

August 7, 2019

Randy Aadland
14274 122nd Ave NE
Kirkland, WA 98034

**Subject: Addendum to Geotechnical Investigation
Green Hills Estates Phase 6 Lot 107
1088 North Maple Drive
Weber County, Utah
CG Project No.: 152-001**

Mr. Aadland,

Christensen Geotechnical completed a geotechnical investigation for Lot 107 of the Green Hills Estates Phase 6 on August 10, 2018. This lot is located at approximately 1088 Maple Drive in Weber County, Utah. The geotechnical investigation included a slope stability assessment of the lot in its unaltered condition at the time of the investigation. Since then, it has been determined that the development of the lot will require modifications to its topography. This new information has been conveyed to us from conversations with Jeff Turville of Reeve & Associates and from a site plane provided to us by Reeve & Associates. At your request, we have performed additional slope stability assessments of the subject lot using the modified topography as planned by Reeve & Associates.

Two additional profiles were assessed, which are identified as Profile A and Profile B on Plate 1, attached. Profile A represents a cross section through a cut slope above the proposed access road to the proposed house on the lot. This profile includes a series of three retaining walls separated by benches. It is our understanding that these retaining walls are to be conventional concrete retaining walls. Profile B is a cross section of a cut slope behind the proposed house on the lot. This profile incorporates two retaining walls which we understand are to consist of rockery retaining walls.

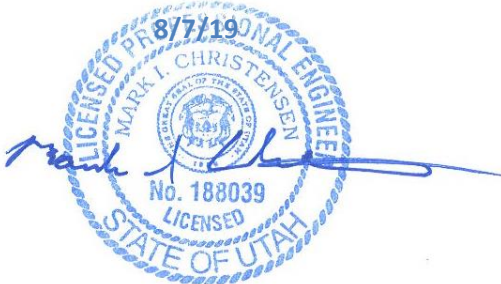
In our reassessment, we used the data from the initial geotechnical report (dated August 10, 2018) for the soil strength values and the depth to groundwater. The concrete retaining walls were assumed to have a strength consisting of a cohesion value of 6,000 psf. The rockery retaining walls were assessed using an anisotropic strength for boulders, with a 45 degree friction angle and no cohesion for boulder-to-boulder contact, and a cohesion value of 2,000 psf for internal rock strength. The results of our assessments of the cut slopes produced factors of safety greater than 1.5 for the static condition and 1.0 for the pseudo static condition, which are considered adequate for residential development.

Based on these results, it is our opinion that the cut slopes and retaining walls as planned at the site pose a low risk. All retaining walls at the site should be designed by a licensed professional engineer. The results of our assessments may be found on Plates 2 through 5, attached.

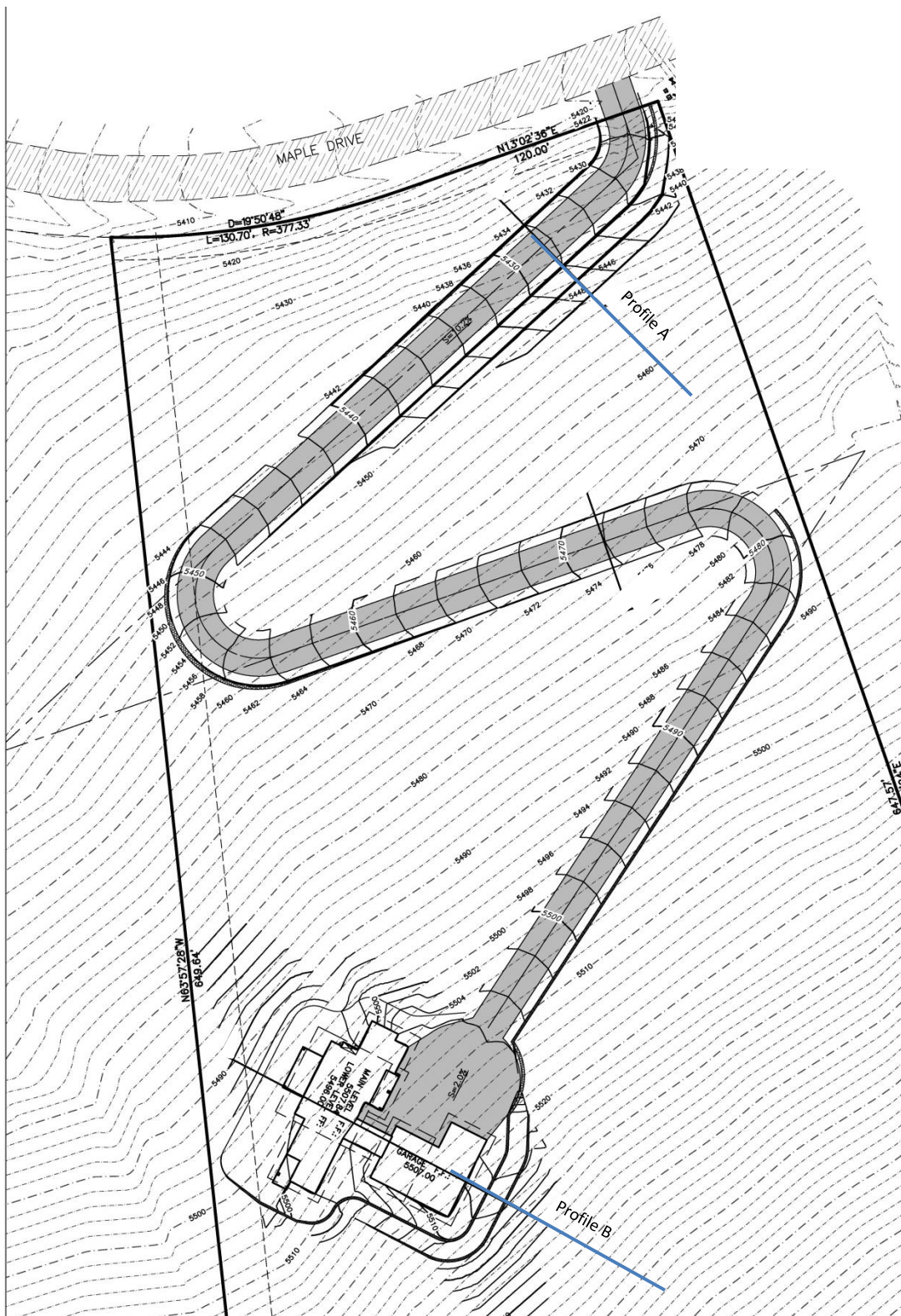
This letter was prepared in accordance with the generally accepted standard of practice at the time this letter was written. No other warranty, expressed or implied, is made.

We appreciate the opportunity of providing our services on this project. If we can answer questions or be of further service, please call.

Sincerely,
Christensen Geotechnical



Mark I. Christensen, P.E.
Principal




Base Map: Reeve & Associates

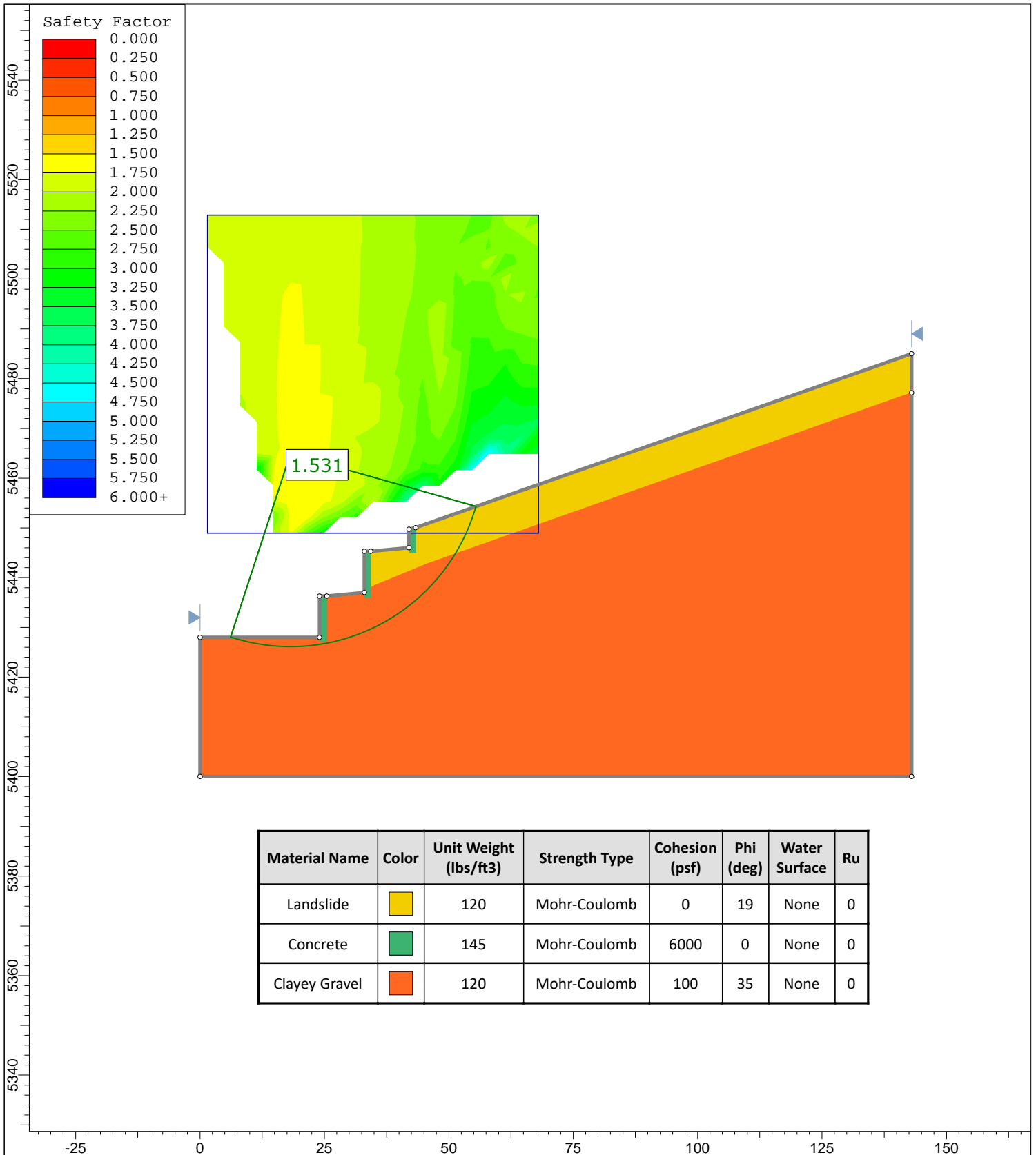





 Slope Stability Profile

Drawing Not to Scale

	<p>Randy Aadland Green Hills Estates Phase 6 Lot 107 Weber County, Utah Project No. 152-001</p>	<p>Plate 1</p>
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Site Map



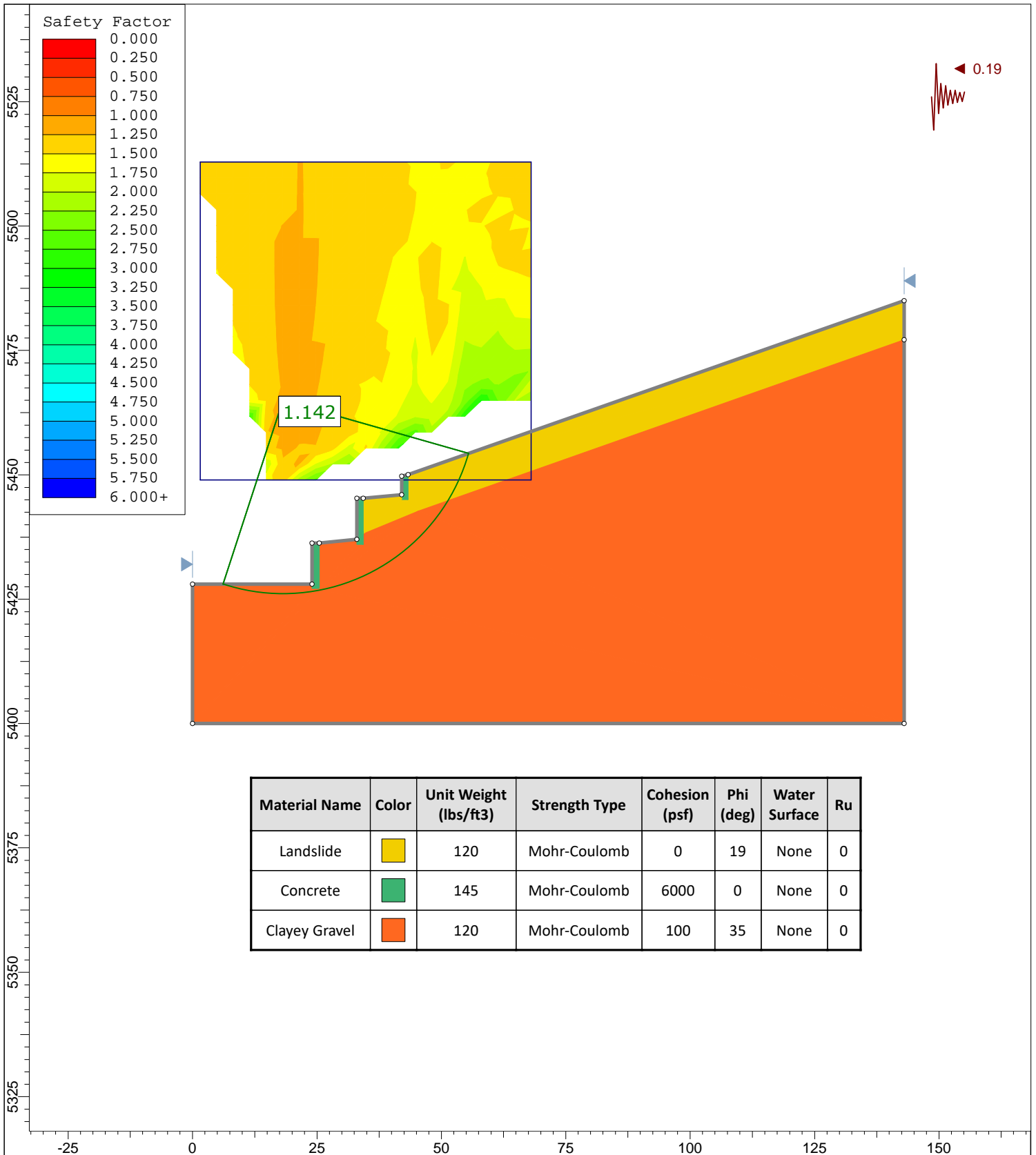
Material Name	Color	Unit Weight (lbs/ft ³)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
Landslide		120	Mohr-Coulomb	0	19	None	0
Concrete		145	Mohr-Coulomb	6000	0	None	0
Clayey Gravel		120	Mohr-Coulomb	100	35	None	0




Profile A - Static



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Plate
 2



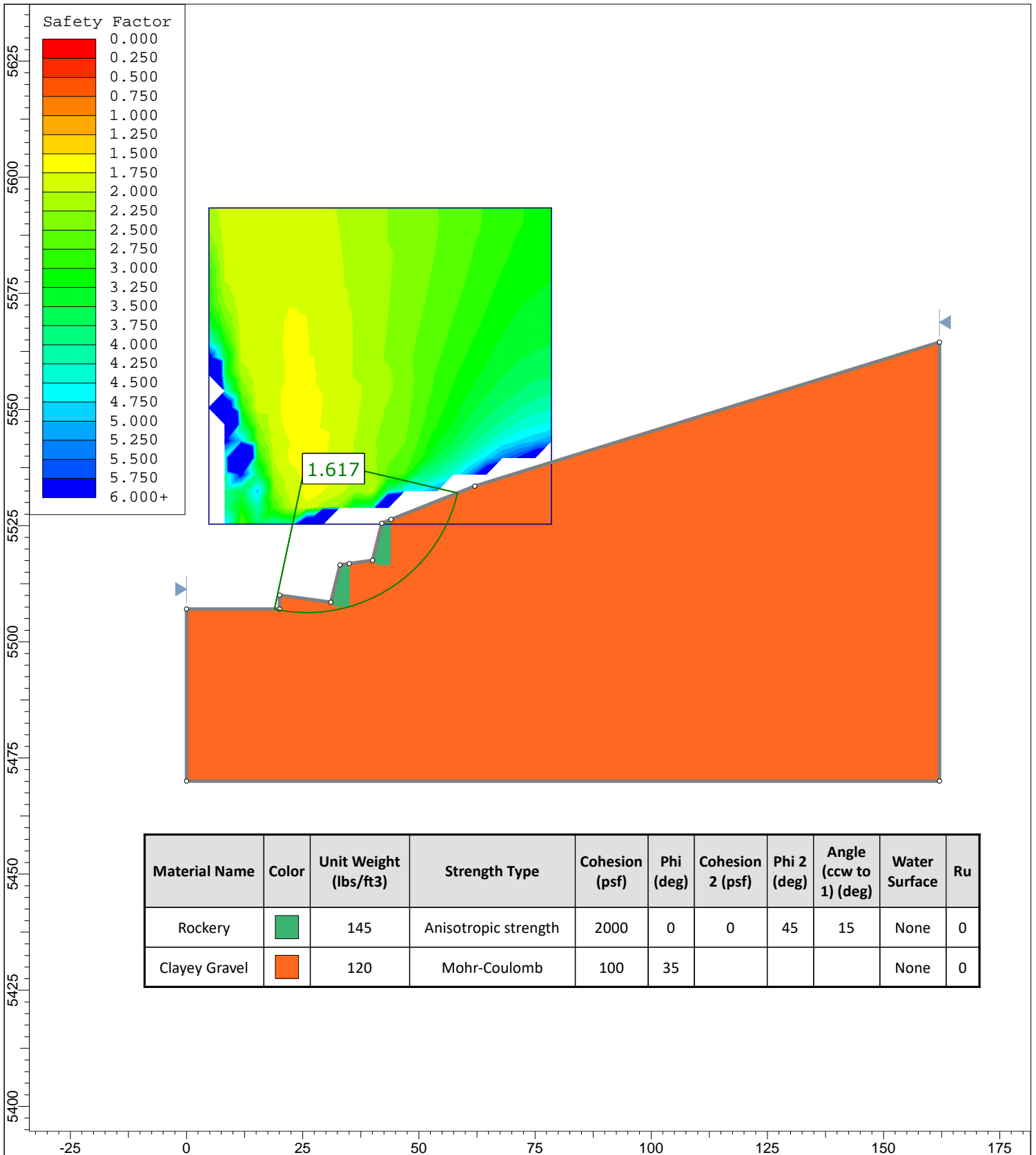
Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
Landslide		120	Mohr-Coulomb	0	19	None	0
Concrete		145	Mohr-Coulomb	6000	0	None	0
Clayey Gravel		120	Mohr-Coulomb	100	35	None	0



Profile A - Pseudo Static



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Plate
3



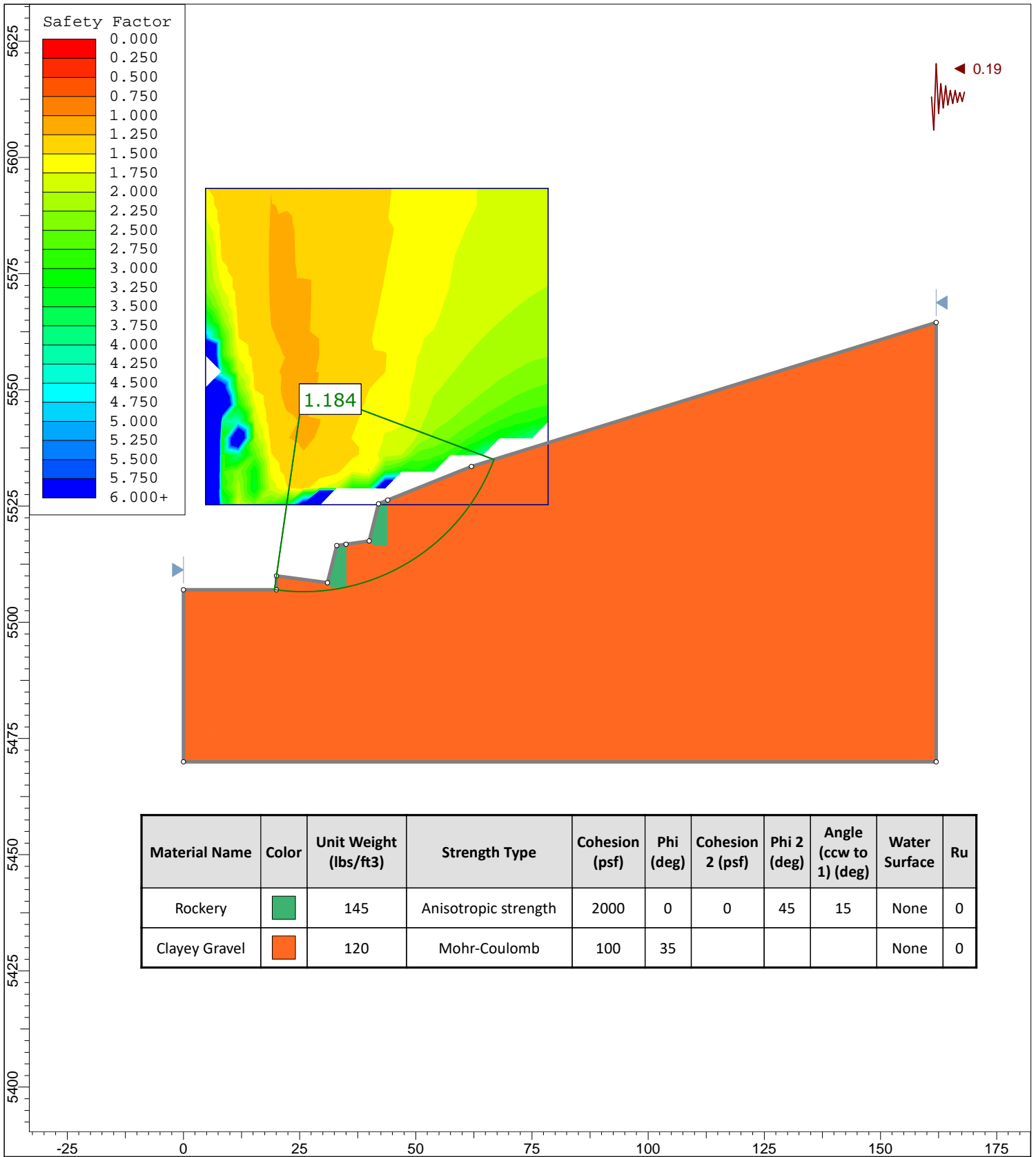
Material Name	Color	Unit Weight (lbs/ft ³)	Strength Type	Cohesion (psf)	Phi (deg)	Cohesion 2 (psf)	Phi 2 (deg)	Angle (ccw to 1) (deg)	Water Surface	Ru
Rockery		145	Anisotropic strength	2000	0	0	45	15	None	0
Clayey Gravel		120	Mohr-Coulomb	100	35				None	0

Profile B - Static



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Plate
4



Profile B - Pseudo Static



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Plate
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