CMP Civil Engineering & Land Surveying Inc.
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Domestic & Production Wastewater Feasibility Report for the proposed Ontrail Vineyards Micro-Winery

3252 Silverado Trail
Napa, CA 94558
APN: 039-610-003

Prepared By:

CMP Civil Engineering & Land Surveying Inc.
1607 Capell Valley Road
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Date: 5/2/2025
R1: 10/8/2025, R2 11/24/2025

Project # 01171

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Contact Information	
Property Owner:	Ozegna Vineyards, LLC c/o Jim Fassio
Owner Address:	501 El Cerrito Ave Hillsborough, CA 94010
Owner Phone:	650-333-3155

Site Map:
Please refer to the Use Permit Application Materials for the proposed Winery.

Existing Site Conditions:
The project site is 13.33 acres of land located at 3252 Silverado Trail in Napa County. The property is currently developed with one three-bedroom residence, one two-bedroom residence, an agricultural barn, a farm office and 8.3 net acres of vineyard.

Proposed Winery:
The proposed winery will be constructed in phases, phase 1 will be converting the existing barn into a production facility and converting the existing farm office into a tasting room. Phase 2 will be the construction of a new production building. Phase 3 will be the installation of an onsite process wastewater system. The proposed winery will comply with the Napa County Micro Winery Ordinance at all phases and will produce up to 5,000 gallons per year.

The winery will be staffed by one full-time resident and one part-time employee. Visitation will be limited to a maximum of 10 daily tours & tasters.

Proposed Wastewater Flows & Analysis:
During phases 1 and 2 only secondary fermentation in the barrel or bottle will be taking place onsite. No crush or other production wastewater generating activities will be taking place onsite during these phases, thus no process wastewater will be generated during these phases. . In phase 3 production activities will be taking place onsite. At this point the proposed 5,000 gallon-per-year winery is estimated to generate peak process wastewater flows of 250 gallons per day during a 30 day crush period. The facility is anticipated to generate process wastewater at a rate of 6 gallons per gallon of wine produced, resulting in a total annual process wastewater flow of 30,000 gallons per year.

Domestic wastewater flow is calculated based on the number of employees and visitors. There will be a maximum of 10 daily visitors, one full-time resident employee and one part-time non-resident employee. Expected wastewater flow rates are 3 gallons per day (GPD) per visitor, 8 GPD per part-time employee and the one fulltime resident employee's wastewater is already included in the wastewater generated by the existing residence. The employees and daily visitors will be served by the on-site restroom facilities. As such, the calculated peak domestic wastewater flow is 38 GPD. Refer to the attached calculations in Appendix A for additional detail.

Domestic Wastewater Improvements:
The proposed winery's domestic wastewater treatment will be served by the existing onsite wastewater system that currently serves the farm office building that is to be converted into a tasting room. The current wastewater system that serves this said farm office building consists of an existing 1200 gallon septic/pump tank and a shared leach field that also serves the exiting onsite residence # 1 as shown on the project site plan. Residence # 1 is a 3 bedroom residence that produces a peak wastewater flow of

450 GPD. Per the wastewater As-Built plan on file with Napa County (included in Appendix C), Residence #1 has its own 1500 gallon septic tank, a 1200 gallon pump tank and a shared leach field that consists of 600 linear feet of rock and pipe type leach lines. The effective treatment sidewall height of each leach line is 18 inches, thus each foot of existing leach line has 3 square feet of treatment area. Based on the approved existing site evaluation (included in Appendix C) the soil at the existing leach field has an acceptable depth of 72 inches and a infiltration rate of 0.33 gallons per square foot of treatment area. Given the above, this means that the existing leach field is capable of treating 600 GPD of wastewater. That said, county staff has reported that septic permit E24-00084 appears to show that the said wastewater system was oversized and according to the said permit document can handle a maximum of 550 GPD. Either way, adding the said existing residential peak flow (450 GPD) to the peak flow of the proposed winery (38 GPD) nets us a total of 488 GPD. This is well under both the 550 GPD county stated maximum as well as the calculated 600 GPD the existing leach field is capable of treating. Based on this, no substantial domestic wastewater improvements are expected for this project. Further there is plenty of space in the tested soil region for a 100% (600 foot long) conventional domestic wastewater reserve area which has been delineated on the project site plan and is also shown on the said As-Built. Please see the said site plan, the included calculations in appendix A and supporting documents in appendix C for further details.

Process Wastewater Improvements:

As stated before, phases 1 and 2 of this project will not generate any process wastewater onsite, thus no process wastewater improvements will be necessary for these phases. That said phase 3 will generate process wastewater which will treated in one of the following ways.

Option 1: the process wastewater will be collected in appropriately sized onsite holding tanks until the wastewater can be pumped out and transported to an offsite treatment facility. Minimum tankage required would be 2500 gallons based on the calculations included in appendix B.

Option 2: The proposed winery would be served by an onsite process wastewater system which requires permitting under the State Water Resources Control Board's Statewide General Waste Discharge Requirements for Winery Process Water (WDR). With an expected 30,000 gallons of process waste generated annually, the winery will be categorized as a Tier 1 facility. The winery would treat and beneficially reuse the process wastewater in the form of irrigation water for the existing vineyard. Process wastewater from the winery would be collected and pumped to a treatment and storage facility as depicted on the site plan. A detailed process wastewater treatment system design is outside of the scope of this feasibility study, however it is anticipated that the system will utilize a combination of mechanical, chemical and biological processes to treat the winery effluent to the standards required of the WDR. The treated wastewater will be stored in tanks and introduced to the vineyard irrigation system as needed to provide supplemental irrigation water. The minimum volume of holding tank storage required for this type of system would be 1306 gallons. See water balance calculations in appendix B for further details.

The WDR imposes limits on land application systems to prevent excessive hydraulic, BOD and nitrogen loading. A conservative hydraulic loading limit for the existing vineyard is determined by current farming practices. With the proposed implementation of more efficient irrigation methods and infrastructure an irrigation rate of 0.3 acre-feet per acre per year. Using this value, 0.31 acres of vineyard is required to dispose of the process wastewater without disrupting established irrigation practices. The WDR imposes a BOD loading limit of 100 pounds per acre per irrigation cycle day. Assuming a conservative post-treatment effluent BOD concentration of 20 mg/L and four irrigation cycles per year, 0.01 acres of

vineyard is required to comply with the BOD loading limit. Lastly, the WDR requires a nitrogen balance calculation to ensure nitrogen is applied at an agronomic rate to the crop. Assuming a conservative post-treatment effluent total nitrogen concentration of 10 mg/L and an estimated agronomic rate of 68.8 pounds of nitrogen per acre, 0.04 acres of vineyard is required to comply with the nitrogen loading limit. With 4.1 acres of approved vineyard on the winery property, there is ample opportunity to facilitate a future land application process waste disposal system in compliance with the WDR. Refer to the WDR calculations in Appendix B for additional detail.

Summary and Conclusions

Based on the preceding analysis, the project site already has suitable domestic wastewater treatment system capable of treating the domestic wastewater needs of the proposed winery. Further in phases 1 & 2 of this project the winery will not need an onsite process wastewater treatment system. In phase 3 of this project, the process wastewater generated by the winery will have the option of utilizing a hold and haul type system or the installation of an onsite process wastewater system that meets the requirements of the Statewide WDR. Should an onsite process wastewater system be installed, it is clear the site's existing vineyard is substantially larger than the area required for the compliant land-application of treated process wastewater. Based on these findings, it is feasible to treat and dispose of the domestic and production wastewater associated with the proposed winery in accordance with County and State requirements.

Appendix A

Wastewater Flow Calculations

CMP Civil Engineering & Land Surveying Inc.
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Proposed Winery Wastewater Flow Calculations

for the proposed

Ontrail Vineyards Micro-Winery

Located at:

3252 Silverado Trail

Napa, CA 94558

Date: 5/2/2025

R1 9/15/2025

Project # 01171

Legend

Requires Input
Automatically Calculates
Important Value Automatically Calculates
Important Value Requires Input

Hit ctrl + alt + shift + F9 when finished to recalc all formulas

Winery Waste Flow Summary

These wastewater calculations are for a proposed winery. The calculations establish the expected peak process and domestic daily flows, as well as the expected total annual domestic and process water use.

Winery Proposed Peak Process Wastewater Flows

Wine Production =	5000	gal/yr
Crush Duration =	30.00	days (30 -60)
Peak Process Waste Flows During Crush =	250.00	gal/day ((1.5 x production)/crush days)
Average Process Flows (non crush) =	82.19	gal/day ((6 x production)/days in yr)
Additional Process Flow =	0.00	gal/day (usually 0)
Winery Peak Process Waste Flows =	**250.00**	gal/day

Proposed Domestic Peak Wastewater Flows

Peak Crush Weekend		
Number of FT Employees =	0	#
Number of PT Employees =	1	#
Number of daily visitors =	10	#
Event people count serviced by this system =	0	# (no visitors on event days)
FT employee daily domestic waste flow =	0.00	gal/day (15 g/p)
PT employee daily domestic waste flow =	8.00	gal/day (8 g/p)
Visitor daily domestic waste flow =	30.00	gal/day (3 g/p)
Event daily domestic waste flow =	0.00	gal/day (5 g/p)
Peak Winery Domestic Flow =	**38.00**	**gal/day**
Peak Non Crush Weekend		
Number of FT Employees =	0	#
Number of PT Employees =	1	#
Number of daily visitors =	10	#
Event people count serviced by this system =	0	# (no visitors on event days)
FT employee daily domestic waste flow =	0.00	gal/day (15 g/p)
PT employee daily domestic waste flow =	8.00	gal/day (8 g/p)
Visitor daily domestic waste flow =	30.00	gal/day (3 g/p)
Event daily domestic waste flow =	0.00	gal/day (5 g/p)
Peak Winery Domestic Flow =	**38.00**	**gal/day**
Peak Weekday		
Number of FT Employees =	0	#
Number of PT Employees =	1	#
Number of daily visitors =	10	#
Event people count serviced by this system =	0	# (no visitors on event days)
FT employee daily domestic waste flow =	0.00	gal/day (15 g/p)
PT employee daily domestic waste flow =	8.00	gal/day (8 g/p)
Visitor daily domestic waste flow =	30.00	gal/day (3 g/p)
Event daily domestic waste flow =	0.00	gal/day (5 g/p)
Peak Winery Domestic Flow =	**38.00**	gal/day
Winery Peak Domestic Wasteflows =	**38.00**	**gal/day**

Combined Winery Waste Annual Volume Calculations

Winery Combined Process & Domestic Waste Flows

Typical Crush Weekend Volumes				
Number of FT Employees =	0	#		
Number of PT Employees =	1	#		
Number of daily visitors =	10	#		
FT employee daily domestic waste flow =	0.00	gal/day (15 g/p)		
PT employee daily domestic waste flow =	8.00	gal/day (8 g/p)		
Visitor daily domestic waste flow =	30.00	gal/day (3 g/p)		
Number of Flow Days =	30.00	days/yr		
Total employee wastewater volume =	240.00	gal		
Total visitor wastewater volume =	900.00	gal		
Total domestic wastewater volume =	1140	gal/year		
Total process wastewater volume =	2466	gal/year		
Combined Process and Domestic Volume =	3606	gal/year		
Typical Non Crush Weekend Volumes				
Number of FT Employees =	0	#		
Number of PT Employees =	1	#		
Number of daily visitors =	10	#		
FT employee daily domestic waste flow =	0.00	gal/day (15 g/p)		
PT employee daily domestic waste flow =	8.00	gal/day (8 g/p)		
Visitor daily domestic waste flow =	30.00	gal/day (3 g/p)		
Number of Flow Days =	94.00	days/yr		
Total employee wastewater volume =	752.00	gal		
Total visitor wastewater volume =	2820.00	gal		
Total domestic wastewater volume =	3572	gal/year		
Total process wastewater volume =	7726	gal/year		
Combined Process and Domestic Volume =	11298	gal/year		
Typical Weekday Volumes				
Number of FT Employees =	0	#		
Number of PT Employees =	1	#		
Number of daily visitors =	10	#		
FT employee daily domestic waste flow =	0.00	gal/day (15 g/p)		
PT employee daily domestic waste flow =	8.00	gal/day (8 g/p)		
Visitor daily domestic waste flow =	30.00	gal/day (3 g/p)		
Number of Flow Days =	241.00	days/yr		
Total employee wastewater volume =	1928.00	gal		
Total visitor wastewater volume =	7230.00	gal		
Total domestic wastewater volume =	9158	gal/year		
Total process wastewater volume =	19808	gal/year		
Combined Process and Domestic Volume =	28966	gal/year		
Special Event Visitor Volumes	visitors	days/yr	flow/day	gallons
Large Events =	0	0	5	0
Medium Events =	0	0	5	0
Small =	0	0	5	0
Very Small =	0	0	5	0
Total Annual Event Visitor Waste Volume =	0	gal/year		
Total annual employee wastewater volume =	2920	gal/yr	0.01	af
Total annual visitor wastewater volume =	10950	gal/yr	0.03	af
Total annual domestic wastewater volume =	**13870**	**gal/yr**	**0.04**	**af**
Total annual process wastewater volume =	**30000**	**gal/yr**	**0.09**	**af**
Total Winery Wastewater Annual Vol =	**43870**	**gal/yr**	**0.13**	**af**

Project-Specific Wastewater Flow Factors

Table 4 of the Napa County ASTS Standards provide factors for calculating peak wastewater flows. These factors are typically utilized in the wastewater flow calculations supporting this analysis. However, each project has unique characteristics which occasionally necessitate the use of factors not provided in Table 4 of the ASTS Standards. This project-specific analysis utilizes a wastewater flow rate which does not appear in Table 4, and is described in detail below:

Part-time Employee Wastewater Flow: The ASTS Standards provide a flowrate factor of 15 gallons per shift for all employees and does not differentiate between full-time and part-time employees. It is assumed that part-time employees will primarily generate wastewater from restroom breaks and other incidental sink use. New restroom facilities use approximately 1.28 gallons per flush and 0.17 gallons for hand washing, resulting in a total of 1.45 gallons per restroom break. OSHA suggests that employees typically take three restroom breaks per eight-hour shift, resulting in a total of 4.35 gallons per shift of restroom wastewater flow. Rounding up to 5 gallons per shift for restroom use and allowing for an additional 3 gallons of wastewater per shift for other activities, we arrive at an estimated wastewater flow factor of 8 gallons per part-time employee shift as a reasonable estimate for the purpose of this analysis.

Appendix B

Statewide WDR Calculations,
Hold & Haul Storage Calculations,
Water Balance Calculations

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Statewide WDR Feasibility Calculations

for the proposed

Ontrail Vineyards Micro-Winery

Located at:

3252 Silverado Trail

Napa, CA 94558

Date: 5/2/2025

R1: 9/15/2025

Project # 01171

Legend

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Important Value Automatically Calculate
Important Value Requires Input

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WDR Feasibility Calculations

Below are calculations supporting the feasibility of compliance under the Statewide General Waste Discharge Requirements for Winery Process Water for the proposed 5,000 gallon subject Winery. These calculations are based on conservative post-treatment waste characteristics and loading rates in order to establish the probable maximum size of a future discharge area that meets the above said Waste Discharge Requirements. These calculations are conservative and for establishing feasibility only.

Winery Process Waste Characteristics

Process Waste Generated =	30000	gal/yr
Treated Effluent BOD =	20	mg/L
Treated Effluent Total Nitrogen =	10	mg/L

Loading Calculations

Hydraulic Loading		
Vineyard Irrigation Demand =	0.3	AF/ac/yr
Process Wastewater for Irrigation =	0.09	AF/yr
Vineyard Acres Req'd to dispose of PW =	**0.31**	acres
BOD Loading		
BOD Generated =	5	lb/yr
Number of Irrigation Cycles =	4	day/yr
BOD Loading Limit =	100	lb/ac/day
Vineyard Acres Req'd per BOD Limit =	**0.01**	acres
Nitrogen Uptake		
Total Nitrogen Generated =	3	lb/yr
Agronomic Nitrogen Rate for Vineyards =	68.8	lb/ac
Vineyard Acres Req'd per Nitrogen Uptake =	**0.04**	acres
Expected Maximum Application Area Req'd =	**0.31**	**acres**
Available Land Application Area =	**7.11**	**acres**

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Hold & Haul Tank Calculations

for the proposed

Ontrail Vineyards Micro-Winery

Located at:

3252 Silverado Trail

Napa, CA 94558

Date: 9/15/2025

Project # 01171

Legend

Descriptions
Automatically Calculates
Important Calculated Value
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Project Summary

The following calculations are for the design of a hold & haul type wastewater system to serve the subject projects production wastewater system needs.

Design Daily Flow Calculation

Max Annual Wine Production =	5000	gal
Harvest Length =	30	days
Expected maximum peak daily flow =	**250**	gal/day

Pump Tank Dosing & Float Calculations

Volume

Expected peak daily flow =	250	gal
Minimum required storage days =	10	days (7 minimum)
Minimum tank volume required =	2500	gal
Additional tank volume =	0	gal
Total Tank Volume Required =	**2500**	gal

Float Settings

Pump Tank manufacurer =	**RVGP**	
Tank size =	**1500**	gal
Number of Tanks =	**2**	#
Single Tank volume per foot from bottom =	352.94	gal/ft
Total Tank volume per foot from bottom =	705.88	gal/ft
Required emergency liquid storage capacity =	625.00	gal
Required feet of emergency storage in tank =	0.89	ft
Max liquid level (MLL) above bottom =	4.25	ft
75% Full Alarm Float (FAT) =	**3.36**	ft
High Level Alarm Float (HLAF) =	**3.81**	ft
Volume between FAT and Bottom of Tank =	2375.00	gal
Volume between HLAf & FAT Float =	312.50	gal
Volume between HLAF and MLL =	312.50	gal (shaded red if < 1 x daily flow)

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Recycled Process Waste Water Irrigation Balance Calculation

for the proposed

Ontrail Vineyard Micro-Winery

Located at:
3252 Silverado Trail
Napa, CA 94558

Date: 9/15/2025

Project # 01171

Legend

Requires Input
Automatically Calculates
Important Value Automatically Calculates
Important Value Requires Input

Winery Process Waste Flows

Wine production =	5,000	gal/yr
Estimated water use adjustment =	0%	%
Process waste generated =	30000	gal/yr
Average daily process waste flow =	82	gal/d

Vegetation Data and Water Use

Min. acres of vegetation to be irrigated =	0.31	ac
Irrigation distribution uniformity =	85%	%
Type of weather =	moderate	
Percent of ground shading =	40	%
Vegetation Max ETo =	0.2	gal/d/ac (ref: ITRC report #R12-001)
Peak vegetation evapotranspiration =	3555	gal/d/ac
Required peak irrigation flow =	1296.53	gal/d

Process Waste and Vegetation Water Balance Table

	days in month (d)	% of Peak Irrg. Req.	% annual waste flow generated	ave. daily irrig. eto. (gal/d)	ave. daily flow generated (gal/d)	excess waste flow infiltrated (gal/d)	addtional irrig. H2O eto'd. (gal/d)	Req. # of rain storage days (d)	Req. monthly wast flow storage (gal)	Total extra H20 possibly eto'd. (gal)
January	31	10%	4%	126	39	0	87	16	619	2699
February	28	19%	6%	241	64	0	176	16	1029	4939
March	31	55%	5%	715	48	0	666	14	677	20654
April	30	80%	5%	1039	50	0	989	14	700	29681
May	31	85%	6%	1100	58	0	1042	9	523	32315
June	30	96%	7%	1246	70	0	1176	6	420	35282
July	31	100%	9%	1297	87	0	1209	6	523	37492
August	31	71%	10%	920	97	0	823	6	581	25520
September	30	50%	16%	648	160	0	488	7	1120	14648
October	31	33%	15%	426	145	0	280	9	1306	8695
November	30	21%	9%	272	90	0	182	14	1260	5452
December	31	21%	8%	268	77	0	190	16	1239	5903
Totals=	**365**		**100.00%**							**223280**
				Max soil infiltration rate required =		0.00	g/sf/d			

Water Balance Calculation Results

Required waste flow tank storage =	**1306**	gal
Total volume lost to infiltration =	**0.00**	ac-ft/yr
Total possibly evapotranspired by plants =	**0.78**	ac-ft/yr
Total volume of recycled water applied =	**0.09**	ac-ft/yr

Appendix C

Site Evaluation Report &

As-Built

E24-00084 SD AS BLT

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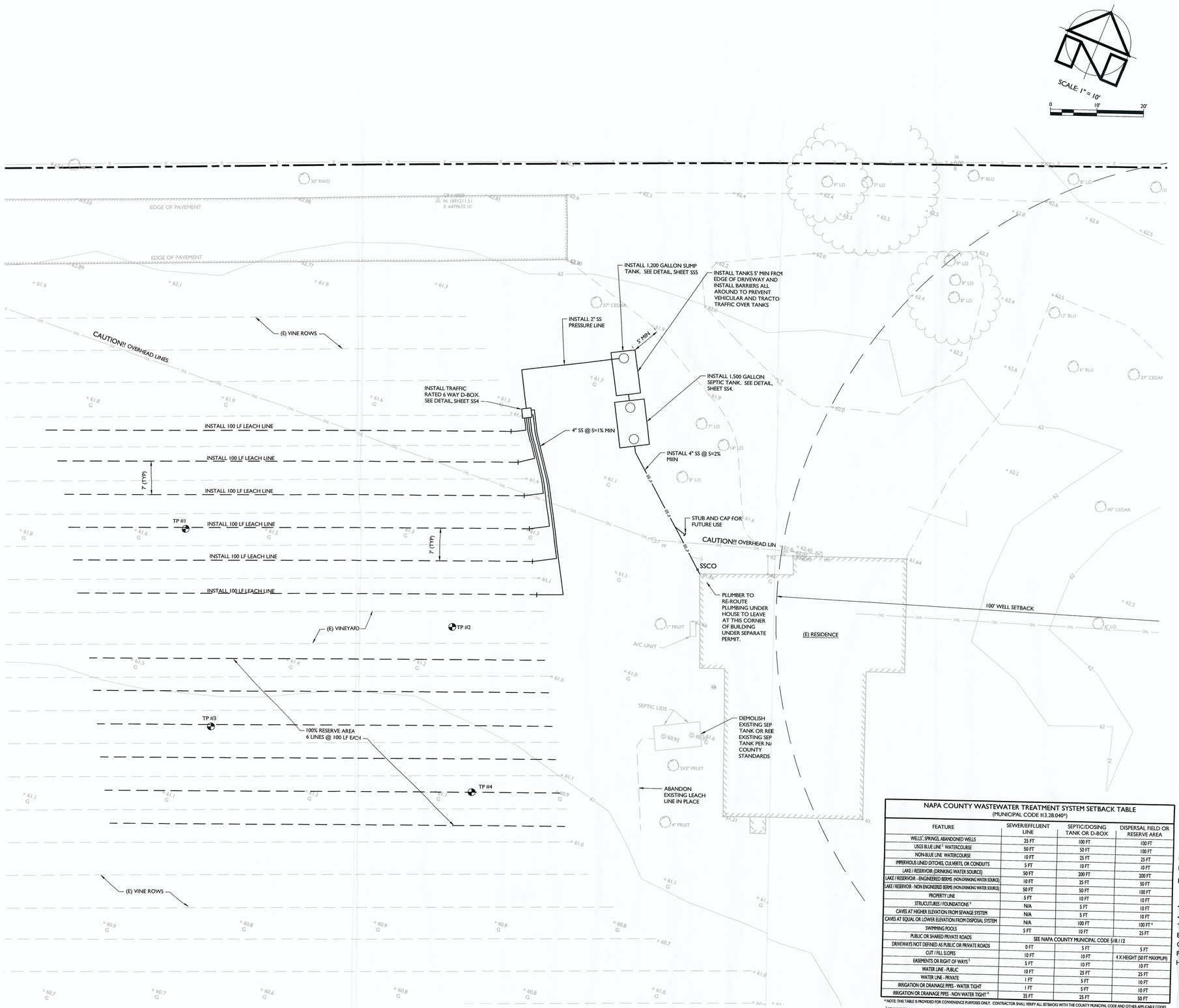

SEPTIC SYSTEM PLAN

SCALE: 1" = 10'

SEPTIC SYSTEM NOTES:

1. ALL SEPTIC SYSTEM WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE CALIFORNIA PLUMBING CODE AND NAPA COUNTY STANDARDS.
2. THE FOLLOWING STAGES OF CONSTRUCTION REQUIRE INSPECTION BY APPLIED CIVIL ENGINEERING INCORPORATED AND NAPA COUNTY PLANNING, BUILDING AND ENVIRONMENTAL SERVICES DEPARTMENT - ENVIRONMENTAL HEALTH DIVISION:
   - A. PRECONSTRUCTION MEETING
     - CONFIRM IMMINENT WEATHER CONDITIONS WILL NOT CREATE UNSUITABLE SOIL CONDITIONS DURING CONSTRUCTION
     - CONFIRM SOIL MOISTURE IN THE AREA OF THE PROPOSED SEPTIC SYSTEM IS NOT SO HIGH THAT IT WILL CAUSE SMEARING OR COMPACTION DURING CONSTRUCTION
     - REVIEW OVERALL SYSTEM LAYOUT
     - REVIEW SOURCE OF MATERIALS INCLUDING SAMPLES FOR GRAVEL
   - B. INTERIM CONSTRUCTION INSPECTIONS
     - EXCAVATION OF LEVEL TRENCH BOTTOMS
     - PLACEMENT OF GRAVEL BEDDING & PERFORATED PIPES
     - DISTRIBUTION PIPING, VALVES AND DISTRIBUTION BOX
     - FUNCTION AND SETTING OF CONTROL DEVICES
     - HYDRAULIC TEST OF PUMP SYSTEM
     - WATERTIGHT TEST FOR ALL TANKS
   - C. FINAL INSPECTION
     - BACKFILL PLACEMENT AND EROSION CONTROL
     - GENERAL CONFORMANCE TO DESIGN PLANS AND SPECIFICATIONS
     - HARDWIRE OF PUMPS, CONTROLS AND ALARM
3. CONTRACTOR SHALL CONTACT APPLIED CIVIL ENGINEERING INCORPORATED AT (707) 320-4968 AND NAPA COUNTY PLANNING, BUILDING AND ENVIRONMENTAL SERVICES DEPARTMENT - ENVIRONMENTAL HEALTH DIVISION AT (707) 253-4135 AT LEAST ONE WEEK PRIOR TO THE COMMENCEMENT OF WORK TO SCHEDULE THE PRECONSTRUCTION MEETING. ALL OTHER INSPECTIONS ARE TO BE SCHEDULED AT LEAST 48 HOURS IN ADVANCE.
4. CONTRACTOR IS RESPONSIBLE FOR SCHEDULING ALL INSPECTIONS. APPLIED CIVIL ENGINEERING INCORPORATED WILL NOT RELEASE THE FINAL LETTER AND RECORD DRAWING FOR FINAL CLEARANCE ON THE SEPTIC SYSTEM IF THE ABOVE INSPECTIONS ARE NOT MADE.
5. POLYVINYL CHLORIDE (PVC) PIPE FOR THE SEPTIC SYSTEM SANITARY SEWER GRAVITY LINES SHALL BE SDR 35 AND COMPLY WITH ASTM D 3034 REQUIREMENTS. ALL GRAVITY LINES 6" IN DIAMETER AND SMALLER SHALL HAVE A MINIMUM SLOPE OF 1% AND ALL LINES 8" IN DIAMETER AND LARGER SHALL HAVE A MINIMUM SLOPE OF 0.5%.
6. PVC PIPE FOR THE SEPTIC SYSTEM PRESSURE LINES SHALL BE SCHEDULE 40 AND COMPLY WITH ASTM D 2751 REQUIREMENTS.
7. ALL SEPTIC SYSTEM PRESSURE FITTINGS SHALL BE SCHEDULE 40 PVC SOLVENT WELD FITTINGS AND COMPLY WITH ASTM D 2466 REQUIREMENTS.
8. ALL VALVES FOR THE SEPTIC SYSTEM SHALL BE SCHEDULE 80 PVC BALL VALVES.
9. ALL ELECTRICAL WORK REQUIRED TO SUPPLY POWER TO THE CONTROL PANEL AND PUMPS MUST MEET NAPA COUNTY AND NATIONAL ELECTRIC CODE REQUIREMENTS. ALL ELECTRICAL WORK FOR THE SEPTIC SYSTEM SHALL BE COVERED UNDER A SEPARATE ELECTRICAL PERMIT SUBMITTED BY THE CONTRACTOR.
10. DISPERSAL FIELD AND RESERVE AREA SHALL BE PROTECTED FROM CONSTRUCTION ACTIVITIES AT ALL TIMES. THE DISPERSAL FIELD AND RESERVE AREAS SHALL NOT BE USED FOR CONSTRUCTION STAGING, VEHICLE PARKING OR ACCESS FOR CONSTRUCTION EQUIPMENT, VEHICLES OR PERSONNEL.
11. OWNER SHALL PROTECT DISPERSAL FIELD AND RESERVE AREA TO PREVENT COMPACTION FROM LIVESTOCK, VEHICLES, EQUIPMENT, ETC. AT ALL TIMES AFTER THE COMPLETION OF CONSTRUCTION.
12. CONTRACTOR IS RESPONSIBLE FOR PROVIDING TEMPORARY SEPTIC TANK PUMPING SERVICE AS NECESSARY TO MAINTAIN THE EXISTING RESIDENCE IN SERVICE AT ALL TIMES.

SEPTIC SYSTEM DESIGN INFORMATION:

DESIGN FLOW:

3 BEDROOM RESIDENCE	= 450 GALLONS PER DAY
1 BEDROOM FOR EXTRA CAPACITY	= 100 GALLONS PER DAY
TOTAL	= 550 GALLONS PER DAY

APPLICATION RATE:

0.33 GALLONS PER DAY PER SQUARE FOOT

TRENCH DESIGN:

3 SQUARE FEET OF SIDEWALL PER LINEAL FOOT OF TRENCH

LENGTH OF TRENCH:

REQUIRED LENGTH OF TRENCH = 550 GPD X 1 SF / 0.33 GPD X 1 LINEAL FOOT / 3 SF

REQUIRED LENGTH OF TRENCH = 550 LINEAL FEET, USE 600 LF

TEST PIT NOTE:

TEST PITS ONE THROUGH FOUR (TP #1 - TP #4) WERE EXCAVATED BY PRIDMORE BROTHERS CONSTRUCTION AND WERE WITNESSED BY MIKE MUELRATH OF APPLIED CIVIL ENGINEERING INCORPORATED AND MARCIA MCEWEN OF THE NAPA COUNTY PLANNING, BUILDING AND ENVIRONMENTAL SERVICES DEPARTMENT - ENVIRONMENTAL HEALTH DIVISION ON OCTOBER 31, 2023.

NAPA COUNTY WASTEWATER TREATMENT SYSTEM SETBACK TABLE
(MUNICIPAL CODE §13.28.040*)

FEATURE	SEWER/EFFLUENT LINE	SEPTIC/DOSING TANK OR D-BOX	DISPERSAL FIELD OR RESERVE AREA
WELLS[1], SPRINGS, ABANDONED WELLS	25 FT	100 FT	100 FT
USGS BLUE LINE [2] WATERCOURSE	50 FT	50 FT	100 FT
NON-BLUE LINE WATERCOURSE	10 FT	25 FT	25 FT
IMPERVIOUS LINED DITCHES, CULVERTS, OR CONDUITS	5 FT	10 FT	10 FT
LAKE / RESERVOIR (DRINKING WATER SOURCE)	50 FT	200 FT	200 FT
LAKE / RESERVOIR - ENGINEERED BERMS (NON-DRINKING WATER SOURCE)	10 FT	25 FT	50 FT
LAKE / RESERVOIR - NON ENGINEERED BERMS (NON-DRINKING WATER SOURCE)	50 FT	50 FT	100 FT
PROPERTY LINE	5 FT	10 FT	10 FT
STRUCTURES / FOUNDATIONS [3]	N/A	5 FT	10 FT
CAVES AT HIGHER ELEVATION FROM SEWAGE SYSTEM	N/A	5 FT	10 FT
CAVES AT EQUAL OR LOWER ELEVATION FROM DISPOSAL SYSTEM	N/A	100 FT	100 FT [4]
SWIMMING POOLS	5 FT	10 FT	25 FT
PUBLIC OR SHARED PRIVATE ROADS	SEE NAPA COUNTY MUNICIPAL CODE §18.112		
DRIVEWAYS NOT DEFINED AS PUBLIC OR PRIVATE ROADS	0 FT	5 FT	5 FT
CUT / FILL SLOPES	10 FT	10 FT	4 X HEIGHT (50 FT MAXIMUM)
EASEMENTS OR RIGHT OF WAYS [5]	5 FT	10 FT	10 FT
WATER LINE - PUBLIC	10 FT	25 FT	25 FT
WATER LINE - PRIVATE	1 FT	5 FT	10 FT
IRRIGATION OR DRAINAGE PIPES - WATER TIGHT	1 FT	5 FT	10 FT
IRRIGATION OR DRAINAGE PIPES - NON WATER TIGHT [6]	25 FT	25 FT	50 FT

* NOTE: THIS TABLE IS PROVIDED FOR CONVENIENCE PURPOSES ONLY. CONTRACTOR SHALL VERIFY ALL SETBACKS WITH THE COUNTY MUNICIPAL CODE AND OTHER APPLICABLE CODES.

[1] SEE SUBSECTION (C) OF SECTION 13.20.080 FOR REPAIRS.
[2] BLUE LINE SHALL MEAN ANY TYPE OF BLUE LINE ON A USGS MAP.
[3] INCLUDES PORCHES AND STEPS, BREEZEWAYS, ROOF PATIOS, CARPORTS, COVERED WALKWAYS, COVERED DRIVEWAYS, AND SIMILAR STRUCTURES.
[4] THIS DISTANCE TO BE INCREASED TO 400 FEET IF THE SEWAGE DISPOSAL SYSTEM DOES NOT COMPLY WITH THE STANDARDS IN NAPA MUNICIPAL CODE §13.28.
[5] UNLESS EASEMENT IS SPECIFICALLY FOR AN ONSITE SEWAGE DISPOSAL SYSTEM.
[6] THESE DISTANCES CAN BE REDUCED TO TEN FEET IF THE UNDERGROUND IRRIGATION OR DRAINAGE SYSTEM IS LOCATED UPSLOPE OF THE SEWAGE DISPOSAL SYSTEM.

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OZEGNA VINEYARDS

SEPTIC SYSTEM REPAIR PLAN
SEPTIC SYSTEM PLAN

PREPARED UNDER THE DIRECTION OF:

REGISTERED PROFESSIONAL ENGINEER
MICHAEL R. MUELRATH
MRM
NO. 67435
Exp. 12/31/2024
3/5/2024
CIVIL
STATE OF CALIFORNIA

DRAWN BY: SMJ

CHECKED BY: MRM

DATE: MARCH 5, 2024

REVISIONS:	BY:
3/5/202024 PERMIT SUBMITTAL	SMJ

JOB NUMBER: 22-149

FILE: 22-149SS.DWG

ORIGINAL SIZE: 24" X 36"

SHEET NUMBER:

SS3

OF

5

E23-00531 SD SER

Napa County
Environmental Health Division

SITE EVALUATION REPORT

Please attach an 8.5" x 11" plot map showing the locations of all test pits triangulated from permanent landmarks or known property corners. The map must be drawn to scale and include a North arrow, surrounding geographic and topographic features, direction and % slope, distance to drainages, water bodies, potential areas for flooding, unstable landforms, existing or proposed roads, structures, utilities, domestic water supplies, wells, ponds, existing wastewater treatment systems and facilities.

Permit #: E23-00531
APN: 039-610-003
(County Use Only) Reviewed by: Date: 1/9/24

PLEASE PRINT OR TYPE ALL INFORMATION

Property Owner Jim Fassio Ozegna Vineyards LLC	☐ New Construction ☐ Addition ☐ Remodel ☐ Relocation X Other: Repair / Replacement
Property Owner Mailing Address 501 El Cerrito Avenue	X Residential - # of Bedrooms: 3 Design Flow : 450 gpd
City: Hillsborough State: CA Zip: 94010	☐ Commercial – Type: Sanitary Waste: gpd Process Waste: gpd
Site Address/Location 3252 Silverado Trail Napa, CA 94558	☐ Other: Sanitary Waste: gpd Process Waste: gpd

Evaluation Conducted By:

Company Name Applied Civil Engineering Incorporated	Evaluator's Name Michael R. Muelrath, R.C.E. 67435	Signature (Civil Engineer, R.E.H.S., Geologist, Soil Scientist) Michael R. Muelrath
Mailing Address: 2160 Jefferson Street, Suite 230		Telephone Number (707) 320-4968
City: Napa State: CA Zip: 94559		Date Evaluation Conducted October 31, 2023

REGISTERED PROFESSIONAL ENGINEER MICHAEL R. MUELRATH NO. 67435 Exp. 12/31/2024 CIVIL STATE OF CALIFORNIA

Primary Area – N/A

Acceptable Soil Depth: 72 inches Test pit #'s: 1-4

Soil Application Rate (gal. /sq. ft. /day): 0.33

System Type(s) Recommended: Standard

Slope: <5% Distance to nearest water source: 100' +

Hydrometer test performed? No X Yes ☐ (attach results)

Bulk Density test performed? No X Yes ☐ (attach results)

Percolation test performed? No X Yes ☐ (attach results)

Groundwater Monitoring Performed? No X Yes ☐ (attach results)

Expansion Area

Acceptable Soil Depth: 72 inches Test pit #'s: 1-4

Soil Application Rate (gal. /sq. ft. /day): 0.33

System Type(s) Recommended: Standard

Slope: <5% Distance to nearest water source: 100' +

Hydrometer test performed? No X Yes ☐ (attach results)

Bulk Density test performed? No X Yes ☐ (attach results)

Percolation test performed? No X Yes ☐ (attach results)

Groundwater Monitoring Performed? No X Yes ☐ (attach results)

Site constraints/Recommendations:

This site evaluation was performed to determine options for replacing the existing septic system. The primary constraints in the area tested are the well setback and Silverado Trail Road setback.

A conventional system is recommended. A sump may be required to accommodate elevations.

Test Pit #1

PLEASE PRINT OR TYPE ALL INFORMATION

Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure	Consistence			Pores	Roots	Mottling
					Side Wall	Ped	Wet			
0-32"	G	0-15	SCL	MSB	SH	FRB	NS	FF / FM	FF	NONE
32-72"		30-49	SCL	MSB	SH	FRB	SS	CF / FM	FF	NONE

Acceptable soil depth = 72"

Test Pit #2

Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure	Consistence			Pores	Roots	Mottling
					Side Wall	Ped	Wet			
0-30"	G	0-15	SCL	MSB	SH	FRB	NS	FF / FM	FF	NONE
30-60"		30-49	SCL	MSB	SH	FRB	SS	CF / FM	FF	NONE
60-72"		0-15	SCL	MSB	S	FRB	SS	CF / FM	FF	NONE

Acceptable soil depth = 72"

Test Pit #3

Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure	Consistence			Pores	Roots	Mottling
					Side Wall	Ped	Wet			
0-30"	G	0-15	SCL	MSB	SH	FRB	NS	FF / FM	FF	NONE
30-72"		30-49	SCL	MSB	SH	FRB	SS	CF / FM	FF	NONE

Acceptable soil depth = 72"

Test Pit #4

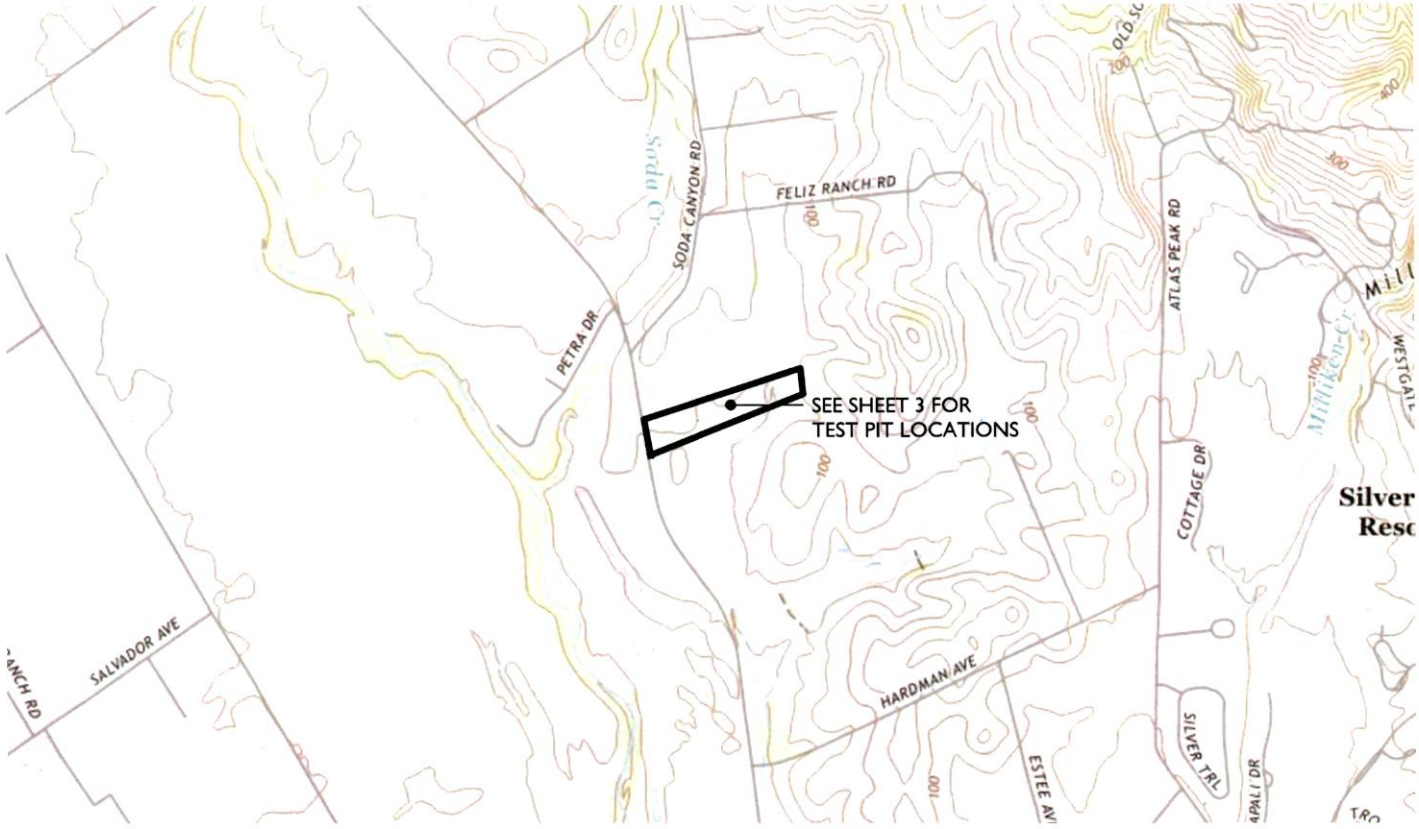
Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure	Consistence			Pores	Roots	Mottling
					Side Wall	Ped	Wet			
0-42	G	0-15	SCL	MSB	S	FRB	NS	CF / FM	FF	NONE
42-60	C	30-49	SCL	MSB	H	FRB	SS	CF / FM	FF	NONE
60-72		0-15	SCL	MSB	VH	FRB / F	SS	FF	FF	NONE

Acceptable soil depth = 72"

LEGEND

Boundary	Texture	Structure	Consistence			Pores	Roots	Mottling
			Side Wall	Ped	Wet			
A=Abrupt <1" **C**=Clear 1"-2.5" **G**=Gradual 2.5"-5" **D**=Difuse >5"	**S**=Sand **LS**=Loamy Sand **SL**=Sandy Loam **SCL**=Sandy Clay Loam **SC**=Sandy Clay **CL**=Clay Loam **L**=Loam **C**=Clay **SiC**=Silty Clay **SiCL**=Silty Clay Loam **SiL**=Silt Loam **Si**=Silt	**W**=Weak **M**=Moderate **S**=Strong **G**=Granular **Pl**=Platy **Pr**=Prismatic **C**=Columnar **B**=Blocky **AB**=Angular Blocky **SB**=Subangular Blocky **M**=Massive **SG**=Single Grain **CEM**=Cemented	**L**=Loose **S**=Soft **SH**=Slightly Hard **H**=Hard **VH**=Very Hard **ExH**=Extremely Hard	**L**=Loose **VFRB**=Very Friable **FRB**=Friable **F**=Firm **VF**=Very Firm **ExF**=Extremely Firm	**NS**=NonSticky **SS**=Slightly Sticky **S**=Sticky **VS**=Very Sticky **NP**=NonPlastic **SP**=Slightly Plastic **P**=Plastic **VP**=Very Plastic	**Quantity:** **F**=Few **C**=Common **M**=Many **Size:** **VF**=Very Fine **F**=Fine **M**=Medium **C**=Coarse **VC**=Very Coarse	**Quantity:** **F**=Few **C**=Common **M**=Many **Size:** **F**=Fine **M**=Medium **C**=Coarse **VC**=Very Coarse **ExC**=Extremely Coarse	**Quantity:** **F**=Few **C**=Common **M**=Many **Size:** **F**=Fine **M**=Medium **C**=Coarse **Contrast:** **Ft**=Faint **D**=Distinct **P**=Prominent

Notes:
Structure is recorded as Modifier then Structure - for example, Moderate (M) Subangular Blocky (SB) is recorded as MSB
Pores and Roots are recorded as Quantity then Size – for example Few (F) Coarse (C) is recorded as FC
Mottling is recorded as Quantity then Size then Contrast – for example Few (F) Coarse (C) Distinct (D) is recorded as FCD



LOCATION MAP

SCALE: 1" = 2,000'

NOTES:

1. TEST PITS ONE THROUGH FOUR (TP #1 - TP #4) WERE EXCAVATED BY PRIDMORE BROTHERS CONSTRUCTION AND WERE WITNESSED BY MIKE MUELRATH OF APPLIED CIVIL ENGINEERING INCORPORATED AND MARCIA MCEWEN OF THE NAPA COUNTY PLANNING, BUILDING AND ENVIRONMENTAL SERVICES DEPARTMENT - ENVIRONMENTAL HEALTH DIVISION ON OCTOBER 31, 2023.

2. FADED BACKGROUND REPRESENTS EXISTING TOPOGRAPHIC INFORMATION ON SHEET C2 WAS TAKEN FROM ELEVATION DATA DERIVED FROM BARE-EARTH SURFACE DIGITAL ELEVATION MODELS (DEMS) CREATED FROM LIDAR DATA FLOWN IN 2018 IN RESPONSE TO THE WIDESPREAD 2017 FIRES IN NORTHERN CALIFORNIA AS PART OF ONGOING NATIONWIDE 3DEP (U.S. GEOLOGICAL SURVEY 3D ELEVATION PROGRAM) EFFORTS. TOPOGRAPHIC INFORMATION ON SHEET C3 WAS TAKEN FROM THE "TOPOGRAPHIC MAP A PORTION OF THE LANDS OF OZEGNA VINEYARDS LLC" PREPARED BY TERRA FIRMA SURVEYS., DATED AUGUST 4, 2023. APPLIED CIVIL ENGINEERING INCORPORATED ASSUMES NO LIABILITY REGARDING THE ACCURACY OR COMPLETENESS OF THE TOPOGRAPHIC INFORMATION.

3. CONTOUR INTERVAL:

   SHEET C2: ONE (1) FOOT, HIGHLIGHTED EVERY FIVE (5) FEET.

   SHEET C3: TWO (2) FEET, HIGHLIGHTED EVERY TEN (10) FEET.

4. BENCHMARK: NAVD 88

5. AERIAL PHOTOGRAPHS (ARE) NADIR IMAGES CAPTURED BY PICTOMETRY INTERNATIONAL DATED JULY 15, 2021 AND MAY NOT REPRESENT CURRENT CONDITIONS.

6. ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE RATE MAP (FIRM) MAP NUMBER 06055C0510F, EFFECTIVE SEPTEMBER 29, 2010THE PROJECT SITE IS NOT LOCATED IN A SPECIAL FLOOD HAZARD AREA.

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APN 039-610-003

SCALE: 1" = 2,000'

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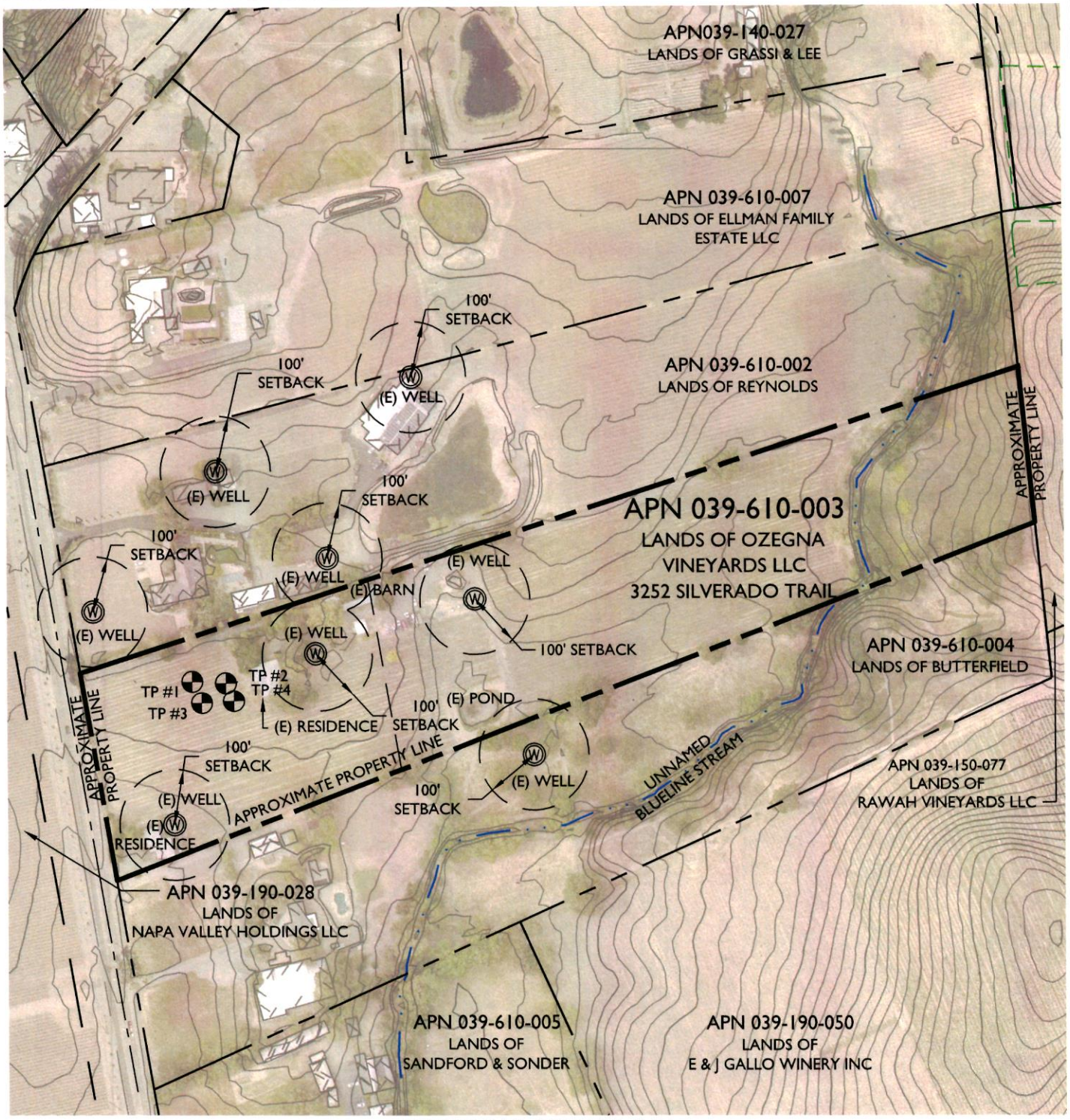

OVERALL SITE PLAN

SCALE: 1" = 250'

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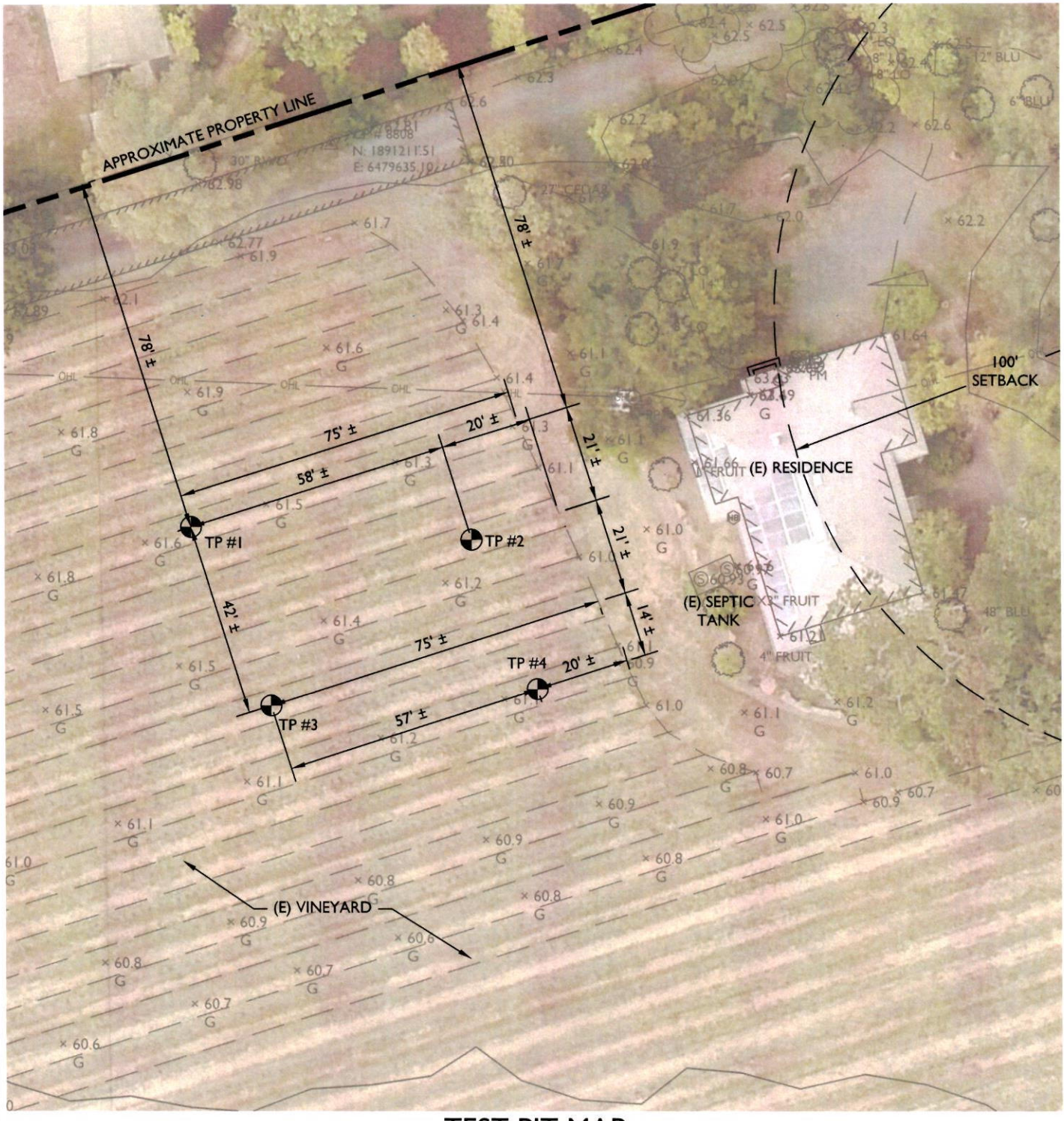

TEST PIT MAP

SCALE: 1" = 30'

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SCALE: 1" = 30'

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