

July 20, 2016

Mr. Joe Bergevin
J D Bergevin Homes
P. O. Box 648
Woodinville, WA 98072

Re: **Geotechnical Recommendations**
Proposed Residence
4211 Holly Lane
Mercer Island, Washington

Dear Mr. Bergevin,

This report summarizes the results of our site investigation and geologic assessment of the subsoil conditions on this proposed residential property located on the southeasterly side of Holly Lane in Mercer Island. It is understood that a new residences will be built on this site that is currently unoccupied.

The purpose of this report is to describe the subsoil conditions onsite, and to provide recommendations for design and construction of this project. References include geologic mapping for this area of Mercer Island and previous geotechnical studies performed in this area.

Site Conditions

This property has a gentle slope from east to west with a gradient ranging from 4H:1V to 5H:1V, but there is a steep slope extending down from the west side to an existing property at the bottom of this steep slope area.

Glacial dialict deposits (Qpogd) are mapped under this area and they are suitable for support for the proposed residence foundations. Two test borings were drilled on this property to document subsoil and groundwater conditions. Below the shallow topsoils were medium dense silty and gravelly sands that will provide excellent support for the new structure. Below a depth of ten feet were dense silty sands with gravel that extended down to the bottom of the borings at 31 feet. Groundwater was encountered in these borings at a depth of ten feet below existing grades. Summary logs of these test borings are attached, and their locations are shown on Drawing No. 1.

Geotechnical Recommendations

Based on our geotechnical site investigation and our assessment of the subsoil conditions the proposed new structure foundations will extend down to the medium dense to dense glacial soils that will be encountered at the proposed building pad grade. An allowable soil bearing value of 3000 psf may be used in the design of these new foundations, with a passive earth pressure of 300 pcf and a friction value of 0.45.

Retaining walls for the upper side of the residence should be designed for an active pressure of 30 pcf and a passive pressure of 300 pcf. All perimeter foundations should have perforated subdrain pipes installed to collect minor surface water infiltration down to the footing levels. Impervious surfaces including the roof and driveway areas will need storm water discharge to a catch basin prior to offsite discharge into the city storm drain system.

Temporary excavations may be made at a 1H:1V slope for the upper two feet, and then at 1H:2V below to the proposed building pad grade. No temporary shoring will be required as long as the building pad is at least five feet from the easterly property line.

On the basis of my site evaluation and engineering assessment there is no potential for instability to the existing steep slope that is stable and not subject to landslide movement. It is recommended that the new structure be setback a minimum of 20 feet from the top of the existing steep slope, and that construction equipment be restricted within ten feet of this slope. Silt fencing for erosion control and equipment setback distance should be placed at the ten foot setback from the top of the slope.

Summary

We will review those portions of the plans and specifications that pertain to the new foundations to determine that they are consistent with the recommendations of this report. Construction monitoring and consultation services should also be provided to confirm that the new foundations are satisfactory.

Our findings and recommendations of this report were prepared in accordance with generally accepted principles of geotechnical engineering as practiced in the Puget Sound area at the time this report was submitted. We make no warranty, either express or implied. If there are any questions please call.

Respectfully,



Robert M. Pride, P. E.
Principal Geotechnical Engineer
dist: (1) Addressee
encl: Drawing No. 1
rmp: WileyResid1