
MEMORANDUM

Date: January 19, 2017

To: TRPA Hearings Officer

From: TRPA Staff

Subject: Lands End Association LLC, Land Capability Challenge; 2240 Lands End Drive, Douglas County, NV; Assessor's Parcel No: 1418-00-001-001; TRPA File No: LCAP2016-0440

Proposed Action: Hearings Officer review and approve the proposed Land Capability Challenge (LCC).

Staff Recommendation: This LCC applies to approximately 4 acres of a 35 acre parcel. The percentages below apply to the 4-acre area assessed in this LCC. The area not assessed remains Class 1a, CaF. Staff recommends the TRPA Hearings Officer approve the land capability challenge on the subject parcel; specifically, changing the land capability from Class 1a (159,729 sq. ft., 91% of LCC), Class 2 (6,100 sq. ft., 4 % of LCC) and Class 4 (8,260 sq. ft., 5 % of LCC) to primarily Class 2 (114,662 sq. ft., 66 % of LCC) and smaller areas of Class 4 (12,174 sq. ft., 7 % of LCC), Class 6 (4,458 sq. ft., 3 % of LCC), Class 1c- RX (31,924 sq. ft., 18 % of LCC), and Backshore (6,438 sq. ft., 4 % of LCC). Please see table below for more details.

Background: The subject parcel is shown as Class 1a on TRPA Land Capability Overlay Maps (aka Bailey Land Capability maps). The Soil Conservation Service Soil Survey of Tahoe Basin Area, California-Nevada (Rogers, 1974) places this parcel in the Cagwin-Rock outcrop complex, 30 to 50 percent slope map unit (CaF). A Land Capability Verification (completed in 2001, LCAP2016-0386) identified small areas, with lower slopes, as Cagwin- Rock Outcrop 15 to 30 percent slopes (CaE), and Cagwin- Rock Outcrop 5 to 15 percent slopes (CaD). This parcel has a geomorphic mapping of C2 for Streamcut granitic mountain slopes, strongly dissected lands (High hazard lands). The Cagwin soils are moderately deep, somewhat excessively drained soils that formed in material weathered from granitic rock. Cagwin soils have loamy coarse sand textures in the A-horizon, with loamy coarse sand or coarse sand subsurface textures in the upper 27 inches. Weathered granitic bedrock is encountered between 20 and 40 inches below ground surface. The updated Soil Survey of Tahoe Basin Area, California and Nevada (NRCS, 2007) this parcel is mapped as map unit 7413- Cagwin – Rock Outcrop, 30 to 50% slopes (for LCC area).

A land capability challenge (LCAP2016-0440) was filed with TRPA on November 10, 2016. Ogilvy Consulting is representing the owner, Lands End Association LCC, and hired Denny Churchill to prepare a land capability analysis. Three soil pits were excavated and described by Mr. Churchill on August 2, 2016. On December 7, TRPA contractor, Marchel Munnecke examined three

confirmatory auger holes. Two were at Mr. Churchill's soil descriptions (8/2/16-1 and 8/2/16-3), and one was within the Class 2 map unit below the residence.

Findings: Three soil pits were excavated on the parcel. Pit 8/2/16-1 was located within the Class 6 polygon, to the south of the residence, between the residence and a bedrock outcrop along the shoreline. Pit 8/2/16-2 was located within the large Class 2 polygon, south of the residence, on a uniform slope below the road, outside of current project area. Pit 8/2/16-3 was located in the Class 4 polygon, in a swale below the residence. Pit 3, in the swale, has Scouler’s willow and Wood’s rose indicating additional moisture, but no redox features were present in the soils. The soils at these three pits are very similar. They are all very deep, with gravelly loamy coarse sand or gravelly coarse sand textures. They are somewhat excessively drained with moderately rapid permeability, and place in Hydrologic Soil Group A. These soils are classified as Mixed, frigid, Dystric Xeropsamments.

These soils are deeper than 20 to 40 inches, so do not meet the range in characteristics for the Cagwin soil component. They are an unmapped soil (XXX) in the 1974 Soil Survey. These soils are similar to the Cassenai soil component, as mapped in the 2006 Soil Survey.

Slopes on this parcel range from 8 percent to greater than 50 percent. Based on slopes, the soils of the subject parcel fall within three capability classes; Class 2 (30 to 50 percent slopes), Class 4 (9 to 30 percent slopes), and Class 6 (0 to 16 percent slopes).

The table below summarizes the changes in land capability as concluded by this land capability challenge.

Land Capability District	Area (sq. ft.) From LCV* approx.	Area (sq. ft.) 2016 LCC
Class 1A (CaF, 30 to 50% slopes, not accessed in LCC)	31.4 acres	31.4 acres
Class 1A (CaF, 30 to 50% slopes)	159,729	2,655
Class 2 (CaE, 15 to 30% slopes)	6,100	1,778
Class 4 (CaD, 5 to 15% slopes)	8,260	0
Class 1C – RX	0	31,924
Backshore	0	6,438
Class 2 XXX (30 to 50% slopes)	0	114,662
Class 4 XXX (9 to 30 % slopes)	0	12,174
Class 6 XXX (0 to 16 % slopes)	0	4,458
Total Parcel Area	31.5 acres	31.5 acres*

*174,089 sq. ft. (or 3.99 acres) assessed in land capability challenge.

This memorandum was jointly prepared by TRPA contractor Marchel Munnecke (Pyramid Botanical Consultants) and TRPA Associate Planner Julie Roll. If you have questions on this Hearings Officer item, please contact Julie Roll, 775-589-5247, or email at jroll@trpa.org.

BAILEY LAND CAPABILITY CHALLENGE FINDINGS

Site Information	
Assessor's Parcel Numbers: (APN)	1418-00-001-001
TRPA File No. / Submittal Date:	LCAP2016-0440 / 11/10/2016
Owner or Applicant:	Lands End Association LLC
Address:	PO Box 84, Reno, NV, 89504

Environmental Setting	
Bailey Soil Mapping Unit¹ / Hydrologic Soil Group (HSG) / Land Class / Geomorphic Hazard Unit	Cagwin-Rock outcrop complex, 30 to 50 % slope map unit (CaF), Cagwin-Rock outcrop complex, 15 to 30 % slopes (CaE), and Cagwin-Rock outcrop complex, 5 to 14 % slope map unit (CaD), / HSG B/ C2 (Streamcut granitic mountain slopes, strongly dissected slopes, high hazard lands)
Soil Parent Material	Colluvium over residuum from granitic rock
Slopes and Aspect	8 to > 50 percent; sloping to the west
Elevation and Datum	6229 to 6332 (Turner and Associates)
Rock Outcrops and Surface Configuration	Rock out crops are along the shoreline and a small area below the road. These are delineated on the map as RX-Rock outcrop unit.
SEZ and Hydrology Source	None present
Vegetation	Jeffrey pine, antelope bitterbrush, greenleaf manzanita, and whitethorn. The swale also has Scouler's willow, Woods rose and snowberry.
Ground Cover Condition	Good (vegetation 90%, duff/mulch 95% cover)
Site Features	Residence, shed, paver porch, compacted dirt driveway, compacted dirt paths, pump house, and wood stairs.

Field Investigation and Procedures	
Consultant and Address	Denny Churchill 145 Cottonwood Ct. Quincy, CA 95971
TRPA Staff Field Dates	Dec. 7 th 2016
SEZ Mapping / NRCS Hydric Soil	None present
Number of Soil Pits or Auger Holes and Description Depth	2 pits hand excavated pits by Mr. Churchill to 20 and 24 inches, then augered to 60 inches. 1 auger description to 60 inches.

¹ TRPA currently relies upon the Soil Survey of Tahoe Basin, California-Nevada (Rogers and Soil Conservation Service, 1974), which the Bailey Land Capability system is predicated upon.

Additional or Repetitive TRPA Sample Locations	2 augur observations at pits 8/2/16-1 and 8/2/16-3 by Mrs. Munnecke. 1 additional augur observation below residence in Class 2 polygon, because 8/2/16-2 could not be located, and was outside of area being challenged. This observation verified the soils are deeper than Cagwin.
Representative Soil Profile Descriptions	Mr. Churchill's land capability report includes three soil profile descriptions.
Areas Not Examined	The majority of this 35.- acre parcel was not examined. Approximately 4 acres was assessed for this land capability challenge. This includes the small residence, the area below road, east to property boundary and south- southeast to the lake.

TRPA Findings	
2006 Soil Survey Map Unit	7413- Cagwin – Rock Outcrop, 30 to 50% slopes (for LCC area).
Consultant Soil Mapping Determination and Rationale	XXX- These soils are all very deep, somewhat excessively drained, with moderately rapid permeability, and are in HSG A. These soils are similar to the Cassenai soil component. Based on slopes, these soils place into land capability Class 2 (30 to 50 % slope), Class 4 (9-30 % slope) and Class 6 (0-16 % slope). A small area remains mapped as CaE and CaF. New areas of Rx have been delineated, as well as backshore.
Slope Determination	8 to > 50 percent slopes
TRPA Conclusion(s)	TRPA concurs with consultants' determination and rationale above.
Applicable Area	See map in Mr. Churchill's Land Capability Assessment Report.

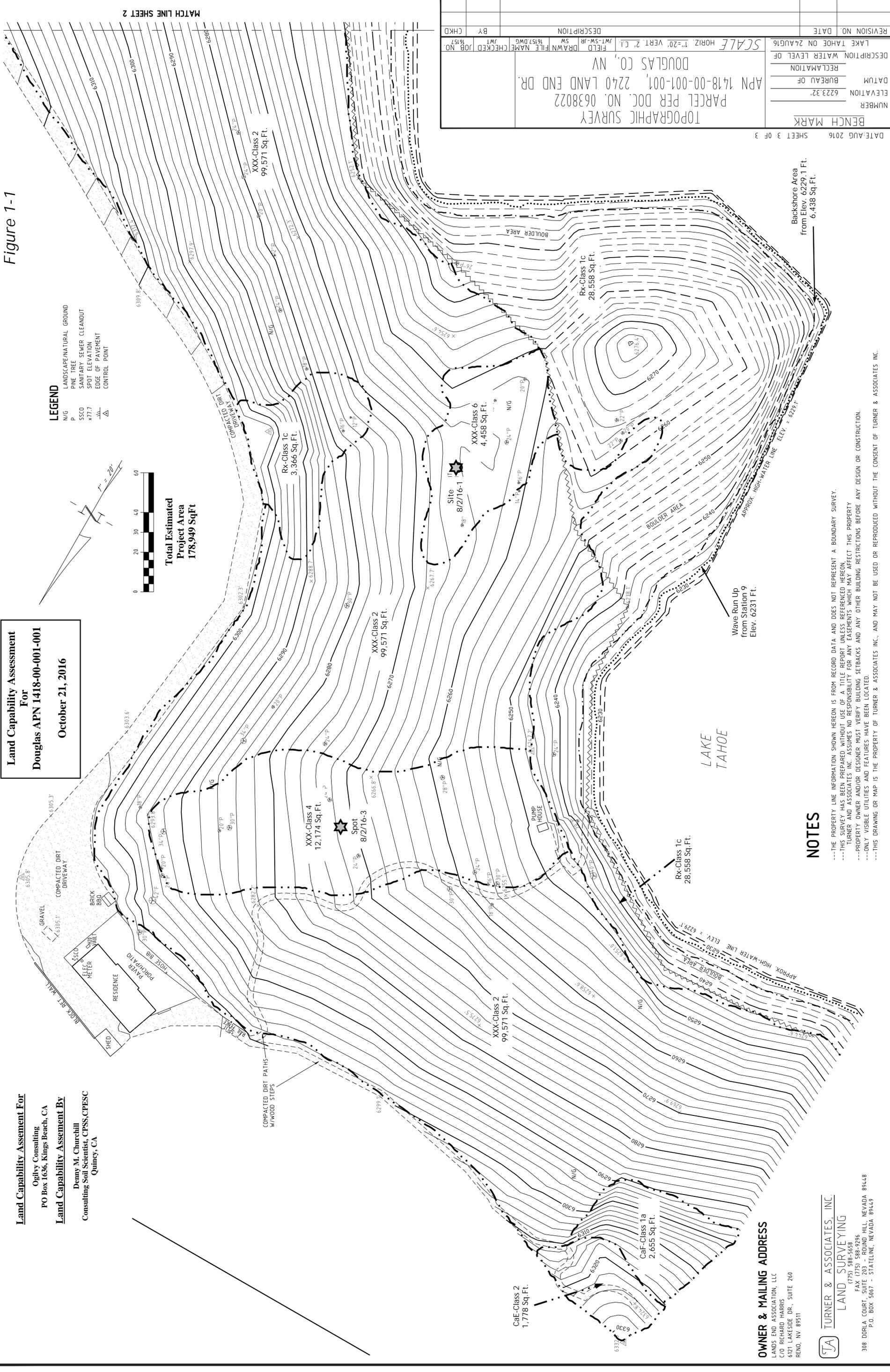
Attachments:

- A. Site Plan (Figure 1-1 and 1-2)
- B. Land Capability Analysis Report prepared by Denny Churchill

Attachment A

Site Plan (Figure 1-1 and 1-2)

Figure 1-1

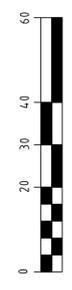


Land Capability Assessment For Douglas APN 1418-00-001-001
October 21, 2016

Land Capability Assessment For
 Ogilvy Consulting
 PO Box 1636, Kings Beach, CA

Land Capability Assessment By
 Denny M. Churchill
 Consulting Soil Scientist, CPSS, CPESC
 Quincy, CA

- LEGEND**
- N/G LANDSCAPE/NATURAL GROUND
 - P PINE TREE
 - SSCO SANITARY SEWER CLEANOUT
 - x77.7 SPOT ELEVATION
 - EDGE OF PAVEMENT
 - △ CONTROL POINT



Total Estimated Project Area
178,949 Sqft

TOPOGRAPHIC SURVEY		REVISION NO.	
PARCEL PER DOC. NO. 0638022		DATE	
APN 1418-00-001-001, 2240 LAND END DR.		LAKE TAHOE ON 24 AUG 16	
DOUGLAS CO., NV		DESCRIPTION	
SCALE	HORIZ. 1"=20'	VERT. 2"=1'	FIELD
DRAWN	FILE	NAME	SM
CHECKED	JMT-SW-JR	16157 DWG	16157
BY	CHKD		

OWNER & MAILING ADDRESS
 LANDS END ASSOCIATION, LLC
 C/O RICHARD HARRIS
 6121 LAKESIDE DR., SUITE 260
 RENO, NV 89511

TURNER & ASSOCIATES, INC.
LAND SURVEYING
 (775) 588-5658
 308 DORLA COURT, SUITE 203 - ROUND HILL, NEVADA 89448
 P.O. BOX 5067 - STAELINE, NEVADA 89449

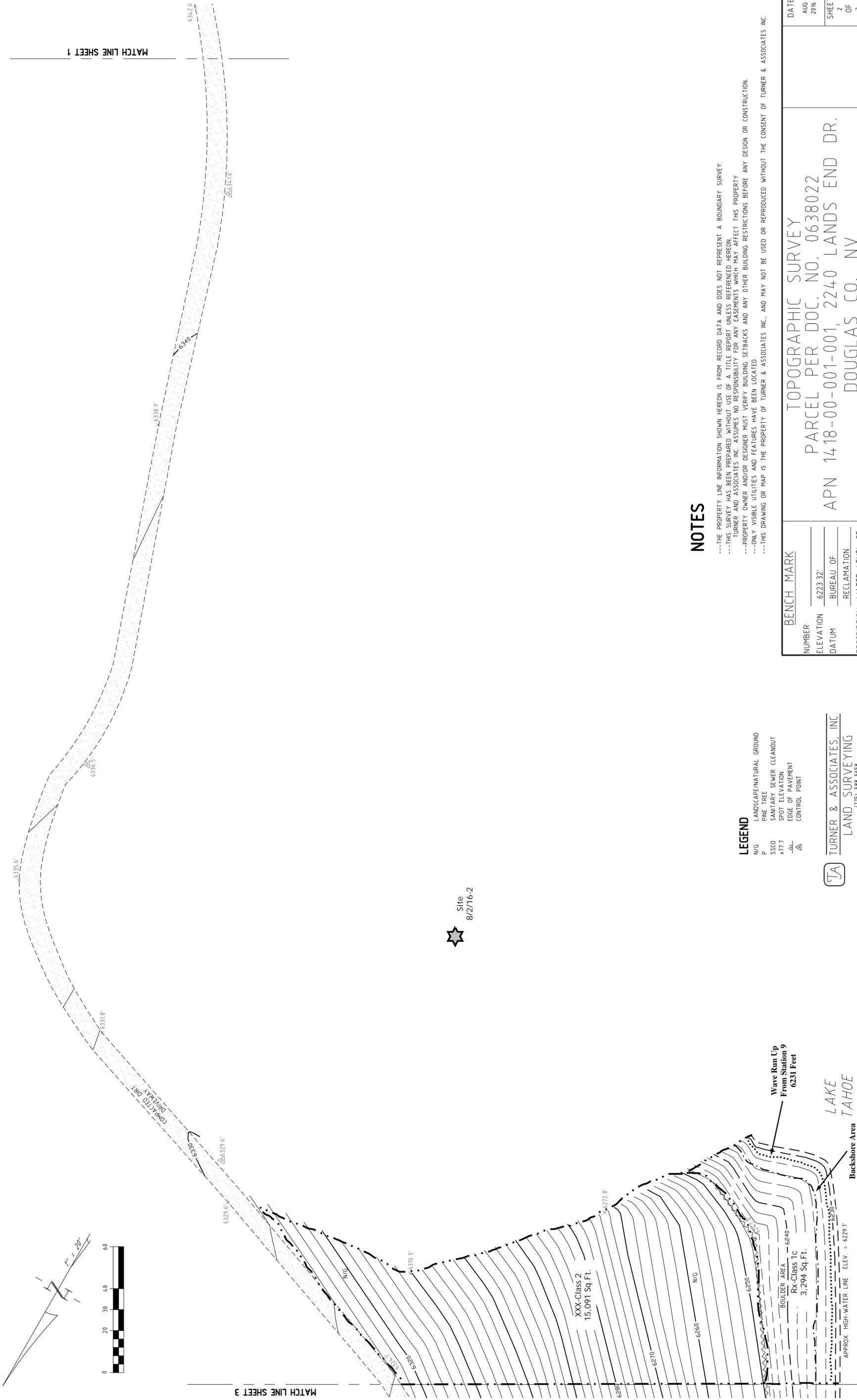
NOTES

- THE PROPERTY LINE INFORMATION SHOWN HEREON IS FROM RECORD DATA AND DOES NOT REPRESENT A BOUNDARY SURVEY.
- THIS SURVEY HAS BEEN PREPARED WITHOUT USE OF A TITLE REPORT UNLESS REFERENCED HEREON.
- TURNER AND ASSOCIATES INC. ASSUMES NO RESPONSIBILITY FOR ANY EASEMENTS WHICH MAY AFFECT THIS PROPERTY.
- PROPERTY OWNER AND/OR DESIGNER MUST VERIFY BUILDING SETBACKS AND ANY OTHER BUILDING RESTRICTIONS BEFORE ANY DESIGN OR CONSTRUCTION.
- ONLY VISIBLE UTILITIES AND FEATURES HAVE BEEN LOCATED.
- THIS DRAWING OR MAP IS THE PROPERTY OF TURNER & ASSOCIATES INC., AND MAY NOT BE USED OR REPRODUCED WITHOUT THE CONSENT OF TURNER & ASSOCIATES INC.

Backshore Area
 from Elev. 6229.1 Ft.
 6,438 Sq. Ft.

Wave Run Up
 from Station 9
 Elev. 6231 Ft.

Figure 1-2



NOTES

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- LEGEND**
- N/G LANDSCAPE/NATURAL GROUND
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 - △ CONTROL POINT

TA TURNER & ASSOCIATES, INC.
LAND SURVEYING

308 DORLA COURT, SUITE 203, ROUND HILL, NEVADA 89448
P.O. BOX 5067 - STATELINE, NEVADA 89449

BENCH MARK		TOPOGRAPHIC SURVEY		DATE
NUMBER	ELEVATION	PARCEL PER DOC. NO. 0638022		AUG 2016
DATUM	RECLAMATION	APN 1418-00-001-001, 2240 LANDS END DR.		SHEET 2 OF 3
DESCRIPTION	WATER LEVEL OF LAKE TAHOE ON 24 AUG 16	DOUGLAS CO., NV		JOB NO. 16157
REVISION NO	DATE	SCALE	HORIZ. 1"=20'	VERT. 2"=1'
			FIELD JMT-SW-JR	DRAWN SW
			FILE NAME	CHECKED
			16157.DWG	JMT
			BY	CHKD

Attachment B

Land Capability Analysis Report prepared by Denny Churchill

**Land Capability Assessment
For
Douglas Parcel APN 1418-00-001-001**

October 21, 2016

INTRODUCTION

A soil investigation was conducted by Denny M. Churchill, Consulting Soil Scientist on a portion of Douglas County Parcel APN 1418-00-001-001 on August 2, 2016. The objective of the study was to identify soils and other features and relate them to Land Capability which is administered by the Tahoe Regional Planning Agency (TRPA) for the purpose of impervious coverage regulation, as defined in Chapter 30 of the Code of Ordinances.

The parcel supports a single-family dwelling on approximately 35.4 acres of land located at 2240 Lands End Drive, Glenbrook, Douglas County, NV. The actual analysis area is approximately 4.1 acres or 178,949 square feet measured from elevation 6229.1 to the road. This work is advanced at the request of Mr. Wyatt Ogilvy, principle of Ogilvy Consulting, agents for Lands End Association, LLC.

Soil information contained in this report is for the strict use of land capability and it should not be used for building foundation design, slope stability or seismic analysis.

ENVIRONMENTAL SETTING

The parcel is located at T14N R18E, S/2 of section 4. Vegetation is predominately Type 6-Montane chaparral and is composed of bitter brush, greenleaf manzanita, white thorn, coffee berry, service berry and scattered Jeffery pine. There are no stream environment zones (SEZ) influencing this parcel.

Soils are shown on the TRPA GIS Data Base (<http://gis.trpa.org/datadownloader/>) as CaF-Cagwin-Rock outcrop complex, 30 to 50 percent slopes. Geology (Grose, 1985) is characterized as Keg-Granodiorites. Bailey's geomorphic analysis (1974) shows the parcel as C2- Strongly dissected lands (high hazard lands).

METHODOLOGY

The parcel was surveyed based on slope delineations and landscape position. Three sites considered representative of the landform were chosen and excavations were placed to open and examine the soil profiles in detail. Standards of the National Cooperative Soil Survey were used to describe and interpret soil physical properties. Information gathered at the site was compared to the *Soil Survey of the Lake Tahoe Basin, California-Nevada* (Rogers et al, 1974) and to the *Land-Capability Classification of the Lake Tahoe Basin, California-Nevada* (Bailey, 1974) for proper placement in the appropriate land capability class. A detailed topographic map was available (Turner and Associates, Inc., August,

2016) for site location and slope control. Information pertaining to land capability districts is shown on Figures 1-1 and 1-2.

FINDINGS

Referring to Figures 1-1 and 1-2 attached site maps, soils at site 8/2/16-1 are found to be deep, somewhat excessively drained, and members of Soil Hydrologic Group A. They can be characterized as having brown or dark brown gravelly loamy coarse sand top soil approximately 16 inches thick, over a light olive brown gravelly loamy coarse sand or coarse sand subsoil to a depth of 62 inches. Vegetation at this site is Type 6-Montane chapparal. Soils were dry throughout at the time of excavation. These soils are deeper than 40 inches, placing them outside the range of characteristics for Cagwin loamy coarse sand.

Soils at site 8/2/16-2 are found to be deep, somewhat excessively drained, and members of Soil Hydrologic Group A. They can be characterized as having brown or dark grayish brown gravelly loamy coarse sand top soil approximately 12 inches thick, over a brown or yellowish brown gravelly coarse sand subsoil to a depth of 60+ inches. Vegetation at this site is representative of Type 6-Montane chapparal. Soils were dry throughout at the time of excavation. Soils at this location are deeper than 40 inches, placing them outside the range of characteristics for Cagwin loamy coarse sand.

Soils at site 8/2/16-3 are found to be deep, somewhat excessively drained, and members of Soil Hydrologic Group A. They can be characterized as having brown or dark yellowish brown gravelly loamy coarse sand top soil approximately 12 inches thick, over a dark brown or dark yellowish brown gravelly coarse sand or loamy coarse sand subsoil to a depth of 60+ inches. Vegetation at this site is representative of Type 6-Montane chapparal. Soils were dry throughout at the time of excavation. Soils at this location are deeper than 40 inches, placing them outside the range of characteristics for Cagwin loamy coarse sand.

CONCLUSIONS AND RECOMMENDATIONS

Soils found at site 8/2/16-1 are deeper than the Cagwin loamy coarse sand soils presently mapped, are considered unmapped inclusions within the CaF map unit, and place in land capability class 6.

Soils found at site 8/2/16-2 are deeper than the Cagwin loamy coarse sand soils presently mapped, are considered unmapped inclusions within the CaF map unit, and place in land capability class 2.

Soils found at site 8/2/16-3 are deeper than the Cagwin loamy coarse sand soils presently mapped, are considered unmapped inclusions within the CaF map unit, and place in land capability class 4.

Please refer to the following soil profile descriptions that support the findings and the attached maps (Figures 1-1 and 1-2) showing the spatial distribution of the appropriate land capability classes on the parcel.

Respectfully submitted,

Denny M.
Churchill

Digitally signed by Denny M. Churchill
DN: cn=Denny M. Churchill, o=Consulting
Soil Scientists
email=dennychurchill@icglobe.net, c=US
Date: 2016.10.19 07:41:46 -0700

Denny M. Churchill
Certified Professional Soil Scientist No. 0755

Representative Soil Profile Descriptions

Site 8/2/16-1: Excavated pit to 20 inches, auger to 62 inches.

Location: 39° 06' 16.36" N. Latitude; 119° 57' 30.83" W. Longitude (WG84 datum)

Elevation: 6264 feet (from Turner and Assoc., 8/2016)

Landform: Out sloped terrace (slopes to the south west).

Vegetation: Bitter brush, greenleaf manzanita, white thorn, Jeffery pine, coffee berry and service berry.

- O1 0 to 4 inches, pine needles, duff and root mass.
- O2 4 to 8 inches, decomposed organics (mull).
- A1 8 to 12 inches, brown (10YR 4/3) gravelly loamy coarse sand, very dark grayish brown (10YR 2/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; common to many very fine to medium and few coarse roots throughout; common fine interstitial pores; 15 percent small subangular gravels; slightly acid (pH 6.2); clear wavy boundary.
- A2 12 to 16 inches, brown (10YR 4/3) gravelly loamy coarse sand, dark brown (10YR 3/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine to medium and few coarse roots throughout; common fine interstitial pores; 15 percent small subangular gravels; slightly acid (pH 6.2); clear wavy boundary.
- C1 16 to 45 inches, light olive brown (2.5Y 5/4) gravelly loamy coarse sand, olive brown (2.5Y 4/4) moist; massive; loose, loose, nonsticky and nonplastic; few to common fine to medium and few coarse roots; many fine interstitial pores; 25 percent small subangular gravels; slightly acid (pH 6.2); clear wavy boundary.
- C2 45 to 60 inches, light olive brown (2.5Y 5/4) very gravelly coarse sand, olive brown (2.5Y 4/4) moist; massive to single grained; loose, loose, nonsticky and nonplastic; few fine roots; many fine interstitial pores; 40 percent small subangular gravels; moderately acid (pH 6.0); clear wavy boundary.

Parent material: Colluvium over residuum (weathered from granodiorite).

Drainage class: Somewhat excessively drained. Moderately rapid permeability.

Slope: 8-12 percent sloping south 30 degrees west.

1974 soil series: None. Deeper than Toem or Cagwin soils.

2003 soil series: Similar to Cassenai gravelly loamy coarse sand.

Soil classification: Mixed, frigid Dystric Xeropsamments

Hydrologic Soil Group: A

Soil was dry throughout at the time of excavation.

Site 8/2/16-2: Pit to 24 inches, augered to 60 inches.

Location: 39° 06' 17.18" N. Latitude; 119° 57' 30.89" W. Longitude (WG84 datum)

Elevation: 6272 feet (from Turner and Assoc., 8/2016)

Landform: Upland side slope (slopes to the south east).

Vegetation: Bitter brush, greenleaf manzanita, white thorn, Jeffery pine, coffee berry and service berry.

Oi 0 to 4 inches, pine needles, duff and leaves.

A1 4 to 8 inches, brown (10YR 4/3) gravelly loamy coarse sand, dark brown (10YR 3/3) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; common to many very fine to medium and few coarse roots throughout; common fine interstitial pores; 15 percent small subangular gravels; slightly acid (pH 6.2); clear wavy boundary.

A2 8 to 12 inches, brown (10YR 4/3) gravelly coarse sand, dark brown (10YR 3/3) moist; moderate fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine to medium and few coarse roots throughout; common fine interstitial pores; 15 percent small subangular gravels; slightly acid (pH 6.2); clear wavy boundary.

C1 12 to 45 inches, yellowish brown (10YR 5/4) gravelly coarse sand, dark yellowish brown (10YR 3/4) moist; massive; loose, loose, nonsticky and nonplastic; many fine to medium and few coarse roots; many fine interstitial pores; 20 percent small subangular gravels; moderately acid (pH 6.0); clear wavy boundary.

C2 45 to 60 inches, yellowish brown (10YR 5/4) gravelly coarse sand, dark yellowish brown (10YR 3/4) moist; massive to single grained; loose, loose, nonsticky and nonplastic; few fine to medium roots; many fine interstitial pores; 25 percent small subangular gravels; moderately acid (pH 6.0); clear wavy boundary.

Parent material: Colluvium over residuum (weathered from granodiorite).

Drainage class: Somewhat excessively drained. Moderately rapid permeability.

Slope: 28-35 percent sloping south 10 degrees east.

1974 soil series: None. Deeper than Toem or Cagwin soils.

2003 soil series: Similar to Cassenai gravelly loamy coarse sand.

Soil classification: Mixed, frigid Dystric Xeropsamments

Hydrologic Soil Group: A

Soil was dry throughout at the time of excavation.

Site 8/2/16-3: Augered to 60 inches (spot location).

Location: 39° 06' 10.70" N. Latitude; 119° 57' 23.40" W. Longitude (WG84 datum)

Elevation: 6272 feet (from Turner and Assoc., 8/2016)

Landform: Concave side slope (slopes to the south east).

Vegetation: Scouler's willow, Wood's rose, greenleaf manzanita, snow brush, Jeffery pine, white fir, coffee berry and service berry.

- Oi 0 to 4 inches, pine needles, duff, leaves, and thick root mass.
- A1 4 to 8 inches, dark yellowish brown (10YR 4/4) gravelly loamy coarse sand, very dark grayish brown (10YR 3/2) moist; weak to moderate fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine to fine and few medium roots throughout; common fine interstitial pores; 10 percent small subangular gravels; slightly acid (pH 6.2); clear wavy boundary.
- A2 8 to 12 inches, dark yellowish brown (10YR 4/4) gravelly loamy coarse sand, very dark grayish brown (10YR 3/2) moist; moderate fine granular structure; soft, very friable, nonsticky and nonplastic; common very fine to medium and few coarse roots throughout; common fine interstitial pores; 15 percent small subangular gravels; slightly acid (pH 6.2); clear wavy boundary.
- C1 12 to 45 inches, yellowish brown (10YR 5/4) gravelly loamy coarse sand, dark yellowish brown (10YR 3/4) moist; massive; loose, loose, nonsticky and nonplastic; common fine to medium and few coarse roots; many fine interstitial pores; 20 percent small subangular gravels; moderately acid (pH 6.0); clear wavy boundary.
- C2 45 to 60 inches, dark grayish brown (10YR 4/4) gravelly coarse sand, dark yellowish brown (10YR 4/2) moist; massive to single grained; loose, loose, nonsticky and nonplastic; few fine to medium roots; sand grains with iron and organic stains; many fine interstitial pores; 25 percent small subangular gravels; moderately acid (pH 6.0); clear wavy boundary.

Parent material: Colluvium over residuum (weathered from granodiorite).

Drainage class: Somewhat excessively drained. Moderately rapid permeability.

Slope: 22-30 percent sloping south 10 degrees east.

1974 soil series: None. Deeper than Toem or Cagwin soils.

2003 soil series: Similar to Cassenai gravelly loamy coarse sand.

Soil classification: Mixed, frigid Dystric Xeropsamments

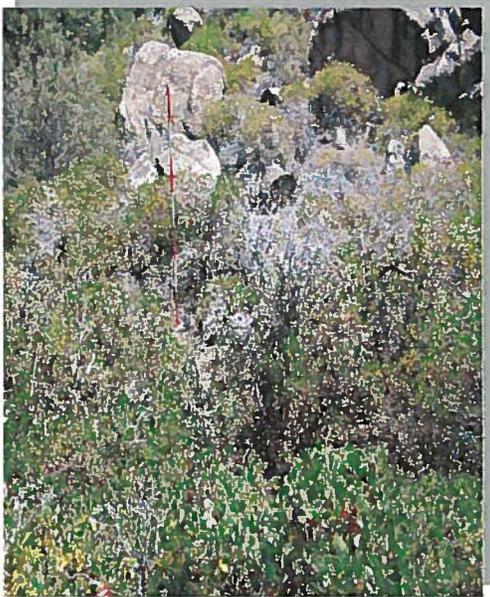
Hydrologic Soil Group: A

Soil was dry throughout at the time of excavation. This location was investigated for potential SEZ determination based on the presence of willow and Wood's rose, as well as its position on the landscape (concave depression below the house and road). Although

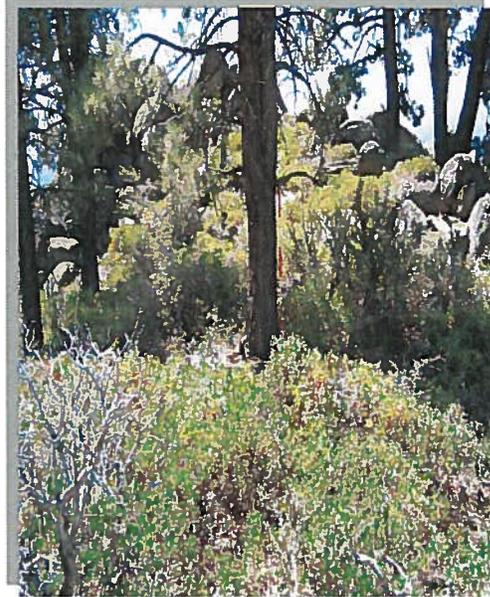
no physical evidence was observed that would suggest periods of prolonged saturation, this site undoubtedly would experience seasonal contributions of surface and subsurface moisture from runoff and snow melt.

Photo Series

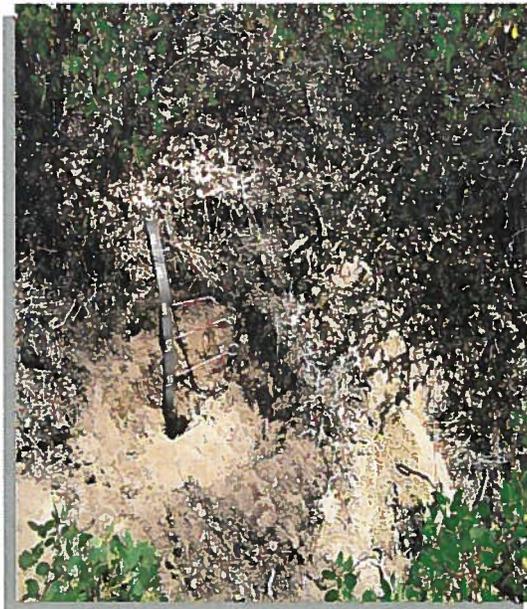
Site 8/2/16-1



Up Slope Towards Residence



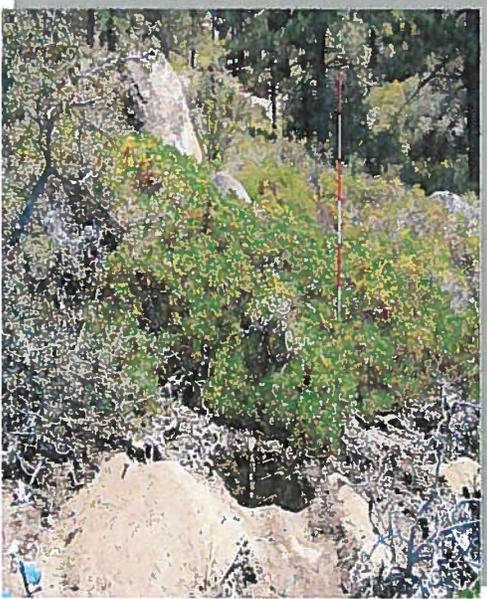
Down Slope Towards Lake



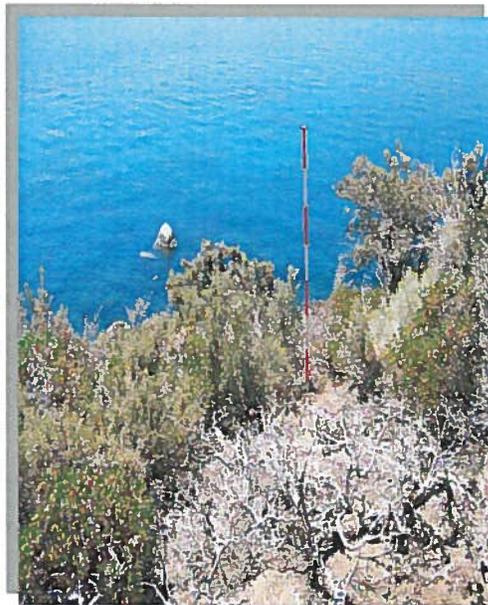
Representative Soil Profile

Denny M. Churchill ■ Consulting Soil Scientist ■ Quincy, CA 95971

Site 8/2/16-2



Up Slope Towards Road



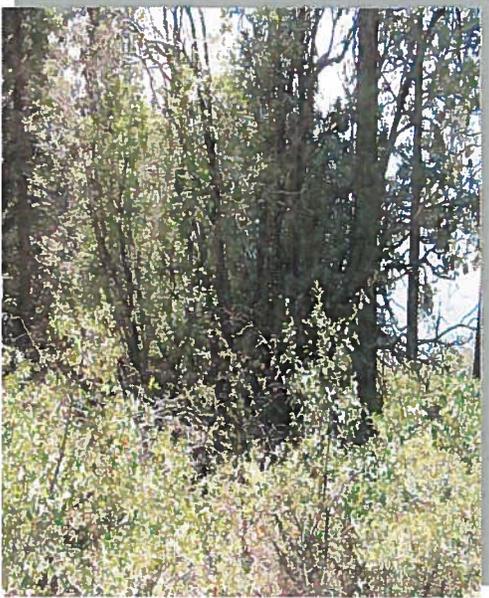
Down Slope



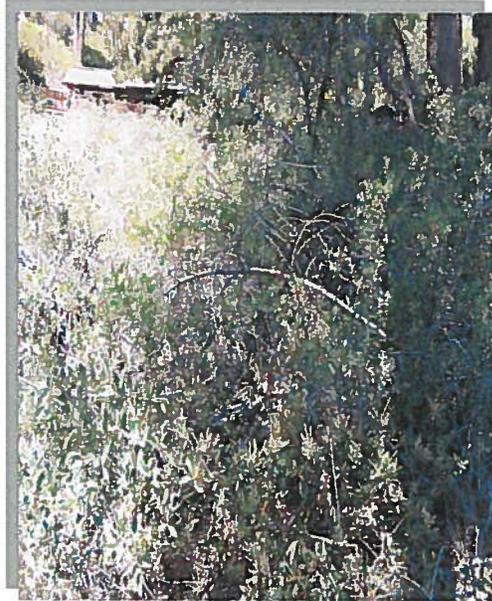
Representative Soil Profile

Denny M. Churchill ■ Consulting Soil Scientist ■ Quincy, CA 95971

Site 8/2/16-3 (Spot Location)



Down Slope Towards Lake



Up Slope Towards Residence