

August 31, 2022
File No. 20-174.300

Mr. Mitch Mounger
4006 East Mercer Way
Mercer Island, WA 98040

**Subject: Geotechnical Plan Review and Statement of Minimum Risks
Proposed SFR
4006 E Mercer Way, Mercer Island, WA**

Dear Mr. Mounger,

As requested, PanGEO prepared this letter to respond to review comments by City of Mercer Island dated August 15, 2022. The following are our responses to the review comments pertinent to the geotechnical aspect of the project.

EARTH PRESSURE FOR THE WEST SITE RETAINING WALL

The ground surface immediately behind the west site retaining wall is flatter than 2H:1V, but then slopes to the tree 500 with a gradient steep than 2H:1V. A more conservative slope angle between the wall and tree 500 will be about 30 - 31 degrees. Based on that and the anticipated soil conditions, it is our opinion that an active earth pressure of 55 pcf (equivalent fluid pressure) may be used for the design of this wall.

GEOTECHNICAL PLAN REVIEW

We reviewed the geotechnical engineering aspects of the current plans for the above-referenced project. Our review includes the following:

- Architectural plan Sheets T1.0, T1.1, A1.0 through A8.0 dated August 23, 2022 by Sturman Architects,
- Civil Plan Sheets C-1 through C-3 last revised on April 29, 2022 by Nick Bossoff Engineering, Inc.; and

- Structural plan sheets S1.0 through S3.3 dated August 17, 2022 by Mike Annee.

In general, it is our opinion that the plans reviewed had incorporated all substantial geotechnical recommendations presented in our geotechnical report dated July 7, 2020, and in this letter.

STATEMENT OF MINIMUM RISKS

We understand that the site is mapped as a geologic hazard area. Per Mercer Island City Code Section 19.07.160.B.2, development within geologic hazard areas and critical slopes may occur if the geotechnical engineer provides a statement of risk with supporting documentation indicating that one of the following conditions can be met:

- a. The geologic hazard area will be modified, or the development has been designed so that the risk to the lot and adjacent property is eliminated or mitigated such that the site is determined to be safe;
- b. Construction practices are proposed for the alteration that would render the development as safe as if it were not located in a geologic hazard area;
- c. The alteration is so minor as not to pose a threat to the public health, safety, and welfare;
- d. An evaluation of site-specific subsurface conditions demonstrates that the proposed development is not located in a geologic hazard area.

Based on our additional analyses and our review of the current plans, it is our opinion that Criterion (b) can be met, provided that the project is properly constructed per the approved plans. We recommend that best management practices be implemented during construction, including the proper use of silt fence, minimize earthwork activities during periods heavy precipitations, minimized exposed areas in wet season, etc. Permanent erosion control measures including landscape and hardscape installations will effectively mitigate the risk of erosion in the long term.

CLOSURE

We trust that the information presented herein meets your need at this time. Please call if you have any questions.

Sincerely,



8/31/2022

Michael H. Xue, P.E.
Principal Geotechnical Engineer