



**NELSON GEOTECHNICAL  
ASSOCIATES, INC.**

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July 25, 2024

Abhi Sharma

Via Email: [abhisharma@outlook.com](mailto:abhisharma@outlook.com)

Geotechnical Plan Review – **REVISED**  
**Sharma Retaining Wall**  
**7905 West Mercer Way**  
**Mercer Island, Washington**  
NGA File No. 1496924

Dear Abhi:

This letter presents the results of our geotechnical engineering review of the plans for the Sharma retaining wall project located at **7905 West Mercer Way in Mercer Way, Washington.**

## **INTRODUCTION**

We understand that the site was red-tagged by the City of Mercer Island after a block wall was installed above an existing rockery on the lower portion of the slope on the west side of the property. We previously prepared a geotechnical report regarding the block wall dated March 7, 2024, followed by a plan review letter dated April 23, 2024, a comment response dated May 14, 2024, and a second comment response dated July 5, 2024. We concluded that the block wall was not stable in its current configuration and provided recommendations for wall reconstruction. We also understand that the plans for stabilization include reducing the height of the wall to 30 inches in accordance with Mercer Island code, reinforcing the soil with geogrid, and sloping the area above the wall back towards the residence.

The City of Mercer Island has requested that we review the provided plans and confirm that they are in accordance with our recommendations.

For our use in preparing this plan review letter, we have been provided with the following document:

- ***A plan set titled "Retaining Wall," dated July 22, 2024, and prepared by Wise Choice Construction.***

In the following sections, we summarize the results of our updated geotechnical plan review.

## **PLAN REVIEW**

We have reviewed the geotechnical aspects of the provided updated plans and found the plans to be in general compliance with our recommendations as presented in our previous geotechnical report. Plans indicate that the new block wall will be located 6.0 feet from the back of the existing rockery and will have an exposed height of 30 inches, along with 8-inches of embedment. The wall will be founded on a minimum 12-inch-thick pad of 1¼-inch clean crushed rock extending down to competent bearing soil to be approved by NGA. All fill behind and above the wall will be placed as structural fill and is to be compacted to 95 percent of maximum dry density, per **ASTM-1557**. Fill behind the block wall will be reinforced with Mirafi 3XT geogrid placed every 12 inches and extending 5.0 feet from the back of the wall. The area above the wall will be sloped back at a 1 Horizontal to 1 Vertical (1H:1V) gradient, reinforced with Mirafi 3XT geogrid wraps lined with Mirafi N140 filter fabric or equivalent. The surface of the slope will be covered with heavy duty jute netting staked in place with metal steaks that are a minimum of 18 inches long. The top of the slope above the wall will be covered with 6 inches of compacted 1¼-inch clean crushed rock. The proposed hot tub will be setback a minimum of 5.5 feet from the top of the 1H:1V slope and 8.0 feet from the top of the block wall.

All other recommendations provided in our previous report should be strictly followed and all drainage from the new wall should be directed to an approved point of discharge.

## **MINIMUM RISK STATEMENT**

Provided that the recommendations in the geotechnical report dated March 7, 2024 are followed during construction, the risk of damage to the site or to adjacent properties from soil instability should be minimal, and the proposed development should not increase the potential for soil movement.

## **CLOSURE**

We recommend that NGA be retained to provide monitoring and consultation services during construction to confirm that the conditions encountered are consistent with those indicated by the explorations, to provide recommendations for design changes should the conditions revealed during the work differ from those anticipated, and to evaluate whether or not earthwork activities comply with contract plans and specifications.

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We appreciate the opportunity to provide service to you on this project. Please contact us if you have any questions regarding this letter or require further information.

Sincerely,

**NELSON GEOTECHNICAL ASSOCIATES, INC.**



Sarah L. Dunn, GIT  
Project Geologist



Khaled M. Shawish, PE  
Principal

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