



Quible & Associates, P.C.

ENGINEERING • ENVIRONMENTAL SCIENCES • PLANNING • SURVEYING
SINCE 1959

P.O. Drawer 870
Kitty Hawk, NC 27949
Phone: 252-491-8147
Fax: 252-491-8146
web: quible.com

February 20, 2019

Attn: Diane Miller, Manager, Town of Oriental
Lexia Weaver, NCCF

Re: Proposal for Professional Engineering Services
Whittaker Pointe Shoreline Stabilization and Restoration
Oriental, Pamlico County, North Carolina

Quible & Associates, PC (Quible) along with Gary Greene Engineers (Gary Greene) is pleased to present this Proposal for Professional Services (Proposal) to The Town of Oriental and the North Carolina Coastal Federation (NCCF) [Client]. The Proposal is for professional surveying, environmental consulting, and engineering design and permitting services necessary to stabilize and protect Whittaker Pointe and to enhance environmental conditions by developing living shoreline components into the stabilization design.

This Proposal outlines, to the best of our abilities and based upon known current conditions, the professional services that we feel are necessary to ensure successful design and implementation of this important project. The fees in this proposal are for Items I, II and III only, but we have described the scope for Items IV, V and VI. Once the preliminary design phase is complete, we will provide fees through the construction Phase.

SCOPE OF SERVICES

Based on our understanding of the project and our site visit, Quible shall perform the following professional services for the referenced project.

I. Preliminary Phase

- A. Initial Consultation: Consult with Client or designated representative, to define and clarify requirements for the project development plan, goals, objectives and available data. This includes meetings and email, telephone correspondences.
- B. County geographical information system (GIS) data, survey data from surrounding properties, LIDAR, Soils, existing Waterway Mapping information, etc. shall be used to develop a base map. This data will be compiled and maintained throughout the project and upgraded as new field data is available. This base map will then be utilized to proceed with further site assessment work and preliminary engineering layout. This will include historic aerial photograph digitization of shorelines to depict shoreline migration and erosion rates.
- C. Coordination with adjacent land owner(s) to establish co-applicant support, to discuss possible staging areas and access.
- D. Historic Tidal Water Levels and Wind Data Compilation for use in permit and design phase justification. The water level data will be based on nearby gauge used for flood

level monitoring. Wind data will be based on nearby wind roses along with data from non-tornadic / non-tropical database for typical conditions as well as data on tropical (hurricane) conditions.

- E. Preliminary On-Site Meeting with NC Division of Coastal Management (NCDCM), US Army Corps of Engineers (USACE), NC Division of Marine Fisheries (NCDMF) and NC Division of Water Resources (NCDWR).

II. Field Survey and Data Collection:

- A. Bathymetric Survey:
Current water depths in and around Whittaker Pointe will be surveyed and plotted. Water depths will be based on normal water level (NWL) as required by DCM in this region. We will use survey grade GPS and we will tie into nearby survey control. In the water, we will use an echosounding device that is tied to our survey grade GPS system.
- B. Coastal Wetland and Section 404 Wetland Delineation and Confirmation:
We will delineate and survey all coastal wetlands and Section 404 non-coastal wetlands in the project area. Field representatives from NCDCM and USACE will confirm our findings.
- C. Submerged Aquatic Vegetation (SAV) Surveying:
The SAV survey must include examination of the substrate for the presence of SAV growth. Typical methodology for a SAV analysis is to perform the work in the spring to summer seasons, where there is near-peak vegetative growth (May-September is best). Permit agencies require SAV analyses to be performed during near-peak growing periods. The State of North Carolina protects areas that are dominated by submerged aquatic vegetation (SAV), which are called "SAV beds".

We understand that we are currently not within the preferred SAV surveying time of year. In order to attempt to meet the goals of expediting the permitting timeframe of this project to be able to reach the construction phase ASAP, we propose to perform our survey in March and to include an evaluation for subsurface rhizomes in addition to mapping exposed biomass. We will most likely be required to perform a secondary SAV survey in May. This scope includes a March and May survey.

- D. Topographic Survey of Land Features
- E. Coring:
We will establish 4-6 coring stations in the river to determine the substratum types for design phase services. This will be conducted with a vibra-core system where we will collect core samples in aluminum pipes that will be split and lithologically categorized. Logs will be provided to regulatory agencies and findings will be incorporated into the design criteria. We will save samples for geotechnical laboratory analyses if needed in the design phase in relation to underlayment recommendations and settlement estimates.

III. Preliminary Design

A. Based on Survey and Data Collection findings, we will develop preferred shoreline protection concepts and alignments. We will work with the Client to ensure compatibility with the goals and anticipated budgets. The following will be considered:

- Types of materials (densities, costs, portability), including alternate "filler" materials
- Height and width of structures
- Underlayment
- Maintenance
- The ability for the design concepts to be implemented/completed by local qualified contractors

B. Reclamation and Restoration Concepts:

We will evaluate the ability and practicality of restoring lands that have eroded in recent years. It is likely that some areas can be restored to wetland elevations and vegetated. This step will consider potential sources of compatible fill and methods in which fill can be transported to the Site.

C. Habitat Enhancement:

We will evaluate the benefit and ability to provide beneficial living shoreline and habitat enhancement features, such as:

- Native plantings (live plants and seed)
- Oyster Shell (loose cultch and oyster shell filled bags)
- Atlantic Reefmaker® and other similar systems
- Slotted breakwater systems
- Osprey nesting boxes

A. Wave Modeling

Based on bathymetry, wind and water levels, wave model development will be established followed by shoaling and diffraction to the site.

B. Interagency Scoping Meeting:

We find that it is best to hold an interagency scoping meeting that includes representatives from pertinent regulatory divisions that will ultimately have an opportunity to review the CAMA permit application. Prior to the scoping meeting we will select the Preferred Alternative and present this as the subject of the scoping meeting. This will be accompanied by preliminary design drawings and a project narrative.

C. Preliminary Opinion of Construction Costs:

Based on the findings above and Client coordination, we will provide a preliminary opinion of building costs for the preferred alternative. As we continue the design and permit phases of this project, preliminary budgetary figures will be refined and adjusted.

D. Assistance with construction easement and water-based staging identification

IV. Design and Permitting Phase (Not in Contract at This Time)

- A. We will prepare design development drawings and specifications. Design Documents will be refined and updated during the review and permitting phases of the project and ultimately will develop into Construction Documents. Said drawings shall at a minimum comply with applicable standards and requirements of the local municipality, North Carolina Department of Environmental Quality (NCDEQ), and any other regulatory body with appropriate jurisdiction. Services provided by Quible and Gary Greene are generally described as follows:
1. Coordinate design with all appropriate Divisions of NCDEQ and USACE.
 2. Prepare Contract Documents to include final drawings and specifications showing the scope, extent, and character of the work to be performed and furnished by the Contractor. Specifications shall be prepared, where appropriate, in general conformance with Engineers Joint Contract Document Committee (EJCDC) criteria.
 3. A project manual including EJCDC Standard Forms and General Conditions documents.
- B. Obtain Client's written approval of Design Development Documents before proceeding with permitting and Construction Documents.
- C. Quible shall assist NCCF with preparation and submission of Permit Applications/Forms. Applications for the required permits and approvals shall be prepared for submittal to the respective agencies. This scope of work assumes that the following permits and approvals will be required:
1. CAMA Major Permit;
 2. 401 Water Quality Certification;
 3. USACE General Permit through the joint "291" process
- D. Coordinate with Client and respective regulatory agencies for review and make all agreed upon changes as required.
- E. Finalize Construction Documents suitable for construction of proposed new improvements.

V. Bidding (Not in Contract at This Time)

- A. Quible will prepare "front-end" documents necessary for providing a bid package to accompany the plans and technical specifications. It is understood that this will be a formal bid and contractual process.
- B. Assist in bidding and executing the construction contract, including:
- Identification of prospective bidders
 - Preparation of invitation to bid

- Coordinate Bid Advertisement
- Attendance at the on-site pre-bid conference
- Issuance of addenda
- Provide bid alternatives for possible cost savings
- Bid tabulation, review and recommendation of award
- Notice of Award
- Preparation of the construction contract
- Notice to Proceed

VI. Construction Phase (Not in Contract at This Time)

- A. General administration of the construction contract, including the following:
1. Conducting the pre-construction conference;
 2. Weekly site visits (and more frequent for critical inspections) and progress meetings;
 3. Review shop drawings, diagrams, illustrations, catalog data, samples, test results, inspections, and other data which the Contractor submits for compliance with their contracts;
 4. Rock inspections at the quarry or staging yard;
 5. Preparation of contract change orders that do not involve substantial changes in the general scope of the project;
 6. Review and certify applications for payment;
 7. Conduct inspections and start-up;
 8. Substantial completion inspection and preparation of a punch-list;
 9. Final notice of acceptability of work;
 10. Engineer's certification to NCDEQ;
 11. Record drawings shall be provided in the form of a pdf scan of the Contractor's red-lined drawings.
- B. Quible and Gary Greene will provide construction inspection services at critical stages of the project and as necessary to accept and certify the work.

PAYMENT TO ENGINEER

Client shall pay Quible for services rendered under this Proposal on a lump sum basis as follows:

| Task | Lump Sum Fee |
|--------------------------------------|--------------|
| I. Preliminary Phase | \$ 5,780 |
| II. Field Survey and Data Collection | \$ 8,800 |
| III. Preliminary Design | \$ 11,840 |
| <hr/> | <hr/> |
| Total in Current Contract | \$ 26,420 |

This Proposal is based on the following considerations:

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1. Costs for Phases IV, V and VI will be provided in separate contract once the preferred alternative is selected.
2. Application and submittal fees will be provided by Client.
3. Geotechnical laboratory testing is not included, but lithologic subsurface geologic descriptions are. If pile and sheet supported structures are incorporated into the design, testing for embedment and foundation support may be required.
4. Construction stakeout, easement plat preparation and boundary surveying is not included in this Proposal, but may be provided for agreed upon additional compensation if authorized in writing by the Client by Amendment.
5. State Erosion Control Permitting (SESCP)- A SESCO Permit is not included. This would be required if the total land disturbance exceeds 1 acre. In the past, no SESCO Permit has been required for reclaiming shoreline areas now under water or for construction of offshore sills or revetments.
6. If authorized in writing by Client, and agreed to by Quible, services beyond the scope of this Proposal will be performed by Quible for agreed upon additional compensation by Amendment.

Proposal Conditions

Statements for services rendered, through the 25th day of each month, will be presented for payment on the first day of the subsequent month. Each monthly statement amount shall be due and payable on or before the 30th day on the invoice month. Any unpaid balance aged 30 days or more shall be subject to a service charge of 1.5% per month until paid in full, including the service charge.

We appreciate the opportunity to be of service to the Town of Oriental and NCCF and look forward to proceeding with this important project. If you have any questions, please contact us at 252.491.8147 or by e-mail at brubino@quible.com.

Sincerely,
Quible & Associates, PC

In witness whereof, the parties hereto have executed this Agreement for authorization of services described herein:

Quible & Associates, P.C. (Quible)

Signature  _____

By: Brian D. Rubino, P.G.

Title: Vice President

Date Signed: 2/20/2019

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