

May 16, 2022

Mr. Sean T. Cardwell, Civil Engineer I  
Town of Greenwich  
Department of Public Works - Engineering Division  
101 Field Point Road  
Greenwich, CT 06830

Re: ***North Street Bridge – Emergency Bridge Replacement Design***  
Our Reference No. 22046

Dear Mr. Cardwell:

**Wengell, McDonnell & Costello, Inc. (WMC)** respectfully requests the Town's consideration of this Proposal to provide emergency bridge repair design and construction administration services. The following is our proposed scope of services and fee proposal:

Our approach to meeting the Town's goals for the project includes:

- Meet with Town personnel to further discuss the details of the project and go over key issues and milestones to be met and addressed
- Perform detailed topographic and property surveys as well as wetland delineation
- Geotechnical evaluation including borings
- Preliminary engineering evaluation, including hydrologic and hydraulic evaluation, scour evaluation, structure type study, preliminary engineering report including cost evaluations
- Utility coordination
- Interagency Coordination Meeting
- Regulatory approvals including various State DEEP, Federal and local approvals
- Community Participation Program including a public information meeting to keep the public aware of the project and its potential impacts
- Final Design and cost opinion

## **PHASE 1 – DESIGN SERVICES**

### **Task 1 – Survey and Borings**

WMC will have wetlands (State and Federal) delineated by a certified soil scientist along with ordinary high water. WMC will have survey of the bridge performed, required for design and permitting of the replacement structure. WMC will prepare a boring plan and will obtain the services of a boring contractor.

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WMC will perform right-of-way, topographic, and stream channel surveys in the field for the road and in the vicinity of the bridge as required to prepare base mapping for project design and preparation of construction drawings. Field work will generally consist of the following:

- control survey and establishment of vertical benches and horizontal control points. All work will be based upon CCGS datum for horizontal control and USGS datum for vertical control, if existing horizontal and/or vertical control can be found within 0.5 mile of the bridge, otherwise assumed datum would be used
- perform research at Town offices and field survey at the site to establish the existing roadway right-of-way within the required standards of Class A-2 survey, and identify property owners abutting the project area. Research will consist of identifying property owners within the project area from assessor's mapping and then locating available mapping for those owners through a search of local map reference books and recent deed references. Field work will consist of spotting and locating existing pins that are readily evident from existing mapping and/or observed in the field
- topographic survey, approximately 200 feet upstream and downstream of the existing roadway centerline and approximately 200 feet on either approach to the bridge, locating buildings/garage structures, utility poles, guide rails, roadway(s), driveways, drainage structures, manhole covers, stone walls, significant trees, landscaped features including ornamental trees, shrubs, and bushes located on private property, and any other topographic features deemed pertinent for design within the project area
- stream channel sections suitable for hydraulic modeling (typically 8), in accordance with ConnDOT guidelines, will be performed. Existing Town, USGS mapping or FEMA topographic mapping will be utilized where appropriate
- location and mapping of all Federal, State and local wetland boundaries as determined by a certified soil scientist within the project area
- schedule of property owners and preparation of property maps as may be required for easements, takings and abandonments. Easement/taking maps to be Class A-2, temporary construction easements to be Class D. Up to four maps are anticipated

We will prepare a topographic base map of the bridge at a scale suitable for design, such as 1' = 40', including centerline layout, buildings, driveways, guide rails, drainage structures, stream channel, wetlands, utilities, and spot elevations as required for preparation of preliminary horizontal and vertical alignments. In addition, WMC will prepare a detailed topographic map of the proposed bridge area at a scale of 1" = 20' for the proposed structure plan.

### **Task 2 - Preliminary Engineering/Design**

WMC prepare preliminary engineering design drawings and outline specifications for the replacement of the structure. This will represent an approximately 30% completion of the design.

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A structure study will be performed and WMC will evaluate appropriate structure types for replacement and will make recommendation to the Town based upon cost, hydraulics, constructability, staging for M&P of traffic, speed of construction, long term maintenance, permissibility, etc. Based upon our preliminary review, if replacement is recommended, it is likely that a clear span bridge with or without integral abutments, will be the most cost effective replacement structure.

Based upon the selected structure, we will prepare preliminary design drawings for the bridge for submittal to the Town for review and approval. Preliminary design will initiate with a project team meeting including the Town and WMC. This will be followed by the submittal of 1" = 40' scale preliminary design drawings outlining the layout and general conditions of the preferred roadway alignment and structure type. Generally, this phase will represent a 30% design submission including:

- 1" = 20' scale or 1" = 40' scale plan/profile sheets of the proposed horizontal and vertical roadway alignment, including centerline geometry, pavement transitions, guide railing, drainage, cut and fill lines, etc.
- 50 foot and critical cross sections
- typical roadway sections
- preliminary structure design sheets
- M & P/Construction phasing sheet
- schematic drainage design
- preliminary cost opinion
- prepare 30% plan submission to the Town for review
- Attendance at 30% design review meeting
- preparation of visual aids and presentation of design at a public information meeting

### **Task 3 – Public Information Meeting and Regulatory Approvals**

WMC will prepare for and attend a public information meeting on the project. WMC will prepare and attend the interagency coordination meeting and any other meetings required for project approval. This will include local approvals as well as DEEP and Army Corps approvals. We have assumed a Preconstruction Notification level of Army Corps permit will be required and that an Environmental Report will be required.

### **Task 4 – Final Design**

WMC will prepare 90% and 100% design plans along with special provisions and any other necessary specification needed for bidding the project. Based upon the preliminary design and public meeting input, final detailed drawings and contract documents will be prepared for public bidding.

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Final design will generally include the following:

- final highway design and preparation of final highway construction drawings generally including a title sheet, 1" = 20' or 1" = 40' scale plan/profile highway sheets, typical section(s) and erosion & sedimentation control details, cross section sheets, drainage details, miscellaneous details, M&P of traffic, temporary construction and permanent signing, pavement markings and guide rail detail sheets
- final design and preparation of final structure construction drawings generally including, as appropriate, 1" = 20' scale structure plan & elevation, wingwall plans, wingwall sections and elevations, structural details and bridge rail details
- maintenance and protection of traffic assuming staged construction or alternatively closing the road during construction.
- final drainage design
- final signing and pavement markings
- utility coordination, including reports of meetings and review of utility company plans
- detailed opinion of construction quantities and costs
- prepare 90% and 100% plan submission to the Town for review
- Connecticut DOT Form 818 will be utilized as the base technical specifications and WMC will prepare supplemental technical specifications, special provisions and quantity estimate, as necessary for public bidding and award of the contract
- WMC will submit one set of final plans, an original copy of all special provisions and mylars of contract drawings for public bidding by the Town
- attend review meetings with the Town

### **Fee Proposal**

Based upon the work required, WMC proposes to complete the design scope of services for the following Lump Sum and Direct Cost fees:



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Tasks 1 through 4 are Lump Sum fees.

<b><u>Task 1 – Survey and Borings</u></b>	<b>\$ 5,000</b>
<b><u>Task 2 - Preliminary Engineering</u></b>	<b>\$ 42,000</b>
<b><u>Task 3 – Public Information Meeting and Regulatory Approvals</u></b>	<b>\$ 39,000</b>
<b><u>Task 4 – Final Design</u></b>	<b>\$ 70,000</b>

The following Direct Costs are “as incurred” not to exceed fees.

**Direct Costs**

Wetlands Delineation	\$ 2,000
Survey	\$ 20,000
Borings	\$ 16,000
Geotechnical Engineering	\$ 6,000
Environmental Report	\$ 4,000
Temporary Traffic Signal Design (If Needed)	\$ 6,500
<b>Total Estimated Fee</b>	<b>\$210,500</b>

**PHASE 2 – CONSTRUCTION OBSERVATION & ADMINISTRATION AND DESIGN SERVICES DURING CONSTRUCTION**

This phase of work shall included all construction obersavation and administration tasks related to construction of the bridge. It shall also include design service during construction which covers the review of shop drawings, working drawing submissions and all other Contractor submittals. The phase 2 fees shall be negotiated prior to construction when the structure type has been finalized and the number of construction calendar days is known.

We have excellent availability and look forward to assisting the Town with this important project. Should you have any questions concerning this proposal, please do not hesitate to call.

Sincerely,

**Wengell, McDonnell & Costello**

A handwritten signature in blue ink that reads 'Keegan O. Elder'.

Keegan O. Elder, P.E.  
Vice President