



October 27, 2017

Ms. Teresa Muzzi
6132 Old Mill Road NE
Bainbridge Island, WA 98110

Re: Response to Comments
6134 Old Mill Road NE
Bainbridge Island, WA 98110
Project No. 170422

Dear Ms. Muzzi:

You requested that Aspect Consulting, LLC (Aspect) provide responses to the third-party review comments from the City of Bainbridge Island (City) for the proposed residence accessory dwelling unit (ADU) and garage (Project), located at 6134 Old Mill Road NE in Bainbridge Island, Washington (Site). This memorandum is to be used in conjunction with Aspect's *Geotechnical Engineering Evaluation and Critical Areas Report* dated August 29, 2017. This letter was completed in general accordance with our agreed upon scope of work dated October 16, 2017.

The review comments (AESI, 2017) are provided below with the responses following.

Comment 1 – Slope Stability

We have several comments on the “Slope Stability Analyses” section of the report and results presented in Appendix B.

(a) Table 2 on Page 7 of the report states that the static factor of safety is greater than 1.5 and that the seismic factor of safety is greater than 1.1 at a distance of 43 feet from the top of the steep slope. The slope stability results in Appendix B on Figures B-2 and B-3 present the minimum static and seismic factors of safety achieved for a shallow failure surface of 0.902 and 0.506, respectively, which is not consistent with the results presented in Table 2. While we infer that Aspect are trying to show that the lowest factors of safety occur within the colluvium, we recommend that Aspect present the factor of safety for a failure surface that terminates at the edge of the recommended buffer and setback. In addition, Aspect state in the paragraph below Table 2 that a seismic factor of safety greater than 1.0 was achieved, which is also inconsistent with the “greater than 1.1” shown in the table. We also recommend that Aspect provide further discussion and clarification of the stability results.

(b) Notes 3, 4, and 5, presented below Table 2, do not appear to be applicable to the analyses performed and are not referenced in the table. We recommend that Aspect clarify the applicability of these notes.

(c) Aspect concluded that, based on their slope stability analyses, the steep slope is “relatively stable” with regards to a deep-seated rotational slope failure, but that the “more pertinent hazard to the proposed structure is the accumulation of incremental erosion failures at the top of the steep



(c) We consider the term “erosion failures” to be interchangeable with “surficial or debris landslides.”

Comment 2 – Earthwork

In the first paragraph on page 7 of Aspect’s report, there is a reference to “fill” being encountered in their limited explorations. No fill unit is presented on the exploration logs or discussed in the text of the report.

Response 2

Although **not** directly observed in our limited hand explorations, fill material may be encountered within and just outside the footprint of the existing structure. We do not anticipate the fill material to be deep or expansive, however, if fill is encountered within the footprint of the new structure, we recommend that it be removed from the foundation areas.

Comment 3 – Foundations

In the second paragraph of this section on page 8 of Aspect’s report, it states that the allowable bearing pressure of 2,000 pounds per square foot (psf) can be increased by one-half for short-term wind or seismic loading. The prescribed value in the International Building Code (IBC) is a one-third increase for short-term loading.

Response 3

The presumptive bearing capacities provided in the IBC are permitted in the absence of geotechnical engineering analyses. In this case, Site-specific investigations and geotechnical engineering analyses were performed. The analyses support use of an allowable bearing capacity of 3,000 psf for short-term transient loading conditions.

Comment 4 – Slabs-on-Grade

On page 9 of the Aspect report, they recommend overexcavation and replacement of any loose soil with structural fill beneath all structural slabs. In our experience, reference to “structural” slabs refers to slabs that are pile supported and designed to span a certain distance. We request that Aspect clarify their recommendation as it appears unnecessary to remove and replace loose fill beneath a pile supported floor slab.

Response 4

For pile-supported slabs, it is unnecessary to overexcavate and replace loose soils. For other slabs-on-grade, we do recommend overexcavation of any discrete zones of loose soil or soil containing excessive deleterious/organic matter and replacement with structural fill. Existing fill or native soils beneath slabs-on-grade that are relatively free of deleterious/organic matter and relatively dense, or can otherwise be compacted in place to achieve a relatively dense configuration, do not require overexcavation and replacement.

Comment 5 – Geotechnical Exploration Logs

Descriptions of consistency for the fine-grained soils identified as Silt (ML) on Aspect’s exploration log HA-1 is not in accordance with Exploration Log Key Figure A-1 in their report. We recommend the description be revised.

Limitations

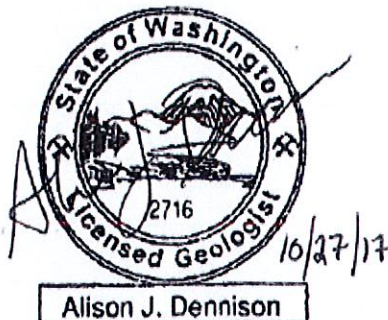
The conclusions and recommendations provided above are based on the information collected during our previous and recent Site visits, limited subsurface exploration data at the Site, our experience with the local geology near the Site, and pertinent available published data. Within the limitations of scope, schedule, and budget, our services have been performed for Ms. Teresa Muzzi (Client), and this letter was prepared in accordance with generally accepted geotechnical engineering and engineering geology practices in effect in this area at the time our letter report was prepared. This letter report does not represent a legal opinion. No other warranty, expressed or implied, is made.

All reports prepared by Aspect Consulting for the Client apply only to the services described in the Agreement(s) with the Client. Any use or reuse by any party other than the Client is at the sole risk of that party, and without liability to Aspect Consulting. Aspect Consulting's original files/reports shall govern in the event of any dispute regarding the content of electronic documents furnished to others.

We believe this addresses all questions from the third-party reviewer and should allow your permit to continue to process. If you have any questions, please do not hesitate to call.

Sincerely,

Aspect consulting, LLC

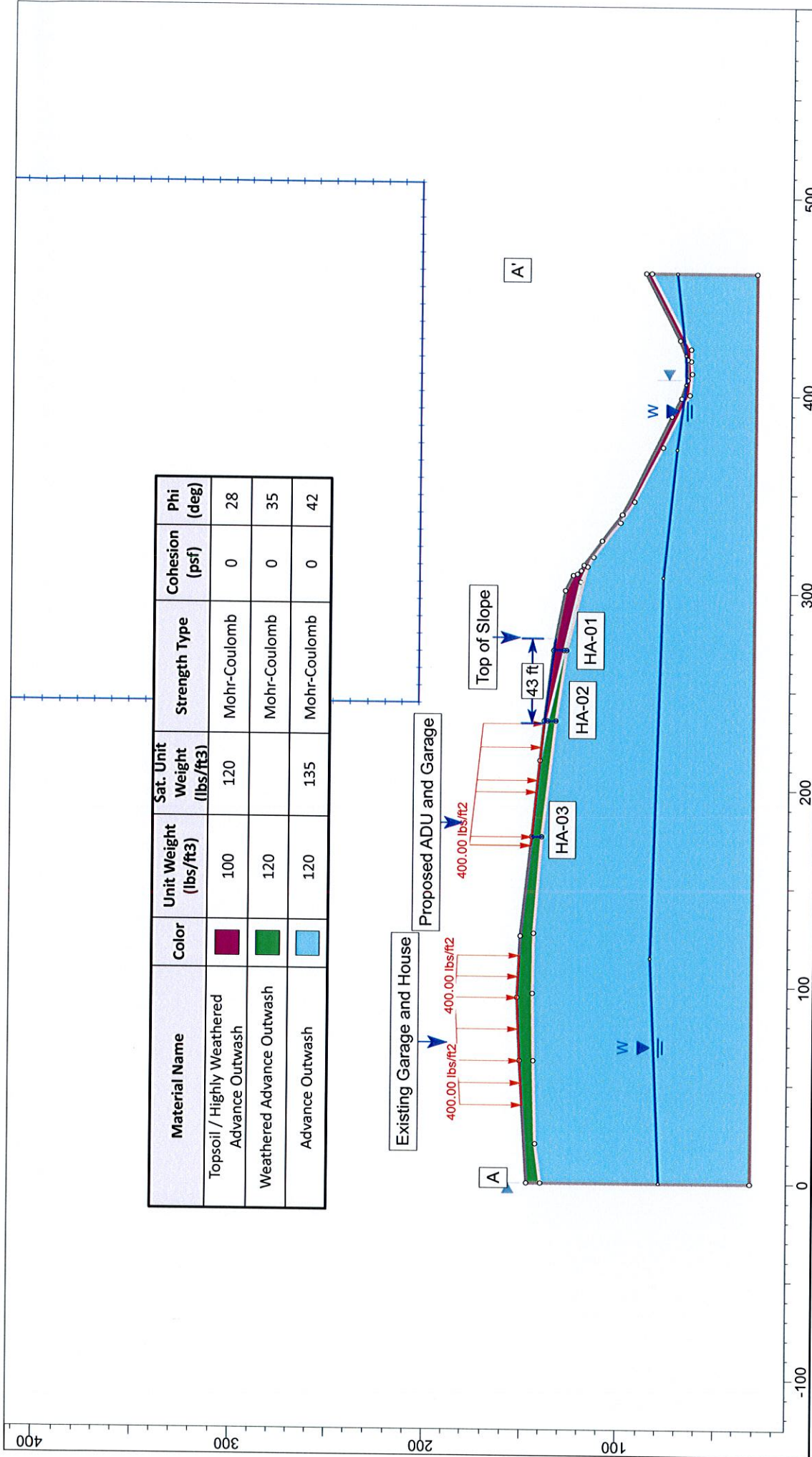


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Attachment: Slope Stability Analyses (revised)



Section A-A' Model Setup

Slope Stability Analysis

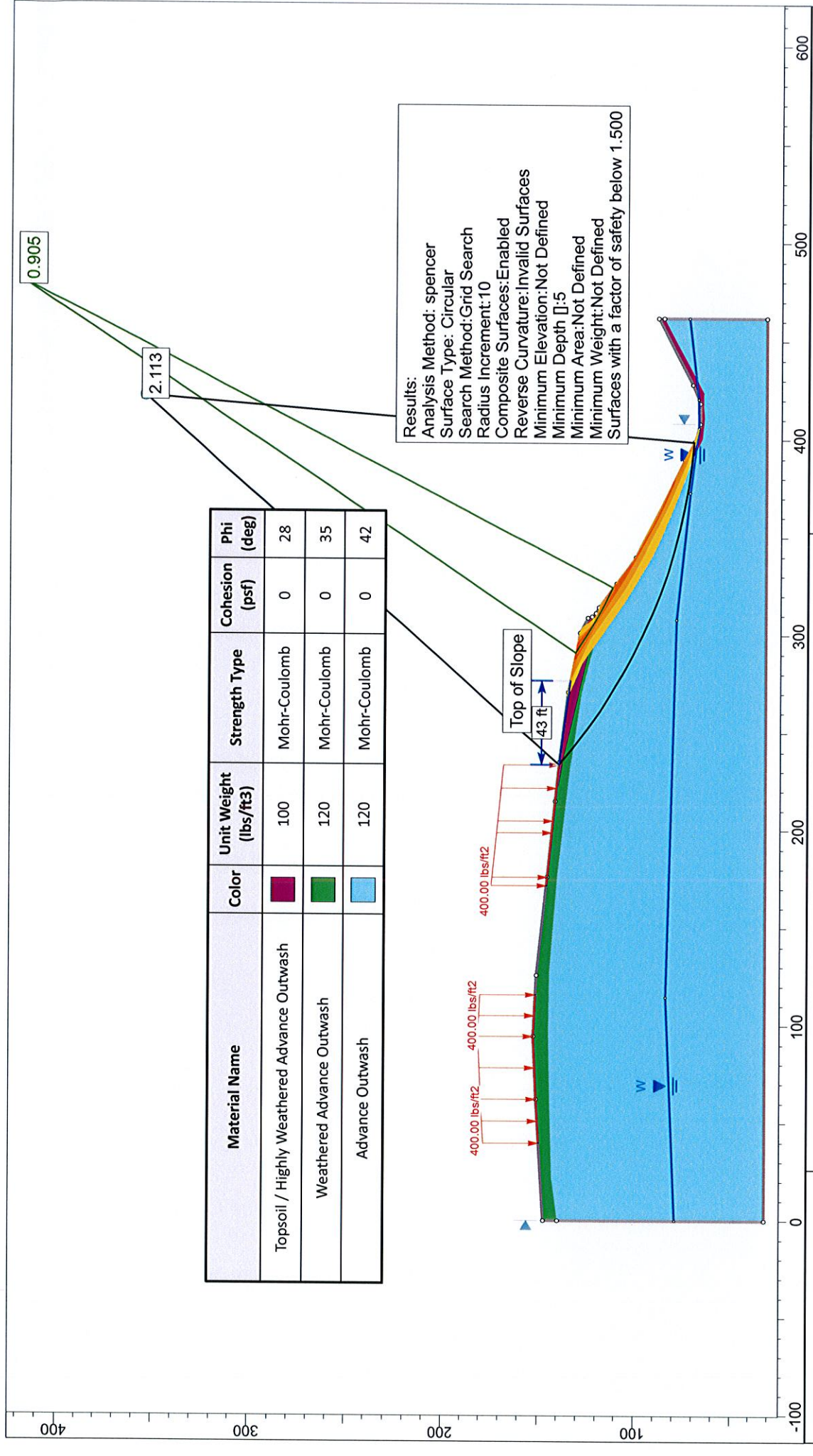
Muzzi ADU and Garage
6134 Old Mill Road NE, Bainbridge Island, WA 98110



10/19/2017
PROJECT NO. 170422

BY NHC
REVISED BY SJA

APPENDIX: **B-1**



Section A-A' Static Conditions

Slope Stability Analysis

Muzzi ADU and Garage
 6134 Old Mill Road NE, Bainbridge Island, WA 98110



SCALE: 1:840

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SJA

APPENDIX:




B-2

SLIDEINTERPRET 7.024



0.490

1.120

Material Name	Color	Unit Weight (lbs/ft ³)	Strength Type	Cohesion (psf)	Phi (deg)
Topsoil / Highly Weathered Advance Outwash		100	Mohr-Coulomb	0	28
Weathered Advance Outwash		120	Mohr-Coulomb	0	35
Advance Outwash		120	Mohr-Coulomb	0	42

Results:
 Analysis Method: Spencer
 Surface Type: Circular
 Search Method: Grid Search
 Radius Increment: 10
 Composite Surfaces: Enabled
 Reverse Curvature: Invalid Surfaces
 Minimum Elevation: Not Defined
 Minimum Depth []: 5
 Minimum Area: Not Defined
 Minimum Weight: Not Defined
 Surfaces with a factor of safety below 1.100




Top of Slope
 43 ft

400.00 lbs/ft²

400.00 lbs/ft²

400.00 lbs/ft²

Legend

-  Search Grid
-  Search Limits
-  Modelled Groundwater Level
-  Boring Location and Depth

Section A-A' Seismic Conditions

Slope Stability Analysis

Muzzi ADU and Garage
 6134 Old Mill Road NE, Bainbridge Island, WA 98110



SCALE: 1:840
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 REVIEWED BY: SJA

APPENDIX:

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