TERRA ASSOCIATES, Inc.
Consultants in Geotechnical Engineering, Geology
and
Environmental Earth Sciences

August 13, 2021
Project No. T-8264

Mr. Derek Cheshire
7615 East Mercer Way
Mercer Island, Washington 98040

Subject: Geotechnical Engineering Addendum
Cheshire Short Plat
7615 East Mercer Way
Mercer Island, Washington

Reference: Geotechnical Report, Cheshire Short Plat, 7615 East Mercer Way, Mercer Island, Washington, Project No. T-8264, prepared by Terra Associates, Inc., dated May 12, 2020

Dear Mr. Cheshire:

As requested by Formworks Build Design, we have prepared a geotechnical engineering addendum to the referenced report addressing the temporary shoring for the Cheshire Short Plat in accordance with the building plans.

As we understand, the project is proposing to use temporary Ultrablock shoring to support the excavation for the residence. Based on the plans prepared for the project, the existing grades on the upslope side of the project are near or at elevation 124 feet and the excavation will extend to elevation 112 feet. Based on this information the temporary shoring will be needed to support an excavation of approximately 12 feet.

To determine if the proposed temporary Ultrablock shoring is acceptable we have completed a slope stability analysis using the computer program Slide 2. The section analyzed was the worst-case scenario for the project which is a 10 foot tall Ultrablock wall with a 1:1 (Horizontal: Vertical) cut slope above.

Based on our field exploration, laboratory testing, and previous experience with similar soil types, we chose the following parameters for our analysis:

Table 1 – Slope Stability Analysis Soil Parameters

Soil Type	Unit Weight (pcf)	Friction Angle (Degrees)	Cohesion (psf)
Medium Dense SM	120	30	100
Medium Dense SP-SM	120	28	75
Medium Stiff ML	110	28	700
Stiff ML	110	28	1500

The results of our slope stability analysis, as shown by the lowest safety factors for each condition, are presented in the following table:

Table 2 – Slope Stability Analysis Results

Cross Section	Minimum Safety Factors
	Temporary Excavation Condition
10' Temporary Ultrablock	1.22

Results of the analysis show that the proposed temporary excavation will not adversely impact the neighboring properties and are stable for a temporary condition. Therefore, it is our opinion that the project can be constructed as shown. Results of the Slide analysis are attached for review. A detail for the temporary Ultrablock is attached as Figure 1.

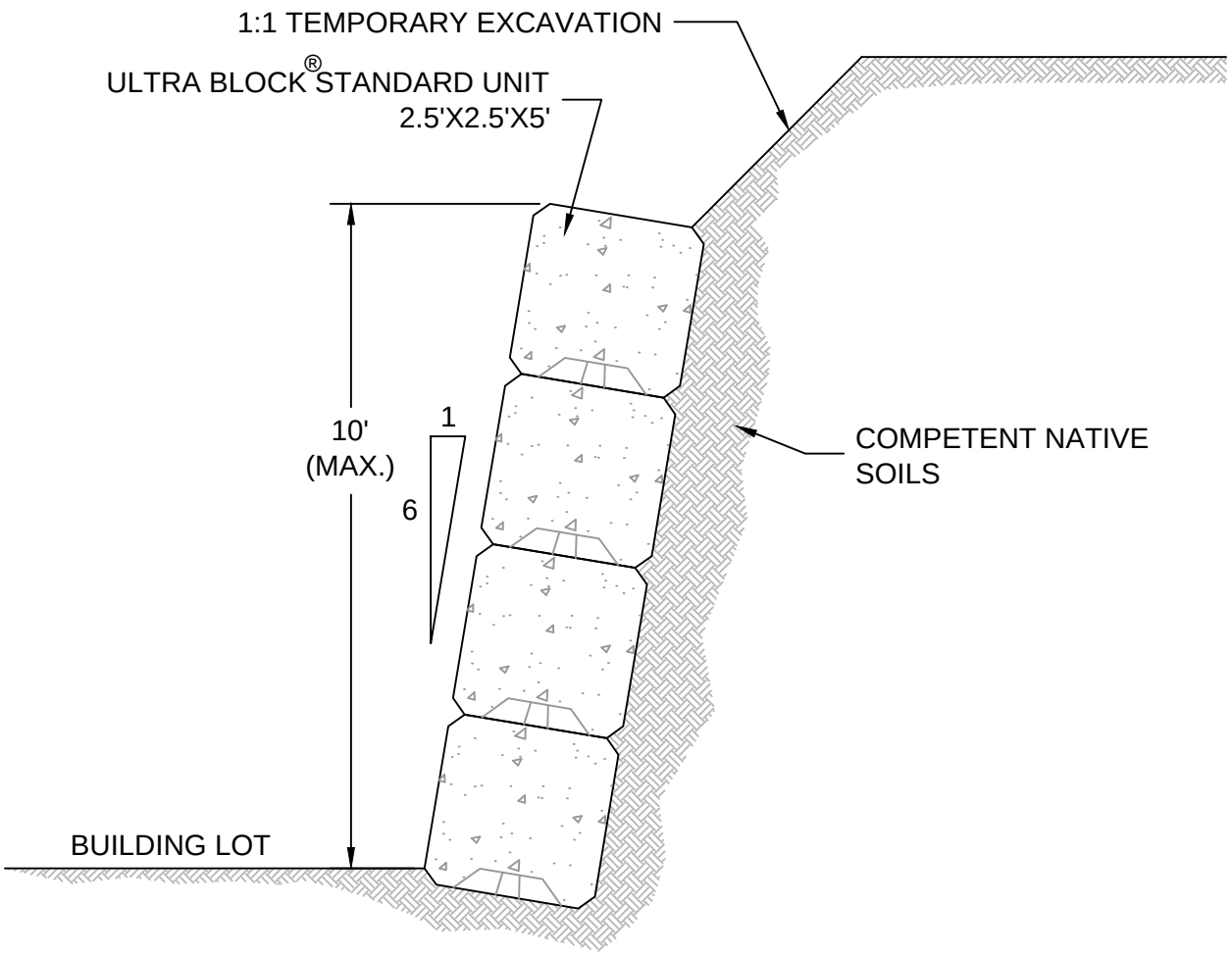
We trust the information presented is sufficient for your current needs. If you have any questions or require additional information, please call.

Sincerely yours,
TERRA ASSOCIATES, INC.

8-13-2021

Carolyn S. Decker, P.E.
Project Engineer

Encl. Figure 1 – Temporary Ultrablock Wall
Slide Output



TEMPORARY 10' ULTRA BLOCK WALL

NOT TO SCALE

GENERAL NOTES:

1) CONSTRUCTION OF THE BLOCK WALLS SHALL BE COMPLETED IN ACCORDANCE WITH THE MANUFACTURE RECOMMENDATIONS.

2) EXCAVATIONS FOR THE BLOCK WALLS SHOULD NOT BEGIN UNTIL THE BLOCKS ARE ONSITE AND THE WALL CONTRACTOR IS READY TO BEGIN WALL CONSTRUCTION.

3) EXCAVATION FOR THE WALL SHALL BE COMPLETED SO THAT THE EXPOSED SOILS ARE COMPLETELY COVERED BY THE END OF THE WORK DAY. IF AT THE END OF THE WORK SHIFT THE WALL IS NOT COMPLETED, THE OPEN CUT SHOULD BE BUTTRESSED WITH A SOIL BERM.

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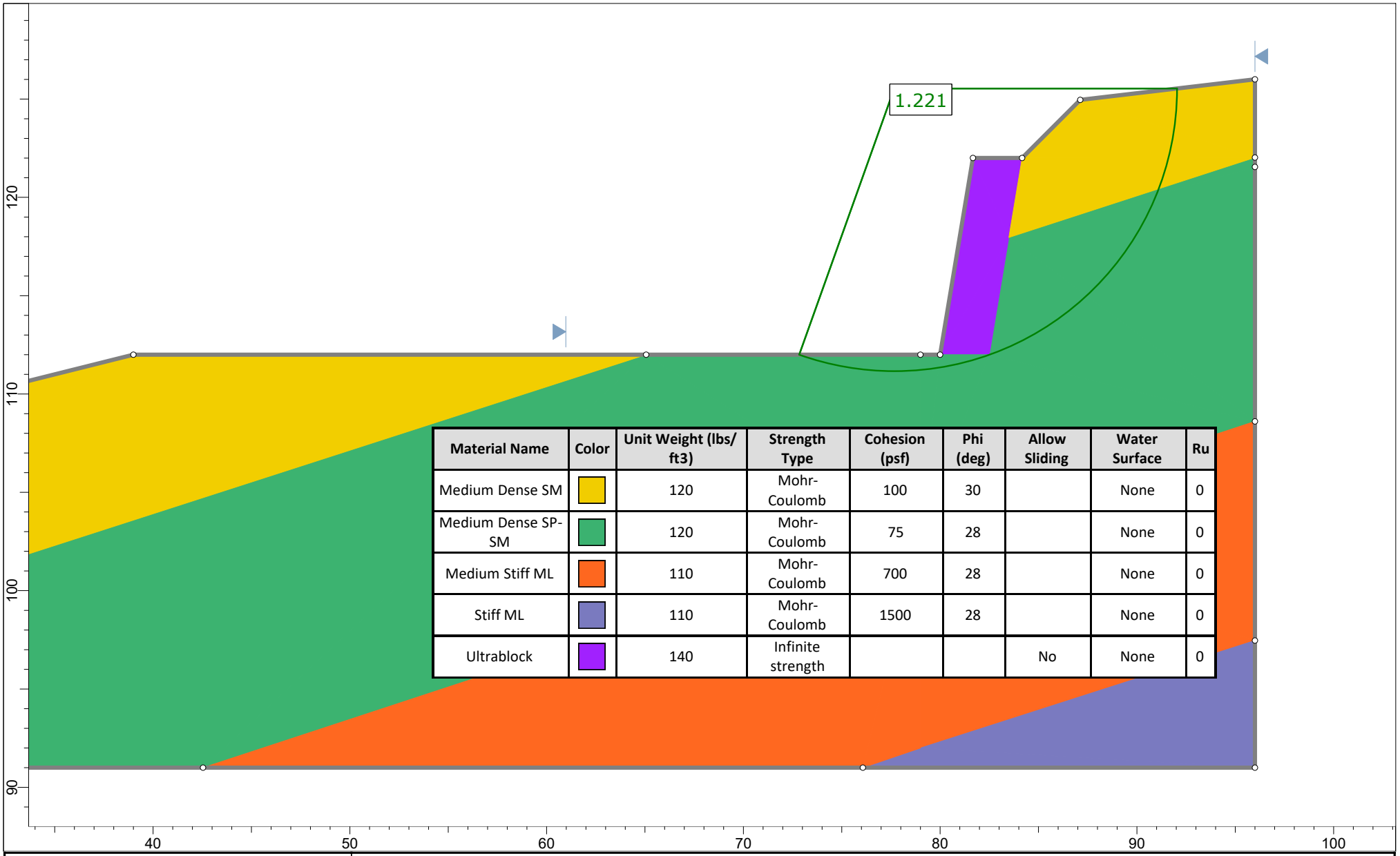
TEMPORARY ULTRABLOCK WALL DETAILS
CHESHIRE SHORT PLAT
MERCER ISLAND, WASHINGTON

Proj. No.T-8264	Date AUG 2021	Figure 1

SLIDE OUTPUT



Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Allow Sliding	Water Surface	Ru
Medium Dense SM		120	Mohr-Coulomb	100	30		None	0
Medium Dense SP-SM		120	Mohr-Coulomb	75	28		None	0
Medium Stiff ML		110	Mohr-Coulomb	700	28		None	0
Stiff ML		110	Mohr-Coulomb	1500	28		None	0
Ultrablock		140	Infinite strength			No	None	0

rocscience

SLIDEINTERPRET 9.008

Project	Cheshire Short Plat		
Group	Temporary Excavation	*Scenario*	Master Scenario
Drawn By	C. Decker	*Company*	Terra Associates, Inc.
Date	May 12, 2020	*File Name*	Cross Section A-A' rv 8-13-21.slmd