

TERRA ASSOCIATES, Inc.

Consultants in Geotechnical Engineering, Geology
and
Environmental Earth Sciences

November 29, 2023
Project No. T-8718

Mr. Jamie Buchan
William E. Buchan Homes
2630 – 116th Avenue NE, Suite 100
Bellevue, Washington 98004

Subject: Response to City of Mercer Island Comments
3036 – 67th Avenue SE
Mercer Island, Washington

- References:
1. Geotechnical Report, 3036 – 67th Avenue SE, Mercer Island, Washington, Project No. T-8718, prepared by Terra Associates, Inc., dated August 22, 2022, 5th revision November 27, 2023
 3. Geotechnical Peer Review Comments, prepared by City of Mercer Island, dated October 2023

Dear Mr. Buchan:

As requested, we have reviewed the referenced comments from the City of Mercer Island regarding the project site. The following is our response to the geotechnical comments.

Page 1 – Comment #1

The revised foundation design includes 3-inch and 4-inch diameter pin piles. The revised geotechnical engineering report dated October 10, 2023 does not provide recommendations for 3-inch diameter pin piles. Please provide a revised report or report addendum to provide design capacity recommendation for 3-inch diameter pin piles.

Response

The geotechnical report has been revised to include recommendations for 3-inch diameter pin piles.

Page 1 – Comment #2

It appears that 1241 psf instead of 241 psf was used. Please resubmit revised residual strength stability analysis using 241 psf in the B-2 section. Please provide mitigation measures should the revised analysis result in a $FS < 1.0$.

Response

The post construction section for residual soils B-B' has been revised using a residual strength of 241 for B-2. Our apologies for the typo.

Page 1 – Comment #3

With the SUB5 plan set submission, please provide review letter from geotechnical engineer of record and updated statement of risk.

Response

As requested, we have reviewed Sheets S-0.0 and S-0.1 prepared by Mulhern+Kulp dated November 27, 2023, Sheets A1.1, A2, A8, and D1 prepared by Architectural Innovations, P.S, dated November 27, 2023, and Sheets SP-01, TG-01, and DT-01 prepared by Atwell dated November 20, 2023. Based on our review, the project consists of developing the site with a new single-family residence, associated access, and utilities. The plans indicate the residence will be a three-story, wood-framed structure with an attached garage constructed at grade. An interceptor trench will be installed on the east side of the site with a bottom elevation of 95.70 feet.

Grading to achieve the bottom of footing elevation of 99.66 feet will require excavation depths of 10 to 13 feet below current site grades. Based on our review, there is sufficient room to complete the excavation using conventional excavation techniques with a 1.5:1 (Horizontal: Vertical) temporary excavation slope.

Review of the structural design indicates the foundation for the residence will be supported on 3-inch and 4-inch diameter pin piles driven to refusal. The structural calculations indicate seismic loading was based on Site Class D.

These design parameters are consistent with the recommendations in the referenced report.

As noted, except as amended herein, all recommendations outlined in the referenced geotechnical report are applicable and continue to remain valid for project design and construction. Based on our review of the plans indicated, we conclude they were prepared in general accordance with the recommendations outlined in our report.

As noted in the reference geotechnical report, the project site is considered a landslide hazard area. Per Section 19.07.160B.3 of the Mercer Island City Code, “Alteration of landslide hazard areas, seismic hazard areas and associated buffers may occur if the conditions listed in subsection (B)(2) of this section are satisfied and the geotechnical professional provides a statement of risk matching one of the following:

- a. An evaluation of site-specific subsurface conditions demonstrates that the proposed development is not located in a landslide hazard area or seismic hazard area;
- b. The landslide hazard area or seismic hazard area will be modified or the development has been designed so that the risk to the site and adjacent property is eliminated or mitigated such that the site is determined to be safe;
- c. 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; or
- d. The development is so minor as not to pose a threat to the public health, safety and welfare.”

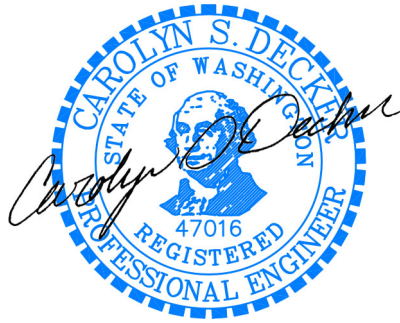
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Based on our review of the project plans, it is our opinion that, the landslide hazard area will be modified and the development has been designed so that the risk to the site and adjacent property is mitigated such that the site is determined to be safe. Therefore, the site can be developed as planned per the City Code.

We trust the information presented is sufficient for your current needs. If you have any questions or require additional information, please call.

Sincerely yours,
TERRA ASSOCIATES, INC.

Carolyn S. Decker, P.E.
President



11-29-2023