TAHOE REGIONAL PLANNING AGENCY

Mail
PO Box 5310
Stateline, NV 89449-5310

Location
128 Market Street
Stateline, NV 89449

Contact
Phone: 775-588-4547
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STAFF REPORT

Date: July 15, 2021

To: TRPA Hearings Officer

From: TRPA Staff

Subject: Yost Land Capability Challenge, 698 Tumbleweed Circle, Washoe County, NV, APN 125-501-08, TRPA File Number LCAP2020-0483

Staff Recommendation:
Staff recommends the TRPA Hearings Officer approve this land capability challenge, which would change the land capability from Class 5 (UmD, Umpa very stony sandy loam, 5 to 15% slopes) to Class 6 (XXX, 0 to 15% slopes).

Required Motions:
In order to approve the proposed land capability challenge, the Hearings Officer must make the following motions, based on the staff report:

1) A motion to approve the required findings, including a finding of no significant effect; and

2) A motion to approve the proposed land capability challenge.

Staff recommends that the Hearings Officer take the following actions, based on this staff report.

Background:
The subject 0.208-acre parcel is shown as Class 3 on TRPA Land Capability Overlay Maps (aka Bailey Land Capability maps, Attachment A). The Soil Conservation Service Soil Survey of Tahoe Basin Area, California-Nevada (Rogers, 1974) identifies nearly the entire parcel as Umpa, very stony sandy loam, 15 to 30% slopes (UmD). The Umpa soil shows evidence of soil formation (such as clay accumulation and cambic soil colors), but it is fundamentally a shallow soil (20 to 40 inches deep). The vicinity of this parcel has a geomorphic mapping of D-2 for Streamcut volcanic flowlands-headlands (moderate hazard lands).

A TRPA land capability verification was conducted on February 2, 2021, and the parcel was identified as Class 5, Umpa very stony sandy loam (UmD, 5 to 15% slopes). No Stream Environment Zone (SEZ) was found within the property. A detailed soil investigation was conducted for this land capability challenge on October 19, 2020 by Sid Davis (Davis2 Consulting Earth Scientists).

Mr. Davis examined the site and prepared a land capability analysis (October 24, 2020, Attachment D) on behalf of the property owner Stephen Yost and Land Use Planner, Gary R. Taylor. A land capability challenge (LCAP2020-0483) was filed with TRPA on November 30, 2020.

Findings:

One soil pit was hand excavated to 60 inches. The pit was excavated 15 feet west of the existing residence, about 85 feet northwest of Tumbleweed and 30 feet east of the west property line. See Attachment B for site photographs. The soil at this location is a deep, gravelly soil derived from andesite colluvium (surface) and granitic residuum (subsurface). The soil has gravelly loam sand textures in the upper 32 inches, then gravelly, loamy coarse sand below that depth. The topsoil layer is about 10 inches thick and the subsoil about 22 inches thick. The subsoil lacks clay films and iron enrichment (no in-situ soil development). Within the soil pit, there was no evidence of a seasonal high-water table or weakly cemented silica horizon. Accordingly, this loamy sand soil is somewhat excessively drained with moderately rapid permeability. The dominant trees and shrubs are Jeffrey pine, Greenleaf manzanita, currant and whitethorn, plus scattered grasses and forbs.

Soil on the subject parcel does not resemble any of the named series in the 1974 soil survey. The loamy sand textures put the soil in Hydrologic Soil Group A (HSG-A). The Umpa soil formed only from andesite materials and that soil is shallow (20 to 40 inches deep, HSG-C). In contrast, the unnamed soil (XXX) is deeper than 60 inches and lacks a root-restricting layer (claypan, silica-cemented layer, etc.). The underlying granodiorite residuum is also unlike the rockier Jorge and Tahoma soils (also found in this vicinity). From Page 20, Table 4 of Land-Capability Classification of the Lake Tahoe Basin, California-Nevada (Bailey, 1974), this unnamed XXX soil with 0 to 16% slopes qualifies as Class 6 (30% allowable land coverage). The subject parcel has only one slope class, so this conclusion applies to the entire parcel (Attachment C). Excavated slopes associated with past street construction (immediately above Tumbleweed Circle) and minor grading near the residence are not historic conditions, whereas this land capability analysis relies upon pre-disturbance soil conditions. The table below summarizes the changes in land capability as concluded by this land capability challenge.

Land Capability District	**Area (sq. ft.) 2020 TRPA LCV**(1)	**Area (sq. ft.) LCAP 2020-0483**	**Net Change (sq. ft.)**
Class 5 (UmD, 5 to 15% slopes)	9,055		-9,055
Class 6 (XXX, 0 to 16% slopes)	0	9,055	+9,055
Total Parcel Area	**9,055**	**9,055**	**0**

(1) The LCV changed the SCS-mapped soil type of Umpa, 15 to 30% (UmE) to Umpa, 5 to 15% (UmD).

Contact Information:
This staff report was jointly prepared by TRPA contractor Phil Scoles (Terra Science, Inc.) and TRPA Senior Planner, Julie Roll. If you have questions on this Hearings Officer item, please contact Julie Roll, at 775-589-5247 or jroll@trpa.gov

Attachments:

A. Vicinity Map and TRPA Land Capability Map
B. Site Photographs
C. Site Plan
D. Applicant's Soil Consultant Land Capability Soil Report (1 soil pit)

BAILEY LAND CAPABILITY CHALLENGE FINDINGS

Site Information	
Assessor's Parcel Numbers: (APN)	125-501-08; T. 16N, R. 18E, Sec. 17 (NW ¼ of NE ¼). 9,055 sf. (0.208-acre).
TRPA File No. / Submittal Date:	LCAP2020-0483 / November 30, 2020
Owner or Applicant:	Stephen Yost; Post Office Box 3284; Incline Village, NV 89450
Address:	698 Tumbleweed Circle, Incline Village, Washoe County, NV

Environmental Setting	
Bailey Soil Mapping Unit[1] / Hydrologic Soil Group (HSG) / Land Class / Geomorphic Hazard Unit	UmE (Umpa very stony sandy loam, 15 to 30% slopes) / HSG C) / D-2 Streamcut volcanic flowlands-Headlands (moderate hazard). The 2020 LCV changed soil designation to UmD (Umpa very stony sandy loam), 5 to 15% slopes) / HSG C. The moderate hazard lands designation was unchanged by LCV.
Soil Parent Material	Andesitic colluvium over granodiorite residuum.
Slopes and Aspect	8 to 15.8% for entire parcel. Slopes dip to southeast.
Elevation and Datum	6929 ft. (northeast prop. corner) to 6912 ft. (southwest prop. corner); from Welsh-Hagen Associates (July 2020, Lake Tahoe datum).
Rock Outcrops and Surface Configuration	Footslope with few surface stones and boulders. No outcrops apparent.
SEZ and Hydrology Source	None present.
Vegetation	Jeffrey pine, white fir, pine saplings, greenleaf manzanita, currant, whitethorn, plus grasses and forbs.
Ground Cover Condition	Good (vegetative cover 15% and duff 85%).
Site Features	Residence, driveway, decks, and vacant land.

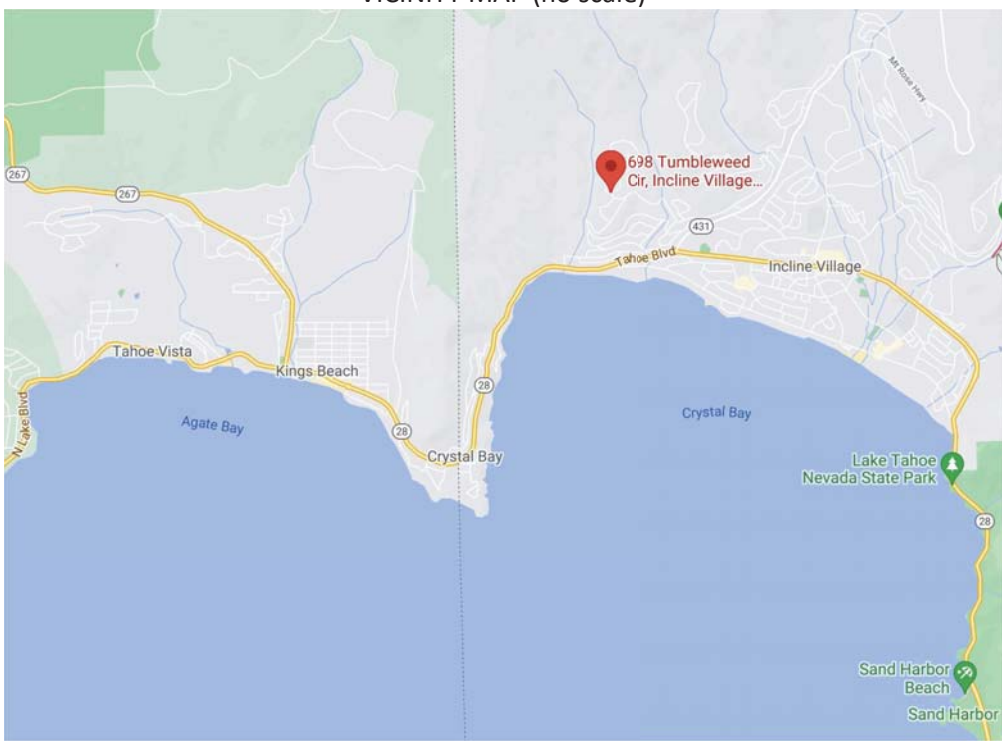
[1] TRPA currently relies upon the Soil Survey of Tahoe Basin, California-Nevada (Rogers and Soil Conservation Service, 1974), which the Bailey Land Capability system is predicated upon.

Field Investigation and Procedures	
Consultant and Address	Sid Davis, Davis2 Consulting Earth Scientists Post Office Box 734, Georgetown, CA 95634 (530) 559-1405; davis2@sbcglobal.net
TRPA Contractor Field Date	April 23, 2021 (soil consultant work conducted on October 19, 2020).
SEZ Mapping / NRCS Hydric Soil	None present.
Number of Soil Pits or Auger Holes and Description Depth	One backhoe-dug pit excavated 60 inches. See Davis2 Consulting Earth Scientists land capability report for soil profile descriptions.
Additional or Repetitive TRPA Sample Locations	None – Soil consultant's soil pit was open for inspection, so no additional sampling needed.
Areas Not Examined	Residence, driveway, and decks.

TRPA Findings	
2006 Soil Survey Map Unit	Jorge very cobbly fine sandy loam, 5 to 15% slopes (map unit 7151), Class 6, HSG-B.
Consultant Soil Mapping Determination and Rationale	The observed soil does not match the mapped UmD soil or other soils described in the 1974 soil survey (hence unnamed, XXX). It is deep, somewhat excessively drained, and has gravelly loamy sand (HSG-A) throughout the upper 60 inches. The soil is deeper than the Umpa series and has granodiorite residuum C horizon that is unlike the Jorge and Tahoma series. No evidence of perched water table or other restricting layer. Rooting depth is deeper than 60-inch pit depth.
Slope Determination	10 to 14% for majority of parcel, with slopes up to 15% in the northeast and southwest corners, respectively. Minor grading in close proximity to driveway (18%) and excavated street slopes (37 to 57%) are exempt.
TRPA Conclusion(s)	XXX Soil, HSG-A, Class 6 for 0 to 16% slopes (30% base allowable cover). Excavated slope above Tumbleweed Circle was historically 0 to 16% slopes -- also Class 6.
Applicable Area	Entire site (see map, Attachment B, June, 2021)

Attachment A
Vicinity Map and TRPA Land Capability Map

VICINITY MAP (no scale)



TRPA LAND CAPABILITY MAP

Attachment B
Site Photographs

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STEPHEN YOST PARCEL, 698 TUMBLEWEED CIR., INCLINE VILLAGE, NV. PHOTOGRAPHS (APN 135-501-08)

Photo 1 – View northwest (left) to north (right) from southwest part of parcel. Tumbleweed Circle located in opposite direction of photo. Natural slopes within parcel range from 8 to 15% and generally slope to the south-east. Ground cover of needles and twigs is good, but not many shrubs growing under the Jeffrey pine canopy.

Photo 2 – View east (left) to southeast (right) from northwest part of parcel. Land west of residence makes up the bulk of vacant ground. The parcel is mapped as Umpa very stony sandy loam (UmE), 15 to 30% slopes (Class 3); however, a 2021 Land Capability Verification determined flatter slopes are present. As such, the LCV changed the land capability to Umpa very stony sandy loam (UmD, 5 to 15%) that qualifies as Class 5.

Photo 3 – View west (left) to northwest (right) along north side of residence. This vicinity of the parcel is 6690 ft., while the lower elevation at street level is 6912 ft. Photo shows a large boulder in foreground – such surface features are very few and not bedrock. The north portion of the parcel is partially forested and supports Jeffrey pine, greenleaf manzanita, currant, whitethorn, and scattered grasses/forbs.

Photo 4 – View east (left) to southeast (right) along north edge of property (USFS boundary marker at far left). The soil pit (on opposite side of covered spoils) was dug in this vicinity to show the absence of near-surface bedrock, in addition to undisturbed soil conditions. Soil profile described by Sid Davis (Oct. 2020). The observed deep soil provides greater land capability (including infiltration) and better growing conditions than the mapped UmE soil.

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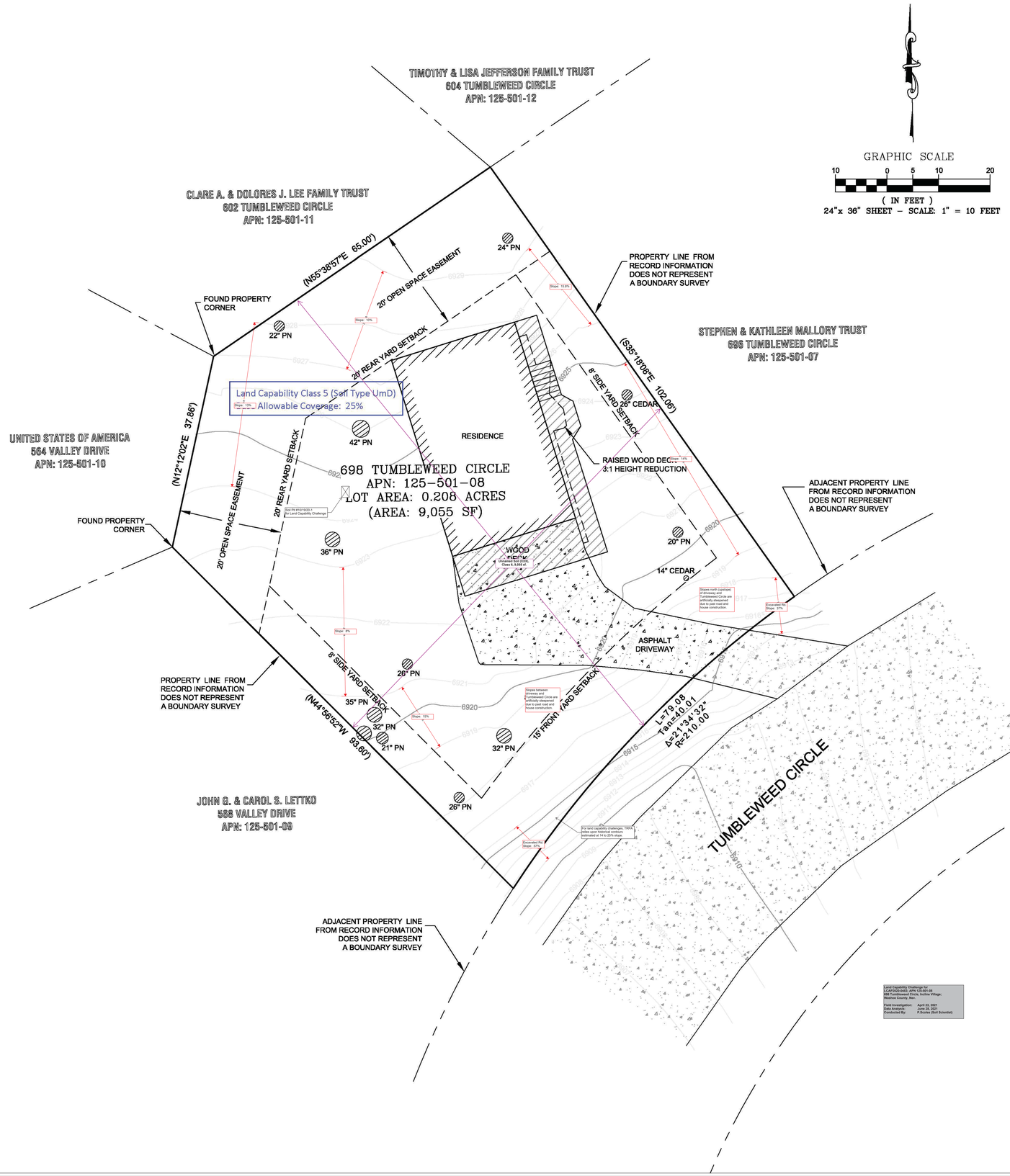
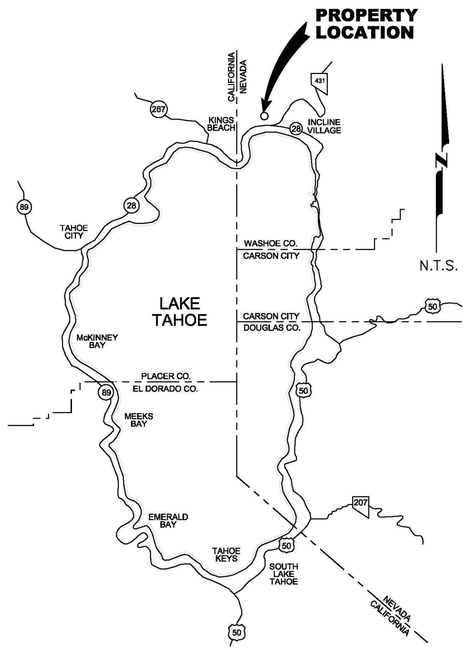
Photo 5 – Soil profile in soil pit located about 20 feet west of the residence. The topsoil layer is colluvium that is 10 inches thick. The subsoil extends to 32-inch depth and lacks any indication of in-situ soil development. Below 32 inches, parent material changes to high weathered granodiorite, as evident to variegated matrix colors and weathered floaters in those layers. Profile lacks root-restricting layer (such as a high water table or brittle layer). For slopes 0 to 16%, the unnamed soil (XXX) qualifies as Class 6, as per Table 4 of the Bailey land capability report.

Photo 6 – View of the east side of the Yost parcel. This edge of the property has quaking aspen plantings and some volunteer native shrubs. Slope in this vicinity is 14 to 15% (hence, Class 6).

Photo 7 – View northwest at steep excavated slope between Tumbleweed Circle and parking area in front of residence. The created escarpment (37 to 57% slope) was created by original road construction and partially vegetated with landscaping plantings and whitethorn. For land capability purposes, TRPA acknowledges the historic slope, which is estimated as 14 to 15%. Thus, the slope is considered Class 6 (0 to 16%).

Attachment C
Site Plan





LAKE TAHOE AREA MAP
NOT TO SCALE

LEGEND:

- EXISTING BUILDING
- EXISTING DECKS & STAIRS
- EXISTING ASPHALT & CONCRETE

SURVEY NOTES:

1. BASIS OF BEARINGS ARE ASSUMED, TAKEN FROM THE SUBDIVISION MAP FOR INCLINE VILLAGE UNIT No. 4, TRACT MAP #1136C, BEING A PORTION OF THE NW 1/4 OF THE NE 1/4, SECTION 17, T. 16 N., R.18 E., M.D.M., OFFICIAL RECORDS OF WASHOE COUNTY, NEVADA.
2. VERTICAL DATUM IS ASSUMED, TAKEN FROM USGS INFORMATION (NAVD 88).
3. TOPOGRAPHY IS SHOWN AT A 1 FOOT CONTOUR INTERVAL.

ZONING AND SETBACK NOTES:

1. PROPERTY IS ZONED HDS (HIGH, DENSITY SUBURBAN), MINIMUM LOT AREA OF 5,000 SF WITH SETBACKS OF 20 FT FRONT & REAR, 5 FT SIDES.
2. INTERIOR LOTS, SECTION 110.406.30(B), FRONT YARD SETBACK REQUIREMENT SHALL BE 15 FEET WHERE THE SLOPE OF THE FRONT HALF OF THE LOT IS GREATER THAN 2 FOOT RISE/FALL ABOVE OR BELOW THE ESTABLISHED STREET GRADE FOR EVERY 10 FEET OF HORIZONTAL DISTANCE.

COVERAGE CALCULATIONS:

LOT AREA = 0.208 ACRES (9,055 SF)
ALLOWABLE COVERAGE: LCC 3 (5% ALLOWABLE): 452 SF

EXISTING COVERAGE CALCULATIONS	AREA:
BUILDING	995 SF
ASPHALT DRIVEWAY	935 SF
DECKS & STAIRS (W/ 3:1 REDUCTION)	85 SF
TOTAL:	2,015 SF

TAHOE REGIONAL PLANNING AGENCY

These plans have been reviewed ~~and approved~~ as required under TRPA Rules, Regulations, and Ordinances only. TRPA has not reviewed and shall not be responsible for any elements contained in these plans, i.e. stuctural, electrical, mechanical, etc. which are not required for review under said Rules, Regulations, and Ordinances.

TAHOE REGIONAL PLANNING AGENCY DETERMINATION

BY Bridget K. Cornell DATE 02/01/2021

Executive Director/Designee
Tahoe Regional Planning Agency

Bridget Cornell

Digitally signed by Bridget Cornell
DN: cn=Bridget Cornell, o=TRPA, ou, email=bcornell@trpa.org, c=US
Date: 2021.02.01 14:42:56 -08'00'

Land Capability Challenge for LCAP2020-0403; APN 125-501-08 698 Tumbleweed Circle, Incline Village; Washoe County, Nev.

Field Investigation: April 23, 2021
Data Analysis: June 28, 2021
Conducted By: P.Bunnes (Soil Scientist)

APN 125-501-08
LCAP2020-0349
Yost Partial Site Assessment

698 TUMBLEWEED CIRCLE
APN: 125-501-08
WASHOE COUNTY NEVADA

STEPHEN R. YOST
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Revisions:

TRPA SUBMITTAL

STAMP:

PROFESSIONAL ENGINEER – STATE OF NEVADA – DAVID L. HAGEN – Exp.: 6/30/21 – CIVIL – No. 16460

12/16/2020

Sheet Title:

AS-BUILT TOPOGRAPHIC SURVEY

Project:	698 TMBLWD
Drawn By:	BAMF
Checked By:	DLH
Sheet Size:	24"x36"
Scale:	AS NOTED
Date:	JULY 2020

Sheet Number: 1 OF 1

AGENDA ITEM NO. X.B

Attachment D
Applicant's Soil Consultant Land Capability Soil Report (1 soil pit)

DAVIS²
CONSULTING EARTH SCIENTISTS
P.0. Box 734 · Georgetown, CA 95634 · Tel. (530) 559-1405; davis2consulting@sbcglobal.net

Land Capability Challenge
698 Tumbleweed Circle
Incline Village, Nevada
(APN 125-501-08)

October 24, 2020

INTRODUCTION

A soil investigation was conducted at 698 Tumbleweed Court, Incline Village, Nevada on October 19, 2020. 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, by Chapter 30 of the Code of Ordinances.

The parcel supports an existing single-family residential dwelling on 0.21 acres of land, located at 698 Tumbleweed Court. This work is advanced at the request of Stephen R. Yost.

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, hazardous waste assessment or seismic analyses.

ENVIRONMENTAL SETTING

The site is located at 698 Tumbleweed Court, Washoe County, Nevada. Vegetation consists of Jeffrey pine, mountain whitethorn and manzanita. Slopes range between 10 and 15 percent on a southeasterly aspect. There are no stream environment zones (SEZ) influencing this parcel.

Soils are shown on TRPA map sheet G-3 as UmE (Umpa very stony sandy loam, 15 to 30 percent slope. Geology (Mathews, 1968) is characterized as Tv^A (andesite). Bailey's (1974) geomorphic analysis shows the parcel within D_2 (Headlands).

METHODOLOGY

The parcel was surveyed as well as areas nearby. A site considered representative of the landform was chosen and an excavation was placed to open and examine the soil profile 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 base map produced by Welsh-Hagan Associates was available in the field for ground control and slope analysis. Information pertaining to land capability districts is shown on the attached base map.

FINDINGS

Soils are found to be deep and somewhat excessively drained, members of Soil Hydrologic Group A. They can be characterized having gravelly loamy sand top soil approximately 10 inches thick, over gravely loamy sand and gravelly sand subsoil to greater than 60 inches depth. Parent materials that form the upper part of the profile are of andesitic colluvium or glacial till; the lower part of the profile below approximately 32 inches depth across a diffuse irregular boundary displays highly weathered granitic (grus) material to greater than 60 inches. Roots explore all depths of the exposure to 60 inches depth. Evidence of groundwater, active or seasonal, is absent.

These soils are different than the UmE soil map unit shown on the TRPA map sheet G-3 because they are deep, and they are rapidly permeable. The granitic substratum is different than the range and characteristics of Umpa soils. Natural slopes across the site are on average gentler than 16 percent.

CONCLUSIONS AND RECOMMENDATIONS

Soils found are unnamed (XXX), deep, somewhat excessively drained and members of Soil Hydrologic Group A. Slopes are on average less than 16 percent over the parcel, which place in Land Capability Class 6. Grading near the front of the parcel for subdivision development over-steepened the natural topography that is contrary to land capability assessment.

Please refer to the following soil profile description(s) that support the findings and the attached map showing the spatial distribution of the appropriate land capability class on the parcel.

Respectfully submitted,

Sidney W. Davis,
CPSS /SC No. 1031

Figure 1 - Landscape of parcel

Figure 2 - Soil profile

Representative Soil Profile Description:

Oi 0 to 1 inches, conifer needles and duff.

A1 1to 4 inches, brown (10YR 5/3) gravelly loamy sand, dark brown (10YR 3/3) moist; weak very fine granular structure; soft, loose, nonsticky and nonplastic; many very fine and fine roots; many very fine and fine interstitial pores; 15 percent gravel; clear smooth boundary.

A2 4 to 10 inches, pale brown (10YR 6/3) gravelly loamy sand, brown (10YR 4/3), moist; gravelly loamy sand; moderate medium granular structure; slightly hard, friable, nonsticky and nonplastic; common fine and medium, few coarse roots; many very fine and fine interstitial pores; 15 percent gravel; gradual wavy boundary.

C1 10 to 32 inches, very pale brown (10YR 7/3) gravelly loamy sand, brown (10YR 5/3), moist; weak fine subangular blocky structure; many fine, medium and coarse roots; many very fine and fine interstitial pores; 15 percent gravel; diffuse irregular boundary.

2C2 32 to 48 inches, light brownish gray (10YR 6/2) variegated light yellowish brown (10YR 6/4) gravelly loamy coarse sand, dark yellowish brown (10YR 4/4)

variegated (10YR 6/4); massive parting to strong coarse granular structure; hard, friable, nonsticky and nonplastic; common fine and medium roots; common very fine interstitial pores;, gradual irregular boundary.

2C3 48 to 60 plus inches, colors and texture as above, massive; hard, friable, nonsticky and nonplastic; few fine, medium and coarse roots, few very fine interstitial pores.

Notes: Andesitic materials to 32 inches, either colluvium or glacial till, over a diffuse irregular boundary of highly weathered granite (grus) with roots and pores penetrating to greater than 60 inches depth. Colors in the 2C2 and 2C3 are related to differential weathering of mineral grains and are other than redoximorphic features. Profile is open and permeable. Other than Umpa soil.

Soil Series: Unnamed
Soil Classification: Sandy, mixed, frigid, Dystric Xerorthents
Soil Drainage Class: Somewhat excessive
Hydrologic Soil Group: A