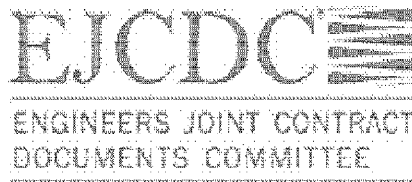


This document has important legal consequences; consultation with an attorney is encouraged with respect to its use or modification. This document should be adapted to the particular circumstances of the contemplated Project and the controlling Laws and Regulations.

**AGREEMENT**  
**~~BETWEEN OWNER AND ENGINEER~~**  
**~~FOR PROFESSIONAL SERVICES~~**  
**Agreement for Western Intake Partnership Water Intake and**  
**Transmission Infrastructure Engineering**  
**between the City of Durham and Hazen and Sawyer, P.C.**

Prepared by



Issued and Published Jointly by



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**AGREEMENT  
BETWEEN OWNER AND ENGINEER  
FOR PROFESSIONAL SERVICES**

THIS IS AN AGREEMENT effective as of August 25, 2021 ("Effective Date") between  
the City of Durham, a North Carolina municipal corporation ("Owner" or "City") and  
Hazen and Sawyer, P.C. ("Engineer").

The title of this Agreement is stated at the top of page 1, above. Engineer is a Professional Corporation registered in North Carolina.

Owner's Project, of which Engineer's services under this Agreement are a part, is generally identified as follows:  
Western Intake Partnership Regional Water Treatment and Transmission Facilities  
("Project").

Other terms used in this Agreement are defined in Article 7.

Engineer's services under this Agreement are generally identified as follows:  
Western Intake Partnership Water Intake and Transmission Infrastructure Engineering

Owner and Engineer further agree as follows:

**ARTICLE 1 – SERVICES OF ENGINEER**

**1.01 Scope**

- A. Engineer shall provide, or cause to be provided, the services set forth herein and in Exhibit A.

**ARTICLE 2 – OWNER'S RESPONSIBILITIES**

**2.01 General**

- A. Owner shall have the responsibilities set forth herein and in Exhibit B.
- B. Owner shall pay Engineer as set forth in Article 4 and Exhibit C.
- C. Owner shall be responsible for all requirements and instructions that it furnishes to Engineer pursuant to this Agreement, and for the accuracy and completeness of all programs, reports, data, and other information furnished by Owner to Engineer pursuant to this Agreement, except to the extent (i) that Owner may indicate that the requirements, programs, instructions, reports, data, or other information is not necessarily accurate or complete, or (ii) that an engineer acting reasonably and in accordance with applicable professional standards would question, doubt, or not rely thereon. Engineer may use and rely upon such requirements, programs, instructions, reports, data, and information in performing or furnishing services under this Agreement, subject to any express limitations or reservations applicable to the furnished items, such as stated in Paragraph 6.03.



- D. Owner shall give prompt written notice to Engineer whenever Owner observes or otherwise becomes aware of:
1. any development that affects the scope or time of performance of Engineer's services;
  2. the presence at the Site of any Constituent of Concern; or
  3. any relevant, material defect or nonconformance in: (a) Engineer's services, (b) the Work, or (c) the performance of any Constructor, ~~or (d) Owner's performance of its responsibilities under this Agreement.~~

### ARTICLE 3 – SCHEDULE FOR RENDERING SERVICES

#### 3.01 *Commencement*

- A. Engineer is authorized to begin rendering services as of the Effective Date.

#### 3.02 *Time for Completion*

- A. Engineer shall complete its obligations within a reasonable time. Specific periods of time for rendering services, or specific dates by which services are to be completed, are provided in Exhibit A, and are hereby agreed to be reasonable.
- B. If, through no fault of Engineer, such periods of time or dates are changed, or the orderly and continuous progress of Engineer's services is impaired, or Engineer's services are delayed or suspended, then the time for completion of Engineer's services, and the rates and amounts of Engineer's compensation, shall be adjusted equitably, but nevertheless, the total compensation shall be limited by any applicable provision of this Agreement that set a ceiling on compensation.
- C. If Owner authorizes changes in the scope, extent, or character of the Project or Engineer's services, then the time for completion of Engineer's services, and the rates and amounts of Engineer's compensation, shall be adjusted equitably.
- D. Owner shall make decisions and carry out its other responsibilities in a timely manner so as not to delay the Engineer's performance of its services.
- E. If Engineer fails, through its own fault, to complete the performance required in this Agreement within the time set forth, as duly adjusted, then Owner shall be entitled, ~~as its sole remedy,~~ to the recovery of direct applicable damages as provided under law and pursuant to the terms of this Agreement, if any, resulting from such failure.

### ARTICLE 4 – INVOICES AND PAYMENTS

#### 4.01 *Invoices*

- A. *Preparation and Submittal of Invoices:* Engineer shall prepare invoices in accordance with its standard invoicing practices and the terms of Exhibit C. Engineer shall submit its invoices to Owner on a monthly basis. Invoices are due and payable within 30 days of receipt subject to the terms of Paragraph 4.02.B.

#### 4.02 Payments

- A. *Application to Interest and Principal:* Payment will be credited first to any interest owed to Engineer and then to principal.
- B. *Failure to Pay:* If Owner fails to make any payment due Engineer for services and expenses within ~~30~~60 days after receipt of Engineer's invoice without providing in writing the specific basis for disputed portions of the invoice, then:
  - 1. amounts due Engineer will be increased at the rate of 1.0% per month (or the maximum rate of interest permitted by law, if less) from said ~~thirtieth~~ sixtieth day; and
  - 2. Engineer may, after giving seven days written notice to Owner, suspend services under this Agreement until Owner has paid in full all undisputed amounts due for services, expenses, and other related charges. ~~Owner waives any and all claims against Engineer for any such suspension.~~
- C. *Disputed Invoices:* If Owner disputes an invoice, either as to amount or entitlement, then Owner shall promptly advise Engineer in writing of the specific basis for doing so, may withhold only that portion so disputed, and must pay the undisputed portion subject to the terms of Paragraph 4.01. Failure to withhold a payment does not constitute a waiver of any of the Owner's claims or defenses with respect to the services for which that payment is made.
- D. ~~[Intentionally deleted]Sales or Use Taxes: If after the Effective Date any governmental entity takes a legislative action that imposes additional sales or use taxes on Engineer's services or compensation under this Agreement, then Engineer may invoice such additional sales or use taxes for reimbursement by Owner. Owner shall reimburse Engineer for the cost of such invoiced additional sales or use taxes; such reimbursement shall be in addition to the compensation to which Engineer is entitled under the terms of Exhibit C.~~

### ARTICLE 5 – OPINIONS OF COST

#### 5.01 Opinions of Probable Construction Cost

- A. Engineer's opinions (if any) of probable Construction Cost are to be made on the basis of Engineer's experience, qualifications, and general familiarity with the construction industry. However, because Engineer has no control over the cost of labor, materials, equipment, or services furnished by others, or over contractors' methods of determining prices, or over competitive bidding or market conditions, Engineer cannot and does not guarantee that proposals, bids, or actual Construction Cost will not vary from opinions of probable Construction Cost prepared by Engineer. If Owner requires greater assurance as to probable Construction Cost, then Owner agrees to obtain an independent cost estimate.

#### 5.02 Designing to Construction Cost Limit

- A. If a Construction Cost limit is established between Owner and Engineer, such Construction Cost limit and a statement of Engineer's rights and responsibilities with respect thereto

will be specifically set forth in Exhibit F to this Agreement. If Exhibit F is not used, or if a Construction Cost limit is not otherwise specified, it is agreed that a Construction Cost limit is not established.

#### 5.03 *Opinions of Total Project Costs*

- A. The services, if any, of Engineer with respect to Total Project Costs shall be limited to assisting the Owner in tabulating the various categories that comprise Total Project Costs. Engineer assumes no responsibility for the accuracy of any opinions of Total Project Costs.

### ARTICLE 6 – GENERAL CONSIDERATIONS

#### 6.01 *Standards of Performance*

- A. *Standard of Care:* The standard of care for all professional engineering and related services performed or furnished by Engineer under this Agreement will be the care and skill ordinarily used by members of the subject profession practicing under similar circumstances, on similar projects, whether such projects can be found locally, regionally or nationally at the same time and in the same locality. Engineer makes no warranties, express or implied, under this Agreement or otherwise, in connection with any services performed or furnished by Engineer. The Engineer warrants that accuracy of Engineer's representations made to Owner as to Engineer's qualifications and experience during the process in which the Owner selected the Engineer. The Engineer represents that it is registered, licensed, and authorized to practice engineering in North Carolina.
- B. *Technical Accuracy:* Engineer shall be responsible for the technical accuracy of its services and documents resulting therefrom, and Owner shall not be responsible for discovering deficiencies in the technical accuracy of Engineer's services. Engineer shall correct deficiencies in technical accuracy without additional compensation, unless such corrective action is directly attributable to deficiencies in Owner-furnished information. Without limiting the foregoing, it is agreed that the Owner's approvals of documents and other items are not waivers or releases of the Engineer's duty to provide the documents and other items in accordance with this Agreement and in accordance with applicable professional standards.
- C. *Consultants:* Engineer may retain such Consultants as Engineer deems necessary to assist in the performance or furnishing of the services, subject to reasonable, timely, and substantive objections by Owner. Notwithstanding the foregoing, Engineer shall serve as Owner's prime professional for the Project.
- D. *Reliance on Others:* Subject to the standard of care set forth in Paragraph 6.01.A, Engineer and its Consultants may use or rely upon design elements and information ordinarily or customarily furnished by others, including, but not limited to, specialty contractors, manufacturers, suppliers, and the publishers of technical standards.
- E. *Compliance with Laws and Regulations, and Policies and Procedures:*
  - 1. Engineer and Owner shall comply with applicable Laws and Regulations. Without limiting the foregoing, it is agreed that Engineer shall comply with applicable provisions of N.C. General Statutes Chapter 133, Article 1.

2. Engineer shall comply with any and all policies, procedures, and instructions of Owner that are applicable to Engineer's performance of services under this Agreement and that Owner provides to Engineer in writing, subject to the standard of care set forth in Paragraph 6.01.A, and to the extent compliance is not inconsistent with professional practice requirements.
3. This Agreement is based on Laws and Regulations and Owner-provided written policies and procedures as of the Effective Date. The following may be the basis for modifications to Owner's responsibilities or to Engineer's scope of services, times of performance, or compensation:
  - a. changes after the Effective Date to Laws and Regulations;
  - b. the receipt by Engineer after the Effective Date of Owner-provided written policies and procedures;
  - c. changes after the Effective Date to Owner-provided written policies or procedures.
- F. Engineer shall not be required to sign any document, no matter by whom requested, that would result in the Engineer having to certify, guarantee, or warrant the existence of conditions whose existence the Engineer cannot ascertain. Owner agrees not to make resolution of any dispute with the Engineer or payment of any amount due to the Engineer in any way contingent upon the Engineer signing any such document.
- G. The general conditions for any construction contract documents prepared hereunder are to be EJCDC® C-700 "Standard General Conditions of the Construction Contract" (2013 Edition ~~2002 Edition~~), or any newer version selected by the Owner, supplemented by the Owner's supplementary conditions, as modified by the Owner from time to time. The construction contract will be the EJCDC contract form issued in conjunction with the General Conditions, as that contract form has been modified by the Owner from time to time ~~prepared by the Engineers Joint Contract Documents Committee, unless expressly indicated otherwise in Exhibit J or elsewhere in this Agreement.~~
- H. Engineer shall not at any time supervise, direct, control, or have authority over any Constructor's work, nor shall Engineer have authority over or be responsible for the means, methods, techniques, sequences, or procedures of construction selected or used by any Constructor, or the safety precautions and programs incident thereto, for security or safety at the Site, nor for any failure of a Constructor to comply with Laws and Regulations applicable to that Constructor's furnishing and performing of its work. Engineer shall not be responsible for the acts or omissions of any Constructor.
- I. Engineer neither guarantees the performance of any Constructor nor assumes responsibility for any Constructor's, failure to furnish and perform the Work in accordance with the Construction Contract Documents.
- J. Engineer shall not be responsible for any decision made regarding the Construction Contract Documents, or any application, interpretation, clarification, or modification of the Construction Contract Documents, other than those made by Engineer or its Consultants, whether directly, or through advice and consultation given to Owner.

- K. Engineer is not required to provide and does not have any responsibility for surety bonding or insurance-related advice, recommendations, counseling, or research, or enforcement of construction insurance or surety bonding requirements.
- L. Engineer's services do not include providing legal advice or representation.
- M. Engineer's services do not include (1) serving as a "municipal advisor" for purposes of the registration requirements of Section 975 of the Dodd-Frank Wall Street Reform and Consumer Protection Act (2010) or the municipal advisor registration rules issued by the Securities and Exchange Commission, or (2) advising Owner, or any municipal entity or other person or entity, regarding municipal financial products or the issuance of municipal securities, including advice with respect to the structure, timing, terms, or other similar matters concerning such products or issuances.
- N. While at the Site, Engineer, its Consultants, and their employees and representatives shall comply with the applicable requirements of Contractor's and Owner's safety programs of which Engineer has been informed in writing.

#### 6.02 *Design Without Construction Phase Services*

- A. Engineer shall be responsible only for those Construction Phase services expressly required of Engineer in Exhibit A, Paragraph A1.05. With the exception of such expressly required services, Engineer shall have no design, Shop Drawing review, or other obligations during construction, and Owner assumes all responsibility for the application and interpretation of the Construction Contract Documents, review and response to Contractor claims, Construction Contract administration, processing of Change Orders and submittals, revisions to the Construction Contract Documents during construction, construction observation and review, review of Contractor's payment applications, and all other necessary Construction Phase administrative, engineering, and professional services. Owner waives all claims against the Engineer that may be connected in any way to Construction Phase administrative, engineering, or professional services except for those services that are expressly required of Engineer in Exhibit A.

#### 6.03 *Use of Documents*

- A. ~~All Documents are instruments of service, and Engineer shall retain an ownership and property interest therein (including the copyright and the right of reuse at the discretion of the Engineer) whether or not the Project is completed. Engineer hereby assigns to Owner, without reservation, all copyrights in all Project-related Documents and other expression created by Engineer, referred to as "Instruments of Service". Included in the Instruments of Service are the Drawings and Construction Contract Documents. Owner's obligation to pay Engineer is expressly conditions upon Engineer obtaining a valid written comprehensive assignment of copyrights from its Consultants in terms identical to those that obligated Engineer to Owner as expressed in this subparagraph, which copyrights Engineer, in turn, hereby assigns to Owner. Owner, in return hereby grants Engineer and its Consultants a revocable, nonexclusive license to reproduce the documents for purposes related directly to Engineer's performance of its obligations under this Agreement, for Engineer's archival records, and for Engineer's reproduction of drawings and photographs in Engineer's marketing materials. This nonexclusive license shall terminate automatically upon the occurrence of either a breach of this Agreement by~~

Engineer or the accused commission by Engineer of a tort or a crime affecting Owner or the Project or upon termination of this Agreement. This nonexclusive license is granted to Engineer alone and shall not be assigned by Engineer to any other person or entity, except that the non-exclusive license granted in this Agreement to Engineer for purposes of the Engineer's performance hereunder may be sub-licensed to Engineer's Consultants (with the same limitations). Subject to the foregoing, this nonexclusive license shall terminate automatically upon an Engineer's assignment of this nonexclusive license to another or its attempt to do so.

- B. If Engineer is required to prepare or furnish Drawings or Specifications under this Agreement, Engineer shall deliver to Owner at least one original printed record version of such Drawings and Specifications, signed and sealed according to applicable Laws and Regulations.
- C. ~~Owner may make and retain copies of Documents for information and reference in connection with the use of the Documents on the Project. Engineer grants Owner a limited license to use the Documents on the Project, extensions of the Project, and for related uses of the Owner, subject to receipt by Engineer of full payment due and owing for all services relating to preparation of the Documents, and subject to the following limitations: (1) Owner acknowledges that such Documents are not intended or represented to be suitable for use on the Project unless completed by Engineer, or for use or reuse by Owner or others on extensions of the Project, on any other project, or for any other use or purpose, without written verification or adaptation by Engineer; (2) any such use or reuse, or any modification of the Documents, without written verification, completion, or adaptation by Engineer, as appropriate for the specific purpose intended, will be at Owner's sole risk and without liability or legal exposure to Engineer or to its officers, directors, members, partners, agents, employees, and Consultants; (3) Owner shall indemnify and hold harmless Engineer and its officers, directors, members, partners, agents, employees, and Consultants from all claims, damages, losses, and expenses, including attorneys' fees, arising out of or resulting from any use, reuse, or modification of the Documents without written verification, completion, or adaptation by Engineer; and (4) such limited license to Owner shall not create any rights in third parties. To the extent that liability arises from misuse of the Instruments of Service by Owner or another engineer or architect, Engineer shall not be responsible for that misuse. If Owner uses the Instruments of Services for purposes including additions to and modifications of the Project, and for other projects, Owner, to the extent authorized by law, shall indemnify Engineer for losses, including reasonable attorneys' fees, suffered by Engineer as a result of the use of the design and these documents for such other purposes. If these documents are used for other purposes, Owner shall see that they are modified (a) to indicate that Engineer did not prepare them for such other purposes and is not responsible for their use in connection with such other purposes and (b) to delete Engineer's name and seal from the documents (where permitted or required by law).~~
- D. [Intentionally deleted] ~~If Engineer at Owner's request verifies the suitability of the Documents, completes them, or adapts them for extensions of the Project or for any other purpose, then Owner shall compensate Engineer at rates or in an amount to be agreed upon by Owner and Engineer.~~

#### 6.04 *Electronic Transmittals*

- A. Owner and Engineer may transmit, and shall accept, Project-related correspondence, Documents, text, data, drawings, information, and graphics, in electronic media or digital format, either directly, or through access to a secure Project website, in accordance with a mutually agreeable protocol.
- B. If this Agreement does not establish protocols for electronic or digital transmittals, then Owner and Engineer shall jointly develop such protocols.
- C. When transmitting items in electronic media or digital format, the transmitting party makes no representations as to long term compatibility, usability, or readability of the items resulting from the recipient's use of software application packages, operating systems, or computer hardware differing from those used in the drafting or transmittal of the items, or from those established in applicable transmittal protocols.

#### 6.05 *Insurance*

- A. Engineer shall procure and maintain insurance as set forth in Exhibit G. Engineer shall cause Owner to be listed as an additional insured on any applicable general liability insurance policy carried by Engineer.
- B. ~~*[Intentionally deleted]* Owner shall procure and maintain insurance as set forth in Exhibit G. Owner shall cause Engineer and its Consultants to be listed as additional insureds on any general liability policies carried by Owner, which are applicable to the Project.~~
- C. Owner shall require Contractor to purchase and maintain policies of insurance covering workers' compensation, general liability, motor vehicle damage and injuries, and other insurance necessary to protect Owner's and Engineer's interests in the Project. Owner shall require Contractor to cause Engineer and its Consultants to be ~~listed~~ named as additional insureds with respect to such liability insurance purchased and maintained by Contractor for the Project.
- D. ~~Owner and~~ Engineer shall each deliver to ~~the other~~ Owner certificates of insurance evidencing the coverages indicated in Exhibit G. Such certificates shall be furnished prior to commencement of Engineer's services and at renewals thereafter as required by Owner during the life of the Agreement.
- E. ~~*[Intentionally deleted]* All policies of property insurance relating to the Project, including but not limited to any builder's risk policy, shall allow for waiver of subrogation rights and contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any insured thereunder or against Engineer or its Consultants. Owner and Engineer waive all rights against each other, Contractor, the Consultants, and the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from any of the perils or causes of loss covered by any builder's risk policy and any other property insurance relating to the Project. Owner and Engineer shall take appropriate measures in other Project related contracts to secure waivers of rights consistent with those set forth in this paragraph.~~

- F. All policies of insurance shall contain a provision or endorsement that the coverage afforded will not be canceled or reduced in limits by endorsement, and that renewal will not be refused, until at least 10 days prior written notice has been given to the primary insured. Upon receipt of such notice, the receiving party shall promptly forward a copy of the notice to the other party to this Agreement.
- G. At any time, Owner may request that Engineer or its Consultants, at Owner's sole expense, provide additional insurance coverage, increased limits, or revised deductibles that are more protective than those specified in Exhibit G. If so requested by Owner, and if commercially available, Engineer shall obtain and shall require its Consultants to obtain such additional insurance coverage, different limits, or revised deductibles for such periods of time as requested by Owner, and Exhibit G will be supplemented to incorporate these requirements.

#### 6.06 *Suspension and Termination*

##### A. *Suspension:*

- 1. *By Owner:* Owner may suspend the Project for up to 90 days upon seven days written notice to Engineer.
- 2. *By Engineer:* Engineer may, after giving seven days written notice to Owner, suspend services under this Agreement if Owner has failed to pay Engineer for invoiced services and expenses, as set forth in Paragraph 4.02.B, or in response to the presence of Constituents of Concern at the Site, as set forth in Paragraph 6.10.D.

##### B. *Termination:* The obligation to provide further services under this Agreement may be terminated:

- 1. For cause,
  - a. by either party upon 30 days written notice in the event of substantial failure by the other party to perform in accordance with the terms hereof through no fault of the terminating party.
  - b. by Engineer:
    - 1) upon seven days written notice stating specifically how ~~if Engineer believes Owner demands that Engineer~~ is being requested by Owner to furnish or perform services contrary to Engineer's responsibilities as a licensed professional; or
    - 2) upon seven days written notice stating specifically how ~~if the~~ Engineer's services for the Project are being delayed or suspended for more than 90 days for reasons beyond Engineer's control, or as the result of the presence at the Site of undisclosed Constituents of Concern, as set forth in Paragraph 6.10.D.
    - 3) Engineer shall have no liability to Owner on account of such termination.



- c. Notwithstanding the foregoing, neither the obligations to provide further services nor this Agreement will not terminate under Paragraph 6.06.B.1.a or Paragraph 6.06.B.1.b if the party receiving such notice begins, within seven days of receipt of such notice, to cure the matters pointed out in the notice correct its substantial failure to perform and proceeds diligently to cure the matters such failure within no more than 30 days of receipt thereof; provided, however, that if and to the extent such substantial failure matters cannot be reasonably cured within such 30 day period, and if such party has diligently attempted to cure the same and thereafter continues diligently to cure the same, then the cure period provided for herein shall extend up to, but in no case more than, 60 days after the date of receipt of the notice.
2. For convenience, by Owner effective upon Engineer's receipt of notice from Owner or at a later time specified in the notice and payment. Without limiting any party's right to terminate for breach, the parties agree that the Owner may, without cause, and in its discretion, terminate this Agreement for convenience by giving Engineer written notice that refers to this subparagraph. Termination for Convenience (TFC) shall be effective at the time and in the fashion indicated in the notice. (a) Obligations. Upon TFC, all obligations that are still executory on both sides are discharged except that any right based on prior breach or contractual performance and representations survives, and the indemnification shall remain in force. (b) Payment. The Owner shall pay Engineer an equitable amount for the costs and charges that accrue because of Owner's decisions with respect to the subcontracts but excluding profit for Engineer. Within 20 days after TFC, the City shall pay Engineer one hundred dollars (\$100.00) as a TFC fee and shall pay Engineer for all services performed, consistent with the terms of the Agreement, except to the extent previously paid for. Services shall be paid for in accordance with the method (% completion of lump sum, hourly fees, etc.) to be used for payment had the services been completed except to the extent it would be inequitable to either party, and if service was to be paid for on a lump-sum basis, Owner shall pay the part of the lump sum that reflects the percentage of completion attained for that service. Engineer shall not be entitled to any payment because of TFC except as stated in this subparagraph, whether on the basis of overhead, profit, damages, other economic loss, or otherwise.
- C. Effective Date of Termination: The terminating Either party under Paragraph 6.06.B may set the effective date of termination at a time up to 30 days later than otherwise provided to allow Engineer to demobilize personnel and equipment from the Site, to complete tasks whose value would otherwise be lost, to prepare notes as to the status of completed and uncompleted tasks, and to assemble Project materials in orderly files. Any termination under this paragraph 6.06.B.1 shall occur automatically upon the passage of the requisite time period unless the cure provisions of 6.06.B.1.c, if applicable, are complied with and the terminating party has received notice of that compliance. In case of any termination, Engineer shall (1) cooperate with the Owner in Owner's efforts to complete the Project, (2) provide information requested by the Owner in connection with completion of the Project, (3) provide a reproducible copy of all Drawings, Specifications and other documents, even if incomplete, prepared by Engineer up to the date of termination, and (4) if requested by the Owner, provide a reproducible copy of all Drawings, Specifications and other documents to describe the constructed Work as of the date of termination. Services provided after termination shall be compensated as Additional Services.

D. *Payments Upon Termination:*

1. In the event of any termination under Paragraph 6.06, Engineer will be entitled to invoice Owner and to receive full payment for all services performed or furnished in accordance with this Agreement and all Reimbursable Expenses (if applicable) incurred through the effective date of termination. Upon making such payment, Owner shall have the limited right to the use of Documents, at Owner's sole risk, subject to the provisions of Paragraph 6.03.
2. In the event of termination by Owner for convenience or by Engineer for cause, Engineer shall be entitled, in addition to invoicing for those items identified in Paragraph 6.06.D.1, to invoice Owner and receive payment of a reasonable amount for services and expenses directly attributable to termination, both before and after the effective date of termination, such as ~~reassignment of personnel~~, direct costs of terminating contracts with Engineer's Consultants, and other related close-out costs, using methods and rates for Additional Services if established and as set forth in Exhibit C, less the amount that the Engineer would have saved had it acted reasonably, and excluding overhead, profit, damages, or other economic loss.

6.07 *Controlling Law*

- A. This Agreement is to be governed by the Laws and Regulations of the ~~state in which the Project is located~~ State of North Carolina.

6.08 *Successors, Assigns, and Beneficiaries*

- A. Owner and Engineer are hereby bound and the successors, executors, administrators, and legal representatives of Owner and Engineer (and to the extent permitted by Paragraph 6.08.B the assigns of Owner and Engineer) are hereby bound to the other party to this Agreement and to the successors, executors, administrators and legal representatives (and said assigns) of such other party, in respect of all covenants, agreements, and obligations of this Agreement.
- B. Neither Owner nor Engineer may assign, sublet, or transfer any rights under or interest (including, but without limitation, money that is due or may become due) in this Agreement without the written consent of the other party, except to the extent that any assignment, subletting, or transfer is mandated by law. Unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under this Agreement.
- C. Unless expressly provided otherwise in this Agreement:
  1. Nothing in this Agreement shall be construed to create, impose, or give rise to any duty owed by Owner or Engineer to any Constructor, other third-party individual or entity, or to any surety for or employee of any of them.
  2. All duties and responsibilities undertaken pursuant to this Agreement will be for the sole and exclusive benefit of Owner and Engineer and not for the benefit of any other party.

3. Owner agrees that the substance of the provisions of this Paragraph 6.08.C shall appear in the Construction Contract Documents.

#### 6.09 *Dispute Resolution*

- A. Owner and Engineer agree to negotiate all disputes between them in good faith for a period of 30 days from the date of notice prior to invoking the procedures of Exhibit H or other provisions of this Agreement, or exercising their rights at law.
- B. If the parties fail to resolve a dispute through negotiation under Paragraph 6.09.A, then either or both may invoke the procedures of Exhibit H. If Exhibit H is not included, or if no dispute resolution method is specified in Exhibit H, then the parties may exercise their rights at law.

#### 6.10 *Environmental Condition of Site*

- A. Owner represents to Engineer that as of the Effective Date to the best of Owner's knowledge no Constituents of Concern, other than those disclosed in writing to Engineer, exist at or adjacent to the Site. Engineer represents to Owner that to the best of its knowledge no Constituents of Concern, other than those disclosed in writing to Owner exist at or adjacent to the Site.
- B. If Engineer encounters or learns of an undisclosed Constituent of Concern at the Site, then Engineer shall notify (1) Owner and (2) appropriate governmental officials if Engineer reasonably concludes that doing so is required by applicable Laws or Regulations.
- C. Unless otherwise negotiated by the parties and expressly included in the Engineer's scope of services, it is acknowledged by both parties that Engineer's scope of services does not include any services related to unknown or undisclosed Constituents of Concern. If Engineer or any other party encounters, uncovers, or reveals an undisclosed Constituent of Concern, then Owner shall promptly determine whether to retain a qualified expert to evaluate such condition or take any necessary corrective action.
- D. If investigative or remedial action, or other professional services, are necessary with respect to undisclosed Constituents of Concern, or if investigative or remedial action beyond that reasonably contemplated is needed to address a disclosed or known Constituent of Concern, then Engineer may, at its option and without liability for consequential or any other damages, suspend performance of services on the portion of the Project affected thereby until such portion of the Project is no longer affected.
- E. If the presence at the Site of undisclosed Constituents of Concern adversely affects the performance of Engineer's services under this Agreement, then the Engineer shall have the option of (1) accepting an equitable adjustment in its compensation or in the time of completion, or both; or (2) terminating this Agreement for cause on seven days notice.
- F. Owner acknowledges that Engineer is performing professional services for Owner and that Engineer is not and shall not be required to become an "owner," "arranger," "operator," "generator," or "transporter" of hazardous substances, as defined in the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended, which

are or may be encountered at or near the Site in connection with Engineer's activities under this Agreement.

#### 6.11 ~~Indemnification and Mutual Waiver~~

A. ~~Indemnification by Engineer: To the fullest extent permitted by Laws and Regulations, Engineer shall indemnify and hold harmless Owner, and Owner's officers, directors, members, partners, agents, consultants, and employees, from losses, damages, and judgments (including reasonable consultants' and attorneys' fees and expenses) arising from third-party claims or actions relating to the Project, provided that any such claim, action, loss, damages, or judgment is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom, but only to the extent caused by any negligent act or omission of Engineer or Engineer's officers, directors, members, partners, agents, employees, or Consultants. This indemnification provision is subject to and limited by the provisions, if any, agreed to by Owner and Engineer in Exhibit I, "Limitations of Liability."~~

1. In general. The terms of subparagraph (3) (Standard Indemnification Provision) below shall apply to the Contractor, subject to subparagraphs (4) through (11), where applicable
2. Definitions. These definitions apply to this Paragraph 6.11.A unless otherwise stated.
  - a. Contractor – Each party to this Agreement except the City of Durham.
  - b. Construction agreement -- any promise or agreement in, or in connection with, a contract or agreement relative to the design, planning, construction, alteration, repair, or maintenance of a building, structure, highway, road, appurtenance, or appliance, including moving, demolition, and excavating connected therewith.
  - c. Defend –In this Paragraph 6.11.A except in subparagraph (c), defend means to pay for or furnish counsel at the expense of the Contractor to defend any of the Indemnitees against claims alleged or brought against any of the Indemnitees by a third party alleged or brought in any court or other tribunal, including forms of alternative dispute resolution required by law or contract, before the court or tribunal has reached a final determination of fault.
  - d. Derivative parties -- with respect to a party, any of that party's subcontractors, agents, employees, or other persons or entities for which the party may be liable or responsible as a result of any statutory, tort, or contractual duty.
  - e. Design professional -- a person or entity who is licensed under and provides professional services regulated by Chapters 83A, 89A, 89C, 89E, or 89F of the N. C. General Statutes.
  - f. Design professional agreement -- any promise or agreement in, or in connection with, a contract or agreement with a design professional to provide design professional services.

- g. Design professional services -- a service or work performed by a design professional for which licensure is required under Chapters 83A, 89A, 89C, 89E, or 89F of the N. C. General Statutes.
  - h. Fault -- a breach of contract; negligent, reckless, or intentional act or omission constituting a tort under applicable statutes or common law; or violations of applicable statutes or regulations.
  - i. Indemnitees -- City and its officers, officials, independent contractors, agents, and employees, excluding the Contractor.
  - j. Subcontractor -- any person or entity, of any tier, providing labor or material through the Contractor for use on the project at issue in the applicable construction agreement or design professional agreement.
3. Standard Indemnification Provision. (i) The Contractor shall defend, indemnify, and hold harmless Indemnitees from and against all Charges that arise in any manner from, in connection with, or out of this Agreement as a result of acts or omissions of the Contractor or its derivative parties. In performing its duties under this subsection "3," the Contractor shall at its sole expense defend Indemnitees with legal counsel reasonably acceptable to City. (ii) "Charges" means claims, judgments, costs, damages, losses, demands, liabilities, duties, obligations, fines, penalties, royalties, settlements, and expenses. Included without limitation within "Charges" are (1) interest and reasonable attorney's fees assessed as part of any such item, and (2) amounts for alleged violations of sedimentation pollution, erosion control, pollution, or other environmental laws, regulations, ordinances, rules, or orders -- including but not limited to any such alleged violation that arises out of the handling, transportation, deposit, or delivery of the items that are the subject of this Agreement. By appropriate litigation, each Indemnitee, severally, shall have the right to enforce this Paragraph 6.11.A (titled "Indemnification") directly against the Contractor, but not against the City of Durham.
4. Restriction regarding Indemnitees' Negligence. This Agreement shall not require the Contractor to indemnify or hold harmless Indemnitees against liability for damages arising out of bodily injury to persons or damage to property proximately caused by or resulting from the negligence, in whole or in part, of Indemnitees.
5. Restriction regarding Fault in Construction Agreements and Design Professional Agreements. If this Agreement is a construction agreement or design professional agreement, nothing in this Agreement requires the Contractor to indemnify or hold harmless Indemnitees or any other person or entity against losses, damages, or expenses unless the fault of the Contractor or its derivative parties is a proximate cause of the loss, damage, or expense indemnified.
6. Restriction regarding Negligence of Design Professionals. Nothing in this Agreement requires the Contractor, provided that it is a design professional, to defend Indemnitees or any other person or entity against liability or claims for damages, or expenses, including attorney's fees, proximately caused or allegedly caused by the professional negligence, in whole or in part, of the Contractor, the City, or their derivative parties, whether the claim is alleged or brought in tort or contract.

7. Liability When at Fault. The parties intend that nothing in this Agreement shall be construed to exclude from any indemnity or hold harmless provisions enforceable under subparagraph (4) (Restriction regarding Indemnitees' Negligence) and subparagraph (5) (Restriction regarding Fault in Construction Agreements and Design Professional Agreements) any attorneys' fees, litigation or arbitration expenses, or court costs actually incurred by the City to defend against third party claims alleged in any court, tribunal, or alternative dispute resolution procedure required of the City by law or by contract, if the fault of the Contractor or its derivative parties is a proximate cause of the attorney's fees, litigation or arbitration expenses, or court costs to be indemnified. Every provision in this Agreement that violates the parties' intent expressed in the preceding sentence shall be construed and revised to the extent that it is lawful in order to make the provision conform with such intent.
8. Insurance Contracts and Bonds. This Paragraph 6.11.A does not affect an insurance contract, workers' compensation, or any other agreement issued by an insurer; and this Paragraph 6.11.A does not apply to lien or bond claims asserted under Chapter 44A of the N.C. General Statutes.
9. Other Provisions. Every provision in this Agreement that violates subparagraph (4) (Restriction regarding Indemnitees' Negligence), subparagraph (5) (Restriction regarding Fault in Construction Agreements and Design Professional Agreements), or subparagraph (6) (Restriction Regarding Negligence of Design Professionals) shall be construed and revised to the extent that it is lawful in order to make the provision conform with those subparagraphs.
10. Survival. This Paragraph 6.11.A shall remain in force despite termination of this Agreement (whether by expiration of the term or otherwise) and termination of the services of the Contractor under this Agreement.
11. Compliance with Law. This Paragraph 6.11.A shall be applied to the maximum extent allowed by law but it shall be construed and limited as necessary to comply with N.C.G.S. § 22B-1. This Paragraph 6.11.A is not to be construed in favor or against any party as the drafter. The preceding sentence is not intended to imply or direct how the remainder of this Paragraph 6.11.A or of this Agreement is to be construed.
- B. ~~*[Intentionally deleted] Indemnification by Owner: Owner shall indemnify and hold harmless Engineer and its officers, directors, members, partners, agents, employees, and Consultants as required by Laws and Regulations and to the extent (if any) required in Exhibit I, "Limitations of Liability."*~~
- C. ~~*[Intentionally deleted] Environmental Indemnification: To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Engineer and its officers, directors, members, partners, agents, employees, and Consultants from all claims, costs, losses, damages, actions, and judgments (including reasonable consultants' and attorneys fees and expenses) caused by, arising out of, relating to, or resulting from a Constituent of Concern at, on, or under the Site, provided that (1) any such claim, cost, loss, damages, action, or judgment is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom, and (2) nothing in this paragraph shall obligate Owner to indemnify*~~

~~any individual or entity from and against the consequences of that individual's or entity's own negligence or willful misconduct.~~

- D. ~~[Intentionally deleted] No Defense Obligation: The indemnification commitments in this Agreement do not include a defense obligation by the indemnitor unless such obligation is expressly stated.~~
- E. ~~[Intentionally deleted] Percentage Share of Negligence: To the fullest extent permitted by Laws and Regulations, a party's total liability to the other party and anyone claiming by, through, or under the other party for any cost, loss, or damages caused in part by the negligence of the party and in part by the negligence of the other party or any other negligent entity or individual, shall not exceed the percentage share that the party's negligence bears to the total negligence of Owner, Engineer, and all other negligent entities and individuals.~~
- F. ~~[Intentionally deleted] Mutual Waiver: To the fullest extent permitted by Laws and Regulations, Owner and Engineer waive against each other, and the other's employees, officers, directors, members, agents, insurers, partners, and consultants, any and all claims for or entitlement to special, incidental, indirect, or consequential damages arising out of, resulting from, or in any way related to this Agreement or the Project, from any cause or causes.~~

#### 6.12 *Records Retention*

- A. Engineer shall maintain on file in legible form, for a period of five years following completion or termination of its services, all Documents, records (including cost records), and design calculations related to Engineer's services or pertinent to Engineer's performance under this Agreement. The records shall be kept in such form and detail as will clearly identify all relevant charges and costs and the bases thereof, except to the extent Owner's representative and Engineer's representative concur otherwise in writing. Said concurrence is valid without an amendment to this Agreement. Upon Owner's request, Engineer shall provide a copy of any such item to Owner at cost.

#### 6.13 *Miscellaneous Provisions*

- A. *Notices:* Any notice required under this Agreement will be in writing, addressed to the appropriate party at its address on the signature page and given personally, by registered or certified mail postage prepaid, or by a commercial courier service. All notices shall be effective upon the date of receipt. The address can be changed from time to time by giving notice pursuant to this Agreement.
- B. *Survival:* All express representations, waivers, indemnifications, and limitations of liability included in this Agreement will survive its completion or termination for any reason.
- C. *Severability:* Any provision or part of the Agreement held to be void or unenforceable under any Laws or Regulations shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon Owner and Engineer, which agree that the Agreement shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

- D. *Waiver*: A party's non-enforcement of any provision shall not constitute a waiver of that provision, nor shall it affect the enforceability of that provision or of the remainder of this Agreement.
- E. ~~*[Intentionally deleted] Accrual of Claims: To the fullest extent permitted by Laws and Regulations, all causes of action arising under this Agreement shall be deemed to have accrued, and all statutory periods of limitation shall commence, no later than the date of Substantial Completion.*~~

## ARTICLE 7 – DEFINITIONS

### 7.01 *Defined Terms*

- A. Wherever used in this Agreement (including the Exhibits hereto) terms (including the singular and plural forms) printed with initial capital letters have the meanings indicated in the text above, in the exhibits, or in the following definitions:
1. *Addenda*—Written or graphic instruments issued prior to the opening of bids which clarify, correct, or change the bidding requirements or the proposed Construction Contract Documents.
  2. *Additional Services*—The services to be performed for or furnished to Owner by Engineer in accordance with Part 2 of Exhibit A of this Agreement.
  3. *Agreement*—This written contract for professional services between Owner and Engineer, including all exhibits identified in Paragraph 8.01 and any duly executed amendments.
  4. *Application for Payment*—The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Construction Contract.
  5. *Basic Services*—The services to be performed for or furnished to Owner by Engineer in accordance with Part 1 of Exhibit A of this Agreement.
  6. *Change Order*—A document which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Construction Contract Price or the Construction Contract Times, or other revision to the Construction Contract, issued on or after the effective date of the Construction Contract.
  7. *Change Proposal*—A written request by Contractor, duly submitted in compliance with the procedural requirements set forth in the Construction Contract, seeking an adjustment in Construction Contract Price or Construction Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Construction Contract Documents or the acceptability of Work under the Construction Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Construction Contract.



8. *Constituent of Concern*—Asbestos, petroleum, radioactive material, polychlorinated biphenyls (PCBs), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to (a) the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. §§9601 et seq. (“CERCLA”); (b) the Hazardous Materials Transportation Act, 49 U.S.C. §§5501 et seq.; (c) the Resource Conservation and Recovery Act, 42 U.S.C. §§6901 et seq. (“RCRA”); (d) the Toxic Substances Control Act, 15 U.S.C. §§2601 et seq.; (e) the Clean Water Act, 33 U.S.C. §§1251 et seq.; (f) the Clean Air Act, 42 U.S.C. §§7401 et seq.; or (g) any other federal, State, or local statute, law, rule, regulation, ordinance, resolution, code, order, or decree regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.
9. *Construction Contract*—The entire and integrated written contract between the Owner and Contractor concerning the Work.
10. *Construction Contract Documents*—Those items designated as “Contract Documents” in the Construction Contract, and which together comprise the Construction Contract.
11. *Construction Contract Price*—The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Construction Contract Documents.
12. *Construction Contract Times*—The number of days or the dates by which Contractor shall: (a) achieve milestones, if any, in the Construction Contract; (b) achieve Substantial Completion; and (c) complete the Work.
13. *Construction Cost*—The cost to Owner of the construction of those portions of the entire Project designed or specified by or for Engineer under this Agreement, including construction labor, services, materials, equipment, insurance, and bonding costs, and allowances for contingencies. Construction Cost does not include costs of services of Engineer or other design professionals and consultants; cost of land or rights-of-way, or compensation for damages to property; Owner’s costs for legal, accounting, insurance counseling, or auditing services; interest or financing charges incurred in connection with the Project; or the cost of other services to be provided by others to Owner. Construction Cost is one of the items comprising Total Project Costs.
14. *Constructor*—Any person or entity (not including the Engineer, its employees, agents, representatives, and Consultants), performing or supporting construction activities relating to the Project, including but not limited to Contractors, Subcontractors, Suppliers, Owner’s work forces, utility companies, other contractors, construction managers, testing firms, shippers, and truckers, and the employees, agents, and representatives of any or all of them.
15. *Consultants*—Individuals or entities having a contract with Engineer to furnish services with respect to this Project as Engineer’s independent professional associates and consultants; subcontractors; or vendors.
16. *Contractor*—The entity or individual with which Owner enters into a Construction Contract.

17. *Documents*—Data, reports, Drawings, Specifications, Record Drawings, building information models, civil integrated management models, and other deliverables, whether in printed or electronic format, provided or furnished in appropriate phases by Engineer to Owner pursuant to this Agreement.
18. *Drawings*—That part of the Construction Contract Documents that graphically shows the scope, extent, and character of the Work to be performed by Contractor.
19. *Effective Date*—The date indicated in this Agreement on which it becomes effective, but if no such date is indicated, the date on which this Agreement is signed and delivered by the last of the parties to sign and deliver.
20. *Engineer*—The individual or entity named as such in this Agreement.
21. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but does not change the Construction Contract Price or the Construction Contract Times.
22. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
23. *Owner*—The individual or entity named as such in this Agreement and for which Engineer's services are to be performed. Unless indicated otherwise, this is the same individual or entity that will enter into any Construction Contracts concerning the Project.
24. *Project*—The total undertaking to be accomplished for Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the services to be performed or furnished by Engineer under this Agreement are a part.
25. *Record Drawings*—Drawings depicting the completed Project, or a specific portion of the completed Project, prepared by Engineer as Basic Services ~~on Additional Service~~ and based on Contractor's record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, and written interpretations and clarifications, as delivered to Engineer and annotated by Contractor to show changes made during construction.
26. *Reimbursable Expenses*—The expenses incurred directly by Engineer in connection with the performing or furnishing of Basic Services and Additional Services for the Project.
27. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site during the Construction Phase. As used herein, the term Resident Project Representative or "RPR" includes any assistants or field staff of Resident Project Representative. The duties and responsibilities of the Resident Project Representative, if any, are as set forth in Exhibit D.

28. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and that establish the standards by which such portion of the Work will be judged.
29. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work. Shop Drawings, whether approved or not, are not Drawings and are not Construction Contract Documents.
30. *Site*—Lands or areas to be indicated in the Construction Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements, and such other lands furnished by Owner which are designated for the use of Contractor.
31. *Specifications*—The part of the Construction Contract Documents that consists of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable to the Work.
32. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work.
33. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Construction Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms “substantially complete” and “substantially completed” as applied to all or part of the Work refer to Substantial Completion thereof.
34. *Supplier*—A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or a Subcontractor.
35. *Total Project Costs*—The total cost of planning, studying, designing, constructing, testing, commissioning, and start-up of the Project, including Construction Cost and all other Project labor, services, materials, equipment, insurance, and bonding costs, allowances for contingencies, and the total costs of services of Engineer or other design professionals and consultants, together with such other Project-related costs that Owner furnishes for inclusion, including but not limited to cost of land, rights-of-way, compensation for damages to properties, Owner’s costs for legal, accounting, insurance counseling, and auditing services, interest and financing charges incurred in connection with the Project, and the cost of other services to be provided by others to Owner.
36. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Construction Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction; furnishing, installing, and incorporating all materials and equipment into such construction; and may include related services such as testing, start-up, and commissioning, all as required by the Construction Contract Documents.

37. *Work Change Directive*—A written directive to Contractor issued on or after the effective date of the Construction Contract, signed by Owner and recommended by Engineer, ordering an addition, deletion, or revision in the Work.
- B. *Day*:
1. The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.

## ARTICLE 8 – EXHIBITS AND SPECIAL PROVISIONS

### 8.01 *Exhibits Included:*

- A. Exhibit A, Engineer’s Services.
- B. Exhibit B, Owner’s Responsibilities.
- C. Exhibit C, Payments to Engineer for Services and Reimbursable Expenses.
- D. Exhibit D, Duties, Responsibilities and Limitations of Authority of Resident Project Representative. [Not used. Intentionally deleted]
- E. Exhibit E, Notice of Acceptability of Work. [Not used. Intentionally deleted]
- F. Exhibit F, Construction Cost Limit. [Not used. Intentionally deleted]
- G. Exhibit G, Insurance.
- H. Exhibit H, Dispute Resolution.
- I. Exhibit I, Limitations of Liability. [Not used. Intentionally deleted]
- J. Exhibit J, Special Provisions.
- K. Exhibit K, Amendment to Owner-Engineer Agreement.

***[NOTE TO USER: If an exhibit is not to be included in the specific agreement, indicate "not used " after that exhibit in the list above.]***

### 8.02 *Total Agreement*

- A. This Agreement, (together with the exhibits included above) constitutes the entire agreement between Owner and Engineer and supersedes all prior written or oral understandings. This Agreement may only be amended, supplemented, modified, or canceled by a written instrument duly executed by both parties. Amendments may take ~~should be based whenever possible on~~ the format of Exhibit K to this Agreement.

### 8.03 *Designated Representatives*

- A. With the execution of this Agreement, Engineer and Owner shall designate specific individuals to act as Engineer’s and Owner’s representatives with respect to the services to

be performed or furnished by Engineer and responsibilities of Owner under this Agreement. Such an individual shall have authority to transmit instructions, receive information, and render decisions relative to this Agreement on behalf of the respective party whom the individual represents.

#### 8.04 *Engineer's Certifications*

- A. Engineer certifies that it has not engaged in corrupt, fraudulent, or coercive practices in competing for or in executing the Agreement. For the purposes of this Paragraph 8.04:
  - 1. "corrupt practice" means the offering, giving, receiving, or soliciting of any thing of value likely to influence the action of a public official in the selection process or in the Agreement execution;
  - 2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the selection process or the execution of the Agreement to the detriment of Owner, or (b) to deprive Owner of the benefits of free and open competition;
  - 3. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the selection process or affect the execution of the Agreement.

#### 8.05 City of Durham Provisions

- A. Choice of Law and Forum; Service of Process. (i) This Agreement shall be deemed made in Durham County, North Carolina. This Agreement shall be governed by and construed in accordance with the law of North Carolina and not the United Nations Convention on Contracts for the International Sale of Goods. The exclusive forum and venue for all actions arising out of this contract shall be the North Carolina General Court of Justice, in Durham County. Such actions shall neither be commenced in nor removed to federal court. The preceding two sentences do not apply to actions to enforce a judgment entered in actions heard pursuant to this subsection (i). (ii) If the Engineer is an artificial person (for instance, the Engineer is a corporation or limited liability company), this subsection (ii) applies. "Agent for Service of Process" means every person now or hereafter appointed by the Engineer to be served or to accept service of process in any State of the United States. The Engineer hereby appoints as one of those agents the person it designates to receive notice pursuant to subparagraph 8.03.A (Designated Representatives). If the Engineer fails to appoint a person to receive such notice or the person cannot be served using reasonable diligence, the Engineer appoints the Durham City Clerk as Agent for Service of Process. Without excluding any other method of service authorized by law, the Engineer agrees that every Agent for Service of Process is designated as its non-exclusive agent for service of process, summons, and complaint. The Engineer shall instruct each Agent for Service of Process that when the agent receives the process, summons, or complaint, the agent shall promptly send it to the Engineer using a means for giving notice under this Agreement, provided that when the City Clerk is the agent, the City shall issue such instructions. This subsection (ii) does not apply while the Engineer maintains a registered agent in North Carolina by filing with the office of the N. C. Secretary of State and that registered agent can be found with due diligence at the registered office.

- B. Performance of Government Functions. Nothing contained in this Agreement shall be deemed or construed so as to in any way estop, limit, or impair the City from exercising or performing any regulatory, policing, legislative, governmental, or other powers or functions.
- C. Notice of City Policy. THE CITY OPPOSES DISCRIMINATION ON THE BASIS OF RACE AND SEX AND URGES ALL OF ITS CONTRACTORS TO PROVIDE A FAIR OPPORTUNITY FOR MINORITIES AND WOMEN TO PARTICIPATE IN THEIR WORK FORCE AND AS SUBCONTRACTORS AND VENDORS UNDER CITY CONTRACTS.
- D. Prompt Payment to Subcontractors.
1. Within 7 days of receipt by Engineer of each payment from the Owner under this Agreement, the Engineer shall pay all Subcontractors (which term includes subconsultants and suppliers) based on work completed or service provided under the subcontract. Should any payment to the Subcontractor be delayed by more than 7 days after Engineer's receipt of payment from Owner under this Agreement, the Engineer shall pay the Subcontractor interest, beginning on the 8<sup>th</sup> day, at the rate of 1% per month or fraction thereof on such unpaid balance as may be due. By appropriate litigation, Subcontractors shall have the right to enforce this subparagraph (1) directly against the Engineer, but not against the City of Durham.
  2. If the Owner's Designated Representative determines that it is appropriate to enforce subparagraph (1) in this manner, the Owner may withhold from progress or final payments to the Engineer the sums estimated by the Owner's Designated Representative to be (a) the amount of interest due to the Subcontractor under subparagraph (1), and/or (b) the amounts past-due under subparagraph (1) to the Subcontractor but not exceeding 5% of the payment(s) due from the Owner to the Engineer. This subparagraph (2) does not limit any other rights to withhold payments that the Owner may have.
  3. Nothing in this Paragraph 8.05.D (titled "Prompt Payment to Subcontractors") shall prevent the Engineer at the time of invoicing, application, and certification to the Owner from withholding invoicing, application, and certification to the Owner for payment to the Subcontractor for unsatisfactory job progress; defective goods, services, or construction not remedied; disputed work; third-party claims filed or reasonable evidence that such a claim will be filed; failure of the subcontractor to make timely payments for labor, equipment, and materials; damage to the Engineer or another subcontractor; reasonable evidence that the subcontract cannot be completed for the unpaid balance of the subcontract sum; or a reasonable amount for retainage not to exceed 10%.
  4. The Owner's Designated Representative may require, as a prerequisite to making progress or final payments, that the Engineer provide statements from any Subcontractors designated by the Owner's Designated Representative regarding the status of their accounts with the Engineer. The statements shall be in such format as the Owner's Designated Representative reasonably requires, including notarization if so specified.

- E. EBOP. The Engineer shall comply with all applicable provisions of Article III of Chapter 18 of the Durham City Code (Equal Business Opportunities Ordinance), as amended from time to time. The failure of the Engineer to comply with that article shall be a material breach of contract which may result in the rescission or termination of this Agreement and/or other appropriate remedies in accordance with the provisions of that article, this Agreement, and State law. The Participation Plan submitted in accordance with that article is binding on the Engineer. Section 18-59(f) of that article provides, in part, "If the City Manager determines that the Contractor has failed to comply with the provisions of the Contract, the City Manager shall notify the Contractor in writing of the deficiencies. The Contractor shall have 14 days, or such time as specified in the Contract, to cure the deficiencies or establish that there are no deficiencies." It is stipulated and agreed that those two quoted sentences apply only to the Engineer's alleged violations of its obligations under Article III of Chapter 18 and not to the Contractor's alleged violations of other obligations.
- F. Principles of Interpretation and Definitions. (1) The singular includes the plural and the plural the singular. The pronouns "it" and "its" include the masculine and feminine. References to statutes or regulations include all statutory or regulatory provisions consolidating, amending, or replacing the statute or regulation. References to contracts and agreements shall be deemed to include all amendments to them. The words "include," "including," etc. mean include, including, etc. without limitation. (2) References to a "Section," "section," "Paragraph," or "paragraph" shall mean a section of this contract. (3) "Contract" and "Agreement," whether or not capitalized, refer to this instrument. (4) "Duties" includes obligations. (5) The word "person" includes natural persons, firms, companies, associations, partnerships, trusts, corporations, governmental agencies and units, and other legal entities. (6) The word "shall" is mandatory. (7) The word "day" means calendar day. (8) The word "Work" is defined in Section 2. (9) The word "Holiday" means legal holiday observed by the City of Durham pursuant to City Code section 42-16 or any successor provision. (10) A definition in this contract will not apply to the extent the context requires otherwise.
- G. Modifications. Entire Agreement. A modification of this contract is not valid unless signed by both parties and otherwise in accordance with requirements of law. Further, a modification is not enforceable against the City unless it is signed by the City Manager, a deputy or assistant City Manager, or, in limited circumstances, a City department director. This contract contains the entire agreement between the parties pertaining to the subject matter of this contract. With respect to that subject matter, there are no promises, agreements, conditions, inducements, warranties, or understandings, written or oral, expressed or implied, between the parties, other than as set forth or referenced in this contract.
- H. Special Provisions. The Engineer is subject to the special provisions contained in of Exhibit J.
- I. American with Disabilities Act (ADA) Compliance Verification – if any of the Work requires compliance with Chapter 11 of the NC State Building Code (2018 edition, as amended and updated), applicable North Carolina Accessibility Codes, and/or 2009 ANSI 117.1 (as amended or updated), the Engineer shall ensure that such Work is completed in compliance with such ADA requirements. After completion of the Work and after Engineer conducts an independent, onsite evaluation, the Engineer shall provide the City with a

written certification, sealed by the Engineer, stating that the Work complies with the approved plans and applicable ADA codes and requirements. Engineer shall confer with the City Inspections Department regarding the appropriate form of the written certification.

- J. E-Verify Requirements. (1) If this Agreement is awarded pursuant to North Carolina General Statutes (NCGS) 143-129 – (a) the contractor represents and covenants that the contractor and its subcontractors comply with the requirements of Article 2 of Chapter 64 of the NCGS; (b) the words "contractor," "contractor's subcontractors," and "comply" as used in this subparagraph (a) shall have the meanings intended by NCGS 143-129(j); and (c) the City is relying on this subparagraph (1) in entering into this contract. (2) If this contract is subject to NCGS 143-133.3, the contractor and its subcontractors shall comply with the requirements of Article 2 of Chapter 64 of the NCGS.
- K. City's Manager's Authority. To the extent, if any, the City has the power to suspend or terminate this contract or the Contractor's services under this contract, that power may be exercised by City Manager or a deputy or assistant City Manager without City Council action.

8.06 Addresses for Notices. Designated Representatives

Address for Owner's receipt of notices:  
ATTN: Sydney P. Miller

101 City Hall Plaza  
Durham, NC 27701  
Designated Representative (Paragraph 8.03.A):  
Sydney P. Miller  
Title: Water Resources Manager  
Phone Number: 919.560.4381 ext. 35201  
E-Mail Address: Sydney.Miller@Durhamnc.gov

Address for Engineer's receipt of notices:

4011 WestChase Blvd, Suite 500  
Raleigh, NC 27607  
Designated Representative (Paragraph 8.03.A):  
H. Thomas Tant, P.E.  
Title: Vice President  
Phone Number: 919-755-8574  
E-Mail Address: ttant@hazenandsawyer.com



IN WITNESS WHEREOF, the City and the Contractor have caused this contract to be executed under seal themselves or by their respective duly authorized agents or officers.

ATTEST:

CITY OF DURHAM

Attest:



Ashley Wyatt  
Deputy City Clerk  
The City of Durham, NC





Wanda S. Page  
City Manager

By: \_\_\_\_\_

This instrument has been pre-audited in the manner required by the  
Local Government Budget and Fiscal Control Act.

preaudit certificate, if applicable \_\_\_\_\_



Deputy Finance Officer- David J. Hickman  
City of Durham

Hazen and Sawyer, P.C.:

By:  (SEAL)

H. Thomas Tant

Title of officer: Vice President

#### ACKNOWLEDGMENT BY CORPORATION

State of North Carolina

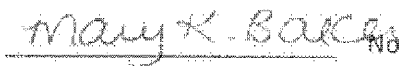
County of Wake

I, a notary public in and for the aforesaid county and state, certify that

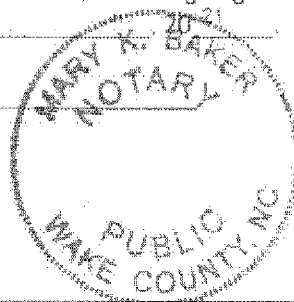
H. Thomas Tant

\_\_\_\_\_ personally appeared before me this  
day and stated that he is vice-president of Hazen and Sawyer, P.C., a corporation, and that by authority  
duly given and as the act of the corporation, he signed, under seal, the foregoing contract or agreement  
with the City of Durham. This the 4th day of August, 2021

My commission expires: April 8, 2023



Notary Public



This is **EXHIBIT A**, consisting of [ 19 ] pages, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated [ ]

## **Engineer's Services**

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Article 1 of the Agreement is supplemented to include the provisions of this Exhibit following agreement of the parties. The Engineer's detailed deliverables and tasks for the Project are outline as part of Attachment A-1, which is attached and incorporated herein. The performance of the services outlined in Attachment A-1 shall be consistent with the general requirements and obligations of the associated scope of services described in this Exhibit A, except where Attachment A-1 describes a specific, more detailed requirement or task, in which case Attachment A-1 shall be controlling.

If a reasonable reading of this Agreement is that a service is to be provided as a Basic Service, the listing of a similar service in this Agreement is not intended to limit the performance of that service as a Basic Service. Without limiting the Owner's other rights and remedies, it is agreed that services that are needed because of the failure of the Engineer to comply with this Agreement or with its duties to the Owner shall be performed or provided by the Engineer without charge. Where the Agreement states that a service will be done or goods will be provided, it will be construed to require the Engineer to do the service or provide the goods, unless the context requires otherwise.

Engineer shall provide Basic and Additional Services as set forth below. Engineer shall provide Basic and Additional services as set forth below. The Engineer's contracted scope of services include Basic Services phases A1.01 Study and Report Phase and A1.02 Preliminary Design Phase, and does not include phases A1.03 through A1.06. The scope of services under A.1.02 Preliminary Design Phase applies to the preliminary design services defined in Attachment A-1 for the finished water transmission mains, and does not apply to other facilities recommended under A.1.01.

### **PART 1 – BASIC SERVICES**

#### *A1.01 Study and Report Phase*

##### **A. Engineer shall:**

1. Consult with Owner to define and clarify Owner's requirements for the Project, including design objectives and constraints, space, capacity and performance requirements, flexibility, and expandability, and any budgetary limitations, and identify available data, information, reports, facilities plans, and site evaluations.
  - a. If Owner has already identified one or more potential solutions to meet its Project requirements, then proceed with the study and evaluation of such potential solutions: N/A
  - b. If Owner has not identified specific potential solutions for study and evaluation, then assist Owner in determining whether Owner's requirements, and available data, reports, plans, and evaluations, point to a single potential solution for Engineer's study and evaluation, or are such that it will be necessary for Engineer to identify, study, and evaluate multiple potential solutions.

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#### **Exhibit A – Engineer's Services**

- ~~e. If it is necessary for Engineer to identify, study, and evaluate multiple potential solutions, then identify [ ] *[insert specific number]* alternative solutions potentially available to Owner, unless Owner and Engineer mutually agree that some other specific number of alternatives should be identified, studied, and evaluated.~~
2. Identify potential solution(s) to meet Owner's Project requirements, as needed.
  3. Study and evaluate the potential solution(s) to meet Owner's Project requirements.
  4. Visit the Site, or potential Project sites, to review existing conditions and facilities, unless such visits are not necessary or applicable to meeting the objectives of the Study and Report Phase.
  5. Advise Owner of any need for Owner to obtain, furnish, or otherwise make available to Engineer additional Project-related data and information, for Engineer's use in the study and evaluation of potential solution(s) to Owner's Project requirements, and preparation of a related report.
  6. After consultation with Owner, recommend to Owner the solution(s) which in Engineer's judgment meet Owner's requirements for the Project.
  7. Identify, consult with, and analyze requirements of governmental authorities having jurisdiction to approve the portions of the Project to be designed or specified by Engineer, including but not limited to mitigating measures identified in an environmental assessment for the Project.
  8. Prepare a report (the "Report") which will, as appropriate, contain schematic layouts, sketches, and conceptual design criteria with appropriate exhibits to indicate the agreed-to requirements, considerations involved, and Engineer's recommended solution(s). For each recommended solution Engineer will provide the following, which will be separately itemized: opinion of probable Construction Cost; proposed allowances for contingencies; the estimated total costs of design, professional, and related services to be provided by Engineer and its Consultants; and, on the basis of information furnished by Owner, a tabulation of other items and services included within the definition of Total Project Costs.
  9. Advise Owner of any need for Owner to provide data or services of the types described in Exhibit B, for use in Project design, or in preparation for Contractor selection and construction.
  10. When mutually agreed, assist Owner in evaluating the possible use of building information modeling; civil integrated management; geotechnical baselining of subsurface site conditions; innovative design, contracting, or procurement strategies; or other strategies, technologies, or techniques for assisting in the design, construction, and operation of Owner's facilities. The subject matter of this paragraph shall be referred to in Exhibit A and B as "Project Strategies, Technologies, and Techniques."

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Exhibit A – Engineer's Services

11. If requested to do so by Owner, assist Owner in identifying opportunities for enhancing the sustainability of the Project, and pursuant to Owner's instructions plan for the inclusion of sustainable features in the design.
  12. Use ASCE 38, "Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data" as a means to advise the Owner on a recommended scope of work and procedure for the identification and mapping of existing utilities.
  13. Develop a scope of work and survey limits for any topographic and other surveys necessary for design.
  14. Perform or provide the following other Study and Report Phase tasks or deliverables:  
See Attachment A-1
  15. ~~Furnish [ ] review copies of the Report and any other Study and Report Phase deliverables to Owner within [ ] days of the Effective Date and review it with Owner. Within [ ] days of receipt, Owner shall submit to Engineer any comments regarding the furnished items. See Attachment A-1.~~
  16. Revise the Report and any other Study and Report Phase deliverables in response to Owner's comments, as appropriate, and furnish [ ] copies of the revised Report and any other Study and Report Phase deliverables to the Owner within a time period mutually agreeable to the Engineer and Owner following days of receipt of Owner's comments.
- B. Engineer's services under the Study and Report Phase will be considered complete on the date when Engineer has delivered to Owner the revised Report and any other Study and Report Phase deliverables.

#### A1.02 Preliminary Design Phase

- A. After acceptance by Owner of the Report and any other Study and Report Phase deliverables; selection by Owner of a recommended solution; issuance by Owner of any instructions of for use of Project Strategies, Technologies, and Techniques, or for inclusion of sustainable features in the design; and indication by Owner of any specific modifications or changes in the scope, extent, character, or design requirements of the Project desired by Owner, (1) Engineer and Owner shall discuss and resolve any necessary revisions to Engineer's compensation (through application of the provisions regarding Additional Services, or otherwise), or the time for completion of Engineer's services, resulting from the selected solution, related Project Strategies, Technologies, or Techniques, sustainable design instructions, or specific modifications to the Project, and (2) upon written authorization from Owner, Engineer shall:
1. Prepare Preliminary Design Phase documents consisting of final design criteria, preliminary drawings, outline specifications, and written descriptions of the Project.
  2. In preparing the Preliminary Design Phase documents, use any specific applicable Project Strategies, Technologies, and Techniques authorized by Owner during or

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#### Exhibit A – Engineer's Services

following the Study and Report Phase, and include sustainable features, as appropriate, pursuant to Owner's instructions.

3. Provide necessary field surveys and topographic and utility mapping for Engineer's design purposes. Comply with the scope of work and procedure for the identification and mapping of existing utilities selected and authorized by Owner pursuant to advice from Engineer based on ASCE 38, "Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data," as set forth in Paragraph A1.01.A.12 above. If no such scope of work and procedure for utility mapping has been selected and authorized, then at a minimum the utility mapping will include Engineer contacting utility owners and obtaining available information.
4. Visit the Site as needed to prepare the Preliminary Design Phase documents.
5. Advise Owner if additional reports, data, information, or services of the types described in Exhibit B are necessary and assist Owner in obtaining such reports, data, information, or services.
6. Continue to assist Owner with Project Strategies, Technologies, and Techniques that Owner has chosen to implement.
7. Based on the information contained in the Preliminary Design Phase documents, prepare a revised opinion of probable Construction Cost, and assist Owner in tabulating the various cost categories which comprise Total Project Costs.
8. Obtain and review Owner's instructions regarding Owner's procurement of construction services (including instructions regarding advertisements for bids, instructions to bidders, and requests for proposals, as applicable), Owner's construction contract practices and requirements, insurance and bonding requirements, electronic transmittals during construction, and other information necessary for the finalization of Owner's bidding-related documents (or requests for proposals or other construction procurement documents), and Construction Contract Documents. Also obtain and review copies of Owner's design and construction standards, Owner's standard forms, general conditions (if other than EJCDC® C-700, Standard General Conditions of the Construction Contract, 2013 Edition), supplementary conditions, text, and related documents or content for Engineer to include in the draft bidding-related documents (or requests for proposals or other construction procurement documents), and in the draft Construction Contract Documents, when applicable.

~~**{Note to User: Some owners prefer to handle the preparation of bidding (procurement) and construction contract documents with little or no involvement by the Engineer (other than with respect to Engineer's preparation or furnishing of the Drawings, Specifications, and other design and technical documents), relying either on Owner's in-house staff and legal counsel for such services, or on third parties such as a construction manager. When such is the case, the task item above, and related items in the Final Design Phase (Paragraph A1.03 below) and in Exhibit B, Owner's Responsibilities, should be modified to fit the requirements of the specific project.}**~~

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Exhibit A – Engineer's Services

9. ~~Perform or provide the following other Preliminary Design Phase tasks or deliverables: [ ] [List any such tasks or deliverables here.] See Attachment A-1.~~
10. ~~Furnish [ ] review copies of the Preliminary Design Phase documents, opinion of probable Construction Cost, and any other Preliminary Design Phase deliverables to Owner within [ ] days of authorization to proceed with this phase, and review them with Owner. Within [ ] days of receipt, Owner shall submit to Engineer any comments regarding the furnished items. See Attachment A-1.~~
11. Revise the Preliminary Design Phase documents, opinion of probable Construction Cost, and any other Preliminary Design Phase deliverables in response to Owner's comments, as appropriate, and furnish to Owner [ 8 ] copies of the revised Preliminary Design Phase documents, revised opinion of probable Construction Cost, and any other deliverables within [ 14 ] days after receipt of Owner's comments.
- B. Engineer's services under the Preliminary Design Phase will be considered complete on the date when Engineer has delivered to Owner the revised Preliminary Design Phase documents, revised opinion of probable Construction Cost, and any other Preliminary Design Phase deliverables.

#### A1.03 *Final Design Phase*

- A. After acceptance by Owner of the Preliminary Design Phase documents, revised opinion of probable Construction Cost as determined in the Preliminary Design Phase, and any other Preliminary Design Phase deliverables, subject to any Owner-directed modifications or changes in the scope, extent, character, or design requirements of or for the Project, and upon written authorization from Owner, Engineer shall:
1. Prepare final Drawings and Specifications indicating the scope, extent, and character of the Work to be performed and furnished by Contractor.
  2. Visit the Site as needed to assist in preparing the final Drawings and Specifications.
  3. Provide technical criteria, written descriptions, and design data for Owner's use in filing applications for permits from or approvals of governmental authorities having jurisdiction to review or approve the final design; assist Owner in consultations with such authorities; and revise the Drawings and Specifications in response to directives from such authorities, as appropriate.
  4. Advise Owner of any recommended adjustments to the opinion of probable Construction Cost.
  5. After consultation with Owner, include in the Construction Contract Documents any specific protocols for the transmittal of Project-related correspondence, documents, text, data, drawings, information, and graphics, in electronic media or digital format, either directly, or through access to a secure Project website. Any such protocols shall be applicable to transmittals between and among Owner, Engineer, and Contractor during the Construction Phase and Post-Construction Phase, and unless agreed

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#### Exhibit A – Engineer's Services

otherwise shall supersede any conflicting protocols previously established for transmittals between Owner and Engineer.

6. Assist Owner in assembling known reports and drawings of Site conditions, and in identifying the technical data contained in such reports and drawings upon which bidders or other prospective contractors may rely.
  7. In addition to preparing the final Drawings and Specifications, assemble drafts of other Construction Contract Documents based on specific instructions and contract forms, text, or content received from Owner.
  8. Prepare or assemble draft bidding-related documents (or requests for proposals or other construction procurement documents), based on the specific bidding or procurement-related instructions and forms, text, or content received from Owner.
  9. Perform or provide the following other Final Design Phase tasks or deliverables:  
[ ] ***[List any such tasks or deliverables here.]***
  10. Furnish for review by Owner, its legal counsel, and other advisors, [ ] copies of the final Drawings and Specifications, assembled drafts of other Construction Contract Documents, the draft bidding-related documents (or requests for proposals or other construction procurement documents), and any other Final Design Phase deliverables, within [ ] days of authorization to proceed with the Final Design Phase, and review them with Owner. Within [ ] days of receipt, Owner shall submit to Engineer any comments regarding the furnished items, and any instructions for revisions.
  11. Revise the final Drawings and Specifications, assembled drafts of other Construction Contract Documents, the draft bidding-related documents (or requests for proposals or other construction procurement documents), and any other Final Design Phase deliverables in accordance with comments and instructions from the Owner, as appropriate, and submit [ ] final copies of such documents to Owner within [ ] days after receipt of Owner's comments and instructions.
- B. Engineer's services under the Final Design Phase will be considered complete on the date when Engineer has delivered to Owner the final Drawings and Specifications, other assembled Construction Contract Documents, bidding-related documents (or requests for proposals or other construction procurement documents), and any other Final Design Phase deliverables.
- C. In the event that the Work designed or specified by Engineer is to be performed or furnished under more than one prime contract, or if Engineer's services are to be separately sequenced with the work of one or more prime Contractors (such as in the case of fast-tracking), Owner and Engineer shall, prior to commencement of the Final Design Phase, develop a schedule for performance of Engineer's services during the Final Design, Bidding or Negotiating, Construction, and Post-Construction Phases in order to sequence and coordinate properly such services as are applicable to the work under such separate prime contracts. This schedule is to be prepared and included in or become an amendment to Exhibit A whether or not the work under such contracts is to proceed concurrently.

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Exhibit A – Engineer's Services

- D. The number of prime contracts for Work designed or specified by Engineer upon which the Engineer's compensation has been established under this Agreement is [REDACTED]. If more prime contracts are awarded, Engineer shall be entitled to an equitable increase in its compensation under this Agreement.

**A1.04 Bidding or Negotiating Phase**

- A. After acceptance by Owner of the final Drawings and Specifications, other Construction Contract Documents, bidding-related documents (or requests for proposals or other construction procurement documents), and the most recent opinion of probable Construction Cost as determined in the Final Design Phase, and upon written authorization by Owner to proceed, Engineer shall:
1. Assist Owner in advertising for and obtaining bids or proposals for the Work, assist Owner in issuing assembled design, contract, and bidding-related documents (or requests for proposals or other construction procurement documents) to prospective contractors, and, where applicable, maintain a record of prospective contractors to which documents have been issued, attend pre-bid conferences, if any, and receive and process contractor deposits or charges for the issued documents.
  2. Prepare and issue Addenda as appropriate to clarify, correct, or change the issued documents.
  3. Provide information or assistance needed by Owner in the course of any review of proposals or negotiations with prospective contractors.
  4. Consult with Owner as to the qualifications of prospective contractors.
  5. Consult with Owner as to the qualifications of subcontractors, suppliers, and other individuals and entities proposed by prospective contractors, for those portions of the Work as to which review of qualifications is required by the issued documents.
  6. If the issued documents require, the Engineer shall evaluate and determine the acceptability of "or equals" and substitute materials and equipment proposed by prospective contractors, provided that such proposals are allowed by the bidding-related documents (or requests for proposals or other construction procurement documents) prior to award of contracts for the Work. Services under this paragraph are subject to the provisions of Paragraph A2.02.A.2 of this Exhibit A.
  7. Attend the bid opening, prepare bid tabulation sheets to meet Owner's schedule, and assist Owner in evaluating bids or proposals, assembling final contracts for the Work for execution by Owner and Contractor, and in issuing notices of award of such contracts.
  8. If Owner engages in negotiations with bidders or proposers, assist Owner with respect to technical and engineering issues that arise during the negotiations.
  9. Perform or provide the following other Bidding or Negotiating Phase tasks or deliverables: [REDACTED] **[List any such tasks or deliverables here.]**

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**Exhibit A – Engineer's Services**



- B. The Bidding or Negotiating Phase will be considered complete upon commencement of the Construction Phase or upon cessation of negotiations with prospective contractors (except as may be required if Exhibit F is a part of this Agreement).

#### A1.05 Construction Phase

- A. Upon successful completion of the Bidding and Negotiating Phase, and upon written authorization from Owner, Engineer shall:
1. *General Administration of Construction Contract:* Consult with Owner and act as Owner's representative as provided in the Construction Contract. The extent and limitations of the duties, responsibilities, and authority of Engineer shall be as assigned in EJCDC® C-700, Standard General Conditions of the Construction Contract (~~2013 Edition~~ 2002 Edition), prepared by the Engineers Joint Contract Documents Committee, or any newer version selected by the Owner, supplemented by the Owner's supplementary conditions, as modified by the Owner from time to time. The construction contract will be the EJCDC contract form issued in conjunction with the General Conditions, as that contract form has been modified by the Owner from time to time, or other construction general conditions specified in this Agreement. If Owner, or Owner and Contractor, modify the duties, responsibilities, and authority of Engineer in the Construction Contract, or modify other terms of the Construction Contract having a direct bearing on Engineer, then Owner shall compensate Engineer for any related increases in the cost to provide Construction Phase services. Engineer shall not be required to furnish or perform services contrary to Engineer's responsibilities as a licensed professional. All of Owner's instructions to Contractor will be issued through Engineer, which shall have authority to act on behalf of Owner in dealings with Contractor to the extent provided in this Agreement and the Construction Contract except as otherwise provided in writing.
  2. *Resident Project Representative (RPR):* Provide the services of an RPR at the Site to assist the Engineer and to provide more extensive observation of Contractor's work. Duties, responsibilities, and authority of the RPR are as set forth in Exhibit D. The furnishing of such RPR's services will not limit, extend, or modify Engineer's responsibilities or authority except as expressly set forth in Exhibit D. ***[If Engineer will not be providing the services of an RPR, then delete this Paragraph 2 by inserting the word "DELETED" after the paragraph title, and do not include Exhibit D as part of the Agreement.]***
  3. *Selection of Independent Testing Laboratory:* Assist Owner in the selection of an independent testing laboratory to perform the services identified in Exhibit B, Paragraph B2.01.
  4. *Pre-Construction Conference:* Participate in a pre-construction conference prior to commencement of Work at the Site.
  5. *Electronic Transmittal Protocols:* If the Construction Contract Documents do not specify protocols for the transmittal of Project-related correspondence, documents, text, data, drawings, information, and graphics, in electronic media or digital format, either directly, or through access to a secure Project website, then together with

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#### Exhibit A – Engineer's Services

Owner and Contractor jointly develop such protocols for transmittals between and among Owner, Contractor, and Engineer during the Construction Phase and Post-Construction Phase.

6. *Original Documents:* If requested by Owner to do so, maintain and safeguard during the Construction Phase at least one original printed record version of the Construction Contract Documents, including Drawings and Specifications signed and sealed by Engineer and other design professionals in accordance with applicable Laws and Regulations. Throughout the Construction Phase, make such original printed record version of the Construction Contract Documents available to Contractor and Owner for review.
7. *Schedules:* Receive, review, and determine the acceptability of any and all schedules that Contractor is required to submit to Engineer, including the Progress Schedule, Schedule of Submittals, and Schedule of Values.
8. *Baselines and Benchmarks:* As appropriate, establish baselines and benchmarks for locating the Work which in Engineer's judgment are necessary to enable Contractor to proceed.
9. *Visits to Site and Observation of Construction:* In connection with observations of Contractor's Work while it is in progress:
  - a. Make visits to the Site at intervals appropriate to the various stages of construction, as Engineer deems necessary based on Engineer's exercise of professional judgment, to observe as an experienced and qualified design professional the progress of Contractor's executed Work. However, those visits shall be made at least [ ] unless the Owner otherwise agrees. Such visits and observations by Engineer, and the Resident Project Representative, if any, are not intended to be exhaustive or to extend to every aspect of the Work or to involve detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in this Agreement and the Construction Contract Documents, but rather are to be limited to spot checking, selective sampling, and similar methods of general observation of the Work based on Engineer's exercise of professional judgment, as assisted by the Resident Project Representative, if any. Based on information obtained during such visits and observations, Engineer will determine in general if the Work is proceeding in accordance with the Construction Contract Documents, will determine if the Work is being performed in a manner indicating that the Work when completed will be in accordance with the Contract Documents, and will endeavor to guard the Owner against defects and deficiencies in the Work. ~~and~~ Engineer shall keep Owner informed in writing of the progress of the Work.
  - b. The purpose of Engineer's visits to the Site, and representation by the Resident Project Representative, if any, at the Site, will be to enable Engineer to better carry out the duties and responsibilities assigned to and undertaken by Engineer during the Construction Phase, and, in addition, by the exercise of Engineer's efforts as an experienced and qualified design professional, to provide for Owner a greater degree of confidence that the completed Work will conform in general to the Construction Contract Documents and that Contractor has implemented and

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Exhibit A – Engineer's Services

maintained the integrity of the design concept of the completed Project as a functioning whole as indicated in the Construction Contract Documents. Engineer shall not, during such visits or as a result of such observations of the Work, supervise, direct, or have control over the Work, nor shall Engineer have authority over or responsibility for the means, methods, techniques, sequences, or procedures of construction selected or used by any Constructor, for security or safety at the Site, for safety precautions and programs incident to any Constructor's work in progress, for the coordination of the Constructors' work or schedules, nor for any failure of any Constructor to comply with Laws and Regulations applicable to furnishing and performing of its work. Accordingly, Engineer neither guarantees the performance of any Constructor nor assumes responsibility for any Constructor's failure to furnish or perform the Work, or any portion of the Work, in accordance with the Construction Contract Documents.

10. *Defective Work:* Reject Work if, on the basis of Engineer's observations, Engineer believes that such Work is defective under the terms and standards set forth in the Construction Contract Documents. Provide recommendations to Owner regarding whether Contractor should correct such Work or remove and replace such Work, or whether Owner should consider accepting such Work as provided in the Construction Contract Documents.
11. *Compatibility with Design Concept:* If Engineer has express knowledge that a specific part of the Work that is not defective under the terms and standards set forth in the Construction Contract Documents is nonetheless not compatible with the design concept of the completed Project as a functioning whole, then inform Owner of such incompatibility, and provide recommendations for addressing such Work.
12. *Clarifications and Interpretations:* Accept from Contractor and Owner submittal of all matters in question concerning the requirements of the Construction Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Construction Contract Documents. With reasonable promptness, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Construction Contract Documents but shall promptly send all such Field Orders to the Owner's representative.
13. *Non-reviewable Matters:* If a submitted matter in question concerns the Engineer's performance of its duties and obligations, or terms and conditions of the Construction Contract Documents that do not involve (1) the performance or acceptability of the Work under the Construction Contract Documents, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly give written notice to Owner and Contractor that Engineer will not provide a decision or interpretation.
14. *Field Orders:* Subject to any limitations in the Construction Contract Documents, Engineer may prepare and issue Field Orders requiring minor changes in the Work.

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Exhibit A – Engineer's Services

15. *Change Orders and Work Change Directives:* Recommend Change Orders and Work Change Directives to Owner, as appropriate, and prepare Change Orders and Work Change Directives as required.
16. *Differing Site Conditions:* Respond to any notice from Contractor of differing site conditions, including conditions relating to underground facilities such as utilities, and hazardous environmental conditions. Promptly conduct reviews and prepare findings, conclusions, and recommendations for Owner's use.
17. *Shop Drawings, Samples, and Other Submittals:* Review and approve or take other appropriate action with respect to Shop Drawings, Samples, and other required Contractor submittals, but only for conformance with the information given in the Construction Contract Documents and compatibility with the design concept of the completed Project as a functioning whole as indicated by the Construction Contract Documents and for the purpose of determining that if the Work is performed as shown by the submittals, it will be in compliance with the Contract Documents. Such reviews and approvals or other action will not extend to means, methods, techniques, sequences, or procedures of construction or to safety precautions and programs incident thereto. Engineer shall meet any Contractor's submittal schedule that Engineer has accepted. The Engineer shall determine what aspects of the Work shall be the subject of submittals, and shall not knowingly permit such aspects to proceed in the absence of approved submittals.
18. *Substitutes and "Or-equal":* Evaluate and determine the acceptability of substitute or "or-equal" materials and equipment proposed by Contractor, but subject to the provisions of Paragraph A2.02.A.2 of this Exhibit A.
19. *Inspections and Tests:*
  - a. Receive and review all certificates of inspections, tests, and approvals required by Laws and Regulations or the Construction Contract Documents. Engineer's review of such certificates will be for the purpose of determining that the results certified indicate compliance with the Construction Contract Documents and will not constitute an independent evaluation that the content or procedures of such inspections, tests, or approvals comply with the requirements of the Construction Contract Documents. When it is reasonable to do so, Engineer shall be entitled to rely on the results of such inspections and tests.
  - b. As deemed reasonably necessary, request that Contractor uncover Work that is to be inspected, tested, or approved.
  - c. Pursuant to the terms of the Construction Contract, require special inspections or testing of the Work, whether or not the Work is fabricated, installed, or completed.
20. *Change Proposals and Claims:* (a) Review and respond to Change Proposals. Review each duly submitted Change Proposal from Contractor and, within 30 days after receipt of the Contractor's supporting data, either deny the Change Proposal in whole, approve it in whole, or deny it in part and approve it in part. Such actions shall be in writing, with a copy provided to Owner and Contractor. If the Change Proposal does not involve

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Exhibit A – Engineer's Services

the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters, then Engineer will notify the parties that the Engineer will not resolve the Change Proposal. (b) Provide information or data to Owner regarding engineering or technical matters pertaining to Claims.

21. *Applications for Payment:* Based on Engineer's observations as an experienced and qualified design professional and on review of Applications for Payment and accompanying supporting documentation:

- a. Determine the amounts that Engineer recommends Contractor be paid. Recommend reductions in payment (set-offs) based on the provisions for set-offs stated in the Construction Contract. Such recommendations of payment will be in writing and will constitute Engineer's representation to Owner, based on such observations and review, that, to the best of Engineer's knowledge, information and belief, Contractor's Work has progressed to the point indicated, the Work is generally in accordance with the Construction Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, to the results of any subsequent tests called for in the Construction Contract Documents, and to any other qualifications stated in the recommendation), and the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work. In the case of unit price Work, Engineer's recommendations of payment will include final determinations of quantities and classifications of the Work (subject to any subsequent adjustments allowed by the Construction Contract Documents).
- b. By recommending payment, Engineer shall not thereby be deemed to have represented that observations made by Engineer to check the quality or quantity of Contractor's Work as it is performed and furnished have been exhaustive, extended to every aspect of Contractor's Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in this Agreement. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment including final payment will impose on Engineer responsibility to supervise, direct, or control the Work, or for the means, methods, techniques, sequences, or procedures of construction or safety precautions or programs incident thereto, or Contractor's compliance with Laws and Regulations applicable to Contractor's furnishing and performing the Work. It will also not impose responsibility on Engineer to make any examination to ascertain how or for what purposes Contractor has used the money paid to Contractor by Owner; to determine that title to any portion of the Work, including materials or equipment, has passed to Owner free and clear of any liens, claims, security interests, or encumbrances; or that there may not be other matters at issue between Owner and Contractor that might affect the amount that should be paid.

22. *Contractor's Completion Documents:* Receive from Contractor, review, and transmit to Owner maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance required by the Construction Contract Documents, certificates of inspection, tests and approvals, and Shop Drawings,

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Exhibit A – Engineer's Services

Samples, and other data approved as provided under Paragraph A1.05.A.17. Receive from Contractor, review, and transmit to Owner the annotated record documents which are to be assembled by Contractor in accordance with the Construction Contract Documents to obtain final payment. The extent of Engineer's review of record documents shall be to check that Contractor has submitted all pages.

23. *Substantial Completion:* Promptly after notice from Contractor that Contractor considers the entire Work ready for its intended use, in company with Owner and Contractor, visit the Site to review the Work and determine the status of completion. Follow the procedures in the Construction Contract regarding the preliminary certificate of Substantial Completion, punch list of items to be completed, Owner's objections, notice to Contractor, and issuance of a final certificate of Substantial Completion. Assist Owner regarding any remaining engineering or technical matters affecting Owner's use or occupancy of the Work following Substantial Completion.
  24. *Other Tasks:* Perform or provide the following other Construction Phase tasks or deliverables: [ ] **[List any such tasks or deliverables here.]**
  25. *Final Notice of Acceptability of the Work:* Conduct a final visit to the Project to determine if the Work is complete and acceptable so that Engineer may recommend, in writing, final payment to Contractor. Accompanying the recommendation for final payment, Engineer shall also provide a notice to Owner and Contractor in the form attached hereto as Exhibit E ("Notice of Acceptability of Work") that the Work is acceptable (subject to the provisions of the Notice and Paragraph A1.05.A.21.b) to the best of Engineer's knowledge, information, and belief, and based on the extent of the services provided by Engineer under this Agreement.
  26. *Standards for Certain Construction-Phase Decisions:* Engineer will render decisions regarding the requirements of the Construction Contract Documents, and judge the acceptability of the Work, pursuant to the specific procedures set forth in the Construction Contract for initial interpretations, Change Proposals, and acceptance of the Work. In rendering such decisions and judgments, Engineer will not show partiality to Owner or Contractor, and will not be liable to Owner, Contractor, or others in connection with any proceedings, interpretations, decisions, or judgments conducted or rendered in good faith.
  27. *Time for Performance.* The Engineer shall perform all of Engineer's tasks in the Construction Phase within a reasonable time, considering, among other relevant factors, the Contractor's Contract Time, schedules that the Engineer has indicated as acceptable, and the time that is appropriate for the tasks to be done to the level of professional skill and care that are required.
- B. *Duration of Construction Phase:* The Construction Phase will commence with the execution of the first Construction Contract for the Project or any part thereof and will terminate upon written recommendation by Engineer for final payment to Contractors. If the Project involves more than one prime contract as indicated in Paragraph A1.03.D, then Construction Phase services may be rendered at different times in respect to the separate contracts. Subject to the provisions of Article 3, Engineer shall be entitled to an equitable increase in compensation if Construction Phase services (including Resident Project Representative services, if any) are

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Exhibit A – Engineer's Services

required after the original date for completion and readiness for final payment of Contractor as set forth in the Construction Contract.

**A1.06**    *Post-Construction Phase*

- A. Upon written authorization from Owner during the Post-Construction Phase, Engineer shall:
1. Together with Owner, visit the Project to observe any apparent defects in the Work, make recommendations as to replacement or correction of defective Work, if any, or the need to repair of any damage to the Site or adjacent areas, and assist Owner in consultations and discussions with Contractor concerning correction of any such defective Work and any needed repairs.
  2. Together with Owner, visit the Project within one month before the end of the Construction Contract's correction period to ascertain whether any portion of the Work or the repair of any damage to the Site or adjacent areas is defective and therefore subject to correction by Contractor.
  3. Perform or provide the following other Post-Construction Phase tasks or deliverables:  
[ ] **[List any such tasks or deliverables here.]**
- B. The Post-Construction Phase services may commence during the Construction Phase and, if not otherwise modified in this Exhibit A, will terminate twelve months after the commencement of the Construction Contract's correction period.

**PART 2 – ADDITIONAL SERVICES**

**A2.01**    *Additional Services Requiring Owner's Written Authorization*

- A. If authorized in writing by Owner, Engineer shall provide Additional Services of the types listed below. These services are not included as part of Basic Services and will be paid for by Owner as indicated in Exhibit C.
1. Preparation of applications and supporting documents (in addition to those furnished under Basic Services) for private or governmental grants, loans, or advances in connection with the Project; preparation or review of environmental assessments and impact statements; review and evaluation of the effects on the design requirements for the Project of any such statements and documents prepared by others; and assistance in obtaining approvals of authorities having jurisdiction over the anticipated environmental impact of the Project.
  2. Services to make measured drawings of existing conditions or facilities, to conduct tests or investigations of existing conditions or facilities, or to verify the accuracy of drawings or other information furnished by Owner or others.
  3. Services resulting from significant changes in the scope, extent, or character of the portions of the Project designed or specified by Engineer, or the Project's design requirements, including, but not limited to, changes in size, complexity, Owner's schedule, character of construction, or method of financing; and revising previously

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**Exhibit A – Engineer's Services**

accepted studies, reports, Drawings, Specifications, or Construction Contract Documents when such revisions are required by changes in Laws and Regulations enacted subsequent to the Effective Date or are due to any other causes beyond Engineer's control.

4. Services resulting from Owner's request to evaluate additional Study and Report Phase alternative solutions beyond those agreed to in Paragraph A1.01.A.1 and 2.
5. Services required as a result of Owner's providing incomplete or incorrect Project information to Engineer.
6. Providing renderings or models for Owner's use, including services in support of building information modeling or civil integrated management.
7. Undertaking investigations and studies including, but not limited to:
  - a. detailed consideration of operations, maintenance, and overhead expenses;
  - b. the preparation of feasibility studies (such as those that include projections of output capacity, utility project rates, project market demand, or project revenues) and cash flow analyses, provided that such services are based on the engineering and technical aspects of the Project, and do not include rendering advice regarding municipal financial products or the issuance of municipal securities;
  - c. preparation of appraisals;
  - d. evaluating processes available for licensing, and assisting Owner in obtaining process licensing;
  - e. detailed quantity surveys of materials, equipment, and labor; and
  - f. audits or inventories required in connection with construction performed or furnished by Owner.
8. Furnishing services of Consultants for other than Basic Services.
9. Providing data or services of the types described in Exhibit B, when Owner retains Engineer to provide such data or services instead of Owner furnishing the same.
10. Providing the following services:
  - a. Services attributable to more prime construction contracts than specified in Paragraph A1.03.D.
  - b. Services to arrange for performance of construction services for Owner by contractors other than the principal prime Contractor, and administering Owner's contract for such services.
11. Services during out-of-town travel required of Engineer, other than for visits to the Site or Owner's office as required in Basic Services (Part 1 of Exhibit A).

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**Exhibit A – Engineer's Services**



12. Preparing for, coordinating with, participating in and responding to structured independent review processes, including, but not limited to, construction management, cost estimating, project peer review, value engineering, and constructibility review requested by Owner; and performing or furnishing services required to revise studies, reports, Drawings, Specifications, or other documents as a result of such review processes.
13. Preparing additional bidding-related documents (or requests for proposals or other construction procurement documents) or Construction Contract Documents for alternate bids or cost estimates requested by Owner for the Work or a portion thereof.
14. Assistance in connection with bid protests, rebidding, or renegotiating contracts for construction, materials, equipment, or services, except when such assistance is required to complete services required by Paragraph 5.02.A and Exhibit F or other provisions of this Agreement.
15. Preparing conformed Construction Contract Documents that incorporate and integrate the content of ~~all Addenda and~~ any amendments negotiated by Owner and Contractor.
16. Providing Construction Phase services beyond the original date for completion and readiness for final payment of Contractor, but only if such services increase the total quantity of services to be performed in the Construction Phase, rather than merely shifting performance of such services to a later date.
- ~~17. Preparing Record Drawings, and furnishing such Record Drawings to Owner.~~
18. Supplementing Record Drawings with information regarding ~~the completed Project, Site, and immediately adjacent areas~~ adjacent to the Site obtained from field observations, Owner, utility companies, and other reliable sources.
19. Conducting surveys, investigations, and field measurements to verify the accuracy of Record Drawing content obtained from Contractor, Owner, utility companies, and other sources; revise and supplement Record Drawings as needed.
20. Preparation of operation, maintenance, and staffing manuals.
- ~~21. Protracted or extensive assistance in refining and adjusting of Project equipment and systems (such as initial startup, testing, and balancing).~~
22. Assistance to Owner in training Owner's staff to operate and maintain Project equipment and systems.
23. Assistance to Owner in developing systems and procedures for (a) control of the operation and maintenance of Project equipment and systems, and (b) related recordkeeping.
24. Preparing to serve or serving as a consultant or witness for Owner in any litigation, arbitration, lien or bond claim, or other legal or administrative proceeding involving the Project.

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Exhibit A – Engineer's Services

~~25. Overtime work requiring higher than regular rates.~~

26. Providing construction surveys and staking to enable Contractor to perform its work other than as required under this Agreement ~~Paragraph A1.05.A.8~~; any type of property surveys or related engineering services needed for the transfer of interests in real property; and providing other special field surveys.
27. Providing more extensive services required to enable Engineer to issue notices or certifications requested by Owner.
28. Extensive services required during any correction period, or with respect to monitoring Contractor's compliance with warranties and guarantees called for in the Construction Contract (except as agreed to under Basic Services).
29. Other additional services performed or furnished by Engineer not otherwise provided for in this Agreement.

A2.02 Required Additional Services Not Requiring Owner's Written Authorization

- A. Engineer shall advise Owner that Engineer is commencing to perform or furnish the Additional Services of the types listed below. For such Additional Services, Engineer shall be required to ~~need not request or~~ obtain specific advance written authorization from Owner. Engineer shall cease performing or furnishing such Additional Services upon receipt of written notice to cease from Owner.
  1. Services in connection with Work Change Directives and Change Orders to reflect changes requested by Owner.
  2. Services in making revisions to Drawings and Specifications occasioned by the acceptance of substitute materials or equipment other than "or equal" items; services after the award of the Construction Contract in evaluating and determining the acceptability of a proposed "or equal" or substitution which is found to be inappropriate for the Project; evaluation and determination of an excessive number of proposed "or equals" or substitutions, whether proposed before or after award of the Construction Contract.
  3. ~~Services resulting from significant delays, changes, or price increases occurring as a direct or indirect result of materials, equipment, or energy shortages.~~
  4. Additional or extended services arising from (a) the presence at the Site of any Constituent of Concern or items of historical or cultural significance, (b) emergencies or acts of God endangering the Work, (c) damage to the Work by fire or other causes during construction, (d) a significant amount of defective, neglected, or delayed Work, (e) acceleration of the progress schedule involving services beyond normal working hours, or (f) default by Contractor.
  5. Services (other than Basic Services during the Post-Construction Phase) in connection with any partial utilization of the Work by Owner prior to Substantial Completion.

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Exhibit A – Engineer's Services

6. Evaluating unreasonable or frivolous requests for interpretation or information (RFIs), Change Proposals, or other demands from Contractor or others in connection with the Work, or an excessive number of RFIs, Change Proposals, or demands.
7. Reviewing a Shop Drawing or other Contractor submittal more than three times, as a result of repeated inadequate submissions by Contractor.
8. While at the Site, compliance by Engineer and its staff with those terms of Owner's or Contractor's safety program provided to Engineer subsequent to the Effective Date that exceed those normally required of engineering personnel by federal, State, or local safety authorities for similar construction sites.

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Exhibit A – Engineer's Services

**ATTACHMENT A-1**  
**(Detailed Deliverables and Tasks)**

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**Exhibit A – Engineer’s Services**

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This is **EXHIBIT B**, consisting of [ 4 ] pages, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated [ ] .

## **Owner's Responsibilities**

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Article 2 of the Agreement is supplemented to include the following agreement of the parties.

B2.01 In addition to other responsibilities of Owner as set forth in this Agreement, Owner shall at its expense:

- A. Provide Engineer with all criteria and full information as to Owner's requirements for the Project, including design objectives and constraints, space, capacity and performance requirements, flexibility, and expandability, and any budgetary limitations.
- B. Give instructions to Engineer regarding Owner's procurement of construction services (including instructions regarding advertisements for bids, instructions to bidders, and requests for proposals, as applicable), Owner's construction contract practices and requirements, insurance and bonding requirements, electronic transmittals during construction, and other information necessary for the finalization of Owner's bidding-related documents (or requests for proposals or other construction procurement documents), and Construction Contract Documents. Furnish copies (or give specific directions requesting Engineer to use copies already in Engineer's possession) of all design and construction standards, Owner's standard forms, general conditions (if other than EJCDC® C-700, Standard General Conditions of the Construction Contract, 2013 Edition), supplementary conditions, text, and related documents and content for Engineer to include in the draft bidding-related documents (or requests for proposals or other construction procurement documents), and draft Construction Contract Documents, when applicable. Owner shall have responsibility for the final content of (1) such bidding-related documents (or requests for proposals or other construction procurement documents), and (2) those portions of any Construction Contract other than the design (as set forth in the Drawings, Specifications, or otherwise), and other engineering or technical matters; and Owner shall seek the advice of Owner's legal counsel, risk managers, and insurance advisors with respect to the drafting and content of such documents.
- C. Furnish to Engineer any other available information pertinent to the Project including reports and data relative to previous designs, construction, or investigation at or adjacent to the Site.
- D. Following Engineer's assessment of initially-available Project information and data and upon Engineer's request, obtain, furnish, or otherwise make available (if necessary through title searches, or retention of specialists or consultants) such additional Project-related information and data as is reasonably required to enable Engineer to complete its Basic and Additional Services. Such additional information or data would generally include the following:
  1. Property descriptions.

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### **Exhibit B – Owner's Responsibilities**

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2. Zoning, deed, and other land use restrictions.
  3. Utility and topographic mapping and surveys.
  4. Property, boundary, easement, right-of-way, and other special surveys or data, including establishing relevant reference points.
  5. Explorations and tests of subsurface conditions at or adjacent to the Site; geotechnical reports and investigations; drawings of physical conditions relating to existing surface or subsurface structures at the Site; hydrographic surveys, laboratory tests and inspections of samples, materials, and equipment; with appropriate professional interpretation of such information or data.
  6. Environmental assessments, audits, investigations, and impact statements, and other relevant environmental, historical, or cultural studies relevant to the Project, the Site, and adjacent areas.
  7. Data or consultations as required for the Project but not otherwise identified in this Agreement.
- E. Arrange for ~~safe~~ access to and make all provisions for Engineer to enter upon public and private property as required for Engineer to perform services under the Agreement. Nothing in this Agreement is intended to require Engineer to go onto public or private property in an unsafe manner or when it is unsafe to do so.
- F. Recognizing and acknowledging that Engineer's services and expertise do not include the following services, provide, as required for the Project:
1. Accounting, bond and financial advisory (including, if applicable, "municipal advisor" services as described in Section 975 of the Dodd-Frank Wall Street Reform and Consumer Protection Act (2010) and the municipal advisor registration rules issued by the Securities and Exchange Commission), independent cost estimating, and insurance counseling services.
  2. Legal services with regard to issues pertaining to the Project as Owner requires, Contractor raises, or Engineer reasonably requests.
  3. Such auditing services as Owner requires to ascertain how or for what purpose Contractor has used the money paid.
- G. Provide the services of an independent testing laboratory to perform all inspections, tests, and approvals of samples, materials, and equipment required by the Construction Contract Documents (other than those required to be furnished or arranged by Contractor), or to evaluate the performance of materials, equipment, and facilities of Owner, prior to their incorporation into the Work with appropriate professional interpretation thereof. Provide Engineer with the findings and reports generated by testing laboratories, including findings and reports obtained from or through Contractor.

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Exhibit B – Owner's Responsibilities

- H. Provide reviews, approvals, and permits from all governmental authorities having jurisdiction to approve all phases of the Project designed or specified by Engineer and such reviews, approvals, and consents from others as may be necessary for completion of each phase of the Project.
- I. Advise Engineer of the identity and scope of services of any independent consultants employed by Owner to perform or furnish services in regard to the Project, including, but not limited to, cost estimating, project peer review, value engineering, and constructability review.
- J. If Owner designates a construction manager or an individual or entity other than, or in addition to, Engineer to represent Owner at the Site, define and set forth as an attachment to this Exhibit B the duties, responsibilities, and limitations of authority of such other party and the relation thereof to the duties, responsibilities, and authority of Engineer.
- K. If more than one prime contract is to be awarded for the Work designed or specified by Engineer, then designate a person or entity to have authority and responsibility for coordinating the activities among the various prime Contractors, and define and set forth the duties, responsibilities, and limitations of authority of such individual or entity and the relation thereof to the duties, responsibilities, and authority of Engineer as an attachment to this Exhibit B that is to be mutually agreed upon and made a part of this Agreement before such services begin.
- L. Inform Engineer in writing of any specific requirements of safety or security programs that are applicable to Engineer, as a visitor to the Site.
- M. Examine all alternative solutions, studies, reports, sketches, Drawings, Specifications, proposals, and other documents presented by Engineer (including obtaining advice of an attorney, risk manager, insurance counselor, financial/municipal advisor, and other advisors or consultants as Owner deems appropriate with respect to such examination) and render in writing timely decisions pertaining thereto.
- N. Inform Engineer regarding any need for assistance in evaluating the possible use of Project Strategies, Technologies, and Techniques, as defined in Exhibit A.
- O. Advise Engineer as to whether Engineer's assistance is requested in identifying opportunities for enhancing the sustainability of the Project.
- P. Place and pay for advertisement for Bids in appropriate publications.
- Q. Furnish to Engineer data as to Owner's anticipated costs for services to be provided by others (including, but not limited to, accounting, bond and financial, independent cost estimating, insurance counseling, and legal advice) for Owner so that Engineer may assist Owner in collating the various cost categories which comprise Total Project Costs.
- R. Attend and participate in the pre-bid conference, bid opening, pre-construction conferences, construction progress and other job related meetings, and Site visits to determine Substantial Completion and readiness of the completed Work for final payment.

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**Exhibit B – Owner's Responsibilities**

- S. Authorize Engineer to provide Additional Services as set forth in Part 2 of Exhibit A of the Agreement, as required.
- T. Perform or provide the following: [ N/A ] *[List any other Owner responsibilities here.]*

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Exhibit B – Owner's Responsibilities

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This is **EXHIBIT C**, consisting of [ 11 ] pages, referred to in and part of the Agreement between Owner and Engineer for Professional Services dated [ ].

## Payments to Engineer for Services and Reimbursable Expenses

### COMPENSATION PACKET BC-1-2: Basic Services – Lump Sum & Standard Hourly Rates

Article 2 of the Agreement is supplemented to include the following agreement of the parties:

#### **ARTICLE 2 – OWNER’S RESPONSIBILITIES**

##### **C2.01 Compensation for Basic Services (other than Resident Project Representative) – Lump Sum Method of Payment and Standard Hourly Rates**

A. Owner shall pay Engineer for Basic Services set forth in Exhibit A, except for services of Engineer’s Resident Project Representative, if any, as follows:

1. A total Lump Sum amount of \$[0.00] and/or a total not to exceed (NTE) amount of \$3,735,590 based on the following estimated distribution of compensation, where the NTE amount is equal to the cumulative hours charged to the Project by each class of Engineer’s personnel times Standard Hourly Rates for each applicable billing class for all services performed on the Project, plus Reimbursable Expenses and Engineer’s Consultants’ charges, if any:

	<u>LUMP SUM</u>	<u>[or]</u>	<u>NTE AMOUNT</u>
a. Study and Report Phase	\$0.00		\$3,084,528
b. Preliminary Design Phase <sup>(1)</sup>	\$0.00		\$651,062
c. <del>Final Design Phase</del>	<del>\$[ ]</del>		<del>\$[ ]</del>
d. <del>Bidding and Negotiating Phase</del>	<del>\$[ ]</del>		<del>\$[ ]</del>
e. <del>Construction Phase</del>	<del>\$[ ]</del>		<del>\$[ ]</del>
f. <del>Post-Construction Phase</del>	<del>\$[ ]</del>		<del>\$[ ]</del>

Note: (1) Preliminary Design Phase include Paragraph 4.0 of Attachment A-1 to Exhibit A

LUMP SUM & NTE SUBTOTALS      \$[ 0 ]      \$3,735,590

SUBTOTAL FOR RPR SERVICE, IF ANY:      \$[ ]

GRAND TOTAL COMPENSATION FOR BASIC SERVICES:      \$3,735,590

Attachment BC-1-2A itemizes the hours and expenses by each task in Exhibit A.

2. ~~Engineer-Owner's representative~~ may alter the distribution of compensation between Lump Sum individual phases or between NTE individual phases noted under Paragraph C2.01.A.1 herein to be consistent with services actually rendered, but such altering of distribution of compensation shall not exceed the Subtotal Lump Sum or Subtotal NTE amounts, respectively, unless approved in a written amendment executed ~~writing~~ by the Owner and Engineer.
  3. The Lump Sum amount includes compensation for Engineer's services and services of Engineer's Consultants, if any. Appropriate amounts have been incorporated in the Lump Sum to account for labor costs, overhead, profit, expenses (other than any expressly allowed Reimbursable Expenses), and Consultant charges. The NTE amount for Engineer's services includes all labor, overhead, profit, Reimbursable Expenses, and Engineer's Consultants' charges.
  4. ~~In addition to the Lump Sum, Engineer is NOT also entitled to reimbursement of expenses from Owner for the Lump Sum phases following Reimbursable Expenses (see Appendix 1 for rates or charges): [ ] [List any such expenses here, or indicate "None." If "None" then the reference to Appendix 1 may be deleted.].~~
  5. The portion of the Lump Sum amount billed for Engineer's services will be based upon Engineer's estimate of the percentage of the total services actually completed during the billing period. ~~If any Reimbursable Expenses are expressly allowed, Engineer may also bill for any such Reimbursable Expenses incurred during the billing period.~~ The amounts billed for Engineer's services for the NTE phases will be based on the cumulative hours charged to the Project during the billing period by each class of Engineer's employees times Standard Hourly Rates for each applicable billing class, plus Reimbursable Expenses, if allowed, and Engineer's Consultants' charges.
- B. Period of Service for Lump Sum Phases: The compensation amount stipulated for Lump Sum phases in this Compensation Packet BC-1-2 is conditioned on a period of service not exceeding 23 months. If such period of service is extended, the compensation amount for Engineer's services shall be appropriately adjusted if Engineer provides Owner reasonable documentation showing Engineer, or Engineer's Consultants, have incurred additional costs or expenses directly related to the extension of Basic Services beyond the original period of service for the Lump Sum phases.
- C. To the extent necessary to verify Engineer's charges and upon Owner's timely request, Engineer shall make copies of such records available to Owner at cost. Records of Engineer's costs pertaining to Engineer's compensation under this Agreement shall be kept in accordance with generally accepted accounting practices. The records shall be kept in such form and detail as will clearly identify all relevant charges and costs and the bases thereof, except to the extent the Owner's representative and the Engineer's representative concur otherwise in writing. Said concurrence is valid without an amendment to this Agreement. The Engineer shall maintain all such records and provide the Owner access to them, and the right to copy them at cost, until at least four years after Engineer's last request for payment under this Agreement.

## C2.02 Reimbursable Expenses and Other Provisions Concerning NTE Phases and Payment

- A. The Standard Hourly Rates charged by Engineer for NTE phases constitute full and complete compensation for Engineer's services for the indicated NTE phases, including labor costs, overhead, and profit; the Standard Hourly Rates do not include Reimbursable Expenses or Engineer's Consultants' charges. For NTE phases noted under Paragraph C2.01.A.1, Engineer's Standard Hourly Rates are attached to this Exhibit C as Appendix 2.
- B. The Standard Hourly Rates and Reimbursable Expenses Schedule will be adjusted on July 1, 2023, and annually thereafter each July 1 to reflect a 3.5 percent change in hourly rates and changes to reimbursable expense rates for the work required under paragraphs A.1.01 and A.1.02. If the Owner and Engineer mutually agree to extend the scope of services beyond A.1.01 and A.1.02, standard hourly rates and reimbursable expenses for the expanded scope will be established as mutually agreeable to the Owner and Engineer at the time the additional scope of work is authorized.
- C. Engineer is entitled to reimbursement from Owner for NTE phases for the Reimbursable Expenses expressly identified and listed in Appendix 1, unless Owner indicates "None" in the following box: [ ].
- D. If Owner has agreed to reimburse Engineer for Reimbursable Expenses, the amounts payable to Engineer will be the Project-related internal expenses actually incurred or allocated by Engineer, plus all invoiced external Reimbursable Expenses allocable to the Project, the latter multiplied by a factor of [ None ].
- E. Whenever Engineer is entitled to compensation for the charges of Engineer's Consultants, those charges shall be the amounts billed by Engineer's Consultants to Engineer times a factor of [1.10].
- F. Reimbursable Expenses and Engineer's Consultants' compensation, whether or not any applied factor is indicated, include Engineer's overhead and profit associated with Engineer's responsibility for the administration of such services and costs.
- G. Estimated Compensation Amounts for NTE Phases:
1. Engineer's estimate of the amounts for NTE phases that will become payable for the specified services are estimates of the compensation anticipated to deliver those specified services. Engineer is not entitled to any balance of the NTE phase amount if the specified services are delivered for less than the estimated NTE phase amount for that specified service. The Owner shall retain all portions of any NTE phase amount not required to deliver the specified service for that NTE phase.
  2. When estimated compensation amounts have been stated herein and it subsequently becomes apparent to Engineer that the compensation amount for any particular NTE phase thus estimated will be exceeded, Engineer shall give Owner written notice thereof, allowing Owner to consider its options, including suspension or termination of Engineer's services for Owner's convenience. Upon notice, Owner and Engineer promptly shall review the matter of NTE phase services remaining to be performed and compensation for such services. Owner shall either exercise its right to suspend or terminate Engineer's services for Owner's convenience, agree to negotiate appropriate

compensation in excess of said estimated amount, or agree to negotiate a reduction in the remaining services to be rendered by Engineer, so that total compensation for such services will not exceed said estimated amount when such services are completed. If Owner decides not to suspend the Engineer's services during the negotiations, Engineer shall not exceed the estimated amount before Owner and Engineer have agreed to an increase in the compensation due Engineer or a reduction in the remaining services without express, written authorization from the Owner.

~~[Instructions to city staff: If RPR is not being used, delete both RPR 1 and RPR 2 packets. If RPR is being used, pick either RPR 1 or RPR 2 form and delete the one not used.]~~

**COMPENSATION PACKET RPR-1:**

**Resident Project Representative – Lump Sum**

---

Article 2 of the Agreement is supplemented to include the following agreement of the parties:

~~C2.04 Compensation for Resident Project Representative Basic Services – Lump Sum Method of Payment~~

~~A. Owner shall pay Engineer for Resident Project Representative Basic Services as follows:~~

- ~~1. Resident Project Representative Services: For services of Engineer's Resident Project Representative, if any, under Paragraph A1.05 of Exhibit A, the Lump Sum amount indicated under Paragraph C2.01.A.1 in the Exhibit C of Compensation Packet BC 1-2 of \$[ ]. The Lump Sum includes compensation for the Resident Project Representative's services. Appropriate amounts have been incorporated in the Lump Sum to account for labor costs, overhead, profit, and expenses (other than any expressly allowed Reimbursable Expenses) related to the Resident Project Representative's Services.~~
- ~~2. Reimbursable Expenses: In addition to the Lump Sum, Engineer is NOT also entitled to reimbursement of expenses from Owner for the following RPR Reimbursable Expenses (see Appendix 1 for rates or charges): [ ]. [List any such expenses here, or indicate "None." If "None" then the reference to Appendix 1 may be deleted.]~~
- ~~3. Resident Project Representative Schedule: The Lump Sum amount referenced set forth in Paragraph C2.04.A.1 above is based on full-time RPR services on an eight-hour workday Monday through Friday over a [ ] day construction schedule. Modifications to the schedule shall entitle Engineer to an equitable adjustment of compensation for RPR services.~~

## **COMPENSATION PACKET RPR-2:**

### **Resident Project Representative – Standard Hourly Rates**

---

Article 2 of the Agreement is supplemented to include the following agreement of the parties:

#### **C2.04 Compensation for Resident Project Representative Basic Services – Standard Hourly Rates Method of Payment**

##### **A. Owner shall pay Engineer for Resident Project Representative Basic Services as follows:**

- 1. Resident Project Representative Services:** For services of Engineer's Resident Project Representative under Paragraph A1.05.A of Exhibit A, an amount equal to the cumulative hours charged to the Project by each class of Engineer's personnel times Standard Hourly Rates for each applicable billing class for all Resident Project Representative services performed on the Project, plus related Reimbursable Expenses and Engineer's Consultant's charges, if any. The total compensation under this paragraph is estimated to be the amount indicated under Paragraph C2.01.A.1 in the Exhibit C of Compensation Packet BC-1-2 \$[ ] based upon full-time RPR services on an eight-hour workday, Monday through Friday, over a [ ] day construction schedule.

##### **B. Compensation for Reimbursable Expenses:**

- 1. Engineer is entitled to reimbursement from Owner for those Reimbursable Expenses that are not accounted for in the compensation for Basic Services under Paragraph C2.01, and are expressly identified and listed in Appendix 1 to this Exhibit C, which are directly related to the provision of Resident Project Representative or Post-Construction Basic Services, unless Owner indicates "None" in the following box: [ ] If "None" then the reference to Appendix 1 may be deleted.** Owner shall pay Engineer at the rates set forth in Appendix 1 to this Exhibit C.
- 2. Reimbursable Expenses include the expenses identified in Appendix 1 and the following: transportation (including mileage), lodging, and subsistence incidental thereto; providing and maintaining field office facilities including furnishings and utilities; subsistence and transportation of Resident Project Representative and assistants; toll telephone calls, mobile phone charges, and courier charges; reproduction of reports, Drawings, Specifications, bidding-related or other procurement documents, Construction Contract Documents, and similar Project-related items. In addition, if authorized in advance by Owner, Reimbursable Expenses will also include expenses incurred for the use of highly specialized equipment.**
- 3. The amounts payable to Engineer for Reimbursable Expenses, if any, will be those internal expenses related to the Resident Project Representative Basic Services that are actually incurred or allocated by Engineer, plus all invoiced external Reimbursable Expenses allocable to such services, the latter multiplied by a factor of [ ]. If no factor is to be applied, insert "None".**

---

#### **Exhibit C – Compensation Packet RPR-2: Resident Project Representative Services – Standard Hourly Rates Method of Payment.**

4. ~~The Reimbursable Expenses Schedule will be adjusted annually (as of [ ] ) to reflect equitable changes in the compensation payable to Engineer. If no adjustment is to be applied, insert "None".~~

C. ~~Other Provisions Concerning Payment Under this Paragraph C2.04:~~

1. ~~Whenever Engineer is entitled to compensation for the charges of Engineer's Consultants, those charges shall be the amounts billed by Engineer's Consultants to Engineer times a factor of [ ]. If no factor is to be applied, insert "None".~~
2. ~~Factors: The external Reimbursable Expenses and Engineer's Consultant's compensation, whether or not any applied factor is indicated factors include Engineer's overhead and profit associated with Engineer's responsibility for the administration of such services and costs.~~
3. ~~Estimated Compensation Amounts:~~
  - a. ~~Engineer's estimate of the amounts that will become payable for specified services are only estimates of the compensation anticipated to deliver the RPR specified services. Engineer is not entitled to any balance of the indicated RPR compensation amount if the RPR services are delivered for less than the estimated RPR compensation amount. The Owner shall retain all portions of any indicated RPR compensation amount not required to deliver the specified RPR services for the Project for planning purposes, are not binding on the parties, and are not the minimum or maximum amounts payable to Engineer under the Agreement.~~
  - b. ~~When estimated compensation amounts have been stated herein and it subsequently becomes apparent to Engineer that the total compensation amount thus estimated will be exceeded, Engineer shall give Owner written notice thereof, allowing Owner to consider its options, including suspension or termination of Engineer's services for Owner's convenience. Upon notice Owner and Engineer promptly shall review the matter of services remaining to be performed and compensation for such services. Owner shall either exercise its right to suspend or terminate Engineer's services for Owner's convenience, agree to negotiate appropriate such compensation in excess of exceeding said estimated amount, or agree to negotiate a reduction in the remaining services to be rendered by Engineer, so that total compensation for such services will not exceed said estimated amount when such services are completed. If Owner decides not to suspend Engineer's services during negotiations, and Engineer shall not exceed exceeds the estimated amount before Owner and Engineer have agreed to an increase in the compensation due Engineer or a reduction in the remaining services without express, written authorization from the Owner, then Engineer shall be paid for all services rendered hereunder.~~
4. ~~To the extent necessary to verify Engineer's charges and upon Owner's timely request, Engineer shall make copies of such records available to Owner at cost. Records of Engineer's costs pertaining to Engineer's compensation under this Agreement shall be kept in accordance with generally accepted accounting practices. The records shall be~~

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Exhibit C – Compensation Packet RPR-2: Resident Project Representative Services –  
Standard Hourly Rates Method of Payment.

~~kept in such form and detail as will clearly identify all relevant charges and costs and the bases thereof, except to the extent the Owner's representative and the Engineer's representative concur otherwise in writing. Said concurrence is valid without an amendment to this Agreement. The Engineer shall maintain all such records and provide the Owner access to them, and the right to copy them at cost, until at least four years after Engineer's last request for payment under this Agreement.~~



**COMPENSATION PACKET AS-1:  
Additional Services – Standard Hourly Rates**

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Article 2 of the Agreement is supplemented to include the following agreement of the parties:

**C2.05 Compensation for Additional Services – Standard Hourly Rates Method of Payment**

- A. Owner shall pay Engineer for Additional Services, if any, as follows:
1. *General:* For services of Engineer's personnel engaged directly on the Project pursuant to Paragraph A2.01 or A2.02 of Exhibit A, except for services as a consultant or witness under Paragraph A2.01.A.20, (which if needed shall be separately negotiated based on the nature of the required consultation or testimony) an amount equal to the cumulative hours charged to the Project by each class of Engineer's personnel times Standard Hourly Rates for each applicable billing class for all Additional Services performed on the Project, plus related Reimbursable Expenses and Engineer's Consultant's charges, if any.
- B. *Compensation For Reimbursable Expenses:*
1. For those Reimbursable Expenses that are not accounted for in the compensation for Basic Services under Paragraph C2.01 and are directly related to the provision of Additional Services, Owner shall pay Engineer at the rates set forth in Appendix 1 to this Exhibit C.
  2. Reimbursable Expenses include the expenses identified in Appendix 1 and the following categories: transportation (including mileage), lodging, and subsistence incidental thereto; providing and maintaining field office facilities including furnishings and utilities; toll telephone calls, mobile phone charges, and courier charges; reproduction of reports, Drawings, Specifications, bidding-related or other procurement documents, Construction Contract Documents, and similar Project-related items; and Consultants' charges. In addition, if authorized in advance by Owner, Reimbursable Expenses will also include expenses incurred for the use of highly specialized equipment.
  3. The amounts payable to Engineer for Reimbursable Expenses, if any, will be the Additional Services-related internal expenses actually incurred or allocated by Engineer, plus all invoiced external Reimbursable Expenses allocable to such Additional Services, the latter multiplied by a factor of [ None ].
  4. The Reimbursable Expenses Schedule will be adjusted annually (as of July 1<sup>st</sup>) to reflect equitable changes in the compensation payable to Engineer.
- C. *Other Provisions Concerning Payment for Additional Services:*
1. Whenever Engineer is entitled to compensation for the charges of Engineer's Consultants, those charges shall be the amounts billed by Engineer's Consultants to Engineer times a factor of [1.10 ].

---

**Exhibit C – Compensation Packet AS-1: Additional Services –  
Standard Hourly Rates Method of Payment.**

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2. *Factors:* The external Reimbursable Expenses and Engineer's Consultant's Factors include Engineer's overhead and profit associated with Engineer's responsibility for the administration of such services and costs.
3. To the extent necessary to verify Engineer's charges and upon Owner's timely request, Engineer shall make copies of such records available to Owner at cost.

This is **Appendix 1 to EXHIBIT C**, consisting of [ 1 ] pages, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated [ ] .

### **Reimbursable Expenses Schedule**

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Reimbursable Expenses are subject to review and adjustment per Exhibit C. Rates and charges for Reimbursable Expenses as of the date of the Agreement are:

8"x11" Copies/Impressions	\$ [ ]/page
Copies of Drawings	\$ [ ]/sq. ft.
Mileage (auto)	\$ [ 0.56 ]/mile*
Air Transportation	at cost
CAD Charge	-\$ [ ]/hour
Laboratory Testing	at cost
Health and Safety Level D	\$ [ ]/day
Health and Safety Level C	\$ [ ]/day
Meals and Lodging	at cost

\*The mileage rate is adjusted from time to time by the Internal Revenue Service.

This is **Appendix 2 to EXHIBIT C**, consisting of [ 1 ] pages, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated [ ] .

## **Standard Hourly Rates Schedule**

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**A. Standard Hourly Rates:**

1. Standard Hourly Rates are set forth in this Appendix 2 to this Exhibit C and include salaries and wages paid to personnel in each billing class plus the cost of customary and statutory benefits, general and administrative overhead, non-project operating costs, and operating margin or profit.
2. The Standard Hourly Rates apply only as specified in Article C2.

**B. Schedule:**

Hourly rates for services performed on or after the date of the Agreement are:

<b>Vice President</b>	<b>\$292/hour</b>
<b>Associate Vice President</b>	<b>\$238/hour</b>
<b>Senior Associate</b>	<b>\$215/hour</b>
<b>Associate</b>	<b>\$179/hour</b>
<b>Senior Principal Engineer</b>	<b>\$154/hour</b>
<b>Principal Engineer</b>	<b>\$133/hour</b>
<b>Assistant Engineer</b>	<b>\$120/hour</b>
<b>Senior Principal Architect</b>	<b>\$143/hour</b>
<b>Principal Architect</b>	<b>\$128/hour</b>
<b>Architect</b>	<b>\$118/hour</b>
<b>Senior Principal Scientist</b>	<b>\$166/hour</b>
<b>Principal Scientist</b>	<b>\$131/hour</b>
<b>Senior Principal Designer</b>	<b>\$149/hour</b>
<b>Principal Designer</b>	<b>\$119/hour</b>
<b>Designer</b>	<b>\$88/hour</b>
<b>Administrator</b>	<b>\$88/hour</b>
<b>Technician</b>	<b>\$66/hour</b>

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**Exhibit C: Appendix 2 - Standard Hourly Rate Schedule.**

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This is ~~EXHIBIT D~~, consisting of ~~[ ]~~ pages,  
referred to in and part of the ~~Agreement~~  
~~between Owner and Engineer for Professional~~  
~~Services~~ dated ~~[ ]~~.

~~[Note to User: Delete this Exhibit D if Engineer will not be providing Resident  
Project Representative Services under Paragraph A1.05.A.2.]~~

## ~~Duties, Responsibilities, and Limitations of Authority of Resident Project Representative~~

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Article 1 of the Agreement is supplemented to include the following agreement of the parties:

### ~~ARTICLE 1 - SERVICES OF ENGINEER~~

#### ~~D1.01 - Resident Project Representative~~

- ~~A. Engineer shall furnish a Resident Project Representative ("RPR") to assist Engineer in observing progress and quality of the Work. The RPR may provide full time representation or may provide representation to a lesser degree. RPR is Engineer's representative at the Site, will act as directed by and under the supervision of Engineer, and will confer with Engineer regarding RPR's actions.~~
- ~~B. Through RPR's observations of the Work, including field checks of materials and installed equipment, Engineer shall endeavor to provide further protection for Owner against defects and deficiencies in the Work. However, Engineer shall not, as a result of such RPR observations of the Work, supervise, direct, or have control over the Work, nor shall Engineer (including the RPR) have authority over or responsibility for the means, methods, techniques, sequences, or procedures of construction selected or used by any Constructor, for security or safety at the Site, for safety precautions and programs incident to the Work or any Constructor's work in progress, for the coordination of the Constructors' work or schedules, or for any failure of any Constructor to comply with Laws and Regulations applicable to the performing and furnishing of its work. The Engineer (including RPR) neither guarantees the performances of any Constructor nor assumes responsibility for any Constructor's failure to furnish and perform the Work, or any portion of the Work, in accordance with the Construction Contract Documents. In addition, the specific terms set forth in Exhibit A, Paragraph A1.05, of this Agreement are applicable.~~
- ~~C. The duties and responsibilities of the RPR are as follows:~~
  - ~~1. General: RPR's dealings in matters pertaining to the Work in general shall be with Engineer and Contractor. RPR's dealings with Subcontractors shall only be through or with the full knowledge and approval of Contractor. RPR shall generally communicate with Owner only with the knowledge of and under the direction of Engineer.~~
  - ~~2. Schedules: Review the progress schedule, schedule of Shop Drawing and Sample submittals, schedule of values, and other schedules prepared by Contractor and consult with Engineer concerning acceptability of such schedules.~~

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Exhibit C: Appendix 2 - Standard Hourly Rate Schedule.

- ~~3. *Conferences and Meetings:* Attend meetings with Contractor, such as preconstruction conferences, progress meetings, job conferences, and other Project-related meetings (but not including Contractor's safety meetings), and as appropriate prepare and circulate copies of minutes thereof.~~
- ~~4. *Safety Compliance:* Comply with Site safety programs, as they apply to RPR, and if required to do so by such safety programs, receive safety training specifically related to RPR's own personal safety while at the Site.~~
- ~~5. *Liaison:*~~
  - ~~a. *Serve as Engineer's liaison with Contractor. Working principally through Contractor's authorized representative or designee, assist in providing information regarding the provisions and intent of the Construction Contract Documents.*~~
  - ~~b. *Assist Engineer in serving as Owner's liaison with Contractor when Contractor's operations affect Owner's on-Site operations.*~~
  - ~~c. *Assist in obtaining from Owner additional details or information, when required for proper execution of the Work.*~~
- ~~6. *Clarifications and Interpretations:* Receive from Contractor submittal of any matters in question concerning the requirements of the Construction Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Construction Contract Documents. Report to Engineer regarding such RFIs. Report to Engineer when clarifications and interpretations of the Construction Contract Documents are needed, whether as the result of a Contractor RFI or otherwise. Transmit Engineer's clarifications, interpretations, and decisions to Contractor.~~
- ~~7. *Shop Drawings and Samples:*~~
  - ~~a. *Record date of receipt of Samples and Contractor approved Shop Drawings.*~~
  - ~~b. *Receive Samples that are furnished at the Site by Contractor, and notify Engineer of availability of Samples for examination.*~~
  - ~~c. *Advise Engineer and Contractor of the commencement of any portion of the Work requiring a Shop Drawing or Sample submittal, if RPR believes that the submittal has not been received from Contractor, or has not been approved by Contractor or Engineer.*~~
- ~~8. *Proposed Modifications:* Consider and evaluate Contractor's suggestions for modifications to the Drawings or Specifications, and report such suggestions, together with RPR's recommendations, if any, to Engineer. Transmit Engineer's response (if any) to such suggestions to Contractor.~~
- ~~9. *Review of Work; Defective Work:*~~

- ~~a. Report to Engineer whenever RPR believes that any part of the Work is defective under the terms and standards set forth in the Construction Contract Documents, and provide recommendations as to whether such Work should be corrected, removed and replaced, or accepted as provided in the Construction Contract Documents.~~
- ~~b. Inform Engineer of any Work that RPR believes is not defective under the terms and standards set forth in the Construction Contract Documents, but is nonetheless not compatible with the design concept of the completed Project as a functioning whole, and provide recommendations to Engineer for addressing such Work. ; and~~
- ~~c. Advise Engineer of that part of the Work that RPR believes should be uncovered for observation, or requires special testing, inspection, or approval.~~

~~10. Inspections, Tests, and System Start-ups:~~

- ~~a. Consult with Engineer in advance of scheduled inspections, tests, and systems start-ups.~~
- ~~b. Verify that tests, equipment, and systems start-ups and operating and maintenance training are conducted in the presence of appropriate Owner's personnel, and that Contractor maintains adequate records thereof.~~
- ~~c. Observe, record, and report to Engineer appropriate details relative to the test procedures and systems start-ups.~~
- ~~d. Observe whether Contractor has arranged for inspections required by Laws and Regulations, including but not limited to those to be performed by public or other agencies having jurisdiction over the Work.~~
- ~~e. Accompany visiting inspectors representing public or other agencies having jurisdiction over the Work, record the results of these inspections, and report to Engineer.~~

~~11. Records:~~

- ~~a. Maintain at the Site orderly files for correspondence, reports of job conferences, copies of Construction Contract Documents including all Change Orders, Field Orders, Work Change Directives, Addenda, additional Drawings issued subsequent to the execution of the Construction Contract, RFIs, Engineer's clarifications and interpretations of the Construction Contract Documents, progress reports, approved Shop Drawing and Sample submittals, and other Project-related documents.~~
- ~~b. Prepare a daily report or keep a diary or log book, recording Contractor's hours on the Site, Subcontractors present at the Site, weather conditions, data relative to questions of Change Orders, Field Orders, Work Change Directives, or changed conditions, Site visitors, deliveries of equipment or materials, daily activities,~~

decisions, observations in general, and specific observations in more detail as in the case of observing test procedures; and send copies to Engineer.

- ~~c. Upon request from Owner to Engineer, photograph or video Work in progress or Site conditions.~~
- ~~d. Record and maintain accurate, up-to-date lists of the names, addresses, fax numbers, e-mail addresses, websites, and telephone numbers (including mobile numbers) of all Contractors, Subcontractors, and major Suppliers of materials and equipment.~~
- ~~e. Maintain records for use in preparing Project documentation.~~
- ~~f. Upon completion of the Work, furnish original set of all RPR Project documentation to Engineer.~~

~~12. Reports:~~

- ~~a. Furnish to Engineer periodic reports as required of progress of the Work and of Contractor's compliance with the progress schedule and schedule of Shop Drawing and Sample submittals.~~
- ~~b. Draft and recommend to Engineer proposed Change Orders, Work Change Directives, and Field Orders. Obtain backup material from Contractor.~~
- ~~c. Furnish to Engineer and Owner copies of all inspection, test, and system start-up reports.~~
- ~~d. Immediately inform Engineer of the occurrence of any Site accidents, emergencies, acts of God endangering the Work, possible force majeure or delay events, damage to property by fire or other causes, or the discovery of any potential differing site condition or Constituent of Concern.~~

~~13. Payment Requests: Review applications for payment with Contractor for compliance with the established procedure for their submission and forward with recommendations to Engineer, noting particularly the relationship of the payment requested to the schedule of values, Work completed, and materials and equipment delivered at the Site but not incorporated in the Work.~~

~~14. Certificates, Operation and Maintenance Manuals: During the course of the Work, verify that materials and equipment certificates, operation and maintenance manuals and other data required by the Contract Documents to be assembled and furnished by Contractor are applicable to the items actually installed and in accordance with the Contract Documents, and have these documents delivered to Engineer for review and forwarding to Owner prior to payment for that part of the Work.~~

~~15. Completion:~~

- ~~a. Participate in Engineer's visits to the Site regarding Substantial Completion, assist in the determination of Substantial Completion, and prior to the issuance of a~~

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Exhibit C: Appendix 2 - Standard Hourly Rate Schedule.



~~Certificate of Substantial Completion submit a punch list of observed items requiring completion or correction.~~

- ~~b. Participate in Engineer's visit to the Site in the company of Owner and Contractor, to determine completion of the Work, and prepare a final punch list of items to be completed or corrected by Contractor.~~
- ~~c. Observe whether all items on the final punch list have been completed or corrected, and make recommendations to Engineer concerning acceptance and issuance of the Notice of Acceptability of the Work (Exhibit E).~~

~~D. Resident Project Representative shall not:~~

- ~~1. Authorize any deviation from the Construction Contract Documents or substitution of materials or equipment (including "or equal" items).~~
- ~~2. Exceed limitations of Engineer's authority as set forth in this Agreement.~~
- ~~3. Undertake any of the responsibilities of Contractor, Subcontractors, or Suppliers, or any Constructor.~~
- ~~4. Advise on, issue directions relative to, or assume control over any aspect of the means, methods, techniques, sequences or procedures of the Work, by Contractor or any other Constructor.~~
- ~~5. Advise on, issue directions regarding, or assume control over security or safety practices, precautions, and programs in connection with the activities or operations of Owner or Contractor.~~
- ~~6. Participate in specialized field or laboratory tests or inspections conducted off site by others except as specifically authorized by Engineer.~~
- ~~7. Accept Shop Drawing or Sample submittals from anyone other than Contractor.~~
- ~~8. Authorize Owner to occupy the Project in whole or in part.~~

This is ~~EXHIBIT E~~, consisting of ~~{ }~~ pages,  
referred to in and part of the ~~Agreement~~  
~~between Owner and Engineer for Professional~~  
~~Services~~ dated ~~{ }~~.

~~{Notes to User~~

~~1. Exhibit A, Paragraph A1.05.A.25 of this Agreement indicates that in connection with recommending final payment of the Construction Contractor, the Engineer will also provide a notice to Owner and Contractor of the acceptability of the Work, subject to stated limitations. The form for that purpose, "Notice of Acceptability of Work," is attached on the following pages of this Exhibit E.~~

~~2. The Notice of Acceptability of Work should be served in compliance with the requirements for service of notice under the Construction Contract. See Paragraph 18.01, Giving Notice, of EJCDC C-700 (2013), Standard General Conditions of the Construction Contract.~~

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Exhibit E – Notice of Acceptability of Work.



ENGINEERS JOINT CONTRACT  
DOCUMENTS COMMITTEE

## NOTICE OF ACCEPTABILITY OF WORK

PROJECT:

OWNER:

CONTRACTOR:

OWNER'S CONSTRUCTION CONTRACT IDENTIFICATION:

EFFECTIVE DATE OF THE CONSTRUCTION CONTRACT:

ENGINEER:

NOTICE DATE:

To:

Owner

And To:

Contractor

From:

Engineer

The Engineer hereby gives notice to the above Owner and Contractor that Engineer has recommended final payment of Contractor, and that the Work furnished and performed by Contractor under the above Construction Contract is acceptable, expressly subject to the provisions of the related Contract Documents, the Agreement between Owner and Engineer for Professional Services dated \_\_\_\_\_, and the following terms and conditions of this Notice:

### CONDITIONS OF NOTICE OF ACCEPTABILITY OF WORK

\_\_\_\_\_ The Notice of Acceptability of Work ("Notice") is expressly made subject to the following terms and conditions to which all those who receive said Notice and rely thereon agree:

1. This Notice is given with the skill and care ordinarily used by members of the engineering profession practicing under similar conditions at the same time and in the same locality.

Exhibit E – Notice of Acceptability of Work.

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- ~~2. This Notice reflects and is an expression of the Engineer's professional opinion.~~
- ~~3. This Notice is given as to the best of Engineer's knowledge, information, and belief as of the Notice Date.~~
- ~~4. This Notice is based entirely on and expressly limited by the scope of services Engineer has been employed by Owner to perform or furnish during construction of the Project (including observation of the Contractor's work) under Engineer's Agreement with Owner, and applies only to facts that are within Engineer's knowledge or could reasonably have been ascertained by Engineer as a result of carrying out the responsibilities specifically assigned to Engineer under such Agreement.~~
- ~~5. This Notice is not a guarantee or warranty of Contractor's performance under the Construction Contract, an acceptance of Work that is not in accordance with the related Contract Documents, including but not limited to defective Work discovered after final inspection, nor an assumption of responsibility for any failure of Contractor to furnish and perform the Work thereunder in accordance with the Construction Contract Documents, or to otherwise comply with the Construction Contract Documents or the terms of any special guarantees specified therein.~~
- ~~6. This Notice does not relieve Contractor of any surviving obligations under the Construction Contract, and is subject to Owner's reservations of rights with respect to completion and final payment.~~

By: \_\_\_\_\_

Title: \_\_\_\_\_

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

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Exhibit E – Notice of Acceptability of Work.

**[EXHIBIT F INTENTIONALLY DELETED]**

This is ~~EXHIBIT F~~, consisting of ~~[ ]~~ pages, referred to in and part of the ~~Agreement between Owner and Engineer for Professional Services~~ dated ~~[ ]~~.

**Construction Cost Limit**

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Paragraph 5.02 of the Agreement is supplemented to include the following agreement of the parties:

**F5.02 — ~~Designing to Construction Cost Limit~~**

- ~~A. Owner and Engineer hereby agree to a Construction Cost limit in the amount of \$[ ].~~
- ~~B. A bidding or negotiating contingency of [ ] percent will be added to any Construction Cost limit established.~~
- ~~C. The acceptance by Owner at any time during Basic Services of a revised opinion of probable Construction Cost in excess of the then established Construction Cost limit will constitute a corresponding increase in the Construction Cost limit.~~
- ~~D. Engineer will be permitted to determine what types and quality of materials, equipment and component systems are to be included in the Drawings and Specifications. Engineer may make reasonable adjustments in the scope, extent, and character of the Project to the extent consistent with the Project requirements and sound engineering practices, to bring the Project within the Construction Cost limit.~~
- ~~E. If the Bidding or Negotiating Phase has not commenced within three months after completion of the Final Design Phase, or if industry-wide prices are changed because of unusual or unanticipated events affecting the general level of prices or times of delivery in the construction industry, the established Construction Cost limit will not be binding on Engineer. In such cases, Owner shall consent to an adjustment in the Construction Cost limit commensurate with any applicable change in the general level of prices in the construction industry between the date of completion of the Final Design Phase and the date on which proposals or Bids are sought.~~
- ~~F. If the lowest bona fide proposal or Bid exceeds the established Construction Cost limit, Owner shall (1) give written approval to increase such Construction Cost limit, or (2) authorize negotiating or rebidding the Project within a reasonable time, or (3) cooperate in revising the Project's scope, extent, or character to the extent consistent with the Project's requirements and with sound engineering practices. In the case of (3), Engineer shall modify the Construction Contract Documents as necessary to bring the Construction Cost within the Construction Cost Limit. Owner shall pay Engineer's cost to provide such modification services, including the costs of the services of its Consultants, all overhead expenses reasonably related thereto, and Reimbursable Expenses, but without profit to Engineer on account of such services. The providing of such services will be the limit of Engineer's responsibility in this regard and, having done so, Engineer shall be entitled to payment for services and expenses in accordance with this Agreement and will not otherwise be liable for~~

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**Exhibit F – Construction Cost Limit.**

~~damages attributable to the lowest bona fide proposal or bid exceeding the established Construction Cost limit.~~

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**Exhibit F – Construction Cost Limit.**

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This is **EXHIBIT G**, consisting of [ 3 ] pages, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated [ ] .

## Insurance

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Paragraph 6.05 of the Agreement is supplemented to include the following agreement of the parties:

### G6.05 Insurance

- A. The limits of liability for the insurance required by Paragraph 6.05.A and 6.05.B of the Agreement are as follows:

1. ~~By~~ The Engineer shall maintain, on a primary basis and at its sole expense, at all times during the life of this Agreement the following applicable coverage's and limits. The requirements contained herein, as well as City's review or acceptance of insurance maintained by Engineer is not intended to and shall not in any manner limit or qualify the liabilities or obligations assumed by Engineer under this Agreement:

- a. Workers' Compensation: Statutory
- b. Employer's Liability --
  - 1) Bodily injury, each accident: \$1,000,000
  - 2) Bodily injury by disease, each employee: \$1,000,000
  - 3) Bodily injury/disease, aggregate: \$1,000,000
- c. General Liability --
  - 1) Each Occurrence (Bodily Injury and Property Damage): \$1,000,000
  - 2) General Aggregate: \$2,000,000
- d. Excess or Umbrella Liability --
  - 1) Per Occurrence: \$1,000,000
  - 2) General Aggregate: \$1,000,000
- e. Automobile Liability --Combined Single Limit (Bodily Injury and Property Damage):  
\$1,000,000
- f. Professional Liability --
  - 1) Each Claim Made \$1,000,000
  - 2) Annual Aggregate \$1,000,000
- g. Other (specify): \$[ None ]

---

#### Exhibit G – Insurance.

~~2. By Owner:~~

~~a. Workers' Compensation: \_\_\_\_\_ Statutory~~

~~b. Employer's Liability~~

~~1) Bodily injury, Each Accident \_\_\_\_\_ \$[\_\_\_\_\_] ]~~

~~2) Bodily injury by Disease, Each Employee \_\_\_\_\_ \$[\_\_\_\_\_] ]~~

~~3) Bodily injury/Disease, Aggregate \_\_\_\_\_ \$[\_\_\_\_\_] ]~~

~~c. General Liability~~

~~1) General Aggregate: \_\_\_\_\_ \$[\_\_\_\_\_] ]~~

~~2) Each Occurrence (Bodily Injury and Property Damage): \$[\_\_\_\_\_] ]~~

~~d. Excess Umbrella Liability~~

~~1) Per Occurrence: \_\_\_\_\_ \$[\_\_\_\_\_] ]~~

~~2) General Aggregate: \_\_\_\_\_ \$[\_\_\_\_\_] ]~~

~~e. Automobile Liability Combined Single Limit (Bodily Injury and Property Damage):~~

~~\_\_\_\_\_ \$[\_\_\_\_\_] ]~~

~~f. Other (specify): \_\_\_\_\_ \$[\_\_\_\_\_] ]~~

~~B. Additional Insureds:~~

- ~~1. The following individuals or entities are to be listed on Owner's general liability policies of insurance as additional insureds:~~

---

Exhibit G – Insurance.



- a.                       
Engineer
- b.                       
Engineer's Consultant
- c.                       
Engineer's Consultant
- d.                       
[other]

- ~~2. During the term of this Agreement the Engineer shall notify Owner of any other Consultant to be listed as an additional insured on Owner's general liability policies of insurance.~~
- 3. The Owner shall be listed on Engineer's general liability policy as provided in Paragraph 6.05.A.

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Exhibit G – Insurance.

This is **EXHIBIT H**, consisting of [ 1 ] pages, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated [ ].

## **Dispute Resolution**

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Paragraph 6.09 of the Agreement is supplemented to include the following agreement of the parties:

***[NOTE TO USER: Select one of the two alternatives provided.]***

### **H6.08 Dispute Resolution**

- A. *Mediation:* Owner and Engineer agree that they shall first submit any and all unsettled claims, counterclaims, disputes, and other matters in question between them arising out of or relating to this Agreement or the breach thereof ("Disputes") to mediation by a mutually acceptable mediator. Owner and Engineer agree to participate in the mediation process in good faith. The process shall be conducted on a confidential basis, and shall be completed within 120 days. If such mediation is unsuccessful in resolving a Dispute, then (1) the parties may mutually agree to a dispute resolution of their choice, or (2) either party may seek to have the Dispute resolved by a court of competent jurisdiction.
1. Notwithstanding the provision of H6.08.A above, after the Owner has engaged a general contractor for construction work and during the construction administration phase of this Agreement only, the parties may avail themselves of the dispute resolution process adopted by the State Building Commission pursuant to G.S. 143-135.26(11) and G.S. 143-128(f1).

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#### **Exhibit H - Dispute Resolution.**

This document is a MODIFIED version of the EJCDC® E-500, Agreement Between Owner and Engineer for Professional Services, Copyright © 2014 by the National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers, or is based in part on excerpts from copyrighted EJCDC documents. Those portions of the text that originated in copyrighted EJCDC documents remain subject to the copyright.

**[EXHIBIT I INTENTIONALLY DELETED]**

This is **EXHIBIT I**, consisting of [ ] pages, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated [ ].

**Limitations of Liability**

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Paragraph 6.11 of the Agreement is supplemented to include the following agreement of the parties:

***A. Limitation of Engineer's Liability***

***[NOTE TO USER: Select one of the three alternatives listed below for 16.11- A.1]***

1. ~~*Engineer's Liability Limited to Stated Amount, or Amount of Engineer's Compensation:*~~ To the fullest extent permitted by Laws and Regulations, and notwithstanding any other provision of this Agreement, the total liability, in the aggregate, of Engineer and Engineer's officers, directors, members, partners, agents, employees, and Consultants, to Owner and anyone claiming by, through, or under Owner for any and all injuries, claims, losses, expenses, costs, or damages whatsoever arising out of, resulting from, or in any way related to the Project, Engineer's or its Consultants' services, or this Agreement, from any cause or causes whatsoever, including but not limited to the negligence, professional errors or omissions, strict liability, breach of contract, indemnity obligations, or warranty express or implied, of Engineer or Engineer's officers, directors, members, partners, agents, employees, or Consultants, shall not exceed the total amount of \$[ ] or the total compensation received by Engineer under this Agreement, whichever is greater. Higher limits are available for an additional fee.

***[or]***

---

1. ~~*Engineer's Liability Limited to Amount of Engineer's Compensation:*~~ To the fullest extent permitted by Laws and Regulations, and notwithstanding any other provision of this Agreement, the total liability, in the aggregate, of Engineer and Engineer's officers, directors, members, partners, agents, employees, and Consultants, to Owner and anyone claiming by, through, or under Owner for any and all claims, losses, costs, or damages whatsoever arising out of, resulting from, or in any way related to the Project or the Agreement from any cause or causes, including but not limited to the negligence, professional errors or omissions, strict liability, breach of contract, indemnity obligations, or warranty express or implied of Engineer or Engineer's officers, directors, members, partners, agents, employees, or Consultants shall not exceed the total compensation received by Engineer under this Agreement.
- 

***[or]***

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**Exhibit I - Limitations on Liability.**

1. ~~Engineer's Liability Limited to Amount of Insurance Proceeds: Engineer shall procure and maintain insurance as required by and set forth in Exhibit G to this Agreement. Notwithstanding any other provision of this Agreement, and to the fullest extent permitted by Laws and Regulations, the total liability, in the aggregate, of Engineer and Engineer's officers, directors, members, partners, agents, employees, and Consultants to Owner and anyone claiming by, through, or under Owner for any and all claims, losses, costs, or damages whatsoever arising out of, resulting from, or in any way related to the Project or the Agreement from any cause or causes, including but not limited to the negligence, professional errors or omissions, strict liability, breach of contract, indemnity obligations, or warranty express or implied, of Engineer or Engineer's officers, directors, members, partners, agents, employees, or Consultants (hereafter "Owner's Claims"), shall not exceed the total insurance proceeds paid on behalf of or to Engineer by Engineer's insurers in settlement or satisfaction of Owner's Claims under the terms and conditions of Engineer's insurance policies applicable thereto (excluding fees, costs and expenses of investigation, claims adjustment, defense, and appeal), up to the amount of insurance required under this Agreement. If no such insurance coverage is provided with respect to Owner's Claims, then the total liability, in the aggregate, of Engineer and Engineer's officers, directors, members, partners, agents, employees, and Consultants to Owner and anyone claiming by, through, or under Owner for any and all such uninsured Owner's Claims shall not exceed \$[\_\_\_\_\_].~~

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~~**[NOTE TO USER: If appropriate and desired, include 16.11.A.2 below as a supplement to Paragraph 6.11, which contains a mutual waiver of damages applicable to the benefit of both Owner and Engineer.]**~~

2. ~~Exclusion of Special, Incidental, Indirect, and Consequential Damages: To the fullest extent permitted by Laws and Regulations, and notwithstanding any other provision in the Agreement, consistent with the terms of Paragraph 6.11, the Engineer and Engineer's officers, directors, members, partners, agents, Consultants, and employees shall not be liable to Owner or anyone claiming by, through, or under Owner for any and all claims for or entitlement to special, incidental, indirect, or consequential damages arising out of, resulting from, or in any way related to this Agreement or the Project, from any cause or causes, including but not limited to:~~

~~**[NOTE TO USER: List here particular types of damages that may be of special concern because of the nature of the project or specific circumstances, e.g., cost of replacement power, loss of use of equipment or of the facility, loss of profits or revenue, loss of financing, regulatory fines, etc.]**~~

~~**[NOTE TO USER: the above exclusion of consequential and other damages can be converted to a limitation on the amount of such damages, following the format of Paragraph 16.11.A.1 above, by providing that "Engineer's total liability for such damages shall not exceed \$\_\_\_\_\_."]**~~

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Exhibit I - Limitations on Liability.

~~[NOTE TO USER: Many professional service agreements contain mutual indemnifications. If the parties elect to provide a mutual counterpart to the indemnification of Owner by Engineer in Paragraph 6.11.A, then supplement Paragraph 6.11.B by including the following indemnification of Engineer by Owner as Paragraph 6.11.B.]~~

~~A. Indemnification by Owner: To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Engineer and its officers, directors, members, partners, agents, employees, and Consultants from and against any and all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court, arbitration, or other dispute resolution costs) arising out of or relating to the Project, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom, but only to the extent caused by any negligent act or omission of Owner or Owner's officers, directors, members, partners, agents, employees, consultants, or others retained by or under contract to the Owner with respect to this Agreement or to the Project.~~

This is **EXHIBIT J**, consisting of [ 2 ] pages, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated [ ] .

## **Special Provisions**

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Paragraph(s) [8.05 H] of the Agreement is/are amended to include the following agreement(s) of the parties:

- H.1. (Compensation for Engineer's Errors). Notwithstanding any other term of the Agreement to the contrary, if the Engineer creates plans or specifications containing an error that causes actual construction of a portion of Work that needs to be changed solely because of the Engineer's error, the Engineer shall pay the Owner all costs of correcting the error, including an amount to compensate the Owner for time spent by Owner's employees because of the error without regard to what other services those employees might have done for the Owner had the error not occurred.
- A. (Unforeseen Conditions) An error shall not be grounds for payment under this Paragraph H.1 if the error occurred because of physical conditions were:
- (i) not in fact known to the Engineer,
  - (ii) not in fact known to the Engineer's consultants,
  - (iv) not readily apparent to the Engineer, and
  - (v) not readily apparent to the Engineer's consultants.
- B. (Cost of Employees' Time) The cost of the employees' time will be calculated as follows: the time spent by any salaried employee of the Owner because of the error shall be compensated at an hourly rate equal to the employee's gross salary (using standards to determine gross salary for federal income tax purposes) during the applicable fiscal year of the Owner divided by the number of hours worked by that employee for the Owner during that fiscal year.
- 3 (Limits on Double Payments) If this Paragraph H.1 is applied to compensate the Owner for an error, the Engineer shall not owe the Owner any other compensation to remove the erroneously built Work and replace it with correct Work. However, the payment of such compensation or the application of this Paragraph H.1 shall not affect liability for personal injury or damage to property. (In the preceding sentence, "damage to property" excludes the damage suffered by the Owner for the cost of replacing the erroneously installed Work for which this Paragraph provides compensation, but it includes all other general, special, consequential, or other kinds of damage resulting from the error.)
- 4 (Limit on Use of Payment against Engineer) A payment by the Engineer pursuant to this Paragraph H.1 shall be considered a compromise, and the City shall not introduce the fact of the payment in any legal action or proceeding except to the extent that compromises are admissible.
- 5 (Nonpayment Hereunder Not to Prevent Other Claims) If this Paragraph H.1 is not applied so as to compensate the Owner for an error, this Paragraph H.1 shall not be used to construe this

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### **Exhibit J - Special Provisions.**

Agreement so as to reduce any remedy that is available to the Owner because of that error. For example, to the extent an error is not compensated for because of the amount exceeds the insurance deductible, the Owner will not be deemed to have waived a claim therefor.

H.2 (Assignment of Subcontracts) All contracts between the Engineer and others to provide services on the Project, in which the services are expected to take more than one month to complete and the compensation is expected to exceed \$5,000, shall contain a provision allowing the Owner or a person designated by the Owner to assume the Engineer's rights under the contract so as to require continued performance according to the terms of the contract, provided, however, that neither the Owner nor the person designated by the Owner shall be liable for breaches or other events or occurrences that took place before it assumed the contract. The Engineer will demonstrate compliance with this Paragraph H.2 when requested by the Owner.

(end of Exhibit J)

This is **EXHIBIT K**, consisting of [ 2 ] pages,  
referred to in and part of the **Agreement  
between Owner and Engineer for Professional  
Services** dated [ ] .

**AMENDMENT TO OWNER-ENGINEER AGREEMENT**  
**Amendment No. \_\_\_\_\_**

The Effective Date of this Amendment is: \_\_\_\_\_.

Background Data

Effective Date of Owner-Engineer Agreement:

Owner:

Engineer:

Project:

Nature of Amendment: [Check those that are applicable and delete those that are inapplicable.]

- \_\_\_\_\_ Additional Services to be performed by Engineer
- \_\_\_\_\_ Modifications to services of Engineer
- \_\_\_\_\_ Modifications to responsibilities of Owner
- \_\_\_\_\_ Modifications of payment to Engineer
- \_\_\_\_\_ Modifications to time(s) for rendering services
- \_\_\_\_\_ Modifications to other terms and conditions of the Agreement

Description of Modifications:

***Here describe the modifications, in as much specificity and detail as needed. Use an  
attachment if necessary.***

Agreement Summary:

Original agreement amount:	\$ _____
Net change for prior amendments:	\$ _____
This amendment amount:	\$ _____
Adjusted Agreement amount:	\$ _____

Change in time for services (days or date, as applicable): \_\_\_\_\_

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**Exhibit K – Amendment to Owner-Engineer Agreement.**



The foregoing Agreement Summary is for reference only and does not alter the terms of the Agreement, including those set forth in Exhibit C.

Owner and Engineer hereby agree to modify the above-referenced Agreement as set forth in this Amendment. All provisions of the Agreement not modified by this or previous Amendments remain in effect.

OWNER:

ENGINEER:

\_\_\_\_\_  
By: \_\_\_\_\_  
Print  
name: \_\_\_\_\_

Title: \_\_\_\_\_

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

\_\_\_\_\_  
By: \_\_\_\_\_  
Print  
name: \_\_\_\_\_

Title: \_\_\_\_\_

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

Western Intake Partnership  
Water Intake and Transmission Infrastructure Preliminary Engineering  
Scope of Services

The scope of services defined herein are intended to define the detailed and project specific services to be performed by the Engineer under Part 1 – Basic Services, A1.01 Study and Report Phase and A.1.02 Preliminary Design Phase.

1. Water Capacity Requirements

- a. The Engineer shall review previously completed reports, to include the 2014 Western Intake Feasibility Study, and other Partner-provided data sources for population and water demand growth and compile the data in a format that allows a comprehensive compilation of the water demands for the Western Intake Partnership (WIP, collectively the Partners).
- b. The Engineer shall collaborate with the Partners to establish the ultimate and interim capacity planning periods for the intake and raw and finished water transmission infrastructure.
- c. The Engineer shall collaborate with the Partners to establish each Partner system's demand characteristics for which the WIP system elements shall be designed.
- d. Following the review and compilation of data under paragraph 1.a, the Engineer shall conduct a workshop with the Partners to review the data to ensure concurrence on the data set on which further planning is based. Preliminary goals for ultimate and interim planning periods will be established, as well as the targeted demand characteristics for Partner systems. The intent of the workshop is to establish capacity guidance on which system analyses and modeling can proceed. Where the Partners define the potential for variability in demand projections, the Engineer shall document the range of capacity conditions for future sensitivity analyses. Further definition of the WIP facilities' capacity and planning criteria will be completed as part of the subsequent modeling and analyses.
- e. The Engineer shall develop a draft Water Capacity Technical Memorandum following the workshop as part of paragraph 1.d to document the preliminary capacity planning criteria, and update the draft TM to reflect the input and comments of the Partners.
- f. The Engineer shall finalize the Water Capacity Technical Memorandum following the completion of the system modeling and analyses to capture any adjustments in the water capacity planning criteria that are warranted based on the additional analyses.

## 2. Finished Water Transfer Alternatives

### a. System Specific Modeling

- i. The Engineer shall collaborate with the Partners individually to define possible connection points for delivery of finished water into each system. Identification of the connection points shall be informed by prior modeling work and through collaboration with individual Partners. The Engineers shall have a targeted workshop with each Partner for the purpose of reviewing system specific considerations prior to modeling. The workshop shall include a review of the previously defined capital improvements, and their timing, planned for each system that may impact the transfer of water and confirm the improvements are in the system models.
- ii. The Engineer shall complete system specific modeling to evaluate the connection points defined in 2.a.i for each individual system to define the connection point(s) for further evaluations in conjunction with regional transmission alternatives. The evaluation of each connection point shall be based on the observed hydraulic performance of targeted transfer amounts for the planning years defined. It is assumed three planning years (near-, mid- and long-term) will be evaluated. It is assumed an initial screening of system performance will be completed for maximum day conditions. Following the initial modeling evaluations completed under paragraph 2.a.ii the Engineer will conduct a workshop with each of the Partners to review the results of the modeling for the respective systems, and refine the assumptions and preferences for connection points.
- iii. The Engineer shall complete additional system specific modeling for system transfers for the connection point or points that appear viable based on the initial modeling under paragraph 2.a.ii. The additional modeling will simulate average day, maximum day, and one additional demand condition and for each of the three planning years. Water age simulations will be conducted for the average day conditions. Following the modeling completed under paragraph 2.a.iii, the Engineer will conduct a workshop with each of the Partners to review the results of the modeling for the respective systems. The results of the system specific modeling completed under 2.a.iii will be relied upon when developing the subsequent alternatives to model and evaluate as a combined system to include transmission infrastructure and other Partner systems.
- iv. Where the modeling reveals the Partner systems with known or previously identified improvements do not accommodate the transfer capacities, or required improvements are not readily apparent to reflect in the systems, the Engineer shall define deficiencies identified in system specific modeling that warrant further system-specific modeling and analysis.
- v. The Engineer shall develop a Technical Memorandum summarizing the evaluations and findings for each Partner system under paragraph 2.a.

b. Finished Water Transmission Modeling and Planning

- i. The Engineer shall complete preliminary hydraulic analyses of two principal transmission routes to assess and review with the Partners the hydraulic performance of each. The routes will not reflect the complete set of pipeline routes but will include the previously identified route with lower elevations and a second more westerly route with significantly higher elevations. GIS contours will be used for the basis of all hydraulic assessment. The Engineer shall conduct a workshop with the Partners to review the findings of these initial hydraulic evaluations with the intent of defining the performance of the functional options available for finished water transmission (i.e., storage, booster pumping options, pressures, etc.), and to establish preferences for more detailed alternatives analysis.
- ii. The Engineer shall develop model scenarios to include more detailed transmission alternatives, combined with the connections to each system, to take into account the results of the system specific modeling, the functional options considered for water transmission, and the pipeline routes developed for consideration and study. The Engineer shall conduct a workshop with the Partners to review the alternatives and the conditions for which modeling will be completed for each.
- iii. The Engineer shall complete modeling of the combined systems with proposed transmission for near-, mid- and long-term conditions, for up to three transmission routes, and at average, maximum and one additional demand condition. Water age simulations will be conducted for the average day demand conditions. The Engineer shall assess the potential for nitrification within the finished water transmission system at the range of flows evaluated and provide recommendations for chlorine dosing or other water chemistry considerations within the water transmission system. The Engineer shall conduct a workshop with the Partners to review the results of the combined modeling.
- iv. The Engineer shall identify phasing opportunities for the finished transmission facilities to address the range of water capacity requirements through the planning period or to address the uncertainty and variability in water capacity requirements that may exist.
- v. The Engineer shall provide recommendations for the High Service Pumping facilities and clearwell storage facilities at the Regional Water Treatment Facilities based on the transmission system modeling and evaluations. The evaluations and recommendation developed under this Agreement shall be coordinated with the WIP Water Treatment Facility Consultant.
- vi. The Engineer shall complete initial transient modeling of the recommended finished water transmission facilities to establish potential for pressure transients

in the system and preliminary recommendations to control transients for each of the facility phases identified.

- vii. The Engineer shall define start-up, commissioning and operating considerations (collectively “operating considerations”) identified during system planning and modeling. Where design and/or operational recommendations are dependent upon assumed operational considerations or observed system response, they shall be identified and documented for Partner review and comments.
- viii. The Engineer shall develop a Technical Memorandum of the evaluations, assumptions and findings from the work completed under paragraph 2.b.

### 3. Finished Water Transmission Main Route Evaluations

- a. The Engineer shall complete an initial screening of finished water transmission main (transmission main) route alternatives via desktop analyses of available GIS data (existing stream and wetland, contours, roadway, utilities, easements, parcel information, cultural/historical areas, and hazardous sites readily available from public state, county, and municipal sources), data collected from other sources (private utility owners, property owners, developers, and municipal departments) and site visits to areas accessible to the public to define the limits of the study area and potential transmission main routes within the study area. The Engineer shall reflect the initially proposed connection points in the development of the study area and routes. It is assumed three (3) primary transmission main routes will be developed for further study and evaluation between the proposed WTP location and the City of Durham/OWASA connection point(s) to the north to include a connection(s) to Chatham County, and two (2) routes will be developed between the proposed WTP location and the Town of Pittsboro. The route assessments shall be limited to the points between the WTP and the connection points to each Partner water system. The Engineer shall complete a screening of potential alternate WTP sites along the water transmission corridors and complete a desktop evaluation of each for comparison against the previously identified WTP site. The Engineer shall conduct a workshop with the Partners, WIP Program Manager and WIP Environmental Permitting Consultant to review the study area and potential transmission main routes developed for further evaluation.
  - i. Engineer shall identify potential transmission main route alternatives to be screened in collaboration with the Partners, WIP Program Manager, and WIP Environmental Permitting Consultant.
- b. The Engineer shall perform a transmission main materials review to identify pipe materials and joint types that meet the project needs. Minimum requirements in the Partner’s standard specifications and details will be included in the review. The review will include a general cost comparison of the material and installation cost.
- c. The Engineer shall perform a preliminary review of each identified potential trenchless crossing to evaluate appropriate trenchless crossing methods. Recommendations shall include consideration of cost, material, and space requirements.

- d. The Engineer shall coordinate the route development and analyses with the hydraulic modeling tasks to account for up to four pumping and storage sites along the transmission main corridor. Storage and pumping alternatives shall be reviewed based on the site locations and elevations. The recommended booster pump station sites shall include a pump station component assessment to evaluate pump type, total dynamic head (TDH), range of motor horsepower for pumping combinations, pump station layout, pump station ancillary facilities, electrical costs, and evaluation of electrical source. Recommendations for storage facilities shall include feasible tank arrangements, sizes and styles.
- e. The Engineer shall define the targeted areas for which additional field information is required to further assess the constructability of the transmission main facilities in certain areas or the construction options available. The types of areas for which supplemental data will be collected to support the evaluations include, but are not limited to, crossing of surface waters, environmentally sensitive areas, major roadway crossings, major utility crossings (i.e., power, gas, etc.) and congested areas potentially warranting further evaluation of construction methods and viability. The supplemental field data may include planimetric and topographic surveys, soil composition and corrosivity analysis, geotechnical investigations and Level A and B subsurface utility investigations. Subsequent field investigation services to be completed as a result of this paragraph at identified in 3.r below.
- f. The Engineer shall define the key stakeholders for each route and coordinate the outreach and communication for each with the WIP Program communication and outreach plan .
  - i. Direct outreach to route stakeholders will be limited to property access for the purposes of route alternative evaluation, as defined below. Other outreach relating to the project, potential easement and property acquisition, or environmental resources will be coordinated with the WIP Program Manager on a case-by-case basis.
  - ii. Where access to private property is required for further evaluation of transmission main routes and construction methods, the Engineer shall develop and distribute letters notifying the respective property owners of the project and the need for access a minimum of 30 days in advance of the entry. The Engineer shall also develop and distribute door hangers where warranted to notify the community of geotechnical, survey, or utility designation activities on site during route evaluations. Partner Management Team will review and approve draft letters and door hangers. Communications materials shall flow the WIP branding guidance.
  - iii. The Engineer shall provide information for the project website and media outlets ahead of any field activities. Information shall include general work descriptions, site location figures, and schedules.
- g. The Engineer shall meet with project stakeholders at the initiation of the project and continue the engagement through the PER process, to discuss feasibility of potential routes and facility sites, including:

- Local planning departments having jurisdiction along the Corridor. 4 meetings
  - NCDOT – feasibility of running along / parallel to existing roads, planned roadway improvements, interchange improvements, etc. (up to three separate DOT districts will be included in the engagement). 6 meetings
  - Duke Progress Energy. 2 meetings
  - USACE and coordination with WIP Environmental Permitting Consultant. 8 meetings. Meetings with USACE or North Carolina DWR will be planned and facilitated by the WIP Environmental Permitting Consultant.
  - Existing private utility providers (Gas, Colonial Gas line, Fiber, Communications, etc.). 8 meetings
  - Private developers and Homeowners Associations. 6 meetings
- i. The Engineer shall obtain and review planning documents for potential future roadway improvements along the corridor.
  - ii. The Engineer shall meet with each local jurisdiction to determine future land use, potential zoning changes, and current and potential development sites.
- h. The Engineer shall complete a desktop review of the known environmental, cultural, and historical resources potentially impacted by each route being considered. Information for the desktop evaluation shall be obtained from WIP Environmental Permitting Consultant and publicly available sources. The Engineer shall coordinate the need for field services required for field verifications or determinations with the WIP Environmental Permitting Consultant.
  - i. The Engineer shall coordinate the transmission main routing evaluation with the hydraulic evaluations to account for phasing or sequencing of infrastructure development where warranted.
  - j. The Engineer shall conduct two (2) workshops in addition to those listed herein to review status and findings of the transmission main route evaluations.
  - k. The Engineer shall preliminarily identify the easement requirements for each of the route alternatives (including potential material storage areas/laydown areas) and account for the easement impacts, to include estimated costs and potential acquisition timeline. Preliminary easement requirements shall be based on GIS level property and right of way information. Up to 1,000 easements and properties will be assessed. Subsequent specialty subconsultant services to support the evaluations of easements and their costs are included in 3.r below.
  - l. The Engineer shall perform a traffic impact review along the evaluated routes. The assessment will take into account the size and type of equipment that will be required for construction to develop a theoretical typical section of the work zone. Each roadway/street along the routes will be analyzed to determine the likely traffic and pedestrian impacts. To the extent possible, the Engineer shall account for known development and qualitatively assess the likely conditions at the time of construction.

Recommendations for lane closures or full street closures, as well as daytime, nighttime, or weekend work restrictions will be made.

- m. The Engineer shall develop a Class 4 Opinion of Probable Construction Costs (OPCC) in accordance with the AACE Classifications for the purpose of comparing transmission main, pumping, and storage alternatives. OPCC shall include consideration of project phasing.
- n. The Engineer shall employ Hazen – Converge, a spreadsheet-based multi-criteria decision support tool (MCDST), for the comparison of transmission main routes developed. The Engineer shall conduct a workshop with the Partners and the Partners’ Environmental Permitting Consultant to define the criteria to be incorporated into the decision tool, as well as the weights assigned for each. The criteria shall align with Partner’s sustainability objectives and the application of Envision. Following the execution of the application of the MCDST, the Engineer shall conduct a workshop with the Partners and Partners’ Permitting Consultant to review the results of the analysis. Engineer will deliver MCDST output and supporting documentation describing the criteria, weighting and factors incorporated into the evaluation process for USACE and NCDWR review as required to support Environmental Permitting.
- o. The Engineer shall define the permitting and approval requirements for the recommended route. Each governing jurisdiction shall be identified and specific permitting and approval needs discussed (e.g., fees, insurance, certifications). A permitting matrix will be developed to summarize the findings of this task.
- p. The Engineer shall develop a construction schedule for the recommended route to define the contractual durations to be incorporated into the overall project schedule.
- q. The Engineer shall develop a Technical Memorandum of the transmission main route alternatives to include GIS-based maps of routes evaluated, a discussion of the key drivers for route revaluations, criteria on which the assessment is based, a summary of the data on which the assessment is based, the results of the application of Hazen – Converge, the opinion of probable construction costs and recommendations for the transmission main route.
- r. Subconsultant Services defined under 3.e and 3.k above
  - i. Level A subsurface investigations have been included for 5 days of field service including vacuum excavation for utilities up to 10 feet deep, traffic control, survey of the utility elevation, and surface restoration.
  - ii. Level B subsurface investigation has been included for approximately 16,000 total feet of individual utility designation and survey.



- iii. Planimetric and topographic survey is included for approximately 3,000 feet along the transmission main corridor and four, one acre parcels for potential pumping or storage facility locations.
- iv. The Engineer will undertake a preliminary assessment of soil composition and corrosivity potential by performing electrical resistivity, pH, chloride and moisture content testing on ten selected soil samples.
- v. Geotechnical investigations shall reflect an initial assessment of ground conditions that includes a boring each side of a major road or water crossing. Standard Penetration Test (SPT) soil borings will be performed to a depth of 25 feet at major road crossings and about 40 feet at water crossings. If auger refusal is encountered prior to reaching the desired depth in the boring, about 10-feet of rock coring will be performed to determine top of rock. Soil and rock samples will be selected for laboratory testing to determine engineering properties and material classification. Sixteen (16) bores are included with a total combined depth of up to 470 vertical feet.
- vi. The Engineer shall undertake a general evaluation of ground conditions at targeted locations along potential transmission main routes based on a desktop review of available geological and geotechnical data and drilling up to ten (10) SPT soil borings to auger refusal at the selected locations. Average boring depth is estimated to be 20 feet.
- vii. The Engineer shall perform a preliminary investigation of ground conditions that will include two SPT soil borings to auger refusal at potential pump station and storage tank sites. Soil samples will be selected for laboratory tests to determine engineering properties. 12 bores are included with an average depth of 20 feet and a total combined depth of up to 240 feet.
- viii. Evaluate the impacts and estimate the cost of easements defined under 3.k.

#### 4. Preliminary Design- Transmission Main

- a. The Engineer shall provide aerial topographic survey mapping, and supplemental field data, of the recommended transmission main corridor (28 miles and 100 feet assumed) to obtain design level contours to allow the preliminary design to be advanced sufficiently for easement requirements to be established, and easements plat to be developed for easement procurement.
  - i. The supplemental field data collected shall include approximately 24,000 feet of individual utility Level B subsurface utility location information in targeted areas.
  - ii. Additional topographic and planimetric survey is included for approximately 6,000 feet for additional information in targeted areas. It is assumed the aerial

topographic survey mapping will be performed during winter “leaf off” conditions and the aerial topography will be sufficient to establish easement recommendations without substantial supplemental topographic survey. Supplemental topographic survey in obscured areas may be required for design level documents.

- b. The Engineer shall develop preliminary plan and profile (1”=50’ horizontal; 1”=5’ vertical) drawings and preliminary utility conflict matrix of the recommended and surveyed alignment for the sole purpose of defining the preliminary design sufficiently to allow the Partners to proceed with easement or property acquisition where necessary to preserve the recommended corridors and sites.
- c. The Engineer shall provide recommendations for additional data collection and studies required for formal design.

#### 5. In-Lake Raw Water Evaluations, Intake Siting and Planning and Alternative Evaluation

- a. The Engineer shall complete the modeling and evaluations required for siting and design of the raw water intake. The objective of this task is to maximize source water quality and limit treatment costs. The known challenges within Jordan lake to be evaluated under this task include:
  - i. Elevated TOC, low alkalinity, occasional elevated bromide concentrations,
  - ii. Algal blooms and the potential for associated algal toxins and taste and odor problems
  - iii. High levels of dissolved iron and manganese in hypoxic bottom waters, and
  - iv. The potential transport of known contaminants such as PFAS and 1,4-dioxane from the Haw River to the water intake.
- b. Optional Task –If authorized by the Partners, Engineer shall optimize the intake design relative to all four challenges noted above using a calibrated, 3-dimensional EFDC hydrodynamic model of Jordan Lake. The existing model was recently updated by others with the latest physical data and was calibrated for both flow and water quality, including algal growth. The existing EFDC model shall be adapted by developing a finer-resolution horizontal grid for the pool south of US 64, enabling the Engineer to test intake location and design scenarios relative to all four water quality challenges noted above.
- c. The Engineer shall rely on the DWR Cape Fear – Neuse River Basin Hydrologic Model (hereafter referred to as OASIS) to evaluate the range of water surface elevation changes under which the intake should be prepared to operate.
- d. Optional Task - Hydrodynamic Modeling

i. Modeling Quality Objectives

1. Engineer will refine a modeling plan (starting from the subtasks described below) and developing explicit model data quality objectives (DQOs) and associated model performance evaluation metrics in discussion with model users. Detailed refinement and application of the model will not proceed until the modeling plan is agreed to. Accordingly, Engineer will plan for the development of a draft detailed modeling plan, review, production of a final plan, and sign-off on the plan by key parties.

ii. Confirm and Validate UNCC EFDC Model

1. Engineer will be prudent to ensure that all model files from the current version of the Jordan Lake EFDC model are present, uncorrupted, and usable, and consistent with the published documentation. If any discrepancies are found, Engineer will note them and resolve such issues with Dr. Bowen at UNCC.

iii. Integrate Model with VEFDC System and Revise Model Grid

The UNCC EFDC model covers all of Jordan Lake. We anticipate that analysis for the WIP intake location will require a higher resolution model grid for the Lower New Hope arm. Engineer will develop a refined model grid for the Lower New Hope area of Jordan Lake between the constrictions at the Highway 64 causeway to the north and the Narrows to the south. The resolution of the refined grid will be proposed and finalized as part of the modeling plan and data quality objectives described above. (The existing model grid should be adequate outside of this area.) Engineer shall modify the curvilinear-orthogonal grid of the model bringing the model grid into the Visual EFDC system (Wilson Engineering, 2020), designed for efficient and semi-automated refinement and updating of model grids.

1. Engineer shall use VEFDC to create a revised model grid (at a scale to be documented in the modeling plan) for the Lower New Hope Arm. The refined grid will then be merged into the existing grid for the remainder of Jordan Lake. Revisions to the grid for the Lower New Hope area will also allow Engineer to incorporate the most up-to-date information on bathymetry and bottom characteristics for this area, including the old river channel..

iv. Test Revised Model Grid and Corroborate Model Performance

1. Engineer shall first corroborate performance of the revised grid through comparison to the existing EFDC model results for the Lower New Hope

arm. The ability of the model with the revised grid to accurately reproduce vertical thermal profile observations and water column stratification will be evaluated quantitatively using statistical measures agreed upon in the modeling plan. Ability of the revised model to reproduce observed DO concentrations will also be tested. If necessary, model parameters will be revised to improve the fit of simulation to observed stratification and water quality patterns and conditions in accordance with the modeling plan described above.

v. Update Weather and Boundary Conditions

1. Engineer shall extend the UNCC EFDC model into 2021 to cover a wider range of environmental conditions and allow comparison to more recent observations. Extension of the hydrodynamic simulation through 2021 will require updating tributary inflow, tributary water temperature, dam release, and water withdrawal time series, as well as weather data. Tributary inflows are based on USGS gages, with proration for un-gaged areas and tributary water temperatures. Dam releases and withdrawals are specified from measured data. Weather data are developed from observations at the Raleigh-Durham Airport. Engineer shall use automated tools to process such data for use in the EFDC model.
2. Engineer shall extend the modeling time period for water quality (nutrients, algae, and sediment) through interpolation between sparse monitoring data for each tributary, many of which are heavily influenced by wastewater treatment plant discharges. Engineer shall not update the water quality simulation past 2018 relying on observed data of more recent conditions.

vi. Initial Intake Specifications

1. Engineer's modeling team will work iteratively with the Engineer's design team to define an initial best estimate of intake design for testing. The initial specifications will include the X-Y locations of the intake structure(s) and preferred withdrawal intervals. Estimated withdrawal rates, and its impact to stratification and mixing processes in the vicinity of the intake will also be incorporated.

vii. Initial Scenarios and Hydraulic Condition Summary

1. Preliminary model scenarios will be run by the Engineer using the initial intake design specifications from the previous task and the range of water surface elevation and water balance conditions available in the 2014-2018 modeling period (or 2014-2021 period if the option for extension in time of the model is pursued). The OASIS water balance model will be used to evaluate whether additional extreme water surface elevation conditions need to be examined. If so, these will be developed

by scaling tributary inflows and releases on a monthly basis based on the OASIS results.

2. Engineer's initial analysis will focus on the percent of time that a given intake will draw water from the epilimnion, metalimnion, of hypolimnion or will be unusable as water surface elevations change. Sensitivity analyses will be undertaken to evaluate the extent to which operational policy in switching between intake elevations may change the position of the thermocline in the vicinity of the intake.

#### viii. Water Quality Condition Summary

1. Results of the previous subtask will be further analyzed to evaluate impacts on raw water quality. For algae and associated byproducts, empirical data on seasonal algal abundance will be used by Engineer to assess the fraction of time that epilimnetic withdrawals are likely to encounter algal bloom conditions.
2. Engineer shall evaluate the risk of high Fe/Mn concentrations in hypolimnetic withdrawals based on the fraction of time that the hypolimnion is observed and predicted to be hypoxic.
3. Engineer shall analyze the potential risk of transport of contaminants from the Haw River through a model-simulated tracer release study. By simulating a conservative tracer with a constant concentration in the Haw River inflow dilution factors will be calculated to estimate the relative concentration of substances from the Haw River that will be present at varying intake levels in the Lower New Hope arm.

#### ix. Scenario Analysis

1. Following completion of the initial scenarios, the Engineer's modeling and design teams will meet to discuss results and potential modifications to the intake design that may warrant investigation. Based on this Engineer will develop up to three alternative scenarios. Each of these scenarios will be analyzed for both hydraulic and water quality conditions and a final recommendation will be developed.

#### x. Support for Hypolimnetic Oxygenation Evaluation

1. Engineer will use the 2014-2018 model period for which EFDC is fully developed and calibrated for eutrophication and dissolved oxygen to support the hypolimnetic oxygenation system (HOS) evaluation. The HOS system (e.g., bubble diffuser) will be incorporated into the EFDC model to predict HOS system effectiveness, inform the operational costs

of doing so. Any auxiliary effects, such as accidental destratification, shall also be accounted for.

xi. Presentation of Results

1. Following completion of the modeling analyses described above, full results will be presented to the project partners along with a written synopsis of results. Engineer will solicit comments for final design modifications to cover up to three most promising design options.

xii. Final Design Scenarios

1. Based on comments received Engineer will develop and submit a plan for final design scenario simulations. After approval Engineer will undertake revised simulations of the proposed alternatives (up to three). As part of this subtask Engineer will undertake detailed model sensitivity and uncertainty analyses to evaluate the degree of risk that may be present in each alternative.

xiii. Contributions to Project Report

1. Engineer will provide a detailed report on model development, calibration, and application that will be designed to be incorporated as an appendix to the overall project report. This document will be submitted in draft for comment and revised in response to comments.

xiv. Enhanced Modeling Tasks (Optional)

1. Performance under Future Climate - Given the long design life anticipated for the intake, the Engineer shall evaluate future climate concerns including increasing average air temperatures and more erratic precipitation impacting water surface elevations, water column stratification, and frequency of cyanobacteria blooms limiting epilimnion water quality. Engineer shall examine these issues through application of the EFDC model, changing the weather inputs (based on downscaled global climate model output) and scaling the tributary inflows, evaporative losses, withdrawals, and downstream releases (based on monthly OASIS model analyses of future climate).
2. Extended Water Quality Simulation - Engineer shall extend the nutrient, dissolved oxygen, and algal simulations in the EFDC model specifying the tributary nutrient loading boundary conditions.
3. Destratification Simulation - Engineer shall simulate a potential destratification scheme in the EFDC model to help evaluate whether this is physically realistic and, if so, the likely operational costs. Given the

volume of water contained within the Lower New Hope arm of Lake Jordan full destratification would likely have a very high energy cost.

e. Water Supply (OASIS) Modeling

The primary purpose for using the OASIS model is to better understand how lake level fluctuations in the future will be different from those observed historically. The OASIS model is the preferred platform for evaluating how future demands in the basin and future climate variability may influence water surface elevations in Jordan Lake as lake levels determine the limnetic strata from which fixed elevation intakes will access raw water. Raw water quality is highly variable with depth below water surface. Secondly the OASIS model can provide information on how flow into the various arms of Jordan Lake will vary in the future as population in the Triad and Western Triangle region grow and climate varies from its historical norms.

i. Baseline OASIS Analysis

1. The Engineer shall develop an updated OASIS model to best represent the demand conditions for the WTP and all municipal and industrial demand nodes in the model for the year 2030 (approximate WTP commencement date), and year 2060.
2. A low-end estimate for 2030 demand conditions will be used to provide a bounding condition representing a probable low end (least) demand scenario.
3. The demands within the model for both 2030 and 2060 demands will be based upon the latest local water supply plans (LWSPs) filed with DWR at the time modeling commences unless Engineer proposes adjustments based on its judgement and those changes will be identified. However, since the demands supplied by many community water supply systems to DWR are bullish (tend to err high) the 2030 scenario demand may be adjusted downward by ENGINEER in their judgement to best represent a plausible low-end bound demand at the time the plant commences operations.
4. Engineer will use the agricultural demands forecast within the DWR OASIS model planning runs for 2030 and 2060.

ii. Enhanced Modeling Tasks (Optional)

1. Additional Demand Sensitivity – The Engineer will include up to three (3) additional community water supply demand scenarios for the sake of

furthering the understanding of water surface elevation response to other water supply demand conditions within the basin. These additional scenarios could include developing a model run to represent conditions wherein community water supply demands approach the safe yield of the entire basin (most extreme); a case where wastewater return fractions are significantly altered from their present demand: return ratios in the model (e.g. to represent widespread reclaimed water use); or others.

2. Climate Variability Modeling – The ENGINEER will develop up to six (6) additional scenarios to represent the combined impacts of changes to climate and demand. The ENGINEER shall use synthetic hydrologic runoff developed from the following spatially downscaled Global Circulation Model (GCM) output from the Multivariate Constructed Analogs (MACA) CMIP5 archive (<http://maca.northwestknowledge.net/>)

CNRM-CM5, RCP 4.5 (higher runoff potential)

MIROC-EMS-CHEM, RCP 8.5 (lower runoff potential)

GFDL-ESM2M, RCP 8.5 (approximates ensemble mean)

Hydrology and evapotranspiration for the above three scenarios will be developed and input into the OASIS model, and has already been done so for the 2041-2070 period. OASIS runs under climate variability will be developed and executed for any of the three aforementioned GCM-emissions scenarios for a 30-year future climate run within the 2006 – 2100 timeframe (centered between 2021 and 2085)

### iii. Presentation of Model Results

1. Output characterizing Jordan Lake water surface elevation variability for Item b.i. and any allowance tasks selected will be provided. Flow inputs and to various reaches of Jordan Lake as well as dam releases can be provided as well and/or used to drive the hydrodynamic model.

### f. Water Quality Sampling Program

- i. Engineer shall utilize services of a certified laboratory to conduct water quality sampling and analysis at the preliminary raw water intake location selected from the completion of the analyses above. Laboratory services shall include boat



rental, sample transport, relevant field measurements, chain-of-custody documentation, sample analysis, and results documentation.

- ii. Samples will be collected over an eighteen (18) month period and analyzed for parameters relevant to the Safe Drinking Water Act, NCDEQ requirements for new treatment facilities design, and contaminants of emerging concern. The parameters, analytical procedures (EPA Method number) and quantities of samples for each sampling event is summarized in the table below.

Sample Analyte	Sample Quantity (Per Sampling Event)	Sampling Frequency (Months Unless Noted Otherwise)	Notes
Total alkalinity	3	2	1
Bicarbonate alkalinity	1	2	
Chloride, sulfate, fluoride, and bromide	1 2 (for bromide ONLY)	2	2 (for bromide ONLY)
Chlorophyll-a, and Phycoeyanin (in-situ)	TBD based on location	2 weeks between May - October; Every 2 months otherwise	3
Chlorophyll-a, b, and c	1	2	
Color (apparent)	1	2	
Color (true)	1	2	
Dissolved iron and manganese	3	2	4
Dissolved organic carbon	1	2	
UV-254	1	2	
MIB and geosmin	1	2 weeks between May - October; Every 2 months otherwise	
Dissolved ammonia (as N)	1	2	
Nitrate (as N)	1	2	
Nitrite (as N)	1	2	
Total nitrogen	1	2	
Phosphorus (ortho)	1	2	
Total phosphorus	1	2	
Semi-volatile organic compounds	1	2	

Sample Analyte	Sample Quantity (Per Sampling Event)	Sampling Frequency (Months Unless Noted Otherwise)	Notes
Calcium, magnesium, hardness, potassium sodium	1	2	
Microcystin congeners	2	2 weeks between May - October; Every 2 months otherwise	5
Anatoxin-a & Cylindrospermopsin	2	2 weeks between May - October; Every 2 months otherwise	5
Total organic carbon	3	2	4
Volatile organic compounds	1	2	
pH	TBD based on location	2	3
PFAS	2	2	2
1,4-dioxane	2	2	2
Total iron	3	2	1
Dissolved oxygen	TBD based on location	2	3
Temperature	TBD based on location	2	3
Turbidity	3	2	4

Notes:

1. Discrete depth profile sampling at 2m, 2m, and 6m
2. Discrete depth profile sampling at 2m and 6m
3. Discrete depth profile sampling at 1m intervals
4. Discrete depth profile sampling at 2m, 4m, 6m, and 8m
5. Discrete depth profile sampling at 2m and 8m
6. Discrete depth samples are relative to the normal pool elevation in Jordan Lake (~ EL 216.00). All other samples not designated as discrete samples at specified depths shall be composite samples.
  - iii. Initially, sampling events will include collected samples at the existing two (2) sampling locations (Bell's Landing and Vista Point) until completion of the water intake siting evaluation effort. Once a preliminary selection for the intake site is recommended, the sampling effort will be focused to this location.
  - iv. Engineer shall compile and perform a direct analysis of the water quality data collected under this contract and from previous sampling events to further characterize the seasonal water quality to inform intake location and withdrawal depths selection. This analysis will also leverage historical data available from sources such as EPA's STORET portal which houses data from

several sources including NC DENR (DWQ and DWR). The trends delineated from the data analysis will be used in conjunction with hydrodynamic modeling results to provide a comprehensive understanding of spatial and temporal variation in water quality.

- v. Engineer will determine phytoplankton composition dynamics throughout the growth season (May – October) by collecting three samples and sending for ID and enumeration. Speciation will better inform risk and potential sources of algal byproducts such as MIB, geosmin, and cyanotoxins.
  - vi. Engineer shall prepare a dashboard interface for the collected and analyzed data and shall be responsible for updating the dashboard upon receiving data results from the previous sampling effort.
- g. The Engineer shall update the Partners, WIP Program Manager and WIP Water Treatment Facility Consultant monthly on the status of the in-lake raw water evaluations and intake planning during the monthly progress meetings. The Engineer shall conduct an additional 5 workshops during the course of the work under paragraph 5 for review of progress, assumptions, findings and observations, and other technical matters related to the work that warrants collaboration and input from the Partners.
- h. The Engineer shall coordinate the findings and results of the raw water quality evaluations and sampling with the WIP Water Treatment Facility Consultant on a periodic basis to inform the ongoing work of the WIP Water Treatment Facility Consultant.
- i. The Engineer will provide recommendations for any raw water chemical dosing or pre-treatment as part of the raw water transmission facilities based on the findings from the raw water quality evaluations. The Engineer shall coordinate these recommendations with the WIP Water Treatment Facility Consultant to ensure the collective treatment processes being considered and proposed for the combined facilities meet the overall objectives of the Partners.
- j. The Engineer shall develop a Technical Memorandum at the conclusion of the in-lake raw water quality evaluations and OASIS modeling to document the methods employed, the observations and findings and the recommendations made based on the evaluation. It is anticipated the Technical Memorandum will be completed prior to the conclusion of the raw water sampling; however, the Technical Memorandum will incorporate the observations and findings of the raw water sampling completed at that time.
- k. Intake and Raw Water Pump Station Alternatives Development and Evaluation
  - i. The Engineer shall develop conceptual alternatives for the combined intake and raw water pumping facilities. Engineer shall develop the alternatives collaboratively with the WIP Water Treatment Facility Consultant, particularly

with regard to raw water pump station locations on the WTP property and treatment prior to the treatment facility.

The concepts shall at a minimum reflect, but not be limited to, the following:

1. Intakes with and without in-lake towers for intake screen mounting and control
2. Intake locations to achieve the water quality objectives defined through the in-lake water quality evaluations under paragraph 5a.
3. Raw water pump station located at an elevation and location to allow access to the facility during full flood condition
4. Intake concepts that permit withdrawal of water from the thalweg
5. Feasible raw water force main routes between raw water pump station and the water treatment facilities
6. Opportunities or requirements for trenchless construction of raw water transmission pipelines
7. Considerations for phasing of certain facility elements

The Engineer shall conduct a workshop to review the concepts developed and finalize the concepts to advance for further evaluation.

1. The Engineer shall provide the preliminary engineering design for the alternatives defined for evaluation to allow the development of feasible phasing options as well as development of costs for each. The preliminary design shall reflect structure type, pump combination and sizes, ancillary facilities (standby power, chemical facilities, etc.) construction methods where appropriate, component sizes, provisions for future phases if warranted, and space requirements for construction and operations.
- m. The Engineer shall complete hydraulic modeling of the raw water intake and pumping facilities to define the required intake and piping sizes and configurations, as well as the number and size of pumps required for the range of water capacity requirements. The Engineer shall coordinate the work with the WTP Water Treatment Facility Consultant to establish the assumed boundary conditions for discharge of raw water at the treatment facility and raw water facility phasing.
- n. The Engineer shall conduct two (2) workshops during the evaluation of the intake and raw water transmission alternatives for the purpose of providing updates to the Partners and seeking input as the alternatives development progresses.

- o. The Engineer shall complete a bathymetric survey of the portion of the lake where intake facilities are proposed.
- p. The Engineer shall complete geotechnical investigations to provide a general characterization of subsurface conditions at the proposed intake and raw water pump station location and along the tunnel connecting these structures if warranted. The geotechnical data will be used for initial design, assessment of pump station shaft and tunnel construction methods, and a developing preliminary level construction cost estimate and schedule.
  - i. The Engineer shall perform subsurface investigations at the potential location of the intake, raw water pump station shaft and tunnel that includes seven borings, ranging from 25 to 85-feet deep. Four boring to be land-based and three borings off-shore requiring a barge. Standard Penetration (SPT) soil borings will be performed to auger refusal followed by rock coring in each boring. Soil and rock samples will be selected for laboratory testing to determine engineering properties and aid material classification. Packer testing will be performed in selected borings to determine in-situ permeability of the sedimentary strata. Surface mapping will be undertaken where possible to aid stratigraphical correlation and determining structural characteristics of the bedrock.
- q. The Engineer shall employ Hazen – Converge, a spreadsheet-based multi-criteria decision support tool (MCDST), for the comparison of intake and raw water pumping alternatives developed. The Engineer shall conduct a workshop with the Partners, WIP Program Manager and WIP Environmental Permitting Consultant to define the criteria to be incorporated into the decision tool, as well as the weights assigned for each. The criteria shall align with Partner’s sustainability objectives and the application of Envision. Following the application of the MCDST, the Engineer shall conduct a workshop with the Partners to review the results of the analysis.
  - i. MCDST output and supporting documentation describing the criteria, weighting and factors incorporated into the evaluation process will be provided to the Partners for use to support Environmental Permitting process.
- r. The Engineer shall leverage the findings of the hydrodynamic modeling and water quality evaluation efforts defined above in paragraph 5 to inform the preliminary design of a hypolimnetic oxygenation system (HOS). Engineer’s subconsultant shall develop the preliminary design concept to include system footprint, air line quantity and layout, appropriate gas bubble diameter, and preferred oxygen source/system (LOX, compressed air, etc.). This design effort shall only be completed if the evaluation efforts completed above determine the HOS is appreciably beneficial to meeting WQ goals relative to the cost of its implementation and subsequent operation.
- s. The Engineer shall collaborate with WIP Program Manager and other WIP engineering and permitting consultants regarding coordination with pertinent federal and state level jurisdictional authorities as required for lake access to complete necessary in-situ investigations. Engineer shall also coordinate proposed intake and on-shore pump station concepts with these authorities for review, comment and ultimate approval of the new

raw water infrastructure; WIP Environmental Permitting Consultant shall facilitate these meetings and communications with federal and state level jurisdictional authorities.

- t. The Engineer shall develop a Class 4 opinion of probable Construction Cost in accordance with the AACE Classifications for the purpose of comparing raw water intake transmission main and pumping alternatives. The alternatives and their costs shall reflect phasing of raw water elements where warranted.
- u. The Engineer shall develop a Technical Memorandum summarizing the evaluations, findings and recommendations for the intake and raw water transmission facilities.

## 6. Application of Envision for Sustainability

- a. The Engineer shall lead an eight (8)-hour kick-off workshop, split into four two (2)-hour sessions, with the Partners, WIP Program Manager and other WIP design and permitting consultants for the purpose of verbally reviewing each of the 64 Envision Credits, discuss the Credit intent and detailed requirements, and establish which Credits the owner desires to target during Preliminary Design phase through the end of construction of the Intake Transmission Infrastructure project. The Engineer shall facilitate the workshop and utilize Envision Version 3 to guide discussion with the participants. Following workshop discussions, the Partners shall determine if pursuit of an Envision Verification and Award is desired. The Engineer shall document the workshop discussion in a memorandum. The memorandum shall document key discussion points from the workshop, and designate which Credit-specific action items relevant to the Preliminary Design phase. The memorandum will also assign Credit-specific action items to the appropriate Partners and other entities involved in the Program.
- b. Allowance: This allowance item shall be utilized should 1) the Partners elect to pursue Envision Verification and Award is desired following the Envision kick-off workshop, or 2) the WIP Partners do not elect to pursue Envision Verification and Award yet desire to act upon Credit-specific action items (relevant to the Preliminary Design phase) to accomplish non-Envision related goals/initiatives. The Engineer shall facilitate Credit-specific action items identified in the memorandum following the kick-off workshop. The Engineer shall take responsibility for Credit-specific action items assigned to the Engineer in the memorandum, and provide guidance for Credit-specific action items assigned to Partners and other entities involved in the Program. The Engineer shall conduct quarterly workshops for the purpose of reviewing the project progress against the Credit-specific action items. The Engineer shall lead an 8-hour Envision deep dive workshop near completion of the Preliminary Design phase to review Credits and Credit-specific action items to determine compliance or target adjustment for subsequent project phases. This workshop will be split into two 4-hour segments and be administered on two days (consecutive or non-consecutive).

## 7. Permitting and Approvals

- a. The Engineer shall identify in a comprehensive list the local, state and federal permit and approval requirements for each of the project elements recommended for the intake and transmission facilities. The Engineer shall identify for each permit/approval the durations for securing the same, the application costs for each, the interdependencies with other Program elements and the risks that can be defined for securing each.
  - b. The permitting and approvals shall be summarized in a Technical Memorandum.
  - c. The Engineer shall collaborate with the Partner's Environmental Permitting Consultant in defining the state and federal environmental permitting requirements, and shall provide permitting support by way of providing technical data, drawings, narratives, and other materials or information required to support the permitting processes.
8. Project Schedule/Phasing/Sequencing

- a. The Engineer shall maintain a project schedule for the intake and transmission components of the project. The schedule shall include those tasks for which the Engineer is providing under this contract, as well as subsequent tasks required through facility construction. The schedule shall be updated monthly to reflect project status and further clarify the Engineer develops during Project completion. The Engineer will collaborate with the WIP Management Team to ensure key project milestones are captured in the master schedule for the Program and align with the other Program elements.

The following is the schedule of key tasks and durations for completion:

Task	Time to Completion from NTP
Define Water Capacity Requirements	90 days
System Specific Modeling	140 days
Transmission System Modeling	310 days
Finished Water Route Evaluation	335 days
Preliminary Design – Finished Water Transmission	690 days
Initial Raw Water Quality Scenario Modeling	230 days <sup>(1)</sup>
Final Raw Water Quality Scenario Modeling	310 days <sup>(1)</sup>
Water Supply OASIS Modeling	90 days

Develop and Evaluate RWPS/Intake Alternatives	250 days
Finalize RWPS/Intake Concepts	365 days
Develop Final Recommendations, Phasing, Costs and Draft Preliminary Engineering Document	475 days
Finalize Preliminary Engineering Deliverable	560 days

Note: 1) The schedule reflects initiating the optional modeling work within the initial 30 days of the Notice to Proceed. Initiating the optional modeling work at a later date will require a mutually agreeable revision to the schedule for this task and other dependent tasks.

- b. The Engineer shall reflect key project phasing and sequencing assumptions in the project schedule and identify interdependencies with other Program elements.
- c. The Engineer shall develop and maintain the schedule in Microsoft Project.

#### 9. Outreach

- a. The Engineer shall support the Partners and WIP management team with the program's communication and outreach initiatives by providing project descriptions, schedules, maps, etc. as required.
- b. The Engineer shall attend community outreach meetings for the Program and support the delivery of technical content related to the intake and transmission facilities. It is assumed four (4) meetings will occur related to overall Program outreach and communications. It is assumed these meetings will be conducted and hosted by the Partners, WIP Program Manager, or WIP Environmental Permitting Consultant.

#### 10. Project Meetings and Workshops

- a. The Engineer shall conduct a project kick-off meeting for the purpose of reviewing the scope, establishing lines of communication, reviewing the project schedule, and establishing the level of participation the Partners desire in meetings and workshops.
- b. The Engineer shall conduct monthly Progress Meetings for the purpose of reviewing project status, ongoing activities, specific needs or information required for project execution, required coordination with other consultants, stakeholder coordination and pending activities. It is assumed presentation of technical topics will generally occur in workshops or targeted meetings outside of progress meetings.
- c. The Engineer shall conduct periodic meetings with WIP Program Manager and other WIP design and permitting consultants, both in person and virtually for the purpose of coordination specific project elements and technical matters.



- d. The Engineer shall conduct the following workshops for the purpose of reviewing deliverables or at key decision points required for subsequent tasks. The list of workshops anticipated and reflected within the detailed project scope and the target durations for each are listed below.

Workshops	Duration
Review Demand Data and Preliminary Assumptions (1.d)	1.5 hr
Individual System Connection Point Review (2.a.i) (4 each)	1.5 hr ea
Initial Individual System Modeling Review (2.a.ii) (4 each)	1.5 hr ea
Individual System Modeling Review (2.a.iii) (4 each)	2.0 hr ea
Review of Functional Options for Water Transmission (2.b.i)	1.5 hr
Review of Combined Transmission Alternatives for Evaluation (2.b.ii)	1.5 hr
Review of Combined Transmission Modeling Results (2.b.iii)	2.0 hr
Finished Water Transmission Route Development Review (3.a)	2.0 hr
Finished Water Transmission Alternatives Review (3.j) (2 each)	2.0 hr ea
Multi-criteria Evaluation of Transmission Routes (3.n) (2 each)	1.5 hr
In-Lake Raw Water Quality Evaluation Review (5.g) (5 each)	1.5 hr ea
Initial Intake and Raw Water Pumping Scenario Development (5.k.i)	2.0 hr
Intake and Raw Water Pumping Alternative Review (5.m) (2 each)	2.0 hr ea
Multi-criteria Evaluation of Intake and Raw Water Transmission (5.o) (2 each)	1.5 hr
Envision Kick-off Workshop (6.a) (4 each)	2.0 hr ea
Envision Workshops During Preliminary Design (6.b) (6 each)	1.5 hr ea
Envision Workshops at the Conclusion of Preliminary Design (6.b) (2 each)	4.0 hr ea
Review of draft Technical Memoranda (multiple)	1.5 hr ea

- e. The Engineer shall develop agendas and meeting summaries for Progress Meetings and Workshops and distribute draft and final versions of each to meeting participants.
- f. The Engineer shall schedule and conduct stakeholder meetings required for completion of the tasks herein. Stakeholders shall include but not be limited to the USACE, NCDOT, local jurisdictions, Duke Progress Energy, and private utility providers.)

## 11. Deliverables

The Engineer shall develop the following deliverables. Each shall be submitted in a draft format, and be finalized following a review of each by the Partners. The Engineer shall compile the final technical memorandum into a single document with an executive summary to serve as the Preliminary Engineering Document for the project. It is assumed the draft Preliminary Engineering Document will be delivered to the Partners digitally and the final version of the document will reflect comments from the Partners and be delivered digitally and fifteen (15) hardcopies of the document will be provided for distribution amongst the Partners.

Deliverables
Water Capacity Technical Memorandum (1.e)
Partner Specific System Performance Technical Memorandum (2.a.v) (4 each)
Finished Water Transmission Modeling Technical Memorandum (2.b.viii)
Geotechnical Report (3.e.iv to 3.e.vii and 5.q.i)
Finished Water Transmission Route Memorandum (3.q)
Preliminary Transmission Design/Easement Requirements Drawings (4.b)
In-Lake Raw Water Quality Evaluations Technical memorandum (5.j)
Intake and Raw Water Transmission Facilities Technical Memorandum (5.r)
Envision Kick-off Workshop Summary Memorandum (6.a)
Permitting and Approvals Memorandum (7.b)
Project Schedule (8.a)
Compilation of Technical Memorandum and Executive Summary

## 12. Exclusions

The following items reflect specific tasks that are not included in the scope and fee without further negotiations for the scope and fee associated with each and subsequent contract amendment(s).

- a. The Engineer will not be required to develop population and/or demand projections. The basis of planning will be defined by prior reported projections or guidance provided by the Partners. The Engineer will not be required to redistribute existing or future demands within the Partner's systems using billing data. It is assumed existing and future demand allocations within the models will be used. Global demand factors within each system's model may be applied to existing or future demands with the model to achieve desired demand conditions. If it is discovered a Partner's system warrants application of something other than global demand factors to adjust existing or future demand

conditions, a more detailed analysis will be authorized separate from the current scope of work.

- b. The Engineer will not be required to evaluate individual systems for operational or capital improvements required to improve the performance of the systems beyond those that are made known to the Engineer in advance of the modeling work and incorporated into the models.
- c. The Engineer will note water age and water quality concerns within the combined system model; however, system specific evaluations to address water age or water quality concerns is not assumed to be required.
- d. Route evaluations for required individual system improvements identified in the modeling are not included in the project scope.
- e. It is assumed the initial screening of alternate water treatment plant sites included in task 3.a will reveal a preferred site on which the hydraulic evaluations and other preliminary engineering evaluations can be based. The Engineer shall not be required to complete subsequent preliminary evaluations for multiple water treatment plant sites.
- f. The development of easement plats and assistance with easement acquisition.
- g. The Engineer will not be required to develop preliminary design layouts for the clearwell and high service pumping.
- g. Preliminary Design Phase services required of the Engineer under Paragraph A.1.02 are defined in Paragraph 4 of this Attachment A-1. The preliminary and conceptual design related to the intake, raw water pump station, booster pumping facilities and water storage facilities are intended to include sufficient detail to allow an evaluation and comparison of alternatives and define the general layout of the facilities considered as required under Paragraph A.1.01. Advancement of the recommended alternatives to include design preferences related to manufacturer preferences, architectural details, structural design, electrical systems, HVAC and plumbing systems and instrumentation and controls are not included scope of work under Paragraphs A.1.01 or A.1.02.

### 13. Assumptions

The following items reflect assumptions upon which the scope of services is based, in addition to other assumptions stated in the scope tasks and Exclusions:

- a. Scope of services tasks identified as “Optional Tasks” are included in the base services but shall be required to be authorized in writing by the Owner’s Representative prior to execution of defined services. Specifically, Partners may elect to authorize Task 5.d Hydrodynamic Modeling if they determine these services are needed to locate the water intake structure and intake elevations, following review of available water quality data collected by others and any data collected under (Task 5.f). It is assumed the initial discussion related to the Engineer’s review of available data and the need for optional modeling services will occur within 30 days of written Notice to Proceed and subsequent discussions of further data review can be scheduled as mutually agreed by the Engineer and Partners.
- b. Collaboration is expected between the WIP project consultants (including Engineer, WIP Water Treatment Facility Consultant, WIP Environmental Permitting Consultant and WIP Governance Consultant) as each completes its Scope of Services.
  - i. The WIP Program Management Plan provides guidance for administrative procedures and standard decision tools which will be applied to the WIP program.

- ii. WIP project consultants shall utilize the program SharePoint site to share documents and data with the Partners, WIP Program Manager and other WIP consultants.
  - iii. Consultants will meet on a monthly basis to review project progress and coordination needs.
  - iv. Coordination needs and potential points of overlap may develop between WIP project consultants in the execution of projects. Engineer (or other WIP project consultants) shall notify WIP Program Manager promptly of coordination needs with the Partners, WIP Program Manager or other WIP consultants) which develop in the course of executing their scope of services. As required, the WIP Program Manager will assist the consultants in resolving questions related to coordination requirements or scope of services boundaries. Issues and resolutions will be documented in writing.
- c. One possible connection alternative to be considered for delivery of finished water from the project to Orange Water and Sewer Authority (OWASA) is through existing interconnections between OWASA and City of Durham.
- d. Available GIS data for environmental features in project areas (including existing streams and wetlands, threatened and endangered species, cultural/historical areas and hazardous sites) will be provided to Engineer and managed by the WIP Environmental Permitting consultant.
- e. Environmental factors and environmental evaluation criteria for screening and evaluation of transmission main site and route alternatives, including for MCDST, and for evaluation of intake options and hypolimnetic aeration system, will be developed in collaboration with the WIP Environmental Permitting Consultant. An initial list of these factors and criteria will be provided to Engineer by the WIP Environmental Permitting Consultant.
- f. Key stakeholders for intake and route alternatives shall be identified in collaboration with the Partners, WIP Program Manager and WIP Environmental Permitting Consultant. Outreach to be conducted directly by Engineer is limited to site access needs. Outreach to stakeholders and property owners along route alternatives to be accomplished in collaboration with WIP Program Manager as defined in this Scope of Services.

Attachment BC-1-2A, Compensation Summary, Basic and Optional Services

Task	Base Scope			Optional Tasks				Total Fee			
	Hours	Labor Cost (\$)	Sub-Consultant Costs (\$)	Direct Expenses (\$)	Base Fee (\$)	Hours	Labor Cost (\$)		Sub-Consultant Costs (\$)	Direct Expenses (\$)	Optional Tasks Fee (\$)
1. Water Capacity Requirements	121	\$21,504	\$0	\$100	\$21,604						\$21,604
2. Finished Water Transfer Alternatives	1,540	\$294,468	\$0	\$600	\$295,068						\$295,068
3. Finished Water Main Route Alternatives											
Subtotal 3.a-3.q, Finished Water Main Alternatives	4,842	\$825,342	\$0	\$900	\$826,242						\$826,242
Subtotal 3.r, Subconsultant Services	0	\$0	\$423,450	\$0	\$423,450						\$423,450
4. Preliminary Design Finished Water Transmission Main	2,146	\$315,062	\$336,000	\$0	\$651,062						\$651,062
5. In-Lake Raw Water Evaluations, Intake Siting and Alternatives Evaluation											
Subtotal 5.d-5.j, Raw Water Quality Evaluations	1,093	\$152,245	\$189,000	\$800	\$342,045	343	\$87,097	\$229,781	\$200	\$317,078	\$659,123
Subtotal 5.k-5.u, Raw Water Intake and Pump Station Evaluations	1,526	\$270,631	\$201,400	\$1,200	\$473,231						\$473,231
6. Application of ENVISION for Sustainability	176	\$104,971	\$0	\$1,000	\$30,525	416	\$74,446		\$1,000	\$75,446	\$106,971
7. Permitting and Approvals	178	\$29,663	\$0	\$500	\$30,163						\$30,163
8. Project Schedule/Phasing/Sequencing	268	\$50,654	\$0	\$0	\$50,654						\$50,654
9. Outreach	280	\$58,713	\$0	\$2,500	\$61,213						\$61,213
10. Project Meetings and Workshops	610	\$133,209	\$0	\$3,600	\$136,809						\$136,809
Totals	12,780	\$2,182,016	\$1,149,850	\$11,200	\$3,343,066	759	\$161,543	\$229,781	\$1,200	\$392,524	\$3,735,590