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STAFF REPORT

Date: November 2, 2023

To: TRPA Hearings Officer

From: TRPA Staff

Subject: Backholm Land Capability Challenge  
81 Observation Drive, Placer County, California  
APN: 093-120-010, TRPA File No.: LCAP2023-0197

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Proposed Action:

Hearings Officer review and approve the proposed Land Capability Challenge.

Staff Recommendation:

Staff recommends the Tahoe Regional Planning Agency (TRPA) Hearings Officer approve the land capability challenge on the subject parcel. The challenge would change the land capability of Class 3 (100% of parcel) to Class 4 (22% of parcel) and Class 6 (78% 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 andesitic 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).

The Bailey land capability map shows the entire parcel as Class 3. The subject parcel received a land capability verification (LCV) on October 07, 2022 (included with complete site assessment). A TRPA land capability challenge (LCAP2023-0197) was filed by the property owner and their representative Tahoe Land Planning on August 04, 2023. On September 07, 2023, TRPA Contractor Terra Science, Inc. (Phil Scoles, soil scientist) conducted a site visit to document site conditions and describe the soil profile for a single hand-dug pit located in the south-center part

of the parcel. The residence front yard has artificially steep slopes with rock revetments, while none in the backyard. The soil pit was dug in the backyard, since it appears mostly 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 correlated the field findings and incorporated such detail into this staff report.

Findings:

The subject parcel consists of a south by southwest sloping hillside formed from andesite and colluvial materials deposited atop weathered bedrock. The land surface has natural 13 to 17% slopes (dips to south by southwest), which is partly consistent with soil survey slope class of 15 to 30%. The parcel has artificially steepened slopes adjacent to Observation Drive and Whitney Court to the east and north, respectively. For land capability matters, TRPA utilizes the historic (natural) slopes, which are estimated using the site topography survey. The parcel contains a two-story house positioned in the north-center part and landscaping on all sides of the residence. The southernmost part is more densely vegetated with native shrubs, while more ornamental species surrounding the residence. Surface boulders occur throughout the property (5 to 10% cover) – some have been placed for landscaping or discarded at the surface during house construction. Such boulders (when exposed by excavation) are evident as “floaters” and not connected to bedrock. The vegetation consists of upland trees (Jeffrey pine, incense cedar, aspen, ornamental species), and shrubs (huckleberry oak, greenleaf manzanita, bitterbrush, whitethorn, sagebrush, prostrate ceanothus, creeping snowberry), plus 10 to 20% grasses and forbs.

This land capability challenge utilized a single, backhoe-dug test pit, located about 17 feet southeast of the residence, 35 feet west of the east property line, and 15 feet north of the south property line. The parent material is a volcanic debris flow (colluvium) that that has been reworked by ancient wave action (when lake water levels were impounded and significantly higher than current high-water line). Observed soil textures are gravelly loamy coarse sand in the upper part, and very gravelly sandy loam and loamy coarse sand in the lower part. This exhibited only a minor degree of soil formation, as evident by slight change in matrix color and soil structure (cambic horizon). Such structure becomes single grain (sand) in the lower part, with fine and medium roots extending to a depth of 54+ inches. The observed soil is somewhat excessively drained and has a hydrologic soil group rating of HSG-A. No indication of seasonal ground water or other root restriction 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. It is similar to the Jorge-Tahoma soils, except the subsoil rocks at this location indicate the original parent material (lahar and associated colluvium) was reworked by ancient wave action. In prehistoric times, Lake Tahoe was impounded by glacial ice dams and/or volcanic flows that raised water levels significantly and created shorelines. Thus, the subsoil rocks are smooth and rounded by centuries of wave water movement. In contrast, Jorge-Tahoma soils have angular rocks due to colluvial movement (gravity influence movement). The observed soil is an unnamed inclusion, rather than the Jorge series described in the 1974 Soil Survey of the Lake Tahoe Basin. In

accordance with Table 4 of Land-Capability Classification of the Lake Tahoe Basin, California-Nevada (R.G. Bailey, 1974), the land capability rating for the observed soil is Class 4 for slopes 16 to 30% (unnamed, XXX-1) and Class 6 for slopes 0 to 16% (unnamed, XXX-2). The table below summarizes the soil types, slope classes, as well as changes in land capability concluded by this land capability challenge.

<b>Land Capability District</b>	<b>Slope Class (Range)</b>	<b>2022 TRPA Land Capability Verif. Area (sq. ft.)</b>	<b>2023 Land Cap. Challenge Area (sq. ft.)</b>	<b>Net Change Total Area (sq. ft.)</b>
Class 3 (Umpa, UmE)	15 to 30%	11,103*	0	-11,103
Class 4 (Unnamed, XXX-1)	16 to 30%	0	2,457	+2,457
Class 6 (Unnamed, XXX-2)	0 to 16%	0	8,839	+8,839
<b>Total Parcel Area</b>		<b>11,103*</b>	<b>11,296</b>	

\* Oct. 07, 2022 Land Capability Verification excluded 193 sq. feet of property encroached by public road. The land capability challenge evaluated the entirety of the subject parcel. The roadway encroachment will be excluded for the calculation of base allowed land coverage if under a recorded easement.

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](mailto:jroll@trpa.gov).

To submit a written public comment, email [publiccomment@trpa.gov](mailto:publiccomment@trpa.gov) with the appropriate agenda item in the subject line. Written comments received by 4 p.m. the day before a scheduled public meeting will be distributed and posted to the TRPA website before the meeting begins. TRPA does not guarantee written comments received after 4 p.m. the day before a meeting will be distributed and posted in time for the meeting.

Attachments:

- A. Vicinity Map and TRPA Land Capability Map
- B. Site Photographs (Sept. 07, 2023)
- C. October 2023 Land Capability Challenge Recommendation Map
- D. TRPA Contractor’s Soil Descriptions (1 test pit)

**BAILEY LAND CAPABILITY CHALLENGE FINDINGS**

<b>Site Information</b>	
<b>Assessor's Parcel No. (APN):</b>	093-120-010
<b>TRPA File No. / Submittal Date:</b>	LCAP2023-0197 / August 04, 2023
<b>Owner or Applicant:</b>	Ari Backholm, owner; 961 Thatcher Court, Los Altos, CA 94024; Tahoe Land Planning (Abby Edwards, Representative); Post Office Box 1253; Carnelian Bay, CA 96140.
<b>Site Address:</b>	81 Observation Drive, Tahoe City (Dollar Point); Placer County, CA.; T. 16N, R. 17E, SW/ 4 of SE1/4 of Sec. 33.

<b>Environmental Setting</b>	
<b>Bailey Soil Mapping Unit / Hydrologic Soil Group (HSG) / Land Class / Geomorphic Hazard Unit</b>	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)
<b>Landform and Soil Parent Material</b>	Colluvium over residuum; ancient shoreline.
<b>Slopes and Aspect</b>	13 to 17% slopes (southwest aspect), excludes artificially steepened road slopes.
<b>Elevation and Datum</b>	6396 to 6421 feet (Lake Tahoe datum); Tahoe Basin Land Surveying topo. survey (Sept. 30, 2021)
<b>Rock Outcrops and Surface Configuration</b>	No outcrops, 5 to 10% surface stones and boulders ("floaters", not connected to bedrock).
<b>SEZ Mapping / NRCS Hydric Soil</b>	None. Stormwater ditch near south property line.
<b>Vegetation</b>	Jeffrey pine, incense cedar, ornamental trees, huckleberry oak, greenleaf manzanita, bitterbrush, prostrate ceanothus, sagebrush, whitethorn, creeping snowberry, plus grasses and forbs.
<b>Ground Cover Condition</b>	Good (vegetation 60 to 80%, duff 20 to 40%)
<b>Site Features</b>	Residence, asphalt driveway, decks, patios, rock revetments, and landscaping.

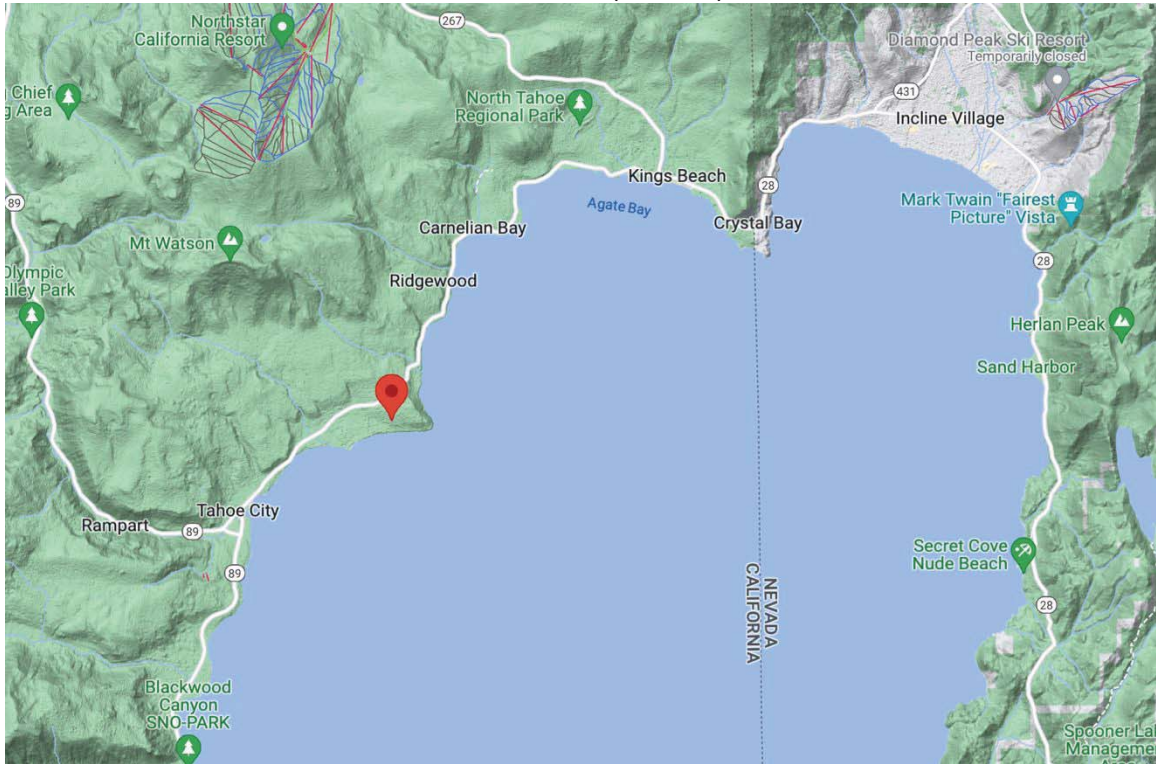
<b>Field Investigation and Procedures</b>	
<b>TRPA Contractor and Address</b>	Phil Scoles, Terra Science, Inc. (soil scientist) Post Office Box 2100; Portland, OR 97208-2100
<b>Consultant Field Date</b>	September 07, 2023. One soil pit dug to 54 inches. Soils are similar to nearby land capability challenges approved for this vicinity.
<b>Areas Not Examined</b>	Residence, driveway, patio, decks and rock revetments.

<b>TRPA Findings</b>	
<b>2006 Soil Survey Map Unit<sup>1</sup></b>	Jorge very cobbly fine sandy loam (Loamy-skeletal, isotic, frigid Andic Haploxeralfs), 15 to 30 percent slopes (map unit 7152). Class 4, HSG-B.
<b>Contractor Soil Mapping Determination and Rationale</b>	The soil is deeper than the mapped Umpa series and unlike the rocky Tallac series. The upper soil layers contain colluvial materials (eroded from higher ground), while the lower layers are wave-influence andesitic parent materials. This soil exhibits less soil formation than the Jorge-Tahoma complex, as well as contains wave-washed sand, gravel and stones. It is somewhat excessively drained (HSG-A). As such, this soil is an unnamed inclusion (designated as XXX). See staff report and TRPA contractor's profile description.
<b>Slope Determination</b>	13 to 17%. Land immediately adjacent to Observation Drive is artificially steepened by original street construction (circa 1970s). Estimated natural contours utilized for evaluation. See land capability map based upon Sept. 30, 2021 Tahoe Basin Land Surveying topographic map.
<b>TRPA Conclusion(s)</b>	Soil does not match 1974 soil survey (Umpa very stony sandy loam, 15 to 30% slopes, UmE) or 2006 soil survey (Jorge, very cobbly fine sandy loam, 15 to 30% slopes). The land capability rating for the unnamed soil (XXX) is Class 4 for 16 to 30% slopes and Class 6 for 0 to 16% slopes.
<b>Applicable Area</b>	Entire site (see map, Attachment C, October, 2023).

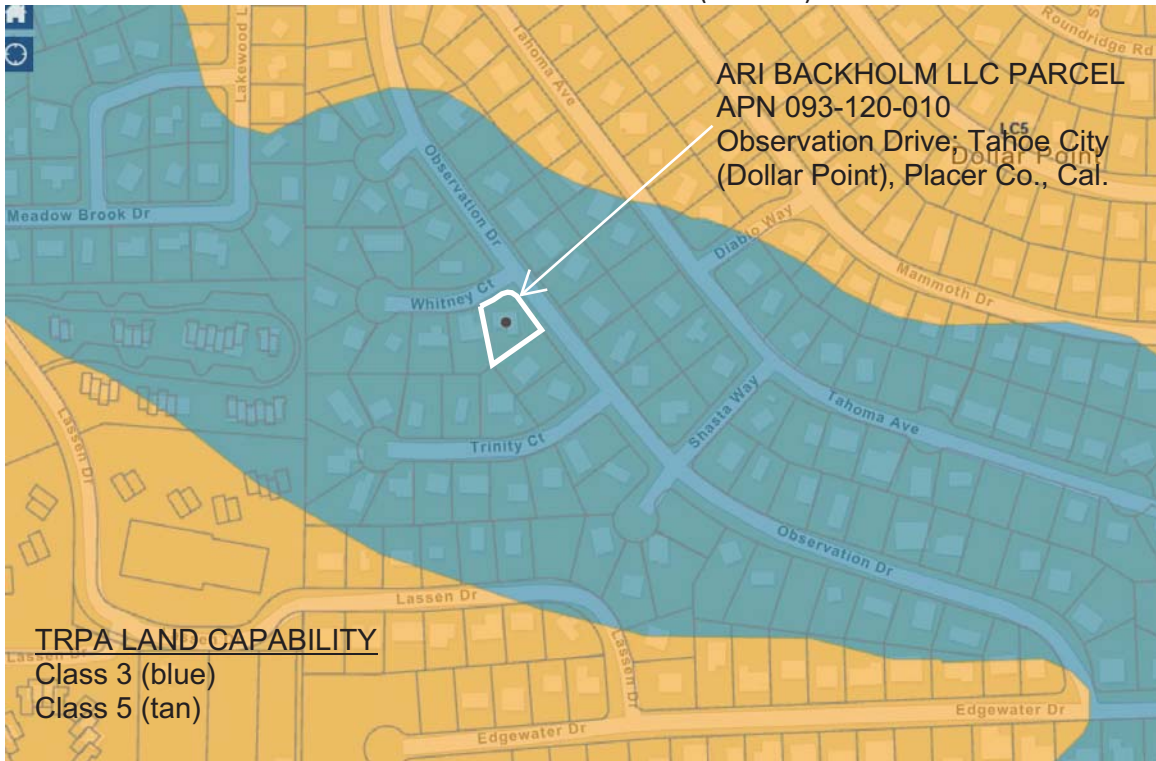
<sup>1</sup> TRPA currently relies upon the Soil Survey of Tahoe Basin, California-Nevada (Rogers and Soil Conservation Service, 1974), which the Bailey Land Capability system is predicated upon. The 2006 soil survey update has not yet been formally adopted by TRPA for use with land capability matters.

Attachment A  
Vicinity Map and TRPA Land Capability Map

VICINITY MAP (no scale)



TRPA LAND CAPABILITY MAP (no scale)



**TRPA LAND CAPABILITY**  
Class 3 (blue)  
Class 5 (tan)

Attachment B  
Site Photographs (Sept. 07, 2023)





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**81 Observation Drive, Tahoe City (Dollar Pt.), Cal. (Ari Backholm Parcel; APN: 093-120-010)**



Photo 1 – View southwest at driveway and residence entrance (behind red car). The land surface drops off abruptly (foreground), because it was over-steepened from street construction (circa 1970s). Vegetation consists of Jeffrey pine, incense cedar, ornamental trees, greenleaf manzanita, huckleberry oak, bitterbrush, sagebrush, prostrate ceanothus & creeping snowberry.



Photo 2 – View west at east portion of property (abuts Observation Drive). Natural slopes in this vicinity are roughly 15% (southwest aspect). Visible boulders were placed when road and/or residence constructed (not exposed bedrock).



Photo 3 – View to north at residence located in north-center of parcel. The backyard is partially landscaped near the residence, but mostly native greenleaf manzanita, bitterbrush and grasses in the southern part (foreground). The backyard generally has 13% slopes, so the deep soils qualify this area (and majority of parcel) as Class 6.



Photo 4 – View to southeast edge of parcel where Test Pit no. 1 was excavated by backhoe. The pit was located about 35 feet west of Observation Drive and 15 feet north of the south property line. Slopes are 15% in this vicinity. The test pit showed the property has deep soils that become increasingly more gravelly with depth (no root restriction nor evidence of seasonal water table).

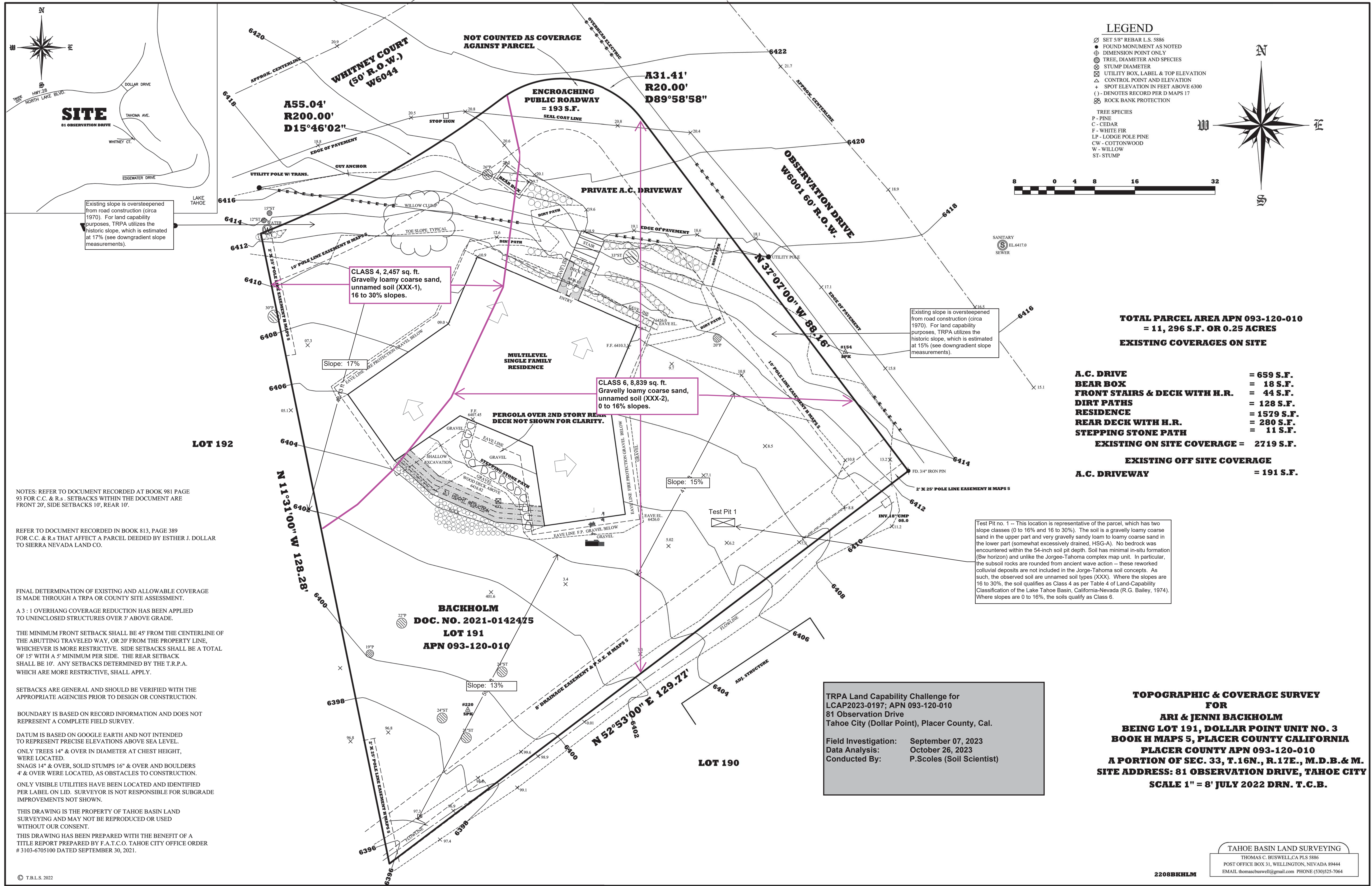


Photo 5 – Close-up view of Test Pit no. 1 showing gravelly-sandy surface layer with many fine and medium roots. While subsoil layers had increasing gravel content, root penetration was still extensive. Fine and medium size roots were observed at a depth of 54+ inches. The underlying substratum (at 39 inches) has rounded pebbles, gravels and cobbles which attained their smooth condition when ancient lake levels occurred at this elevation. This soil is unlike the mapped Umpa series, and unlike the Jorge-Tahoma soil types due to the wave-influenced substratum. This is an unnamed inclusion (XXX). For slopes 16 to 30%, this soil rates as Class 4 and Class 6 for slopes 0 to 6%, as per Table 4 of the land capability system.



Photo 6 – View northwest side of residence (dark building at right), where the natural slope was artificially steeped by road construction (circa 1970s). For land capability purposes, the natural slopes are relied upon. The natural slope remains to the right of the tree and boulders, about 17% in this vicinity. Such slope qualifies this portion of the property as Class 4 for slopes 16 to 30%. The boulders in foreground presumably excavated when residence was constructed.

Attachment C  
October 2023 Land Capability Challenge Recommendation Map



**LEGEND**

- ⊗ SET 5/8" REBAR L.S. 5886
  - FOUND MONUMENT AS NOTED
  - ⊕ DIMENSION POINT ONLY
  - ⊗ TREE, DIAMETER AND SPECIES
  - ⊙ STUMP DIAMETER
  - ⊕ UTILITY BOX, LABEL & TOP ELEVATION
  - △ CONTROL POINT AND ELEVATION
  - + SPOT ELEVATION IN FEET ABOVE 6300
  - ( ) DENOTES RECORD PER D MAPS 17
  - ⊗ ROCK BANK PROTECTION
- TREE SPECIES
- P - PINE
  - C - CEDAR
  - F - WHITE FIR
  - LP - LODGE POLE PINE
  - CW - COTTONWOOD
  - W - WILLOW
  - ST - STUMP



**TOTAL PARCEL AREA APN 093-120-010 = 11, 296 S.F. OR 0.25 ACRES**

**EXISTING COVERAGES ON SITE**

<b>A.C. DRIVE</b>	<b>= 659 S.F.</b>
<b>BEAR BOX</b>	<b>= 18 S.F.</b>
<b>FRONT STAIRS &amp; DECK WITH H.R.</b>	<b>= 44 S.F.</b>
<b>DIRT PATHS</b>	<b>= 128 S.F.</b>
<b>RESIDENCE</b>	<b>= 1579 S.F.</b>
<b>REAR DECK WITH H.R.</b>	<b>= 280 S.F.</b>
<b>STEPPING STONE PATH</b>	<b>= 11 S.F.</b>
<b>EXISTING ON SITE COVERAGE =</b>	<b>2719 S.F.</b>
<b>EXISTING OFF SITE COVERAGE</b>	<b>=</b>
<b>A.C. DRIVEWAY</b>	<b>= 191 S.F.</b>

Test Pit no. 1 - This location is representative of the parcel, which has two slope classes (0 to 16% and 16 to 30%). The soil is a gravelly loamy coarse sand in the upper part and very gravelly sandy loam to loamy coarse sand in the lower part (somewhat excessively drained, HSG-A). No bedrock was encountered within the 54-inch soil pit depth. Soil has minimal in-situ formation (Bw horizon) and unlike the Jorjee-Tahoma complex map unit. In particular, the subsoil rocks are rounded from ancient wave action - these reworked colluvial deposits are not included in the Jorjee-Tahoma soil concepts. As such, the observed soil are unnamed soil types (XXX). Where the slopes are 16 to 30%, the soil qualifies as Class 4 as per Table 4 of Land-Capability Classification of the Lake Tahoe Basin, California-Nevada (R.G. Bailey, 1974). Where slopes are 0 to 16%, the soils qualify as Class 6.

TRPA Land Capability Challenge for  
 LCAP2023-0197; APN 093-120-010  
 81 Observation Drive  
 Tahoe City (Dollar Point), Placer County, Cal.

Field Investigation: September 07, 2023  
 Data Analysis: October 26, 2023  
 Conducted By: P.Scoles (Soil Scientist)

**TOPOGRAPHIC & COVERAGE SURVEY**  
**FOR**  
**ARI & JENNI BACKHOLM**  
**BEING LOT 191, DOLLAR POINT UNIT NO. 3**  
**BOOK H MAPS 5, PLACER COUNTY CALIFORNIA**  
**PLACER COUNTY APN 093-120-010**  
**A PORTION OF SEC. 33, T.16N., R.17E., M.D.B. & M.**  
**SITE ADDRESS: 81 OBSERVATION DRIVE, TAHOE CITY**  
**SCALE 1" = 8' JULY 2022 DRN. T.C.B.**

NOTES: REFER TO DOCUMENT RECORDED AT BOOK 981 PAGE 93 FOR C.C. & R.s. SETBACKS WITHIN THE DOCUMENT ARE FRONT 20', SIDE SETBACKS 10', REAR 10'.

REFER TO DOCUMENT RECORDED IN BOOK 813, PAGE 389 FOR C.C. & R.s THAT AFFECT A PARCEL DEEDED BY ESTHER J. DOLLAR TO SIERRA NEVADA LAND CO.

FINAL DETERMINATION OF EXISTING AND ALLOWABLE COVERAGE IS MADE THROUGH A TRPA OR COUNTY SITE ASSESSMENT.

A 3 : 1 OVERHANG COVERAGE REDUCTION HAS BEEN APPLIED TO UNENCLOSED STRUCTURES OVER 3' ABOVE GRADE.

THE MINIMUM FRONT SETBACK SHALL BE 45' FROM THE CENTERLINE OF THE ABUTTING TRAVELED WAY, OR 20' FROM THE PROPERTY LINE, WHICHEVER IS MORE RESTRICTIVE. SIDE SETBACKS SHALL BE A TOTAL OF 15' WITH A 5' MINIMUM PER SIDE. THE REAR SETBACK SHALL BE 10'. ANY SETBACKS DETERMINED BY THE T.R.P.A. WHICH ARE MORE RESTRICTIVE, SHALL APPLY.

SETBACKS ARE GENERAL AND SHOULD BE VERIFIED WITH THE APPROPRIATE AGENCIES PRIOR TO DESIGN OR CONSTRUCTION.

BOUNDARY IS BASED ON RECORD INFORMATION AND DOES NOT REPRESENT A COMPLETE FIELD SURVEY.

DATUM IS BASED ON GOOGLE EARTH AND NOT INTENDED TO REPRESENT PRECISE ELEVATIONS ABOVE SEA LEVEL.

ONLY TREES 14" & OVER IN DIAMETER AT CHEST HEIGHT, WERE LOCATED.

SNAGS 14" & OVER, SOLID STUMPS 16" & OVER AND BOULDERS 4" & OVER WERE LOCATED, AS OBSTACLES TO CONSTRUCTION.

ONLY VISIBLE UTILITIES HAVE BEEN LOCATED AND IDENTIFIED PER LABEL ON LID. SURVEYOR IS NOT RESPONSIBLE FOR SUBGRADE IMPROVEMENTS NOT SHOWN.

THIS DRAWING IS THE PROPERTY OF TAHOE BASIN LAND SURVEYING AND MAY NOT BE REPRODUCED OR USED WITHOUT OUR CONSENT.

THIS DRAWING HAS BEEN PREPARED WITH THE BENEFIT OF A TITLE REPORT PREPARED BY F.A.T.C.O. TAHOE CITY OFFICE ORDER # 3103-6705100 DATED SEPTEMBER 30, 2021.

Attachment D  
TRPA Contractor's Soil Descriptions (1 test pit)

**81 Observation Drive (Ari Backholm Parcel; APN: 093-120-010);  
Tahoe City (Dollar Point), Placer County, Calif. – Test Pit 1 (TP-1)**



**Photo A – View of soil profile showing bottom depth of 54 inches. Fine and medium root penetration to bottom. No indication of seasonal water table.**

**Photo B – View southwest at Test Pit 1, located 17 feet southeast of residence, 35 feet west of east property line and 15 feet north of south property line. Pit location is representative of parcel and has a 15% slope. The soil layers are composed of mixed colluvium over bedrock (not observed). Land surface has 5 to 10% surface stone and boulders (floaters).**

Layer	Depth (In.)	Color (moist)	Soil Properties / Features
Oi	0 to 0.5	Very dark brown	Duff composed of pine needles, shrub twigs and leaves; abrupt boundary.
A1	0.5 to 10	Very dark brown (10YR 2/2)	LOAMY COARSE SAND, weak, fine granular structure, 10 to 15% gravels, soft, very friable; non-plastic, non-sticky, no redox features, many fine and few medium roots; many fine interstitial pores, abrupt boundary.
AB	10 to 27	Dark brown (10YR 3/3)	Gravelly LOAMY COARSE SAND, weak, fine subangular blocky structure, 15 to 20% gravels; no clay films, soft, very friable; non-plastic, non-sticky, no redox features, many fine and medium roots, few coarse roots; many medium interstitial pores, clear boundary.
Bw	27 to 39	Dark brown (10YR 3/3)	Very gravelly SANDY LOAM, weak, fine subangular blocky structure, 30 to 40% gravels, 40% cobbles, no clay films; slightly hard, friable; non-plastic, non-sticky, no redox features, common fine and medium roots, few coarse roots; many medium interstitial pores, abrupt boundary,
2C	39 to 54+	Very dark grayish brown (10YR 3/2)	Very gravelly LOAMY COARSE SAND, single grain; 30 to 40% gravels, 20% cobbles and stones; slightly hard, friable; non-plastic, non-sticky, no redox features, few fine and medium roots; many medium interstitial pores.

Soil does not match 1974 soil survey (Umpa very stony sandy loam, 15 to 30% slopes, UmE). Soil characteristics also do not resemble the geographically associated Jorge-Tahoma very stony, sandy loam, which has an argillic horizon (clay accumulation). Soil conditions also lack silica-cemented layer (Tallac series). Substratum contains rounded cobbles, gravels and pebbles from ancient shoreline. This unnamed soil designated (XXX) is somewhat excessively drained (HSG-A). In accordance with Land-Capability Classification of the Lake Tahoe Basin (Bailey, 1974), XXX soils with slopes 16 to 30% qualify as Class 4 and slopes 0 to 16% qualify as Class 6.