TAHOE REGIONAL PLANNING AGENCY

Mail
PO Box 5310
Stateline, NV 89449-5310

Location
128 Market Street
Stateline, NV 89449

Contact
Phone: 775-588-4547
Fax: 775-588-4527
www.trpa.gov

STAFF REPORT

Date: October 20, 2022

To: TRPA Hearings Officer

From: TRPA Staff

Subject: Bowman Land Capability Challenge, 81 Tahoma Avenue, Placer County, California, APN 093-101-002, TRPA File Number LCAP2022-0639

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

Staff Recommendation:
Staff recommends the TRPA Hearings Officer approve the land capability challenge on the subject parcel. The challenge would change the land capability of Classes 3 (100% of parcel) to Class 4 (82% of parcel) and Class 6 (18% of parcel). This change is itemized on the table on Page 3 and depicted on a map included in Attachment C.

Background:
The subject 0.26-acre parcel is shown as Class 3 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) identifies the subject parcel as Umpa very stony sandy loam (UmE), 15 to 30 percent slopes. Umpa soils formed from andesite colluvium and residuum, and has a very stony sandy loam surface layer. The Umpa subsoil has a gravelly sandy loam texture to a depth of 20 to 40 inches, then fractured andesite is present below. The 2006 soil survey update indicates this parcel is likely Jorge very cobbly fine sandy loam, 15 to 30 percent slopes (map unit 7152). The Jorge soil type consists of colluvium over andesitc residuum, which has a gravelly to very gravelly sandy loam in the upper part. Jorge soils are older soils, so they have clay accumulation in the subsoil (argillic horizon), as well as some iron enrichment. Underlying bedrock may be present in the upper 50 inches, but could be below 60 inches, too. The vicinity of the parcel has a geomorphic mapping of D-2 for Streamcut Volcanic Flowlands: Headlands (moderate hazard lands).

A May 31, 2013 site assessment completed by Placer County staff (Attachment C) determined the entire parcel qualified as Class 3. A TRPA land capability challenge (LCAP2022-0639) was filed by the property owner and their representative Exline & Company on August 2, 2022. On June 28, 2022, Sid Davis (Davis2 Consulting Earth Scientists) conducted a site visit to document site conditions and describe the soil profile for two backhoe-dug pits located near the north-center and south-center of the parcel. These locations appear undisturbed and representative of the parcel.

The TRPA contractor examined the soil profile for soil texture, ped structures, soil horizon depths, root distribution, depth to bedrock, and conducted a walking tour of the remaining portion of the property. The TRPA contractor agreed with the Davis2 Consulting Earth Scientist's soil descriptions (Attachment D); however, the contractor found slopes to be 14.3 to 22% rather than 5 to 15% (consultant report page 1). It was determined that an error on the topographical map was the basis of the lower slope vales in the consultant report.

Findings:
The subject parcel consists of a southwest sloping hillside formed from andesite and colluvial materials deposited atop weathered bedrock. The land surface has 14.3 to 22% slopes (dips to southwest), which is mostly consistent with soil survey slope class of 15 to 30%. The parcel contains a two-story house positioned in the center part, while the south part is densely vegetated with shrubs and a few surface boulders. Such boulders (when excavated) are "floaters" and not connected to bedrock. The vegetation consists of upland trees (Jeffrey pine, white fir), and chaparral shrubs like huckleberry oak, greenleaf manzanita, whitethorn, wild currant, prostrate ceanothus, and grasses/forbs).

This land capability challenge utilized two backhoe test pits – one located about 15 feet southeast of the north property line, and 10 feet southwest of the east property line. The other located 45 feet southeast of the north property line and 30 feet northeast of the west property line. The parent material is volcanic debris flow (colluvium) that typically weathers to gravelly loamy sand to stony sandy loam or sandy clay loam soils. Both locations show the soil has sandy to loamy sand textures that become increasingly rockier with depth. The onsite soil shows moderate soil formation (Bt horizon), which is a zone of clay accumulation of clay in the subsoil (a common characteristic of the Jorge-Tahoma soil types). Medium and coarse roots are present in the upper 52 to 56 inches this material (albeit fewer coarse roots with depth). The observed soil is well drained and has a hydrologic soil group rating of HSG-B. No indication of seasonal ground water within the soil profile.

The observed soils are unlike the mapped Umpa series (which has a shallow depth to bedrock). It is also unlike the rocky Tallac series that has a silica-cemented layer in the subsoil. The soil is consistent with the mapped Jorge series, which has subsurface clay accumulation (aka argillic horizon). Since the soil is similar to the Jorge series described in the 1974 Soil Survey of the Lake Tahoe Basin, the land capability class is Class 4 for slopes 15 to 30% (JwE) and Class 6 for 0-15% (JwD). The table on the following page summarizes the soil types, slope classes, as well as changes in land capability concluded by this land capability challenge.

Land Capability District	Slope Class (Range)	2013 Placer Co. Site Assess. Area (sq. ft.)	2022 Land Cap. Challenge Area (sq. ft.)	Net Change Total Area (sq. ft.)
Class 3 (UmE)	15 to 30%	11,250	0	-11,250
Class 4 (JwE)	15 to 30%	0	9,225	+9,225
Class 6 (JwD)	0 to 15%	0	2,025	+2,025
Total Parcel Area		**11,250**	**11,250**	

Contact Information:

This memorandum 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 (July 26, 2022)
C. April 04, 2022 Site Assessment and October 2022 Land Capability Challenge recommendation map
D. Soil consultant's land capability report, incl. soil descriptions (2 test pits)

BAILEY LAND CAPABILITY CHALLENGE FINDINGS

Site Information	
Assessor's Parcel No. (APN):	093-101-002
TRPA File No. / Submittal Date:	LCAP2022-0639 / August 02, 2022
Owner or Applicant:	Chris Bowman, owner; 785 Buckland Avenue; San Carlos, CA 94070; Exline & Company, Inc. (Representative); Post Office Box 16789; South Lake Tahoe, CA. 96151.
Site Address:	81 Tahoma Ave., Tahoe City (Dollar Point); Placer County, CA.; T. 16N, R. 17E, SW1/ 4 of SW1/4 of Sec. 33.

Environmental Setting	
Bailey Soil Mapping Unit / Hydrologic Soil Group (HSG) / Land Class / Geomorphic Hazard Unit	Umpa very stony sandy loam, 15 to 30% slopes (UmE, HSG-C) / D-2 Volcanic Flowlands: Headlands (moderate hazard lands as per 1974 Bailey Land Capability Report)
Landform and Soil Parent Material	Colluvium over residuum.
Slopes and Aspect	14.3 to 22% slopes (southwest aspect).
Elevation and Datum	74 to 99 feet (local datum); Tieslau Civil Engineer topo. survey (Dec. 09, 2020)
Rock Outcrops and Surface Configuration	No outcrops, 2 to 3% surface stones and boulders (floaters, not connected to bedrock).
SEZ and Hydrology Source	None.
Vegetation	Jeffrey pine, white fir, saplings, huckleberry oak, greenleaf manzanita, whitethorn, wild currant, prostrate ceanothus, and grasses/forbs.
Ground Cover Condition	Good (vegetation 60 to 80%, duff 20 to 40%)
Site Features	Residence, asphalt driveway, stairs, decks, retaining wall, and landscaping.

Field Investigation and Procedures	
TRPA Contractor and Address	Phil Scoles (TRPA subcontractor) Post Office Box 2100; Portland, OR 97208-2100
TRPA Contractor Field Dates	July 26, 2022.
SEZ Mapping / NRCS Hydric Soil	None
Number of Soil Pits or Auger Holes and Description Depth	Two backhoe pits excavated 52 to 56 inches (weathered bedrock encountered at 56 in.).
Additional or Repetitive TRPA Sample Locations	Not applicable.
Areas Not Examined	Residence, driveway, stairs, deck and retaining wall.

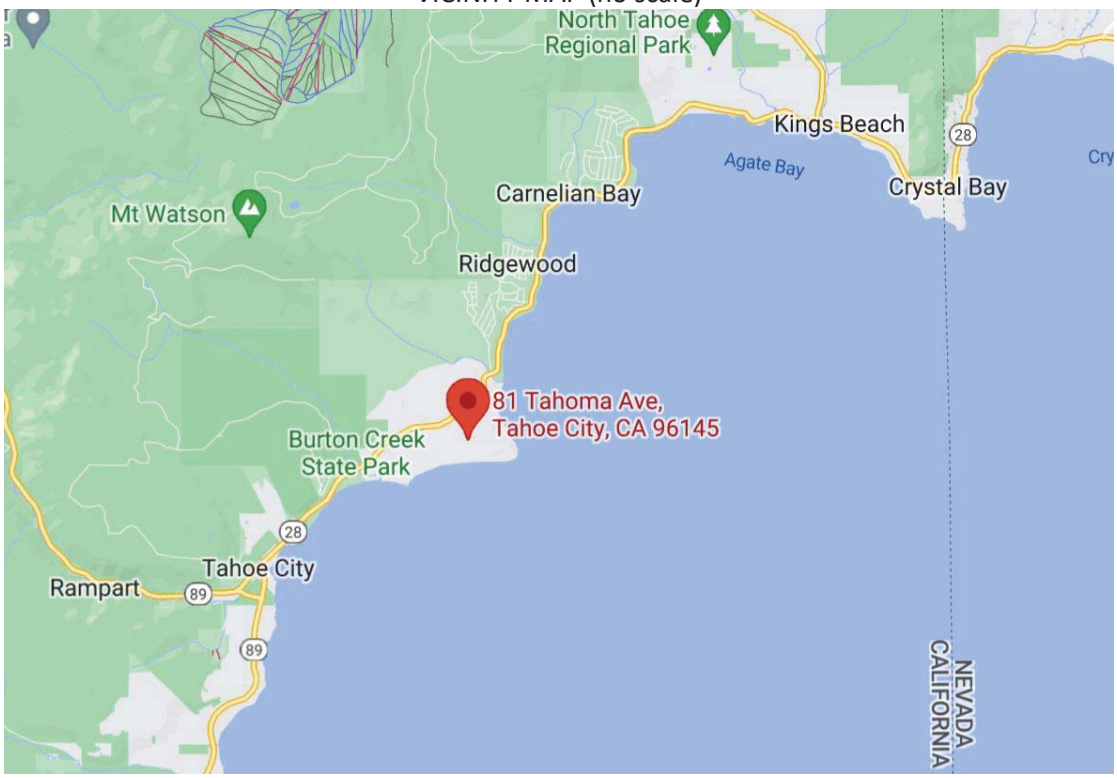
TRPA Findings	
2006 Soil Survey Map Unit[1]	Jorge very cobbly fine sandy loam (Loamy-skeletal, isotic, frigid Andic Haploxeralfs), 15 to 30 percent slopes (map unit 7152). Class 4, HSG-B.
Contractor Soil Mapping Determination and Rationale	The soil is much deeper than the mapped Umpa series. The upper soil layers contain colluvial materials (eroded from higher ground), while the lower layers are derived from weathered andesitic bedrock (residuum). The colluvium can have mixed mineralogy and loamy sand textures, while the residuum can be finer textures like sandy clay loam. The onsite soil shows moderate soil formation (Bt horizon). Such clay accumulation in subsoil is a common characteristic of the Jorge-Tahoma series). As such, this soil is consistent with Jorge-Tahoma very stony sandy loam soil (designated as JwE and JwD). It is well drained (HSG-B). See staff report and soil consultant's profile descriptions.
Slope Determination	14.3 to 22%. Portion of property adjacent to Tahoma Avenue artificially steepened by original street construction. Estimated natural contours utilized for evaluation. See land capability map based upon Dec. 2020 Tieslau Civil Engineering, Inc. topographic map.
TRPA Conclusion(s)	Soil is consistent with the Jorge series, but it does not match 1974 soil survey (Umpa very stony sandy loam, 15 to 30% slopes, UmE). The land capability class for the Jorge-Tahoma very stony sandy loams, 15 to 30% (JwE) is Class 4 and 0-15% (JwD) is Class 6..
Applicable Area	Entire site (see map, Attachment C, Oct., 2022).

[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. The 2006 soil survey update has not yet been formally adopted by TRPA for use with land capability matters.

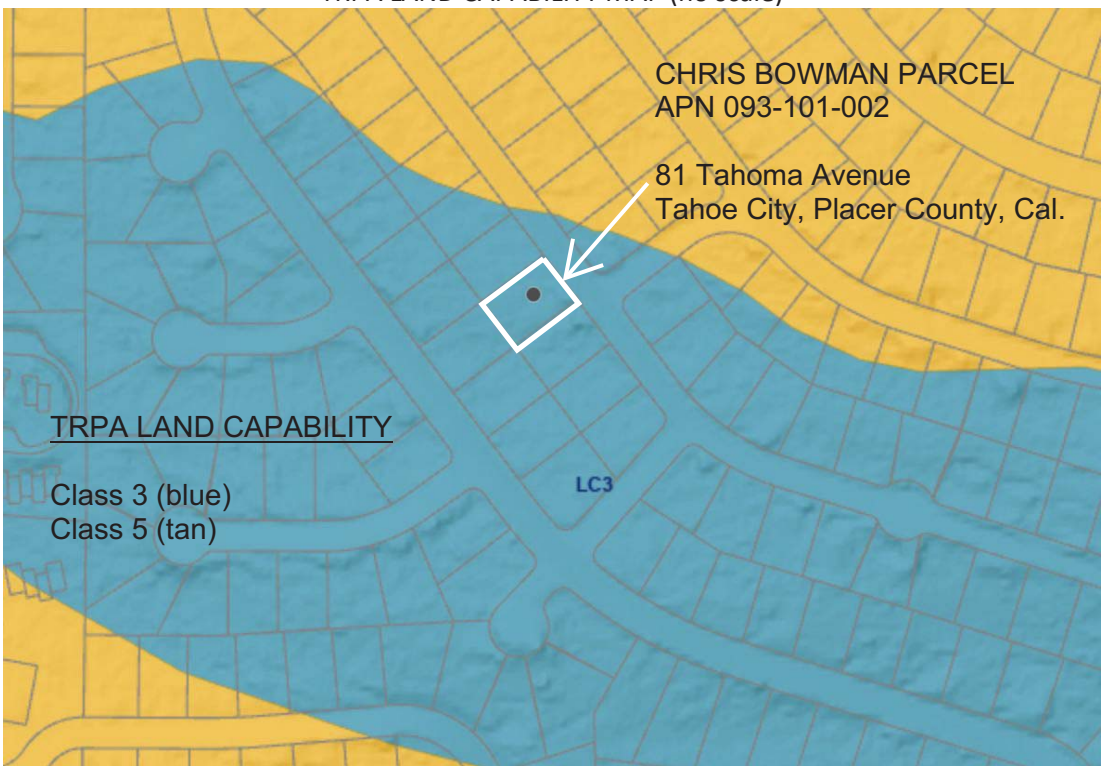
Attachment A

Vicinity map and TRPA land capability map

VICINITY MAP (no scale)



TRPA LAND CAPABILITY MAP (no scale)



Attachment B

Site photographs (July 26, 2022)

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Mail
PO Box 5310
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Location
128 Market Street
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81 Tahoma Avenue, Tahoe City, Cal. (Chris Bowman Parcel; APN: 093-101-002)

Photo 1 – View to east at upper part of property where sample site 6/22/22-1 was excavated downslope of Tahoma Avenue. Natural slopes in this vicinity are 18% in such vicinity and dip to the southwest. The test pit showed the property has deep soils that become increasingly rocky with depth.

Photo 2 – View to south at lower portion of parcel where sample site 6/22/22-2 was excavated downslope of residence. Slopes are 15.8 to 17% in this vicinity. Dominant trees are Jeffrey pine, white fir, plus saplings. Understory vegetation is predominately greenleaf manzanita, with lesser amounts of whitethorn, wild currant and prostrate ceanothus. Overall ground cover is 60 to 80% vegetation and remainder is leaf and tree debris. Ground cover also includes 2 to 3% stones and boulders.

Photo 3 – Close-up view of sample site 6/22/22-1 showing organic matter enriched A horizon at the surface, and increasing rockiness with depth. Medium and coarse roots are present to the bottom of profile and no indication of seasonal water table. The slope in this vicinity is approximately 18%.	Photo 4 – Close-up view of sample site 6/22/22-2 located in the lower part of the subject parcel. This location also has increasing rockiness with depth. Medium and coarse roots are present to the bottom of profile and no indication of seasonal water table.

Photo 5 – View upslope at north side of property. Dominant vegetation is Jeffrey pine, whitethorn and greenleaf manzanita. Bare ground in foreground is atypical of property, which has dense brush and scattered trees.

Photo 6 – View at south side of property. This vicinity supports a mixture of Jeffrey pine, white fir (and saplings), greenleaf manzanita, whitethorn, prostrate ceanothus, and several grasses/ forbs. Slopes in this vicinity are 17 to 18% (southwest aspect).

Attachment C

April 04, 2022 Site Assessment and October 2022 Land Capability Challenge

recommendation map

COUNTY OF PLACER
Community Development Resource Agency

Michael J. Johnson, Agency Director

PLANNING

Paul Thompson
Planning Deputy Director

May 31, 2013

Anixter Trust
145 Stonepine Road
Hillsborough, CA
94010

Re: Site Assessment, 81 Tahoma Avenue, APN 093-101-002-000, Placer #2013041

Dear Mr. and Mrs. Anixter,

At your request, a Site Assessment was recently conducted at the above referenced parcel, and address. This parcel is comprised of Lot 129, Dollar Point Unit No. 2 Subdivision Book G of Maps at Page 7 of the Placer County Recorder's Office. Any structure proposed over an interior lot line or attached to a structure intersected by an interior lot line, as well as any setback to such line, will require a variance to setbacks, boundary line adjustment or merger of the lots. The results of the Site Assessment are outlined below.

LAND CAPABILITY VERIFICATION

The Placer County Planning Department has received information on verified the land capability of this property as:

Capability	District/Class	% Allowable	Area (sq. ft.)	Base Allowed
Class 3	UmE	5%	11,250	562

Assuming a parcel size of 11,250 square feet, the total allowed base land coverage for this parcel is 562 square feet.

LAND COVERAGE VERIFICATION

The Placer County Planning Department has verified the following existing land coverage:

Existing Onsite coverage (Class 3)	Land Coverage
Residence	1,071 sq. ft.
Front Deck	47 sq. ft
Rear Deck	191 sq. ft
Asphalt driveway	704 sq.ft.
Concrete Patio	4 sq. ft.
Total Existing On-site coverage	**2,017 sq. ft.**

Existing Off Site Coverage	Land Coverage
Asphalt Driveway (in right of way)	397 sq. ft.
Total Existing Off Site Coverage	**397 sq. ft.**

P.O. Box 1909 / 775 West Lake Boulevard. / Tahoe City, California 96145 / (530) 581-6280 / Fax (530) 581-6282
Internet Address: http://www.placer.ca.gov/planning / email: planning@placer.ca.gov

Please note that the existing verified coverage exceeds the allowable coverage determined by this site assessment. Coverage created legally prior to the inception of TRPA in 1972, or the change in coverage regulations in 1987, and is in excess of the allowed coverage in this report is considered "grandfathered" under the TRPA Code of Ordinances. Additional coverage is not allowed but, in many cases, the existing verified coverage may be moved from place to place on the parcel, or banked for use at a later date or on another parcel.

If you have further information or evidence such as dated photos, contracts, and material receipts, and permits which support the areas not verified as meeting the TRPA definition of coverage, please submit the information, within 21 days, for consideration.

Changes in the Tahoe Regional Plan, Code of O rdinances (C.O.R), effective, July 2001, require certain standards for the conservation of healthy and sound trees in excess of 30 inches diameter at breast height (dbh) for your area. These standards require that specified trees be retained as specimen trees having aesthetic and wildlife values, unless 1) all reasonable alternatives are not feasible to retain the tree, including reduction of parking area and/or modification of the original design; 2) a written discussion pursuant to C.O.R. Sec. 71.2 has been provided, regarding how the code section was applied.

BEST MANAGEMENT PRACTICES (BMP)

The following Best Management Practices (BMP's) should be incorporated into any proposed project or installed by October 15, 2000, as required by the BMP retrofit program, under Chapter 25of the Tahoe Regional Planning Agency (TRPA) Code of Ordinances. The Ordinance requires homeowners to capture and infiltrate all runoff experienced during a 20 year one hour storm (approximately one inch of rain in one hour), and to control erosion on their property. **If a project including a BMP design will not be submitted before the date above, please expect to complete the recommended BMPs by the compliance date.** The Tahoe Resource Conservation District (TRCD) is currently providing BMP designs and technical assistance free of charge to homeowners in order to complete BMP installation. Please contact TRCD at (530) 543-1501 or tahoercd@yahoo.com for more information.

1. All barren soil areas within the property shall be vegetated and mulched to stabilize the soil.
2. Capture driveway runoff by grading flow onto property for infiltration or installing a swale or slotted trench drain across the driveway entrance directed to a dry-well sized to accommodate expected runoff from wind and water erosion.
3. Plant TRPA approved native or adapted vegetation. TRPA recommends abiding by the "Living with Fire" recommendations for areas directly adjacent to and within thirty feet of all structures. Contact TRPA for further details on requirements to abide by these prescriptions. (775-588-4547).
4. Install a three- inch layer of gravel (pea or ¾"" to 1 ½" drain rock) with a border beneath all raised decks and stairways.

5. Install immovable parking barriers to prevent parking off of paved surfaces. Pave all verified dirt or gravel parking surfaces.
6. Capture and infiltrate roof drip line runoff in appropriately sized facilities such as absorption trenches or conveyances to drywells.

It will be necessary to post a security deposit to ensure compliance with certain conditions of approval of proposed projects. Project security deposits are typically equal to 110 per cent of the estimated cost of the required BMPs.

Sincerely,

PLACER COUNTY PLANNING DEPARTMENT

ALLEN BREUCH
Supervising Planner

Enclosure: Site Assessment Field Notes
BMP information sheet
"Living with Fire" TRPA publication

SITE ASSESSMENT FIELD NOTES

APN: 093-101-002 DATE VISITED 4/10/13 STAFF BREUCH

NAME ANIXTER ADDRESS 81 TAHOMA AVE

BMP'S NEEDED:

- ____ Infiltration Trenches along Roof Drip lines
- ____ Infiltration Trenches along Driveway
- ____ Swale, Berm or Drain to Drywell
- ____ Slope Stabilization-Where? ____
- ____ Re-vegetation Where? ____
- ____ Gravel under Decks
- ____ Other BMP's (Describe) ____

LAND CAPABILITY

Mapped Land Capability
1. 3
2. ____
3. ____
4. ____

Mapped Soil Map Unit
1. UmE
2. ____
3. ____
4. ____

TRPA WORK ONLY
Additional TRPA Work Required Y/N (N)

Date Complete 5/31/13
Staff BREUCH

Verified as Mapped Y/N (N) SEZ on Parcel ____

Amount of SEZ On Parcel N/A

Verified Land Capability
1. 3
2. ____
3. ____
4. ____

Verified Soil Map Unit
1. UmE
2. ____
3. ____
4. ____

Observed Slope
1. ____
2. ____
3. ____
4. ____

MEASUREMENTS
Dimensions Accurate Y/N (N) If No: ____

SCENIC CONCERNS

TRPA Project Review Required Yes (No)

ADDITIONAL COMMENTS

Land Capability Assessment
For
Placer APN 093-101-002
81 Tahoma Ave., Placer County, CA

July 22, 2022

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

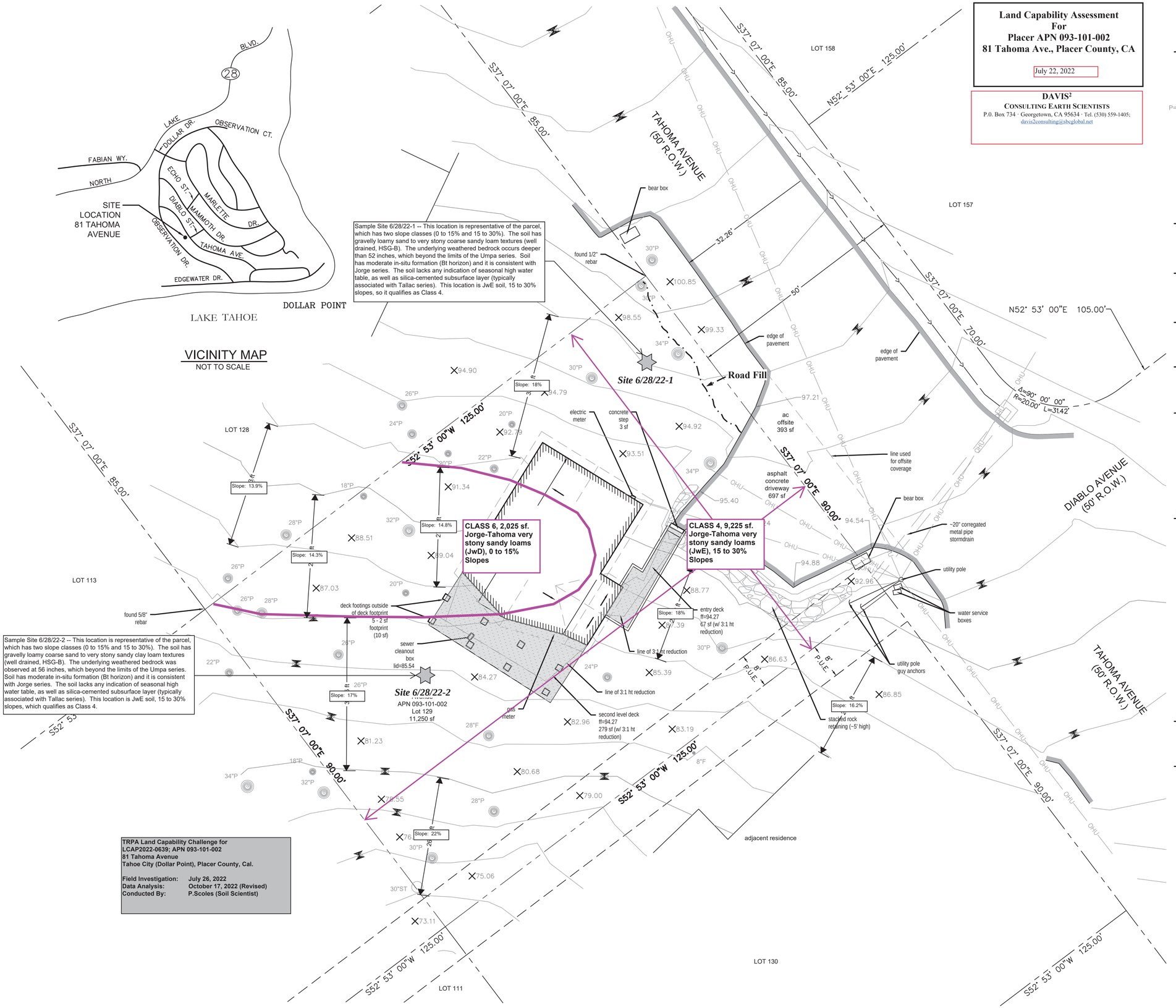
VICINITY MAP
NOT TO SCALE

Sample Site 6/28/22-1 -- This location is representative of the parcel, which has two slope classes (0 to 15% and 15 to 30%). The soil has gravelly loamy sand to very stony coarse sandy loam textures (well drained, HSG-B). The underlying weathered bedrock occurs deeper than 52 inches, which beyond the limits of the Umpa series. Soil has moderate in-situ formation (Bt horizon) and it is consistent with Jorge series. The soil lacks any indication of seasonal high water table, as well as silica-cemented subsurface layer (typically associated with Tallac series). This location is JwE soil, 15 to 30% slopes, so it qualifies as Class 4.

Sample Site 6/28/22-2 -- This location is representative of the parcel, which has two slope classes (0 to 15% and 15 to 30%). The soil has gravelly loamy coarse sand to very stony sandy clay loam textures (well drained, HSG-B). The underlying weathered bedrock was observed at 56 inches, which beyond the limits of the Umpa series. Soil has moderate in-situ formation (Bt horizon) and it is consistent with Jorge series. The soil lacks any indication of seasonal high water table, as well as silica-cemented subsurface layer (typically associated with Tallac series). This location is JwE soil, 15 to 30% slopes, which qualifies as Class 4.

TRPA Land Capability Challenge for
LCAP2022-0639; APN 093-101-002
81 Tahoma Avenue
Tahoe City (Dollar Point), Placer County, Cal.

Field Investigation: July 26, 2022
Data Analysis: October 17, 2022 (Revised)
Conducted By: P.Scoles (Soil Scientist)



LEGEND

- PROPERTY LINE
- ADJACENT PROPERTY LINE
- 30"P — EXISTING TREE AS NOTED (P=PINE, F=FIR, ST=STUMP)
- EXISTING CONTOURS (1' & 5')
- EDGE OF PAVEMENT
- CONCRETE
- ROCK BORDER

BASIS OF BEARINGS
BEARINGS SHOWN HEREON ARE BASED ON THE SUBDIVISION MAP OF DOLLAR POINT UNIT NO. 2, BOOK G, MAPS, PAGE 7, PLACER COUNTY RECORDS.

BENCHMARK DATUM
ELEVATIONS SHOWN HEREON ARE BASED ON AN ASSUMED ELEVATION, SET SPIKE IN SHOULDER OF TAHOMA AVENUE, ASSUMED EL = 100.00'.

LEGAL DESCRIPTION:
LOT 129, SUBDIVISION MAP OF DOLLAR POINT UNIT NO. 2, BOOK G, MAPS, PAGE 7, PLACER COUNTY RECORDS.

OWNER:
CHRIS BOWMAN

SETBACK REQUIREMENTS
SETBACK REQUIREMENTS PER DEVELOPMENT STANDARDS FOR THE RS ZONING FROM THE PLACER COUNTY TAHOE BASIN AREA PLAN.

FRONT: 20 FEET FROM THE FRONT PROPERTY LINE.

SIDE: 15 FEET TOTAL, 5 FEET MINIMUM

REAR: 10 FEET

COVERAGE (ON-SITE)
LOT AREA = 11,250 SF (.26 acres)

WOOD FRAME RESIDENCE	1,068 SF
ASPHALT CONCRETE DRIVEWAY	697 SF
CONCRETE STEP	3 SF
ENTRY DECK (W/ 3:1 HT REDUCTION)	67 SF
SECOND LEVEL DECK (W/ 3:1 HT REDUC)	279 SF
TOTAL	2,114 SF (18.8% COVERAGE)

COVERAGE (OFF-SITE)

AC DRIVEWAY	393 SF

NOTES
1. UNDERGROUND UTILITIES SHOWN HEREON ARE FOR REFERENCE ONLY AND THEIR LOCATIONS SHOULD BE VERIFIED BY CONTACTING THE VARIOUS UTILITY COMPANIES.
2. LOT SQUARE FOOTAGE = 11,250 SF (.26 AC)
3. PROPERTY LINES SHOWN HEREON ARE BASED ON RECORD INFORMATION AND NOT A FIELD SURVEY
4. EASEMENTS AFFECTING THIS PROPERTY MAY NOT ALL BE SHOWN.
5. BMP/GRAVEL DRIPLINE TRENCHS NOT SHOWN OR INCLUDED IN COVERAGE.

GRAPHIC SCALE
-5 0 5 10 20
SCALE 1"=10'

N

REV	DATE	DESCRIPTION	APPROVED	DATE

TIESLAU CIVIL ENGINEERING, INC.
3080 NORTH LAKE BLVD
TAHOE CITY, CA 96145
P.O. BOX 412
TAHOE VISTA, CA 96145
TCETAHOE.COM
(530) 546-4805

TOPOGRAPHIC SURVEY
BOWMAN
81 TAHOMA AVENUE
APN 093-101-002

CA
PLACER COUNTY
TAHOE CITY

COMP:_____ DESIGN:
DRWN: PRJ.ENG: AT

PROJECT #: 20.088
SCALE: 1" = 10"
HORIZONTAL:
VERTICAL:

DATE: 12/9/20

1

AGENDA ITEM NO. V.A

Attachment D

Soil consultant's land capability report, incl. soil descriptions (2 test pits)

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

Land Capability Challenge
81 Tahoma Avenue
Placer County, California
(APN093-101-002)

July 22, 2022

INTRODUCTION

A soil investigation was conducted on the parcel on June 26, 2022. 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 impervious coverage regulation, by Chapter 30 of the Code of Ordinances.

The parcel supports an existing single-family residential dwelling on 0.26 acres of land, located at 81 Tahoma Avenue, Placer County, California. This work is advanced at the request of Mr. Chris Bowman.

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, hazard waste assessment or seismic analyses. In this report the term "soil" refers to the surface weathering of rocks and sediments as typically used in agriculture, forestry, and erosion control. In contrast, the typical engineering use of the "soil" refers to the strength of deeper materials, often a few to tens or more feet deep.

ENVIRONMENTAL SETTING

The site is located at 81 Tahoma Avenue. Vegetation consists of Jeffrey pine, manzanita and squaw carpet. Slopes range between 5 and 15 percent on a southwest aspect. There are no stream environment zones (SEZ) influencing this parcel.

Soils are shown on TRPA map sheet D-6 as UmE (Umpa very stony sandy loam, 15 to 30 percent slopes) . Geology (Mathews, 1968) is characterized as Tv^a (andesite). Bailey's (1974) geomorphic analysis shows the parcel within D1 (Toe slope lands).

METHODOLOGY

For this investigation, we surveyed the parcel and immediately adjacent areas (Fig.). We then measured and technically described two discrete soil profiles, each representative of site-specific landforms. By use of hand augers and backhoe excavators, we exposed the near- surface sediments to depths ranging from 0 to 6 feet deep. We then formally described and measured the physical properties of the soils following procedures of the National Cooperative Soil Survey. We similarly documented groundwater levels using visual methodologies. Information gathered at the site was compared to the *Soil Survey of the Lake Tahoe Basin, California-Nevada* (Rogers et al, 1974) and to criteria of 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 supplied by Tieslau Civil Engineering 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 well drained, members of Soil Hydrologic Group B. They can be characterized having gravelly loamy coarse sand topsoil approximately 6 to 12 inches thick, over very gravelly or stony sandy loam or sandy clay loam subsoil to between 52 and 56 inches depth. Soft andesitic materials are encountered below.

These soils are different than those shown on the TRPA map sheet as UmE because the Umpa series is moderately deep (20-40 inches). The soils found are more similar to the Jorge series, which is deeper than 40 inches and slightly more developed.

CONCLUSIONS AND RECOMMENDATIONS

Soils found are interpreted as JwE (Jorge-Tahoma very stony sandy loam, 2 to 15 percent slopes) and place in Land Capability Class 6. LCC 6 receives 30 percent allowable impervious coverage. This soil map unit extents over the entire parcel area.
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(s) on the parcel.

Respectfully submitted,

Sidney W. Davis,
CPSS /SC No. 1031

Representative Soil Profile Descriptions
Stop No. 1

Oi 0 – 1 inch, conifer needles and duff.

A 1 – 6 inches, grayish brown (10YR 5/2) gravelly loamy coarse sand, dark brown (10YR 3/2) moist; weak fine granular structure; soft, loose, nonsticky and nonplastic; many very fine, fine roots; many very fine and fine interstitial pores; fifteen percent gravel; clear smooth boundary.

A2 6 – 14 inches, brown (10YR 5/3) gravelly loamy coarse sand, dark brown (10YR 3/3) moist; moderate fine granular structure; soft, loose, nonsticky and nonplastic; many fine medium roots; many very fine and fine interstitial pores; fifteen percent gravel; gradual wavy boundary.

Bt1 14 – 28 inches, brown (7.5YR 5/3) gravelly coarse loam, very dark brown (7.5YR 2.5/3) moist; weak fine subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; many fine medium coarse roots; many fine medium tubular pores; twenty-five percent gravel; gradual wavy boundary.

2Bt2 28 – 52 inches, very dark brown (7.5YR 2.5/3) moist; very stony coarse sandy loam; weak fine subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; common fine medium and few coarse roots; many fine medium tubular pores; sixty percent stones and fifteen percent gravel; gradual irregular boundary.

Notes: HSG B. Roots throughout profile. Soft lahar at 52 inches. Roots to 54-56 inches.

Soil Series: Jorge
Soil Classification: Loamy-skeletal, mixed, frigid, Ultic Haploxeralfs
Soil Drainage Class: Well drained
Hydrologic Soil Group: B

Figure 1 Stop 1 soil profile.

Figure 2 - Stop 1 landscape.

Stop No. 2

0 – 1 inches, leaves and duff

A1 1 – 6 inches, brown (10YR 5/3) gravelly loamy coarse sand, dark brown (10YR 3/3) moist; moderate fine granular structure; soft, loose, nonsticky and nonplastic;

many fine medium roots; many very fine interstitial pores; slightly acid; five percent stones and ten percent gravel; clear smooth boundary.

Bt1 6 – 13 inches, brown (10YR 5/3) gravelly sandy loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, loose, slightly sticky and nonplastic; many fine medium and coarse roots; many fine medium tubular pores; few thin colloid in bridges between mineral grains; slightly acid; ten percent stones and fifteen percent gravel; clear smooth boundary.

Bt2 13 – 28 inches, dark brown (7.5YR 3/3) moist; very stony sandy loam near clay loam; moderate medium subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; many fine medium and coarse roots; many fine medium tubular pores; common thin colloid in bridges between mineral grains; slightly acid; twenty percent stones and two percent gravel; gradual wavy boundary.

Bt3 28 – 56 inches, dark brown (7.5YR 3/3) moist; very stony sandy clay loam; moderate medium subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; common fine medium and few coarse roots; common moderately thick clay films occur on faces of peds; slightly acid; sixty percent stones and ten percent gravel; gradual wavy boundary.

C 56+ inches, soft andesite.

Note: Boulders at 13 inches.
Soil Series: Jorge
Soil Classification: Loamy-skeletal, mixed, frigid, Ultic Haploxeralfs
Soil Drainage Class: Well drained
Hydrologic Soil Group: B

Figure 3 - Stop 2 soil profile.

Figure 4 - Stop 2 landscape.