



Mud Bay Geotechnical Services, LLC

April 3rd, 2023

2185-THU

Nisqually Meadows HOA
15007 105th Ave SE
Yelm, WA 98597
Proposal for Geotechnical Services

Dear Melissa Worthington,

Per your request, Mud Bay Geotechnical Services, LLC is providing this proposal for the geotechnical design at the subject address in Yelm, WA. We prepared this proposal based on the provided images and project description. The project consists of installing a retaining wall in a dry retention pond to prevent further erosion under a homeowner's fence.

The scope of this project is to investigate the soil and groundwater conditions within the property, provide geotechnical recommendations for the retaining wall, and prepare a report that meets the jurisdiction geotechnical reporting requirements for the type of work being performed.

Scope of Work

As part of the geotechnical effort, two hand auger borings will be performed near the footprint where the retaining wall will be constructed as part of the project. The borings will be drilled to a maximum depth of 12 feet. In order to investigate the density of the soil, down hole dynamic cone penetrometer tests will be performed at selected depths. Disturbed samples will be collected throughout the borings.

Based on our understanding of the geotechnical effort required to complete the requested work, we propose a minimum scope as follows:

- Provide a site reconnaissance to identify important site geologic features.

- Review available site information including soil and geology maps, LiDAR, prior mitigation measures, and other online information available to determine the mapped geology and geologic hazards at the site location.
- Provide representatives to perform the drilled hand auger borings, retain soil samples, and collect geotechnical data sufficient to determine the stratigraphy, density, and field classify soil types encountered. The depth to groundwater, if present, will also be determined at the time of drilling.
- Classify the soil samples retained from the drilling in accordance with ASTM D2488 Visual-Manual procedure for identification and classification of soils based on the Unified Soil Classification System (USCS).
- Based on the data collected in the borings and classification of soil samples, develop final boring logs to be used for design, which will be included in the geotechnical report for the project.
- Final geotechnical recommendations for feasible retaining walls. At the current time, we understand that mechanically stabilized earth walls (walls with geogrid reinforcement in the backfill) are the preferred alternative.
- Recommendations for engineered soil materials, compaction, reuse of onsite material, and other earthwork considerations, if applicable.
- Recommendations for surface water drainage, temporary and permanent erosion control.
- Recommendations for temporary excavation cuts including feasible temporary slope angles and shoring alternatives.
- A report summarizing the findings of the soil conditions at the site based on the hand auger boring exploration, and final geotechnical recommendations and conclusions to be used in the design and construction. The geotechnical recommendations and conclusions will be summarized in a professional engineer sealed and signed letter report that meets the Thurston County criteria.

Cost Estimate

Based on the understanding of the geotechnical scope of services requested, we estimate that the geotechnical design required for this project can be completed for fees of \$3,380. A summary of the estimated costs is presented in Table 1 below.

Table 1: Cost Estimate Summary – Design Phase

Work Item	Estimated Cost
Field Exploration	\$1,120
Review of Site Information	\$420
Engineering Analysis	\$720
Drafting and Report Preparation	\$1,120
	\$3,380

Estimated costs for field exploration, engineering analysis, drafting and boring log production, and report preparation are based on an hourly rate of \$150/hr. The total cost for the design phase of the project (geotechnical report) is \$3,380. A deposit of \$2,000 will need to be received prior to starting the field exploration. If the deposit is not paid prior to the date of the field exploration, the exploration will be postponed and rescheduled once the payment is received. The remaining amount of \$1,380 will be invoiced at the time of completion of the geotechnical report for the project. The remaining balance must be paid before deliverables are provided.

We look forward to the opportunity to work with you and serve your geotechnical needs on this project. Please contact me at your earliest convenience if you have any questions or would like to discuss any of the content in this proposal.

Sincerely,



Chris Heathman, PE
Mud Bay Geotechnical Services, LLC