August 4, 2014

John McDowell
Napa County Planning, Building, &
Environmental Services Department
1195 Third Street, Suite 210
Napa, CA 94559

RE: Raymond Winery UP-Water/WWFS and UP
Project Number 2010080

Dear John:

The following is in response to the letter prepared by Abbot & Kindermann, LLP in regards to the proposed Raymond Vineyard and Cellar Use Permit Modification (P11-00156); specifically addressing the engineering comments related to stormwater, process wastewater treatment and proximity to groundwater, and the water availability/demand analysis.

Stormwater Runoff Management Plan

Two items were identified in the letter: the Hydrologic Soil Group classification and the infiltration rate.

Our investigation indicates that the Natural Resources Conservation Service (NRCS) Hydrologic Soil Group classification was revised between the time the original Stormwater Runoff Management Plan (SRMP) was written on May 15, 2013 and the date Abbot & Kindermann queried the database. The updated NRCS data now classifies the soil as Hydrologic Soil Group C, which changes the runoff curve numbers used to calculate the stormwater runoff with the Hydraflow Hydrograph software. The software models have been updated with the revised runoff curve numbers. The resulting increase in the 2-year, 24 hour rainfall event from the proposed parking lot is 1,264 cubic feet, which is less than the originally calculated runoff (1,994 cubic feet). The change in runoff is less than previously calculated because the changed soil group classification increased the runoff in the existing condition more than in the proposed condition due to the higher runoff curve numbers associated with Hydrologic Soil Group B.

The saturated hydraulic conductivity, Ksat, was taken from the NRCS website to use as a conservative infiltration rate for calculating the amount of time it would take to infiltrate the added runoff. We understand that this approach is consistent with County requirements. The swale depth is proposed to be 1 foot; therefore, an average Ksat value (5.59 micrometers per second) for a depth of soil between 0 to 24 inches was used. Given this infiltration rate and the available area for bioswales, all of the added runoff from the 2-year, 24 hour rainfall event would infiltrate within 16.6 hours, which is below the Napa County vector control requirements of 48 hours. The size and geometry of the swales may be revised during the design phase of the project in order to adjust the time to infiltrate. Any runoff not infiltrated into the biowales (from larger storm events) would overflow onto the adjacent vineyards and

return to sheet flow, mimicking the pre-project stormwater condition. Summit concludes that the stormwater impacts caused by the proposed project will be adequately mitigated and will meet the Napa County Post-Construction Runoff Management Requirements.

Process Wastewater Treatment

Per the original wastewater pond drawings (attached), the ponds were constructed above existing grade. The pond bottom elevations range from approximately 171-173 with the top of berm elevation ranging from approximately 183-184. Surrounding ground elevations, outside of the pond limits, range from approximately 172 (south end) to 177 (north end). Therefore, the ponds extend partially into grade by about 1-6 feet. Additionally, each of the ponds were originally constructed with a 3-foot minimum clay liner (with permeability of less than 10^{-6} cm/sec maximum per the County/State standards) to provide protection to groundwater.

The integrity of the existing clay liner could be confirmed by Geotechnical Engineering as part of the permit conditions to ensure that adequate groundwater protection is being maintained.

Water Availability Analysis/Demand

The May 15, 2012Groundwater Memorandum was prepared by the County Assistant Engineer and based on the original Water Availability Analysis (WAA) dated May 9, 2011. The WAA was prepared by Summit Engineering Inc. (SEI) and was submitted with the original Use Permit Modification application. This WAA reflected an existing water usage of 34.075 af/yr (reflective of 14.2 af/yr for vineyard irrigation). This WAA also reflected a proposed water usage of 53.95 ac/year, but was reflective of the proposed production increase at that time. Since the original submittal, the WAA was subsequently updated per initial comments from the County to provide vineyard irrigation water usage based on actual, current water usage data that was recorded by the facility. It was also updated to reflect no change in production. The latest WAA that was submitted to the County is dated January 22, 2014 and reflects an existing water usage of 51.29 af/yr and proposed water usage of 52.47 ac/yr (which includes an updated 31.3 af/yr for vineyard irrigation).

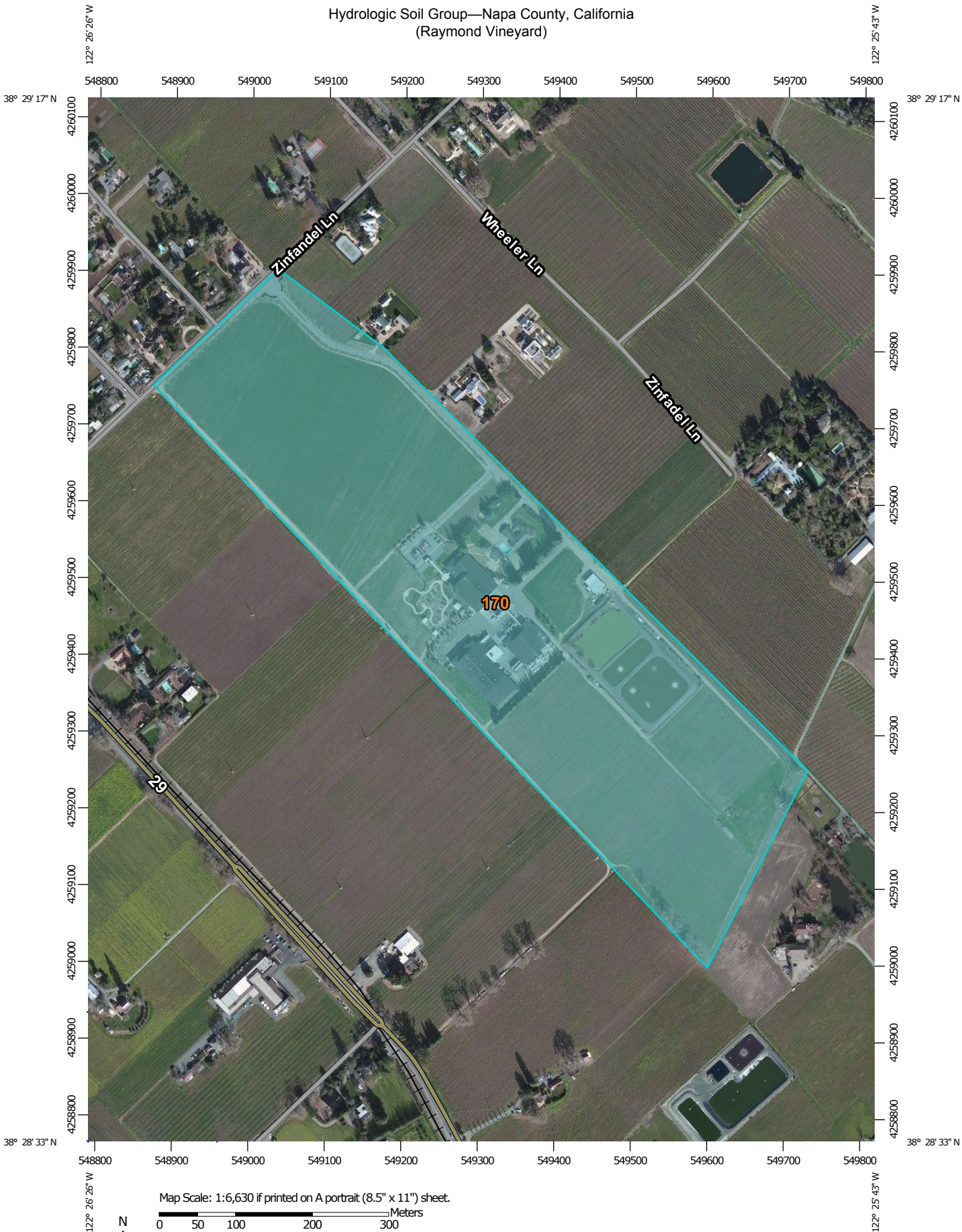
Sincerely,

Gina Giacone

Gina Giacone, P.E.
Project Manager

Enclosures:
NRCS Soils Survey information and soils classification for property
Revised Hydrographs
Proposed bioswale calculation to address SRMP proposal
Original Process Wastewater Pond Drawings
cc: Tom Blackwood, Boisset Family Estates

Hydrologic Soil Group—Napa County, California
(Raymond Vineyard)



Map Scale: 1:6,630 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 50 100 200 300

Feet
0 300 600 1200 1800

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

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

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

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

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

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

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

Soil Survey Area: Napa County, California
Survey Area Data: Version 5, Nov 25, 2013

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

Date(s) aerial images were photographed: Nov 2, 2010—Feb 17, 2012

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

Hydrologic Soil Group

Hydrologic Soil Group— Summary by Map Unit — Napa County, California (CA055)				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
170	Pleasanton loam, 0 to 2 percent slopes	C	64.0	100.0%
Totals for Area of Interest			**64.0**	**100.0%**

Description

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

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

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

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

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

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

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

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Saturated Hydraulic Conductivity (Ksat)—Napa County, California
(Raymond Vineyard)

Map Scale: 1:6,630 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 50 100 200 300

Feet
0 300 600 1200 1800

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

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

= 5.5918

Not rated or not available

Soil Rating Lines

= 5.5918

Not rated or not available

Soil Rating Points

= 5.5918

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

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

Saturated Hydraulic Conductivity (Ksat)

Saturated Hydraulic Conductivity (Ksat)— Summary by Map Unit — Napa County, California (CA055)				
Map unit symbol	**Map unit name**	**Rating (micrometers per second)**	**Acres in AOI**	**Percent of AOI**
170	Pleasanton loam, 0 to 2 percent slopes	5.5918	64.0	100.0%
Totals for Area of Interest			**64.0**	**100.0%**

Description

Saturated hydraulic conductivity (Ksat) refers to the ease with which pores in a saturated soil transmit water. The estimates are expressed in terms of micrometers per second. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Saturated hydraulic conductivity is considered in the design of soil drainage systems and septic tank absorption fields.

For each soil layer, this attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

The numeric Ksat values have been grouped according to standard Ksat class limits.

Rating Options

Units of Measure: micrometers per second

Aggregation Method: Dominant Component

Component Percent Cutoff: *None Specified*

Tie-break Rule: Fastest

Interpret Nulls as Zero: No

Layer Options (Horizon Aggregation Method): Depth Range (Weighted Average)

Top Depth: 0

Bottom Depth: 24

Units of Measure: Inches

Table of Runoff Curve Numbers (SCS, 1986)

Description of Land Use	Hydrologic Soil Group			
	A	B	C	D
Paved parking lots, roofs, driveways	98	98	98	98
Streets and Roads:				
Paved with curbs and storm sewers	98	98	98	98
Gravel	76	85	89	91
Dirt	72	82	87	89
Cultivated (Agricultural Crop) Land*:				
Without conservation treatment (no terraces)	72	81	88	91
With conservation treatment (terraces, contours)	62	71	78	81
Pasture or Range Land:				
Poor (<50% ground cover or heavily grazed)	68	79	86	89
Good (50-75% ground cover; not heavily grazed)	39	61	74	80
Meadow (grass, no grazing, mowed for hay)	30	58	71	78
Brush (good, >75% ground cover)	30	48	65	73
Woods and Forests:				
Poor (small trees/brush destroyed by over-grazing or burning)	45	66	77	83
Fair (grazing but not burned; some brush)	36	60	73	79
Good (no grazing; brush covers ground)	30	55	70	77
Open Spaces (lawns, parks, golf courses, cemeteries, etc.):				
Fair (grass covers 50-75% of area)	49	69	79	84
Good (grass covers >75% of area)	39	61	74	80
Commercial and Business Districts (85% impervious)	89	92	94	95
Industrial Districts (72% impervious)	81	88	91	93
Residential Areas:				
1/8 Acre lots, about 65% impervious	77	85	90	92
1/4 Acre lots, about 38% impervious	61	75	83	87
1/2 Acre lots, about 25% impervious	54	70	80	85
1 Acre lots, about 20% impervious	51	68	79	84

*From Chow et al. (1988).

Hydrograph Report

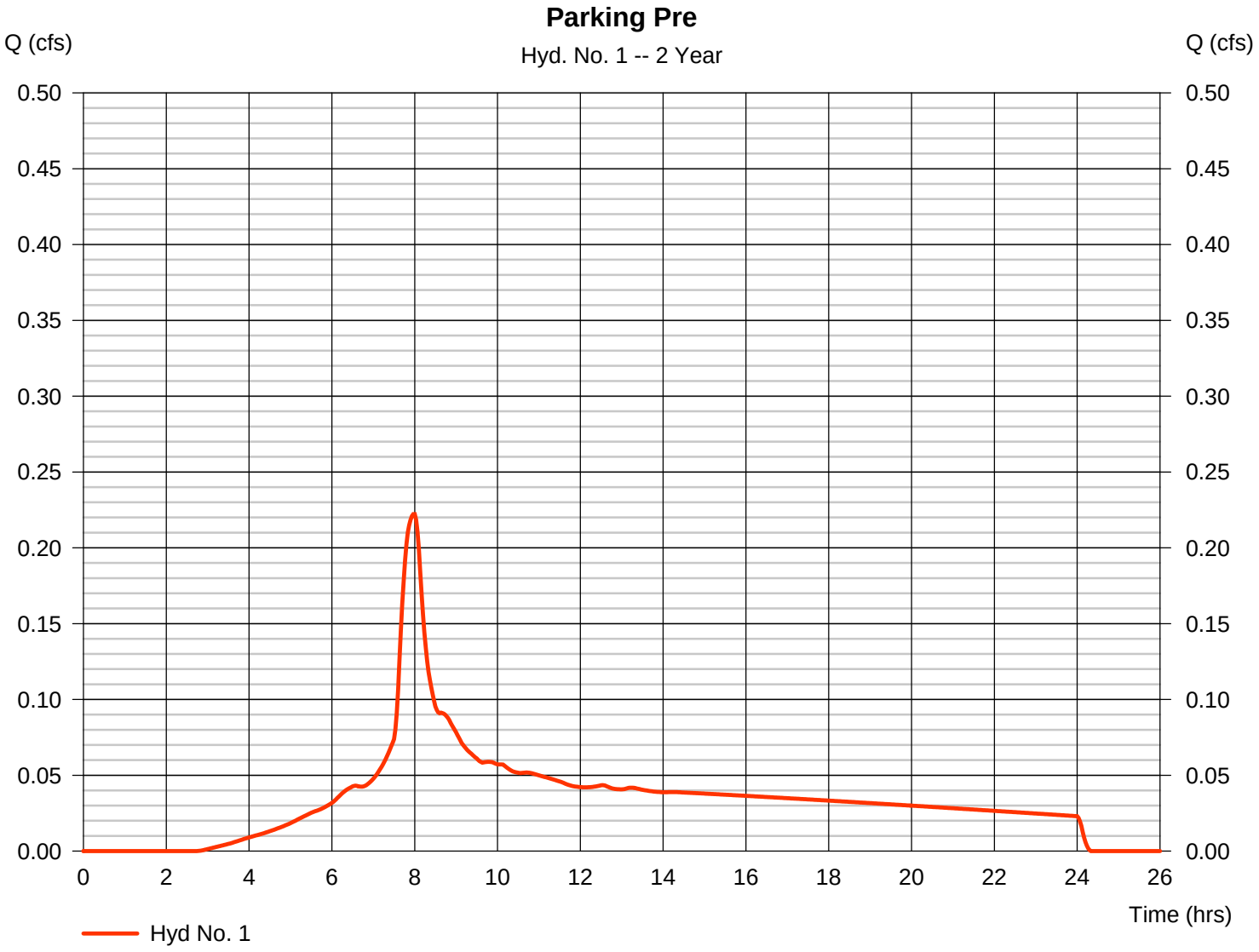
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2013 by Autodesk, Inc. v10 — Monday, 08 / 4 / 2014

Hyd. No. 1

Parking Pre

Pre-Construction Runoff Volume

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.222 cfs
Storm frequency	=	2 yrs	Time to peak	=	8.00 hrs
Time interval	=	2 min	Hyd. volume	=	3,165 cuft
Drainage area	=	0.330 ac	Curve number	=	88
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	10.00 min
Total precip.	=	3.82 in	Distribution	=	Type IA
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2013 by Autodesk, Inc. v10 — Monday, 08 / 4 / 2014

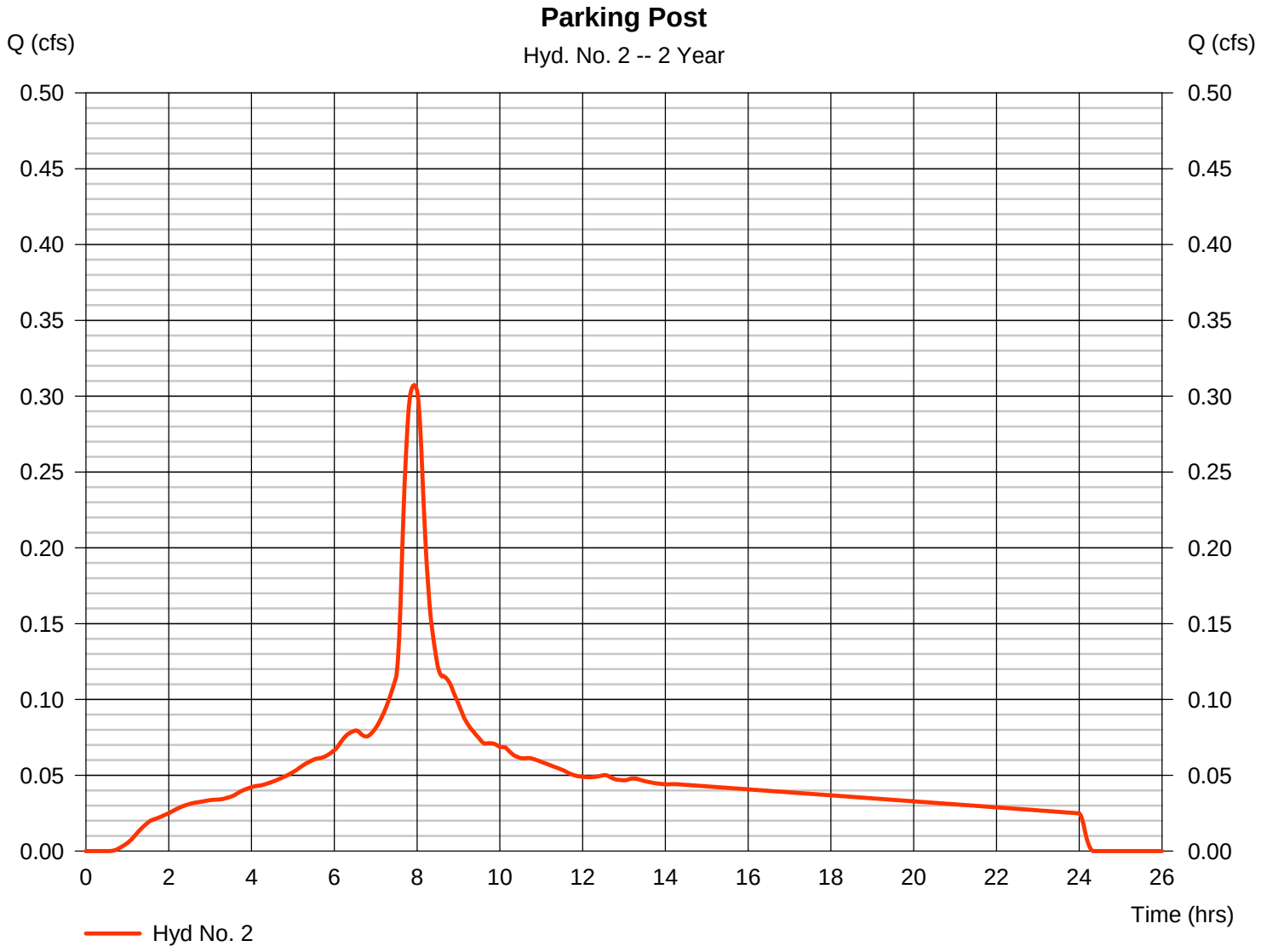
Post-Construction Runoff Volume

Hyd. No. 2

Parking Post

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.307 cfs
Storm frequency	=	2 yrs	Time to peak	=	7.93 hrs
Time interval	=	2 min	Hyd. volume	=	4,429 cuft
Drainage area	=	0.330 ac	Curve number	=	98*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	10.00 min
Total precip.	=	3.82 in	Distribution	=	Type IA
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.330 x 98)] / 0.330

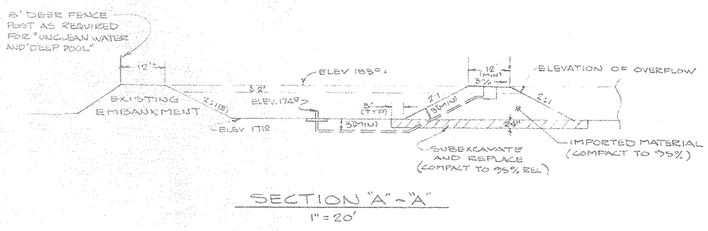


	Parking Lot
Volume (ft3)	1,264
Map Group	170
Soil Perc Rate (ft/s)	0.000018
Pond Bottom Area (ft2)	1152
Time to infiltrate Total Vol (sec)	59823.13
Time to infiltrate Total Vol (hrs)	16.62
Top Area (ft2)	2000
Bottom Area (ft2)	1152
Depth (ft)	1
Volume (ft3)	1,576

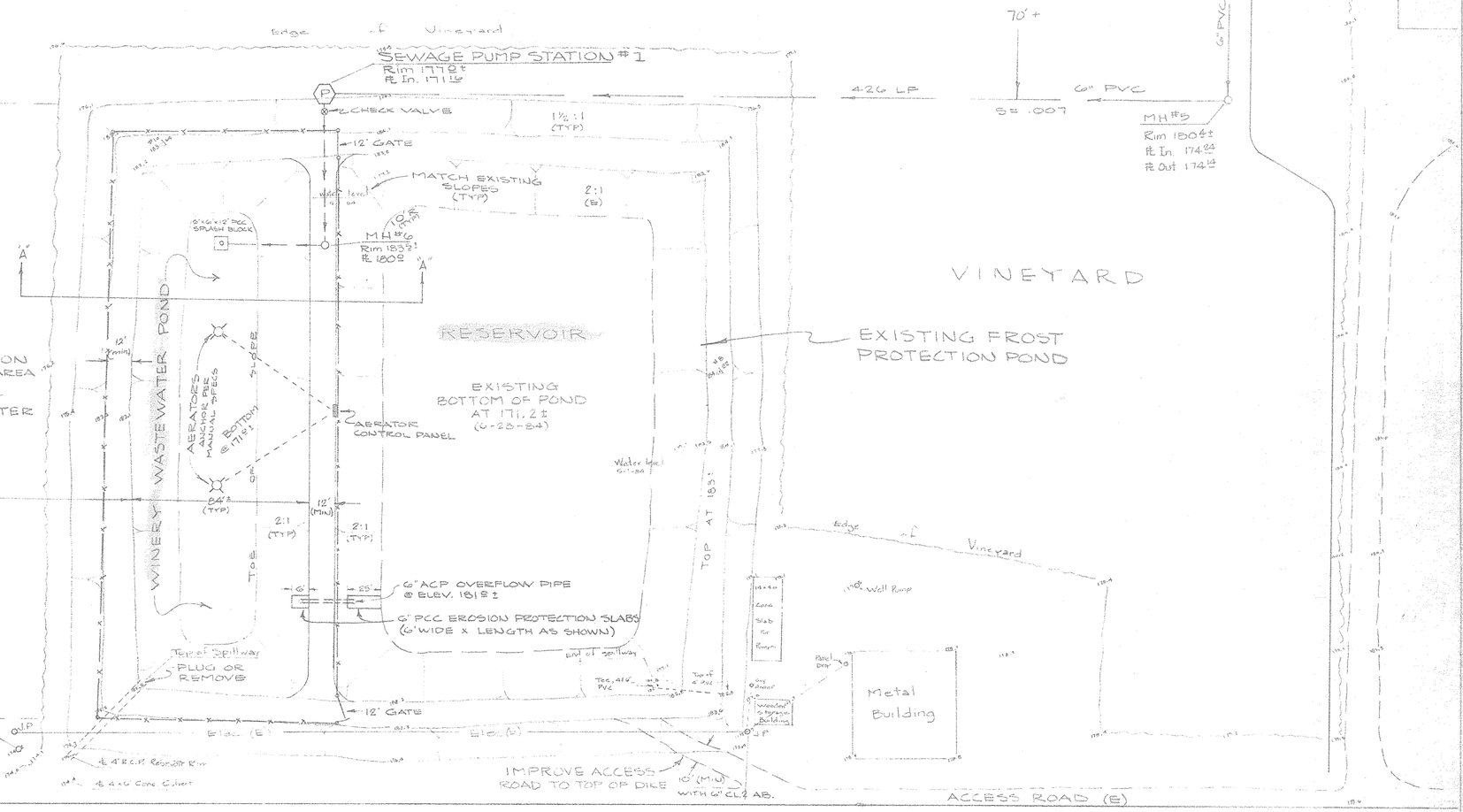
Post-Project Runoff - Pre-Project Runoff (4,429 - 3,165 = 1,264 ft3)

Area available using Option 1 and Option 2 BMP locations, area may be revised during project design phase

assumed 2:1 side slopes



SECTION "A"-"A"
1" = 20'



S 44° 31' 16" E

Approximate Property Line

PROPOSED WINERY WASTEWATER POND AND EXISTING TOPOGRAPHY

OF A PORTION OF
THE LANDS OF
RAYMOND VINEYARD & CELLAR
AP № 30-270-04
NAPA COUNTY, CALIFORNIA

—PREPARED BY—

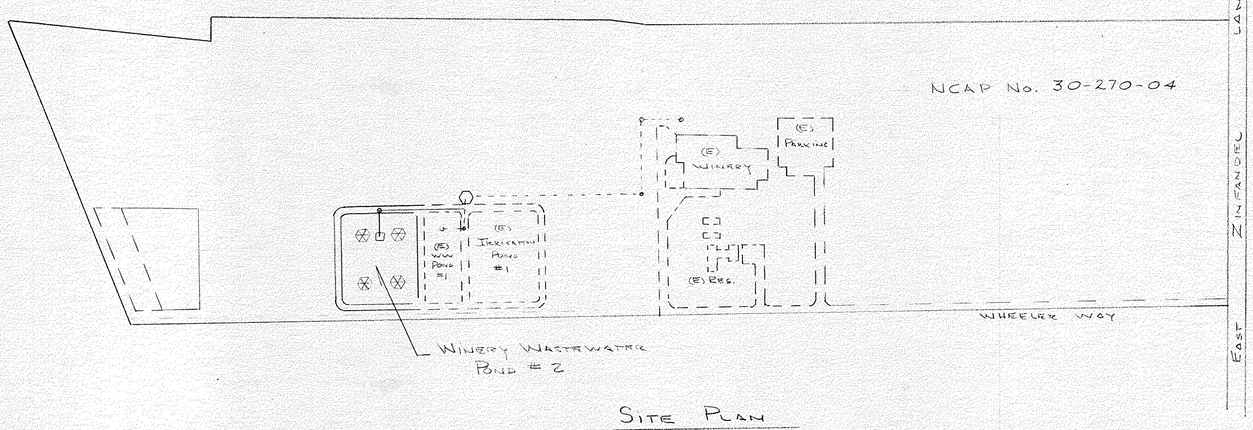
MAHONEY, ALFONSO & ASSOCIATES
CIVIL ENGINEERS & LAND SURVEYORS
ST. HELENA, CALIFORNIA
MAY 25, 1984

APPROVED BY: _____
ENVIRONMENTAL HEALTH DEPT
COUNTY OF NAPA
DATE: _____

DESIGN BY: _____ RCE 19820

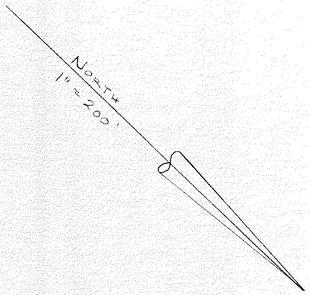
1086

RAYMOND VINEYARD AND CELLAR, INC.



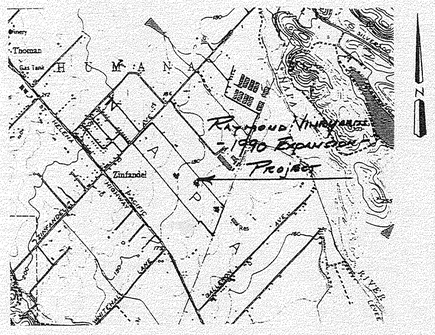
SITE PLAN

1" = 200' ±



GENERAL NOTES

1. Contractor shall be responsible for contacting the appropriate County agencies for inspection and approval of all stages of construction.
2. Contractor shall arrange a pre-construction conference with County Officials prior to commencing work. County Environmental Health shall be notified 72 hours prior to commencing work on the project and shall be kept informed as to the progress of the work.
3. Contractor shall be responsible for the location of all utilities in the work area and shall be responsible for their safekeeping during the course of the work.
4. Contractor shall comply with all applicable CAL-OSHA requirements.
5. Drawings show representative details, Engineer to be consulted prior to construction.
6. All deficiencies noted in these plans shall be brought to the attention of the Engineer prior to beginning of construction.
7. All construction shall conform to Manufacturer's Specifications, AWWA standards, or County of Napa standards - whichever is more restrictive.
8. Contractor shall coordinate his work with others as required.
9. Facilities not shown may exist and interfere with the work. Contractor shall protect all existing facilities from damage.
10. Contractor shall obtain and/or provide all permits, fees, bonds, gaurantees, etc..
11. All construction is subject to the approval of the County of Napa and the Engineer and shall not be deemed complete until such approvals have been obtained by the Contractor.
12. Materials listed as "or equal" items shall be submitted to the Engineer, prior to ordering such materials, for approval.
13. All pipe shall be U.L. approved.
14. Contractor shall satisfy himself as to the nature of the ground and other existing conditions prior to bidding the work. No adjustments will be made.
15. Contractor shall remove all debris and unusable materials from the job site.
16. The Prime Contractor shall coordinate all work of sub-contractors on the site, and shall be responsible for the condition of the site at all time.
17. The project site shall be left in a clean and orderly condition, subject to Owner's approval.
18. Contractor shall determine exact locations and grades of existing utilities and other obstructions prior to beginning work.
19. Contractor shall not damage any existing improvements.
20. Contractor shall provide and utilize facilities necessary to control dust.
21. Field adjustments may be required to preserve amenities and to avoid obstacles not shown on the plans. Contractor shall notify the Engineer in writing of any proposed deviation from the plans and shall not proceed with any changes without consent of the Engineer.



VICINITY MAP

SCALE: 1" = 2000'

BASIS OF BEARINGS

THE BEARING OF S 44° 31' 16" E AS SHOWN ON RECORD OF SURVEY MAP No. 2046 (17 RS 63), N.C.R. (RECORDED MAY 17, 1971)

BASIS OF ELEVATIONS

CHISELED SQUARE ON TOP OF PARAPET AT EAST END OF NORTH PARAPET OF BRIDGE ACROSS THE NAPA RIVER ON ZINFANDEL LANE.

ELEVATION 189.87 ~ USGS DATUM

SHEET INDEX

SHEET No.	DESCRIPTION
1 OF 3	SITE PLAN & MISC. DATA
2 OF 3	PLAN - WW. POND #2 AND RELATED FACILITIES
3 OF 3	SECTIONS & DETAILS

APPROVED BY:

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT COUNTY OF NAPA, CALIF.

DATE APPROVED: _____

DESIGNED BY: R.G. Mahorney

R.G. MAHORNEY RCE 19820

DATE: SEP. 20, 1991

REG. EXP. 9-30-93

SITE PLAN

1991 WINERY WASTEWATER POND #2

RAYMOND VINEYARD & CELLAR, INC.

N.C.A.P. No. 30-270-04

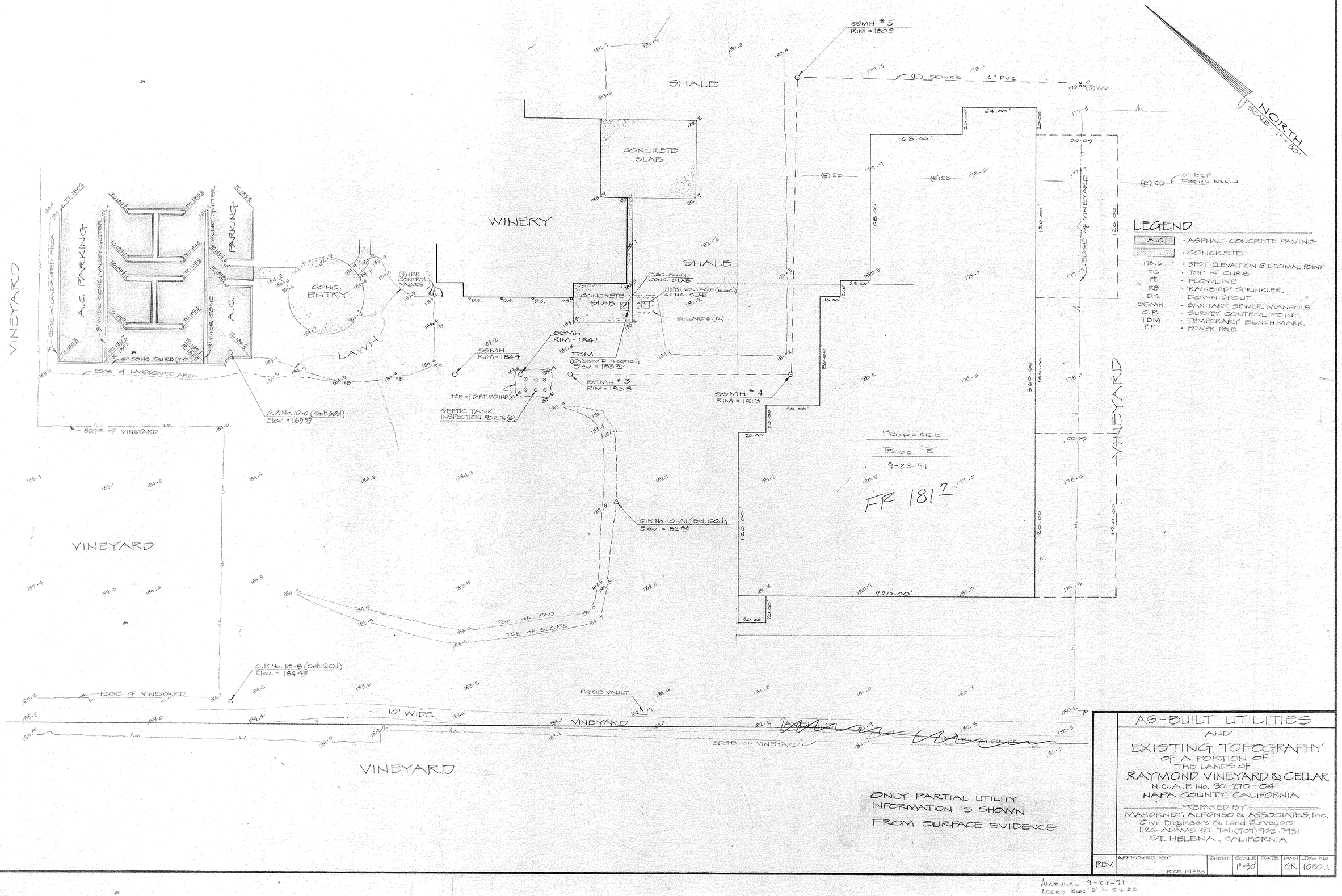
NAPA COUNTY, CALIF.

PREPARED BY

MAHORNEY, ALFONSO & ASSOC., INC.
CIVIL ENGINEERS & LAND SURVEYORS
1126 ADAMS ST., ST. HELENA, CALIF.
(707) 963-7931

94574

APPROVED FOR SUBMITTAL	SHEET	SCALE	DATE	DRAWN	JOB No.
R.G. Mahorney RCE 19820	1 OF 3	1"=200'	9-20-91	RGM	1080.1



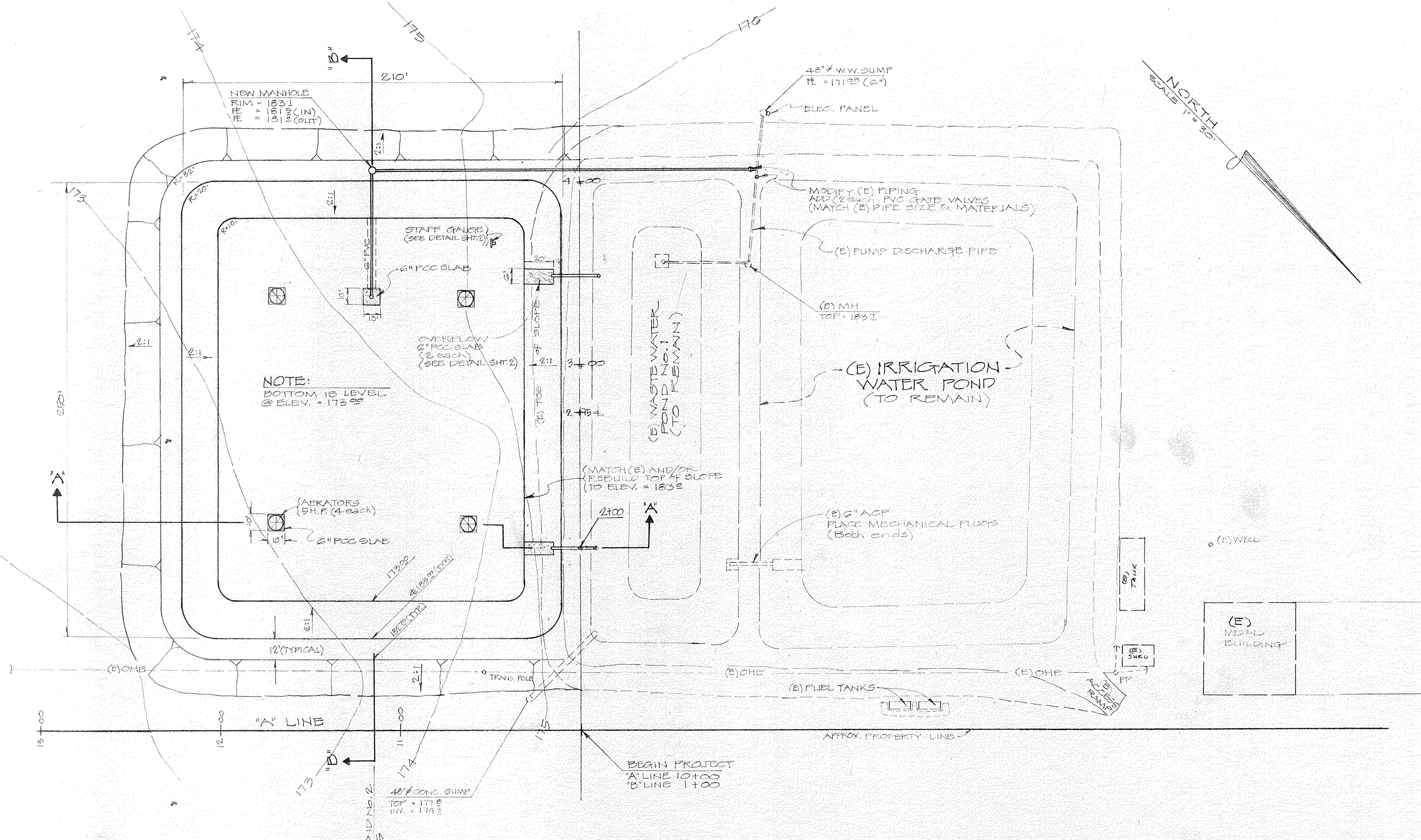
AS-BUILT UTILITIES AND EXISTING TOPOGRAPHY OF A PORTION OF THE LANDS OF RAYMOND VINEYARD & CELLAR

N.C.A.P. No. 30-270-04
NAPA COUNTY, CALIFORNIA

PREPARED BY
MAHORNEY, ALFONSO & ASSOCIATES, Inc.
Civil Engineers & Land Surveyors
1129 ADAMS ST. Tel: (707) 963-7931
ST. HELENA, CALIFORNIA

REV.	APPROVED BY	SHEET	SCALE	DATE	DWN	JOB No.
	RCE 19820		1"=30'		GR	1080.1

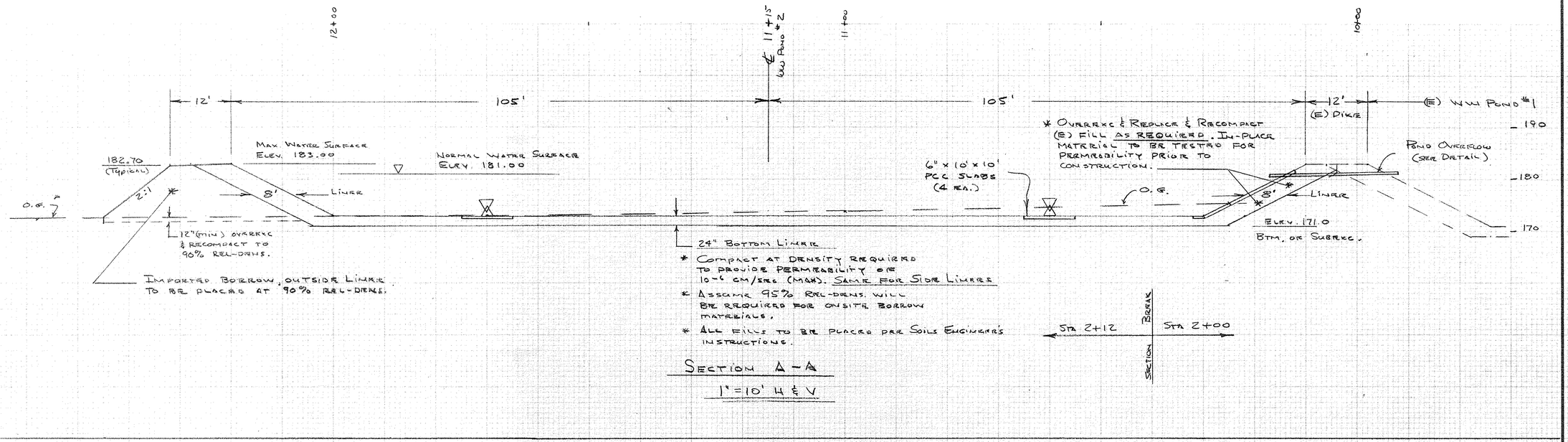
AMENDED 9-23-91
ADDED BLDG 'B' + SPOT


NORTH
SCALE 1" = 30'
210'
NEW MANHOLE
RIM = 183±
IE = 181.5 (IN)
IE = 181.0 (OUT)
48" ø W.W. SUMP
IE = 171.25 (6")
ELEC. PANEL
MODIFY (E) PIPING
ADD (2 each) PVC GATE VALVES
(MATCH (E) PIPE SIZE & MATERIALS)
STAFF GAUGE
(SEE DETAIL SHT. 2)
6" PCC SLAB
(E) PUMP DISCHARGE PIPE
(E) MH
TOP = 183±
OVERFLOW
6" PCC SLAB
(2 each)
(SEE DETAIL SHT. 2)
(E) WASTEWATER POND No. 1
(TO REMAIN)
(E) IRRIGATION WATER POND
(TO REMAIN)
NOTE:
BOTTOM IS LEVEL
@ ELEV. = 173.00
(MATCH (E) AND/OR
REBUILD TOP OF SLOPE
TO ELEV. = 183.0
TOE OF SLOPE
AERATORS
5 H.P. (4 each)
6" PCC SLAB
(E) 6" ACP
PLACE MECHANICAL PLUGS
(Both ends)
(E) WELL
(E) TANK
(E) METAL BUILDING
(E) SHED
12' (TYPICAL)
(E) OHE
TRANS. POLE
(E) FUEL TANKS
"A" LINE
APPROX. PROPERTY LINE
BEGIN PROJECT
"A" LINE 10+00
"B" LINE 1+00
48" ø CONC. SUMP
TOP = 177.8
INV. = 179.5
℄ W.W. POND No. 2
STA. 11+15
2:1
173
174
175
176

PLAN
SCALE : 1" = 30'

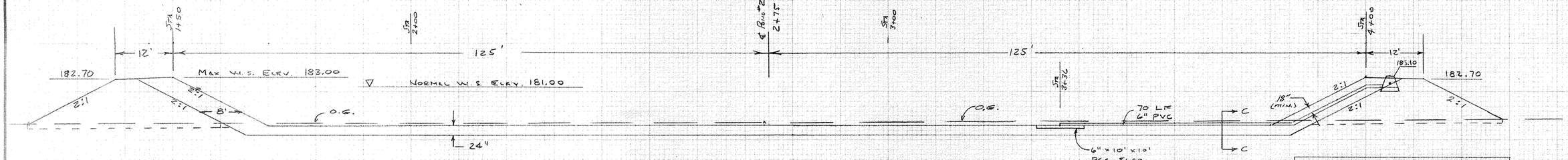
PLAN	
1991 WINERY WASTEWATER POND No. 2	
RAYMOND VINEYARD & CELLAR	
N.C.A.P. No. 30-270-04 NAPA COUNTY CALIFORNIA	
PREPARED BY MAHORNEY, ALFONSO & ASSOC., Inc. Civil Engineers & Land Surveyors 1126 ADAMS ST. Tel: (707) 963-7931 ST. HELENA, Ca 94574	

REV.	APPROVED FOR SUBMITTAL	SHEET	SCALE	DATE	DWN	JOB No.
	RCE 19820	2 of 3	1"=30'	9-20-91		1080.1



Section A-A

1" = 10' H & V

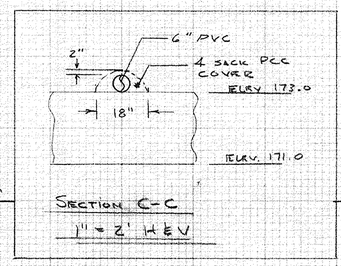


Section B-B

Sta. 11+15

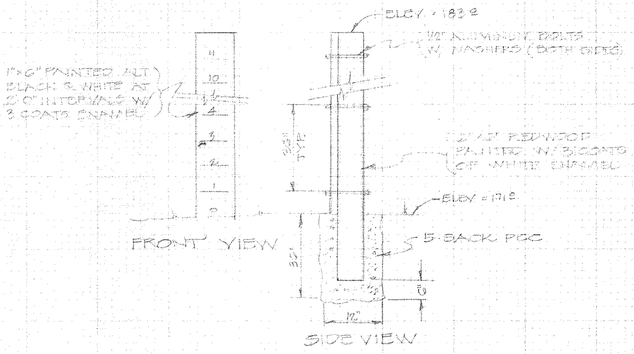
1" = 10' H & V

* See Sec. A-A for *
typical information
not shown.



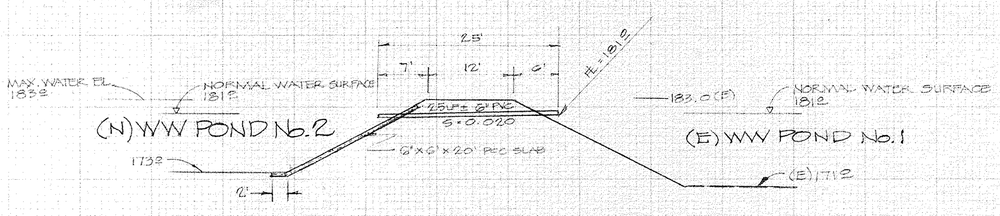
Section C-C

1" = 2' H & V



Staff Gauge Detail

Not to Scale



Overflow Pipes - Detail

Sta. 2+00 & 3+50

Scale: 1" = 10' Horizontal & Vertical

Sections & Details

1991 Winery Wastewater Pond No. 2

Raymond Vineyard & Cellar

N.C.A.P. No. 30-270-04

Napa County, California

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Rev.	Approved for Submittal	Sheet	Scale	Date	Dwn	Job No.
	RCE 19820	3 of 3	As Shown	9-20-91	GR	1080.1