associated earth sciences incorporated

May 17, 2023
Project No. 20180261E001

Mr. Harvey Chen
1542 24th Avenue NE
Issaquah, Washington 98029

Subject: Response to City Comments
Chen Residence
5024 West Mercer Way
Mercer Island, Washington

Geotechnical Report: Subsurface Exploration, Geologic Hazard, and Geotechnical Engineering Report
Chen Residence
Mercer Island, Washington
Dated September 20, 2018

Plans Reviewed: Chen Residence
Civil Sheets 1 through 6, The Land Developer's Engineered Solution, dated May 1, 2023
Architectural Sheets A000, A001, A002, A003, A101, A102, A104, A201, A301, A401, A501, A601, A701, A702, A703, D101, D102, D201, D301 and D401, Monsef Design Studio, dated January 8, 2021 (Sheets A000, A002, A003, A201, A301, A501, A601, D102 and D201 dated October 19, 2021, and Sheets A101, A102 and A104 dated October 17, 2022)
Structural Sheets S100, S101, S102, S200, S201, S202, S203, S300, S301 and S302, L2 Engineers, dated June 13, 2022
Topographic Survey, Tyee Surveyors, dated as revised February 6, 2023
Boundary Topographic Survey, Encompass Engineering and Surveying, dated as revised October 24, 2022
Arborist Tree Plan (Sheet A102), Arborists NW, undated (file stamped January 20, 2023)

Dear Mr. Chen:

This letter addresses selected geotechnical comments made by the City of Mercer Island's reviewer regarding the proposed residence. Associated Earth Sciences, Inc. (AESI) has prepared a geotechnical report, dated September 20, 2018, for the proposed residence, to be located at 5024 West Mercer Way in Mercer Island, Washington. The following provides our responses to selected City comments.

Geotechnical engineer of record to review the design drawings and provide letter indicating whether the project is designed in accordance with their recommendations. Provide statement of risk as indicated in MICC 19.07.160(B)(3)(a) through (d), indicating which statement is relevant for this project. Provide review of plans and statement of risk as an addendum letter to their September 20, 2018 geotechnical report.

We have reviewed the project plans referenced above. In our opinion, these plans conform to our geotechnical engineering recommendations. In our opinion, provided the project is constructed in accordance with these plans, the development practices proposed for the alteration would render the development as safe as if it were not located in a geologic hazard area, per MICC 19.07.160(B)(3)(c).

Geotechnical engineer to review proposed temporary and final grading proposed on the north side of the structure and provide recommendations to maintain slope stability and limit potential long term erosion.

Per our September 20, 2018 report, *"To the extent possible, we recommend that native vegetation be left on the slope to provide erosion control and that no fill material is placed atop or over the slope."* Our review of the grading and landscaping plans indicates that the area near to the residence will be excavated down to a level bench and mulched, with the existing vegetation remaining along the steep slope to provide mitigation for long term erosion.

Provide final grading plans for this area. How will you achieve higher grades here at the edge of a steep slope? The north elevation on Sheet A601 shows a final elevation at the NW corner of 296.

Geotechnical engineer to review proposed grading and provide recommendations to project team.

Our review of the above-referenced plans indicates that a cast-in-place concrete wall is now proposed to provide grade separation between the driveway and garage and the nearby slope.

Geotechnical engineer to review location/depth of proposed footings along the north side of the structure with respect to the existing slope. Verify embedment depth is sufficient for allowable bearing pressure used in the design of the footing.

Per the sections shown in the above-referenced plans, the footings along the north side of the residence are to be embedded roughly 4 to 8 feet below existing surface to allow placement of a partial basement level. In our opinion, this embedment should provide a suitable effective setback from the top of the slope. Foundation bearing capacity of the resulting foundation subgrade soils should be evaluated at the time of construction.

Geotechnical engineer to review location/depth of proposed footings along the south side of the structure with respect to anticipated temporary cuts required for construction of the foundations. Verify that temporary cuts do not encroach onto the adjacent property as well as identify potential impacts of temporary cut to existing structure located upslope. Provide

recommendations to mitigate potential impact to existing structure above or shoring recommendations if open cut excavation will encroach onto adjacent property in a letter addendum format for review.

Review of the temporary excavation plan presented on Sheet A102 indicated that the proposed temporary excavation for the residence should remain within the subject property.

This steep slope area has slopes approaching 1H:1V. After consulting with the geotechnical engineer of record, provide details on what this material will be and what layer thickness is proposed. Include measures to be implemented to ensure that it stays on the steep slope. Include this item in plan set review letter from the geotechnical engineer. The letter should specifically state that this material or the underlying slope due to the placement of this material will not be a long term stability issue.

Review of the above-referenced plans indicates that approximately 3 inches of mulch is planned for the area surrounding the residence, including along the resulting level bench along the north side of the residence. The existing vegetation along the steep slope should remain. Based on our plan review, it is our opinion that the 3 inches of mulch planned for the level bench near to the top of the slope should not pose a significant risk of long-term instability to the slope.

Closure

We appreciate the opportunity to be of continued service. If you have any questions, please call.

Sincerely,
ASSOCIATED EARTH SCIENCES, INC.
Kirkland, Washington

Bruce L. Blyton, P.E.
Senior Principal Engineer

Jeffrey Paul Laub
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Jeffrey P. Laub, P.E., L.G., L.E.G.
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BLB/jh – 20180261E001-005