

May 26, 2017

Summit Homes Construction, LLC, Attn: Mr. Tim Crane  
PO Box 6539  
Dillon, Colorado 80435

Subject: Comments Regarding Slope Stability  
Dillon Ridge Vistas  
Block 6, Dillon Ridge Marketplace  
Summit County, Colorado  
Project No. SU01304-125

As requested, we conducted a slope stability analysis of the proposed grading plan at the subject site. We previously provided a Preliminary Geotechnical Investigation at the site (see report dated January 27, 2017, Project No. SU01304-125). This letter should serve as a supplement to that report. Proposed construction includes three buildings with 12 units each (36 units total). Each building will be a three-story, wood-frame structure. An asphalt parking lot with concrete curb and gutter will be provided. Overlot grading will include cut depths of around 16 feet below existing grade.

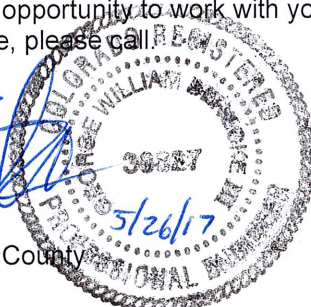
We conducted subsurface exploration at the site for our previous report. Three test pits (TP-1, TP-2 and TP-3) were excavated on Block 6. The conditions encountered in the test pits generally consisted of fill soils overlying weathered shale bedrock. In TP-1, clayey, sandy gravel was found above the weathered shale. In TP-2 and TP-3, a layer of sandy clay was encountered above the weathered shale. The thickness of the clay layer ranged from 6 to 24 inches. A full description of the conditions encountered in TP-1, TP-2 and TP-3 and laboratory test results are shown in our January 2017 report. In order to conduct our slope stability analysis, we observed an additional test pit on the site (TP-10) at the location shown on Figure 1. Conditions encountered consisted of slightly clayey to silty, sandy gravel with cobbles to a depth of 18 feet. Gradation and classification testing was conducted on a sample of the gravel soils, see Figure 3. Weathered shale was found below the gravel to the depth explored of 20 feet. No clay was encountered in TP-10. Bedding planes of the shale dip across and against the hillside. No free water was encountered; however, the iron staining of the shale indicates seasonal water seepage. A graphic log of the test pit is shown on Figure 2.

Based on our stability analysis, the factor of safety of the existing hillside is near 1.6. Industry standard suggests a safety factor of at least 1.5 for permanent slopes. Based on the proposed grading shown on Overall Grading Plan, prepared by Ten Mile Engineering, Inc., April 4, 2017, the new retaining walls will need to be engineered to retain the hillside. We understand mechanically stabilized earth (MSE) segmental block walls are being considered. It is our opinion that properly designed and constructed retaining walls will be suitable to create a permanent, stable hillside configuration. We can provide design services upon request.

We appreciate the opportunity to work with you on this project. If you have questions or we can be of further service, please call.

Very truly yours,  
CTL | THOMPSON, INC.

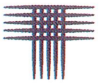
George Benecke III, P.E.  
Division Manager, Summit County



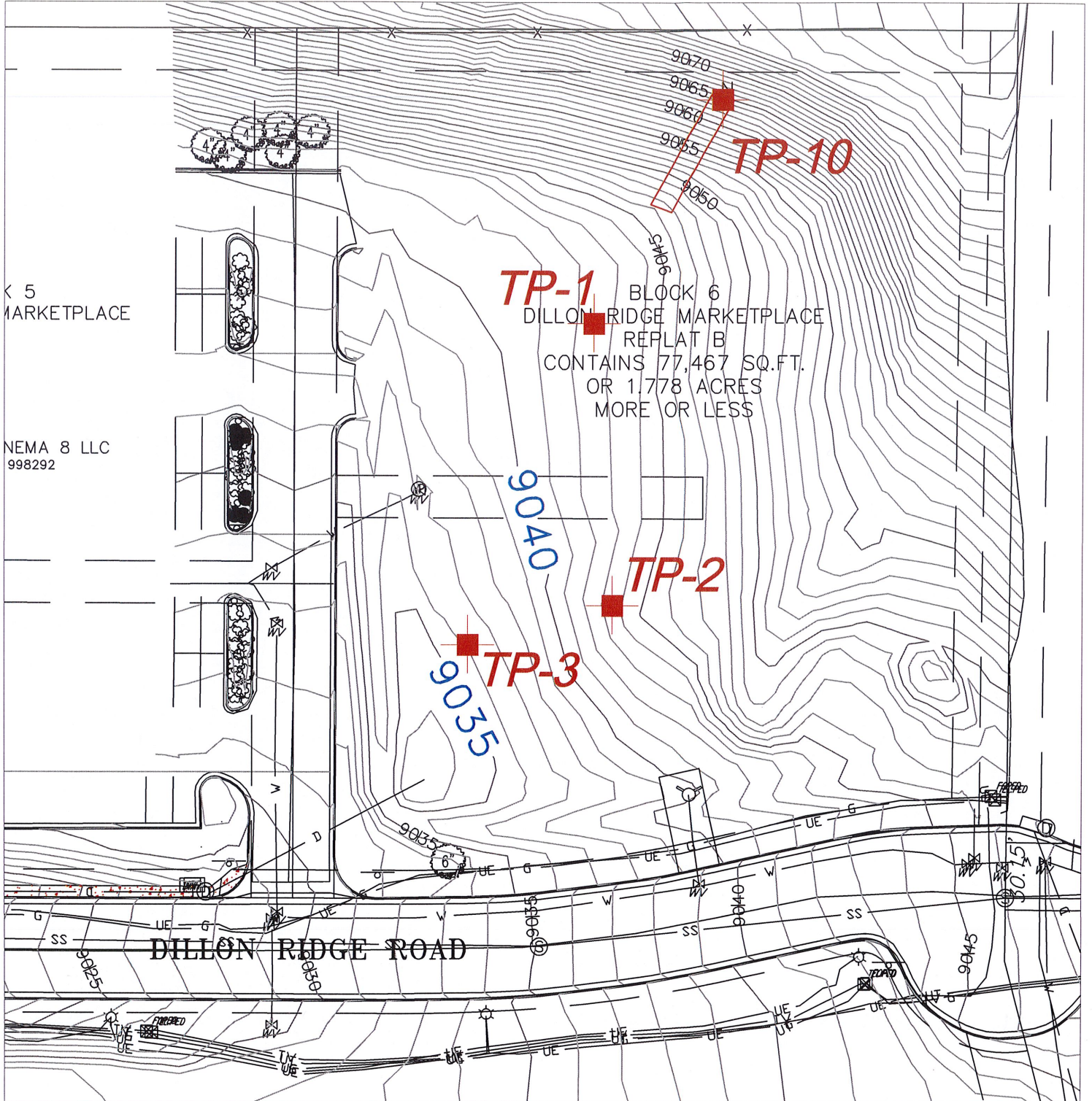
Attachments: Figures 1-3

cc: [Scott@columbineconcrete.com](mailto:Scott@columbineconcrete.com), [timc@compasshomesdev.com](mailto:timc@compasshomesdev.com), [tenmileengineer@aol.com](mailto:tenmileengineer@aol.com)

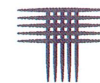




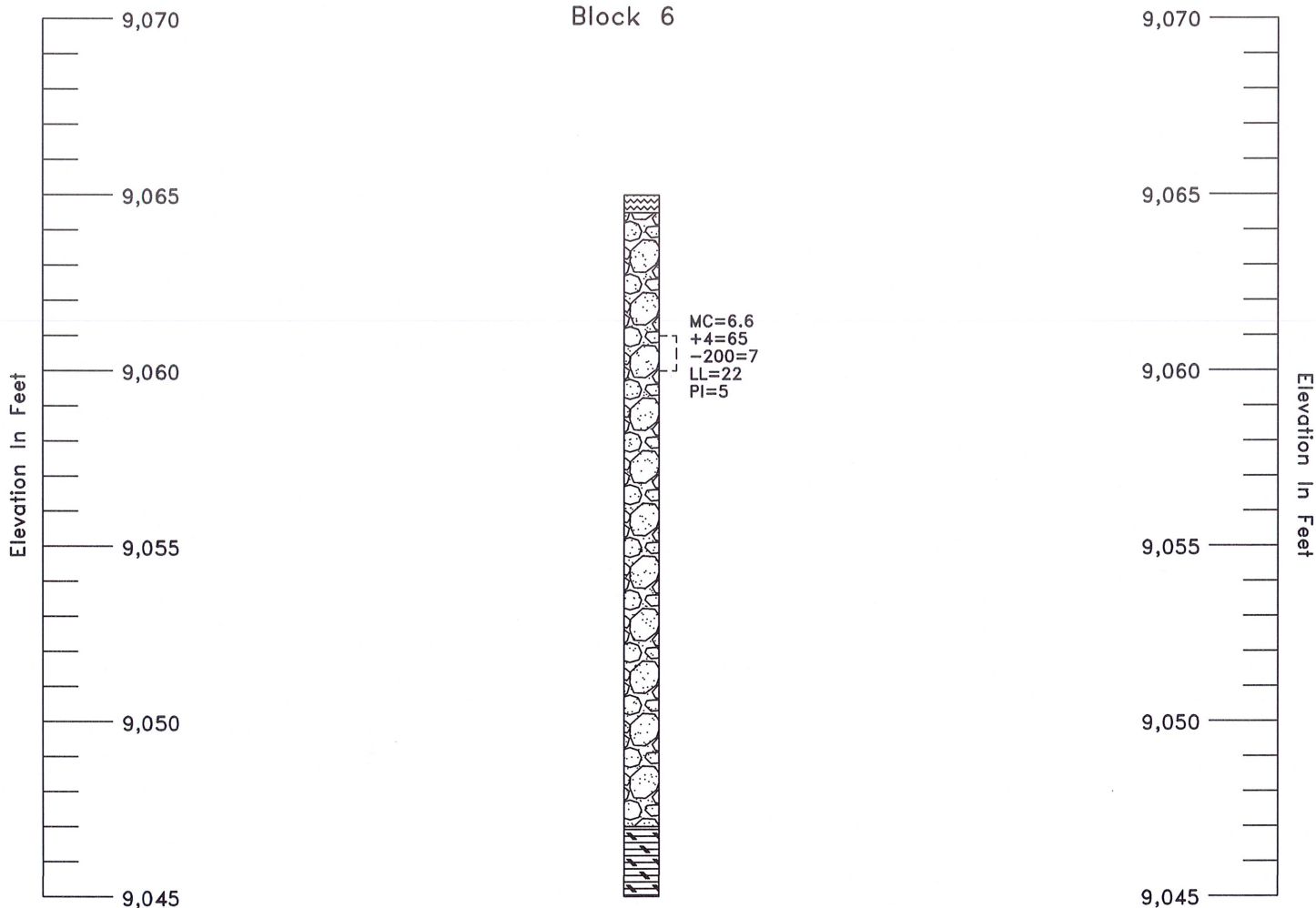
Scale: 1 inch = 50 feet



LOCATION OF EXPLORATORY PITS



TP-10  
 ELEV.=9,065  
 Block 6



**LEGEND:**



TOPSOIL; silty, sandy, with roots, moist, dark brown (OL)



GRAVEL; silty to slightly clayey, sandy with subrounded to subangular cobbles up to 10 inches in diameter, medium dense, moist, medium brown. (GP-GC, GM)



SHALE BEDROCK; very weathered, fractured fissile, mostly flat surface, very moist, orange brown. Strike 82 degrees, Dip 44 degrees.

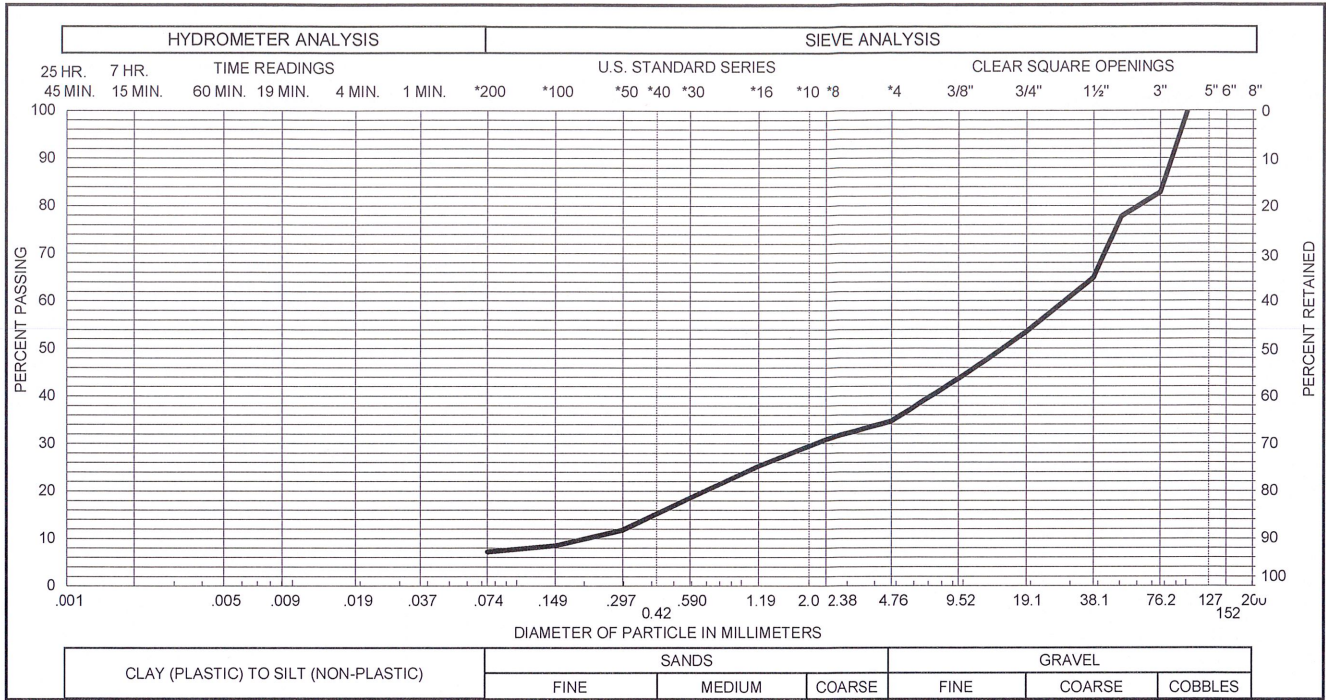
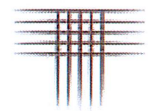


Disturbed bulk sample.

**NOTES:**

1. This pit was excavated with a Caterpillar 336E on May 4, 2017.
2. No free water was observed in the pit at the time of excavation. The pit was backfilled. Groundwater levels can fluctuate. Iron staining in pit indicates seasonal water seepage.
3. Pit location as shown on Figure 2 was measured from site features and should be considered approximate.
4. Pit elevation was estimated from topography shown on Figure 1 and should be considered approximate. Elevation was checked by instrument level.
5. These exploratory pits are subject to the explanations, limitations and conclusions contained in our January 27, 2017 report.





Sieve Size	% Passing
4 in.	100
3 in.	83
2 in.	78
1.5 in.	65
3/4 in.	54
1/2 in.	48
3/8 in.	44
No. 4	35
No. 8	31
No. 16	25
No. 30	19
No. 50	12
No. 100	9
No. 200	7

Curve No. 1

Sample of GRAVEL; slightly silty, sandy  
 From TP-10 4-5'

GRAVEL(USCS)	65 %	SAND(USCS)	28 %
SILT & CLAY	7 %	LIQUID LIMIT	22 %
PLASTICITY INDEX			5 %

## Gradation Test Results