

September 9, 2021

Mayor David McFadden  
 Village of Tuxedo Park  
 80 Lorillard  
 Tuxedo Park, NY 10987

Re: **Village of Tuxedo Park  
 Proposal for Engineering Services  
 Summit Road Retaining Wall Reconstruction**

Dear Mayor McFadden;

The Village of Tuxedo Park (Owner) has requested that Weston & Sampson, PE, LS, LA, PC (Weston & Sampson) review the stone masonry retaining wall along Summit Road. This wall is partially collapsed in one area due to a downed tree and shows signs of movement along the base of the wall, presumably from groundwater induced hydraulic pressure. The Village has requested that we provide a proposal for engineering services to diagnose the cause of the wall movement design a replacement wall to be constructed in the same location and alignment as the existing wall.

**SCOPE OF SERVICES**

Upon written authorization to proceed, Weston & Sampson will immediately begin work which will include the following tasks.

**Task 1: Geotechnical Evaluation**

Our proposed scope of services consists of field exploration, laboratory testing and engineering/project delivery. These services are described in the following sections.

**Field Exploration: The field exploration program consists of the following:**

Number of Borings	Planned Boring Depth (feet) <sup>1</sup>	Planned Location
3	30 or refusal	Center and 1/3 <sup>rd</sup> points of retaining wall
2	8 or refusal	2/3 <sup>rds</sup> points about centerline of roadway
1. Below existing ground surface. Actual depth of test borings may be modified by the geotechnical engineer based on the conditions encountered during drilling.		

**Test Boring Layout and Elevations:** We will use handheld GPS equipment to locate borings with an estimated horizontal accuracy of +/-10 feet. Field measurements from existing site features may also be utilized. If available, approximate ground surface elevations at the borehole locations will be obtained by interpolation from a surveyed topographic map.

**Test Boring Exploration Procedures:** We will advance the soil borings with an all-terrain or trailer mounted drill rig using hollow stem augers or flush joint casing with mud rotary, dependent upon the conditions encountered. As the casings are advanced, the soils will be sampled on a continuous basis through existing fills, and at standard intervals of 5 feet or less thereafter in general accord with ASTM D1586, Standard Method for Penetration Test and Split-Barrel Sampling of Soils. The split-spoon samples will be placed in appropriate containers and transported to our office for laboratory testing and visual classification by a Geotechnical Engineer or Geologist. We will observe and record groundwater levels during drilling and sampling.

If refusal on suspected bedrock is encountered above a depth of 20' below grade, rock coring will be performed at one or more locations to allow its characterization. The coring will be performed in general

conformance with ASTM D2113 procedures. Water will be used as a drilling fluid for rock coring and the spent water will be discharged on site.

Our exploration team will prepare field boring logs as part of standard drilling operations including sampling depths, penetration distances, and other relevant sampling information. Field logs include visual classifications of materials encountered during drilling, and our interpretation of subsurface conditions between samples. Final boring logs, prepared from field logs, represent the Geotechnical Engineer's interpretation, and include modifications based on observations and laboratory tests.

**Property Disturbance:** We will backfill borings with auger cuttings upon completion. Our services do not include repair of the site beyond backfilling our boreholes. Excess auger cuttings will be dispersed in the general vicinity of the borehole. Because backfill material often settles below the surface after a period, we recommend boreholes be periodically checked and backfilled, if necessary. We can provide this service or grout the boreholes for additional fees at your request.

**Laboratory Testing:** Laboratory testing of selected soil samples will be conducted to refine the visual classifications and assist in evaluating strength and compressibility characteristics. Laboratory tests will be assigned by a geotechnical engineer based upon the subsurface profiles encountered. The testing will be performed in general accordance with applicable ASTM standards and may include moisture content, sieve analysis, Atterberg limits and/or unconfined compressive strength of rock.

**Data Report:** our data report would present the results of the field investigations, including soil boring logs and location plans, laboratory testing results and a cover letter delineating the sampling procedures. The data report would not include engineering recommendations.

#### **Geotechnical Engineering Report:**

As a minimum, the geotechnical engineering report will provide the following:

- Boring logs with field and laboratory data
- Stratification based on visual soil (and rock) classification
- Groundwater levels observed during and after completion of drilling
- Site Location and Exploration Plans
- Subsurface exploration and laboratory testing procedures
- Results of laboratory testing
- Description of subsurface conditions
- Foundation options and geotechnical design parameters
- Estimated settlement of foundations
- Frost depths
- Subgrade preparation and earthwork recommendations
- Retaining wall design parameters
- Pavement recommendations

#### **Task 2: Survey/Mapping**

Prepare a Topographic / Existing Conditions survey for approximately 200 L.F. of a stone retaining wall, roadway, and 10 feet out from the retaining wall base located on the downhill side of Summit Road. The mapping will be used in the preparation of construction documents showing demolition/removal of the old wall and the proposed construction of the new wall. The location and limits of the survey are depicted on the aerial image to the right.



**Task 3: Design**

Based on the results of the geotechnical evaluation, we will prepare final design of a reconstructed wall to be built in the same general location and geometry as the old wall, with a similar appearance. Preliminarily it is our plan to construct a pre-engineered wall below grade that will be faced with similar stone pattern on the downhill side, with an example photo provided on the next page. If the private property owner of the wall wanted to reface the wall with real stone, we assume this cost would be borne by



the property owner. The pre-engineered wall will extend approximately to street grade where it will transition to a stone masonry wall (using stone scavenged from the existing wall) with, an internal reinforced concrete core, to be similar in appearance to the existing. This hybrid concrete/stone wall will provide greater strength and longevity of the wall while preserving the look of the existing wall at an anticipated significantly lower cost than a cast-in-place reinforced concrete wall. Design will include the preparation of construction plans and detailed specifications, along with front end contracts and bidding documents to form a bid package suitable for procuring public works bids under General Municipal Law.

**Task 4: Bid Administration:**

Assist the Village with administering the public bidding process, including the following activities:

- Furnish bid advertisement for the Village to place in their official publication;
- Provide the Village with up to ten (10) complete sets of bidding documents;
- Attend one pre-bid meeting at the Village Office;
- Respond to questions from bidders and issue addenda, if required;
- Review bids, check references of the low bidder, prepare tabulation of bids, and issue a letter of recommendation of award.

**Task 5: Construction Administration:**

Assist the Village with Construction Administration including the following activities:

- Conform contracts for signature by Village and Contractor.
- Schedule and conduct a pre-construction meeting with Village, contractor, and engineer.
- Review schedules and shop drawings from contractor;
- Make weekly site visits (6 expected) during the course of the work.
- Review and approve payments to the Contractor on monthly basis (2 expected)
- Provide engineer's certification at the conclusion of the project.
- Assist with contractor's closeout documents

**OWNER'S RESPONSIBILITIES:**

We anticipate the Village will obtain access from the abutting property owner for Weston & Sampson to conduct the necessary investigative activities as well as obtain a construction easement for the reconstruction of the wall.

**FEE SCHEDULE:**

The proposed fees below include labor, equipment, materials, and expenses required to complete the scope of work as outlined above. Our proposed fees are summarized in the table below.

Project Task	Total Fee
Task 1: Geotechnical Evaluation (Lump Sum)	\$20,100
Task 2: Survey/Mapping (Lump Sum)	\$5,000
Task 3: Design (Lump Sum)	\$16,900
Task 4: Bid Administration (Lump Sum)	\$3,300
Task 5: Construction Administration (Time & Expense)	\$8,800
<b>TOTAL ESTIMATED FEE</b>	<b>\$54,100</b>

**PAYMENT**

- Project compensation will be invoiced on the basis of percent completion for lump sum tasks.
- Labor and Expenses for hourly rate tasks will be billed as incurred at the applicable rates specified in our approved 2020 rate schedule.
- All expenses, including travel time, mileage, communication, and reproduction costs are included in the estimated fees provided above.

**PERFORMANCE SCHEDULE:**

Weston & Sampson is prepared to proceed with work immediately upon execution of an agreement and receipt of written notice to proceed. Flow isolation will be dependent upon weather and groundwater conditions, as well as the Village obtaining access to the manholes by removal of surcharge plates and coordination with impacted homeowners.

**GENERAL TERMS & CONDITIONS**

Weston & Sampson’s services will be provided as described herein and in accordance with our previously approved Term’s & Conditions under our current 2020 On-Call Services Agreement. To accept this proposal, please sign below. Once signed, return a copy of each to this office. We look forward to continuing to assist the Village with this important infrastructure project. Please feel free to call 518-463-4400 or email [zongolj@wseinc.com](mailto:zongolj@wseinc.com) if you have any questions.

Very truly yours,  
**Weston & Sampson PE, LS, LA, PC**



Joseph M. Zongol, PE, NICET III  
 Associate/Team Leader

ACCEPTED FOR:  
**Village of Tuxedo Park**

Accepted by: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_