

Geotechnical and Geological Review

Project: Nobs Hillside Review
User: Alan Taylor
Department: Taylor Geotechnical
Created: 2015-05-29 23:45:51
Modified: 2015-05-30 05:30:42

Notes

Subect Document: Earthtec Engineering: "Geotechnical Study, Lot 15 Ski Lake Estates No. 3, 6640 East 1100 South, Huntsville, Utah," Project No. 145150G, prepared for Martin Nobs, dated June 23, 2014.

GEOLOGICAL REVIEW

See attached document.

GEOTECHNICAL REVIEW

The purpose of this review is to evaluate whether or not Earthtec Engineering adequately addresses geotechnical engineering parameters at the property, as applicable to residential development, consistent with concerns for public health, safety, reasonable professional standard of practice and the Weber County Hillside Development Review Procedures and Standards.

Prior to completion of the geotechnical review, following documents should be submitted.

1. Engineering calculations that substantiate the recommended allowable bearing capacity and settlement analysis.
2. Engineering calculations that substantiate the recommended lateral earth pressure coefficients and equivalent fluid densities for active, at-rest and passive conditions.
3. Data that substantiates the soil parameters used for second soil unit in the global stability analyses.
4. Input and output files for the global stability analyses presented in the subject document.
5. The entry and exit boundaries as presented in the global stability analyses were outside the boundaries of the home and limited the location of the exit point at the toe. It is recommended to verify that slope is stable near and just below the home as well as the general slope of the area. Please have Earthtec provide global stability analysis considering failure surfaces near the home as well as larger boundaries at the top and bottom of the slope.
6. It is recommended that the applicant have Earthtec's geologist review the geology of the site as recommended in the geologic review memo by Simon and Associates, attached to this file review.

This review is issued solely in response to the Consultants' evaluation of the referenced documents. Comments and recommendations in this review are based on data presented in the subject reports. Comments and recommendations presented herein are provided to aid Weber County in reducing risks from geotechnical hazards and to protect public health and safety. This review does not forego other items of concern that may come to the Weber County Engineering Department's attention during additional reviews or during construction of improvements. If you have any comments or questions concerning this review, feel free to contact Alan Taylor with Taylor Geotechnical at 801-400-9784 or Dana Shuler with Weber County.

Files

Name	Size	Date Uploaded	Actions
SA Memorandums Lot 15 Ski Lakes Estates.pdf	1.06 MB	2015-05-29 23:47:51	<input type="button" value="Rename"/> <input type="button" value="Delete"/>

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PROJECT MEMORANDUM

Date: May 29, 2015 SA Project No: 15-142

From: David B. Simon

To: Alan Taylor

Subject: Report - Geotechnical Study, Lot 15 Ski Lake Estates No.3, 6640 East 1100 South,
Huntsville, Utah, prepared by Earthtec Engineering Inc. (project no. 145150G), dated June 23, 2014, prepared for Mr. Martin Nabs, 50 River Bluff Road, Elgin, IL 60120.

As requested I reviewed the above referenced report to evaluate whether or not the site is located in a geologically sensitive area. It is my opinion the site is located in a geologically sensitive area. As shown on the attached geologic map:

1. The site is underlain by geologic unit Tn, Norwood Formation, an extremely landslide-prone geologic unit. Personally, I believe any site underlain by Tn should have a qualified engineering geologist, at a minimum, review, if not log, subsurface explorations.
2. There are several landslides in the immediate vicinity of the site (geologic unit Qms), all within unit Tn. Please note that I only included the geologic description of the units in the immediate vicinity of the site on the attached geologic map.

The test pit logs in the EEL report (attached) are also informative. TP-1 denotes clay to 8 feet, silty sand from 8 to 12 feet, and no "bedrock" (e.g., Norwood Formation sediments). TP-2 indicates clay to 4 feet and sandstone (presumably bedrock) from 4 to 7.5 feet, followed by silty sand to 12 feet; bedrock "sandwiched" between soil units. The test pit logs are suggestive that a landslide may be present on the property.

It is possible that the field engineer did not have sufficient geologic experience to recognize Norwood Formation material, or for that matter a landslide. Based on the geologic map, Norwood Formation bedrock should have been documented within a few feet of the ground surface. Alternatively, the site may be underlain by a landslide, not recognized by the field engineer or delineated on the geologic map due to the scale of the geologic map.

Memorandum
Lot 15 Ski Lake Estates No.3
6640 East 1100 South, Huntsville, Utah

SA Project No: 15-142
May 29, 2015
Page 2 of 2

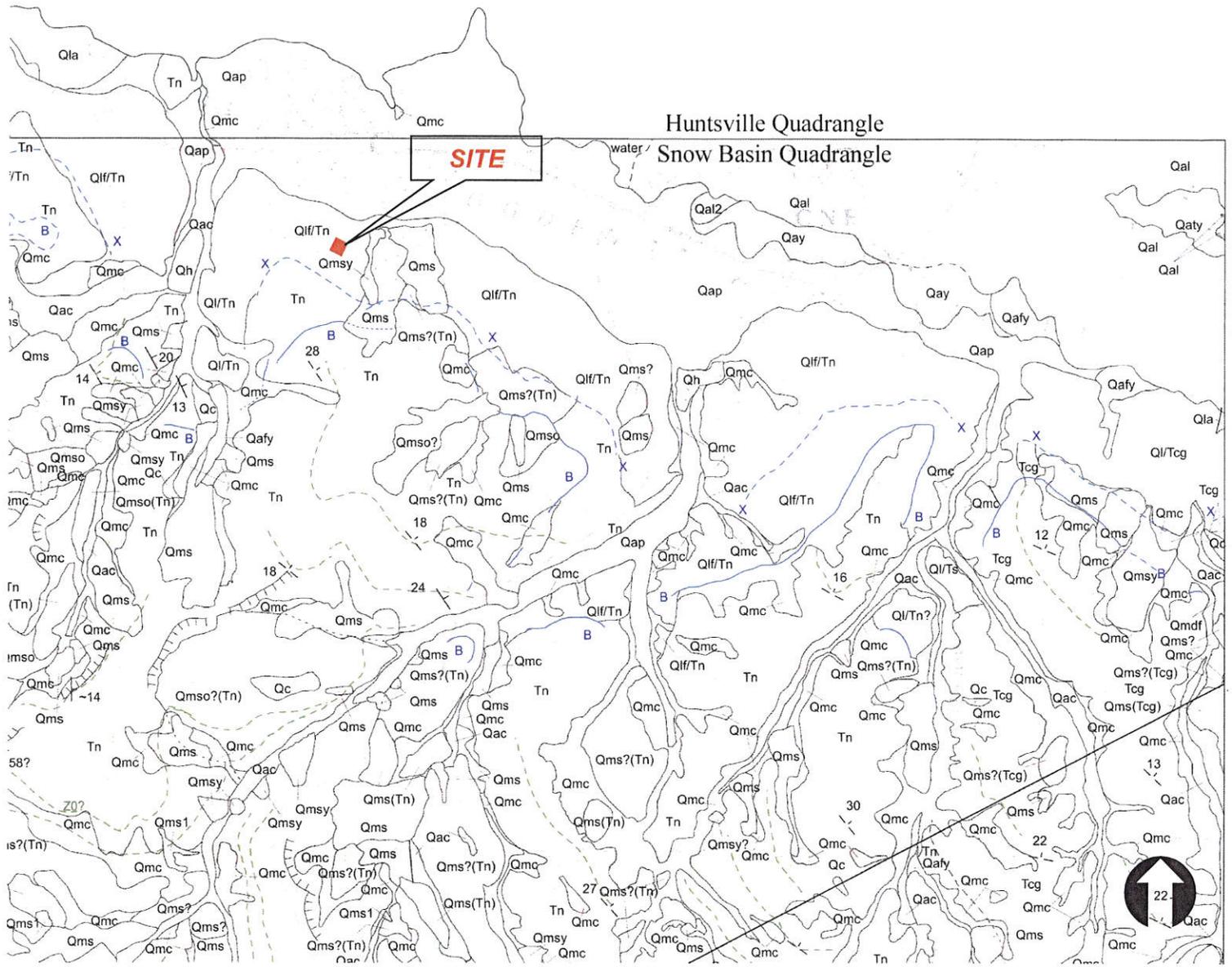
Based on the documents reviewed and my experience in the area, specifically with the Norwood Formation, I recommend the site be treated as a geologically sensitive (e.g., hazardous) site and also be evaluated by a qualified engineering geologist. Should you have any questions, please feel free to contact me.

SA



David B. Simon, P.G.
Principal Geologist

Dist: 1/Addressee
Encl: Geologic Map
EEL test pit logs



King, J.K., Yonkee, W.A., and Coogan, J.C., 2008, Interim geologic map of the Snow Basin and part of the Huntsville quadrangle, Davis, Morgan, and Weber Counties, Utah: Utah Geological Survey Open-File Report 536, scale 1:24,000.

Qap, Alluvium, undivided (Holocene and Pleistocene)

Qms, Landslide and slump deposits (Holocene and Pleistocene) - age uncertain (though likely Holocene and/or upper Pleistocene), where portions of slide/slump complexes have different ages but cannot be shown separately at map scale, or where boundaries between slides/slumps of different ages are not distinct.

Qlf Lake Bonneville fine-grained deposits (upper Pleistocene) - Mostly silt, clay, and fine sand (typically eroded from shallow Norwood Formation) in Ogden and Morgan Valleys.

Tn Norwood Formation (lower Oligocene and upper Eocene) - Typically light-gray to light brown, altered tuff (claystone), tuffaceous siltstone, sandstone, and conglomerate; includes landslides and slumps that are too small to show at map scale.



TEST PIT LOG

NO.: TP-1

PROJECT: Lot 15 Ski Lake Estates No. 3
CLIENT: Martin Nobs
LOCATION: See Figure 2
OPERATOR: C.E. Butters
EQUIPMENT: Trackhoe
DEPTH TO WATER; INITIAL ∇ :

PROJECT NO.: 145150G
DATE: 05/30/14
ELEVATION: Not Measured
LOGGED BY: S. Stuart

AT COMPLETION ∇ :

Depth (Fl.)	Graphic Log	USCS	Description	Samples	TEST RESULTS								
					Water Cont. (%)	Dry Dens. (pcf)	LL	PI	Gravel (%)	Sand (%)	Fines (%)	Other Tests	
0			TOPSOIL, clay, slightly moist, black, organic rich										
1													
2			Fat CLAY with sand, stiff (estimated), moist, olive, minor sandstone content up to 1 inch in diameter, moderate thin root material, minor pinhole texture										
3		CH											
4					26	84	79	49	0	29	71	C, DS	
5			Sandy Lean CLAY, stiff (estimated), moist, olive, heavy salt staining from 4 to 7 feet, moderate sandstone content up to 1 inch in diameter										
6		CL											
7													
8													
9			Silty SAND, dense (estimated), moist, olive, moderate sandstone content up to 6 inches in diameter										
10		SM											
11													
12													
13			MAXIMUM DEPTH EXPLORED APPROXIMATELY 12 FEET										
14													

Notes: No groundwater encountered.

Tests Key

- CBR = California Bearing Ratio
- C = Consolidation
- R = Resistivity
- DS = Direct Shear
- SS = Soluble Sulfates
- UC = Unconfined Compressive Strength

PROJECT NO.: 145150G



FIGURE NO.: 3

LOG OF TESTPIT_145150G.GPJ EARTHTEC.GDT 6/19/14

TEST PIT LOG

NO.: TP-2

PROJECT: Lot 15 Ski Lake Estates No. 3
CLIENT: Martin Nobs
LOCATION: See Figure 2
OPERATOR: C.E. Butters
EQUIPMENT: Trackhoe
DEPTH TO WATER; INITIAL ∇ :

PROJECT NO.: 145150G
DATE: 05/30/14
ELEVATION: Not Measured
LOGGED BY: S. Stuart

AT COMPLETION ∇ :

Depth (Ft.)	Graphic Log	USCS	Description	Samples	TEST RESULTS								
					Water Cont. (%)	Dry Dens. (pcf)	LL	PI	Gravel (%)	Sand (%)	Fines (%)	Other Tests	
0			TOPSOIL, clay, slightly moist, black, organic rich										
1													
2			Lean CLAY with sand, stiff (estimated), moist, olive, moderate thin root material										
3		CL											
4					23	90	49	22	0	21	79	C	
5			SANDSTONE, olive, slightly weathered, moderate soft										
6		SANDSTONE											
7													
8			Silty SAND, dense (estimated), slightly moist, olive, moderate sandstone content up to 1 inch in diameter	X									
9													
10		SM											
11				X									
12													
13			MAXIMUM DEPTH EXPLORED APPROXIMATELY 12 FEET										
14													

Notes: No groundwater encountered.

Tests Key

- CBR = California Bearing Ratio
- C = Consolidation
- R = Resistivity
- DS = Direct Shear
- SS = Soluble Sulfates
- UC = Unconfined Compressive Strength

PROJECT NO.: 145150G



FIGURE NO.: 4

LOG OF TESTPIT 145150G.GPJ EARTHTEC.GDT 6/19/14

Engineering Review 1

Project: Nobs Hillside Review
User: Dana Shuler
Department: Weber County Engineering Division
Created: 2015-06-01 10:24:04
Modified: 2015-06-01 11:04:10

Notes

I have had a chance to review the submitted information and offer the following comments:

1. The site plan needs to show the existing and proposed contours, both, and where they tie in together.
2. Contours should be shown through the hatched areas representing the cut slope.
3. Please give top and toe elevations of rock wall at corner of garage. (also, please move note pertaining to wall out of the grading area)
4. The geotech needs to state the maximum allowable slope of the native material and proposed fill. Site plan shows areas of nearly 1V:1H; however, the geotech's analysis used 0.5V:1H (section 9.0).
5. Fill areas greater than 3' depth must be re-evaluated by the geotech per the report (section 8.1).
6. There is a 30% slope on the driveway. Is this intentional?

Written responses are required to the above comments.

I have tried to address all items of concern from the Engineering Department. However, this review does not forego other items of concern that may come to this department's attention during additional reviews or during construction of improvements. If you have any comments or questions concerning this review, feel free to contact me.

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Weber Fire District- Hillside Review

Project: Nobs Hillside Review
User: Brandon Thueson
Department: Weber County Special Events, Weber Fire District
Created: 2015-06-08 09:17:12
Modified: 2015-06-18 11:53:21
Approved: Yes

Notes

Date: June 8, 2015

Project Name: Nobs Hillside Review

Project Address: 6640 E 1100 S Huntsville Utah

Contractor/Contact: Karl Lundin 801-395-1560 | klundin70@gmail.com

Fees: see attached pdf

FEE NOTICE:

Weber Fire District has various fees associated with plan reviews, and inspections. Please be prepared to make payments at the time of inspections or when you pick up your approved plans. Impact Fees are due prior to taking out a building permit. Make checks payable to: Weber Fire District.

REVIEW STATUS: APPROVED

SPECIFIC COMMENTS:

1. As the driveway is less than 150 feet in length, no turn-a-round is required.
2. Fire Flow: All dwellings structures over 5000 sq. ft. which do not meet the fire flow requirements, shall be equipped with an NFPA 13D compliant fire sprinkler system or be provided with area separations compliant with the IBC/IRC. For more information regarding fire flow, please contact Fire Marshal Thueson at 801-782-3580.
3. Provide a temporary address marker at the building site during construction.
4. Roads and bridges shall be designed, constructed and maintained to support an imposed load of 75,000 lbs.
5. All roads shall be designed, constructed, surfaced and maintained so as to provide an all-weather driving surface.
6. Fire access roads for this project shall be completed and approved prior to any combustible construction. Temporary roads shall meet the same requirements for height, width and imposed loads as permanent roads.
7. All required fire hydrants and water systems shall be installed, approved and fully functional prior to any combustible construction.

Every effort has been made to provide a complete and thorough review of these plans. This review does not relieve the owner, contractor and/or developer from compliance with any and all applicable codes and standards. Any change or revision of this plan will render this review void and will require submittal of the new or revised layout for fire department review.

Reviewed by: Brandon Thueson
Fire Marshal

cc: File

Files

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RES-Hillside Review- Nobs Residence 6640 E 1100 S Huntsville.pdf	204 KB	2015-06-08 09:17:18	<input type="button" value="Rename"/> <input type="button" value="Delete"/>