GREAT BASIN ENGINEERING INC

9 October, 2015

Weber County Engineering
2380 Washington Blvd, Suite 240
Ogden, Utah 84401

ATTN: Chad Meyerhoffer

RE: The Summit at Ski Lake No. 12 Retaining Wall

Dear Chad,

At your request to provide an approval on the Redi-Rock Retaining Wall along the South Side of the new road for The Summit at Ski Lake Phase 12, we have hired GSH Geotechnical to perform an analysis of the wall. This study includes slope stability, soil shear, seismic design and overturning moments. We have attached a copy of the study.

This study indicates that the maximum exposed height of the Redi-Rock retaining wall shall be 9.0 feet, a minimum embedding of 3.0 feet with a maximum slope of 3H:1V extending at least 3 feet from the wall and a maximum backfill slope of 4H:1V.

The height of the wall has been measured in the field and when comparing it to the edge of existing asphalt 12 feet to the north of the wall. We found there is a segment of the wall, less than 50 long, that has a wall height was between 9.0 feet and 9.3 feet above our design (Our design shows a 4-foot wide road base shoulder that matches the top of asphalt and slopes to the south at 2%, then a slope down to the flowline of the drainage swale at 4H:1V for 4 feet and then up to the wall for 4 feet at a 3H:1V, this equals a top of embedded soil at the wall of 2-inches above the top of asphalt).

With a slight variation in the location of the flowline drainage swale (7.5 feet south of the edge of asphalt instead of 8.0 feet) we can reduce the maximum exposed wall height to 9.0 feet and meet all of the requirements outlined in the GSH Geotechnical Report.

Based on the slight modification to the location of the flowline of the drainage swale the current construction of the wall meets the design requirements and factors of safety defined in the Block Wall Evaluation Study prepared by GSH Geotechnical.

Please review and contact us if you have any questions.

Sincerely,
Great Basin Engineering, Inc.

Mark E Babbitt, PE / PLS
Principal

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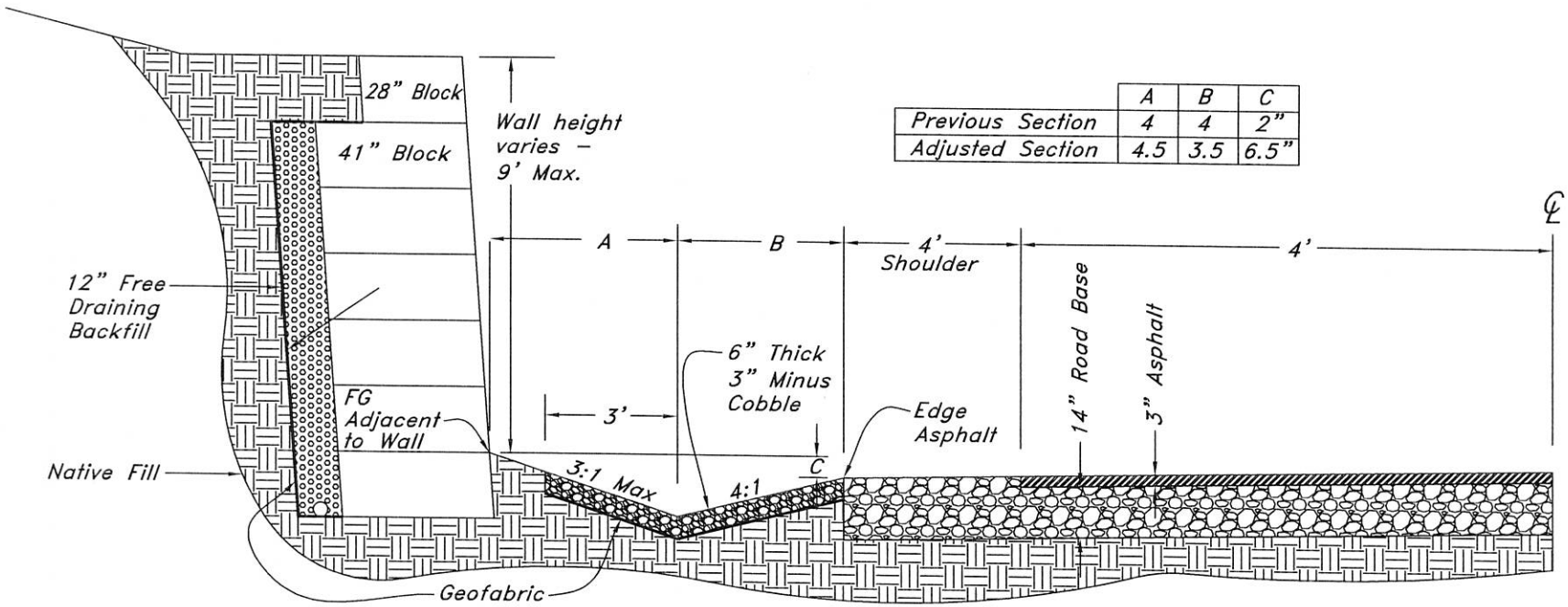

	A	B	C
Previous Section	4	4	2"
Adjusted Section	4.5	3.5	6.5"

Via Cortina Cross Section at Block Wall

Not to Scale

Additional Detail

The Summit at Ski Lake Phase 12

A part of the Southwest 1/4 of Section 13, a part of the Northeast 1/4 of Section 23, and a part of the Northwest 1/4 of Section 24, T6N, R1E, SLB&M, U.S. Survey

GREAT BASIN ENGINEERING NORTH
CONSULTING ENGINEERS AND SURVEYORS
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SCALE : NTS	DATE : 10-9-2012	DRWG. NO. 1
DRAWN : RB	REVISIONS :	
11N224		Of 1

GSH

October 7, 2015
Job No. 0582-23N-15

Mr. Ray Bowden
c/o Great Basin Engineering, Inc.
5746 South 1475 East
Ogden, UT 84403

Mr. Bowden:

Re: Letter
Block Wall Evaluation
The Summit at Ski Lake, Phase 12
Via Cortina Street
Huntsville, Utah

Introduction

This letter presents our evaluation and analyses results for the existing block retaining wall at the subject site. GSH visited the site on September 28, 2015 to observe the existing (nearly completed) Redi-Rock block wall and to excavate 3 test pits to depths of 5.0 to 14.5 feet below the ground surface.

The existing retaining wall is composed of 41-inch deep Redi-Rock blocks (except the top block is 28 inches deep) and is 12 feet in total height, with the bottom row placed on compacted gravel and a drain system behind the wall. The drain system consists of a 4-inch diameter perforated pipe surrounded by 1-inch size clean gravel. The gravel extends up behind the back of the blocks and a fabric separates the clean gravel from the adjacent soils. It is our understanding that fill soils will be placed in front of the wall to provide proper embedment.

The general location of the site with respect to major topographic features and existing facilities, as of 2014, is presented on Figure 1, Vicinity Map. The locations of the test pits excavated in conjunction with this study are also presented on Figure 2.

Subsurface Conditions

The soil conditions encountered in the 3 test pits, to the depths penetrated, consisted of natural layers of silty clay, silt, and silty fine sand, extending to the maximum depths explored of about 5.0 to 14.5 feet below the existing ground surface. The silt/clay soils were moist, brown to gray in color, estimated to be medium stiff to hard, and are anticipated to exhibit low strength characteristics under the anticipated loading range. The natural silty sand soils were moist,

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brown to orange-brown in color, estimated to be medium dense to dense, and are anticipated to exhibit moderate to high strength characteristics under the anticipated loading range.

Detailed graphical representations of the subsurface conditions encountered are presented on Figures 3A through 3C, Test Pit Logs. Soils were classified in accordance with the nomenclature described on Figure 4, Key to Test Pit Log (USCS). The lines designating the interface between soil types on the test pit logs generally represent approximate boundaries. In-situ, the transition between soil types may be gradual.

Groundwater was not encountered in the test pits during excavation operations. Seasonal and longer-term groundwater fluctuations on the order of 1 to 2 feet are projected, with the highest seasonal levels generally occurring during the late spring and early summer months.

Stability Analyses

The properties of the natural clay soils at the site were obtained by performing a direct shear test (see Figure 5, attached). The results of this test indicate the clay soils have an internal friction angle of 26 degrees, an apparent cohesion of 230 pounds per square foot (psf), and a saturated unit weight of about 115 pounds per cubic foot (pcf). Accordingly, we used the following parameters in our stability analyses:

Material	Internal Friction Angle (degrees)	Apparent Cohesion (psf)	Saturated Unit Weight (pcf)
On-Site Clay Soils	26	200	115
Redi-Rock Blocks	0 (global) 45 (internal)	9000 (global) 0 (internal)	145

For the seismic (pseudostatic) analysis, a peak horizontal ground acceleration of 0.32*g* for the 2 percent probability of exceedance in 50 years was obtained for site (grid) locations of 41.243 degrees latitude (north) and 111.786 degrees longitude (west). To model sustained accelerations at the site, one-half of this value is typically employed. Accordingly, a value of 0.16 was used as the pseudostatic coefficient for the stability analysis.

Using these input parameters, the internal (block-to-block) stability of the wall was evaluated considering sliding, overturning, and bearing capacity to achieve respective minimum factors of safety of 1.5, 2.0, and 3.0 for static conditions and 1.1, 1.1, and 1.5 for seismic conditions. The results of this analysis (see attached Figure 6) indicate that a maximum exposed wall height of 9 feet can be achieved for 41-inch deep Redi-Rock blocks with the top row being 28-inch deep blocks. This exposed height will require embedding the wall a minimum of 2.5 feet.

We also evaluated the global stability of the walls using the computer program *SLIDE*. This program uses a limit equilibrium (Simplified Bishop) method for calculating factors of safety against sliding on an assumed failure surface and evaluates numerous potential failure surfaces,

with the most critical failure surface identified as the one yielding the lowest factor of safety of those evaluated. The configuration we analyzed consisted of a 12-foot high Redi-Rock wall retaining slightly sloping backfill (at about 4H:1V, perpendicular to the wall). Typically, the required minimum factors of safety are 1.5 for static conditions and 1.1 for seismic (pseudostatic) conditions. The results of our analyses indicate that the existing Redi-Rock wall will meet both these requirements provided our recommendations are followed. The slope stability data are included as Figures 7 and 8, attached.

Conclusions and Recommendations

Based on the results of our analyses, the Redi-Rock block retaining walls at this site will be stable as constructed if the bottom of the wall is embedded a minimum 3 feet so that the exposed wall height is 9 feet. This embedment should be maintained at a maximum slope of 3H:1V extending at least 3 feet from the wall face. Note that surface drainage at the bottom and top of the wall should be directed away from the wall. GSH must observe the final wall construction, including the recommended embedment.

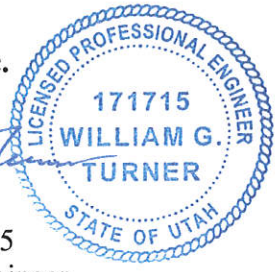
Closure

Our professional services have been performed, our findings developed, and our recommendations prepared in accordance with generally accepted engineering principles and practices in this area at this time.

If you have any questions or would like to discuss these items further, please feel free to contact us at (801) 393-2012.

Respectfully submitted,

GSH Geotechnical, Inc.



William G. Turner, P.E.
State of Utah No. 171715
Senior Geotechnical Engineer

Reviewed by:

Michael S. Huber, P.E.
State of Utah No. 343650
Vice President/Senior Geotechnical Engineer

WGT/MSH:mmh

Encl. Figure 1, Vicinity Map
Figure 2, Site Plan
Figures 3A to 3C, Log of Test Pits
Figure 4, Key to Test Pit Log (USCS)
Figure 5, Direct Shear Test Result
Figure 6, Redi-Rock Wall Stability Evaluation
Figures 7 and 8, Stability Results

Addressee (email)

GREAT BASIN ENGINEERING, INC.
JOB NO. 0582-23N-15

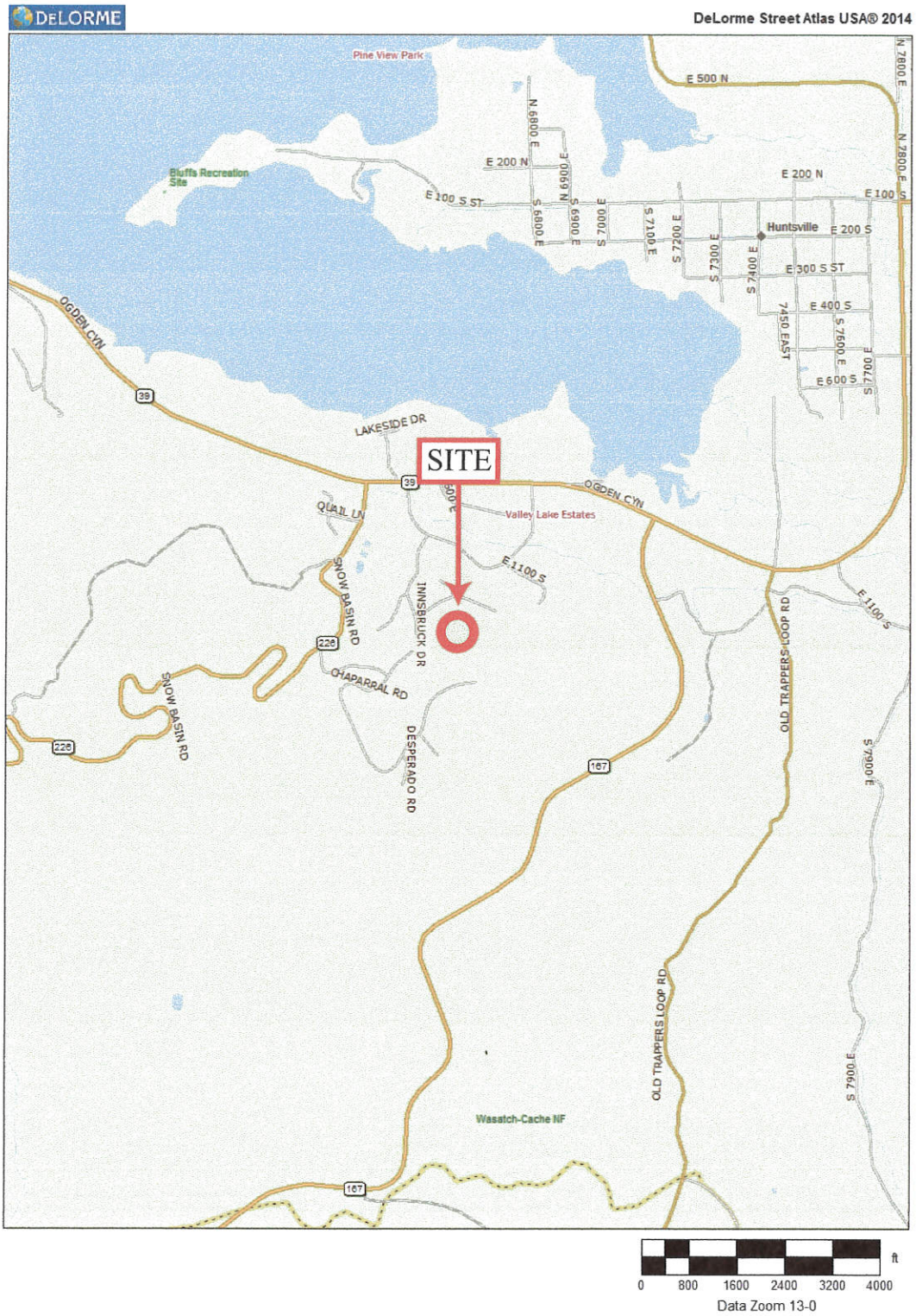


FIGURE 1
VICINITY MAP

REFERENCE:
DELORME STREET ATLAS

GSH

GREAT BASIN ENGINEERING, INC.
JOB NO. 0582-23N-15

FIGURE 2
SITE PLAN

REFERENCE:
ADAPTED FROM AERIAL PHOTOGRAPH
DOWNLOADED FROM GOOGLE EARTH
IMAGERY DATE: 16 JUNE 2015

GSH

GSH — TEST PIT LOG

Page: 1 of 1

TEST PIT: TP-1

CLIENT: Great Basin Engineering, Inc. PROJECT NUMBER: 0582-23N-15

PROJECT: Via Cortina Extension Redi-Rock Wall DATE STARTED: 9/28/15 DATE FINISHED: 9/28/15

LOCATION: Via Cortina Street, Near Huntsville, Weber County, Utah GSH FIELD REP.: RG

EXCAVATING METHOD/EQUIPMENT: CAT Trackhoe

GROUNDWATER DEPTH: Not Encountered (9/28/15) ELEVATION: ---

WATER LEVEL	USCS	DESCRIPTION	DEPTH (FT.)	SAMPLE SYMBOL	MOISTURE (%)	DRY DENSITY (PCF)	% PASSING 200	LIQUID LIMIT (%)	PLASTICITY INDEX	REMARKS
		Ground Surface	0							
	CL	SILTY CLAY with some fine sand; blocky structure; dark brown								moist medium stiff
		grades brown with dark brown mottling; blocky structure								stiff
	ML/CL	CLAYEY SILT/SILTY CLAY with some fine sand; blocky structure; light cementation; brown	5							moist very stiff
	SM	SILTY FINE TO COARSE SAND cemented; brown								moist dense
		End of Exploration at 8.0' No groundwater encountered at time of excavation	10							
			15							
			20							
			25							

See Subsurface Conditions section in the report for additional information.

FIGURE 3A

GSH — TEST PIT LOG

Page: 1 of 1

TEST PIT: TP-2

CLIENT: Great Basin Engineering, Inc. PROJECT NUMBER: 0582-23N-15

PROJECT: Via Cortina Extension Redi-Rock Wall DATE STARTED: 9/28/15 DATE FINISHED: 9/28/15

LOCATION: Via Cortina Street, Near Huntsville, Weber County, Utah GSH FIELD REP.: RG

EXCAVATING METHOD/EQUIPMENT: CAT Trackhoe

GROUNDWATER DEPTH: Not Encountered (9/28/15) ELEVATION: ---

WATER LEVEL	USCS	DESCRIPTION	DEPTH (FT.)	SAMPLE SYMBOL	MOISTURE (%)	DRY DENSITY (PCF)	% PASSING 200	LIQUID LIMIT (%)	PLASTICITY INDEX	REMARKS
		Ground Surface	0							
	CL	SILTY CLAY with some fine sand; blocky structure; major roots (topsoil) to 5"+; dark brown								moist loose to 5" stiff
	ML	SILT with sand; moderately cemented; brown	5							moist medium stiff
		End of Exploration at 5.0' No groundwater encountered at time of excavation	10							
			15							
			20							
			25							

See Subsurface Conditions section in the report for additional information.

FIGURE 3B

GSH — TEST PIT LOG

Page: 1 of 1

TEST PIT: TP-3

CLIENT: Great Basin Engineering, Inc. PROJECT NUMBER: 0582-23N-15

PROJECT: Via Cortina Extension Redi-Rock Wall DATE STARTED: 9/28/15 DATE FINISHED: 9/28/15

LOCATION: Via Cortina Street, Near Huntsville, Weber County, Utah GSH FIELD REP.: RG

EXCAVATING METHOD/EQUIPMENT: CAT Trackhoe

GROUNDWATER DEPTH: Not Encountered (9/28/15) ELEVATION: ---

WATER LEVEL	USCS	DESCRIPTION	DEPTH (FT.)	SAMPLE SYMBOL	MOISTURE (%)	DRY DENSITY (PCF)	% PASSING 200	LIQUID LIMIT (%)	PLASTICITY INDEX	REMARKS
		Ground Surface	0							
	CL	SILTY CLAY with some fine sand; blocky structure; major roots (topsoil); dark brown to brown								moist loose stiff
		highly plastic; blocky structure; grayish-green	5							
	SM	SILTY FINE SAND occasional clasts of volcanic ash; brown								moist medium dense
		grades fine to medium sand with some silt	10							
	CL	SILTY CLAY with some fine sand; moderately cemented; blocky structure; gray with mottling								moist hard
	SP	FINE SAND with some silt; orangish-brown								moist medium dense
		End of Exploration at 14.5' No groundwater encountered at time of excavation	15							
			20							
			25							

See Subsurface Conditions section in the report for additional information.

FIGURE 3C

CLIENT: Great Basin Engineering, Inc.
PROJECT: Via Cortina Extension Redi-Rock Wall
PROJECT NUMBER: 0582-23N-15

KEY TO TEST PIT LOG

WATER LEVEL	USCS	DESCRIPTION	DEPTH (FT.)	SAMPLE SYMBOL	MOISTURE (%)	DRY DENSITY (PCF)	% PASSING 200	LIQUID LIMIT (%)	PLASTICITY INDEX	REMARKS
①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪

COLUMN DESCRIPTIONS

① **Water Level:** Depth to measured groundwater table. See symbol below.

② **USCS:** (Unified Soil Classification System) Description of soils encountered; typical symbols are explained below.

③ **Description:** Description of material encountered; may include color, moisture, grain size, density/consistency,

④ **Depth (ft.):** Depth in feet below the ground surface.

⑤ **Sample Symbol:** Type of soil sample collected at depth interval shown; sampler symbols are explained below.

⑥ **Moisture (%):** Water content of soil sample measured in laboratory; expressed as percentage of dryweight of

⑦ **Dry Density (pcf):** The density of a soil measured in laboratory; expressed in pounds per cubic foot.

⑧ **% Passing 200:** Fines content of soils sample passing a No. 200 sieve; expressed as a percentage.

⑨ **Liquid Limit (%):** Water content at which a soil changes from plastic to liquid behavior.

⑩ **Plasticity Index (%):** Range of water content at which a soil exhibits plastic properties.

⑪ **Remarks:** Comments and observations regarding drilling or sampling made by driller or field personnel. May include other field and laboratory test results using the following abbreviations:

CEMENTATION:

Weakly: Crumbles or breaks with handling or slight finger pressure.

Moderately: Crumbles or breaks with considerable finger pressure.

Strongly: Will not crumble or break with finger pressure.

MODIFIERS:

Trace <5%

Some 5-12%

With > 12%

MOISTURE CONTENT (FIELD TEST):

Dry: Absence of moisture, dusty, dry to the touch.

Moist: Damp but no visible water.

Saturated: Visible water, usually soil below water table.

Descriptions and stratum lines are interpretive; field descriptions may have been modified to reflect lab test results. Descriptions on the logs apply only at the specific boring locations and at the time the borings were advanced; they are not warranted to be representative of subsurface conditions at other locations or times.

UNIFIED SOIL CLASSIFICATION SYSTEM (USCS)

MAJOR DIVISIONS			USCS SYMBOLS	TYPICAL DESCRIPTIONS
COARSE-GRAINED SOILS More than 50% of material is larger than No. 200 sieve size.	GRAVELS More than 50% of coarse fraction retained on No. 4 sieve.	CLEAN GRAVELS (little or no fines)	GW	Well-Graded Gravels, Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly-Graded Gravels, Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES (appreciable amount of fines)	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS More than 50% of coarse fraction passing through No. 4 sieve.	CLEAN SANDS (little or no fines)	SW	Well-Graded Sands, Gravelly Sands, Little or No Fines
			SP	Poorly-Graded Sands, Gravelly Sands, Little or No Fines
		SANDS WITH FINES (appreciable amount of fines)	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS More than 50% of material is smaller than No. 200 sieve size.	SILTS AND CLAYS Liquid Limit less than 50%		ML	Inorganic Silts and Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands or Clayey Silts with Slight Plasticity
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clays, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays o f Low Plasticity
	SILTS AND CLAYS Liquid Limit greater than 50%		MH	Inorganic Silts, Micacious or Diatomacious Fine Sand or Silty Soils
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Silts and Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Humus, Swamp Soils with High Organic Contents

Note: Dual Symbols are used to indicate borderline soil classifications.

STRATIFICATION:

DESCRIPTION	THICKNESS
Seam	up to 1/8"
Layer	1/8" to 12"
Occasional:	One or less per 6" of thickness
Numerous;	More than one per 6" of thickness

TYPICAL SAMPLER GRAPHIC SYMBOLS

- Bulk/Bag Sample
- Standard Penetration Split Spoon Sampler
- Rock Core
- No Recovery
- 3.25" OD, 2.42" ID D&M Sampler
- 3.0" OD, 2.42" ID D&M Sampler
- California Sampler
- Thin Wall

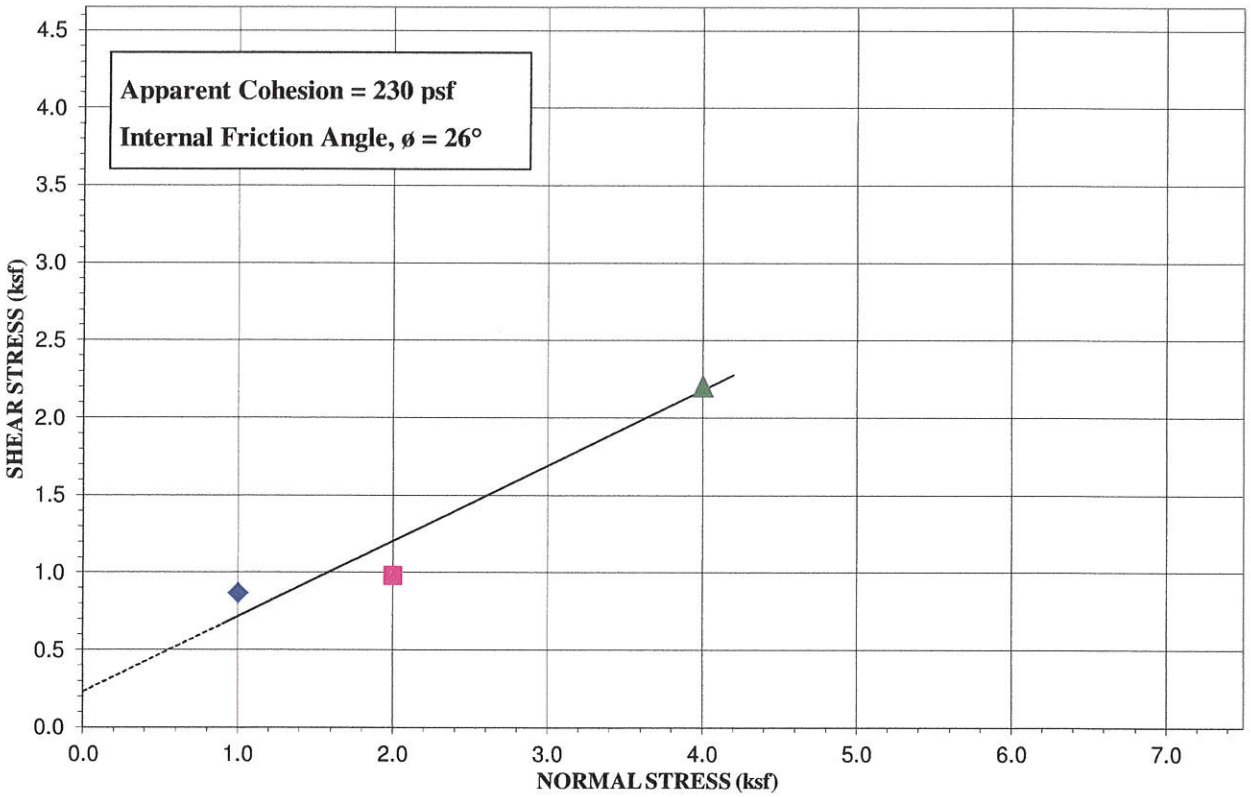
WATER SYMBOL

- Water Level

FIGURE 4

GSH

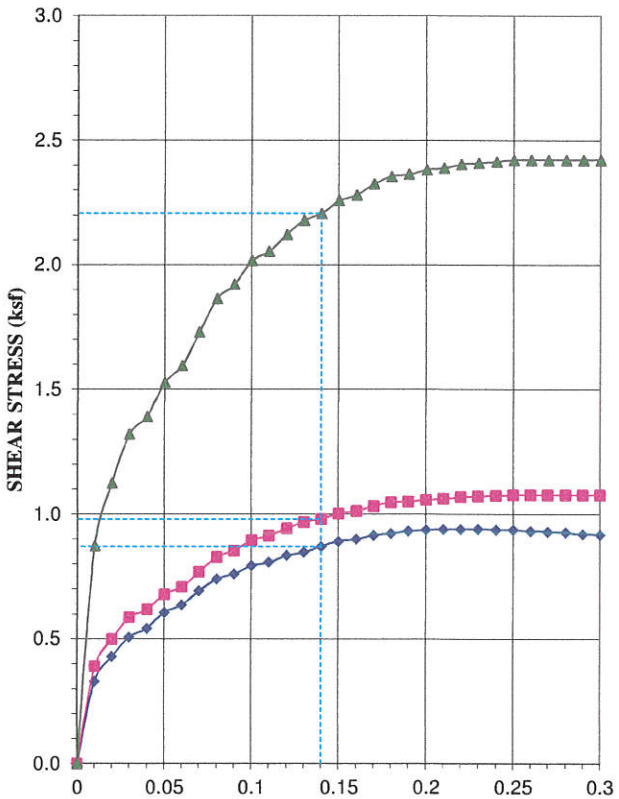
DIRECT SHEAR TEST



Source: TP-3	Depth: 4 ft		
Type of Test:	Consolidated - Undrained		
Test No. (Symbol)	1 (◆)	2 (■)	3 (▲)
Sample Type	Relatively Undisturbed		
Initial Height, in.	1.06	1.16	1.10
Diameter, in.	2.42	2.42	2.42
Dry Density Before, pcf	81.5	78.3	83.0
Dry Density After, pcf	84.5	82.5	86.6
Moisture % Before	28.9	31.1	27.4
Moisture % After	38.8	38.3	29.5
Saturation % Before	70.7	70.8	69.3
Saturation % After	101.8	96.0	81.1
Normal Load, ksf	1.0	2.0	4.0
Shear Stress, ksf	0.87	0.98	2.21
Strain Rate	0.005 in/min		

Sample Properties	
Cohesion, psf	230
Friction Angle, ϕ	26
Liquid Limit, %	---
Plasticity Index, %	---
Percent Gravel	---
Percent Sand	---
Percent Passing No. 200 sieve	---
Classification	Clay (CL)

Testing Laboratory: GSH



PROJECT: The Summit at Ski Lake, Phase 12

PROJECT NO.: 0582-23N-15

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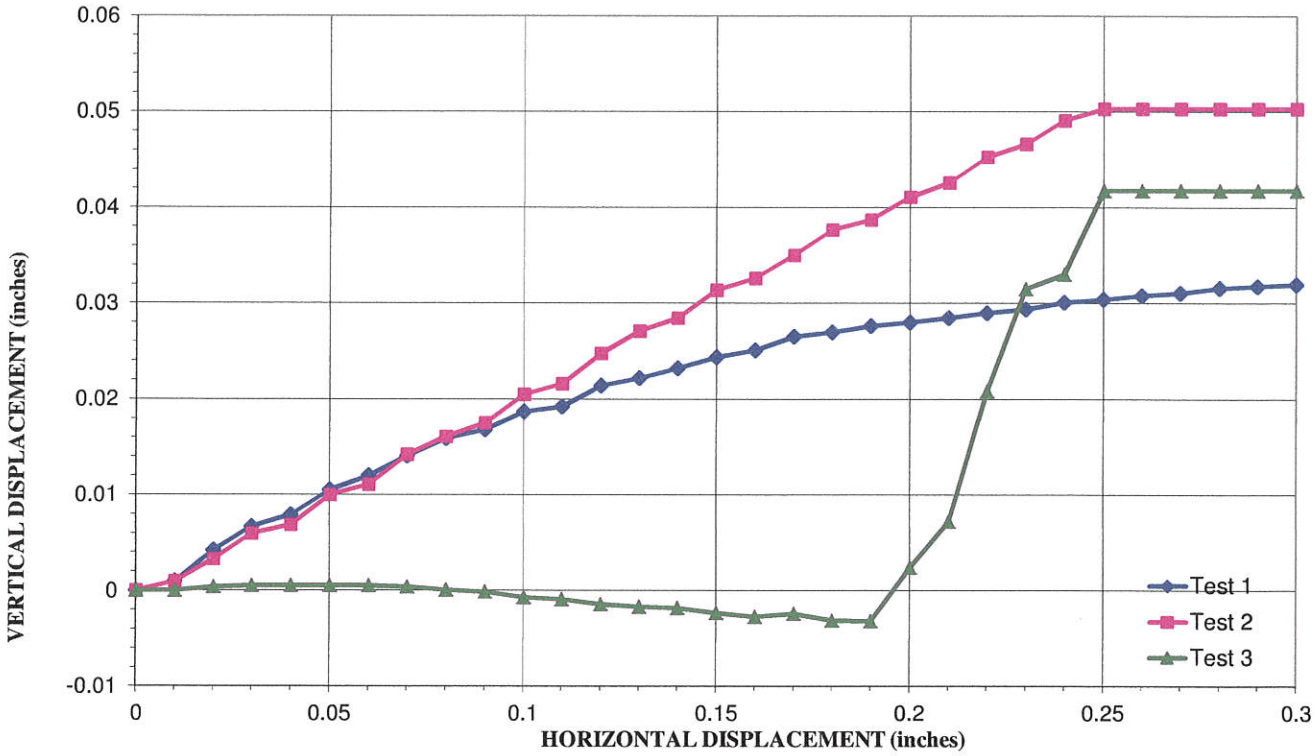
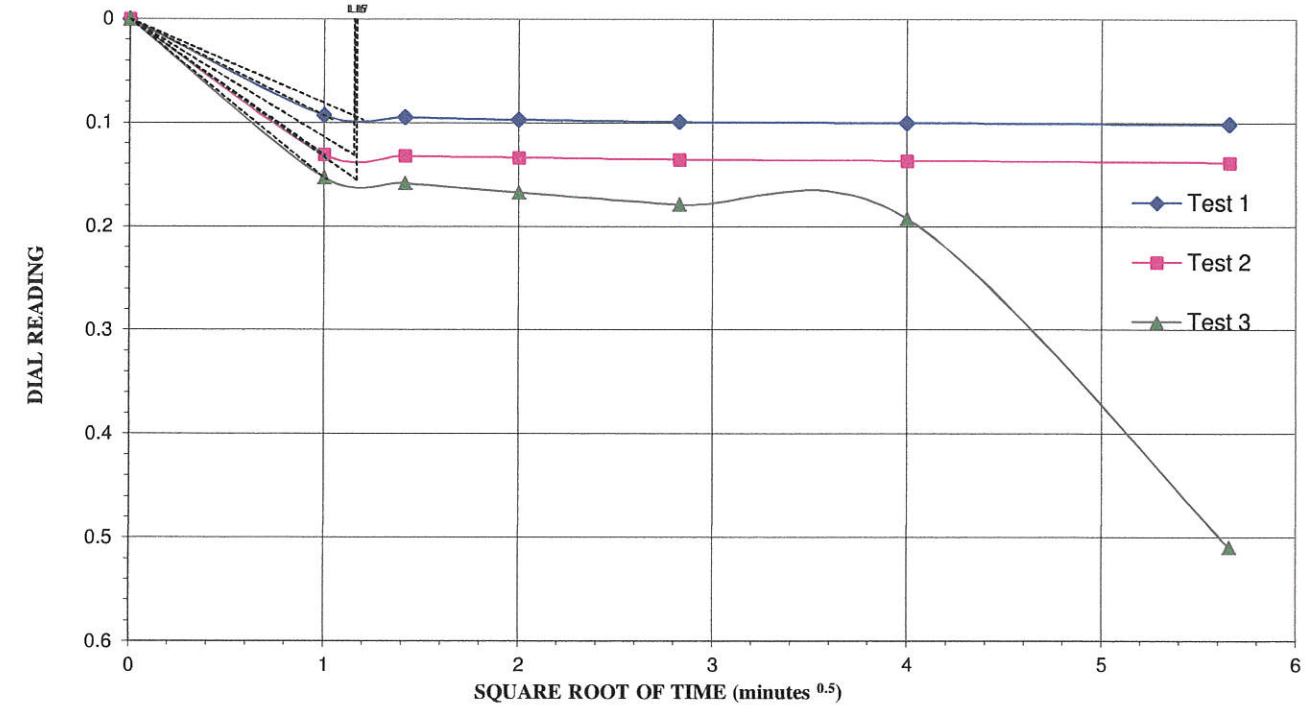
FIGURE NO.: 5A

DIRECT SHEAR TEST





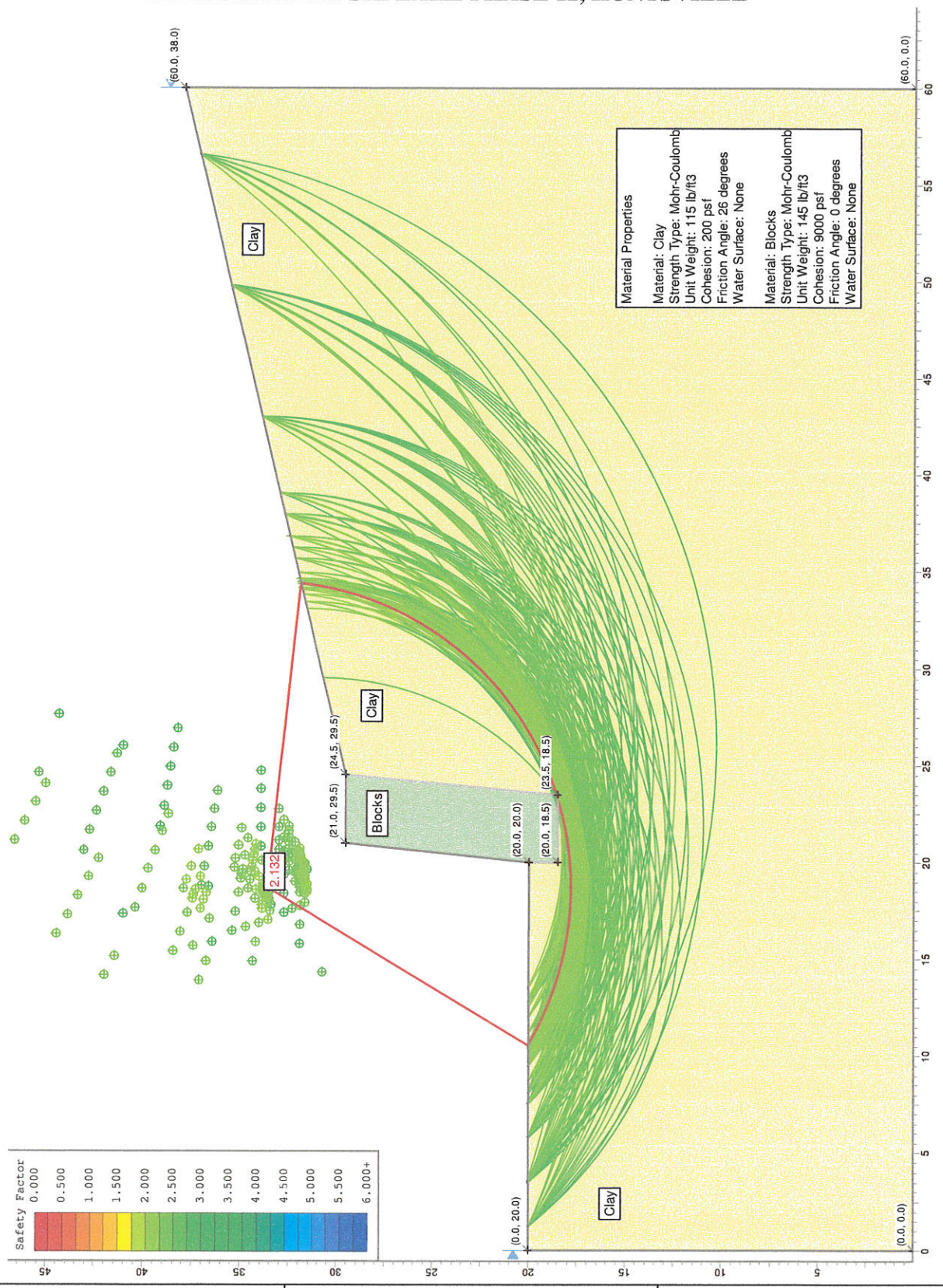
Test No. (Symbol)	1 (◆)	2 (■)	3 (▲)
t_{90} (from sq-root time)	1.34	1.33	1.36
$t_f = 50\ t_{90} / 4.28$	15.7	15.5	15.9
max. $d_r = 0.5 / t_f$	0.0319	0.0322	0.0315
selected d, (in./min)	0.0050	0.0050	0.0050

PROJECT: The Summit at Ski Lake, Phase 12

PROJECT NO 0582-23N-15	GSH	**FIGURE NO.:** 5B

STABILITY RESULTS

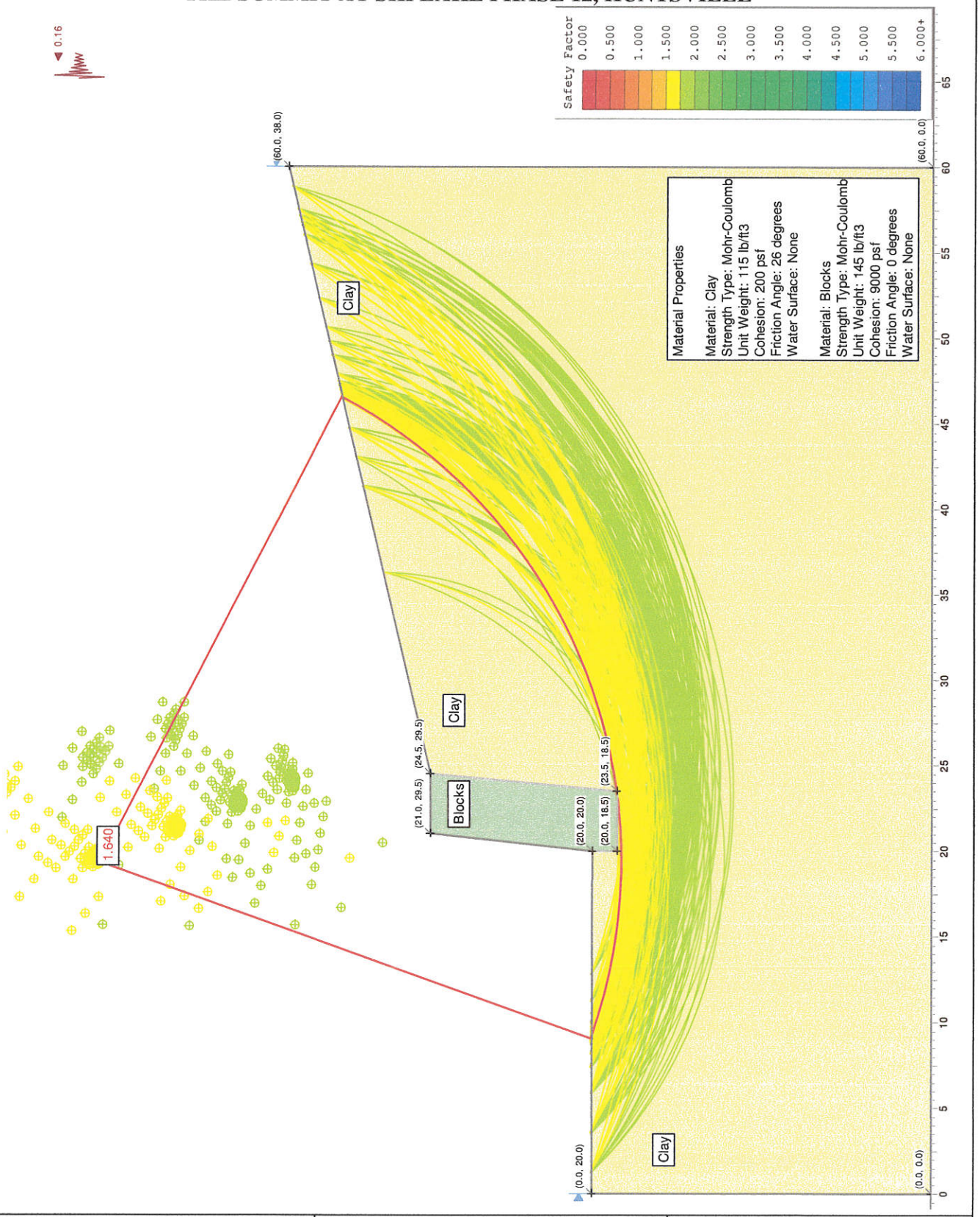
THE SUMMIT AT SKI LAKE PHASE 12, HUNTSVILLE



PROJECT NO.: 0582-23N-15	GSH	FIGURE NO.: 6

STABILITY RESULTS

THE SUMMIT AT SKI LAKE PHASE 12, HUNTSVILLE



PROJECT NO.: 0582-23N-15	GSH	**FIGURE NO.:** 7

REDI-ROCK WALL STABILITY EVALUATION

Project:	The Summit at Ski Lake, Phase 12			Date:	10/7/15
Location:	Huntsville, Utah			By:	WGT
Backfill slope angle, β:	0	degrees (β)	Foundation soil γ :	115	pcf
Front batter angle (from vert.):	5.16	degrees (α)	Foundation soil ϕ :	26	degrees
Soil/wall interface friction:	17	degrees (δ)	Found. soil cohesion:	200	psf
Surcharge pressure:	0	psf	Retained soil γ :	115	pcf
	static	seismic	Retained soil ϕ :	26	degrees
FS against sliding:	1.5	1.1	Retain. soil cohesion:	200	psf
FS against overturning:	2.0	1.1	Block γ :	150	psf
FS for bearing:	3.0	1.5	Block ϕ :	45	degrees
Horizontal seismic coef., k_h:	0.16	(typically ½ of PGA)	Embedment depth:	2.5	feet
Vertical seismic coef., k_v:	0	(typically 0)	Block Width:	48	inches
Mononobe-Okabe theta, θ =	0.1587		Soil Bearing Capacity =	14677	psf (Meyerhoff)

STATIC

Wall Ht, H (ft)	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0	13.5	15.0	16.5
Block Width (in)	41.0	41.0	41.0	41.0	41.0	28.0	28.0	28.0	28.0	28.0	28.0
Block Width (ft)	3.4167	3.4167	3.4167	3.4167	3.4167	2.3333	2.3333	2.3333	2.3333	2.33333	2.33333
Back batter angle, ψ:	0	5.1586	5.1586	5.1586	5.1586	5.1586	5.1586	5.1586	5.1586	5.15855	5.15855
Coulomb K_a	0.3475	0.3124	0.3124	0.3124	0.3124	0.3124	0.3124	0.3124	0.3124	0.3124	0.3124
F_a (lbs/ft)	0	0	0	0	168	439	790	1219	1727	2315	2982
Wall Wt, W (lbs/ft)	769	1538	2306	3075	3844	4369	4894	5419	5944	6469	6994
Wall $x_{centroid}$ (ft)	1.71	1.78	1.84	1.91	1.98	1.96	1.96	1.98	2.00	2.03	2.07
Wall $y_{centroid}$ (ft)	0.75	1.50	2.25	3.00	3.75	4.29	4.88	5.49	6.13	6.79	7.47
$F_{sliding}$ (lbs/ft)	0	0	0	0	165	430	773	1193	1691	2266	2918
$F_{resisting}$ (lbs/ft)	375	750	1125	1500	1892	2175	2466	2765	3072	3387	3709
$FS_{base\ sliding}$	**>100**	**>100**	**>100**	**>100**	**11.5**	**5.1**	**3.2**	**2.3**	**1.8**	**1.5**	**1.3**
$FS_{interface\ shear}$	**>100**	**>100**	**>100**	**>100**	**10.8**	**4.7**	**2.9**	**2.1**	**1.6**	**1.3**	**1.1**
$M_{overturn}$ (ft-lbs/ft)	0	0	0	0	412	1290	2705	4772	7608	11328	16049
$M_{resisting}$ (ft-lbs/ft)	1313	2731	4252	5878	7733	8892	10169	11568	13090	14738	16514
$FS_{overturn}$	**>100**	**>100**	**>100**	**>100**	**18.8**	**6.9**	**3.8**	**2.4**	**1.7**	**1.3**	**1.0**
Eccentricity, e (ft)	0.00	0.00	0.00	0.00	0.09	0.26	0.49	0.78	1.13	1.54	2.01
Bearing Pressure	225	450	675	900	1317	1897	2749	3933	5510	7539	10081
$FS_{bearing}$	**65.2**	**32.6**	**21.7**	**16.3**	**11.1**	**7.7**	**5.3**	**3.7**	**2.7**	**1.9**	**1.5**

SEISMIC

Mononobe-Okabe K_{ae}	0.4777	0.4393	0.4393	0.4393	0.4393	0.4393	0.4393	0.4393	0.4393	0.4393	0.4393
F_{ae} (lbs/ft)	0	0	0	114	427	853	1393	2047	2814	3696	4690
$F_{sliding}$ (lbs/ft)	123	246	369	604	1033	1534	2147	2870	3706	4652	5710
$F_{resisting}$ (lbs/ft)	375	750	1125	1511	1917	2216	2526	2848	3181	3525	3881
$FS_{base\ sliding}$	**3.0**	**3.0**	**3.0**	**2.5**	**1.9**	**1.4**	**1.2**	**1.0**	**0.9**	**0.8**	**0.7**
$FS_{interface\ shear}$	**2.9**	**2.9**	**2.9**	**2.4**	**1.7**	**1.3**	**1.1**	**0.9**	**0.7**	**0.6**	**0.6**
$M_{overturn}$ (ft-lbs/ft)	92	369	830	1878	3856	6476	10245	15370	22060	30521	40961
$M_{resisting}$ (ft-lbs/ft)	1313	2731	4252	5965	7936	9223	10663	12259	14016	15937	18026
$FS_{overturn}$	**14.2**	**7.4**	**5.1**	**3.2**	**2.1**	**1.4**	**1.0**	**0.8**	**0.6**	**0.5**	**0.4**
Eccentricity (ft)	0.12	0.24	0.36	0.59	0.94	1.36	1.88	2.51	3.24	4.05	4.95
Bearing Pressure	272	640	1102	1850	3053	8749	12974	18666	26056	35371	46841
$FS_{bearing}$	**53.9**	**22.9**	**13.3**	**7.9**	**4.8**	**1.7**	**1.1**	**0.8**	**0.6**	**0.4**	**0.3**

Max. Recommended Wall Height: 9 feet

PROJECT NO.: 0582-23N-15	GSH	**FIGURE NO.:** 8