



October 20, 2023

G-5881

Steve Kao and Hui Hong
21722 Chinook Road
Woodway, Washington 98020

Subject: Geotechnical Engineering Addendum, Residence Remodel and Addition,
5425 W. Mercer Way, Mercer Island, Washington.

Reference: Geotechnical Engineering Study, Proposed Addition, 5425 West Mercer Way,
Mercer Island, Washington. GEO Group Northwest, Inc., May 20, 2023.

Dear Mr. Kao and Ms. Hong:

GEO Group Northwest, Inc. has prepared this addendum to our above-referenced geotechnical engineering report regarding the proposed residential remodel and addition project at the above-subject location on Mercer Island, Washington. This addendum presents our responses to the geotechnical peer review comments posted to the submitted plans site via the City of Mercer Island permit portal, and geotechnical comments provided in the review letter by Kolke Consulting Group, Inc. dated September 23, 2023.

New Footing for Residence Remodel

(plans set page 26 geotechnical comment)

We have reviewed the location and depth of the proposed new footing inside the footprint of the existing residence as shown in Sheet 6.1, Section 2 and specified in Sheet S3.0, Detail 12 and Sheet S3.1, Detail 6. We have noted that the grade inclination in the area around the footing is approximately 2H:1V. Soils found in boring B-1 completed near the existing residence during our geotechnical study were observed to consist of medium dense / very stiff silt from near-surface depths to the bottom of the boring at a depth of approximately 26 feet.

We conclude that the vertical and lateral extent of loading imposed by the footing does not intersect with nearby existing footings or vice versa. Also, we anticipate that excavation work to construct the footings can be performed without removing support for nearby existing footings.

Based on these considerations, it is our opinion that the depth, location, and allowable loading from the proposed footing are acceptable from a geotechnical perspective provided that the proposed footing is directly supported on medium dense or stronger native soils and at a minimum depth of 18 inches below lowest adjacent grade, and verified during construction.

On-Grade Floor Slab for New Accessory Dwelling Unit

(plans set page 43 geotechnical comment, and KCG geotechnical comment #3)

We have noted that the lower floor for the accessory dwelling unit is proposed to consist of a structurally-reinforced, 7"-thick concrete slab connected to the grade beam system, as designed by the project structural engineer. In our opinion, the proposed structurally supported slab is acceptable for the project.

Resistance of Lateral Loads for New Accessory Dwelling Unit Foundation

(plans set page 43 geotechnical comment)

Based on the soil conditions found in boring B-2 near the proposed ADU footprint, we recommend that laterally supported the grade beams be provided by placing compacted crushed rock in a prism extending at least 4 feet outward from the sides of the grade beams and to a depth of at least 1 foot below the bottom of the grade beams. Under these conditions, the soil design parameters presented in our geotechnical report for the project can be used for design.

Alternatively, battered pipe piles or helical anchors can be used to resist lateral forces. We recommend that the use of battered piles or helical anchors be designed by a structural engineer.

Project Plans Review and Risk Statement

(plans set page 1 geotechnical comment, and KCG geotechnical comment #2)

GEO Group Northwest, Inc. has reviewed the revised construction plans for the proposed project. The plans we reviewed consisted of the following:

- the architectural plans set by Chesmore Buck Architecture, dated 6/7/23, and posted comments to date; and the revised Sheet 1.0, Site Plan, dated 9/8/23; and
- the structural plans set by Quantum Consulting Engineers, dated 6/7/23, and posted comments to date; and the revised sheets S.1, S.2, S.3, S.4, and D.2, dated 9/8/23.

In our opinion, the reviewed plans are consistent with the geotechnical recommendations presented in our referenced geotechnical report and this addendum, provided that one of lateral support options for the accessory dwelling foundation described in this letter is implemented.

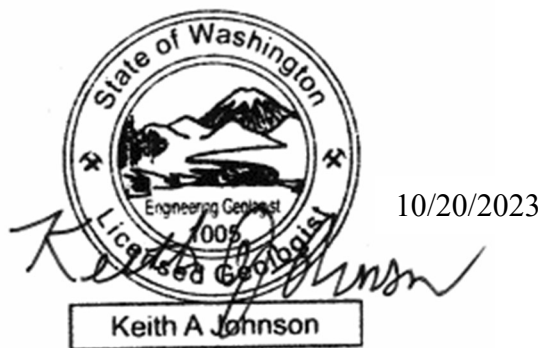
We also have reviewed the project plans per MICC Section 19.07.160(B)(3) with regard to the risk to the project associated with geologically hazardous areas. In our opinion, construction practices are proposed for the alteration that would render the development as safe as if it were not located in a geologically hazardous area and do not adversely impact adjacent properties.

Closing

Please feel welcome to contact us if you have any questions.

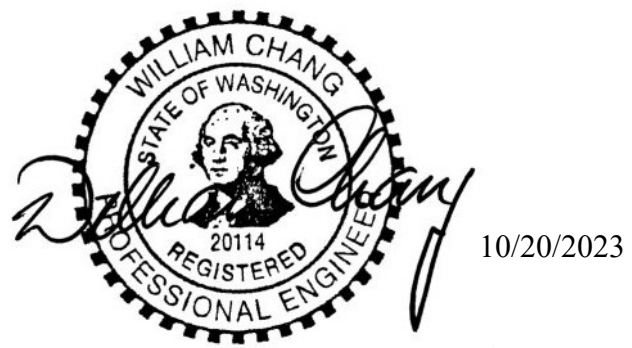
Sincerely,

GEO Group Northwest, Inc.



10/20/2023

Keith Johnson
Project Geologist



10/20/2023

William Chang, PE
Principal Engineer