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# MEMORANDUM

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**To:** Mayor and Members of the City Council

**From:** Montique McClary, Interim City Manager  
Dwan Bell, Public Utilities Director  
Jon Hawley, Grants Administrator

**Date:** September 9, 2022

**Re:** Consideration - Service Contract for Rivershore Road Bridge Replacement

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***BACKGROUND:***

This summer, NC Emergency Management awarded the City of Elizabeth City a Transportation Infrastructure Resiliency Fund grant of \$1.97 million for the replacement of the failing bridge on Rivershore Road near Fairfax Avenue. The grant includes \$844,000 for planning, engineering and preconstruction expenses, with \$1.13 million available for construction and contingency costs. The City Council voted to accept this grant during its July 11, 2022, meeting; please see that meeting's agenda materials for further project background.

With the grant now in place, the City may proceed with engineering and design for the bridge. City staff are proposing to use an on-call engineering firm, AECOM, to perform this work. AECOM has provided a service contract for the City's consideration, which is included with this memo. The service contract is an extension of the City's Master Services Agreement with AECOM.

***ANALYSIS:***

AECOM's service contract requests \$282,016.50 for planning and design of the Rivershore Road Bridge replacement. These services are described in Attachment 1 to the agreement. They include bridge, roadway, and other necessary design services, as well as determining necessary easements and permitting. The requested amount is well within the \$403,000 budgeted in the grant for planning and design services.

In discussions with City staff, AECOM has explained that initial *planning and design* work is needed to finalize estimates for subsequent work, such as utility relocation and rights-of-way acquisition/easements. Attachment 1 discusses this under "Future Task Orders,"

which could be amendments to this service contract. All work proposed for these amendments is grant-eligible.

AECOM's service contract proposes a September 15, 2022, start date, contingent on adoption of this service contract. Based on that start date, Public Utilities anticipates preconstruction work being complete by Fall 2023, after which the City would solicit construction bids. Our aim is to see the bridge replaced before 2025.

***STAFF RECOMMENDATION:***

By motion: accept the proposed service contract from AECOM in the amount of \$282,016.50 to initiate planning and design work funded through the City's NCEM grant award for the Rivershore Road Bridge Replacement Project, and authorize all necessary signatures; and further authorize City staff to approve subsequent amendments to the contract for necessary and appropriate grant-eligible work as described in Attachment 1, part 5, Future Task Orders.

**NORTH CAROLINA  
CITY OF ELIZABETH CITY**

**SERVICE CONTRACT**

**THIS CONTRACT** is made and entered into this the 15<sup>th</sup> day of September 2022, by and between the **CITY of ELIZABETH CITY**, a political subdivision of the State of North Carolina, (hereinafter referred to as "CITY"), and AECOM Technical Services of North Carolina, Inc., a corporation duly authorized to do business in the state of North Carolina, (hereinafter referred to as "CONTRACTOR").

For and in consideration of mutual promises to each as herein after set forth, the parties hereto do mutually agree as follows:

- 1. SCOPE OF SERVICES.** CONTRACTOR hereby agrees to provide the services and/or materials under this contract pursuant to the provisions and specifications identified in "Attachment 1" (hereinafter collectively referred to as "Services"). Attachment 1, the "Rivershore Road Culvert Replacement – Planning and Final Design Services", is hereby incorporated herein and made a part of this contract. Time is a material element with respect to all provisions of this contract that specify a time for performance. The Memorandum of Agreement (MOA) is included in the terms of this contract and Scope of Services, as provided in Attachment 2.

The CITY will perform on-going contract monitoring to ensure that the terms of this contract are complied with. CONTRACTOR agrees to cooperate with the CITY in its monitoring process and provide documentation and/or information requested during the term of this Agreement for the purpose of monitoring the services provided by CONTRACTOR.

- 2. TERM OF CONTRACT.** The Term of this contract for services is from September 15, 2022 to July 30, 2025 unless sooner terminated as provided herein.
- 3. PAYMENT TO CONTRACTOR.** CONTRACTOR shall receive from CITY an amount not to exceed \$282,016.50 as full compensation for the provision of Services. CITY agrees to pay CONTRACTOR at the rates specified for Services performed to the satisfaction of the CITY, in accordance with this contract, and Attachment 1. Unless otherwise specified, CONTRACTOR shall submit an itemized invoice to CITY by the end of each month during which Services are performed. A Purchase Order number may be assigned to encumber the funds associated with this contract and must appear on all invoices and correspondence mailed to the CITY. Payment will be processed within 30 days of receipt pending approval of the invoice by CITY.
- 4. INDEPENDENT CONTRACTOR.** CITY and CONTRACTOR agree that CONTRACTOR is an independent contractor and shall not represent itself as an agent or employee of CITY for any purpose in the performance of CONTRACTOR's duties under this Contract. Accordingly, CONTRACTOR shall be responsible for payment of all federal, state and local taxes as well as business license fees arising out of CONTRACTOR's activities in accordance with this Contract. For purposes of this contract taxes shall include, but not be limited to, Federal and State Income, Social Security and Unemployment Insurance taxes.

CONTRACTOR, as an independent contractor, shall perform the Services required hereunder utilizing that degree of care and skill ordinarily exercised by members of same profession performing the same or similar services under similar conditions in similar localities ("Standard of Care"). No other warranties, express or implied, are made or intended.

- 5. INDEMNIFICATION.** To the fullest extent permitted by laws and regulations, CONTRACTOR shall indemnify and hold harmless the CITY and its officials, authorized agents, and employees from and against all claims, damages, losses, and expenses (including but not limited to reasonable fees and charges of attorneys and costs related to court action) arising out of or resulting from CONTRACTOR's performance of this Contract or the actions of the CONTRACTOR or its officials, employees, or subcontractors under this Contract or under

contracts entered into by the CONTRACTOR in connection with this Contract. This indemnification shall survive the termination of this Contract.

In claims against any person or entity indemnified under this provision by an employee of the CONTRACTOR, a subcontractor, an employee of a subcontractor, or an agent of the CONTRACTOR or a subcontractor, the indemnification obligation under this provision shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the CONTRACTOR or a subcontractor under workers' or workmen's compensation acts, disability benefit acts or other employee benefit acts.

6. **INSURANCE.** CONTRACTOR shall procure and maintain for the duration of the contract the following insurance coverage from an insurance company(s) possessing a rating of A-VII or higher from the A.M. Best Company and licensed or authorized to do business in North Carolina. All of the policies required of the CONTRACTOR shall contain a waiver of subrogation provision to waive all rights of recovery under subrogation or otherwise against the CITY, with the exception of Professional Liability coverage (if required). In the event CONTRACTOR'S Insurance Policy or Certificate of Insurance conflicts with the aforesaid language concerning "waiver of subrogation" this contract shall govern. CONTRACTOR shall advise the CITY of any cancellation, non-renewal, or material change in any policy within fifteen (15) days of notification of such action and provide updated certificates of insurance evidencing renewals within fifteen (15) days of the expiration of any previous insurance coverage. CONTRACTOR'S insurance affording additional insured status shall be primary, and any insurance or self-funded liability programs maintained by the CITY shall not contribute with respect to the CONTRACTOR's insurance. CITY shall be listed as an additional insured on any Insurance Policy or Certificate of Insurance of the CONTRACTOR, except for Workers Compensation, Employers Liability, and Professional Liability (if required). In the event CONTRACTOR'S Insurance Policy or Certificate of Insurance conflicts with the aforesaid language concerning "additional insured" this contract shall govern.

**6.1 Commercial General Liability:** CONTRACTOR shall provide coverage on an "occurrence" basis, including products and completed operations, property damage, bodily injury, and personal & advertising injury with limits of \$1,000,000 per occurrence and \$3,000,000 aggregate.

**6.2 Commercial Automobile Liability:** CONTRACTOR shall provide coverage covering any auto with limit of \$1,000,000 per accident for bodily injury and property damage.

**6.3 Worker's Compensation and Employers Liability:** as required by The State of North Carolina, with statutory limits, and Employers Liability Insurance with a limit of \$1,000,000 per occurrence.

By requiring insurance herein, the CITY does not represent that coverage and limits will necessarily be adequate to protect CONTRACTOR, and such coverage and limits shall not be deemed as a limitation on CONTRACTOR's liability under the indemnities granted to the CITY in this Contract. CONTRACTOR shall provide the CITY a valid certificate of insurance, in advance of the performance of any work, exhibiting coverage required. CONTRACTOR shall require and verify that all subcontractors maintain insurance meeting all the requirements stated herein.

The failure of the CITY at any time to enforce the insurance provisions, to demand such certificates of insurance, or to identify a deficiency shall not constitute a waiver of those provisions, nor reduce obligations of the CONTRACTOR to maintain such insurance or to meet its obligations under the indemnification provisions. Notwithstanding the foregoing, nothing contained in this section shall be deemed to constitute a waiver of the governmental immunity of the CITY, which immunity is hereby reserved to the CITY.

## 7. TERMINATION.

**7.1. EVENT OF DEFAULT.** Any one or more of the following acts or omissions of the Contractor shall

constitute an Event of Default hereunder:

- a. Failure to perform the Services satisfactorily or on schedule, as consistent with the Standard of Care.
- b. Failure to submit any report required hereunder; and/or
- c. Failure to perform any other covenant, term, or condition of this Agreement.

Upon the occurrence of an Event of Default, the City may take one or more or all of the following actions:

1. Give Contractor written Notice of the Event of Default, specifying the Event of Default and requiring it to be remedied within, in the absence of greater or lesser specification of time, ten (10) calendar days from the date of the notice; and if the Event of Default is not timely remedied, terminate the agreement, effective two (2) days after giving the Contractor written Notice of Termination; and/or
2. Deduct any and all direct expenses incurred by the City for damages caused by the Contractor's Event of Default; and/or
3. Treat the agreement as breached and pursue any of its remedies at law or in equity, or both, including damages and specific performance.

**7.2 TERMINATION FOR CONVENIENCE.** This Contract may be terminated, without cause, by either party upon thirty (30) days written notice to the other party. This termination notice period shall begin upon receipt of the Notice of Termination.

Termination of this Contract, under either section 7.1 or 7.2, shall not form the basis of any claim for loss of anticipated profits by either party.

- 8. CITY NOT RESPONSIBLE FOR EXPENSES.** CITY shall not be liable to CONTRACTOR for any expenses paid or incurred by CONTRACTOR, unless otherwise agreed in writing.
- 9. EQUIPMENT.** CONTRACTOR shall supply, at its sole expense, all equipment, tools, materials, and/or supplies required to provide Services hereunder, unless otherwise agreed in writing.
- 10. COMPLIANCE WITH LAWS.** CONTRACTOR shall abide by all statutes, rules, regulations, laws, and executive orders Federal, State and Local as they relate to, but are not limited to, (i) services in general, (ii) payment of employees, subcontractors and agents, (iii) the Fair Labor Standards Act and (iv) the Wage and Hour Division. In the event CONTRACTOR is determined by the final order of a court or appropriate agency to be in violation of any Federal, State or Local statute, rule, regulation, law or executive order or this provision, this Contract may be canceled, terminated or suspended in whole or in part by CITY and CONTRACTOR may be declared ineligible for further CITY contracts.
- 11. HEALTH AND SAFETY.** CONTRACTOR shall be responsible for initiating, maintaining and supervising all safety precautions and programs required by OSHA and all other regulatory agencies while providing Services under this Contract. Notwithstanding the foregoing, CONTRACTOR shall be responsible for its own activities at sites including the safety of its employees, and that of its subconsultants, subcontractors and suppliers but shall not assume control of or responsibility for the site.
- 12. IRAN DIVESTMENT ACT CERTIFICATION. (Applicable only to contracts/agreements valued at \$1,000.00 or more).** CONTRACTOR by signing/executing this contract certifies that as of the date of this contract CONTRACTOR is not on the Final Divestment List as created by the State Treasurer pursuant to North Carolina General Statute 147-86.58 and in compliance with the requirements of the Iran Divestment Act and North Carolina General Statute 147-86.65. CONTRACTOR shall not utilize in the performance of this contract any subcontractor that is identified on the Final Divestment List.

**13. AUDIT RIGHTS.** For all Services being provided hereunder, CITY shall have the right to inspect, examine, and make copies of any and all books, accounts, invoices, records and other writings relating to the performance of the Services. Audits shall take place at times and locations mutually agreed upon by both parties. Notwithstanding the foregoing, CONTRACTOR must make the materials to be audited available within one (1) week of the request for them.

**14. DISPUTE RESOLUTION PROCEDURE.** To prevent disputes and litigation, it is agreed by the parties that any claim or dispute between CITY and the CONTRACTOR, arising from this Agreement or the services and/or materials being provided by the CONTRACTOR, shall be sent to the City of Elizabeth City Manager who shall appoint a qualified mediator to address the issue. Such request shall be submitted to the City Manager in writing within ten (10) days of the claim or dispute. Upon receipt of a timely written claim, the Manager, or his designee, shall notify the Mediator who will conduct a mediation and notify the CONTRACTOR in writing of the decision within forty five (45) calendar days from the date of the submission of the claim or dispute, unless the Mediator requires additional time to gather information or allow the parties to provide additional information. The Mediator's orders, decisions and decrees shall be non-binding. Mediation, pursuant to this provision, shall be a pre-condition to initiating litigation concerning the dispute. During the pendency of any dispute and after a determination thereof, parties to the dispute shall act in good faith to mitigate any potential damages including utilization of schedule changes and alternate means of providing services and/or materials. The costs of mediation shall be divided equally between parties to the dispute.

The mediation session shall be private and shall be held in Elizabeth City, North Carolina. Mediation under this provision shall not be the cause for a delay of services and/or materials being provided which is the focus of the dispute.

If the disputed issue cannot be resolved in mediation or either party disagrees with the results of the mediation, the parties may seek resolution in the General Court of Justice in the County of Pasquotank and the State of North Carolina. If a party fails to comply in strict accordance with the requirements of this provision, the non-complying party specifically waives all of its rights provided hereunder, including its rights and remedies under State law.

**15. EXISTENCE.** CONTRACTOR warrants that it is a corporation or otherwise legal entity duly organized, validly existing, and in good standing under the laws of the State of North Carolina and is duly qualified to do business in the State of North Carolina and has full power and authority to enter into and fulfill all the terms and conditions of this contract.

**16. CORPORATE AUTHORITY.** By execution hereof, the person signing for CONTRACTOR below certifies that he/she has read this contract and that he/she is duly authorized to execute this contract on behalf of the CONTRACTOR.

**17. SUCCESSORS AND ASSIGNS.** CONTRACTOR shall not assign its interest in this Contract without the written consent of CITY. CONTRACTOR has no authority to enter into contracts on behalf of CITY.

**18. NOTICES.** All notices which may be required by this contract, or any rule of law shall be effective when received by certified mail sent to the following addresses:

**CITY OF ELIZABETH CITY**  
**ATTN: PURCHASING DEPARTMENT**  
**PO BOX 347**  
**ELIZABETH CITY, NC 27907-0347**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

24. **HEADINGS.** The subject headings of the sections are included for purposes of convenience only and shall not affect the construction or interpretation of any of its provisions. This contract shall be deemed to have been drafted by both parties and no interpretation shall be made to the contrary.

25. **GOVERNING LAW.** This Contract shall be governed by and in accordance with the laws of the State of North Carolina. All actions relating in any way to this Contract shall be brought in the General Court of Justice in the County of Pasquotank and the State of North Carolina.

26. **ENTIRE CONTRACT.** This contract, including Attachment 1, shall constitute the entire understanding between CITY and CONTRACTOR and shall supersede all prior understandings and agreements relating to the subject matter hereof and may be amended only by written mutual agreement of the parties.

**IN TESTIMONY WHEREOF,** the parties have expressed their agreement to these terms by causing this Service Contract to be executed by their duly authorized officer or agent.

**CITY OF ELIZABETH CITY**

\_\_\_\_\_  
Name and Title

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

\_\_\_\_\_  
City of Elizabeth City, Chief Financial Officer

**CONTRACTOR**

By: *Scott A. Hartung*  
Authorized Representative

Print Name/Title: Scott A. Hartung / Vice President

ATTACHMENT 1 to follow

# **ATTACHMENT 1: SCOPE OF SERVICES**

## **Task Order 1**

**Rivershore Road Culvert Replacement  
Planning and Final Design Services  
Elizabeth City, North Carolina**

**Prepared for:  
City of Elizabeth City, NC**

**Prepared by:  
AECOM Technical Services of North Carolina, Inc.**

**August 30, 2022**

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## **1. GENERAL INFORMATION, ASSUMPTIONS, SCHEDULE, AND FEE**

### **1. PROJECT INFORMATION**

The CITY has selected under an existing Engineering Services on-call agreement a qualified and competent ENGINEER, AECOM Technical Services of North Carolina, Inc. ("ENGINEER") to develop construction designs for the replacement of the Rivershore Rd Culvert at approximately 36.290934 N latitude, 76.20484 W longitude with associated adjacent improvements necessary for the construction of the replacement culvert (hereinafter called "PROJECT"), described herein. This contract describes the terms of services for the ENGINEER. The Project Scoping Fact Sheet is attached to this document as APPENDIX 1.

Final design plans will be completed using the Bentley software Microstation V8i or newer. Cross sections will be completed using Geopak and Corridor Modeler.

The work will be performed in accordance with City standards and specifications, when available. When not available, the project will follow latest policies and procedures of the State of North Carolina Department of Transportation (NCDOT), the Federal Highway Administration (FHWA), the American Association of State Highway and Transportation Officials (AASHTO) and various guidelines included and referenced in this Scope of Work (as of the time of agreement execution).

Unless noted otherwise, all deliverables shall be provided only in electronic PDF format. Any sealed work shall be sealed through DocuSign or other verifiable electronic signature method.

This contract is expected to have an approximate 30-month duration from the issuance of a notice-to-proceed, with the final work concluding by March 15, 2025. Work performed under this contract is billed on a time and materials basis with a not-to-exceed amount. An estimated invoicing schedule will be provided by the ENGINEER to the CITY within 1 month of notice-to-proceed. If scoped items are not required to complete the project, such items may be removed from the scope upon written agreement between the CITY and ENGINEER. Additional items added to the scope will be handled on a case-by-case basis and may require a supplemental agreement and notice-to-proceed.

### **2. TASK ASSUMPTIONS AND CITY RESPONSIBILITIES**

This contract includes preparation of the design through Final Plans. The following disciplines and tasks and are scoped in this task order:

- Project Management and Coordination
- Public Involvement
- Permitting Support and Coordination
- Environmental Features Delineation and Determination
- Survey Services, Right-of-Way Plat generation, ROW monumentation
- Roadway Design
- Traffic Management Design
- Hydraulics and Drainage Design

- Erosion and Sedimentation Control Design
- Structures Design
- Utility Coordination
- Geotechnical Investigation and Design
- Signing & Delineation Design

Additional work which will be scoped under a Contract Amendment or supplement listed under section 5, "Future Task Orders". The details required to scope these services are not known at this time and effort to complete these services and cannot be reasonably estimated at present. This scope of work excludes those items.

The CITY'S responsibility under this agreement shall be as follows:

- Provide the best available information as to requirements for the project.
- Assist ENGINEER by placing at his disposal all available information pertinent to the project, including previous designs, reports and any other data relative to the design and construction of the project.
- Guarantee access to and make all provisions for ENGINEER to enter upon CITY property as required for ENGINEER to perform his services. The CITY will use its best efforts to assist ENGINEER to enter upon other property as needed for ENGINEER'S work on this project.
- Examine all studies, reports, sketches, drawings, specifications, proposals and other documents presented by ENGINEER and render in writing decisions pertaining thereto within a reasonable time so as not to delay the services of the ENGINEER.
- Designate in writing a person to act as CITY'S representative with respect to the work to be performed under this agreement. Such person shall have complete authority to transmit instructions, receive information interpret and define CITY'S policies and decisions with respect to materials, equipment, elements and systems pertinent to ENGINEER'S services.
- Give prompt written notice to ENGINEER whenever CITY observes or otherwise becomes aware of any defect in the project.
- Furnish signatures and permits from all governmental authorities having jurisdiction over the project and such approvals and consents from others as may be necessary for completion of the project.
- Bear all permit application fees.
- Provide projected traffic volumes for design (when required)
- Provide City GIS parcel mapping and ownership information.

### **3. PROJECT SCHEDULE**

The project design is anticipated to be delivered generally on the following schedule:

Notice to Proceed issued: September 15, 2022

Design Criteria and Alternate Designs completed: November 15, 2022

Topographic Surveys Completed: December 15, 2022

25-percent Roadway Plans: February 28, 2023  
Hydraulic Design, Foundation/Geotech investigation completed: May 1, 2023  
Public Utility Easements determined: June 1, 2023  
Structure Preliminary Design complete: June 1, 2023  
65% roadway plans and field inspection: June 15, 2023  
75%/Right-of-Way plans: August 1, 2023  
90% plans: November 1, 2023  
Final plans: September 15, 2023  
Advertisement: November 15, 2023  
Let: March 15, 2024  
ROW Acquisition Completed: December 1, 2023  
Utility Relocation Completed: April 1, 2024 (date of availability)  
Construction Start: April 1, 2024  
Construction complete: December 1, 2024

#### **4. FEE FOR SERVICES**

The ENGINEER agrees to provide the CITY with the services detailed herein for the lump sum fee of \$282,016.50 which will be invoiced monthly on a percent complete basis. The CITY agrees to payment of these fees in accordance with the terms set within the contract.

#### **5. FUTURE TASK ORDERS**

Additional work not included in the fee estimate above is anticipated as part of this project, and will be scoped, estimated, and contracted at a later date. Those supplemental items are listed below:

Additional Preconstruction services to be scoped at a later date:

- Utility Relocation Design (water and sanitary sewer)
- Utility Relocation Design (power distribution)
- Utility joint-use and encroachment agreements (power, telecom)
- Right of Way Acquisition services (not including purchase cost)

Preliminary estimates for these services are approximately \$121,000.00 plus 25% contingency of \$30,250.00.

Additional construction-phase services to be scoped at a later date:

- Construction Engineering and Inspection and Contract Administration

Preliminary estimates for these services are approximately \$147,000.00 plus 25% contingency of \$36,750.00.

Preliminary estimates for these remaining services are based on the TIRF Grant application and cannot be considered binding at this time, and should be used for planning-level purposes only.

Anticipated approximate future task order(s) value for AECOM and subconsultants: \$335,000.00. This does not include Construction costs or unanticipated additional services not listed that may be required to complete the project.

## **2. PROJECT MANAGEMENT AND COORDINATION**

### **1. PROJECT MANAGEMENT**

The ENGINEER will maintain general oversight and coordination with the CITY and its designated representatives for a 30-month period starting at Notice-to-Proceed. The ENGINEER will provide general oversight and direction to sub-ENGINEERs regarding scheduling and overall design consistency in combination with the CITY. The CITY will be advised of contact with other agencies.

To facilitate the production of Final Design Plans for the CITY the following services will be provided:

- Monthly Invoices and Progress Reports
- Subconsultant QA/QC Compliance
- Budget/Scope adherence and tracking and Contracting with Subconsultant (s)

### **2. MAINTAIN PROJECT SCHEDULE**

The ENGINEER will update and maintain the project schedule to include forthcoming tasks and anticipated completion dates. This schedule will be updated on a monthly basis and provided to CITY to help track progress.

### **3. COORDINATION**

The ENGINEER will maintain coordination with the CITY and its designated representatives throughout the duration of this task order. All meetings are assumed to be teleconference unless specifically noted otherwise in this scope. A list of meetings is provided below:

- A monthly coordination meeting with CITY is anticipated throughout the duration of the project's design phase (18 total meetings). The ENGINEER will send 3 representatives from the design team, as needed, to each meeting. 4 meetings are assumed to be in-person, and the others are assumed to be virtual via TEAMS or equivalent.
- Field Inspection Meeting: At approximately the 65%-level of design, the ENGINEER will hold a meeting with the CITY on-site to discuss aspects of the projects that may impact Right-of-way needs, utility relocation needs, and other items related to final design.
- Monthly internal coordination meetings throughout the duration of the project (18 total meetings).
- Meetings specific to a discipline (i.e., permitting coordination with agencies) are not included in this list, but are listed with the various disciplines' scopes.

### **4. TECHNICAL OVERSIGHT**

The ENGINEER will maintain Technical oversight of the project. The ENGINEER will conduct Independent Reviews at key milestones and attend project coordination meetings to verify overall adherence to NCDOT submittal guidelines and consistency. Additionally, the ENGINEER will conduct Interdisciplinary Reviews at the 65% submittal to assist in Quality Assurance efforts for the project.

### **3. PUBLIC INVOLVEMENT TASKS**

#### **1. PROJECT NOTIFICATION POSTCARD**

The ENGINEER will prepare a postcard for distribution to the project mailing list advertising the project. The draft postcard will be reviewed by the CITY and revised as needed. The postcard will be finalized, reproduced, labeled, and mailed to the approved list of recipients (anticipate 200 mailings). The ENGINEER will coordinate with the CITY's GIS specialist to determine the mailing distribution list.

**Deliverables:**

- Mailing Distribution List
- Draft and Final Notification Postcard
- Mailings

#### **2. PRESENTATION TO CITY COUNCIL**

It is assumed that the ENGINEER will be requested to present once to the City Council on the progress of the project at a key milestone. The ENGINEER will send 2 representatives to this meeting. A 1-month advance notice is requested to arrange for the meeting.

**Task Assumptions and Exclusions:**

- Public meetings are not included
- Public Involvement during the Construction phase is not included (may be included under CEI/CA services in a contract amendment)

### **4. PERMITTING SUPPORT AND COORDINATION**

#### **1. PERMITTING COORDINATION**

If needed, Engineer will coordinate with regulatory agencies to determine the expected regulatory process related to 404/401, CAMA, State Stormwater, and Sedimentation and Erosion Control requirements for the project as applicable.

If needed, the Engineer will also facilitate a meeting with the US Army Corps of Engineers (USACE), the NC Division of Coastal Management (NCDQM) the NC Division of Water Resources (NCDWR), NC Division of Energy, Mining and Land Resources (NCDEMLR), NC Department of Public Safety (NCDPS) and City staff to review the proposed project and obtain input regarding expected permit requirements. It is expected that this will be a single (onsite or virtual) meeting.

## **2. PERMIT APPLICATION**

Once the 65% Drawings have been developed Engineer will prepare application(s) for a Nationwide 404/401 Permit and/or CAMA Minor Permit if required. AECOM will use the wetland/stream PJD boundaries to determine the amount of unavoidable WOUS impacts that would result from the proposed project. AECOM will prepare a Preconstruction Notification (PCN) application for a Section 404 Clean Water Act (CWA) Nationwide Permit (NWP), and a Section 401 CWA Water Quality Certification (WQC). AECOM will also prepare a permit CAMA Minor Permit application to submit to the Division of Coastal Management to allow impacts to Areas of Environmental Concern (AEC), as needed. The City will review the permit application(s) and provide comments, signatures, and application fees. For the purposes of this scope of services it is assumed that the Sedimentation and Erosion Control Plan (for NCDEQ review) and permit application will not be required.

Engineer will prepare, submit, and track applications and other needed documentation for regulatory review and permitting by NCDEQ (including NCDWR and NCDCM), USACE, and City's Site Plan Review Process as needed and respond to reviewer comments.

### **Deliverables:**

- Nationwide 404 and/or CAMA Minor Permit application(s)
- Request for State Stormwater Permit exemption (if needed)

### **Task Assumptions and Exclusions:**

- The City will provide any application fees.
- The Project will not require a 404/401 Individual Permit Application and/or CAMA Major Permit application.
- USACE Section 10 coordination and/or Permit Application(s) will not be required.
- A Categorical Exclusion, Environmental Assessment, or similar environmental documentation shall be considered Additional Services (not expected).
- Threatened and Endangered Species Surveys are not included (not anticipated. If required, this work will be performed under a contract amendment)
  
- Section 7 Consultations shall be considered Additional Services (not expected).
- Archeological Assessments shall be considered Additional Services (not expected).
- NC State Historic Preservation Office coordination shall be considered Additional Services (not expected).
- The Jurisdictional Delineation extents will be as approximately shown in Figure 1.
- Engineer will respond to up to two (2) rounds of reviews each of the Permit/Approval applications.
- Wetland mitigation permitting is not included in this contract.

## 5. ENVIRONMENTAL FEATURE DELINEATION AND DETERMINATION

### 1. JURISDICTIONAL DELINEATION

Engineer will field delineate the study area for jurisdictional Waters of the United States (WOUS), including wetlands. Engineer will identify habitat types, vegetated wetlands, waterbodies, and other regulated special aquatic sites encountered. The boundaries of all jurisdictional waters within the study area will be demarcated using high visibility flagging. Engineer will document, using the current US Army Corps of Engineers (USACE) wetland delineation data forms, two sample plots for each vegetated wetland: one in the wetland and one in the adjacent upland. Engineer will classify the resource according to the US Fish and Wildlife Service (USFWS) Classification of Wetlands and Deepwater Habitats of the United States. Engineer will complete an NC Division of Water Resources (NCDWR) Stream Identification Forms (Version 4.11) for mapped features that may not be jurisdictional, may not exist, or may not be subject to buffer rules. Engineer will collect specific information about width, depth, and bank characteristics for all identified stream and ditch features. Representative photographs will be recorded for wetlands and streams.

Engineer will map the location of field-delineated boundary flags using Global Positioning System (GPS) units with sub-meter accuracy. Field data will be used in GIS analysis to produce tables (including a calculation of total number of wetlands, surface waters, and length of streams and tributaries) and maps required for a USACE Jurisdictional Determination (JD).

Engineer will incorporate the data collected into wetland delineation report for the subject property area. The report will include an overview of resource identification methodology; a summary resource table of field-delineated jurisdictional waters; and a narrative description of waterbodies and wetlands, including vegetation, soils, and hydrology within the study area. The report will include an appendix with 11"x17" color figures, the completed wetland and stream data forms, representative photographs, and information sufficient to request a JD from the USACE.

It is assumed that the NCDCM Coastal Area Management Act (CAMA) Coastal Wetland line will be determined through the use of elevation data (mean high water) and added to the wetland plats based on elevation alone. As such, a CAMA Coastal Wetland delineation is not included in this scope of work.

### 2. JURISDICTIONAL DETERMINATION

The ENGINEER will acquire digital survey data from the surveyor (see below) to develop mapping for the Jurisdictional Determination Package. Engineer will prepare a Preliminary Jurisdictional Determination (PJD) request package for the USACE approval. The request package will include the data collected during the field-delineation, as well as the USACE JD Request Form, the USACE PJD Form, the ORM upload sheet, Antecedent Precipitation Tool data, and Aquatic Resource Delineation maps (as needed) at a scale sufficient to depict individual flag locations. If requested, Engineer will attend a single field visit with representatives from the USACE, NCDCM, and/or NCDWR to review the delineation. Engineer will revise the Aquatic Resource Delineation maps, as necessary, based on the field review.

#### **Deliverables:**

- Jurisdictional delineation to be used for a Nationwide or CAMA Permit as needed.

## **6. SURVEY SERVICES**

All survey services shall be performed in accordance with and shall conform to accepted surveying and engineering general practices and procedures. **Precision Measurements Land Surveyors (PMLS)**, a Subconsultant of the ENGINEER shall provide professional land surveying services required for planning and design of the proposed PROJECT as a Subconsultant to the ENGINEER as outlined and described below.

Deliverables are as outlined below or in the attached scope from PMLS in Appendix 2.

### **1. TOPOGRAPHIC SURVEY**

PMLS's scope for topographic survey is attached to the scope and incorporated herein. The surveyed limits are included in graphical form.

Survey extents along Rivershore Rd begin approximately 275ft south of the existing culvert and extend to 230ft north of existing culvert. Survey extents along Fairfax Ave extend from the intersection with Rivershore Rd and extend approximately 210ft west from the intersection. Width of collection will be approximately 150 feet generally centered about the existing centerline of the road(s). This area is considered to be the survey "Project Limits".

### **2. UTILITY SURVEY AND TEST HOLES**

PMLS's scope for utility survey (QL-B) and utility test holes (QL-A) is attached to the scope and incorporated herein.

### **3. RIGHT OF WAY PLAT PREPARATION**

Based upon the existing boundary information compiled and the approved right of way and easement information provided by the Engineer after completion of design phases, PMLS shall prepare recordable right of way acquisition plats for the project in accordance with NCGS 47-30. Plats will include the proposed right of way, permanent and temporary drainage, utility and construction easements and shall be prepared on 18" x 24" reproducible medium.

PMLS will provide to the ENGINEER written metes and bounds descriptions of all properties to be acquired for inclusion by the CITY in necessary deeds and/or easements and right-of-way agreements.

The agreement includes two (2) preliminary submittals (digital) and one final submittal on 18" x 24" Mylar sheets or format agreed-upon.

The first preliminary plat submittal will follow the 65% design plan submittal. The second preliminary submittal will occur after the initial round of negotiations with the property owners. Final plat submission will be in accordance with the schedule developed by the City and the Engineer. Three copies of the final plats will be submitted for recordation. Upon the completion of recording, one copy is to be retained by the Pasquotank County Register of Deeds, one copy by the City of Elizabeth City, and one copy returned to PMLS bearing Pasquotank County's recordation information and the Register of Deeds signature.

Plats are paid on a per-plat basis per the attached scope and fee breakdown from PMLS.

#### **4. RIGHT OF WAY MONUMENTATION**

Prior to the recordation of the proposed right of way acquisition plats, PMLS shall permanently monument the proposed right of way and easements by placing City of Elizabeth City Right-of-way markers (markers to be provided by the city) at all breaks in the right of way and at intersections of the proposed right of way with existing property lines. Permanent drainage easements will also be monumented with #4 rebar. All other easements will be monumented with semi-permanent materials. The project is anticipated to be split into two right of way acquisition phases. Each area shall be staked at the time specified by the City. This is to be done AFTER the Right-of-way and easements are confirmed by engineer and city to avoid revisions to staking.

ROW monumentation is paid on a LS basis per the attached scope and fee breakdown from PMLS.

#### **7. ROADWAY DESIGN TASKS**

The ENGINEER will develop roadway designs for the PROJECT. The design will be developed based on the selected design alternate prepared during Preliminary Roadway Design. A summary of expected alignments and lengths is included in "APPENDIX 1 – Project Fact Sheet."

All efforts will conform to NCDOT's standard practices for highway construction, which are based on the guidelines below, including any updates during the life of this agreement:

- NCDOT Highway Design Branch "Policy and Procedure Manual for Roadway Design"
- NCDOT "Roadway Design Manual"
- NCDOT "Roadway Design Guidelines to be used by ENGINEERs for Producing Roadway Plans" (hereinafter referred to as the "Roadway Design Guidelines")
- American Association of State Highway and Transportation Officials (AASHTO) 2018 Geometric Design of Highways and Streets
- NCDOT Standard Drawings for Roads and Structures (2018)
- NCDOT's Policy on Streets and Driveway Access to North Carolina Highways
- NCDOT's Resurfacing, Restoration, and Rehabilitation (R-R-R) of Highways and Streets

All submittals will be in electronic format unless specified in this scope of work.

The road is currently closed and will stay closed during construction. If the road is re-opened to traffic prior to construction and the CITY determines that traffic must remain open, additional work will be required under a supplemental agreement.

#### **1. DESIGN CRITERIA**

Design criteria shall be compatible with the functional classification of Local Street. Projected traffic volumes, design speed, provided by the CITY, will determine minimum and desirable design criteria for lane width, horizontal alignment, vertical alignment, stopping sight distance, cross slopes, superelevation, shoulder width, and grades. AASHTO design criteria will be utilized where doing so will not compromise safety or function. Any design element not meeting AASHTO standards shall be documented. Basic roadway typical sections are included.

## 2. ALTERNATIVE DESIGNS

In consultation with the CITY, the ENGINEER shall perform an analysis of at most two (2) alternate roadway/bridge/culvert crossings, and develop the impact of the alternatives on R/W, safety, project budget, and environmental permitting. ENGINEER shall present these alternatives to the CITY in an intermediate design conference, and provide the advantages and disadvantages of each. Provide supporting data such as preliminary plans, typical sections, and typical structure sections or views. Coordinate the location of other utilities and any impact these may have on the project.

It is assumed that both designs shall minimize approach roadway reconstruction work and minimize grade change to the maximum extent practicable.

Option 1 is proposed to be a 2-barrel reinforced concrete box culvert (RCBC). Option 2 is proposed to be a single barrel aluminum arch culvert. A bridge alternate is not anticipated at this time and would require a supplemental Contract Amendment due to the additional complexity involving a bridge.

The ENGINEER will develop Functional Design at a 1" = 20' scale on an 22"x34" plan sheet. Each functional design plan sheet should include: Anticipated Design Data, Anticipated Design Exceptions, Bridge Typical, Roadway Typical, Horizontal and Vertical Alignments, Super Elevations, Curve Data, Edge of Pavements, Anticipated Bridge length, Slope Stakes, North Arrow, and Scale. Corridor Modeling will be required for each alternative. Any CITY comments will be incorporated into the 25% plans and no resubmittal of non-chosen alternates will be made.

## 3. PRELIMINARY / 25% ROADWAY PLANS

The selected alternate will be carried forward to this step. The ENGINEER will prepare the following tasks/deliverables associated with 25% / Preliminary Plans:

- Horizontal and Vertical Alignment
- Develop horizontal and vertical alignments based on approved design criteria and final surveys
- Layout roadway and structural design elements
- Layout superelevation transitions
- Calculate and document vertical clearance
- Perform sight distance calculations
- Coordinate with technical disciplines/units
- 3D Model Development
- Generate 3D model of proposed design
- Layout cross sections and limits of construction (slope stakes)
- Right of Way and Easement Layout
- Layout initially proposed right of way and easements (line work only)
- Layout title sheet, plan and profile sheets, and cross section sheets
- Incorporate final pavement design into typical sections
- Develop earthwork summary
- Quantities for Construction Estimate

Plans will be produced according to NCDOT guidelines referenced above.

#### **4. 65% ROADWAY PLANS (FIELD INSPECTION PLAN SET)**

The ENGINEER will prepare the following tasks/deliverables to develop the 65% Roadway Plans (Field Inspection Plans) from the Preliminary / 25% Roadway Plans:

- Incorporate Drainage Designs
- Incorporate Geotechnical recommendations
- Incorporate Pavement Designs from Geotechnical Design tasks
- Update ROW and Easements for Utility relocations
- Incorporate preliminary structure design plans
- Update and refine Quantities for Construction Estimate

A field inspection meeting, as described in section 1, will be used to review the plans with all interested parties.

#### **5. 75% / RIGHT-OF-WAY PLANS**

The ENGINEER will prepare the following tasks/deliverables to develop 75% Right-of-Way plans from the 65% plans.

- Incorporate comments from Field Inspection meeting
- Revise/refine ROW and Easements for Utility Relocations
- Permit drawing consistency review, in coordination with Hydraulic design tasks

#### **6. 90% (FINAL REVIEW PLANS) AND 100% PLANS**

The ENGINEER will prepare the following tasks/deliverables to develop 90% plans from the 75% plans.

- Add additional details as required per NCDOT guidelines

Upon acceptance of 90% plans by the CITY, 100% final plans will be sealed and issued.

Contract special provisions will be provided by the City.

### **8. TRAFFIC MANAGEMENT TASKS**

The ENGINEER will prepare a traffic control plan for the construction of the PROJECT. The existing road is closed and will remain closed during construction. An off-site detour plan will be developed and provided in conjunction with the 90% Roadway Plan submittal. The plan will conform to NCDOT Work Zone Traffic Control requirements, "Guidelines for Transportation Management Plan Development." A narrative will be provided with 25% Roadway Plans.

Upon acceptance of the plan, 100% final plans will be issued and sealed.

If the road is re-opened to traffic prior to construction and the CITY determines that traffic must remain open, additional work will be required under a supplemental agreement.

## 9. HYDRAULICS TASKS

The ENGINEER will develop Hydraulic and Drainage Designs for the PROJECT.

### 1. PROJECT SPECIFIC TASK ASSUMPTIONS

The following assumptions and activities will be used to develop deliverables for Hydraulic and Drainage Designs as described in this scope of work:

- Hydraulic Design will be completed within the project area utilizing the NCDOT Hydraulics Unit's Guidelines for Drainage Studies and Hydraulic Design. Drainage Plans will be completed in Geopak Drainage in Microstation or OpenRoads Designer.
- HY-8 will be used for culvert design.
- Coordination with others is anticipated, such the CITY, permitting agencies, utility providers, etc.
- Project Management and Quality Control/Quality Assurance is included.
- NCDOT Roadway Standard Drawings (2018) will be referenced in the project construction documents.

Exclusions from Scope:

- HEC-RAS modeling of the unnamed creek or Pasquotank River.
- Coordination with NC Floodplain Mapping Program or FEMA. No CLOMR submittal is anticipated.
- 2D (2 dimensional) modeling Supplemental Surveys (FFE/LAG) for structures within Project 100-Yr floodplain.
- Pipe Liner design and special provisions. (May be added as a supplement after existing pipe evaluation.)
- Structural BMP design is not anticipated on this project.

### 2. DEVELOP PRELIMINARY HYDRAULIC RECOMMENDATIONS

The ENGINEER will prepare the following deliverables:

- Preliminary Hydraulic Design Memo (unsealed) for the UT stream crossing, including:
  - Project Description
  - Hydraulic analysis of culvert and recommendations (for 2 culvert options)
  - Assessment of Permit requirements

Data collection and hydraulic design shall generally follow the following NCDOT publications: "Guidelines for Drainage Studies and Hydraulic Design (2022)" including *Preliminary Field Visit Checklist* and "Appendix D, Preliminary Design and Assessment of Stream Crossings and Encroachments."

- Field Reconnaissance and Supplemental Surveys will include travel time and will be completed by two (2) design staff members. Field notes will be compiled, and a photo log will be completed following the field reconnaissance and supplemental surveys. Field notes will be drafted into an CADD file.

### **3. COMPLETE DRAINAGE DESIGN**

The ENGINEER shall perform drainage design associated with the roadway improvements, and hydraulic analysis for the proposed culvert in accordance with the requirements of the City and the latest revision of "Guidelines for Drainage Study and Hydraulic Design" by NCDOT. The design of the roadway stormwater design shall also incorporate BMP features where practicable to provide water quality in accordance with the NCDENR, DEMLR and NPDES requirements.

The ENGINEER will perform a hydraulic analysis of the proposed culvert using HY-8 to determine floodplain impacts and evaluate scour. It is assumed that no coordination with FEMA or NC Floodplain Mapping Program will be required. Any coordination with those agencies for purposes of the hydraulic design of the culvert will be performed under a Contract Amendment, and any associated review fees charged by FEMA for review are assumed to be the direct responsibility of the City.

The Hydraulic design will be based on the approved alternate and 25% / Preliminary Plans. The drainage design will be submitted as part of the 65% Roadway (Field Inspection) Plans. A separate submittal for drainage designs only is not included. Minor revisions to the drainage designs are assumed after the field inspection meeting and are incorporated into the 75% plans or final plans as required.

Tasks and Deliverables associated with this section include:

- Attend one (1) pre-design meeting with the CITY or their design review representative with one staff member. This will be a virtual meeting
- Perform storm drainage design studies required to detail each feature (type, size, location, material, etc.) and note these features on the plans.
- Determine drainage easements.
- Draft proposed ditches in plan, profile and cross sections. Draft storm drainage cross pipes into the profile sheets.
- Draft the proposed drainage features and all associated labeling.
- Size all cross pipes along alignment to determine critical roadway profile minimums to allow for adequate cover in establishing 25% vertical grade.
- An Outfall Analysis will be completed for selected outfalls in the project area. Evaluate all points where water leaves the right of way. Level of detail increases with likelihood of adverse effects on downstream conditions.
- PE-sealed Hydraulic Design Memo for the selected culvert alternate to indicate the hydraulic design data, general culvert size (barrel width, height, number, slope, and length), culvert sill requirements, and any pertinent information to establish the hydraulic design of the culvert for use by the Structural engineer.
- Attend one (1) Final Design Field Inspection meeting with NCDOT or their design review representative with up to two (2) staff members.

The Hydraulic Design Memo will be developed in coordination with the Structural Engineer and submitted separately to the City for review. The CSR will be sealed and remain part of the project record but will not be included in the construction document package.

The following tasks are assumed not needed and are excluded:

- Drainage Plans for Merger CP4B Meeting.
- Merger CP4B Meeting Package and Minutes.

- Structural BMPs.
- No stream buffers, ORW, HQW, WS-I, or WS-II within project area.
- No 303(d) impaired waters within project area
- A Culvert Survey Report (as defined by NCDOT) will not be prepared.

#### **4. PERMIT DRAWINGS AND PERMIT APPLICATION SUPPORT**

- Prepare one set of stream / wetland permit drawings with impact computations for use in the Permit application.

### **10. EROSION AND SEDIMENTATION CONTROL DESIGN**

The ENGINEER will develop Erosion and Sediment Control Plans for the PROJECT in accordance with NCDOT guidelines from the NCDOT Roadside Environmental Unit.

#### **1. PROJECT SPECIFIC TASK ASSUMPTIONS**

All Erosion Control Plans will conform to NCDOT Erosion Control standards and conform with the 2015 NCDOT Erosion and Sediment Control Design & Construction Manual.

The following assumptions and activities will be used to develop deliverables for Erosion and Sediment Control as described in this scope of work:

- Attend one (1) pre-design meeting with CITY (virtual)
- Project Management and Quality Control/Quality Assurance
- The ENGINEER will attend meetings as shown in section 1.

#### **2. EROSION AND SEDIMENT CONTROL PRELIMINARY PLANS**

The ENGINEER will prepare the following deliverables for preliminary Erosion and Sedimentation Control Plans:

- Water Quality Worksheet (Form ESC-1)
- Water Quality Document Review (Form ESC-2)
- Pre-Design Meeting Minutes
- E&SC Field Inspection Plans (quantities and special provisions will not be provided in this stage)
- ROW/Easement Requests

Tasks associated with the Plans include:

For the Clearing and Grubbing E&SC plans, this work includes:

- Delineating the watersheds that drain through the project and their discharge points based on
- existing topography and drainage features.
- Designing any basins at existing outfalls and routing runoff with existing or temporary ditches
- with velocity controls, as needed.
- Identifying and protecting jurisdictional features.

- Delineating the Environmentally Sensitive Areas (ESA), as required.
- Designing perimeter protection to contain runoff not conveyed to an E&SC basin.
- Designing inlet protection for existing inlets and drainage inflow points.

For the Final Construction Phase E&SC plans, this work includes:

- Delineating watersheds that drain through the project and their discharge points based on
- proposed topography and drainage plans.
- Designing basins at outfalls using proposed pipes and drainage channels.
- Designing temporary ditches, as needed, to convey runoff to E&SC basins.
- Designing velocity controls for proposed drainage channels and temporary ditches.
- Incorporating clearing and grubbing E&SC plans, as practical.
- Designing perimeter protection to contain runoff not conveyed to an E&SC basin.
- Designing inlet protection for proposed inlets and other drainage inflow points.

Culvert Construction Sequence:

- Design construction sequence drawings and narratives, for pipes/culverts carrying jurisdictional streams sufficient to convey the stream through the project construction site, while maintaining separation from the work site.
- Design temporary drainage (e.g., pipes, channels, etc.) as needed to maintain stream passage during construction. Include designs for temporary pipes carrying jurisdictional streams that are needed for work zone traffic control and other construction activities.
- Incorporate pipe/culvert construction sequences into the clearing & grubbing phase E&SC plans.

### **3. FINALIZE EROSION AND SEDIMENT CONTROL PLANS**

The ENGINEER will finalize E&SC plans after the Field Inspection meeting:

- E&SC Plan Set
- E&SC Special Provisions and Quantities
- Approved E&SC Contract package

It is assumed that updates from preliminary plans will be minimal and related to refinement of the E&SC plan, quantities, and/or special provisions only.

### **4. APPLICATION AND SUBMITTAL TO NCDEMLR**

The ENGINEER will submit E&SC plans to NCDEMLR for permit and approval, if the disturbed area exceeds 1AC. All application fees are to be paid by the City. 1 round of review and revision is anticipated.

## **11. STRUCTURES DESIGN TASKS**

The ENGINEER will prepare Structure Designs for the subject culvert of the project. The structure design and plans will be completed in accordance with applicable AASHTO and NCDOT requirements, standards, policies and procedures. Bid Documents will include construction plans, estimated construction quantities using standard NCDOT pay items, and project special provisions in accordance with standard NCDOT policies and procedures.

## **1. PROJECT SPECIFIC TASK ASSUMPTIONS**

The culvert is assumed to have the following characteristics:

- 2-barrel reinforced concrete box culvert (cast-in-place)
- Single stage for traffic (no traffic maintenance during construction)
- Construction joints for streamflow phasing
- Minimal or zero-fill above culvert to pavement structure
- Approximately 40ft long along streamflow
- Approximately 20ft long along roadway
- Approximately 6ft tall
- Guardrail will be anchored to the culvert

Structure Tasks Assumptions:

- Coordination with the geotechnical engineer is included.
- Preliminary engineering / coordination with Hydraulics engineer and roadway engineer is included

References:

- NCDOT Structures Management Unit Design Manual and Figures
- NCDOT Structures Management Unit Standard Letters and Policy Memos
- AASHTO LRFD Bridge Design Specifications
- Approved 25% / Preliminary Roadway Plans
- Approved Culvert Survey Report from Hydraulics Design tasks

The ENGINEER will attend meetings as shown in section 1.

## **2. PRELIMINARY GENERAL DRAWINGS**

The ENGINEER will prepare the following deliverables and tasks to develop preliminary structure plans (type, size, and location):

### **Preliminary Engineering Design**

- Determine preliminary structure geometry (barrel size, length, top slab thickness)
- Perform QC/QA on calculations.

### **Draft and Final Preliminary General Drawings (PGDs)**

- Prepare and submit preliminary general drawings for the culvert. For culverts, this is assumed to be sheet #1 of the culvert construction drawings set, which shows:
  - Culvert plan
  - Culvert section along Centerline of stream
  - Culvert barrel section normal to culvert
  - General Notes
  - Hydraulic Design data
  - General culvert quantities

## **3. COMPLETE STRUCTURES DESIGN AND FINALIZE STRUCTURE DESIGN PLANS, SPECIFICATIONS, AND ESTIMATES.**

The ENGINEER will complete the tasks and prepare the following deliverables to finalize structure design and produce sealed plans and specifications. It is assumed the geometry of the culvert will not change following the Preliminary General Drawing submittal prior.

- Coordination with Geotechnical design
- Coordination with hydraulics design and permitting tasks for impacts
- Culvert final design calculations and plans, including:
  - Culvert plan view and general profile
  - Culvert barrel section view / dimensions and reinforcement
  - Culvert top slab, bottom slab, and wall reinforcement
  - Culvert wingwalls (assumed to be NCDOT standard)
  - Culvert LRFR sheet
- A 90% submittal will be made (without PE seals)
- A 100% (PE-sealed) submittal will be made to incorporate comments.
- PE-sealed project special provisions will be submitted with 100% plans.
- Updated culvert quantities will be submitted.

## **12. GEOTECHNICAL TASKS**

The ENGINEER shall contract with a qualified local geotechnical Subconsultant to provide all geotechnical engineering services and shall conform to accepted engineering general practices and procedures and be performed in accordance with the following:

The Geotechnical Engineer shall perform geotechnical subsurface investigations necessary for completion of the final roadway and structure documents. These investigations shall include soil borings, core boring analyses, laboratory testing and engineering recommendations. Geotechnical data is to be gathered and presented generally in accordance with NCDOT guidelines for Geotechnical Investigations for Roadways and Structures. The following scope is anticipated:

- Conduct site reconnaissance and locate the borings.
- Contact NC811 a minimum of 3 working days before drilling operations to mark the underground utility locations.
- Drill two SPT borings each to depth of 60 feet through the pavement near the culvert, and four SPT borings each to depth of 5 feet within the proposed pavement areas. Split-spoon samples will be conducted at 5-foot intervals for visual classification and collection of potential laboratory samples.
- Perform laboratory testing including soil classification (includes sieve analysis, passing 200, and Atterberg limits on 4 to 6 samples), moisture content, Standard Proctor, and CBR testing.
- Collect six total pavement cores for both Rivershore Rd and Fairfax Ave from the six total borings proposed.
- Provide a written report containing:
  - A brief summary of drilling methods
  - Boring logs
  - General description of the site and subsurface conditions, including groundwater conditions and undercut/unsuitable soil estimates.
  - Results of laboratory and CBR testing.
  - Foundation recommendations
  - Pavement design recommendations for roadway sections

### **Assumptions and exclusions:**

- Drilling areas are closed to traffic and no traffic control is required to complete the field investigation.
- No rock coring

### **13. UTILITY COORDINATION TASKS**

AECOM will collect information on existing utilities for the project using NC 811 locate services to mark existing utilities and AECOM will show these utilities on the construction drawings.

AECOM will contact utility owners and send them draft construction drawings to verify the accuracy of their utilities shown and to allow owners to generate any utility relocation plans.

AECOM will coordinate with the City of Elizabeth City and utility owners to confirm utility relocations are completed, if required, prior to construction.

The scope assumes up to 2 site visits with utility owners.

The following is assumed:

- Powerlines will be designed and relocated by the City
- Development of utility encroachment agreements will be scoped under a supplemental agreement if required.

### **14. SIGNING AND DELINEATION TASKS**

The ENGINEER will Signing and Delineation Plans the project's selected roadway alignment. All efforts will conform to NCDOT's standard practices for highway construction and the NCDOT Signing and Delineation Unit's guidelines. All submittals will be in electronic format unless specified in this scope of work.

A 90% (final review) submittal and 100% (sealed plan) submittal is anticipated for signing and delineation plans.

The following features are assumed for signage:

- 1 street sign and 1 stop sign at the corner of Fairfax Ave and Rivershore Rd
- Sign Designs and Support Chart
- Project Special Provisions
- Quantities

### **15. ENGINEERS OPINION OF PROBABLE CONSTRUCTION COSTS**

The ENGINEER shall provide the CITY an opinion of probable construction costs at the following stages of the design:

- 25% / Preliminary Plans
- 75% Right of Way Plans
- 100% Plans

Estimates are based on the current level of design. Items not yet designed are estimated in more general manners.

Exclusions: The ENGINEER is not a construction cost estimator or construction contractor, nor should ENGINEER'S rendering an opinion of probable construction costs be considered equivalent to the nature and extent of service a construction cost estimator or construction contractor would provide. This requires ENGINEER to make a number of assumptions as to actual conditions that will be encountered on site; the specific decisions of other design professionals engaged; the means and methods of construction the contractor will employ; the cost and extent of labor, equipment and materials the contractor will employ; contractor's techniques in determining prices and market conditions at the time, and other factors over which ENGINEER has no control. Given the assumptions which must be made, ENGINEER cannot guarantee the accuracy of its opinions of cost, and in recognition of that fact, the CITY waives any claim against ENGINEER relative to the accuracy of ENGINEER's opinion of probable construction cost.

**Scope of Services**  
**APPENDIX 1**

**Project Fact Sheet**



Tier Classification: n/a - City

Design Standard: 2018 Standards and Specification  
Terrain: Level

Typical Section: 2 lane undivided with shoulders (partial) and curb/gutter (partial)

Right-of-Way: Existing: 50ft  
Proposed: 75ft

Detours: Offsite (road is closed)

School Buses: Yes

Bicycle Route: No

Sidewalk: No

Access Control: No

Noise Abatement: No

Railroad Involvement: No

Utility Impact: Medium (power, telecom, water, sewer)

Hazardous Sites: No impacts anticipated

Number of Parcels impacted: 5

Number of Relocatees: 0

Historic Sites: None anticipated

Archaeological Sites: None anticipated

Greenways: None

Grade Separations/  
Interchanges: None

Structures: 1 RCBC (assumed 20ft long)

Signals: None

General Comments: None

Project Length:

<u>Alignment</u>	<u>Routes</u>	<u>Design Lengths (LF)</u>	<u>Design Lengths (LF)</u>
L	Rivershore Rd	400'	500'
Y1	Fairfax Ave	100'	
	TOTAL LENGTH		500ft

# **Scope of Services**

## **APPENDIX 2**

### **Precision Measurements Land Surveying Scope**



**Precision Measurements Land Surveyors  
(PMLS)**

August 9, 2022

Topographic Survey of  
Rivershore Road  
Elizabeth City, NC  
PMI #22366

**Gregory R. Cols, PE**

M +1-9196067769

[gregory.cols@aecom.com](mailto:gregory.cols@aecom.com)

AECOM

**PROJECT LIMITS**

See attached sketch for limits depiction.

**SURVEY SERVICES**

PMI shall provide professional survey services as outlined below.

**TOPOGRAPHIC SURVEY**

1. Property Research - Immediately upon receipt of the notice to proceed, the SURVEYOR will compile data on all properties affected by the project. Data sources include available recorded and unrecorded documents from the OWNER, state agencies and private sources. Information to be obtained will include current owner names, deed book and page of conveyance, property lines, rights-of-way, easements and tax parcel information.
2. Horizontal Control - The horizontal datum for this project will be referenced to the North Carolina State Plane Coordinate System, North American Datum of 1983 (2011) (NAD 1983/2011). Measurements will be based on the U.S. Survey foot. Survey base lines will be established throughout the project limits. Semi-permanent survey markers (P-K nails, pins, etc.) will be set at all breakpoints along the survey base lines and referenced for recovery.
3. Vertical Control - The vertical datum will be referenced to the North American Vertical Datum of 1988 (NAVD 88) U.S. Survey Feet. Benchmarks will be verified for accuracy. Supplemental project benchmarks (railroad spikes, chiseled square, etc.) will be set throughout the project.
4. Property Ties - Field ties will be made to the boundaries of all affected properties. The boundaries of the properties will be computed and related to the project meridian and coordinate system.
5. Topographic Mapping - Planimetric and topographic mapping will be captured throughout the project limits. Base mapping will be provided 2D in Microstation digital format at a scale of 1"=25' and will utilize NCDOT Cad Standards. The topographic survey will include, but is not limited to:
  - Existing paved surfaces (including pavement markings)
  - Existing Buildings - type of structure, number of stories, building number, finished floor elevations located at the front door (if within the project limits)
  - Edge of pavement, edge of concrete, edge of gravel, curb and/or gutter, valley gutters, gutter pan
  - Sidewalks, driveways, ramps, concrete swales
  - Delineate gravel, concrete, asphalt and dirt driveways and parking areas (including pavement markings)
  - Ditches - top of bank, toe of slope, centerline of ditch, swales, top of water
  - \*Storm drain facilities (closed) - rims, inverts, and pipe sizes
  - \*Storm drain facilities (open) - inverts and pipe sizes, culverts, headwalls
  - \*Gravity sanitary sewer - rims, inverts and pipe sizes
  - Force mains - valves and any other above ground appurtenances
  - Water mains - valves, meters, hydrants and any other above ground appurtenances
  - Gas mains - valves and any other visible above ground appurtenances
  - Above ground traffic control devices
  - Underground telephone and T.V. - pedestals and any other visible above ground appurtenances
  - Underground electric - any visible above ground appurtenances
  - Utility poles - type of service and pole number

- Overhead wires - type of service
- Tree lines - large wooded areas, drip lines, ornamental landscaping limits, walls
- Single trees – 4-inch caliper and larger (type and actual caliper), if not in wooded area
- Mailboxes, posts, signs, fences (size and type)
- **\*\*Rights-of ways**
- **\*\*Property lines**
- **\*\*Recorded easements**
- **\*\*Property owners - name, deed reference, map reference and Tax ID**
- Riser Structure, outlet pipe, spillway (if necessary)
- Wetland Flags (to be delineated by others prior to commencement of survey and located by PMI)
- Hydrographic Soundings

6. A separate 3D DTM (.tin, .dgn format) file will be prepared for use in generating a digital terrain model. This drawing will consist of break lines, contours, and points located at the proper X, Y and Z coordinates. This file will be based on 1' contour intervals.

#### **UTILITY SURVEY (Quality Level-B)**

PMI will perform utility designation work in accordance with Quality Level B standards CI/ASCE 38-02, Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data. Non-metallic utilities without trace wire cannot be easily detected with designating equipment; therefore, if such utilities are encountered or indicated by records, they will be mapped in accordance with Quality Level C or Quality Level D.

Utility record research will also be performed for both public and franchise utilities within the project limits prior to designation. The research effort will include a site inspection to understand the field conditions at each location, contacting each utility company with underground utilities present to get copies of their records, pick up records at several different locations, and review records to make sure they are complete.

Every reasonable effort will be made to locate all systems of interest whether indicated on records available to us or not. However, we do not guarantee that all existing utility systems can or will be detected. Further, this service is not intended to detect non-utility structures such as, but not limited to: foundations, irrigation systems, septic systems, wells, tunnels, concrete or metal structures, or the true size and limits of subsurface utility vaults and manholes.

The designation results will be collected with total station/GPS survey and referenced to project datum. The results will be processed, annotated and merged into the final delivery file.

#### **UTILITY TEST HOLES (QL-A)**

PMI shall provide supplemental SUE QL-A utility test hole exploration. SUE QL-A exploration and data results shall be in accordance with ASCE 38-02.

1. The test hole excavations will be coordinated with NC811.
2. A utility data form will be provided for the utility test holes to provide:
  - a. Location (coordinates in project datum)
  - b. Anticipated type and size of target utility
  - c. Existing pavement type and thickness
  - d. Description
  - e. General utility condition
  - f. Type and location of the survey marker set to identify the test hole location.
  - g. Top elevation of utility based on a manual depth check.
  - h. Outside diameter measurement of utility, if possible.
  - i. A sketch (not to scale) indicating the street and or general test hole location, direction of utility, and reference distance ties to physical features
3. Utility test hole restoration will be completed in accordance with the roadway owner's standard.

4. PMI shall collect the SUE QL-A locations with total station survey and referenced to project datum. The results shall be processed, annotated and merged into the final survey file.

**DELIVERABLES**

2D Plan File (.dgn)  
3D Surface Model File (.dgn, .dat, .tin)  
Survey Control Sheets (.dgn)  
Test Hole Report (.pdf) (.dgn)

**LUMP SUM FEE**

Topographic Survey	\$ 12,958.00
Utility Survey (QL-B)	\$ 3,966.00
Utility Test holes (QL-A)	\$ 2,130.00
<b>Total:</b>	<b>\$ 19,054.00</b>

**OPTIONAL SURVEY SERVICES**

ROW Acquisition Plat	\$ 1800.00/parcel
ROW Monumentation (all monuments set in one mobilization)	\$ 1,240.00

**DELIVERY SCHEDULE**

Contingent upon favorable weather conditions and the absence of any project team delays, the survey files can be delivered within approximately six to eight (6-8) weeks after receiving executed notice to proceed and \*\*\*approved notification letters.

**ASSUMPTIONS/EXCLUSIONS**

\*Storm and Gravity Sewer (rims, inverts, size & material). Pipe system will be traced and shown to next structure outside of the project limits. Pipe inverts, size & material are determined to the best of our ability and if accessible. No confined space entry is included in this scope and fee.

\*\*Property lines, right-of-way, easements and owner information will be based on available tax assessor and courthouse information. No title report or title research will be performed with this scope and fee. All easements, restrictions or encumbrances that may affect the properties may not be reflected.

\*\*\*PMI assumes all right-of-entry and notification to private residents shall be handled by the owner/client.

Thank you for allowing us the opportunity to provide you with this proposal, utilizing our professional services. If I can be of any additional assistance or you have any questions, comments or require additional information, please feel free to contact me.

Respectfully,  
Precision Measurements, Inc.



Ivan Lineberry, L.S.  
757-368-0945

SURVEY LIMITS



Project Name: *Rivershore*  
 Client Name: *AECOM*

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8/9/2022 9:30

Survey Services **TASK 1:** TOPO **TASK 2:** UTILITY

Job Details  
 ACRES \_\_\_\_\_  
 LINEAR FEET \_\_\_\_\_  
 R/W WIDTH \_\_\_\_\_  
 # OF MANHOLES \_\_\_\_\_

**TASK 1: TOPO**

**TOPO , Hours by Classification (list up to 7 people)**

**Direct Labor (list up to 8 tasks):**

	Project Manager	Prof. Land Surveyor	Survey Technician	Field Coordinator	2 Person Crew	3 Person Crew	Admin	Total
Travel/Commute					4	2		6
Topographic Survey & Control					24			24
Hydro Survey						8		8
Property Recovery & Location					4			4
Property Research/Computations			12					12
Drafting/DTM Surface			24					24
Safety/Management/Coordination				4				4
Field Checks/Professional Review		8						8
<b>Hours Totals:</b>	0	8	36	4	32	10	0	90
<b>Hourly Labor Rate:</b>	\$194.00	\$194.00	\$112.00	\$116.00	\$155.00	\$195.00	\$65.00	
<b>Labor Subtotal (by Classification):</b>	\$0.00	\$1,552.00	\$4,032.00	\$464.00	\$4,960.00	\$1,950.00	\$0.00	

**TASK 2: UTILITY**

**UTILITY, Hours by Classification (list up to 7 people)**

**Direct Labor (list up to 8 tasks):**

	Project Manager	Prof. Land Surveyor	Survey Technician	Field Coordinator	2 Person SUE Crew	2 Person Crew	Admin	Total
Utility Coordination/Management/Research			2					2
Utility Designation and Locations					16			16
Drafting			4					4
Field Checks/Professional Review		1						1
Travel-Commute					4			4
<b>Hours Totals:</b>	0	1	6	0	20	0	0	27
<b>Hourly Labor Rate:</b>	\$194.00	\$194.00	\$112.00	\$116.00	\$155.00	\$155.00	\$65.00	
<b>Labor Subtotal (by Classification):</b>	\$0.00	\$194.00	\$672.00	\$0.00	\$3,100.00	\$0.00	\$0.00	

**TOPO , Other Direct Costs:**

	UNITS	UNIT COST	ITEM COST
OTHER:		\$ -	\$ -
OTHER:		-	-
OTHER:		-	-
OTHER:		-	-
<b>TOPO , SUBTOTAL:</b>		\$	-

**SUMMARY, TOPO :**

Hours	90
Labor Subtotal	\$12,958.00
Direct Costs	\$ -
<b>TASK 1, TOTAL</b>	<b>\$12,958.00</b>

**UTILITY, Other Direct Costs:**

	UNITS	UNIT COST	ITEM COST
QL-A Test Holes and Repair Materials	2	\$ 1,065.00	\$ 2,130.00
OTHER:		-	-
OTHER:		-	-
OTHER:		-	-
<b>UTILITY, SUBTOTAL:</b>		\$	2,130.00

**SUMMARY, UTILITY:**

Hours	27
Labor Subtotal	\$3,966.00
Direct Costs	\$ 2,130.00
<b>TASK 2, TOTAL</b>	<b>\$6,096.00</b>

**COMBINED SUMMARY:**

Hours	117
Labor Subtotal	\$16,924.00
Direct Costs	\$ 2,130.00
<b>TOTAL</b>	<b>\$19,054.00</b>