

Murstein Toe-Slope Structure Setback Modification Vicinity Map





June 22, 2009
Project No. 09012

Mr. Michael Murstein
12412 NE 37th Street
Bellevue, WA 98005-1215

Subject: Critical Area Slope Assessment
Murstein Residence
12412 NE 37th Street
Bellevue, Washington

Battermann Geotechnical Consulting, pllc was requested to provide a geotechnical assessment of the minor area of 40 percent slope near the northeast corner of the subject property. We understand that you are planning on constructing a new single family residence to replace the existing single family residence onsite and that the City of Bellevue has requested a geotechnical engineering review of this critical area. The new residence will occupy the same basic footprint as the existing residence near the middle of the east side of the property. A short, approximate 10 to 12 foot high segment of slope to the north of the residence location was at an inclination slightly steeper than 40 percent which qualifies the slope as a critical area per the City code. The existing septic drainfield for the residence is located at the toe of this slope and may require maintenance as part of the new development plans. We performed a visual geological hazards reconnaissance of the site and the results of our review are contained in the following letter.

The subject property was located at 12412 NE 37th Street in the Pikes Peak neighborhood of Bellevue, Washington. The property was located in a shallow east-west trending draw with a flat bottom and moderate side slopes. The majority of the slope to the north of the residence was at slope inclinations of 20 to 30 percent. There is a minor, short segment at the toe of this slope that was at an inclination of about 50 to 60 percent. The slope was covered with a thick growth of 12 to 24 inch diameter fir trees except for the steep section where the trees are much smaller and were congruous with the landscaping around the yard.

We performed a geologic hazard reconnaissance of the slope on June 22, 2009. We did not observe any evidence of past or current slope instability on the slope. There was no evidence of old head scarps, debris flow channels, hummocky topography, or tension cracks. The tree trunks were primarily straight with minimal "pistol butt" tree trunks which is an indication of little soil creep on the slope. The slope was well vegetated with no exposed soil or evidence of erosion. The upslope area was not extensive extending about 20 to 30 feet above the steep slope segment at an inclination of about 25 percent.

A geologic map of the area indicates that the site is underlain by Vashon glacial till sediments. Soils exposed on the south slope in the driveway cut into the property confirms that the site is underlain by dense, damp to moist, grey, fine to medium sand with some silt, gravel and cobbles. Shallow hand exploration into the near surface soil in the steep slope area revealed a medium dense, damp, orangish brown, fine to medium sand with some gravel and fine silt. The near

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surface soil is either the upper weathered glacial till sediments of possibly a thin layer of recessional outwash sand from the retreat of the Vashon glacial ice at.

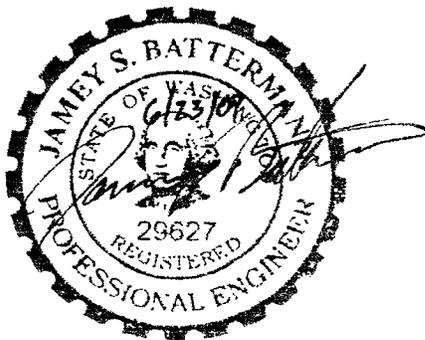
It is our opinion based on our review of the slope and the surrounding area that the slope is in a stable configuration. It is our opinion that the segment of steep slope was man-made from grading for the original residence construction. Based on the dense glacial sediments that underlie the core of the slope and the slope height and slope gradients, the potential for the slope to experience a rotational failure or earthquake induced landslide is low. Based on the moderate slope inclination of the majority of the slope and the relatively low over-all slope length, the potential for a debris flow, mass wasting type slope failure to occur is also low. No grading into the slope is planned as part of the development plans presented to us. Provided that the slope is left in its current configuration, we do not recommend that any setback from the toe of slope be imposed on the development plans.

The current septic drainfield is located at the toe of the north slope within the sandy soils. It is our understanding that this drainfield will continue to be utilized for the new residence but that some maintenance may need to be performed on the system. The system has been functioning without impact to the stability of the slope since its installation and it is our opinion that its continued use will not impact the stability of the slope. The planned maintenance may involve lengthening or replacing some of the dispersal lines within the drainfield. Provided that these lines are not installed higher up the slope than their current location, it is our opinion that the maintenance of the drainfield will not impact the slope.

We trust that this information will aid with the development of your project. If you have questions or require additional geotechnical engineering services, please contact BGC, pllc at (425) 273-5062.

Sincerely

Battermann Geotechnical Consulting, pllc



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Jamey S. Battermann, PE, LG