WASTEWATER FEASIBILITY STUDY

Robert Mondavi Winery

7801 St. Helena Highway

Oakville, California

APN's 027-280-067 and 027-280-066

SUMMIT

CIVIL STRUCTURAL ELECTRICAL WATER|WASTEWATER PLANNING

Project No. 2021201
Revised September 27, 2022

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PROJECT OVERVIEW AND SITE DESCRIPTION

Robert Mondavi Winery (RMW), located at 7801 St. Helena Highway in Oakville, CA (APN 027-280-067 and 027-280-066), is applying for a use permit modification to incorporate a new outdoor hospitality pavilion and to reconstruct existing production and hospitality buildings. No modifications are proposed to the existing winery production capacity, number of employees, or visitation and marketing plan.

APN 027-280-067 is a 93.76-acre parcel and 027-280-066 is a 32.75-acre parcel. The site is generally flat, with an average slope of 1.4% from west to east and an average slope of 1.1% from north to south. Refer to Enclosure A for a vicinity map and an overall site plan.

Summit Engineering has prepared this Wastewater Feasibility Study (WWFS) to evaluate the ability of the existing winery process wastewater (PW) and sanitary sewage (SS) systems to provide the required treatment and disposal capacity.

WINERY PROCESS WASTEWATER MANAGEMENT SYSTEM

OVERVIEW OF EXISTING SYSTEM

Separate systems are currently used for SS and PW treatment and disposal, and the systems are proposed to remain segregated in the future.

The existing PW treatment and disposal system at the winery includes the following components:

- Screening of PW at drains and other points of discharge at the winery
- Collection of winery PW in a sump located near the winery
- Pumping of PW to pond area
- Mechanical screening via a rotary screen to remove solids from PW before PW enters the ponds
- Chemical adjustment of pH as needed before the PW enters the ponds
- Treatment of PW via two aerated ponds
- Use of treated PW for vineyard irrigation

The treatment ponds were built in 1974. Construction documents were developed by Keith & Associates, with Kennedy Engineers providing the “sanitation engineering” component of the design. The pond construction drawings from Keith & Associates are provided in Enclosure B. The pond design criteria from Kennedy Engineers are provided in Enclosure C.

PROCESS WASTEWATER CHARACTERISTICS

PW consists primarily of wastewater collected at floor drains and trenches within the winery, receiving, crush, tank, and wash down areas. Typical winery wastewater characteristics are summarized in Table 1.

Table 1: Typical winery PW characteristics.

Characteristic	Units	Crushing Season Range	Non-crushing Season Range
pH	--	2.5 - 9.5	3.5 - 11.0
Dissolved Oxygen	mg/L	0.5 - 8.5	1.0 - 10.0
BOD-5	mg/L	500 – 12,000	300 – 3,500
COD	mg/L	800 – 15,000	500 – 6,000
Grease	mg/L	5 - 30	5 - 50
Settleable Solids	mg/L	25 - 100	2 - 100
Nonfilterable Residue	mg/L	40 - 800	10 - 400
Volatile Suspended Solids	mg/L	150 - 700	80 - 350
Total Dissolved Solids	mg/L	80 – 2,900	80 – 2,900
Nitrogen	mg/L	1 - 40	1 - 40
Nitrate	mg/L	0.5 - 4.8	-
Phosphorous	mg/L	1 - 10	1 - 40
Sodium	mg/L	35 - 200	35 - 200
Alkalinity ($CaCO_3$)	mg/L	40 - 730	10 - 730
Chloride	mg/L	3 - 250	3 - 250
Sulfate	mg/L	10 - 75	20 - 75

PROCESS WASTEWATER DESIGN FLOWS

RMW's existing entitlement is to produce 1.6 million gallons of wine per year and to bottle 1.4 million gallons of wine per year. No changes are proposed to the production or bottling capacity as part of the current use permit modification. The winery is estimated to produce a total of 11,000,000 gallons of PW each year, with an average daily PW flow rate during the peak month of harvest of 57,800 gallons per day (GPD). This estimate is based on a combination of operational data from the winery, typical flow data from wineries of similar size, and industry standard design parameters. The complete calculations are provided in Enclosure D.

The PW design flow estimate has also been checked against the sizing criteria provided in Part IV of the Draft Napa County Onsite Wastewater Treatment Systems Technical Standards. Based on annual wine production of 1,600,000 gallons per year, the peak daily flow is estimated according to the calculation below:

$$Peak\ Daily\ Flow\ (GPD) = \frac{(1{,}600{,}000\ gallons) \times 1.5}{60\ day\ harvest} = 40{,}000\ GPD$$

The PW calculations in Enclosure D represent a more conservative approach; therefore 57,800 GPD will be used to evaluate the capacity of the PW treatment and disposal system.

REVIEW OF EXISTING PW SYSTEM AND CAPACITY ASSESSMENT

Development of the new outdoor pavilion area may include repurposing a portion of the existing PW treatment ponds. The exact impact of the outdoor pavilion development on the existing PW treatment ponds is not currently known. After the design of the outdoor pavilion area is complete, the hydraulic retention time, treatment capacity, and storage capacity of the pond volume remaining for PW treatment will be reevaluated.

If sufficient pond capacity remains after development of the new pavilion area, RMW will continue to use the

existing PW treatment ponds to provide treatment. RMW may also elect to continue using the existing pond(s) for PW treatment while construction occurs in areas of the winery other than the pavilion.

If there is not sufficient pond capacity to provide adequate PW treatment, RMW plans to install a new package treatment system (e.g., a membrane bioreactor [MBR] manufactured by a vendor such as Cloacina, or similar type of system) to provide the required PW treatment. Similarly, if the outdoor pavilion area will be in contact with or extending over the pond(s), the ponds will no longer be utilized for PW treatment. RMW may continue to use the ponds for storage of treated effluent, but complete treatment would occur upstream of the ponds in this scenario. Should a new package treatment system be required, the proposed location and footprint are indicated on the site plan provided in Enclosure E. Any revisions to the PW treatment system will comply with Napa County Planning, Building, and Environmental Services requirements and will also conform to the State Water Resources Control Board's General Waste Discharge Requirements for Winery Process Water.

Existing Gravity Collection

The existing gravity collection system will continue to route PW from the winery to the existing collection sump. Screening is provided by screened baskets and strainers installed on the trench drains and floor drains within the winery. With no changes proposed to the existing production or bottling capacity of the facility, no upgrades to the existing gravity collection system are anticipated to be required.

Existing Collection Sump and Pump Station

The existing collection sump will continue to the receive the gravity PW flow from the winery. The existing pump system will also continue convey PW to an existing rotary screen for solids removal prior to reaching the pond system. No changes are anticipated to the collection sump or pump station.

Existing Rotary Screen

Pumped PW will continue to flow to an existing rotary screen for solids removal. Discharge from the rotary screen will then flow to the existing pond system. No changes are anticipated to the rotary screen

Existing Facultative Pond System

According to the WWFS developed by Riechers Spence & Associates (RSA) dated May 10, 2007 (included in Enclosure F), the first pond (western pond) has a total volume of 4,950,750 gallons and an available treatment volume of 3,251,392 gallons (assuming two feet of freeboard is maintained). There are three 15-hp mechanical surface aerators installed in the first pond. The second pond (eastern pond) has a total volume of 5,170,330 gallons and an available treatment volume of 3,393,873 gallons (assuming two feet of freeboard is maintained). There are two 15-hp mechanical surface aerators installed in the second pond.

A pond water balance for the existing ponds based on the PW flow rates provided in Enclosure D is included in Enclosure G. The pond water balance shows the existing ponds have sufficient capacity to store treated PW throughout the year.

Based on a peak flow rate of 57,800 GPD and a total available treatment volume of 6,645,265 gallons (both ponds), the available pond hydraulic residence time is approximately 115 days. Thus, the existing ponds are

expected to provide sufficient hydraulic residence time for adequate PW treatment.

Assuming a peak harvest BOD-5 concentration of 7,700 mg/L and a peak flow rate of 57,800 GPD, the estimated loading rate of BOD-5 to the ponds can be calculated as shown below:

$$Incoming\ Peak\ BOD\ Load\ = \frac{7{,}700\ mg\ BOD5}{L} \times \frac{3.7854\ L}{gal} \times \frac{kg}{1{,}000{,}000\ mg} \times \frac{2.2046\ lb}{kg} \times \frac{57{,}800\ gal}{day} = 3{,}714\ \text{lb/day}$$

A typical industry assumption is that it requires 1.5 pounds of dissolved oxygen to consume 1 pound of BOD-5. Thus, the estimated oxygen requirement to consume the peak BOD load is 5,571 pounds of oxygen per day. Based on a typical aerator oxygen transfer rate of 3.45 pounds of oxygen per horsepower/hour, the five 15-hp aerators have capacity to provide 6,210 pounds of oxygen per day. The existing aeration is anticipated to provide sufficient BOD removal to provide treated effluent that meets the existing limit of 160 mg/L as well as the anticipated future General Order limit of 100 lb BOD-5/acre/day.

If development of the outdoor pavilion area impacts the existing ponds such that there is no longer sufficient pond capacity to provide adequate PW treatment, RMW plans to install a new package treatment system (e.g., a membrane bioreactor [MBR] manufactured by a vendor such as Cloacina, or similar type of system) to provide the required PW treatment. The new PW treatment system will comply with Napa County Planning, Building, and Environmental Services (PBES) requirements and will also conform to the State Water Resources Control Board's General Waste Discharge Requirements for Winery Process Water (General Order).

Irrigation Disposal Area

Treated effluent is used to irrigate 53 acres of vineyard. There is a second reservoir located near the intersection of Dwyer Road and Highway 29 (called the "West Reservoir") that collects storm water and can be supplemented with City of Napa or well water as needed. The West Reservoir is used to supplement any remaining irrigation demand that cannot be satisfied by the treated PW.

SOLID WASTES

Solid wastes from the winery primarily include pomace, seeds, and stems. The estimated quantities of these wastes (at peak capacity) are as follows:

$$Peak\ annual\ production = \ 1{,}600{,}000\ gal\ wine\ \times \frac{1\ ton}{165\ gal} = 9{,}697\ tons$$

$$Ultimate\ Annual\ Total\ of\ Soilds = \ 35\% \times \ 9{,}697\ tons = 3{,}394\ tons$$

Based on a unit weight of 38 pounds per cubic foot, the annual volume of solids wastes would be:

$$3{,}394\ tons\ \times \frac{2{,}000\ lb}{1\ ton} = 6{,}788{,}000\ lb$$

$$6{,}788{,}000\ \text{lbs}\ \times \frac{1\ ft^3}{38\ lb} \times \frac{1\ yd^3}{27\ ft^3} = 6{,}616\ yd^3$$

These organic solids will continue to be hauled offsite to Upper Valley Composting for composting. In the future, the winery may consider on-site composting with application to the vineyard.

WINERY SANITARY SEWAGE TREATMENT AND DISPOSAL SYSTEM

OVERVIEW OF EXISTING SYSTEM

Separate systems are currently used for SS and PW treatment and disposal, and the systems are proposed to remain segregated in the future.

The existing SS treatment and disposal system at the site was installed in 1987 and designed to treat a flow rate of 8,625 gallons per day (GPD). The original design plans are provided in Enclosure H. The original 7,500-gallon septic tank and 1,500-gallon sump tank were replaced with new, larger tanks in 2018 via repair permit E18-00717. The plans showing the new tanks installed in 2018 are included in Enclosure I. There was also a 2,000-gallon grease interceptor that was installed in 2001 to receive wastewater generated in the kitchen.

In the existing SS treatment and disposal system, SS from the winery flows into a 12,000-gallon septic tank with filter. SS from the septic tank flows into a 2,000-gallon dose tank with duplex pumps. Treated SS is pumped to one of four pressure distribution (PD) subfields for disposal. Each of the four subfields includes 1,800 linear feet of installed leach lines for a total of 7,200 linear feet. The leach line trenches have a minimum depth of 30” from finished grade (24” depth from original ground surface), with 12” minimum from the bottom of the perforated pipe to the trench bottom.

SANITARY SEWAGE CHARACTERISTICS

SS will consist primarily of wastewater generated from restrooms and tasting room facilities. There is no change anticipated to the composition of the SS generated at the winery. Typical characteristics of raw SS are summarized in Table 2.

Table 2: Typical SS characteristics.

Characteristic	Units	Raw Wastewater Range [1]
BOD-5	mg/L	133 - 400
Oil and Grease	mg/L	51 - 153
Total Suspended Solids (TSS)	mg/L	130 - 389
Volatile Suspended Solids	mg/L	101 - 304
Total Dissolved Solids (TDS)	mg/L	374 – 1,121
Nitrogen	mg/L	23 - 69
Nitrate	mg/L	0
Phosphorous	mg/L	3.7 - 11
Chlorides	mg/L	39 - 118
Sulfate	mg/L	24 - 72
Notes: 1. From Metcalf & Eddy, “Wastewater Engineering, Fifth Edition”, 2014.		

SANITARY SEWAGE DESIGN FLOWS

SS generated at the facility will consist of typical wastewater from restrooms, tasting room, and hospitality functions. The estimated peak day flows in various scenarios are provided in Tables 3 and 4.

Table 3: Estimate of design SS flow on a peak tasting day with an evening dinner event.

Occupancy Type	Number	Gal/Person/Day	Total GPD
Employees (Note 1)	331	15	4,965
Tasting Visitors (Note 2)	900	3	2,700
Private Dinner Event (Note 3)	50	15	750
Total	—	—	8,415

Notes:
1. Assumes all employees (part-time and full-time) are onsite for a full day.
2. Assumes the tasting room remains open on the day of a dinner event and "light bites" or appetizers (but not meals) are served to wine tasting visitors.
3. Assumes private dinner event held after winery has closed to tasting visitors and food is prepared onsite.

Table 4: Estimate of design SS flow on a peak tasting day with a trade event.

Occupancy Type	Number	Gal/Person/Day	Total GPD
Employees (Note 1)	331	15	4,965
Tasting Visitors (Note 2)	900	3	2,700
Trade Event (Note 3)	400	15	6,000
Total	—	—	13,665

Notes:
1. Assumes all employees (part-time and full-time) are onsite for a full day.
2. Assumes the tasting room remains open on the day of trade event and "light bites" or appetizers (but not meals) are served to wine tasting visitors.
3. Assumes trade event guests are served meals, and that food is prepared onsite.

The SS system is proposed to be designed to handle a peak daily SS flow of up to 13,665 gallons per day associated with a peak tasting day held simultaneously with a trade event.

REVIEW OF EXISTING SS SYSTEM AND CAPACITY ASSESSMENT

Grease Interceptor

Section 13.20.090 of the Napa County Municipal Code requires food waste from the food preparation and dishwashing areas of a commercial food facility to be connected to an approved grease interceptor, sized according to Appendix H of the Uniform Plumbing Code (UPC), prior to connection to an individual of private sewage disposal system.

For a commercial kitchen, the grease interceptor capacity is calculated per the formula shown below:

$$Interceptor\ Size\ (Gal) = \frac{\#\ Meals}{Peak\ Hour} \times Waste\ Flow\ Rate \times Retention\ Time \times Storage\ Factor$$

For a trade event with 400 guests, the meals are assumed to be served over the course of 4 hours for a rate of 100 meals/hour. The waste flow rate is assumed to be 6 gallons/day based on the “Restaurants – with Kitchen Waste” information provided in Table H201.1 of the UPC. The retention time for a commercial kitchen with dishwasher, garbage disposal, or both is 2.5 hours. The storage factor for a commercial kitchen with 16 hours

of operation per day is 2. Thus, the grease interceptor volume can be calculated as follows:

$$Interceptor\ Size\ (Gal) = 100\frac{meals}{hour} \times\ 6\frac{gallons}{meal} \times\ 2.5\ hours\ \times\ 2 = 3{,}000\ gallons$$

To provide the necessary volume, either a new 1,000-gallon grease interceptor will be installed adjacent to the existing 2,000-gallon tank, or the 2,000-gallon tank will be removed and replaced with a larger grease interceptor (minimum 3,000-gallon volume).

Septic Tank

The required volume of the septic tank is calculated using the formula shown below:

$$Septic\ Tank\ Size\ (Gal) = 1{,}125 + 0.75\ \times\ Peak\ Daily\ Sewage\ Flow$$

Based on the design flow of 13,665 GPD, the SS treatment system will require a total of 11,374 gallons of septic tank capacity. There is already a 12,000-gallon septic tank installed at site. The existing septic tank provides the required volume and additional septic tank capacity is not anticipated to be required.

Subsurface Disposal System

The original SS treatment and disposal system was designed and installed in accordance with Napa County requirements. At the time, the County determined the water table to be at a depth of 60". The design included 30" deep trenches from finished grade (24" depth from original ground surface). Refer to Detail 2 on Sheet G1 of the original design plans included in Enclosure H for a section view of the existing leach lines. Refer to Enclosure J for a series of memos between Summit Engineering and Napa County discussing the design requirements of the SS treatment and disposal system.

Section 5 of Napa County's current Design, Construction, and Installation of Alternative Sewage Treatment Systems ("ASTS Standards") provide the requirements for the design of pressure distribution (PD) systems. Per Section 5.A.2. of the ASTS Standards, the required minimum separation for PD systems to a limiting condition is 36" below the trench bottom. Based on a trench depth of 24" from original ground surface and a water table depth of 60" (limiting condition), the existing system meets the requirement to have 36" of separation between the trench bottom and a limiting condition. Therefore, pretreatment is not anticipated to be required.

Site Soil Evaluation and Percolation Testing Results

Sheet C2 of the original SS design plans provided in Enclosure H shows the location of 16 percolation test holes relative to the existing leach lines. There are 8 percolation test holes within the footprint of the existing leach field, and there are 8 percolation test holes to the south of the existing leach field. The percolation rates observed in the 8 test holes within the footprint of the existing leach field range from 3.75 inches/hour to 13.5 inches/hour, with an average of 6.1 inches/hour or 9.8 minutes/inch (MPI). Per the ASTS Standards, the corresponding soil hydraulic loading rate associated with a percolation rate of 10 MPI is 0.8 gallons/square foot (sf)/day.

Leach Field

Per Section 5.C.1.g. of the ASTS Standards, the equation to calculate total required PD system length is:

$$Total\ PD\ System\ Length = \frac{Maximum\ Daily\ Sewage\ Flow}{Effective\ Surface\ Area\ x\ Soil\ Application\ Rate}$$

The proposed maximum daily sewage flow is 13,665 GPD. Per the original design plans, the effective surface area is 3 square feet per linear foot. As discussed in the preceding "Site Evaluation Results" section, the soil application rate is 0.8 gallons/sf/day. Therefore, the total PD system length required for the proposed expansion is 5,694 linear feet.

The existing PD system includes four subfields with 1,800 linear feet of leach line per subfield for a total of 7,200 linear feet of leach line. The total installed PD system length exceeds the requirement based on the proposed expansion. Therefore, the existing leach field is anticipated to have sufficient capacity for disposal of the increased SS flows. No expansion of the existing leach field is anticipated.

Reserve/Expansion Area

The original SS system design plans identified a 100% expansion area. Since there is no change proposed to the existing leach field, it is not necessary to identify additional expansion area.

Monitoring Wells

Section 5.7.c. of the ASTS Standards defines the requirements for monitoring wells on PD systems installed on flat sites. Per the original system design plans, there is a single monitoring well installed to the east of subfield #4. RMW will installed additional monitoring wells if required by Napa County.

OTHER CONSIDERATIONS

ODOR CONTROL

There should be no noxious odors from a properly designed and operated wastewater treatment system. See Alternative Courses of Action for operation alternatives.

GROUNDWATER CONTAMINATION

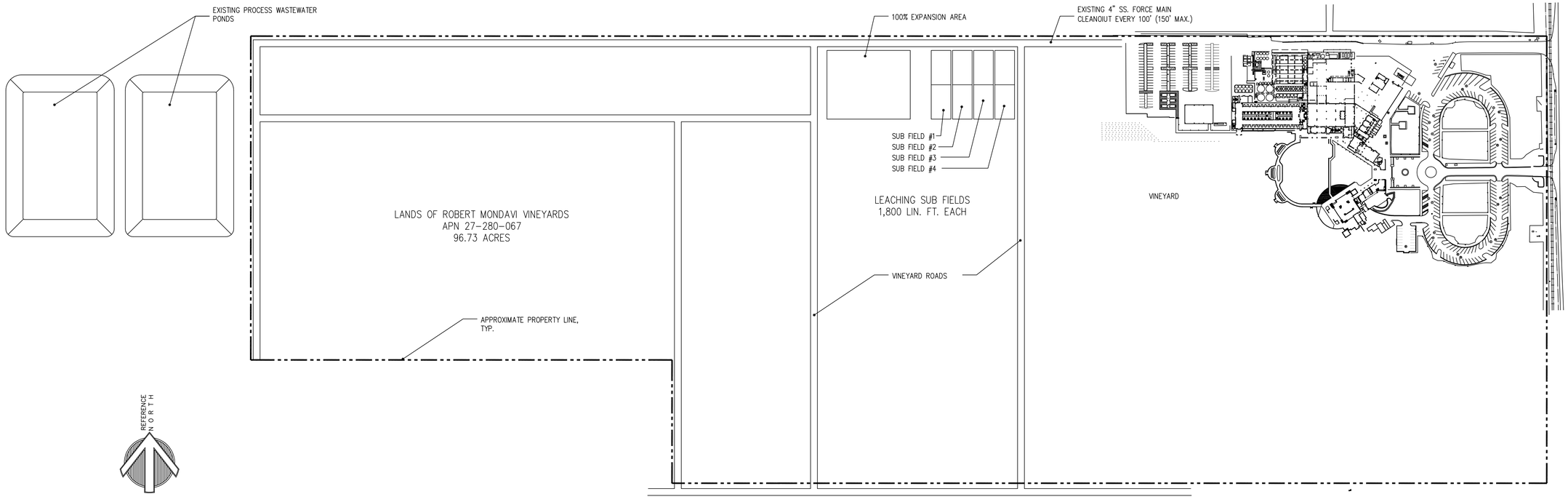
No disposal of treated effluent (either PW or SS) will occur within 100 feet of any existing or proposed wells.

PROTECTION

Exposed wastewater treatment facilities should be posted with appropriate warning signs. The treatment areas will be protected to restrict access and potential damage to the system.

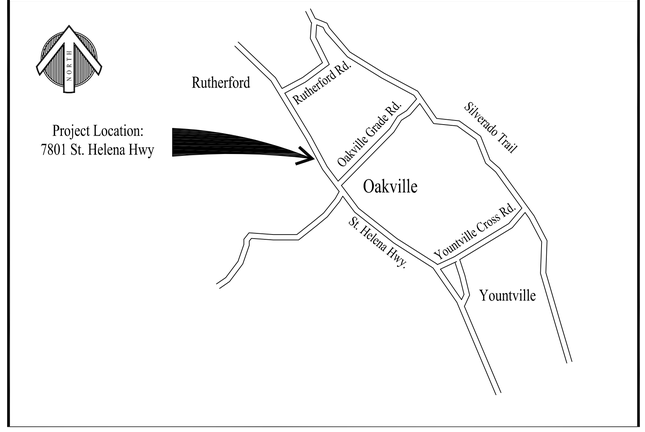
ENCLOSURE A

VICINITY MAP AND OVERALL SITE PLAN



1 SITE PLAN

VICINITY MAP (NOT TO SCALE)



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ROBERT MONDAVI WINERY
ST. HELENA HIGHWAY, OAKVILLE, CALIFORNIA
SHADE SAIL COVERS
@ VINEYARD ROOM PATIOS

ENCLOSURE B

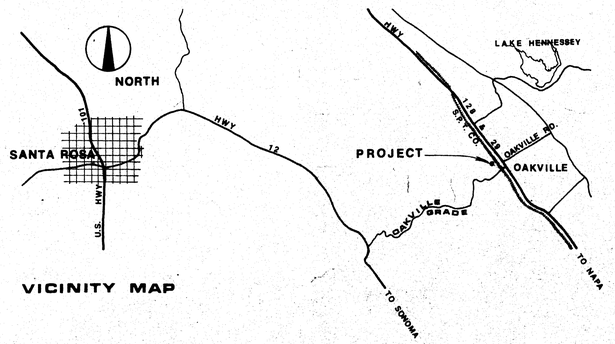
ORIGINAL PW POND CONSTRUCTION DRAWINGS

CONSTRUCTION PLANS
FOR
ROBERT MONDAVI WINERY
WASTEWATER TREATMENT PONDS

OAKVILLE, CALIFORNIA

MAY 6, 1974

REVISED JUNE 11, 1974



VICINITY MAP

ABBREVIATIONS

A. C.	ASBESTOS CEMENT	I. W.	INDUSTRIAL WASTE
BOT.	BOTTOM	MIN.	MINIMUM
C. C.	CENTER TO CENTER	MACH.	MACHINE
C. I.	CAST IRON	MCC.	MOTOR CONTROL CENTER
℄	CENTERLINE	N.I.C.	NOT IN CONTRACT
CLR.	CLEAR	N.T.S.	NOT TO SCALE
CAP.	CORRUGATED METAL PIPE	P.	PROPERTY LINE
E L.	ELEVATION	P.V.C.	POLYVINYL CHLORIDE
ELECT.	ELECTRICAL	P.S.I.	POUNDS PER SQUARE INCH
E.W.	EACH WAY	RAD.	RADIUS
EXIST.	EXISTING	R. W.	RECLAIMED WATER
F.C.A.	FLANGED COUPLING ADAPTER	SCH.	SCHEDULE
F. G.	FINISHED GRADE	S. D.	STORM DRAIN
FLEX.	FLEXIBLE	SYM.	SYMMETRICAL
F. P.	FIRE PROTECTION	S. S.	STAINLESS STEEL
G. A.	GAGE	T. B.	THRUST BLOCK
GPM	GALLONS PER MINUTE	TYP.	TYPICAL
GALV	GALVANIZED	W. S.	WATER SURFACE
G. V.	GATE VALVE		
H. P.	HORSEPOWER		

INDEX OF DRAWINGS

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V-1	PLOT PLAN	E-2	ELECTRICAL SINGLE LINE DIAGRAM & DETAILS
W-2	AERATION PONDS PLANS AND DETAILS		
W-3	MECHANICAL DETAILS AND SCHEMATICS		
W-4	FLOW CONTROL STRUCTURE DETAILS		
C-1	POND SITE PLAN AND DETAILS		
C-2	WINERY UTILITY PLAN		

GENERAL NOTES

1. THE OWNER BY ACCEPTING THESE PLANS OR PROCEEDING WITH IMPROVEMENTS THERETO AGREES TO ASSUME LIABILITY AND TO HOLD KEITH & ASSOCIATES HARMLESS FOR ANY DAMAGE RESULTING FROM THE EXISTENCE OF UNDERGROUND UTILITIES NOT REPORTED TO KEITH & ASSOCIATES. THE EXISTING UTILITIES SHOWN ON THESE PLANS HAVE BEEN COMPILED FROM INFORMATION FURNISHED BY THE OWNER.
2. THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT THE UTILITIES OR STRUCTURES SHOWN AND ANY OTHER UTILITIES OR STRUCTURES FOUND AT THE SITE. IT SHOULD BE THE CONTRACTORS RESPONSIBILITY TO NOTIFY THE OWNERS OF THE UTILITIES OR STRUCTURES CONCERNED BEFORE STARTING WORK.
3. KEITH & ASSOCIATES ASSUMES NO RESPONSIBILITY FOR SOIL CONDITIONS AND/OR EASEMENTS OR PROPERTY LINE LOCATIONS.
4. THE CONTRACTOR SHALL NOTIFY THE PACIFIC GAS & ELECTRIC CO. AND THE PACIFIC TELEPHONE CO. PRIOR TO STARTING ANY WORK AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING THESE UTILITY COMPANIES INFORMED OF HIS SCHEDULE
5. THE CONTRACTOR SHALL COORDINATE HIS WORK SO THAT IT DOES NOT INTERFERE WITH THE VINEYARD OR WINERY OPERATION ADJACENT TO THE JOB SITE.
6. ALL EARTHWORK SHALL CONFORM TO THE REQUIREMENTS OF "SOILS INVESTIGATION" WASTE WATER TREATMENT PONDS, ROBERT MONDAVI WINERY, OAKVILLE, CALIFORNIA, MAY 6 1974 BY HARDING - LAWSON ASSOCIATES.
7. THE DRAWING SHALL NOT BE SCALED, WORK SHALL BE GOVERNED BY DIMENSIONS INDICATED ON THE DRAWINGS AND DISCREPANCIES SHALL BE BROUGHT TO THE ENGINEERS ATTENTION FOR ADJUSTMENT.
8. ALL WORK SHALL CONFORM TO ALL APPLICABLE COUNTY OR NAPA CODES, ORDINANCES AND / OR THE 1973 UBC.

REVISIONS:
NO. 1 - AS PER ADDENDUM NO. 1, 2 & 4
6-11-74

KEITH & ASSOCIATES
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694 MISSION ST. SAN FRANCISCO, CA. 94105

SOILS ENGINEERING 707-545-3281
HARDING-LAWSON ASSOCIATES
1142 STATE FARM DR. SANTA ROSA, CA. 95401

PROJECT 7393
DRAWN Y. P. HAO
CHECK HRD.
DATE MAY 6 1974

T-1

KEITH & ASSOCIATES

OCT 28 1974
RAPP CONST. CO

N

PROJECT SITE

NEW WINERY WASTE AERATION PONDS

ROBERT MONDAVI WINERY

EXISTING WINERY WASTE PONDS

APPROXIMATE SOIL BORING LOCATIONS BY HARDING-LAWSON ASSOCIATES DRAWINGS DATED 2/27/74 & 4/12/74. (NOS. 1 THRU 9)

APPROX. PROPERTY LINE

AMMONIA TANK
INFLUENT METER
10"x10"x8" TEE W/BLIND FLG. ON 8"

8" PVC - INF. INFLUENT FORCE MAIN

10" CONNECT WATER MAIN LINE

10" FLANGED PIPE W/BLIND FLANGE

EFFLUENT FORCE & ELECTRICAL CONDUIT

EXISTING ROAD NO. 2

EXISTING 8" SEWER SERVICE

LOCATION MAP
SCALE:

SYMBOLS

- PLUG VALVE
- BUTTERFLY VALVE
- GATE VALVE
- UNION
- ELBOW
- TEE
- L STEEL ANGLE
- PL STEEL PLATE
- ⌀ ROUND OR DIAMETER

ROBERT MONDAVI VINEYARD

PROPERTY LINE

APPROX. PROPERTY LINE

CREEK

INTERSECTION OF
19.5" EAST OF 2ND ROW } ON ANGLE 16° VINE
20.6" WEST OF 2ND ROW }
W/VALVE BOX 1.0" BELOW GRADE

INTERSECTION OF
19.7" EAST OF 2ND ROW } ON ANGLE 16° VINE
20.2" WEST OF 2ND ROW }
W/VALVE BOX 1.0" BELOW GRADE

3" PIPE IN FORCE MAIN
11-4" FROM WEST SIDE A.D.
38.6' NORTH CHAIN LINK FENCE

BEAULIEU VINEYARD

6" PVC FORCE MAIN SEWER LOCATED 21'-4" NORTH OF EXISTING ASPHALT PAVE.
4" PVC CONNECTS TO EXISTING 10" 34'-0" EAST OF EXIST. F.H.

EXISTING DISTRIBUTION BOXES

EXISTING ROAD

PROPERTY LINE

8" FORCE MAIN SEWER

WINERY EXPANSION

CONNECT WINERY

EXISTING LEACHING FIELDS.

EXISTING WINERY WASTE PONDS (TO BE ABANDONED)

EXISTING 8" W. FORCE MAIN (TO BE ABANDONED)

VINEYARD ACCESS RD.

150 WELL

EXISTING SEPTIC TANK & DOSING CHAMBER

LAWN & LANDSCAPING

4" PVC FORCE MAIN SEWER 4-2" NORTH EXISTING VINE ROW

8" DIA. TO RECLAIMED WATER LINE 2-6" NORTH EXISTING VINE ROW

VINEYARD IRRIGATION

PROPERTY LINE

BEAULIEU VINEYARD

S.P.R.R.

TO OAKVILLE

HWY 29

TO ST. HELENA

SECTION REFERENCE

(A) — SECTION DESIGNATION
W5W3 — SHEET DRAWN ON

SHEET CUT ON

REVISIONS:
NO.1 - AS PER ADDENDUM NO.1, 2 & 4 6-11-74
NO.2 ADBUILT 9/30/74

SCALE: 1" = 200'

KEITH & ASSOCIATES
ENGINEERING ▫ ARCHITECTURE ▫ PLANNING
4635 OLD REDWOOD HIGHWAY SANTA ROSA, CALIFORNIA 95401 707-544-1542

ROBERT MONDAVI WINERY
OAKVILLE, CALIFORNIA
WASTEWATER TREATMENT PONDS

PLOT PLAN

RECEIVED
SEP 30 1974
RAPP CONST. CO.

KENNEDY ENGINEERS
8057 HOWARD STREET
SAN FRANCISCO 94105
Robert A. Ryder
REG. NO. 11501

PROJECT 7353
DRAWN R.E. RYDER
DATE MAY 6, 1974

1" = 1'

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OCT 8 1974
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RECEIVED
OCT 23 1974
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RECEIVED
OCT 11 1974
KEITH & ASSOCIATES

6"PVC - I.W. INFLUENT FORCE MAIN FROM WINERY

EXIST. ROAD

6"PVC SEWER LINE 17'-6" WEST OF EXISTING VINE ROW

10" AC RECLAIMED WATER LINE 10'-6" WEST EXISTING VINE ROW

6" PVC SEWER LINE 3'-6" SOUTH OF NORTH EDGE OF DIKE ROAD COVERED WITH 8" SAND MIX CONCRETE BELOW 6" CLASS 2 AGG BASE ROCK

1½" RECIRCULATION LINE

10" AC RECLAIMED WATER TO VINEYARD & LANDSCAPE IRRIGATION

PH CONTROLLER
PH SENSOR
AMMONIA TANK
SPARLING METER
4" CHECK VALVE
4" BUTTERFLY VALVE
1½" GLOBE VALVE
VALVE BOX W/COVER
SPARLING METER
HYDROPNEUMATIC TANK
FILTER
COUPLING TO A.C.

ELECT. PANEL RECLAIMED WATER PUMP W/CONNECTIONS FOR 2 FUTURE PUMPS (BLIND FLANGED)

POST FOR SUPPORT OF ELECTRICAL EQUIPMENT, SHALL BE 5'-6" ABOVE TOP OF DIKE

TRANSITION CMP TO STEEL PIPE, WELD CONNECTION

TEST BORE #9

VACUUM BREAKER

6"PVC INDUSTRIAL WASTE INFLUENT

TOE OF SLOPE

PROPERTY LINE

EXISTING ROAD

MOORING ROPE (TYPICAL)

TEST BORE #8

FLOW CONTROL STRUCTURE

MOORING POST (TYP.)

12"CMP

15 H.P. AERATOR

AERATION POND NO.1
(BOT. EL. 196.0)

10' RAD. RIPRAP (TYP.)

10 H.P. AERATOR

AERATION POND NO.2
(BOT. EL. 196.0)

10' RAD. RIPRAP (TYP.)

5 H.P. AERATOR

CUT-OFF FLANGES (TYP.)

FLOW CONTROL STRUCTURE

12" CMP TRANSFER PIPE

EXIST. ROAD

EXIST. ROAD

SINGLE MOORING POST (TYPICAL OF 4 EACH POND)

DOUBLE MOORING POST (TYPICAL OF 2 EACH POND)

TOE OF SLOPE AT EDGE OF ROAD

NOTE
SEE DRAWING C-1 FOR SITE DETAILS NOT SHOWN.

PLAN
SCALE: 1"=40'

AERATOR DETAIL
NO SCALE

MOTOR
FLOATATION RING
POWER CABLE
STRAIN CLAMP
W.S.?
DISCHARGE
MOORING ROPE
IMPELLER
INTAKE
ANTI-EROSION ASSEMBLY

AERATOR (TYP. OF 3)

ANTI-EROSION PLATE

RIPRAP NOT SHOWN

EL. 196.0

3' (MIN.) N.T.S.

SECTION
SCALE: ¼"=1'0"

5/8" POLYPROPYLENE MOORING ROPE (TYPICAL OF 4 PER AERATOR)

W. S. EL. 208.0

AERATION POND (TYPICAL)

MOORING POST

OUTSIDE SLOPE 2 (TYPICAL)

3 (TYPICAL) 1

CONCRETE ENCASEMENT (TYPICAL AT EACH POST)

SELECT SOIL LINER. (TYP.) AT LEAST 95 % RELATIVE COMPACTION, ON INTERIOR SLOPES AND BOTTOM OF PONDS. USE APPROVED CLAYEY MATERIALS FROM SITE FOUND GENERALLY FROM 6" TO 4'-0" BELOW EXISTING SURFACE.

8' (MIN)

WIDTH OF EACH COMPACTED LIFT OF SELECT SOIL LINER SLOPE.

5/8" SHOULDER EYEBOLT
5/8" SHACKLE
USE THIMBLE SPLICE ENDS
5/8" POLYPROPYLENE ROPE

CONNECTORS
CONCRETE ENCASEMENT

5'-6"
2'-0"
2'-0"
12"
6"
1'-6"

SELECT SOIL LINER NOT SHOWN FOR CLARITY. SEE TYPICAL SECTION (A 2|2)

PLAN

MOORING ROPE WHERE DOUBLE ANCHORAGE IS INDICATED

CONCRETE ENCASEMENT

MOORING ROPE

6" REDWOOD POST (TYPICAL OF 12)

SELECT SOIL LINER NOT SHOWN ON SLOPES & BOTTOM FOR CLARITY. SEE TYPICAL SECTION (A 2|2)

3
1

12" C.M.P. TRANSFER PIPE

2'-0"

EL. 199.5

EL. 196.0

CUT-OFF FLANGE (TYPICAL AT OPPOSITE END OF PIPE) SEE SPECIFICATIONS.

RIPRAP 2' THICK

SECTION
NO SCALE (B 2|2)

7'-0" (AMMONIA TANK)
8'-0" (HYDROPNEUMATIC TANK)

8" 2'-10" 8"

4" TYP.

½" ϕ x 12" GALV. ANCHOR BOLTS (TYP OF 4)

TO FIT SADDLE USED

(SCHEDULE) 40 (MINIMUM) O.D.S.

PLAN

8" 2'-10" 8"

¾" ϕ ANCHOR BOLT (TYP.)

1 No. 4

NO. 4 DOWELS AT 12" O.C.

1'-0"

2"±

4½"

6"

NO. 5 AT 12" O.C. EACH WAY

SECTION
SUPPORT FOR AMMONIA TANK & HYDROPNEUMATIC TANK

SECTION
AERATOR MOORING POST DETAIL
SCALE: ½"=1'-0"

1½" VACUUM BREAKER (PVC)
2'-0" MIN.
OPEN END
3'-0" MIN. COVER
6" PVC - I.W. INFLUENT
3'-0" MIN. COVER
℄ AERATOR
4'-0"
EL. 196.0?
RIPRAP 2' THICK
LINER & RIPRAP NOT SHOWN SEE SECTION (A W2|W2)

6" I.W. INLET TO PONDS
RECIRCULATION PIPE NOT SHOWN SEE PLAN
NO SCALE

REVISED "AS BUILT" DRAWINGS
20 FEB 1975
RAPP CONSTRUCTION COMPANY

REVISIONS:
NO. 1 - AS PER ADDENDUM NO. 2 & 4
6-17-74
NO. 5 AS BUILT

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APR 18 1975
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KEITH & ASSOCIATES
ENGINEERING ○ ARCHITECTURE ○ PLANNING
4835 OLD REDWOOD HIGHWAY SANTA ROSA, CALIFORNIA 95401 707-544-1848

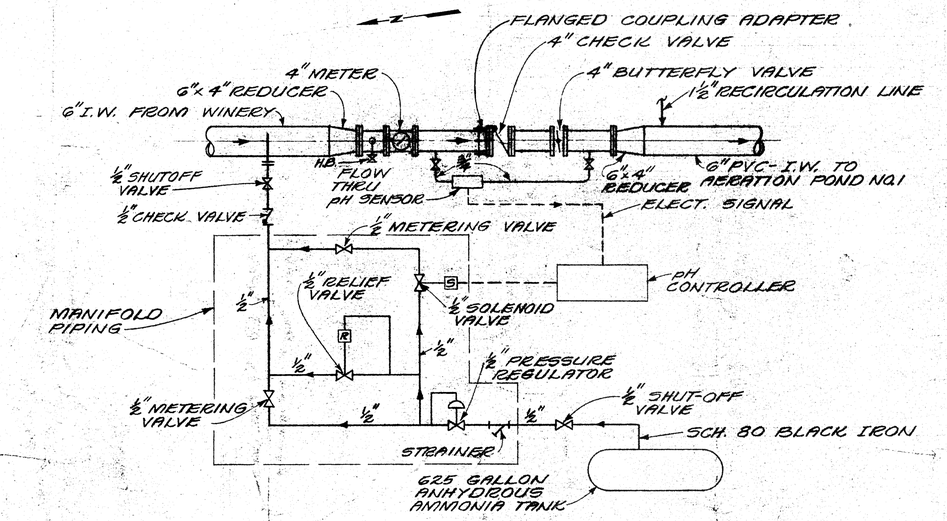
ROBERT MONDAVI WINERY
OAKVILLE CALIFORNIA
WASTEWATER TREATMENT PONDS

AERATION PONDS PLANS AND DETAILS

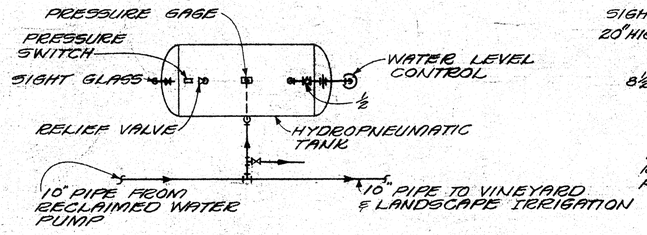
KENNEDY ENGINEERS
657 HOWARD STREET
SAN FRANCISCO 94105
Robert A. Ryder
LIC. NO. C-10

PROJECT 7353
DRAWN E.V. - R.A.R.
DATE MAY 6, 1974

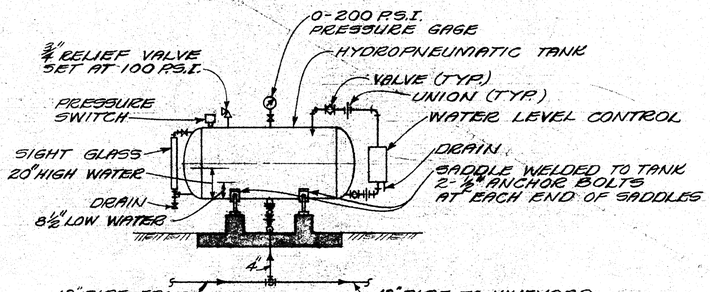
W-2



AMMONIA SYSTEM SCHEMATIC



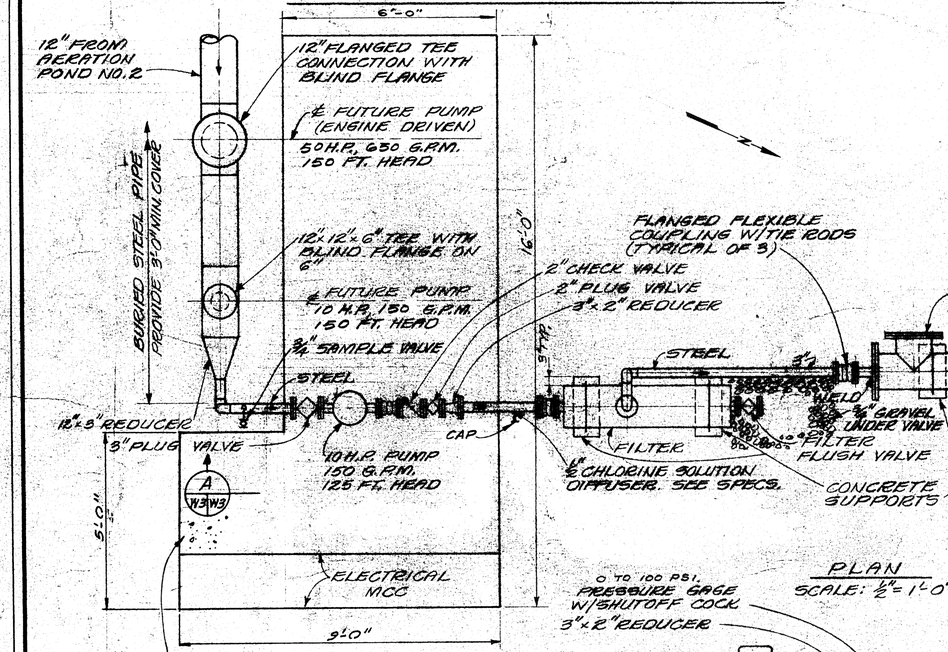
PLAN

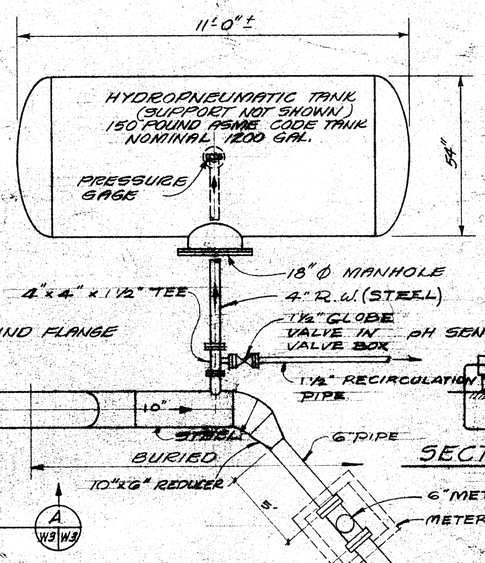


ELEVATION

HYDROPNEUMATIC TANK DETAILS

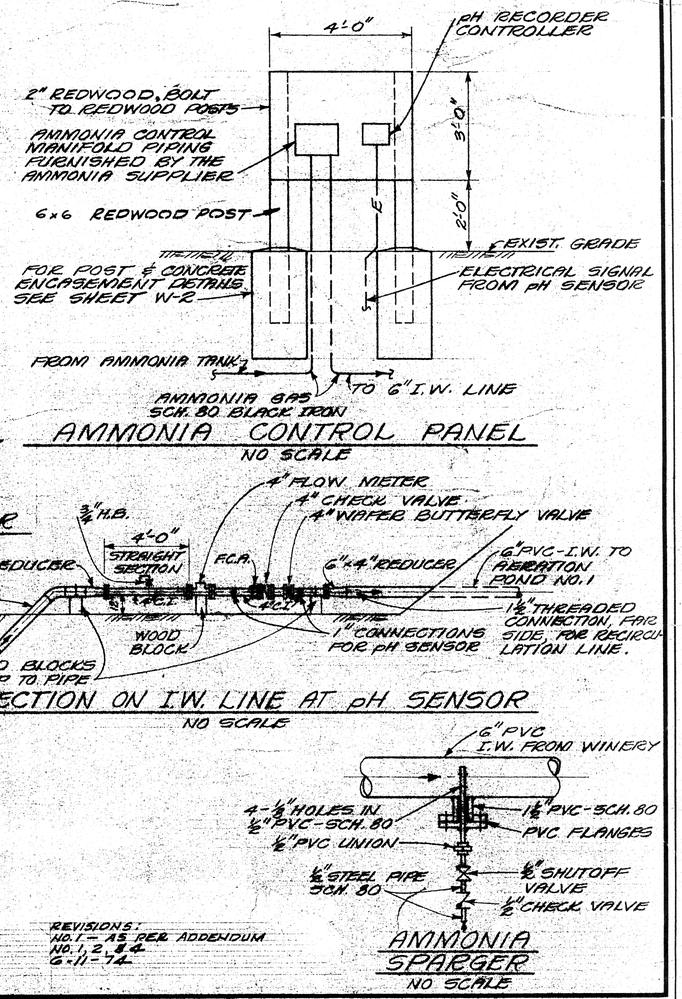
NO SCALE





SECTION AT pH SENSOR

NO SCALE



AMMONIA CONTROL PANEL

NO SCALE

SECTION ON I.W. LINE AT pH SENSOR

NO SCALE

AMMONIA SPARGER

NO SCALE

REVISIONS:
NO.1 — AS PER ADDENDUM NO.1, 2 & 4
6-11-74

RECLAIMED WATER PUMP & HYDROPNEUMATIC TANK

KEITH & ASSOCIATES
ENGINEERING ARCHITECTURE PLANNING
4535 OLD REDWOOD HIGHWAY SANTA ROSA, CALIFORNIA 95401 TELEPHONE: 707-544-1545

ROBERT MONDAVI WINERY
OAKVILLE CALIFORNIA
WASTEWATER TREATMENT PONDS

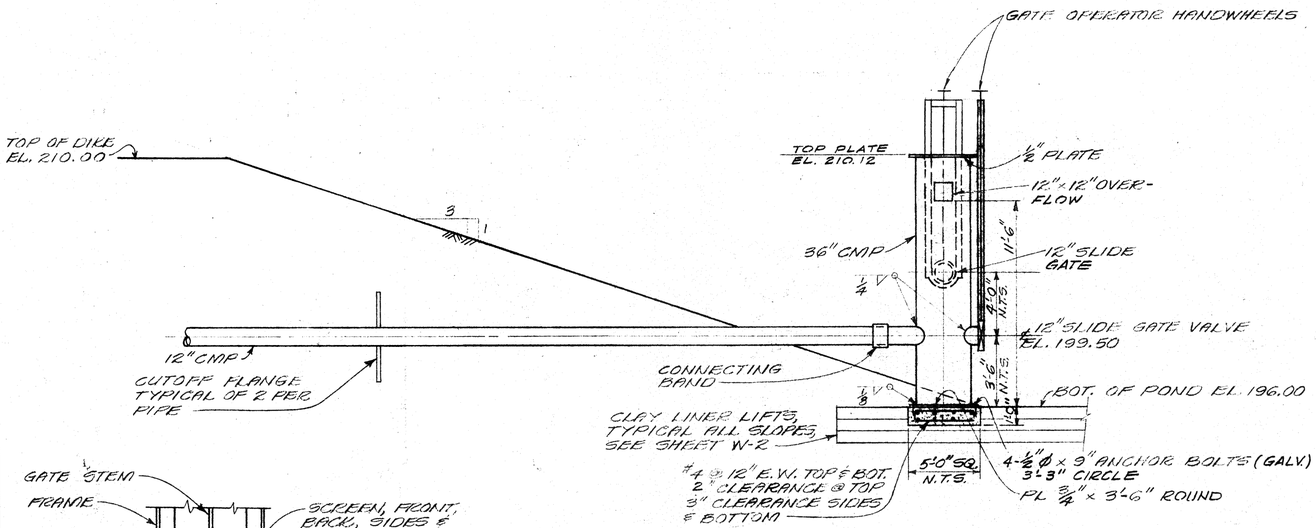
MECHANICAL DETAILS AND SCHEMATICS

PROJECT 7355
DRAWN E.J.
CHECK E.P.R.
DATE MAY 6, 1974

W-3

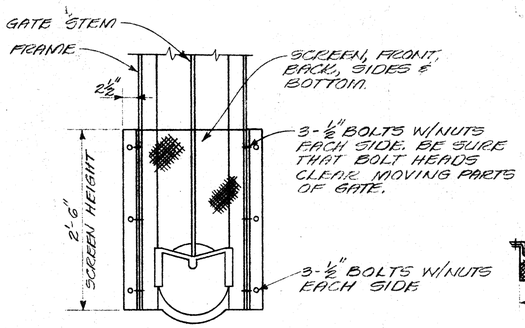
PRINTED ON DIEPO NO. 100M CLEARPRINT

RWM 144

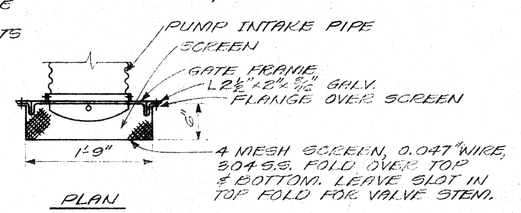


SECTION

SCALE: 1/4"=1'-0"



ELEVATION



PLAN

SLIDE GATE SCREEN DETAILS

NO SCALE

NOTE:

ALL BOLTS, NUTS, WASHERS, ANGLES & NAILS ARE TO BE GALV.

REVISIONS:
NO. 1 - AS PER ADDENDUM NO. 1, 2 & 4
6-11-74

KEITH & ASSOCIATES
ENGINEERING ARCHITECTURE PLANNING
4535 OLD REDWOOD HIGHWAY SANTA ROSA, CALIFORNIA 95401 TELEPHONE: 707-544-1642

ROBERT MONDAVI WINERY
OAKVILLE CALIFORNIA
WASTEWATER TREATMENT PONDS

FLOW CONTROL STRUCTURE DETAILS

KENNEDY ENGINEERS
657 HOWARD STREET
SAN FRANCISCO 94105
Robert A. Kuyler
RCE NO. C 1778

PROJECT 7353
DRAWN E.J.
CHECK R.P.R.
DATE MAY 6, 1974

W-4

KEITH & ASSOCIATES

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OCT 23 1974
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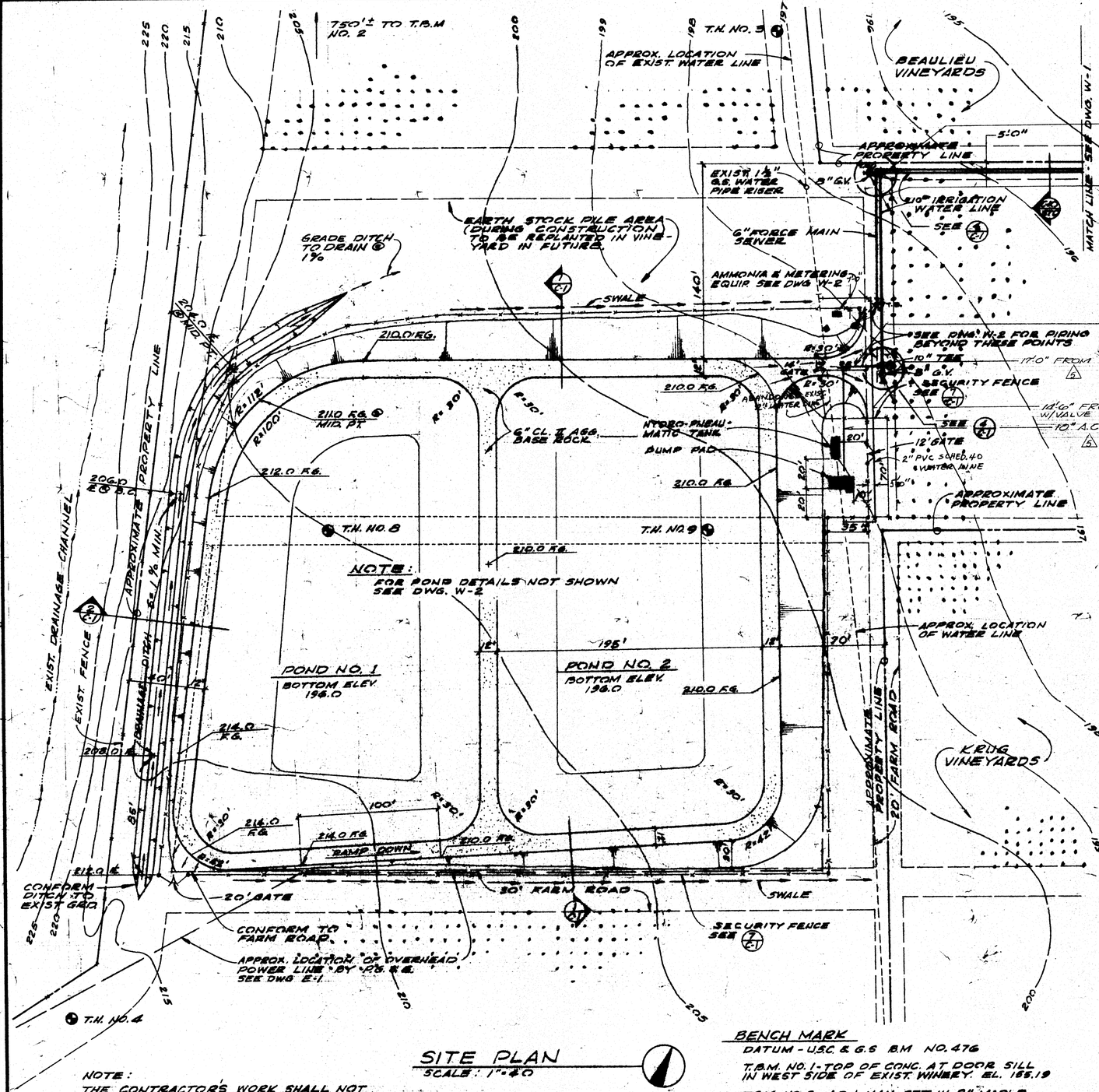
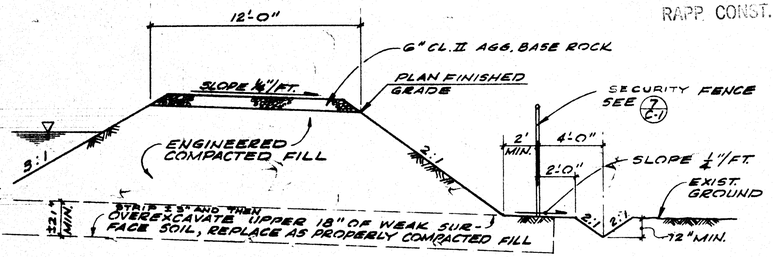


SITE PLAN
SCALE: 1"=40

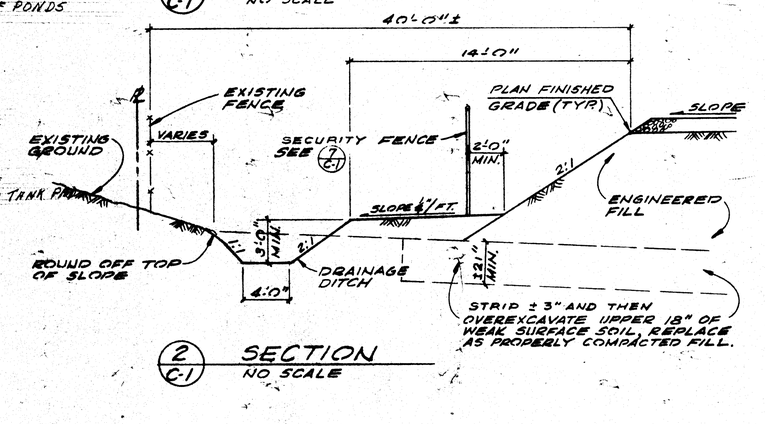
NOTE:
THE CONTRACTORS WORK SHALL NOT ENCROACH INTO THE VINEYARDS BEYOND THE FARM ROADS ON THE NORTH, EAST AND SOUTH SIDES OF THE POND SITE.

BENCH MARK
DATUM - U.S.C. & G.S. B.M. NO. 476
T.B.M. NO. 1 - TOP OF CONC. AT DOOR SILL IN WEST SIDE OF EXIST. WINERY. EL. 185.19
T.B.M. NO. 2 - 40d NAIL SET IN 8" MAPLE TREE EL. 194.00



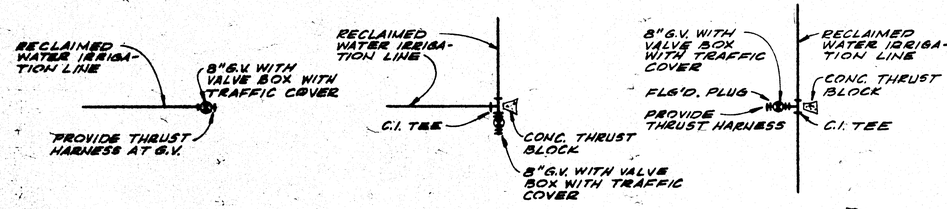
1 C-1 SECTION
NO SCALE

10" AC RECLAIMED WATER LINE LOCATED AT E. OF DIKE ROAD NORTH END OF PONDS



2 C-1 SECTION
NO SCALE

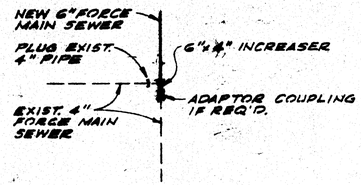
17'-0" FROM 12th ROW
12'-6" FROM 10th ROW W/VALVE BOX 1'0" BELOW GRADE
10" A.C. REC. WTR. EXIST. 6" FROM TANK PAD

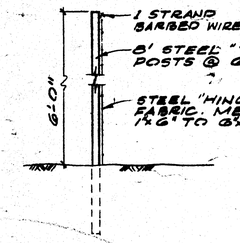


3 C-1 DETAIL
NO SCALE

4 C-1 DETAIL
NO SCALE

5 C-1 DETAIL
NO SCALE





6 C-1 DETAIL
NO SCALE

7 C-1 DETAIL
NO SCALE

RAPP CONSTRUCTION COMPANY

REVISED
"AS BUILT DRAWINGS"
26 FEB 1975

REVISIONS:
NO. 1 - AS PER ADDENDUM NO. 1, 2 & 4 6-11-74
NO. 2 - AS BUILT 9/30/74

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KEITH & ASSOCIATES
ENGINEERING ARCHITECTURE PLANNING
4633 OLD REDWOOD HIGHWAY SANTA ROSA, CALIFORNIA 95401 TELEPHONE: 707-545-1545

ROBERT MONDAVI WINERY
OAKVILLE CALIFORNIA
WASTEWATER TREATMENT PONDS

POND SITE PLAN AND DETAILS

PROJECT 7353
DRAWN G.E.L.
CHECK H.P.O.
DATE MAY 6, 1974

C-1

RECEIVED
OCT 23 1974
RAPP CONST. CO.

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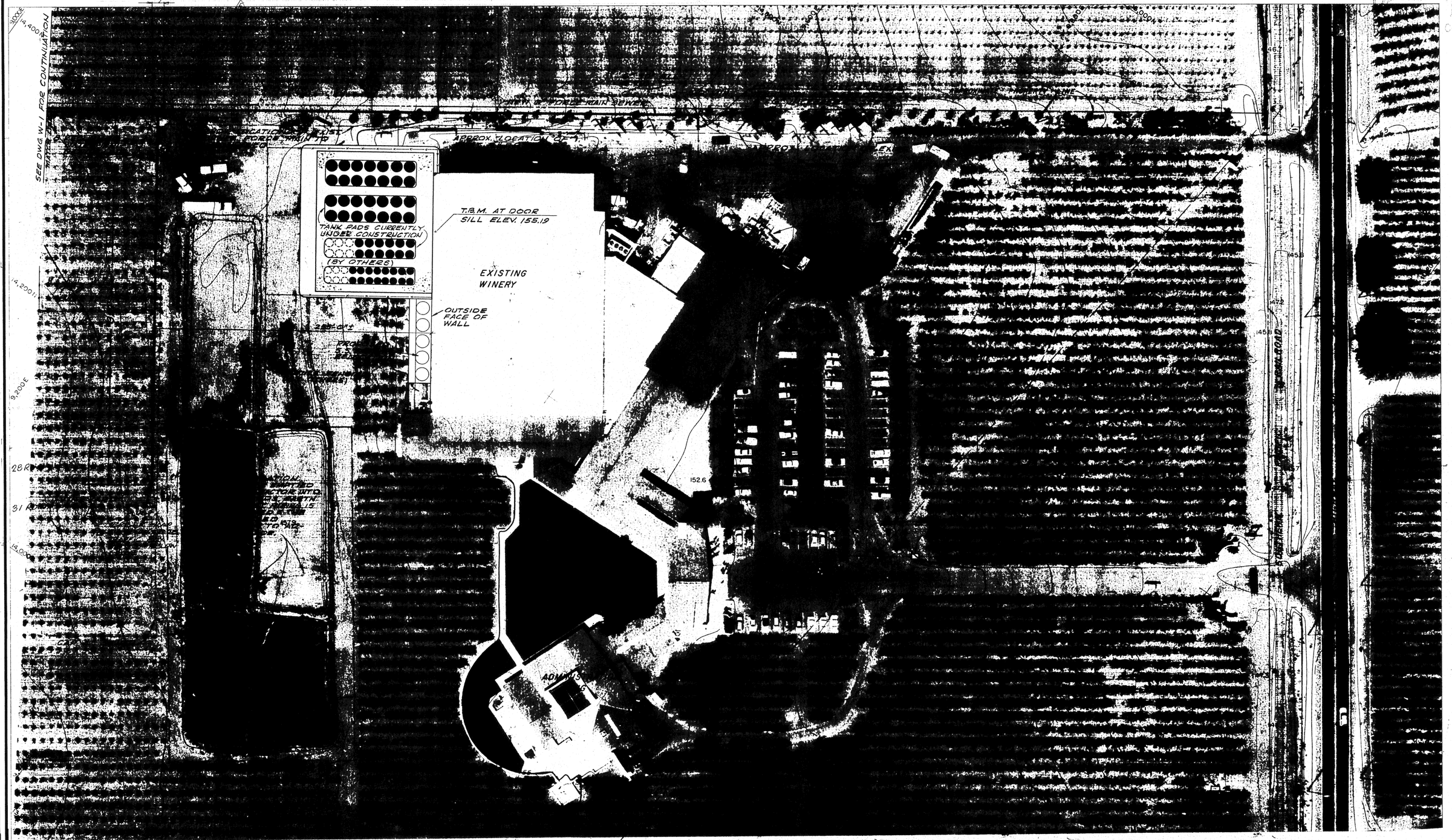
OCT 1 1974
KEITH & ASSOCIATES

2'-8" VALVES SET 8'-0" c/c w/ 1 VALVE BOX SET 1'-0" BELOW GRADE



NOTE:
AERIAL PHOTOGRAPH TAKEN IN OCTOBER, 1973 BY CALIF. AERO TOPO INC. FOR R. MONDAVI WINERY. KEITH & ASSOCIATES IS NOT RESPONSIBLE FOR TOPOGRAPHIC FEATURES SHOWN OR FEATURE CHANGES SINCE THE DATE OF THIS PHOTOGRAPH. DISREGARD VEHICLES SHOWN HEREON.

PLAN
SCALE: 1"=40'

REVISIONS:
NO. 1 AS PER ADDENDUM NO. 1, 8-4-74
6-11-74
NO. 5 AS BUILT 9/30/74

KEITH & ASSOCIATES
ENGINEERING ARCHITECTURE PLANNING
4535 OLD REDWOOD HIGHWAY SANTA ROSA, CALIFORNIA 95401 TELEPHONE: 707-544-1642

ROBERT MONDAVI WINERY
OAKVILLE CALIFORNIA
WASTEWATER TREATMENT PONDS

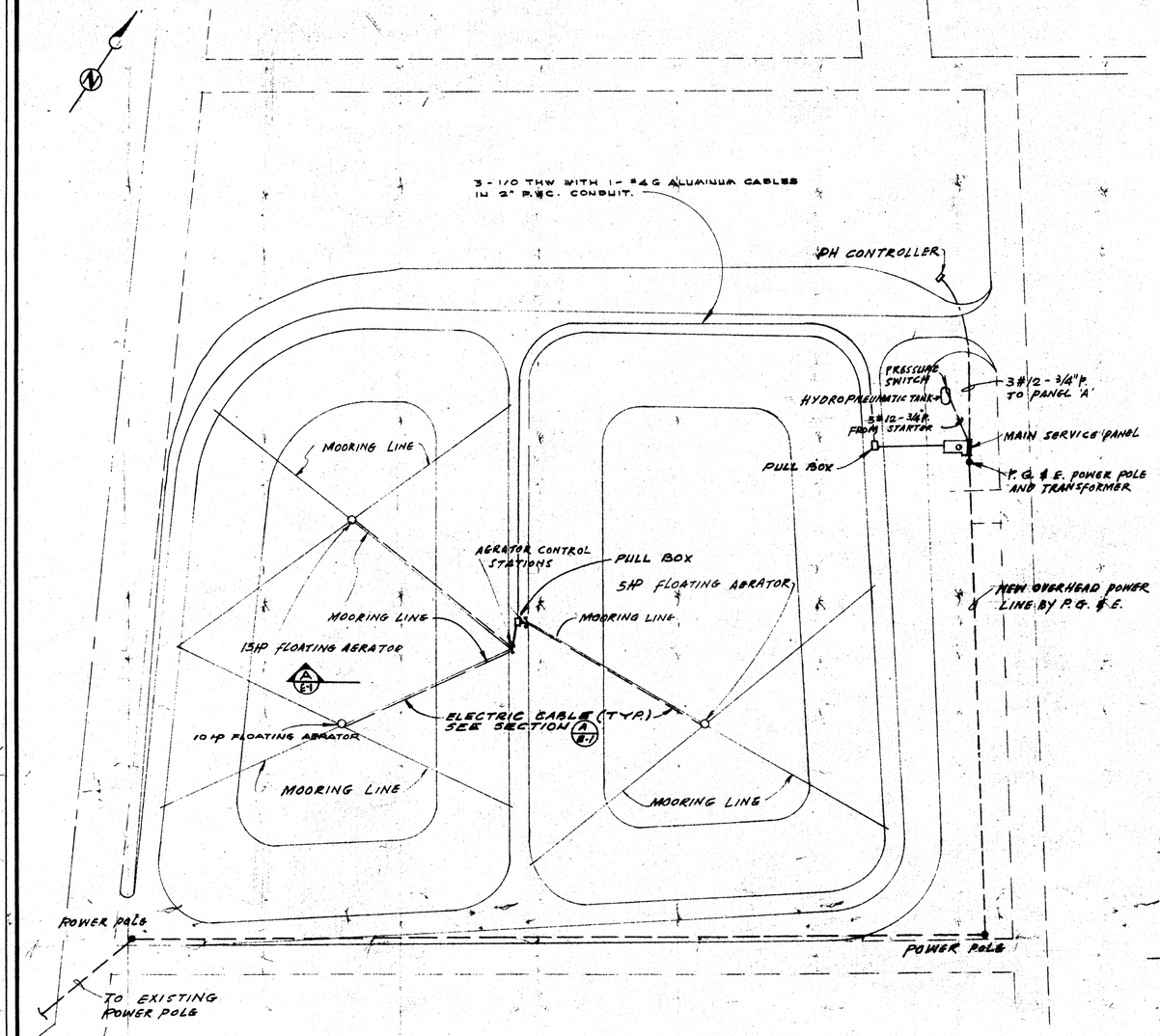
WINERY UTILITY PLAN

RECEIVED
SEP 30 1974
RAPP CONST. CO.

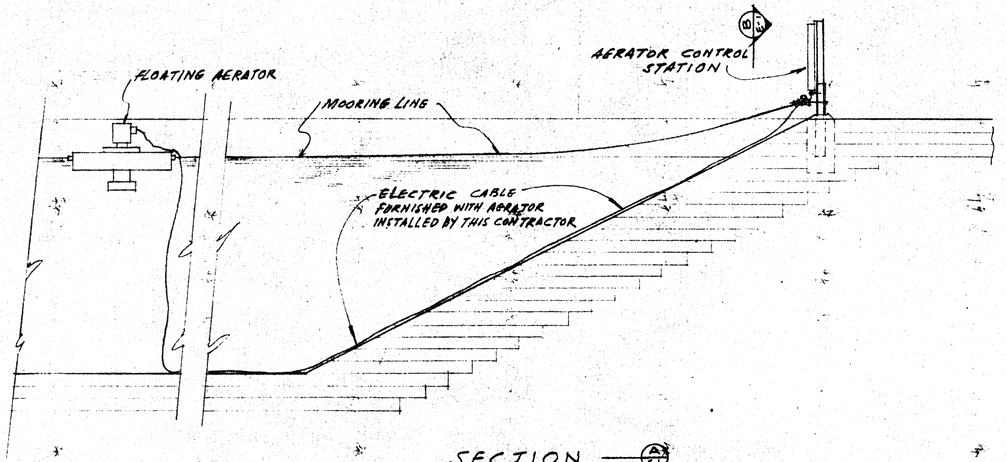
PROJECT 7353
DRAWN G.E.L.
CHECK H.A.O.
DATE MAY 6, 1974

C-2

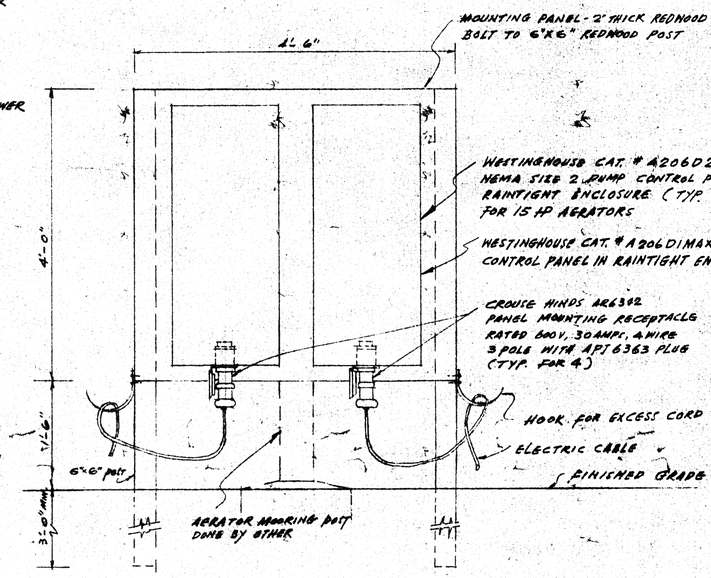
RECEIVED
RAPP CONST. CO.



PLAN
SCALE: 1" = 40'-0"



SECTION — A E-1
SCALE 1/4" = 1'-0"



SECTION — B E-1
SCALE: 1" = 1'-0"

RAPP CONSTRUCTION COMPANY
LIC. # 251 536
AS-BUILT
13 JAN., 1975

5/3/74
REGISTERED PROFESSIONAL ENGINEER — DAVID K. LOW — E 5940 — STATE OF CALIFORNIA
David K. Low

REVISIONS :
NO. 1 - AS PER ADDENDUM NO. 1, 2 & 4
6-11-74

DAVID K. LOW & ASSOCIATES
MECHANICAL AND ELECTRICAL ENGINEERS
604 MISSION STREET, SAN FRANCISCO, CALIF. 94105 (415) 989-5129
3301 HYPERION AVE., LOS ANGELES, CALIF. 90027 (213) 666-2241

KEITH & ASSOCIATES
ENGINEERING ARCHITECTURE PLANNING
4535 OLD REDWOOD HIGHWAY SANTA ROSA, CALIFORNIA 95401 TELEPHONE: 707-544-1548

ROBERT MONDAVI WINERY
OAKVILLE CALIFORNIA
WASTEWATER TREATMENT PONDS

ELECTRICAL PLAN

PROJECT 7353
DRAWN D.T.
CHECK CYR
DATE 5-6-74

RECEIVED
JAN - 8 1975
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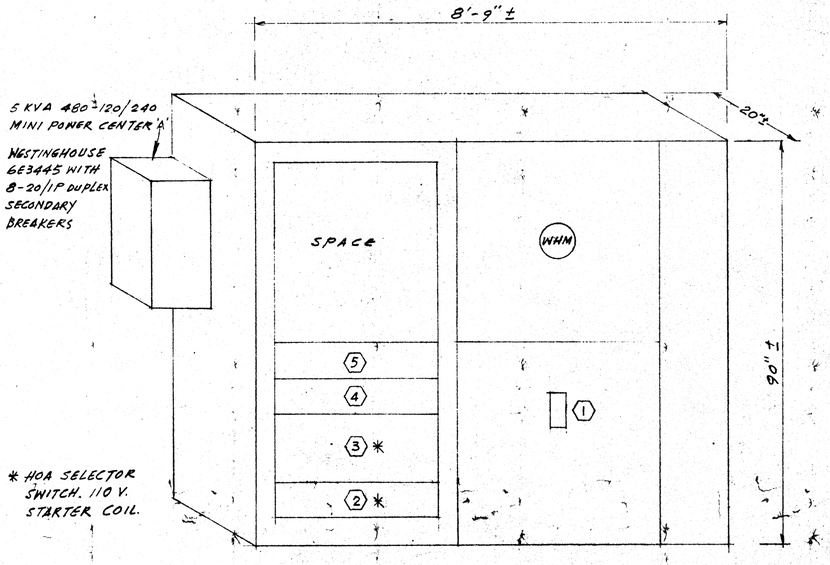
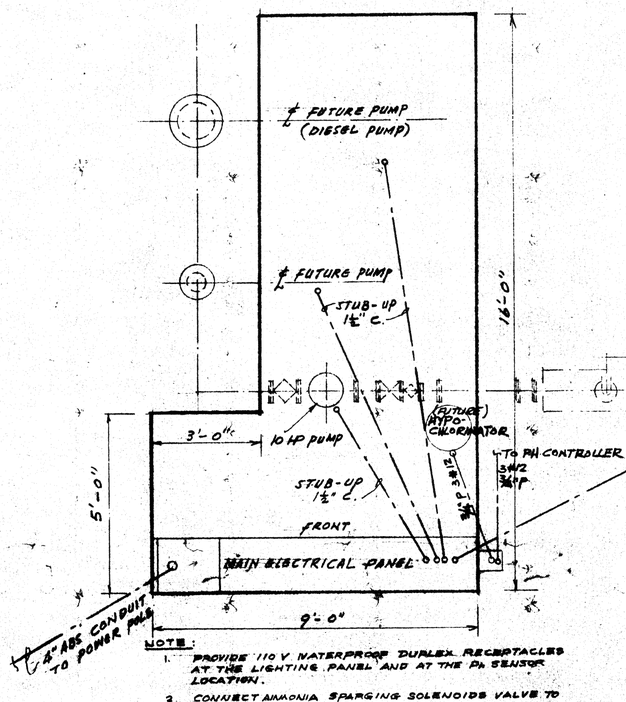
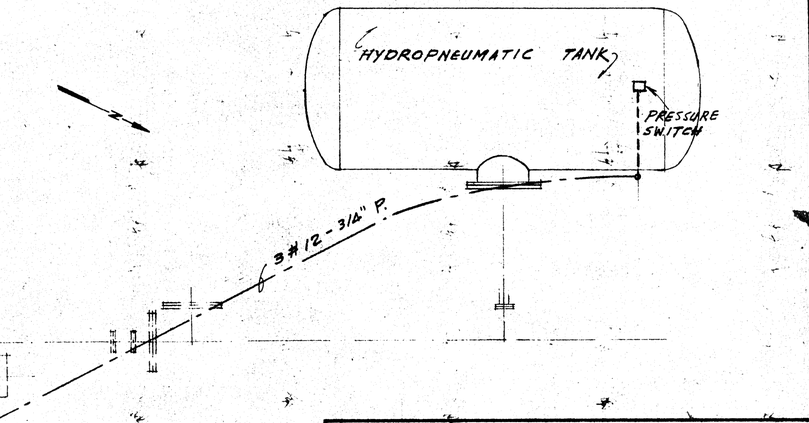


WESTINGHOUSE CAT-LINE SWITCHBOARD (WEATHERPROOF)
WITH MAC B MOTOR STARTER UNITS



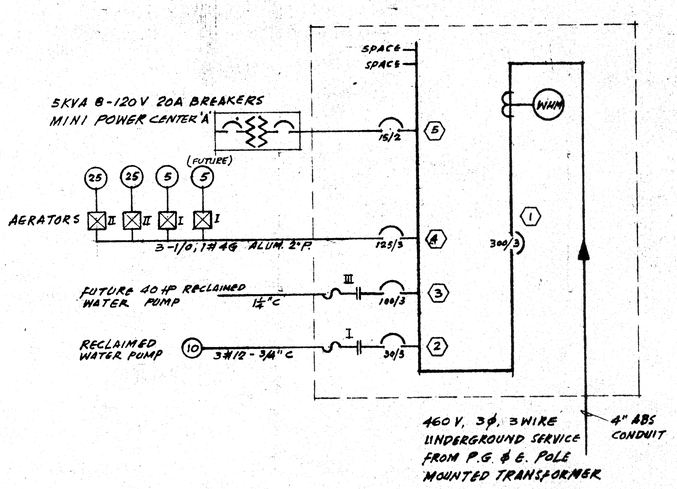
NOTE:
1. PROVIDE 110 V. WATERPROOF DUPLEX RECEPTACLES AT THE LIGHTING PANEL AND AT THE PH SENSOR LOCATION.
2. CONNECT AMMONIA SPARGING SOLENOIDS VALVE TO THE PH CONTROLLER.



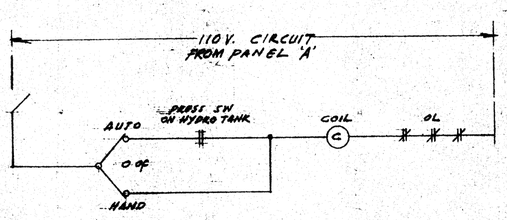
PLAN
SCALE 1½"=1'-0"

SYMBOL LIST

○	ROUND INCANDESCENT LIGHTING FIXTURE CEILING OR WALL MTD.
□	SQUARE INCANDESCENT LIGHTING FIXTURE CEILING MTD.
●	FLUORESCENT LIGHTING FIXTURE CEILING OR PENDANT MTD.
(A)	LIGHTING FIXTURE ON EMERGENCY CIRCUIT OR NIGHT LIGHT CIRCUIT
◇	LIGHTING FIXTURE IDENTIFICATION TAG. SEE FIXTURE SCHEDULE
⊗	EXIT LIGHTING FIXTURE WITH DIRECTIONAL ARROW
⊕	DUPLEX CONVENIENCE OUTLET WALL MTD. + 12" UNLESS NOTED
⊕	FLOOR OUTLET WITH CONVENIENCE RECEPTACLE
⊕	JUNCTION BOX CEILING OR WALL MTD.
⊕	TELEPHONE OUTLET WALL MTD. + 12" UNLESS OTHERWISE NOTED
⊕	TELEPHONE OUTLET IN FLOOR
▭	DISCONNECT SWITCH HORSEPOWER RATED
(2A)	ADJACENT BALOON INDICATED PANEL DESIGNATION
▬	LIGHTING PANELBOARD SURFACE MTD.
▬	LIGHTING PANELBOARD FLUSH MTD.
———	CONDUIT IN CEILING OR WALL
———	CONDUIT IN OR UNDER FLOOR OR UNDER GRADE
- - - -	CONDUIT RUN EXPOSED
2A-1,3,5	CONDUIT HOME RUN TO PANELBOARD 2A WITH CIRCUITS 1, 2, 5,
———	1/2" CONDUIT WITH 2 NO. 12 WIRES UNLESS OTHERWISE INDICATED
——#—	1/2" CONDUIT WITH 3 NO. 12 WIRES
——##	3/4" CONDUIT WITH 4 NO. 12 WIRES
S_s	SINGLE POLE TUMBLER SWITCH + 4'-6" SUBSCRIPT INDICATES OUTLET CONTROLLED
S_3	THREE WAY SWITCH



SINGLE LINE DIAGRAM



CONTROL DIAGRAM FOR
10 HP RECLAIMED WATER PUMP

RAPP CONSTRUCTION COMPANY
LIC. # 251 536
AS-BUILT
13 JAN., 1975

5/3/74
REGISTERED PROFESSIONAL ENGINEER
DAVID K. LOW
E 5940
ELECTRICAL
STATE OF CALIFORNIA
David K. Low

REVISIONS:
NO. 1 - AS PER ADDENDUM
NO. 1, 2 & 4
8-11-74

DAVID K. LOW & ASSOCIATES
MECHANICAL AND ELECTRICAL ENGINEERS
604 MISSION STREET, SAN FRANCISCO, CALIF. 94105
2301 HYPERION AVE., LOS ANGELES, CALIF. 90027
(415) 986-8126 (213) 666-2241

KEITH & ASSOCIATES
ENGINEERING ARCHITECTURE PLANNING
4525 OLD REDWOOD HIGHWAY SANTA ROSA, CALIFORNIA 95401 TELEPHONE: 707-546-1646

ROBERT MONDAVI WINERY
OAKVILLE CALIFORNIA
WASTEWATER TREATMENT PONDS

ELECTRICAL SINGLE LINE
DIAGRAM & DETAILS

PROJECT 7353
DRAWN D.Y.
CHECK C.V.Q.
DATE 5-6-74

RECEIVED
JAN - 8 1975
RAPP CONST. CO.

ENCLOSURE C

ORIGINAL PW POND DESIGN CRITERIA

RECEIVED
MAY 8 1974
DIVISION OF
ENVIRONMENTAL HEALTH

May 2, 1974

In reply, please refer
to File No. 2139.3056(MHK)

Kennedy Engineers, Inc.
657 Howard Street
San Francisco, CA 94105

Dear Mr. Ryder:

Subject: Robert Mondavi Winery - Oakville, California
Construction of Proposed New Ponds.

Your Report of Waste Discharge for discharging winery and domestic wastes from Robert Mondavi Winery has been accepted as complete and we are proceeding with the revised Waste Discharge Requirements.

As discussed with you during our staff inspection of the site on April 24, 1974, we understand that you are very anxious to proceed with the construction of the new proposed ponds prior to issuance of Waste Discharge Requirements.

We do not object to this early start due to the urgency, provided no wastewater is discharged before requirements are adopted.

Upon review of your application we believe that your proposed lining of ponds will not provide adequate protection of the shallow groundwater table lying beneath the proposed ponds which has horizontal hydraulic continuity with the Napa River and vertical hydraulic continuity with the deeper usable groundwater. In the revised Waste Discharge Requirements which we will recommend to the Regional Board, it is anticipated that the following specification shall be made part of the revised requirements:.

> "The proposed ponds shall be hydraulically sealed by the presence of a natural clay barrier of at least 3 feet in thickness and a permeability of 10^{-6} cm/sec or less on the bottom and sides. If, such a natural condition does not exist, an artificial barrier shall be constructed to meet the above specification as a minimum. Existence and continuity of such barrier must be demonstrated to the satisfaction of this Board's Executive Officer prior to discharging of waste material. Reports submitted in compliance with these requirements shall be signed by a registered engineer or certified engineering geologist in the State of California".

If you have any questions, please call Mr. Kazemi or Mr. Winnicki at (415) 464-1255.

Sincerely,

PAUL D. WINNICKI
Water Quality Control Engineer

PDW,MHK/daw
c.c. Keith & Associates
4635 Old Redwood Highway
Santa Rosa, CA 95401
Attn: Mr. Harry A. Deeths

KENNEDY ENGINEERS, INC.
657 Howard Street • San Francisco, California 94105 • Telephone: (415) 362-6065

7 January 1974

RECEIVED
JAN 9 19[illegible]
Robert Mondavi Winery

California Regional Water Quality Control Board
San Francisco Bay Region
364 Fourteenth Street
Oakland, California 94612

Subject: Robert Mondavi Winery - Oakville
Report on Waste Discharge
KEI 3088

Gentlemen:

A report on waste discharge, together with a check for the $100 filing fee, is enclosed for the Robert Mondavi Winery, Oakville, California. This report of waste discharge and the supporting concept data is furnished in compliance with your request to the Robert Mondavi Winery of December 17, 1973.

Kennedy Engineers has been retained to provide consulting sanitary engineering services to Keith and Associates of Santa Rosa, who are the design engineers for this revised waste treatment and reclamation project as well as a proposed winery expansion.

The current method of providing waste disposal for the winery process wastewaters by the evaporation-percolation ponds located near the winery will be abandoned. No change of the present septic tank - leaching field treatment and disposal of sanitary wastes, or of the off site disposal of pommace is contemplated or proposed.

The proposed method of winery wastewater treatment and disposal includes the following elements:

1. Screening of the wastewater at drains and other points of discharge in the winery.

2. Pumping of the wastewater from the vicinity of the winery to new ponds to be located on the west side of the vineyard.

3. Neutralization of winery waste by addition of ammonia at the pump station.

4. Construction of three ponds of six million gallon total capacity, with mechanical aerators to provide biological oxidation and storage of the winery wastewater throughout the crushing season and winter.

5. A solids settling zone incorporated in a quiescent area of the terminal pond.

6. A pump station and spray irrigation facilities for reclamation of the treated wastewater on approximately 1-1/2 acres of landscaped area at the Winery and 130 acres of vineyard during the Spring and Summer growing seasons.

A summary of anticipated wastewater flows, ponding volume, and reclaimed water irrigation usage is listed on Table 1. The chemicals used in the winery processes are listed on Table 2. The expected winery wastewater characteristics and oxidation pond effluent to be used for irrigation is shown on Table 3.

We are available to discuss matters relating to this waste discharge report.

Very truly yours,

KENNEDY ENGINEERS, INC.

Robert A. Ryder

RAR:kjs
encls.
cc: Keith & Associates w/encls.
Robert Mondavi Winery w/encls.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

REPORT OF WASTE DISCHARGE
Pursuant to Division 7 of the State Water Code

FOR USE OF REGIONAL BOARD
WRCB Form 200 Rec'd: _____
Duty Fee: _____
Letter to Discharger: _____
Report Rec'd: _____
Effective Date: _____

(A) REPORT FROM:
Discharger Robert Mondavi Winery
(Owner of Facility, Municipality, County, District, Firm or Individual)
Mailing Address P.O. Box 106, Oakville, Ca. 94562
Zip Code
Telephone No. (707) 963-7156

Name of Facility Robert Mondavi Winery

(B) DESCRIPTION:

I. WASTE DISCHARGE: (check)
1. New discharge ( )
2. Existing discharge ( )
3. Increase in quantity of discharge ( )
4. Change in character of waste ( )
5. Change in place or method of disposal (X)

II. LOCATION OF POINT OF DISPOSAL OR OPERATION (describe and attach map, sketch or locate on USGS Quadrangle map, 7.5 minute series.) List distances or bearing and distance from section corner or quarter corner, Section, Township, Range and Base and Meridian.)
See Map Attached, Waste Treatment Ponds to be located approximately 1,000 feet west of Intersection of Oakville Cross Road and State Highway 29. Winery wastes will be screened, neutralized with ammonia, biologically oxidized by aeration ponds of 6 million gallon capacity, stored and used for irrigation of 1-1/2 acres of landscaping and 130 acres of vineyard.

III. WASTE TREATMENT OR DISPOSAL FACILITIES: (check)
1. Construction of entirely new facilities (X)
2. Enlargement of existing facilities ( )
3. Other (explain) _____

(C) TYPE OF WASTE DISCHARGE: (check)
1. Sewage only ( )
2. Industrial wastes only (X)
3. Mixed sewage and industrial wastes ( )
4. Solid wastes ( )
5. Cattle wastes ( )
6. Soil, silt, clay, etc. ( )
7. Other wastes ( )

(D) QUANTITY OF WASTES:
1. Present or proposed flow (in mgd) 0.030
2. Design flow (in mgd) 0.040
3. Present population 60 employees
4. Design population —
5. Solid waste disposal site (in cubic yards) —
6. Area in which soil will be disturbed (in acres) —

(E) SOURCE OF WATER SUPPLY:
1. Municipal or utility service (X) City of Napa; Conn Reservoir from Lake Hennessy
2. Individual wells ( )
3. Surface supply: (a) Name of Stream _____
(b) Type of Water Rights: Riparian ( ) Appropriation ( )
(c) Water Rights Permit or License Number _____

(F) AMOUNT OF FILING FEES – (See attached Fee Schedule)
Amount of fee accompanying this report $100.00

ALL OF THE STATEMENTS CONTAINED HEREIN ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND ARE SUBMITTED UNDER PENALTY OF PERJURY.

SIGNATURE OF AUTHORIZED PERSON Robert E. Taylor
Title Vice President, Kennedy Engineers, Inc.
(Manager, Clerk, Engineer, Consultant, etc.)
Date 7 January 1974

You will be notified of the correctness of filing fee and submittal of any additional information deemed necessary to complete your Report of Waste Discharge pursuant to Division 7, Section 13260 of the State Water Code.

WRCB Form 200(2-72)

TABLE 1

WINERY WASTEWATER TREATMENT

Month	Winery Waste Flow M.G.	Pond Loss or Gain by Rain or Exp. M.G.	Waste Accum. in Ponds M.G.	Σ Waste Accum. in Ponds M.G.	Lawn M.G.	Vineyard M.G.	Frost M.G.	Water in Pond Irrigation Use	Total Water in Pond M.G.
Sept.	0.90	-0.41	+0.49	0.49	-0.15	-	-	+0.34	1.34
Oct.	0.90	-0.17	+0.73	1.22	-0.10	-	-	+0.63	1.97
Nov.	0.65	+0.07	+0.72	1.94	0	-	-	+0.72	2.69
Dec.	0.50	+0.28	+0.78	2.72	0	-	-	+0.78	3.47
Jan.	0.45	+0.30	+0.75	3.47	0	-	-	+0.75	4.22
Feb.	0.45	+0.24	+0.69	4.16	0	-	-	+0.69	4.91
March	0.45	+0.02	+0.47	4.63	0	-	-	+0.47	5.48
April	0.50	-0.18	+0.32	4.95	-0.10	-2.5	(6.0)	-2.28	3.20
May	0.50	-0.38	+0.12	5.07	-0.15	-5.0		-5.13	1.00
June	0.55	-0.53	+0.02	5.09	-0.22	-2.5		-2.70	1.00
July	0.55	-0.60	-0.05	5.04	-0.22			-0.27	1.00
Aug.	0.60	-0.52	+0.08	5.12	-0.22			-0.15	1.00
TOTAL	7.0	-1.88							

Ponds ~ 2.5 A. - Estimate of Overall Size
Landscape & Lawn ~ 1-1/2 Acres @ 6"/Mo. Summer
Vineyard ~ 130 acres @ 3" Early Growing Season Irrigation
Vineyard Frost Protection ~ 130 Acres @ 1500 Gal/Hr/A = 200,000 G/Hr and 30 Hr/Yr.
1.0 M.G. Minimum Pond Sumbergence for Aerators

TABLE 2

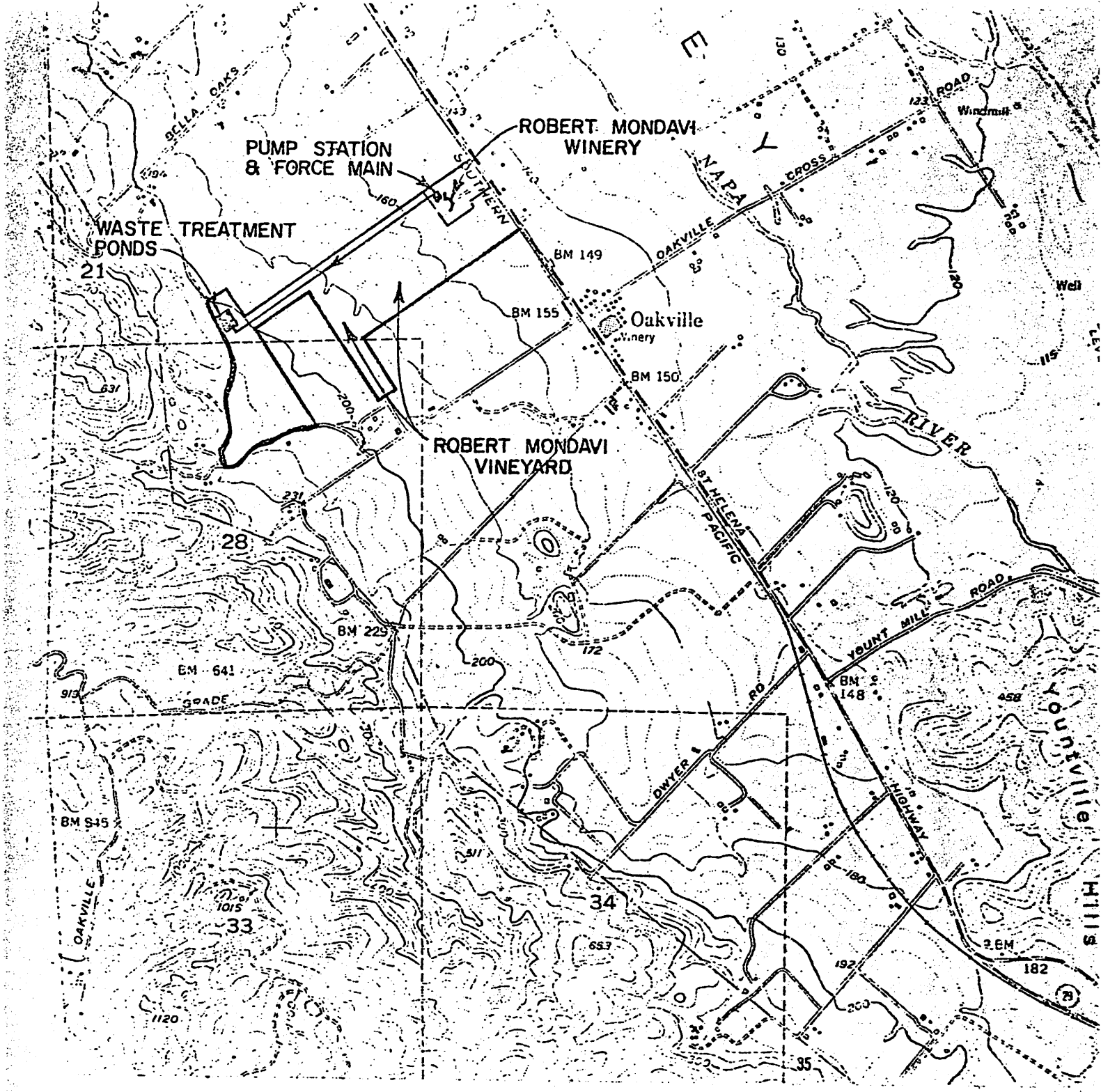
CHEMICALS USED IN WINERY PROCESSES

CHEMICAL COMPOUND	ESTIMATED USE - POUNDS PER YEAR
Trisodium Phosphate	500
Chlorinated Trisodium Phosphate	800
Soda Ash	3600
Calcium Hypochlorite	1600
Tri-Pel-Detergent	1400
Sulfur	50
Sodium Bisulfite	2500
Sulfur Dioxide	1000
Citric Acid	Small
Tartaric Acid	Small
Bentonite	Small
Gelatin	Small
Activated Carbon	Small
Diatomaceous Earth	Small

TABLE 3

EXPECTED WINERY WASTEWATER CHARACTERISTICS

CHARACTERISTICS	UNIT	CRUSHING SEASON	NON-CRUSHING SEASON	OXIDATION POND-EFFLUENT
pH	-	3.5-5.5	4.0-6.0	6.5-9.0
Dissolved Oxygen	Mg/L	0	0	1-6
B.O.D. (5)	Mg/L	3000-5000	2000-4000	20-40
C.O.D.	Mg/L	6000-10,000	4000-8000	50-250
Settleable Solids	Ml/L	25-100	2-10	0.5-1.0
Suspended Solids	Mg/L	200-800	100-400	40-80
Dissolved Solids	Mg/L	300-600	250-500	250-750
Phosphorous	Mg/L	5-10	10-25	2-10
Nitrogen	Mg/L	50-100	10-50	10-100
Sodium	Mg/L	-	-	50-150
Chlorides	Mg/L	-	-	50-150
Sulfates	Mg/L	-	-	25-100
Hardness	Mg/L	-	-	100-300
Boron	Mg/L	-	-	0-.2
Grease	Mg/L	-	-	0-5
Color	Units	-	-	10-50

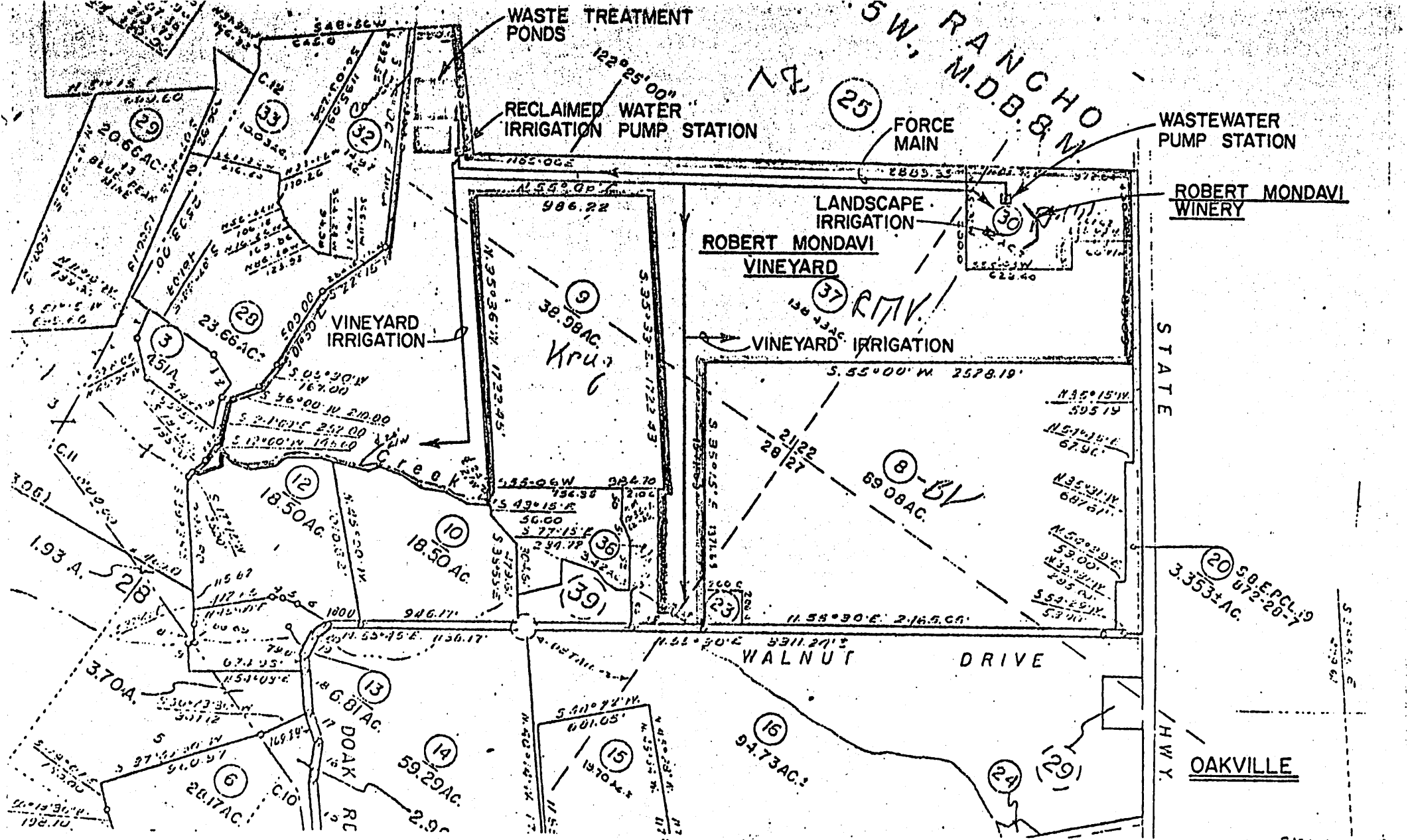


KENNEDY ENGINEERS, INC.
657 HOWARD STREET
SAN FRANCISCO 94105

R.C.E. NO.

ROBERT MONDAVI WINERY
OAKVILLE, CALIFORNIA
WINERY WASTEWATER DISPOSAL
VICINITY MAP

KE 3088 JAN. 1974



KENNEDY ENGINEERS, INC.
657 HOWARD STREET
SAN FRANCISCO 94105

R.C.E. NO.

ROBERT MONDAVI WINERY
OAKVILLE, CALIFORNIA
WINERY WASTEWATER DISPOSAL
SITE PLAN
KE 3088

ENCLOSURE D

WINERY PW FLOW CALCULATIONS

Parameter	Current		Comments
PW from wine production			
Annual wine production, cases wine / year	672,962		
Annual wine production, gal wine / year	1,600,000		
PW generation rate, gal PW / gal wine	6.0		Industry standard value
Annual PW generation, gal PW / year	9,600,000		
Harvest months	Aug - Oct.		Typically mid-Aug. through early Nov.
Average harvest day PW flow, gal PW / day	46,375		Represents August through October
Avg. day peak harvest month PW flow, gal PW / day	57,799		Assumed to be September per calcs below

PW from bottling			
Annual wine production, cases wine / year	588,842		
Annual bottling production, gal wine / year	1,400,000		
PW generation rate, gal PW / gal wine	1.0		Industry standard value
Annual PW generation, gal PW / year	1,400,000		
Bottling months	Year-Round		Year-round, with peak in May - Aug

Summary of Annual PW Distribution Based on Current Production Levels

Month	Days	% of Annual Wine Production (Note 1)	% of Annual Wine Bottling (Note 2)	Total PW Generation, Gal / Month	% of Annual Total PW Generation	Avg. PW Flow Rate, Gal/Day
January	31	6.6%	10.4%	779,153	7.1%	25,134
February	28	7.2%	4.9%	760,011	6.9%	27,143
March	31	7.6%	7.1%	828,908	7.5%	26,739
April	30	6.8%	6.6%	745,897	6.8%	24,863
May	31	6.4%	8.6%	734,846	6.7%	23,705
June	30	5.6%	8.8%	661,228	6.0%	22,041
July	31	6.2%	7.2%	695,849	6.3%	22,447
August	31	10.5%	10.6%	1,155,916	10.5%	37,288
September	30	16.4%	11.4%	1,733,981	15.8%	57,799
October	31	12.9%	9.9%	1,376,637	12.5%	44,408
November	30	7.4%	10.9%	862,933	7.8%	28,764
December	31	6.4%	3.6%	664,642	6.0%	21,440
TOTAL	365	100.0%	100.0%	11,000,000	100.0%	30,137

NOTES:
1. Percentage of annual wine production based on Summit historical data from similar-sized wineries.
2. Percentage of annual wine bottling based on average monthly bottling values at Robert Mondavi Winery from 2017 through 2020.

ENCLOSURE E

PROPOSED LOCATION AND FOOTPRINT OF
PW PACKAGE TREATMENT SYSTEM (IF REQUIRED)

ABBREVIATIONS:

AC	ASPHALT CONCRETE
AD	AREA DRAIN
APN	ASSESSOR'S PARCEL NUMBER
BASMAA	BAY AREA STORMWATER MANAGEMENT AGENCIES ASSOCIATION
BFE	BASE FLOOD ELEVATION
BLDG	BLDG
℄	CENTERLINE
CONC	CONCRETE
DI	DRAIN INLET
DS	DOWNSPOUT
DG	DECOMPOSED GRANITE
(E)	EXISTING
EV	ELECTRIC VEHICLE
FDC	FIRE DEPARTMENT CONNECTION
FF	FINISH FLOOR
FH	FIRE HYDRANT
GB	GRADE BREAK
LIDF	LOW IMPACT DEVELOPMENT FACILITY
LL	LOWER LEVEL
PD	PLANTER DRAIN
PIP	PROTECT IN PLACE
PIV	POST INDICATOR VALVE
PW	PROCESS WASTE
SB	SETBACK
SD	STORM DRAIN
SS	SANITARY SEWAGE
STD	STANDARD
TD	TRENCH DRAIN
TI	TRAFFIC INDEX
TYP	TYPICAL
UL	UPPER LEVEL

NOTES:

1. STORMWATER RUNOFF FROM THE WASTEWATER SYSTEM ENCLOSURE ROOF SHALL BE DIRECTED TO THE VINEYARDS. VINEYARD SHALL PROVIDE INFILTRATION AND TREATMENT.
2. THE EXISTING DRIVEWAY AND PARKING MEET THE 2021 NAPA COUNTY ROAD AND STREET STANDARDS FOR SLOPE SURFACING, WIDTH AND RADII.
3. EXCESS SOILS WILL BE OFF-HAULED TO AN APPROVED SITE.
4. FIRE HYDRANTS SHALL BE LOCATED THROUGHOUT THE SITE IN A LOCATION ACCESSIBLE BY A FIRE TRUCK AND CONFORMING TO NAPA COUNTY CODE.
5. PERVIOUS DRIVEWAY AND PARKING AREA SHALL MEET CRITERIA FOR PERVIOUS PAVEMENT PER BASMAA POST-CONSTRUCTION MANUAL SECTION 4-6.
6. PROPOSED SELF-RETAINING AREAS SHALL MEET CRITERIA PER BASMAA POST-CONSTRUCTION MANUAL.
7. ACCESS DRIVE STRUCTURAL PAVEMENT SECTION SHALL BE BASED ON A MINIMUM TI OF 6.0 & APPROPRIATE "R" VALUE. PROPOSED PAVEMENT SECTIONS PROVIDED BY THE GEOTECHNICAL ENGINEER SHALL MEET OR EXCEED NAPA COUTNY ROAD AND STREET STANDARDS. (1)
8. DRIVEWAYS SHALL BE DESIGNED TO HAVE A VERTICAL CLEARANCE OF 13.5' MIN

PARKING TABLE	
NUMBER	TYPE
283	STANDARD SPACE
–	COMPACT SPACE
10	STANDARD ACCESSIBLE SPACE
2	VAN ACCESSIBLE SPACE
12	EV SPACE
2	EV ACCESSIBLE SPACE
2	EV VAN ACCESSIBLE SPACE
6	BUS PARKING SPACES
317	**TOTAL SPACES**

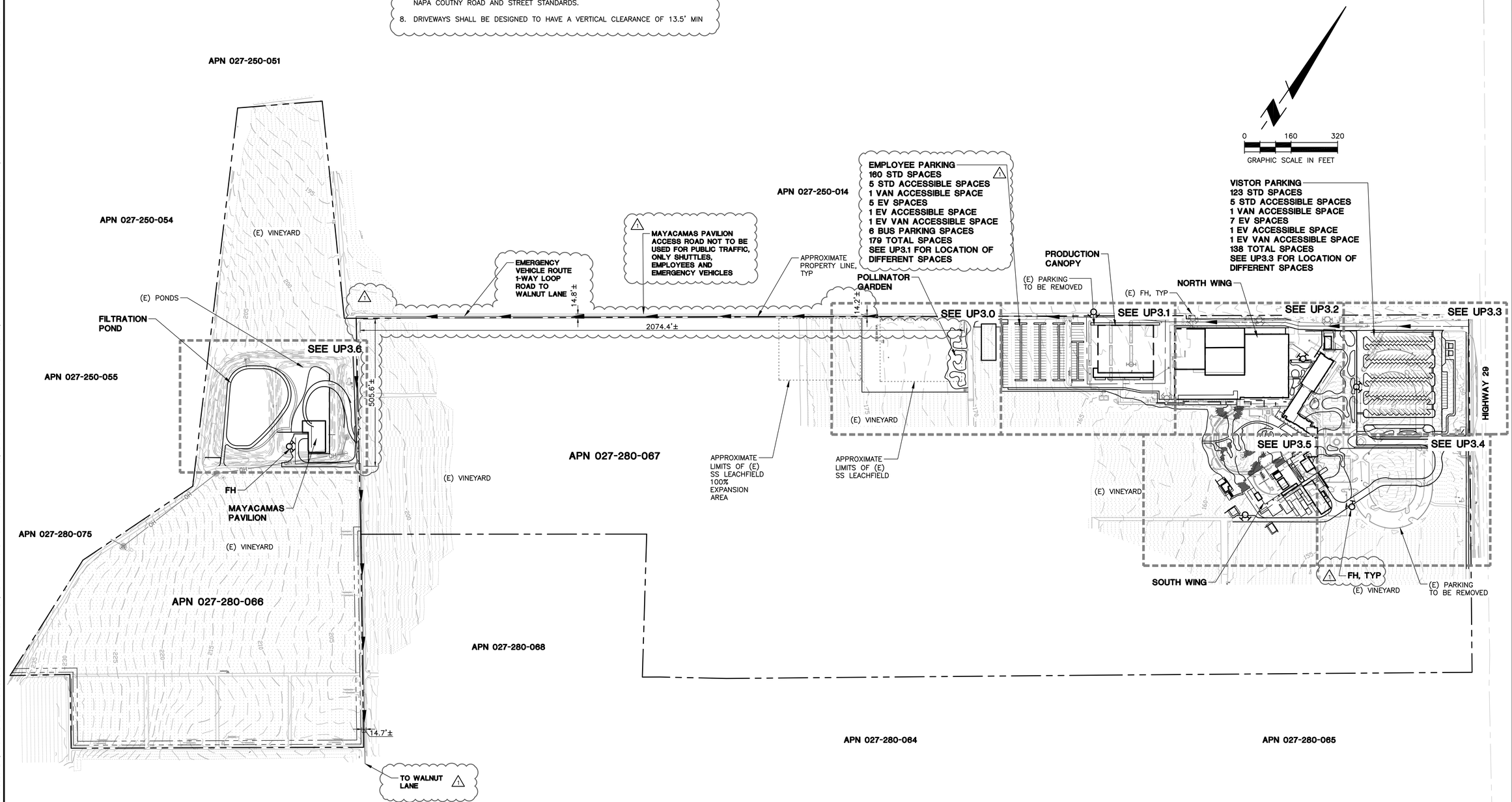
(1)

OWNER:

ROBERT MONDAVI WINERY
7801 ST. HELENA HIGHWAY
OAKVILLE, CA 94562

APPLICANT:

SUMMIT ENGINEERING, INC
463 AVIATION BLVD STE 200
SANTA ROSA, CA 95403



0 160 320
GRAPHIC SCALE IN FEET

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SUMMIT
Summit Engineering, Inc
463 Aviation Blvd, Suite 200 • Santa Rosa, CA 95403
707-527-0775 • www.summit-sr.com

ROBERT MONDAVI WINERY
7801 ST. HELENA HIGHWAY
OAKVILLE, CA 94562
APN 027-280-066 & 067

ROBERT MONDAVI USE PERMIT

OVERALL SITE PLAN

	2022-03-21 PERMIT SUBMITTAL
1	2022-07-19 PERMIT RESUBMITTAL

DATE: 2022-07-19
JOB NO: 2021201
SCALE: AS SHOWN
DRAWN: BG
CHECKED: DR

SHEET UP1
1OF 12

P:\2021\2021201 ROBERT MONDAVI WINERY USE PERMIT ASSIST\CAD\PLANNING\USE PERMIT\21201-UP1-UP4.DWG PLOTTED ON: 7/19/2022 9:42 AM

ENCLOSURE F

2007 WASTEWATER FEASIBLITY STUDY BY RSA

#4107019.0
May 10, 2007

CONSULTING CIVIL ENGINEERS
RIECHERS & SPENCE ASSOCIATES

WASTEWATER FEASIBILITY STUDY For CONSTELLATION-MONDAVI (ROBERT MONDAVI WINERY)

#4107019.0

Prepared for:
Robert Mondavi Winery
P.O. Box 106
Oakville, CA 94562

CONSULTING CIVIL ENGINEERS
RIECHERS SPENCE & ASSOCIATES

Executive Summary

Facility Winemaking Activities

The Robert Mondavi Winery is currently permitted for the harvest and processing of 1.4 MG (16,600 tons of grapes) and the bottling of 1.6 MG of wine. The facility is requesting a Use Permit Modification for the ability to receive and bottle an additional 1.4 million gallons (MG) of wine per year. Harvest, blending, and other winemaking activities will not be altered.

Winery Wastewater Generation

The existing use permit limits peak daily wastewater generation to 0.092 million gallons per day (MGPD). A comprehensive water use audit determined that actual peak daily wastewater generation is 0.074 MGPD—less than the permitted amount. Proposed production was calculated to generate an additional 0.011 MGPD with a 100% factor of safety.

Allowable, Existing, and Proposed Conditions

	Harvest & Winemaking (MG)	Bottling (MG)	Peak Daily Waste (MG)
Allowable Production[1]	2.3	1.6	0.092
Existing Production	1.4	1.6	0.074
Proposed Production	0	1.4	0.011
Future Total Production	2.3	3.0	0.085

Winery Wastewater Treatment

The existing process wastewater system consists of two treatment ponds. As shown in the above table, future peak daily waste generation is expected to be within the permitted amount. This report demonstrates that the existing ponds are currently operating under-capacity, even under the following conservative assumptions:

- 100% factor of safety for future peak wastewater flows
- Very high-strength wastewater
- Doubling the required residence time

The existing ponds are confirmed to provide adequate storage, residence time, and treatment for peak daily wastewater generation from 2.3 MG harvest and winemaking activities, plus 3.0 MG bottling per year.

[1] Per Use Permit #98071-MOD.

Background

The Constellation-owned Robert Mondavi Winery, just off of Highway 29, currently occupies two adjacent parcels: APN #027-280-050 for the winery, and APN #027-280-0641 for the two winery process wastewater treatment ponds. The current use permit, UP #208788, allows production up to 1.6 MG of wine per year. With the addition of a 21,438 square foot red wine fermentation building in 1998, the use permit modification #98071-MOD allows peak wastewater flows of up to 92,000 GPD.

The existing process wastewater septic system utilizes two ponds for treatment of organic constituents, sludge settling, and storage of treated water. The ponds were designed by Kennedy/Jenks Consultants[2] in 1974 with the following design parameters[3]:

- Usable storage capacity of 5.99 MG
- Maximum annual harvest and processing of 2.3 MG (16,600 tons)[4]
- Maximum annual bottling of 1.6 MG

Actual crush—including grapes received and crushed onsite and custom crush juice received—totaled less than 1.0 MG (7,267 tons) for Harvest 2005, and less than 0.8 MG (5,520 tons) for Harvest 2006.

The Owner proposes a Use Permit Modification to bottle another 1.4 MG, increasing "production" to 3.0 MG annually:

- The additional 1.4 MG is for bottling only.
- No additional grapes will be harvested, nor additional juice received.
- There will not be any additional wine processing at this facility.
- The additional 1.4 MG will be trucked in, transferred to bottling staging tanks, and bottled soon thereafter.

RSA performed a water-use and facility operations audit to determine actual operating trends and process waste generation from each type of winery operation:

- Winemaking activities
- Harvest/crush
- Bottling

All of the 1.4 MG of received wine will be bottle-ready and only 10% of it is expected to require filtration. As such, "bottling" is the only winery operation this proposed

[2] Formerly Kennedy Engineers, Inc.
[3] *Operation Guide for the Robert Mondavi Winery, Wastewater Treatment Facilities*. Prepared by Kennedy Engineers, Inc., December 1974.
[4] 140 gallons per ton conversion used to obtain maximum estimate

modification affects. Processes involved in receiving and bottling this 1.4 MG of wine are the only sources for additional process wastewater generation.

Actual peak daily wastewater flow was determined to be less than the permitted amount of 92,000 GPD. In 2006, for example, actual peak daily flow was roughly 74,200 gallons. The additional bottling activity is not expected to exceed 11,000 GPD waste flow generation[5]. Thus, 85,200 GPD is expected with peak future activity, and is within the existing Use Permit allowances.

This report confirms that sufficient storage and treatment exists to meet Napa County effluent regulatory standards with the additional facility bottling. The existing ponds are not operating at full capacity, and can accommodate additional wastewater generation from 1.4 MG bottling.

The methodology behind this report includes:

- Validation of design parameters
- Waste generation: current and future
- Demonstration that expected wastewater generation is less than available as-built pond capacity
- Demonstration that the pond effluent can meet regulatory requirements.

[5] This figure includes a 100% factor of safety.

RIECHERS SPENCE & ASSOCIATES CONSULTING CIVIL ENGINEERS

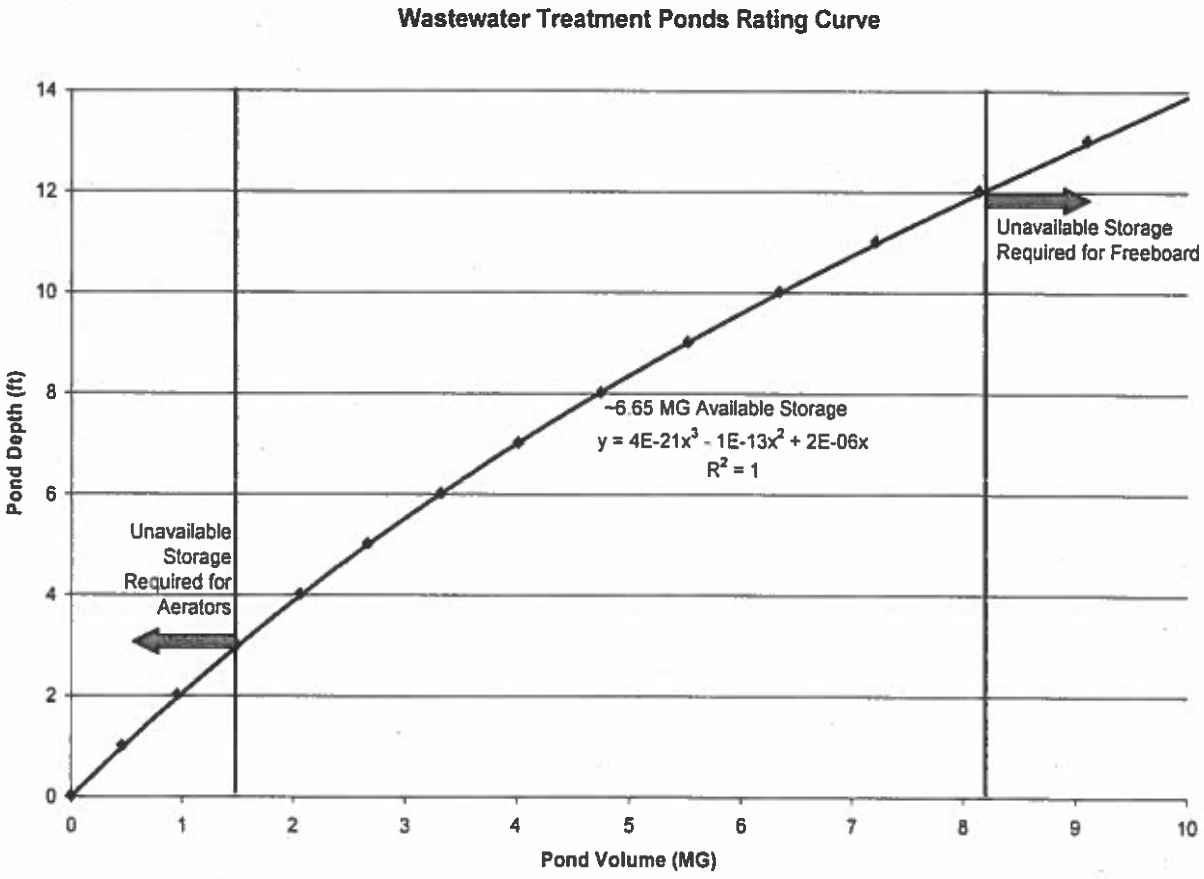
Validation of Design Parameters

RSA conducted an analysis to determine the ponds' as-built capacities[6]:

Design versus Actual Pond Capacity

	Usable Storage Capacity (MG)	Total Storage Capacity (MG)
Design	5.99	7.29
Actual	6.65	8.14

The pond rating curve (below) and supporting calculations conclude that the ponds were constructed larger than originally designed.



[6] Analysis conducted using the average-end method on an as-built aerial photograph. Calculations follow at the end of this report.

Waste Generation

RSA also performed a facility operations audit to determine actual water use. The facility has a total available wine storage capacity of 1.54 MG (including all tanks and barrels). No additional equipment or storage (tanks or barrels) will be purchased with the proposed bottling increase. The following summarizes winery activities that generate process wastewater, and notes whether there will be any significant changes with the proposed bottling expansion:

Winemaking Activities: Will NOT be affected

- Wine processing (centrifuging, other types of filtering)
- Blending
- Transfers/racking
- Daily cellar sanitation

Harvest Activities: Will NOT be affected

- Receiving grapes
- De-stemming and sorting
- Crushing
- Receiving juice
- Transfers into fermentation tanks
- Harvest equipment sanitation

Bottling: This is the only facility activity that WILL be affected

- Receive wine (tankers)
- Prepare and fill staging tanks
- Cross flow filtering of wine for bottling(if necessary)
- Sanitize bottling line and equipment

The facility will not be increasing production of wine – it will only receive a greater quantity of ready-to-bottle wine: 1.4 MG total. Effectively, the proposed change is that two back-to-back shifts will bottle per day as opposed to just one shift. A majority of the time, the additional daily shift will bottle the same product as the preceding shift. In cellar operations, vessels and equipment do not require sanitizing in between immediate uses for an identical product.

The expected waste flows from the additional 1.4 MG of bottling are calculated in the following section. Information used in these calculations were compiled from a comprehensive survey filled out by the Cellar Master, (with input from the Production

Manager and Facility Coordinator), and a facility audit. Portions of this survey follow at the end of this report[7].

Receiving Wine

- A maximum of three tankers per day can be expected with the proposed bottling increase. The tankers are not expected to be cleaned at this facility. The wine will go directly into the existing staging tanks.

- 100 gallons spillage per tanker is assumed, for an additional 300 GPD waste generation for this activity:

$$\frac{3\,trucks}{day} \times \frac{100\,gal}{truck} = 300\,GPD$$

Staging Tanks

- There are (8) existing 6,000 gallon staging tanks; none will be added.

- Sanitation prior to filling one of these tanks with wine requires a total of approximately 350 gallons.

- This water use is not expected to change drastically from current production to future because the only difference is that two shifts will be run back-to-back. The majority of the time, the back-to-back shifts will bottle the same cuvee, in which case there will be no additional tank cleaning relative to what currently occurs.

- Worst case scenario during a peak day is complete sanitation in between shifts, or an additional 2,800 GPD for this activity:

$$\frac{350\,gal}{tk} \times \frac{8\,tks}{day} = 2{,}800\,GPD$$

IT is anticipated That

Filtering

- ~~Roughly 90% of the 300,000 gallons of offsite wine received in 2006 was~~ ready ~~for bottle, with no type of filtering~~ required. Only 10% of the wine received ~~in~~ 2006 required pad filtration prior to bottling. ~~This trend is expected to continue.~~ will

- Based on 1.4 MG of wine that will be received under the requested modification, 140,000 additional gallons of wine is expected to require in-line filtering prior to entering the bottle.

[7] RSA conducted a facility walk-through on on March 7, 2007, and a conducted a waster-use audit and facility operations survey by means of a survey filled out by winery staff and followed up with another facility site visit and interview with the Cellar Master on March 19, 2007.

- Worst case scenario is that the VELO pad filter will need to be flushed twice per day, for a conservative 50 minutes each time. The wash flowrate is likely closer to 2 to 5 GPM, but again a more conservative value was used:

$$\frac{50\,\text{min}}{clean\,cycle} \times \frac{10\,gal}{\text{min}} \times \frac{2\,clean\,cycles}{day} = 1{,}000\,GPD$$

Filler Bowl

- The production line filler bowl is a vessel that transfers the bulk wine into the bottle. The "bowl" itself has a capacity of 300 gallons.

- The filler bowl requires sanitation at the end of each bottling day, or would require a flush if there is a cuvee changeover. Worst case scenario is that the filler bowl will need to be cleaned or flushed twice per day.

- It is assumed that no more than twice the filler bowl capacity would be needed to either flush or clean the device:

$$\frac{600\,gal}{cleaning} \times \frac{2\,cleanings}{day} = 1{,}200\,GPD$$

Line Sanitation

- Outside of sanitation for the staging tanks, the pad filter, and the filler bowl, bottling sanitation is minimal. Typical winery operations will pressure wash the production floor only at the end of the day, when bottling is complete.

- Worst case scenario is that the bottling floor might be cleaned one additional time per day with the addition of second bottling shifts.

- The production floor will be washed down using one of the winery's ALTO Industrial Cleaning System's high pressure washers. High pressure washers like the ALTO 52C3KA (the model currently being used at this facility) typically have flowrates less than 2 GPM, but a more conservative figure was used here. Also, the bottling room at this facility is fairly small, and a half hour of floor washing should be more than sufficient:

$$\frac{5\,gal}{\min} \times 30\,\min = 150\,GPD$$

Breakage

- Bottles can break on the bottling line, and their contents are another source of bottling-generated waste. Breakage, while fairly insignificant, does occur.

- Quality Control records from production estimate 0.01317% breakage by day[8]. Realistically, to bottle an additional 1.4 MG, at least 230 additional bottling shifts would be required. To demonstrate the minimal impact from breakage, 100 bottling days were used:

$$\frac{1{,}400{,}000\,gal}{yr} \times \frac{yr}{100\,additional\,bottling\,shifts} \times 0.0001317 = 1.84\,GPD$$

[8] Breakage statistic provided by Production Manager, Noreen Messina, on March 23, 2007

Total Impact

A maximum additional waste generation of 5,452 GPD is anticipated with the additional bottling demand. With a 100% factor of safety on top of the already conservative figures, this report assumes 11,000 GPD peak wastewater generation on top of the peak daily flow from existing operations.

In 2006 the peak daily winery wastewater flow was roughly 74,200 GPD; the permitted peak daily flow is 92,000. Therefore, existing operations plus the proposed bottling activity is expected to yield a peak daily flow of 85,200 GPD. A summary of the findings follow:

Summary of Existing Waste Generation and Future Impact

Parameter	Unit	2005	2006	Future	Design Limit
Approximate maximum bulk wine inventory at one point in time, (includes tanks and barrels)	MG	1.08	0.99	No Significant Change	N/A
Grapes and custom crush juice received during Harvest	Tons	7,267	5,520	No Significant Change	16,600
Peak number of bottling shifts	Shifts/ Month	23	23	46	N/A
Peak process wastewater generation	GPD	N/A	~74,200	~85,200	92,000
Total number of bottling shifts	Shifts/ Year	186	223	450	N/A

Effluent Quality
Treated pond water is used to drip irrigate the property's vineyards. In order to do so, the following conditions apply:

- Adequate storage capacity: discharges not allowed to rain-soaked ground
- Treatment reliability: reasonable residence times to ensure BOD effluent at or below 160 gm/L
- Treatment reliability: sufficient aerator capacity to ensure BOD effluent at or below 160 gm/L

Storage Capacity

A pond water balance was performed based on future conditions, and follows at the end of this report[9]. Maximum used volume for storage and treatment is expected to occur in March at 6.37 MG, which is less than 6.65 MG total storage capacity.

Residence Time

The existing ponds are able to treat future waste flows to the desired BOD effluent concentration of 160 mg/L. The steady-state equation for BOD degradation—assuming high-strength wastewater BOD concentration of 9,000 mg/L— requires 26.9 days of residence time to meet the effluent regulation of 160 mg/L at 20°C.[10]

$$C_e = C_0 e^{-kt}$$
$$k = 0.15\,days^{-1}$$
$$\ln\left(\frac{160\,mg/L}{9{,}000\,mg/L}\right) = -0.15t$$
$$t = 26.9\,days$$

It should be noted that Kennedy Engineers, Inc. designed the ponds with a minimum residence time of 60 days. Therefore, sixty days – twice the calculated residence time— was used to determine required storage capacity. As previously calculated, peak future wastewater flowrates are expected to be 85,200 GPD. Therefore, 5.11 MG of storage is required in order to meet effluent regulations.

[9] Future wastewater flows used in pond water balance were 13% greater that peak existing monthly flows. Additionally, rain water was taken into account for reducing irrigation demand.
[10] "k-constant" (reaeration constant) of 0.15 days^{-1} from Table 3.1, *Environmental Engineering, Third Ed.*, Vesilind, Peirce, and Weiner; 1994.

$$residence\,time = \frac{required\ volume}{Flowrate}$$

$$60\,days = \frac{V_{req'd}}{85{,}200\,GPD}$$

$$V_{req'd} = 5.11\,MG$$

There are 6.65 MG of available pond storage, so we conclude that the pond is of adequate size to accommodate required residence time.

Aerator Capacity

According to the original design report compiled by Kennedy Engineers, Inc., the aerators were specified to deliver 28,000 pounds of oxygen per day. These conditions allow for the consumption of up to 16,471 lbs BOD per day, based on requiring 1.7 pounds of dissolved oxygen for every pound of BOD consumed:

$$\frac{28{,}000\,lb\,DO}{day} \times \frac{lb\,BOD}{1.7\,lb\,DO} = \frac{16{,}4741\,lb\,BOD}{day}$$

Under peak conditions, less than 6,400 pounds per day BOD is expected to enter the ponds:

$$\left(\frac{9{,}000\,mg}{L} \times \frac{3.7854\,L}{gal} \times \frac{2.2046 \times 10^{-6}\,lb}{mg}\right) \times \frac{85{,}200\,gal}{days} = \frac{6{,}399\,lb\,BOD}{day}$$

Even with the assumption of high-strength wastewater, aeration capacity is more than sufficient. This analysis further validates the high level of treatment and containment reliability of these ponds, even under extreme volume and BOD loading rates[11].

[11] Note: flow generated from the additional bottling is mostly water and in reality is expected to dilute BOD loading on the ponds. A pond balance generated for future peak flows is included at the end of this report for reference.

Conclusion

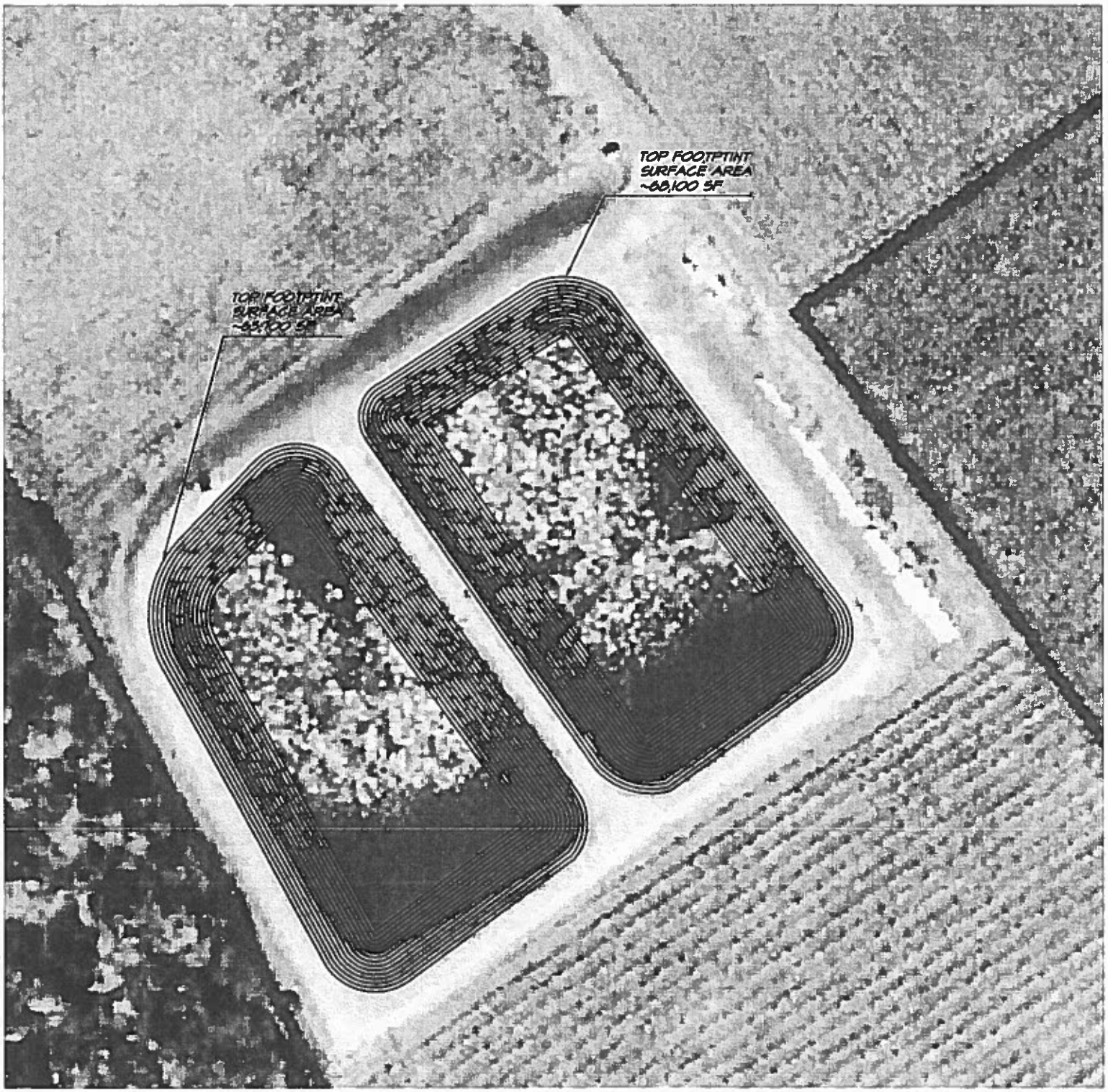
Harvest capacity and winemaking activities will NOT increase under the requested modification; only bottling activities will change. The expected peak daily flow for existing plus requested operations is 85,200 GPD. This is 7.4% less than the permitted peak daily flow of 92,000 GPD.

The existing ponds have an actual usable storage capacity of about 6.65 MG, and are permitted to handle a 2.3 MG (16,600 ton) harvest. Neither of these conditions is currently at capacity. The existing ponds provide adequate treatment and storage to accommodate the additional bottling activities.

ROBERT MONDAVI WINERY: PONDS

OAKVILLE CALIFORNIA

1/8" = 1'



CONSULTING CIVIL ENGINEERS
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4-19-07 4107019.0

#4107019.0
May 10, 2007

CONSULTING CIVIL ENGINEERS
RIECHERS SPENCE & ASSOCIATES

Pond Rating Curve Calculations: Average-End Method

Assumption: 3:1 sideslope

Western-most pond

Depth (ft)	Pond surface area at height (sqft)	Pond Volume (Avg End Method) cu ft	gal	Available storage (gal)
0	28822			
1	31083	29,953	224,045	Minimum volume required for aerators
2	33408	62,230	465,478	
3	35790	96,918	724,945	
4	38229	134,102	1,003,079	278,134
5	40742	173,911	1,300,852	575,907
6	43276	216,295	1,617,888	892,943
7	45885	261,475	1,955,833	1,230,887
8	48550	309,490	2,314,983	1,590,038
9	51272	360,424	2,695,974	1,971,029
10	54051	414,364	3,099,440	2,374,495
11	56886	471,393	3,526,017	2,801,072
12	59777	531,596	3,976,337	**3,251,392**
13	62725	595,058	4,451,037	Required for freeboard
14	65730	661,865	4,950,750	

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Eastern-most Pond

Depth (ft)	Pond surface area at height (sqft)	Pond Volume (Avg End Method) cu ft	gal	Available storage (gal)
0	30647			
1	32949	31,798	237,851	**Minimum volume required for aerators**
2	35277	65,924	493,112	
3	37691	102,507	766,751	
4	40165	141,625	1,059,358	**292,606**
5	42701	183,371	1,371,615	**604,864**
6	45297	227,832	1,704,180	**937,429**
7	47949	275,085	2,057,639	**1,290,888**
8	50657	325,218	2,432,630	**1,665,879**
9	53423	378,314	2,829,789	**2,063,038**
10	56244	434,459	3,249,751	**2,483,000**
11	59123	493,737	3,693,151	**2,926,400**
12	62058	556,233	4,160,624	**3,393,873**
13	65050	622,033	4,652,806	**Required for freeboard**
14	68099	691,221	5,170,330	

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Combined Ponds

Depth (ft)	Pond surface area at height (sqft)	Pond Volume (Avg End Method) cu ft	gal	Available storage (gal)
0	59469		0	
1	64032	61,751	461,897	Minimum volume required for aerators
2	68684	128,154	958,590	
3	73480	199,425	1,491,697	
4	78394	275,727	2,062,437	570,741
5	83443	357,282	2,672,467	1,180,771
6	88573	444,127	3,322,068	1,830,372
7	93834	536,560	4,013,471	2,521,775
8	99208	634,708	4,747,613	3,255,917
9	104695	738,738	5,525,763	4,034,067
10	110295	848,822	6,349,192	4,857,495
11	116009	965,129	7,219,168	5,727,471
12	121835	1,087,829	8,136,961	6,645,265
13	127775	1,217,091	9,103,842	Required for freeboard
14	133829	1,353,086	10,121,080	

#4107019.0
May 10, 2007

RIECHERS SPENCE & ASSOCIATES
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FUTURE POND WATER BALANCE CHART

Design Parameters
Top Surface Area of pond = 87,120 SF
Bottom Surface Area of pond = Unknown
Minimum Pond Water Level = 3 ft.
Maximum Pond Water Level = 12 ft
Total storage capacity = 7.29 MG
Available storage capacity = 5.99 MG
Irrigation: 130 acres vineyard + 1.5 acres landscape

Actual Parameters
Top Surface Area of pond = ~ 133,800 SF
Bottom Surface Area of pond = ~ 59,400 SF
Minimum Pond Water Level = 3 ft.
Maximum Pond Water Level = 12 ft
Total storage capacity = 8.14 MG

Available storage capacity = 6.65 MG
Irrigation: ~200 acres available for disposal; calcs based on 130

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sep
Eto (inch)	3.54	2.75	1.22	1.19	1.76	6.12	4.63	6.04	6.81	7.23	6.41	4.94
Crop Constant	0.58	0.58	0.00	0.00	0.00	0.50	0.60	0.60	0.80	0.80	0.80	0.80
ET (inch)	2.05	1.60	0.00	0.00	0.00	3.06	2.78	3.62	5.45	5.78	5.13	3.95
Irrigation Demand After Rain (in)	0.72	0.10	0.00	0.00	0.00	0.00	0.62	2.10	5.10	5.78	4.84	3.85
Irrigation Demand after Rain (MG)	**2.55**	**0.34**	**0.00**	**0.00**	**0.00**	**0.00**	**2.18**	**7.43**	**17.99**	**20.42**	**17.08**	**13.60**
Pan Evaporation (inch)	1.53	2.15	3.79	5.82	8.90	11.00	13.22	12.06	8.67	5.72	2.48	1.66
Pan Evaporation (MG)	**0.04**	**0.03**	**0.01**	**0.06**	**0.10**	**0.12**	**0.15**	**0.13**	**0.10**	**0.06**	**0.03**	**0.02**
Precipitation (inch)	1.33	1.50	8.03	7.56	7.25	5.11	2.16	1.52	0.35	0.00	0.29	0.10
100 YR RP Precipitation (inch)	2.00	2.25	12.05	18.84	10.88	7.67	3.24	2.28	0.53	0.00	0.44	0.15
Annual Precipitation (MG)	**0.02**	**0.03**	**0.13**	**0.21**	**0.12**	**0.09**	**0.04**	**0.03**	**0.01**	**0.00**	**0.00**	**0.00**
Wastewater Flows (MG)	**2.52**	**1.49**	**1.50**	**0.83**	**0.83**	**1.43**	**1.43**	**1.62**	**1.62**	**2.19**	**2.19**	**2.51**
Required Storage (MG)	**2.50**	**1.52**	**3.14**	**4.12**	**4.97**	**6.37**	**5.51**	**1.51**	**1.53**	**2.12**	**2.16**	**2.50**
Total Pond Volume (MG)	**3.80**	**2.82**	**4.44**	**5.42**	**6.27**	**7.67**	**6.81**	**2.81**	**2.83**	**3.42**	**3.46**	**3.80**

harvest

Where possible, attach any supporting documents and ignore answering on this form. If no supporting documents are available, circle the most appropriate choices and answer the questions with the most current available information.

Harvest Coordinator:

Attach Harvest Schedule for '05 and '06 if one exists. I need tonnage received (per month is fine), and of which varietals

Comments:

Do you receive any mechanically harvested fruit?	(yes)	no	N/A	
If yes, how much (rough percentage or tonnage okay):	ATTACHED			
List varietals that are de-stemmed:	CS/ME/CF/PN/MN/PV			
List varietals that are hand sorted:	RESERVE CS/CF			
Are de-stemmers sorters washed down in between loads?	yes	(no)	N/A	
If not, just at end of shifts or end of day?	shift	(day)	N/A	
List varietals pressed using basket press:	CS/CF/PV CS/ME (reserve, spotlight, dessert) ~ 6000 TONS			
List varietals pressed using bladder press:	CS/ME/CF/PN/MA			
Are presses washed down in between loads?	yes	(no)	N/A	
If not, just at end of shifts or end of day?	shift	(day)	N/A	

Where possible, attach any supporting documents and ignore answering on this form. If no supporting documents are available, circle the most appropriate choices and answer the questions with the most current available information.

Cellar Master:

Comments:

Number of fulltime winery employees: 11

Number of seasonal winery employees: 2→5 Jan→Aug 2→4 Jan→Dec

We have seasonal employees during the following months: July → Dec

Attach an inventory of major wine processing equipment or answer the following

VELO FPC plate filters: 2 FILTERS 60X60 1 40X40

and type of separators: CENTRIFUGE

and type of other filters:

Basket presses 4

Bladder presses 5

High pressure washers 5

Make model high pressure washers: ALTO

Misc:

Any CIP (Clean In Place) equipment: yes no N/A

If so, list CIP Cellar equipment: CENTRIFUGE

To discuss in person with Cellar:

More information on Harvest sanitation procedures. ATTACHED

More information on standard Cellar sanitation procedures. ATTACHED

More information on Bottling sanitation procedures. ATTACHED

Cellar practices during blending, transfers, & processing.

Approximate chronology of Cellar events in '05 and '06 ATTACHED

Where possible, attach any supporting documents and ignore answering on this form. If no supporting documents are available, circle the most appropriate choices and answer the questions with the most current available information.

Compliance/Wine Tracking Personnel:

If possible, have a report run using your wine tracking software (AMS®, PC Blend®), with a query that includes the following items listed. Feel free to simply attach the report, or answer the following questions to the best of your ability.

Comments

Attach actual quantity of wine in Cellar inventory on a monthly basis for '05 and '06, if available.

Total Number of Oak Uprights:	36	
Capacity of an Oak Upright:	160 gal	1400 gal, used 1x h 7.5t per year
Total Number of Fermentation Tanks:	174	mostly red
Total Capacity of Fermentation Tanks:	450 tons	(red)
Total number of Bottling Staging Tanks:	16	
Total capacity of Bottling Staging Tanks:		
Misc Tanks:	20 tons	
Total Number of Red Barrel Lots:	Approx.	
Total Number of Red Barrels:		
Total Number of White Barrel Lots:		
Total Number of White Barrels:		

ENCLOSURE G
POND WATER BALANCE

SUMMIT ENGINEERING, INC. Consulting Civil Engineers	Robert Mondavi Winery Pond Water Balance 100-Year Design Storm	PROJECT NO. 2021201 BY: JF CHK: GG

Pond No. 1

Month	Initial Volume [a] (Mgal)	Pond Evaporation [b] (Mgal)	PW Inflow (includes Stormwater) [c,1] (Mgal)	100-Year Precipitation (Mgal)	Volume Change [d] (Mgal)	Total Volume [e] (Mgal)	Divert Volume [f] (Mgal)	Final Volume [g] (Mgal)	Final Pond Depth [h] (ft)	Volume Check [i] (Mgal)	Surface Area (ft^2)
August	2.696	-0.297	1.156	0.004	0.863	3.559	0.863	2.696	9.0	0.863	51,272
September	2.696	-0.213	1.734	0.006	1.527	4.223	0.246	3.976	12.0	0.246	51,272
October	3.976	-0.164	1.377	0.171	1.383	5.359	1.383	3.976	12.0	1.383	59,777
November	3.976	-0.071	0.863	0.335	1.127	5.103	1.127	3.976	12.0	1.127	59,777
December	3.976	-0.048	0.665	0.742	1.359	5.336	1.359	3.976	12.0	1.359	59,777
January	3.976	-0.044	0.779	0.669	1.404	5.380	1.404	3.976	12.0	1.404	59,777
February	3.976	-0.062	0.760	0.694	1.392	5.368	1.392	3.976	12.0	1.392	59,777
March	3.976	-0.109	0.829	0.515	1.235	5.211	1.235	3.976	12.0	1.235	59,777
April	3.976	-0.167	0.746	0.204	0.783	4.759	0.783	3.976	12.0	0.783	59,777
May	3.976	-0.255	0.735	0.135	0.615	4.591	0.615	3.976	12.0	0.615	59,777
June	3.976	-0.316	0.661	0.036	0.382	4.358	0.382	3.976	12.0	0.382	59,777
July	3.976	-0.379	0.696	0.001	0.318	4.294	1.598	2.696	9.0	1.598	59,777
Total		**-2.125**	**11.000**	**3.512**	**12.387**		**12.387**			**12.387**	

Pond No. 2

Month	Initial Volume [a] (Mgal)	Pond Evaporation [b] (Mgal)	PW Inflow [c,2] (Mgal)	100-Year Precipitation (Mgal)	Volume Change [d] (Mgal)	Total Volume [e] (Mgal)	Divert Volume [f] (Mgal)	Final Volume [g] (Mgal)	Final Pond Depth [h] (ft)	Volume Check [i] (Mgal)	Surface Area (ft^2)
August	2.830	-0.309	0.863	0.004	0.558	3.388	0.558	2.830	9.0	0.558	53,423
September	2.830	-0.222	0.246	0.006	0.030	2.860	0.000	2.860	9.0	0.000	53,423
October	2.860	-0.147	1.383	0.177	1.413	4.273	0.113	4.161	12.0	0.113	53,423
November	4.161	-0.074	1.127	0.347	1.400	5.561	1.400	4.161	12.0	1.400	62,058
December	4.161	-0.049	1.359	0.769	2.079	6.240	2.079	4.161	12.0	2.079	62,058
January	4.161	-0.046	1.404	0.693	2.052	6.212	2.052	4.161	12.0	2.052	62,058
February	4.161	-0.064	1.392	0.719	2.047	6.207	2.047	4.161	12.0	2.047	62,058
March	4.161	-0.113	1.235	0.533	1.656	5.816	1.656	4.161	12.0	1.656	62,058
April	4.161	-0.173	0.783	0.211	0.820	4.981	0.820	4.161	12.0	0.820	62,058
May	4.161	-0.265	0.615	0.140	0.490	4.651	0.490	4.161	12.0	0.490	62,058
June	4.161	-0.328	0.382	0.037	0.092	4.252	0.092	4.161	12.0	0.092	62,058
July	4.161	-0.394	1.598	0.001	1.205	5.366	2.536	2.830	9.0	2.536	62,058
Total		**-2.184**	**12.387**	**3.639**	**13.842**		**13.842**			**13.842**	

[a] Volume of each pond at the beginning of each month.
[b] Estimated pond evaporation by month based on starting volume.
[c,1] Process wastewater inflow to Pond 1. Includes estimate of stormwater runoff (if applicable).
[c,2] Inflow to Pond 2 is set to the Pond 1 divert volume.
[d] Volume change is equal to the sum of pond evaporation, PW inflow, and precipitation.
[e] Total volume is equal to initial volume plus the volume change.
[f] Divert volume is the amount of PW that exceeds a set pond volume (related to maximum pond height; Total depth - 2' Freeboard).
[g] Final volume is equal to the total volume minus the divert volume.
[h] Pond depth associated with final volume.
[i] Determines difference between total volume and volume associated with the pond height to help determine divert volume (note h).

SUMMIT ENGINEERING, INC. Consulting Civil Engineers	Robert Mondavi Winery Pond Water Balance Irrigation & Effluent Application Rates	PROJECT NO. 2021201 BY: JF CHK: GG

Applied Irrigation Area

Vineyard	53.0	acres
Pasture	0.0	acres

Total Area Available for Irrigation

Vineyard	53.0	acres
Pasture	0.0	acres

Month	Reference ET[a]	Pasture Coefficent [b]	Vineyard Crop Coefficient[c]	Pasture ET[d]	Vineyard ET[d]	Precipitation[e]	Irrigation Demand[f]		Operating Days per Month[g]	Percolation Capacity[h]		Assimilative Capacity[i]		Effluent Applied		Excess Capacity
	(in)			(in)	(in)	(in)	(in)	(Mgal)	(d)	(in)	(Mgal)	(in)	(Mgal)	(Mgal)	(in)	(Mgal)
August	8.3	0.9	0.5	7.5	3.7	0.1	3.7	5.299	21	11.49	16.548	15.2	21.848	0.558	0.39	21.29
September	6.3	0.9	0.3	5.7	1.7	0.1	1.6	2.241	18	9.85	14.184	11.4	16.425	0.000	0.00	16.43
October	4.2	0.9	0.1	3.8	0.3	2.6	0.0	0.000	16	8.76	12.608	8.8	12.608	0.113	0.08	12.50
November	2.1	0.8	0.0	1.7	0.0	5.1	0.0	0.000	12	6.57	9.456	6.6	9.456	1.400	0.97	8.06
December	1.5	0.8	0.0	1.2	0.0	11.3	0.0	0.000	10	5.47	7.880	5.5	7.880	2.079	1.44	5.80
January	1.8	0.8	0.0	1.4	0.0	10.2	0.0	0.000	9	4.92	7.092	4.9	7.092	2.052	1.43	5.04
February	2.3	0.8	0.0	1.8	0.0	10.6	0.0	0.000	9	4.92	7.092	4.9	7.092	2.047	1.42	5.05
March	3.7	0.8	0.0	3.0	0.0	7.9	0.0	0.000	10	5.47	7.880	5.5	7.880	1.656	1.15	6.22
April	5.0	0.9	0.2	4.5	0.8	3.1	0.0	0.000	12	6.57	9.456	6.6	9.456	0.820	0.57	8.64
May	6.9	0.9	0.6	6.2	4.0	2.1	1.9	2.752	15	8.21	11.820	10.1	14.572	0.490	0.34	14.08
June	8.2	0.9	0.7	7.4	5.8	0.6	5.3	7.573	16	8.76	12.608	14.0	20.181	0.092	0.06	20.09
July	9.2	0.9	0.6	8.3	5.9	0.0	5.9	8.444	18	9.85	14.184	15.7	22.628	2.536	1.76	20.09
Total	**59.5**			**52.4**	**22.2**	**53.6**	**18.3**	**26.3**	**166.0**	**90.8**	**130.8**	**109.1**	**157.1**	**13.8**	**9.6**	**143.28**

(a) Average monthly reference evapotranspiration rates, see Climate Data Worksheet.
(b) Kc coefficients for pasture from Table 5-1, "Irrigation with Reclaimed Municipal Wastewater-A Guidance Manual"- California State Water Resources Control Board, July 1984 (San Joaquin Valley).
(c) Kc coefficients for vineyards from Table 5-12, "Irrigation with Reclaimed Municipal Wastewater-A Guidance Manual"- California State Water Resources Control Board, July 1984 (San Joaquin Valley).
(d) ET=ETo x Kc. A weighted value is determined on the basis of the available irrigated acreage of vineyard and pasture.
(e) Precipitation, 10-year rainfall event, see Climate Data Worksheet.
(f) Irrigation Demand = ET-Precipitation, inches. A weighted value is determined on the basis of the available irrigated acreage of vineyard and pasture.
(g) Number of operating days per month based on estimated irrigation days available for St. Helena, CA. Precipitation data from NOAA between 1991-2020.
(h) Design percolation rate is a maximum of 0.55 inches per day for the number of operating day per month. Design perc rate based on estimated hydraulic conductivity for soils in the area (USGS Websoil Survey) adjusted by a 0.04 safety factor to account for typical slow rate land application design methodology.
(i) Assimilative capacity is the sum of irrigation demand and percolation applied.
(j) Effluent applied is the monthly divert volume from Pond 2 (Sheet 5 of 6). This volume is also represented as a depth spread over the total irrigation area.
(k) Excess capacity is the difference between the Assimilative Capacity (note i) and the Effluent Applied (note j). This is the estimated remaining disposal capacity of the soil.

ENCLOSURE H
ORIGINAL SEPTIC SYSTEM DESIGN

"SEPTIC SYSTEM AS BUILT" 1987

CONSTRUCTION DRAWINGS
OF
DOMESTIC WASTEWATER DISPOSAL SYSTEM

FOR

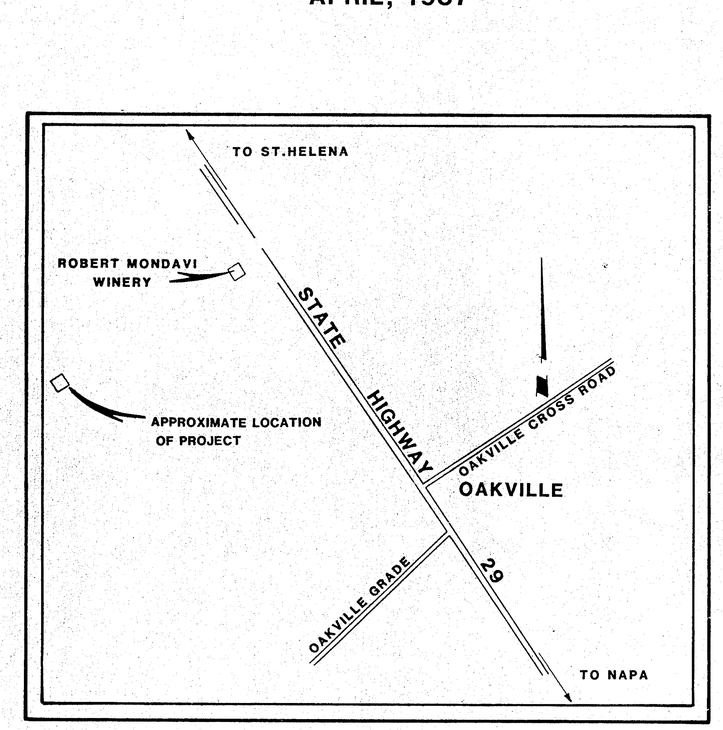
ROBERT MONDAVI WINERY

OAKVILLE, CALIFORNIA

APRIL, 1987

- PREPARED BY
  Summit Engineering Inc.
  Consulting Civil Engineers
  Santa Rosa, California

- **Electrical Engineers**
  Oneto & Arthur
  Stockton, California



VICINITY MAP

INDEX OF DRAWINGS

DWG. NO.	TITLE
G1	GENERAL NOTES & DETAILS
C1	SITE PLAN
C2	LEACHING SUBFIELDS PLAN
C3	LEACHFIELD DETAILS
C4	ELECTRICAL CONDUIT PLAN, DOSING TANK & TRENCH DETAILS
E4	ELECTRICAL-480 VOLT DISTRIBUTION
E11	ELECTRICAL-DETAILS

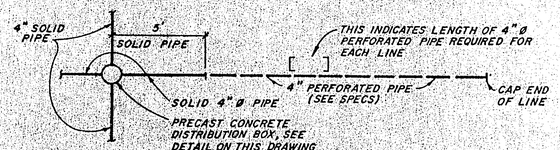
AS BUILT

PROJECT NO. 8356

This document, and the ideas and designs incorporated herein, as an instrument of professional service, is the property of Summit Engineering, Inc., and is not to be used, in whole or in part, for any other project without the written authorization of Summit Engineering, Inc.

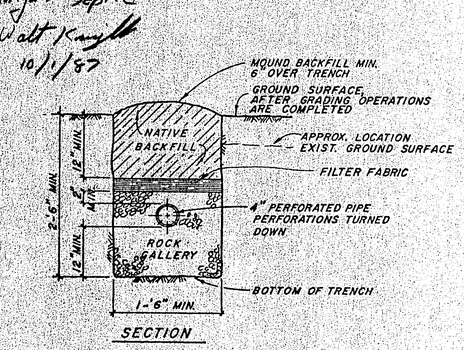
LEACH SYSTEM NOTES:

1. THE ENGINEER IS TO BE NOTIFIED WHEN INSTALLATION IS COMPLETE BUT BEFORE PIPE IS COVERED.
2. LINES CONNECTING DISTRIBUTION BOXES SHALL BE AN APPROVED PIPE WITH WATERTIGHT JOINTS.
3. THE DESIGN OF THE SUBSURFACE DISPOSAL SYSTEM AS SHOWN ON THE DRAWINGS IS BASED ON FIELD CONDITIONS AND PERCOLATION TESTS. IF, DURING THE COURSE OF CONSTRUCTION, FREE WATER, SOIL SATURATION, OR SPONGE-LIKE CHARACTERISTICS ARE ENCOUNTERED IN THE EXCAVATION OF THE LEACH TRENCHES, THE CONTRACTOR SHALL CEASE CONSTRUCTION OPERATIONS AND NOTIFY THE OWNER OR THE ENGINEER.
4. ALL WORK SHALL CONFORM TO THE LOCAL COUNTY HEALTH DEPT. STANDARDS AND ORDINANCES AND BE APPROVED BY SAID COUNTY PRIOR TO BACKFILLING. CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE HEALTH DEPT. FOR REQUIRED INSPECTIONS.

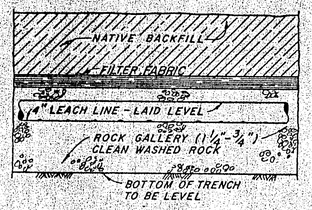


TYPICAL LEACH LINE PLAN (1)

AS BUILT BY
Knights Septic
Walt Knight
10/1/87



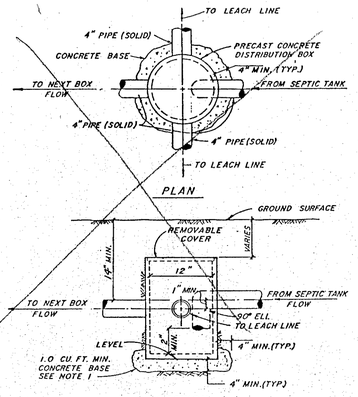
SECTION



PROFILE

THE CONTRACTOR SHALL BE RESPONSIBLE FOR DIVERTING STORM DRAIN WATER DURING CONSTRUCTION IN ORDER TO PROTECT ALL WORK.

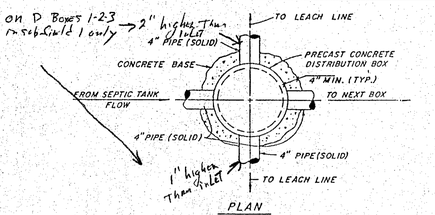
LEACH LINE TRENCH DETAIL (2)



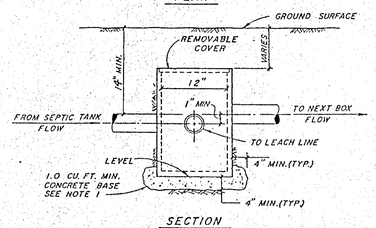
PLAN

SECTION

SUBFIELDS 1 & 3



PLAN

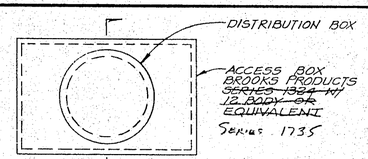


SECTION

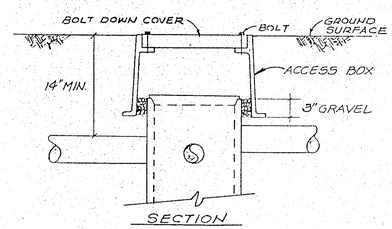
SUBFIELDS 2 & 4

DISTRIBUTION BOX DETAILS (3)

1. BEFORE THE CONCRETE BASE HAS HARDENED, THE DISTRIBUTION BOX SHALL BE PRESSED INTO THE CONCRETE BASE AND ADJUSTED SUCH THAT THE D-BOX IS AND WILL REMAIN LEVEL.
2. FOR DISTRIBUTION BOXES AT POSITIONS 4 & 9 IN EACH SUBFIELD, SEE DETAIL (4)



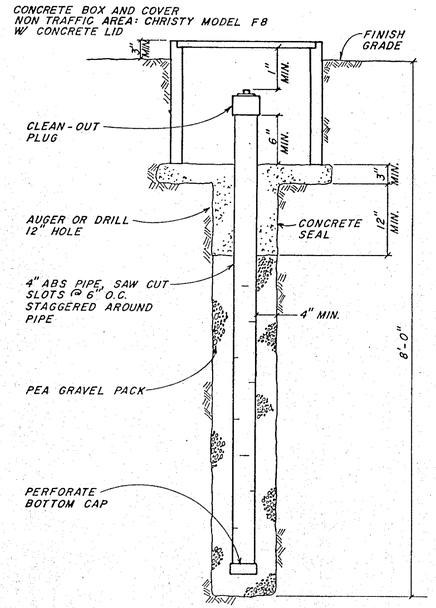
PLAN



SECTION

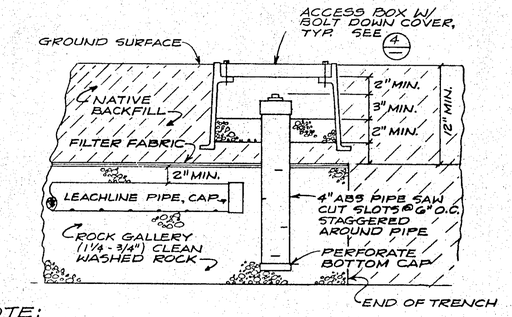
ACCESS BOX PLAN & SECTION (4)

NO SCALE



MONITORING WELL (5)

N.T.S.



NOTE:
1. RISERS SHALL BE LOCATED AS INDICATED ON SHEET C2

LEACHLINE OBSERVATION RISER (6)

N.T.S.

GENERAL NOTES

1. ALL WORK SHALL CONFORM TO THE LATEST EDITION OF THE UNIFORM BUILDING CODE AND/OR APPLICABLE COUNTY OF NAPA CODES, ORDINANCES, ZONING AND PLANNING LAWS, AND THE PROJECT USE PERMIT CONDITIONS.
2. ALL WORK SHALL BE IN COMPLIANCE WITH ALL APPLICABLE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (O.S.H.A.) STANDARDS AS SET FORTH BY THE FEDERAL DEPT. OF LABOR AND/OR THE STATE OF CALIFORNIA. THE CONTRACTOR SHALL SECURE A TRENCH PERMIT FROM THE CALIFORNIA DIVISION OF INDUSTRIAL SAFETY PRIOR TO THE EXCAVATION OF ANY TRENCH OVER FIVE FEET DEEP.
3. ALL ONSITE SEWER LINE CONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS OF THE UNIFORM PLUMBING CODE (U.P.C.) AND ALL APPLICABLE REGULATIONS OF THE COUNTY OF NAPA.
4. THE DRAWINGS SHALL NOT BE SCALED. ALL WORK SHALL BE GOVERNED BY THE DIMENSIONS SHOWN ON THE DRAWINGS. DISCREPANCIES SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION FOR ADJUSTMENT PRIOR TO PROCEEDING WITH THE WORK.
5. THE SCREENED CONTOURS AND TOPOGRAPHIC INFORMATION ON THESE DRAWINGS REPRESENT THE APPROXIMATE SURFACE CONDITIONS TO BE FOUND AT THE PROJECT LOCATION AS OF AUGUST, 1985. THIS INFORMATION HAS BEEN FURNISHED BY AMERICAN AERIAL SURVEYS, INC. OF NORTHERN CALIFORNIA OF SACRAMENTO, CALIFORNIA.
6. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THE PLAN ARE BASED ON THE BEST INFORMATION AVAILABLE; HOWEVER, THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THE INFORMATION SHOWN, OR THE INADVERTENT OMISSION OF ANY SUCH INFORMATION. CONTRACTOR SHALL VERIFY LOCATION OF EXISTING UTILITIES; CONFLICTS AND/OR DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER. UNLESS NOTED OTHERWISE EXISTING UTILITIES SHALL BE PROTECTED AND MAINTAINED BY THE CONTRACTOR.
7. UNDERGROUND SERVICE ALERT (U.S.A.) CALL TOLL FREE (800) 642-2444 AT LEAST 48 HOURS PRIOR TO EXCAVATION.
8. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR SOIL CONDITIONS IN THE AREA OF CONSTRUCTION OPERATIONS.
9. DETAILS OF CONSTRUCTION NOT INDICATED OR NOTED SHALL BE CONSIDERED OF THE SAME CHARACTER SHOWN FOR SIMILAR OR EXISTING CONSTRUCTION.
10. THE CONTRACTOR SHALL SECURE ALL NECESSARY PERMITS FROM NAPA COUNTY. THE OWNER WILL MAKE APPLICATIONS AND PAY ALL PERMIT FEES.
11. THE NAPA COUNTY BUILDING AND PUBLIC HEALTH DEPARTMENTS SHALL BE NOTIFIED 48 HOURS PRIOR TO STARTING ANY WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING THESE AGENCIES INFORMED OF THE SCHEDULE.
12. CONTRACTOR SHALL COORDINATE HIS WORK WITH WINERY OPERATIONS REQUIREMENTS. CONTRACTOR SHALL BE PREPARED TO PHASE PORTIONS OF THE WORK SO THAT IT DOES NOT INTERFERE WITH OR INHIBIT WINERY OR VINEYARD OPERATIONS
13. CONTRACTOR SHALL PROVIDE 24 HOURS ADVANCE NOTICE TO THE ENGINEER FOR REQUESTED INSPECTIONS.
14. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING CONSTRUCTION WATER.
15. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING EXISTING FACILITIES AND IMPROVEMENTS FROM DAMAGE RESULTING FROM HIS WORK. ANY DAMAGE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
16. THIS DRAWING DOES NOT REPRESENT A PROPERTY SURVEY. PROPERTY LINES HAVE BEEN PLOTTED FOR INFORMATIONAL PURPOSES ONLY AND ARE APPROXIMATE.
17. THE CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING ACCESS TO THE SITE AND ADJOINING OPERATIONS OPEN TO THE OWNERS AT ALL TIMES.
18. ONSITE GRADING SHALL NOT INHIBIT OFFSITE DRAINAGE.
19. AS THE RESPONSIBILITY FOR THE ENGINEERING DESIGN WORK DEPICTED ON THESE DRAWINGS RESTS WITH THE FIRM OF SUMMIT ENGINEERING, INC., CONSULTING CIVIL ENGINEERS, NO CHANGES ARE TO BE MADE TO THE WORK DURING OR PRIOR TO CONSTRUCTION WITHOUT THE EXPRESSED WRITTEN PERMISSION OR ACKNOWLEDGEMENT OF SUMMIT ENGINEERING, INC., CONSULTING CIVIL ENGINEERS.
20. SEE DETAILED SPECIFICATIONS FOR FURTHER INFORMATION.

ABBREVIATIONS

ABS	ACRYLONITRILE BUTADIENE STYRENE	HWA	HIGH WATER ALARM
APPROX.	APPROXIMATE	HWY.	HIGHWAY
BLDG.	BUILDING	I.E.	INVERT ELEVATION
C.O.	CLEANOUT	IN.	INCH
CONC.	CONCRETE	LIN. FT.	LINEAL FOOT
CONT.	CONTINUOUSLY	LOC.	LOCATION
CU.	CUBIC	M.C.	MOTOR CONTROL
C.V.	CHECK VALVE	MIN.	MINIMUM
D-BOX	DISTRIBUTION BOX	NTS	NOT TO SCALE
DEPT.	DEPARTMENT	O.D.	OUTER DIAMETER
EA.	EACH	P.V.C.	POLY VINYL CHLORIDE
ELEC.	ELECTRICAL	P.V.	PLUG VALVE
ELEV.	ELEVATION	REF.	REFERENCE
EXIST. OR (E)	EXISTING	SF	SQUARE FEET
FT.	FOOT OR FEET	SPEC.	SPECIFICATION
GPD	GALLONS PER DAY	S.S.	SANITARY SEWER
HR.	HOUR	TYP.	TYPICAL
		W/	WITH

AS BUILT

REGISTERED PROFESSIONAL ENGINEER — MARK A. HETHERINGTON — No. 39603 EXP. DATE 12/31/88 — CIVIL — STATE OF CALIFORNIA

REV.	DESCRIPTION	BY	DATE
	ISSUED FOR CONSTRUCTION	MAH	4/20/87

SUMMIT ENGINEERING, INC.
Consulting Civil Engineers
1400 North Dutton Avenue #22
Santa Rosa, CA 95401
(707) 527-0775

ROBERT MONDAVI WINERY
OAKVILLE, CALIFORNIA
DOMESTIC WASTEWATER DISPOSAL SYSTEM
GENERAL NOTES AND DETAILS

SCALE: AS NOTED | DATE: 4/20/87
DR. SEL | CHK. MAH | PROJECT NO. 8386

G1

DIETERICH-POST RECORDER NO. 82881

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REF. NORTH

POTENTIAL FILL FOR LEACHING SUBFIELD COVER SOIL. VERIFY. W/ ENGINEER.

EXISTING PROCESS WASTEWATER PONDS

100% EXPANSION AREA

PROPOSED NEW LEACHING SUBFIELDS 1800 LIN. FT. EA.

SUBFIELD #1
SUBFIELD #2
SUBFIELD #3

SHEET C2

NOT IN PRODUCTION

SUBFIELD #4

150' MAX.

CLEANOUT EVERY 100', SEE (3/C4)

EXISTING 4" SS. FORCE MAIN

EXISTING MECHANICAL ROOM

EXISTING LEACHFIELDS

C/O is Located 12' South of valve Box Marked by X

LANDS OF ROBERT MONDAVI WINERY APN 27-280-36

EXISTING SEPTIC TANK AND HOLDING TANK, SEE (2,6/C4)

EXISTING VINEYARD

Access Road

VINEYARD ROADS

LANDS OF ROBERT MONDAVI VINEYARDS, INC. APN 27-280-41

AS BUILT BY Knights Septic Walt Knight 10/1/87

APPROX. PROPERTY LINE (TYP.)

TO ST. HELENA

HWY 29

TO OAKVILLE

REGISTERED PROFESSIONAL ENGINEER MARY A. HETHERINGTON No. 39602 EXP. DATE 12/31/89 CIVIL STATE OF CALIFORNIA

REV.	DESCRIPTION	BY	DATE
	ISSUED FOR CONSTRUCTION	MAH	4/20/87

SUMMIT ENGINEERING, INC.
Consulting Civil Engineers
1400 North Dutton Avenue #22
Santa Rosa, CA 95401
(707) 527-0775

ROBERT MONDAVI WINERY
OAKVILLE, CALIFORNIA
DOMESTIC WASTEWATER DISPOSAL SYSTEM

SITE PLAN

SCALE: 1"=200' | DATE: 4/20/87
DR. MW | CHK. MAH | PROJECT NO. 8356

C1

DIETERICH-POST REORDER NO. 93281

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TO PONDS

100% EXPANSION AREA

As Built by
Knight's Septic
Walt Knight
10/1/87

25' MIN. SETBACK

Flow Line To subfield 4 is on Top of Line To SubField 3 To maintain Fall

8' MIN. SETBACK

CUT & CAP EXIST. FORCE MAIN

4"-45° ELLS

7500 GAL. SEPTIC TANK

LEACHING SUBFIELDS DISTRIBUTION MAINS (#2, #3, & #4)

ELEC. CONDUIT

1500 GAL. SUMP TANK

VALVE BOX

M.C. VALVE VAULT SEE 1,4/C3

LEACHING SUBFIELD #1 DISTRIBUTION MAIN

4' MIN. TYP.

DISTRIBUTION BOX, TYP. SEE 3/G1

FIRST THREE "D" BOXES in Each Field 24" DIA

LEACHLINE, TYP. SEE 1,2/G1

CLEAN OUT @ EVERY 100' See Sheet C4 for Spacing & Lay-Out

Spacing on Lines in Field 2-@ 3-4 Identical

APPROX. LOCATION OF EXIST. 4" FORCE MAIN FIELD VERIFY

NEW 1½" ELECTRICAL CONDUIT TO BE INSTALLED

TO WINERY

4' MIN.

#1 5.5 IN/HR. 31 3/4 IN.

#2 6.5 IN/HR. 31 IN.

#3 4.5 IN/HR. 30 IN.

#4 4.0 IN/HR. 31½ IN.

#5 5.0 IN/HR. 31 IN.

#6 6.0 IN/HR. 33 IN.

#7 18.5 IN/HR. 32 IN.

#8 3.75 IN/HR. 34½ IN.

#9 2 IN/HR. 33½ IN.

#10 4.5 IN/HR. 33 IN.

#11 2 IN/HR. 51 IN.

#12 4 IN/HR. 32 IN.

#13 3 IN/HR. 32 IN.

#14 3 IN/HR. 32½ IN.

#15 4.5 IN/HR. 39.5 IN.

#16 7.0 IN/HR. 40 IN.

8' MIN. TYP.

5' MIN.

100' TYP.

Inspect Boxes

MONITORING WELL SEE 5/G1

25' MIN. SETBACK

C.H. #1

C.H. #2

C.H. #3

C.H. #4

RISER (TYP.) SEE 6/G1

172 EXIST. 170 CONTOUR 171 NEW 170 CONTOUR 169

SUBFIELD #1 SUBFIELD #2 SUBFIELD #3 SUBFIELD #4

PERCOLATION TEST HOLE (TYP)

CORE HOLE (TYP)

APPROX. LOCATION OF VINEYARD DRAIN TILE - FIELD VERIFY BEFORE LEACHING TRENCH LOC. ARE DETERMINED.

APPROX. LOCATION OF VINEYARD DRAIN TILE - FIELD VERIFY BEFORE LEACHING TRENCH LOC. ARE DETERMINED.

AS BUILT

REF. NORTH

NOTES:

1. LENGTH OF LEACH LINES DETERMINED USING THE METHODS OUTLINED IN THE NAPA COUNTY SEWAGE ORDINANCE AND THE U.S.P.H.S. MANUAL OF SEPTIC TANK PRACTICES FOR A MAXIMUM FLOW OF 3625 G.P.D.
2. FILL AND GRADING OPERATIONS AT THE LEACHFIELD SHALL BE COMPLETED BEFORE LEACH LINES ARE INSTALLED.
3. D-BOXES #4 AND #9 (SHOWN WITH AN *) IN EACH SUBFIELD SHALL BE ACCESSIBLE AS DEPICTED IN DETAIL 4/G1. Subfld "3 is Box "4 + 7
4. PIPING FROM M.C. VALVE TO D-BOX #1 IN EACH SUBFIELD SHALL BE CONTINUOUSLY SLOPED.
5. OPERATON OF HEAVY EQUIPMENT OVER THE LEACHING SUBFIELDS SHALL BE MINIMIZED DURING THE CONSTRUCTION OF THE LEACHLINES AND IT SHALL NOT OCCUR AFTER THE LEACHLINES ARE INSTALLED.

REGISTERED PROFESSIONAL ENGINEER
MARY A. METHERINGTON
No. 39602
EXP. DATE 12/31/89
CIVIL
STATE OF CALIFORNIA

REV	DESCRIPTION	BY	DATE
	ISSUED FOR CONSTRUCTION	MAH	4/20/87

SUMMIT ENGINEERING, INC.
Consulting Civil Engineers
1400 North Dutton Avenue #22
Santa Rosa, CA 95401
(707) 527-0775

ROBERT MONDAVI WINERY
OAKVILLE, CALIFORNIA

DOMESTIC WASTEWATER DISPOSAL SYSTEM

LEACHING SUBFIELDS PLAN

SCALE 1"=20' | DATE 4/20/87 | C2
DR. MW | CHK MAH | PROJECT NO. 8356.82

DIETZGEN-POST REORDER NO. 33241

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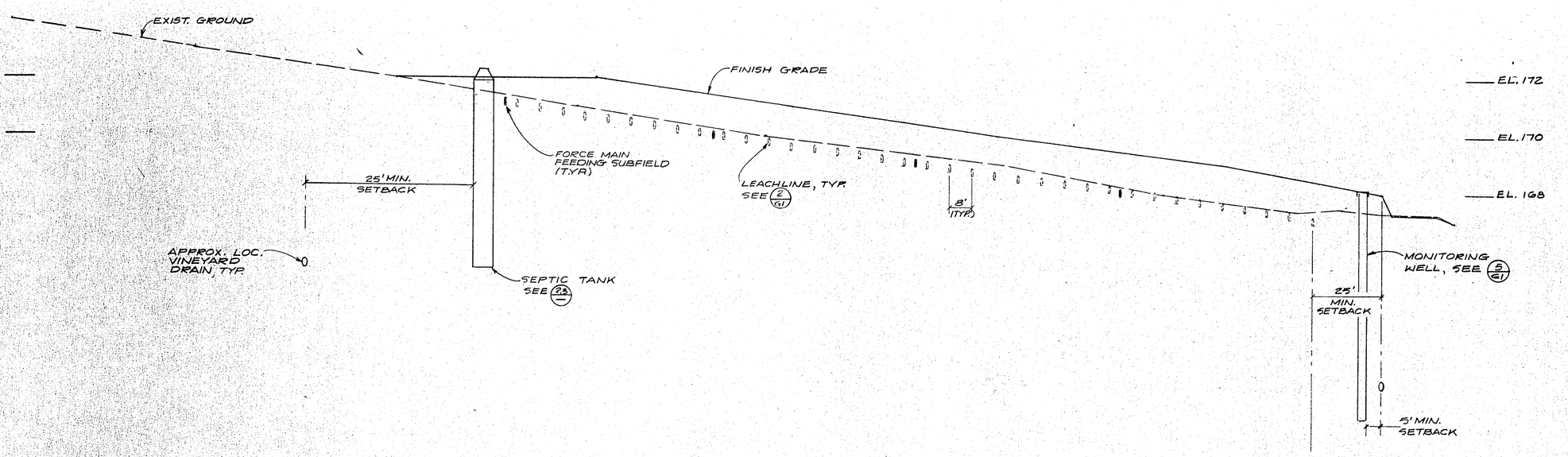
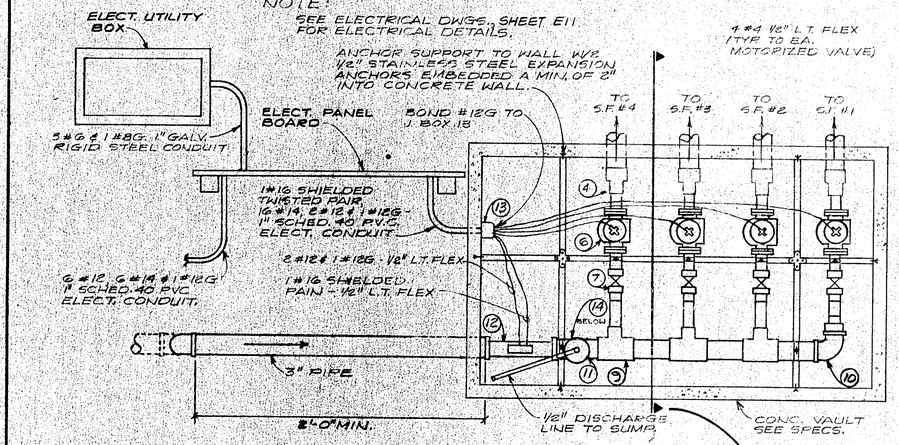


AS BUILT By
Knight's Septic
Walt Knight 11/1/87

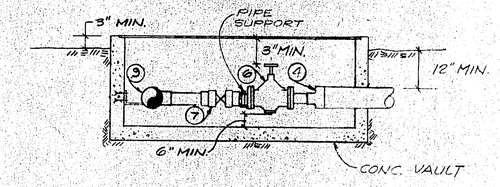
LEACHFIELD SECTION (A/—)

SCALE: HORIZ: 1" = 20'
VERT: 1" = 2'



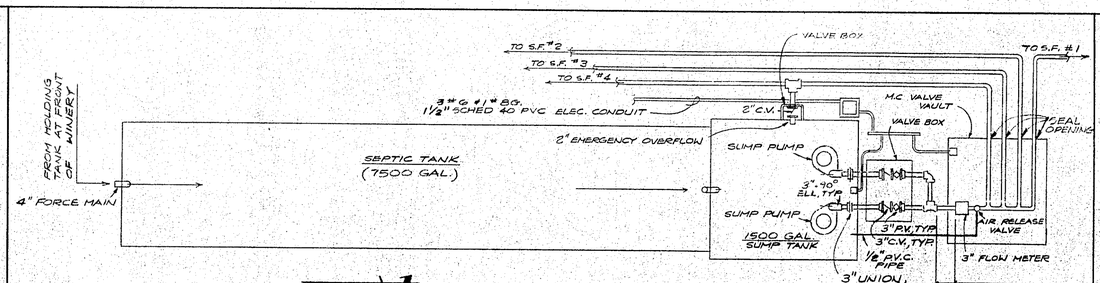
M.C. VALVE VAULT PLAN (1/—)

NO SCALE



M.C. VALVE VAULT SECTION (4/—)

NO SCALE



PROCESS WASTEWATER SEPTIC TANK INSTALLATION DETAIL (2/—)

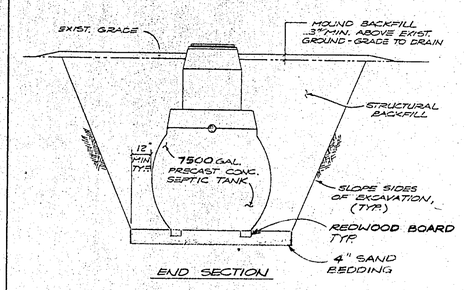
NO SCALE

LEGEND

1. 4" 90° ELL
2. DELETE
3. DELETE
4. 4" X 2" REDUCER
5. DELETE
6. MOTOR CONTROL PLUG VALVE (2")
7. 2" BALL VALVE (TRUE UNION)
8. DELETE
9. 3" X 3" X 2" TEE
10. 3" 90° ELL
11. 1/2" AIR RELEASE VALVE
12. 3" FLOWMETER
13. ELECTRICAL JUNCTION BOX
14. 3" X 3" X 1/2" TEE

NOTE:

1) TANK INSTALLATION SHALL BE APPROVED AND INSPECTED BY THE ENGINEER AND THE LOCAL COUNTY HEALTH DEPT. PRIOR TO BACKFILLING.
2) BAFFLE IN 1500 GAL. SUMP TANK TO BE REMOVED.



SECTION (3/—)

NO SCALE

REGISTERED PROFESSIONAL ENGINEER
MARY A. NETHERINGTON
No. 39602
EXP. DATE 12/31/88
CIVIL
STATE OF CALIFORNIA

REV.	DESCRIPTION	BY	DATE
	ISSUED FOR CONSTRUCTION	MAH	4/20/87

SUMMIT ENGINEERING, INC.
Consulting Civil Engineers
1400 North Dutton Avenue #22
Santa Rosa, CA 95401
(707) 527-0775

ROBERT MONDAVI WINERY

OAKVILLE, CALIFORNIA

DOMESTIC WASTEWATER DISPOSAL SYSTEM

LEACHFIELD DETAILS

SCALE: AS NOTED | DATE: 4/20/87
DR. SEI | CHK. MAH | PROJECT NO. 8356

C3

DIETRICH-POST REORDER NO. 82261

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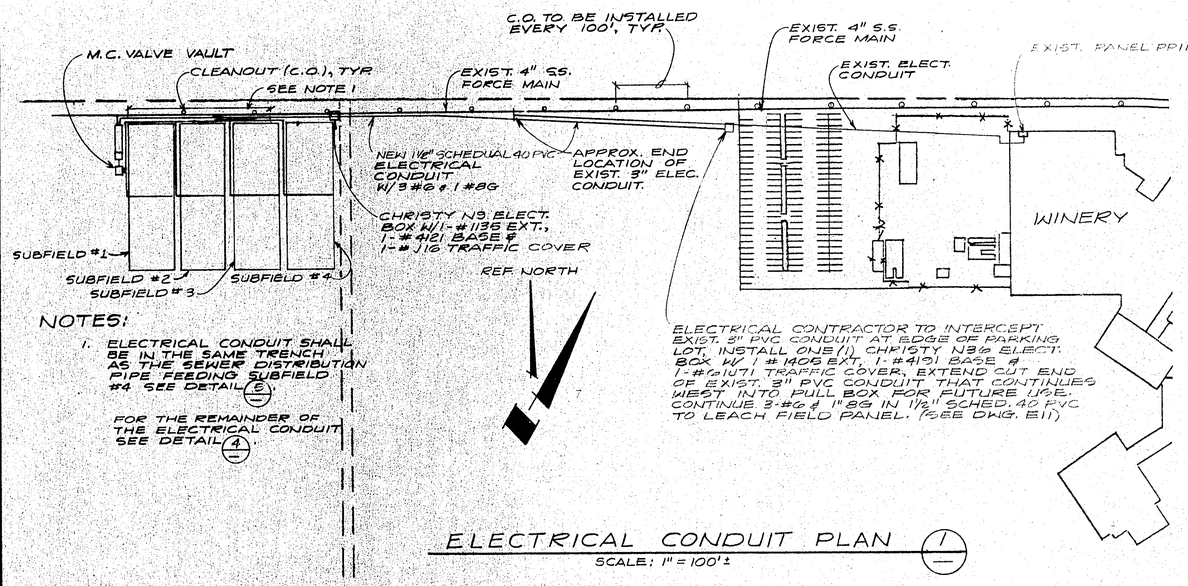


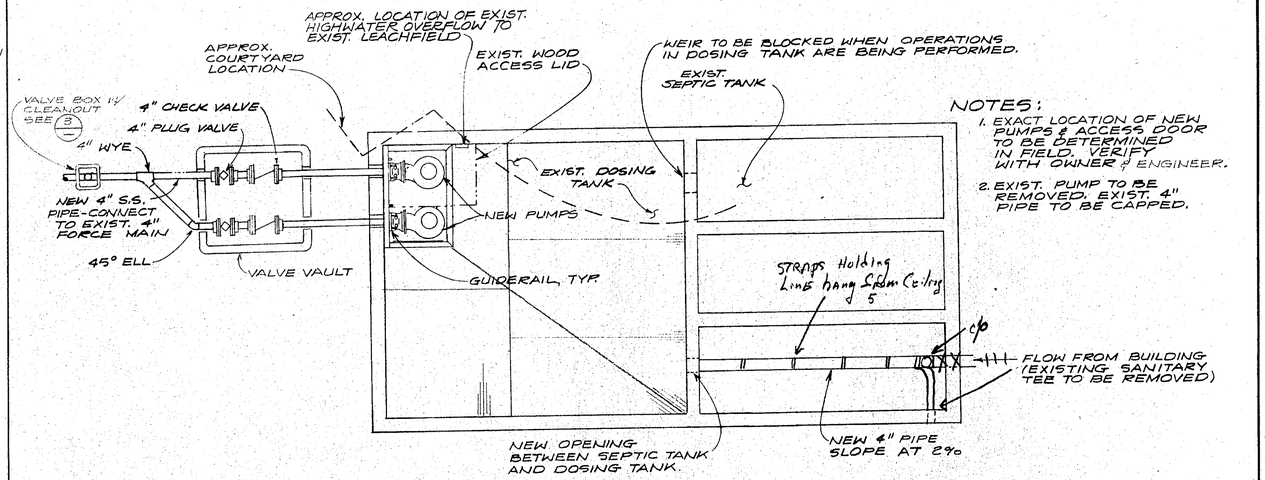
NOTES:

1. ELECTRICAL CONDUIT SHALL BE IN THE SAME TRENCH AS THE SEWER DISTRIBUTION PIPE FEEDING SUBFIELD #4 SEE DETAIL (5).

FOR THE REMAINDER OF THE ELECTRICAL CONDUIT SEE DETAIL (4).

ELECTRICAL CONDUIT PLAN (1)

SCALE: 1" = 100'±



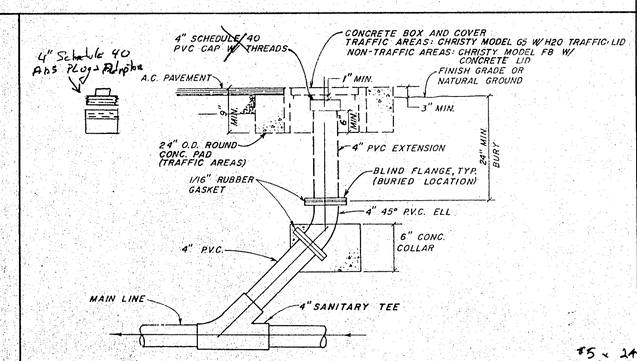
NOTES:

1. EXACT LOCATION OF NEW PUMPS & ACCESS DOOR TO BE DETERMINED IN FIELD. VERIFY WITH OWNER & ENGINEER.
2. EXIST. PUMP TO BE REMOVED. EXIST. 4" PIPE TO BE CAPPED.

DOSING TANK PLAN (2)

N.T.S.

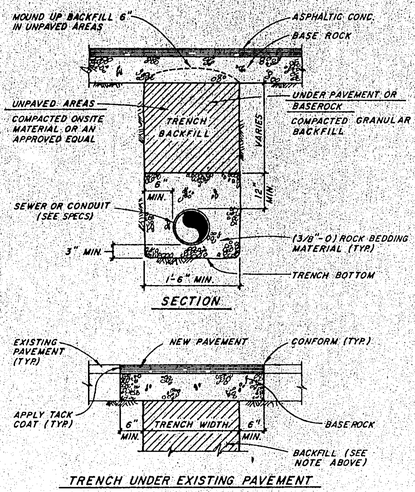
(FOR LOCATION, SEE PLAN, DWG. C1)



NOTES:

1. WHEN CLEANOUT IS BURIED IN VINEYARD PROVIDE ONE 4" x 4" x 6' REDWOOD MARKER POST FOR EACH. VERIFY LOCATION OF CLEANOUT & MARKER POST WITH ENGINEER.
2. WHEN CLEANOUT IS LOCATED IN AN IMPROVED AREA PROVIDE EXTENSION & UTILITY BOX AS SHOWN DASHED IN DETAIL.

PRESSURE CLEANOUT DETAIL (3)

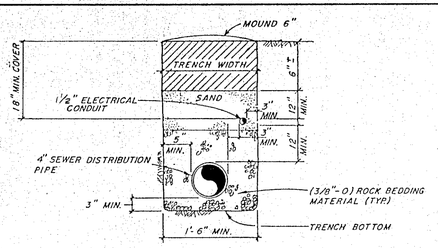


SECTION

TRENCH UNDER EXISTING PAVEMENT

UTILITY TRENCH SECTION (4)

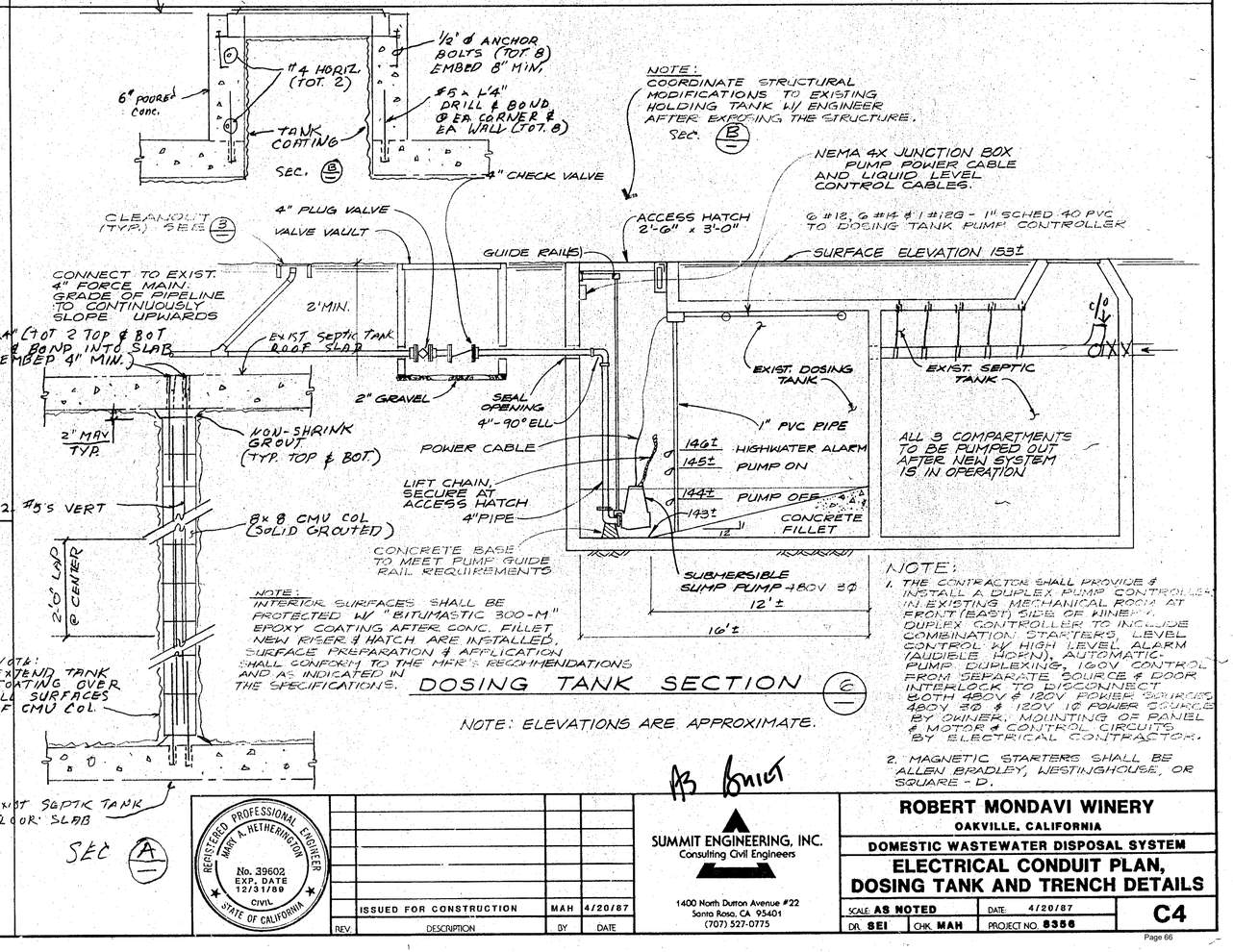
SEWER OR ELEC. CONDUIT



NOTE:
FOR TRENCH SECTIONS WHERE THERE ARE 2 OR MORE DISTRIBUTION PIPES, HOLD: MIN. 3" TRENCH WALL TO PIPE
MIN. 3" PIPE TO PIPE
ELECT. CONDUIT SIM.
MIN. 2'-0" TRENCH WIDTH

UTILITY TRENCH SECTION (5)

SEWER AND ELEC. CONDUIT



NOTE:
COORDINATE STRUCTURAL MODIFICATIONS TO EXISTING HOLDING TANK W/ ENGINEER AFTER EXPOSING THE STRUCTURE.
SEC. (B)

NEMA 4X JUNCTION BOX PUMP POWER CABLE AND LIQUID LEVEL CONTROL CABLES.

6 #12, 6 #14 & 1 #12G - 1" SCHED 40 PVC TO DOSING TANK PUMP CONTROLLER

ALL 3 COMPARTMENTS TO BE PUMPED OUT AFTER NEW SYSTEM IS IN OPERATION

NOTE:
1. THE CONTRACTOR SHALL PROVIDE & INSTALL A DUPLEX PUMP CONTROLLER IN EXISTING MECHANICAL ROOM AT FRONT (EAST) SIDE OF PINERY. DUPLEX CONTROLLER TO INCLUDE COMBINATION STARTERS, LEVEL CONTROL W/ HIGH LEVEL ALARM (AUDIBLE HORN), AUTOMATIC PUMP DUPLEXING, 120V CONTROL FROM SEPARATE SOURCE & DOOR INTERLOCK TO DISCONNECT BOTH 480V & 120V POWER SOURCES. 480V 3ø & 120V 1ø POWER SOURCES BY OWNER. MOUNTING OF PANEL & MOTOR & CONTROL CIRCUITS BY ELECTRICAL CONTRACTOR.
2. MAGNETIC STARTERS SHALL BE ALLEN BRADLEY, WESTINGHOUSE, OR SQUARE - D.

DOSING TANK SECTION (C)

AS Built by
Knights Septic
Watt Knight
10/1/87

REGISTERED PROFESSIONAL ENGINEER MARK A. HETHERINGTON No. 39602 EXP. DATE 12/31/89 CIVIL STATE OF CALIFORNIA

REV.	DESCRIPTION	BY	DATE
	ISSUED FOR CONSTRUCTION	MAH	4/20/87

SUMMIT ENGINEERING, INC.
Consulting Civil Engineers
1400 North Dutton Avenue #22
Santa Rosa, CA 95401
(707) 527-0775

ROBERT MONDAVI WINERY
OAKVILLE, CALIFORNIA

DOMESTIC WASTEWATER DISPOSAL SYSTEM

ELECTRICAL CONDUIT PLAN, DOSING TANK AND TRENCH DETAILS

SCALE: AS NOTED | DATE: 4/20/87 | DR. SEI | CHK. MAH | PROJECT NO. 8356 | **C4**

DIETERICH-POST REORDER NO. 11591

EXISTING 8" SCHED. 40 PVC (EMPTY) ⚠

⚠ EXISTING 18x24x8" PULL BOX

⚠ ADD 3"G #1/0G - 1½" RIGID ALUM CONDUIT

INTERCEPT EXISTING CIRCUIT (6"300MCM AL-4C) GOING TO REFRIG. SYSTEM 3B.

EXISTING SUMPS

MD-1 PG&E XFMR

PB-1

PP-11 (NEW)

3"500MCM-3C CIR #2

(5(3"500MCM-3C) CIR's 3,4,5,8&9
2(3"350MCM-3C) CIR #6
2(6"250MCM-3C) CIR's #7&10

WAREHOUSE

SEE DETAIL "A" THIS SHEET

SEE DWG E5

2-4" SCHED 40 PVC TELEPHONE CONDUITS

MCC-2

PG&E XFMR

N2

MCC-1

REFRIG SYSTEM #2

SEE DWG E5 FOR DETAILS IN THIS AREA

P/SB-2

P/SB-3

2-4" RIGID ALUM (TELEPHONE) (SEE DWG E5)

TELEPHONE TERMINAL BD (EXIST)

3"4/0 THW CU-2"C

SEE NOTE 1. BELOW ⚠

TO PP-1 THRU PB-1

PP-2

6"250MCM-3C CIR #1

LP-20

PP-7 (OLD-REMOVED BY OWNER)

REFRIG. SYSTEM 3B

REFERIG. SYSTEM 3A

PP-7 (PROVIDED & INSTILLED BY OWNER)

6"250MCM-3C CIR #11

EXIST 12" VERIFY IN FIELD W/ OWNER

EXIST PVC LINE

AS REQ'D

EXISTING STRUT PIPE RACK

STRUTMASTER FIG. 689A ALUM. SQ WASHER (TYP)

STRUTMASTER FIG. 73 CONT. THREADED ROD ½"Ø W/ FIG 83 ½" HEX NUT (TYP.)

STRUTMASTER "600A-2 TYPE 3 ALUM. CHANNEL W/1½" FIG. 550 ALUM. CLAMP W/ ALUM. BOLT (TYP)

½" RIGID ALUMINUM CONDUIT

SECTION "B-B" ⚠1
N.T.S.

NOTE ⚠1
PIPE RACK ADDITION REQ'D FULL LENGTH OF EXISTING PIPE RACK BETWEEN TANKS. 257/258 THRU 251/264

PP-8

PP-9

MCC-4

2-4" RIGID ALUM CONDUITS TO TELEPHONE TERM. BOARD (SEE DETAILS ON DWG. E5)

NORTH WALL OF WHSE

FOREMAN (OR EQUAL) #A-20RLGENCLO NEMA 3R PULL BOX 20X16X6" W/ HINGED & LOCKABLE COVER

PP-3

MCC-3

FIN. FLOOR IN WHSE

3'-0" MIN

48" (NOM)

9" RIGID ALUM CONDUIT ABOVE FIN. GRADE

FIN. GRADE OUTSIDE WHSE

MIN 24" COVER

MIN 30" RAD SCHED. 40 PVC

4" SCHED. 40 PVC

DETAIL "A"
SCALE 1½" = 1'-0"
(TELEPHONE CONDUIT ENTRY INTO WAREHOUSE)

(EXISTING MECHANICAL ROOM) ⚠

(EXISTING DOSING TANK. SEE DWG. C4 FOR POWER & CONTROL DETAILS) ⚠1

⚠ NOTE
1. OWNER WILL PROVIDE & INSTALL ONE (1) 40/3 CB IN EXISTING PANEL PP-2 FOR LEACH FIELD FEEDER. ELECTRICAL CONTRACTOR TO BRING NEW 1½"C INTO PP-2 AS DIRECTED BY OWNER, TERMINATE 3#6 ON LOAD SIDE OF OWNER PROVIDED 40/3 CB AND TERMINATE #8 GROUND IN A GROUNDING LUG WITHIN PANEL PP-2

PLAN VIEW
SCALE 1/16" = 1'-0"

N

AS BUILT BY
Knights Septic
Walt Knight
14/1/87

AS BUILT

IN MD-1 — 11 — 400/3 400CLF — 6"250MCMTHWCU-3"C (FEEDER BY BLACK CONSTR.) — LP-20 (EXISTING) — 1|2 3|4 5|6 7|8 9|10 11|12 13|14

IN MD-1 — 12 — 600/3 600CLF — 2(8"350MCMTHW CU-3"C) — PP-2 (EXISTING) — 3-4/0-2"C — 225/3 — 100/3 BY OWNER — SUMP PUMPS — 1|2 3|4 5|6 7|8 9|10 11|12 13|14

PANEL PP-7 (PROVIDED & INSTALLED BY OWNER)
400A, 480V, 3Ø, 3W, NEMA 3R FREE STANDING SQ "D" I-LINE ONLY TYPE MCW FOR FUTURE "FA", "KA" & "LA" C.B.'s MINIMUM 14-3 POLE SPACES

PANEL PP-11
600A 480V, 3Ø, 3W NEMA 3R FREE STANDING SQ "D" I-LINE ONLY TYPE MCW. FOR "JA" AND "LA" CB's ONLY MINIMUM 14-3 POLE SPACES. ½" WHITE ON RED LETTER WARNING RE "INSTALL ONLY "KA" FRAME OR LARGER CB's

REV	DESCRIPTION	BY	DATE
	ISSUED FOR CONSTRUCTION		4/20/87
⚠1	ADD FEEDER FROM P/SB-2 TO LEACH FIELD. REQ PIPE SUPPORT RACK PER SHT E-6 & NOTE "1"	CKA	4-14-87

ROBERT MONDAVI WINERY
OAKVILLE FACILITIES OAKVILLE, CA.

SCALE AS NOTED	APPROVED BY	DRAWN BY C.K.A.	
DATE 1-26-84		REVISED	

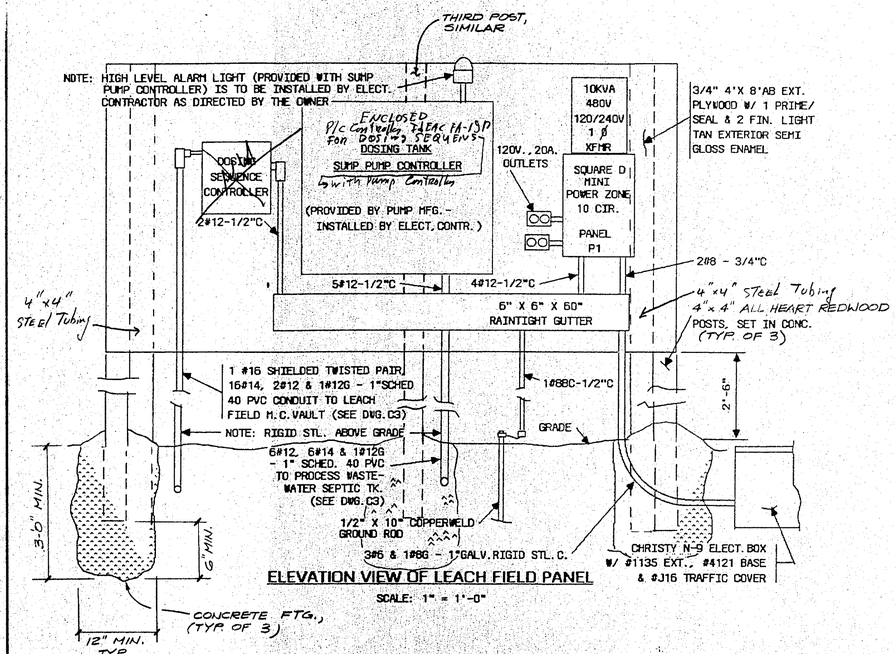
ELECTRICAL - 480 VOLT DISTRIBUTION

ONETO & ARTHUR ENGINEERING
922 N. CENTER ST., STOCKTON, CA.

DRAWING NUMBER E4

EXP. DATE 3/31/88

797



ELEVATION VIEW OF LEACH FIELD PANEL

SCALE: 1" = 1'-0"

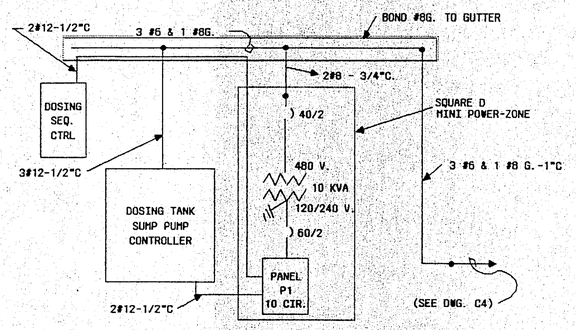
AS BUILT By
Knights Septic
Walt Knight
10/1/87

EQUIPMENT SPECIFICATIONS FOR LEACH FIELD PANEL:

6"X 6" GUTTER - HOFFMAN #A-6660RT 6" X 6" X 60" RAINTIGHT

LOAD CENTER PANEL P1 - SQUARE "D" "MINI POWER-ZONE" #MPZ10S40F, 10KVA 480V-120/240V, 1 PH, 3W WITH 40/2 PRIM. MAIN. 60/2 SEC. MAIN & 10 CIRCUIT LOAD CENTER-WEATHERPROOF

120V. OUTLETS - DUPLEX RECEPTACLE, WEATHERPROOF 20A., 125V., NEMA 5-20R HUBBELL #53CM62 CORROSION RESISTANT RECEPT. IN "FD" BOX WITH CROUSE-HINDS WLRD-1 WET LOCATION DUPLEX COVER. MOUNT "FD" BOX HORIZ.



ONE LINE DIAGRAM AT LEACH FIELD PANEL

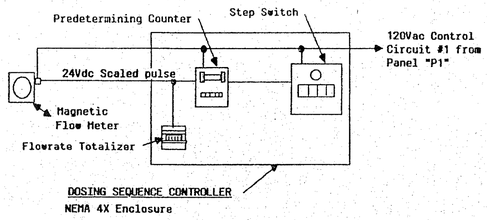
NOTE:
MECHANICAL TO PROVIDE DOSING TANK SUMP PUMP CONTROLLER W/COMBINATION STARTERS PROVIDING BOTH SHORT CIRCUIT AND 3 LEG RUNNING OVERLOAD PROTECTION, LEVEL CONTROL WITH HIGH LEVEL ALARM. HIGH LEVEL ALARM CONDITION IS TO OPERATE A ROTATING RED LIGHT THAT IS TO BE FIELD MOUNTED (BY ELECTRICAL CONTRACTOR) REMOTE FROM THE SUMP PUMP CONTROLLER. ALARM SILENCE IS TO BE LOCATED INSIDE CONTROLLER ENCLOSURE, ALSO WITH AUTOMATIC PUMP DUPLEXING AT 480V, 3 PHASE, 120V CONTROL FROM SEPARATE SOURCE AND DOOR INTERLOCK TO DISCONNECT BOTH 480 AND 120 VOLT POWER SOURCES WHEN DOOR IS OPENED (DEFEATABLE FOR MAINTENANCE PURPOSES). ENCLOSURE TO BE NEMA 4X SURFACE MOUNTED WITH LOCKABLE, QUICK-RELEASE SST LATCHES. ALL DEVICES AND OPERATORS WITH THE EXCEPTION OF OVERLOAD RESETS, TO BE LOCATED INSIDE THE ENCLOSURE. MAGNETIC STARTERS SHALL BE ALLEN BRADLEY, WESTINGHOUSE OR SQUARE D. LEVEL CONTROL SHALL UTILIZE FLYGT #ENH-10 FLOATS.

DOSING SEQ.CONTROL 100	15	1	2	60/2	MAIN	
SUMP PUMP CTRL. 100	15	3	4			
SPARE	20	5	6	20	1000	RECEPTACLE
SPARE	20	7	8	20	1000	RECEPTACLE
SPARE	20	9	10	15	SPARE	
SPARE	20	11	12	15	SPARE	

PANEL P1

120/240 VOLT, SINGLE PHASE

SQUARE D MINI POWER-ZONE



LEACH FIELD SEQUENCE CONTROLS

SPECIFICATIONS:

Magnetic Flow Meter* - Sparling FM622, MAGPAC II

~~Predetermining Counter - HECON #AU423-238-4 W/ auto-reset and output contact closure at predetermined count.~~

~~Step Switch - Eagle MTA Series Stepping Programmer #MTA-2-5-A6-5, 120Vac, w/ Tap Switch~~ *USED IDEAC FA-1 P/C FOR SEQUENCE

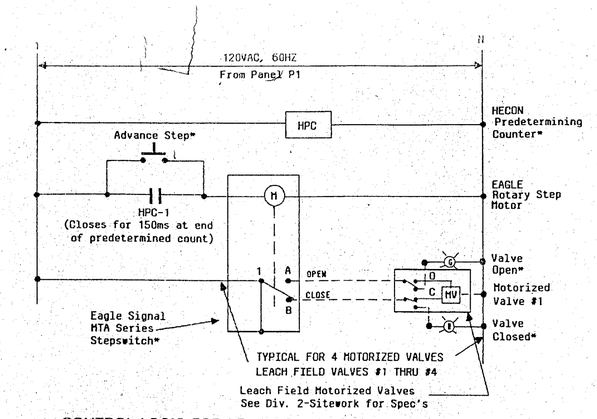
Flowrate Totalizer - Sparling #FQ792-420, 6 Digit Manual Reset, 24Vdc count coil, Panel Mounting

Enclosure - NEMA 4X W/Lockable Quick-Release SST Latches, to house Pre-Counter, Step Switch, Flow Totalizer, Advance Step P.B., and "Open"-"Closed" Pilot Lights → HOFFMAN PANEL (SS) 36X32X12 with POWER DISC UPON OPENING of DOORS

* Provided and installed by Mechanical Contractor, wired by Electrical Contractor

Electrical Contractor Note:

Eagle Stepswitch is to be set up so that each switch closure in the Predetermining Counter, advances the Stepswitch one step. At the end of Step 4 the Stepswitch is to start over at Step 1.



CONTROL LOGIC FOR LEACH FIELD M. C. VALVES

* Locate inside Dosing Sequence Controller Enclosure

X—Closed O—Open

System Operation	STEP	Load Switches on Stepswitch 1 A	1 B	2 A	2 B	3 A	3 B	4 A	4 B
Advance Step Pushbutton or Closure of HPC-1	1	X	O	O	X	O	X	O	X
Advance Step Pushbutton or Closure of HPC-1	2	O	X	X	O	O	X	O	X
Advance Step Pushbutton or Closure of HPC-1	3	O	X	O	X	X	O	O	X
Advance Step Pushbutton or Closure of HPC-1	4	O	X	O	X	O	X	X	O
	LOAD	VALVE #1-O	VALVE #1-C	VALVE #3-O	VALVE #3-C	VALVE #2-O	VALVE #2-C	VALVE #4-O	VALVE #4-C

NOTE:
1. Dosing Sequence is 1-3-2-4
2. At end of Step 4 (Valve #4-Closed) advance Step Switch to Step 1 using "Homing" feature of Eagle MTA Series Stepping Programmer

OPERATIONAL LOGIC

AS BUILT ELEC P/C Controller PANEL GENERAL LAYOUT

AS BUILT

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BUTTERCHURN POST REORDER NO. 10113

ONETO & ARTHUR ENGINEERING INC.
(209) 464-4775
922 N. CENTER ST., STOCKTON, CA. 95202
MAILING ADDRESS P.O. BOX 967, STOCKTON, CA. 95201

REGISTERED PROFESSIONAL ENGINEER — EXP. DATE 12/31/88 — STATE OF CALIFORNIA

REV	DESCRIPTION	BY	DATE
	ISSUED FOR CONSTRUCTION		4/20/87

SUMMIT ENGINEERING, INC.
Consulting Civil Engineers
1400 North Dutton Avenue #22
Santa Rosa, CA. 95401
(707) 527-0775

ROBERT MONDAVI WINERY
OAKVILLE, CALIFORNIA

DOMESTIC WASTEWATER DISPOSAL SYSTEM

ELECTRICAL DETAILS

SCALE	AS NOTED	DATE	4-14-87	DRAWING NUMBER
DR. CHK		CHK		PROJECT NO. 8356	E 11

ENCLOSURE I
2018 SEPTIC SYSTEM REPAIR

E18-00717 SD PMT

OFFICE SET

A Tradition of Stewardship
A Commitment to Service

Planning, Building & Environmental Services
1195 Third Street, 2nd Floor
Napa CA 94559
www.countyofnapa.org
Main: (707) 253-4417

David Morrison
Director

SEWAGE PERMIT

Application Type:	Environmental / EM Permits / Sewage System / Tank Only	**Applied Date:**	9/12/2018
Permit Number:	E18-00717	**Issued Date:**	9/12/2018
Parcel Number:	027-280-067-000	**Expiration Date:**	9/11/2020
Site Address:	7801 State Highway 29, Napa		
Owner:	ROBERT MONDAVI WINERY	**Phone:**	() -
Address:	C/O CBUSO INC, ATTN: FINANCIAL COMPLIANCE, 235 NORTH BLOOMFIELD RD		
Applicant:	Brandon Thomas	**Phone:**	() -
Business Name:	MC COLLUM GENERAL ENGINEERING		

Project Type: Environmental / EM Permits / Sewage System / Tank Only

	Bedrooms			Commerical UP#:	
	Existing	**Proposed**	**GPD**		**GPD**
Residence				**Sanitary Waste**	
Second Dwelling				**Process Waste**	
Guest House					
Total Residential:				**Total Commercial:**	

Water Supply:

Distance from closest water source to any part of sewage system:

Specifications:

Designer:		**Drainline:**	**Sump Type:**
Engineered Plan Date:		**Trench Depth (in):**	**A/V Alarm:**
Conventional Plan Date:		**Rock Under Pipe (in):**	**Remote Alarm:**
Septic Tank:	New 12000 gl fbrgls	**Chamber Manu:**	**Elec Self Cert:**
Sewer Line:		**Model Number:**	
Length (ft):		**DOC Backfill (in):**	
		DOC Fill (in):	

TO PERMITEE:

Any work performed or operations conducted under the auspices of this permit constitutes acceptance of all conditions, inspections and comments contained in the this permit, and the incorporation of all requirements as set forth in the permit application.

Staff Signature: Date: 9/12/18

FIFOO-813

CONDITIONS/INSPECTIONS/COMMENTS

Application Type:	Environmental / EM Permits / Sewage System / Tank Only	**Applied Date:**	9/12/2018
Permit Number:	E18-00717	**Issued Date:**	9/12/2018
Parcel Number:	027-280-067-000	**Expiration Date:**	9/11/2020
Owner:	ROBERT MONDAVI WINERY	**Phone:**	() -
Applicant:	Brandon Thomas	**Phone:**	() -

Conditions:

Code	Condition
STRM-02	The owner shall comply with the Napa Countywide Stormwater Pollution Prevention Program, "Erosion and Sediment Control Measures for Construction Projects". Failure to comply with best management practices for erosion and sediment control will result in issuance of a stop-work order.
SD-03	An as-built/record drawing must be submitted prior to final.
SD-05	Destroy existing septic tank per county requirements.

WEED OK NSB

Inspections: **Inspected By:** **Date:**

Inspection Type	
Septic Tank Installation	XERXES Insp B (PA) 2,000G + 2,000 g PUMP chamber; connection to (E) line between tanks 11-15-18
Tank Destruction	

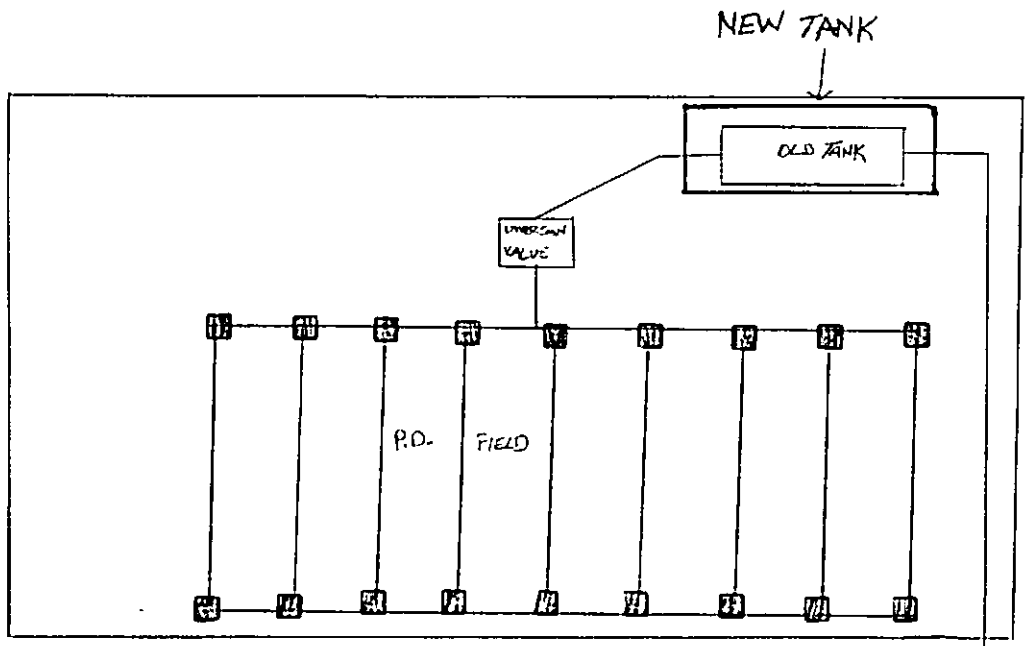
2 Pumps (to be added to 2,000G tank) - OK 4/21/18

Comments:

Date	Comment
9/12/2018	Call 253-4135 at least 24 hours in advance during normal business hours to schedule inspection requests. Inspections are taken on a first-come-first-served basis so if you need a specific date and time be sure to call well in advance Environmental Management's inspection must be obtained prior to covering any portion of the system. If a claim is to be submitted for a refund, per County Code, a 25% processing fee will be retained. Such claims must be made within one year of the date on the receipt.

CP / Alarm - NSB 5-3-19

D-box - NOT Replaced.



MONDAVI WINERY

7801 HIGHWAY 29

027 280 067

9-11-18

Planning, Building & Environmental Services

1195 Third Street, Suite 210
Napa, CA 94559
www.countyofnapa.org

David Morrison
Director

SEWAGE PERMIT APPLICATION

A Tradition of Stewardship
A Commitment to Service

Date: _____ Plan Check # _____ Install Permit # E18-00717

PROPERTY OWNER INFORMATION:

Name: ROBERT MONDAVI

Mailing Address: 7801 HIGHWAY 29

OAKVILLE CA 94562

Site Address: "SAME"

APN: 027-280-067

Phone #: 255-4555

SEWAGE CONTRACTOR INFORMATION:

Company Name: McCOLLUM

Contractor License Number: 547731

Contact Person: BENSON

Address: P.O. BOX 2223 YOUNTVILLE CA 94599

E-Mail: MGECONSTRUCTION@YAHOO.COM

Phone #: 252-6220

TYPE OF SYSTEM (circle one): ASTS (Conventional)

Proposed Use (circle one): Residential (Commercial)

Type Of Permit (circle one):

New Construction Addition (Repair)

(Tank Install) Tank Destruct Sewer Line, Circle one: Gravity Pump

DESIGN FLOW: _____ Gallons/Day # of Bedrooms/Potential Bedrooms: _____ (If applicable)

Bedroom Count Verified by (circle one): Building Plans Physical Inspection Other: _____

SITE EVALUATION TEST DATA: Please attach. (If applicable)

SEWER LINE (circle one): (Existing) New

Size: _____ Inches Total Length: _____ Feet Material: _____

SEPTIC TANK (circle one): Existing (New) Size: 12,000 Gallons

Material (circle one): Concrete (Fiberglass) Polyethylene Other: _____

Manufacturer: XERES

SUMP TANK (circle one): Yes (No)

If yes (circle one): Existing New Size: _____ Gallons

Material (circle one): Concrete Fiberglass Polyethylene Other: _____

Manufacturer: _____

TYPE OF DISPOSAL FIELD (circle one): Gravel/Pipe Chamber Other: _____

Trench Depth: _____ Inches Trench Width: _____ Inches # of Leach lines: _____

Length of each Leach line: _____ Feet Total Length of Leach lines: _____ Feet

Fill (circle one): Yes No If yes, depth of fill: _____ Inches

DISTRIBUTION BOX (circle one): Yes No

If yes (circle one): Existing New

A SCALED MAP OF THE PROPOSED SEWAGE DISPOSAL SYSTEM SHALL BE ATTACHED TO THIS APPLICATION. THE MAP WILL INCLUDE THE DISTANCE FROM THE WELL.

APPLICATION
THIS IS NOT A PERMIT

Worker's Compensation Coverage (please check one):

( ) A Certificate of current Worker's Compensation Insurance Coverage is on file with the State of California, Department of Consumer Affairs, Contractors State License Board.

OR

( ) I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the Worker's Compensation laws of California.

By executing this application, the undersigned agrees to comply with all conditions, inspections and comments of the issued permit and all federal, state and county code requirements applicable to this permit. Furthermore, I understand that the Department of Environmental Health in no way guarantees trouble-free operation of the well and that future repair or the drilling of a new well may be necessary.

Please sign below:

Signature: _____ Date: 9-12-18

Please print your name: BRANDON THOMAS

To be destroyed (E) old D Box

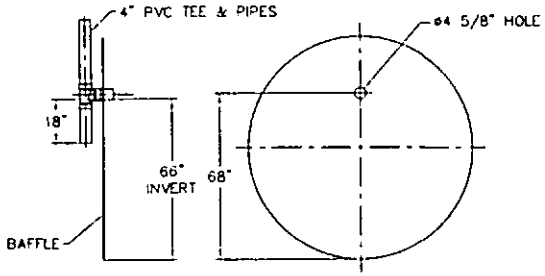
Orenco T2000
T 12,000

12000 → 12000 2 Pumps.

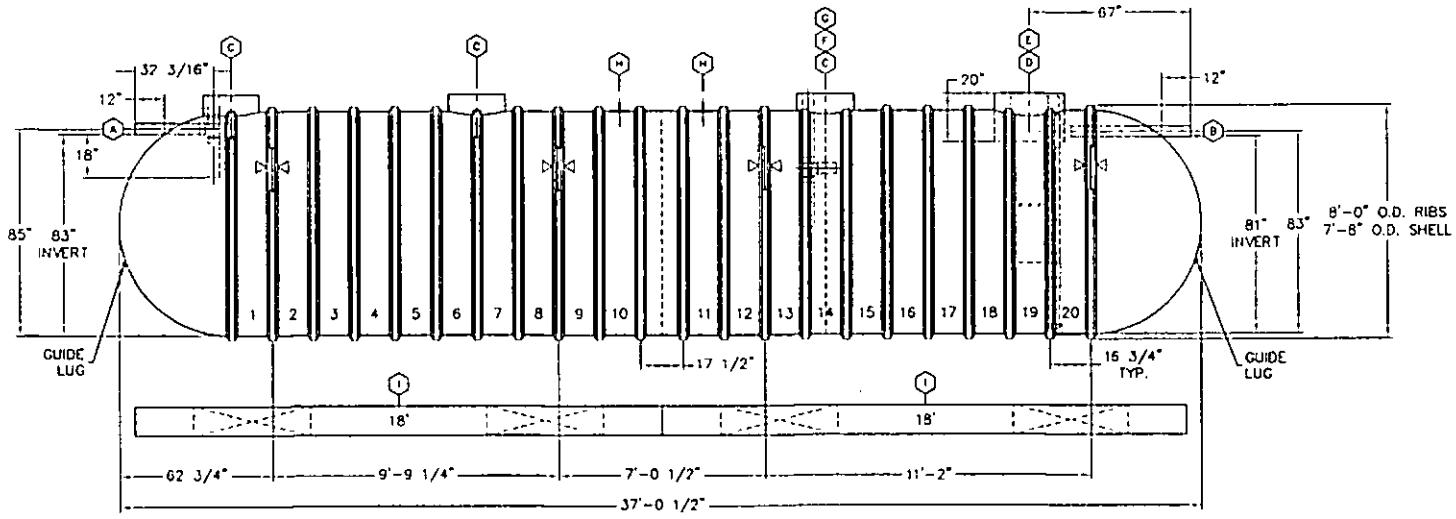
— Pump
— Alarm
— D-box

NOTE:

1. INVERT DIMENSION FROM TANK I.D.
2. NOMINAL TANK WEIGHT : 5,100 lbs



CROSS-OVER 'G' & BAFFLE 'F' DETAIL



ITEM	QTY	DESCRIPTION
A	1	4"DIA SCH 40 PVC INLET PIPE WITH INTERNAL SANITARY TEE & PIPES
B	1	4"DIA SCH 40 PVC OUTLET PIPE
C	3	RISER PIPE, 23 3/8" O.D., FOR 24"(NOMINAL) ACCESS OPENING
D	1	RISER PIPE, 29 3/8" O.D., FOR 30"(NOMINAL) EXTENDED ACCESS OPENING
E	1	SLIDE RAIL FILTER INSTALLATION (SUPPLIED BY OTHERS, INSTALLED BY XERXES)

F	1	FULL PLATE BAFFLE (66" INVERT) WITH 1-4 5/8" DIA HOLE
G	1	4" DIA SCH 40 PVC CROSS-OVER PIPE WITH SANITARY TEE & PIPES
H	2	LIFTING LUG (10"x8")
I	4	18' PREFABRICATED CONCRETE DEADMEN
▷◁	4	HOLD DOWN STRAP LOCATION

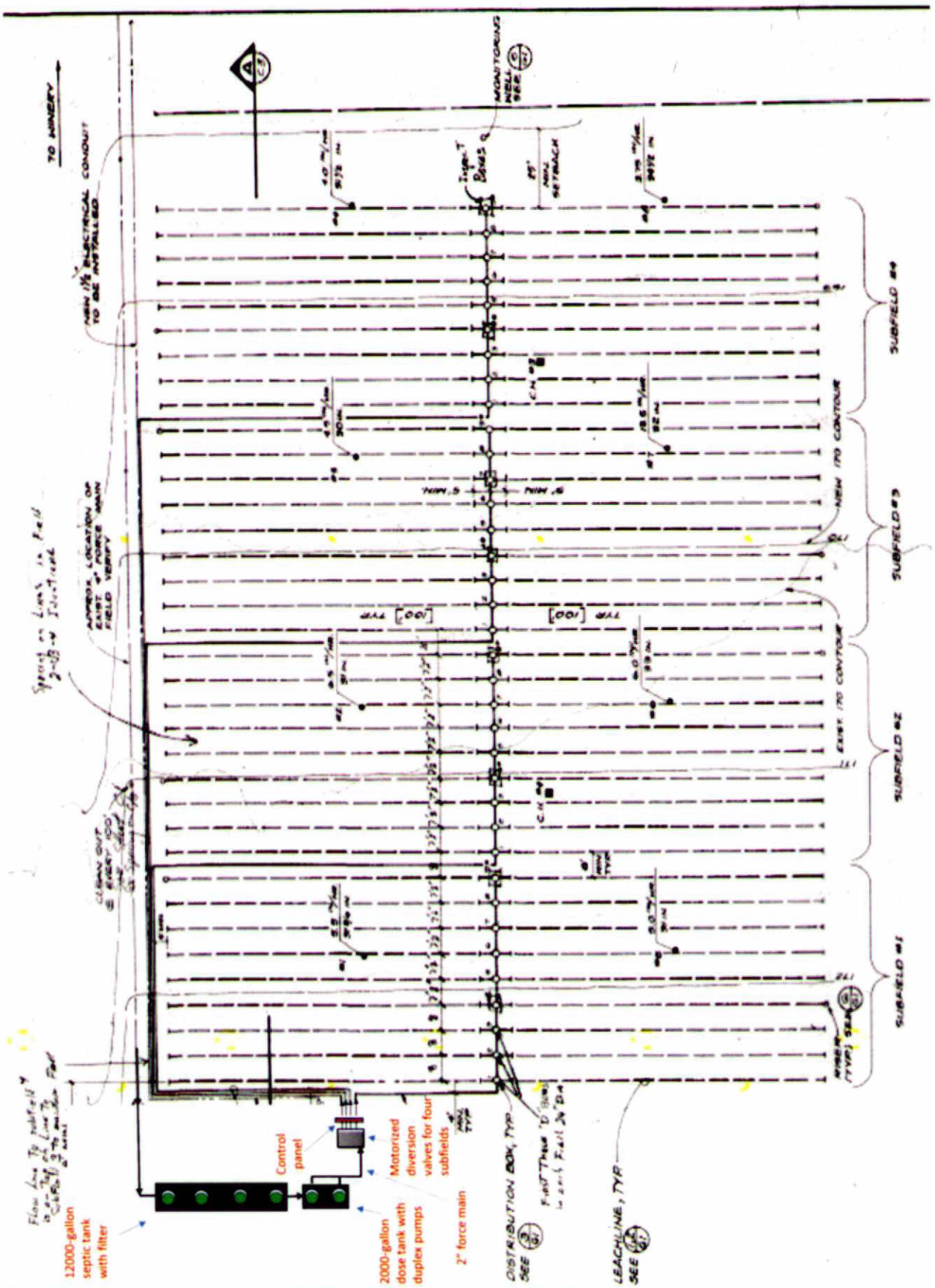
CUSTOMER DESIGNATION:

DWW SEPTIC TANK

XERXES® a zcl company

8' DIA S/B
CAP. 12,000 GALLONS
MONDAVI WINERY

D 658-863 01



As Built septic tank & dose tank replacement
May 3, 2019

Property:
Robert Mondavi Winery
7801 State Hwy 29
Napa, CA

Permit #'s
E18-00717
B18-02485

APN 027-280-067

Contractor:
McCollum
P.O. Box 2223
Yountville, CA

ENCLOSURE J

CORRESPONDENCE WITH NAPA COUNTY ON DESIGN OF EXISTING SS SYSTEM

NAPA COUNTY

DEPARTMENT OF
ENVIRONMENTAL HEALTH

TRENT CAVE, R.S.
Director of Environmental Health

1195 THIRD STREET, ROOM 205 • NAPA, CALIFORNIA 94559
AREA CODE 707/253-4471

June 10, 1986

Summit Engineering, Inc.
1400 North Dutton Ave #22
Santa Rosa, CA 94501
ATTN: Mary Hetherington, P.E.

Subject: Robert Mondavi Winery Special Design Disposal System

Dear Mary:

We have reviewed your most recent proposal of May 21, 1986, and have the following comments:

1. If the personnel that were proposed to be added to the Oakville Winery are not going to be added, where are they going to be located?

2. On page 2 paragraph 3 you describe that "...there will be 6 inches plus or minus of topsoil cover over the building paper." I call your attention to Title V, Article 3 of the Napa County Sewage Ordinance Section 5592, "...Minimum depth of earth cover over lines...12 inches." Therefore it will be necessary for the cover over the building paper to be 12 inches of topsoil.

3. Of the three alternatives that are proposed, our preference is for number two - pumping to one subfield each pump cycle; gravity distribution by D-boxes within the subfield. Our reasons are as follows:

   A. In regards to number one, "The Flow Splitter Box", this causes the same parts of the system to be saturated for long periods of time, where as alternating fields allows for some rest and recovery. Since this concept does not alternate the fields it is not desirable.

   B. In number 3, "Pressure Distribution", the system appears to be too complex and not lending itself to easy repair should something malfunction.

C. As for number 2, we feel that this offers the better option but even with this we have a couple of major concerns:

1. The system relies heavily on the stability of the D-boxes in order for distribution to occur to all of the leach lines. Should the first D-box shift (tilt) to one side, it would result in an immediate surfacing of effluent, due to overloading of a single trench. Since D-boxes are also used in number 1 this would obviously be a problem with that alternative as well. The stability of these D-boxes must be addressed.

2. The question naturally arises as to how often should the solenoid alternate the flows between the subfields. If it swiches after every pump cycle, it would not be maximizing this method of design disposal of the effluent since you would be using the same area of each subfield each cycle. This should be worked out so that the quality of flow dispensed to each subfield is enough to use a larger portion of the subfield before switching to another subfield.

If you have any questions please feel free to contact me Monday through Thursday 7:30 a.m. to 8:30 a.m.

Very Truly Yours,

Tim Snelling
Sanitarian I

TS:sb

cc: Paul Smith at Mondavi Winery

SUMMIT ENGINEERING, INC.
Consulting Civil Engineers

WILLIAM J. PHILLIPS II
President
Reg. Engr. C24978

CHET ADAMICK
Vice President
Reg. Engr. C22857

1400 North Dutton Avenue #22 Santa Rosa, California 95401 (707) 527-0775

May 21, 1986

RECEIVED
MAY 27 1986
DIVISION OF
ENVIRONMENTAL HEALTH

Napa Co. Department of
Environmental Health
1195 Third Street, Room 205
Napa, CA 94559

ATTN: Mr. Ralph Hunter

RE: Robert Mondavi Winery
Oakville, CA
Project No. 8356.81

Dear Ralph:

Because this project has undergone several transitions, we felt that it was appropriate to clarify the existing status and the intended concept for the domestic wastewater disposal system.

Quantity of Domestic Wastewater

where are employees going to be ?

It is no longer intended that all personnel will be situated at the Winery in Oakville; therefore, the amount of wastewater to be disposed is smaller than first proposed. Attachment A is a summary of the expected monthly flows. Whereas the range of expected flows had been between 8,000 gpd (in January) and ~~9,875~~ (in July) the range of expected flows is now between 6,750 gpd and 8,625 gpd in the same respective months.

peak summer water usage (

Existing Leachfields

Cause ?

The problem with the existing leachfields in front of the winery seems to arise from the high groundwater during the winter. During the summer, even with the higher flows, the ground has been observed to be completely dry.

Conceptual Design

It is proposed that the existing leachfields in front of the winery continue to be used through the summer period and that a new leachfield will be installed behind the winery to be used for the winter flows. The winter period would be designated as including the months of October through April; it would become a routine part of Robert Mondavi Winery's Daily Operation and Maintenance Log that on October 1 of every year the set of pumps to the back leachfield would be activated and the other set deactivated, and vice versa on May 1. By having separate summer and winter leachfields, each field will have a six month rejuvenation period.

The back leachfield would be designed for 7,925 gpd, which is the average daily flow during the peak winter month. Percolation tests performed by Mr. Jim Page in December, 1985, indicate that the northerly portion of the percolation area had perc rates of between 4 in./hr. and 6 in./hr. The corresponding allowable dosing rate would be 0.4 gpd/SF.

Mr. Tim Snelling, from your office, has set the observed water table at 60", thus requiring the use of shallow 24" trenches. This size of trench will allow 3 SF/LF sidewall dosing area and there will be 6" + of topsoil cover over the building paper layer.

NEEDS TO BE

The required length of leachline in this area is thus calculated to be 6,600 LF. It is further proposed that this quantity of leachfield would be subdivided into three subfields. On the County's recommendation, the leachlines will be placed 8' o.c. even though the County's ordinance allows 6' o.c. spacing.

The septic tank and dosing tank will remain in front of the winery, and the transfer/dosing pumps will be located in the dosing tank adjacent to the pumps feeding the existing leachfield. These duplex pumps will alternate and they will be sized to meet the necessary dose quantity, storage capability and time requirements.

Three alternatives for the rear leachfield include:

(1) Pump to a flow splitter box; pipe inverts to each subfield to be set at the same elevation; gravity distribution by D-boxes.

(2) Pump to one subfield each pump cycle; gravity distribution by D-boxes within subfield.

(3) Pump to one subfield each pump cycle; pressure distribution using 1-1/2" PVC pipe.

Alternatives 2 and 3 will require electrical power at the leachfield to activate a solenoid valve and to receive the pump activation signal. Schematic diagrams of these alternatives are in Attachment B.

The economics of the three alternatives will determine which option is designed. We would request your input at this time so that we can incorporate any suggestions and/or requirements into the decision making process.

Please call if you have any questions or comments.

Sincerely,

Mary A. Hetherington

Mary A. Hetherington, P.E.

jl
cc: Mr. Paul Smith
Mr. Ken Arthur

ATTACHMENT A

Updated

Estimated Flow Rates

5/20/86

1. Personnel Data

	Number of People	Flowrate (GPCD)	GPD
CRUSH (mid-August through October)			
Weekdays			
Administration	80	20	
Production	160	20	5050
Vineyard Room	10	25	
Saturdays			
Administration	25	20	
Production	150	20	4125
Vineyard Room	10	25	
Banquets (5 per year) (Sept.--2, Oct.--3)	15	25	
Sunday			
Administration	25	20	
Production	20	20	1150
Vineyard Room	10	25	
NON-CRUSH (October through mid-August)			
Weekdays			
Administration	85	25	
Production	140	25	5875
Vineyard Room	10	25	
Saturdays			
Administration	20	25	
Vineyard Room	10	25	1250
Concerts (7 per year) (June--2, July--3, Aug.--1)	20	25	
Sunday			
Administration	20	25	750
Vineyard Room	10	25	

2. Visitor Data

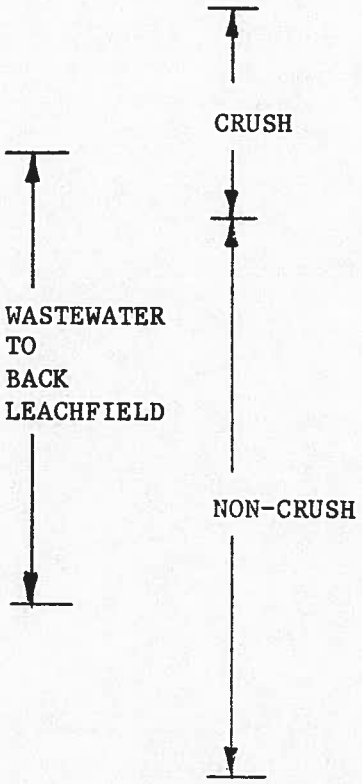
Month	Weekday Visitors	GPD @ 2.5 gpcd	Weekend Visitors	GPD @ 2.0 gpcd
Aug	1200	3000	1900	3800
Sept	950	2375	2000	4000
Oct	900	2250	2000	4000
Nov	700	1750	1700	3400
Dec	700	1750	550	1100
Jan	350	875	900	1800
Feb	500	1250	1600	3200
Mar	800	2000	1400	2800
Apr	800	2000	1550	3100
May	850	2125	1750	3500
June	1000	2500	1550	3100
July	1100	2750	1850	3700

WATER USAGE IS VERY HIGH!!

3. Water Usage

Month	Weekday	Weekend
Aug	8050	7925
Sept	7325	8125
Oct	7300	8125
Nov	7625	4650
Dec	7625	2350
Jan	6750	3050
Feb	7125	4550
Mar	7925	4050
Apr	7925	4350
May	8000	4750
June	8375	4350
July	8625	4950

MAX DESIGN FLOW USED.



ATTACHMENT C

USGS MAP SHOWING LOCATIONS OF
WELLS AND ALSO EXISTING AND PROPOSED
DISPOSAL AREAS

SUMMIT ENGINEERING, INC.
Consulting Civil Engineers

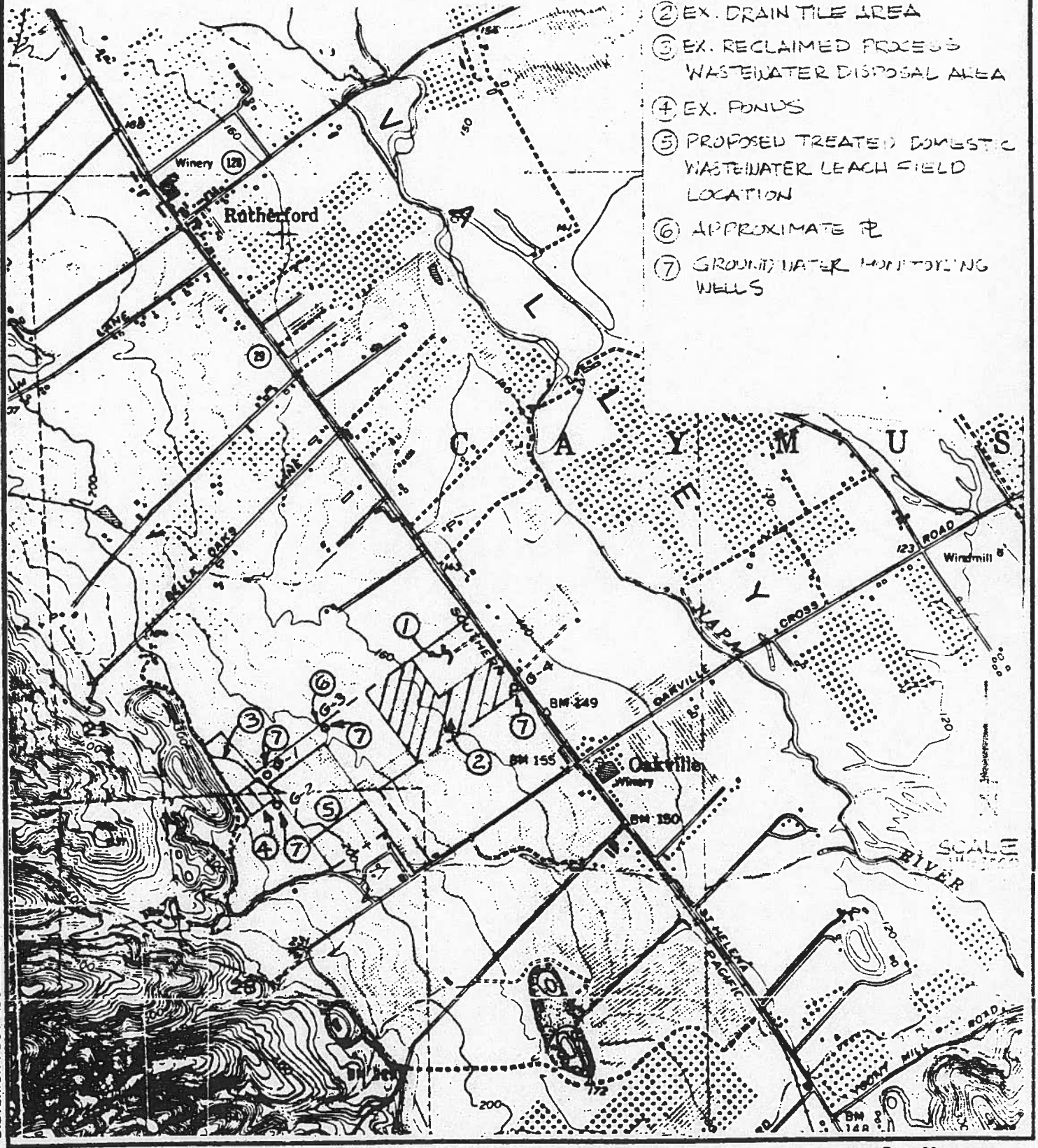
ROBERT MONDAVI WINERY
Oakville, CA.
LOCATION MAP

PROJECT NO 8356
DATE
BY CHK
SHEET NO OF

U.S.G.S. 7.5 MIN. QUAD.
RUTHERFORD, CA.

KEY

1. WINERY BUILDING
2. EX. DRAIN TILE AREA
3. EX. RECLAIMED PROCESS WASTEWATER DISPOSAL AREA
4. EX. PONDS
5. PROPOSED TREATED DOMESTIC WASTEWATER LEACH FIELD LOCATION
6. APPROXIMATE ℄
7. GROUNDWATER MONITORING WELLS



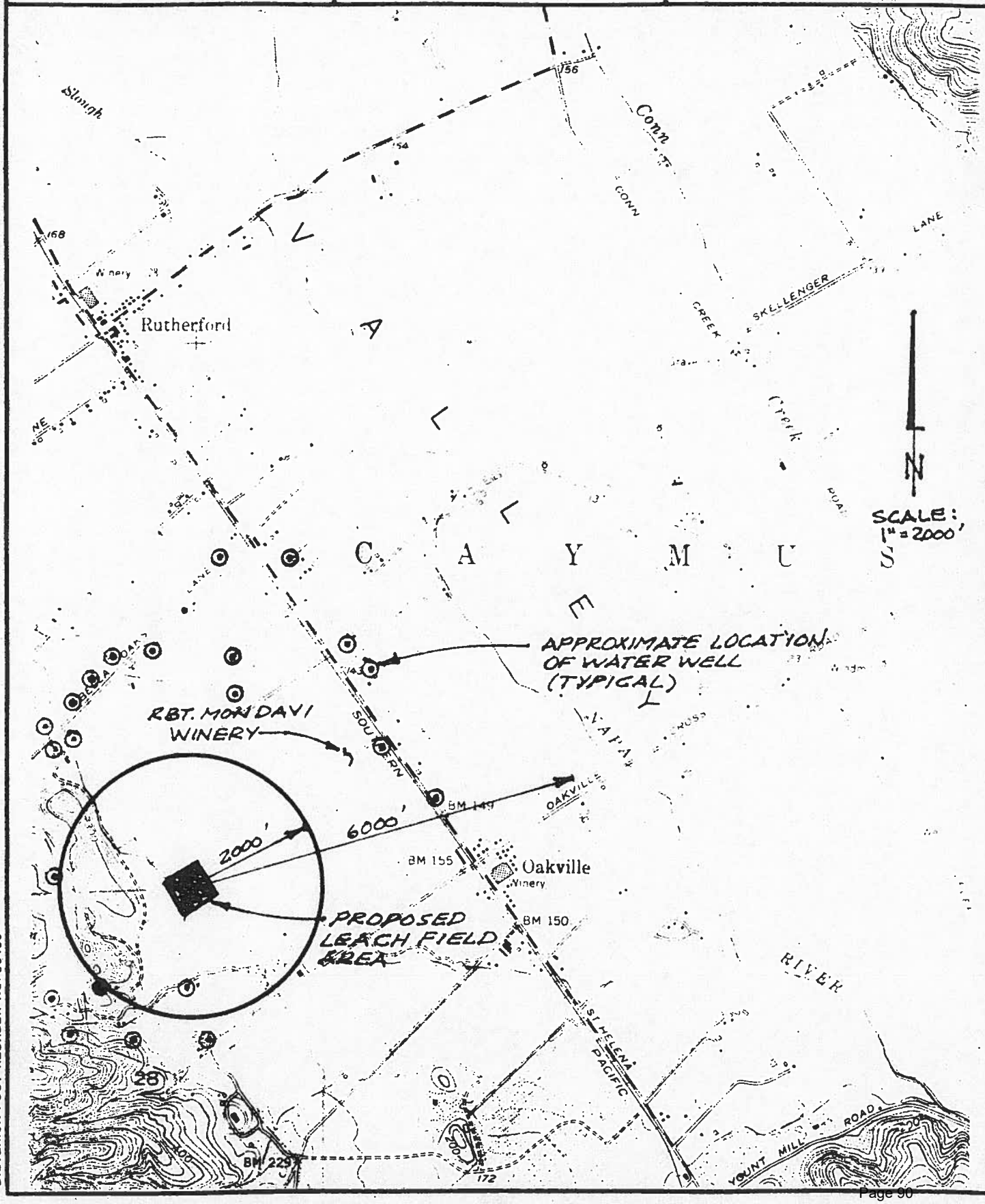
DIETERICH-POST REORDER NO. 60713

1400 North Dutton Avenue #22 Santa Rosa, California 95401 (707) 527-0775

SUMMIT ENGINEERING, INC.
Consulting Civil Engineers

ROBERT MONDAVI WINER
Oakville, CA.
WATER WELLS
LOCATION MAP

PROJECT NO. 8356
DATE
BY CHK
SHEET NO. OF



DIETERICH-POST REORDER NO. 86499

1400 North Dutton Avenue #22 Santa Rosa, California 95401 (707) 527-0775

Project No. 8356
May 7, 1985

ATTACHMENT D

LETTER FROM JAMES E. PAGE
REGARDING PERCOLATION RATES
APRIL 12, 1985

JAMES E. PAGE
Environmental Health Consultant
REGISTERED SANITARIAN NO 551
1980 DRY CREEK RD
NAPA CA 94558

APR 1 5 1985

April 12, 1985

Mr. Bill Phillips
Summit Engineering Inc.
1400 N. Dutton Ave, Suite 22
Santa Rosa, California 95401

Re: Robert Mondavi winery
7801 St. Helena Highway
Oakville, Ca.
A.P. No. 27-280-09

Dear Bill:

Enclosed you will find a plan layout of the location of the percolation test and core holes, together with logs of the soil profiles, on the subject property.

The core hole observations were made on April 8 th. and the percolation tests were performed by Pat, Crain of Crain Construction, on April 11 th. Tim of Environmental Health, observed the last two hours of the test, and observed the core holes.

The results of the percolation tests were as follows:

Hole #	Depth	Stabalized Rate	Comments
1	36"	5.5 in/ hr	Encountered some gravel in bottom of hole
2	36"	> 12 in/hr	encountered gravel
3	36"	½ in/hr	Did not encounter gravelly soil
4	36"	> 12 in/hr	encountered gravel
5	36"	13½ in/hr	encountered gravel
6	36"	0 in/hr	Did not encounter gravelly soil

In reviewing the logs it appears that the seasonal high water table is somewhere between 48 and 60 inches. Tim set the water table for Environmental Health files at 54".

The soil compares with the Bale Series, Bal , as described in the Soil Survey of Napa County, soil survey indicates the permeability between [illegible] to be in the range of 0.6 to 2.0 inches per hour.

In performing the percolation test six inch diameter holes were used, and read at one half hour intervals. Holes no. 2,4, and 5, were dry at the end of each half hour period with the exception that hole No. 5 had a little water in the bottom at the last reading. This rate may cause some concern to Environmental Health, (see enclosed administrative order). You may be able to counter this objection with the following.

Assume a rate of 13½ inches per hour. and using the adjustment factor of 1.8 for a six inch diameter hole, as suggested by The Regional Water Quality Control Board, found in "Guidelines for The Control of Individual Wastewater Treatment and Disposal Systems", The rate would be adjusted to 8 min/in or 7.5 inches per hour. This would establish a maximum loading rate of 0.70 gal/ ft^2/day, of effective infiltrative surface,(W.Q.C.B. sidewalls to invert of lateral pipe, plus trench bottom).

Lateral trenches should be deep enough so that all of the infiltrative area is in the sandy gravelly loam soil. This would place the trench bottoms closer than 3 ft. to the seasonal water table, this may be acceptable if the wastewater recieves complete treatment and disinfection.

In regards to the Mondavi-Rothschild system, I reviewed the percolation test and discussed same with Pat Crain. As you advised me the County recommendation was for 24 inch deep trenches with 6 inches of fill over the system, due to their determination that a seasonal water table existed at 60 inches, This would not be practical in light of the fact that the leach lines would be located in a vineyard.

I was advised that the core hole was dug to a depth of 80 inches and no free water was observed, but mottling was noted below 60 inches. The observations were made on December 21, 1984, which followed a period of fairly heavy rainfall in November and the first part of December. If a seasonal water table were to exist I would expect that free water would have been found at that time. The absence of such water could be explained by the fact that a subsurface field drain system has been installed within the past two years which has effectively lowered the water table. I mentioned this to Nat Passaglia, who observed the test along with Tim, and he felt that this may be a consideration in going deeper with the lateral trenches.

I am enclosing a plan of the subsurface drainage system which I received from Paul Smith. The inverts of the lateral lines below grade, were received by Paul from the project engineer, by telephone.

Paul advised me that the vineyard will be planted soon, and that the vine rows will be 8 ft. apart with vines planted 6 ft. apart. Since that type of planting will practically preclude equipment from working between the rows, the leach lines should be installed before the vineyard is planted.

If you have any questions in regards to any of the foregoing discussion please call me.

Sincerely,

James E. Page

cc. Paul Smith

SUMMIT ENGINEERING, INC.
Consulting Civil Engineers

ROBERT MONDAVI WINERY

PROJECT NO. 8356.81
DATE 5/23/86
BY MW CHK MAH
SHEET NO. ____ OF ____

ALTERNATIVE 2

TO WINERY

VINEYARD ALLEY

2200 L.F.

2200 L.F.

2200 L.F.

3.75 IN/HR

13.5 IN/HR

6 IN/HR

5 IN/HR

PERC HOLE (TYP)

D-BOX (TYP)

3" LEACHLINE (TYP)

25' MIN.

100'

VINEYARD DRAIN TILE

TO PONDS

1"=30'

OLD VINEYARD ALLEY

CORE HOLE (TYP)

4 IN/HR

4.5 IN/HR

6.5 IN/HR

5.5 IN/HR

SUBFIELD (TYP)

FORCE MAIN

SOLENOID VALVE (TYP)

PROPERTY LINE

DIETERICH-POST REORDER NO. 87583

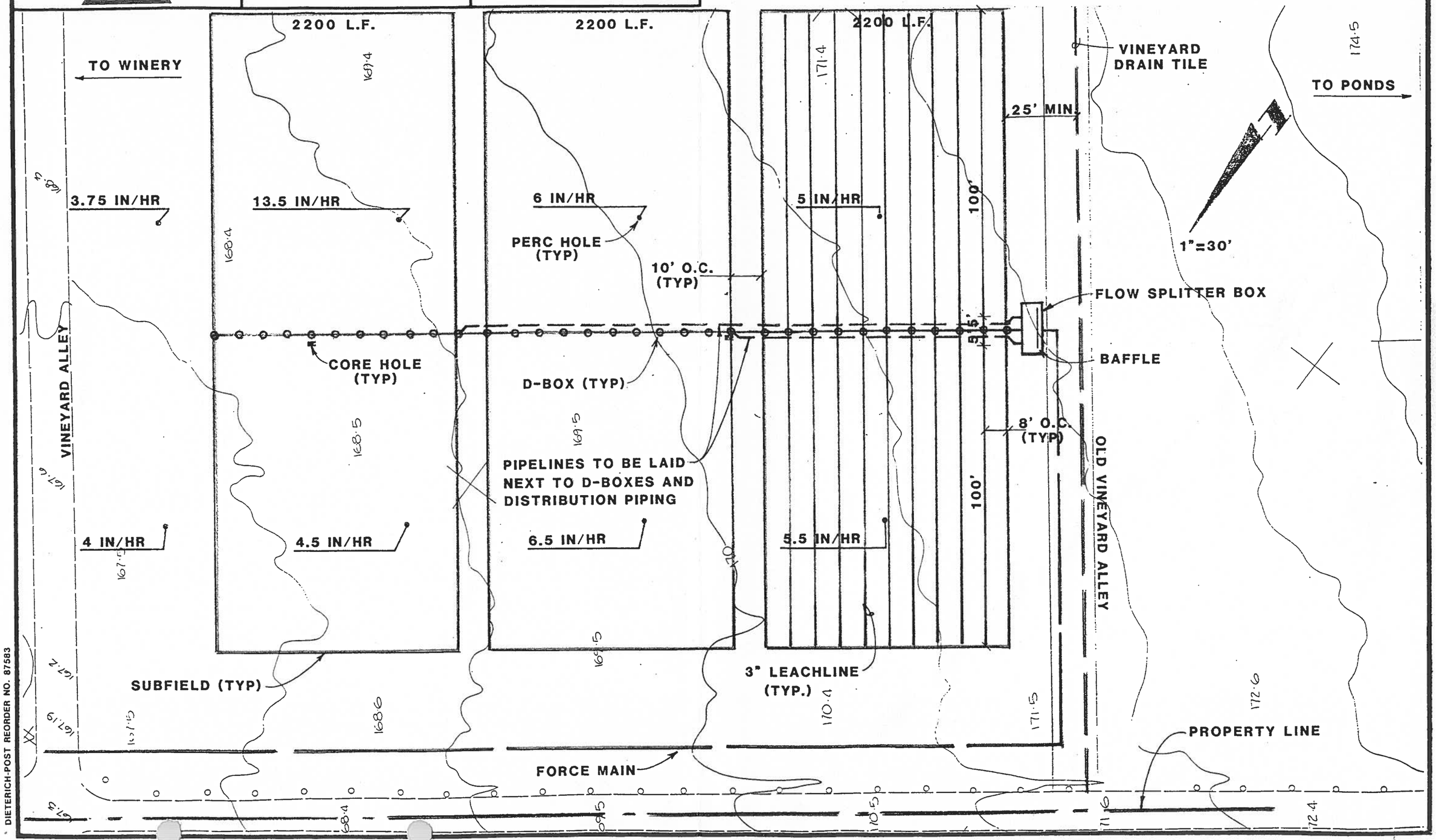
1400 North Dutton Avenue #22 Santa Rosa, California 95401 (707) 527-0775

SUMMIT ENGINEERING, INC.
Consulting Civil Engineers

ROBERT MONDAVI WINERY

PROJECT NO. 8356.81
DATE 5/23/86
BY MW CHK MAH
SHEET NO. ____ OF ____

ALTERNATIVE 1



1400 North Dutton Avenue #22 Santa Rosa, California 95401 (707) 527-0775

DIETERICH-POST REORDER NO. 87583

SUMMIT ENGINEERING, INC.
Consulting Civil Engineers

ROBERT MONDAVI WINERY

PROJECT NO. 8356.81
DATE 5/23/86
BY MW CHK MAH
SHEET NO. ____ OF ____

ALTERNATIVE 3

TO WINERY

VINEYARD ALLEY

3.75 IN/HR

13.5 IN/HR

2200 L.F. (TYP)

1-1/2" LEACHLINE (TYP)

6 IN/HR

PERC HOLE (TYP)

5 IN/HR

100'

25' MIN.

VINEYARD DRAIN TILE

TO PONDS

OLD VINEYARD ALLEY

1"= 30'

CORE HOLE (TYP)

4 IN/HR

4.5 IN/HR

6.5 IN/HR

5.5 IN/HR

SUBFIELD

FORCE MAIN

SOLENOID VALVE (TYP)

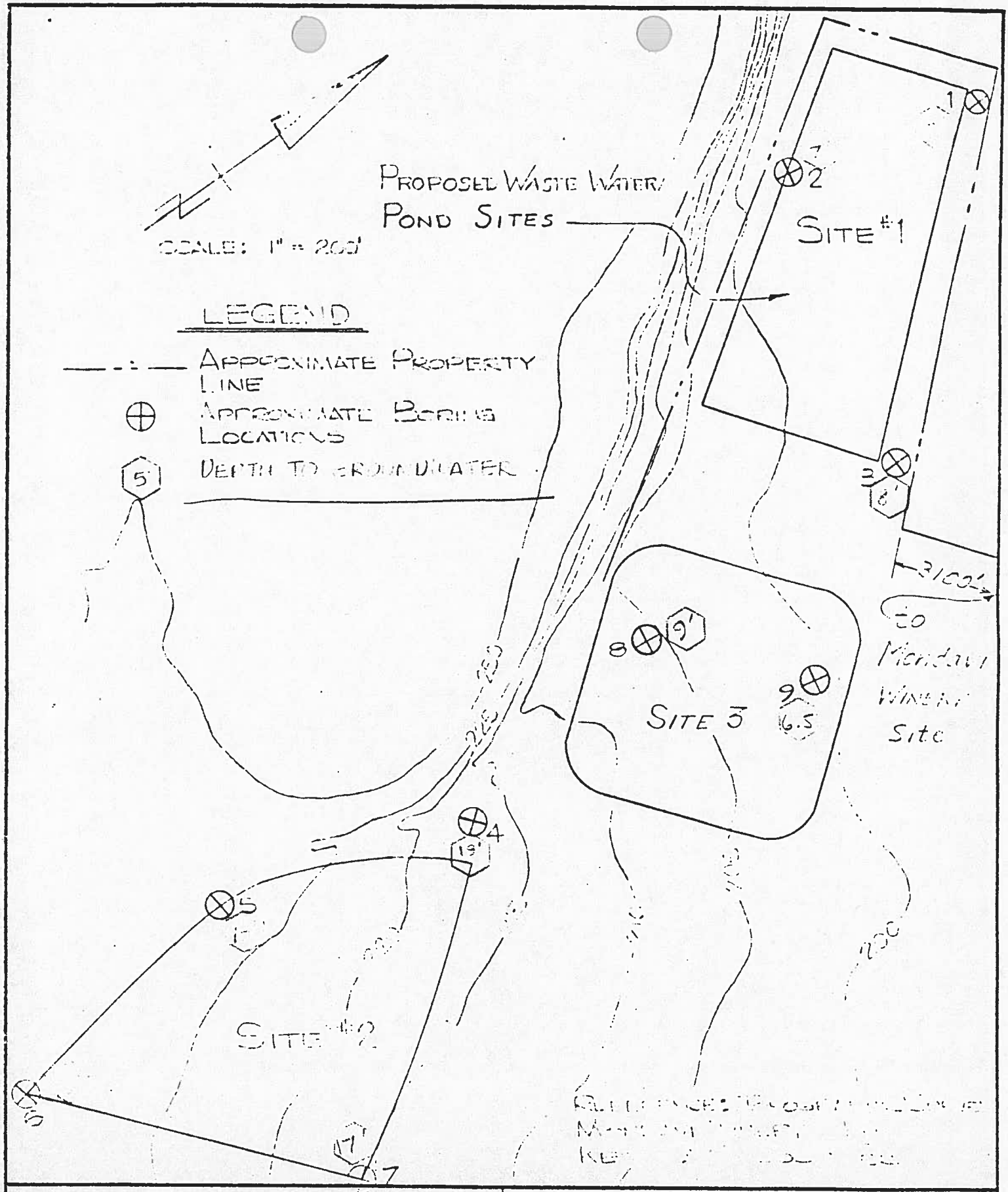
DIETERICH-POST REORDER NO. 87583

1400 North Dutton Avenue #22 Santa Rosa, California 95401 (707) 527-0775

Project No. 8356
May 7, 1985

ATTACHMENT E

PREVIOUS SOIL BORING DATA FROM
HARDING LAWSON ASSOCIATES



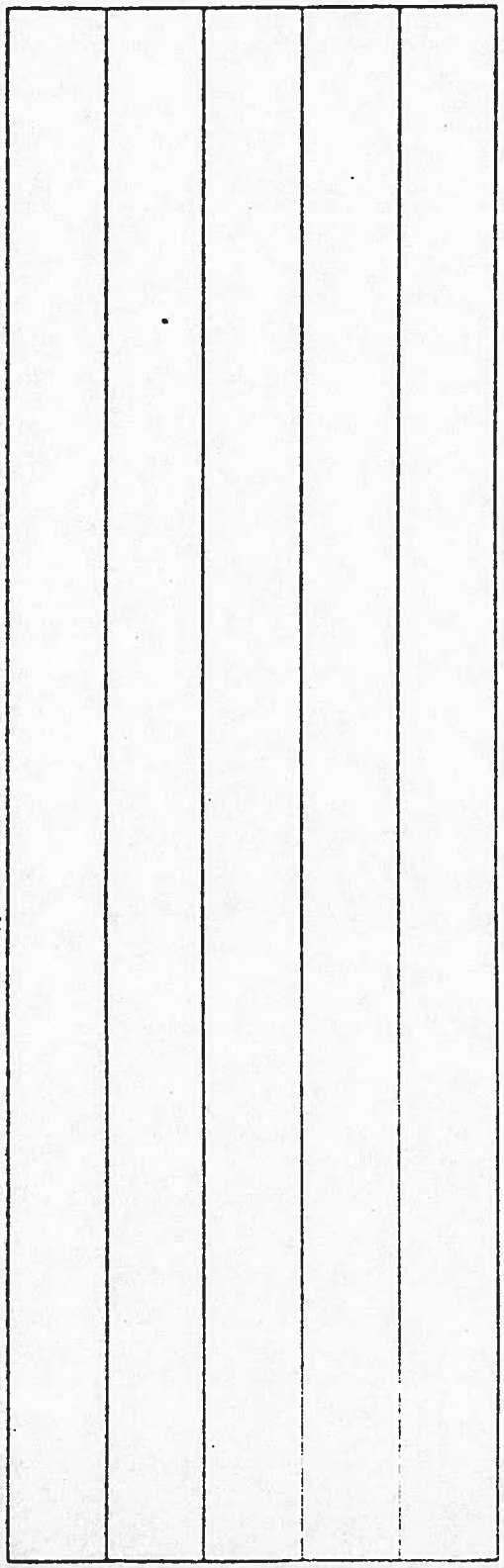
HARDING-LAWSON ASSOCIATES *Consulting Engineers and Geologists*	PLOT PLAN LOCATION PLAN WASTE WATER PONDS MONTHLY WASTE SITE CAMP PENDLETON, CALIFORNIA	PLATE 1
Job No. [illegible] Approved [illegible] Date 4/12/74		Page 99

LOG OF BORING 1

Shear Strength (lbs/sq ft) | Moisture Content (%) | Dry Density (pcf) | Depth (ft) | Sample

Equipment 8" Hollow Stem Auger

Elevation 138.0' Date 2/14/74



BROWN SANDY SILT (ML)
medium stiff, wet

▽ water level 2/15/74

BROWN SILTY SANDY GRAVEL (GM)
loose, saturated

medium dense @ 5.0'

GRAY-BROWN SANDY SILT (ML)
very stiff with
occasional gravel

BROWN SILTY SANDY GRAVEL (GM)
medium dense

BROWN-GRAY SANDY SILT (ML)
very stiff with
abundant small gravel

HARDING-LAWSON ASSOCIATES
Consulting Engineers and Geologists

Job No 1675,006.02 Appr. Date 2/25/74

LOG OF BORING 1

WASTE WATER TREATMENT PONDS
MONDAVI WINERY
OAKVILLE, CALIFORNIA

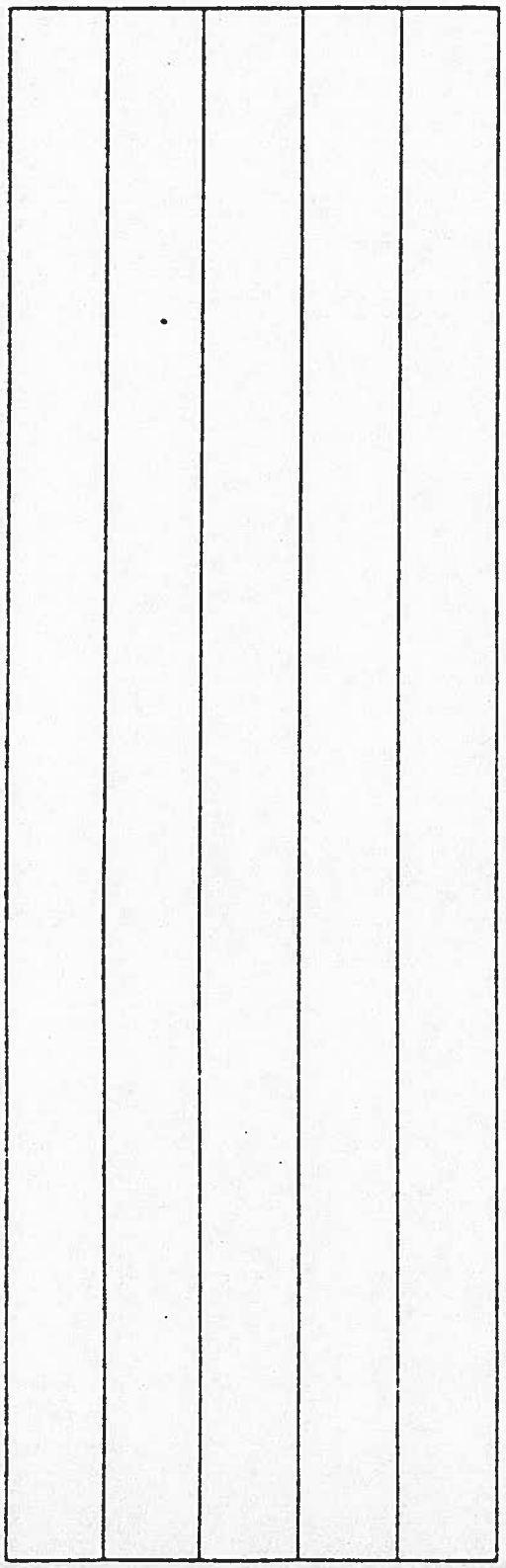
PLATE 2

LOG OF BORING 2

Shear Strength (lbs/sq ft) | Moisture Content (%) | Dry Density (pcf) | Depth (ft) | Sample

Equipment 8" Hollow Stem Auger

Elevation 195.0' Date 2/14/74



0
5
10
15
20
25
30
35
40

RED-BROWN SANDY SILT (ML)
medium stiff, moist
with occasional gravel

BROWN SILTY SANDY GRAVEL (GM)
medium dense, wet

▽ water level 2/15/74

becomes saturated

BROWN SANDY GRAVEL (GP)
medium dense, saturated

HARDING-LAWSON ASSOCIATES
Consulting Engineers and Geologists

Job No 1675,006.02 Appr: JC Date 2/25/74

LOG OF BORING 2
WASTE WATER TREATMENT PONDS
MONDAVI WINERY
OAKVILLE, CALIFORNIA

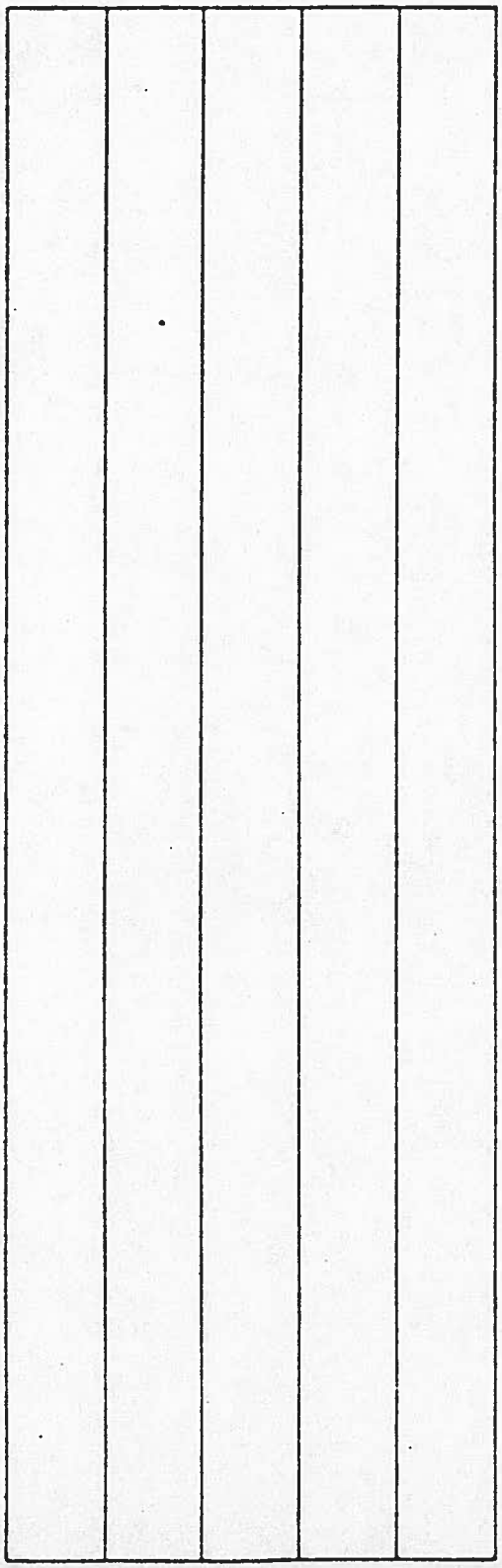
PLATE 3

LOG OF BORING 3

Shear Strength (lbs/sq ft) | Moisture Content (%) | Dry Density (pcf) | Depth (ft) | Sample

Equipment 8" Hollow Stem Auger

Elevation 197.0' Date 2/15/74



0

BROWN SANDY SILT (ML)
stiff, moist, grass roots to 1.0' with occasional gravel

5

▽ water level 2/15/74

10

BROWN SILTY SANDY GRAVEL (GM)
dense, saturated

15

20

25

30

35

40

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Job No 1675,006.02 Appr: Date 2/25/74

LOG OF BORING 3
WASTE WATER TREATMENT PONDS
MONDAVI WINERY
OAKVILLE, CALIFORNIA

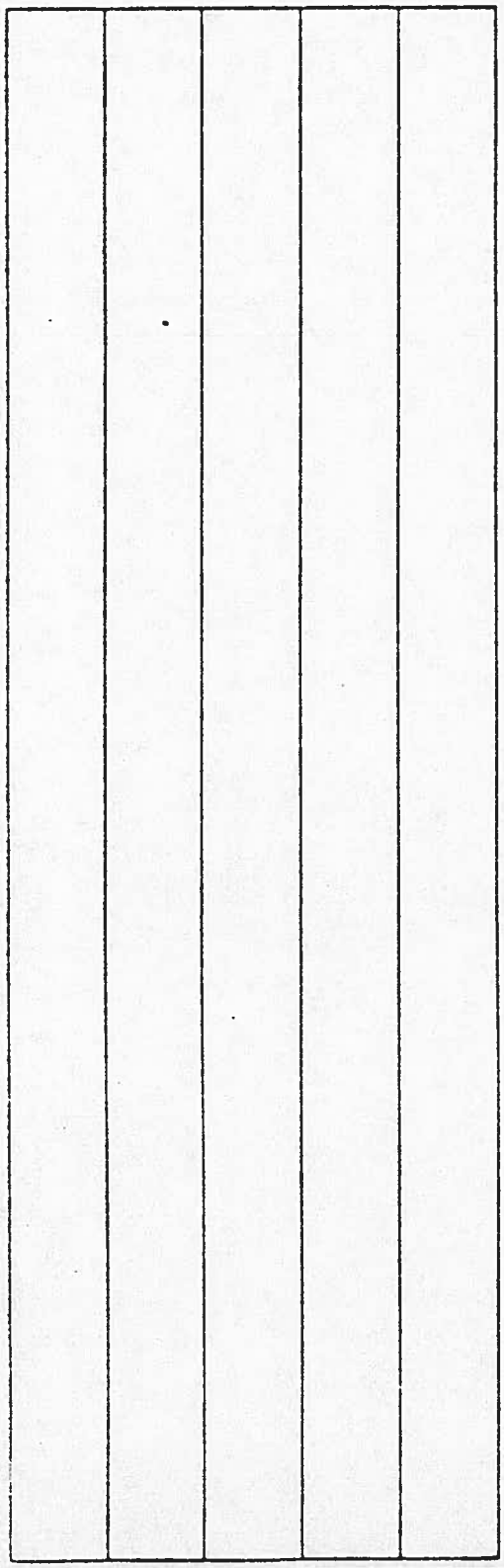
PLATE 4

LOG OF BORING 4

Equipment 8" Hollow Stem Auger

Elevation 217.0' Date 2/15/74

Shear Strength (lbs/sq ft) | Moisture Content (%) | Dry Density (pcf) | Depth (ft) | Sample



0 — BROWN SANDY SILT (ML)
medium stiff, wet, with occasional gravel

5

10 — abundant small gravel @ 9'

15 — occasional large gravel below 15'

▽ water level 2/15/74

20 — BROWN SILTY SANDY GRAVEL (GM)
dense, saturated

25

30

35

40

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Job No 1675.006.02 Appr: [illegible] Date 2/25/74

LOG OF BORING 4
WASTE WATER TREATMENT PONDS
MONDAVI WINERY
OAKVILLE, CALIFORNIA

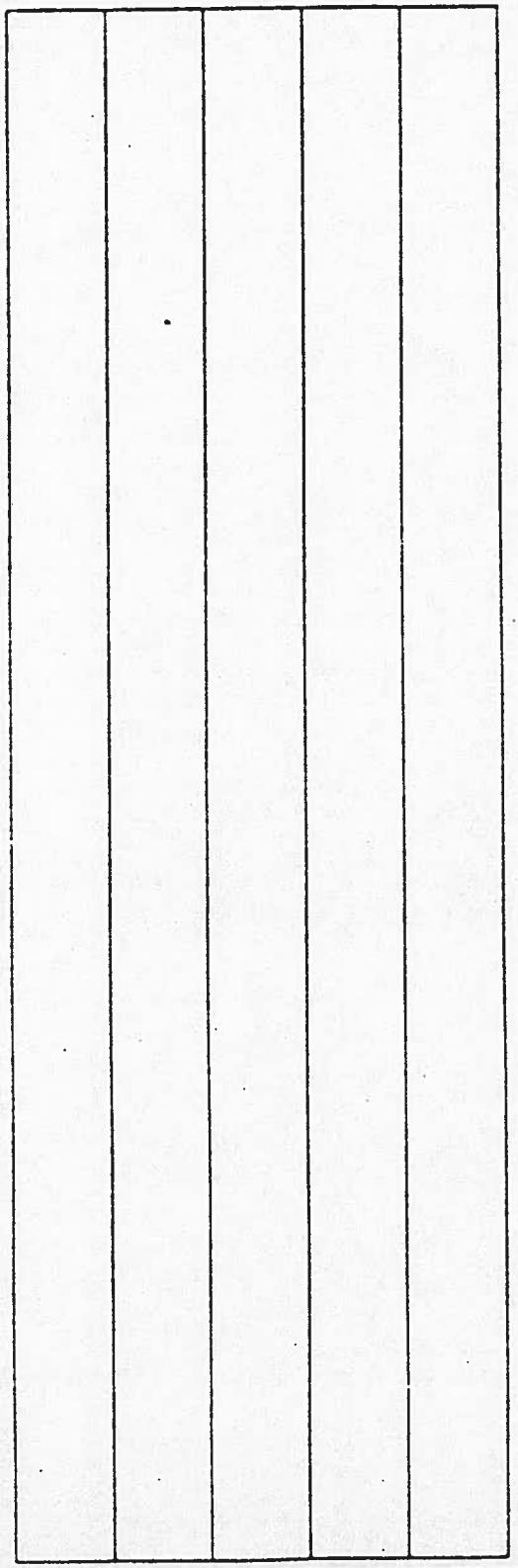
PLATE 5

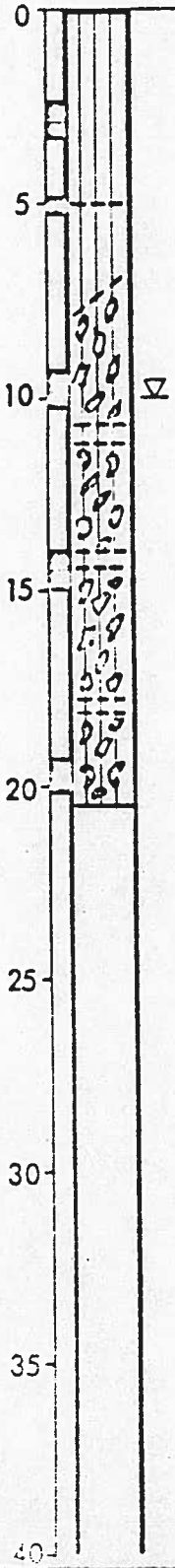
LOG OF BORING 5

Shear Strength (lbs/sq ft) | Moisture Content (%) | Dry Density (pcf) | Depth (ft) | Sample

Equipment 8" Hollow Stem Auger

Elevation 228.0' Date 2/15/74





DARK BROWN SANDY SILT (ML)
stiff, wet, porous to 2.0' with occasional gravel

color change to brown very stiff @ 5'

BROWN SILTY SANDY GRAVEL (GM)
medium dense, wet
water level 2/15/74
becomes saturated, with occasional silt lenses

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LOG OF BORING 5

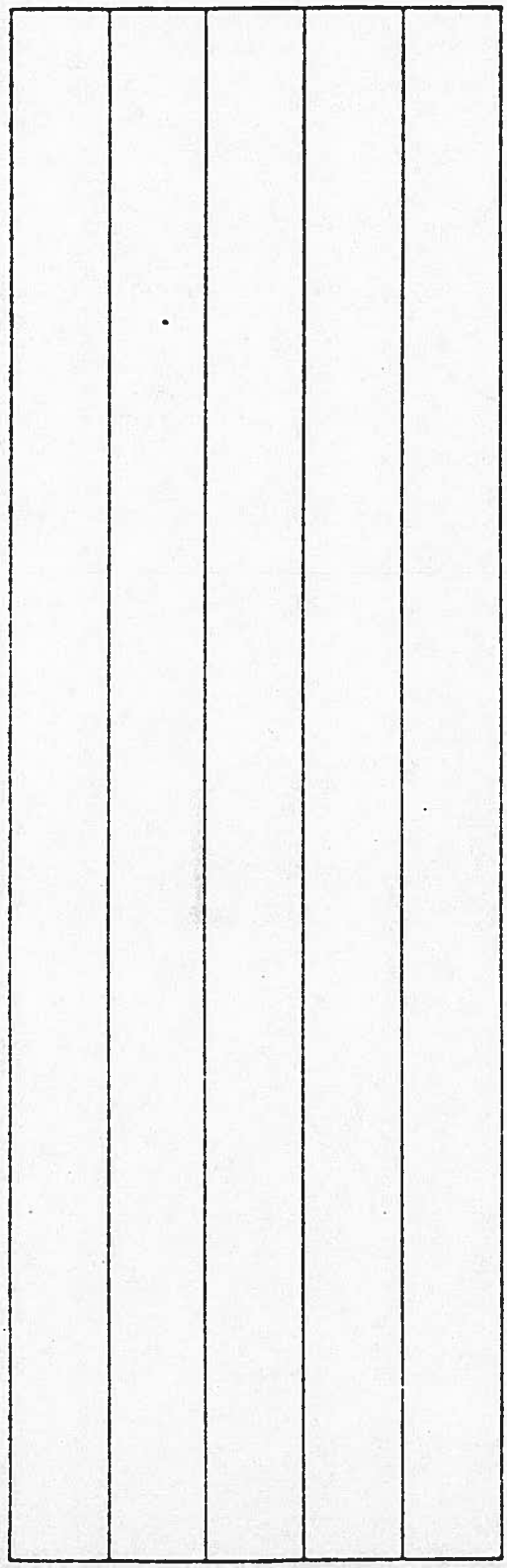
WASTE WATER TREATMENT PONDS
MONDAVI WINERY
OAKVILLE, CALIFORNIA

PLATE 6

LOG OF BORING 6

Equipment 8" Hollow Stem Auger

Elevation 234.0' Date 2/15/74



RED-BROWN SANDY SILT (ML)
stiff, wet, porous to 2.0' with abundant small gravel

BROWN SILTY SANDY GRAVEL (GM)
dense, wet

▽ water level 2/15/74
becomes saturated

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LOG OF BORING 6
WASTE WATER TREATMENT PONDS
MONDAVI WINERY
OAKVILLE, CALIFORNIA

PLATE 7

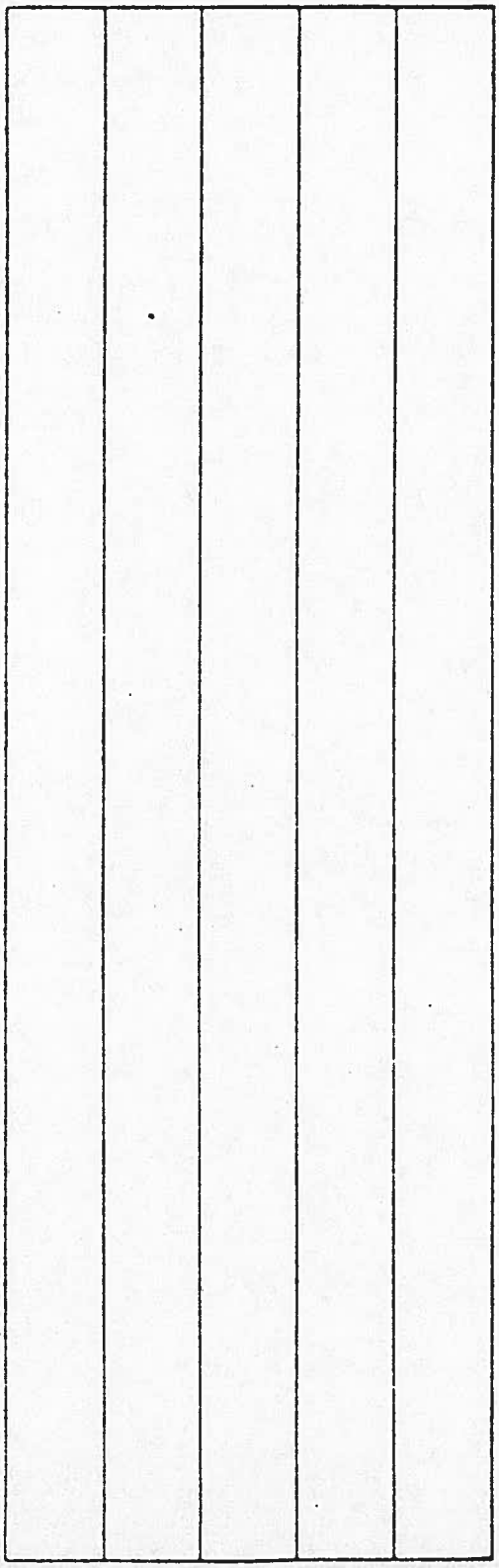
RF11

LOG OF BORING 7

Equipment 8" Hollow Stem Auger

Elevation 216.0' Date 2/15/74

Shear Strength (lbs/sq ft) | Moisture Content (%) | Dry Density (pcf) | Depth (ft) | Sample



BROWN SANDY SILT (ML)
medium stiff, moist with occasional gravel

BROWN SILTY SANDY GRAVEL (GM)
medium dense, wet

BROWN SANDY GRAVELLY SILT (ML) - very stiff, wet

BROWN SILTY SANDY GRAVEL (GM)
medium dense, saturated

▽ water level 2/15/74

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LOG OF BORING 7
WASTE WATER TREATMENT PONDS
MONDAVI WINERY
OAKVILLE, CALIFORNIA

PLATE 8

LOG OF BORING 8

Equipment 8" Hollow Stem Auger

Elevation 205.0' Date 4/11/74

Shear Strength (lbs/sq ft)	Moisture Content (%)	Dry Density (pcf)	Depth (ft)	Sample	
%Passing No. 200 Sieve Size = 31	11.7	110	0		RED BROWN CLAYEY SAND (SC) medium dense, moist, becoming brown to light brown and dense at 2.0'
Classification Tests*	13.6	113	5		
Particle Size Analysis See Plate 12	10.6	120		▽	water level 4/11/74
			10		BROWN GRAVELLY CLAYEY SAND (SC) medium dense, saturated
			15		becoming dense
*Atterberg Limits: Liquid Limit = 27 Plastic Limit = 18 Plasticity Index = 9 % Passing No. 200 Sieve Size = 43			20		
			25		
			30		
			35		
			40		

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Job No 1675,006.02 Appr. WM Date 4/16/74

LOG OF BORING 8

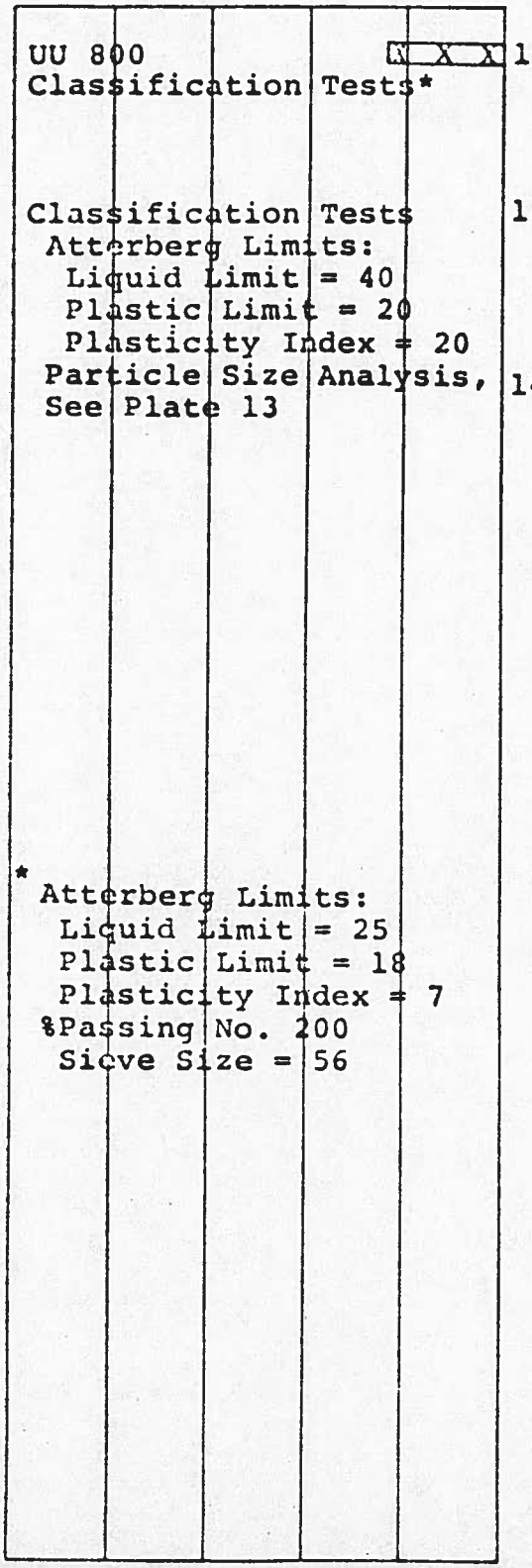
WASTE WATER TREATMENT PONDS
MONDAVI WINERY
OAKVILLE, CALIFORNIA

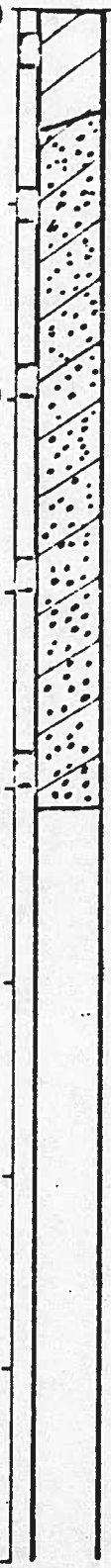
PLATE 9

LOG OF BORING 9

Equipment 8" Hollow Stem Auger

Elevation 201.0' Date 4/11/74





RED BROWN SANDY CLAY (CL)
medium stiff, moist to wet
with occasional gravels

BROWN GRAVELLY CLAYEY SAND (SC)
medium dense, saturated

▽ water level 4/11/74

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Job No. 1675,006.02 Appr. wm Date 4/16/74

LOG OF BORING 9

WASTE WATER TREATMENT PONDS
MONDAVI WINERY
OAKVILLE, CALIFORNIA

PLATE 10

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