

**STATE OF NORTH CAROLINA  
COUNTY OF WAKE**

**PURCHASE ORDER # 2021-408  
DESIGN SERVICES AGREEMENT**

THIS AGREEMENT is entered into this \_\_\_\_ day of \_\_\_\_\_, 2020 by and between, Hazen and Sawyer, P.C., a North Carolina corporation with its principal business offices located at 498 7<sup>th</sup> Ave., New York, NY 10018 (the "Engineer"), and the Town of Apex, a municipal corporation of the State of North Carolina, (the "Town"). Town and Engineer may collectively be referred to as "Parties" hereinafter.

**WITNESSETH:**

WHEREAS, the Town is engaged in the utilization and operation of Town buildings, infrastructure, and facilities which from time to time require design, revision, engineering, evaluation, surveying, testing, architectural services and other related projects; and

WHEREAS, the professional services of engineers, architects, surveyors and others are at times needed by the Town for the services as described above; and

WHEREAS, Engineer provides professional services of the nature required by the Town and employs trained and experienced technical personnel possessing adequate knowledge, skills, and experience to provide such professional services to the Town; and

WHEREAS, pursuant to N.C.G.S. 143-64.31, it is the public policy of the State of North Carolina that municipalities announce all requirements for architectural, engineering, and surveying services, and select firms qualified on the basis of demonstrated competence and qualifications, and negotiate contracts for services at a fair and reasonable fee with the best qualified firm; and

WHEREAS, the Town has announced the requirements for said services and selected Engineer in accordance with the criteria and procedure provided in N.C.G.S. 143.64.31.

NOW THEREFORE, the Town and the Engineer, for the consideration stated herein, agree as follows:

**1. SCOPE OF SERVICES.**

The Engineer agrees to perform for the Town the following services: See Exhibit A

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In the event of a conflict between the terms of the attached Scope of Services and this Agreement, this Agreement shall control.

**2. SPECIFICATIONS.**

Engineer shall provide services in accordance with all governing agency regulations and shall be held to the same standard and shall exercise the same degree of care, skill, and judgment in the performance of services for Town as is ordinarily provided by a similar professional under the same or similar circumstances at the time in North Carolina.

### **3. TIME OF COMMENCEMENT AND COMPLETION.**

Engineer shall commence the work required in this Agreement no later than (See Exhibit A) days after the date of execution of this Agreement, and the Engineer shall complete entire work no later than (See Exhibit A). Additionally, Engineer shall perform in accordance with any individual timelines provided in the attached Scope of Services. If Engineer has not satisfactorily commenced or completed the work within the times specified, unless due to the actions or inactions of the Town, the Town may declare such delay a material breach of contract and may pursue all available legal and equitable remedies. Any changes to the schedule(s) provided in the Agreement must be agreed to in writing by the Town and the Engineer.

### **4. CONSIDERATION AND PAYMENT OF SERVICES.**

In consideration of the above services, the Town will pay the Engineer the total sum of \$ (See Exhibit B). The costs attributed to specific services are as shown in the attached Scope. In the event the Town requests that any service shown in the Scope not be performed, the total sum designated in this section shall be reduced by the corresponding amount attributed to that particular service in the Scope. Invoices from Engineer for services performed shall be paid by the Town within thirty (30) days from receipt of invoice. Town has the right to require the Engineer to produce for inspection all of Engineer's records and charges to verify the accuracy of all invoices. Town shall pay Engineer's invoices at times set forth above unless a bona fide dispute exists between Town and Engineer concerning the accuracy of said invoice or the services covered thereby.

### **5. CHANGE ORDERS**

- A. In the event Town requests changes or additions to the services that are not covered by the Scope, these changes will not invalidate or relieve Engineer from any guarantee it has given in this Agreement. Changes in work shall not proceed without a Change Order approved by the Town. Engineer shall provide a complete breakdown of all costs associated with the Change Order request. No claim for adjustments of the Agreement price or the completion date shall be valid unless the procedure outlined in this Section is followed. Any work performed pursuant to an approved Change Order shall be governed by the terms of this Agreement.
- B. Change Orders shall be submitted by the Engineer for the Town's review and approval. Engineer shall provide a detailed scope and all applicable supporting information. The Town shall respond to the Engineer's proposal within fourteen (14) days of receipt of the proposal. If accepted, the Town shall prepare the Change Order for the Engineer's signature. The Town shall execute the approved Change Order within seven (7) days of receipt from the Engineer. In the event a Change Order cannot be agreed upon by the Parties, nothing in this Agreement shall preclude the Town from performing, or having performed, the work requested in a Change Order.

### **6. INDEMNIFICATION.**

To the extent permitted by law, the Engineer agrees to indemnify and hold harmless the Town of Apex, its elected and appointed officials, employees, agents, and designated volunteers against any and all claims, losses, and expenses, or any damages which may be asserted, claimed or recovered against or from the Town of Apex, its elected or appointed officials, employees, agents, and designated volunteers by reason of personal injury, including bodily injury or death and/or property damage, including loss of use thereof resulting from the negligence of the Engineer.

## **7. APPLICABILITY OF LAWS AND REGULATIONS.**

The Engineer shall adhere to all laws, ordinances, and regulations of the United States, the State of North Carolina, the County of Wake, and the Town of Apex in the performance of the services outlined in this Agreement and any attached specifications. This Agreement shall be governed by the laws of the State of North Carolina.

## **8. E-VERIFY COMPLIANCE.**

The Engineer shall comply with the requirements of Article 2 of Chapter 64 of the North Carolina General Statutes (E-Verify). Engineer shall require all of the Engineer's subcontractors to comply with the requirements of Article 2 of Chapter 64 of the North Carolina General Statutes (E-Verify).

## **9. QUALITY AND WORKMANSHIP.**

All work shall be performed to the satisfaction of the Town. The work shall not be considered complete nor applicable payments rendered until the Town is satisfied with the services provided.

## **10. INSURANCE.**

The Engineer shall maintain valid general liability insurance in the minimum amount of \$1,000,000, commercial automobile liability insurance in the minimum amount of \$2,000,000, and provide certificates of such insurance naming the Town of Apex as an additional insured by endorsement to the policies. If the policy has a blanket additional insured provision, the Engineer's insurance shall be primary and non-contributory to other insurance. Additionally, the Engineer shall maintain professional liability insurance in the minimum amount of \$1,000,000 and maintain and show proof of workers' compensation insurance, and employer's liability insurance in the minimum amount of \$1,000,000. The Engineer shall provide notice of cancellation, non-renewal or material change in coverage to the Town of Apex within 10 days of their receipt of notice from the insurance company. All required certificates of insurance, endorsements, and blanket additional insured policy provisions are attached and considered part of this document. Notwithstanding the foregoing, neither the requirement of Engineer to have sufficient insurance nor the requirement that Town is named as an additional insured, shall constitute waiver of the Town's governmental immunity in any respect, under North Carolina law.

## **11. PRE-PROJECT SAFETY REVIEW MEETING.**

When specified by the Safety and Risk Manager, the Engineer shall attend a pre-project safety review meeting with Town representatives and the Safety and Risk Manager prior to the start of work.

## **12. DEFAULT.**

In the event of substantial failure by Engineer to perform in accordance with the terms of this Agreement, Town shall have the right to terminate Engineer upon seven (7) days written notice in which event Engineer shall have neither the obligation nor the right to perform further services under this Agreement.

## **13. OWNERSHIP OF DOCUMENTS.**

All designs, drawings, specifications, design calculations, notes and other works developed in the performance of this Agreement shall become the property of the Town and may be used on any other design or construction without additional compensation to the Engineer. The use of the design, including

specifications, by any person or entity, for the purpose other than as set forth in this Agreement, shall be at the full risk of such person or entity and the Engineer shall be relieved of any liability whatsoever, including claims for personal injury, property damage, or death as a result of such other use. The Parties acknowledge and agree that nothing in this section shall limit the ownership rights, access, or use of the above referenced works by the Engineer.

#### **14. TERMINATION FOR CONVENIENCE.**

Town shall have the right to terminate this Agreement for the Town's convenience upon thirty (30) days written notice to Engineer. Engineer shall terminate performance of services on a schedule acceptable to the Town. In the event of termination for convenience, the Town shall pay Engineer for all services satisfactorily performed.

#### **15. NOTICE.**

Any formal notice, demand, or request required by or made in connection with this Agreement shall be deemed properly made if delivered in writing or deposited in the United States mail, postage prepaid, to the address specified below.

TO ENGINEER:

Attention: Brian Porter, PE  
4011 WestChase Blvd, Suite 500  
Raleigh, NC 27607  
Email: bporter@hazenandsawyer.com

TO TOWN: Town of Apex

Attention: Water Resources Director  
PO Box 250  
Apex, NC 27502  
Email: michael.deaton@apexnc.org

#### **16. DELAY BEYOND THE CONTROL OF THE PARTIES.**

Neither Engineer nor Town shall be in default of the provisions of this Agreement for delays in performance due to forces beyond the control of the parties. "Forces beyond the control of the parties" shall mean, but is not limited to, delay caused by fire, acts of God, flood, earthquakes, storms, lightning, epidemic, war, riot, and/or civil disobedience.

#### **17. NONWAIVER FOR BREACH.**

No breach or non-performance of any term of this Agreement shall be deemed to be waived by either party unless said breach or non-performance is waived in writing and signed by the parties. No waiver of any breach or non-performance under this Agreement shall be deemed to constitute a waiver of any subsequent breach or non-performance and for any such breach or non-performance each party shall be relegated to such remedies as provided by law.

#### **18. CONSTRUCTION.**

Should any portion of this Agreement require judicial interpretation, it is agreed that the Court or Tribunal construing the same shall not apply a presumption that the terms hereof shall be more strictly construed against any one party by reason of the rule of construction that a document is to be more strictly construed against the party who prepared the documents.

#### **19. NO REPRESENTATIONS.**

The parties hereby warrant that no representations about the nature or extent of any claims, demands, damages, or rights that they have, or may have, against one another have been made to them, or to anyone



acting on their behalf, to induce them to execute this Agreement, and they rely on no such representations; that they have fully read and understood this Agreement before signing their names; and that they act voluntarily and with full advice of counsel.

## **20. SEVERABILITY.**

In the event for any reason that any provision or portion of this Agreement shall be found to be void or invalid, then such provision or portion shall be deemed to be severable from the remaining provisions or portions of this Agreement, and it shall not affect the validity of the remaining portions, which portions shall be given full effect as if the void or invalid provision or portion had not been included herein.

## **21. COUNTERPARTS.**

This Agreement may be executed in two or more counterparts, each of which shall be deemed an original, and all of which together shall constitute one instrument.

## **22. MODIFICATION.**

This Agreement contains the full understanding of the parties. Any modifications or addendums to this Agreement must be in writing and executed with the same formality as this Agreement.

## **23. BINDING EFFECT.**

The terms of this Agreement shall be binding upon the parties' heirs, successors, and assigns.

## **24. ASSIGNMENT.**

Engineer shall not assign, sublet, or transfer any rights under or interest in (including, but without limitation, monies that may become due or monies that are due) this Agreement without the written consent of the Town. Nothing contained in this paragraph shall prevent Engineer from employing such independent consultants, associates, and subcontractors as it may deem appropriate to assist Engineer in the performance of services rendered.

## **25. INDEPENDENT CONTRACTOR.**

Engineer is an independent contractor and shall undertake performance of the services pursuant to the terms of this Agreement as an independent contractor. Engineer shall be wholly responsible for the methods, means and techniques of performance.

## **26. NON-APPROPRIATION.**

Notwithstanding any other provisions of this Agreement, the parties agree that payments due hereunder from the Town are from appropriations and monies from the Town Council and any other governmental entities. In the event sufficient appropriations or monies are not made available to the Town to pay the terms of this Agreement for any fiscal year, this Agreement shall terminate immediately without further obligation of the Town.

## **27. IRAN DIVESTMENT ACT CERTIFICATION.**

N.C.G.S. 147-86.60 prohibits the State of North Carolina, a North Carolina local government, or any other political subdivision of the State of North Carolina from contracting with any entity that is listed on the Final Divestment List created by the North Carolina State Treasurer pursuant to N.C.G.S. 147-86.58.

N.C.G.S. 147-86.59 further requires that contractors with the State, a North Carolina local government, or any other political subdivision of the State of North Carolina must not utilize any subcontractor found on the State Treasurer's Final Divestment List. As of the date of execution of this Agreement the Engineer hereby certifies that the Engineer is not listed on the Final Divestment List created by the North Carolina State Treasurer and that the Engineer will not utilize any subcontractors found on the Final Divestment List.

## 28. ANTI-HUMAN TRAFFICKING.

The Engineer warrants and agrees that no labor supplied by the Engineer or the Engineer's subcontractors in the performance of this Agreement shall be obtained by means of deception, coercion, intimidation or force, or otherwise in violation of North Carolina law, specifically Article 10A, Subchapter 3 of Chapter 14 of the North Carolina General Statutes, Human Trafficking.

## 29. ELECTRONIC SIGNATURE.

Pursuant to Article 40 of Chapter 66 of the North Carolina General Statutes (the Uniform Electronic Transactions Act) this Agreement and all documents related hereto containing an electronic or digitized signature are legally binding in the same manner as are hard copy documents executed by hand signature. The Parties hereby consent to use electronic or digitized signatures in accordance with the Town's Electronic Signature Policy and intend to be bound by the Agreement and any related documents. If electronic signatures are used the Agreement shall be delivered in an electronic record capable of retention by the recipient at the time of receipt.

In witness thereof, the contracting parties, by their authorized agents, affix their signatures and seals this \_\_\_\_ day of \_\_\_\_\_, 2020.

### Engineer

Name: Hazen and Sawyer

Name of Engineer (type or print)

By: [Signature]

(Signature)

Title: Vice President

Attest:

[Signature]  
(Secretary, if a corporation)

### Town of Apex

[Signature]  
Town Manager

Attest:

[Signature]  
Town Clerk

*This instrument has been preaudited in the manner required by the Local Government Budget and Fiscal Control Act.*

[Signature]  
Finance Director



## **EXHIBIT A – SCOPE OF SERVICES**

### **PROJECT DESCRIPTION**

The Big Branch 2 Wastewater Pump Station project consists of planning, design, and construction administration of facilities required to provide sewer service to the Big Branch drainage basin that lies within the Town of Apex service area. The project includes a review and update of flow projections for the Big Branch sewer basin, an assessment of a two pump station system (BB1PS and BB2PS) versus a single pump station system (BB12PS) with deep gravity sewer, pump station site and force main alignment evaluations, preliminary and detailed design of a new pump station (BB2PS or BB12PS based on the results of the Preliminary Engineering Report) and associated pipelines, bidding, and construction administration services. The ENGINEER shall provide the following professional services for the orderly development of the Project:

### **PART 1 – BASIC SERVICES**

#### **1.01 Preliminary Engineering Report (PER)**

- A. The ENGINEER shall consult with the TOWN to determine the project elements to be included in the preliminary design. These elements are assumed to include a new pump station, force main, and the associated interceptors. The ENGINEER shall evaluate the following:
1. Master Plan Update: The ENGINEER shall review the existing collection system master plan and update for the Big Branch Basin. The update shall include:
    - i. Land use plan evaluation / basin boundary review: The ENGINEER shall review the land use plan and boundary conditions for the Big Branch basin and provide recommended service area modifications for review.
    - ii. Review of Pending Developments: The ENGINEER shall review all current and potential developments for the basin and assess the projected average daily flows from each development for accuracy.
    - iii. For undeveloped areas within the basin that are not contained within pending or defined developments, land use and future zoning classifications will be used to establish projected average daily flows based upon flow per acre rates established in the Apex Unified Development Ordinance (UDO). Furthermore, flow projections for these areas will also be evaluated based upon current CAMPO population and employment data. The two sets of flow projections will be compared, and final average daily flow projections will be determined based upon consultation with the TOWN.
    - iv. The ENGINEER will perform evaluations of the four (4) existing pump stations in the basin to determine current sewer inflows and establish expected wet weather peaking factors for each station. The evaluations will include two (2) months of flow data collection on the influent of each station. For areas not currently served by existing pump stations, flows

and peaking factors will be based upon population projections in accordance with the NCDEQ Minimum Design Criteria or observed peaking factors in other similar areas following consultation with the TOWN.

- v. Flow projections: The ENGINEER shall review the current flow projections and develop updated design flows based upon review of collected data. Updated design flows will be compared to flow projections calculated by use of regulatory flow projections established in the NCAC 2T rules. Final designs flows will be established in coordination with the TOWN.
2. Gravity Sewer Considerations: ENGINEER shall provide a preliminary evaluation of the gravity sewers required to serve the basin for the purpose of establishing the appropriate elevations for the pump stations evaluated. The following gravity sewers will be evaluated as part of this scope:
    - i. Gravity sewer from BB2PS to the proposed Pleasant Park temporary pump station.
    - ii. Gravity sewer routes between BB2PS and BB12PS and BB1PS and BB12PS.
    - iii. Gravity sewer routes between the three BB pump stations and I-540 including the existing casings under I-540.
    - iv. As part of the gravity sewer route evaluations, the ENGINEER will provide:
      - Assessment of existing casing elevations relative to serving the upstream basin areas.
      - A recommendation for the routes
      - Establish the depth of cover for the sewer sufficient to serve the proposed infrastructure, to include an evaluation of key connection points that could facilitate potential tapering of the pipe size to reduce overall costs.
      - Assessment of installing deep sewers via tunnel methods from the BB2PS and BB1PS areas to the BB12PS area to combine these stations.
  3. Pump Station Site Evaluations: ENGINEER shall provide site evaluations for BB2PS, BB1PS, and BB12PS. These site evaluations shall include:
    - i. ENGINEER shall utilize GIS data and available aerial photography to establish a potential site for each pump station. The sites shall be assessed based on potential environmental impacts (wetlands, streams, existing use, floodplains, topography), property owner impacts, accessibility, NCDOT coordination, and ability to serve the Study Area. Generally, the pump station sites will be situated at the Town of Apex service boundary



and along their respective creeks. The potential sites for each pump station will be presented to the TOWN for approval before further analysis is performed.

- ii. Following the establishment of pump station site locations, the ENGINEER shall prepare a preliminary site layout for each of the three pump stations suitable for relative costing of proposed options. ENGINEER shall evaluate the most feasible gravity sewer and force main route to and from each site to establish common points where the broader force main and gravity sewer alternatives converge. The ENGINEER shall utilize these routes and the identified site to establish site and structure footprints, stormwater management facilities, required wet well depth, general pump size, generator size, pipeline lengths, access road lengths, and comparative environmental impacts to wetlands and streams for each of the three pump station sites.
- iii. ENGINEER shall develop relative cost opinions for two options: construction of independent BB1PS and BB2PS as well as the option for a combined BB12PS with deep sewer installation.
- iv. ENGINEER shall recommend a preferred option (i.e. BB1PS/BB2PS or combined BB12PS) based on criteria agreed upon by the TOWN. Criteria shall at a minimum include construction cost, lifecycle cost including O&M, environmental impacts (flood plains, wetlands, and streams), ability to service the area, property owner impacts, accessibility, site layout, and storm water management requirements.
- v. Final Site Selection: Following consultation with the TOWN and the determination of a preferred pump station option (BB2PS or BB12PS) the ENGINEER will recommend a final pump station site for further field evaluations and preliminary design.

#### 4. Pump Station Preliminary Design

- i. ENGINEER shall perform field evaluations for preliminary design. The evaluations shall include accessing the site, identifying environmental constraints and performing limited field investigations as described in Section 1.01.A.7. If conditions are different than anticipated based on available data, the TOWN may consider evaluating an alternative site as an additional service.
- ii. Detailed Site Plan/Layout: ENGINEER shall refine the preliminary site layout on the selected site. The site plan will incorporate the TOWN's design preferences for the pump station, to include any required onsite stormwater management controls.
- iii. Pump Selection: ENGINEER shall size and select pumps appropriate for a phased pump station design. If required, the pump station shall include provisions for smaller pumps and larger pumps to provide the ability to handle initial average day flows as well as the peak flows established for

the first phase. ENGINEER shall also size and select pumps for a later phase pump station expansion, with recommendations for replacement or modification to the initial phase pumps as appropriate. Submersible pumps are likely satisfactory for the application and are the preference of the TOWN. The ENGINEER will confirm acceptability of the submersible pump and consideration of other pump types will be performed only if submersible pumps are unacceptable.

- iv. Wet well/Intake Design: ENGINEER shall evaluate up to three (3) potential wet well configurations to include the self-cleaning trench style wet well, confined inlet, and rectangular wet well and provide a recommendation with the TOWN's input.
  - v. Pump Protection: ENGINEER shall evaluate and compare the use of bar screens and grinders for pump protection and provide a recommendation with the TOWN's input. ENGINEER shall also consult with the Town of Cary to ensure chosen pump protection solution is suitable for delivery of flow to WWRWRF.
  - vi. Odor Control: ENGINEER shall evaluate potential odor control strategies to include chemical scrubbers, chemical addition, and biological odor control removal with and without carbon polishing. ENGINEER shall provide a recommendation with the TOWN's input.
  - vii. Flow Measurement: ENGINEER shall evaluate potential flow measurement options for both influent and effluent methods including provisions to accommodate flow variability and anticipated flow increases over the lifetime of the pump station.
  - viii. Pump Control: ENGINEER shall provide an assessment of pump control systems to include constant speed and variable frequency drives.
  - ix. Preliminary Surge Analysis: ENGINEER shall evaluate the surge potential and potential mitigation of surge at the pump station. ENGINEER shall provide a recommendation for surge control with TOWN's input.
  - x. Electrical/Auxiliary Power: ENGINEER shall evaluate auxiliary power options and include recommendations for onsite back-up power for the phased pump station.
  - xi. Instrumentation and Process Control: ENGINEER shall evaluate process control options and provide recommendations for pump station controls with the TOWN's input.
5. Force Main Preliminary Design: ENGINEER shall, in conjunction with pump station site selection and evaluation, review alternative force main routes, and sizes. Specific tasks include:
- i. GIS desktop level evaluation to identify up to three (3) potential force main corridors through the study area. This evaluation will include consideration of existing utility corridors through the area as well as

consultation with NCDOT relative to installation within the US1 right-of-way.

- ii. ENGINEER will consult with the Town of Apex, Holly Springs, and Wake County to identify any areas where development is either pending or under review to determine route impacts and further refine potential force main corridors.
  - iii. Field investigations will be conducted to assess the feasibility of and provide adjustments to identified desktop level corridors. Criteria for assessing feasibility shall include environmental impacts (wetlands, streams, stream buffers, and floodplains), suitability of trenchless crossing locations, compliance with utility and right-of-way encroachment requirements, property owner impacts, hydraulic impacts, and existing infrastructure impacts/conflicts.
  - iv. ENGINEER shall prepare preliminary force main route profiles, based upon publicly available GIS data, for use in pump system design.
  - v. ENGINEER shall consult with the Town of Cary to develop appropriate provisions or modifications to allow for connecting to the headworks of the WWRWRF.
  - vi. In conjunction with preliminary pump station design the ENGINEER shall develop a recommendation for force main size(s) and quantity to allow for proper station operation throughout its lifecycle.
  - vii. ENGINEER shall perform a relative cost assessment of the identified force main routes and phases from the selected pump station site (i.e. BB2PS or BB12PS) to the Western Wake Regional Water Reclamation Facility (WWRWRF). The cost will be based on current manufacturer budget level pricing, prior bid tabulations, and general engineering principles.
  - viii. Provide a final recommendation for force main route, material, lining, and coating with TOWN's input.
  - ix. The ENGINEER shall compile a list of property owners from whom an easement or site acquisition is required.
6. Project Packaging and Phasing: Upon completion of preliminary design of selected pump station, force main, and interceptor the ENGINEER shall provide a plan for phased construction of the proposed work with the TOWN's input.
  7. Analysis of Funding Options: The ENGINEER will identify potential funding opportunities and analyze the benefit to the TOWN of receiving funding assistance from each of the identified opportunities, while considering additional State and Federal regulatory and material sourcing requirements. Following this analysis, the ENGINEER will work with the TOWN to develop one or more funding applications (including required supporting documentation) to the programs that will provide the greatest financial benefit.

8. Field Investigations: The ENGINEER and its subconsultants will conduct the following field investigations during the preliminary design:
  - i. Geotechnical Investigations: ENGINEER shall include an allowance for limited geotechnical investigations as needed to complete the preliminary design.
  - ii. Survey: ENGINEER shall include an allowance for limited ground survey as needed to complete the preliminary design.
  - iii. Environmental Investigations: ENGINEER shall include an allowance for wetland and stream delineations as needed to complete the preliminary design.
  - iv. ENGINEER shall prepare and send by certified mail “30-day” notice letters on the TOWN’s behalf to the properties required for field evaluations.
9. Workshops/Meetings: The ENGINEER shall conduct workshops at critical points during the Preliminary Design to present concepts and receive TOWN input on the preliminary design concepts. In addition, the ENGINEER shall conduct monthly progress meetings to provide updates on the preliminary evaluation. The anticipated workshops include:
  - i. Kickoff Meeting/Workshop
  - ii. Flow Projections
  - iii. Pump Station Option Discussion (BB2PS/BB1PS vs. BB12PS)
  - iv. Force Main Route Selection
  - v. Pump Station Preliminary Design Considerations
  - vi. Project Packaging and Phasing
  - vii. Final Recommendations Review

#### B. Deliverables

1. Draft and Final meeting summaries from all meetings/workshops. Summaries shall be finalized and distributed in pdf format following incorporation of comments by participants.
2. A series of technical memoranda to document and compile the information and decisions made during the preliminary design shall be provided in draft form for review. The memoranda will be compiled into a single document with an executive summary to serve as the PER. At a minimum, the following memoranda will be submitted:
  - i. Master Plan Updates
  - ii. Pump Station Site Selection
  - iii. Gravity Sewer Assessment
  - iv. Force Main Assessment



v. Preliminary Pump Station Design

- Site Plan/Layout
- Pump Selection
- Wet well/Intake Design
- Pump Protection
- Odor Control
- Electrical/Auxiliary Power
- Instrumentation and Process Control

vi. Hydraulics/Surge Analysis

vii. Cost Estimates

viii. Project Packaging and Phasing

Engineer shall submit seven (7) hard copies and one electronic copy (searchable pdf and/or Microsoft Word) of the DRAFT Technical Memoranda to the TOWN for review and comment. All draft memoranda shall be delivered within six (6) months of Notice to Proceed, assuming there are no issues or delays in accessing the pump station sites and force main alignment options.

3. Engineer shall incorporate TOWN comments and submit seven (7) hard copies and one electronic copy (searchable and indexed pdf and/or Microsoft Word) of the FINAL PER including all the technical memoranda and the executive summary to the TOWN. The FINAL PER shall be delivered within one (1) month of receipt of the TOWN's comments.

1.02 Detailed Design Services

- A. Detailed design services shall be added by amendment following the completion of the preliminary engineering work.

1.03 Bidding, Construction Administration, and Construction Observation

- A. Bidding, Construction Administration, and Construction Observation services shall be added by amendment following the completion of the preliminary engineering work.

# EXHIBIT B

Town of Apex  
Big Branch 2 Pump Station - Preliminary Design Phase Services

## FEE ESTIMATE

LABOR COSTS		STAFFING HOURS					Subtotal Hours	Labor Cost by Task
TASK DESCRIPTION	Employee Classification	Vice President	Sr. Associate	Sr. Principal Engineer/ Principal Scientist	Principal Engineer	Engineer / Designer		
	Average Hourly Rate	\$256.00	\$208.00	\$144.00	\$128.00	\$112.00		
1.01 Preliminary Engineering Report (PER)								
A. PER Details		VP	SA	Sr Princ	Principal	Eng		
1	Master Plan update							
	i. Land Use Evaluation	2	16	16	24	32	90	
	ii. Review Pending Developments		8	8	16	20	52	
	iii. Undeveloped Area Evaluations		8	12	20	32	72	
	iv. Flow monitoring coordination and evaluations		6	12	24	32	74	
	v. Flow Projections	2	12	8	24	40	86	
	Subtotal	4	50	56	108	156	374	\$50,800
2	Gravity Sewer considerations							
	i. Gravity sewer evaluation from Pleasant Park	2	16	16	20	48	102	
	ii. Gravity sewer evaluation between BB2PS, BB12PS & BB1PS	4	16		32	74	126	
	iii. Gravity sewer route evaluation from I-540	2	12	8	24	40	86	
	Subtotal	8	44	24	76	162	314	\$42,600
3	Pump Station site evaluations							
	i. GIS/Desktop evaluation		16	24	24	40	104	
	ii. Preliminary layouts development		12	16	16	84	128	
	iii. Cost comparison		4	4	16	40	64	
	iv. Preferred Option Development	4	16	2	16		38	
	v. Final site selection (BB2PS or BB12PS)	2	12	4	12		30	
	Subtotal	6	60	50	64	164	364	\$50,400
4	Pump Station preliminary design							
	i. Field evaluation		8		40	24	72	
	ii. Detailed site layout development	2	8	24	16	72	122	
	iii. Pump selection	1	8		8	8	25	
	iv. Wet well/Intake Design	2	20	12	48	100	182	
	v. Pump protection evaluation		4	4	12	48	68	
	vi. Odor control evaluation		10	8	24	40	82	
	vii. Flow measurement considerations	2	4		8	24	38	
	viii. Pump control evaluation	1	8	4	20	24	57	
	ix. Surge evaluation		16	32	32	40	120	
	x. Electrical/Auxiliary power considerations	1	8	4	20	24	57	
	xi. I&C considerations	1	8	4	20	24	57	
	Subtotal	10	102	92	248	428	880	\$116,800
5	Force Main preliminary design							
	i. GIS desktop evaluation	2	16	16	20	24	78	
	ii. Private/Public development evaluation	8	8	4	28	36	84	
	iii. Field investigations		4	24	16	24	68	
	iv. Development of preliminary force main profiles		16	20	32	100	168	
	v. Connection at WWRWRF	2	16		24	48	90	
	vi. Force main size/number evaluation	8	40	20	20	20	108	
	vii. Preliminary cost assessment	4	16	4	20	20	64	
	viii. Development of recommended route, materials etc	8	16	12	12	24	72	
	ix. Easement and site acquisition owner development		4	4	16	24	48	
	Subtotal	32	136	104	188	320	780	\$111,400
6	Project packaging and phasing	4	8		16	20	48	\$6,980
	Project management and periodic coordination		20				20	\$4,160
	QA/QC	16	40				56	\$12,420
	LUMP SUM SUBTOTAL							\$395,560
NOT TO EXCEED TASKS		VP	SA	Sr Princ	Principal	Eng		
7	Analysis of funding options	4	40		80			\$19,590
8	Develop notifications for field evaluations		2		24	40	66	\$7,970
9	Workshops and Meetings	12	32	8	40		100	\$17,410
OTHER DIRECT COSTS					Qty		Cost	
Survey					1		\$	25,000
Flow monitoring					1		\$	20,000
Geotechnical Services					1		\$	25,000
Mileage					1000		\$	575
ODC SUBTOTAL							\$	70,600
					Total Direct Cost		\$	70,600
TOTAL FOR PER DESIGN SERVICES - LUMP SUM								\$395,560
TOTAL FOR PER DESIGN SERVICES - NTE								\$115,570
TOTAL PER DESIGN SERVICES								\$511,130