REVISED PRELIMINARY DOMESTIC WASTEWATER FEASIBILITY STUDY

FOR THE

PERRIN SMALL WINERY

ADMINISTRATIVE PERMIT APPLICATION

LOCATED AT:

16138 HIGHLAND VALLEY ROAD
ESCONDIDO, CALIFORNIA 92025
APN 276-101-14

PREPARED FOR:

STRATA a|p (BENNETT MARTIN)
23562A ARNOLD DRIVE
SONOMA, CALIFORNIA 95476

PREPARED BY:

FRANK SPRINGER AND ASSOCIATES, INC.
2080 WINERIDGE PLACE
ESCONDIDO, CALIFORNIA 92029

5/17/19

FRANK C. SPRINGER, JR.
RCE 28290

Date

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INTRODUCTION

The Preliminary Domestic Wastewater Feasibility Study for the Perrin Small Winery has been prepared as a supplementary report to the Administrative Permit Application for the subject project. The Perrin Small Winery is located at 16138 Highland Valley road in Escondido, California 92025 on APN 276-101-14 property that consists of approximately 56 acres, with the majority of the property in existing vineyards. The subject feasibility study will develop the peak domestic wastewater flows and prepare preliminary septic system layouts for the proposed Hospitality Building and the Wine production Facility associated with the Perrin Small Winery project.

SOILS AND HISTORICAL PERCOLATION TEST DATA

The United States Department of Agriculture Soil Conservation Service Soils Map (NCRS) for San Diego County includes a map of the soil conditions for APN 276-101-14 property as shown in Appendix 1 of this report. The northerly portion of the property is mapped as Fallbrook rocky sandy loam, 30-60 percent slopes. The southerly portion of the property is mapped as Vista rocky course sandy loam, 15-30 percent slopes. These soils are consistent with anticipated good percolation rates for septic disposal systems.

Percolation tests were performed on the subject property in 2007 for a proposed single family residence and the percolation test results and the proposed septic system layout were submitted as a Percolation Test Report to the County of San Diego Department of Environmental Health in October 2007. The Percolation Test Report as shown in Appendix 2 of this report indicates that eight percolation test holes were drilled to depths ranging from 46-60 inches deep with stabilized percolation rates ranging from 8 to 24 mpi, with an average percolation rate of 14 mpi. The Percolation Test Report proposed horizontal pits for primary and reserve septic disposal systems.

PEAK DOMESTIC WASTEWATER FLOW CALCULATIONS

HOSPITALITY BUILDING

2 full time employees @ 15 gpd/employee per County of San Diego Department of Environmental Health Standards for "Day Workers".
(2) (15) = 30 gpd

75 maximum number of visitor guests/day @ 5 gpd/guest (see Appendix 3 USEPA On-Site Wastewater Treatment Manual, Page 3-9) for representative "Visitor Center" projected Wastewater flow of 5 gpd/guest
(75) (5) = 375 gpd

Total Daily Wastewater Flow = 30 + 375 = 405 gpd. For commercial facility, use County surge factor of 2.

Total Peak Flow = (405) (2) = 810 gpd

For all other periods where visitor guests exceed 75 maximum visitor guests/day, portable restrooms will be provided for the use of any visitor guests exceeding 75 visitors per day.

WINE PRODUCTION FACILITY

2 full time employees @ 15 gpd/employee per County of San Diego Department of Environmental Health Standards for "Day Workers".
(2) (15) = 30 gpd

11 part-time employees (October through December each year)

10 on-site farm worker units are provided as part of the Wine Production Facility.

75 gpd/unit per County of San Diego Department of Environmental Health Standards for equivalent "single family dwellings" for farm worker units. Assume all 10 farm worker units are occupied for the full year period for conservative estimate of peak wastewater flows.
(75) (10) = 750 gpd

Total Daily Wastewater Flow = 30 + 750 = 780 gpd. For commercial facility, use County surge factor of 2

Total Peak Flow = (780) (2) = 1,560 gpd

SEPTIC TANK & DISPOSAL SYSTEM CALCULATIONS

HOSPITALITY BUILDING:

Total Peak Flow = 810 gpd
Septic Tank Size = (810) (1.5) = 1,215 Gal (Use 1,500 Gal Tank)
Use assumed percolation rate of t = 15 mpi consistent with 2007 Percolation Test Report (Appendix 2) for average percolation rate of 14 mpi

Application Rate (A.R.) = 5/V15 = 5/3.87 = 1.29 Gal/SF/Day

Peak Flow/AR=810/1.29 = 628 SF

Leach Line Length = LLL = 628/1.5 = 419 FT

Total SF of Pit = (LLL) (3) = (419) (3) = 1,256 SF

Pit Length = (1,256 - 48) /12 = 101 FT

101 FT Horizontal Pit Primary & 100% Reserve Horizontal Pit

WINE PRODUCTION FACILITY:

Total Peak Flow = 1,560 gpd
Septic Tank Size = 1125 + (0.75) (1,560) = 2,295 Gal (use 2,500 Gal Tank)
Use assumed percolation rate of t=15 mpi consistent with 2007 Percolation Test Report (Appendix 2) for average percolation rate of 14 mpi

Application Rate (A.R.) = 5/V15 = 5/3.87 = 1.29 Gal/SF/Day

Peak Flow/A.R. = 1,560/1.29 = 1,209 SF

Leach Line Length = LLL = 1,209 / 1.5 = 806 FT

Total SF of Pit = (LLL) (3) = (806) (3) = 2,419 SF

Pit Length = (2,419 - 48)/12 = 198 FT

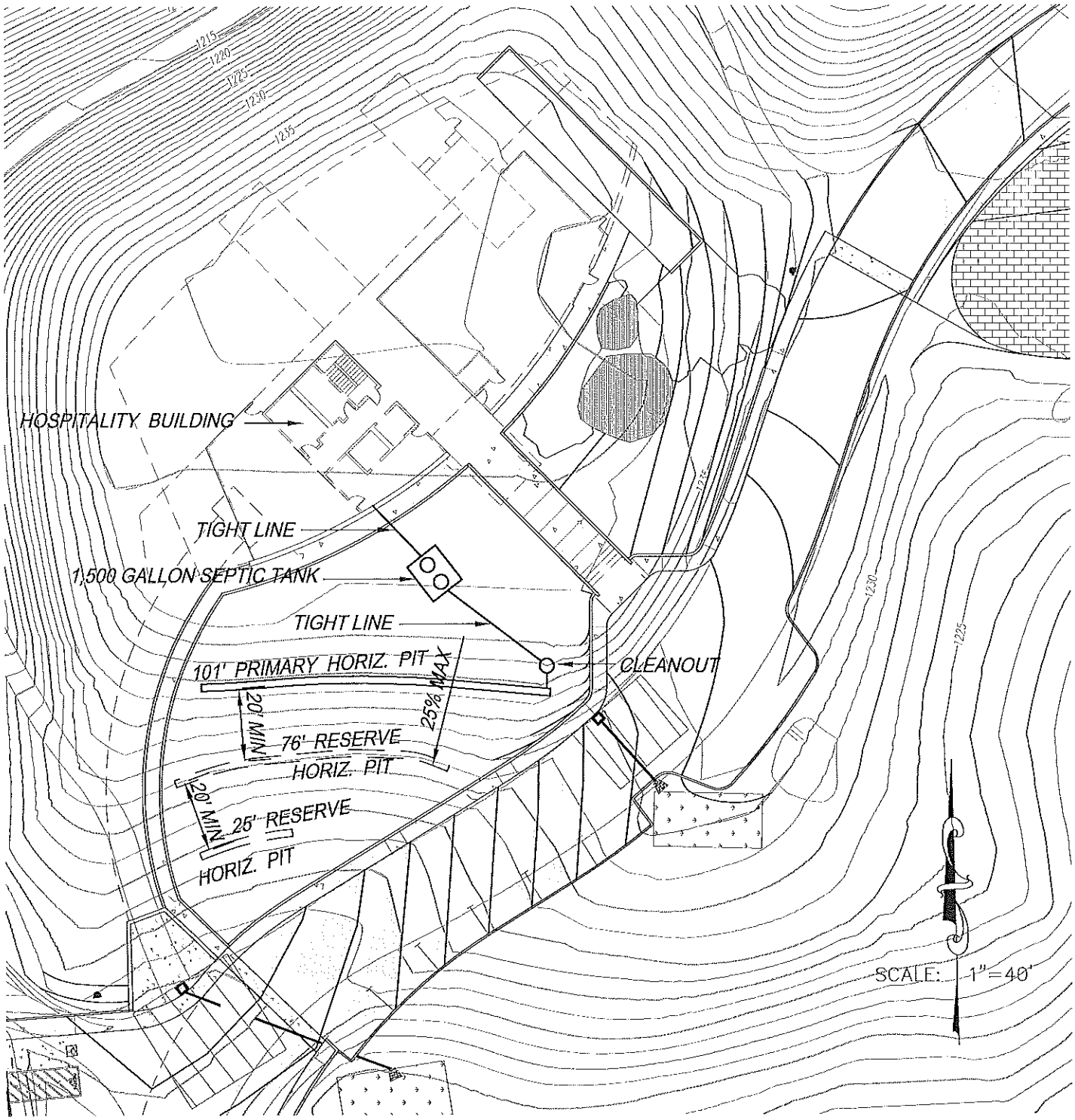
200 FT Horizontal Pit Primary & 100% Reserve Horizontal Pit

PRELIMINARY SEPTIC SYSTEM LAYOUTS

A preliminary separate septic system layout has been prepared and included in this report for the proposed Hospitality Building septic system and for the proposed Wine Production Facility septic system. As discussed recently with County of San Diego Department of Environmental Health staff, the domestic wastewater septic disposal systems such as leach lines or horizontal pits can be located in vineyard areas subject to meeting the County of San Diego Department of Environmental Health requirements and processing for permits. The preliminary septic system layout for the Hospitality Building and the Wine Production Facility included in his report reflect each of the proposed septic systems to be located in vineyard areas.

HOSPITALITY BUILDING PERRIN WINERY

PRELIMINARY SEPTIC SYSTEM LAYOUT



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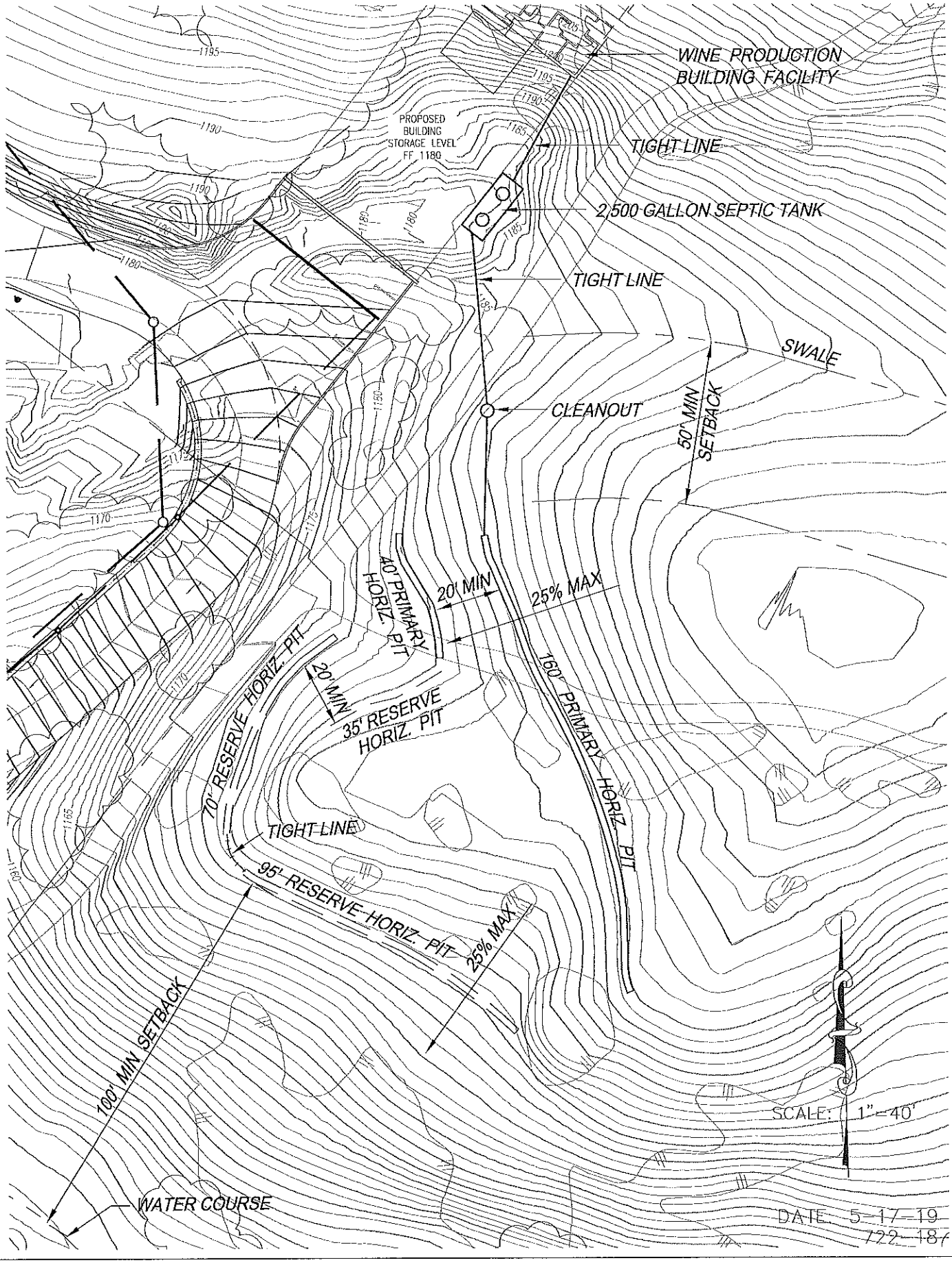
WINE PRODUCTION FACILITY PERRIN WINERY

REVISED PRELIMINARY SEPTIC SYSTEM LAYOUT

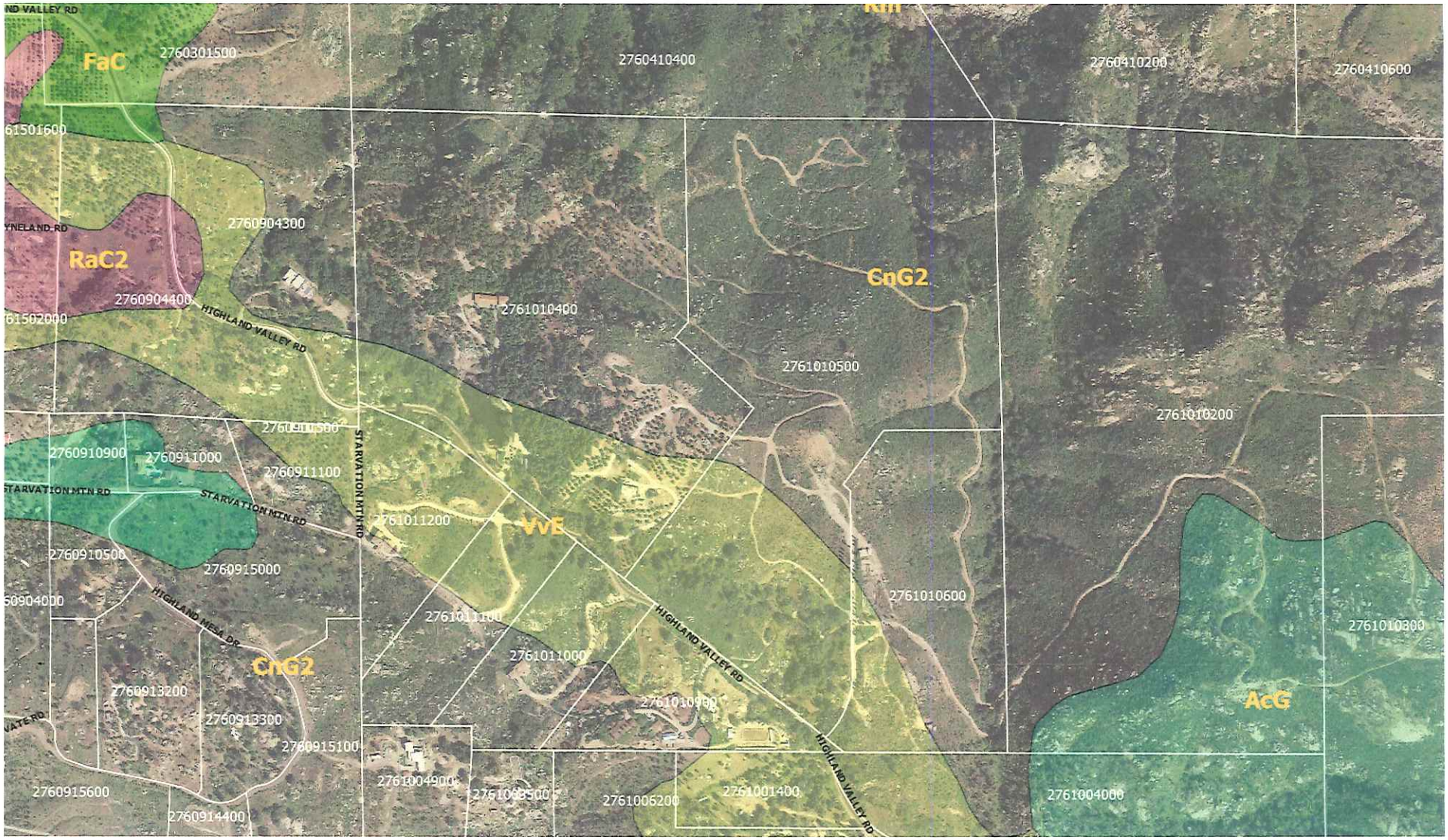


CONCLUSION

Based on the preliminary study prepared for this report, the design and construction of gravity domestic wastewater septic systems to serve the proposed Hospitality Building and Wine Production Facility appears to be feasible subject to future field percolation testing and deep holes in the areas proposed for the septic disposal system, and processing of Percolation Test Reports with Septic System Layouts, and processing for septic permits with construction of the septic systems with the approval at each step by the County of San Diego Department of Environmental Health.

APPENDIX 1

SOIL MAP (NRCS)


FaC
RaC2
CnG2
VvE
CnG2
AcG
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2760913300
2760915100
2760915600
2760914400
2761004900
2761003500
2761006200
2761001400
2761004000
HIGHLAND VALLEY RD
STARVATION MTN RD
HIGHLAND MESA DR

APPENDIX 2

HISTORICAL PERCOLATION TEST DATA

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH
PERCOLATION TEST REPORT

DEH Control #: LOWS 14184
Date: 10/5/07
Activity Code: E12

Assessor's Parcel Number: 276-101-05-00 Map # 1297D Lot # 2

Site Address 16168 HIGHLAND VALLEY ROAD Town: RAMONA Zip Code: 92065

Owner: PAUL THORYK Phone: (619) 523-9050

Mailing Address: 1235 SHAFTER STREET, SAN DIEGO, CA. 92106

Test Hole #	Test Depth	Stabilized Rate	Test Hole #	Test Depth	Stabilized Rate	Average Perc Rate
1	46 IN	8 MIN/IN	5	54 IN	15 MIN/IN	14 MIN/IN
2	72 IN	11 "	6	48 IN	17 "	
3	54 IN	15 "	7	63 IN	15 "	
4	60 IN	24 "	8	60 IN	14 "	

Vertical seepage pits: Provide soils log, uniformity/capacity test results, and calculations on separate 8-1/2" x 11" sheets of paper

TYPE OF SOIL: (clay, silt, sand, decomposed granite, etc.)
Surface: BROWN SILTY FINE TO COARSE SAND
3 ft. below surface: "
7 ft. below surface: "
20 ft. below surface: LIGHT BROWN FINE TO COARSE SAND
____ ft. below surface:
Depth to Refusal: NOT ENC. TO 20 FT Depth to Groundwater: NOT ENC. TO 20 FT.

RECOMMENDATIONS: (1000 REQUIRED) 900-72 12

Septic Tank: 1,500 gal Pump Chamber: ____ gal Surge Tank: 400 gal
Leach Line Length: ____ ft Seepage Pit Type: HORIZ. Number of Pits: 1
Trench Depth: 6 ft Length: 60-OK ft Width: 6 ft
Rock below Pipe: ____ in Total Depth: ____ ft Cap Depth: ____ ft
Other:
Proposed Structure: 2 BDRM RESIDENCE

WATER SUPPLY:
Source of Potable Water: DOMESTIC WELL Well Permit Number:

I have reviewed this percolation data and design of the subsurface sewage disposal system for this parcel and find the data and design to be accurate and in compliance with state and local regulations, and good engineering practice.

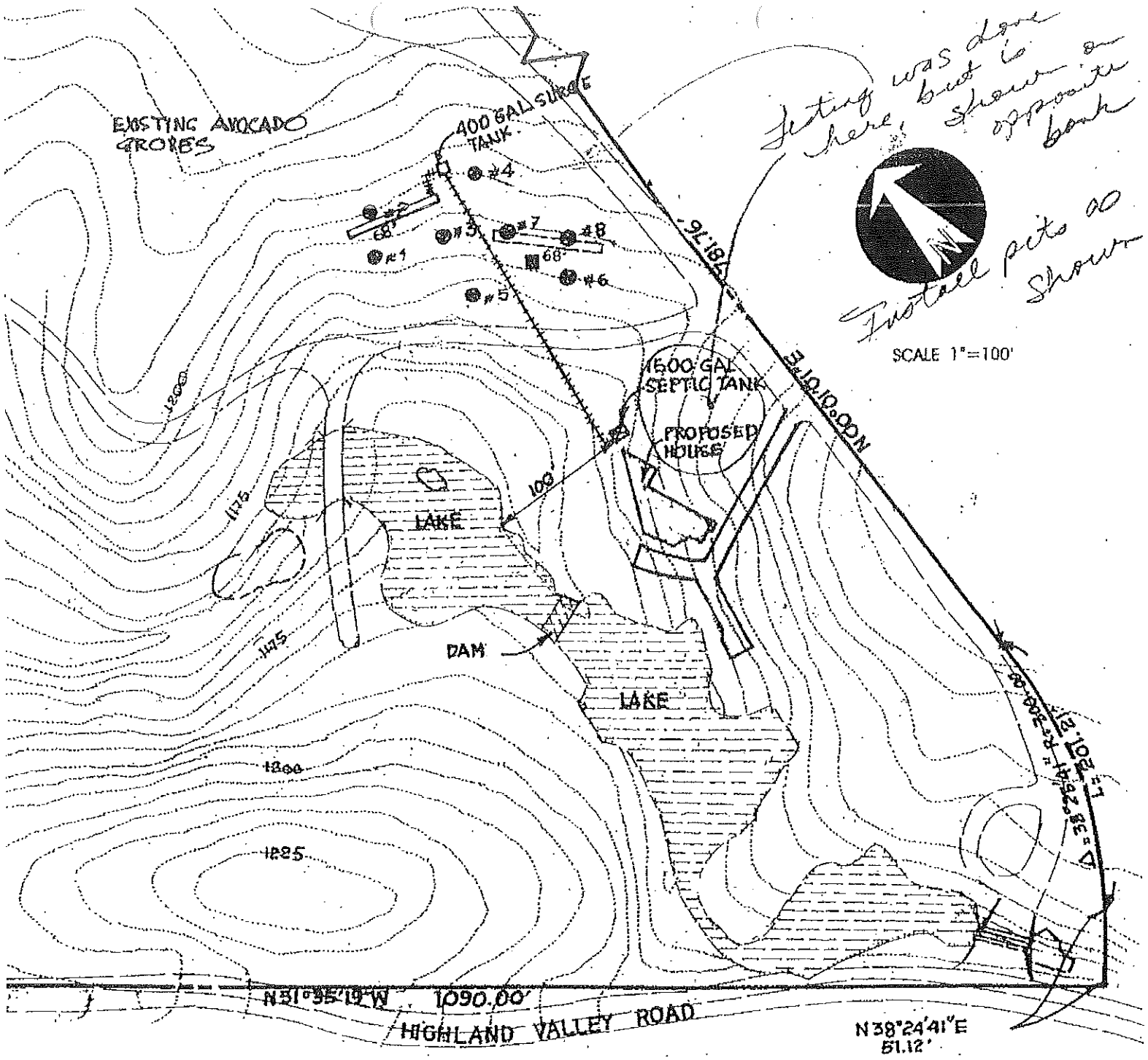
REGISTERED PROFESSIONAL ENGINEER ROBERT CHAN No. C-24613 Exp 12/31/07 STATE OF CALIFORNIA

Registered CE, PE, Geologist, REHS: ROBERT CHAN RCE 24613
Address: 4926 LA CUENTA DR. TORR Phone: (858) 541-0225 Date: 09/04/07
SAN DIEGO, CA. 92124

FOR DEPARTMENT USE ONLY

Approved: Yes ___ No ___ Date: ____ Final Map Required: Yes ___ No ___
Specialist:
Building Plan Review: Date:
Grading Inspection: Date:
Water Sample Analysis Results: Date:

Percolation Test Report Form
Revised July 10, 2003



IMATE LOCATION OF
ATION TEST HOLE

IMATE LOCATION OF 20 FT
OLE

ED HORIZONTAL
E PIT

ON PIT

Primary dwelling?
Show entire property...

APPENDIX 3

USEPA ONSITE WASTEWATER TREATMENT MANUAL, PAGE 3-9

Table 3-6. Typical wastewater flow rates from recreational facilities[a]

Facility	Unit	Flow, gallons/unit/day Range	Typical	Flow, liters/unit/day Range	Typical
Apartment, resort	Person	50–70	60	190–260	230
Bowling alley	Alley	150–250	200	570–950	760
Cabin, resort	Person	8–50	40	30–190	150
Cafeteria	Customer	1–3	2	4–11	8
	Employee	8–12	10	30–45	38
Camps:					
Pioneer type	Person	15–30	25	57–110	95
Children's, with central toilet/bath	Person	35–50	45	130–190	170
Day, with meals	Person	10–20	15	38–76	57
Day, without meals	Person	10–15	13	38–57	49
Luxury, private bath	Person	75–100	90	280–380	340
Trailer camp	Trailer	75–150	125	280–570	470
Campground-developed	Person	20–40	30	76–150	110
Cocktail lounge	Seat	12–25	20	45–95	76
Coffee Shop	Customer	4–8	6	15–30	23
	Employee	8–12	10	30–45	38
Country club	Guests onsite	60–130	100	230–490	380
	Employee	10–15	13	38–57	49
Dining hall	Meal served	4–10	7	15–38	26
Dormitory/bunkhouse	Person	20–50	40	76–190	150
Fairground	Visitor	1–2	2	4–8	8
Hotel, resort	Person	40–60	50	150–230	190
Picnic park, flush toilets	Visitor	5–10	8	19–38	30
Store, resort	Customer	1–4	3	4–15	11
	Employee	8–12	10	30–45	38
Swimming pool	Customer	5–12	10	19–45	38
	Employee	8–12	10	30–45	38
Theater	Seat	2–4	3	8–15	11
Visitor center	Visitor	4–8	5	15–30	19

[a] Some systems serving more than 20 people might be regulated under USEPA's Class V UIC Program.

Source: Crites and Tchobanoglous, 1998.

pollutants, the strength of residential wastewater fluctuates throughout the day (University of Wisconsin, 1978). For nonresidential establishments, wastewater quality can vary significantly among different types of establishments because of differences in waste-generating sources present, water usage rates, and other factors. There is currently a dearth of useful data on nonresidential wastewater organic strength, which can create a large degree of uncertainty in design if facility-specific data are not available. Some older data (Goldstein and Moberg, 1973; Vogulis, 1978) and some new information exists, but modern organic strengths need to be verified before design given the importance of this aspect of capacity determination.

Wastewater flow and the type of waste generated affect wastewater quality. For typical residential sources peak flows and peak pollutant loading rates do not occur at the same time (Tchobanoglous and Burton, 1991). Though the fluctuation in wastewater quality (see figure 3-5) is similar to the water use patterns illustrated in figure 3-3, the fluctuations in wastewater quality for an individual home are likely to be considerably greater than the multiple-home averages shown in figure 3-5.