

May 12, 2025

JN 23150

Tammy Cui
8636 North Mercer Way
Mercer Island, Washington 98040
via email: tmsliu3@gmail.com

Subject: **Addendum to Geotechnical Report/Critical Area Study –
Critical Area Mitigation Sequencing**
Proposed Landscape Improvements
8636 North Mercer Way
Mercer Island, Washington

Reference: *Geotechnical Engineering Study and Critical Area Study*, same site and project;
Geotech Consultants, Inc.; November 20, 2024.

Greetings:

This addendum to our above-referenced November 20, 2024 report has been prepared to address Mitigation Sequencing under MICC 19.07.100, as required by the City of Mercer Island reviewer. We have been provided with the architectural drawings prepared by Michael L. Jones (4/10/2023) and the structural plans developed by I.L. Gross Structural Engineers (7-16-24).

MICC 19.07.100 Mitigation Sequencing

Response: In order to satisfy MICC 19.07.100 this project has addressed mitigation of impacts to the Seismic, Steep Slope, Potential Landslide, and Erosion Hazard critical areas present on site in the following manners:

A – Avoiding Impact altogether:

- The area upslope, south, of the detached garage was previously disturbed by rockeries and landscaping completed during the original construction of the house and garage. We observed that there are older rockeries in this area that obviously pre-date the more recent modular walls, pavers, and pergola. From Mercer Island's GIS, we obtained the attached letter from 2012 prepared by GeoSpectrum Consultants, which confirms that rockeries were to be constructed at that time in conjunction with landscaping on the upper side of the detached garage.

The area of the proposed landscaping and pergola has already been impacted. The planned new landscaping, which includes construction of reinforced modular block walls to terrace the previously-disturbed area avoid adverse impacts and will actually improve stability of the sloped ground.

B – Minimizing Impact:

- The planned work will not affect the area south of the existing detached garage any more than the landscaping and rockery construction that occurred in this area at the time of the original site development. The pavers, pergola, and reinforced modular walls will: 1) prevent soil erosion, and 2) provide appropriate long-term stability for the previously-disturbed area.

C – Rectify impacts:

- The proposed terracing combined with the reinforced modular block walls will provide stability for the previously-disturbed area. The original rockeries are not structural retaining walls and the reinforced modular walls will provide stability for this area.

D – Reduce or eliminate impact over time:

- The reinforced modular block walls will eliminate the pre-existing impacts to slope stability that resulted from the use of unreinforced rockeries.

E- Compensate for impact:

- There is no geotechnical rationale for compensating for the proposed project. The new modular walls will provide appropriate stability, and the pavers will prevent soil erosion problems.

F – Monitor the impact:

- The planned redevelopment of the property does not adversely impact the mapped Critical Areas. The only potential for adverse impacts with regard to the mapped erosion hazard is during construction, before permanent landscaping measures are fully implemented. The proper function of the temporary erosion control system will be monitored during the site work by the general contractor, as well as representatives of the City of Mercer Island and the project geotechnical engineer. The general or earthwork contractors will be responsible to take immediate action to correct any erosion control issues, such as silty runoff leaving the work area.

Please contact us if there are any questions regarding this letter.

Respectfully submitted,
GEOTECH CONSULTANTS, INC.



5/12/2025

Marc R. McGinnis, P.E.
Principal Engineer

Attachment: May 4, 2012 GeoSpectrum Letter

cc: **Gregerson Custom Homes** – Chris Gregerson
via email: chrisg@gregersoncustomhomes.com

GEOSPECTRUM CONSULTANTS, INC.

Geotechnical Engineering and Earth Sciences

May 4, 2012

Mr. Kan Cui and Ms. Tammy Liu
8636 North Mercer Way
Mercer Island, WA 98040

**SUBJECT: SUPPLEMENTAL RECOMMENDATIONS AND
GEOTECHNICAL REVIEW**

Proposed Residence Replacement
8636 North Mercer Way
Mercer Island, Washington
Project No. 10-117-01



Dear Kan and Tammy,

This letter is to confirm our supplemental recommendations for rockery and ecology block wall construction as well as our geotechnical review of the Grading and Site Walls plan for your proposed new residence final landscaping design. We have previously presented our recommendations for design and construction of the residence replacement in our report dated October 7, 2010.

Supplemental Recommendations:

We have previously presented recommendations for design and construction of the proposed residence replacement in our report dated October 7, 2010 which remain applicable. The following recommendations are intended to supplement the recommendations of our previous report.

Rockery Detail: We understand that rockeries are proposed to support grade changes up to 4 feet in height in landscape areas along the lower side of the residence and on the upper side of the proposed detached garage. Based on our previous site explorations we expect the areas where rockeries are proposed may have fill and/or weathered soils exposed at the ground surface. We recommend that where fill and/or weathered soils are exposed at the proposed rockery location, the existing soils should be excavated and replaced with a zone of structural fill or quarry spalls for support of the rockery. The detail of Figure 6 attached, presents our recommendations for support and construction of the proposed rockeries.

Ecology Wall Detail: We understand that ecology block walls are proposed to support landscape area grade changes up to 4 feet in height along the lower side of the proposed detached garage. Based on our previous site explorations and construction observations we expect the areas where ecology block walls are proposed may have fill and/or weathered soils exposed at the ground surface. We recommend that where fill and/or weathered soils are exposed at the proposed ecology block wall location, the existing soils should be excavated and replaced with a zone of structural fill or quarry spalls for support of the ecology block. The detail of Figure 7 attached, presents our recommendations for support and construction of the proposed ecology block walls.

Observations of Rockery and Wall Construction: Recommendations presented in this letter are based on the assumption that soil conditions exposed during construction will be observed by our office so that any necessary design changes or supplements may be made. All excavations for rockery and wall foundation areas should be observed by our office prior to placement of rock or block to verify that rockeries and walls are supported on properly a constructed support zone. Drainage systems should be observed to verify proper construction. Proper fill placement and compaction should be verified with field and laboratory density testing by a qualified testing laboratory.

Plan Review:

We were provided a copy of the **Grading and Site Walls** plan, sheet C3.1, dated 5/2/12, prepared by Taylor Engineering Consultants for our review.

Based on our review we find the rockery and ecology block wall facing details on the referenced C3.1 sheet to be in conformance with our supplemental recommendations for rockeries and ecology block walls as presented in this letter and the attached Figures 6 and 7.

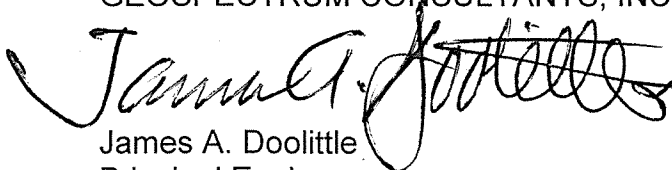
CLOSURE

This letter is intended for the exclusive use of Mr. Kan Cui and Ms. Tammy Liu and their representatives. The findings and conclusions of this letter were prepared with the skill and care ordinarily exercised by local members of the geotechnical profession practicing under similar conditions in the same locality. We make no other warranty, either express or implied.

Variations may exist in site conditions between those described in our previous report and actual conditions encountered during construction. Unanticipated subsurface conditions commonly occur and cannot be prevented by merely making explorations and performing reconnaissance. Such unexpected conditions frequently require additional expenditures to achieve a properly constructed project. If conditions encountered during construction appear to be different from those indicated in our previous report, our office should be notified.

Sincerely,

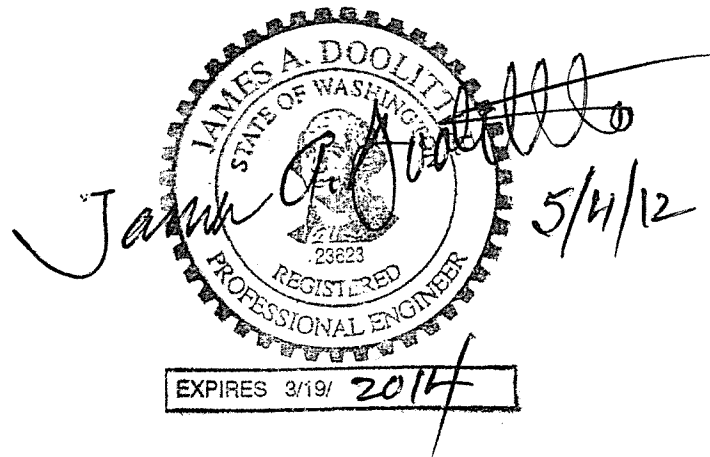
GEOSPECTRUM CONSULTANTS, INC.

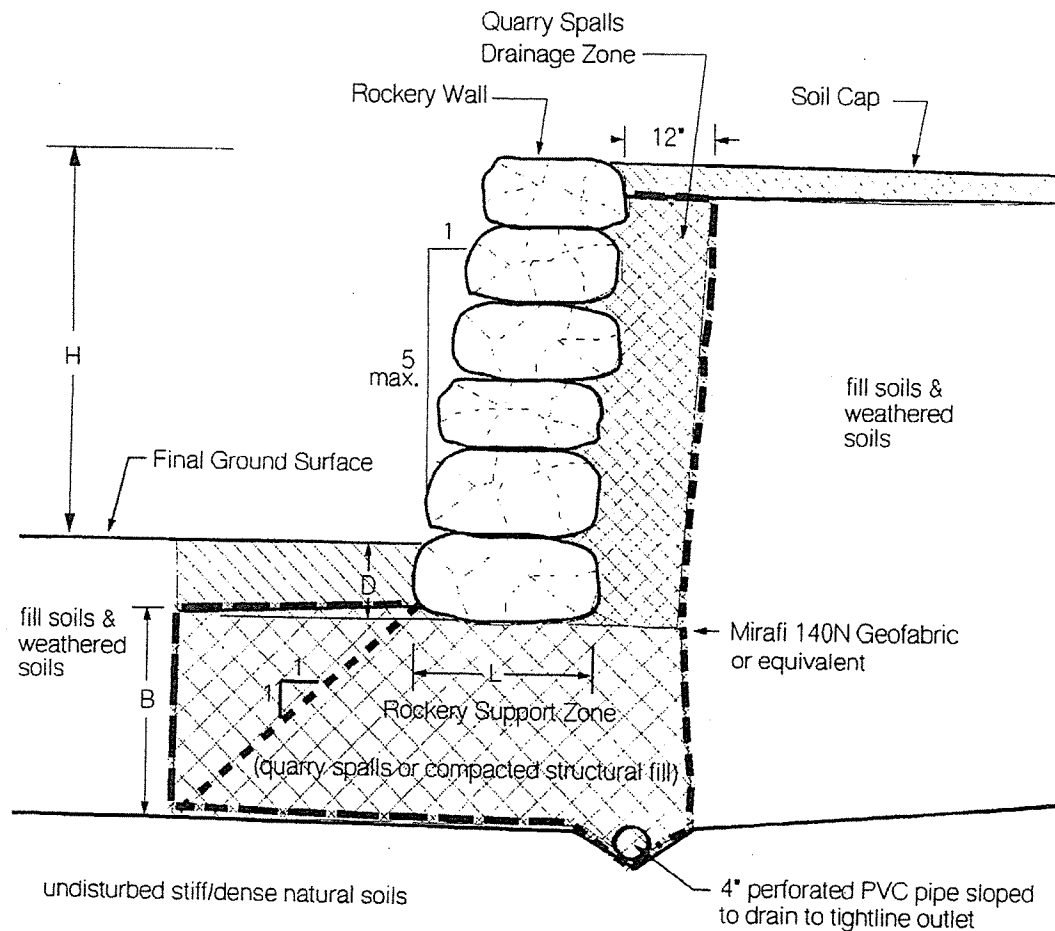


James A. Doolittle
Principal Engineer

Attachments: Figure 6, Rockery Detail
 Figure 7 Ecology Block Wall Detail

dist: 1/Addressee
 1/Chandler Stever Architect
 1/Taylor Engineering Consultants





LEGEND



Quarry Spalls material, 4" to 6" maximum particle size with less than 5 percent fines (passing #200 sieve) and free of organics.



Soil cap, 6 inch minimum thickness, consisting of silty soil or topsoil of low permeability. Slope to drain away from the rockery.



Perforated or slotted drain pipe, 4 inches minimum diameter with positive gradient to a tightline outlet pipe. The outlet pipe should have a non-erosive discharge into the storm drain system.



Mirafi 140 N geofabric or equivalent.

H Rockery height, measured from final ground surface. Maximum of 4 feet.

D Soil embedment, minimum of 6 inches.

L Rock dimension, minimum of 2 feet or 1/2 rockery height above the level of the base of the rock whichever is greater. Maximum of 1/2 H.

B Support zone thickness. Maximum thickness equal to 1/2 H, or depth to stiff/dense natural soils whichever is less.

ROCKERY DETAIL

GEOSPECTRUM CONSULTANTS, INC.

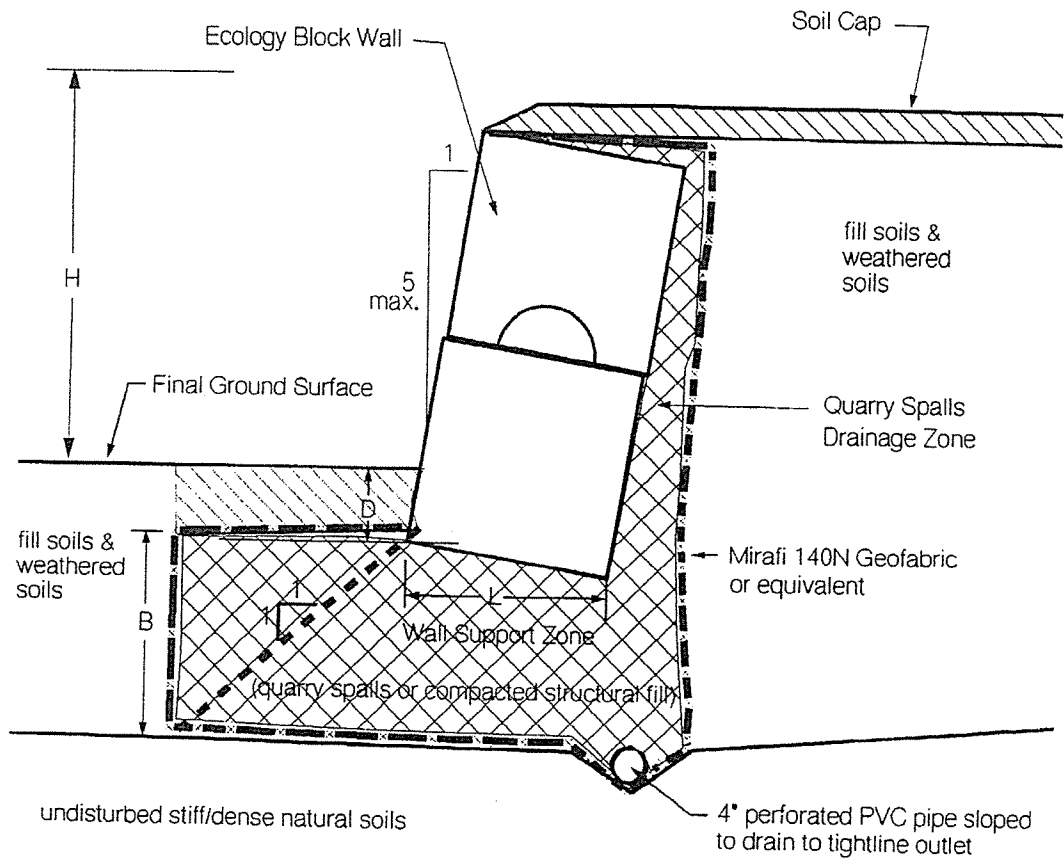
Geotechnical Engineering and Earth Sciences

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



Proj. No.10-117

Date 5/12


Figure 6



LEGEND

-  Quarry Spalls material, 4" to 6" maximum particle size with less than 5 percent fines (passing #200 sieve) and free of organics.
-  Soil cap, 6 inch minimum thickness, consisting of silty soil or topsoil of low permeability. Slope to drain away from the wall.
-  Perforated or slotted drain pipe, 4 inches minimum diameter with positive gradient to a tightline outlet pipe. The outlet pipe should have a non-erosive discharge into the storm drain system.
-  Mirafi 140 N geofabric or equivalent.
- H Wall height, measured from final ground surface. Maximum of 4 feet.
- D Soil embedment, minimum of 6 inches.
- L Wall width dimension, minimum of 2 feet.
- B Support zone thickness. Maximum thickness equal to 1/2 H, or depth to stiff/dense natural soils whichever is less.

ECOLOGY BLOCK WALL DETAIL

GEOSPECTRUM CONSULTANTS, INC.  <i>Geotechnical Engineering and Earth Sciences</i>	Proposed Residence Replacement 8636 North Mercer Way Mercer Island, Washington		
	Proj. No.10-117	Date 5/12	Figure 7