

OWTS Design Report
for
Wildwood Conservation Foundation
20111 Old Cazadero Road
Guerneville, California 95446
APN 106-230-008

JN: 20248
May 16, 2022

Prepared for:
Wildwood Conservation Foundation
lglomset@gmail.com
PO Box 78
Guerneville, CA 95446



Gregory M. Schram, PE 73540
My license expires 12/31/2022



Prepared by:

 **adobe associates, inc.**
civil engineering | land surveying | wastewater

1220 N. Dutton Ave., Santa Rosa, CA 95401
P. (707) 541-2300 F. (707) 541-2301
Website: www.adobeinc.com

Project Narrative

The purpose of this project is to provide septic disposal capacity for the existing Wildwood Conservation Foundation and Retreat Center located at 20111 Old Cazadero Road in Guerneville. A standard type dual leachfield system preceded by a 5,000 gallon septic tank and 10,000 gallon surge dosing tank will serve the resort. The proposed design meets all current Sonoma County OWTS standards.

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Appendix A – OWTS Design Calculations

DESIGN CRITERIA

DESIGN PURPOSE

THE PURPOSE OF THIS PROJECT IS TO PROVIDE SEPTIC DISPOSAL CAPACITY FOR THE WILDWOOD CONSERVATION FOUNDATION RETREAT CENTER ON THE PARCEL LOCATED AT 20111 OLD CAZADERO ROAD (APN 106-230-008). THE PROPOSED DESIGN IS A STANDARD SYSTEM. THE PROPOSED DESIGN MEETS ALL CURRENT SONOMA COUNTY OWTS STANDARDS.

SITE REVIEW:

A SITE REVIEW WAS CONDUCTED BY A REPRESENTATIVE FROM THE SONOMA COUNTY PERMIT AND RESOURCE MANAGEMENT DEPARTMENT ON NOVEMBER 19, 2020 (WSR20-0572).

PERCOLATION TEST (AREA A):

PERCOLATION TESTING WAS CONDUCTED BY A REPRESENTATIVE FROM ADOBE ASSOCIATES INC. ON DECEMBER 10, 2020 (WSR20-0641).

AVERAGE PERCOLATION RATE: 4 MINUTES PER INCH AT A DEPTH OF 48"
CORRESPONDING SOIL LOADING RATE: 1.143 GAL/SF/DAY

PERCOLATION TEST (AREA B):

PERCOLATION TESTING WAS CONDUCTED BY A REPRESENTATIVE FROM ADOBE ASSOCIATES INC. ON DECEMBER 10, 2020 (WSR20-0641).

AVERAGE PERCOLATION RATE: 6 MINUTES PER INCH AT A DEPTH OF 72"
CORRESPONDING SOIL LOADING RATE: 1.029 GAL/SF/DAY

DESIGN FLOWS:

FRIDAY, SATURDAY & SUNDAY:

10 ONSITE EMPLOYEES X 60 GAL/DAY = 600 GAL
50 GUESTS X 60 GAL/DAY = 3,000 GAL
TOTAL (1 DAY) = 3,600 GAL
TOTAL 3 DAY = 10,800 GAL

MONDAY THROUGH THURSDAY:

10 ONSITE EMPLOYEES X 60 GAL/DAY = 600 GAL
TOTAL (DAY) = 600 GAL
TOTAL 4 DAY = 2,400 GAL

TOTAL CALCULATED WEEK MAXIMUM FLOW = 13,200 GAL

DOSING SCHEDULE:

(24 DOSES/DAY) X (79 GAL/DOSE) = 1,896 GAL
(7 DAYS/WEEK) X (1,896 GAL/DAY) = 13,272 GAL

COMMERCIAL SEPTIC TANK SIZING:

$V = 1,125 + 0.75Q = 1,125 + .75(3,600) = 3,825$ GAL TANK REQUIRED
5,000 GALLON SEPTIC TANK PROPOSED (ADDITIONAL SURGE CAPACITY PROVIDED)

PRIMARY SYSTEM DESIGN (AREA A):

1,890 GPD TOTAL WASTEWATER LOAD.
 $(1,890 \text{ GPD}) / (1.143 \text{ GAL/SF/DAY}) / (4 \text{ SQ FT/LF}) = 413$ LINEAL FEET (100%)
TOTAL PRIMARY DISPOSAL FIELD REQUIRED.
208 LINEAL FEET PRIMARY DISPOSAL FIELD SHOWN (50%).

PRIMARY SYSTEM DESIGN (AREA B):

1,890 GPD TOTAL WASTEWATER LOAD.
 $(1,890 \text{ GPD}) / (1.029 \text{ GAL/SF/DAY}) / (3 \text{ SQ FT/LF})(50\%) = 306$ LINEAL FEET (50%)
TOTAL PRIMARY DISPOSAL FIELD REQUIRED.
306 LINEAL FEET PRIMARY DISPOSAL FIELD SHOWN (50%).

RESERVE SYSTEM DESIGN (AREA A):

1,890 GPD TOTAL WASTEWATER LOAD.
 $(1,890 \text{ GPD}) / (1.143 \text{ GAL/SF/DAY}) / (4 \text{ SQ FT/LF})(200\%) = 826$ LINEAL FEET
(200%) TOTAL RESERVE DISPOSAL FIELD REQUIRED.
600 LINEAL FEET RESERVE DISPOSAL FIELD SHOWN (145%).

RESERVE SYSTEM DESIGN (AREA B):

1,890 GPD TOTAL WASTEWATER LOAD.
 $(1,890 \text{ GPD}) / (1.029 \text{ GAL/SF/DAY}) / (3 \text{ SQ FT/LF})(55\%) = 337$ LINEAL FEET (55%)
TOTAL RESERVE DISPOSAL FIELD REQUIRED.
460 LINEAL FEET RESERVE DISPOSAL FIELD SHOWN (75%).

DISPOSAL FIELD TRENCH DESIGN (AREA A):

48" DEEP X 24" WIDE, WITH 24" GRAVEL BELOW LEACHLINE LATERAL, SPACED 8' O.C.
(4 SQ FT/LF TRENCH SIDEWALL)

DISPOSAL FIELD TRENCH DESIGN (AREA B):

36" DEEP X 24" WIDE, WITH 18" GRAVEL BELOW LEACHLINE LATERAL, SPACED 8' O.C.
(3 SQ FT/LF TRENCH SIDEWALL)

ADDRESS: 20111 Old Cazadero Road, Occidental CA
APN 106-230-008

CALCULATIONS FOR SUMP PUMP

WASTE WATER LOAD: (Design loading rate, DLR)

79 gallons per dose

PUMP CALCULATIONS

SIZE PUMP: Capacity = 20 gpm

Head losses:

Elev. head:
At pump = 490'
At field = 210'
Total elev. head = 210' - 490'
= -280', assume 0'

Friction Head

2" Pressure Line

Head = (1700 lf) (0.74'/100')
= 12.58'

2" fittings in sump

90° ell = 5.5 lf
Ch. vlv. = 17.2 lf
Gate vlv. = 1.4 lf
45° ells = 2.8 lf
[5.5+17.2+1.4+2(2.8)] x (0.74'/100')
= 29.7 x (0.74'/100)
= 0.22'

Ells and Tees

2" ells (14) = 5.5 lf

$$\begin{aligned} 2" \text{ tee (side)} &= 12 \text{ lf} \\ [(5.5 \times 14) + (12 \times 2)] (0.74' / 100') \\ &= 0.75' \end{aligned}$$

$$\text{Total friction head} = 12.58' + 0.22' + 0.75' = 13.55'$$

$$\text{Total Head} = 0' + 13.55' = 13.55 \text{ say } 14'$$

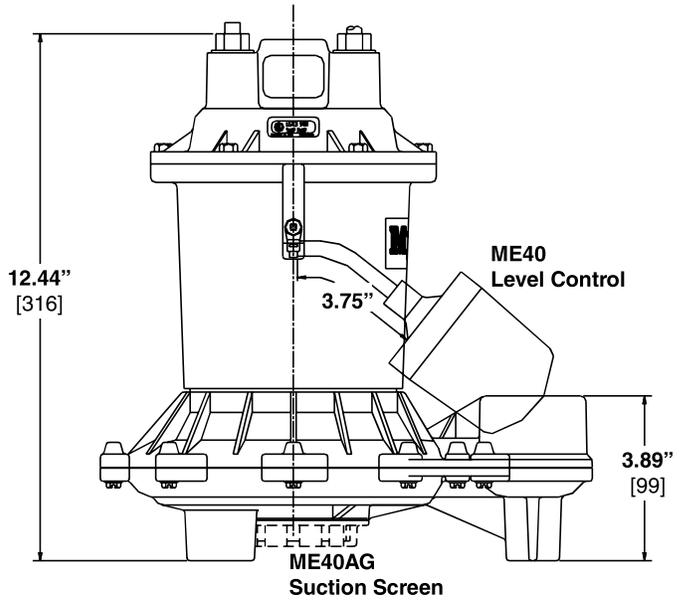
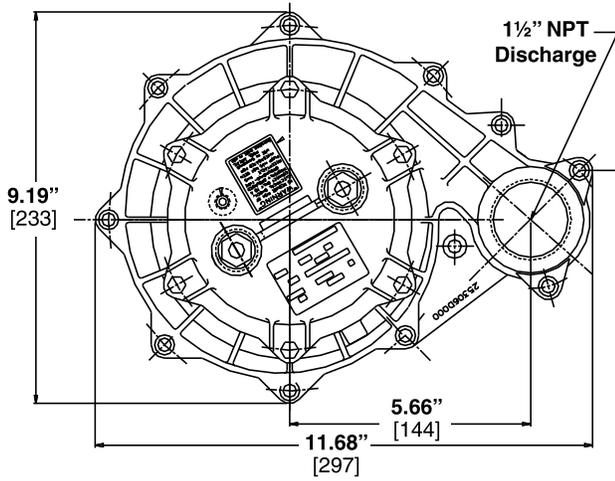
FOR 20 GPM AT 14' TOTAL HEAD, USE MYERS ME40 4/10 HP PUMP

SIZE DOSE:

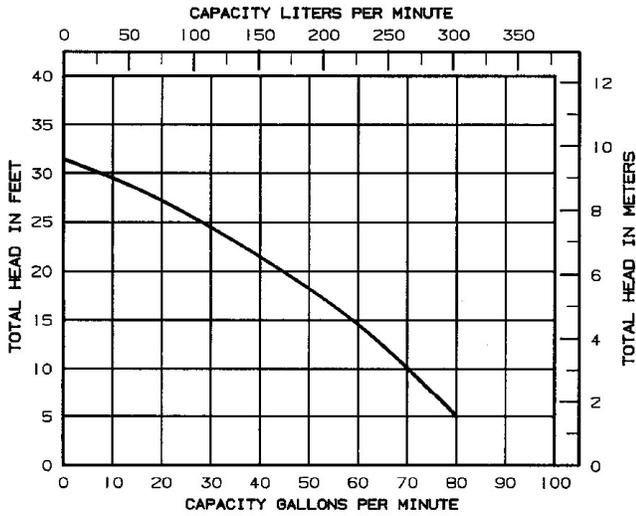
$$\text{Dose} = 79 \text{ gallons}$$

DIMENSIONS

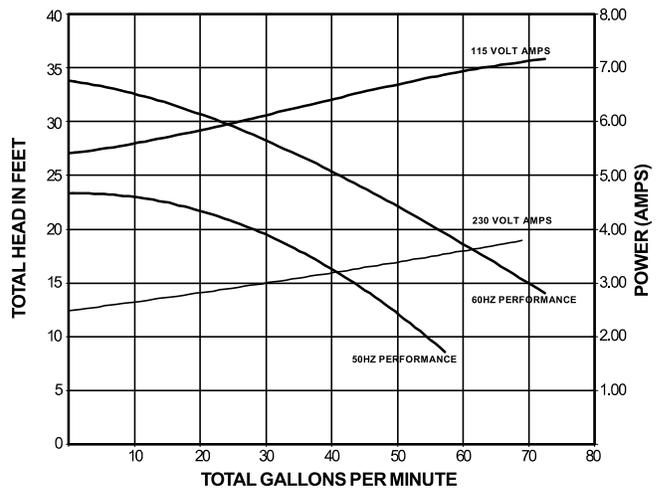
[Dimensions in mm]



ME40 PERFORMANCE CURVE



ME40AG PERFORMANCE CURVE



Appendix B – Supporting Documentation

May 11, 2022

Ross Markey
County of Sonoma
Permit and Resource Management Department
2550 Ventura Ave
Santa Rosa, CA 95403

Re: 20111 Old Cazadero Road - Wildwood Conservation Foundation
APN: 106-230-008
JN: 20248

Dear Ross:

Wildwood Conservation Foundation and Retreat Center, located at 20111 Old Cazadero Road in Guerneville, is proposing a new use permit for the existing facility which will require an upgrade to their septic system. The subject 194-acre parcel is located on the north side of Old Cazadero Road approximately 5 miles north of the intersection with Highway 116. The existing facility is currently served by an existing standard septic system that is to be abandoned. A septic findings report was conducted by Adobe Associates and it was determined that the existing system functions adequately (WSR22-0184, ref. Attachment - A). The facility contains a commons building (kitchen, storage, office space, two guest rooms, bathrooms), multipurpose room (laundry, storage, bathroom, activities), yurt (open space), guest house (14 rooms, suite bathrooms, no cooking facilities), hot tub room (bathroom), Carriage House (communal bathrooms and laundry room), and four staff cabins (individual bathrooms). It is expected that ten staff members will occupy the facility on a daily basis.

The facility will host the following events:

- Typical weekend events Friday through Sunday for up to 50 guests.
- One weekend a month (in lieu of the above event), Thursday through Sunday for up to 25 guests.

Adobe Associates was hired by the Wildwood Conservation Foundation to review the parcel's potential wastewater disposal capacity and determine if it has the capability to dispose of the wastewater produced by the proposed use.

The proposed use is expected to generate mixed intensity flows throughout the week with the maximum flow of 3,600 gallons per day during a typical weekend visitation and average flow of

1,886 gallons per day (see calculations below). The monthly extended weekend events are expected to generate a maximum flow of 2,100 gallons per day and average flow of 1,457 gallons per day. Chapter 11 in the Sonoma County OWTS Manual addresses such variability in flow for uses such as churches, schools, and events venues by providing adequate flow equalization capacity. Although the average dosed daily flow for the peak week is greater than 1,500 gallons, there are two leachfields (943 gallons per field) located greater than 100 feet apart and will not require a cumulative impact study. We propose installing a 5,000-gallon septic tank and 10,000-gallon surge dosing tank with equalization capacity to supplement the proposed septic disposal system.

Estimated wastewater design flows are shown below.

Estimated Flows During Typical Week:

Employees:

10 Employees X 60 gal/day = 600 gal/day

Weekend Visitation:

Up to 50 guests X 60 gal/day = 3,000 gal/day

Total = 3,600 gal/day

Total for the week is 13,200 gallons or average daily flow of 1,886 gal/day

Estimated Flows During Alternate Week (Once a month):

Employees:

10 Employees X 60 gal/day = 600 gal/day

Weekend Visitation:

Up to 25 guests X 60 gal/day = 1,500 gal/day

Total = 2,100 gal/day

Total for the week is 10,200 gallons or average daily flow of 1,457 gal/day

The flow for this facility is considered similar to a resort camp with limited plumbing as seen in Chapter 11, Table 11.1, of the Sonoma County OWTS Manual. Similarly flow for the facility is considered similar to an Apartment, resort as described in Metcalf and Eddy, 5th edition Table 3-5. The recommended design flow is 50 gallons per day per person (Sonoma County OWTS Manual) or 40-53 gallons per day per person (Metcalf and Eddy), while we are proposing 60 gallons per day per person as a conservative estimate.

The following site investigations were performed on the parcel: a septic findings report (WSR22-0184) submitted April 18, 2022, a pre-percolation test (WSR20-0572) performed on November 19, 2020 by a member of Adobe Associates and a Sonoma County PRMD representative, and percolation testing (WSR20-0641, ref. Attachment - B) performed by Scientific Sanitation on December 10, 2020. It was determined the tested area is suitable for installation of a standard type system.

We are proposing treatment and disposal of 13,200 gallons of weekly flow into the proposed standard sewage disposal system. The proposed system preceded by a new 5,000-gallon septic tank and a new 10,000-gallon surge tank equipped with duplexing pumps. 10,000 gallons of surge volume will accommodate the maximum daily flow of up to 3,600 gal/day when

considering the dosing that occurs throughout the maximum day. Calculations of daily inflows and outflows are shown below.

Inflow Calculations - Peak Week

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	TOTAL
<i>Employees (10*60 gpd)</i>	600	600	600	600	600	600	600	4,200
<i>Weekend visitation (typ) (50*60)</i>					3,000	3,000	3,000	9,000
							-	-
TOTAL	600	600	600	600	3,600	3,600	3,600	13,200

Inflow Calculations - Reduced Week

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	TOTAL
<i>Employees (10*60 gpd)</i>	600	600	600	600	600	600	600	4,200
<i>Weekend visitation (1 a month) (25*60)</i>				1,500	1,500	1,500	1,500	6,000
							-	-
TOTAL	600	600	600	2,100	2,100	2,100	2,100	10,200

Inflow/Outflow Calculations (Peak Week)

	Inflow	Outflow	Remainder	Remainder Cumulative
<i>Monday</i>	600	1886	0	0
<i>Tuesday</i>	600	1886	0	0
<i>Wednesday</i>	600	1886	0	0
<i>Thursday</i>	600	1886	0	0
<i>Friday</i>	3,600	1886	1,714	1,714
<i>Saturday</i>	3,600	1886	1,714	3,428
<i>Sunday</i>	3,600	1886	1,714	5,142
<i>Monday</i>	600	1886	0	3,856
<i>Tuesday</i>	600	1886	0	2,570
<i>Wednesday</i>	600	1886	0	1,284
<i>Thursday</i>	600	1886	0	0
<i>Friday</i>	3,600	1886	1,714	1,714

The tables above show that with disposal capacity of up to 1,886 gallons/day the largest accumulated volume is expected to reach 5,142 gallons at the end of a Sunday night. That volume and the following inflows should be pumped out by Thursday of next week.

The Wildwood Conservation Foundation and Retreat Center plans to continue operation of the existing facility in a manner commensurate with the previous use of the property. While the existing 1,500-gallon septic tank and single line leachfield appeared to be functioning adequately when reviewed in March of 2022, the facility proposes to greatly increase the septic tank capacity and leachfield area to meet current Sonoma County OWTS policy. The large volume of

flow expected during weekend visitation will be dosed out in a consistent manner and split evenly between the two proposed leachfields. A custom control panel capable of time dosing will be utilized to ensure the dosed flow remains consistent and equivalent to 1,886 gallons per day, or less. The proposed project is meeting all current Sonoma County OWTS regulations.

If you have any questions regarding this information, please feel free to call.

Sincerely,

A handwritten signature in black ink, appearing to read "Greg Schram". The signature is written in a cursive, flowing style.

Gregory Schram
PE 73540

Attachment A – Findings Report (WSR22-0184)



Request for Well and Septic Service

WLS-006

PURPOSE: This form is used to request a paid service from the Well & Septic Division of the Permit and Resource Management Department (PRMD) related to an existing or proposed septic system. **A permit application may be required following the requested service.**

March 28,2022
Date of Request

20111 Old Cazadero Highway
Site Address

Guerneville, CA 95446
City/Town Zip

Adobe Associates
Applicant Name

1220 North Dutton Avenue
Mailing Address State/Zip

707- 541-2300
Day Phone

WSR22-0184
SEV Number

Camino del Arroyo
Cross Street

106-230-008
Assessor's Parcel Number

Wildwood Conservation Foundation
Property Owner's Name

P.O. Box 78, Guerneville, CA 95446
Mailing Address State/Zip

707-791-0979
Day Phone

Service Requested:

Review for a Tier II Findings Report/Commercial

----- **DO NOT WRITE BELOW THIS LINE - To Be Completed by PRMD Staff** -----
Code Enforcement Violation Yes No Violation # _____

Status _____

Staff Comments/Notations

The findings review is completed. The septic system serving all noted structures included in the revised findings report, meets the definition of a nonconforming OWTS. It appears to be undersized for the number of structures and their occupancies/uses.

A replacement area design approval has not been completed at this time. Soils work has been completed under WSR20-0572 and WSR20-0641.

Staff Signature _____

Date Completed _____

April 18, 2022

Attn: Leif Glomset

Site Address: 20111 Old Cazadero Road

APN: 106-230-008

Job Number: 20248

The purpose of this report is to present the findings and conditions of the existing onsite sewage disposal system currently serving 20111 Old Cazadero Road. This site is located on the north side of Old Cazadero Road, approximately 5 miles north of the intersection with Highway 116. The property consists of several structures that make up the Wildwood Conservation Foundation Retreat Center. A Use Permit application has been submitted to Sonoma County to legalize the existing use of the property (UPE20-0012). The subject property is approximately 210 acres in size. Sonoma County septic records were not located for the property and no septic permit history was available through PRMD. The following structures are served by the existing septic system:

Commons building (kitchen, storage, office space, two guest rooms, bathrooms), multipurpose room (laundry, storage, bathroom, activities), yurt (open space), guest house (14 rooms, suite bathrooms, no cooking facilities), hot tub room (bathroom), Carriage House (communal bathrooms and laundry room), four staff cabins (individual bathrooms).

On March 8, 2022 we visited the site to review the general condition of the septic system components and conduct a Tier 2 findings report.

The current septic system is composed of a 1,500-gallon concrete septic tank and approximately 50 feet of total leach line. The septic tank has two fiberglass risers and lids. The inlet and outlet sanitary tees were intact and functional. The effluent level in the tank was normal. The tank was pumped at the time of the visit on March 8, 2022 and the receipt is enclosed.

A load test of approximately 150 gallons was applied to the leach field. We experienced no backup in the septic tank during the load test and no noticeable rise in water level during the test. There was no evidence of surface saturation or breakout. The field appears to be functioning adequately. The leachfield was located and can be described as being a single leachline at least 36” deep and 24” wide with 24” of gravel below the pipe. A three-foot crushed section of orangeburg leach pipe was found and replaced with perforated PVC during the inspection (see pictures, attached). Based on the orangeburg pipe observed, it is assumed that the existing leachfield is at least 50 years old. Potential code conforming reserve area for the property has

been identified recently under permit number (Pre Perc – WSR20-0572 & Perc Test – WSR20-0641).

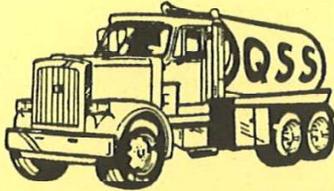
It is our opinion that this standard septic system meets non-conforming standards with respect to current Sonoma County guidelines.

Please keep in mind that the above findings represent only what was seen on March 8, 2022 and does not guarantee or estimate the longevity of the existing septic system. If you have any questions please do not hesitate to call or e-mail us.

Signed:

Greg Schram, P.E.
My license expires 12/31/2022

Attachment A – Tank Pump Receipt



Quality Septic Service

Septic Tank Pumping

Post Office Box 6781 • Santa Rosa, CA 95406
(707) 585-9000

No. 25050

Date

3/8/2022

Name

Adobe

Address

20111 Old Cazadero Rd

City

Cazadero

Phone

DESCRIPTION	AMOUNT
-------------	--------

<input type="checkbox"/> Pump septic tank	pump 1500 gallons
<input type="checkbox"/> Labor	
<input type="checkbox"/> Tank inspection	Septic 645
<input type="checkbox"/> Pump grease	
<input type="checkbox"/> Additional charges	PO
<input type="checkbox"/> Material	
	Locate Leach
	Line Distribution box
	excavator setter
	Electronic locate
	mark The end OFF

Paid on account

Mastercard/Visa

The Leach Line

Check #

Cash

650
1295

NOTICE: Under the Mechanics' Lien Law (California Code of Civil Procedure) any contractor, subcontractor, laborer, supplier, or other person who helps to improve your property but is not paid for his work or supplies has a right to enforce a claim against your property. This means that after a court hearing, your property could be sold by a court officer and the proceeds of the sale used to satisfy the indebtedness. This can happen even if you have paid your own contractor in full, if the subcontractor, laborer, or supplier remains unpaid.

**This company will not be held responsible for damage or breakage on property.
The owner assumes all responsibility.**

Signature

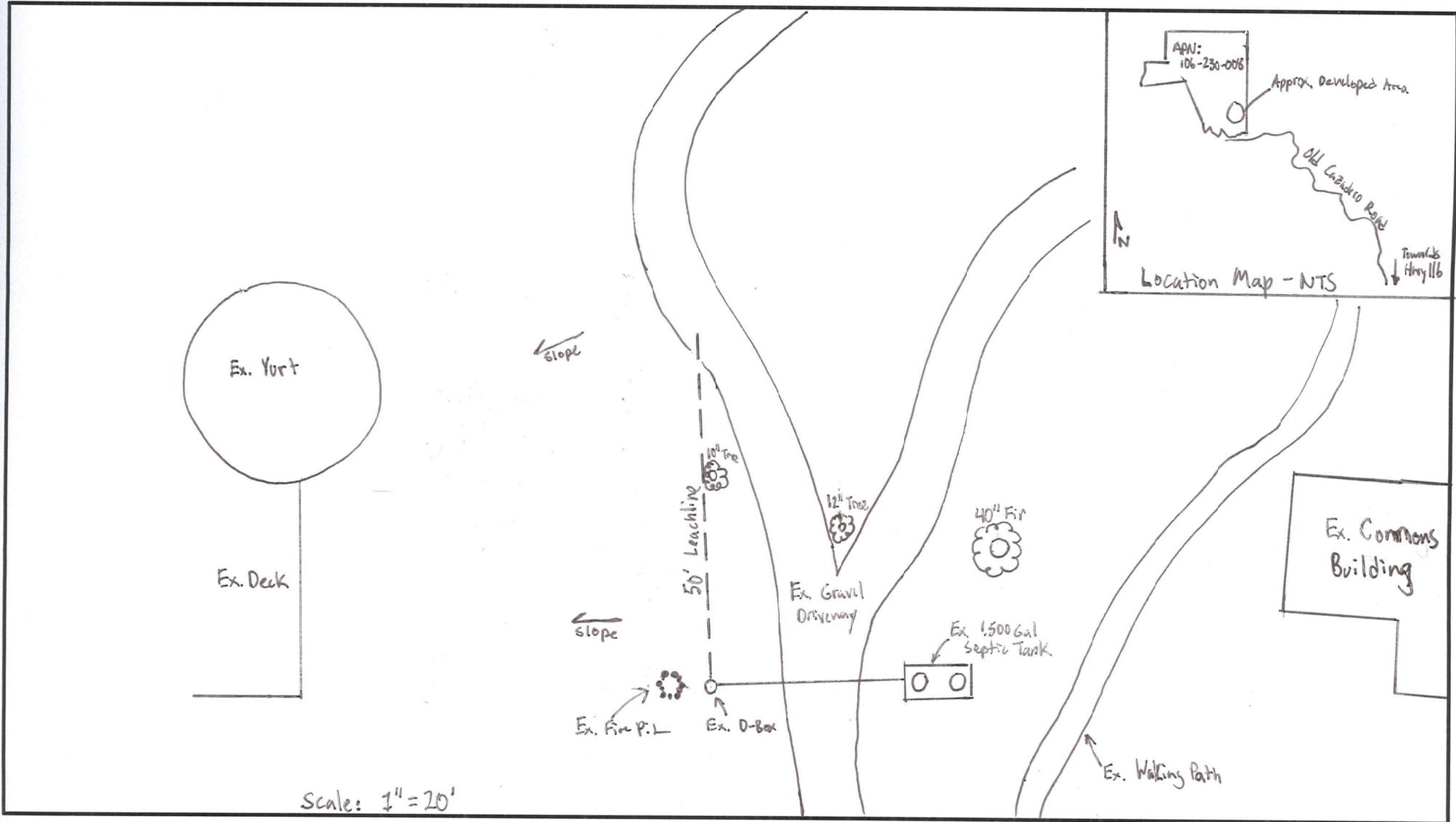
[Handwritten Signature]

1295

Attachment B – Repair Pictures



Attachment C – Field Drawing



Attachment D – Overall Site Plan



Wildwood Conservation Foundation

501(c)3 Non-Profit Organization
#C2074655

Address

20111 Old Cazadero Rd.
Guerneville, CA 95446

A.P. Numbers

106-230-008

Permit Application

Zoning/Use Permit Application
Zone: Timberland Production
Use: Wildwood Retreat Center

Prepared By

Leif Glomset

Drawn By

Alexander Vincent

Sheet Numbers

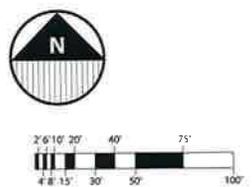
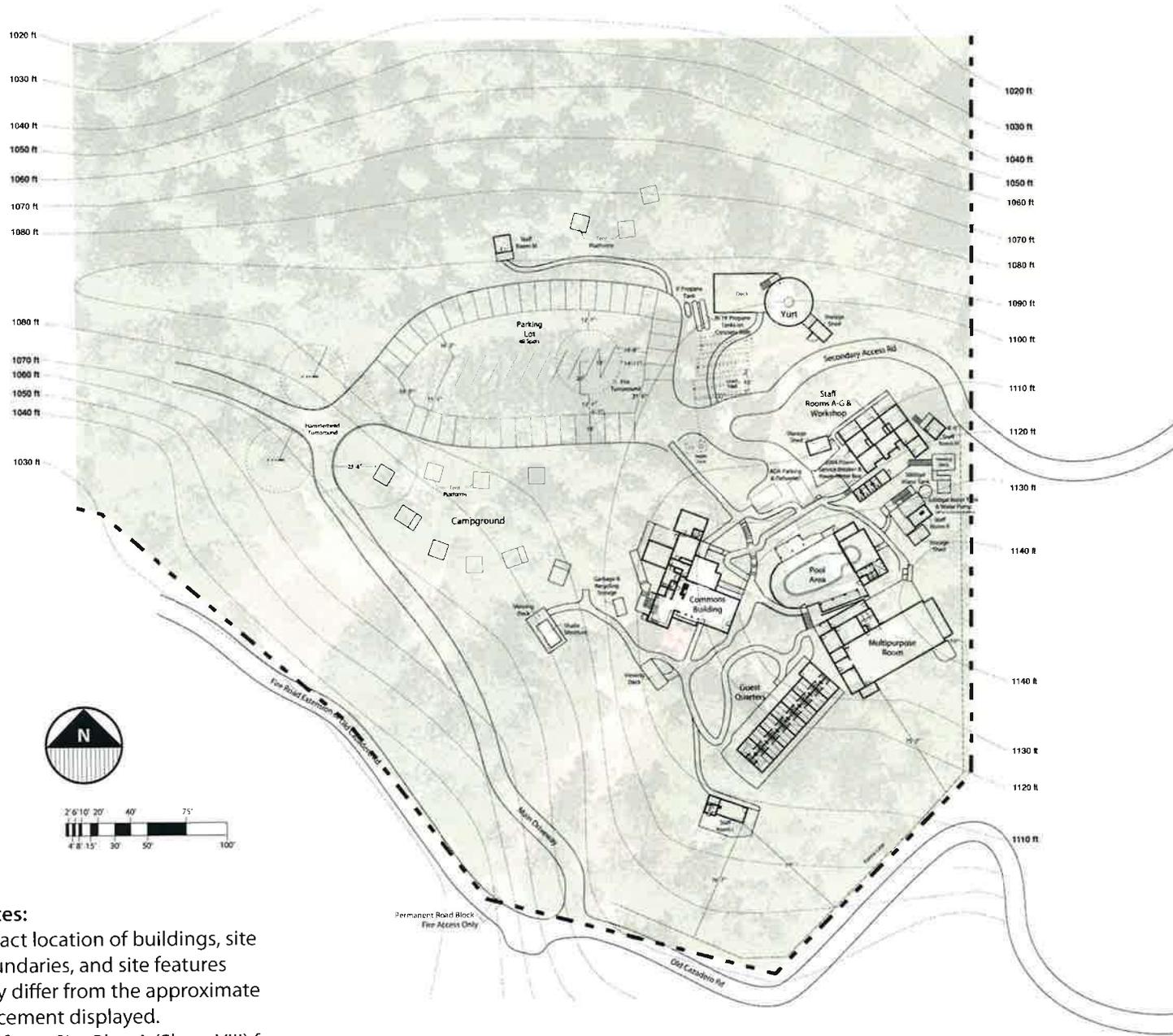
- VII Location Vicinity Map
- VIII Site Plan A
- IX Site Plan B
- X-1 Commons
- X-2 Guest Quarters
- X-3 Multipurpose Room
- X-4 Yurt
- X-5 Pool Area
- X-6 Staff Quarters A-H
- X-7 Staff Quarters K, L, & M
- XI Landscape Plan

Date: 12-Feb-2020

Sheet IX

Site Plan B

Scale: 1/32" = 3'-0"

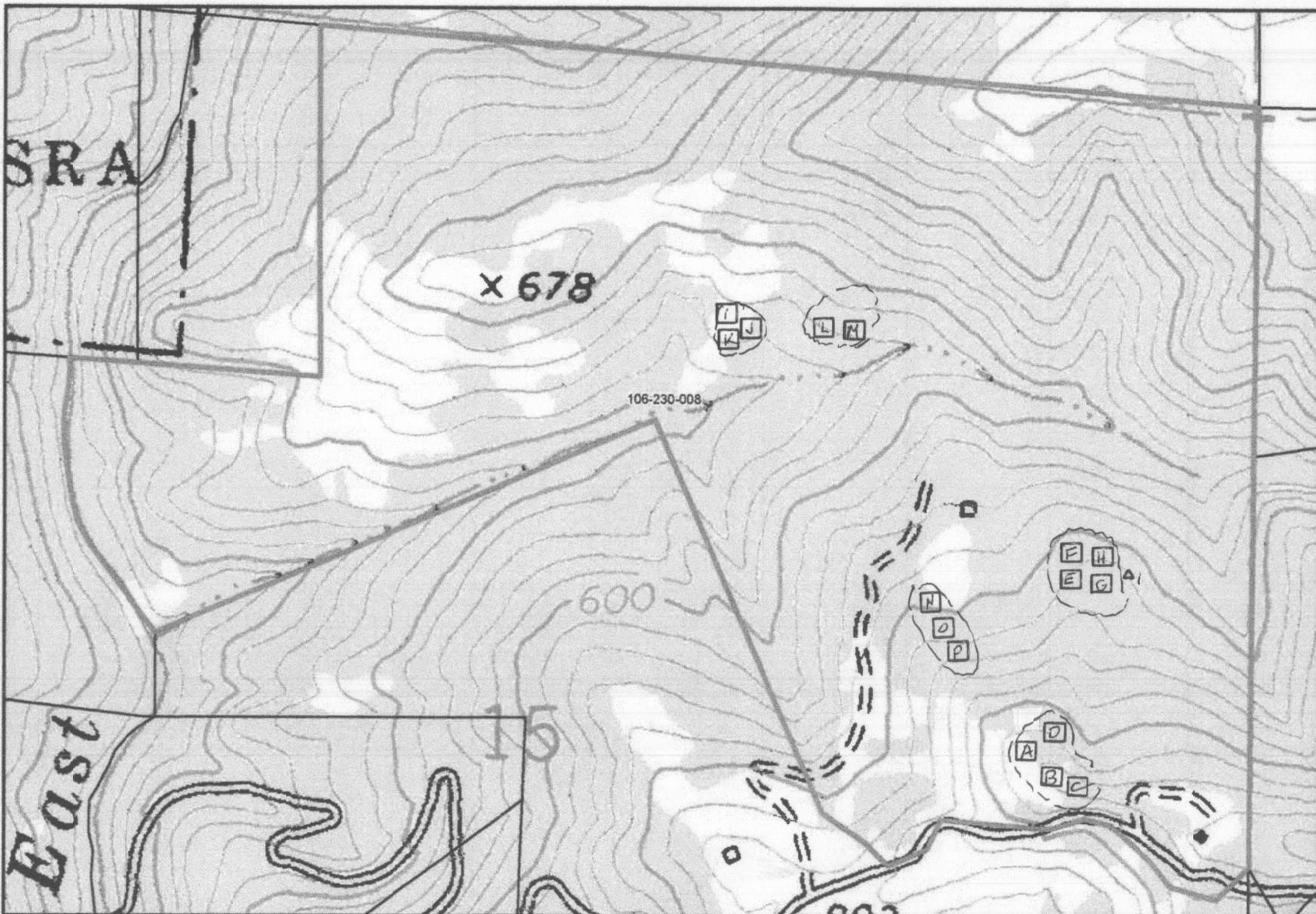


Notes:

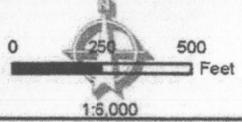
- Exact location of buildings, site boundaries, and site features may differ from the approximate placement displayed.
- Refer to Site Plan A (Sheet VIII) for full parcel boundary and APNs of neighboring properties.



Attachment E – Pre Perc and Perc Map



APN 106-230-008
 USGS Quad: 18, Cazadero (40 Ft. Contour Interval)



Parcel Data February 11, 2020

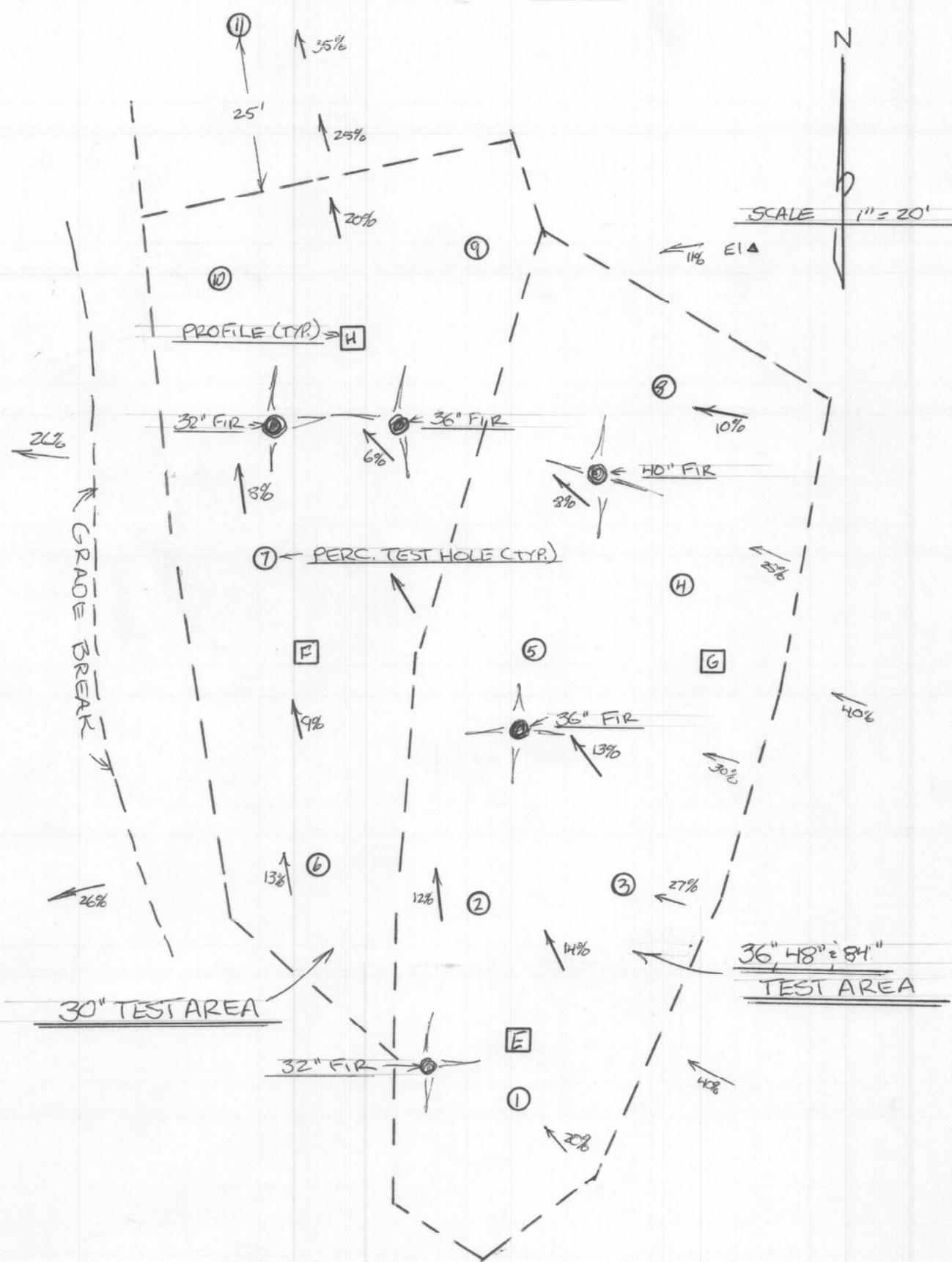
PROFILE LOCATION SKETCH
2011 OLD CAZADERO ROAD
 DWG 10/12/20

USGS Topographic

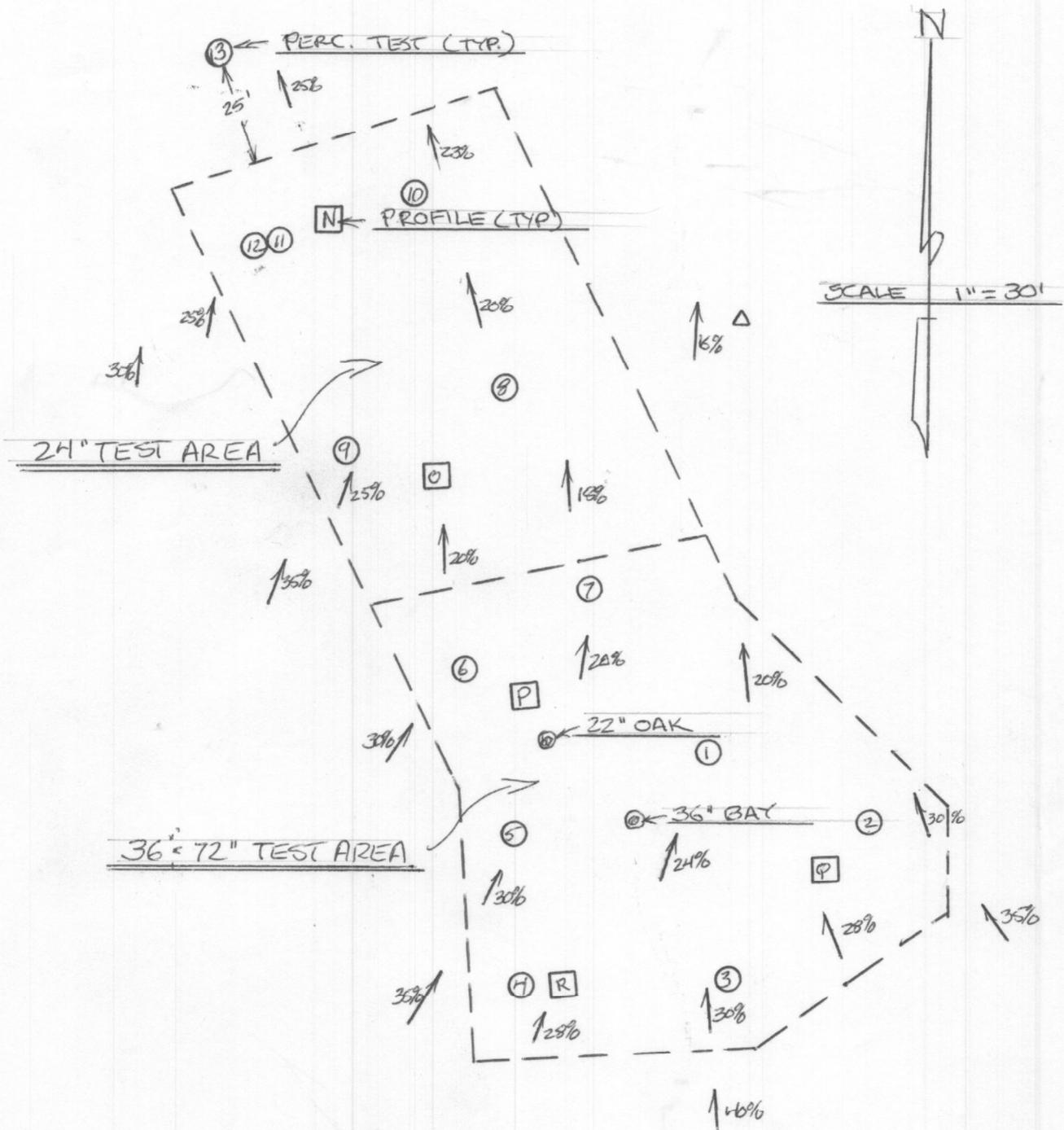
County of Sonoma
 Permit and Resource Management Department
 2550 Ventura Avenue, Santa Rosa, California 95403
 707-565-1900 FAX 707-565-1103



1-1



PERCOLATION TEST AREA "A" 20111 OLD CAZADERO ROAD
TEST DATE: 12/10/2020 BY: SCIENTIFIC SANITATION SYS.



PERCOLATION TEST AREA "B"

20111 OLD CAZADERO ROAD

TEST DATE: 12/10/2020

BY: SCIENTIFIC SANITATION

Attachment B – Percolation Report (WSR20-0641)

Percolation Test Approved

WLS-028

Purpose: The purpose of this form is to identify the potential type(s) of septic system(s) that may be constructed based upon the approved percolation test.

ADOBE ASSOCIATES, INC
Consultant's Name
Mailing Address
City/Town State/Zip
Phone SEV Number
WSR20-0641
Fax

20111 OLD CAZADERO RD
Site Address
GUERNEVILLE
City/Town
106-230-008
Assessor's Parcel Number
Property Owner
Subdivision Number and/or Lot Number

The percolation test data has been reviewed and approved and there is potential for the following type(s) of septic system(s):

Area "A" (profiles F, H) sized at avg 30" holes = 0.686 gal/sf/day
Area "A" (profiles E, G) sized at avg 36" holes = 1.2 gal/sf/day; avg 48" holes = 1.143 gal/sf/day
Area "B" (profiles N, O) sized at avg 24" holes = 1.2 gal/sf/day
Area "B" (profiles P, Q, R) sized at avg 36" holes = 1.086 gal/sf day; avg 72" holes = 1.029 gal/sf/day

The following items are required for approval of the septic system:

- Design by a Registered Environmental Health Specialist or Registered Civil Engineer.
- Complete topographic map of site.
- 100% expansion. 200% expansion.
- Maintain setbacks from the following failed percolation hole(s):

N/A

- The following critical design elements need to be addressed for approval of the septic system design:

Maintain all required setbacks.

The septic system capacity is also dependent upon topography and setbacks. The approved septic system design will determine the number of bedrooms allowed in the dwelling(s).

Construction of the septic system cannot occur until plans have been approved and a permit has been issued by our office. **All septic systems must comply with standards in effect at the time of permit issuance.**

For further information, please contact the undersigned at (707)565- 1693 between 7:30 and 9:00 a.m.

PERMIT SONOMA WELL & SEPTIC SECTION
APPROVED BY EMYSZKA
DATE February 11, 2021
RECORD # WSR20-0641

02/11/2021

District Environmental Health Specialist

Date

Sonoma County Permit and Resource Management Department
2550 Ventura Avenue ❖ Santa Rosa, CA ❖ 95403-2829 ❖ (707) 565-1900 ❖ Fax (707) 565-1399



1220 N. Dutton Ave., Santa Rosa, CA 95401
P. (707) 541-2300 F. (707) 541-2301
Website: www.adobeinc.com

“A Service You Can Count On!”

PERCOLATION TEST RESULTS TRANSMITTAL

County of Sonoma, Permit and Resource Management Department
2550 Ventura Avenue, Santa Rosa, CA 95403

January 20, 2021

Attn: Emmy Myszka

Site Address: 20111 Old Cazadero Road
APN: 106-230-008
Job Number: 20248
Permit Number: WSR20-0641

Enclosures: Assessors Parcel Map, Soil Survey Map, Soil Profile Log, Soil Sample Test Results, Percolation Test Data, and Percolation Test Map

These tests were run in order to establish subsurface wastewater disposal system potential for this 194 +/- acre parcel in Guerneville. The parcel contains the Wildwood Conservation Foundation and Retreat Center, which is proposing modifications to its properties allowed uses. This change will require an update to their septic system. This site is located on the north side of Old Cazadero Highway approximately 1 mile east of its intersection with East Austin Creek Road. Site soils in the area of consideration are identified as HkG – Hugo very gravelly loam, HnG – Hugo-Josephine complex, Hugo-Laughlin complex, McF – Maymen gravelly sandy loam and Yorkville-Laughlin complex, per the Soil Survey of Sonoma County.

A site review was conducted on November 19th, 2020 and 18 profile holes (A through R) were reviewed in five areas of the parcel (Areas A through E, ref. WSR20-0572). Area A was determined suitable for dry weather testing at depths of 12”, 30”, 36”, 48”, and 84” (hydrometer and plasticity index test results for profile F and G are attached). Area B was determined suitable for dry weather testing at depths of 12”, 24”, 36”, and 72” (hydrometer and plasticity index test results for profile O and P are attached). On December 10, 2020 percolation tests in Area A and B were performed.

Area A

One 12-inch deep hole (A7), four 30-inch deep holes (A6, A9, A10, A11), two 36-inch deep holes (A2, A4), three 48-inch deep holes (A1, A3, A8), and one 84-inch deep hole (A5) were

tested in Area A. The average percolation rate for the 12", 30", 36", and 48" tests was determined to be 10 minutes per inch, which corresponds to a soil application rate of 0.8 gallons per square foot per day. This area is considered suitable for installation of a mound type system, at grade type system, drip system installed 6 inches into native with 6 inches of fill preceded by an NSF40 approved pre-treatment system, or drip system installed 6 inches into native with UV disinfection preceded by an NSF40 approved pre-treatment system. We recommend a linear loading rate of 8 gallons/day/lineal foot. The average percolation rate for the 36" and 48" tests was determined to be 3 minutes per inch, which corresponds with a soil application rate of 1.2 gallons per square foot per day. This area is considered suitable for installation of a standard type system. Based on 120 gallons per bedroom per day and a 4 square foot trench sidewall, the system shall provide 25 linear total feet of leach line per bedroom. Trenches should be 48 inches deep, 24 inches wide, 8 ft minimum on center, and 24 inches of drain rock below the pipe. The percolation test area contains slopes that range from 6-30 percent. Maintain all applicable setbacks.

Area B

One 12-inch deep hole (B11), three 24-inch deep holes (B10, B12, B13), seven 36-inch deep holes (B1, B2, B4, B5, B7, B8, B9), and two 72-inch deep holes (B3, B6) were tested in Area B. The average percolation rate for the 36" tests was determined to be 5 minutes per inch, which corresponds to a soil application rate of 1.086 gallons per square foot per day. The area of holes B1-B7 is considered suitable for installation a standard type system. Based on 120 gallons per bedroom per day and a 3 square foot trench sidewall, the standard system shall provide 37 linear total feet of leach line per bedroom. Trenches should be 36 inches deep, 24 inches wide, 8 ft minimum on center, and 18 inches of drain rock below the pipe. The area within holes B1-B9 is also considered suitable for a drip irrigation system with a 12" deep trench preceded by an NSF40 approved pretreatment system. The average percolation rate for holes B8-B13 was determined to be 2 minutes per inch, which corresponds to a soil application rate of 1.2 gallons per square foot per day. This area is considered suitable for installation of an at grade type system preceded by an NSF40 approved pretreatment system. We recommend a design linear loading rate of 7-8 gallons per lineal foot per day. The percolation test area contains slopes that range from 20-30 percent. Maintain all applicable setbacks.

The attached percolation test data was generated from percolation tests run in conformance with the methods and procedures of the Sonoma County Permit and Resource Management Department, Well and Septic Division. The results are a true and accurate account of the tests. Recommendations made in this report are subject to review and approval of the Well and Septic Division staff. A response to this report will be on file at the PRMD office.

Signed:



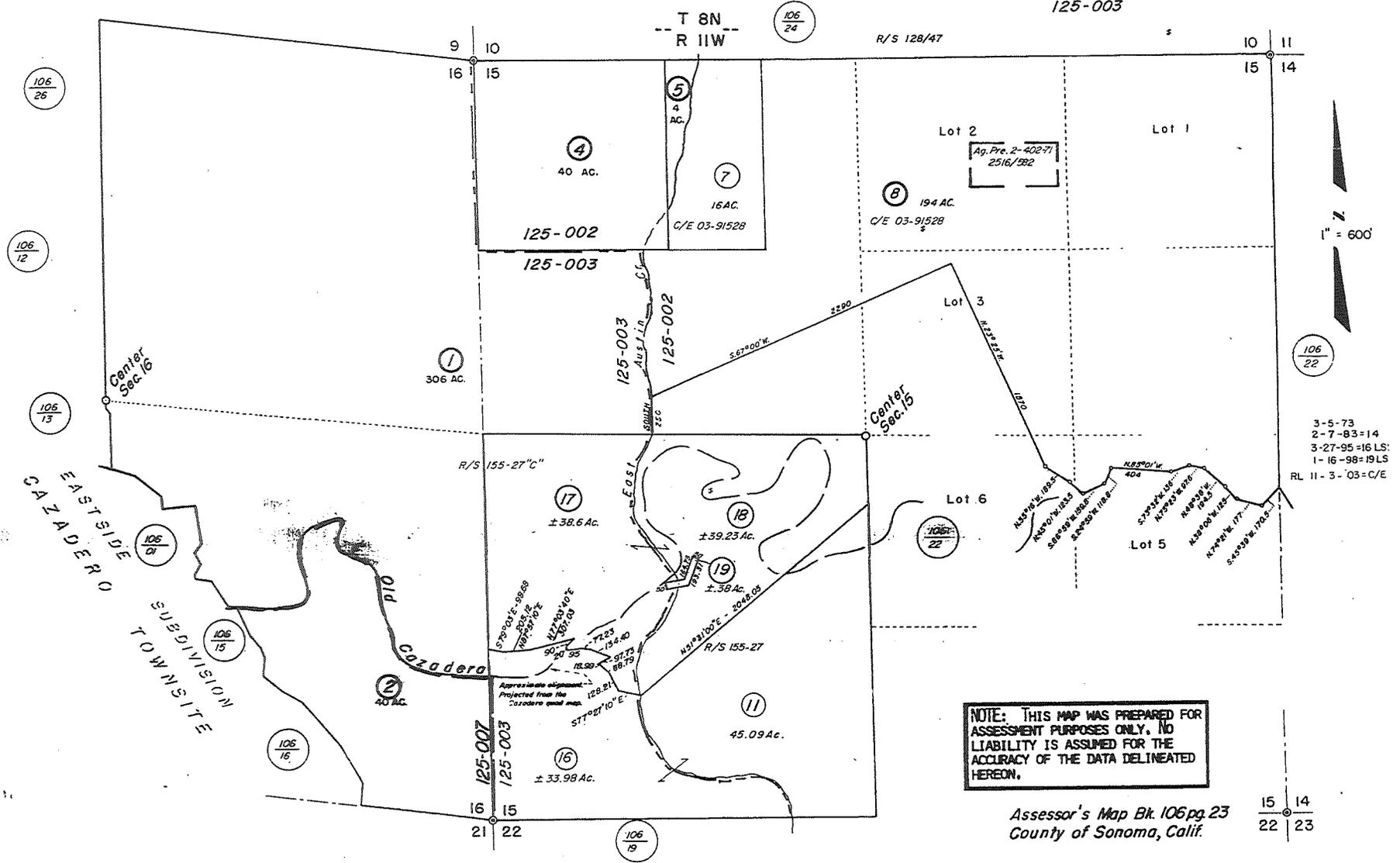
Gregory M. Schram, PE 73540
My license expires 12/31/22



COUNTY ASSESSOR'S PARCEL MAP

TAX RATE AREA
125-002
125-007
125-003

106-23

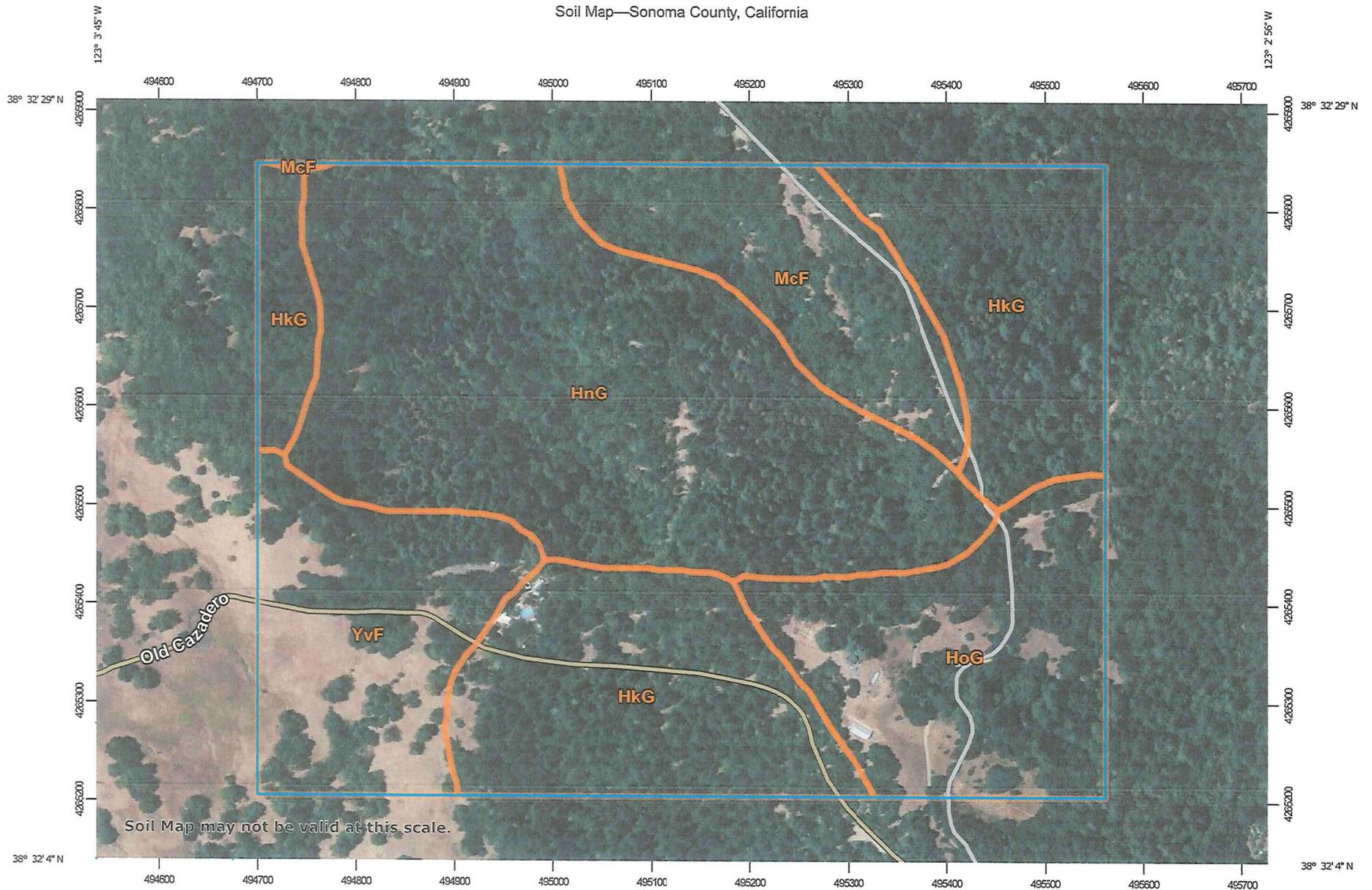


NOTE: THIS MAP WAS PREPARED FOR ASSESSMENT PURPOSES ONLY. NO LIABILITY IS ASSUMED FOR THE ACCURACY OF THE DATA DELINEATED HEREON.

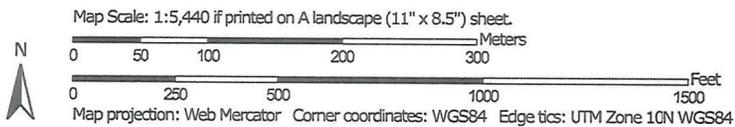
Assessor's Map Bk. 106 pg. 23
County of Sonoma, Calif.

15 14
22 23

Soil Map—Sonoma County, California



Soil Map may not be valid at this scale.



Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
HkG	Hugo very gravelly loam, 50 to 75 percent slopes	38.2	27.8%
HnG	Hugo-Josephine complex, 50 to 75 percent slopes	47.7	34.8%
HoG	Hugo-Laughlin complex, 30 to 75 percent slopes	20.1	14.7%
McF	Maymen gravelly sandy loam, 30 to 50 percent slopes	14.0	10.2%
YvF	Yorkville-Laughlin complex, 30 to 50 percent slopes	17.1	12.5%
Totals for Area of Interest		137.1	100.0%

MAP LEGEND

- Area of Interest (AOI)**
-  Area of Interest (AOI)
- Soils**
-  Soil Map Unit Polygons
-  Soil Map Unit Lines
-  Soil Map Unit Points
- Special Point Features**
-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot
-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features
- Water Features**
-  Streams and Canals
- Transportation**
-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads
- Background**
-  Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.
 Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Sonoma County, California
 Survey Area Data: Version 14, May 29, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 3, 2019—Jul 5, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Request for Well and Septic Service

WLS-006

PURPOSE: This form is used to request a paid service from the Well & Septic Division of the Permit and Resource Management Department (PRMD) related to an existing or proposed septic system. **A permit application may be required following the requested service.**

October 26, 2020

Date of Request

20111 Old Cazadero Highway

Site Address

Guerneville, CA

95446

City/Town

Zip

Adobe Associates

Applicant Name

1220 North Dutton Avenue

Mailing Address

State/Zip

707-541-2300

Day Phone

WSR20-0572

SEV Number

Camino del Arroyo

Cross Street

106-230-008

Assessor's Parcel Number

Wildwood Conservation Foundation

Property Owner's Name

P.O.Box 78, Guerneville, CA 95446

Mailing Address

State/Zip

707-791-0979

Day Phone

Service Requested:

Pre Perc Inspection (16 holes)

----- **DO NOT WRITE BELOW THIS LINE - To Be Completed by PRMD Staff** -----
Code Enforcement Violation Yes No Violation # _____

Status _____

Staff Comments/Notations

This report is approved for soils investigation and site conditions only per the Onsite Wastewater Treatment Systems Regulations and Technical Standards (OWTS Manual) Section 7 – see profile logs with field notes. Any information regarding a proposed design has not been reviewed or approved. All designs must conform to the current OWTS Manual.

Eighteen (18) profile holes were documented in five (5) areas of the parcel: Area A - profiles A, B, C, D; Area B - profiles E, F, G, H; Area C - profiles I, J, K; Area D - profiles L, M; Area E - profiles N, O, P, Q, R. See profile logs for details. Around profile D, 24"-36", wet weather percolation testing required due to Zone 3 soil with Plasticity Index of 33. In profiles F, H, I, P, Q, R very firm clay loam/clay horizon considered limiting condition unless percolation test proves permeability. In profile O, very firm horizon considered limiting condition unless percolation test proves permeability.

Wet weather groundwater testing required in areas with slope of zero to five percent or where mottling indicates high seasonal groundwater.

Maintain all required setbacks.

PERMIT SONOMA WELL & SEPTIC SECTION
APPROVED BY _____ **EMYSZKA**
DATE _____ **December 2, 2020**
RECORD # _____ **WSR20-0572**

Staff Signature

12/2/2020

Date Completed

Sonoma County Permit and Resource Management Department

2550 Ventura Avenue ❖ Santa Rosa, CA ❖ 95403-2829 ❖ (707) 565-1900 ❖ Fax (707) 565-1399

Address: 20111 OLD CAZADERO RD Date: OCTOBER 12, 2020

Profile: D					Average Ground Slope: 23%				
Depth	Munsell Color	% Rock	Texture	Structure	Consistency	Moist	Pores	Roots	
0-24	5YR 3/4	5	CL	SBK 3	F	Dr	CL	CM	
24-60	2.5YR 3/4	5	CL	SBK 3	F	Dr	CF	CF	
Mottling: NO Reduction: Oxidation: Depth to groundwater: Perc depth:									
Other:									

Profile: E					Average Ground Slope: 20%				
Depth	Munsell Color	% Rock	Texture	Structure	Consistency	Moist	Pores	Roots	
0-36	5YR 3/4	20	6CL	SBK 3	F	Dr	ML	CM	
36-84	5YR 3/4	35	VGCL	SBK 3	F	Dr	CL	CF	
Mottling: NO Reduction: Oxidation: Depth to groundwater: Perc depth:									
Other:									

Profile: F					Average Ground Slope: 10%				
Depth	Munsell Color	% Rock	Texture	Structure	Consistency	Moist	Pores	Roots	
0-30	5YR 4/4	15	CL	SBK 3	Fr	Dr	CL	MM	
30-50	5YR 4/6	5	CL	SBK 3	VF	Dr	FF	CF	
Mottling: NO Reduction: Oxidation: Depth to groundwater: Perc depth:									
Other: SAMPLED 18-30 + 30-42"									

Abbreviations:
 USDA Texture: Gravel=G, Sand=S, Loamy Sand=LS, Sandy Loam=SL, Sandy Clay Loam=SCL, Sandy Clay=SC, Silt Loam=SIL, Loam=L, Clay Loam=CL, Silty Clay Loam=SiCL, Clay=C
 Structure: Granular=G, Platy=p, Blocky=B, Prismatic=Pr, Massive=M, Columnar=C
 Consistency: Loose=L, Very Friable=VFr, Friable=Fr, Firm=F, Very Firm=VF, Extremely Firm=EF, Solid (BH refusal)=S
 Moisture: Dry=Dr, Damp=D, Very Damp=VD, Saturated=S, Seepage=Se
 Mottling: abundance, size, contrast
 abundance F=few C=common M=many
 size 1=fine 2=medium 3=large
 contrast F=faint D=distinct P=prominent

Address: 20111 OLD CAZADERO RD. Date: OCTOBER 12, 2020

Profile: G				Average Ground Slope: 20%				
Depth	Munsell Color	% Rock	Texture	Structure	Consistency	Moist	Pores	Roots
0-38	5YR 3/4	20	GCL	SBK 3	F	Dr	ML	CM
38-84	5YR 3/4	25	GCL	SBK 3	F	Dr	CL	CF

Mottling: NO Reduction: Oxidation: Depth to groundwater: Perc depth:

Other:

Profile: H				Average Ground Slope: 10%				
Depth	Munsell Color	% Rock	Texture	Structure	Consistency	Moist	Pores	Roots
0-30	5YR 4/4	15	CL	SBK 3	Fr	Dr	CL	MM
30-57	5YR 4/6	5	CL	SBK 3	VF	Dr	FF	CF

Mottling: NO Reduction: Oxidation: Depth to groundwater: Perc depth:

Other:

Profile: I				Average Ground Slope: 12%				
Depth	Munsell Color	% Rock	Texture	Structure	Consistency	Moist	Pores	Roots
0-30	10YR 7/2	20	GCL	SBK 3	F	Dr	CM	CM
30-42	10YR 3/1	5	C	B/M	VF	Dr	FF	FF

Mottling: NO Reduction: Oxidation: Depth to groundwater: Perc depth:

Other:

Abbreviations:
 USDA Texture: Gravel=G, Sand=S, Loamy Sand=LS, Sandy Loam=SL, Sandy Clay Loam=SCL, Sandy Clay=SC, Silt Loam=SIL, Loam=L, Clay Loam=CL, Silty Clay Loam=SiCL, Clay=C
 Structure: Granular=G, Platy=p, Blocky=B, Prismatic=Pr, Massive=M, Columnar=C
 Consistency: Loose=L, Very Friable=VFr, Friable=Fr, Firm=F, Very Firm=VF, Extremely Firm=EF, Solid (BH refusal)=S
 Moisture: Dry=Dr, Damp=D, Very Damp=VD, Saturated=S, Seepage=Se
 Mottling: abundance, size, contrast
 abundance F=few C=common M=many
 size 1=fine 2=medium 3=large
 contrast F=faint D=distinct P=prominent

Address: 20111 OLD CAZADERO RD Date: OCTOBER 12, 2020

Profile: P				Average Ground Slope: 24%				
Depth	Munsell Color	% Rock	Texture	Structure	Consistency	Moist	Pores	Roots
0-44	5YR 2.5/2	20	GCL	SBK 3	Fr	Dr	MM	MM
44-74	5YR 3/3	10	CL	SBK 3	VF	Dr	CF	FF

Mottling: NO Reduction: Oxidation: Depth to groundwater: Perc depth:
Other:

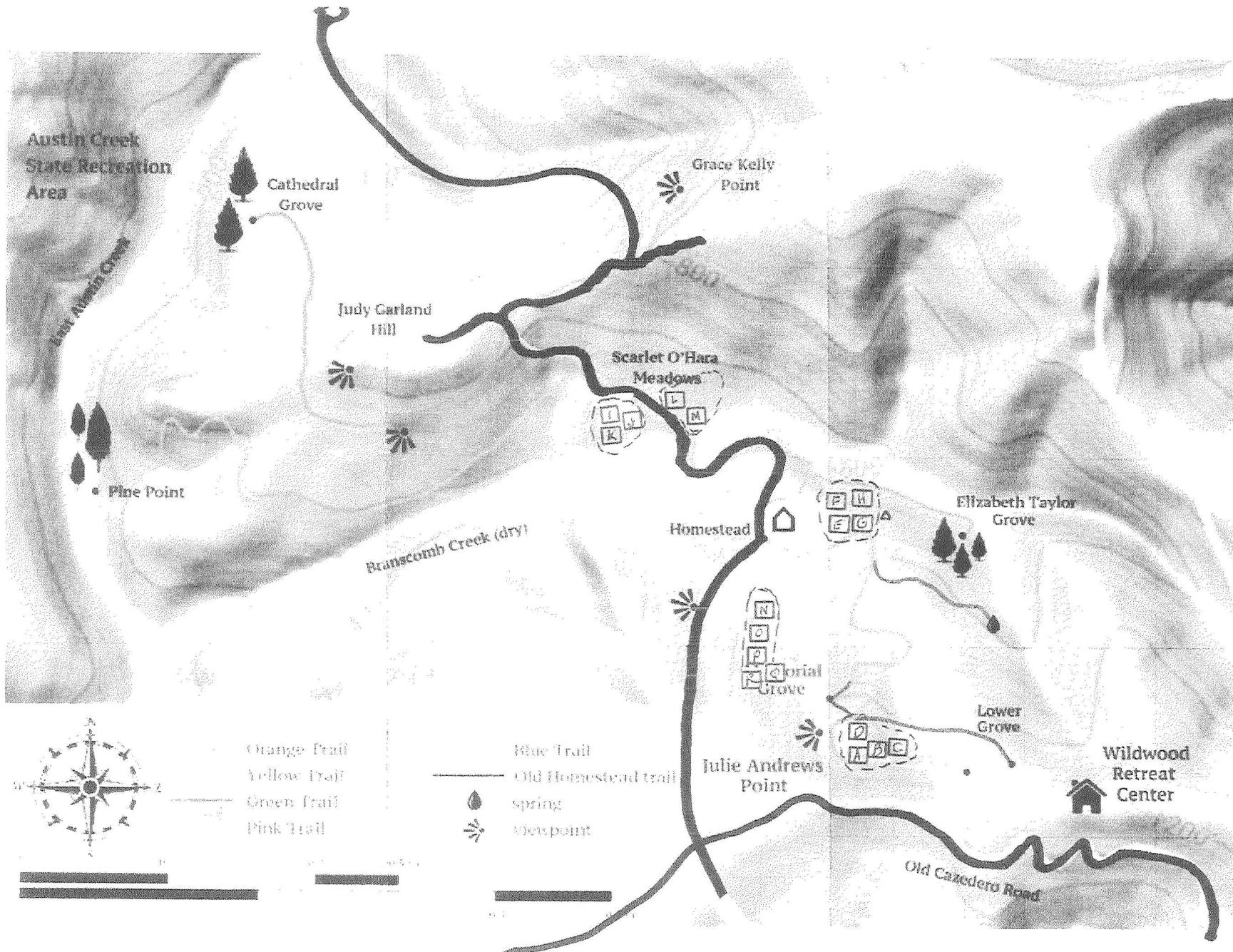
Profile: Q				Average Ground Slope: 20%				
Depth	Munsell Color	% Rock	Texture	Structure	Consistency	Moist	Pores	Roots
0-48	5YR 2.5/2	20	GCL	SBK 3	Fr	D/Dr	MM	MM
48-74	5YR 3/3	10	CL	SBK 3	VF	Dr	CF	FF

Mottling: NO Reduction: Oxidation: Depth to groundwater: Perc depth:
Other:

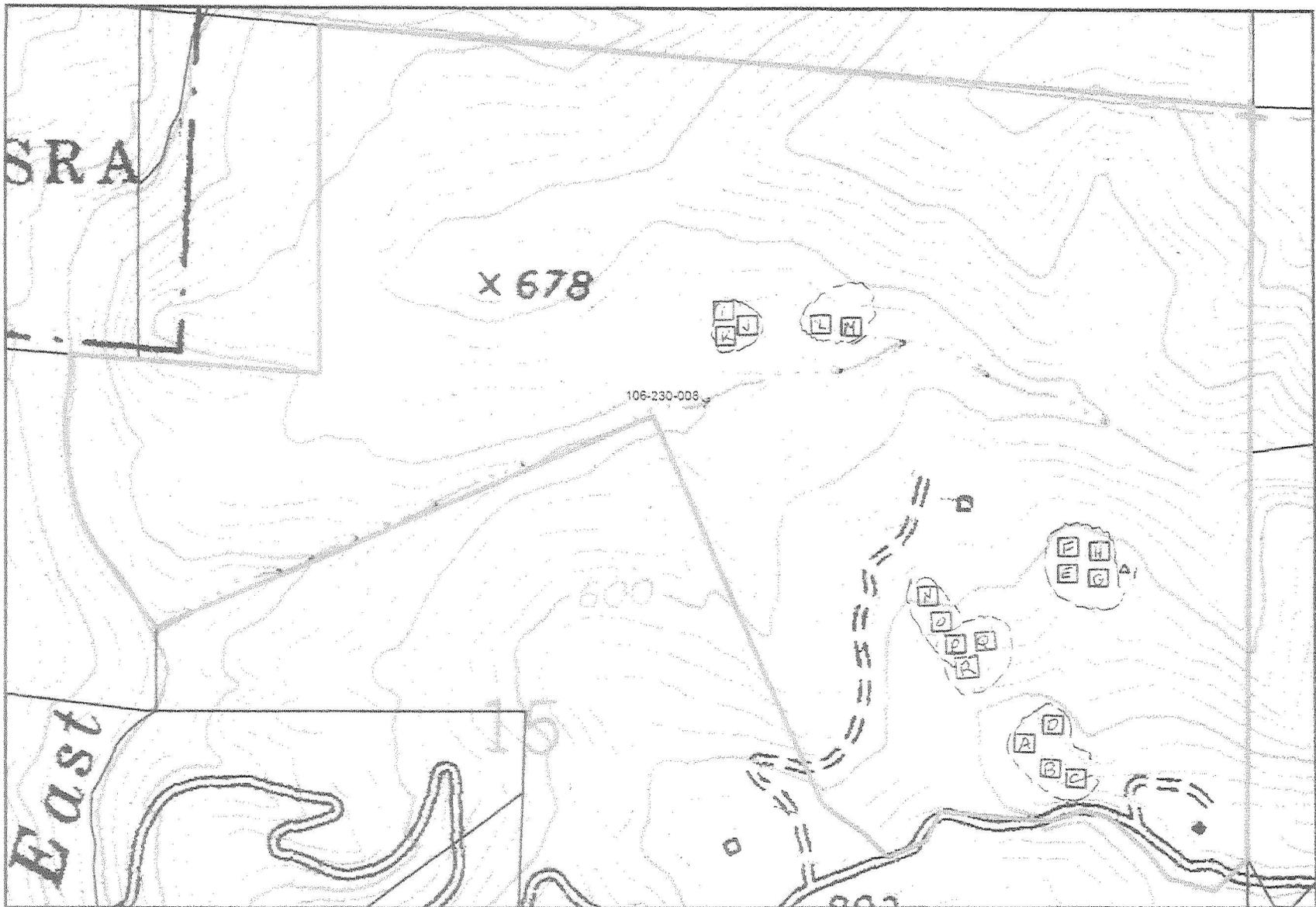
Profile: R				Average Ground Slope: 27%				
Depth	Munsell Color	% Rock	Texture	Structure	Consistency	Moist	Pores	Roots
0-72	5YR 2.5/2	20	GCL	SBK 3	Fr	D/Dr	MM	MM
72-84	5YR 3/3	10	CL	SBK 3	VF	Dr	CF	FF

Mottling: NO Reduction: Oxidation: Depth to groundwater: Perc depth:
Other:

Abbreviations:
 USDA Texture: Gravel=G, Sand=S, Loamy Sand=LS, Sandy Loam=SL, Sandy Clay Loam=SCL, Sandy Clay=SC, Silt Loam=SiL, Loam=L, Clay Loam=CL, Silty Clay Loam=SiCL, Clay=C
 Structure: Granular=G, Platy=p, Blocky=B, Prismatic=Pr, Massive=M, Columnar=C
 Consistency: Loose=L, Very Friable=VFr, Friable=Fr, Firm=F, Very Firm=VF, Extremely Firm=EF, Solid (BH refusal)=S
 Moisture: Dry=Dr, Damp=D, Very Damp=VD, Saturated=S, Seepage=Se
 Mottling: abundance, size, contrast
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PROFILE LOCATION SKETCH - 20111 OLD CAZADERO ROAD 10/12/20



APN 106-230-008
 USGS Quad: 18, Cazadero (40 Ft. Contour Interval)



Printed Date February 2002

PROFILE LOCATION SKETCH

20111 OLD CAZADERO ROAD

DJG 10/12/20

USGS Topographic

County of Sonoma

Permit and Resource Management Department

2450 Ventura Avenue, Santa Rosa, California 95403
 707-565-1900

FAX 707-565-1103



Oakley Laboratory & Field Services

1645 Chapman Way • Santa Rosa, CA 95403 • Telephone 707-575-1075

November 16 2020
Job No. 20-105.631

Adobe Associates
1220 North Dutton Avenue
Santa Rosa, Calif. 95401

Attention: Mr. Greg Schram

Re: Results of Soil Texture Analysis
By Bouyoucos Hydrometry Method

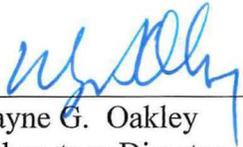
Client address: 20111 Old Cazadero Road

The results of the soil texture analysis on the sample received November 12, 2020 is as follows:

Sample Location	F @ 18" – 30"
% Plus No. 10 (WT)	21.6
% Sand	38.4
% Clay	31.8
% Silt	29.8
Db g/cc	---

We are pleased to provide laboratory services for you and look forward to your continued work. If you have any questions, please call.

Oakley Laboratory and Field Services

By: 
Wayne G. Oakley
Laboratory Director

Oakley Laboratory & Field Services

1645 Chapman Way • Santa Rosa, CA 95403 • Telephone 707-575-1075

November 16 2020
Job No. 20-105.631

Adobe Associates
1220 North Dutton Avenue
Santa Rosa, Calif. 95401

Attention: Mr. Greg Schram

Re: Results of Soil Texture Analysis
By Bouyoucos Hydrometry Method

Client address: 20111 Old Cazadero Road

The results of the soil texture analysis on the sample received November 12, 2020 is as follows:

Sample Location	F @ 30" – 48"
% Plus No. 10 (WT)	6.6
% Sand	32.4
% Clay	34.8
% Silt	32.8
Db g/cc	---

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Oakley Laboratory and Field Services

By: 
Wayne G. Oakley
Laboratory Director

Oakley Laboratory & Field Services

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Re: Results of Soil Texture Analysis
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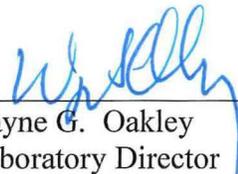
Client address: 20111 Old Cazadero Road

The results of the soil texture analysis on the sample received November 12, 2020 is as follows:

Sample Location	G @ 24" – 36"
% Plus No. 10 (WT)	42.7
% Sand	47.4
% Clay	22.8
% Silt	29.8
Db g/cc	---

We are pleased to provide laboratory services for you and look forward to your continued work. If you have any questions, please call.

Oakley Laboratory and Field Services

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Wayne G. Oakley
Laboratory Director

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November 16 2020
Job No. 20-105.631

Adobe Associates
1220 North Dutton Avenue
Santa Rosa, Calif. 95401

Attention: Mr. Greg Schram

Re: Results of Soil Texture Analysis
By Bouyoucos Hydrometry Method

Client address: 20111 Old Cazadero Road

The results of the soil texture analysis on the sample received November 12, 2020 is as follows:

Sample Location	O @ 24" – 36"
% Plus No. 10 (WT)	39.9
% Sand	58.8
% Clay	13.2
% Silt	28.0
Db g/cc	---

We are pleased to provide laboratory services for you and look forward to your continued work. If you have any questions, please call.

Oakley Laboratory and Field Services

By: 
Wayne G. Oakley
Laboratory Director

Oakley Laboratory & Field Services

1645 Chapman Way • Santa Rosa, CA 95403 • Telephone 707-575-1075

November 23, 2020

Job No. 20-105.633

Adobe Associates
1220 North Dutton Avenue
Santa Rosa, Calif. 95401

Attention: Mr. Greg Schram

Re: Results of Soil Texture Analysis
By Bouyoucos Hydrometry Method

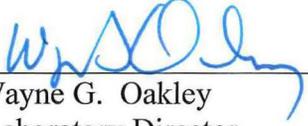
Client address: 20111 Old Cazadero Road

The results of the soil texture analysis on the sample received November 20, 2020 is as follows:

Sample Location	P @ 24" – 36"
% Plus No. 10 (WT)	33.0
% Sand	59.2
% Clay	16.8
% Silt	24.0
Db g/cc	---

We are pleased to provide laboratory services for you and look forward to your continued work. If you have any questions, please call.

Oakley Laboratory and Field Services

By: 
Wayne G. Oakley
Laboratory Director

Oakley Laboratory & Field Services

1645 Chapman Way • Santa Rosa, CA 95403 • Telephone 707-575-1075

November 23, 2020
Job No. 20-105.633

Adobe Associates
1220 North Dutton Avenue
Santa Rosa, Calif. 95401

Attention: Mr. Greg Schram

Re: Results of Soil Texture Analysis
By Bouyoucos Hydrometry Method

Client address: 20111 Old Cazadero Road

The results of the soil texture analysis on the sample received November 20, 2020 is as follows:

Sample Location	P @ 72" – 84"
% Plus No. 10 (WT)	22.5
% Sand	60.2
% Clay	12.8
% Silt	27.0
Db g/cc	---

We are pleased to provide laboratory services for you and look forward to your continued work. If you have any questions, please call.

Oakley Laboratory and Field Services

By: 
Wayne G. Oakley
Laboratory Director

Oakley Laboratory & Field Services

1645 Chapman Way • Santa Rosa, CA 95403 • Telephone 707-575-1075

November 20, 2020
Job No. 20-105.631

Adobe Associates
1220 North Dutton Avenue
Santa Rosa, CA. 95401

Attention: Mr. Greg Schram

Re: Results of the Plasticity Index test

Client address: 20111 Old Cazadero Road

This is the results of the Plasticity Index test for the sample received November 12, 2020 is as follows:

Sample Location	F @ 18" – 30"
% Free Swell	--
Liquid Limit	29
Plasticity Index	7

We are pleased to provide laboratory services for you and look forward to your continued work. If you have any questions, please call.

Oakley Laboratory and Field Services

By: 
Wayne G. Oakley
Laboratory Director

Oakley Laboratory & Field Services 

1645 Chapman Way • Santa Rosa, CA 95403 • Telephone 707-575-1075

November 20, 2020
Job No. 20-105.631

Adobe Associates
1220 North Dutton Avenue
Santa Rosa, CA. 95401

Attention: Mr. Greg Schram

Re: Results of the Plasticity Index test

Client address: 20111 Old Cazadero Road

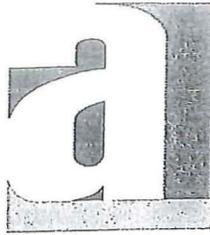
This is the results of the Plasticity Index test for the sample received November 12, 2020 is as follows:

Sample Location	F @ 30" – 48"
% Free Swell	--
Liquid Limit	34
Plasticity Index	17

We are pleased to provide laboratory services for you and look forward to your continued work. If you have any questions, please call.

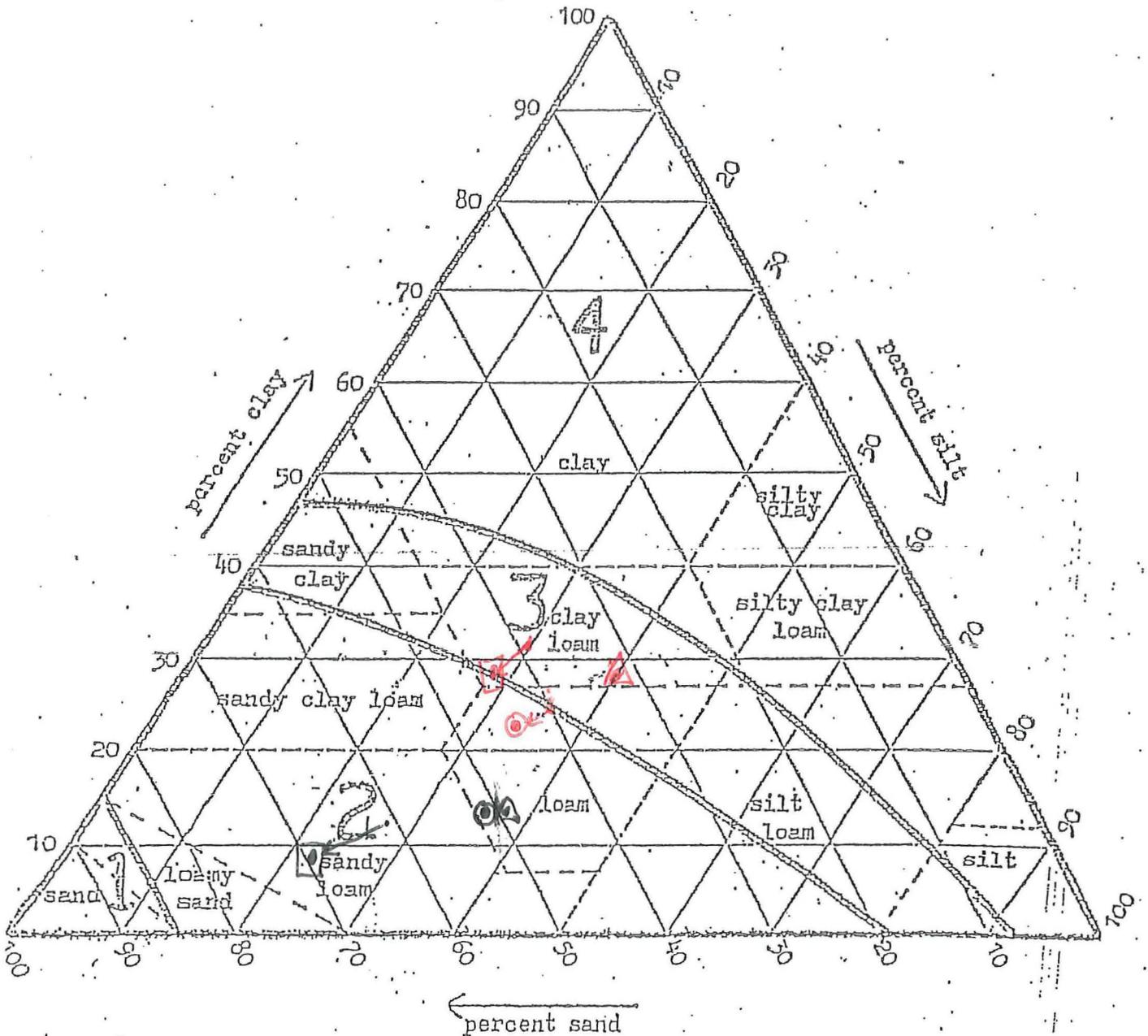
Oakley Laboratory and Field Services

By: 
Wayne G. Oakley
Laboratory Director



Adobe Associates, Inc.
Civil Engineering, Land Surveying & Land Development Services
1220 North Dutton Avenue, Santa Rosa, CA 95401
(707) 541-2300

SITE ADDRESS: 20111 Old Cazadero	JOB NO: 20248	DATE: 11-16-2020				
Profile hole no.	A ①	A A B ②	C ③	D A	F ④	
Depth (inches)	0-12	18-30	24-36	12-24	24-36	18-30





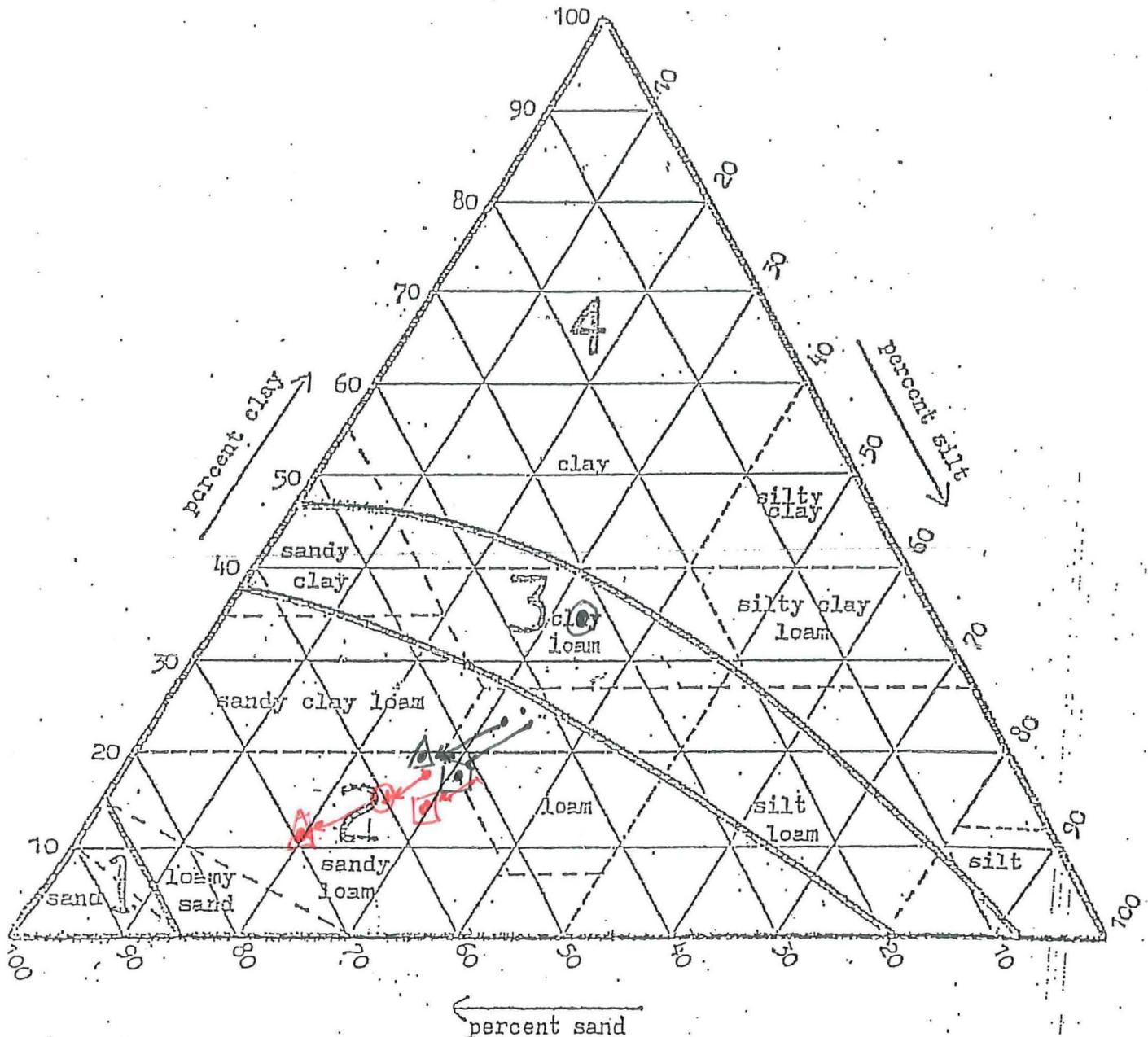
Adobe Associates, Inc.

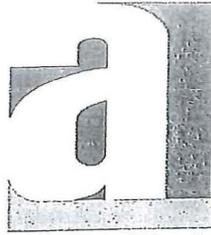
Civil Engineering, Land Surveying & Land Development Services

1220 North Dutton Avenue, Santa Rosa, CA 95401

(707) 541-2300

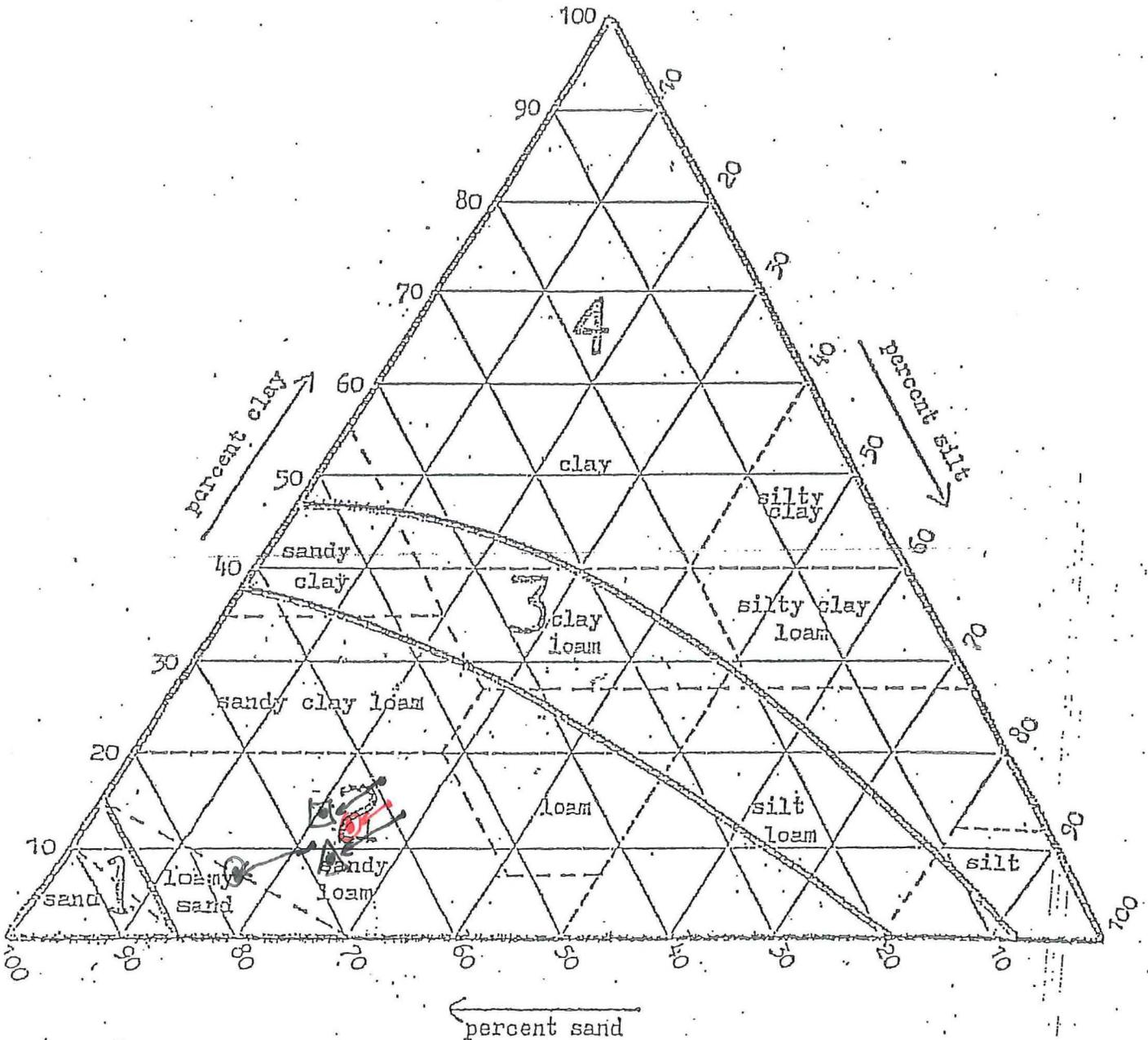
SITE ADDRESS:	JOB NO:	DATE:
20111 Old Cazadero	20248	11-16-2020
Profile hole no.	F <input type="checkbox"/> G <input type="checkbox"/> G <input type="checkbox"/> I <input type="checkbox"/> J <input type="checkbox"/> M <input type="checkbox"/>	
Depth (inches)	30-48 24-36 60-72 12-24 0-9 24-36	





Adobe Associates, Inc.
 Civil Engineering, Land Surveying & Land Development Services
 1220 North Dutton Avenue, Santa Rosa, CA 95401
 (707) 541-2300

SITE ADDRESS:	JOB NO:	DATE:
201M Old Cazadero	20248	11-16-2020
Profile hole no.	M @ O A P @	P @
Depth (inches)	60-72 24-36 24-36 72-84	



County of Sonoma
 Permit And Resource Management Department
 Well & Septic Section
 2550 Ventura Avenue, Santa Rosa, CA 95403 (707) 527-1900

AREA "A"

SOILS PERCOLATION TEST DATA

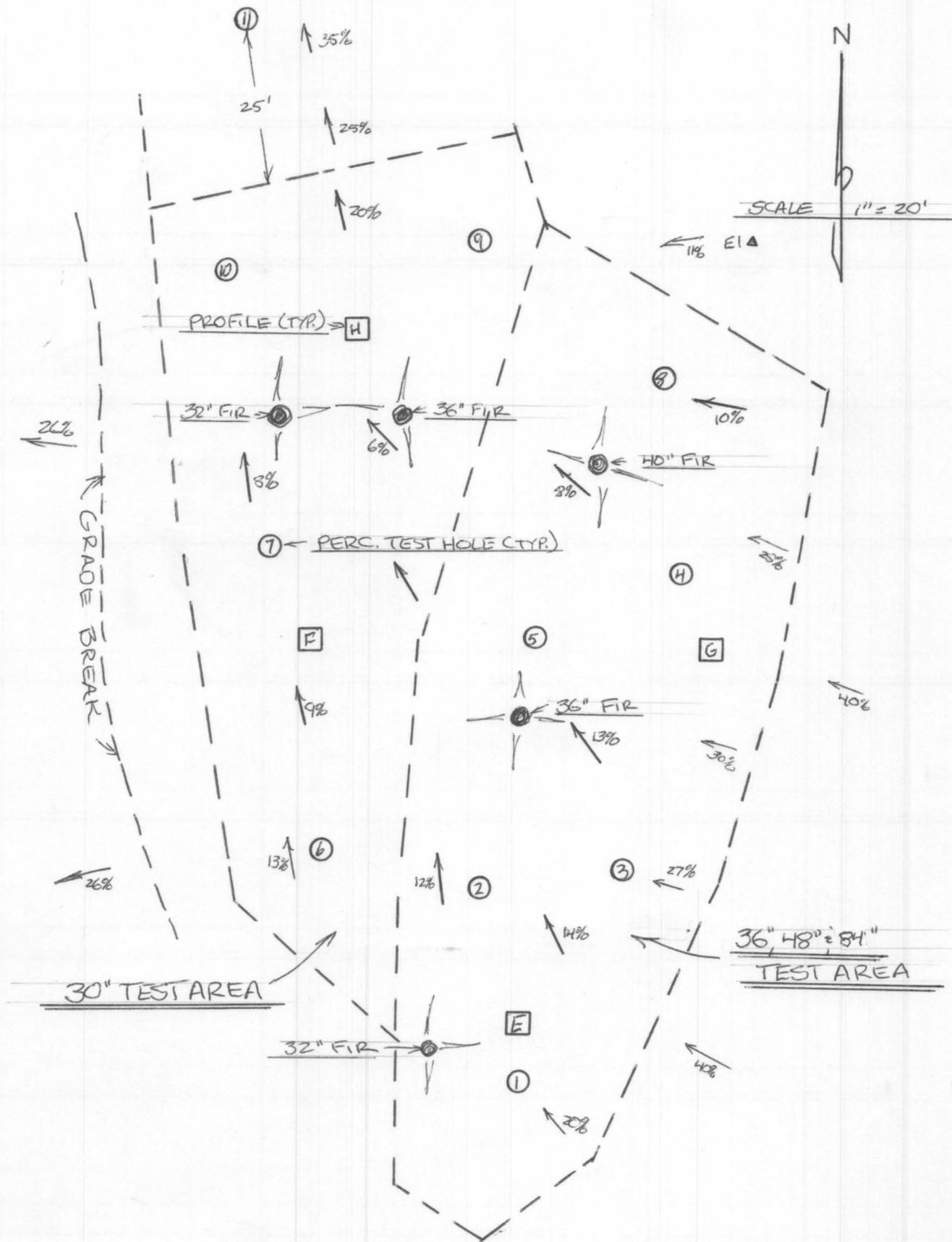
Address of Percolation Test: 20111 OLD CAZADERO RD		A.P. Number:		Winter Ground Water Test:		"Wet Weather Perc":	
Owner's Name: AGENT: ADOBE ASSOCIATES				Field Check: Yes No		By:	
				Date:		Time:	
Owner's Mailing Address: 1220 NORTH DUTTON AVE.				Review of Data:			
				Rates Acceptable: Yes No			
City/State/Zip Code: SANTA ROSA 95404		Telephone Number: (707) 541 2300		Remarks:		Receipt Information:	
Water Supply: Private Public		Lot or Parcel Size:					
Test Conducted By: SCIENTIFIC SANITATION		Telephone Numbers: (707) 799 8524					
Address/City/State/Zip Code: 11377 BARNETT VALLEY ROAD SEBASTOPOL, CA 95472							
Type of Soil:		Date of Test: DEC. 10, 2020		Circle One: Initial Test Supplemental		Sanitarian	

Hole No.	Depth of Hole	Pipe Length	Presoak Remaining	Start		First Measurement		Second Measurement		Third Measurement		Fourth Measurement		Fifth Measurement		Sixth Measurement		RATE
				Time	Inches	Time	Inches	Time	Inches	Time	Inches	Time	Inches	Time	Inches	Time	Inches	
A1	48	12	Ø	740	Ø	840	DRY											11
A2	36	12	Ø	740	Ø	840	DRY	} SEE 10 MINUTE TESTS									1	
A3	48	12	Ø	740	Ø	840	DRY										1	
A4	36	12	Ø	740	Ø	840	DRY										1	
A5	84	12	Ø	740	Ø	840	10 1/8	940	10 1/8	1040	10 1/8	1140	9 1/2	1240	DRY 1/8	140	9 1/8	7
A6	30	12	Ø	740	Ø	840	6 3/8	940	8	1040	9	1140	10 1/8	1240	5 1/2	140	7 1/4	60
A7	12	12	Ø	740	Ø	840	DRY											11
A8	48	12	Ø	740	Ø	840	DRY	} SEE 10 MINUTE TESTS									1	
A9	30	12	Ø	740	Ø	840	DRY										1	
A10	30	12	Ø	740	Ø	840	DRY										1	
A11	30	12	Ø	740	Ø	840	DRY											1



avg 30" = 18 mpi
 avg 36" = 1 mpi
 avg 48" = 4.3 mpi

Hole No.	Depth of Hole	Pipe Length	Presoak Remaining	Start		First Measurement		Second Measurement		Third Measurement		Fourth Measurement		Fifth Measurement		Sixth Measurement		RATE		
				Time	Inches	Time	Inches	Time	Inches	Time	Inches	Time	Inches	Time	Inches	Time	Inches			
10 MINUTE TESTS																				
A1	48	12	Ø	1040	Ø	1050	8 3/4	1100	10 1/4	1110	7 1/8	1120	9 1/4	1130	10 3/8	1140	7 1/4			
						1150	9 1/8	1200	10 1/4	1210	6 3/4	1220	8 3/8	1230	9 3/4	7/8	1240	10 5/8	11 ✓	
A2	36	12	Ø	1040	Ø	1050	DRY 1/8	1100	9 1/2	1110	DRY 1/8	1120	9 3/8	1130	DRY 1/8	1140	9 1/8			
						1150	DRY	1200	9	1210	DRY 1/8	1220	8 5/8	1230	DRY 1/8	8 3/8	1240	8 3/8	1 ✓	
A3	48	12	Ø	1040	Ø	1050	DRY 1/8	1100	DRY 1/8	1110	DRY 1/8	1120	DRY 1/8	1130	10 1/2	1140	10 1/8			
						1150	9 5/8	1200	DRY 1/8	1210	9 1/8	1220	DRY 1/8	8	8	1230	8	1240	DRY	1 ✓
A4	36	12	Ø	1040	Ø	1050	DRY 1/8	1100	DRY 1/8	1110	DRY 1/8	1120	DRY 1/8	1130	DRY 1/8	1140	DRY 1/8			
						1150	DRY 1/8	1200	DRY 1/8	1210	DRY 1/8	1220	10 3/4	1230	10 3/4	1240	10 1/2	1 ✓		
A7	12	12	Ø	840	Ø	850	7 7/8	900	9 1/2	7/8	910	10 3/8	920	7 1/2	930	9 1/8	7/8	940	10 1/8	
						950	7 1/2	1000	9 1/8	7/8	1010	10 1/8	1020	6 7/8	1030	8 3/8	1 1/8	1040	9 1/2	11 ✓
A8	48	12	Ø	840	Ø	850	DRY 1/8	900	DRY 1/8	910	DRY 1/8	920	DRY 1/8	930	DRY 1/8	940	DRY 1/8			
						950	10 1/2	1000	10 5/8	1010	10 1/2	1020	10 1/4	1030	10 1/4	1040	10 1/4	1 ✓		
A9	30	12	Ø	840	Ø	850	DRY 1/8	900	DRY 1/8	910	DRY 1/8	920	DRY 1/8	930	DRY 1/8	940	DRY 1/8			
						950	DRY 1/8	1000	DRY 1/8	1010	DRY 1/8	1020	DRY 1/8	1030	DRY 1/8	1040	DRY 1/8	< 1 ✓		
A10	30	12	Ø	840	Ø	850	6 1/8	900	9	910	10 1/2	920	5	930	7 1/2	940	9 1/2			
						950	10 1/2	1000	4 1/4	1010	6 1/2	1020	7 7/8	1030	9 1/8	1040	10 1/8	10 ✓		
A11	30	12	Ø	840	Ø	850	DRY 1/8	900	DRY 1/8	910	DRY 1/8	920	10 3/8	930	10 1/8	940	10 3/4			
						950	10 1/8	1000	10 5/8	1010	10 5/8	1020	10 1/4	1030	10 1/4	1040	10	1 ✓		



PERCOLATION TEST AREA "A" 20111 OLD CAZADERO ROAD
TEST DATE: 12/10/2020 BY: SCIENTIFIC SANITATION SYS.

County of Sonoma
 Permit And Resource Management Department
 Well & Septic Section
 2550 Ventura Avenue, Santa Rosa, CA 95403 (707) 527-1900

AREA "B"

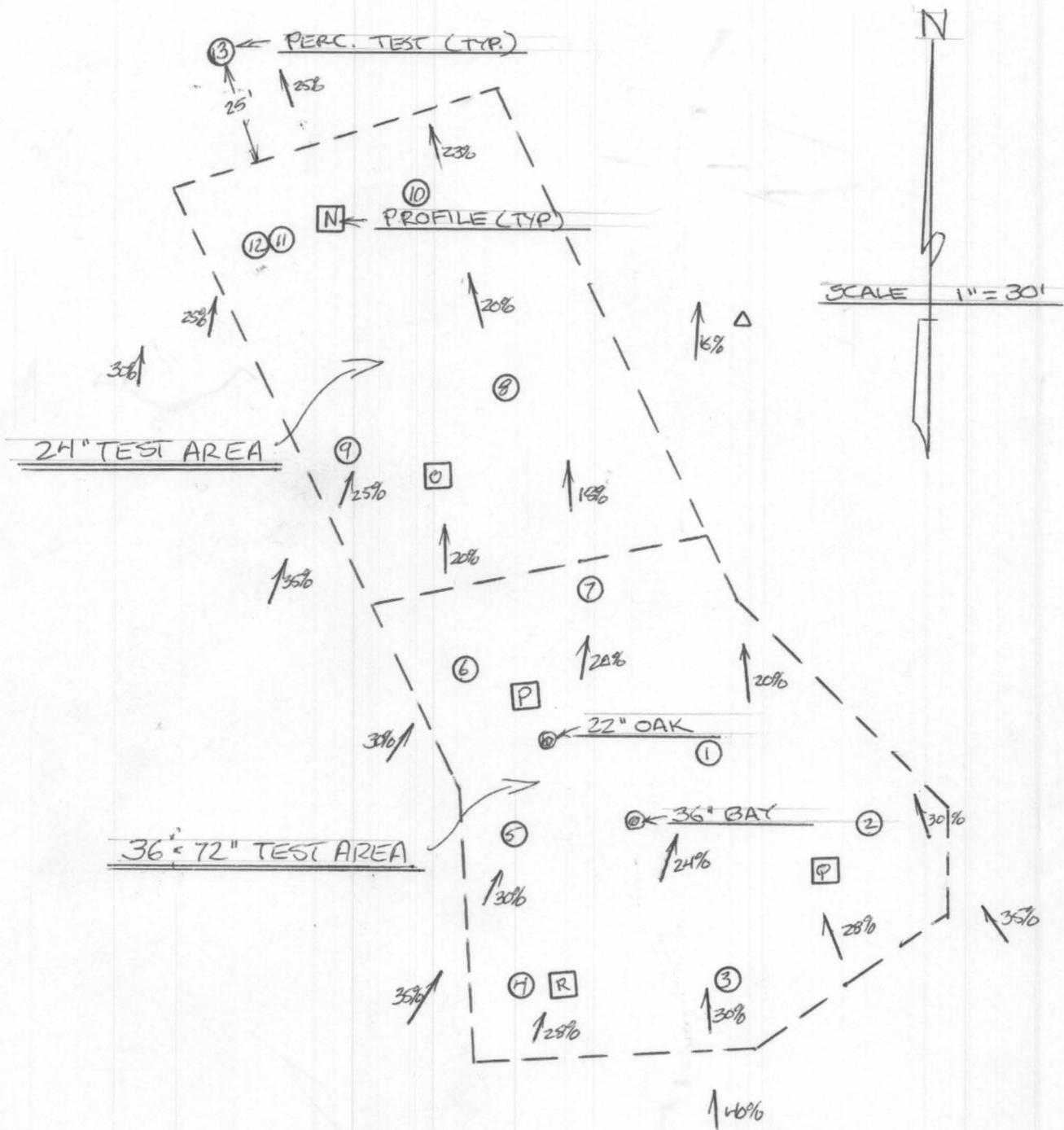
SOILS PERCOLATION TEST DATA

Address of Percolation Test: 20111 OLD CAZADERO RD		A.P. Number:		Winter Ground Water Test:		"Wet Weather Perc":	
Owner's Name: AGENT: ADOBE ASSOCIATES				Field Check: Yes No		By:	
				Date:		Time:	
Owner's Mailing Address: 1220 NORTH DUTTON AVE.				Review of Data:			
				Rates Acceptable: Yes No			
City/State/Zip Code: SANTA ROSA 95404		Telephone Number: (707) 541 2300		Remarks:		Receipt Information:	
Water Supply: Private Public		Lot or Parcel Size:					
Test Conducted By: TB SCIENTIFIC SANITATION		Telephone Numbers: (707) 799 8524					
Address/City/State/Zip Code: 11377 BARNETT VALLEY ROAD SEBASTOPOL, CA 95472							
Type of Soil:		Date of Test: DEC 10, 2020		Circle One: Initial Test Supplemental		Sanitarian	

Hole No.	Depth of Hole	Pipe Length	Presoak Remaining	Start		First Measurement		Second Measurement		Third Measurement		Fourth Measurement		Fifth Measurement		Sixth Measurement		RATE		
				Time	Inches	Time	Inches	Time	Inches	Time	Inches	Time	Inches	Time	Inches	Time	Inches			
B1	36	12	Ø	730	Ø	830	DRY											3		
B2	36	12	Ø	730	Ø	830	DRY											6		
B3	72	12	Ø	730	Ø	830	DRY											2		
B4	36	12	Ø	730	Ø	830	DRY											2		
B5	36	12	Ø	730	Ø	830	DRY											4		
B6	72	12	Ø	730	Ø	830	DRY											10		
B7	36	12	Ø	730	Ø	830	DRY	SEE 10 MINUTE TESTS												10
B8	36	12	Ø	730	Ø	830	DRY											7		
B9	36	12	Ø	730	Ø	830	DRY											1		
B10	24	12	Ø	730	Ø	830	DRY											1		
B11	12	12	Ø	730	Ø	830	DRY											1		
B12	24	12	Ø	730	Ø	830	DRY											1		
B13	24	12	Ø	730	Ø	830	DRY											1		

avg 24" = 1 mpi
 avg 36" = 5 mpi
 avg 72" = 6 mpi

Hole No.	Depth of Hole	Pipe Length	Presoak Remaining	Start		First Measurement		Second Measurement		Third Measurement		Fourth Measurement		Fifth Measurement		Sixth Measurement		RATE
				Time	Inches	Time	Inches	Time	Inches	Time	Inches	Time	Inches	Time	Inches	Time	Inches	
— 10 MINUTE TESTS —																		
B1	36	12	Ø	800	Ø	810	8	820	DRY ^{1/8}	830	7 ^{5/8}	840	DRY ^{1/8}	850	6 ^{3/4}	900	9 ^{3/4}	
						910	DRY ^{1/8}	920	6 ^{5/8}	930	9 ^{5/8}	940	DRY ^{1/8}	950	6 ^{1/2}	1000	9 ^{1/2}	3 ✓
B2	36	12	Ø	800	Ø	810	10 ^{1/2}	820	9 ^{1/2}	830	DRY ^{1/8}	840	9	850	DRY ^{1/8}	900	8 ^{7/8}	
						910	10 ^{1/2}	920	8	930	DRY ^{1/8}	940	7 ^{5/8}	950	9 ^{3/8}	1000	DRY	6 ✓
B3	72	12	Ø	800	Ø	810	DRY ^{1/8}	820	DRY ^{1/8}	830	10 ^{1/2}	840	9 ^{1/4}	850	DRY ^{1/8}	900	8 ^{1/4}	
						910	DRY ^{1/8}	920	6 ^{1/2}	930	DRY ^{1/8}	940	5 ^{3/4}	950	10 ^{1/8}	1000	5 ^{1/4}	2 ✓
B4	36	12	Ø	800	Ø	810	DRY ^{1/8}	820	DRY ^{1/8}	830	10 ^{1/2}	840	10 ^{1/2}	850	10 ^{1/8}	900	6 ^{3/4}	
						910	DRY ^{1/8}	920	6 ^{1/4}	930	10 ^{5/8}	940	6 ^{1/8}	950	10 ^{1/2}	1000	5 ^{7/8}	2 ✓
B5	36	12	Ø	800	Ø	810	4 ^{1/2}	820	3 ^{1/2}	830	DRY ^{1/8}	840	4 ^{1/8}	850	7 ^{5/8}	900	9 ^{1/8}	
						910	DRY ^{1/8}	920	3 ^{3/4}	930	7 ^{1/4}	940	10 ^{1/4}	950	3 ^{1/2}	1000	6 ^{7/8}	4 ✓
B6	72	12	Ø	1100	Ø	1110	3 ^{1/8}	1120	5 ^{3/4}	1130	7 ^{5/8}	1140	8 ^{3/4}	1150	10 ^{1/8}	1200	3 ^{1/8}	
						1210	4 ^{7/8}	1220	6 ^{1/2}	1230	7 ^{3/4}	1240	8 ^{3/4}	1250	9 ^{3/4}	100	DRY	10 ✓
B7	36	12	Ø	1100	Ø	1110	5 ^{1/4}	1120	7 ^{1/8}	1130	8 ^{3/4}	1140	10 ^{1/8}	1150	4	1200	5 ^{3/4}	
						1210	7 ^{3/8}	1220	8 ^{1/2}	1230	9 ^{1/2}	1240	10 ^{1/8}	1250	4	100	5 ^{3/4}	10 ✓
B8	36	12	Ø	1100	Ø	1110	6 ^{1/4}	1120	8 ^{3/4}	1130	10 ^{1/4}	1140	5 ^{3/4}	1150	8 ^{3/8}	1200	10 ^{1/8}	
						1210	5 ^{1/8}	1220	7 ^{3/4}	1230	9 ^{1/8}	1240	DRY ^{1/8}	1250	5	100	7	7 ✓
B9	36	12	Ø	1100	Ø	1110	DRY ^{1/8}	1120	DRY ^{1/8}	1130	DRY ^{1/8}	1140	DRY ^{1/8}	1150	DRY ^{1/8}	1200	10 ^{1/2}	
						1210	9 ^{3/8}	1220	DRY ^{1/8}	1230	8 ^{1/4}	1240	DRY ^{1/8}	1250	8 ^{1/2}	100	DRY	1 ✓
B10	24	12	Ø	1100	Ø	1110	9 ^{1/8}	1120	DRY ^{1/8}	1130	8	1140	DRY ^{1/8}	1150	7 ^{1/8}	1200	DRY ^{1/8}	
						1210	7 ^{1/2}	1220	DRY ^{1/8}	1230	7 ^{5/8}	1240	DRY ^{1/8}	1250	7 ^{1/2}	100	DRY	1 ✓
B11	12	12	Ø	1100	Ø	1110	DRY ^{1/8}	1120	DRY ^{1/8}	1130	DRY ^{1/8}	1140	DRY ^{1/8}	1150	DRY ^{1/8}	1200	DRY ^{1/8}	
						1210	DRY ^{1/8}	1220	DRY ^{1/8}	1230	10 ^{3/4}	1240	10 ^{5/8}	1250	10 ^{1/4}	100	10 ^{1/4}	1 ✓
B12	24	12	Ø	1100	Ø	1110	DRY ^{1/8}	1120	DRY ^{1/8}	1130	DRY ^{1/8}	1140	9 ^{3/4}	1150	DRY ^{1/8}	1200	9 ^{5/8}	
						1210	DRY ^{1/8}	1220	9 ^{3/4}	1230	DRY ^{1/8}	1240	7 ^{1/2}	1250	DRY ^{1/8}	100	7 ^{1/8}	1 ✓
B13	24	12	Ø	1100	Ø	1110	DRY ^{1/8}	1120	DRY ^{1/8}	1130	10 ^{1/2}	1140	9 ^{3/4}	1150	DRY ^{1/8}	1200	9 ^{1/2}	
						1210	DRY ^{1/8}	1220	9 ^{1/4}	1230	DRY ^{1/8}	1240	9 ^{1/8}	1250	DRY ^{1/8}	100	9	1 ✓



PERCOLATION TEST AREA "B"

20111 OLD CAZADERO ROAD

TEST DATE: 12/10/2020
 BY: SCIENTIFIC SANITATION