

# **Scope of Services (SOS)**

## **Section 1 - General**

### **1.01 Project Description and Location**

Project Name: Half Moon Bay Bridge (BIN 2270050) Reconstruction Project  
PIN:8763.05

Project Description: In order to address past safety flags and inspections, the Village is moving ahead with the rehabilitation/reconstruction of the Half Moon Bay Bridge. The consultant is expected to perform inspections, prepare a report and present options for this renovation.

Project Limits: The project limit to be considered is the entire area around the bridge structure as well as both approaches. The total distance is approximately 240 linear feet from the intersection of Elliot Way to the approach past the eastern abutment.

Sponsor: Village of Croton-on-Hudson

Town of Cortlandt

Westchester County

The anticipated start date of preliminary design: February, 2024

The anticipated letting date: November 2024 (dependent on coordination with railroad)

The construction completed date. April 2026

The anticipated design costs. \$ 200,000

The anticipated construction costs \$ 1,500,000 (preliminary estimate only, subject to change)

### **1.02 Project Manager**

The **Sponsor's** Project Manager for this project is Frank Balbi, P.E., Superintendent of Public Works, who can be reached at (914) 271-3775, or [fbalbi@crotononhudson-ny.gov](mailto:fbalbi@crotononhudson-ny.gov).

All correspondence to the **Sponsor** should be addressed to 1 Van Wyck Street, Croton-on-Hudson, NY 10520. The use of email shall be appropriate unless original documents are required.

The Project Manager should receive copies of all project correspondence directed other than to the **Sponsor**.

### **1.03 Project Classification**

This project is assumed to be a Class II action under USDOT Regulations, [23 CFR 771](#)<sup>1</sup>. Classification under the New York State Environmental Quality Review Act (SEQRA) Part 617, Title 6 of the Official Compilation of Codes, Rules, and Regulations of New York State (6 NYCRR Part 617) is assumed to be Type II.

### **1.04 Categorization of Work**

Project work is generally divided into the following sections:

Section 1	General
Section 2	Data Collection & Analysis
Section 3	Preliminary Design
Section 4	Environmental

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<sup>1</sup> <http://www.ecfr.gov/cgi-bin/textidx?c=ecfr&SID=d21c8e6f33a02787d9b788103bac7b9d&rgn=div5&view=text&node=23:1.0.1.8.43&idno=23>

Section 5	Right-of-Way
Section 6	Detailed Design
Section 7	Advertising, Bid Opening, and Award
Section 8	Construction Support
Section 9	Construction Inspection
Section 10	Estimating & Technical Assumptions

When specifically authorized in writing to begin work, the **Consultant** will render all services and furnish all materials and equipment necessary to provide the **Sponsor** with reports, plans, estimates, and other data specifically described in Sections 1, 2, 3, 4, 5, 6, 7, 8, 9 and 10. [Note: Retain the list of all sections above and on the last line only select the sections which will be retained in the SOS Document]

## 1.05 Project Familiarization

The **Sponsor** will provide the **Consultant** with the following information:

- Approved project initiation document (Initial Project Proposal or similar documentation) indicating project type, project location, cost estimate, schedule, and fund source(s).
- Transportation needs.
- Accident records and history.
- Most recent bridge inspection and condition report, NYSDOT weighted-average bridge condition rating, FHWA sufficiency rating, and NYSDOT Bridge Management System rating.
- Record plans.
- Anticipated permits and approvals (initial determination).
- Available project studies and reports.
- Other relevant documents pertaining to the project.

The **Consultant** will become familiar with the project before starting any work. This includes a thorough review of all supplied project information and a site visit to become familiar with field conditions.

## 1.06 Meetings

The **Consultant** will prepare for and attend all meetings as directed by the **Sponsor's Project Manager**. Meetings may be held to:

- Present, discuss and receive direction on the progress and scheduling of work in this contract.
- Present, discuss, and receive direction on project specifics.
- Discuss and resolve comments resulting from the review of project documents, advisory agency review, and coordination with other agencies.
- Preview visual aids for public meetings.
- Manage subconsultants and subcontractors.

The **Consultant** will be responsible for the preparation of all meeting minutes; the minutes will be submitted to meeting attendees within one (1) week of the meeting date.

## 1.07 Cost and Progress Reporting

For the duration of this contract, the **Consultant** will prepare and submit to the **Sponsor** on a monthly basis a Progress Report in a format approved by the **Sponsor**. The Progress Report must contain the *Cost Control Report*.<sup>2</sup> The beginning and ending dates defining the reporting period

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<sup>2</sup> <https://www.dot.ny.gov/plafap/view-document?id=1598>

must correspond to the beginning and ending dates for billing periods so that this reporting process can also serve to explain billing charges. (In cases where all work under this contract is officially suspended by the **Sponsor**, this task will not be performed during the suspension period.) Generally the Cost Control Report will be submitted as part of the monthly invoicing.

### 1.08 Policy and Procedures

- The design of this project will be progressed in accordance with the current version of the [\*NYSDOT Local Projects Manual \(LPM\)\*](#)<sup>3</sup> including the latest updates.
- If there are conflicts between local policies and procedures and those listed in the *LPM* those listed in the *LPM* take precedence.

### 1.09 Standards & Specifications

The project will be designed and constructed in accordance with the current edition of the NYSDOT Standard Specifications for Construction and Materials, including all applicable revisions.

### 1.10 Subconsultants

The **Consultant** will be responsible for:

- Coordinating and scheduling work, including work to be performed by subconsultants.
- Technical compatibility of a sub-consultant's work with the prime consultant's and other subconsultants' work.

### 1.11 Subcontractors

The procurement of subcontractors must be in accordance with the requirements set forth in the *NYSDOT LPM*.

## Section 2 - Data Collection and Analysis

### 2.01 Design Survey

#### A. Ground Survey

The **Consultant** will provide terrain data required for design by means of a topographic field survey. Boundary Survey is explicitly excluded from the scope of services. Approximately property lines, boundary and right of way lines will be identified from available mapping and shall be considered approximate.

#### B. Photogrammetric Survey Intentionally Left Blank

#### C. Stream Survey Intentionally Left Blank

#### D. Survey of Wetland Boundaries Intentionally Left Blank

#### E. Supplemental Survey

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<sup>3</sup> <https://www.dot.ny.gov/plafap>

<sup>9</sup> [https://www.dot.ny.gov/portal/pls/portal/MEXIS\\_APP.EI\\_EB\\_DOC\\_DETAILS.show?p\\_arg\\_names=doc\\_id&p\\_arg\\_values=10618](https://www.dot.ny.gov/portal/pls/portal/MEXIS_APP.EI_EB_DOC_DETAILS.show?p_arg_names=doc_id&p_arg_values=10618)

The **Consultant** will provide supplemental surveys when needed for design purposes and to keep the survey and mapping current.

F. Standards

The survey will be done in accordance with the standards set forth in the [\*NYS DOT Land Surveying Standards and Procedures Manual\*](#)<sup>4</sup> and in accordance with local standards described in Section 10 of the SOS.

## 2.02 Design Mapping

The **Consultant** will provide the following design mapping:

- 1:2500 scale mapping (large-scale projects only).
- 1:250 scale mapping with 0.5 meters or 2-foot contour intervals.

The **Consultant** will provide supplemental mapping when needed for design purposes and keep the mapping current for the duration of the project.

## 2.03 Determination of Existing Conditions

The **Consultant** will determine, obtain or provide all information needed to accurately describe in pertinent project documents the existing conditions within and adjacent to the project limits.

## 2.04 Accident Data and Analysis

The **Sponsor** will provide accident records for the last three years for roads within the project limits plus one-tenth of a mile immediately outside of the project limits. The **Consultant** will prepare collision diagrams and associated summary sheets and note any clusters of accidents or patterns implying inadequate geometrics, or other safety problems, within the project limits. A formal accident analysis is not required.

## 2.05 Traffic Counts

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## 2.06 Capacity Analysis

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## 2.07 Future Plans for Roadway and Coordination with Other Projects

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## 2.08 Soil Investigations

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## 2.09 Hydraulic Analysis

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## 2.10 Bridges to be rehabilitated

A. Inspection

The **Consultant** will perform an in depth field inspection of each bridge to determine its condition, to establish the rehabilitation work necessary, and to prepare a Level I load rating. The intent is to supplement the inspection done as part of NYS DOT's

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<sup>4</sup> <https://www.dot.ny.gov/divisions/engineering/design/design-services/land-survey/repository/LSSPM09.pdf>

on-going bridge inspection program, not to duplicate it.

The **Consultant** will perform and document the findings of in-depth inspection of each bridge in accordance with the current AASHTO “Manual for Condition Evaluation of Bridges.”

#### B. Bridge Deck Evaluation

For Bridges in which the deck will be rehabilitated, the Consultant will perform a bridge deck evaluation in accordance with [NYSDOT Bridge Deck Evaluation Manual](#)<sup>5</sup> and [NYSDOT Bridge Inspection Manual](#).<sup>6</sup>

The existing deck has an asphalt overlay which limits information that can be gathered. Sounding and potential evaluation techniques will not be used on the top of the deck. The evaluation of the top will be visual only.

#### C. Load Rating of Existing Bridge

The **Consultant** will perform a Level 1 load rating of each existing bridge in accordance with NYSDOT’s *Uniform Code of Bridge Inspection*. Immediately upon completion, the **Consultant** will transmit two copies of the load rating calculations and summary sheets to the **Sponsor** and the Regional Local Projects Liaison for filing.

#### D. Fatigue Evaluation

The **Consultant** will analyze, in accordance with the current AASHTO *Guide Specification for Fatigue Evaluation of Existing Bridges*, those metal structural elements which will or may be retained in the rehabilitated bridge. Where this guide specification does not apply (e.g., severe corrosion, mechanical damage, repaired fatigue damage, wrought iron instead of steel, etc.), the **Consultant** will develop an appropriate approach for comprehensive fatigue evaluation while maintaining close coordination with the **Sponsor** for guidance and input. The **Consultant** will then conduct the evaluation accordingly.

For situations where the calculated remaining safe life is less than the planned remaining service life, the **Consultant** will develop various conceptual strategies to improve fatigue performance and/or safely manage the risk. The **Consultant** will prepare and submit to the **Sponsor** a technical memorandum documenting the relative advantages, disadvantages, and approximate costs of each strategy along with specific recommendations.

The **Sponsor** will determine the strategy to be adopted.

For situations where the calculated remaining safe life is equal to or greater than the planned remaining service life, the **Consultant** will prepare and submit to the **Sponsor** a technical memorandum documenting the results of the fatigue evaluation.

### 2.11 Pavement Evaluation

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## Section 3 - Preliminary Design

### 3.01 Design Criteria

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<sup>5</sup> [https://www.dot.ny.gov/divisions/engineering/structures/repository/manuals/br\\_deck\\_manual/bridge\\_deck\\_eval\\_manual\\_1992.pdf](https://www.dot.ny.gov/divisions/engineering/structures/repository/manuals/br_deck_manual/bridge_deck_eval_manual_1992.pdf)

<sup>6</sup> <https://www.dot.ny.gov/divisions/engineering/structures/manuals/bridge-inspection>

The **Consultant** will identify the applicable design standards to be used for this project and will establish project-specific design criteria in accordance with the [NYSDOT Project Development Manual](#)<sup>7</sup>

The **Sponsor** will approve the selected project design criteria and will obtain NYSDOT concurrence (either by written submission or at a meeting).

Based on the selected design criteria, the **Consultant** will identify all existing non-standard features that are within and immediately adjacent to the project limits. Non-standard features that correlate with a high accident rate will be noted.

### 3.02 Development of Alternatives

#### A. Selection of Design Alternative(s)

The **Consultant** will identify and make rudimentary evaluations of potential design alternative concepts that would meet the **Sponsor's** defined project objectives. These evaluations are not to be carried beyond the point of establishing the feasibility of each concept as a design alternative; only those significant environmental and geometric design constraints that bear on the feasibility should be identified.

For each concept the **Consultant** will prepare rudimentary sketches of plan, profile, and typical section views which show:

- **On plan:** proposed centerlines; pavement edges; curve radii and termini; and existing approximate ROW limits.
- **On profile:** theoretical grade lines; critical clearances; vertical curve data; grades; and touchdown points.
- **On typical section:** lane, median, and shoulder widths; ditches; gutters; curbs; and side slopes.
- **Where necessary:** important existing features.
- **Where pertaining to feasibility:** significant environmental and geometric design constraints, labeled as such.

These sketches will include only the minimum information needed to select design alternatives to be studied in further detail.

The **Consultant** will meet with the **Sponsor** to discuss the concepts, using the sketches as discussion aids to describe the relative order-of-magnitude costs, advantages, disadvantages, and problem areas of each. From these concepts, the **Sponsor** will select one or in some cases more, design alternative(s) for further development.

#### B. Detailed Evaluations of Alternative(s)

The **Consultant** will further evaluate the selected design alternative and the null alternative with specific engineering analyses and considerations. Analyses will be conceptual and limited to determining the relative suitability of each design alternative, and will include:

- Design geometry, including the identification and comparison of alignment constraints and (where applicable) justification for retaining nonstandard design features, per the [NYSDOT Highway Design Manual](#).<sup>8</sup>
- Environmental constraints and potential environmental impact mitigation measures (identified under Section 4 tasks).

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<sup>7</sup> <https://www.dot.ny.gov/divisions/engineering/design/dqab/pdm>

<sup>8</sup> <https://www.dot.ny.gov/divisions/engineering/design/dqab/hdm>

- Traffic flow and safety considerations, including signs, signals, and level of service analysis for intersections.
- Pavement.
- Structures, including bridges, retaining walls, major culverts, and building alterations (limited to establishing basic concepts, accommodating clearances and streamflow, and estimating costs). Bridge investigative work (inspection, deck coring, etc.) is covered under Section 2.
- Drainage.
- Maintenance responsibility.
- Maintenance and protection of traffic during construction.
- Soil and foundation considerations.
- Utilities.
- Railroads.
- Right-of-way acquisition requirements.
- Conceptual landscaping (performed by a Registered Landscape Architect).
- Accessibility for pedestrians, bicyclists and the disabled.
- Lighting.
- Construction cost factors.

The **Consultant** will prepare the following drawings for each design alternative analyzed:

- 1:250 plans showing (as a minimum) stationed centerlines; roadway geometrics; major drainage features; construction limits; cut and fill limits; and proposed right-of-way acquisition lines.
- Profiles, at a scale of 1:250 horizontal and 1:50 (maximum) vertical, showing (as a minimum) the vertical datum reference; significant elevations; existing ground line; theoretical grade line; grades; vertical curve data including sight distances; critical clearances at structures; centerline stations and equalities; construction limits; and superelevation data.
- Typical sections showing (as a minimum) lane, median, and shoulder widths; ditches; gutters; curbs; and side slopes.

### 3.03 Cost Estimates

The **Consultant** will develop, provide and maintain a cost estimate for each design alternative.

The **Consultant** will update the estimate periodically and as necessary to incorporate significant design changes.

### 3.04 Preparation of Draft Design Approval Document

For this project, the Design Approval Document (DAD) will be a Design Report.

The **Sponsor** will make all determinations not specifically assigned to the **Consultant** which are needed to prepare the Draft DAD.

The **Consultant** will prepare a Draft DAD, which will include the results of analyses and/or studies performed in other Sections of this document. The DAD will be formatted as specified in the NYSDOT [Project Development Manual \(PDM\)](https://www.dot.ny.gov/divisions/engineering/design/dqab/pdm).<sup>9</sup>

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<sup>9</sup> <https://www.dot.ny.gov/divisions/engineering/design/dqab/pdm>

The **Consultant** will submit three copies of the Draft DAD to the **Sponsor** for review. The **Sponsor** will review the Draft DAD and provide the **Consultant** with review comments. The **Consultant** will revise the Draft DAD to incorporate the comments.

The **Consultant** will revise the DAD to reflect NYSDOT and/or FHWA comments. The **Sponsor** will sign the cover sheet and submit 3 copies of the revised report to the NYSDOT for signature by the FHWA.

### 3.05 **Advisory Agency Review**

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### 3.06 **Public Information Meeting(s) and/or Public Hearing(s)**

#### A Public Information Meeting(s)

The **Consultant** will assist the **Sponsor** at three public information meeting(s) with advisory agencies, local officials, and citizens, at which the **Consultant** will provide visual aids and present a technical discussion of the alternatives.

The **Sponsor** will arrange for the location of public information meeting(s). The **Consultant** will assist the **Sponsor** with appropriate notification.

#### B. Public Hearing(s)

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### 3.07 **Preparation of Final Design Approval Document (DAD)**

The **Sponsor** will obtain all necessary approvals and concurrences and will publish all applicable legal notices.

The **Consultant** will prepare the Design Recommendation, and will modify the DAD to include the Design Recommendation, re-title the DAD in accordance with the *PDM* Manual, and update existing conditions and costs as necessary. The **Consultant** will incorporate changes resulting from the advisory agency review and all public information meetings and public hearings.

The **Consultant** will submit three copies of the Final DAD to the **Sponsor** for review. The **Sponsor** will review the Final DAD and provide the **Consultant** with review comments. The **Consultant** will revise the Final DAD to incorporate the comments.

The **Sponsor** will submit three copies of the Final DAD to NYSDOT for a Final Environmental Determination. NYSDOT will make the determination or obtain FHWA's determination. If necessary, NYSDOT will transmit the Final DAD to FHWA for final review and concurrence. The **Consultant** will again revise the Final DAD to incorporate changes (assumed minor) resulting from the NYSDOT and/or FHWA review.

The **Sponsor** will grant or obtain, from or through NYSDOT, Design Approval.

## **Section 4 – Environmental**

**Tectonic shall perform all work in accordance with the [NYSDOT Project Development Manual \(PDM\)](#), and the NYSDOT [The Environmental Manual](#) (TEM)<sup>10</sup> and Chapter 7 of the LPM. S**

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<sup>10</sup> <https://www.dot.ny.gov/divisions/engineering/environmental-analysis/manuals-and-guidance/epm>

Specifically for Lead-based paint (LBP) and asbestos, Tectonic shall refer to the following: TEM 4.4.20: Contaminated Materials and Hazardous Substances and 4.4.19: Asbestos Management.

#### **4.01 Asbestos Material Assessment & Report**

Tectonic has reviewed the asbestos survey report prepared by QuES&T on October 26, 2016 for the upper bridge deck, along the roadway of Half Moon Bay Dr., and has determined an additional survey for the remaining areas of the bridge is required. All asbestos work, including reporting and obtaining variances, shall be performed in accordance with the DOT Specifications 4.4.19: ASBESTOS MANAGEMENT. Tectonic shall provide a track-trained, asbestos inspector certified by the New York State Department of Labor (NYSDOL), to perform all bulk sampling and inspection services in accordance with the following regulations:

- USEPA Guidance for Controlling Asbestos-Containing Materials in Bridges (EPA Purple Book);
- USEPA Guidance effective June 4, 2013 titled, “Bulk Sampling for Asbestos”;
- USEPA, 40 Code of Federal Regulations (CFR), Part 763, Asbestos; and
- Part 56 of Title 12 of the Official Compilation of Codes, Rules, and Regulations of the State of New York (CR 56).

To the extent feasible, prior to mobilizing to the site, Tectonic personnel shall review available plans or drawings and any existing documentation to identify any materials specified as asbestos-containing and/or any suspect materials that may be present.

The asbestos survey will be conducted in all areas of the existing structure, starting at the lowest level and entering all accessible spaces. The Client will supply a means, in accordance with Occupational Safety and Health Administration (OSHA), for accessing the sampling locations (including ladders or aerial lifts to access the underside of the bridge span). Destructive sampling, to determine if suspect materials are present will be performed as needed. The patching of sampling locations will not be performed. As such, bulk samples will be collected from inconspicuous locations when possible.

Suspect materials will be categorized into homogeneous materials based on color, texture and if ascertainable date of installation. Representative samples from each homogenous group within the impacted area(s) shall be collected according to recognized protocols. The inspection process will focus on identifying the locations and quantities of the following types of materials: (1) surfacing materials, (2) thermal system insulation (TSI) and (3) miscellaneous materials. The number of samples collected for each type of material and the analytical procedure shall be in accordance with EPA 40 CFR Part 763.86, Asbestos – Sampling, EPA Guidance document, and CR 56.

For all suspected materials sampled, a sketch of each homogeneous sampling area will be drawn. A unique sample ID number will be assigned to each sample collected and recorded on the COC form. Samples will be shipped via standard COC protocol to a NYSDOH ELAP accredited laboratory for analysis.

If the inspector deems an area inaccessible, such as confined spaces, elevated locations, electrically charged locations, or other areas that may be otherwise unsafe to enter, the areas and any potential suspect ACM typically found in these areas will be recorded by the inspector and noted as presumed ACM.

Analysis will be performed on each of the groups and when a positive result is found, analysis for that group will stop. Bulk samples will be analyzed for asbestos fibers at a NYSDOH ELAP accredited laboratory by polarized light microscopy (PLM) according to the "Interim Method for the Determination of Asbestos in Bulk Insulation Samples" issued by the USEPA/EMSL, Research Triangle Park, North Carolina.

In the event Non-Friable Organically Bound (NOB) materials are sampled, (i.e., mastics, caulks, flashing, etc.) the organic material will be reduced by gravimetric reduction and read via PLM. Should the PLM analysis show <1 % asbestos by weight, confirmation analysis via Transmission Electron Microscopy (TEM) will be performed.

If the laboratory determines that vermiculite is present in any of the surfacing material samples (i.e. sprayed-on fireproofing, plaster, etc.), the samples will be subjected to the NYSDOH approved analysis method for Sprayed on Fireproofing / Surfacing Material containing Vermiculite (SOF-V/SM-V).

Tectonic has assumed the sampling shall occur outside of normal business hours (weekends and/or nights) by one (1) inspector and Staff Geologist, as needed, in (1) day. Additionally, Tectonic will invoice the Client for the actual number of samples collected and analyzed by the laboratory.

#### *Asbestos Survey Report*

Based on the results of our asbestos survey, our certified personnel will prepare site specific documents that detail the methods and procedures to be followed to complete the asbestos abatement. This will include plans of ACM locations and will also include the preparation of Work Practice Applications for submittal to the Client.

#### **4.02 Lead Based Paint (LBP) – Assessment & Report**

Tectonic has reviewed the Limited XRF Lead Testing survey report prepared by QuES&T on September 22, 2016 for the upper bridge deck, along the roadway of Half Moon Bay Dr., and has determined an additional survey for the remaining areas of the bridge is required. Tectonic will provide a track-trained, United States Environmental Protection Agency (USEPA) certified risk assessor to conduct a lead-based paint (LBP) survey and a surface-by-surface inspection utilizing a X-ray fluorescence (XRF) spectrum analyzer. The LBP survey will be performed in accordance with the USEPA regulation 40 CFR Part 745 and all state and local regulations.

Prior to analyzing bridge components with the XRF equipment, a three-point calibration will be performed in accordance with the National Institute of Standards and Technology (NIST) standard 2573. The following painted surfaces will be tested for the presence of lead (if present):

- Accessible bridge components (superstructure and substructure).
- Utilities and supports to be impacted during construction.
- Any other painted surfaces within the project limits as directed by the Client.

Locations of each XRF reading will be identified with cardinal direction. All sample locations will be sketched on a sampling map and be identified with a unique sample ID number. Photographs of sampling locations will be taken.

Tectonic's inspection team will assess the current conditions of all tested surfaces to determine paint condition in accordance with EPA guidelines. All inspection work will be based on either Client direction, or regulatory protocol. Based on the data results, Tectonic will determine which bridge components tested are to be considered actionable for lead based paint based on the criteria below or other criteria specified by the Client, if communicated prior to the inspection services.

<b>LEAD-BASED PAINT CRITERIA</b>	
<b>Lead Content (mg/cm<sup>2</sup>)</b>	<b>Determination</b>
< 1.0 mg/cm <sup>2</sup>	Negative
≥ 1.0 mg/cm <sup>2</sup>	Positive

Additionally, each XRF reading location will be marked on a Site Sketch and will be identified using the unique sample ID number. A photograph of each sample location will be taken.

As stipulated by HUD guidelines, painted surfaces having an inconclusive XRF reading can be assumed to be positive readings. However, the Client can elect to have paint chip samples collected from inconclusive reading locations in lieu of identifying them as positive. If the Client elects to have paint chip samples submitted for laboratory analysis, a paint-chip sample of approximately four (4) square inches shall be collected. Paint-chip samples, when collected, will contain all layers of paint. For all paint chips sampled, a unique sample ID number will be assigned to each sample collected and recorded on the chain-of-custody (COC) form. Samples will be shipped via standard COC protocol to a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) accredited laboratory for analysis. Collection and laboratory analysis of paint chip samples are included in this proposal as an optional service.

Tectonic has assumed the sampling shall occur outside of normal business hours (weekends and/or nights) by one (1) inspector in one (1) day.

Additionally, Tectonic shall prepare site specific operation and maintenance plans and/or abatement design documents that detail methods and procedures to be followed for the maintenance and/or abatement of lead.

#### **4.03 Limitations of Service**

The limitations of service shall be as outlined in our contractual agreement upon procurement of the project and the following:

- 4.03.1 Our scope of services is limited to those described above. All permit application fees, Municipal fees, escrow payments, etc. shall be the responsibility of the Client. Making revisions to the documents as requested by the Municipality, regulatory entities, the various stakeholders, or the Client are not included. If documentation not within the scope described above is required during this process, additional fees will be required. The scope of work and estimated fee related to additional work (including TBD fees in the table below) will be discussed and agreed upon with the Client before proceeding.
- 4.03.2 Tectonic assumes all work will be performed during normal business hours (Monday through Friday 7:00 AM – 5:00 PM). A premium of 1.5 times the normal billing rate will be charged for time in excess of 8 hours per day, after hours or on holidays or weekends. Tectonic assumes all work can be performed in OSHA level D PPE. It is not anticipated that respiratory protection will be necessary during routine sampling activities except in the event that damaged asbestos is present. Tectonic ACM Inspectors will be equipped with half-mask respirators equipped with HEPA P-100 filters to be worn whenever potential risk to exposure to airborne asbestos fibers exists.
- 4.03.3 The Client is responsible for supplying a man lift and/or ladder and personnel to stabilize the ladder such that Tectonic personnel can access material sampling points. The Client is

responsible for moving all obstructions associated with access to material sampling locations. Client responsible for providing lockout/tagout in accordance with OSHA requirements for the sampling of electrically charged suspect materials.

- 4.03.4 The Client is responsible for obtaining and providing Tectonic with all necessary clearances, flagging, access and protections. Tectonic shall coordinate the scheduling.
- 4.03.5 Please note, per NYSDOL CR 56, the completed asbestos survey for controlled or pre-demolition asbestos projects should be submitted to the appropriate Asbestos Control Bureau district office by the bridge owner.
- 4.03.6 Regulatory liaison services are not included in our scope of services. Except as specified, revisions to the documents prepared under the scope of work above as requested by the various regulatory agencies or the Client are not included. If documentation not included in Section 4 above is required during the review by these entities, this scope will also constitute additional work. The actual scope of work and associated estimated fee related to the additional work will be discussed and agreed upon with the Client before proceeding.
- 4.03.7 Changes to the project design or scope during the prosecution of the work contained in this proposal after Tectonic receives initial direction from the Client will constitute additional work. A revised scope of work and estimated fee related to additional effort will be discussed and agreed upon with the Client before proceeding.
- 4.03.8 Tectonic will assume no liability for project delays, extra costs, or any and all claims associated with the sample data if such data is obtained in general accordance with applicable regulations or Client direction.
- 4.03.9 Deliverables will be in electronic format (PDF) unless otherwise arranged.
- 4.03.10 Tectonic has provided unit rates/fees for all ACM and Lead work that will be required, based on information provided by the client. The amount invoiced will be based on the actual number of days time the unit rates provided, adjusted for overtime if required. For sampling, the actual amount invoice will be the actual number of samples collected and tested as discussed and approved in advance with client. The total of all actual labor and testing quantities assumed are shown in the attached Environmental Fee Schedule.
- 4.03.11 For the purpose of this proposal, Tectonic has assumed asbestos removal air monitoring will be performed by others. Should removal work require containment within a negative pressure environment such as a tent, air monitoring may be required. Asbestos monitoring services may be provided at the request of the Client for an additional fee.
- 4.03.12 For the purpose of this proposal, Tectonic has assumed lead abatement air monitoring will be performed by others. Lead monitoring services may be provided at the request of the Client for an additional fee.

#### **Section 4.02 – Fees**

Tectonic will provide the above-described scope of work for a pre-abatement work fee of **\$22,110.00**. A breakdown of the charges is included below:

Item No.	Description	Fee	Estimated Quantity	Extended
4.01	Asbestos Survey:			
	NYS DOL Asbestos Inspector (per weekend day/night rate)	\$3,600.00	1	\$3,600.00
	Survey Report & Abatement Design	\$2,500.00	1	\$2,500.00
	Asbestos Samples:			
	PLM Bulk - Non-friable (5-day TAT)	\$25.00	30	\$750.00
	PLM Bulk - Friable (5-day TAT)	\$20.00	30	\$600.00
	TEM (5-day TAT)	\$40.00	20	\$800.00
	Sample Prep. (For Non-Friable Samples Not Analyzed by Laboratory)	\$10.00	30	\$300.00
	MNR Track Training (per person). Assumes max four hours to complete.	\$500.00	2	\$1,000.00
4.02	Lead-based Paint (LBP) Survey:			
	USEPA LBP Inspector (includes use of XRF Spectrum Analyzer & Lead Paint Chip Samples for inconclusive XRF results) (per weekend day/night rate)	\$4,800.00	1	\$4,800.00
	Lead-based Paint Letter Report	\$1,500.00	1	\$1,500.00
	MNR Track Training (per person). Assumes max four hours to complete.	\$500.00	2	\$1,000.00
4.01/ 4.02	ACM & LBP Permits/Variations ( <i>additional services – if required</i> )	\$2,500.00	1	\$2,500.00
	Geologist / Environmental Scientist (1 personnel–hourly weekend day/night rate)	\$230.00	8	\$1,840.00
	Staff Geologist / Environmental Scientist (hourly office rate)	\$115.00	8	\$920.00
<b>TOTAL ESTIMATED COST FOR ITEMS/QUANTITIES LISTED ABOVE:</b>				<b>\$22,110.00</b>

## Section 5 - Right-of-Way

### 5.01 Abstract Request Map and/or Title Search

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### 5.02 Right-of-Way Survey

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### 5.03 Right-of-Way Mapping

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### 5.04 Right-of-Way Plan

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### 5.05 Right-of-Way Cost Estimates

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### 5.06 Public Hearings/Meetings

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**5.07 Property Appraisals**  
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**5.08 Appraisal Review**  
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**5.09 Negotiations and Acquisition of Property**  
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**5.10 Relocation Assistance**  
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**5.11 Property Management**  
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## **Section 6 - Detailed Design**

### **6.01 Preliminary Bridge Plans**

**A. New and Replacement Bridges**  
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**B. Bridge Rehabilitations**

For each bridge to be rehabilitated, the **Consultant** will prepare and submit to the **Sponsor** for review a Preliminary Bridge Rehabilitation Plan, which will be sufficiently developed to:

- Show basic concepts and major details (including all existing and proposed utilities).
- Acquaint affected parties with the project and project components.
- Serve as an instrument for initial approval.
- Provide a basis for the development of final plans.

The plan should indicate maintenance and protection of traffic provisions and be accompanied by a cost estimate.

**C. Selected Structural Treatment**

The **Consultant** will modify the Structure Justification Report, Preliminary Bridge Plan and/or Preliminary Bridge Rehabilitation Plan to incorporate **Sponsor** review comments.

The **Sponsor** will approve the selected structural treatment and will obtain NYSDOT concurrence (either by a written submission or at a meeting).

### **6.02 Advance Detail Plans (ADP)**

The **Consultant** will develop the approved design alternative to the ADP stage. At this stage, all plans, specifications, estimates and other associated materials will be **90%** complete.

As part of this task, the **Consultant** will prepare templated cross-sections at 50 foot intervals.

Advance Detail Plans will be in accordance with [Chapter 21 of the NYSDOT Highway Design Manual](#).<sup>11</sup>

The **Consultant** will prepare and submit three copies of the ADP's to the **Sponsor** for review. The **Consultant** will modify the design to reflect the review of the ADP package.

### 6.03 Contract Documents

The **Consultant** will prepare a complete package of bid-ready contract documents. The package will include:

- Instructions to bidders.
- Bid documents.
- Contract language, including applicable federal provisions and prevailing wage rates.
- Special notes.
- Specifications.
- Plans.
- A list of supplemental information available to bidders (i.e., subsurface exploration logs, record as-built plans, etc.).
- Other pertinent information.

The **Consultant** will submit the contract documents to the **Sponsor** for approval. Upon approval, the **Sponsor** will submit 3 copies of the contract bid documents to NYSDOT as described in the *LPM*.

### 6.04 Cost Estimate

The **Consultant** will develop, provide, and maintain the construction cost estimate for the project. The **Consultant** will update the estimate periodically and as necessary to incorporate significant design changes and will develop and provide the final Engineer's Estimate, including all quantity computations.

### 6.05 Utilities

The **Consultant** will coordinate with affected utility companies to ensure the timely relocation of utility poles and appurtenances. The **Consultant** will assist the **Sponsor** in preparing any necessary agreements with utility companies. Any agreements containing reimbursable relocations must be approved and signed by the Design Support Section of the NYSDOT Design Quality Assurance Bureau (see *LPM* Appendix 10-8).

### 6.06 Railroads

The **Consultant** will coordinate with affected railroads and will assist the **Sponsor** in preparing all necessary Railroad Agreements.

### 6.07 Bridge Inventory and Load Rating Forms

The **Consultant** will complete and provide the **Sponsor** and NYSDOT with:

- Inventory Update forms, per the current NYSDOT Bridge Inventory Manual for Bridge Inventory

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<sup>11</sup> [https://www.dot.ny.gov/divisions/engineering/design/dgab/hdm/hdm-repository/Chapt\\_21.pdf](https://www.dot.ny.gov/divisions/engineering/design/dgab/hdm/hdm-repository/Chapt_21.pdf)

- and Inspection System, reflecting all proposed physical changes resulting from construction.
- Level 2 Load Rating Data Input forms, per NYSDOT User Manual for Structural Rating Program for Bridges and current NYSDOT guidance on the "Procedure for Inventorying, Inspecting, and Level 2 Load Rating, New, Replacement and Reconstructed or Rehabilitated Bridges".

## **6.08 Information Transmittal**

Upon completion of the contract documents, the **Consultant** will transmit to the **Sponsor** all project information, including electronic files. The electronic information will be in the format requested by the **Sponsor**.

## **Section 7 - Advertisement, Bid Opening and Award**

### **7.01 Advertisement**

The **Consultant** will prepare the advertisement for bids to be placed in the NYS Contract Reporter and any other newspaper or publication identified by the **Sponsor**. The **Consultant** will submit the ad(s) to the **Sponsor** for review and will revise the ad(s) to reflect comments generated by that review. Upon approval by the **Sponsor**, the **Consultant** will place the advertisements.

Advertisements must not be placed until authorization is granted to the **Sponsor** by the NYSDOT.

### **7.02 Bid Opening (Letting) and Award**

The **Consultant** will analyze the bid results. The analysis will include:

- Verifying the low bidder mathematical calculations.
- Ensuring receipt of all required bid documents (non-collusive bid certification, debarment history certification, etc.).
- Breaking the low bid into fiscal shares, if necessary.
- Determining whether the low bid is unbalanced.
- For pay items bid more than 25% over the Engineer's Estimate:
  - Check accuracy of quantity calculations.
  - Review the appropriateness of price bid for work in the item.
  - Review the low bidder qualifications to perform the work.
  - Prepare a summary letter.

The **Consultant** will assist the **Sponsor** in preparing and compiling the package of information to be transmitted to the NYSDOT.

The **Sponsor** will award the contract and will transmit the award package to the NYSDOT as described in the Procedures for Locally Administered Federal Aid Projects (LPM).

## ***Section 8 - Construction Support***

The **Consultant** will provide design response to unanticipated or changed field conditions, analyze and participate in proposed design changes, and interpret design plans.

Work under this section will always be in response to a specific assignment from the **Sponsor** under one of the tasks below:

- In response to unanticipated and/or varying field conditions or changes in construction procedures,

the **Consultant** will conduct on-site field reconnaissance and, where required, prepare Field Change Sheets modifying pertinent contract plan sheets.

- The **Consultant** will analyze and make recommendations on the implementation of changes proposed by the **Sponsor** or the construction contractor. This includes the Traffic Control Plan.
- The **Consultant** will interpret and clarify design concepts, plans and specifications.
- The **Consultant** will review and approve shop drawings for construction.

Not reimbursable under this Section are:

- Corrections of design errors and omissions
- Straightforward interpretations of plans and designer intentions

## **Section 9 - Construction Inspection**

### **9.01 Equipment**

The **Contractor** will furnish office space and basic office furnishings for the **Consultant**, as part of the contract.

The **Consultant** will furnish all other office, field and field laboratory supplies and equipment required to properly perform the inspection services listed below.

### **9.02 Inspection**

The **Consultant** must provide, to the satisfaction of the **Sponsor**, contract administration and construction inspection services from such time as directed to proceed until the completion of the final agreement and issuance of final payment for the contract. The **Consultant** must assume responsibility, as appropriate, for the administration of the contract including maintaining complete project records, processing payments, performing detailed inspection work and on-site field tests of all materials and items of work incorporated into the contract consistent with federal policies and the specifications and plans applicable to the project.

### **9.03 Municipal Project Manager**

This Project Manager will be the **Municipality's** official representative on the contract and the **Consultant** must report to and be directly responsible to said Project Manager.

### **9.04 Ethics**

Prior to the start of work, the **Consultant** will submit to the **Sponsor** a statement regarding conflicts of interest.

### **9.05 Health and Safety Requirements**

The **Consultant** must provide all necessary health and safety related training, supervision, equipment and programs for their inspection staff assigned to the project.

### **9.06 Staff Qualifications and Training**

The **Consultant** must provide sufficient trained personnel to adequately and competently perform the requirements of this agreement. The **Consultant** will recommend inspectors to the Sponsor for approval prior to their assignment to the project. Resumes, proof of required certification and the proposed initial salary shall be furnished. The Sponsor may want to interview before approval, and reserves the right to disapprove any application. The employment of all consultant personnel is conditional, subject to satisfactory performance, as determined by the Sponsor.

For all construction inspection agreements, it is mandatory that all technician personnel be identified by the National Institute for Certification in Engineering Technologies (NICET)

certification levels in the staffing tables. In addition, all Transportation Engineering Technicians-Construction assigned to the project at and above level III, Engineering and Senior Engineering Technicians, must be certified by NICET. Transportation Engineering Technicians-Construction below level III assigned to the project must have successfully completed the General Work Element requirements and at least those Special Work Elements which apply to their specific project assignments at the level of their rating.

In lieu of the NICET certification requirements, the Sponsor may accept evidence that the person proposed for employment (1) has satisfactorily performed similar duties as a former NYS Department of Transportation (NYSDOT) employee or (2) has a combination of education and appropriate experience commensurate with the scope of the position in question.

Technicians employed by the **consultant** that perform field inspection of Portland cement concrete shall possess a current certification from the American Concrete Institute (ACI) as a Concrete field-testing Technician-Grade 1, or have completed all of the following NICET work elements, which are equivalent to the ACI certification:

NICET LEVEL	NICET CODE	NICET WORK ELEMENT
I	82019	Sample Fresh Concrete
I	82020	Slump Test
II	84068	Air Content, Pressure
II	84069	Air Content, Gravimetric
II	84070	Air Content, Volumetric
II	84076	Field Prepared Test Specimens

Inspectors designated as the responsible person in charge of work zone traffic control must have sufficient classroom training, or a combination of classroom training and experience, to develop needed knowledge and skills. Acceptable training should consist of a formal course presented by a recognized training program which includes at least two full days of classroom training. A minimum of two days classroom training is normally required, although one day of classroom training plus responsible experience may be considered. Recognized training providers include American Traffic Safety Services Association (ATSSA), National Safety Council (NSC), Federal Highway Administration's National Highway Institute (FHWA-NHI), and accredited colleges and universities with advanced degree programs in Civil/Transportation/Traffic Engineering. Former DOT employees may be considered on the basis of at least one day of formal classroom training combined with responsible M&PT experience.

Technicians employed by the **consultant** who perform field inspection of geotechnical construction (earthwork), including, but not limited to embankment construction, subbase placement, structure and culvert backfill placement, and testing of earthwork items for in-place density and/or gradation, shall possess a current certification and/or proof of training from the following organization:

North East Transportation Technician Certification Program (NETTCP) Soils and Aggregate Inspector Certification. An alternative to the certification/training listed above would be proof of previous training (within the past 5 years) of the NYSDOT Earthwork Inspectors School, given by the Department's Geotechnical Engineering Bureau.

A Licensed Professional Engineer may be qualified to perform any testing based on demonstrated experience.

## 9.07 Scope of Services/Performance Requirements

A. Quality

The Consultant will enforce the specifications and identify in a timely manner to the **Sponsor** local conditions, methods of construction, errors on the plans or defects in the work or materials which would conflict with the quality of work, and conflict with the successful completion of the project.

B. Record Keeping & Payments to the Contractor

- 1) All records must be kept in accordance with the directions of the **Sponsor and must be consistent with the requirements of the [NYSDOT Manual of Uniform Recordkeeping \(MURK\)](#)**.<sup>12</sup> The **Consultant** must take all measurements and collect all other pertinent information necessary to prepare daily inspection reports, monthly and final estimates, survey notes, record plans showing all changes from contract plans, photographs of various phases of construction, and other pertinent data, records and reports for proper completion of records of the contract.
- 2) Any record plans, engineering data, survey notes or other data provided by the Sponsor should be returned to the Sponsor at the completion of the contract. Original tracings of record plans, maps, engineering data, the final estimate and any other engineering data produced by the Consultant will bear the endorsement of the Consultant. Any documents that require an appropriate review and approval of a Professional Engineer (P.E.) licensed and registered to practice in New York State must be signed by the P.E.
- 3) Unless otherwise modified by this agreement, the **Sponsor** will check, and when **acceptable**, approve all structural **shop drawings**.
- 4) The **Consultant** must submit the final estimate of the contract to the **Sponsor** within four (4) weeks after the date of acceptance of the contract. All **project records** must be cataloged, indexed, **packaged**, and delivered to the **Sponsor** within five (5) weeks after the date of the acceptance of the contract.

Health & Safety/Work Zone Traffic Control

- 1) The **Consultant** must ensure that all inspection staff assigned to the project are knowledgeable concerning the health and safety requirements of the contract per **Sponsor** policy, procedures and specifications and adhere to all standards. Individual inspectors must be instructed relative to the safety concerns for construction operations they are assigned to inspect to protect their personal safety and to ensure they are prepared to recognize and address any contractor oversight or disregard of project safety requirements.
- 2) The **Consultant** is responsible for monitoring the Contractor's and Subcontractor's efforts to maintain traffic and protect the public from damage to person and property within the limits of, and for the duration of the contract.

Monitoring Equal Opportunity/Labor Requirements

The **Consultant** must assign to one individual the responsibility of monitoring the Contractor's adherence to Equal Opportunity and Labor requirements contained in the contract. When monitoring the Contractor's Equal Opportunity and Labor compliance, the

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<sup>12</sup> <https://www.dot.ny.gov/main/business-center/contractors/construction-division/forms-manuals-computer-applications-general-information>

Consultant, will utilize the guidance contained in the contract, standard specifications, and the **Sponsor's** policies. The Consultant is also to input required disadvantaged business enterprise (DBE) information into the NYSDOT maintained [Equitable Business Opportunities \(EBO\) database](#)<sup>13</sup>.

## **Section 10 - Estimating and Technical Assumptions**

### **10.01 Estimating Assumptions**

The following assumptions have been made for estimating purposes:

- Section 1 Estimate six meetings (virtual) during the life of this agreement.  
Estimate 12 cost and progress reporting periods will occur during the life of this agreement.
- Section 2 Estimate topographic survey with approximate boundary information. Survey limits to be approximately 100ft from each end of bridge. One weekend daytime on the railroad tracks to scan the underside of the bridge is assumed. No de-energization of the 3<sup>rd</sup> track is assumed.
- The cost of any flagman, under bridge or Hi-rail inspection vehicle, and MPT set up, when required for survey, inspection, and testing services, are to be borne by the Village.
- Estimate two accidents will require analysis.
- Section 3 Estimate four concepts will be evaluated.
- Estimate three design alternative(s) will be analyzed in addition to the null alternative.
- Estimate three cost estimate(s) plus two updates will be required.
- Section 4 Estimate two permits will be required.
- Section 5 No Rights of Way activities are anticipated. Any work related to this item is extra work.
- Section 6 Detailed Design or Final Design
- Final Design will include but not be limited to:
- Development of highway and bridge plans.
  - Structural rehabilitation design.
  - Roadway design.
  - Development and design for public utilities.
  - Maintenance and protection of traffic during construction.
  - Preparation and submission of final Plans, Specifications, and Estimate (PS&E) for the project.

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<sup>13</sup> <https://www.dot.ny.gov/dotapp/ebo>

Estimate three cost estimates plus three updates will be required.

Estimate one bridge will be rehabilitated.

Estimate three utility companies and two railroad agencies will be affected.

Section 7

Estimate five copies of the final contract bid documents will be needed for prospective bidders.

Estimate advertisements will be placed in publications in addition to the NYS Contract Reporter.

Analysis of bids.

Section 8

Construction Support will include but not be limited to:

- Providing technical support during construction on questions relating to the design.
- Providing assistance in construction bid proceedings.
- Review of shop drawings (if necessary).

Estimate twenty requests that require effort will be made during the construction phase of the project.

Section 9

Construction Inspection will include but not be limited to:

- Providing on-site construction inspection and oversight to ensure the quality of construction and conformity with the final plans and specifications.
- Preparation of as-built plans.

Estimate construction will begin in April 2025, and will be completed by April 2026.

**10.02 Technical Assumptions**

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**Section 11 – Fee Summary**

**11.1 Fee Summary Table**

A summary of the estimated fee is provided below:

<b>DESIGN SERVICES</b>		
<b>Description</b>	<b>Fee Structure</b>	<b>Est. Fee</b>
Section 1 - General	LS	\$14,440.00
Section 2 - Data Collection & Analysis	LS	\$46,740.00
Section 3 - Preliminary Design	LS	\$43,700.00
Section 4 – Environmental	LS	\$22,110.00
Section 5 - Right of Way	LS	

<b>DESIGN SERVICES</b>		
<b>Description</b>	<b>Fee Structure</b>	<b>Est. Fee</b>
Section 6 - Detailed Design	LS	\$51,490.00
Section 7 - Advertising, Bid Opening, and Award	LS	\$7,200.00
Section 8 - Construction Support	LS	\$13,460.00
<b>SUBTOTAL DESIGN FEE</b>		<b>\$199,140.00</b>
Section 9 - Construction Inspection (40 weeks assumed)	LS	\$276,400.00
<b>TOTAL ESTIMATED FEE</b>		<b>\$475,540.00</b>

- 11.2 Five copies of the final contact bid documents and electronic copies (PDF) of all project deliverables are included in the lump sum fees. Out-of-pocket reimbursable expenses for travel, photocopies, additional plan prints, and overnight mailings are not included in the lump sum fees and will be billed at cost. The current schedule of rates for reimbursable expenses is as follows:

<b>Reimbursable Expenses</b>	<b>Rate</b>
Photocopies (Black & White)	\$0.10 per 8 ½" x 11" sheet
Photocopies (Color)	\$0.60 per 8 ½" x 11" sheet
Travel	\$0.655 per mile (or current IRS rate)
Tolls	At cost
Plan Reproduction	\$2.50 per plan sheet
Overnight Mail (e.g. FedEx)	At cost

- 11.3 Amounts invoiced for each lump sum item shall be based on the approximate percent complete for each item. Amounts invoiced for time and materials items shall be based on actual labor and expenses expended to date.
- 11.4 Fees shall be invoiced monthly, with payment due upon receipt.
- 11.5 The cost of any railroad flagman, railroad groundman, under bridge or hi-rail inspection vehicle, police services, and maintenance of protection of traffic set up is not included in the lump sum fees and will be borne by the Village or billed to the Village as direct cost.