



EXHIBIT \_\_\_\_\_  
DURHAM COUNTY SNOW HILL ROAD PUMP STATION  
PRECONSTRUCTION SCOPE OF SERVICES

The following narrative is to provide more detail to the Scope of Services for the Phase 1 Services.

The duration of Phase 1 Services is assumed to be 8 months for design development (inclusive of pre-construction services provided by Wharton-Smith and 2 months for production and negotiation of the Guaranteed Maximum Price (GMP).

Generally:

Attend general progress review and coordination meetings with Owner.

Attend periodic design meetings to provide consultation on aspects of the design and construction that will impact the budget, schedule and quality of the completed Work.

1. Design-Builder will work with Owner to develop the optimum scope and quality of Work to meet Owner's Budget. Such work will consist of considering options and alternates with scope and quality adjustments as determined by Owner. Design-Builder will assess cost and schedule impact of these options and alternates
2. Consult with Owner regarding Site use and improvements, and the selection of materials, building systems and equipment.
3. Provide recommendations on construction feasibility; actions designed to minimize adverse effects of labor or material shortages; time requirements for procurement, installation and construction completion; and factors related to construction cost including estimates of alternative designs or materials, preliminary budgets and possible opportunities for savings.
4. Provide recommendations on construction schedule for possible opportunities for time savings.

Provide input to the Owner regarding current construction market, bidding climate, status of key Subcontractor and supplier markets, and other local economic conditions. Develop Subcontractor and supplier interest in the Work, consistent with Legal Requirements. Furnish Owner a list of possible Subcontractors and suppliers, from whom bids will be requested for each principal portion of the Work. Submission of this list is for information and discussion purposes only and not for prequalification.

In conjunction with the Owner, identify the appropriate Early Work packages including procurement of long-lead time items and equipment and other Work required to meet the schedule to the Owner.

In conjunction with the Owner, identify the appropriate Work packages from the Contract Documents for distribution to prospective bidders for providing all elements of Work not included in the General Conditions. Appropriate Work packages shall generally mean scopes of work that will maximize the competition for those Work packages. Work packages will also be identified with appropriate scopes of work should the Owner have any goals for involvement of the local and/or small contracting communities.



### Task 1 Meetings and Site Investigation

- 1.1 Design Review Meetings – Wharton-Smith staff will attend four (4) design review meetings with Hazen and Sawyer (Designer), Durham County (Owner), and City of Durham. These meetings will be workshop style meetings to review drawings and specifications at the 30%, 60%, 90%, and 100% design submittals.
- ~~1.2 Attend Design Progress Meetings – Wharton-Smith staff will attend four (4) additional design progress meetings with Hazen and Sawyer (Designer) and Durham County (Owner). These meetings include redline page turning sessions, value engineering option and constructability reviews, and other specific design related meetings. NOT USED~~
- 1.3 Attend Design Progress Conference Calls – Wharton-Smith staff will attend biweekly conference calls for a total of ten (10) calls to review design progress, action items, and other outstanding items.
- 1.4 Site Visits & Investigation – Wharton-Smith will perform one (1) site visit to investigate existing conditions, review spatial constraints, evaluate structure placement, develop ingress & egress plan during construction, and analyze site conditions for development of site-specific safety and quality plans. The meeting will be to focus on **pump station siting**. Wharton-Smith will provide final report of encountered conditions to the County and City.
- 1.5 Site Visits & Investigation – Wharton-Smith will perform one (1) site visit to investigate existing conditions, review spatial constraints, evaluate structure placement, develop ingress & egress plan during construction, and analyze site conditions for development of site-specific safety and quality plans. The meeting will be to focus on **force main alignment**. Wharton-Smith will provide final report of encountered conditions to the County and City.
- 1.6 Site Visits & Investigation – Wharton-Smith will perform one (1) site visit to investigate existing conditions, review spatial constraints, evaluate structure placement, develop ingress & egress plan during construction, and analyze site conditions for development of site-specific safety and quality plans. The meeting will be to focus on the **existing condition of the sub-aqueous crossings**. Our scope includes a \$5,000 owner-controlled allowance for labor, materials, and equipment to execute investigation and/or testing. Exact method has not yet been determined but may video, visual inspection, or pressure testing. Wharton-Smith will provide final report of encountered conditions to the County and City.
- 1.7 Preconstruction Video – Wharton-Smith will hire subcontractor to video existing conditions at the pump station site as well as the planned route for the force main. A copy of the video will be provided to the County.
- 1.8 NPDES/SWPPP Meeting – Wharton-Smith will attend one (1) meeting with project team to discuss best practices for containment of stormwater runoff during construction.
- 1.9 Sequencing / Tie-in Coordination Meeting – Wharton-Smith will attend one (1) meeting with project team to discuss project sequencing as it relates to new force main, tie-ins, bypassing, flushing, etc.
- 1.10 Permitting Meeting – Wharton-Smith will attend one (1) meeting with regulatory agency to discuss permitting requirements.
- 1.11 Building Department Meetings – Wharton-Smith will attend one (1) meeting for “page turn” session with building department, County, and Engineer.



## Task 2 Preliminary Cost Estimates

- 2.1 Initial Preliminary (30%) Design Cost Estimate – Wharton-Smith preconstruction staff will perform a preliminary cost estimate based on the available information within 15 days of Agreement execution. detailed takeoffs (based on drawing concepts) on all construction trades such as concrete, utilities, masonry, roofing, doors, windows, force main, etc. A full cost estimate book will be provided showing all material, labor, and equipment take-offs and any subcontractor cost estimates. Commerce Controls will provide the cost estimate for controls and integration work. If any cost estimates deviate from Owners Budget by more than 15%, Wharton-Smith will provide reasons why and recommendations on how to restore previous cost estimate.
- 2.2 Preliminary (30%) Design Cost Estimate – Wharton-Smith preconstruction staff will perform detailed takeoffs (based on drawing concepts) on all construction trades such as concrete, utilities, masonry, roofing, doors, windows, force main, etc. A full cost estimate book will be provided showing all material, labor, and equipment take-offs and any subcontractor cost estimates. Commerce Controls will provide the cost estimate for controls and integration work.
- 2.3 Schematic (60%) Design Cost Estimate - These costs are for the same items outlined in Task 2.1, but more accurate cost data will be provided as more detail is provided in the design. Conceptual costing for electrical and integration work is provided.
- 2.4 Detailed (90%) Design Cost Estimate and Risk Management Plan – These costs are for the same items outlined in Tasks 2.1 and 2.2 but now accurate costing of all trades as these drawings are essentially complete, minus corrections.
- 2.5 Wharton-Smith will provide cost estimating services for any changes or modifications to Project scope or quality during the design process in order for Owner to maintain adherence to the Project Budget.
- 2.6 Make appropriate recommendations to the Owner if any estimate exceeds previously approved Owner Budget or if volatility in the cost of selected materials or equipment may drive cost above the Owner's Budget when bids are received for Work. Identify areas where costs may be lower than original estimates and cost savings may be used to balance the budget. Report to the Owner the cost of various design and construction alternatives, including Design-Builder's assumptions in preparing its analysis, a variance analysis between budget and preliminary estimate, and recommendations for any adjustments to the budget. Consider costs relating to efficiency, usable life, maintenance, energy, and operation as part of the cost analysis.
- 2.7 Prepare a pre-bid line item estimate to be used for comparison of bids received at the bid opening(s). Include a line item in the estimate for each anticipated Work package, as well as line items for general conditions, contingencies and other cost that will be incorporated into the GMP for any of the construction Work.
- 2.8 Revise the construction cost estimate to reflect actual cost as determined by bid amounts. Use this revised estimate to establish the schedule of values used for periodic Applications for Payment.
- 2.9 Notify the Owner immediately if any construction cost estimate exceeds the Owner's Budget.



### Task 3 Design and Constructability Reviews

- 3.1 30% Design Review – Wharton-Smith will perform detailed design and constructability review to identify errors, conflicts, constructability concerns, spatial concerns, general questions, and overall consistency of the design disciplines (structural, architectural, civil, etc.). Value engineering options are also provided.
- 3.2 60% Design Review - These costs are for the same items outlined in Task 3.1 but for the 60% design documents including specifications.
- 3.3 90% Design Review - These costs are for the same items outlined in Tasks 3.1 and 3.2 but now include detailed review of the electrical and P&ID drawings.
- 3.4 100% Design Review - These costs are for the same items outlined in Tasks 3.1, 3.2, and 3.3 but include final review of all documents to ensure that they are “bid ready.”
- 3.5 Design-Builder shall review in-progress design documents, including at a minimum the documents generally described above in 3.1 through 3.4 and provide input and advice to Owner on constructability, materials and equipment selections, and availability. Provide timely suggestions for modifications to improve:
  - 3.5.1 Constructability, including sequencing or coordination issues, to enable Work to be completed with a minimum of RFI's and change orders
  - 3.5.2 Adequacy of details for construction
  - 3.5.3 Potential conflicts during construction
  - 3.5.4 Feasibility of construction
  - 3.5.5 Construction sequencing
  - 3.5.6 Ability to coordinate among Subcontractors and Suppliers
  - 3.5.7 Coordination between Contract Documents
  - 3.5.8 Elimination of ambiguities, conflicts, discrepancies or lack of clarity in the Contract Document
  - 3.5.9 Operability
  - 3.5.10 Ability to minimize disruptions to existing operations, if applicable
  - 3.5.11 Ability to complete construction connections to existing facilities or utilities
  - 3.5.12 Modifications to facilitative commissioning and start-up and/or performance testing
  - 3.5.13 Ability of Owner to operate/maintain the Work in a safe, time and cost-efficient manner when completed

### Task 4 CPM Master Schedule

- 4.1 Schedule Development and Phasing – Wharton-Smith will develop a baseline Critical Path Method (CPM) schedule using Primavera P6 software based on available information (and providing reasonable allowances for Owner review time and time for permits and approvals from governmental agencies) within 15 days of Agreement execution. The schedule will be broken down by phase (design/permitting, procurement, construction, and closeout) as by structure. A detailed schedule sequence will be provided for each structure. All portions of the project will be interrelated by schedule logic so that a true “critical path” is easily identifiable.
- 4.2 Schedule Review and Updates – The baseline CPM schedule developed in Task 4.1 is continually updated as more information is made available through design progression and construction sequence determination. If any schedule updates deviate from prior schedule by more than 15 days, Wharton-Smith will provide reasons why and recommendations on how to restore previous schedule.



4.3 Final GMP Schedule – The schedule developed in Task 4.2 is modified based on the final design. Final construction sequencing is determined. This schedule shall serve as the basis for General Condition's costs in the GMP as well as the contract time required for the duration of construction.

Task 5 Procurement Services and Guaranteed Maximum Price (GMP)

5.1 Subcontract Bid Packages – Identify and assemble appropriate Work packages from the Contract Documents for distribution to prospective bidders for providing all elements of Work not included in the General Conditions. Appropriate Work packages shall generally mean scopes of work that will maximize the competition for those Work packages. Work packages will be assembled with appropriate scopes of work should the Owner have any goals for involvement of the local and/or small contracting community. Wharton-Smith will develop scope specific bid packages for all construction subcontract trades. The bid packages shall include Instructions to Bidders, Scopes of Work, RFP's, Bid Forms, Value Engineering forms, and Schedule Commitments. Wharton-Smith will continually communicate with bidding vendors through the bidding process to ensure responsive bids. Wharton-Smith will respond to all questions from bidders related to scope of work as well as coordinate any questions regarding design with its design engineer. The following bid packages are anticipated and subject to modification:

1. Demolition
2. Earthwork
3. Paving, Drainage, Striping
4. Landscaping
5. Fencing
6. Rock blasting/removal
7. Concrete
8. Masonry
9. Misc. Metals
10. Insulation
11. Roofing
12. Caulking and Sealants
13. Doors
14. Paint/Coatings
15. Flooring
16. Acoustical Ceiling
17. Misc. Specialties
18. Signage
19. Instrumentation and Controls
20. Off-site Pipe Package #1
21. Off-site Pipe Package #2
22. Off-site Pipe Package #3
23. Mechanical and Equipment Install
24. Plumbing
25. HVAC
26. Fire Protection
27. Electrical

The 27 packages should require approximately 85 bid packages be sent out (2-3 bidders per package).

5.2 For any Work Packages that the Design-Builder will submit a bid, the Design-Builder shall notify the Owner prior to any advertisement. Prior to initiating any bidding of any of the construction Work, the Design-Builder and



Owner shall decide on the protocol for advertisement, pre-Bid conferences and opening of bids for any Work packages that the Design-Builder will submit a bid. In such cases the Design-builder bid will be submitted directly to the Owner. The Owner shall review all bids received and make the determination as to the selected bidder.

5.3 Supplier Work Packages – The packages shall include Instructions to Bidders, Scopes of Work, RFP's, Bid Forms, Value Engineering forms, and Schedule Commitments. Wharton-Smith will continually communicate with bidders through the bidding process to ensure responsive bids. Wharton-Smith will respond to all questions from bidders related to scope of work as well as coordinate any questions regarding design with its design engineer. The following Supplier Work Packages are anticipated and subject to modification:

1. Pumps
2. Odor Control
3. Grinders
4. Pipe & Fittings
5. Valves
6. Stand-By Generator

5.4 Publicly advertise the Work soliciting bids from Subcontractors and suppliers for providing all elements of Work not included in the General Conditions in accordance with Legal Requirements. Publish the advertisement in a manner that meets the requirements placed on the Owner by Legal Requirements. Maintain a list of all entities that have requested bid documents for any portion of the Work until bids are received. Provide weekly updates of the plan holders list to the Owner. Encourage multiple Subcontractors and suppliers to submit bids so that a minimum of three bids are received for each trade or Work package.

5.5 Mandatory Pre-Bid Meetings and Site Visits – Wharton-Smith will host, coordinate, and manage a pre-bid site visit for all potential bidders for the Work Packages. It is possible, due to the number of bid packages, that two meetings may be held on the same day (one before lunch and one after lunch). Wharton-Smith will take notes and answer questions. Bid clarifications/addenda will be issued to bidding parties as needed. Due to a potential phased GMP approach, Wharton-Smith anticipates four separate pre-bid site visits.

5.6 Receive Bids (Four Bid Days) – Wharton-Smith will receive bids throughout the course of an entire day. The bid times will be staggered to ensure our ability to answer questions or provide direction up to the last minute. For example: site work and electrical bids may be at 2:00 PM, while roofing, masonry, and concrete bids will be due at 3:00 PM. Due to a potential phased GMP approach, Wharton-Smith anticipates that four (4) bid days will be required.

5.7 Review Bids and Recommend Award –With 33 bid packages being distributed, we anticipate receiving around 70 +/- bids. All those bids are reviewed for completeness, responsiveness, exceptions, clarifications, and deviations from the contract documents. Value engineering ideas and schedule commitments will also be evaluated. Wharton-Smith will provide a bid tabulation worksheet and, make a recommendation for package award.

5.8 For all Work Packages, compare bids received to the line item budget prepared for the Work prior to the opening of bids. Resolve discrepancies or overlaps in Work packages to eliminate duplications or the omission of elements of the Work that are not included in the General Conditions.

5.9 Final Guaranteed Maximum Price (GMP) Assembly – The Design-Builder shall develop and submit the Proposal in accordance with Section 2.3 of the Agreement. All documents that comprise the GMP are assembled into a single tabbed and searchable binder/pdf document (both hard copy and electronic copy provided). This includes all schedules, bid package documents, subcontractor and supplier bids, other quotes, general conditions





breakdowns, value engineering logs, and other GMP relevant documents that were considered in creation of the GMP. It is anticipated that multiple, phased GMP's may be required to accomplish desired project schedule.

#### Task 6 Miscellaneous

- 6.1 Site Specific Safety Plan – During Phase 1 Services, Wharton-Smith will develop a site-specific plan that covers all policies related to safety including MSDS chemical sheets, trench safety, confined spaces, fall protection, drug free policy, hurricane preparedness, emergency medical care plans, etc.
- 6.2 Site Specific Quality Assurance and Quality Control (QA/QC) Plan – During Phase 1 Services Wharton-Smith will develop a site-specific QA/QC plan for the design Work and construction Work of the Project that meets the Agreement requirements, County and City expectations. Wharton-Smith policies for quality control as well as appropriate portions of the Wharton-Smith quality manual will be incorporated into the QA/QC Plan. Manage quality assurance and quality control on the Work to ensure that the design and construction complies with the Construction Documents. Design-Builder shall work with Owner to develop this Plan and Owner shall have right to review and comment on this Plan as it is being developed and finalized. Support the activities of the Owner with regards to its construction materials engineering, testing and inspection services and the verification testing services.
- 6.3 During the Phase 1 Services Design-Builder shall develop a Site Access and Logistics Plan that Design-Builder will implement to coordinate and manage the site constraints and challenges including but limited to traffic and pedestrian control, access to Site, material and supplies delivery, laydown areas, safety considerations, etc. Design-Builder shall work with Owner to develop this Plan and Owner shall have right to review and comment on this Plan as it is being developed and finalized.
- 6.4 During the Phase 1 Services Design-Builder shall develop an Acceptance Testing Plan in accordance with Exhibit [REDACTED]. Design-Builder shall work with Owner to develop this Plan and Owner shall have right to review and comment on this Plan as it is being developed and finalized.
- 6.5 During the Phase 1 Services Design-Builder shall develop a Transition Plan that it will implement to coordinate and manage the initial start-up and operations, training, Acceptance Testing turn-over to the Owner of the Project and transition to Owner operations. Design-Builder shall work with Owner to develop this Plan and Owner shall have right to review and comment on this Plan as it is being developed and finalized.
- 6.6 Risk Management Plan - Analyze design and construction risk to assess risk impact and develop risk management strategies to minimize associated costs and schedule impacts. Provide recommendations for appropriate allocation of design and construction risks.
- 6.7 Public Outreach and use of Social Media – Wharton-Smith will utilize a subcontractor to coordinate public outreach services including door hangers, public “town hall” type meetings, and use of social media throughout the implementation of the Project.



Fee Summary:

Wharton-Smith .....	\$ 294,949.90
Hazen .....	<u>\$ 1,604,500.00</u>
Subtotal .....	\$ 1,899,449.90
CH Engineering, PLLC (MWBE) .....	\$ 168,000.00
Falcon Engineering, Inc. (MWBE) .....	\$ 68,250.00
CH Engineering, PLLC (MWBE) .....	\$ 14,620.00
CH Engineering, PLLC (MWBE) .....	\$ 49,350.00
PED, Inc. (MWBE) .....	<u>\$ 10,850.00</u>
MWBE Subtotal .....	\$ 310,070.00
Phase 1 Total .....	\$ 1,899,449.90