

“F”

Wastewater Feasibility Study



July 7, 2023
October 30, 2023 – Revision #1

Job No. 23-111

Kim Withrow, REHS
Environmental Health Division
Napa County Planning, Building and Environmental Services Department
1195 Third Street, Suite 210
Napa, CA 94559

Re: Onsite Wastewater Disposal Feasibility Study for the
Chaix Family Vineyards Micro-Winery Use Permit Application
1204 Manley Lane, Napa, California 94558 Napa County APN 027-210-026

Dear Ms. Withrow:

At the request of John Chaix we have evaluated the process and sanitary wastewater flows associated with the proposed Micro Winery Use Permit application. We have also analyzed the capacity of the existing residential sanitary wastewater system serving the existing structures to determine if it is adequate to serve the proposed changes in use.

The Use Permit application under consideration proposes the construction and operation of a winery with the following characteristics:

- Wine Production:
 - 5,000 gallons of wine per year
 - Fermentation and aging onsite
- Employees:
 - 1 employee
- Marketing Plan:
 - Daily Tours and Tastings by Appointment
 - 10 visitors per day maximum

Existing improvements on the property include a main residence, vineyards, ag and accessory residential buildings, three groundwater wells, paved, dirt and gravel driveways and the utility infrastructure associated with this type of rural residential and agricultural development.

A new structure will be built to house restrooms for the proposed micro-winery and production will be located within an existing building that will be improved for the intended micro-winery use.

Please see the plans prepared by Roger Wolffe, Architect (attached) for approximate locations of existing and proposed facilities.

The remainder of this letter describes the existing wastewater disposal system, peak flows associated with the proposed changes in use for the micro-winery and our analysis and recommendations related to how wastewater from the micro-winery can be handled onsite.

Existing Septic System

The existing residence is served by a septic tank and leach field system located to the southwest of the residence. The leach field is located within the road setback and drainage ditch setback and therefore is not viable to handle the new flows from the micro-winery.

Proposed Winery Process Wastewater Design Flows

It is planned that the micro-winery will be a co-production type facility and will ferment and age wine onsite but no barrel washing or tank washing will occur onsite. Therefore, there will be no process wastewater generated onsite at this micro-winery facility.

Proposed Winery Sanitary Wastewater Design Flows

The peak sanitary wastewater flow from the winery is calculated based on the number of winery employees and the number of daily visitors for tastings. In accordance with Table 4 of the Napa County "Regulations for Design, Construction, and Installation of Alternative Sewage Treatment Systems" we have used a design flow rate of 3 gallons per day per visitor for tastings. Based on these assumptions, the peak winery sanitary wastewater flows are calculated as follows:

Daily Tastings

Peak Sanitary Wastewater Flow = 10 visitors per day X 3 gallons per visitor

Peak Sanitary Wastewater Flow = 30 gpd

Residential Sanitary Wastewater Design Flow

It is our understanding that the main house consists of three bedrooms. The total residential sanitary wastewater flow is based on 150 gpd per bedrooms as follows:

Total Residential Sanitary Wastewater Design Flow = 150 gpd / bedroom x 3 bedrooms

Total Residential Sanitary Wastewater Design Flow = 450 gpd

Combined Sanitary Wastewater Flow

The combined sanitary wastewater flow includes the flow from both the winery and residence and is calculated as follows:

Combined Sanitary Wastewater Flow = 30 gpd + 450 gpd

Combined Sanitary Wastewater Flow = 480 gpd

Existing Septic System Capacity

As noted above the existing septic system is located within road and drainage course setbacks so it is assumed that it is adequate for the existing residential uses only.

Recommendations

Based on the conditions observed during our site evaluation on June 7, 2023 (E23-00251), we recommend a new standard septic system be installed to serve the micro-winery facility sanitary wastewater flows. The application rate for the septic system is 0.33 gpd/sf and the acceptable soil depth is 72 inches which allows for three foot deep trenches with 4 sf of sidewall per lineal foot of trench. Using these parameters the required length of trench is calculated as follows:

$$\text{Required Length of Trench} = 30 \text{ gpd} \times \frac{1 \text{ square foot}}{0.33 \text{ gpd}} \times \frac{1 \text{ lineal foot}}{4 \text{ square feet}}$$

Required Length of Trench = 23 lineal feet

Based on the site maps ACE has determined that there is enough area to install a code minimum system with 100 lf of leach line in the area of Test Pits #3 & #6 as shown on the Chaix Family Vineyards Micro-Winery Wastewater Exhibit prepared by ACE.

Reserve Area

The reserve must accommodate the three bedrooms from the main house (450 gpd) as well as the micro-winery (30 gpd) for a total of 480 gpd. Based on the conditions observed during our site evaluation on June 7, 2023 (E23-00251), we recommend the reserve area be a pretreatment and subsurface drip type septic system located in the area of Test Pits @1, 2, 4 & 5. The application rate for the septic system is 0.6 gpd/sf and 200% reserve is required for this type of system. Using these parameters, the required reserve area is calculated as follows:

$$\text{Required Length of Trench} = 480 \text{ gpd} \times \frac{1 \text{ square foot}}{0.6 \text{ gpd}} \times 200\%$$

Required Length of Trench = 1,600 square feet

At least 1,800 sf of reserve area is available. The reserve area is shown on the Chaix Family Vineyards Micro-Winery Wastewater Exhibit prepared by ACE.

Summary

The calculations presented above illustrate that the sanitary wastewater flows associated with the proposed Micro-Winery Use Permit can be accommodated with a new small standard septic system. Furthermore, process wastewater will not be generated onsite and therefore the project is not subject to winery process wastewater disposal regulations at this time.

We trust that this provides the information you need to process the subject Micro-Winery Use Permit application. Please feel free to contact us at (707) 320-4968 if you have any questions.

Sincerely,

Applied Civil Engineering Incorporated

By:

Michael R. Muelrath

Michael R. Muelrath RCE 67435
Principal

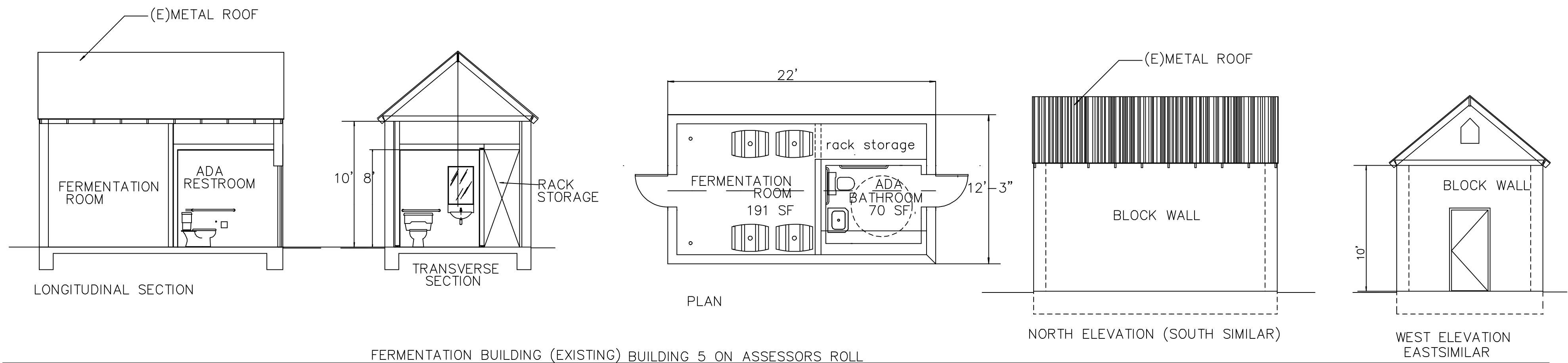
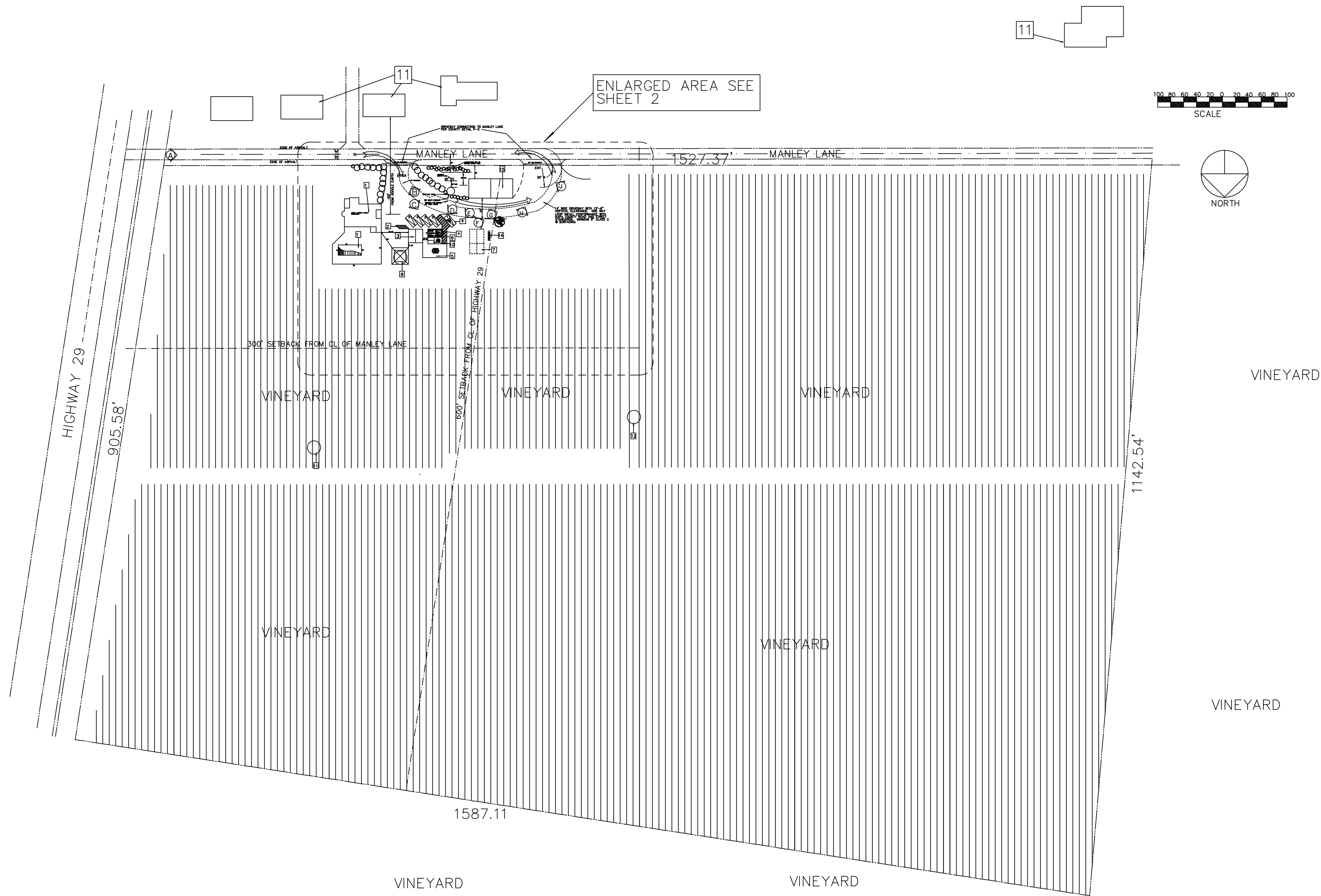


Copy:

John Chaix, Chaix Family Vineyards (via email)
Roger Wolfe (via email)

Attachments:

Site Plan prepared by Roger Wolffe, Architect
Chaix Family Vineyards Micro-Winery Wastewater Exhibit



REVISIONS

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ARCHITECT
2023
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ARCHITECT'S SEAL

SHEET DATA:

ROGER WOLFF
ARCHITECT
PO BOX 5836
NAPA, CA 94581
TOT 255-3877

PROJECT TITLE:
CHAIX FAMILY VINEYARDS
1204 MANLEY LANE
APN 027 210 026

SHEET TITLE
OVERALL SITE PLAN
PLANS OF RESTROOM
FERMENTATION BLDG PLANS

DATE: 10/11/2023
SCALE: SEE PLAN
JOB NO. CHAIX
DRAWN: RW
SHEET NO.

1

OF 1 SHEETS



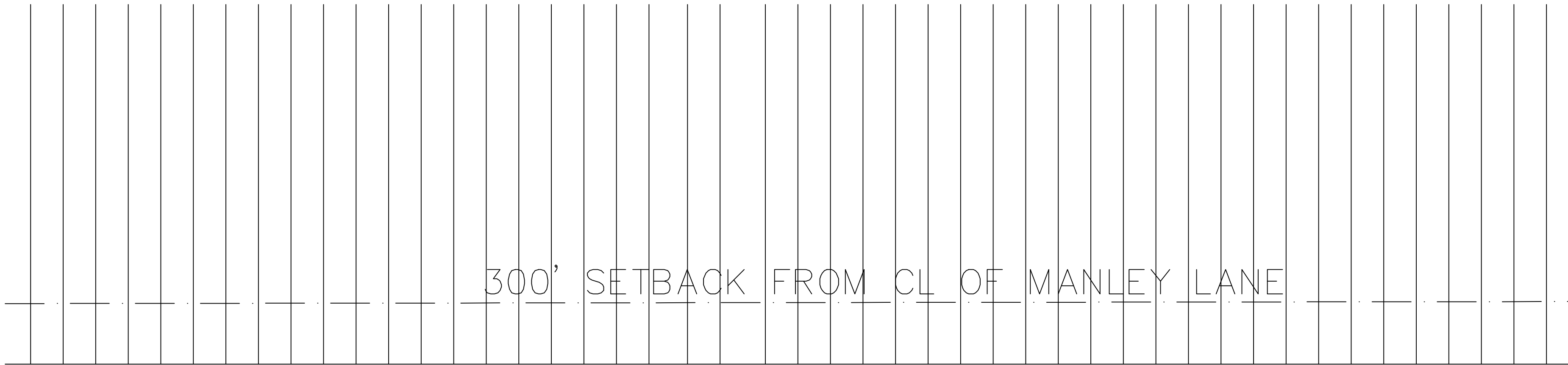
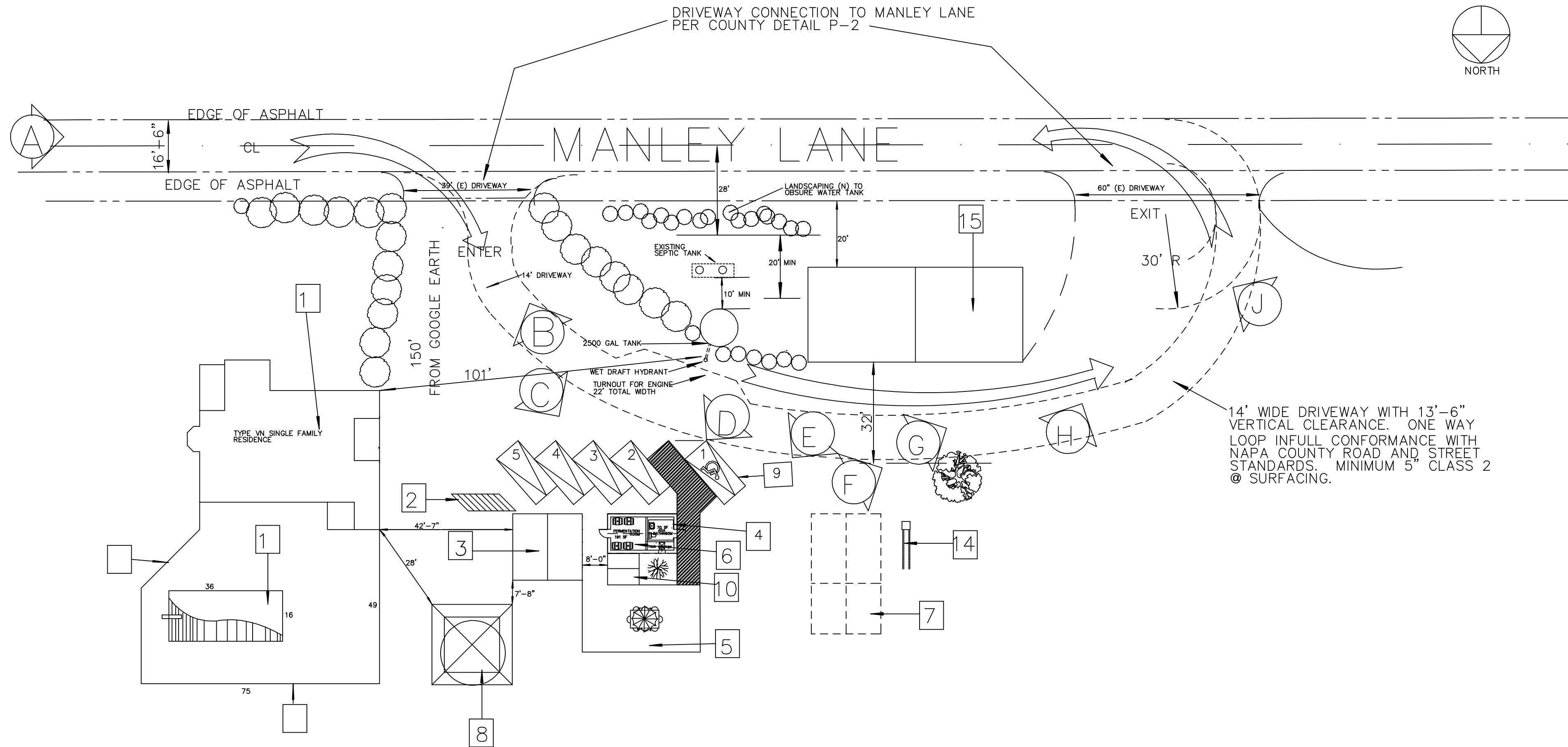
PHOTO LEGEND

- A = VIEW WEST DOWN MANLEY LANE AT HWY 29
B = VIEW AT ENTRANCE TO SITE TO MANLEY LANE
C = VIEW ON SITE LOOKING NORTH TO FERMENTATION BLDG
D = VIEW ON SITE LOOKING AT FERMENTATION BLDG
E = VIEW ON SITE LOOKING AT FERMENTATION BLDG AND TASTING AREA
F = VIEW ON SITE LOOKING WEST FROM FERMENTATION BLDG EXISTING BARN ON LEFT AND DEMOLISHED BUILDING ON RIGHT
G = VIEW ON SITE LOOKING WEST FROM PARKING AREA
H = VIEW ON SITE LOOKING TOWARDS MANLEY LANE EXIT
J = VIEW ON SITE LOOKING SOUTH TO MANLEY LANE TO EAST

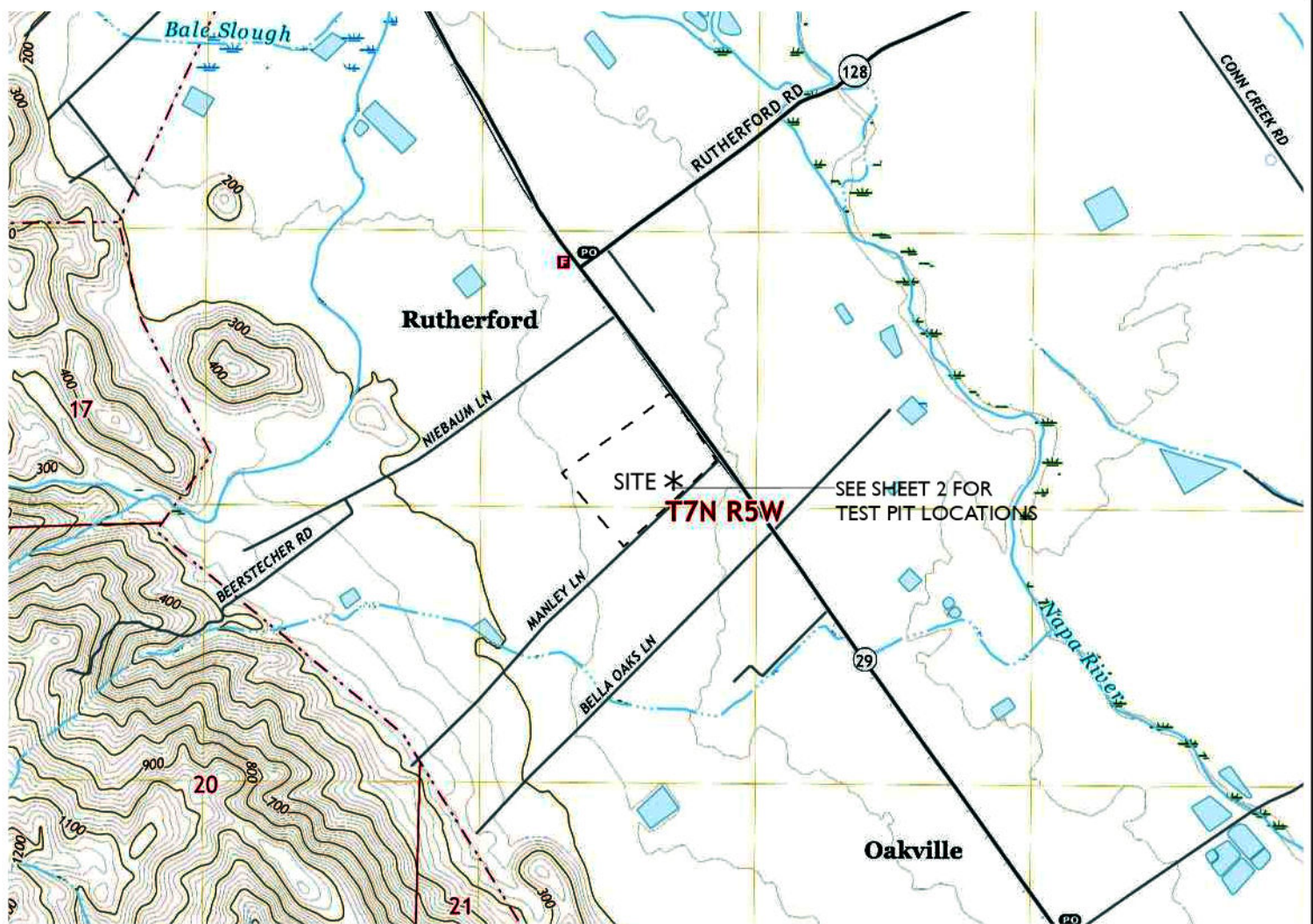
LEGEND E=EXISTING P=PROPOSED

- 1 RESIDENCE (E)
2 BICYCLE STAND FOR 8 BICYCLES (P)
3 STORAGE BLDG (E)
4 ACCESSIBLE RESTROOM (P) WITHIN EXISTING FERMENTATION BLDG
5 PICNIC BENCH WITH UMBRELLA (OUTSIDE TASTING) (P)
967 SF OUTSIDE TASTING AREA
FLAT PAVED AREA WITHIN ADA STANDARDS
6 (E) FERMENTATION BLDG
BUILDING IDENTIFIED AS NO. 5 ON ASSESSOR'S ROLL (1956)
(E) STRUCTURE FROM 1956 USED FOR COLD STORAGE
WITH ADA RESTROOM WITHIN PER ILLUSTRATION THIS PAGE

- 7 VINEYARD BLDG (REMOVED BY PERMIT)
8 HISTORIC WATER TOWER W/ EXISTING WELL
EXISTING WELL 1
9 (P) VAN ACCESSIBLE PARKING SPACE
WITH 4 STANDARD PARKING SPACES
10 TOOL SHED
11 NEIGHBORING HOMES
12 EXISTING WELL 2
13 EXISTING WELL 3
14 (N) LEACH FIELD
15 (E) HISTORIC BARN



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ARCHITECT'S SEAL
SHEET DATA:
ROGER WOLFF ARCHITECT PO BOX 5836 NAPA, CA 94561 707 255-3977
PROJECT TITLE: CHAIX FAMILY VINEYARDS 1204 MANLEY LANE APN 027 210 026
SHEET TITLE: SITE PLAN
DATE: SCALE: SEE PLAN JOB NO. CHAIX DRAWN: RW SHEET NO.
2
OF 1 SHEETS



LOCATION MAP

SCALE: 1" = 2000'

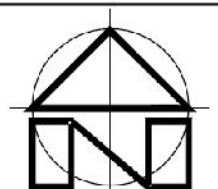
NOTES:

1. TEST PITS ONE THROUGH SIX (TP #1 - TP #6) WERE EXCAVATED BY SAKAI GENERAL ENGINEERING AND WERE WITNESSED BY MIKE MUELARTH OF APPLIED CIVIL ENGINEERING INCORPORATED AND ARMEDA SIMPSON-VAN DAM OF THE NAPA COUNTY PLANNING, BUILDING AND ENVIRONMENTAL SERVICES DEPARTMENT - ENVIRONMENTAL HEALTH DIVISION ON JUNE 7, 2023.
2. FADED BACKGROUND REPRESENTS EXISTING TOPOGRAPHIC FEATURES. TOPOGRAPHIC INFORMATION WAS TAKEN FROM THE NAPA COUNTY GEOGRAPHIC INFORMATION SYSTEM DATABASE.
3. CONTOUR INTERVAL: ONE (1) FOOT, HIGHLIGHTED EVERY FIVE (5) FEET.
4. AERIAL PHOTOGRAPHS ARE NADIR IMAGES CAPTURED BY PICTOMETRY INTERNATIONAL DATED JULY 15, 2021 AND MAY NOT REPRESENT CURRENT CONDITIONS.
5. ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE RATE MAP (FIRM) MAP NUMBER 06055C0385E, EFFECTIVE 09/26/2008, THE PROJECT SITE IS NOT LOCATED IN A SPECIAL FLOOD HAZARD AREA.

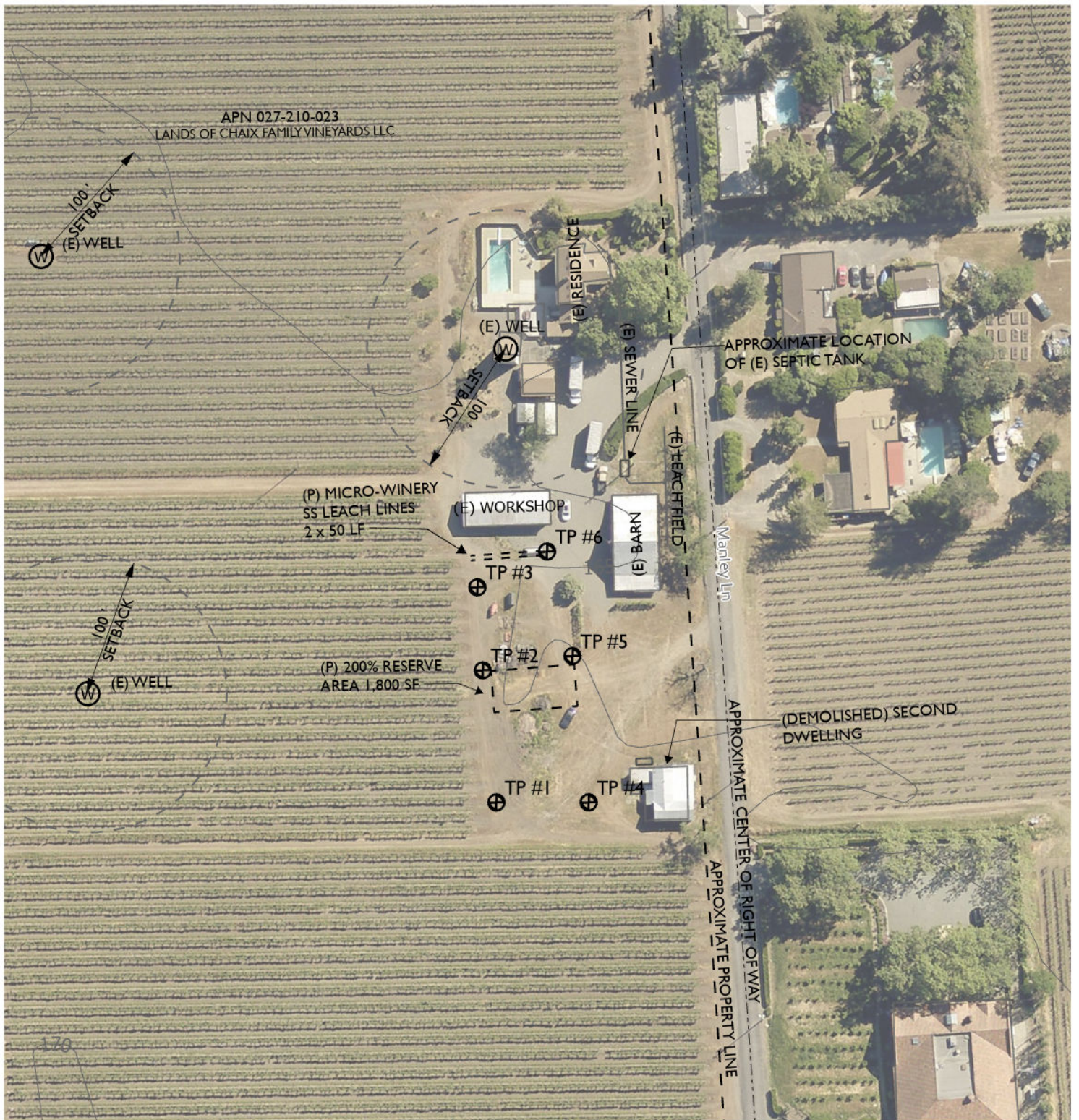


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(707) 320-4968 | www.appliedcivil.com

CHAIX FAMILY VINEYARDS
MICRO-WINERY WASTEWATER EXHIBIT
1204 MANLEY LANE
NAPA, CA 94558
APN 027-210-023



SCALE: 1" = 2000'



SITE PLAN EXHIBIT

SCALE: 1" = 100'

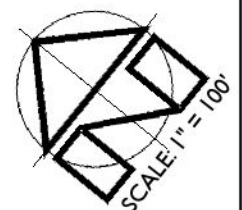


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MAY 2023