

Emerson St. Retaining Wall Field Investigations

Pennoni is pleased to present this proposal for topographic survey and geotechnical soil boring services in support of the completion of the Emerson St. Retaining Wall task. The previously approved task consisted of design of a retaining wall to replace the existing retaining wall along Emerson Street on the northeast quadrant of the intersection with 40th Place in Hyattsville, Maryland. The existing retaining wall consists of a tiered timber retaining wall system which is approximately 85 feet long with two tiers which have a maximum total height of approximately 5 feet based on available site photography.

For this supplemental task, we understand that a topographical survey and geotechnical exploration has been requested to obtain crucial information needed for the design and review of retaining wall options.

Scope of Work

Based on discussions with Mr. Hal Metzler, Public Works Project Manager, it was noted that topographic survey and soil boring investigations were required to complete the design.

Based on our review of the available site/aerial photography, there does not appear to be clear access to the area behind the wall through the adjacent property as there appears to be additional tiered walls and a chain link fence along the driveway within the property. To obtain the required subsurface information, Standard Penetration Test borings are proposed at each end of the existing wall (see attached sketch for proposed locations). Based on our discussions with the City on March 1, 2022, we understand that Emerson Street can be closed from the intersection with 40th Place to the intersection with 41st Place during our field exploration. We have assumed that road closed signs at each end of the road will be sufficient for maintenance of traffic and understand that a City of Hyattsville Street Access/Right-Of-Way Usage Permit will not be required but we will need to provide notice to the City prior to our fieldwork. We understand that the City will also restrict parking within the work area.

Work will be performed by qualified personnel under the supervision of a licensed professional geotechnical engineer in the State of Maryland; the report will be signed and sealed by that engineer.

1. Available Data – We will compile, review, and evaluate readily available existing information related to the current and proposed development at the referenced site, including geotechnical reports for adjacent developments that are provided by the Client. We will research our files for nearby projects and review available subsurface data.
2. Signage – Pennoni will provide advanced notice to the City of Hyattsville prior to our geotechnical field exploration. Pennoni will provide road closed signs on Emerson Street at the intersections with 40th Place and 41st Place. The signs will be set up at the beginning of each day and taken down at the end of each day. We understand that the City will restrict parking in the area of our exploration for the duration of the exploration.
3. Field Exploration – Based on our reviews, we will further develop/modify exploration and testing programs to obtain the necessary information pertinent to interpretation of subsurface conditions at the project site. We will estimate ground surface elevations based on the survey information to be obtained. We will contract the services of a qualified drilling contractor to perform the test boring.

We propose to perform two Standard Penetration Test (SPT) borings advanced to depths of approximately 20 feet below the existing ground surface at the east and west ends of the existing wall for a total of 40 linear feet. Sampling will be performed in general accordance with ASTM D 1586. Sampling of the soil will be continuous from the ground surface to a depth of approximately 10 feet and then in 5 foot intervals until the termination depth or auger refusal is reached, whichever is encountered first. We will obtain representative samples of the soil during drilling to be returned to our laboratory for subsequent analysis.

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We have included provisions for boring setup at each location, as locations are not easily accessible due to being located within the tiered wall and on sloped soil at each end of the wall and will take additional time to set up beyond what is typically required.

We have also included provisions for performance of up to two hand augered probes within the upper tier of the retaining wall where access with the drill rig is not feasible. Hand augered probes will be performed to a maximum of 5 feet below the existing ground surface. The probes will be utilized to classify subsurface stratigraphy behind the retaining wall at elevations above those accessible with the drill rig. Soil samples will be obtained from each strata observed.

At each hand auger probe location, we will perform an evaluation of the subsurface soils using a Dynamic Cone Penetrometer (DCP) testing device. We anticipate the depth of testing to be on the order of 5 feet below the existing ground surface unless refusal (30 blows/inch) to further advancement of the equipment is experienced first. The DCP device uses a standard 10 square centimeter (projected area) cone tip to determine cone penetration resistance and estimate soil bearing capacity. Uniformity of soil consistency and/or relative density can also be evaluated from the test results. Cone penetration resistance values are obtained every 4 inches by dropping a 35 pound hammer 15 inches.

We will provide full-time observation by an experienced engineer or geologist during the SPT drilling, hand auger borings, DCP testing, and backfill operations. At the conclusion of the field program, we will backfill the boreholes and probeholes with a mixture of the excavated soils and bentonite grout and spread any excess soil within the grass around the boring locations. It should be noted that settlement and softening of the replaced soil often takes place leading to depressions or holes at the ground surface. We have not included provisions for off-site soil disposal and/or additional site restoration beyond that described herein.

4. Laboratory Analysis – Samples obtained in the field will be returned to our laboratory. Tests will be performed on selected representative samples to better define classification and engineering properties as required. We anticipate our laboratory analysis will consist of routine index testing (e.g., moisture content determination, grain-size analysis, and/or liquid and plastic limit determination). Our services do not include testing or other type of investigation regarding the possible presence of hazardous or toxic substances either on-site or in imported materials.
5. Report and Recommendations – At the completion of our geotechnical services we will issue a letter style geotechnical engineering report summarizing our field exploration, laboratory testing, and subsequent analyses. The report will provide recommended soil parameters for use in design of the retaining wall and associated foundations included a recommended allowable bearing capacity.
6. Contingency Work – If additional test borings or auger probes are required other than those outlined in this proposal, we will develop the recommended scope of work along with the associated fee(s) and present them for approval. Any other engineering service not specifically outlined in this proposal will be invoiced in accordance with our normal professional Fee Schedule.
7. Topographic Survey - Pennoni to perform a field run topographic survey of the existing wall located on Emerson Street at 40th Place as well as Emerson Road curb and center pavement, 30 feet past the existing drive, up to the fence or 30 feet onto lot 3 if accessible. Perform topographic survey of 40th Place curb, center pavement up to the fence or 30 feet on lot 3 if accessible past the driveway on 40th Place. The horizontal survey datum will be performed in the Maryland Coordinate System NAD83 and the vertical datum will be NAVD88.
8. Boundary Survey - Pennoni to perform a field run boundary survey of Emerson Street right of way searching for property evidence on the adjoining properties along Emerson Street.

9. Boring Stakeout - Pennoni to stake the proposed boring locations and provide a spreadsheet.

Assumptions

The following assumptions have been made.

- An ALTA survey will not be required.
- Location of existing underground utilities are not included in this contract. Pennoni will utilize existing available utility plans from utility companies and county records to shown existing underground utilities
- Field exploration is to be provided during normal business hours (Monday through Friday, 8:00am to 6:00pm) using non-union, non-prevailing wage rate personnel and a single-mobilization;
- Client will provide unrestricted access to the boring locations for the duration of the field exploration program;
- Client will restrict parking on Emerson Street in the vicinity of the retaining wall during our field exploration;
- Site is accessible to a track mounted drill rig;
- Geotechnical field exploration can be performed in one day;
- Emerson Street can be closed during our field exploration and "Road Closed" signs are sufficient maintenance of traffic;
- A City of Hyattsville Street Access/Right-Of-Way Usage Permit is not required;
- Permits and site access requirements not specifically addressed herein shall be provided by the Client;
- For all hourly fee estimates in this proposal, the client agrees to compensate Pennoni for additional fees that exceeded the estimated amount. Pennoni will seek client’s authorization prior to proceeding with any services. Compensation to Pennoni shall be in accordance with the hourly rate schedule in effect at the time of services are performed.

Exclusions

The following items are specifically excluded from this proposal.

- No services will be performed outside the scope of services of this proposal without prior written authorization by the client. Pennoni has included all items that are believed to be necessary, in order to obtain approval for the scope of this proposal. For services outside the scope of this proposal which is required as a result of studies performed or added by the review agencies, Pennoni will prepare a scope of services and fee consistent with the extent of the services required.
- If Client directs Engineer to perform services as set forth in this agreement without signing the Agreement, such direction, verbal or otherwise, constitutes acceptance by Client of the terms of the Agreement, including all attachments.
- No site restoration beyond that described herein is being provided.

Deliverables

- Report of evaluation of two previous design alternatives (prepared by others), present two proposed alternatives, comparison of costs and life cycles for the proposed alternatives.
- Conceptual level plans for proposed alternatives.
- Rendering of the proposed alternatives for visualization.

Fees

Pennoni will provide the above referenced scope of services for a lump sum fee of **\$21,350** developed as follows:

Pennoni Field Exploration and Laboratory Testing-----	\$3,355.00
Drilling Subcontractor-----	\$5,500.00
Analysis and Report-----	\$5,895.00



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Topographic Survey-----\$2,100.00

Boundary Survey-----\$2,900.00

Boring Stakeout-----\$1,600.00

We have proposed a scope of work which satisfies our current understanding of the project. Should additional services be requested, we'll submit a request to the City.

Schedule

All topographic surveying work should be completed prior to beginning geotechnical work. We anticipate our geotechnical investigations can be completed within one week, weather permitting. We anticipate issuing our geotechnical engineering report within three weeks of the completion of drilling. A verbal summary of the results can be provided within 48 hours of the completion of drilling.

