

October 3, 2019
File No. 18-371-100

Mr. Ryan Yuan
3611 West Mercer Way
Mercer Island, WA 98040

**Subject: Response to Plan Review Comments – 1907-017
3611 West Mercer Way
Mercer Island, Washington**

Dear Mr. Yuan,

This letter responds to plan review comments from the City of Mercer Island on your proposed new single-family residence. The following provides responses to the review comments with the numbering sequence below corresponding to the page numbers of the plan set submitted to the City.

PAGE 1 – GEOTECHNICAL STATEMENT OF RISK

Following plan revisions as subsequently discussed in this letter, we believe that the site redevelopment is permissible in accordance with MI 19.07.160.B.3.C.

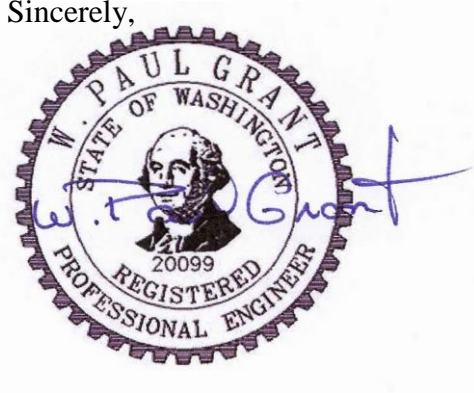
PAGE 4 COMMENTS - QUANTITATIVE SLOPE STABILITY ANALYSIS

Stability analyses were conducted to evaluate the static and seismic stability of the slope above the residence. All analyses were completed using the computer program SLIDE v. 6, by RocScience. The results of the static analysis, which is presented in Figure 1, indicates that the slope above the garage has a static factor in excess of 1.5. We also conducted a pseudo-static or seismic analysis of the slope and used a seismic coefficient of 0.28g to represent seismic ground shaking at the site corresponding to half the MCE_G.

The results of this analysis, as presented in Figure 2, indicate a factor of safety of about 1.2, which suggest that the slope should remain stable in the design earthquake.

We trust that the information outlined in this letter meets your needs. Please call with any questions.

Sincerely,



W. Paul Grant, P.E.
Principal Geotechnical Engineer

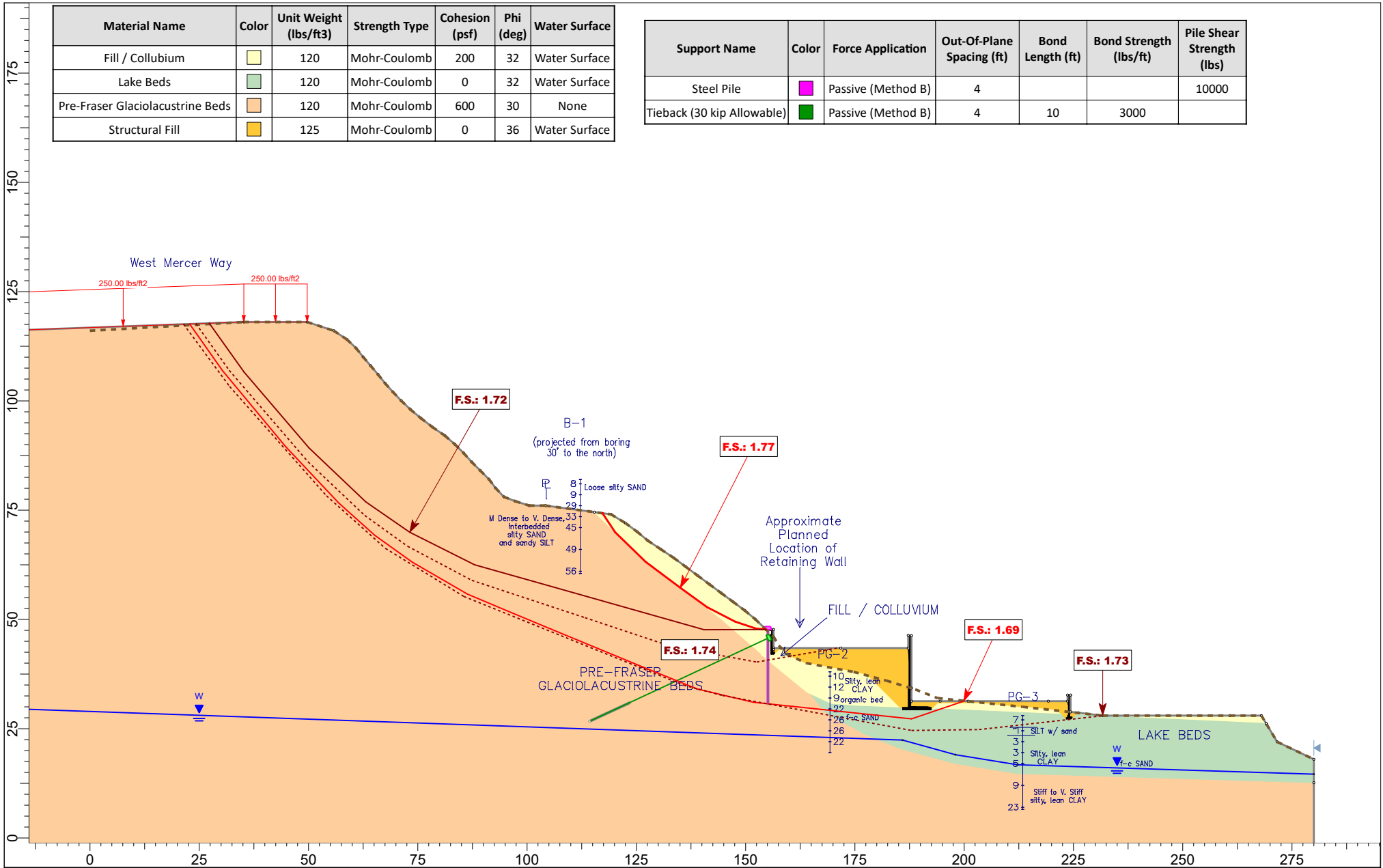
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Fig. 1 – Static Global Stability Analysis

Fig. 2 – Pseudo-Static (Seismic) Global Stability Analysis

Material Name	Color	Unit Weight (lbs/ft ³)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface
Fill / Colluvium	Yellow	120	Mohr-Coulomb	200	32	Water Surface
Lake Beds	Green	120	Mohr-Coulomb	0	32	Water Surface
Pre-Fraser Glaciolacustrine Beds	Orange	120	Mohr-Coulomb	600	30	None
Structural Fill	Yellow-Orange	125	Mohr-Coulomb	0	36	Water Surface

Support Name	Color	Force Application	Out-Of-Plane Spacing (ft)	Bond Length (ft)	Bond Strength (lbs/ft)	Pile Shear Strength (lbs)
Steel Pile	Purple	Passive (Method B)	4			10000
Tieback (30 kip Allowable)	Green	Passive (Method B)	4	10	3000	



SLIDEINTERPRET 6.039

Proposed Residence
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Mercer Island, WA

Static Global Stability Analysis

Project No.

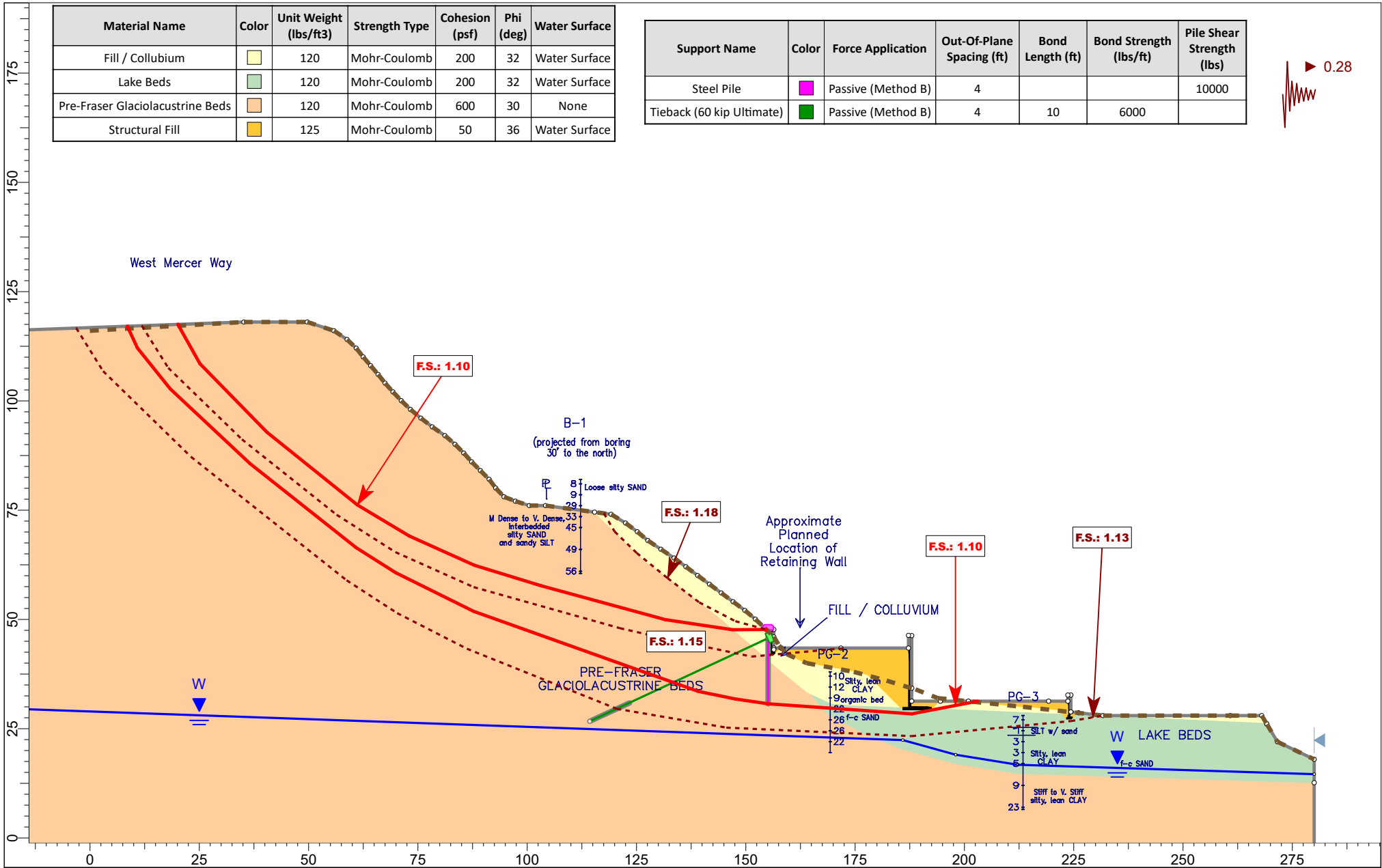
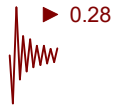
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Figure No.

1

Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface
Fill / Colluvium	Yellow	120	Mohr-Coulomb	200	32	Water Surface
Lake Beds	Green	120	Mohr-Coulomb	200	32	Water Surface
Pre-Fraser Glaciolacustrine Beds	Orange	120	Mohr-Coulomb	600	30	None
Structural Fill	Yellow-Orange	125	Mohr-Coulomb	50	36	Water Surface

Support Name	Color	Force Application	Out-Of-Plane Spacing (ft)	Bond Length (ft)	Bond Strength (lbs/ft)	Pile Shear Strength (lbs)
Steel Pile	Purple	Passive (Method B)	4			10000
Tieback (60 kip Ultimate)	Green	Passive (Method B)	4	10	6000	



SLIDEINTERPRET 6.039

Proposed Residence
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Pseudo-Static (Seismic) Global Stability Analysis

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Figure No.

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