

Location 128 Market Street Stateline, NV 89449

Contact

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

STAFF REPORT

Date: February 24, 2022

To: TRPA Hearings Officer

From: TRPA Staff

Subject Pipkin Family Trust Land Capability Challenge, 843 Stateline Avenue, South Lake Tahoe, CA; APN 029-010-013; TRPA File Number LCAP2021-0302

Staff Recommendation:

Staff recommends the TRPA Hearings Officer approve this land capability challenge which would reduce land capability of Class 1B and add Class 7. This change is itemized on the table on Page 3 and depicted on a map included in Attachment C.

Required Motion:

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

1) 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 parcel being challenged is mapped as land capability Class 1B. The Soil Conservation Service Soil Survey of Tahoe Basin Area, California-Nevada (Rogers, 1974) identifies the site having Beaches (Be) and Elmira loamy coarse sand, wet variant (Ev). The Beaches map unit consists of unconsolidated sand that may have patches of stabilized vegetation, but mostly barren. The Elmira wet variant soil type is derived from mixed granitic parent material that was deposited as alluvium and glacial outwash. While the Elmira wet variant soil is deep (no bedrock within 60 inches of the surface), it is somewhat poorly to very poorly drained due to seasonal high-water table and/or seasonal ponding. The vicinity of the parcel has a geomorphic mapping of E-2 for Depositional Lands, outwash, till and lake deposits (low hazard lands). The subject parcel has a surveyed size of 16,984 square feet; however, only 15,185 square feet (0.349-acre) is located above Lake Tahoe high water line (elev. 6,229.1 ft.).

A July 9, 1987 Land Capability Verification (LCV) compiled by TRPA staff indicated the site as Class 1b (Attachment C). The LCV confirmed the TRPA land capability map, which showed the Beaches and Elmira wet variant soil types as Class 1b.



A detailed soil investigation was conducted for this land capability challenge by Sid Davis (Davis2 Consulting Earth Scientists) on August 23, 2021. During that investigation, TRPA contractor Phil Scoles (Terra Science, Inc.) was present to examine soil conditions at the same auger hole locations described by the applicant's soil consultant. The TRPA contractor's observations of textures, matrix colors, ped structures, horizon depths, and gravel volume were consistent with the soil consultant's findings (Appendix D). The TRPA contractor agreed with the soil consultant that the observed soil conditions did not match the SCS-mapped Beaches and Elmira wet variant soil types for the vicinity of the residence, adjacent landscaping and most of the paved driveway. The contractor also visited the property on August 22, 2021 (prior day) and hand-augered to more than 40 inches in the SEZ area (east part of parcel). A land capability challenge (LCAP2021-0302) was filed with TRPA on September 27, 2021.

Findings:

The subject property consists of a mostly south to north oriented barrier beach ridge that slopes half toward Lake Tahoe (to the west) and half to the east. The barrier beach ridge composes the west and center part of the parcel and contains a single-family residence with attached garage, driveway, patio, and pathways. The property also has a stone retaining wall parallel to the shoreline and pier. The majority of the parcel is landscaped with lawn, ornamental shrubs/forbs, and ground cover. The parcel lacks any rock outcrops and surface stones. The upland portion of the parcel supports several large Jeffrey pine trees in the west-center, with lodgepole and white fir trees. The SEZ portion (east end) is dominated by lodgepole pine, aspen, willow, and forbs/grasses. NOTE: The retaining wall has held native soils in place, while water and wind action have eroded soil along the shoreline of Lake Tahoe. Thus, the retaining wall is now the western extend of the original stabilized barrier beach ridge.

For the field investigation, the applicant's consulting soil scientist described two hand-augered holes (60 inches deep). The hand-augered holes were situated in the front and back yards, atop the stabilized barrier beach ridge. Both holes were augered in lawn areas, so a thin layer of sod and imported soil was present. The stabilized barrier beach ridge has slopes of 0 to 2%, while the transition down to the SEZ has slopes of 2 to 5%. At both sample locations, the soil consultant documented deep soils that lacked any indication of seasonal high-water table (aka Stream Environment Zone, SEZ), or other root-restricting layers.

The observed soils at both auger hole locations showed deep, coarse sandy soils that lack any restrictions, such as seasonal high-water table, bedrock or dense layers. The soils are different than nearby Elmira gravelly loamy coarse sand and Gefo gravelly loamy coarse sand soil types, which were formed from glacial outwash, then re-worked into lake terraces. Such soils have a minor amount of in-situ soil development (iron translocation, soil structure, etc.). Instead, the stabilized barrier beach soil consists of simple layers of sand and coarse sand. These soils are a stabilized version of the Beaches soil type – such stabilization is outside the mapping unit concept for Beaches. Consequently, the observed barrier beach soil is an unnamed inclusion (designated 'XXX'). In accordance with Table 4 of Land-Capability Classification of Lake Tahoe Basin, California-Nevada (Bailey, R.G., 1974), this unnamed soil (XXX) qualifies as Class 7 for slopes 0 to 5%. This conclusion is consistent with several other land capability challenges to the west which contain the same stabilized barrier beach ridge.

The table below summarizes the changes in land capability from the 1998 TRPA land capability verification to the 2021 land capability challenge, as concluded by this document.

| Land Capability District | Slope Class (Range) | 1987 TRPA ¹ LCV Area (sq. ft.) | 2021 Land Cap. Challenge Area (sq. ft.) | Net Change Total Area (sq. ft.) |
|--------------------------------|------------------------|---|---|---------------------------------------|
| Class 1b (Beaches) | Any Slope | 0 | 448 | +448 |
| Class 1b (SEZ) | Any Slope | 15,185 | 3,330 | -11,855 |
| Class 7, (XXX) | 0 to 5% | | 11,407 | +11,407 |
| Total Parcel Area ² | | 15,185 | 15,185 | 0 |

¹ Land capability area measured from July 09, 1987 Land Capability Verification (LCV).
² Parcel size for land area above Lake Tahoe high water line, elev. 6229.1 ft.

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 (August 23, 2021)
- C. July 09, 1987 LCV and January 2022 land capability challenge recommendation map
- D. Soil consultant's land capability report (September 15, 2021)

BAILEY LAND CAPABILITY CHALLENGE FINDINGS

| Site Information | | |
|---------------------------------|---|--|
| Assessor's Parcel No. (APN): | 029-010-13 | |
| TRPA File No. / Submittal Date: | LCAP2021-0302 / September 27, 2021 | |
| Owner or Applicant: | Pipkin Family Trust dated 10/6/89, Second Manassas, | |
| | LLC, Post Office Box 6119, Stateline, NV. 89449 | |
| Site Address: | 843 Stateline Avenue, South Lake Tahoe, El Dorado | |
| | County, Calif; 38.96227° N, -119.94935° W | |

| Environmental Setting | | | |
|------------------------------------|--|--|--|
| Bailey Soil Mapping Unit / | Beaches (Be, HSG-A) and Elmira loamy coarse sand, wet | | |
| Hydrologic Soil Group (HSG) / Land | variant (Ev, HSG-D) / E2 – Outwash, till and lake | | |
| Class / Geomorphic Hazard Unit | deposits (low hazard lands as per 1974 Bailey Land | | |
| | Capability Report Report) | | |
| Landform and Soil Parent Material | Lake Tahoe shoreline and stabilized barrier beach ridge | | |
| | having mixed granodiorite parent material (sand). | | |
| Slopes and Aspect | 1 to 5% slopes / slopes to southeast, except with Beach | | |
| | zone (slightly steeper slope). | | |
| Elevation and Datum | 6229 to 6233 feet (BLM Lake Tahoe datum, Turner & | | |
| | Associates; May, 2021) | | |
| Rock Outcrops and Surface | No outcrops or surface stones. Residence situated on | | |
| Configuration | stabilized barrier beach ridge, which slopes toward lake | | |
| | (west) and SEZ (east). | | |
| SEZ and Hydrology Source | South edge of parcel qualifies as SEZ; sustained by | | |
| | seasonal high water table. | | |
| Vegetation | Upland supports Jeffrey pine, lodgepole pine, | | |
| | ornamental trees/shrubs, lawn, while SEZ supports | | |
| | willow, lodgepole pine, aspen, and grasses/forbs. | | |
| Ground Cover Condition | Good (mostly landscaped). | | |
| Site Features | Single family residence with attached garage, patio, | | |
| | pathways, paved driveway, and retaining wall along | | |
| | shoreline. | | |

| Field Investigation and Procedures | | |
|------------------------------------|--|--|
| Consultant and Address | Sid Davis, Davis2 Consulting Earth Scientists; | |
| | Post Office Box 734, Georgetown, CA 95634 | |
| | (530) 559-1405; sid@davis2consult.com | |
| TRPA Contractor and Address | Phil Scoles (TRPA subcontractor) | |
| | Post Office Box 2100; Portland, OR 97208-2100 | |
| TRPA Contractor Field Dates | August 23, 2021. | |
| SEZ Mapping / NRCS Hydric Soil | Yes, beaches and Elmira wet variant (from 1987 LCV); | |
| | Marla loamy coarse sand (2006 soil survey mapping of | |
| | entire site) is listed as hydric soil. | |

| Number of Soil Pits or Auger Holes | Two hand-augered holes to depth of 60 inches (also | |
|------------------------------------|---|--|
| and Description Depth | observed by TRPA contractor). | |
| Additional or Repetitive TRPA | One hand-augered hole to depth of 40+ inches in SEZ | |
| Sample Locations | (east edge of parcel) | |
| Areas Not Examined | Residence, driveway, patio, pathways, retaining wall, | |
| | and pier. | |

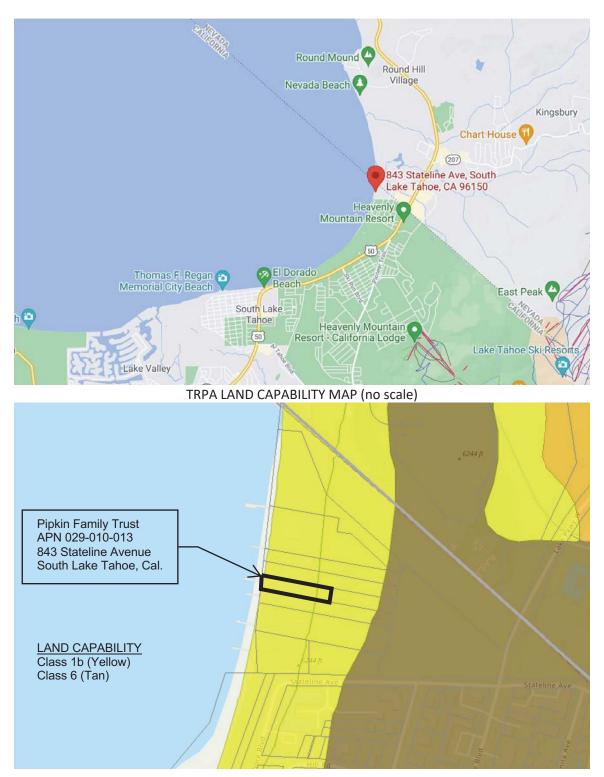
| TRPA Findings | | |
|--|---|--|
| 2006 Soil Survey Map Unit ¹ | Marla loamy coarse sand, 2 to 5% slopes (map unit 7471, Class 1B). | |
| Consultant Soil Mapping Determination and Rationale | Soil consultant dug two hand auger holes to determine unnamed soils (XXX) occur on a stabilized barrier beach ridge (rather than Beaches or Elmira wet variant soil). The field observations indicate the barrier beach soils are deep and lack and subsurface restrictions or seasonal high water table. In particular, these unnamed soils are excessive to somewhat excessively drained and differ from the Elmira and Gefo series due to less in-situ soil development and no gravels. The subject land has slopes 0 to 5%, while the slightly steeper transition to the shoreline. | |
| Slope Determination | 0 to 5% (slopes both to west and east from vicinity of existing residence). | |
| TRPA Conclusion(s) | Decrease in Class 1B (Beaches and SEZ, all slopes); and addition of Class 7 soil (XXX) for 0 to 5% slopes. Prior mapping combined Beaches and SEZ into one unit of Class 1B. | |
| Applicable Area | Entire site (see map, Attachment C, February, 2022). | |

¹ TRPA currently relies upon the <u>Soil Survey of Tahoe Basin, California-Nevada</u> (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)



Attachment B

Site Photographs (August 23, 2021)



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

843 STATELINE AVENUE (PIPKIN FAMILY TRUST PARCEL) PHOTOGRAPHS (APN 029-010-013)



Photo 1 – View east along northern edge of parcel and east of residence (Stop no. 1). The west-center part of the parcel consists of a stabilized barrier beach ridge – half slopes towards Lake Tahoe and other half toward an SEZ. The barrier beach ridge has 0 to 2% slopes and qualifies as Class 7 (0 to 5% slopes).



Photo 2 – View westward toward Stop 2 location (west of residence), where a hole was hand-augered to 60 inches. The profile showed no significant soil development aside from an A horizon. The soil is excessively drained due to underlying sand layers and lacks any indication of seasonal high water table. Several large Jeffrey pine trees attest this has been a stabilized barrier beach ridge for a century or more.



Photo 3 – View north toward southwest property corner. Subject residence located at far right and Lake Tahoe at far left. The retaining wall was built (and likely rebuilt) to prevent further erosion of the shoreline and protect several large Jeffrey pines. Without the retaining wall, the land on the adjacent parcel (foreground, right) has eroded away a portion of the stabilized barrier beach ridge.



Photo 4 – View west toward west-center of parcel (residence in background). The soil consultant (Sid Davis) hand augered each hole and examined soil layers atop the blue tarp. The soils in the vicinity of the residence, front yard and back yard differ from the mapped Elmira wet variant (Ev) and Beaches (Be) on basis of no seasonal high water table. They also differ from Elmira gravelly loamy coarse sand and Gefo gravelly loamy coarse sand due to lack of gravels and no in-situ soil development.



Photo 5 – View west along southern edge of parcel. The residence in background was built atop a stabilized barrier beach ridge, which has 0 to 2% slopes. As an unnamed soil inclusion (labeled XXX), it qualifies as Class 7 (0 to 5% slopes). In addition to landscaped plants, Jeffrey pine, white fir, lodgepole pine are common native trees on this parcel. This investigation findings are consistent with land capability challenges on adjacent/nearby parcels.



Photo 6 – View east toward SEZ area at east end of parcel. The TRPA contractor hand-augered to 40+ inches in this vicinity and confirm presence soil redox features (evidence of seasonal high water table). This area is dominated by lodgepole pine, aspen, willow, grasses and forbs. This area amounts to 3,330 sf. of Class 1B soil.

Attachment C

July 09, 1987 LCV and January 2022 land capability challenge recommendation map

TAHOE REGIONAL PLANNING AGENCY

P.O. Box 1038 Zephyr Cove, Nevada 89448-1038

195 U.S. Highway 50 Round Hill, Zephyr Cove, NV

LAND CAPABILITY VERIFICATION REQUEST FORM

(702) 588-4547

| Name: <u>LYN</u> - | TRPA | |
|--|---------------------------|----------------------------------|
| Mailing Address: | | City: |
| State: | Zip: | Phone: |
| | | |
| LOCATION OF FIELD CHECK Assessor's Parcel Number: | 20-010-13 | County: CSCT |
| Assessor's Parcel Number: | <u> </u> | |
| Street and #: Private | Road - 841 St | ateline |
| Lot #: M&B | Subdivision: | |
| | m of atmucture distingui | shing features, landmarks, etc): |
| Gauge, SFD four | ridation (burned i | ~ 1960 <u>5</u>) |
| | cost \$25 00 and can only | be performed when lot is |

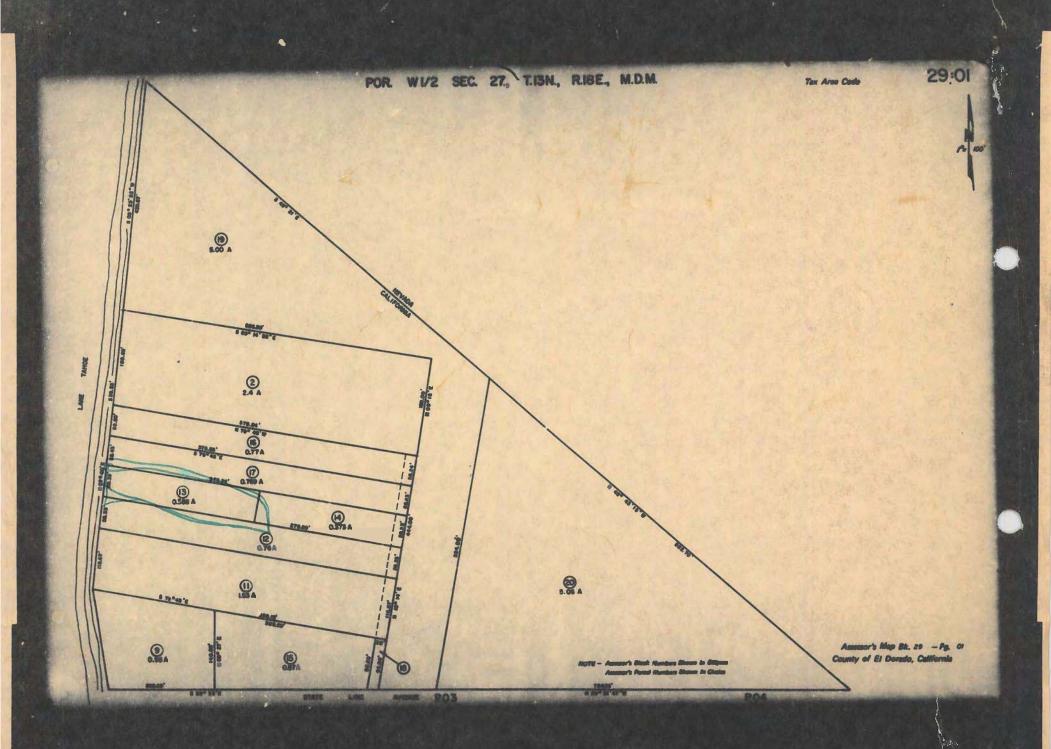
NOTE: Field inspections cost \$25.00 and can only be performed when for is relatively clear of snow. Lots which are difficult to locate (i.e., no adjacent development, no natural landmarks, large lots, etc.) must have corners staked and identified. Please provide location map if warrented. TRPA staff must have access to the lot and may dig an eight inch round test pit to evaluate soils and hydrologic conditions.

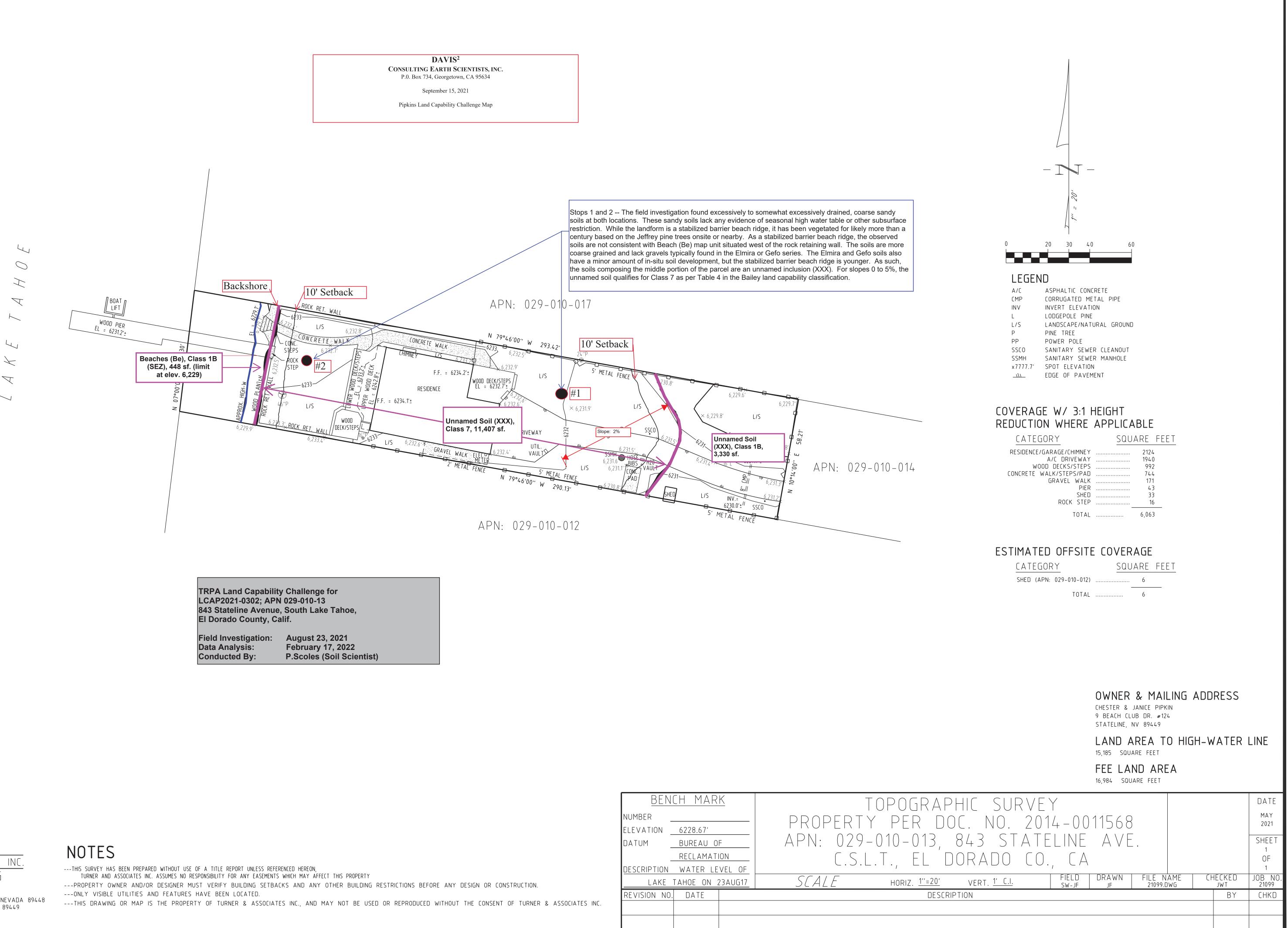
Date

Signature of Property Owner or Authorized Agent

FOR OFFICE USE ONLY

| Date Received Fee \$ Receipt # N |
|---|
| Mapped Land Capability 16 Mapped Soil Type Be/EV |
| Land Capability Verified: Yes No See Comments |
| Date of Field Check 7-10-87 By When MSolt |
| comments Wendy - What are Chances for a Challange on This |
| parcel - either making the beach a class 7, or |
| changing portion of lot te mon-modified - CB. |
| (Need mower by 7/15 if possibl - for Dusan S.) |
| much of the parcel has reparign vegetated |
| and readow grasses the other portion has |
| Ancadenstics of barrier beach, A soil report |
| while be necessary to chance the and |
| capability tong 16. |
| 9-18-86 |
| FORMS1: Form - Field Inspection |





| LCAP2021-0302; | nue, South Lake T |
|--------------------|-------------------|
| Field Investigatio | n: August 23, 2 |

| Field Investigation: | August 23, 2 |
|----------------------|--------------|
| Data Analysis: | February 17, |
| Conducted By: | P.Scoles (So |
| | |



| | <u>bench</u> Ma | <u>RK</u> | |
|---|---------------------------|-----------|----------|
| | NUMBER | | |
| | ELEVATION <u>6228.67'</u> | | |
| | DATUM <u>BUREAU</u> | OF | APN: 029 |
| | RECLAM | ATION | |
| PROPERTY | DESCRIPTION WATER | LEVEL OF | C.J |
| BUILDING RESTRICTIONS BEFORE ANY DESIGN OR CONSTRUCTION. | LAKE TAHOE ON | N 23AUG17 | SEALE |
| | REVISION NO. DATE | | |
| BE USED OR REPRODUCED WITHOUT THE CONSENT OF TURNER & ASSOCIATES INC. | | | |
| | | | |

Attachment D

Soil consultant's land capability report (September 15, 2021)

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

Pipkins Land Capability Challenge El Dorado County, California (APN 029-010-13)

September 15, 2021

INTRODUCTION

A soil investigation was conducted on the parcel on August 23, 2021. 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 0.39 acres of land, located at 843 Stateline Avenue, South Lake Tahoe, Eldorado County, California. This work is advanced at the request of Ms. Janice Pipkins, property owner.

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.

ENVIRONMENTAL SETTING

The site is located at 843 Stateline Avenue, South Lake Tahoe, El Dorado County, California. Vegetation on the lakefront part of the parcel is devoid of any growth within the wave-worked area lakeward of a stone retaining wall. On a convex portion of the parcel landward of the retaining wall, Jeffry pine, and landscaped sod is present either side of the existing residence. Near the east portion of the parcel slopes become concave and vegetation associated with Type 9 (Broadleaf), Lodgepole pine, Schouler willow and various sedges. Slopes range between nearly level to 3 percent on a southeasterly aspect. The Be unit west of the retaining wall along the Lake Tahoe shoreline and the concave slope area near the east property line are stream environment zones (SEZ).

A Land Capability report prepared for TRPA in 1987 by this firm placed the westerly portion of the parcel in the Be unit, which was the methodology that prevailed at that time. After that time unnamed soils have been evaluated separately and rated by Bailey's (1974) criteria, *Table 4- Basis of capability classification of Lake Tahoe basin lands*. Revisitation of this parcel in 2021 supports a different interpretation than the initial finding and is in conformance with work completed by others on adjacent parcels in recent years. The concave area supports primary SEZ vegetation. The 1987 report also states "there was no detailed map available to for [sic] study."

Soils are shown on TRPA map sheet H-16 as Be (Beaches) and Ev (Elmira wet variant). Geology (Burnett, 1968) is characterized as Rl (Recent lakebeds). Bailey's (1974) geomorphic analysis shows the parcel within E₃ (Alluvial lands).

METHODOLOGY

The parcel was surveyed as well as areas nearby. Sites considered representative of the landform were 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 supplied by Turner and Associates was available in the field for ground control and slope analysis. Information pertaining to land capability districts is shown on the base map.

FINDINGS

The area immediately adjacent to the lake, in the swash zone, is defined as Be (Beaches), where the landform is devoid of vegetation and in constant transition from wave action. This area terminates at the stone wall west of the residence. No soil investigation was conducted in the swash zone.

Soils on the convex portion of the landform surrounding the existing residence are found to be deep and excessively drained, members of Soil Hydrologic Group A. They can be characterized having dark brown loamy sand and sandy loam top soil approximately thick 12 to 14 inches thick, over very dark brown and dark yellowish brown coarse sand subsoil to ≥ 60 inches depth. These soils are other than the Be Soil Map Unit as shown because they support permanent vegetation (very mature Jeffrey pine), and a topsoil is present at the surface in conjunction with moderate fine granular structure, indicative of landscape stability. Such soils are not present in wave-washed conditions that define beaches. These soils are unnamed (XXX) in the Lake Tahoe basin and rate as Class 7 on Bailey's Table 4.

Existing vegetation along the eastern concave portion of the parcel is considered Type 9 (Broadleaf) supporting Lodgepole pine, Schoulers willow, and sedges, are primary SEZ indicators and the area receives Class 1b. Soil investigation in this area is unnecessary.

CONCLUSIONS AND RECOMMENDATIONS

Soils found are unnamed in the convex portion of the parcel and place in Land Capability Class 7. The swash zone is in transition, considered a deposit rather than soil. The area along the eastern edge of the parcel supports Primary indicators and is SEZ.

| Table | Table 1- Land Capability Districts | | |
|-------|------------------------------------|-------------|-------|
| SMU | Name | Square Feet | Class |
| Be | Beaches | 2,313 | 1b |
| XXX | Unnamed | 11,460 | 7 |
| | SEZ | 3,330 | 1b |

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Please refer to the following soil profile descriptions that support the findings and the attached map showing the spatial distribution of the appropriate land capability classes on the parcel.

Respectfully submitted,

Sidney/W. Davis, CPSS /SC No. 1031

Representative Soil Profile Descriptions **Stop No. 1**

- A1 0-4 inches, black (10YR 2/1) moist; sandy loam; moderate fine granular structure; soft, loose, nonsticky and nonplastic; many very fine and fine roots; many very fine and fine interstitial pores; clear smooth boundary.
- A2 4-14 inches, very dark brown (7.5YR 2.5/2) moist; sandy loam; moderate fine granular structure; soft, loose, nonsticky and nonplastic; common fine medium roots; many very fine and fine interstitial pores; gradual smooth boundary.
- C1 14 36 inches, very dark grayish brown (10YR 3/2) moist; sand; single grain; soft, loose, nonsticky and nonplastic; many very fine and fine interstitial pores; gradual smooth boundary.
- C2 36 60 inches, brown (10YR 4/3) moist; coarse sand; single grain; soft, loose, nonsticky and nonplastic; many very fine and fine interstitial pores.

Soil Series: Unnamed (XXX) Soil Classification: Sandy, mixed frigid, Humic Dystroxerepts Soil Drainage Class: Excessive Hydrologic Soil Group A



Figure 1- Stop 1

Stop No. 2

- A1 0-4 inches, black (7.5YR 2.5/1) moist; loamy sand; moderate fine granular structure; soft, loose, nonsticky and nonplastic; many very fine and fine roots; many very fine and fine interstitial pores; clear smooth boundary.
- A2 4 12 inches, dark brown (7.5YR 3/3) moist; coarse sand; single grain; soft, loose, nonsticky and nonplastic; common fine medium and few coarse roots; many very fine and fine interstitial pores; gradual smooth boundary.
- C1 12 24 inches, dark yellowish brown (10YR 4/4) moist; coarse sand; single grain; soft, loose, nonsticky and nonplastic; many very fine and fine interstitial pores; gradual smooth boundary.
- C2 24 50 inches, dark yellowish brown (10YR 3/6) moist; coarse sand; single grain; soft, loose, nonsticky and nonplastic; many very fine and fine interstitial pores; gradual smooth boundary.
- C3 50 60 inches, dark red (2.5YR 3/6) moist; coarse sand; single grain; soft, loose, nonsticky and nonplastic; many very fine and fine interstitial pores.

Note: Hydro A.

Soil Series: Unnamed (XXX) Soil Classification: Mixed frigid, Dystric Xeropsamments Soil Drainage Class: Excessive Hydrologic Soil Group A

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Figure 2- Stop 2, convex landform.



Figure 3 - Class 6 / Class 1b boundary

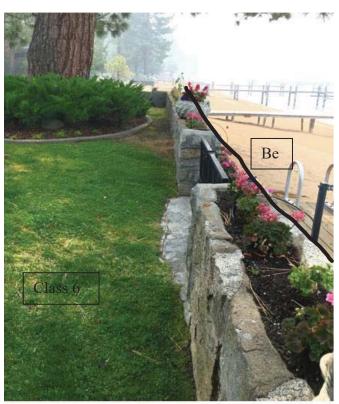


Figure 4- Backshore / Be line

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