“H”

Wastewater Feasibility Study & Site Evaluation

Madonna Estate Winery P19-00167-MOD
Planning Commission Hearing – April 7, 2021

WINERY WASTEWATER FEASIBILITY REPORT

MADONNA ESTATE WINERY
5400 OLD SONOMA ROAD
NAPA, CA 94559

APN 047-110-016

Prepared for:

Madonna Estate Winery
5400 Old Sonoma Road
Napa, CA 94559

DocuSigned by:
Bruce Fenton
C91AA92030A3404...

Project #4119003.0
January 27, 2021

TABLE OF CONTENTS

APPENDICES

I. INTRODUCTION

The Madonna Estate Winery is requesting recognition and authorization of existing employees and visitation. The purpose of this report is to demonstrate that their existing wastewater system is capable of treating wastewater from the existing visitation and existing production of up to 50,000 gallons of wine per year. Please refer to Appendix A for a Vicinity Map, USGS Map, and Soils Map.

The Madonna Estate Winery is aware of potential changes from the State Water Board regarding process wastewater dispersal. When final requirements are confirmed, the winery will address any potential changes to the current wastewater system, if required.

II. EXISTING WASTEWATER SYSTEM

The existing wastewater system is used by both domestic and process wastewater. The system consists of two 1,500-gallon septic tanks for winery process wastewater and one 1,500-gallon septic tank for domestic wastewater. All septic tanks then gravity flow to the existing dispersal field. The dispersal field was sized for a peak flow rate of 2,500 gal/day and has a design capacity of 2,651 gpd. Refer to Appendix B for the Existing Wastewater System Site Plan.

III. WINERY PROCESS WASTEWATER CHARACTERISTICS

The following is a summary of the winery wastewater characteristics:

Wine Production:	50,000 gallons of wine per year 2.38 gallons of wine per case 21,008 cases/year
Wastewater Production:	5 gallons of wastewater/gallon of wine 250,000 gallons/year
Peak Daily Waste Water Flow:	Crush Period = 60 days Annual wine production x 1.5 / 60 1,250 gallons/day
Average Daily Flow:	250,000/365 = 685 gallons/day

Monthly Wastewater Flows:

TABLE 1

	% By Month	Waste/Month
Sep	14%	35,000 Gal/Month
Oct	14%	35,000 Gal/Month
Nov	11%	27,500 Gal/Month
Dec	8%	20,000 Gal/Month
Jan	4%	10,000 Gal/Month
Feb	6%	15,000 Gal/Month
Mar	6%	15,000 Gal/Month
Apr	5%	12,500 Gal/Month
May	6%	15,000 Gal/Month
Jun	7%	17,500 Gal/Month
Jul	9%	22,500 Gal/Month
Aug	10%	25,000 Gal/Month
Totals	**100%**	**250,000 Gal/Year**

IV. WINERY DOMESTIC WASTEWATER CHARACTERISTICS

The existing winery domestic wastewater system will to accommodate the peak flows in Table 2 below. The number of visitors and employees is existing and is based on information provided by the applicant. The projected flow is based on Napa County Environmental Health guidelines.

TABLE 2

Use	Source	Number	Projected Flow (gpd)	Total Flow (gpd)
Winery	Full-time employees	6	15	90
	Part-time employees	7	15	105
	Visitors	280	3	840
Total Peak Flow				1,035

The projected flow is based on every visitor using a full 3 gallons of water during their visit to the winery. This is unlikely as the majority of visitors at the Madonna Estate Winery arrive in tour buses with sanitary facilities on board. Actual daily water use is lower than the estimated flow.

V. EXISTING WATER USE

The volume of water the existing wastewater field receives can be estimated by the volume of water extracted from the well. Not all water extracted from the well ends up in the wastewater field as this water is also used for drinking and all irrigation on the property. The table below shows the monthly data from 2016.

Month	Water produced from Groundwater (gal)	Average Daily Flow (gpd)
Jan	14,000	452
Feb	12,100	432
March	14,400	465
April	15,000	500
May	24,300	784
June	32,000	1,067
July	32,500	1,048
Aug	34,600	1,116
Sep	35,000	1,167
Oct	24,000	774
Nov	28,000	933
Dec	27,500	887
Total	**293,400**	**804**

Water use increases in the summer months as more irrigation is required on the property. The month with the largest water use is September with an average daily flow of 1,167 gpd. This is less than the capacity of the existing system and is considered conservative as it includes water used for irrigation.

The average daily flow of 1,167 gpd includes both domestic and prosses water uses and is less than the expected peak of 2,285 gpd which further supports the assumption that water use by visitors arriving by bus is less than the typical County allowances. Low flow devices have been installed at the winery to further reduce the load to the wastewater field.

VI. WINERY PROCESS AND DOMESTIC WASTEWATER – DISPERSAL

The peak winery process wastewater flow of 1,250 gallons per day and the peak domestic wastewater flow of 1,035 gallons per day totals 2,285 gallons per day going to the existing dispersal field based on typical County of Napa design values. This is less than the system capacity of 2,651 gallons per day. Actual data from 2016 demonstrates that wastewater flows are substantially lower than typical County of Napa design values. In addition to the primary field, an existing reserve area of 18,600 square feet is shown on Sheet C1 of the Use Permit Modification plans.

The existing field was inspected on August 5, 2019 by G. D. Nielson Construction and the inspection report can be found in Appendix C. The field was found to be in good condition. The process wastewater tanks were found to be partially decomposed and in need of replacement. Proposed replacement of the tanks was submitted under permit number E20-00611.

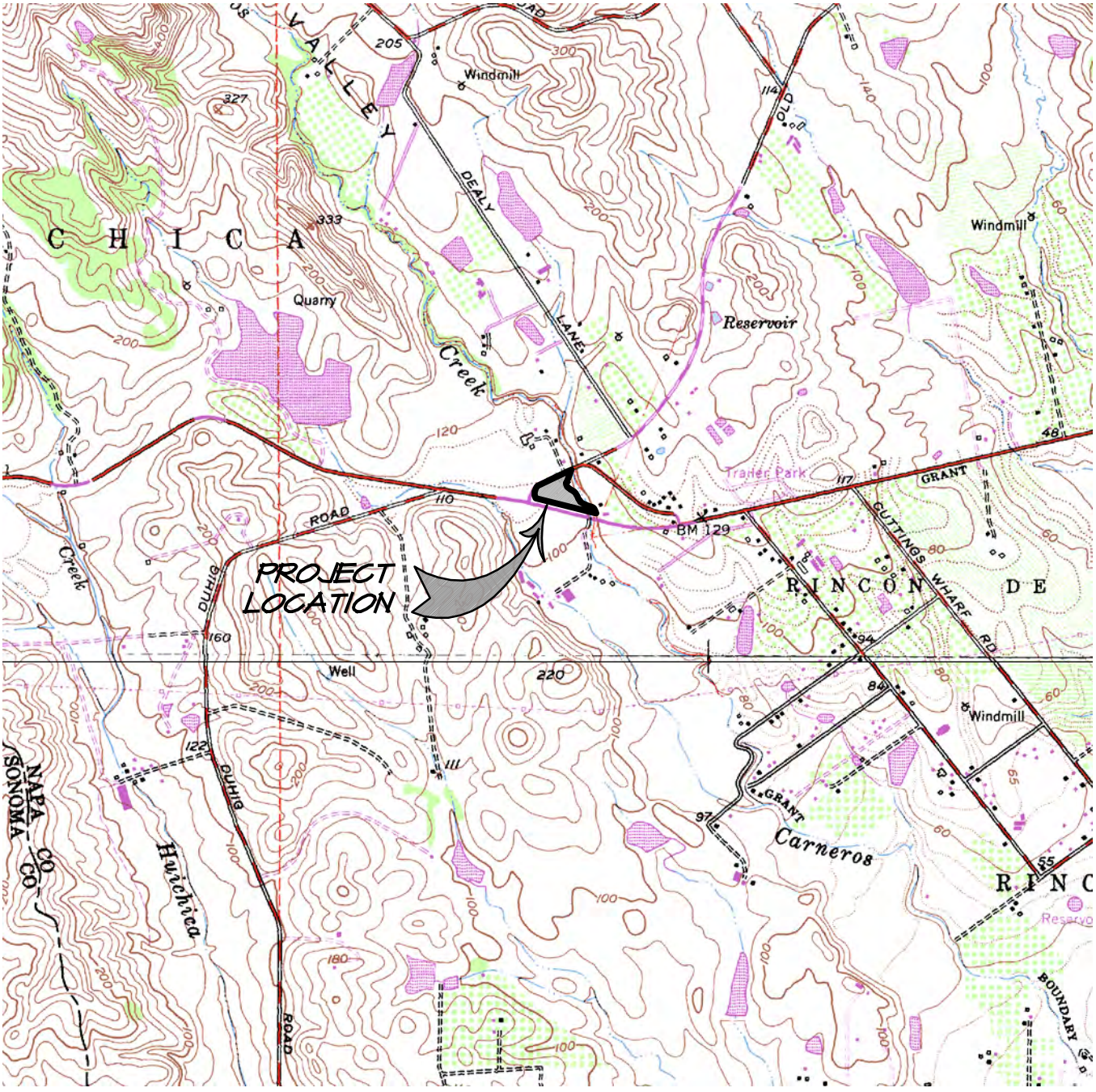
VII. CONCLUSIONS

This report demonstrates that the existing wastewater system is adequately sized to treat both domestic and process wastewater with no change to the system.

Appendix A

Vicinity Map, USGS Map, Soils Map

MADONNA ESTATE WINERY
USGS QUAD MAP



GRAPHIC SCALE

2000 0 2000 4000

(IN FEET)

1 inch = 2000 FT

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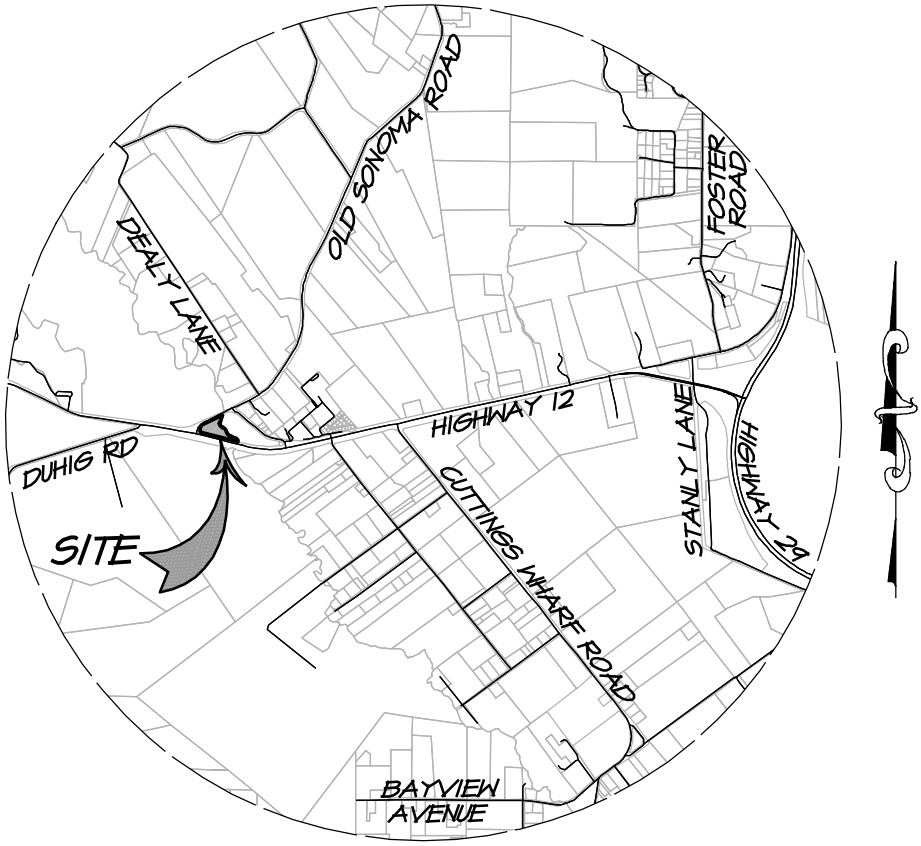
NAPA, CALIF. 94559
OFFICE|707|252.3301
+ www.RSAcivil.com +

RSA+| CONSULTING CIVIL ENGINEERS + SURVEYORS + est. 1980

JAN. 16, 2019 4119003.0 Exh-USGS Map.dwg

MADONNA ESTATE WINERY
VICINITY MAP

NAPA COUNTY CALIFORNIA



VICINITY MAP

SCALE: 1" = 4000'

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JANUARY 16, 2019 4119003.0 Exh-VicMap.dwg

Hydrologic Soil Group—Napa County, California
(Madonna Estate Winery)

Map Scale: 1:1,570 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 20 40 80 120

Feet
0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Soil Rating Lines

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Soil Rating Points

A
A/D
B
B/D
C
C/D
D
Not rated or not available

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 1:24,000.

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: Napa County, California
Survey Area Data: Version 11, Sep 12, 2018

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

Date(s) aerial images were photographed: Jun 19, 2017—Oct 31, 2017

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.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
118	Cole silt loam, 0 to 2 percent slopes, MLRA 14	C	5.5	97.1%
146	Haire loam, 2 to 9 percent slopes	D	0.2	2.9%
Totals for Area of Interest			**5.6**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Appendix B

Existing Wastewater System Site Plan

wastes, 1250 gpd

S-78-68
1 NOV-78
JIC
1.

BARTOLUCCI WINERY

PEAK FLOW 2500 GAL/DAY ←
PERC RATE 1" to 2"/HR = 600 FT²/BEDROOM

1 BEDROOM ≈ 150 GAL

2500 GAL ≈ 16⅔ BEDROOM @ 600 FT²/BEDROOM = 10,000 FT²

IF TRENCH = 2.5' DEEP ⇒ 5 FT²/FT OR 2000 LIN FT TRENCH
IF TRENCH = 2.0 DEEP ⇒ 4 FT²/FT OR 2500 LIN FT TRENCH

ALTERNATE SYSTEM (EVAPOTRANSPIRATION & SIDEWALL)

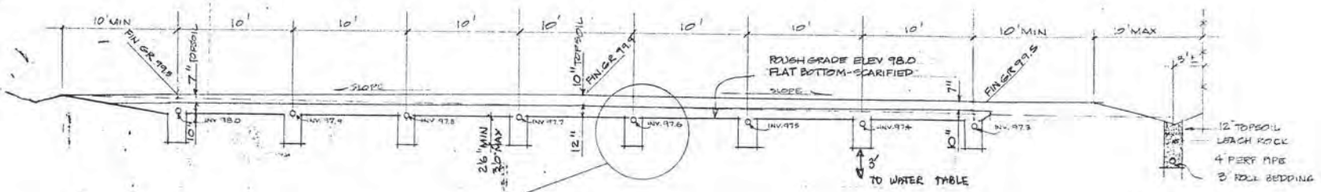
A) EVAPOTRANSPIRATION → RATE = .2 GAL/FT²/DAY

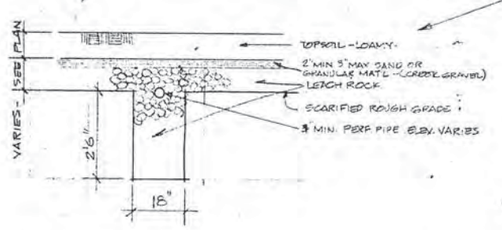
ASSUME 1/3 EFFECTIVE → RATE = $\frac{.2}{3}$ = .067 GAL/FT²/DAY

AREA = 80 × 180 = 14,400 FT² ⇒ 964.8 GAL/DAY → 964

B) SIDEWALL 1350 LIN FT × 5 FT²/FT = 6750 FT² ⇒ 1685 gal

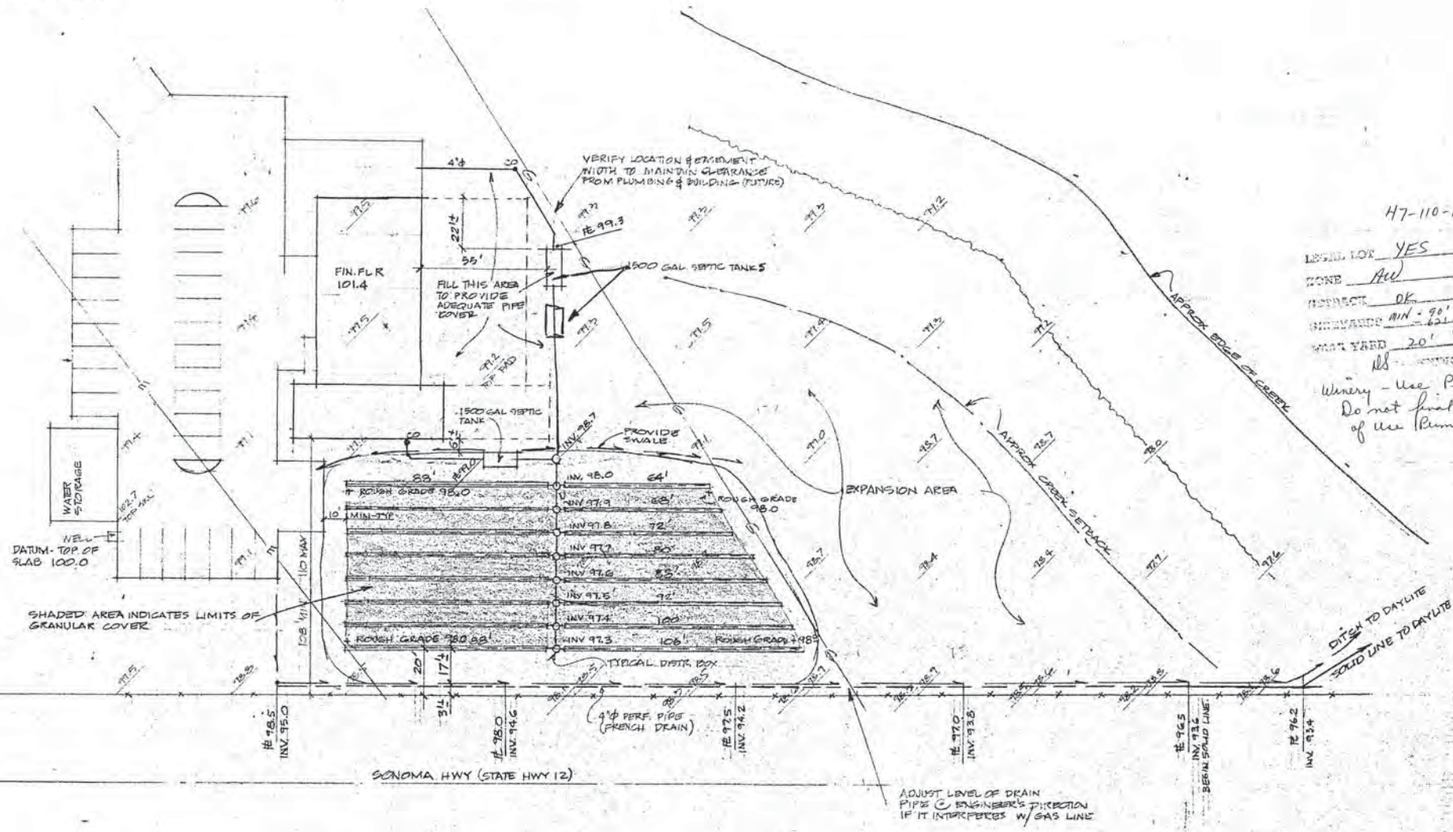
2500 < TOTAL = 2651 gal





DETAIL ½"=1'0"

SECTION 1"=6'



PLOT PLAN 1"=30'

RECEIVED
DEC 14 1978
DIVISION OF ENVIRONMENTAL HEALTH

47-110-16

LEGAL LOT YES
ZONE AW
SETBACK OK
SIDEYARDS MIN - 90' & Old Sonoma Hwy
REAR YARD 20'
Winery - Use Permit #179778
Do not final until conditions of Use Permit are met 12/15/78

APPROVED
Approval of these plans does not authorize or approve any omission or deviation from requirements of State laws or local ordinances. One set of approved plans shall be available on the project site at all times.
Napa County, Building Department
Napa, California
No.
Date 12-5-78 By JHall

Office Copy

NOTES:

CONTRACTORS MUST COORDINATE WORK TO PROVIDE PROPER ELEVATIONS. PLUMBING, DRAINAGE AND SEWAGE GRADES, BUILDING, PLUMBING, DRAIN LINES DITCHES, DISPOSAL FIELD, LEACH LINES ETC. MUST BE SET BY REGISTERED CIVIL ENGINEER OR LICENSED LAND SURVEYOR.

CONTRACTOR MUST CONTACT PG&E PRIOR TO CONSTRUCTION TO AVOID CONFLICT WITH GAS LINE.

OWNER MUST PLANT & MAINTAIN LAWN COVER.

"CO" DESIGNATES CLEANOUT

PRIOR TO ANY GRADING WORK THE OWNER SHALL SUBMIT TO THE ENGINEER A GRADING PLAN SHOWING FINISH GRADES AT THE BUILDING, PARKING LOT AND SURROUNDING AREAS PROVISION SHALL BE MADE TO PROVIDE ADEQUATE DRAINAGE FOR ALL AREAS OF THE SITE.

PRELIMINARY 3 NOV 78

CASSAYRE & ASSOCIATES
PAUL CASSAYRE — STRUCTURAL, CIVIL MECHANICAL ENGR.
JAMES CASSAYRE — CIVIL ENGINEER
531 JEFFERSON ST. — NAPA, CALIF. — (707) 253-9589

JOB BARTOLUCCI WINERY 47-110-16
TITLE SEWAGE DISPOSAL SYSTEM / SITE PLAN
DWN jlc gmjf
CHK
DATE 20 NOV 78
JOB 5-78-68
SHEET

Appendix C

Septic Inspection Report

NAPA COUNTY DEPARTMENT OF ENVIRONMENTAL HEALTH – LAND USE
EXISTING INDIVIDUAL SEPTIC SYSTEM INSPECTION REPORT FORM

PROPERTY OWNER *Andrea Bartolucci* **DATE** *August 5, 2019*

SITE ADDRESS *5400 Old Sonoma Rd., Napa, CA 94558*

PARCEL NUMBER *47-110-78* **SEWAGE CONTRACTOR** *G. D. Nielson Construction, Inc.*

SEWAGE CONTRACTOR LICENSE NUMBER *648601*

PRIMARY TREATMENT-SEPTIC TANK *-Processed Waste #1 & #2*

Distance to closest well: This parcel *100'+* Adjacent parcel *100'+* Date tank was last pumped *8/5/2019*

Distance from foundation *-0* Pumped by *Dependable Septic Systems*

Distance from property line *100'+* Pre-fab tank or poured in place (describe) *Pre-Fab*

Material-Tank *Concrete* lid *Concrete* Number of compartments *2 (Baffle wall collapsed in #1*

Inside Dimensions-Length *108"* Width *70"* Depth *57"* Total Capacity *1500 gallons*

SECONDARY TREATMENT-DISPOSAL FIELD

Distance to closest well: This parcel *100'+* Adjacent Parcel *100'+* Distance to property line *100'+*

Distance from foundation *20'*

Total length of leach line *1258'* Total effective sidewall: *6290 ft²*

Type of filter material *None* Amount of filter material: *None*

Type of pipe *3" PVC Perforated* Number of lines *16*

Depth of cover over rock: Above pipe *12"+* Below pipe *24"*

Trench Width *18"* Depth *30"*

GENERAL INFORMATION

Is the house/structure presently occupied? *Yes* How many bedrooms? *Commercial Winery*

If commercial use-how many employees (FT and PT) *$4_F / 8_P$* How many units served by this system *1*

Any other septic systems on the property? *No* If yes, how many?

CONDITION OF SYSTEM - Make a statement on the condition of the septic tank and interior surfaces, including baffles and fittings. How was this determined? Note: If tank is over five years old, it **MUST** be inspected (pumping is required to allow inspection). *Visually inspected tanks after pumped. Process waste tanks #1 & #2 are badly decomposed and need to be replaced. Both are partially under building foundation. There are no inlet/ outlet tees except on outlet of #2. Domestic tank is in decent shape and has outlet tee only, no inlet tee.*

Make a statement on the condition of the sump/pump (if applicable), including size, alarm, structure, etc.

Make a statement on the condition of the distribution box, leaching lines, etc. How was the length and location of the disposal field determined? *Used mini-excavator to locate and pothole lines through D-boxes after being exposed. Please see attached page for more details.*

Note: Information on disposal field must be determined by physically locating each line by exposing the ends. All Distribution Boxes must be uncovered and inspected.

A PLOT PLAN OF THE SEPTIC SYSTEM AND ALL OTHER IMPROVEMENTS MUST BE ATTACHED TO THIS REPORT-DISTANCE TO PONDS/STREAMS, WELLS, BUILDINGS, ETC. MUST BE SHOWN

IAN MACKIE

Print Name (Licensed Contractor)

Signature (Licensed Contractor)

Note: In order to secure clearance of an individual sewage disposal system from the Department of Environmental Management, the system must be inspected by a licensed sewage contractor and the completed form returned to our office for evaluation. It should be accompanied by a plot plan showing the septic system, wells, buildings and other improvements on the property and the 100% expansion area (if required).

CONTINUATION OF SEPTIC EVALUATION
PERFORMED AT 5400 OLD SONOMA ROAD, NAPA, CA ON AUGUST 5, 2019

- D-boxes are in decent shape with minimal decomposition. They are made of concrete. Line #1 has broken concrete lid, but still keeps out dirt. Line #2 has concrete lid in good shape, remaining six boxes have had lids replaced with square steel lids. All lines were dry except slight moisture in line #1.

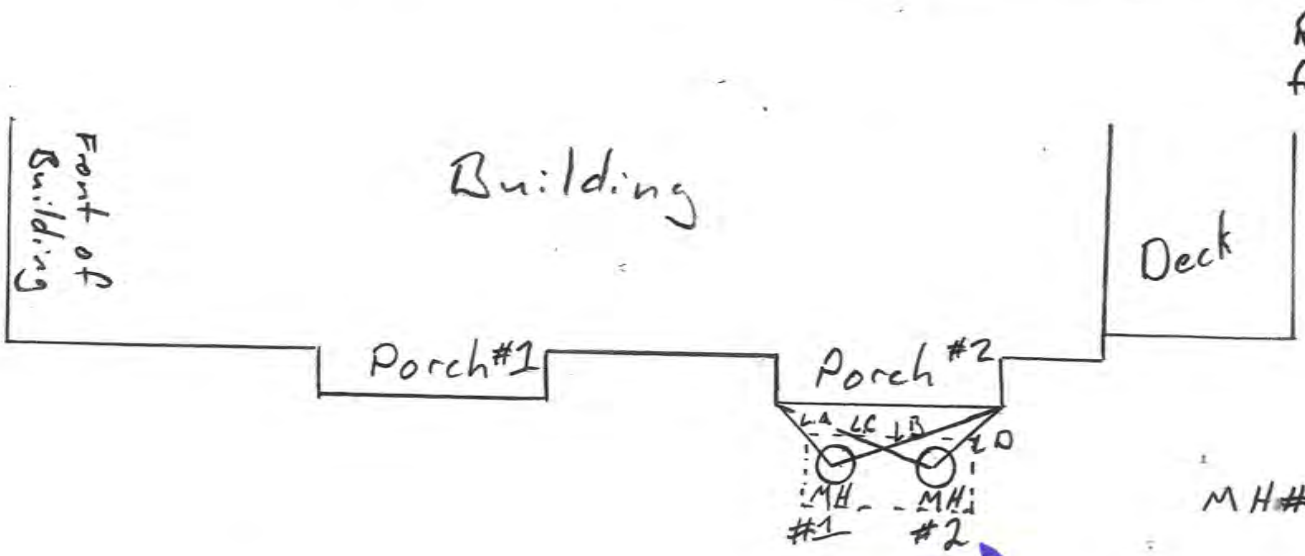
- Leach lines are in good condition and were exposed with mini excavator to visually inspect for length, depth and width.

- Domestic waste tank is same size (1500 gallons) and dimensions as process tanks.
    - Tank is approximately 7' from building foundation and is partially under porch #2. It has steel manhole lids on both access points and is easily accessible.
    - It is 100'+ from any well
        - 100'+ from creek
        - 95' (approx.) from closest property line.

- All tanks were pumped and inspected visually on August 5, 2019.

- There is a small concrete junction box approximately 4'x4' with multiple inlets just before the process tank #1 and in line with both tanks. It has redwood 2x6's for a lid. It is partially decomposed and should be replaced as well.

Maddrina Estates septic MH



MH #1 = L.A. @ 9'10"
L.B. @ 16'

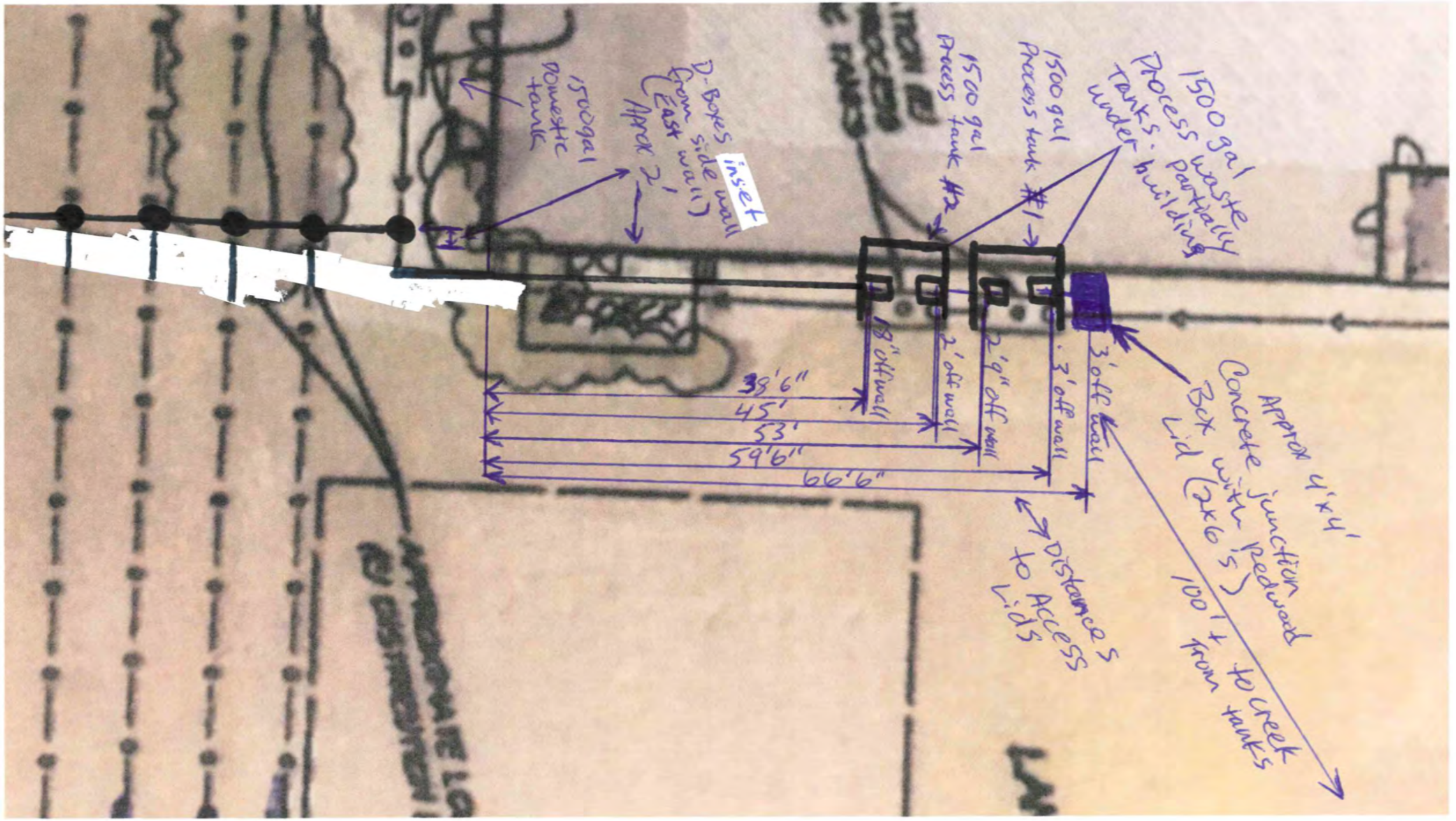
MH #2 = L.C. @ 15'9"
L.D @ 10'

S & S Grading and Paving
Barnabe Segura
(707) 704-7605

1500 gal Domestic waste Septic tank with Steel manhole Lids 24" diameter
Verified by GD NIELSON INC
8/5/19

MADONNA ESTATES

GD NIELSON INC
8/5/19 Septic Eval.



GD NIELSON INC.
8/5/19 Septic Eval

MADONNA ESTATES

TRICK
ATION
ROOF

APPROXIMATE LOCATION (E) 1500 GAL DOMESTIC SEPTIC TANK

(E) 3500

DECK

10'

30'6"

APPROXIMATE LOCATION (E) DISTRIBUTION BOX TYP.

well
100'+

83'
83'
83'
83'
83'
83'
← 83' →

9' 9' 9' 9' 9' 9'

60'
63'
63'
73'
80'
80'
84'
← 92' →

RSA+ Project Number: 4119003.0

Napa County Department of Environmental Management

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 #: E21-00078

APN: 047-110-016

(County Use Only)
Reviewed by: Date:

PLEASE PRINT OR TYPE ALL INFORMATION

Property Owner Mont St. John Cellars, Inc	☐ New Construction ☐ Addition ☐ Remodel ☐ Relocation ☒ Other: establishing reserve
Property Owner Mailing Address 5400 Old Sonoma Road	☐ Residential - # of Bedrooms: Design Flow : gpd
City State Zip Napa CA 94559	☒ Commercial – Type: Winery Sanitary Waste: 1035 gpd Process Waste: 1250 gpd
Site Address/Location 5400 Old Sonoma Road Napa, CA 94559	☐ Other: Sanitary Waste: gpd Process Waste: gpd

Evaluation Conducted By:

Company Name RSA+	Evaluator's Name Julia King	Signature (Civil Engineer, R.E.H.S., Geologist, Soil Scientist) DocuSigned by: Julia King EA8E697F6E01495...
Mailing Address: 1515 Fourth Street		Telephone Number 707-252-3301
City State Zip Napa CA 94559		Date Evaluation Conducted March 3, 2021

Primary Area	**Expansion Area**
Acceptable Soil Depth: in. Test pit #'s:	Acceptable Soil Depth: 24 Test pit #'s: 1-10
Soil Application Rate (gal. /sq. ft. /day):	Soil Application Rate (gal. /sq. ft. /day): 0.3
System Type(s) Recommended:	System Type(s) Recommended: subsurface drip with pretreatment
Slope: % Distance to nearest water source:	Slope: 1% Distance to nearest water source: >100 ft
Hydrometer test performed? No ☐ Yes ☐ (attach results)	Hydrometer test performed? No ☒ Yes ☐ (attach results)
Bulk Density test performed? No ☐ Yes ☐ (attach results)	Bulk Density test performed? No ☒ Yes ☐ (attach results)
Percolation test performed? No ☐ Yes ☐ (attach results)	Percolation test performed? No ☒ Yes ☐ (attach results)
Groundwater Monitoring Performed? No ☐ Yes ☐ (attach results)	Groundwater Monitoring Performed? No ☒ Yes ☐ (attach results)

Site constraints/Recommendations:
All pits are good to 24" and can be used as reserve area. 6" of fill will be needed if a septic field is ever constructed. 24,645 sf proven area. 15,233 sf required for 200% reserve area at 0.3 gal/sf/day application rate.

RSA+ Project Number: 4119003.0

Test Pit # 1

X = Limiting Horizon	Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure (Grade / Shape)	Consistence			Pores (QTY / Size)	Roots (QTY / Size)	Mottling (QTY / Size/ Contrast)
						Side Wall	Ped	Wet			
	0-28	A	0%	SiC	MSB	SH	VF	VS	FF	FF	-
X	28-47		0%	C	M	H					-

Notes: Massive clay at 28”

Test Pit # 2

X = Limiting Horizon	Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure (Grade / Shape)	Consistence			Pores (QTY / Size)	Roots (QTY / Size)	Mottling (QTY / Size/ Contrast)
						Side Wall	Ped	Wet			
	0-38	C	0%	SiC	MSB	SH	VF	VS	FF	FF	-
X	38-44		0%	C	M	H					

Notes: Massive clay at 38”

Test Pit # 3

X = Limiting Horizon	Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure (Grade / Shape)	Consistence			Pores (QTY / Size)	Roots (QTY / Size)	Mottling (QTY / Size/ Contrast)
						Side Wall	Ped	Wet			
	0-24	C	0%	SiC	MSB	SH	VF	VS	FF	FM	-
X	24-33		0%	C	M						-

Notes: Massive clay at 24”

RSA+ Project Number: 4119003.0

Test Pit # 4

X = Limiting Horizon	Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure (Grade / Shape)	Consistence			Pores (QTY / Size)	Roots (QTY / Size)	Mottling (QTY / Size/ Contrast)
						Side Wall	Ped	Wet			
	0-26	C	0%	SiC	MSB	H	VF	VS	FF	FM	-
X	36-34		0%	C	M	VH					-

Notes: Massive clay at 26". Several medium size roots in top 26".

Test Pit # 5

X = Limiting Horizon	Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure (Grade / Shape)	Consistence			Pores (QTY / Size)	Roots (QTY / Size)	Mottling (QTY / Size/ Contrast)
						Side Wall	Ped	Wet			
	0-36	C	0%	SiC	MSB	H	VF	VS	FF	FF	-
X	36-41		0%	C	M	VH					-

Notes: Massive clay below 36"

Test Pit # 6

X = Limiting Horizon	Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure (Grade / Shape)	Consistence			Pores (QTY / Size)	Roots (QTY / Size)	Mottling (QTY / Size/ Contrast)
						Side Wall	Ped	Wet			
	0-28	C	0%	SiC	MSB	H	VF	VS	FF	FM	-
X	28-41		0%	C	M	VH					-

Notes: Massive clay at 28"

RSA+ Project Number: 4119003.0

Test Pit # 7

X = Limiting Horizon	Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure (Grade / Shape)	Consistence			Pores (QTY / Size)	Roots (QTY / Size)	Mottling (QTY / Size/ Contrast)
						Side Wall	Ped	Wet			
	0-31	C	0%	SiC	MSB	H	VF	VS	FF	FM	-
X	31-40		0%	C	M	VH					-

Notes: Massive clay at 31”

Test Pit # 8

X = Limiting Horizon	Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure (Grade / Shape)	Consistence			Pores (QTY / Size)	Roots (QTY / Size)	Mottling (QTY / Size/ Contrast)
						Side Wall	Ped	Wet			
	0-30	G	0%	SiC	MSB	H	VF	VS	FF	FF	-
X	30-35		0%	C	M	VH					-

Notes:

Test Pit # 9

X = Limiting Horizon	Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure (Grade / Shape)	Consistence			Pores (QTY / Size)	Roots (QTY / Size)	Mottling (QTY / Size/ Contrast)
						Side Wall	Ped	Wet			
	0-29	C	0%	SiC	MSB	H	VF	VS	FF	FF	-
X	29-37		0%	C	M	VH					-

Notes: Massive clay at 29”

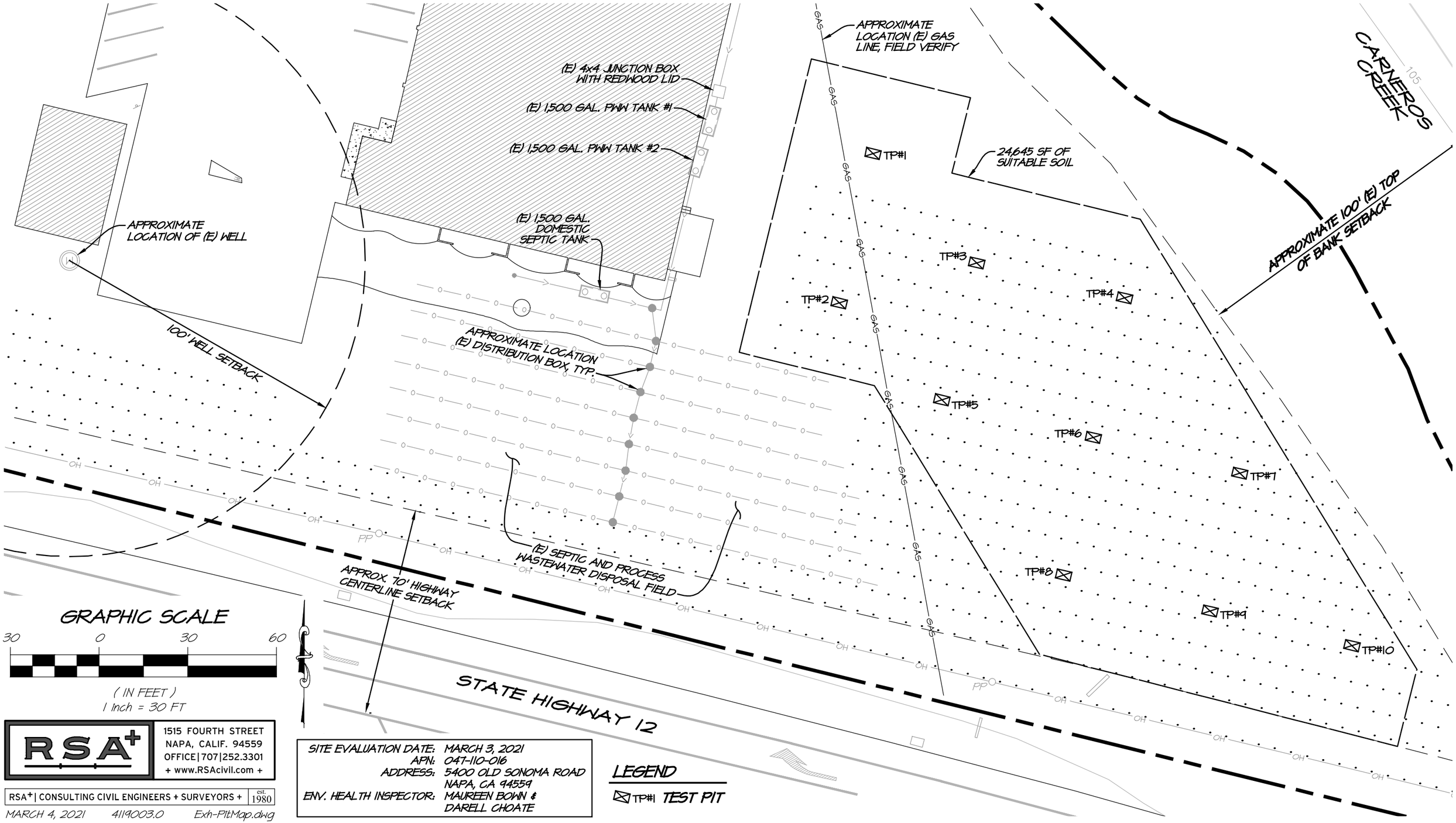
RSA+ Project Number: 4119003.0

Test Pit # 10

X = Limiting Horizon	**Horizon Depth** (Inches)	**Boundary**	**%Rock**	**Texture**	**Structure** (Grade / Shape)	**Consistence**			**Pores** (QTY / Size)	**Roots** (QTY / Size)	**Mottling** (QTY / Size/ Contrast)
						Side Wall	Ped	Wet			
	0-26	G	0%	SiC	MSB	H	VF	VS	FF	FM	-
X	26-33		0%	C	M	VH					-

Notes: Massive clay at 26”

MADONNA ESTATE WINERY
PIT MAP EXHIBIT



GRAPHIC SCALE

30 0 30 60

(IN FEET)
1 inch = 30 FT

RSA+

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MARCH 4, 2021 4119003.0 Exh-PitMap.dwg

SITE EVALUATION DATE:	MARCH 3, 2021
APN:	047-110-016
ADDRESS:	5400 OLD SONOMA ROAD NAPA, CA 94559
ENV. HEALTH INSPECTOR:	MAUREEN BOWN & DARELL CHOATE

LEGEND

TP#1 TEST PIT