

August 12, 2024

Steven E. Masalin, PE
Public Works Director
Town of Ledyard
741 Colonel Ledyard Highway
Ledyard, CT 06339

Re: **Design Services During Construction
Ledyard High School Multi-Use Pathway & Sidewalk Extension**

Dear Mr. Masalin:

We have prepared the attached scope for additional design services during construction for the Ledyard High School Multi-Use Pathway & Sidewalk Extension project. Since we have reached our previous contractual limit for design services during construction, this proposal forecasts the effort needed for the duration of construction. As discussed, an additional lump sum fee for geotechnical investigations and engineering is also included. The fees to complete the work described herein are summarized below on the fee schedule.

We look forward to completing this additional work for the Town for the remainder of construction. Should you have any questions or comments, please do not hesitate to contact me directly at casalep@wseinc.com or 508-203-4211 or Nick DePalermo at depalermn@wseinc.com or 860-856-8966.

Sincerely,

WESTON & SAMPSON ENGINEERS, INC.



Nick DePalermo, PE
Project Manager



Pompeo Casale, PE, M. ASCE
Vice President

CC: Mike Joyce – Joyce.Michael@wseinc.com
Matt Jermine – Jermine.Matthew@wseinc.com
Steve Spink – SpinkS@wseinc.com

**Scope of Work
Additional Engineering Services
Ledyard High School Multi-Use Pathway & Sidewalk Extension**

PHASE V. ADDITIONAL ENGINEERING SERVICES

E. Geotechnical Services

During an initial site visit with the Contractor and Inspector at the beginning of June 2024, a discussion was held regarding the condition of the subsurface materials in the embankment where the retaining wall (site no. 4) is being proposed. The retained height of the wall above finished grade is planned to be up to about 6 feet and the wall will consist of a segmental block wall with horizontal geogrid reinforcement. Due to the unknown type and consistency of the existing roadway embankment fill, subsurface explorations and a global stability analysis of the proposed site soils are recommended.

Based on our understanding, access to the area will be provided by the General Contractor. Therefore, police details, flaggers and/or traffic controls are not anticipated and not included as part of our scope.

We propose to complete design level borings to provide information on subsurface conditions at the site. Information from the borings will be used to evaluate global slope stability based on proposed grades. We anticipate that our field work can be scheduled within approximately two weeks of receiving authorization. Our geotechnical engineering report can be submitted within approximately four weeks of completing field work. We will accelerate this schedule, if possible, based on subcontractor availability and can provide preliminary recommendations to the design team as they are developed.

SCOPE OF GEOTECHNICAL SERVICES:

Our specific scope of geotechnical engineering services will include the following items:

1. Visit the site to observe surface features exposed at the ground surface, assess site access for subsurface explorations, and mark out proposed exploration locations.
2. Engage a drilling subcontractor to explore subsurface conditions by advancing up to three (3) borings using an All-Terrain (ATV) mounted drill rig. Currently, we anticipate completing up to two borings near the top of the existing embankment and one boring near the toe of the embankment. Weston & Sampson will observe the explorations in the field, maintain logs of soil and groundwater conditions, prepare boring logs, and measure the as-drilled boring locations relative to existing site features.

For budgeting purposes, we have assumed that native soils suitable for foundation support are present within 15 feet of existing ground surface and borings will be advanced up to 25 ft or refusal, whichever is shallower. We anticipate the proposed drilling program can be completed in one (1) workday. Adjustment to the number and depth of borings could be required depending on actual conditions encountered.

Standard Penetration Tests (SPTs) will be conducted in the borings generally at two-foot intervals in fill and organic soils and five-foot intervals in underlying native materials. The boreholes will be backfilled with soil cuttings. Rock coring and the installation of groundwater monitoring wells are not included.

Since the multiuse path construction is currently in-progress, we assume access to boring locations will be provided by the General Contractor. Access to boring locations will require removal of guardrails and regrading of the existing roadway embankment. **Access to both the top and bottom of embankment slope will be required.**

Prior to mobilizing the drill rig to the site, our drilling subcontractor will contact Call-Before-You-Dig (CBYD) to "mark" below-grade utilities in public streets and easements in the project area. As this service is limited to participating utilities in public easements, we will need someone with knowledge of any private on-site utilities to approve proposed boring locations. The General Contractor should also "mark" any below-grade utilities within their project limits-of-work.

Drilling involves inherent risks such as potential damage to subsurface utilities. If desired, and for an additional fee, we can subcontract with a private utility locator or perform vacuum excavation to clear boring locations within the top few feet. Private utility location and vacuum excavation reduces but does not eliminate the risk associated with drilling.

3. We will retain a geotechnical testing laboratory and coordinate the submission of soil samples collected from the borings for laboratory testing. We will submit up to three (3) samples for grain size distribution analyses or Atterberg Limit testing to confirm field classifications.
4. Weston & Sampson will complete analyses related to global stability analysis. We will develop design and construction recommendations for earthwork and prepare a geotechnical report. The report will include the following items as applicable:
 - a. Descriptions of the site conditions and subsurface exploration program.
 - b. Site plan showing approximate boring locations.
 - c. Boring logs and laboratory test results.
 - d. A discussion of the subsurface conditions encountered at explorations including depth of fill, organic deposits, bearing soils, groundwater, and refusal if encountered.
 - e. A summary of the proposed grading, and other relevant information, as provided by the project design team.
 - f. A summary of the global slope stability analyses and results.

Additional Field Work Related Assumptions:

- Traffic control (e.g., flaggers, signage, etc.) and police details will not be required.
- Vacuum excavation and private utility location are not requested.
- Prevailing wage rates are required.
- Access to the site will be provided by others. Clearing, regrading, guard rail removal, permits, bonds, or other costs associated with site access are not required and have not been included.
- Location of completed borings will not be surveyed and will be approximate. Elevations will be interpolated from the topographic plan provided by the design team.
- Restoration of areas disturbed as a result of our fieldwork, including any depressions caused by the drill rig, is not included, beyond backfilling the test borings with cuttings. We assume Terra mats are not required to protect the surface from disturbance caused by the drill rig.
- Environmental characterization, environmental services, health & safety training, or drumming of spoils are not included.
- The exploration program, including the number of days of drilling, and number of laboratory samples are estimated based on our current understanding of the project and the general subsurface conditions anticipated for the site. The exploration program may need to be adjusted based on actual conditions encountered, such as shallow bedrock, or thick deposits of loose or compressible materials. We will contact you of changes to the exploration program requiring additional drilling days (if any) while driller is on site to discuss the situation with you and revise our scope, schedule, and fee estimate accordingly.
- Soil samples collected during the geotechnical subsurface exploration program will be retained for 3 months following submission of our geotechnical report. The soil samples will be discarded at this time unless the Client requests, in writing, for a longer storage period. Additional fees may apply.

Additional Design Related Assumptions:

- Construction cost estimating is not included in our scope.
- Our fee does not include attendance at meetings.

The above referenced Scope of Services for Phase V will be completed for a lump sum fee as summarized below and does not include structural design revisions based on the findings of the proposed subsurface explorations.

PHASE VI. DESIGN SERVICES DURING CONSTRUCTION

The initial hourly budget maximum of \$20,000 has been reached by Weston & Sampson for effort related to design services during construction from April through June of 2024. Moving forwards, the expectation is that design services during construction will be reduced but will still be necessary to aid in the construction of the project. Weston & Sampson has been billing an average of 20 hours/month and moving forwards we anticipate that number to drop to 12 hours/month. Weston & Sampson proposes a new hourly budget based on established billing rates up to a maximum of \$15,000, or until the total fee approaches that cap. The services that are expected are detailed below:

1. Attend bi-weekly progress meetings on site. Representative from the sewer group will not attend once the sewer force main construction is substantially completed.
2. Assist in the interpretation of project plans and specifications during the construction process.
3. Respond to Requests for Information from the contractor. Provide clarifications to the contractor regarding interpretations of plans and specifications.
4. Coordinate with the Town and issue necessary field directives to the contractor based on changes in the scope of the work or differing/unforeseen site conditions.
5. Assist the inspection team in reviewing change order proposals, analyze pay requests, and prepare/process change orders to be incorporated into the contract including requisite backup. Analyze test pit information and make any necessary changes to the proposed drainage design. Weston & Sampson will issue up to two (2) revisions of the contract documents.
6. Participate in additional site visits and meetings as requested by the Town on an as-needed basis.

The above referenced Scope of Services for Phase VI will be completed for Hourly Budget as summarized below.

FEE SCHEDULE

Additional Work Tasks	Type	Cost
PHASE V. ADDITIONAL ENGINEERING SERVICES		
E. Geotechnical Services	Lump Sum Fee	<u>\$ 15,300</u>
PHASE V – TOTAL		\$ 15,300

Additional Work Tasks	Type	Cost
PHASE VI. DESIGN SERVICES DURING CONSTRUCTION		
A. DSDC	Previous Budget	<u>\$ 20,000</u>
	New Hourly (Budget)	<u>\$ 15,000</u>
PHASE VI – NEW TOTAL		\$ 35,000

Approved by: _____
 Town of Ledyard

 Signature Date

 Printed Name and Title