



DEVELOPMENT ENGINEERING, PLLC

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August 12, 2013

Mr. Peter Riggs
690 E Colonel Road
Shelton, WA 98584

Geologic Assessment: Needle Pile Foundation
Proposed Residence
650 E Colonel Wright Rd
Mason County, Washington
PN: 220121190040
Job: 13-098 Riggs.EL

INTRODUCTION

This letter presents the results of our geotechnical investigation for the proposed residence to be located at 650 E Colonel Wright Rd on Harstine Island in Shelton, Washington. The general location of the site is shown on the attached Site Vicinity Map, Figure 1.

Our understanding of the project is based on our discussions with yourself, and our August 6, 2013 site visit. We understand that you are in the process of applying for a building permit to construct a single family residence on the currently developed site. Since the proposed building will be supported on a "Diamond Pier Foundation" the County Building department and Contractor have asked that a soils analysis be done to establish soils design parameters for the proposed foundation system. On the day of our site visit we observed the excavation of a single test pit in the vicinity of the proposed residence. The test pit was excavated by a backhoe operated by your earthwork contractor.

The test pit was excavated to a depth of approximately 8 feet, the soils generally consisted of a clean fine sand at depth, a test pit log is included as Figure 1. These soils are typical for the area and are consistent with what we would expect to see for a low bank waterfront property. As a result it is our professional opinion that no further test pits were warranted to characterize the site soils. Based on the observed soils in the test pit we recommend the following design parameters for the design of the foundation system

Unit Weight (pcf)	125
Soil Friction Angle (degrees)	32
Cohesion (pcf)	0

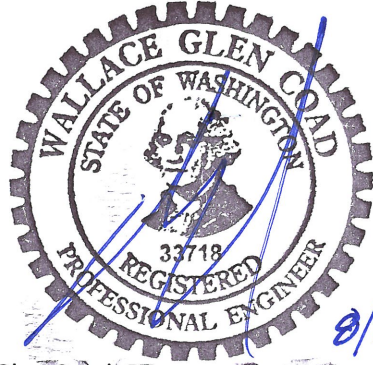
We trust this is sufficient for your current needs. Should you have any questions, or require additional information, please contact us at your earliest convenience.

LIMITATIONS

We have prepared this letter for the Riggs's and other members of the design team for use in evaluating a portion of this project. Subsurface conditions described herein are based on our observations of exposed soils on the parcel. This report may be made available to regulatory agencies or others, but this report and conclusions should not be construed as a warranty of subsurface conditions. Subsurface conditions can vary over short distances and can change with time.

Within the limitations of scope, schedule and budget, our services have been executed in accordance with generally accepted practices in this area at the time this report was prepared. No warranty, express or implied, should be understood.

Respectfully submitted,
Development Engineering, PLLC



Glen Coad, PE
Owner

WGC:wgc
Doc ID: 13-098 Riggs.EL
Attachments: Figure 1 – Test Pit Log

TP-1

Location: West of proposed residence

Depth (ft.)	Soil Type	Description
0 - 1.0'		Topsoil/ sod
1.0' - 3.0'	SW	brown SAND (trace silt med dense, moist)
3.0' - 8.0'	SW	grey SAND w/gravel (dense, moist)

Terminated at 8.0 feet below ground surface.
Slight caving observed in upper soils.
No groundwater seepage.

Logged by WGC, 8/6/13



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Test Pit Logs
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Figure 1