TAHOE REGIONAL PLANNING AGENCY

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PO Box 5310
Stateline, NV 89449-5310

Location
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Stateline, NV 89449

Contact
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MEMORANDUM

Date: March 22, 2018

To: TRPA Hearings Officer

From: TRPA Staff

Subject: Donna J Jewel Surviving Spouse's Trust Land Capability Challenge;
735 Mildes Drive, Washoe County, Nevada
APN: 125-051-14; TRPA File #: LCAP2018-0032

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 changes Class 3 (UmE, Umpa very stony sandy loam, 15 to 30 percent slopes for 14,121 square feet) to Class 2 (XXX- 30 to 50 percent slopes for 678 square feet), Class 4 (XXX- 16 to 30 percent slopes for 6,119 square feet) and Class 6 (XXX- 0 to 16 percent slopes for 7,324 square feet)

Background: The Soil Conservation Service Soil Survey of Tahoe Basin Area, California-Nevada (Rogers, 1974) places the subject parcel in the UmE, Umpa very stony sandy loam, 15 to 30 percent slope mapunit. The updated Soil Survey of Tahoe Basin Area, California and Nevada (NRCS, 2007) maps this parcel as mapunit 7152, Jorge very cobbly fine sandy loam, 15 to 30 percent slopes, rubbly. This parcel has a geomorphic mapping of D2 for Streamcut volcanic flowlands, headlands (Moderate hazard lands). The Umpa soils formed in colluvium and residuum over andesitc bedrock. Umpa soils have a very stony sandy loam A-horizon, with gravelly sandy loam subsurface textures in the upper 40 inches. Hard, fractured andesite is typically encountered between 20 and 40 inches below ground surface. The Jorge soils formed in colluvium and residuum over andesitc bedrock. Jorge soils have a stony sandy loam A-horizon, with gravelly sandy loam or very gravelly sandy loam subsurface textures in the upper 50 inches. An argillic horizon is present at 33 inches to a depth of 50 inches, where a C horizon is present. Depth to weathered andesitic bedrock ranges from 50 to 100 inches.

A land capability challenge (LCAP2018-0032) was filed with TRPA on January 31, 2018. Gary R. Taylor is representing the owner, Jewell Surviving Spouse's Trust. Denny Churchill, Certified Professional Soil Scientist, examined site and prepared a land capability challenge on behalf of the owner. Three soil pits were excavated by Mr. Churchill on January 7, 2018. TRPA consultant, Marchel Munnecke, visited the site on February 14, 2018.

Findings: Three soil pits were excavated, and two were fully described. The soil pits are all very similar. Pit 1/7/18-1 was located east of the residence, pit 1/7/18-2 was located south and

downslope of the residence, and pit 1/7/18-3 was located southeast, and farthest downslope from the residence. These pits were hand excavated to 65 inches. The soil at pit 1/7/18-1 is characterized by gravelly loamy coarse sand textures to 50 inches. Below 50 inches is a gravelly fine sand. This soil is deep to very deep, somewhat excessively drained, and is a member of Soil Hydrologic Group A. The soil at pit 1/7/18-2 is characterized by loamy coarse sand textures to 16 inches, with gravelly loamy coarse sand textures from 16 to 65 inches. This soil is deep to very deep, somewhat excessively drained, and is a member of Soil Hydrologic Group A. The soil at pit 1/7/18-3 was not fully described but is very similar to pit 1/7/18-1. This soil is also deep to very deep, somewhat excessively drained, and a member of Soil Hydrologic Group A. The vegetation for all pits is similar and is a Jeffrey pine forest with greenleaf manzanita and snowbrush ceanothus dominant in the understory.

In the Soil Conservation Service Soil Survey of Tahoe Basin Area, California-Nevada (Rogers, 1974), the Umpa soils are moderately deep (20-40 inches over bedrock), and the Jorge and Tahoma soils are very deep (greater than 60 inches over bedrock). The Umpa, Jorge and Tahoma soils formed in volcanic parent material. The soils described on this parcel formed in granitic parent material and lack the finer textures and argillic soil development of the Jorge and Tahoma soils. These soils are also dissimilar to the Umpa soil because they are deeper than 40 inches to bedrock. These soils do not meet the criteria for any soil mapped in the Lake Tahoe Basin Soil Survey (1974), so they are an unmapped soil (XXX). These soils are like the Cassenai soils as described in the 2007 Soil Survey of the Tahoe Basin Area, California and Nevada. Based on slopes, the parcel is mapped as Class 2- XXX, Class 4-XXX, and Class 6- XXX.

The table below summarizes the changes in land capability as concluded by this land capability challenge.

Land Capability District	**Area (sq. ft.) 1974 soil survey**	**Area (sq. ft.) 2017 LCC**
Class 3 (UmE, 15 to 30 % slopes)	14,121	0
Class 2 (XXX, 30 to 50 % slopes)	0	678
Class 4 (XXX, 16 to 30 % slopes)	0	6,119
Class 6 (XXX, 0 to 16 % slopes)	0	7,324
Total Parcel Area	**14,121**	**14,121**

*Approximate area based on 1974 Soil Survey of Lake Basin Area, California and Nevada.

This memorandum was jointly prepared by TRPA consultant, Marchel Munnecke (Pyramid Botanical Consultants) and TRPA Associate Planner, Julie Roll. If you have questions on this Hearings Officer item, please contact Julie Roll, 775-589-5247, or email at jroll@trpa.org.

BAILEY LAND CAPABILITY CHALLENGE FINDINGS

Site Information	
Assessor's Parcel Numbers: (APN)	125-051-14
TRPA File No. / Submittal Date:	LCAP2018-0032 / 1/31/2018
Owner or Applicant:	Gary R. Taylor
Address:	PO Box 1715, Crystal Bay, NV, 89402

Environmental Setting	
Bailey Soil Mapping Unit[1] / Hydrologic Soil Group (HSG) / Land Class / Geomorphic Hazard Unit	UmE (Umpa very stony sandy loam, 15 to 30 percent slopes/ HSG C/ D2 (Streamcut volcanic flowlands, headlands lands, Moderate Hazard Lands)
Soil Parent Material	Colluvium over residuum from volcanic rock
Slopes and Aspect	13 to 34 percent; sloping to southeast
Elevation and Datum	7340 to 7372,
Rock Outcrops and Surface Configuration	None present
SEZ and Hydrology Source	NA
Vegetation	Jeffrey pine, greenleaf manzanita, huckleberry oak, and snowbrush ceanothus.
Ground Cover Condition	Good (vegetation 65%, duff/mulch 70 % cover)
Site Features	Residence, decks, skirted parking deck, concrete parking, and retaining wall.

Field Investigation and Procedures	
Consultant and Address	Denny M. Churchill, Consulting Soil Scientist 145 Cottonwood Court, Quincy, CA 95971
TRPA Staff Field Dates	February 14, 2018
SEZ Mapping / NRCS Hydric Soil	None present
Number of Soil Pits or Auger Holes and Description Depth	3 large hand dug pits, to 65 inches.
Additional or Repetitive TRPA Sample Locations	NA
Representative Soil Profile Descriptions	Denny Churchill's soil profile descriptions. Two pits were described, see attached.
Areas Not Examined	Residence, decks, skirted parking deck, concrete parking, and retaining wall.

TRPA Findings	
2006 Soil Survey Map Unit	7152, Jorge very cobbly fine sandy loam, 15 to 30

[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.

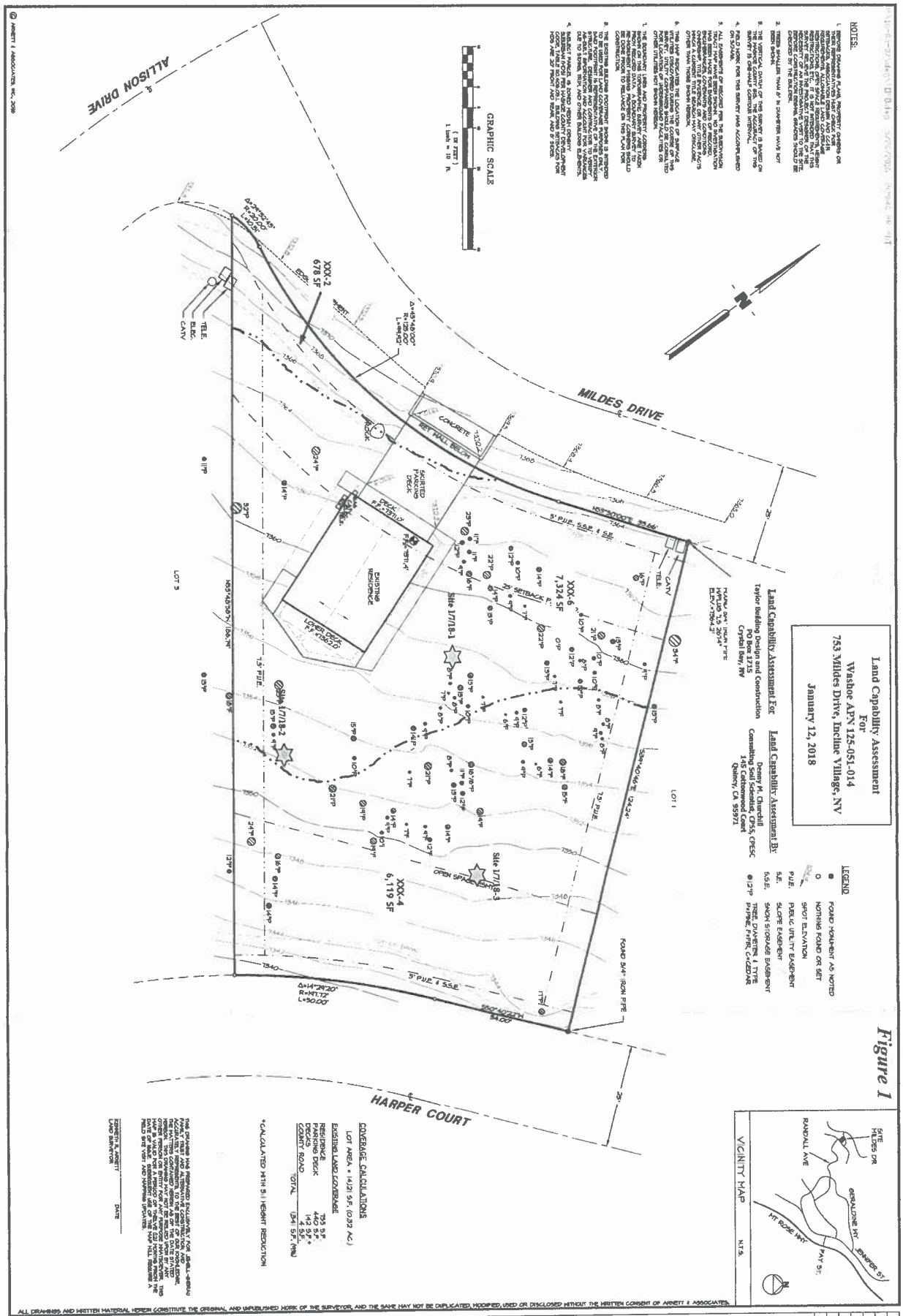
	percent slopes, rubbly (Mapped Class 4 for entire site).
Consultant Soil Mapping Determination and Rationale	Based on slopes, these soils are capability Class 2- XXX, Class 4-XXX, and Class 6- XXX. The Umpa, Jorge and Tahoma soils formed in volcanic parent material. The soils described on this parcel formed in granitic parent material and lack the finer textures and argillic soil development of the Jorge and Tahoma soils. These soils are also dissimilar to the Umpa soil because they are deeper than 40 inches to bedrock. These soils do not meet the criteria for any soil mapped in the Lake Tahoe Basin Soil Survey (1974), so they are an unmapped soil (XXX). These soils are similar to the Cassenai soils as described in the 2007 Soil Survey of the Tahoe Basin Area, California and Nevada. In the 2007 Soil Survey, the Cassenai soils are mapped just to the north of this parcel.
Slope Determination	13 to 34 percent slopes
TRPA Conclusion(s)	TRPA concurs with consultants' determination and rationale above.
Applicable Area	See parcel map for soil delineations.

Attachments:

A. Parcel map with soil map units delineated
B. Mr. Churchill's, soil profile description (2 pits).

Attachment A

Parcel map with soil map units delineated


Land Capability Assessment
For
Washoe APN 125-051-014
753 Mildes Drive, Incline Village, NV
January 12, 2018
Land Capability Assessment For
Taylor Building Design and Construction
PO Box 3715
Crystal Bay, NV
Land Capability Assessment By:
Denny R. Churchill
Consulting Soil Scientist, CPSS, CPESC
145 Cottonwood Court
Quincy, CA 95971
NOTES:
1. BEFORE DRAWING PLANS, PROPERTY OWNERS OR THEIR REPRESENTATIVES MAY CHECK FOR RECORDED EASEMENTS, RESTRICTIONS, AGREEMENTS, RIGHT OF WAY, ETC. AT THE WASHOE COUNTY RECORDER'S OFFICE. THIS MAP IS NOT INTENDED TO SHOW ALL EASEMENTS, RESTRICTIONS, ETC. IF IS NOT INTENDED THAT THIS MAP BE USED FOR THE PURPOSE OF THE LOCATION OF AN INTRUSIVE VISIT TO THE SITE. CONTRACTORS OBTAINING GRADING PERMITS SHOULD BE CHECKED BY THE BUILDER.
2. TREES SMALLER THAN 6" IN DIAMETER HAVE NOT BEEN SHOWN.
3. THE VERTICAL DATUM OF THIS SURVEY IS BASED ON SURVEY BY OHLHAUT CONTOUR INTERVAL OF 2'.
4. FIELD WORK FOR THIS SURVEY WAS ACCOMPLISHED ON 3/24/04.
5. ALL EASEMENTS OF RECORD PER TITLE REPORT NO. 0003-0000000 HAVE NOT BEEN SHOWN HEREON. NO SEARCH FOR EASEMENTS OF RECORD, OWNERSHIP TITLE EVIDENCE OR ANY OTHER FACTS THAN THOSE SHOWN HEREON, OTHER THAN VISIBLE EVIDENCE, WAS MADE BY THE SURVEYOR.
6. THIS MAP INDICATES THE LOCATION OF SURFACE EVIDENCE OF UTILITIES OBSERVED BY THE SURVEYOR. UTILITY COMPANIES SHOULD BE CONSULTED FOR OTHER UTILITIES NOT SHOWN HEREON.
7. THE BOUNDARY LINES AND PROPERTY CORNERS SHOWN HEREON ARE BASED ON A RECORD SURVEY AND MAP FOR THE DIVISION OF LAND INTO LARGE PARCELS, RECORDED MARCH 1, 1968 AS FILE NO. 68-0000000. THE BOUNDARY LINES AND PROPERTY CORNERS SHOWN HEREON ARE BASED ON A RECORD SURVEY AND MAP FOR THE DIVISION OF LAND INTO LARGE PARCELS, RECORDED MARCH 1, 1968 AS FILE NO. 68-0000000. THE BOUNDARY LINES AND PROPERTY CORNERS SHOWN HEREON ARE BASED ON A RECORD SURVEY AND MAP FOR THE DIVISION OF LAND INTO LARGE PARCELS, RECORDED MARCH 1, 1968 AS FILE NO. 68-0000000.
8. THE EXISTING BUILDING FOOTPRINT SHOWN IS INTENDED TO BE REPRESENTATIVE OF THE EXTERIOR DIMENSIONS OF THE BUILDING. THE EXISTING BUILDING FOOTPRINT SHOWN IS INTENDED TO BE REPRESENTATIVE OF THE EXTERIOR DIMENSIONS OF THE BUILDING. THE EXISTING BUILDING FOOTPRINT SHOWN IS INTENDED TO BE REPRESENTATIVE OF THE EXTERIOR DIMENSIONS OF THE BUILDING.
9. BEARINGS AND DISTANCES SHOWN HEREON ARE BASED ON RECORD DATA AND MAY VARY FROM FIELD MEASUREMENTS DUE TO SURVEY, ROW, AND OTHER BUILDING ELEMENTS.
10. BENCHMARK FOR THIS SURVEY IS WASHOE COUNTY DEVELOPMENT CODE, MONUMENT NO. 1, BEING A BRASS CAP MONUMENT SET IN CONCRETE, STAMPED "WASHOE COUNTY BENCHMARK NO. 1 1992" AND BEARS N 00°00'00" E 1.00' FROM THE CENTERLINE OF MILDES DRIVE AT THE INTERSECTION OF MILDES DRIVE AND ALLISON DRIVE. ELEVATION = 7364.42' (NAVD 88).
LEGEND
FOUND MONUMENT AS NOTED
NOTHING FOUND OR SET
SPOT ELEVATION
P.U.E. PUBLIC UTILITY EASEMENT
S.E. SLOPE EASEMENT
S.G.E. SNOW STORAGE EASEMENT
12"P TREE DIAMETER & TYPE P=PINE, F=FIR, C=CEDAR
GRAPHIC SCALE
(IN FEET)
1 inch = 10 ft.
ALLISON DRIVE
MILDES DRIVE
HARPER COURT
CONCRETE RET WALL BELOW
SKIRTED FOUNDATION DECK
DECK F.F. 7361.7
EXISTING RESIDENCE
LOWER DECK F.F. 7356.25
SETBACK
XXX-2 678 SF
XXX-6 7,324 SF
XXX-4 6,119 SF
Site 17/18-1
Site 17/18-2
Site 17/18-3
OPEN SPACE
TELE.
CATV
ELEC.
5' P.U.E. & S.S.E.
7.5' P.U.E.
LOT 3
LOT 1
FOUND 3/4" IRON PIPE
Δ=14°29'20" R=197.72' L=50.00'
Δ=29°52'43" R=2,000' L=1,043.16'
Δ=43°46'00" R=1,500' L=1,145.62'
N53°45'50"W 126.76'
S53°45'50"E 134.24'
N00°00'00" E 75.46'
S00°00'00" E 14.60'
COVERAGE CALCULATIONS
LOT AREA = 14,121 S.F. (0.32 AC.)
EXISTING LAND COVERAGE
RESIDENCE 1,925 S.F.
REMAINING DECK 1,403 S.F.
DRIVING 142 S.F.
COUNTY ROAD 4 S.F.
TOTAL 3,474 S.F. (25%)
*CALCULATED WITH 8:1 HEIGHT REDUCTION
THE DRAWING HAS PREPARED EXCLUSIVELY FOR JIBELL-BERAU ACCURATELY REPRESENTS, TO THE BEST OF OUR KNOWLEDGE, CONDITIONS AS THEY EXISTED ON THE DATE OF THE SURVEY HEREON. THIS DRAWING MAY NOT BE RELIED UPON BY ANY PERSON OTHER THAN THOSE FOR WHOM IT WAS PREPARED. THIS MAP IS VALID FOR A PERIOD OF THREE (3) MONTHS FROM THE FIELD SURVEY AND MAPPING UPDATES.
KENNETH R. ARNETT
LAND SURVEYOR
DATE
VICINITY MAP
N.T.S.
SITE
MILDES DR
RANDALL AVE
GERALDINE WY
MT ROSE HWY
HWY 50
JENNIFER ST
Figure 1
ALL DRAWINGS AND WRITTEN MATERIAL HEREIN CONSTITUTE THE ORIGINAL AND UNPUBLISHED WORK OF THE SURVEYOR, AND THE SAME MAY NOT BE DUPLICATED, MODIFIED, USED OR DISCLOSED WITHOUT THE WRITTEN CONSENT OF ARNETT & ASSOCIATES.
ARNETT & ASSOCIATES, INC.
LAND SURVEYORS & PLANNERS
SOUTH TAHOE (530) 541-3595
NORTH TAHOE (775) 831-5010
TRUCKEE (530) 550-0530
IMPERVIOUS COVERAGE SURVEY
LOT 2 BLOCK "A" INCLINE VILLAGE UNIT NO. 1-B
APN 125-051-14 WASHOE COUNTY NEVADA
REVISIONS
DATE 3/22/04
SCALE 1" = 10'
JOB 04-06-01
DRAWN JDT
FILE 04-06-01
SHEET TOPOSHW
SHEET 1 OF 1 SHEET

Attachment B

Mr. Churchill's, soil profile description (2 pits)

Land Capability Assessment
For
Washoe Parcel APN 125-051-014

January 12, 2018

INTRODUCTION

A soil investigation was conducted by Denny M. Churchill, Consulting Soil Scientist on Washoe County Parcel APN 125-051-014 on January 7, 2018. The objective of the study was to identify soils and other features and relate them to Land Capability which is administered by the Tahoe Regional Planning Agency (TRPA) for the purpose of impervious coverage regulation, as defined in Chapter 30 of the Code of Ordinances.

The parcel supports a single-family dwelling in a mixed residential setting on approximately 0.32 acres of land located at 753 Mildes Drive, Incline Village, NV. This work is advanced at the request of Mr. Gary R. Taylor, principle of Taylor Building Design and Construction, agents for the Jewel Surviving Spouses Trust, Ms. Paula Savage, Trustee.

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 or seismic analysis.

ENVIRONMENTAL SETTING

The parcel site is located at T16N R18E, N half of section 9. Vegetation is representative of Type 17-Mixed conifer and consists of white fir, Jefferey pine, greenleaf manzanita and snow brush. Slopes range from 15 to 40 percent on a south east aspect. There are no stream environment zones (SEZ) influencing this parcel.

Soils are shown on the TRPA GIS Data Base (http://gis.trpa.org/datadownloader/) as UmE- Umpa very stony sandy loam, 15 to 30 percent slopes. Geology (Lewis, 1988) is characterized as Kgr- Undivided granite and granodiorite. Baileys' geomorphic analysis (1974) shows the parcel as C1-Strongly dissected lands (high hazard lands).

METHODOLOGY

The parcel was surveyed based on slope delineations and landscape position. Three sites considered representative of the landform were chosen and excavations were placed to open and examine the soil profiles in detail. Due to similarities of all three sites, only two were fully described. 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 Arnett and Associates, Inc (May 20, 2016)

was available in the field for ground control and slope analysis. Information pertaining to land capability districts is shown on Figure 1.

FINDINGS

Referring to Figure 1, soils at site 1/7/18-1 are found to be deep, somewhat excessively drained, and members of Soil Hydrologic Group A. They can be characterized as having brown or yellowish brown gravelly loamy coarse sand top soil approximately 22 inches thick, over a yellowish brown subsoil to a depth of 65 inches. This soil is dissimilar to the Umpa very stony sandy loam because they are deeper than 40 inches, developed from granitic parent material, and are coarser textured.

Soils at site 1/7/18-2 are found to be deep, somewhat excessively drained, and members of Soil Hydrologic Group A. They can be characterized as having brown or yellowish brown gravelly loamy coarse sand top soil approximately 16 inches thick, over a yellowish brown subsoil to a depth of 65 inches. This soil is dissimilar to the Umpa very stony sandy loam because they are deeper than 40 inches, developed from granitic parent material, and are coarser textured.

Soils at site 1/7/18-3 were not fully described but were found to be deep, somewhat excessively drained, and members of Soil Hydrologic Group A. They can be characterized as having brown or yellowish brown gravelly loamy coarse sand top soil approximately 16 inches thick, over a yellowish brown subsoil to a depth of 65 inches. This soil is dissimilar to the Umpa very stony sandy loam because they are deeper than 40 inches, developed from granitic parent material, and are coarser textured.

CONCLUSIONS AND RECOMMENDATIONS

Soils found at site 1/7/18-1-1 are unnamed inclusions in the UmE map unit. They are unmapped in the published Lake Tahoe Soil Survey and would place in Land Capability Class 6.

Soils found at site 1/7/18-1-2 are unnamed inclusions in the UmE map unit. They are unmapped in the published Lake Tahoe Soil Survey and would place in Land Capability Classes 4 and 6.

Soils found at site 1/7/18-1-3 are unnamed inclusions in the UmE map unit. They are unmapped in the published Lake Tahoe Soil Survey and would place in Land Capability Class 4.

Please refer to the following soil profile descriptions that support the findings and the attached Figure 1 showing the spatial distribution of the appropriate land capability classes on the parcel.

Respectfully submitted,

Denny M. Churchill
Certified Professional Soil Scientist No. 0755

Representative Soil Profile Descriptions

Site 1/7/18-1: Excavated pit.

Location: 39° 16' 09.84" N. Latitude; 119° 57' 47.89" W. Longitude (WG84 datum)
Elevation: 7550 feet (from Arnett and Associates, Inc., 5/2016)
Landform: Upland terrace (slopes to the south east).
Vegetation: White fir, Jeffery pine, greenleaf manzanita and snow brush.

O1 0 to 1 inch, pine needles and duff

A1 1 to 8 inches, yellowish brown (10YR 5/4) gravelly loamy coarse sand, dark yellowish brown (10YR 3/4) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; common to many very fine to medium roots throughout; common fine interstitial pores; slightly acid (pH 6.2); 15 percent small rounded gravels; clear wavy boundary.

A2 8 to 22 inches, yellowish brown (10YR 5/4) gravelly loamy coarse sand, dark yellowish brown (10YR 3/4) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; common to many very fine to medium roots throughout; common fine interstitial pores; slightly acid (pH 6.2); 15 percent small rounded gravels; clear wavy boundary.

Bw1 22 to 34 inches, yellowish brown (10YR 5/4) gravelly loamy coarse sand, very dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; soft, friable, nonsticky and nonplastic; many fine to medium and few coarse roots; many fine interstitial pores; moderately acid (pH 6.0); 15 percent small rounded gravels and 5 percent stones; clear wavy boundary.

Bw2 34 to 50 inches, yellowish brown (10YR 5/6) gravelly loamy coarse sand, very dark yellowish brown (10YR 4/4) moist; moderate medium subangular blocky structure; soft, friable, slightly sticky and nonplastic; many fine to medium and few coarse roots; many fine interstitial pores; moderately acid (pH 6.0); 20 percent small and medium rounded gravels and 5 percent stones; clear wavy boundary.

C1 50 to 65 inches, yellowish brown (10YR 5/6) gravelly fine sand, dark yellowish brown (10YR 4/4) moist; massive; slightly hard, friable, nonsticky and nonplastic; few to common fine to medium and few coarse roots; many fine interstitial pores; moderately acid (pH 6.0); 20 percent small and medium rounded gravels and 5 percent stones; clear wavy boundary (highly weathered granodiorite and possible alluvial deposits)

Parent material: Colluvium over decomposed granite.
Drainage class: Somewhat excessively drained. Moderately rapid permeability.
Slope: 16-18 percent sloping south 30 degrees east.
1974 soil series: None.
2003 soil series: Similar to Cassenai gravelly loamy sand.
Soil classification: Mixed, frigid Dystric Xeropsamments
Hydrologic Soil Group: A
No physical evidence was observed to imply any ground water intrusion or poor drainage even though the site is directly below a paved road and other developed properties.

Site 1/7/18-2: Excavated pit.

Location: 39^0 16' 09.02" N. Latitude; 119^0 57' 47.76" W. Longitude (WG84 datum)
Elevation: 7553 feet (from Arnett and Associates, Inc., 5/2016)
Landform: Upland terrace (slopes to the south east).
Vegetation: White fir, Jeffery pine, greenleaf manzanita and snow brush.

O1 0 to 1 inch, pine needles and duff

A1 1 to 4 inches, yellowish brown (10YR 5/4) loamy coarse sand, brown (10YR 4/3) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; common to many very fine to medium roots throughout; common fine interstitial pores; slightly acid (pH 6.2); 10 percent small rounded gravels; clear wavy boundary.

A2 4 to 16 inches, yellowish brown (10YR 5/4) loamy coarse sand, brown (10YR 4/3) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; common to many very fine to medium roots throughout; common fine interstitial pores; slightly acid (pH 6.2); 10 percent small rounded gravels; clear wavy boundary.

Bw1 16 to 28 inches, yellowish brown (10YR 5/6) gravelly loamy coarse sand, very dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; soft, friable, nonsticky and nonplastic; many fine to medium and few coarse roots; many fine interstitial pores; moderately acid (pH 6.0); 15 percent small rounded gravels and 5 percent stones; clear wavy boundary.

Bw2 28 to 52 inches, light yellowish brown (10YR 6/4) gravelly loamy coarse sand, very dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; soft, friable, slightly sticky and nonplastic; common fine to medium and few coarse roots; many fine interstitial pores; moderately acid (pH 6.0); 20 percent small and medium rounded gravels and 5 percent stones; clear wavy boundary.

C1 56 to 65 inches, very pale brown (10YR 7/4) gravelly coarse sand, yellowish brown (10YR 5/4) moist; massive; slightly hard, friable, nonsticky and nonplastic; few fine to medium and few coarse roots; many fine interstitial pores; moderately acid (pH 6.0); 20 percent small and medium rounded gravels; clear wavy boundary (highly weathered granodiorite and possible alluvial deposits)

Parent material: Colluvium over decomposed granite.
Drainage class: Somewhat excessively drained. Moderately rapid permeability.
Slope: 16-18 percent sloping south 40 degrees east.
1974 soil series: None.
2003 soil series: Similar to Cassenai gravelly loamy sand.
Soil classification: Mixed, frigid Dystric Xeropsamments
Hydrologic Soil Group: A
No physical evidence was observed to imply any ground water intrusion or poor drainage even though the site is directly below a paved road and other developed properties.

Photo Series

Site 1/7/18-1

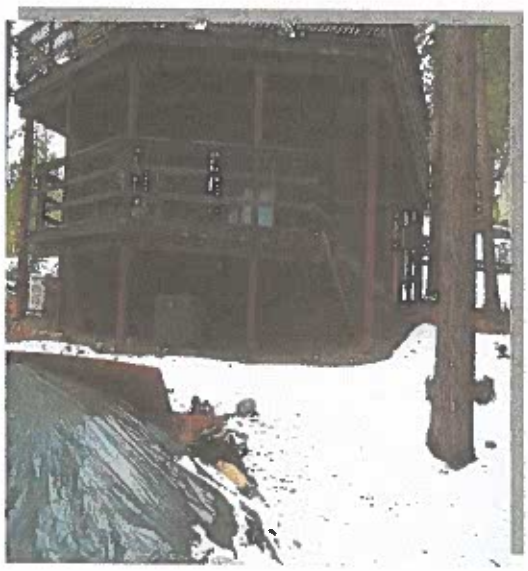
Up Slope Towards Mildes Drive

Down Slope Towards Harper Court

pit 3 -
CR - C
50"
similar

Representative Soil Profile

Site 1/7/18-2



Up Slope Towards Residence

Down Slope Towards Harper Court

Representative Soil Profile