

February 29, 2024

JN 23413

Izabela Tekiela
5026 – 84th Avenue Southeast
Mercer Island, Washington 98040
via email: izabelatekiela@gmail.com

Subject: **Project Verification**
Proposed Residential Project
6520 – 82nd Avenue Southeast
Mercer Island, Washington

Greetings:

We have prepared a geotechnical engineering study for the proposed residence project dated December 27, 2023. In the report, we noted that at the southwestern portion of the site there is a slope/rockery that qualifies as a Potential Landslide Hazard Area per Mercer Island Code. Our full reasoning regarding this southwestern portion as a Potential Landslide Hazard Area, as detailed in our study, is included below. However, the conclusion of our reasoning is that we verify the project will not impact the slope/rockery on the southwestern portion of the site, and thus the project can be constructed as proposed. The full reasoning, taken directly from our study, is given below:

Under 19.16.010 of the Mercer Island City Code, a Landslide Hazard is defined as:

Those areas subject to landslides based on a combination of geologic, topographic, and hydrologic factors, including:

- 1. Areas of historic failures;*
- 2. Areas with all three of the following characteristics:*
 - a. Slopes steeper than 15 percent; and*
 - b. Hillsides intersecting geologic contacts with a relatively permeable sediment overlying a relatively impermeable sediment or bedrock; and*
 - c. Springs or ground water seepage;*
- 3. Areas that have shown evidence of past movement or that are underlain or covered by mass wastage debris from past movements;*
- 4. Areas potentially unstable because of rapid stream incision and stream bank erosion; or*
- 5. Steep slope. Any slope of 40 percent or greater calculated by measuring the vertical rise over any 30-foot horizontal run.*

Of the above criteria, the only one that applies to the site is 5.; this is at the slope/rockery on the southwestern side of the site. None of the other criteria apply to the site; there is no evidence of historic or past landslide movements, no springs or groundwater seepage, and no rapid stream incision or stream bank erosion.

With regard to the steep slope/rockeries area at the southwestern corner of the property (5.), we strongly believe that the lower rockery was placed in an excavated location and is adjacent to the native, medium-dense and denser sand soil. The small upper rockery is likely supporting fill soil. The residence is founded on the medium-dense sand (no fill) that is at least 2 feet below the ground, and all new building loads (including the proposed patio) will be founded on medium-dense to dense soil as recommended in this report, thus the foundations do/will bear on competent sand soil below the base of the small rockery; thus the small rockery does not provide any stability for the residence and patio structures, and these structures will have no effect on the stability of the small rockery. The residence is set back about 25 feet from the top of the 9-foot-tall base rockery that is adjacent to competent sand soil, while the patio will be set back about 15 feet. As noted earlier, this rockery appears to be in a stable condition and supports competent sand. The only significant potential of instability would potentially be during an MCE seismic event. However, based on the setback distances, it is our professional opinion that this potential rockery failure would not affect stability of the existing and new structures on the property. Therefore, it is our opinion that no buffers or setbacks are required for the project other than what is currently proposed, provided the recommendations presented in this report are followed. In addition, no adverse conditions will be made on the property or on adjacent properties if the recommendations in this report are followed.

We appreciate the opportunity to be of service on this project. If you have any questions, or if we may be of further service, please do not hesitate to contact us.

Respectfully submitted,

GEOTECH CONSULTANTS, INC.



2/29/2024

D. Robert Ward, P.E.
Principal

cc: **McClellan Architects** – Joey Pasquinelli
via email: joey@mccarch.com

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