associated earth sciences incorporated

January 22, 2021
Project No. 20210004E001

Westhill, Inc.
P.O. Box 306
Woodinville, Washington 98072

Attention: Mr. Chuck Russell

Subject: Leahy Addition
4340 East Mercer Way
Mercer Island, Washington

Dear Mr. Russell:

In accordance with your request, this letter presents the findings of the limited geologic hazard assessment completed for the subject project. This letter was prepared for the exclusive use of Westhill, Inc., and their agents, for specific application to this project. No other warranty, express or implied, is made.

SITE AND PROJECT DESCRIPTION

The subject site consists of a residential parcel with an existing home located at 4340 East Mercer Way in Mercer Island, Washington. Review of King County records indicates that the house was constructed in 1977. The topography of the site generally slopes down toward the east to southeast. Review of a topographic survey of the site indicates that slope inclinations in the western portion of the parcel range from approximately 40 to 65 percent over heights ranging from approximately 4 feet to a maximum of approximately 25 feet. The upper portion of this steep slope extends offsite. A small area of steep slope ranging in height from approximately 4 to 10 feet extends along a portion of the southern site margin. The topography flattens to less than 15 percent in the vicinity of the existing house, located in the

eastern portion of the parcel below the area of the steep slope. The topographic conditions at the site are shown on the Slope Exhibit, Figure 1.

Current plans consist of construction of a second-story addition to the home. The second-story addition will be limited to the northern portion of the home. We understand that the project will include construction of some interior footings, but no disturbance will occur outside of the footprint of the existing house.

SITE RECONNAISSANCE

The steep slope at the west end of the property is naturally forested with light to moderately thick underbrush. During our reconnaissance of this area we did not observe any emergent seepage/spring activity or evidence of historic landsliding. A private road (Cedar Cove Road) that provides access to the subject parcel and several nearby parcels extends down the steep slope near the northwest margin of the site. The area between the toe of the slope and the subject house consists of a relatively flat-lying lawn. A small stream is located south of the home. The stream enters the property near its west end from a culvert that passes below East Mercer Way. As shown on Figure 1, most of the stream is located outside of the subject parcel.

GEOLOGIC MAP REVIEW

Review of the regional geologic map titled *Geologic Map of Mercer Island, Washington* by Troost and Wisher (2006) indicates that the sediments underlying the area of the subject parcel consist of pre-Olympia non-glacial deposits. The pre-Olympia non-glacial deposits consist of sediments that were deposited prior to the non-glacial period that preceded the most recent glaciation of the Puget Lowland. The Olympia non-glacial period is estimated to have begun approximately 60,000 years ago. The regional geologic map also depicts a small landslide scarp in a sloping area south of the stream located south of the subject parcel.

CONCLUSIONS AND STATEMENT OF RISK

As previously noted, slope inclinations in an area of the western portion of the site range from approximately 40 to 65 percent over heights ranging from approximately 4 to 25 feet. The portion of the slope at the west end of the property that is 40 percent or steeper over a height of at least 12 feet classifies as a Landslide Hazard Area and as a Steep Slope under the *Mercer Island Municipal Code* (MIMC). Given the height and inclination of the Steep Slope/Landslide Hazard Area, and the regional geologic mapping, it is our opinion that if landsliding were to occur on this slope it would most likely consist of a shallow landslide. Section 19.07.106(C)(2) of the MIMC specifies buffer widths for Steep Slope and Landslide Hazard Areas. For Steep

Slopes, this section of codes states that the buffer width shall be equal to the height of the Steep Slope or 75 feet, whichever is less, and the buffer shall be applied at the top and toe of the Steep Slope. The code states that Shallow Landslide Hazard Areas shall have minimum buffers of 25 feet, applied in all directions. Based on the conditions present, we recommend a 25-foot buffer from the Steep Slope/Landslide Hazard Area. The locations of the toe of the Steep Slope/Landslide Hazard Area and associated buffer are shown on Figure 1.

Earthwork associated with the project will be limited to minor excavation associated with construction of footings within the interior of the existing home. No disturbance will occur outside of the footprint of the existing structure. Although construction of the second-story addition will result in increased loading on the building foundation, the home is located below the steeply sloping area. For this reason, construction of the addition will not increase the load on the steep slope. Given the location of the home relative to the steep slope, and the limited disturbance anticipated for the project, it is our opinion that the development is so minor as not to pose a threat to the public health, safety, and welfare.

We appreciate this opportunity to have been of service to you. If you have any questions or require any additional information, please do not hesitate to call.

Sincerely,
ASSOCIATED EARTH SCIENCES, INC.
Kirkland, Washington

Timothy J. Peter, L.E.G., L.Hg.
Senior Engineering Geologist

Matthew A. Miller, P.E.
Principal Geotechnical Engineer

Attachment: Figure 1 - Slope Exhibit

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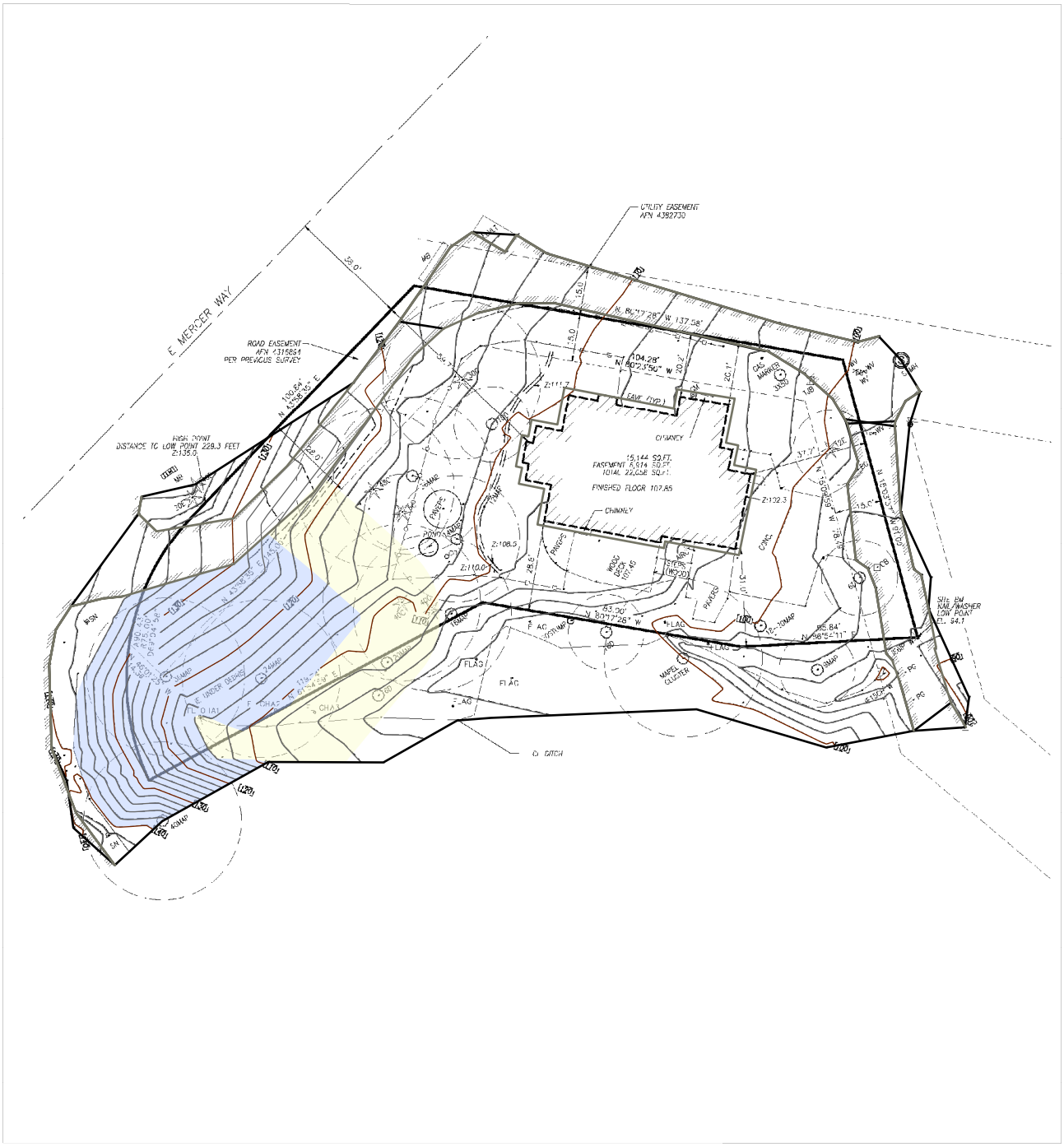

LEGEND

- STEEP SLOPE LANDSLIDE HAZARD AREA
- 25 FT BUFFER

N

0 50

Feet

DATA SOURCES / REFERENCES:
ACREAGE LAND SURVEYING, LEAHY RESIDENCE,
TOPOGRAPHIC AND BOUNDARY SURVEY, 2/25/2020
LOCATIONS AND DISTANCES SHOWN ARE APPROXIMATE

NOTE: BLACK AND WHITE REPRODUCTION OF THIS COLOR ORIGINAL MAY REDUCE ITS EFFECTIVENESS AND LEAD TO INCORRECT INTERPRETATION

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SLOPE EXHIBIT

LEAHY ADDITION
MERCER ISLAND, WASHINGTON

PROJ NO.	DATE:	FIGURE:
20210004E001	1/21	1

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