TAHOE REGIONAL PLANNING AGENCY

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Stateline, NV 89449-5310

Location
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Stateline, NV 89449

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STAFF REPORT

Date: February 23, 2023

To: TRPA Hearings Officer

From: TRPA Staff

Subject Dallosta Land Capability Challenge, No Address, El Dorado County, Assessor's Parcel Number (APN): 017-061-003, TRPA File No.: LCAP2022-0281

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. This challenge reduces the land capability of Class 1A (Cagwin-Rock outcrop complex, 30 to 50% slopes) and Class 1B and adds Class 2 (Cagwin-Rock outcrop complex, 15 to 30% slopes), Class 4 (unnamed soil, 16 to 30% slopes and Class 6 (unnamed soil, 0 to 16% slopes). The amount of Rock outcrop-Toem complex remains relatively unchanged. This change is itemized on the table on Page 3 and depicted on a map included in Attachment C.

Background: The parcel being challenged is currently mapped having Class 1A and Class 5 soils, and secondarily Class 1b soil (as per TRPA, tributary of Rubicon Creek). The Soil Conservation Service Soil Survey of Tahoe Basin Area, California-Nevada (Rogers, 1974) identifies the Class 1A soils as Cagwin-Rock outcrop complex, 30 to 50% slopes (CaF) and Rock outcrop-Toem complex, 30 to 50% slopes (RtF). In addition, the Class 5 soils are mapped as Jabu sandy loam, moderately fine subsoil variant, 0 to 9% slopes (JgC). The CaF and RtF soil types are derived from colluvium atop granitic residuum. The Jabu soil is composed of mixed sediments and ancient lake deposits occurring in low areas and terraces. The vicinity of the project has a geomorphic mapping of C-2 for Steep strongly dissected lands (high hazard lands lands). The subject parcel is bordered by U.S.F.S. and Rubicon Mutual Water Company land to the west, California Tahoe Conservancy land to the south, Highway 89 to the east, and private land to the north. The parcel lacks any improvements, although there are subtle remnants of former logging roads (likely greater than 60 years old and entirely revegetated).

A June 06, 2004 Land Capability Verification identified the site having Class 1A (Cagwin 30 to 50% slopes and Rock outcrop-Toem complex, 30 to 50% slopes), and Class 1B (Stream Environment Zone) in several drainages oriented south to north (Attachment B). A land capability challenge (LCAP2022-0306) was filed with TRPA on April 14, 2022. The subject parcel has a surveyed size of 272,947 sf. (6.266 acres). Specifically, a detailed soil investigation was conducted for this land capability challenge by TRPA contractor Phil Scoles of Terra Science, Inc. on August 27, 2022. For that investigation, four auger holes were examined and described by the soil scientist. The property owner, Stephen Dallosta, was also present during the investigation and assisted in locating property corners and providing site history. Site photographs are included in Attachment C and the soil profile descriptions are presented in Attachment D.

Findings: The subject parcel is a densely forested hillside having 10 to greater than 45% slopes. The forest is dominated by white fir, sugar pine, Jeffrey pine, and lesser amounts of incense cedar and lodgepole pine. The understory vegetation is somewhat sparce due to the dense tree cover (typically 70 to 100% canopy cover). The understory vegetation contains fir and pine saplings, trailing chinquapin, snowberry, wild currant, bracken fern, thimbleberry, grasses and forbs. The forest floor is covered with 2 to 5 inches of partially decomposed fir and pine needles, twigs and branches (Oi horizon). There are 5 to 10% surface stones and boulders; however, a few areas have a greater concentration of boulders. The underlying bedrock is granodiorite that has a mantle of colluvium and boulders. Some of the larger boulders are likely remnants of ancient debris flows, while the sandy interstitial material is a combination of colluvium and granodiorite residuum. The extreme northeast corner of the parcel contains a large rock outcrop, that is properly mapped as Rock outcrop-Toem complex, 30 to 50% slopes. If vegetated, the gravelly, loamy sand soil atop this outcrop is less than 20 inches deep.

The hillside generally slopes north to northeast, and it is dissected by four drainages. The smaller drainages have intermittent flow and originate onsite as hillside hollows. The larger drainages – near the east and west property lines – have perennial flow and originate offsite. All of the drainage merge beyond the north property line and become a tributary to Rubicon Creek. All of the drainages, with or without a channel, qualifies as Stream Environment Zone (SEZ) on the basis of primary (key) plant community. In particular, these features and associated riparian fringe are dominated by mountain alder, willow and white fir (Type 9 Broadleaf-Low elevations plant community). Other plants present in the SEZs include thimbleberry, scouring rush, cow parsnip, sedges, small-fruited bulrush, and field horsetail. The soil within the SEZ was not investigated in detail, but informally sampling found gravelly loam soils with chroma 3 matrix colors and 2 to 10% redoximorphic concentrations in the upper 20 inches. Such soil characteristics are consistent with Gravelly Alluvial Land (Gr) described in the 1974 soil survey. In addition to the primary (key) plant community, the SEZs exhibited evidence of seasonal flowing water, and topographic change from upland to SEZ. All of the SEZ drainage qualify as Class 1b. NOTE: While the SEZ features are too small to be mapped by the 1974 Soil Survey, they were previously identified on the 2004 LCV map. The TRPA land capability contractor refined the SEZ boundaries using the applicant's topography map with 2-foot contour interval.

This land capability challenge utilized four auger holes – one in the northwest corner of the parcel, one in the south-center, one in the southeast corner, and one in the east-center. These locations are typical of soil conditions on slopes ranging from 10 to 30%, which composes about 35% of the parcel. The remainder of the property has either slopes greater than 30% (not sampled since automatically Class 1A or Class 2) or qualify as SEZ (not sampled if wetland/riparian plant community present). The four auger hole locations were relatively undisturbed (albeit past forest harvesting, greater than 50 years ago). The east edge of the parcel has a sliver of created slopes that compose the embankment below Highway 89. The historic soil condition was utilized for this land capability challenge.

The observed soil conditions at all four auger holes share many similar characteristics. All are somewhat excessively drained soils with soil hydrologic group A (loamy coarse sand textures, HSG-A). Only one location had a portion of the soil profile with sandy loam texture. All of the profiles lack any kind of root-restricting layer (such as a silica-cemented layer associated with the nearby Tallac series), or seasonal high water table in the upper 48 to 58 inches. The profiles also show a minor degree of in-situ soil development and deeper root penetration (48 to 58 inches below the surface). The soils also contain relatively few gravels (5 to 15%), and cobbles.

From a soil genesis perspective, the observed soils are a deeper version of the Cagwin series (which is shallower than 39 inches). The 1974 Soil Survey of the Lake Tahoe Basin acknowledged the presence of deeper soils (inclusions) within the Cagwin map units. Mapping constraints and site-specific topography maps prevented such inclusions identified as separate map units. In comparison to the Elmira and Gefo soil series (located lower in the Rubicon Creek watershed), the observed soils occurs on steeper slopes, and show in-situ iron translocation (cambic horizon). The Elmira and Gefo series lack these characteristics. Lastly, the unnamed soil differs from the Jorge and Tahoma soils, which formed from volcanic parent materials that degrade into small particles sizes (silts and clays). As such, the onsite soils do not match known soil series described in the (hence they are considered unnamed, XXX soils). The land capability classes for the XXX soils were determined from Page 20, Table 4 of Land-Capability Classification of the Lake Tahoe Basin, California-Nevada (Bailey, 1974). The following table summarizes the changes in land capability and allowable land coverage as concluded by this land capability challenge.

Land Capability District	**Slope Class (Range)**	**2004 TRPA Land Cap. Verif. Area (sq. ft.)** (1)	**2023 Land Cap. Challenge Area (sq. ft.)**	**Net Change Total Area (sq. ft.)**
Class 1A (CaF)	30 to 50%	180,627	129,882	-50,745
Class 1A (RtF)	30 to 50%	15,763	20,029	+4,266
Class 1B (SEZ) (2)	Any slope	76,557	22,744	-53,813
Class 2 (CaE)	15 to 30%	0	5,883	+5,883
Class 4 (XXX)	16 to 30%	0	60,254	+60,254
Class 6 (XXX)	0 to 16%	0	34,155	+34,155
Total Parcel Area		**272,947** (1)	**272,947**	**0**

(1) Areas calculated from June 06, 2004 LCV map, using PDF digital measuring tools.

(2) The Class 1B consists of 2 intermittent drainages and 2 perennial drainages, dominated by mountain alder, willow, scouring rush, thimbleberry, sedge, field horsetail (qualifies as SEZ). Land capability challenge did not sample SEZ soils, since it met primary (key) vegetation indicator.

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. June 06, 2004 LCV Map and Feb. 2023 land capability challenge recommendation map
C. Site Photographs (August 28, 2022)
D. TRPA land capability contractor soil profile descriptions

BAILEY LAND CAPABILITY CHALLENGE FINDINGS

Site Information	
Assessor's Parcel No. (APN):	017-061-003
TRPA File No. / Submittal Date:	LCAP2022-0305 / April 14, 2022
Owner or Applicant:	Stephen J. Dallosta Trust; 6852 Laird Road Loomis, CA 95650
Site Address:	Highway 89, Rubicon Bay (Tahoma), CA 96142; T. 13N, R. 17E, NE1/ 4 of NW 1/4 of Sec. 09.

Environmental Setting	
Bailey Soil Mapping Unit / Hydrologic Soil Group (HSG) / Land Class / Geomorphic Hazard Unit	Cagwin-Rock outcrop complex, 30 to 50% slopes (CaF, HSG-C), Rock outcrop-Toem complex, 30 to 50% slopes (RtF, HSG-C), and Jabu sandy loam, moderately fine subsoil variant (JgC, HSG-B) / C-2 Steep strong dissected lands (high hazard lands as per 1974 Bailey Land Capability Report)
Landform and Soil Parent Material	Hillside capped with ancient debris flow and colluvium over granodiorite bedrock.
Slopes and Aspect	10 to greater than 45% slopes / slopes to north by northeast.
Elevation and Datum	6280 (at SEZ along north property line) to 6458 feet in southwest corner (from Turner & Associates Land Surveying, February, 2022). NGVD 29 Datum
Rock Outcrops and Surface Configuration	Rock outcrops present in extreme northwest corner (bordering Highway 89), many large surface boulders in northwest portion of parcel.
SEZ and Hydrology Source	Yes. 2 intermittent drainages, 2 perennial drainages. SEZ dominated by mountain alder, willow, scouring rush, thimbleberry, currant, sedges, grasses and forbs. SEZ sustained by groundwater discharge and minimal runoff from Highway 89.
Vegetation	Upland only: Sugar pine, Jeffrey pine, white fir, incense cedar, fir and pine saplings, chinquapin, trailing snowberry, currant, thimbleberry, bracken fern, grasses and forbs.
Ground Cover Condition	Good (vegetation 30 to 40%, duff 60 to 70%)
Site Features	Forested hillside dissected by intermittent and perennial, north sloping drainages. No structures.

Field Investigation and Procedures	
TRPA Land Capability Consultant and Address	Phil Scoles (Soil Scientist), Terra Science, Inc. Post Office Box 2100; Portland, OR. 97208 (503) 274-2100; pscoles@terrascience.com
TRPA Contractor Field Dates	August 27, 2022
SEZ Mapping / NRCS Hydric Soil	Yes. 2006 Soil survey identifies Oxyaquic Cryorthents-Aquic Xerorthents-Tahoe complex, 0 to 15% slopes, which is similar to Gravelly alluvial land (Gr, Class 1B).
Number of TRPA Soil Pits or Auger Holes and Description Depth	Four auger holes dug to 48 to 58 inches (full descriptions), plus additional confirmatory auger holes.
Areas Not Examined	Hillside areas having slopes greater than 35 to 40%.

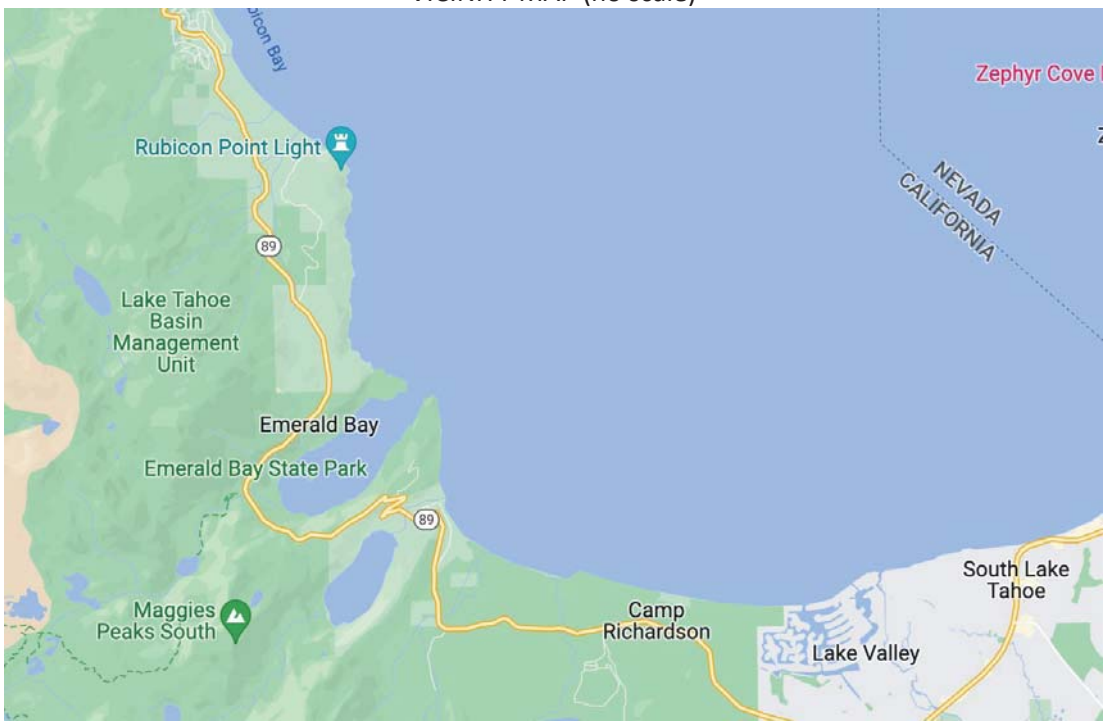
TRPA Findings	
2006 Soil Survey Map Unit[1]	Cassenai gravelly loamy coarse sand, 5 to 15% slopes and 15 to 30% slopes (map units 7421 and 7422, Class 6 and Class 4, respectively), and Oxyaquic Cryorthents-Aquic Xerorthents-Tahoe complex, 0 to 15% slopes (map unit 9011, Class 1B).
TRPA Contractor Soil Mapping Determination and Rationale	Soils across the most of the parcel are similar, except for slope class. These soils do not match any series described in the 1974 soil survey, hence they are unnamed (XXX). The soil have loamy coarse sand textures (HSG-A) and they lack a subsurface restricting layer. These deep, somewhat excessive drained soils lack bedrock and grus in the upper 40 inches, which is necessary for the Cagwin series. The SEZ drainage features that dissect the parcel are Class 1B.
Slope Determination	10 to 16% slopes and 16 to 30% slopes. Any slopes for SEZ area. See TRPA land capability map using topographic survey map from Turner & Associates Land Surveying (Feb. 2023, Attach. C).
TRPA Conclusion(s)	Class 1b (SEZ); Class 1A for shallow soils and 30 to 50% slopes; Class 4 unnamed soil (XXX) for 16 to 30% slopes; Class 6 unnamed soil (XXX) for 10 to 16% slopes.
Applicable Area	Entire site (see map, Attachment C, Feb, 2023)

[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)

LAND CAPABILITY
Class 1A (lime)
Class 2 (olive)
Class 5 (tan)

DALLOSTA
TRUST PARCEL
APN 017-061-003

Hwy 89, Rubicon
Bay, El Dorado
County, Cal.

Attachment B

June 06, 2004 LCV Map and Feb. 2023 land capability challenge recommendation map

A.P.N.
017-061-051

N 00°08'00" E 107.34'

N 89°48'00" E 176.11'

N 63°41'00" W 316.30'

A.P.N.
017-061-061

FLOWLINE
DRAINAGE
(TYPICAL)

N 71°36'00" W 460.00'

N 53°56'00" W 682.50'

A.P.N.
017-061-041

N 58°28'00" E 153.00'

R=365.00'
D=3°24'19"
L=21.69'

R=460.00'
D=4°03'59"
L=321.67'

STATE HIGHWAY 89

36" CMP

Surface flow

1a Cat

1b SEZ

20' SETBACK

1a R+F

1" = 30'

0 30 45 60 90

Jed Hammer
TRPA COPY
6-16-04

GEND

	ASPEN	△	TOPO STATION
	CEDAR		
	COTTONWOOD	77 7	SPOT ELEVATION
	FIR		
	JUNIPER		
	LODGE POLE	IP	IRON PIPE
	PINE	CIP	CAPPED IRON PIPE
	OTHER TREE	(R)	RECORD
	MARKED TO BE CUT	(M)	MEASURED
	EDGE OF PAVEMENT		
	ASPHALTIC CONCRETE		
	SANITARY SEWER MANHOLE		FOUND 6" X 6" CONCRETE RIGHT OF WAY MONUMENT, OR AS NOTED
	DRAIN INLET		
	POWER POLE		
	GUY WIRE		SET 3/4" IP W/PLUG PLS 4029 OR SET AS NOTED
	TOP OF WALL		
	BOTTOM OF WALL		
	LANDSCAPE		NOTHING FOUND OR SET

D AREA

ACRES

ES

OPERTY LINE INFORMATION SHOWN HEREON IS
ECORD DATA AND DOES NOT REPRESENT A
RY SURVEY.

ORK FOR THIS SURVEY WAS PERFORMED
-3' OF SNOW ON GROUND.

MARK _____

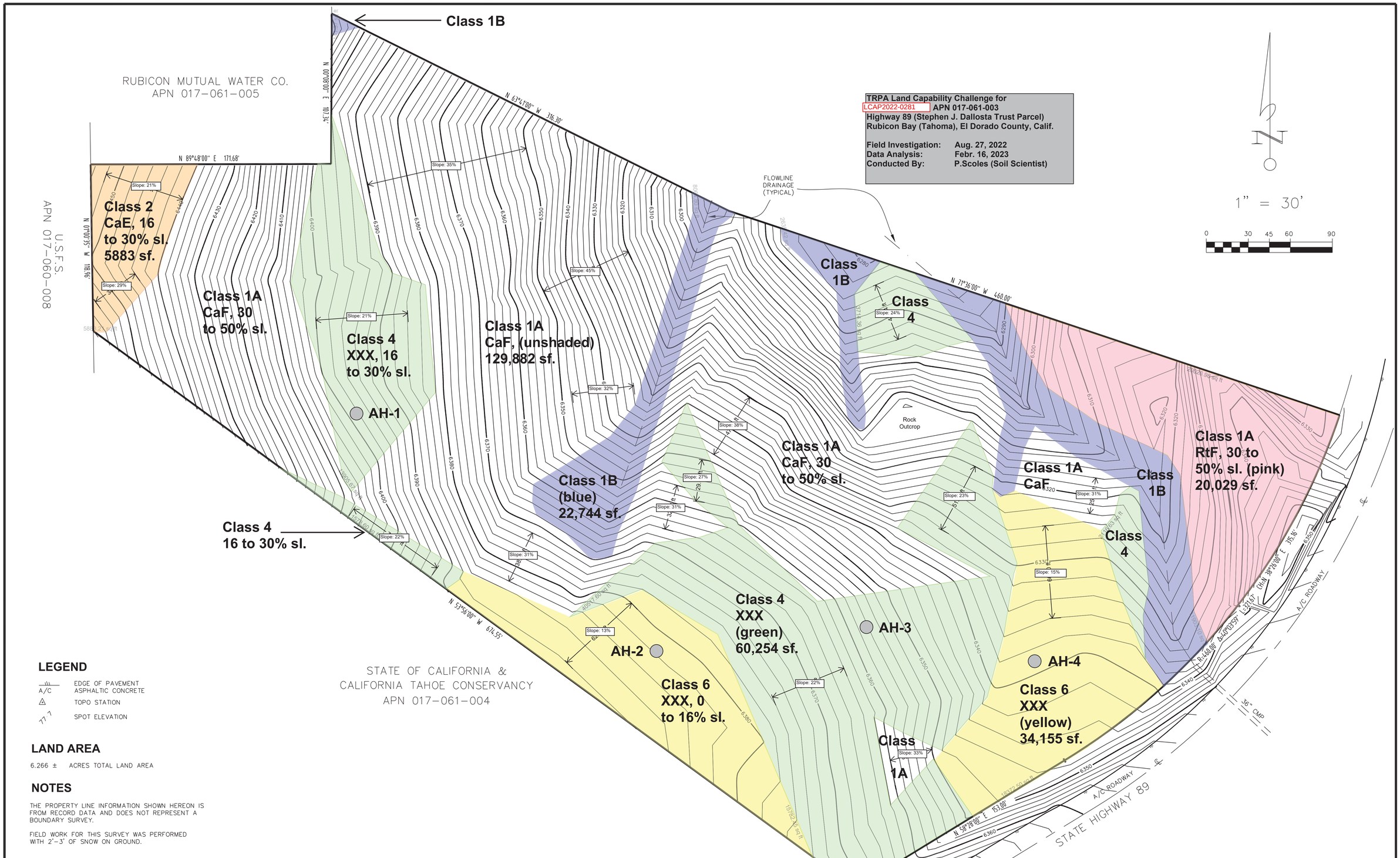
ACAD NOTES
FILE NAME PROJECTS\03431.DWF

TOPOGRAPHIC SURVEY
A POR. OF THE NE 1/4 OF THE NW 1/4, SEC. 9

DESIGN		A.P.N. 017-061-031	DATE 12/003
DRAWN	G.S. PHILLIPS	LOT N/A BLOCK N/A	
		SUBDIVISION	SHEET

TURNER & ASSOCIATES, INC.
LAND SURVEYING

AGENDA ITEM NO. VI-A



BENCH MARK
NUMBER _____ MARK _____
ELEVATION 6389.39' DATUM NGVD 29
DESCRIPTION CAL-TRANS BRASS
DISK DESIGNATION ED 89 20.46

ACAD NOTES
FILE NAME 20300 TOPO UPDATE NO SLOPE.DWG
SCALE
HORIZ. 1"=30' VERT. 2' C.I.

TOPOGRAPHIC SURVEY

PARCEL PER DOC. NO. 2019-0001714, TRACT 1 PER RS 038-007
A POR. OF THE NE 1/4 OF THE NW 1/4, SEC. 9 , T.13N., R.17E., M.D.M., APN 017-061-003
STATE HIGHWAY 89, EL DORADO COUNTY, CALIFORNIA

DESIGN	A.P.N. 017-061-003		DATE 02/22
DRAWN G.S. PHILLIPS/SW	LOT N/A	BLOCK N/A	
CHECKED	SUBDIVISION N/A		SHEET 1 OF 1
	ADDRESS STATE HWY. 89		
SUBMITTED	COUNTY EL DORADO		JOB NO 20300

TURNER & ASSOCIATES, INC.
LAND SURVEYING
(775) 588-5658
FAX (775) 588-9296
160 PINERIDGE - KINGSBURY GRADE
P.O. BOX 5067 - STATELINE, NEVADA 89449

Attachment C

Site Photographs (August 28, 2022)

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Stephen J. Dallosta Trust Parcel APN 017-061-003 **Highway 89, Rubicon Bay (Tahoma), Cal.**

Photo 1 – View at sample plot AH-1 located in southeast part of property. This vicinity has 16 to 30% slopes and 5 to 10% surface stones (Class 4, unnamed XXX soil). Upland forest dominated by sugar pine and white fir.

Photo 2 – View at sample plot AH-2 located south-center of subject parcel. This vicinity has 10 to 14% slopes (Class 6, unnamed XXX soil). Understory has 3 to 5 inch surface Oi horizon, and chinquapin/bracken fern ground cover.

Photo 3 – View at sample plot AH-3 located in southeast part of parcel. This vicinity has 20 to 25% slopes that dip toward the large SEZ dissecting the northeast property corner. Class 4, unnamed XXX soil with loamy coarse sand textures and no indication of seasonal high water table.

Photo 4 – View at sample plot AH-4 located on 10 to 15% slope (Class 6, unnamed XXX soil) that parallels the large SEZ dissecting the northeast property corner. This vicinity supports a mixture of white fir (and saplings), trailing snowberry, prostrate ceanothus, trail plant, and scattered forbs.

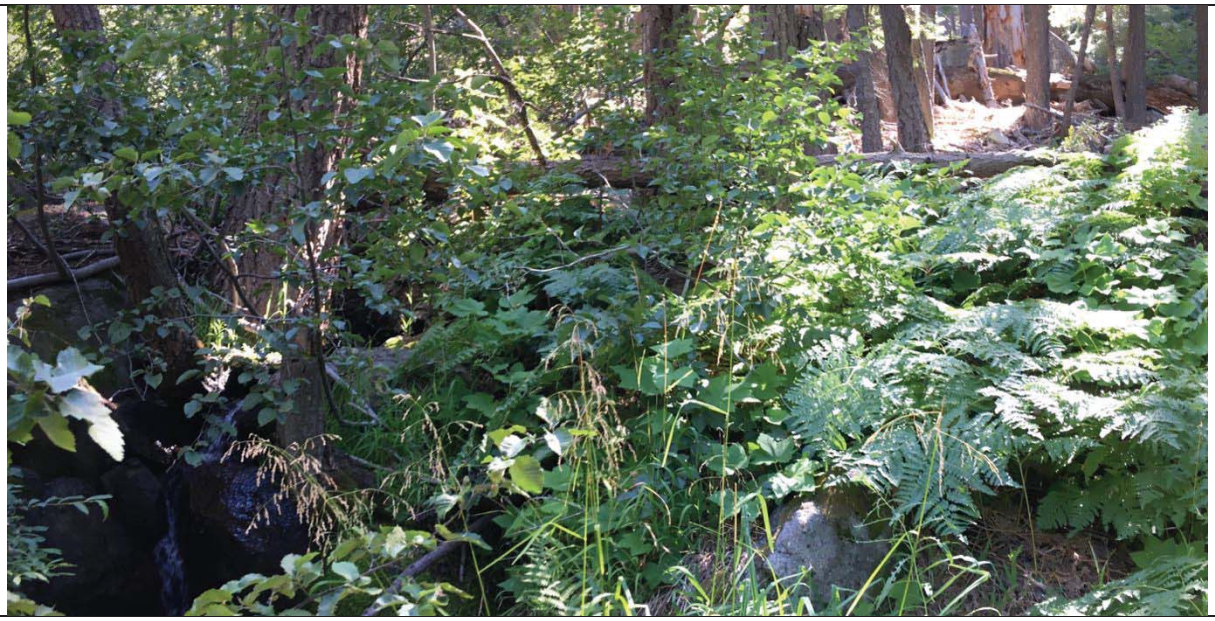

Photo 5 – View southeast (upslope) at largest SEZ situated in northeast corner of parcel. This perennial drainage originates offsite in D.L. Bliss State Park and flows along interface between hillside and rock outcrop (RtF) that defines the extreme northeast corner of parcel. Rocky drainage with small pools.

Photo 6 – View to south (upslope) at narrow, short reach SEZ located in northeast part of parcel. SEZ vegetation dominates the bottom of the drainage, as well as the side slopes of the drainage. This drainage has intermittent flow and non-channelized bed. It connects the largest SEZ immediately north of parcel.

Photo 7 – View north (downslope) at upper end of SEZ situated in north-center of subject parcel. The SEZ is dominated by mountain alder and willow, with horsetail, sedges and ferns in understory. Surrounding upland support sugar pine, white fir, incense cedar, chinquapin, thimbleberry, bracken fern and forbs.

Photo 8 – View to west (upslope) in northwest portion of parcel. This vicinity has 20 to 40% slopes and a cluster of large boulders and shallow soils. Such area qualifies as Class 1A and Class 2.

Attachment D

TRPA land capability contractor soil profile descriptions

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Stephen J. Dallosta Trust Parcel (APN: 017-016-003);
Highway 89, Rubicon Bay, El Dorado County, Cal. – Auger Hole #1 (AH-1)

View of soil profile showing bottom depth of 58 inches.	Soil Properties / Features		
	Layer	**Depth (In.)**	**Color (moist)**
	Oi	0 to 3	Partially decomposed fir and pine needles and twigs; abrupt boundary.
	A	3 to 8	Dark brown (7.5YR 3/3) loamy coarse sand, very dark brown (7.5YR 2.5/3) moist; moderate fine granular structure; loose, very friable, nonsticky and nonplastic; many very fine to fine roots; many fine interstitial pores; 5% gravel; abrupt boundary.
	Bw1	8 to 16	Brown (7.5YR 4/4) sandy loam, dark yellowish brown (10YR 4/4) moist; weak fine granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine to fine roots, common medium roots, many fine interstitial pores; 10% gravel; clear boundary.
	Bw2	16 to 37	Dark yellowish brown (10YR 4/6) sandy loam, dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine and many medium roots, few coarse roots; many fine interstitial pores; 10 percent gravel; clear boundary.
	C	37 to >58	Dark yellowish brown (10YR 4/4) loamy coarse sand, dark yellowish brown (10YR 3/4) moist; single grain (structureless); soft, friable, nonsticky and nonplastic; common fine roots, few and coarse medium roots; many fine interstitial pores; 15 percent gravel. Vegetation: 40% sugar pine, 10% white fir, 10% incense cedar, 5% saplings; 10% chinquapin, 5% bracken fern, 10% other forbs and grasses. NOTE: Colluvium over residuum. 5 to 10% surface stones and boulders. Soil is similar to Cassenai soil series (2006 soil survey update), but considered an unnamed inclusion in the 1974 soil survey. Below surface Oi horizon, the topsoil is about 5 inches thick and has loamy coarse sand texture. The subsoil has sandy loam textures that extends to 37 inch depth, then loamy coarse sand to greater than 58 inches. Roots penetration to 58 inches. No bedrock nor grus encountered. Soil does not match 1974 soil survey (Cagwin-Rock outcrop complex, CaF). Soil composition is a deeper version of the Cagwin soil series, which formed from colluvial materials atop granodiorite residuum. In accordance with the Land-Capability Classification of the Lake Tahoe Basin (Bailey, 1974), this unnamed soil (designated XXX) with slopes 15 to 30% qualifies as Class 4.

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Stephen J. Dallosta Trust Parcel (APN: 017-016-003);
Highway 89, Rubicon Bay, El Dorado County, Cal. – Auger Hole #2 (AH-2)

View of soil profile showing bottom depth of 55 inches.	Soil Properties / Features		
	Layer	**Depth (In.)**	**Color (moist)**
	Oi	0 to 3	Partially decomposed fir and pine needles and twigs; abrupt boundary.
	A	3 to 7	Brown (10YR 4/3) loamy coarse sand, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; loose, very friable, nonsticky and nonplastic; many very fine to fine roots; many fine interstitial pores; 5% gravel; abrupt boundary.
	Bw1	7 to 17	Dark yellowish brown (10YR 4/4) loamy coarse sand, dark brown (10YR 3/3) moist; weak fine granular structure; loose, very friable, nonsticky and nonplastic; many very fine to fine roots, common medium roots, many fine interstitial pores; 5% gravel; clear boundary.
	Bw2	17 to 34	Dark yellowish brown (10YR 4/6) loamy sand, dark yellowish brown (10YR 3/4) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common fine roots, many medium roots, few coarse roots; many fine interstitial pores; 10 percent gravel; gradual boundary.
	C	34 to >55	Dark yellowish brown (10YR 4/4) loamy sand, dark yellowish brown (10YR 3/3) moist; single grain (structureless); soft, very friable, nonsticky and nonplastic; common fine and medium roots, few coarse roots; many fine interstitial pores; 10 percent gravel. Vegetation: 40% white fir, 20% sugar pine, 5% incense cedar, 2% saplings; scattered chinquapin and bracken fern, forbs and grasses. NOTE: Colluvium over residuum. 5 to 10% surface stones and boulders. Soil is similar to Cassenai soil series (2006 soil survey update), but considered an unnamed inclusion in the 1974 soil survey. Below surface Oi horizon, the topsoil is about 4 inches thick and has loamy coarse sand texture. The subsoil has loamy sand textures that extends to 55inches. Roots penetration to 55 inches. No bedrock nor grus encountered. Soil does not match 1974 soil survey (Cagwin-Rock outcrop complex, CaF). Soil composition is a deeper version of the Cagwin soil series, which formed from colluvial materials atop granodiorite residuum. In accordance with the Land-Capability Classification of the Lake Tahoe Basin (Bailey, 1974), this unnamed soil (designated XXX) with slopes 0 to 16% qualifies as Class 6.

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Stephen J. Dallosta Trust Parcel (APN: 017-016-003);
Highway 89, Rubicon Bay, El Dorado County, Cal. – Auger Hole #3 (AH-3)

View of soil profile showing bottom depth of 56 inches.	Soil Properties / Features		
	Layer	**Depth (In.)**	**Color (moist)**
	Oi	0 to 2.5	Partially decomposed fir and pine needles and twigs; abrupt boundary.
	A	2.5 to 13	Brown (10YR 4/3) loamy coarse sand, dark brown (10YR 3/3) moist; weak fine granular structure; loose, very friable, nonsticky and nonplastic; many very fine to fine roots; many fine interstitial pores; <5% gravel; abrupt boundary.
	Bw1	13 to 27	Brown (10YR 5/3) loamy coarse sand, dark yellowish brown (10YR 3/4) moist; weak fine granular structure; loose, very friable, nonsticky and nonplastic; many very fine to fine roots, common medium roots, many fine interstitial pores; 5% gravel; clear boundary.
	Bw2	27 to 41	Brown (10YR 5/3) loamy coarse sand, dark yellowish brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, friable, nonsticky and nonplastic; common fine and medium roots, few coarse roots; many fine interstitial pores; 15 percent gravel; gradual boundary.
	C	41 to >56	Light olive brown (2.5Y 5/3) loamy coarse sand, olive brown (2.5Y 4/3) moist; single grain (structureless); soft, friable, nonsticky and nonplastic; few fine and medium roots; many fine interstitial pores; 10 percent gravel. Vegetation: 50% white fir, 10% sugar pine, 5% incense cedar, 1% saplings; 2% chinquapin, plus scattered forbs and grasses. NOTE: Colluvium over residuum. 10 to 15% surface stones and boulders. Soil is similar to Cassenai soil series (2006 soil survey update), but considered an unnamed inclusion in the 1974 soil survey. Below surface Oi horizon, the topsoil is about 10.5 inches thick and has loamy coarse sand texture. The subsoil has loamy coarse sand textures that extends to 56 inch depth. Roots penetration to 56 inches. No bedrock nor grus encountered. Soil does not match 1974 soil survey (Cagwin-Rock outcrop complex, CaF). Soil composition is a deeper version of the Cagwin soil series, which formed from colluvial materials atop granodiorite residuum. In accordance with the Land-Capability Classification of the Lake Tahoe Basin (Bailey, 1974), this unnamed soil (designated XXX) with slopes 0 to 16% qualifies as Class 6.

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Stephen J. Dallosta Trust Parcel (APN: 017-016-003);
Highway 89, Rubicon Bay, El Dorado County, Cal. – Auger Hole #4 (AH-4)

View of soil profile showing bottom depth of 48 inches.	Soil Properties / Features		
	Layer	**Depth (In.)**	**Color (moist)**
	Oi	0 to 4	Partially decomposed fir and pine needles and twigs; abrupt boundary.
	A	4 to 15	Dark yellowish brown (10YR 4/4) loamy coarse sand, dark brown (7.5YR 3/4) moist; weak fine granular structure; loose, very friable, nonsticky and nonplastic; many very fine to fine roots, few medium roots; many fine interstitial pores; 5% gravel; abrupt boundary.
	Bw1	15 to 30	Dark yellowish brown (10YR 4/4) loamy coarse sand, dark yellowish brown (10YR 3/4) moist; weak fine granular structure; loose, very friable, nonsticky and nonplastic; many very fine, fine and medium roots, few coarse roots, many fine interstitial pores; 5% gravel; clear boundary.
	Bw2	30 to 41	Yellowish brown (10YR 5/4) loamy coarse sand, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, friable, nonsticky and nonplastic; common fine and medium roots, few coarse roots; many fine interstitial pores; 10 percent gravel; clear boundary.
	C	41 to >48	Dark yellowish brown (10YR 4/6) coarse sand, dark brown (7.5YR 3/4) moist; single grain (structureless); soft, friable, nonsticky and nonplastic; few fine roots; many fine interstitial pores; 10 percent gravel. Vegetation: 30% white fir, 10% incense cedar, 5% lodgepole pine, 5% saplings; 20% trailing snowberry, 15% bracken fern, 10% chinquapin, 10% thimbleberry, forbs and grasses. NOTE: Colluvium over residuum. 5 to 10% surface stones and boulders. Soil is similar to Cassenai soil series (2006 soil survey update), but considered an unnamed inclusion in the 1974 soil survey. Below surface Oi horizon, the topsoil is about 11 inches thick and has loamy coarse sand texture. The subsoil has loamy coarse sand textures that extends to 48 inch depth. Roots penetration to 48 inches. Gravel or cobble refusal at 48 inches (not bedrock nor grus at 48 in.). Soil does not match 1974 soil survey (Cagwin-Rock outcrop complex, CaF). Soil composition is a deeper version of the Cagwin soil series, which formed from colluvial materials atop granodiorite residuum. In accordance with the Land-Capability Classification of the Lake Tahoe Basin (Bailey, 1974), this unnamed soil (designated XXX) with slopes 0 to 16% qualifies as Class 6.