party	Applicable Infrastructure (Water Mains and/or Water Treatment Plant)
Virginia Stormwater Management Permit	DEQ	Stormwater Linear Project Exemption	Linear Projects	Design-Build Team	Water Mains, assumed that DEQ will accept the linear exemption per the DEQ guidance memo
	DEQ	Stormwater Facility Maintenance Agreement	If permanent stormwater facilities to be installed	Prince Edward	All
	DEQ	Nutrient Credits <sup>3</sup>	If necessary for water quality compliance	Design-Build Team	All
VPDES General Permit for Potable Water Treatment Plants	DEQ	Registration Statement per 9VAC25-860-60	Water Treatment Plant Discharge	Design-Build Team	Water Treatment Plant
Waterworks Construction Permit	VDH	As required	New water treatment or distribution facilities	Design-Build Team	All
Waterworks Operation Permit	VDH	As required	New water treatment or distribution facilities	Design-Build Team	All
Permit for Archaeological Field Investigation on State-Controlled Land	DHR	As required	If field investigation on state-owned property necessary	Excluded from Scope	All
Burial Permit	DHR	As required	If buried remains, graves, or funerary objects disturbed	Excluded from Scope	All

Permit/Approval	Issuing or Responsible Authority <sup>2</sup>	Related Surveys, Studies, Plans, or Consultations <sup>3</sup>	Triggering Requirement	Responsible Party	Applicable Infrastructure (Water Mains and/or Water Treatment Plant)
Aboveground Storage Tank Registration / Oil Discharge Contingency Plan	DEQ	As required	If oil (e.g., construction fuel tanks) on site	Excluded from Scope	All
Environmental Impact Review	DEQ	As required	State project	Excluded from Scope	All
<b>Local</b>					
Land Disturbing Permit	Piedmont Soil & Water Conservation District	Erosion and sediment control plans	Land Disturbance	Design-Build Team	All
Floodplain Permit	Locality <sup>5</sup>	As required	Work in a regulated floodplain	Design-Build Team	All
Building Permits	Locality <sup>5</sup>	As required	If required by local ordinance	Design-Build Team	All
Zoning Permits	Locality <sup>5</sup>	As required	If required by local ordinance	Design-Build Team	All
Special Use Permit	Locality <sup>5</sup>	As Required	If required by local ordinance	Prince Edward	All
Drainfield	Local Health Department	As required	Previously approved, confirm approval with Department	Design-Build Team	Water Treatment Plant
Statement of special inspections	Locality <sup>5</sup>	As required	If required by local ordinance	Design-Build Team	Water Treatment Plant
Broadband utilities (Communications)	Broadband Provider	As required	Service to the Site	Prince Edward	Water Treatment Plant, Booster Pump Station
Power utilities	Southside Electric Cooperative	As required	Service to the Site	Prince Edward	Water Treatment Plant, Booster Pump Station
Source water protection plan	VDH	As required	New Waterworks	Prince Edward	Water Treatment Plant

Permit/Approval	Issuing or Responsible Authority <sup>2</sup>	Related Surveys, Studies, Plans, or Consultations <sup>3</sup>	Triggering Requirement	Responsible Party	Applicable Infrastructure (Water Mains and/or Water Treatment Plant)
Waterworks business operation plan	VDH	As required	New Waterworks	Prince Edward	Water Treatment Plant
Sludge hauling permits	Receiving Facility	As required	New Waterworks	Prince Edward	Water Treatment Plant
Dominion	Dominion Energy	Encroachment Agreement <sup>6</sup>	Co-location in ROW	Prince Edward	Water Mains
Railroad Crossing Permits	Railroad	As required	If Crossed	Excluded from Scope	Water Mains, no crossings expected
Gas Transmission Main Crossing Permits	Gas Provider	As required	If Crossed	Excluded from Scope	Water Mains, no crossings expected
Dam or outlet structure permitting	Piedmont Soil & Water Conservation District	As required	As Determined by Permitting Authority	Excluded from Scope	Water Treatment Plant, none expected
Water System Compatibility Study	VDH	Water System Compatibility Study	Connecting to Existing Water System	Excluded from Scope	All, recommended that study is performed under separate contract
Va. Code 15.2-2143 Consent	Locality <sup>5</sup>	As required	Transfer of Nottoway water line to Prince Edward	Prince Edward	Water Mains

**NOTES**

<sup>1</sup> Table covers permits and approvals necessary for construction of the Project in Prince Edward County only, except where specifically noted. No permitting outside of the County is expected.

<sup>2</sup> USACE – US Army Corps of Engineers; USFWS – US Fish and Wildlife Service; DEQ – Virginia Department of Environmental Quality; DCR – Virginia Department of Conservation and Recreation; DWR – Virginia Department of Wildlife Resources; DHR – Virginia Department of Historic Resources; VMRC – Virginia Marine Resources Commission; VDOT – Virginia Department of Transportation; VDH – Virginia Department of Health.

<sup>3</sup> The Design-Build Team will pay permit application fees for any individual application that does not exceed \$500. Any application fees higher than this value shall be paid by Prince Edward County. Environmental mitigation costs that may be required due to impacts to wetlands or waters of the U.S. shall be paid by Prince Edward County. Nutrient Credit costs that may be required due to stormwater permitting shall be paid by Prince Edward County.



<sup>4</sup> Assumes the Project will be eligible for Nationwide Permit (NWP) 58. It is assumed that a new Joint Permit Application for the NWP for the Water Mains will be executed, and that the NWP 58 application already being processed for the Water Treatment Plant will not be modified.

<sup>5</sup> "Locality" refers to Prince Edward County and/or any town crossed by the Project that has permit-issuing authority within its jurisdiction.

<sup>6</sup> While Prince Edward shall be responsible for completing the encroachment agreement with Dominion Energy as the County will own and operate the water mains, and will have to coordinate with Dominion for access, the Design-Build Team will assist with preparing the supporting documentation necessary to prepare the application to Dominion.

**COMMONWEALTH OF VIRGINIA  
PERFORMANCE BOND**

**KNOW ALL MEN BY THESE PRESENTS:** That **Prince Edward County Infrastructure, LLC**, the Contractor (“Contractor” or “Principal”) whose principal place of business is located at 4016 Holland Blvd., Chesapeake, VA 23323 and **Liberty Mutual Insurance Company** (“Surety”) whose address for delivery of ‘Notices’ is located at 175 Berkeley St., Boston, MA 02116, and who is qualified to do business in the Commonwealth of Virginia, are held and firmly bound unto **Prince Edward County, Virginia**, the Owner (“Obligee”) in the amount of **FIFTY-ONE MILLION NINE HUNDRED EIGHTY THOUSAND, SEVEN HUNDRED FIFTY-NINE AND 00/100 DOLLARS (\$ 51,980,759.00)** for the payment whereof Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

**WHEREAS**

Surety is qualified to do business in the Commonwealth of Virginia and has a Registered Agent as follows:

Corporation Service Company  
100 Shockoe Slip Fl 2  
Richmond, VA, 23219 - 4100, USA

Principal has by written agreement dated \_\_\_\_\_ entered into a contract with Obligee for the Design and Construction of the Sandy River Reservoir Water Treatment and Distribution Project\_ which contract (the "Contract") is by reference expressly made a part hereof;

**NOW THEREFORE, THE CONDITION OF THIS OBLIGATION** is such that, if the Principal shall promptly and faithfully perform said Contract in strict conformity with the plans, specifications and conditions of the Contract, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

Provided, that any alterations which may be made in the terms of the Contract, or in the Work to be done under it, or the giving by the Obligee of any extension of time for the performance of the Contract, or any other alterations, extensions or forbearance on the part of either or both of the Obligee or the Principal to the other shall not in any way release the Principal and the Surety, or either of them, their heirs, executors, administrators, successors or assigns from their liability hereunder, notice to the Surety of any such alterations, extension, or forbearance being hereby waived.

No action shall be brought on this bond unless brought within five years after completion of the Contract. Completion of the Contract is established when the final payment is made to the Contractor pursuant to the terms of the Contract. However, if a final certificate of occupancy or written final acceptance of the Project is issued prior to final payment, the five-year period to bring an action shall commence no later than 12 months from the date of the certificate of occupancy or written final acceptance of the Project. The Surety represents to the Principal and to the Obligee that it is legally authorized to do business in the Commonwealth of Virginia.

**NOW THEREFORE, THE CONDITION OF THIS OBLIGATION** is such that, if the Principal shall promptly and faithfully perform said Contract in strict conformity with the plans, specifications and



conditions of the Contract, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

Signed and sealed this \_\_\_\_\_ day of  
\_\_\_\_\_, 2023

\_\_\_\_\_  
*Contractor/Principal* (SEAL)

\_\_\_\_\_  
*Witness*

By: \_\_\_\_\_

Typed name:

Title:

\_\_\_\_\_  
*Surety* (SEAL)

By: \_\_\_\_\_

*Attorney-in-Fact*

Typed name:

**AFFIDAVIT AND ACKNOWLEDGEMENT OF ATTORNEY-IN-FACT**

COMMONWEALTH OF VIRGINIA  
(or alternatively, Commonwealth or State of \_\_\_\_\_)

CITY/COUNTY/TOWN of \_\_\_\_\_

I, the undersigned notary public, do certify that \_\_\_\_\_, whose name is signed to the foregoing performance bond in the sum of \$ 51,980,759.00 and dated \_\_\_\_\_ and which names Prince Edward County, Virginia, as Obligee, personally appeared before me today in the above jurisdiction and made oath that he/she is the attorney-in-fact of Liberty Mutual Insurance Company, a Massachusetts corporation which is the Surety in the foregoing bond, that he/she is duly authorized to execute on the above Surety's behalf the foregoing bond pursuant to the Power of Attorney noted above and attached hereto, and on behalf of the surety, he/she acknowledged the foregoing bond before me as the above Surety's act and deed.

She/he has further certified that her/his Power of Attorney has not been revoked.

[ Complete if Power is recorded: Clerk's Office: \_\_\_\_\_;  
Deed Book/Page No. or Instrument No.: \_\_\_\_\_.]

Given under my hand this \_\_\_\_\_ day of \_\_\_\_\_, 2023.

\_\_\_\_\_  
Notary Public (SEAL)

My Name (printed) is:  
My registration number is:  
My commission expires:

APPROVED:

\_\_\_\_\_  
Attorney for Obligee

\_\_\_\_\_  
Date

**Terms and Conditions of the Performance Bond**

1. The Contractor and the Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner for the prompt and faithful performance of the Contract, which is incorporated herein by reference.
2. If the Contractor promptly and faithfully performs the Contract in strict conformity with the plans, specifications and conditions of the Contract, the Surety and the Contractor shall have no obligations under this Bond.
3. In the event of the Contractor's Default, and subsequent notification to the Surety, the Surety shall, within fourteen (14) days of receipt of such notice, contact the Owner in writing, and arrange a meeting with the Owner to discuss methods of completing the Contract. See paragraph 4, below, for the options to be discussed. If the Surety fails to arrange a meeting or fails to attend such meeting, the Surety shall be deemed to be in default on this Bond and the Owner may, at its sole discretion, take what measures it deems necessary to

protect the Owner's interests, without further notice to the Surety, and the Owner shall be entitled to enforce any remedy available to the Owner under the Contract or under Virginia law.

4. Within thirty (30) days after such meeting, during which time the Surety may investigate and otherwise analyze the project, and which period shall not toll any Contract time periods nor operate as a waiver of any of the Owner's rights, the Surety shall, at its own expense, notify the Owner in writing that it is taking one of the following actions, which shall be acceptable to the Owner, at the Owner's sole discretion:
  - 4.1. By written takeover agreement with the Owner, the Surety itself shall undertake to perform and complete the Contract, which it may do through its licensed agents or through licensed independent contractors. If the Owner, at its sole discretion, consents, the Contractor may serve as the Surety's independent contractor (however, due to conflicts with the Virginia Public Procurement Act, the Owner may not directly contract with an otherwise qualified independent contractor produced by the Surety); or
  - 4.2. The Surety may, if acceptable to the Owner and at the Owner's sole discretion, waive its right to perform and complete the Contract, and with reasonable promptness under the circumstances:
    - 4.2.1. Pay to the Owner all amounts for which it may be liable to the Owner as surety on this Performance Bond, including the damages described in paragraph 6 below; or
    - 4.2.2. Deny liability, in whole or in part, and provide written notice thereof to the Owner, citing reasons therefor.
5. If, after the meeting described in paragraph 4, above, the Surety does not proceed with reasonable promptness with one of the options provided in subparagraphs 4.1 or 4.2 (including its subparts), above, the Owner may send additional written notice to the Surety demanding that the Surety perform its obligations under the Bond. If the Surety does not proceed to perform its obligations under the Bond within fifteen (15) days after receipt of said notice, the Surety shall be deemed to be in default on this Bond. Thereafter, the Owner shall be entitled to enforce any remedy available to the Owner under the Bond, the Contract or Virginia law. If the Surety proceeds as provided in Subparagraph 4.2, and the Surety and the Owner are unable to agree as to the amount for which the Surety may be liable to the Owner, or if the Surety has denied liability, in whole or in part, the Owner, without further notice, shall be entitled to enforce any remedy available to the Owner under the Bond, the Contract or Virginia law. In such event, the Owner may immediately proceed to complete the work in any manner authorized by law.
6. After the Owner has terminated the Contractor's right to complete the Contract, and if the Surety elects to act under Subparagraph 4.1 or 4.2.1, above, then the responsibilities of the Surety to the Owner shall not be greater or less than those of the Contractor under the Contract, and the responsibilities of the Owner to the Surety shall not be greater than or less than those of the Owner under the Contract. To the limit of the amount of this Bond, plus the increased cost of any change orders under the Contract, provided the Owner commits the balance of the Contract Price to the prompt and faithful completion of the Contract, the Surety is obligated without duplication for:
  - 6.1. The responsibilities of the Contractor for correction of defective work and completion of the Contract;
  - 6.2. Additional legal, design professional and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Paragraph 4; and
  - 6.3. Liquidated damages, or if no liquidated damages are specified in the Contract, actual damages caused by delayed performance or non-performance of the Contractor.The Owner, at its sole discretion, may waive its claim to delay costs and/or liquidated damages.
7. The Surety shall not be liable to the Owner for obligations of the Contractor that are unrelated to the Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated

obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner, its officers, agencies, administrators, successors or assigns.

8. The Surety hereby waives notice of any changes, including changes of time, to the Contract or to related subcontracts, purchase orders and other obligations. The Surety understands and agrees that the penal amount of the bond shall be increased or decreased by any changes to time and amount incorporated into any Change Orders.
9. Any proceeding by the Owner, legal or equitable, under this Bond may be instituted in any Virginia state court of competent jurisdiction, as permitted of the Contract and Virginia Code § 2.2-4337 and 2.2-4340, or by the Contractor or Surety, as permitted under the Contract or under Virginia law.
10. Notice to the Surety shall be mailed or delivered to the address shown on the Performance Bond in the space for Surety address for delivery of Notices
11. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory bond and not as a common law bond when furnished to comply with statutory requirements.
12. DEFINITIONS
  - 12.1. **Balance of the Contract Price:** The total amount payable by the Owner to the Contractor under the Contract after all proper adjustments have been made, reduced by all valid and proper payments made to or on behalf of the Contractor under the Contract.
  - 12.2. **Contract:** The agreement between the Owner and the Contractor identified on first page of the Performance Bond, including all Contract Documents and duly executed modifications and change orders thereto.
  - 12.3. **Contractor Default:** Failure of the Contractor, as defined under the Contract, which has neither been remedied, at the Owner's sole discretion, nor expressly waived by the Owner, to perform or otherwise to comply with the terms of the Contract.
13. Nothing in these General Conditions shall prevent a surety from becoming involved in the Contract prior to termination, upon notice from the Owner of the Contractor's failure to promptly and faithfully perform the Contract in strict conformity with the plans, specifications and conditions of the Contract.

**COMMONWEALTH OF VIRGINIA  
STANDARD LABOR AND MATERIAL PAYMENT BOND**

**KNOW ALL MEN BY THESE PRESENTS:** That **Prince Edward County Infrastructure, LLC**, the Contractor ("Contractor" or "Principal") whose principal place of business is located at 4016 Holland Blvd., Chesapeake, VA 23323 and **Liberty Mutual Insurance Company** ("Surety") whose address for delivery of 'Notices' is located at 175 Berkeley St., Boston, MA 02116, and who is qualified to do business in the Commonwealth of Virginia, are held and firmly bound unto **Prince Edward County, Virginia**, the Owner ("Obligee") in the amount of **FIFTY-ONE MILLION NINE HUNDRED EIGHTY THOUSAND, SEVEN HUNDRED FIFTY-NINE AND 00/100 DOLLARS (\$ 51,980,759.00)** for the payment whereof Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

**WHEREAS,**

Surety is qualified to do business in the Commonwealth of Virginia and has a Registered Agent as follows:

Corporation Service Company  
100 Shockoe Slip F1 2  
Richmond, VA, 23219 - 4100, USA

Principal has by written agreement dated \_\_\_\_\_ entered into a contract with Obligee for the Design and Construction of the Sandy River Reservoir Water Treatment and Distribution Project, which contract (the "Contract") is by reference expressly made a part hereof;

**NOW THEREFORE, THE CONDITION OF THIS OBLIGATION** is such that, if the Principal shall promptly make payment to all claimants as hereinafter defined, for labor performed and material furnished in the prosecution of the Work provided for in the Contract, then this obligation shall be void; otherwise it shall remain in full force and effect, subject, however, to the following conditions.

The Principal and Surety, jointly and severally, hereby agree with Obligee as follows:

1. A claimant is defined as one having a direct contract with the Principal or with a subcontractor of the Principal for labor, material, or both for use in the performance of the Contract. A "subcontractor" of the Principal, for the purposes of this bond only, includes not only those subcontractors having a direct contractual relationship with the Principal, but also any other contractor who undertakes to participate in the Work which the Principal is to perform under the aforesaid Contract, whether there are one or more intervening subcontractors contractually positioned between it and the Principal (for example, a subcontractor). "Labor" and "material" shall include, but not be limited to, public utility services and reasonable rentals of equipment, but only for periods when the equipment rented is actually used at the work site.
2. Any claimant who has a direct contractual relationship with the Principal and who has performed labor or furnished material in accordance with the Contract documents in furtherance of the Work provided in the Contract, who has not been paid in full therefor before the expiration of ninety (90) days after the day on which such claimant performed the last of such labor or furnished the last of such materials for which he claims payment, may bring an action on this bond to recover

any amount due him for such labor or material, and may prosecute such action to final judgment and have execution on the judgment. The Obligee need not be a party to such action and shall not be liable for the payment of any costs, fees or expenses of any such suit.

3. Any claimant who has a direct contractual relationship with any subcontractor of the Principal but who has no contractual relationship, express or implied, with the Principal, may bring an action on this bond only if he has given written notice to the Principal within ninety (90) days from the day on which the claimant performed the last of the labor or furnished the last of the materials for which he claims payment, stating with substantial accuracy the amount claimed and the name of the person for whom the Work was performed or to whom the material was furnished. Notice to the Principal shall be served by registered or certified mail, postage prepaid, in an envelope addressed to the Principal at any place where his office is regularly maintained for the transaction of business. Claims for sums withheld as retainages with respect to labor performed or materials furnished shall not be subject to the time limitations stated in this paragraph 3.
4. No suit or action shall be commenced hereunder by any claimant.
  - a. Unless brought within one year after the day on which the person bringing such action last performed labor or last furnished or supplied materials, it being understood, however, that if any limitation embodied in this bond is prohibited by any law controlling the construction hereof, the limitation embodied within this bond shall be deemed to be amended so as to be equal to the minimum period of limitation permitted by such law.
  - b. Other than in a Virginia court of competent jurisdiction, with venue as provided by statute, or in the United States District Court for the district in which the project, or any part thereof is situated.
5. The amount of this bond shall be reduced by and to the extent of any payment or payments made in good faith hereunder.

Signed and sealed this \_\_\_\_\_ day of \_\_\_\_\_, 2023

\_\_\_\_\_  
*Witness*

\_\_\_\_\_  
*Contractor/Principal* (SEAL)

By: \_\_\_\_\_

Typed name:  
Title:

\_\_\_\_\_  
*Surety* (SEAL)

By: \_\_\_\_\_

*Attorney-in-Fact*

Typed name:

**AFFIDAVIT AND ACKNOWLEDGEMENT OF ATTORNEY-IN-FACT**

COMMONWEALTH OF VIRGINIA  
(or alternatively, Commonwealth or State of \_\_\_\_\_)

CITY/COUNTY/TOWN of \_\_\_\_\_

I, the undersigned notary public, do certify that \_\_\_\_\_, whose name is signed to the foregoing labor and material payment bond in the sum of \$ **51,980,759.00** and dated \_\_\_\_\_ and which names Prince Edward County, Virginia, as Obligee, personally appeared before me today in the above jurisdiction and made oath that he/she is the attorney-in-fact of Liberty Mutual Insurance Company, a Massachusetts corporation which is the Surety in the foregoing bond, that he/she is duly authorized to execute on the above Surety's behalf the foregoing bond pursuant to the Power of Attorney noted above and attached hereto, and on behalf of the surety, he/she acknowledged the foregoing bond before me as the above Surety's act and deed.

She/he has further certified that her/his Power of Attorney has not been revoked.

[ Complete if Power is recorded: Clerk's Office: \_\_\_\_\_;  
Deed Book/Page No. or Instrument No.: \_\_\_\_\_.]

Given under my hand this \_\_\_\_\_ day of \_\_\_\_\_, 2023.

\_\_\_\_\_  
*Notary Public* (SEAL)

My Name (printed) is:  
My registration number is:  
My commission expires:

APPROVED:

\_\_\_\_\_  
*Attorney for Obligee*

\_\_\_\_\_  
Date

EXHIBIT J  
Allowance Items

1. Allowance Items. The following portions of the Work are designated as Allowance Items in accordance with Sec. 6.3 of the Design-Build Agreement:
  - a. Rock Excavation. The Contract Price includes the costs and markup for the shooting or mechanical breaking, excavation, and handling of 7,500 Linear Feet (LF) of rock in pipe trenches on the Project ("Rock Quantity Allowance") for the Work defined under "Eastern Service Area Distribution System" in Attachment B. Overruns or underruns in the actual quantities of rock excavation required for the performance of this Work shall be priced at \$ 100 per LF of trench containing rock requiring mechanical breaking or blasting, which price is inclusive of Design-Builder's markups and profit.
    - i. The means and methods of rock breaking, blasting, excavation, and any disposition or disposal shall be solely at the discretion of the Design-Builder.

//End of Exhibit J.



<b>Sandy River Water Project</b>					<b>4/11/2023</b>
<b>PECI - MEB / Faulconer JV with Timmons Group</b>					
<b>PPEA Project Pricing Summary</b>					
<b>Project</b>	<b>Description</b>	<b>Quantity</b>	<b>Unit</b>	<b>Unit Cost</b>	<b>Total</b>
<b>Design Phase</b>					
IA	Topographic Survey	1	LS	\$110,000	\$110,000
IA	Geotechnical Drilling	1	LS	\$40,000	\$40,000
IA	Geotechnical Laboratory	1	LS	\$10,000	\$10,000
IA	Geotechnical Coordination & Report	1	LS	\$15,000	\$15,000
IA	Environmental Delineation	1	LS	\$80,000	\$80,000
IA	Subsurface Utility Engineering (SUE)	1	LS	\$45,000	\$45,000
IA	Preconstruction Services - MEB & Faulconer	1	LS	\$250,000	\$250,000
IA	Study and Report Phase	1	LS	\$200,000	\$200,000
IA	Preliminary Design (15%)	1	LS	\$250,000	\$250,000
1	Design to 100% - RW Intake and Pump Station	1	LS	\$590,750	\$590,750
2	Design to 100% - Water Treatment Plant	1	LS	\$2,134,520	\$2,134,520
2a	Design to 100% - GAC Filters	1	LS	\$104,125	\$104,125
3	Design to 100% - Eastern Service Area	1	LS	\$718,144	\$718,144
4	Design Services - Balance of 15% all projects	1	LS	\$567,286	\$567,286
3	Environmental Permitting - Eastern Service Area	1	LS	\$50,000	\$50,000
<b>Construction Phase</b>					
<b>Project 1, 2 &amp; 3 - Raw Water Intake, Pump Station, WTP &amp; East Service Area Distribution</b>					
1+2+3	Engineering Construction Administration Fees	1	LS	\$1,080,734	\$1,080,734
1+2+3	Engineering Support to Owner	1	LS	\$350,000	\$350,000
1+2+3	Project Commissioning and Startup, O&M Manual	1	LS	\$175,000	\$175,000
<b>Project 1 &amp; 2 - Raw Water Intake, Pump Station, &amp; Water Treatment Plant</b>					
1 + 2	Mobilization & General Conditions	1	LS	\$1,778,200	\$1,778,200
1 + 2	Taxes, Bonds, Insurance	1	LS	\$1,125,000	\$1,125,000
1 + 2	Surveying & Stakeout	1	LS	\$225,000	\$225,000
1 + 2	Sitework, Clearing, Grading, E&S, Roads	1	LS	\$2,270,000	\$2,270,000
1 + 2	Process Yard Piping	1	LS	\$2,790,500	\$2,790,500
1 + 2	Site Drainage Systems, Lagoons, Liners	1	LS	\$1,124,500	\$1,124,500
1 + 2	Landscaping, Fencing, Plantings	1	LS	\$225,000	\$225,000
1 + 2	Sheeting, Shoring, Cofferdam, Intake	1	LS	\$2,547,000	\$2,547,000
1 + 2	Cast In Place Concrete	1	LS	\$3,145,280	\$3,145,280
1 + 2	Crom Tank & Undertank Utilities	1	LS	\$1,593,720	\$1,593,720
1 + 2	Masonry	1	LS	\$551,000	\$551,000
1 + 2	Metal Fabrications	1	LS	\$847,000	\$847,000
1 + 2	FRP Fabrications	1	LS	\$235,000	\$235,000
1 + 2	Waterproofing & Sealants	1	LS	\$170,000	\$170,000
1 + 2	Windows & Doors	1	LS	\$292,000	\$292,000
1 + 2	Special Coatings, Flooring, Framing, Drywall	1	LS	\$351,000	\$351,000
1 + 2	Specialties	1	LS	\$55,750	\$55,750
1 + 2	Equipment & Installation	1	LS	\$4,974,950	\$4,974,950
1 + 2	Casework, Furnishings	1	LS	\$93,800	\$93,800
1 + 2	Metal Buildings, Anchor Systems, Precast Building	1	LS	\$897,250	\$897,250
1 + 2	Cranes & Hoists	1	LS	\$92,500	\$92,500
1 + 2	Process Piping & Installation	1	LS	\$1,573,550	\$1,573,550
1 + 2	HVAC & Plumbing	1	LS	\$865,000	\$865,000
1 + 2	Electrical	1	LS	\$3,349,000	\$3,349,000
1 + 2	Controls and Instrumentation	1	LS	\$825,000	\$825,000
<b>Project 1a - RWPS &amp; Intake Permanent Generator and ATS</b>					
1a	RWPS & Intake - Permanent Generator and ATS	1	LS	\$173,000	\$173,000

<b>Project 2a - WTP - Add GAC Filtration</b>					
2a	Engineering Construction Administration Fees	1	LS	\$34,750	\$34,750
2a	General Conditions	1	LS	\$60,500	\$60,500
2a	Sitework	1	LS	\$28,000	\$28,000
2a	Cast In Place Concrete	1	LS	\$145,000	\$145,000
2a	Metal Fabrications	1	LS	\$23,540	\$23,540
2a	Windows & Doors	1	LS	\$32,000	\$32,000
2a	Paint & Special Coatings	1	LS	\$25,000	\$25,000
2a	Equipment & Installation	1	LS	\$625,460	\$625,460
2a	Metal Building	1	LS	\$137,000	\$137,000
2a	Process Piping & Installation	1	LS	\$124,000	\$124,000
2a	Electrical	1	LS	\$62,500	\$62,500
<b>Project 3 - East Service Area Distribution</b>					
3	Eastern Service Area - Mob/GCs	1	LS	\$545,160	\$545,160
3	Eastern Service Area - E&S	1	LS	\$283,900	\$283,900
3	Eastern Service Area - MOT	1	LS	\$82,980	\$82,980
3	Eastern Service Area - Clearing	1	LS	\$175,690	\$175,690
3	Eastern Service Area - 16" Waterline	1	LS	\$7,667,760	\$7,667,760
3	Eastern Service Area - 18" HDD	1	LS	\$1,953,000	\$1,953,000
3	Eastern Service Area - Jack & Bore	1	LS	\$118,530	\$118,530
3	Eastern Service Area - Misc. Restoration	1	LS	\$338,430	\$338,430
3b	Eastern Service Area Rock Allowance	1	LS	\$750,000	\$750,000
				<b>Design &amp; Construction TOTAL PRICE</b>	<b>\$52,153,759</b>