

January 6, 2026
File No. 25-466

Artoush Fanaiyan
Artoush Construction and Remodeling
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**Subject: Letter of Concurrence & Additional Geotechnical Recommendations
Proposed SFR
5818 West Mercer Way, Mercer Island, WA**

Dear Artoush,

As requested, we have completed a review of the following documents:

1. Geotechnical Engineering Report entitled “*Geotechnical Evaluation, Proposed Residence, 5818 W. Mercer Way, Mercer Island, Washington.*” prepared by Cobalt Geoscience dated November 8, 2024;
2. Geotechnical Report Addendum entitled “*Geotechnical Addendum, Proposed Residence, 5818 W. Mercer Way, Mercer Island, Washington.*” prepared by Cobalt Geoscience dated July 2, 2025;
3. Current Design Plan Set including the following:
 - Architectural Plan Sheets A1 through A10 by Centerline Design (last Revised on July 25, 2025);
 - Civil Plan Sheets C1.0 through C4.0 by Civil Engineering Solutions (last revised on July 7, 2025); and
 - Structural plan sheets S1.1 thorough S6.7 and shoring plans SH0.1 through SH2.2 by Atlas Consulting Structural Engineers (last revised on July 25, 2025).

GEOTECHNICAL OPINIONS AND ADDITIONAL RECOMMENDATIONS

Based on our review, in general, we concur with the geotechnical findings and recommendations contained in the above referenced geotechnical report and addendum with the exceptions discussed below. The additional geotechnical recommendations presented below will supersede the design recommendations in the original geotechnical report and addendum.

Soldier Pile Shoring Walls

Based on the current plans, we understand that temporary and permanent soldier pile walls with tiebacks will be needed to support temporary excavations and permanent cuts along the east and south sides of the proposed building. For cantilevered soldier pile walls, we recommend that the earth pressures depicted on Figure 1 be used for design. For soldier pile walls with one or more levels of tiebacks, we recommend that the earth pressures depicted on Figure 2 be used for design. The lateral earth pressures shown on Figures 1 and 2 should be increased for any surcharge loads resulting from construction equipment, storage of construction materials, or excavated soil if they are located within the height dimension of the wall.

Above the bottom of excavation, the recommended active earth and surcharge pressures should be applied over the full width of pile spacing. Below the bottom of excavation, the active and surcharge pressures should be applied over one pile spacing, and the passive resistance should be applied over 2.5 times the pile diameter.

CONCLUSION

Based on our review, in general, we concur with the geotechnical findings and recommendations contained in the above referenced geotechnical report and addendum, with the exceptions discussed above. Provided that the original geotechnical recommendations and our current recommendations presented above are followed and the proposed project is designed in accordance with the current codes and properly constructed, we have agreed to be the geotechnical engineer of record for the project.

CLOSURE

We appreciate the opportunity to assist you with this project. If you have any questions, please do not hesitate to contact us.

Sincerely,

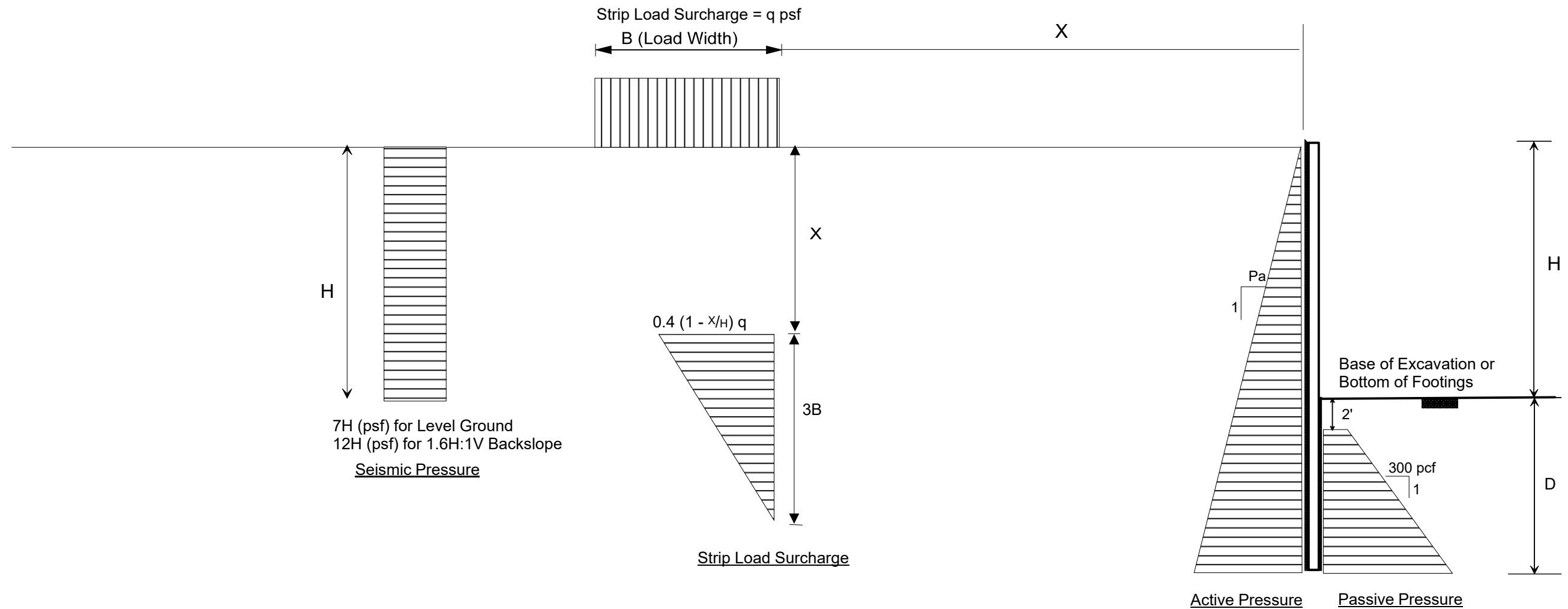


1/6/2026

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

Attachments:

- Figure 1 Design Lateral Pressures, Cantilever Soldier Pile Wall
- Figure 2 Design Lateral Pressures, Soldier Pile Wall, One or Multiple Levels of Tiebacks

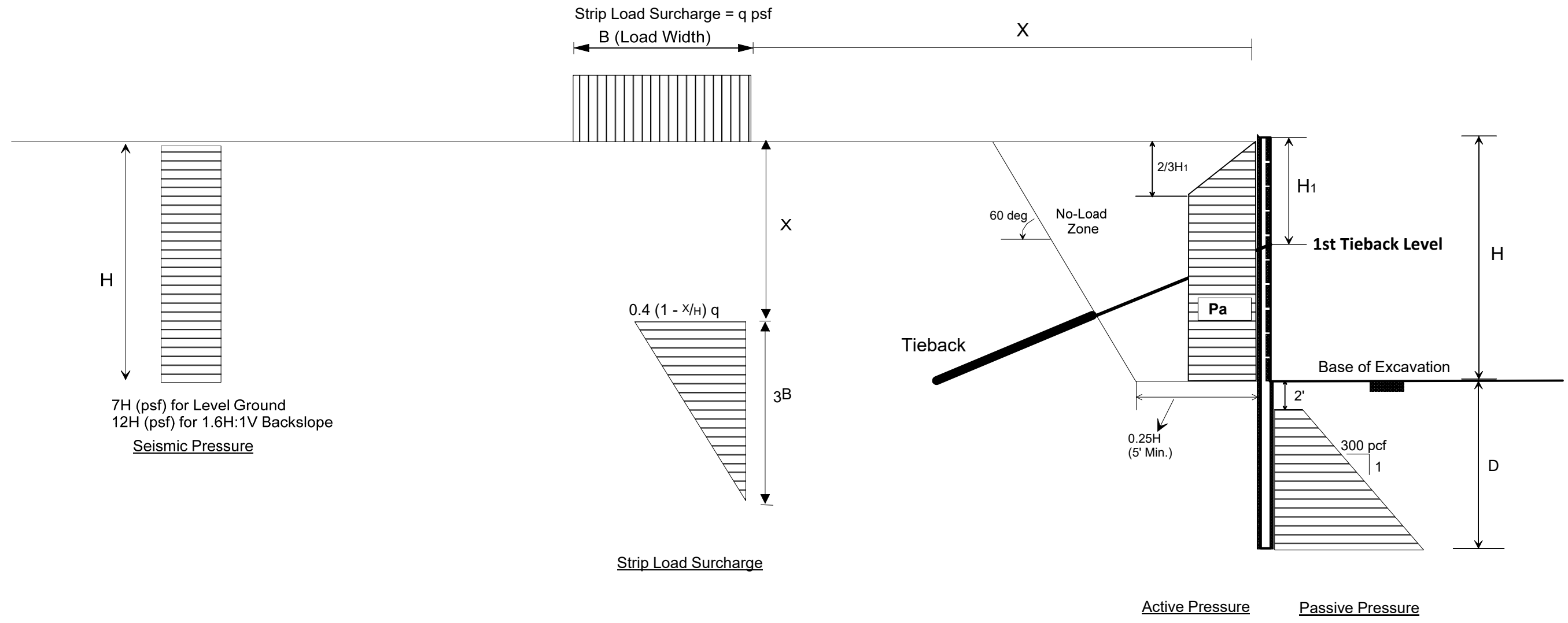


Temporary Shoring Walls:
 $P_a = 35$ pcf (Level Background)

Permanent Shoring Walls:
 $P_a = 50$ pcf (Level Background)

Earth Pressure Factor for Backslope	
Backslope, X:1	Earth Pressure Factor (A)
Level	1
3H:1V	1.2
2H:1V	1.4
1.6H:1V	1.55

- Notes:
1. Minimum embedment should be at least 8 feet below bottom of excavation.
 2. A factor of safety of 1.5 has been applied to the recommended passive pressure values. No factor of safety has been applied to the recommended active earth pressure values.
 3. Active pressures should be applied over the full width of the pile spacing above the base of the excavation, and over one pile diameter below the base of the excavation.
 4. Surcharge pressures should be applied over the entire length of the loaded area.
 5. Passive pressure should be applied to 2.5 times the diameter of the soldier piles, or pile center-to-center spacing, whichever is less.
 6. For lagging design, refer to report text.



$P_a = 35H \text{ pcf}$ (Level Background)

Earth Pressure Factor for Backslope	
Backslope, X:1	Earth Pressure Factor (A)
Level	1
3H:1V	1.2
2H:1V	1.4
1.6H:1V	1.55

Tiebacks:
 Minimum Bond Length: 12 feet
 Assume Maximum Allowable Capacity:
 2.0 kip / foot

- Notes:
1. Minimum embedment should be at least 8 feet below bottom of excavation.
 2. A factor of safety of 1.5 has been applied to the recommended passive pressure values. No factor of safety has been applied to the recommended active earth pressure values.
 3. Active pressures should be applied over the full width of the pile spacing above the base of the excavation, and over one pile diameter below the base of the excavation.
 4. Surcharge pressures should be applied over the entire length of the loaded area.
 5. Passive pressure should be applied to 2.5 times the diameter of the soldier piles, or pile center-to-center spacing, whichever is less.
 6. For lagging design, refer to report text.

13-052_Figure 3.grf 1/6/26 (6:12:36) JCR