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Water Availability Analysis

Amizetta Winery Use Permit P19-00132 & Variance P21-00229
Zoning Administrator Hearing September 22, 2021

UPDATED MEMORANDUM

March 29, 2021

To: Perry Clark
Amizetta Winery
1089 and 1099 Greenfield Road
St. Helena, CA 94571
Sent via email (perry@amizetta.com)

Cc: Jeff Redding
Sent via email (jreddingaicp@comcast.net)

Job No. 695-NPA01

From: Geza Demeter, Anthony Hicke, and Richard C. Slade
Richard C. Slade & Associates LLC (RCS)

Re: Updated Results of Napa County Tier 1 Water Availability Analysis
Amizetta Winery
Napa County APNs 025-390-010 and 025-390-011
Vicinity Lake Hennessey, Napa County, California

Introduction

This Updated Memorandum presents the revised findings, conclusions, and recommendations by RCS to the original Water Availability Analysis (WAA) prepared by RCS for the Amizetta Winery property in Napa County (County), California dated September 19, 2019, and previously submitted to the County for review. County comments regarding that September 2019 WAA were received on December 11, 2019. Changes in water-use estimates as part of a project reconfiguration, and the recent construction of a new water well, necessitated revision of the WAA. Hence, this updated document was prepared for the property owner to provide an updated hydrogeologic analyses in conformance with Napa County Tier 1 requirements, as described in the County WAA Guidelines (WAA 2015), and to address the project reconfiguration.

The Amizetta Winery property (referred to herein as "subject property") is comprised by two separate parcels consisting of a total of 40.40 acres and is located at the addresses of 1089 and 1099 Greenfield Road in the Lake Hennessey area of Napa County. Figure 1, "Location Map," shows the boundaries of the subject property superimposed on the USGS topographic map for the St. Helena quadrangle. Property boundaries shown on Figure 1 were adapted from the County's Assessor parcel data; these County parcel data are freely available on the County GIS website. Also shown on Figure 1 are the locations of the existing onsite water wells (known herein as: "Well A"; "Well B"; "Well C"; "Well D"; "Well E"; "Well F"; "Well G"; and the "New Well") and the locations of a few nearby offsite wells owned by others. Other features shown on Figure 1 are discussed later in this Memorandum. Figure 2, "Aerial Photograph Map," shows the same

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property boundaries and well locations that are illustrated on Figure 1, but the base map for Figure 2 is an aerial photograph of the area, obtained using the ArcGIS Pro software package. Additionally, Figure 2 includes an inset map showing a more detailed view of the winery area on the subject property and the configuration of existing wells near the winery. Note that property boundaries shown on all Figures in this document should be considered approximate only as those boundaries were not surveyed by a professional surveyor for this work.

As reported by the property owner, the 40.40-acre subject property is currently developed with the following: 22 acres of existing vineyards, two residences, landscaping, and an existing winery. RCS understands the proposed project is to modify the operating characteristics of the existing winery to increase the winery production to 20,000 gallons of wine per year. Due to the proposed winery increases, a new onsite water-supply well (i.e., the "New Well") with a minimum 50-foot sanitary seal was constructed in January 2020 in order to meet the requirements for a Transient Non-Community Public Water System. For this new winery project, future winery water demands are proposed to be met using groundwater pumped from the New Well; as seen on Figure 2, the New Well (i.e., the project well) was constructed on the western parcel near the existing winery.

The basic purpose of this Memorandum is to comply with the County's WAA guidelines for a "Tier 1" WAA (i.e., a Groundwater Recharge Estimate); those guidelines were promulgated by the County in May 2015. Because there are no known offsite wells owned by others located within 500 ft of the onsite project well, County requirements for a "Tier 2" WAA analysis (i.e., a Well Interference Evaluation) have been "presumptively met" per the WAA Guidelines (WAA 2015).

Although the County use permit modification only applies to the western parcel of the subject property (APN 025-390-010) on which the winery exists, this Tier 1 WAA will need to consider both parcels of the subject property. This is due to the fact that groundwater is extracted from wells on the eastern parcel (APN 025-390-011) in order to meet the irrigation demands of vineyards located on the western parcel.

Site Conditions

From review of existing in-house data, and from the field reconnaissance visit by RCS geologists to the subject property on November 7, 2018 for the original RCS Memorandum, the following key items were noted and/or observed (refer to Figures 1 and 2):

a. The Amizetta Winery property is comprised by two contiguous parcels having County Assessor's Parcel Numbers (APN) of 025-390-010 (the western parcel) and 025-390-011 (the eastern parcel). The total assessed area of the subject property is 40.40 acres.

b. Topographically, the subject property is situated in the hills north of Lake Hennessey in Napa County. Based on the topographic contours illustrated in Figure 1, ground surface on the subject property is moderately steep and slopes to the southeast. An ephemeral drainage is shown on the USGS topographic map within the boundaries of the subject property, as denoted by a dashed blue line on Figure 1. This marked drainage flows from the northwest portion of the property to southeast and continues offsite. Because this drainage is ephemeral, it would contain surface water runoff only during or immediately following a rainfall event. During the November 2018 RCS site visit, this drainage was observed to be dry.

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c. The subject property is currently developed with the following: 22 acres of vineyards (approximately 9.90 acres on APN 025-390-010 and 12.10 acres on APN 025-390-011); an existing winery (on APN 025-390-010); a primary residence on each parcel; a pool (on APN 025-390-011); and associated landscaping and several water wells on both parcels.

d. Offsite areas surrounding the subject property consist primarily of vineyards, wineries, and some residences. Naturally vegetated and/or wooded hillsides (i.e., undeveloped areas) were observed offsite to the east and south.

e. As shown on Figures 1 and 2, eight existing water-supply wells ("Well A"; "Well B"; "Well C"; "Well D"; "Well E"; "Well F"; "Well G"; and the "New Well") are located on the subject property. Wells A, E, F, and G are located on APN 025-390-011, whereas Wells B, C, D, and the New Well are located on APN 025-390-010. Wells A, B, C, D, E, F, and G are currently equipped with permanent pumps. As reported by the Owner, groundwater pumped from onsite Wells A, B, C, and D is directed to a water storage tank located next the winery (referred to herein as the "winery tank"). Groundwater stored in the winery tank is used to help meet the existing winery demands and irrigation demands of the existing vineyards on the western parcel. Groundwater pumped from Wells E, F, and G is directed to multiple water storage tanks located behind the residence on the eastern parcel (referred to herein as "house tanks"); water in these tanks is reportedly used to meet existing domestic water demands for the residence and the irrigation demands of the existing vineyards on the eastern parcel. However, the house tanks are also reportedly plumbed to the winery tank, and water can be transferred from the house tanks to the winery tank, if necessary.

   It should be noted that RCS has not observed the location and above-ground infrastructure of the New Well, which was constructed in January 2020, after the RCS site reconnaissance visit.

f. Only one flow meter totalizer device was observed at the subject property, and it was installed on the outflow pipe of the winery tank. As such, the winery tank totalizer meter reportedly records water flowing out of the winery tank. As stated above, generally only Wells A, B, C, and D pump water to the winery tank. No other totalizer flow dials were observed to be installed near the wellhead of any of the eight exiting onsite wells or on the house tanks.

g. An onsite spring was reported by the Owner to exist in the southern portion of the subject property (see Figures 1 and 2). The reported spring location was observed by the RCS geologist during the site visit, but at the time of that visit, the spring was observed to not to be flowing. In addition, based on the observed infrastructure at the reported spring site, it appeared that spring water (when flowing) would be collected in a plastic cistern-type receptacle. Reportedly, this spring is known by the Owner to be intermittent (i.e., it does not flow year-round), and water from this spring, when available, can be diverted directly to the house tanks behind the residence, if necessary, via the infrastructure observed by the RCS geologist.

h. During the November 2018 site visit by RCS, the geologist also traveled along public roads to the subject property in attempt to identify possible locations and/or the existence of nearby offsite wells owned by others. RCS refers to such work as

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"windshield surveys." During this survey, the RCS geologist identified possible well locations by observing typical well-house enclosures, pressure tanks, storage tanks, power lines, or by the direct observation of a wellhead.

RCS geologists contacted Napa County Planning, Building, and Environmental Services (PBES) in an attempt to acquire "Well Completion Reports" (also known as "driller's logs") that might exist for the onsite wells, and wells located on those neighboring offsite properties. In addition, RCS geologists also used the California Department of Water Resources (DWR) online Well Completion Report website to download driller's logs for wells within the immediate vicinity of the subject property. As a result of those inquiries, a few driller's logs and/or well drilling permits were obtained for wells historically drilled in the area.

Figures 1 and 2 show the approximate locations of known, reported, or inferred nearby offsite wells surrounding the subject property, as determined from the field reconnaissance and well log research. It is noteworthy that none of these wells are shown to be located with 500 ft of the onsite wells, and specifically, not within 500 ft of the project well (i.e., the New Well).

Key Construction and Testing Data for Existing Onsite Wells

As stated above, RCS geologists contacted PBES and used the DWR online Well Completion Report website to acquire driller's logs that might exist for the onsite wells. As a result of those inquiries, driller's logs were obtained for five onsite wells. The available driller's logs that could be reliably correlated to these five onsite wells include:

- Well A – Log No. 119516
- Well C – Log No. 284922
- Well E – Log No. 546360
- Well F – Log No. 546359
- Well G – Log No. 119515

The driller's log for the New Well was provided to RCS by the Owner after the well was constructed in January 2020.

- New Well – Log No. WCR2020-000958

Copies of these six driller's logs are appended to this Memorandum; no driller's logs were recovered for Well B or Well D. Table 1, "Summary of Well Construction and Airlift Test Data," provides a tabulation of key well construction data and groundwater airlifting data available for the onsite wells.

Well Construction Data

Key data for the onsite wells listed on the available driller's logs and/or identified during our site visit include:

a. Onsite wells with known driller's logs were drilled and constructed as early as 1982, and as recent as January 2020. The onsite wells were drilled by the following contractors: Doshier-Gregson Inc (DGI) of Vallejo, California (Well A and Well G); Pulliam Well Exploration (PWE) of Angwin, California (Well C); and Huckfeldt Well Drilling of Napa, California (Well E, Well F, and the New Well). Each of these wells was drilled using direct air rotary methods, except for Well C and the New Well, which were both drilled using the direct mud rotary method.

b. Pilot hole depths (the borehole drilled before the well casing was placed downwell) for those onsite wells with available driller's logs were reported to have ranged from 145 ft below ground surface (bgs) in Well A, to 500 ft bgs in the New Well. Geophysical electric log surveys were not conducted in the open pilot borehole for any of the onsite wells.

c. The onsite wells are all reportedly and/or appear to be cased with PVC well casing and have nominal diameters ranging from 5 inches (in Well C, Well E, and Well F), to 6 inches (in Well A, Well B, Well D, Well G, and the New Well); total casing depths ranged from 145 ft bgs in Well A, to 495 ft bgs in the New Well. For Wells B and D, the casing diameter was measured during the field visit by RCS geologists.

d. Casing perforations for the onsite wells with available data are reported to be either machine-cut slots or factory-cut slots. The top of the uppermost perforations in the wells ranges from 40 ft bgs (in Well F) to 80 ft bgs (in Well C and the New Well). The depth to the base of the bottommost perforations ranges from 75 ft bgs (in Well G) to 485 ft bgs (in the New Well).

e. Gravel pack materials listed on the driller's logs for Wells A, C, E, F, and G were all reported to be "pea gravel;" the exception is the gravel pack in the New Well which was reported to be "No. 6 Sand."

f. Wells A, C, E, F, G, and the New Well were reportedly constructed with sanitary seals consisting of cement, concrete, and/or bentonite. The sanitary seals were set to depths ranging from 20 ft bgs (in Well A, Well E, Well F, and Well G) to 55 ft bgs (in the New Well). As such, the seal depth in the New Well meets the minimum 50-foot sanitary seal depth that is required for wells to be used for public-supply purposes, per County and State water well requirements. The sanitary seal depths for Well B and Well D are unknown.

Summary of Key Well "Test" Data for Onsite Wells

The driller's logs available for Wells A, C, E, F, G, and the New Well list the original post-construction static water levels in the wells, and the original "airlift" test rates in those wells (as shown on Table 1), as follows:

- Initial static water levels (SWLs), following completion of well construction, ranged from 35 ft to 65 ft bgs, depending on the well and its date of construction.
- The reported maximum airlift flow rates during initial post-construction airlifting operations in the onsite wells were estimated by the drillers to have ranged from 1 gallon per minute (gpm) in Well F, to 50 gpm in Well E, on the dates of their respective construction (see Table 1). As a rule of thumb, RCS geologists estimate that normal operational pumping rates for a new well equipped with a permanent pump are typically on the order of only about one-half or less of the airlifting rate reported on a driller's log.
- A "water level drawdown" value was not and could not be provided on the driller's logs, because water level drawdown cannot be measured during airlifting operations; thus,

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the original post-construction specific capacity[1] value for the onsite wells cannot be calculated from the data on the available driller's logs.

Based on the available data provided to RCS for this project, no historical, long-term water level data or pumping test data are available for any of the existing onsite wells. Imboden Pump (Imboden) of Napa, California is the current pumping contractor for the existing onsite wells, and Imboden reported to RCS the design rate for the pumps at the time of pump installation in each of the onsite wells to be as follows: 75 gpm for Well A (in April 1990); 1.5 gpm for Well E (in September 1999); 20 gpm for Well F (in April 1995); and 18 gpm for Well G (in July 1987). Note that these rates are not considered to be current operational pumping rates for these wells; current operational pumping rates for the onsite wells are unknown.

Well Data from Site Visit

As discussed above, a site visit to the subject property was performed by an RCS geologist on November 7, 2018; the New Well was constructed in January 2020, and therefore was not observed by RCS Geologists. The following information for the onsite wells was collected from that site visit:

- Wells A through G were equipped with permanent pumps. At the time of the RCS site visit, none of the onsite wells appeared to be pumping. Note that the RCS site visit was conducted prior to construction of the New Well.
- SWL measurements recorded by the RCS geologist in the onsite wells at the time of the site visit were as follows (the post-construction SWL and date are shown below in parenthesis for comparison):

  Well A – 122.3 ft below wellhead reference point, brp (40 ft in August 1982)
  Well C – 182.7 ft brp (50 ft in February 1989)
  Well E – 61.0 ft brp (36 ft in November 1994)
  Well F – 146.3 ft brp (65 ft in November 1994)
  Well G – 29.0 ft brp (35 ft in August 1982)
- SWL measurements could not be obtained in Wells B and D at the date of the RCS site visit due to a lack of wellhead access for our water level sounder device.
- As listed above, these SWL depths in the onsite wells appear to be deeper than their respective initial, post-construction water level measurements reported on the available driller's logs, except for the water level in Well G, which appears to be slightly shallower than the original measurement.
- Based on the reported casing depths for Wells A (at 145 ft bgs), C (at 200 ft bgs), and Well F (at 160 ft bgs), current SWL depths in these wells are near the bottom of the well casings, and likely near the depth of the installed permanent pumps. Because of the timing of the RCS site visit, these water levels were measured near the end of the irrigation season, when water levels for wells in the region are typically at their deepest.
- None of the onsite wells is currently equipped with a totalizer flow meter. However, a totalizer flow meter that measures outflow from the winery tank was observed. As

[1] Specific capacity, in gallons per minute per foot of water level drawdown (gpm/ft ddn), represents the ratio of the pumping rate in a well (in gpm) divided by the amount of water level drawdown (in ft ddn) created in the well while pumping at that rate.

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discussed above, and as reported by the Owner, the winery tank is generally filled with groundwater pumped from Wells A, B, C, and D only. During the RCS site visit, the totalizer flow dial at the winery tank outflow was observed to have a reading of 345,884 gallons. This totalizer was reportedly installed by a contractor in October 2017. Assuming the flow meter totalizer had an initial reading of zero gallons in October 2017, then it is estimated that a total combined volume of 345,884 gallons (or about 1.1 AF) of groundwater may have been pumped from Wells A, B, C, and/or D, between October 2017 and November 2018.

For water level and airlift data available for the New Well, please refer to the data and information reported by the driller on the driller's log and presented on Table 1.

Local Geologic Conditions

Figure 3, "Geology Map," illustrates the types, lateral extents, and boundaries between the various earth materials mapped at ground surface in the region by others. Specifically, Figure 3 has been adapted from the results of regional geologic field mapping of Eastern Sonoma and Western Napa Counties, as published by the USGS in 2007. As shown on Figure 3, the key earth materials mapped at ground surface in the area from geologically youngest to oldest include the following:

a. Sonoma Volcanics. The Sonoma Volcanics are comprised by a highly variable sequence of chemically and lithologically diverse volcanic rocks. These rock types in the vicinity of the property include the following: rhyolitic lava flows (map symbol Tsr) and volcanic sand and gravel (map symbol Tss). As shown on Figure 3, volcanic rocks, specifically the rhyolitic lava flows (map symbol Tsr), are exposed at ground surface in the southwestern corner of the subject property. In many parts of Napa and Sonoma Counties, these volcanics rocks tend to be viable aquifer systems. However, none of the onsite wells appear to have been constructed in areas where Sonoma Volcanics have been mapped on the subject property. These volcanic rocks overlie the older sedimentary rocks that are discussed below, and are separated at ground surface from those older rocks by geologic faults, as discussed below.

b. Franciscan Complex. The geologically older (Cretaceous-aged) Franciscan Complex rocks occur at ground surface across the entire northeastern portion of the subject property (map symbol Kfm on Figure 3). These geologically older rocks consist mainly of well-consolidated to cemented, thickly bedded metagreywacke with minor amounts of thinly bedded shale. Metagreenstone (map symbol Kfmg) are exposed at ground surface to the south of the subject property. Due to their geologic age and the high degree of consolidation, these rocks are also not typically considered to be a viable water-bearing formation and they generally have low permeability and virtually no intergranular (primary) porosity. Based on our interpretation of the available well construction data, and driller's descriptions of the drill cuttings for wells with available driller's logs, these geologic materials appear to be the primary source of groundwater for all existing wells on the property.

   The quality and quantity of groundwater produced from this formation will depend on the fractured nature of these rocks and the amounts of average annual recharge (rainfall) experienced at the subject property. These rocks are also known to underlie all other geologically-younger rocks exposed in offsite areas near the subject property

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(including the volcanic rocks mentioned above) and are considered to be the bedrock of the area.

Geologic Structure

Several faults[2], as mapped by others, have been interpreted to exist on and in the vicinity of the subject property as shown by the dark-colored, solid or short dashed lines on Figure 3 (USGS 2007). Also shown on Figure 3 are fault traces reportedly associated with the "Atlas Peak-Foss Valley lineament zone." These latter Quaternary-aged fault traces, shown as green-colored lines, were mapped by the USGS in conjunction with the CGS in 2000 and are available as GIS files via the USGS "Quaternary Fault and Fold Database" website. Specifically, these northwest-southeast trending fault traces are shown to be mapped through the central portion of the subject property. The fault traces mapped by USGS/CGS (2000) are different than those mapped by the USGS (2007), because the USGS/CGS (2000) study mapped only younger, Quaternary-aged faults. Where the two differently-sourced fault traces are shown to overlap, the Quaternary-aged faults (USGS/CGS 2007) and the faults mapped by USGS (2007) are presumably the same faults; their variations in placement and lateral extent on Figure 3 may also differ due to varied interpretations by the authors of the two maps or may be partially due to GIS mapping conversion inaccuracies.

There may be potential impacts of these faults on groundwater availability in the region and on the property. Faults can serve to increase the number and frequency of fracturing in the surrounding geologic materials. If such fractures were to occur, they would tend to increase the amount of open area in the rock fractures which, in turn, could increase the ability of the local earth materials to store groundwater. Fracturing due to fault motion is the likely reason successful wells have been constructed at the property overtime. Faults can also act as barriers to groundwater flow. The possible nature of the onsite fault discussed above is unknown. As mentioned above, the contact on the subject property between the Sonoma Volcanics and the Franciscan rocks is a geologic fault (see Figure 3).

Project Groundwater Demands

For the purposes of this WAA, the New Well is considered to be the "project well," as it will represent the only well that will be used to meet water demands of the proposed winery project. As discussed above, existing onsite water demands for the existing residences, pool, winery, lawn, landscaping, and vineyards have been supplied by groundwater pumped from Wells A, B, C, D, E, F, and G.

Due to the lack of historical totalizer flow data for these seven onsite wells, existing (and proposed) onsite groundwater demands for the property were estimated[3] by Applied Civil Engineering, Inc. (ACE) of Napa, CA; these ACE estimates are discussed in more detail below. Table 2, "Groundwater Use Estimates by ACE," has been adapted from the ACE information to summarize those water use data and is intended to categorize the specific water demands of the project and

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[2] Note that it is neither the purpose nor within our Scope of Hydrogeologic Services for this project to assess the potential seismicity or activity of any faults that may occur in the region.

[3] These water demand estimates were reportedly based on those values presented for specified land uses provided in Appendix B of the County's WAA Guidance Document (WAA 2015); see the ACE "Groundwater Use Estimate" table in the Appendix to this Memorandum.

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other onsite uses. The original "Groundwater Use Estimate" tables received from ACE are provided in the Appendix to this Updated Memorandum.

Existing Groundwater Demands

Groundwater demands for the existing residences, pool, winery, lawn, landscaping, and vineyards have historically been met using groundwater pumped from existing Wells A, B, C, D, E, F, and G. Existing groundwater demands for the subject property have been estimated by ACE, as follows:

a. Existing residential (and pool) groundwater demand = 1.55 acre-feet per year (AF/yr)
   - This includes 0.75 AF/yr for each of the two onsite residences, and 0.05 AF/yr for the one onsite pool.
   - Note that 1 AF = 325,851 gallons

b. Existing winery groundwater demand = 0.59 AF/yr
   - This includes: 0.115 AF/yr for daily visitors; 0.134 AF/yr for employees; and 0.337 AF/yr for process water (see Table 2).

c. Existing lawn and landscape irrigation groundwater demand = 0.45 AF/yr

d. Existing vineyard irrigation groundwater demand = 11.00 AF/yr
   - This estimate is based on the total vineyard acreage of 22 acres, and a unit water demand of 0.50 AF per acre of vine per (AF/ac/yr)

e. Total estimated existing annual groundwater demand = a + b + c + d = 13.59 AF/yr

Proposed Groundwater Demands

Proposed onsite groundwater demands for the property have been estimated by ACE, as shown on Table 2. All winery water demands (including both process water and domestic water for the winery) and the domestic demands for the residence on the western parcel (APN 025-390-010) are proposed to be met by pumping groundwater from the New Well. Water demands for the existing vineyards, lawn, landscape, residences and pool (on the eastern parcel, APN 025-390-011) are not anticipated to increase as part of the proposed project. These existing water demands will be supplied via groundwater pumping from Wells A, B, C, D, E, F, and G.

a. Existing residential (and pool) groundwater demand = 1.55 AF/yr

b. Existing lawn and landscaping irrigation groundwater = 0.45 AF/yr

c. Existing vineyard irrigation groundwater demand = 11.00 AF/yr

d. Proposed winery groundwater demand = 0.62 AF/yr
   - This includes: 0.101 AF/yr for daily visitors; 0.003 AF/yr for events with meals prepared offsite; 0.084 AF/yr for employees; 0.001 AF/yr for event staff; and 0.430 AF/yr for process water (see Table 2).

As shown on Table 2, the total proposed groundwater demand for the project (13.62 AF/yr) represents a small increase of 0.03 AF from the estimated existing groundwater demands (13.59 AF/yr).

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Groundwater Demands by Well

As shown on Table 2, the proposed winery water demands (including all domestic and process water uses) and domestic demands for the existing residence on the western parcel (APN 025-360-010) are proposed to be met by pumping groundwater from the New Well. Groundwater to meet the existing demands of the residence on the eastern parcel (APN 025-360-011), the pool, the lawn, the landscaping, and the vineyards will continue to be supplied by pumping groundwater from Wells A, B, C, D, E, F, and G. The total proposed onsite groundwater demands from the onsite wells are estimated as follows:

New Well

a. Existing residential demand (APN 025-390-010)

   = 0.75 AF/yr

b. Proposed winery demand

   = 0.62 AF/yr

c. Total proposed groundwater demand from the New Well

   = a + b = 1.37 AF/yr

Wells A, B, C, D, E, F, and G

a. Existing residential (and pool) demand (APN 025-390-011)

   = 0.80 AF/yr

b. Existing landscape and lawn irrigation demand (APN 025-390-010 & 025-390-011)
   = 0.45 AF/yr

c. Existing vineyard irrigation demand (APN 025-390-010 & 025-390-011)

   = 11.00 AF/yr

d. Total estimated groundwater demand from Wells A, B, C, D, E, F, and G

   = a + b + c = 12.25 AF/yr

Note that actual groundwater demands for vineyard irrigation are reportedly relatively minor and much less than what is estimated above (11.00 AF/yr) due to the implementation of dry farming techniques for the vineyards. Based on the limited extraction data available for the property, approximately 1.10 AF of groundwater were delivered from the winery tank in a roughly 1-year period (October 2017 to November 2018). Recall the winery tank is generally only filled with groundwater extracted from existing Wells A, B, C, and D.

Estimated Pumping Rate of New Well

To determine an estimated pumping rate necessary from the New Well, it was conservatively assumed that the proposed winery and residential water demands (1.37 AF/yr) on the western parcel (APN 025-390-010) will be required year-round (365 days/year). Based on this assumption, and in order to meet the water demands for the proposed project, the New Well would need to pump at a rate of about 2 gpm. This pumping rate assumes that the New Well would be pumped on a 50% operational basis (12 hours/day, 7 days/week) for the entire year.

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Groundwater demands for the eastern parcel (APN 025-390-011), including the residence and pool (0.80 AF/yr) and existing irrigation for the lawn, landscaping and vineyards (11.45 AF/yr) are proposed to be met by pumping groundwater from Wells A, B, C, D, E, F, and G. To meet these groundwater demands, these seven onsite wells would have to pump at a combined rate of about 38 gpm. This pumping rate assumes that: the residential and pool demands would be required year-round (365 days/year); the irrigation water demands for the existing vineyards will be required during a 20-week irrigation period each year: and the water demands for the existing landscaping will be required during a 26-week irrigation period each year. This rate also assumes the wells would be pumped on a 50% operational basis (12 hours/day) during the time of year when onsite water demands coincide. This necessary combined pumping rate is considered to be conservative and could be much lower considering these rates assume a standard irrigation volume. As a typical practice, the Owner implements dry farming techniques.

Rainfall

Long-term rainfall data are essential for estimating the average annual recharge that may occur at subject property. Average annual rainfall totals that occur specifically at the subject property are not directly known because no onsite rain gage exists. The nearest rain gage known to RCS with a significantly long data record is located approximately 5 miles west of the subject property in St. Helena, California. The data for this St. Helena rain gage are available from the Western Regional Climate Center (WRCC) website. For this rain gage, the available period of record is 1907 through December 2020; data for this gage are listed by calendar year, not water year. Note that there are several months and/or years of rainfall data missing, such as: in 1907; between 1915 and 1922; between 1979 and 1980; between 1985 and 1988; in 1992; and between 2011 and 2012. For the available period of record, the average annual rainfall at this St. Helena gage is 33.30 inches (2.78 ft), as reported by the WRCC. This rainfall gage is located at a lower elevation (±225 ft above mean sea level, amsl) than that of the subject property (between ±660 and ±1,120 ft amsl), and therefore the average annual rainfall at the subject property could be higher than that experienced at this known gage location.

Another WRCC rain gage with a long-term data record exists for the Angwin Pacific Union College rain gage, which is located roughly 5 miles north of the subject property in Angwin, California. For this rain gage, the period of record is listed as 1940 through December 2020. Note that there are several months and/or years of rainfall data missing between 1940 and 1943, in 1975, and in 2011. For the available period of record, the average annual rainfall at this Angwin gage is reported to be 38.80 inches (3.23 ft). This WRCC gage is located at a higher elevation (±1,715 ft amsl) than that of the subject property, and thus, it is likely the average annual rainfall at the subject property is lower than that experienced at this known gage location.

Relatively shorter-term rainfall data exist for the Atlas Peak rain gage, which is located roughly 9½ miles southeast of the subject property. Data for this rain gage are available from the California Data Exchange Center (CDEC) website, which is maintained by the DWR. Data from the CDEC website for this gage are available beginning in water year (WY) 1987-88 (October 1987 - September 1988) through WY 2019-20. Note there appear to be some erroneous and/or missing data in WY 1987-88, WY 1994-95, WY 1995-96, WY 2004-05, and WY 2006-07. RCS removed these erroneous and/or missing data from the dataset before calculating an average annual rainfall for this gage. Note that RCS only removed water year rainfall totals; no rainfall data were “added” to the dataset. With these assumed erroneous water years removed from the data set, an average annual rainfall for WY 1988-89 through WY 2019-20 at this gage was calculated to be 40.00 inches (3.33 ft). Because this rain gage is located at a higher elevation (±1,660 ft amsl) than that of the subject property, thus the average annual water year rainfall at the subject property could be lower than that experienced at this known gage location.

To help corroborate the average annual rainfall data derived from the WRCC and CDEC rain gages, RCS reviewed the precipitation data published by the PRISM Climate Group at Oregon State University. This dataset, which is freely available from the PRISM website, contains "spatially gridded average annual precipitation at 800m (800-meter) grid cell resolution." The date range for this dataset includes the climatological period between 1981 and 2010. These gridded data provide an average annual rainfall distributed across Napa County, including the region of the subject property. Using this dataset, RCS determined that the average rainfall for the subject property for the stated date range was approximately 37.10 inches (3.09 ft).

An additional, though older, rainfall data source, an isohyetal map (a map showing contours of equal average annual rainfall) was prepared by the County for all of Napa County, and is freely available for download from the online Napa County GIS database. As described in the metadata for the file (also available via the County GIS database), the isohyets are based on a 60-year data period beginning in 1900 and ending in 1960. As stated in the metadata for the file, the contour interval for the map is reported to be "variable due to the degree of variation of annual precipitation with horizontal distance", and therefore the resolution of the data for individual parcels cannot be readily discerned. The subject property is situated within the boundaries of the 35-inch average annual rainfall contour on this County map. Based on our interpretation of the actual isohyetal contour map (not provided herein), the long-term average annual rainfall at the subject property may be on the order of 35.00 inches (2.92 ft).

Table 3, "Comparison of Rainfall Data Sources," provides a comparison of the data collected from the different rainfall sources discussed above. Based on those rainfall data sources and as summarized on Table 3, RCS considers the long-term average annual rainfall at the subject property to be 37.10 inches (3.09 ft), as derived from the PRISM data set. The 37.10-inch per year estimate is based on the data source with a relatively long period of record (30 years) and is more site-specific, when compared to the other rainfall data sources listed in Table 3 that exist at different elevations, and/or are located at a significant distance from the subject property, and/or have a shorter period of available data.

Estimate of Groundwater Recharge

Groundwater recharge on a long-term average annual basis at the subject property can be estimated as a percentage of the long-term average rainfall that falls directly on the subject property and becomes available to deep percolate into the local aquifer system(s) over the long-term. The actual percentage of rain that deep percolates can be variable based on numerous conditions, such as: the slope of the land surface; the soil type that exists at the property; the evapotranspiration that occurs on the property; the intensity and duration of the rainfall; etc. Therefore, RCS has considered various analyses of deep percolation into the rocks of the Sonoma Volcanics and Franciscan Formation, as relied upon by other consultants and government agencies for projects in the Napa Valley.

Recharge volumes estimated in this Memorandum are based on the long-term average annual rainfall values determined for the subject property using the available data presented above. Note that a calculation of average annual rainfall (by calendar year or water year) for any long-term period always includes periods of below-average and above-average rainfall that occurred during

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the period over which the average was calculated. Therefore, the following recharge calculations also include consideration of drought year conditions.

Updated Napa County Hydrogeologic Conceptual Model (LSCE&MBK 2013)

Estimates of groundwater recharge as a percentage of rainfall were presented for a number of watersheds (but not all watersheds) in Napa County in the report titled "Updated Napa County Hydrogeologic Conceptual Model" (LSCE&MBK, 2013) prepared for Napa County. Watershed boundaries within Napa County are shown on Figures 8-3 and 8-4 in that report. Herein, Figure 4, "Watershed Boundaries," was prepared for this project using those same watershed boundaries provided by MBK Engineers (MBK), for which watershed water balance data are available in the LSCE&MBK 2013 report. As shown on Figure 4, the vast majority of the subject property is located within the watershed referred to by MBK as the "Conn Creek Watershed". As shown on Table 8-9 on page 97 of the referenced report (LSCE&MB 2013, not included in this report), 21% of the average annual rainfall that occurs within this watershed was estimated to be able to deep percolate as groundwater recharge. Note that, as shown above on Table 8-8 of LSCE&MBK (2013), several sub-watersheds, including the Conn Creek Watershed, are tributary to the "Napa River Watershed near Napa."

As stated above, the total surface area of the subject property is 40.40 acres. Assuming a conservative amount of 37.10 inches (3.09 ft) of rainfall occurs on the subject property on a long-term average annual basis, then the total volume of rainfall that would fall each year directly on the property over the long term would be approximately 124.84 AF/yr (40.40 acres x 3.09 ft). Assuming 21% of that average annual rainfall volume would be able to deep percolate to the groundwater beneath the subject property over the long term, then the average annual groundwater recharge at the subject property would be approximately 26.22 AF/yr. This estimated annual recharge volume is greater than the conservatively-estimated proposed average annual groundwater demand of 13.62 AF/yr for the subject property.

For projects located near or within the Napa River Watershed near Napa (a watershed south of the Conn Creek Watershed), RCS geologists have typically used a rainfall recharge percentage estimate between 14% and 17%. Additionally, based on the typical hydrogeologic properties of the earth materials that underlie the subject property (primarily older, well-consolidated and well-lithified sedimentary rocks with low permeability), the rainfall recharge percentage may be lower than the 21% derived from LSCE & MBK2013 for Conn Creek Watershed. Thus, to provide a more conservative analysis, a value of 14% could be an appropriate estimate for the percentage of rainfall that could become available to deep percolate to recharge the groundwater beneath the subject property. In addition, a very small portion of the subject property (approximately 0.80 acres) appears to have slopes greater than 30 degrees; such steep slopes can potentially reduce the deep percolation of rainfall. Thus, for this analysis, RCS will assume for those portions of the property with slopes greater than 30 degrees, infiltration is reduced to 0%.

Assuming a deep percolation of rainfall volume of 14% and using the "reduced" available surface area (39.60 acres) of the subject property, then the average annual groundwater recharge at the subject property is estimated to be 17.13 AF/yr (39.60 acres x 3.09 ft of rainfall x 14% deep percolation). This recharge estimate is noted to be greater than the conservatively-estimated average annual groundwater demand for the subject property (13.62 AF/yr).

It is noteworthy that the subject property Owner reports that they have never reported issues meeting vineyard irrigation demands because the existing vineyards are primarily dry farmed.

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Groundwater pumped from existing Wells A, B, C, D, E, F, and G is reported to historically have met the groundwater demands of the current onsite developments each year.

Estimate of Groundwater in Storage

To help evaluate possible impacts to the local aquifer system(s) that might occur as a result of pumping for the proposed project, the volume of groundwater extracted annually from the property can be compared to an estimate of the current volume of groundwater in storage strictly beneath the subject property. To estimate the amount of groundwater currently in storage beneath the subject property, the following parameters are needed:

a) Approximate surface area of property = 39.60 acres

b) Depth to the bottom of the perforated zone in Well E = 270 ft bgs; Well E is the second deepest well (depth to the bottom of the perforated zone in the New Well is 485 ft bgs) on the property and appeared to be perforated entirely within the Franciscan Formation; this formation is the only potentially water-bearing source of groundwater beneath the property. The depths to the bottom of the perforated zones for the onsite wells range from 75 ft to 485 ft bgs; therefore, the depth to the bottom of the perforated zone in Well E would place it near the middle of this range of well perforation depths of the onsite wells.

c) To present a conservative calculation of groundwater in storage, RCS geologists have assumed that the current saturated thickness of the aquifer(s) beneath the subject property is approximately 209 vertical feet. This value is calculated using the depth of Well E at 270 ft bgs and subtracting the RCS-measured SWL of 61 ft in this well (measured on November 7, 2018). The saturated rock aquifers beneath the subject property are likely much thicker, which would tend to create an even greater volume of groundwater in storage beneath the property.

d) Approximate average specific yield of the Franciscan Formation = 2%. The specific yield of these rocks can vary greatly depending on the degree and interconnection of the fracturing within the rocks. A conservative estimate by Kunkel and Upson for the specific yield of the local, subsurface materials range from 3% to 5% (UGSS 1960). Values for the specific yield of the different rock types are discussed on pages 65 and 78 of that Kunkel and Upson report (USGS 1960). Although no specific yield values are stated directly for the Franciscan Formation rocks, comparisons can be made to the rock types listed as "cemented conglomerate; cemented sand, gravel, and clay"; "cemented sand and boulders"; "sandrock"; and/or "sandstone" in that USGS (1960) report. For other nearby properties for which RCS has performed similar analyses, a more conservative estimate for specific yield of 2% was used. Hence, to present a conservative analysis, we will assume a specific yield value of only 2% for these consolidated and/or possibly cemented rocks that underlie the subject property. This conservative assumption also assigns the 2% specific yield value to the volcanic rocks that underlie the southwestern portion property. Specific yield values for fractured Sonoma Volcanics may actually be higher than 2%.

e) Thus, the RCS estimate of the groundwater in storage (S) beneath the subject property (based on the November 2018, post-construction SWL of Well E is calculated as:

S = property area (“a”) times saturated thickness (“c”) times average specific yield (“d”)
= (39.60 ac)(209 ft)(2%) = 165.53 AF

In contrast, the proposed average annual groundwater use for the property is conservatively estimated to be 13.62 AF/yr. Hence, the estimated groundwater demand for the entire property represents about 8% of the groundwater conservatively estimated to currently be in storage in the sedimentary rocks beneath the subject property based on conservative, site specific water level data for Well E. Furthermore, this percentage does not include annual groundwater recharge that will occur from rainfall into the onsite aquifer(s).

Based on the foregoing, the estimated increase in groundwater demands of the proposed project (approximate 0.03 AF/yr) and the entire subject property should not cause a net deficit in the volume of groundwater within the aquifer system(s) beneath the site so as to adversely impact water levels in nearby wells to a point that they would not support existing or permitted land uses.

Possible Effects of “Prolonged Drought”

California has experienced a number of periods of extended drought throughout its history. Here, drought is defined as a meteorological drought, that is, a period in which the total annual precipitation is less than the long-term average annual precipitation (DWR 2015). For similar projects in the County, Napa County PBES has asked RCS to consider what the effects on groundwater availability at a particular property might be if a period of “prolonged drought” were to occur in the region, assuming the project were to operate in the future as described herein. Recharge volumes estimated in this document are based on the long-term average rainfall value determined for the subject property using available data. Recall that a calculation of average annual rainfall for any long-term period always includes periods of below-average rainfall and above-average rainfall that occurred during the period over which the average was calculated. Therefore, it is our opinion that the preceding calculations do inherently include consideration of drought year conditions.

However, to help understand what potential conditions might exist in the local volcanic rocks beneath the property during a “prolonged drought period,” a “prolonged drought” must be defined. As discussed by DWR, “there is no universal definition of when a drought begins or ends, nor is there a state statutory process for defining or declaring drought” (DWR 2015). California’s most significant historical statewide droughts were defined by DWR as occurring during the following periods (DWR 2015):

- WY 1928-29 through WY1933-34 – six years
- WY 1975-76 through WY 1976-77 – two years
- WY 1986-87 through WY 1991-92 – six years
- WY 2006-07 through WY 2008-09 – three years
- Recent drought – WY 2011-12 through WY 2015-16[4] – five years

[4] The DWR 2015 drought document was published in February 2015 and lists the recent significant drought through the 2013-14 water year only; the drought continued throughout the State into WY 2015-16. Due to the rains in WY 2016-17, various sources, including the National Drought Mitigation Center website (NDMC 2021), declared an end to the drought in Northern California in 2017, which included Napa County. As of January 14, 2021, the area of Napa County in which the subject property lies, is currently mapped as “Extreme Drought” on the NDMC website (NDMC 2021).

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Table 4, "Drought Period Rainfall as Percentage of Average," shows the average amount of rainfall that occurred during each drought period for which rainfall data exist at the three rain gages discussed above and shown on Table 4; that drought period rainfall amount is also expressed on Table 4 as a percentage of the total rainfall that occurred. As shown on Table 4, determining the amount of rain that might fall during a "prolonged drought" is variable, and depends on the period of record for the specific rain gage. The WY 1975-76 to WY 1976-77 drought period recorded by the Angwin rain gage and reported by the WRCC had the lowest total rainfall at 32% (drought period average was 12.30 inches), compared to the long-term average (38.80 inches), and that specific drought lasted two years. The WY 1928-29 to WY 1933-34 drought period lasted for six years, but rainfall during this drought at the WRCC St. Helena gage was 72% of the average annual rainfall. It is important to note that the drought year percentage listed on Table 4 is completely dependent on the period of record for each individual gage. An example of this is the CDEC gage data; because the period of record for this gage is relatively short, and includes many drought years, then the first available drought year period (WY 1986-87 to WY 1991-92) rainfall percentage is shown to be 97% of the long-term average.

Hence, for the purposes of this analysis, a "prolonged" drought period rainfall is conservatively considered to be 32% of the average annual rainfall that occurred in the region (using the rainfall data from the WRCC Angwin rain gage). Further, to again be conservative, a "prolonged drought period" is estimated to last 6 years, which is the longest drought period on record according to DWR (DWR 2015); see Table 4. This six-year period is a conservative estimate, because the 39%-average figure corresponds with a two-year drought period, not a six-year drought period.

To meet six consecutive years of groundwater demand for the proposed subject property, a total onsite groundwater extraction of 81.72 AF is estimated to be required (13.62 AF/yr of groundwater demand multiplied by 6 years = 81.72 AF). Assuming groundwater recharge is reduced to 32% of the average annual recharge during each year of such a theoretical "prolonged drought period", then the resulting total of groundwater recharge that might occur during the six-year drought period for the subject property is calculated as follows:

- As shown herein, a conservative estimate of the average annual groundwater recharge on the subject property is estimated to be 17.13 AF/yr. Taking 32% of this annual volume yields a drought period recharge volume of 5.48 AF/yr.
- Assuming a drought period duration of 6 continuous years, then a total of 32.88 AF (5.48 AF/yr times 6 years) of water would be available to recharge the volcanic rocks beneath the property by virtue of deep percolation of the direct rainfall that occurs solely within the boundaries of the subject property.

Therefore, assuming a theoretical six-year drought period during which only 32% of the average annual rainfall might occur, a conservative estimate of the total drought-period recharge at the subject property (32.88 AF) would be less than the estimate of the total onsite groundwater demand (81.72 AF) that may occur over the same six-year period.

As estimated above, 165.53 AF of groundwater are in storage beneath the property (based on the November 2018 RCS-measured SWL from Well E). Hence, the theoretical six-year long drought period groundwater "recharge deficit" of 48.84 AF would represent about 30% of that volume of groundwater in storage. Temporarily removing an average of 8.14 AF of groundwater from storage every year (48.84 AF of total "deficit" over the entire 6-year period) may cause water levels to decrease somewhat beneath the subject property, but removal of such a relatively small percentage of groundwater from storage over an entire 6-year period of time is not expected to significantly impact groundwater levels beneath the property. Recharge that occurs during periods of average and above-average rainfall would continue to recharge the local aquifer system(s). Again, this drought analysis is quite conservative, and assumes very extreme drought (32% of average rainfall occurring every year for six consecutive years). This analysis also assumed a standard vineyard irrigation use estimate. Actual use of groundwater for vineyard irrigation is assumed to be lower due to the dry farming techniques used by the property owner.

Key Conclusions and Recommendations

1. The existing 40.40-acre Amizetta Winery property is comprised by two parcels and is currently developed with an existing winery, two residences, pool, landscaping, and 22 acres of existing vineyards.
2. The proposed project consists of modifying the operating characteristics of the existing winery and to increase the winery production to 20,000 gallons of wine per year.
3. There are eight existing onsite water wells ("Well A"; "Well B"; "Well C"; "Well D"; "Well E"; "Well F"; "Well G"; and the "New Well") on the subject property. The New Well, constructed in January 2020 near the existing winery, was provided with a 54-foot deep sanitary seal. Thus, the New Well meets the minimum 50-foot deep seal requirements for a public-supply water well for a Transient Non-Community Public Water System. Groundwater pumped from the New Well will be used to meet water demands of the proposed winery project and one existing residence located on the western parcel (APN 025-390-010).
4. Proposed groundwater demands for the property have been estimated by ACE to be approximately 13.62 AF/yr. This demand includes: 0.62 AF/yr for the winery; 1.55 AF/yr for the two residences and pool; 0.45 AF/yr for the lawn and landscape irrigation; and 11.00 AF/yr for vineyard irrigation. Existing onsite water demands have historically been met using groundwater pumped from the existing onsite wells.
5. Proposed groundwater demands for the property (including the proposed project) are estimated to increase by only 0.03 AF/yr, as estimated by ACE (see Table 2 and Appendix B). Hence, groundwater use on the property will be very similar to the groundwater use at the property currently supported by the onsite wells. As mentioned above, the property owners have not reported any issues meeting groundwater demands at the property in recent years.
6. Based on discussions with the Owner, actual groundwater demands for vineyard irrigation are reportedly relatively minor and much less than the 11.00 AF/yr conservatively estimated above due to the implementation of vineyard dry farming techniques. Between October 2017 and November, approximately 1.10 AF was extracted from the Winery Tank, which is filled with groundwater pumped from Well A, Well B, Well C, and Well D (and occasionally from the other onsite water tanks near the residence). This 1.10 AF met all site groundwater demands, including vineyard irrigation.
7. To meet the estimated groundwater demands of the proposed winery project (0.62 AF/yr) and existing residence (0.75 AF/yr) each year, the New Well would need to pump at an estimated rate of approximately 2 gpm assuming year-round use. This

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peak pumping rate assumes the proposed new well would be pumped on a 50% operational basis (pumping 12 hours per day, every day).

8. Based on the reported airlifting rate of the New Well (approximately 15 gpm) and design pumping rates of the other existing onsite wells, it appears that the New Well would be capable of pumping at a rate of 2 gpm to meet the demands of the proposed project.
9. Groundwater recharge at the subject property on an average annual basis is estimated to be 17.13 AF/yr; this value is based on conservative estimates of the average annual rainfall at the property (37.10 inches per year) and conservative estimates of rainfall (14%) that could be available to deep percolate into the fractures and jointed rocks of the volcanic and sedimentary rocks that underlie the subject property. This estimated groundwater recharge of 17.13 AF/yr is 3.51 AF/yr more than the 13.62 AF/yr estimated to be required for the project on an average annual basis in the future from the subject property and does not take into consideration the dry farming techniques used for vineyard irrigation at the property.
10. Conservative estimates of recharge that may occur during a "prolonged drought" (as defined herein) show that, over a theoretical six-year period of continuous drought in which only 32% of the average annual rainfall might occur, a total of 32.88 AF of rainfall recharge is estimated to occur strictly within the boundaries of the subject property. This theoretical drought period recharge estimate of 32.88 AF is less than the estimated groundwater demand of the proposed project of 81.72 AF for the same continuous six-year period (assuming no dry farming). Hence, the theoretical six-year long drought period groundwater recharge "deficit" of about 48.84 AF would represent about 30% of the volume of groundwater currently in storage (estimated to be approximately 165.53 AF). Rainfall recharge during years of average and above-average rainfall would then replenish groundwater in storage that has been used to the meet the groundwater demand of the entire property during a theoretical drought of six continuous years.
11. RCS recommends the immediate implementation of a groundwater monitoring program at the subject property. This would include the monitoring of static and pumping water levels in the onsite wells, and the monitoring of instantaneous flow rates and cumulative pumped volumes from the onsite wells via the installation and use of dual-reading flow meters that record both instantaneous flow rate and total volume on both wells. Currently, only outflow from the existing Winery Tank is reportedly equipped with a flow meter. The Owner has also reported an intent to install totalizer flow meters at each onsite well, including the New Well.
12. RCS also recommends that new water level transducers be purchased and installed in the onsite wells to permit the automatic, frequent, and accurate recording of water levels in those wells. By continuing to observe the trends in groundwater levels and future well production rates/volumes over time by qualified professionals, potential declines in water levels and well production in the onsite wells, along with possible changes in operational pumping scenarios, can be addressed in a timely manner.

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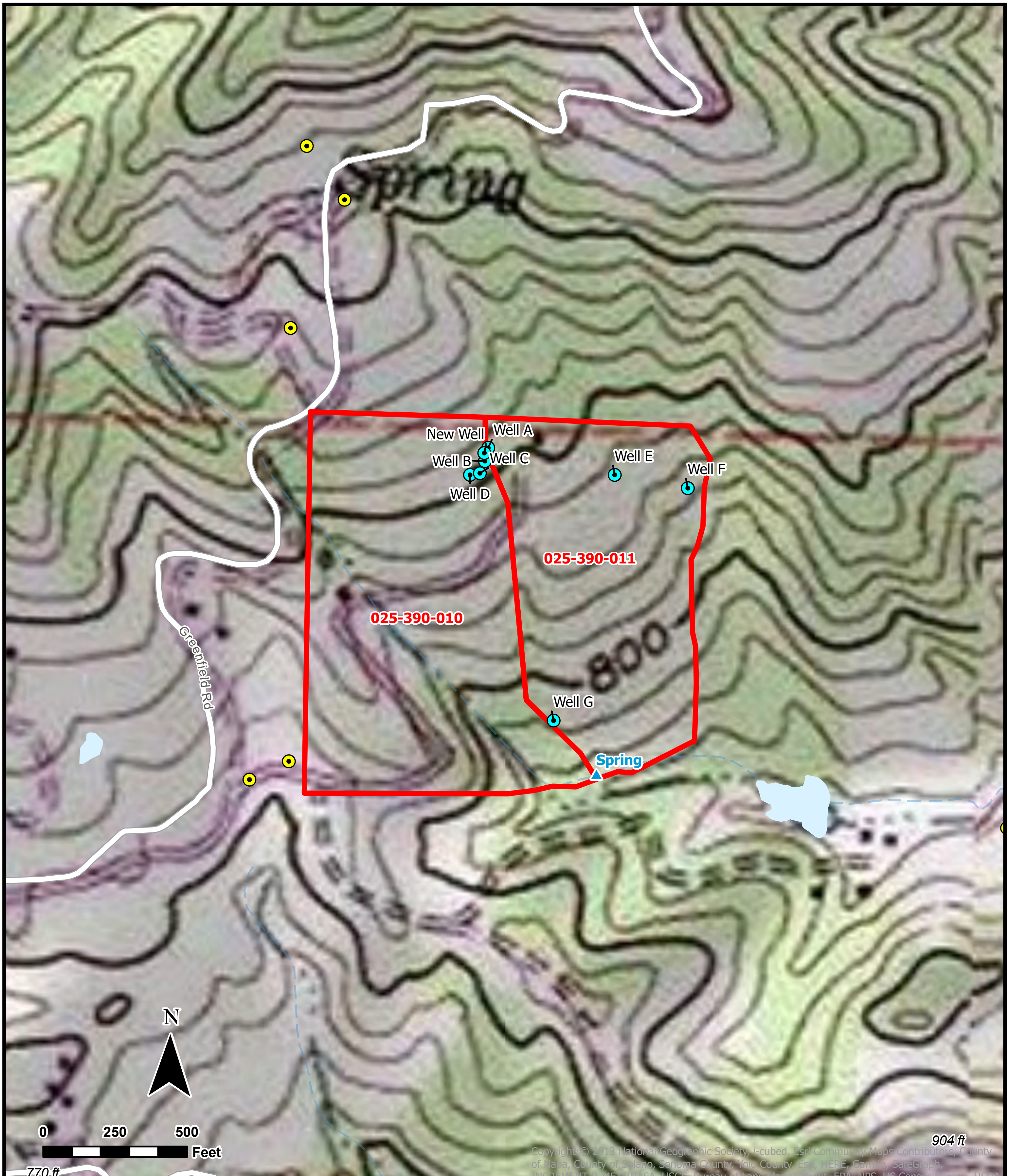


LEGEND

- Subject Property Boundary (showing County APNs)
- Onsite Well Location
- Offsite Wells Location (Approx.)
- Spring-Cistern Location

RCS

FIGURE 1
LOCATION MAP

RCS Job No. 695-NPA01 **March 2021**

LEGEND

Subject Property Boundary (showing County APNs)

Onsite Well Location

Offsite Well Location (Approx.)

Spring-Cistern Location

RCS

FIGURE 2
AERIAL PHOTOGRAPH MAP

RCS Job No. 695-NPA01 **March 2021**

LEGEND

- Subject Property Boundary (showing County APNs)
- Onsite Well Location
- Offsite Wells Location (approx)
- Spring-Cistern Location
- Quaternary Fault (USGS-CGS 2000)
- Fault (USGS 2007)

RCS

FIGURE 3
GEOLOGY MAP

RCS Job No. 695-NPA01 **March 2021**

LEGEND

★ Location of Subject Property

Watershed Boundary

RCS

FIGURE 4 WATERSHED BOUNDARIES

RCS Job No. 695-NPA01

March 2021

Table 1
Summary of Well Construction and Pumping Data
Amizetta Winery

WELL CONSTRUCTION DETAILS

Reported Well Designation	DWR Well Log No.	Date Drilled	Method of Drilling	Pilot Hole Depth (ft bgs)	Casing Depth (ft bgs)	Casing Type	Casing Diameter (in)	Borehole Diameter (in)	Sanitary Seal Depth (ft bgs)	Perforation Intervals (ft bgs)	Type and Size of Perforations (in)	Gravel Pack Interval (ft) and Size
Well A	119516	August 1982	Air Rotary	145	145	PVC	6	ND	20 (cement)	45-100	Machine-cut 0.125 x 3	ND
Well B	ND					PVC	6	ND				
Well C	284922	February 1989	Mud Rotary	357	200	PVC	5	9	25	80-200	ND 0.125 x 3	25-200; Pea Gravel
Well D	ND					PVC	6	ND				
Well E	546360	November 1994	Air Rotary	300	270	PVC	5	8	20 (concrete/ grout)	50-270	Factory-cut 0.125	20-270; Pea Gravel
Well F	546359	November 1994	Air Rotary	320	160	PVC	5	8	20 (concrete/ grout)	40-160	Factory-cut 0.062	20-300; Pea Gravel
Well G	119515	August 1982	Air Rotary	265	75	PVC	6	ND	20 (cement)	20-75	Machine-cut 0.125 x 3	ND
New Well	WCR2020-000958	January 2020	Mud Rotary	500	495	PVC	6	10	55 (cement/ bentonite)	80-140; 160-240; 260-340; 450-485	Factory-cut 0.032	55-400; 403-495 No. 6 Sand

POST-CONSTRUCTION YIELD AND WATER LEVEL DATA

Reported Well Designation	Date & Type of Yield Data	Duration of "Test" (hrs)	Estimated Airlift Rate (gpm)	Static Water Level (ft)	Pumping Water Level (ft)	Estimated Specific Capaity (gpm/ft ddn)	SWL by RCS on 11/7/18 (ft brp)
Well A	Aug 1982 Airlift	ND	40	40	ND	ND	122.3
Well B	ND						
Well C	Feb 1989 Airlift	3	4	50	ND	ND	182.7
Well D	ND						
Well E	11/18/94 Airlift	2	50	36	ND	ND	61.0
Well F	11/18/94 Airlift	2	1	65	ND	ND	146.3
Well G	Aug 1982 Airlift	ND	4	35	ND	ND	29.0
New Well	January 2020 Airlift	3	15	55	ND	ND	ND

Notes: ft bgs = feet below ground surface
ft brp = feet below reference point
in = inches
hrs = hours
gpm = gallons per minute
gpm/ft ddn = gallons per minute per foot of water level drawdown
SWL = static water level

Table 2
Groundwater Use Estimates by ACE
Amizetta Winery

Groundwater Use	Estimated Groundwater Use (AF/yr)[1]			
	Existing	Water Source	Proposed	Water Source
Residential Groundater Use				
Residence (on APN 025-390-010)	0.75	Wells A, B, C, D, E, F, & G	0.75	New Well
Residence (on APN 025-390-011)	0.75		0.75	Wells A, B, C, D, E, F, & G
Pool (on APN 025-390-011)	0.05		0.05	
Total Residential Groundwater Use	**1.55**	**--**	**1.55**	**--**
Winery Groundwater Use (on APN 025-390-010)				
Winery - Daily Visitors	0.115	Wells A, B, C, D, E, F, & G	0.101	New Well
Winery - Events with Meals Prepared Onsite	0.000		0.000	
Winery - Events with Meals Prepared Offsite	0.000		0.003	
Winery - Employees	0.134		0.084	
Winery - Event Staff	0.000		0.001	
Winery - Process	0.337		0.430	
Total Winery Groundwater Use	**0.59**	**--**	**0.62**	**--**
Irrigation Water Use (on APNs 025-390-010 & 025-390-011)				
Lawn	0.20	Wells A, B, C, D, E, F, & G	0.20	Wells A, B, C, D, E, F, & G
Other Landscape	0.25		0.25	
Vineyard - Irrigation - 22 acres	11.00		11.00	
Total Irrigation Groundwater Use	**11.45**	**--**	**11.45**	**--**
Total Combined Groundwater Use	**13.59**		**13.62**	

Total Groundwater Demand from:	Existing Demand (AF/yr)	Proposed Demand (AF/yr)
Wells A, B, C, D, E, F, & G	**13.59**	**12.25**
Proposed New Well	**--**	**1.37**

Notes:
AF/yr = Acre-Feet per Year
[1]Estimates based on Napa County Water Availability Analysis Guidance Document (WAA 2015)
This table has been adapted from table of "Water Use Estimate Calculations" provided by Applied Civil Engineering, Inc. (ACE).

Table 3
Comparison of Rainfall Data Sources
Amizetta Winery

Rain Gage and/or Data Source	Years of Available Rainfall Record	Average Annual Rainfall in Inches (ft)	Elevation of Rain Gage (ft amsl)	Distance of Rain Gage from Subject Property (miles)	Gage Elevation Relative to Subject Property[(1)]
WRCC St. Helena	1907 through December 2020[2]	33.3 (2.78)	225	5.0	Lower
WRCC Angwin Pac Union College	1940 through December 2020[3]	38.8 (3.23)	1,715	5.0	Higher
CDEC Atlas Peak	WY 1987-88 through WY 2019-20[4]	40.0 (3.33)	1,660	9.5	Higher
PRISM	1981 to 2010	37.1 (3.09)	---	---	---
Napa County Isohyetal Map	1900 to 1960	35.0 (2.92)	---	---	---

Notes:

ft = feet

ft amsl = feet above mean sea level

1. The subject property is located at elevations between ±660 and ±1,120 ft asl
2. Missing and/or erroneous rainfall data in: 1907; 1915-1922; 1979-1980; 1985-1988; 1992; and 2011-2012.
3. Missing and/or erroneous rainfall data in: 1940-1943; 1975; and in 2011.
4. Missing and/or erroneous rainfall data in: WY 1987-88, WY 1994-95, WY 1995-96, WY 2004-05, and WY 2006-07.

Table 4
Drought Period Rainfall as Percentage of Average
Amizetta Winery

Statewide Drought Period as Defined by DWR/NDMC	Drought Duration (years)	Average Rainfall by Raingage								
		St. Helena WRCC Period of Record - 1907 through December 2020			Angwin Pacific Union College WRCC Period of Record - 1940 through December 2020			Atlas Peak CDEC Period of Record - WY 1998-89 to WY 2019-20		
		[A] Total Gage Average (in)	[B] Drought Period Ave. (in)	[B/A] Drought Period Rainfall as % of Average	[A] Total Gage Average (in)	[B] Drought Period Ave. (in)	[B/A] Drought Period Rainfall as % of Average	[A] Total Gage Average (in)	[B] Drought Period Ave. (in)	[B/A] Drought Period Rainfall as % of Average
WY 1928-29 to WY 1933-34	6	33.3	23.9	72%	ND	ND	ND	ND	ND	ND
WY 1975-76 to WY 1976-77	2	33.3	13.4	40%	38.8	12.3	32%	ND	ND	ND
WY 1986-87 to WY 1991-92	6	33.3	18.3*	55%*	38.8	23.7	61%	40.0	38.7*	97%*
WY 2006-07 to WY 2008-09	3	33.3	24.8	74%	38.8	27.6	71%	40.0	23.4	59%
WY 2011-12 to WY 2015-16	5	33.3	21.7*	65%*	38.8	33.2	86%	40.0	29.3	73%

ND = No rainfall data for corresponding drought period.

* Raingage data do not extend through entire drought period and/or are missing rainfall data within drought period.

APPENDIX
CALIFORNIA
DEPARTMENT OF WATER RESOURCES
WELL COMPLETION REPORTS (DRILLER'S LOGS)
AMIZETTA WINERY

ORIGINAL
File with DWR

of Intent No.
Permit No. or Date

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

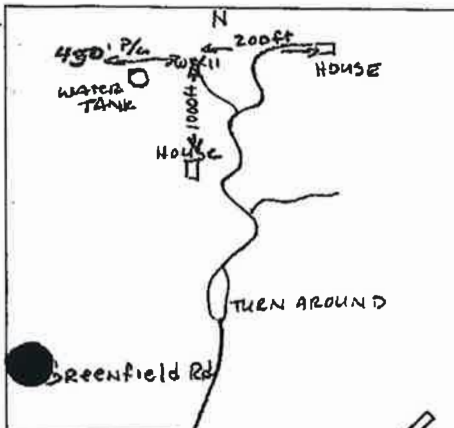
025 ...

Do not fill in
No. 119516

State Well No.
Other Well No. 08N05W26B

Amizetta "Well A" (per client)

(2) LOCATION OF WELL (See instructions):
County Napa Owner's Well Number AP25-390-02
Well address if different from above
Township St. Helena Range Section
Distance from cities, roads, railroads, fences, etc.



WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well ☒ Deepening ☐
Reconstruction ☐
Reconditioning ☐
Horizontal Well ☐
Destruction ☐ (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic ☒
Irrigation ☐
Industrial ☐
Test Well ☐
Stock ☐
Municipal ☐
Other ☐

(5) EQUIPMENT:
Rotary ☐ Reverse ☐
Cable ☐ Air ☒
Other ☐ Bucket ☐

(6) GRAVEL PACK:
Yes ☒ No ☐ Size
Diameter of bore
Packed from 0 to 23 ft.

(7) CASING INSTALLED:
Steel ☐ Plastic ☒ Concrete ☐

From ft.	To ft.	Dia. in.	Gage or Wall
0	45	6	160

(8) PERFORATIONS: Power saw
Type of perforation or size of screen

From ft.	To ft.	Slot size
45	100	1/8x3

(9) WELL SEAL:
Was surface sanitary seal provided? Yes ☒ No ☐ If yes, to depth 20 ft.
Were strata sealed against pollution? Yes ☒ No ☐ Interval ft.
Method of sealing neat cement

(10) WATER LEVELS:
Depth of first water, if known 80 ft.
Standing level after well completion 40 ft.

(11) WELL TESTS:
Was well test made? Yes ☒ No ☐ If yes, by whom? driller
Type of test Pump ☐ Bailer ☐ Air lift ☒
Depth to water at start of test 40 ft. At end of test ft
arge 40 gal/min after hours Water temperature
cal analysis made? Yes ☐ No ☒ If yes, by whom?
Was electric log made? Yes ☐ No ☒ If yes, attach copy to this report

(12) WELL LOG: Total depth 145 ft. Depth of completed well 145 ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	15	Rocky and clay
15	25	Brown rock, med. hard
70	85	Hard gray rock fractured
85	100	Hard and soft blue shale
		with str. of gray rock
100	110	Medium hard gray and white
		rock
110	120	Hard and soft blue shale
120	145	Medium hard gray and white
		rock with str. of blue shale

Work started 8/16 19 82 Completed 8/20 19 82

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

SIGNED [signature] (Well Driller)

NAME Doshier & Gregson, Inc.
(Person, firm, or corporation) (Typed or printed)
Address 5365 Napa-Vallejo Hwy.
City Vallejo Zip 94589
License No. 294001 Date of this report 8/20/82

CONFIDENTIAL NOT FOR PUBLIC USE WATER CODE SEC. 13752

DWR 188 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

CLARK, SPENCER

DUPLICATE
Driller's Copy

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

Do not fill in

No. 119516

Notice of Intent No. ____

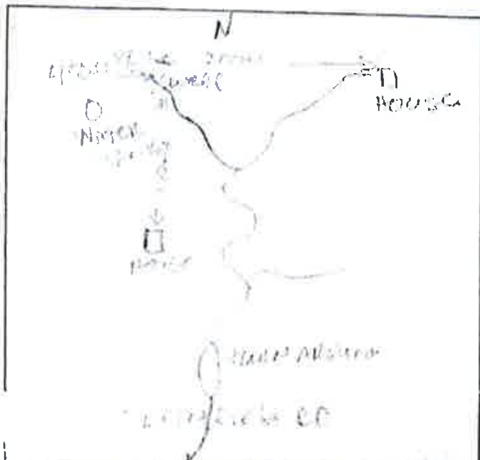
_al Permit No. or Date ____

State Well No. ____

Other Well No. ____

(1) OWNER: Name Spencer Clark
Address 1099 Greenfield Rd.
City St. Helena, Ca. Zip 94574

(2) LOCATION OF WELL (See instructions):
County Napa Owner's Well Number AP#23-390-027
Well address if different from above ____
Township St. Helena Range ____ Section ____
Distance from cities, roads, railroads, fences, etc. ____



WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well ☒ Deepening ☐
Reconstruction ☐
Reconditioning ☐
Horizontal Well ☐
Destruction ☐ (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic ☒
Irrigation ☐
Industrial ☐
Test Well ☐
Stock ☐
Municipal ☐
Other ☐

(5) EQUIPMENT:
Rotary ☐ Reverse ☐
Cable ☐ Air ☒
Other ☐ Bucket ☐

(6) GRAVEL PACK:
Yes ☒ No ☐ Size ____
Diameter of bore ____
Packed from 0 to 23 ft.

(7) CASING INSTALLED:
Steel ☐ Plastic ☒ Concrete ☐

(8) PERFORATIONS: Power saw
Type of perforation or size of screen

From ft.	To ft.	Dia. in.	Gage or Wall	From ft.	To ft.	Slot size
0	45	6	160	45	100	1/8x3

(9) WELL SEAL:
Was surface sanitary seal provided? Yes ☒ No ☐ If yes, to depth 20 ft.
Were strata sealed against pollution? Yes ☒ No ☐ Interval ____ ft.
Method of sealing neat cement

(10) WATER LEVELS:
Depth of first water, if known 80 ft.
Standing level after well completion 40 ft.

(11) WELL TESTS:
Was well test made? Yes ☒ No ☐ If yes, by whom? driller
Type of test Pump ☐ Bailer ☐ Air lift ☒
Depth to water at start of test 40 ft. At end of test ____ ft
Discharge 40 gal/min after ____ hours Water temperature ____
Chemical analysis made? Yes ☐ No ☒ If yes, by whom? ____
Was electric log made? Yes ☐ No ☒ If yes, attach copy to this report

(12) WELL LOG: Total depth 145 ft. Depth of completed well 145 ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	15	Rocky and clay
15	25	Brown rock, med. hard
25	85	Hard gray rock fractured
85	100	Hard and soft blue shale
		with str. of gray rock
100	110	Medium hard gray and white
		rock
110	120	Hard and soft blue shale
120	145	Medium hard gray and white
		rock with str. of blue shale

Work started 8/16 19 82 Completed 8/20 19 82

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

SIGNED [signature] (Well Driller)

NAME Doshier & Gregson, Inc.
(Person, firm, or corporation) (Typed or printed)
Address 5365 Napa-Vallejo Hwy.
City Vallejo Zip 94589
License No. 294001 Date of this report 8/20/82

DWR 188 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

ORIGINAL
File with DWR

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

Do not fill in

No. 284922

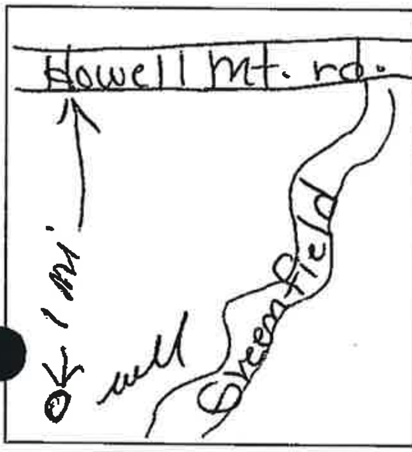
[redacted]tice of Intent No. ______
Local Permit No. or Date ______

State Well No. ______
Other Well No. 08N05W26B

Hennessey Lk

Amizetta "Well C"

(2) LOCATION OF WELL (See instructions):
County 28   Owner's Well Number ______
Well address if different from above ______
Township 25   Range 390   Section 02
Distance from cities, roads, railroads, fences, etc. 1 mile No. of Howell Mt. rd. on Greenfield rd.



WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well ☑ Deepening ☐
Reconstruction ☐
Reconditioning ☐
Horizontal Well ☐
Destruction ☐ (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic ☐
Irrigation ☑
Industrial ☐
Test Well ☐
Municipal ☐
Other ☐
(Describe)

(5) EQUIPMENT:
Rotary ☑ Reverse ☐
Cable ☐ Air ☐
Other ☐ Bucket ☐

(6) GRAVEL PACK:
Yes ☐ No ☑ Size pea
Diameter of bore 9⅞
Packed from 25 to 200 ft.

(7) CASING INSTALLED:
Steel ☐ Plastic ☑ Concrete ☐

(8) PERFORATIONS:
Type of perforation or size of screen 1/8 X 3

From ft.	To ft.	Dia. in.	Gage or Wall	From ft.	To ft.	Slot size
0	200	5	160	80	200	1/8 X 3

(9) WELL SEAL:
Was surface sanitary seal provided? Yes ☑ No ☐ If yes, to depth ______ ft.
Were strata sealed against pollution? Yes ☐ No ☑ Interval ______ ft.
Method of sealing Cement

(10) WATER LEVELS:
Depth of first water, if known ______ ft.
Standing level after well completion 50 ft. ft.

(11) WELL TESTS:
Was well test made? Yes ☑ No ☐ If yes, by whom? driller
[redacted]pe of test Pump ☐ Bailer ☐ Air lift ☑
[redacted]pth to water at start of test 50 ft. At end of test 200 ft.
Discharge 4 gal/min after 3 hours Water temperature ______
Chemical analysis made? Yes ☐ No ☑ If yes, by whom? ______
Was electric log made Yes ☐ No ☑ If yes, attach copy to this report

(12) WELL LOG: Total depth 357 ft. Completed depth 200 ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	10'	Clay & boulders
10	50'	brown clay
50	65'	hard rock
65	100'	blue shale
100	160'	brokenup shale & rock
160	200	hard blue shale

CONFIDENTIAL
NOT FOR PUBLIC USE
WATER CODE SEC. 13752

Work started 1-26-1989 Completed 2-13-1989

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Signed Ray Pulliam (Well Driller)
NAME Pulliam Well Drilling (Person, firm, or corporation) (Typed or printed)
Address 2871 Piedmont Ave.
City Napa ZIP 94558
License No. 548677 Date of this report 2/28/89

DWR 188 (REV. 12-86)   IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM   86 96355

ORIGINAL
File with DWR
Page 1 of 1
Owner's Well No. ______
Date Work Began 11-14-94, Ended 11-18-94
Local Permit Agency Napa County Environmental Mgmt.
Permit No. 37780 Permit Date 11-4-94

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet
No. 546360

DWR USE ONLY — DO NOT FILL IN
08N05W26
STATE WELL NO./STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) X VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)
DEPTH TO FIRST WATER 40 (Ft.) BELOW SURFACE

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
0	18	brown clay with embedded rock
18	38	clay
38	53	fractured sandstone
53	70	gray shale & clay
70	115	hard sandstone
115	140	soft sandstone
140	155	shale
155	200	50% sandstone/50% shale
200	220	sandstone
220	250	shale
250	300	soft sandstone

TOTAL DEPTH OF BORING 300 (Feet)
TOTAL DEPTH OF COMPLETED WELL 270 (Feet)

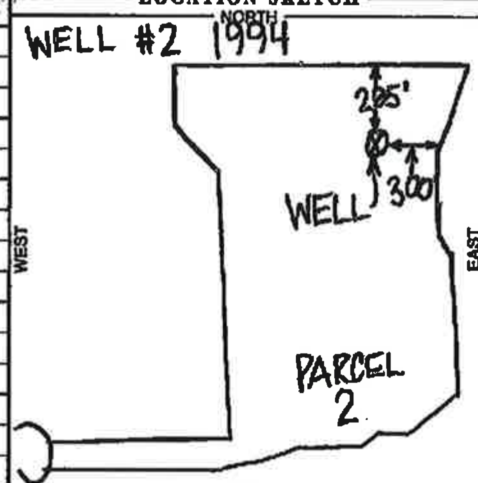
WELL OWNER

Amizetta "Well E"

Address same
City
County Napa
APN Book 25 Page 390 Parcel 011
Township ___ Range ___ Section ___
Latitude ___ DEG. MIN. SEC. NORTH Longitude ___ DEG. MIN. SEC. WEST

LOCATION SKETCH

NORTH



WEST EAST
SOUTH

Illustrate or Describe Distance of Well from Landmarks such as Roads, Buildings, Fences, Rivers, etc. PLEASE BE ACCURATE & COMPLETE.

ACTIVITY (✓)

X NEW WELL
MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)
___ DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USE(S) (✓)

___ MONITORING
WATER SUPPLY
___ Domestic
___ Public
X Irrigation
___ Industrial
___ "TEST WELL"
___ CATHODIC PROTECTION
___ OTHER (Specify)

DRILLING METHOD Rotary (air) FLUID ______

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH OF STATIC WATER LEVEL 36 (Ft.) & DATE MEASURED 11-18-94
ESTIMATED YIELD* 50 (GPM) & TEST TYPE air lift
TEST LENGTH 2 (Hrs.) TOTAL DRAWDOWN N/A (Ft.)
* *May not be representative of a well's long-term yield.*

CASING(S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	BLANK	SCREEN	CON-DUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0	25	10								
25	300	8								
0	50		X				plastic	5	SDR-21	
50	270			X			plastic	5	SDR-21	1/8"

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	CE-MENT (✓)	BEN-TONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	3	X			concrete
3	20		X		grout
20	270			X	pea gravel

ATTACHMENTS (✓)

___ Geologic Log
___ Well Construction Diagram
___ Geophysical Log(s)
___ Soil/Water Chemical Analyses
___ Other ______
ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME HUCKFELDT WELL DRILLING 1487
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

2110 Penny Lane Napa CA 94559
ADDRESS CITY STATE ZIP

Signed Lloyd Huckfeldt 11-28-94 439-746
WELL DRILLER/AUTHORIZED REPRESENTATIVE DATE SIGNED C-57 LICENSE NUMBER

DWR 188 REV. 7-90

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

ORIGINAL
File with DWR

Page 1 of 1

Owner's Well No. ____

Date Work Began 11-7-94, Ended 11-11-94

Local Permit Agency Napa County Environmental Mgmt.

Permit No. 37780 Permit Date 11-4-94

STATE OF CALIFORNIA

WELL COMPLETION REPORT

Refer to Instruction Pamphlet

No. 546359

DWR USE ONLY — DO NOT FILL IN

08N05W26

STATE WELL NO./STATION NO.

LATITUDE | LONGITUDE

APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) X VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)

DEPTH TO FIRST WATER 80 (Ft.) BELOW SURFACE

DEPTH FROM SURFACE Ft. to Ft.		DESCRIPTION *Describe material, grain size, color, etc.*
0	20	brown clay with embedded rock
20	45	brown sandstone & clay
45	80	gray shale & clay
80	130	hard gray sandstone
130	140	gray clay
140	190	soft sandstone
190	320	60% clay with sandstone stringers

TOTAL DEPTH OF BORING 320 (Feet)

TOTAL DEPTH OF COMPLETED WELL 160 (Feet)

WELL OWNER

Antizetta "Well F"

WELL LOCATION

Address same

City

County Napa

APN Book 25 Page 390 Parcel 011

Township ___ Range ___ Section ___

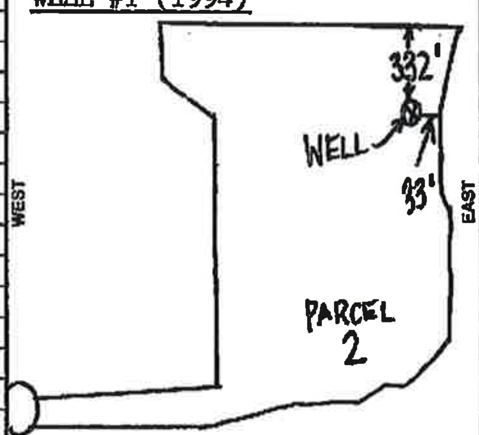
Latitude ___ NORTH Longitude ___ WEST

DEG. MIN. SEC. DEG. MIN. SEC.

LOCATION SKETCH

NORTH

WELL #1 (1994)



SOUTH

Illustrate or Describe Distance of Well from Landmarks such as Roads, Buildings, Fences, Rivers, etc. PLEASE BE ACCURATE & COMPLETE.

ACTIVITY (✓)

X NEW WELL

MODIFICATION/REPAIR

___ Deepen

___ Other (Specify)

___ DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USE(S) (✓)

___ MONITORING

WATER SUPPLY

___ Domestic

___ Public

X Irrigation

___ Industrial

___ "TEST WELL"

___ CATHODIC PROTECTION

___ OTHER (Specify)

DRILLING METHOD Rotary (air) FLUID ___

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH OF STATIC WATER LEVEL 65 (Ft.) & DATE MEASURED 11-18-94

ESTIMATED YIELD* 1 (GPM) & TEST TYPE air lift

TEST LENGTH 2 (Hrs.) TOTAL DRAWDOWN N/A (Ft.)

* *May not be representative of a well's long-term yield.*

CASING(S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CON-DUCTOR	FILL PIPE	MATERIAL/ GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0	25	10								
25	320	8								
0	40		X				plastic	5	SDR-21	
40	160			X			plastic	5	SDR-21	.062

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	CE-MENT (✓)	BEN-TONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	3	X			concrete
3	20		X		grout
20	300			X	pea gravel

ATTACHMENTS (✓)

___ Geologic Log

___ Well Construction Diagram

___ Geophysical Log(s)

___ Soil/Water Chemical Analyses

___ Other ___

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME HUCKFELDT WELL DRILLING 1487

(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

2110 Penny Lane Napa CA 94559

ADDRESS CITY STATE ZIP

Signed Lloyd Huckfeldt 11-28-94 439-746

WELL DRILLER/AUTHORIZED REPRESENTATIVE DATE SIGNED C-57 LICENSE NUMBER

DWR 188 REV. 7-90

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

CONFIDENTIAL WATER CODE 13752

ORIGINAL

File with DWR

of Intent No.

Permit No. or Date

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

025 390 002

Do not fill in

No. 119515

State Well No.

Other Well No. 08N05W26B

Amizetta "Well 6"

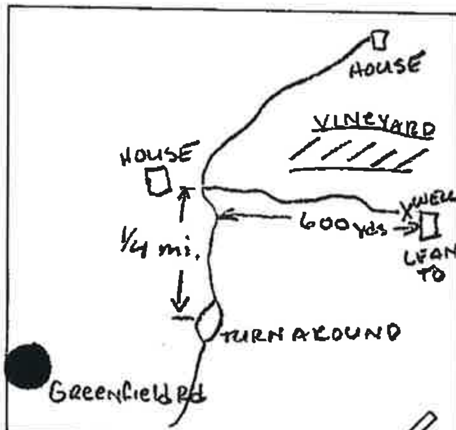
(2) LOCATION OF WELL (See instructions):

County Napa Owner's Well Number AP#25-390-020

Well address if different from above

Township St. Helena Range Section

Distance from cities, roads, railroads, fences, etc.



WELL LOCATION SKETCH

(3) TYPE OF WORK:

New Well X Deepening ☐
Reconstruction ☐
Reconditioning ☐
Horizontal Well ☐
Destruction ☐ (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:

Domestic ☐
Irrigation ☐
Industrial ☐
Test Well ☐
Stock ☐
Municipal ☐
Other ☐

(5) EQUIPMENT:

Rotary ☐ Reverse ☐
Cable ☐ Air ☒
Other ☐ Bucket ☐

(6) GRAVEL PACK:

Yes ☐ No ☒ Size
Diameter of bore
Packed from to ft.

(7) CASING INSTALLED:

Steel ☐ Plastic ☒ Concrete ☐

From ft.	To ft.	Dia. in.	Gage or Wall
0	20	6	160

(8) PERFORATIONS: Power saw

Type of perforation or size of screen

From ft.	To ft.	Slot size
20	75	1/8x3

(9) WELL SEAL:

Was surface sanitary seal provided? Yes X No ☐ If yes, to depth 20 ft.
Were strata sealed against pollution? Yes ☒ No ☐ Interval ft.
Method of sealing neat cement

(10) WATER LEVELS:

Depth of first water, if known 70 ft.
Standing level after well completion 35 ft.

(11) WELL TESTS:

Was well test made? Yes ☒ No ☐ If yes, by whom? driller
Type of test Pump ☐ Bailer ☐ Air lift ☒
Depth to water at start of test 35 ft. At end of test ft
Discharge 4 gal/min after hours Water temperature
Chemical analysis made? Yes ☐ No ☒ If yes, by whom?
Was electric log made? Yes ☐ No ☒ If yes, attach copy to this report

(12) WELL LOG: Total depth 265 ft. Depth of completed well 265 ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	40	Clay and gravel, soft
40	50	Brown fractured rock, soft
50	70	Blue shale, hard and soft
70	75	Brown fractured rock
75	100	Gray sandstone rock with str.
		of hard blue shale
100	230	Gray sandstone and white and
		black rock, hard
230	265	Blue shale, soft

Work started August 12 1982 Completed 8/16 1982

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

SIGNED Harold Gregson
(Well Driller)

NAME Doshier-Gregson Drilling, Inc.
(Person, firm, or corporation) (Typed or printed)

Address 5365 Napa-Vallejo Hwy.

City Vallejo Zip 94589

License No. 294001 Date of this report 8/20/82

DWR 188 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

CONFIDENTIAL
NOT FOR PUBLIC USE
WATER CODE SEC. 13752

DUPLICATE
Driller's Copy

CLARK, SPENCER

Notice of Intent No.
Local Permit No. or Date

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

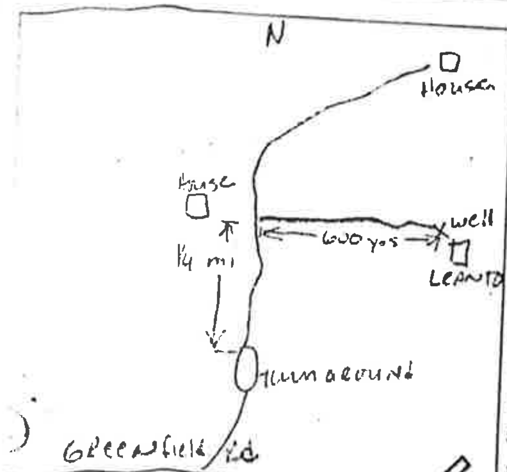
Do not fill in

No. 119515

State Well No.
Other Well No.

(1) OWNER: Name Spencer Clark
Address 1099 Greenfield rd.
City St. Helena, Ca. Zip 94574

(2) LOCATION OF WELL (See instructions):
County Napa Owner's Well Number AP#25-390-020
Well address if different from above
Township St. Helena Range Section
Distance from cities, roads, railroads, fences, etc.



WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well ☒ Deepening ☐
Reconstruction ☐
Reconditioning ☐
Horizontal Well ☐
Destruction ☐ (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic ☐
Irrigation ☐
Industrial ☐
Test Well ☐
Stock ☐
Municipal ☐
Other ☐

(5) EQUIPMENT:
Rotary ☐ Reverse ☐
Cable ☐ Air ☒
Other ☐ Bucket ☐

(6) GRAVEL PACK:
Yes ☐ No ☒ Size
Diameter of bore
Packed from to

(7) CASING INSTALLED:
Steel ☐ Plastic ☒ Concrete ☐

From ft.	To ft.	Dia. in.	Gage or Wall
0	20	6	160

(8) PERFORATIONS:
Type of perforation or size of screen Power saw

From ft.	To ft.	Slot size
20	75	1/8x3

(9) WELL SEAL:
Was surface sanitary seal provided? Yes ☒ No ☐ If yes, to depth 20 ft.
Were strata sealed against pollution? Yes ☒ No ☐ Interval ft.
Method of sealing neat cement

(10) WATER LEVELS:
Depth of first water, if known 70 ft.
Standing level after well completion 35 ft.

(11) WELL TESTS:
Was well test made? Yes ☒ No ☐ If yes, by whom? driller
Type of test Pump ☐ Bailer ☐ Air lift ☒
Depth to water at start of test 35 ft. At end of test ft
Discharge 1/2 gal/min after hours Water temperature
Chemical analysis made? Yes ☐ No ☒ If yes, by whom?
Was electric log made? Yes ☐ No ☒ If yes, attach copy to this report

(12) WELL LOG: Total depth 265 ft. Depth of completed well 265 ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	40	Clay and gravel, soft
40	50	Brown fractured rock, soft
50	70	Blue shale, hard and soft
70	75	Brown fractured rock
75	100	Gray sandstone rock with str.
		of hard blue shale
100	230	Gray sandstone and white and
		black rock, hard
230	265	Blue shale, soft

Work started August 12 1982 Completed 8/16 1982

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Signed [signature] (Well Driller)

NAME Doshier-Gregson Drilling, Inc.
(Person, firm, or corporation) (Typed or printed)
Address 5365 Napa-Vallejo Hwy.
City Vallejo Zip 94589
License No. 294001 Date of this report 8/20/82

CONFIDENTIAL
NOT FOR PUBLIC USE
WATER CODE SEC. 13752

DWR 188 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

DOSHIER & GREGSON, INC.
5365 NAPA -VALLEJO, HWY.
VALLEJO, CALIF. 94590

VALLEJO PHONE: 642-9698
NAPA PHONE: 226-9698 and 226-2623

LICENSED BONDED

WORK ORDER 2762-W

DATE Aug 5

WORK ORDERED BY

BILL TO: Spencer Clark
ADDRESS 1099 Greenfield Rd
CITY St Helena 94574
PHONE 963-5191

JOB NAME 1099 Greenfield Rd
LOCATION
CITY
PHONE ~~25-390-01~~ #1 well
AP # 25-390-02 #2 "

QUANTITY	DESCRIPTION OF WORK	PRICE	AMOUNT
	Drilling 6" Well		
	Well - #1		
265'	Drilling 6" well	18.00	4770.00
95'	Casing pvc	4.00	380.00
1	Well cap		8.00
1	Cement seal		200.00
	Subtotal		5358.00
	S/T on casing, cap, Seal		35.28
1	Drilling Permit		40.00
	TOTAL #1		5433.28
	Well - SITE # 2		
145'	Drilling 6" Well	18.00	2610.00
145'	Casing - pvc	4.00	580.00
1	Well Cap		8.00
1	Cement Seal		200.00
			3398.00
	S/T on casing, cap, Seal		47.28
1	Drilling permit		40.00
	TOTAL # 2		3485.28
	TOTAL Both Wells		8918.56

DATE COMPLETED

Net 10 days 17757

MECHANIC

UPDATED MEMORANDUM

APPENDIX
GROUNDWATER USE ESTIMATES
BY
APPLIED CIVIL ENGINEERING
AMIZETTA WINERY

APPLIED CIVIL ENGINEERING INCORPORATED

APN 025-390-010 & 025-390-011

Groundwater Use Estimate - Existing Conditions

	Estimated Water Use (Acre-Feet / Year)
Residential Water Use	
Primary Residence(1) x 2	1.500
Pool with Cover(1) x 1	0.050
Second Dwelling Unit - Not Applicable	0.000
Guest Cottage - Not Applicable	0.000
Total Residential Domestic Water Use	1.550
Winery Domestic & Process Water Use	
Winery - Daily Visitors(2)(3)	0.115
Winery - Events with Meals Prepared Onsite(2)(4)	0.000
Winery - Events with Meals Prepared Offsite(2)(5)	0.000
Winery - Employees(2)(6)	0.134
Winery - Event Staff(2)(6)	0.000
Winery - Process(2)(7)	0.337
Total Winery Water Use	0.586
Irrigation Water Use	
Lawn(8)	0.200
Other Landscape(9)	0.250
Vineyard - Irrigation - 22 acres @ 0.5 ac-ft/ac	11.000
Vineyard - Frost Protection - Not Applicable	0
Vineayrd - Heat Protection - Not Applicable	0
Total Irrigation Water Use	11.450
Total Combined Water Use	13.59

Estimates per Napa County Water Availability Analysis - Guidance Document, May 12, 2015 unless noted

(1)0.5 to 0.75 ac-ft/yr for Primary Residence, includes some landscaping and 0.05 ac-ft/yr for covered pool per Napa County WAA Guidance Document

(2) See attached Winery Production, Guest, Employee and Event Staff Statistics

(3) 3 gallons of water per guest per Napa County WAA Guidance Document

(4) 15 gallons of water per guest per Napa County WAA - Guidance Document

(5) 5 gallons of water per guest used because all food preparation, dishwashing, etc. to occur offsite

(6)15 gallons per shift per Napa County WAA - Guidance Document

(7)2.15 ac-ft per 100,000 gallons wine per Napa County WAA - Guidance Document

(8)0.1 ac-ft/yr per 1,000 sf of lawn per Napa County WAA - Guidance Document - 2,000 sf +/- lawn

(9)0.1 ac-ft/yr per 2,000 sf landscape per Napa County WAA - Guidance Document - 5,000 sf +/- estimated

Amizetta Winery

Existing Winery Production, Visitor, Employee & Event Staff Statistics

Winery Production[1]		15,667	gallons per year

Tours and Tastings by Appointment[1]

Sunday Through Monday	240 guests max per week	
Total Guests Per Year		12,480

Events - Meals Prepared Offsite[1]

0 per year	0 guests max	0
0 per year	0 guests max	0
0 per year	0 guests max	0
Total Guests Per Year		0

Events - Meals Prepared Onsite[1]

0 per year	0 guests max	0
0 per year	0 guests max	0
0 per year	0 guests max	0
Total Guests Per Year		0

Winery Employees[2]

8 employees	1 shift per day	
Total Employee Shifts Per Year		2,920

Event Staff[3]

0 per year, 0 guests	0 event staff	0
0 per year, 0 guests	0 event staff	0
0 per year, 0 guests	0 event staff	0
Total Event Staff Per Year		0

(1) Winery production, tours and tasting and event guest statistics per Winery Use Permit Application

(2) Employee counts per Winery Use Permit Application

(3) Assumes 1 event staff per 10 guests (in addition to regular winery employees)

APPLIED CIVIL ENGINEERING INCORPORATED

APN 025-390-010 & 025-390-011

Groundwater Use Estimate - Proposed Conditions

	Estimated Water Use (Acre-Feet / Year)
Residential Water Use	
Primary Residence[1] x 2	1.500
Pool with Cover[1] x 1	0.050
Second Dwelling Unit - Not Applicable	0.000
Guest Cottage - Not Applicable	0.000
Total Residential Domestic Water Use	1.550
Winery Domestic & Process Water Use	
Winery - Daily Visitors[2][3]	0.101
Winery - Events with Meals Prepared Onsite[2][4]	0.000
Winery - Events with Meals Prepared Offsite[2][5]	0.003
Winery - Employees[2][6]	0.084
Winery - Event Staff[2][6]	0.001
Winery - Process[2][7]	0.430
Total Winery Water Use	0.618
Irrigation Water Use	
Lawn[8]	0.200
Other Landscape[9]	0.250
Vineyard - Irrigation - 22 acres @ 0.5 ac-ft/ac	11.000
Vineyard - Frost Protection - Not Applicable	0
Vineayrd - Heat Protection - Not Applicable	0
Total Irrigation Water Use	11.450
Total Combined Water Use	13.62

Estimates per Napa County Water Availability Analysis - Guidance Document, May 12, 2015 unless noted

(1) 0.5 to 0.75 ac-ft/yr for Primary Residence, includes some landscaping and 0.05 ac-ft/yr for covered pool per Napa County WAA Guidance Document

(2) See attached Winery Production, Guest, Employee and Event Staff Statistics

(3) 3 gallons of water per guest per Napa County WAA Guidance Document

(4) 15 gallons of water per guest per Napa County WAA - Guidance Document

(5) 5 gallons of water per guest used because all food preparation, dishwashing, etc. to occur offsite

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(7) 2.15 ac-ft per 100,000 gallons wine per Napa County WAA - Guidance Document

(8) 0.1 ac-ft/yr per 1,000 sf of lawn per Napa County WAA - Guidance Document - 2,000 sf +/- lawn

(9) 0.1 ac-ft/yr per 2,000 sf landscape per Napa County WAA - Guidance Document - 5,000 sf +/- estimated

APPLIED CIVIL ENGINEERING INCORPORATED

Amizetta Winery

Proposed Winery Production, Visitor, Employee & Event Staff Statistics

Winery Production(1)		20,000	gallons per year
Tours and Tastings by Appointment(1)			
Sunday Through Monday	210 guests max per week		
Total Guests Per Year		10,920	
Events - Meals Prepared Offsite(1)			
8 per year	15 guests max	120	
2 per year	25 guests max	50	
0 per year	0 guests max	0	
Total Guests Per Year		170	
Events - Meals Prepared Onsite(1)			
0 per year	0 guests max	0	
0 per year	0 guests max	0	
0 per year	0 guests max	0	
Total Guests Per Year		0	
Winery Employees(2)			
5 employees	1 shift per day		
Total Employee Shifts Per Year		1,825	
Event Staff(3)			
8 per year, 15 guests	2 event staff	16	
2 per year, 25 guests	3 event staff	6	
0 per year, 0 guests	0 event staff	0	
Total Event Staff Per Year		22	

(1) Winery production, tours and tasting and event guest statistics per Winery Use Permit Application

(2) Employee counts per Winery Use Permit Application

(3) Assumes 1 event staff per 10 guests (in addition to regular winery employees)

TRANSIENT NON-COMMUNITY WATER SYSTEM INFORMATION

FOR THE

AMIZETTA WINERY

LOCATED AT:
1089 Greenfield Road
St. Helena, CA 94574
NAPA COUNTY APN 025-390-010

PREPARED FOR:
Amizetta Winery
Care Of: Perry Clark
1089 Greenfield Road
St. Helena, CA 94574
Telephone: (707) 963-1460

PREPARED BY:

APPLIED CIVIL ENGINEERING INCORPORATED

2074 West Lincoln Avenue
Napa, California 94558
Telephone: (707) 320-4968
www.appliedcivil.com

Job Number: 18-155

Michael R. Muelrath   1/25/2021

Michael R. Muelrath R.C.E. 67435   Date

REGISTERED PROFESSIONAL ENGINEER
MICHAEL R. MUELRATH
NO. 67435
Exp. 12/31/2022
CIVIL
STATE OF CALIFORNIA

TABLE OF CONTENTS

LIST OF APPENDICES

INTRODUCTION

Amizetta Winery is applying for a Use Permit to modify the operating characteristics of their existing winery located at 1089 Greenfield Road in Napa County, California. The subject property, known as Napa County Assessor's Parcel Number 025-390-010, is located off Greenfield Road approximately 1.7 miles north of the intersection of Greenfield Road and Conn Valley Road in the eastern hills that flank the Napa Valley.

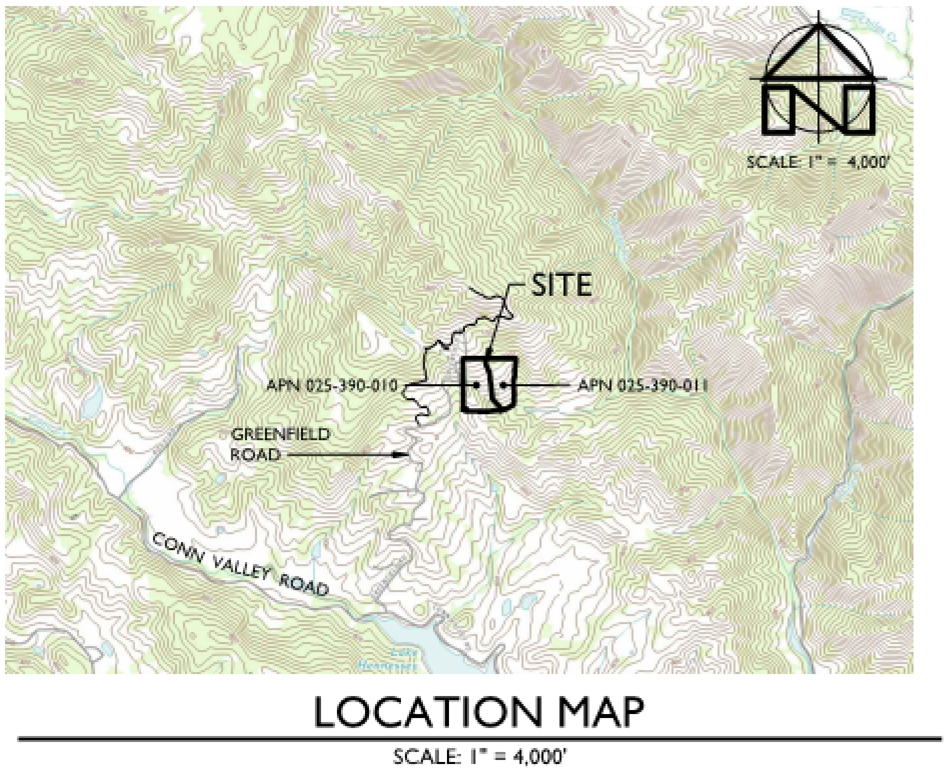


Figure 1: Location Map

The Use Permit application under consideration proposes the following characteristics:

- Wine Production:
  - 20,000 gallons of wine per year
  - Crushing, fermenting, aging and bottling

- Employees:
  - 5 full time employees

- Marketing Plan:
  - Daily Tours and Tastings by Appointment
    - 30 visitors per day maximum
    - 210 visitors per week maximum

- Event Type #1
  - 8 per year
  - 15 guests maximum
  - Food prepared offsite by catering company
- Event Type #2
  - 2 per year
  - 25 guests maximum
  - Food prepared offsite by catering company

Existing development on the property includes the winery, a single-family residence, groundwater wells, vineyard and the access and utility infrastructure typical of this type of rural residential and agricultural development. Please see the Amizetta Winery Use Permit Conceptual Site Improvement Plans for approximate locations of existing and proposed features.

Since the number of employees plus the number of visitors is expected to exceed 24 for 60 or more days out of the year, the project will be required to implement a Transient Non-Community Public Water System.

Amizetta Winery has requested that Applied Civil Engineering Incorporated (ACE) prepare a brief report outlining the anticipated technical, managerial and financial aspects of the water system that will be required to serve the proposed winery to accompany the winery Use Permit application as required by Napa County.

WATER SYSTEM NAME

The water system will be known as the "Amizetta Winery Water System".

NAME OF PERSON WHO PREPARED THIS REPORT

This report was prepared by Michael Muelrath, PE of Applied Civil Engineering Incorporated. Information regarding the parameters of the subject Use Permit application and existing water system information were provided by Perry Clark of Amizetta Winery.

TECHNICAL CAPACITY

System Description

Water for the existing winery is currently provided by existing groundwater wells. The existing wells do not have the required 50 foot deep, 3 inch wide annular seal and thus a new well will be required to serve the public water system. The new well was recently drilled in the vicinity of the existing Well A. The location of Well A is illustrated on the Amizetta Winery Use Permit Conceptual Site Plans.

The new well was constructed per Napa County standards and treatment must be provided as required to meet applicable local, state and federal water quality requirements. Detailed plans for the water treatment system will be prepared and presented to Napa County for review during the building permit and water system permit stage, after the new well is drilled and the required yield and water quality testing is performed.

Water Demand Projection

Napa County Water Availability Analysis Guidelines were used to estimate the annual water demand for the winery domestic and process water uses and the existing residence domestic use. It is planned that irrigation for vineyards and landscaping will continue to be supplied by other existing well(s) and therefore they are not included in this analysis. The total proposed domestic water use for the existing residence and winery is estimated to be 1.8 acre-feet per year. Using the projected annual domestic water demand of 1.4 acre-feet per year, we have calculated an average daily demand of approximately 1,250 gallons and a maximum daily demand (MDD) of approximately 2,813 gallons (calculated using a peaking factor of 2.25 per California Waterworks Standards Section 64554b.3.(C)).

Source Adequacy

The new well was constructed with a minimum 50 foot deep, 3 inch wide concrete annular seal to meet the requirements for public water systems. A copy of the Well Completion Report providing information about the well will be included with the water system application with the winery building permit application package to document adequacy of the seal.

Water Supply Capacity

Assuming a conservative well pumping cycle of 12 hours per day the new well must be capable of producing at least 3.9 gallons per minute to meet the water system's MDD. Initial testing indicates the new well should be able to proved the required flow.

Furthermore, the project hydrogeologist has prepared a preliminary analysis confirming that the projected aquifer extraction is less than expected overall average aquifer recharge for both normal and dry years and therefore long term supply should be sufficient to meet the needs of the public water system.

White we do not anticipate any issues, we cannot guarantee the ability of achieving enough water in a new well. The yield of the new well must be verified by pumping and measuring drawdown in accordance with California Waterworks Standards Section 64554 prior to submittal of the water system permit application package.

Once the water system is permitted and constructed we recommend that the water level, yield and drawdown in the well be monitored on an ongoing basis to detect any trends in changing water table levels and well yield so that alternate sources can be developed if needed.

The water system must also include a new storage tank that can store at least the MDD (2,813 gallons).

Water Quality Characterization

It will be necessary to perform a full panel of water quality testing, including chemical and bacteriological analysis, for the new well. The water treatment system must then be designed to reduce all required contaminant levels to below the regulatory maximum contaminant level

(MCL) for each constituent, as applicable. Based on preliminary testing of existing onsite wells and experience with other wells in the project area we judge that it will be feasible to provide treatment as needed to meet water quality requirements for the new public water system.

Consolidation Analysis

We have reviewed the California Environmental Health Tracking Program Water System Map Viewer (http://www.cehtp.org/page/water/water_system_map_viewer) and found two systems identified on the map that are located within 3 miles of the subject property:

1) Rutherford Hill Mutual Water

2) Woodland Ridge Mutual Water Co

We have reviewed possibility of connecting to one of these existing systems and any other municipal water systems in the general area with the Napa County Local Agency Formation Commission and have determined that it is not feasible to connect to an existing water system due to the fact that the property is outside of the service areas and also outside of the sphere of influence of all public water systems in the vicinity of the project area (see correspondence in Appendix 2).

MANAGERIAL

Organization

Management and routine operation of the water system will be performed by the winery staff. One staff member will be responsible for performing sampling, reporting and keeping up to date records onsite in accordance with Napa County requirements. The winery staff person in charge of the water system will consult with water system specialists as needed if issues arise with any components of the water system. The water system manager will report directly to the property owner(s).

Land Ownership

The new well, storage tank and piping will all be located on the same property as the winery and residence that it will serve. This property is owned by the Clark family (see ownership documents in Appendix 4) who are also the operators of the winery. Since the well and all water system components are planned to be located on the winery property, no access or maintenance easements will be required.

Water Rights

The Amizetta Winery Water System will use groundwater from a non-adjudicated groundwater basin exclusively and is therefore not subject to water rights through the State Water Resources Control Board.

FINANCIAL

There will be no revenue generated by the water system.

The expected expenses for the water system can be broken down into initial startup cost and ongoing operational cost as shown below.

Startup Cost

Startup cost includes the new well and pump for the new well, water transmission piping, water storage tank(s), water treatment system equipment, booster pump(s) and installation. The water treatment and storage equipment will be designed based on a full panel of water quality test results that will be performed on water from the new well. Based on previous experience we estimate that the cost for the well, well pump, water transmission piping, water storage tank, booster pump, water treatment system equipment and installation will be approximately $114,000 (see budget spreadsheet in Appendix 3).

Actual costs will be dependent upon the location of the new well, tank and other water system components as well as results of the water quality testing and design of the water treatment system.

Annual Operating Cost

Annual operating cost for the water system will include a portion of one employee's salary, cost for performing quarterly and annual water quality testing, equipment maintenance, replacement of consumable items, electrical service charges, professional fees and capital replacement allowance. The actual cost to operate and maintain the water system will be dependent on the final design of the water system. We estimate that the annual cost associated with operating and maintaining the water system will be approximately $19,250 per year (see budget spreadsheet in Appendix 3).

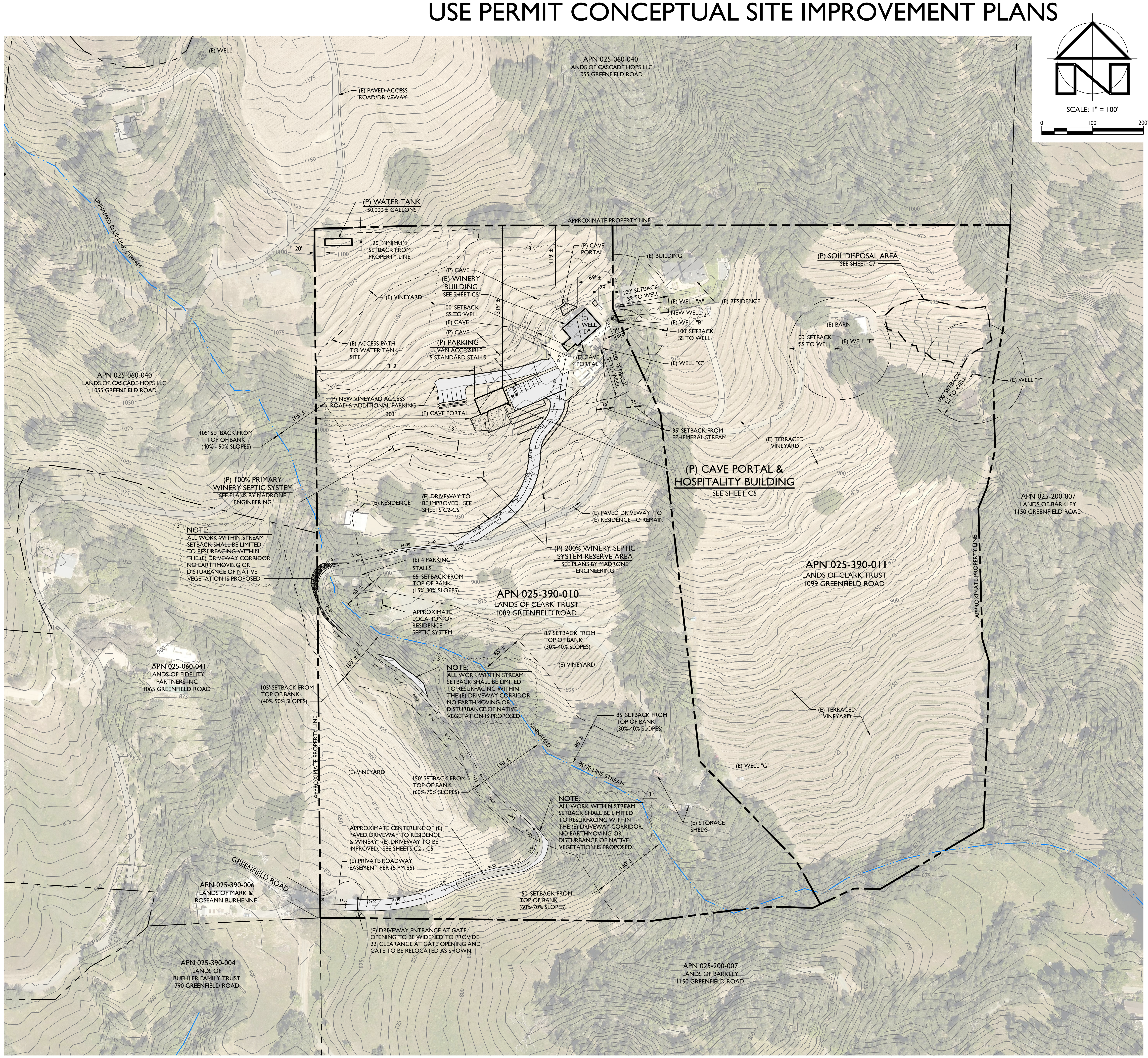
Funding

The startup cost will be financed along with the construction of the winery improvements. The winery's annual budget must include a line item for water system operation and maintenance expenses to ensure finances are available to operate and maintain the water system throughout the life of the winery.

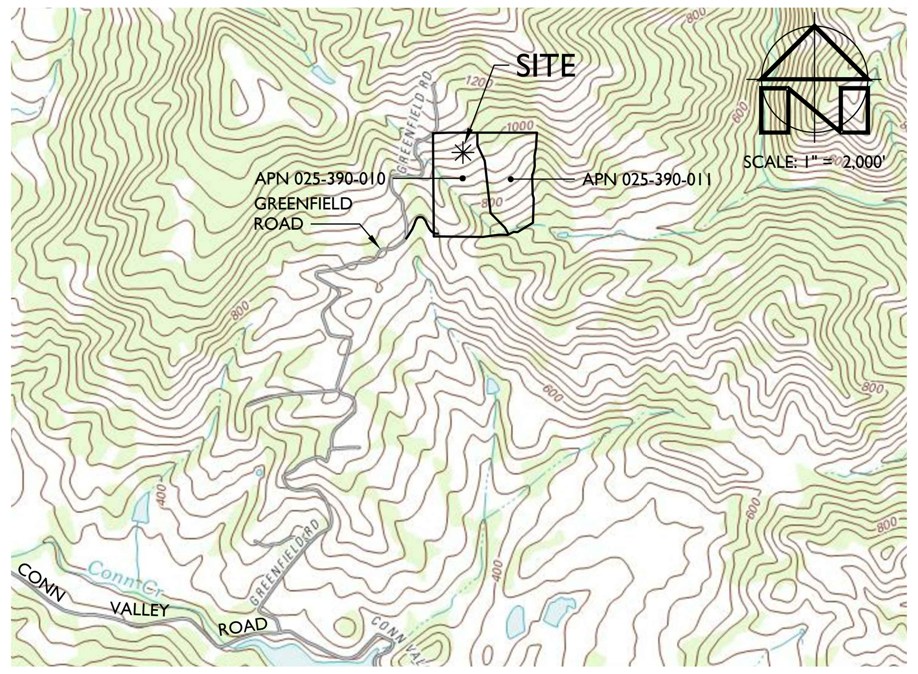
APPENDIX 1: Amizetta Winery Use Permit Conceptual Site Plans
(Reduced to 8.5" x 11")

AMIZETTA WINERY

USE PERMIT CONCEPTUAL SITE IMPROVEMENT PLANS



OVERALL SITE PLAN
SCALE: 1" = 100'



LOCATION MAP
SCALE: 1" = 2,000'

PROJECT INFORMATION:

PROPERTY OWNER & APPLICANT:
CLARK & AMIZETTA TRUST
1089 GREENFIELD ROAD
SAINT HELENA, CA 94574

SITE ADDRESS:
1089 GREENFIELD ROAD
SAINT HELENA, CA 94574

ASSESSOR'S PARCEL NUMBER:
025-390-010

PARCEL SIZE:
21.5 ± ACRES

PROJECT SIZE:
1.5 ± ACRES

ZONING:
AGRICULTURAL WATERSHED (AW)

DOMESTIC WATER SOURCE:
PRIVATE WELLS

FIRE PROTECTION WATER SOURCE:
STORAGE TANK

WASTEWATER DISPOSAL:
ONSITE TREATMENT AND DISPERSAL

SHEET INDEX:

PROJECT DESCRIPTION:

THE PURPOSE OF THIS PROJECT IS TO MODIFY THE EXISTING WINERY FACILITY VIA A NEW USE PERMIT. THESE PLANS ILLUSTRATE THE CONCEPTUAL DESIGN OF THE PROPOSED SITE IMPROVEMENTS ASSOCIATED WITH THE PROPOSED USE PERMIT.

FLOOD HAZARD NOTE:

ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE RATE MAP (FIRM) MAP NUMBER 06055C0270E EFFECTIVE SEPTEMBER 26, 2008, THE PROJECT SITE IS NOT LOCATED IN A SPECIAL FLOOD HAZARD AREA.

NOTES:

1. FADED BACKGROUND REPRESENTS EXISTING TOPOGRAPHIC FEATURES. TOPOGRAPHIC INFORMATION ON SHEET C1 WAS TAKEN FROM THE NAPA COUNTY GEOGRAPHIC INFORMATION SYSTEM DATABASE. TOPOGRAPHIC INFORMATION ON ALL OTHER SHEETS WAS TAKEN FROM THE "TOPOGRAPHIC MAP OF A PORTION OF THE LANDS OF AMIZETTA WINERY" PREPARED BY TERRA FIRMA SURVEYS, INC., DATED DECEMBER 10, 2018 AND UPDATED JANUARY 9, 2020. APPLIED CIVIL ENGINEERING INCORPORATED ASSUMES NO LIABILITY REGARDING THE ACCURACY OR COMPLETENESS OF THE TOPOGRAPHIC INFORMATION.
2. AERIAL PHOTOGRAPHS WERE OBTAINED FROM THE NAPA COUNTY GEOGRAPHIC INFORMATION SYSTEM (GIS) DATABASE, TAKEN APRIL TO JUNE 2018 AND MAY NOT REPRESENT CURRENT CONDITIONS.
3. CONTOUR INTERVAL:
   SHEET C1: FIVE (5) FEET, HIGHLIGHTED EVERY TWENTY FIVE (25) FEET.
   OTHER SHEETS: ONE (1) FOOT, HIGHLIGHTED EVERY FIVE (5) FEET.
4. BENCHMARK: NAVD 88.
5. THE PROPERTY LINES SHOWN ON THESE PLANS DO NOT REPRESENT A BOUNDARY SURVEY. THEY ARE APPROXIMATE AND ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

APPLIED CIVIL ENGINEERING INCORPORATED
2074 West Lincoln Avenue
Napa, CA 94558
(707) 320-4968 (707) 320-2395 Fax
www.appliedcivil.com

AMIZETTA WINERY
USE PERMIT CONCEPTUAL SITE IMPROVEMENT PLANS
OVERALL SITE PLAN

PREPARED UNDER THE DIRECTION OF:

NOT FOR USE PERMIT ONLY NOT FOR CONSTRUCTION

DRAWN BY:
PowerCAD LLC

CHECKED BY:
MRM

DATE:
JANUARY 25, 2021

REVISIONS:	BY:
3/18/2019 PERMIT SUBMITTAL	SMI
1 6/21/2019 RESPONSE TO COMMENTS	BT
2 4/17/2020 RESPONSE TO COMMENTS	SMI
3 1/25/2021 CLIENT REVISION	YMS

JOB NUMBER:
18-155

FILE:
18-155CONC-OSP.DWG

ORIGINAL SIZE:
24" X 36"

SHEET NUMBER:
C1
OF
9

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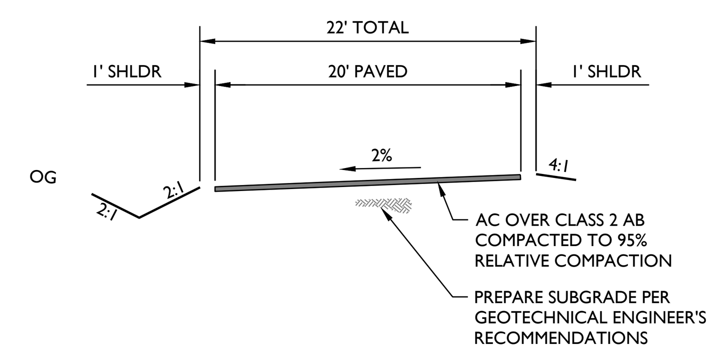
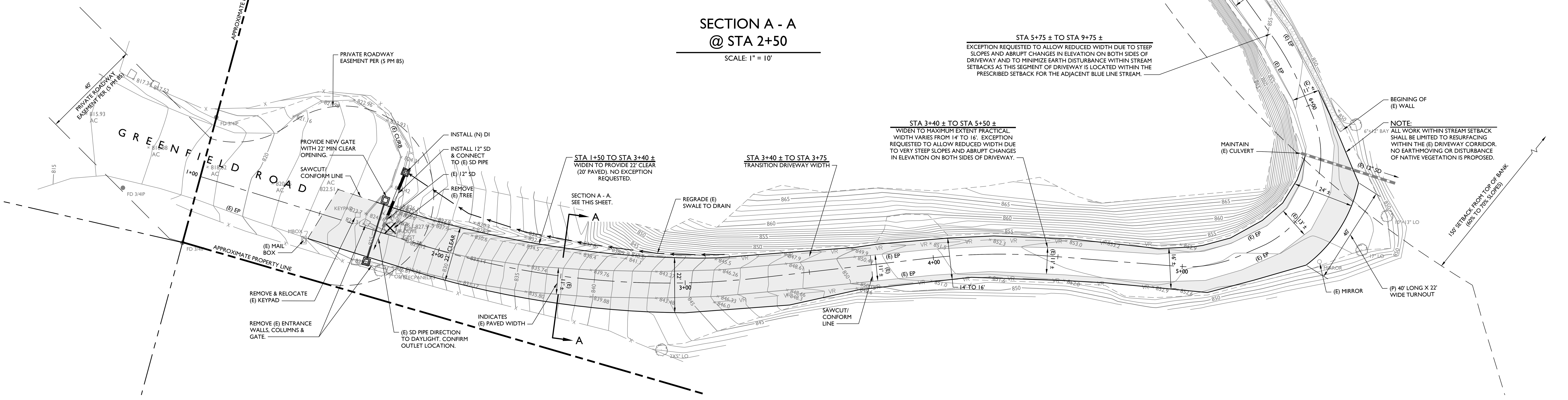
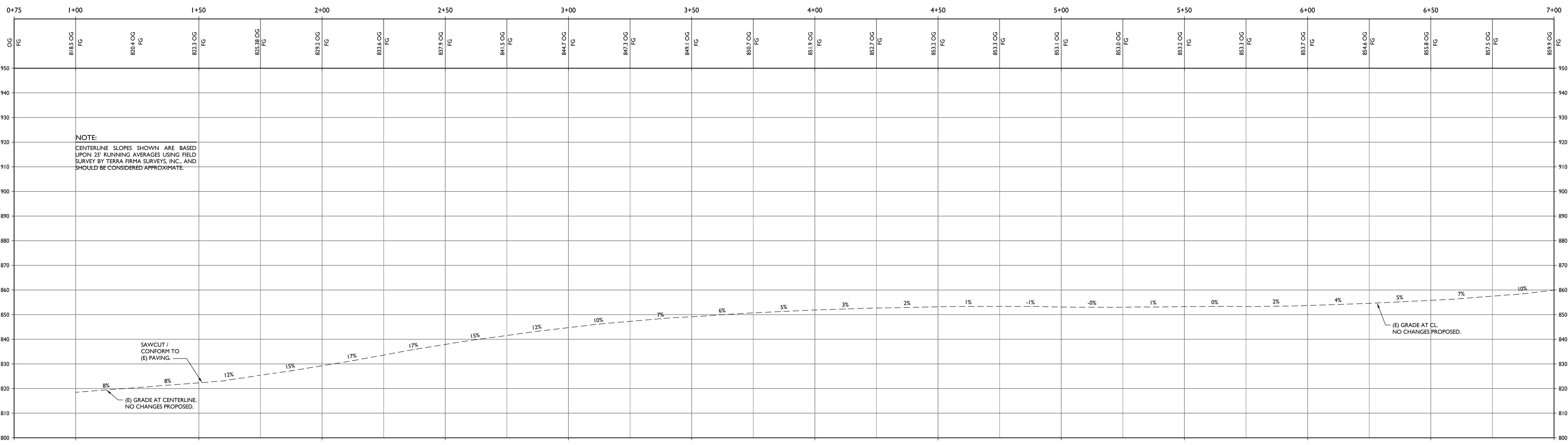


SECTION A - A
@ STA 2+50
SCALE: 1" = 10'



DRIVEWAY PLAN
STA 1+00 TO STA 7+00
SCALE: 1" = 20'



DRIVEWAY PROFILE
STA 1+00 TO STA 7+00
HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 20'

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AMIZETTA WINERY

USE PERMIT CONCEPTUAL SITE IMPROVEMENT PLANS
DRIVEWAY PLAN & PROFILES STA 1+00 TO STA 7+00

PREPARED UNDER THE DIRECTION OF:

REGISTERED PROFESSIONAL ENGINEER
MICHAEL R. MUELRATH
STATE OF CALIFORNIA
FOR USE PERMIT REVIEW NOT FOR CONSTRUCTION

DRAWN BY: PowerCAD LLC

CHECKED BY: MRM

DATE: JANUARY 25, 2021

REVISIONS:	BY:
3/18/2019 PERMIT SUBMITTAL	SMI
1 6/21/2019 RESPONSE TO COMMENTS	BT
2 4/17/2020 RESPONSE TO COMMENTS	SMI
3 1/25/2021 CLIENT REVISION	YMS

JOB NUMBER: 18-155

FILE: 18-155CONC-P&P.DWG

ORIGINAL SIZE: 24" X 36"

SHEET NUMBER: C2 OF 9

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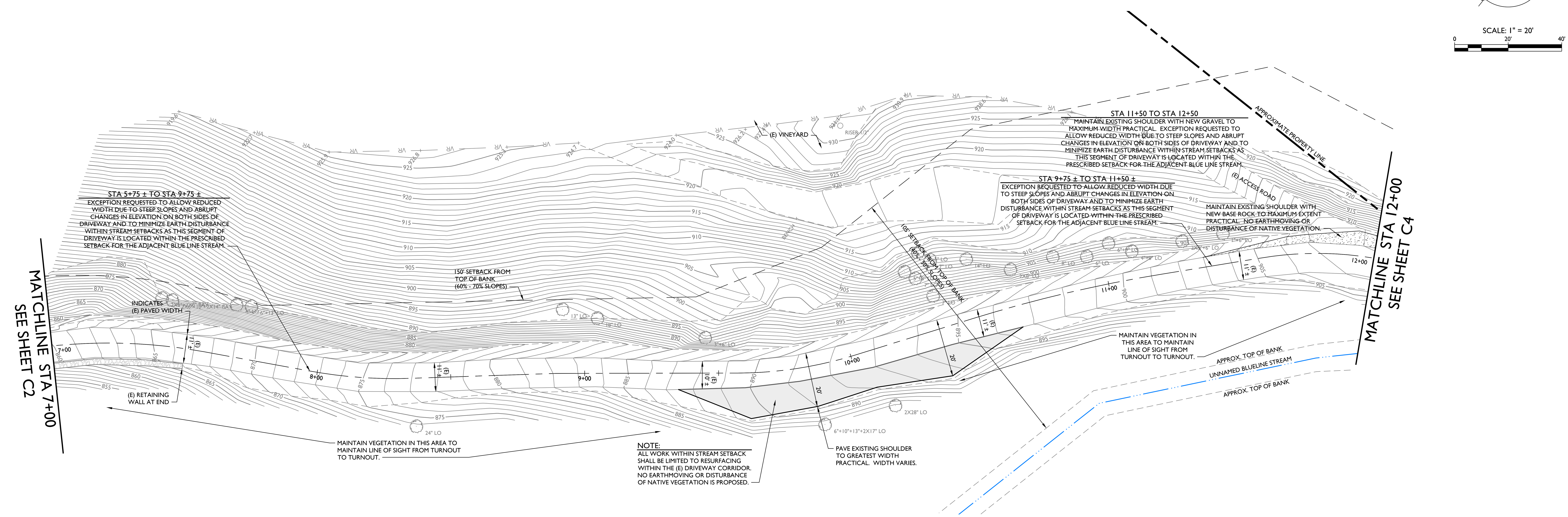
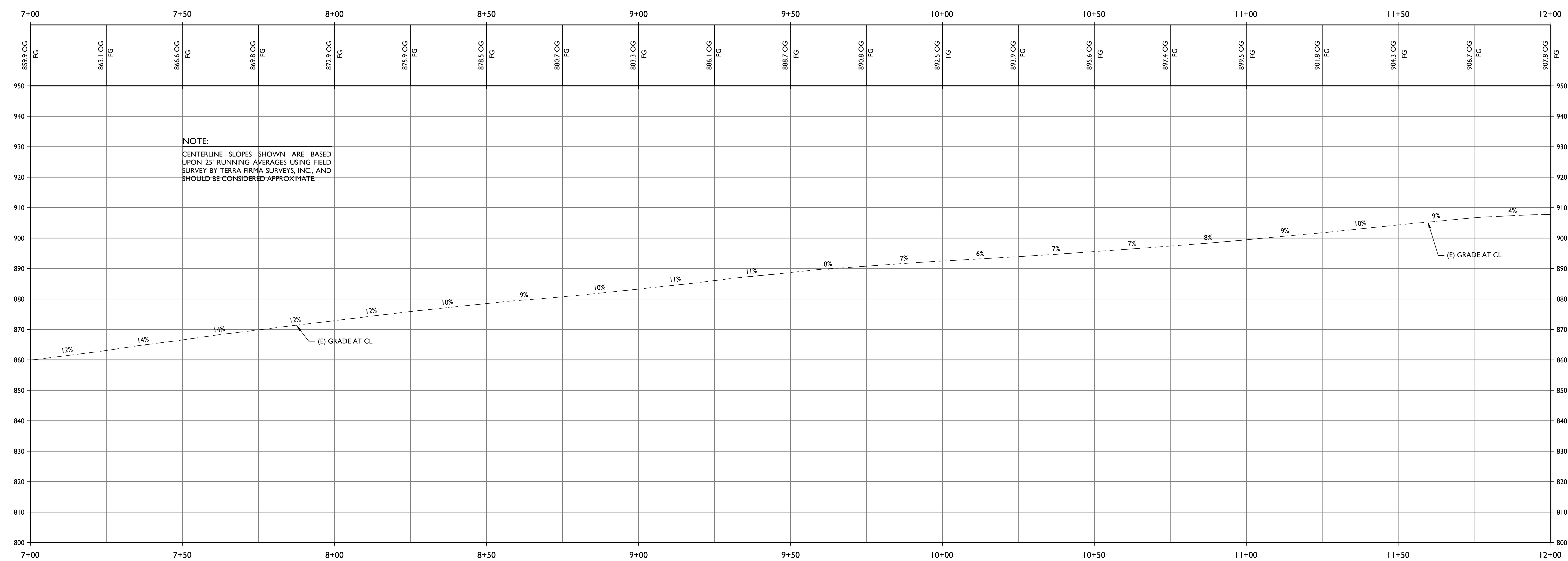
SCALE: 1" = 20'



DRIVEWAY PLAN
STA 7+00 TO STA 12+00

SCALE: 1" = 20'



DRIVEWAY PROFILE
STA 7+00 TO STA 12+00

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 20'

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AMIZETTA WINERY

USE PERMIT CONCEPTUAL SITE IMPROVEMENT PLANS
DRIVEWAY PLAN & PROFILE STA 7+00 TO STA 12+00

PREPARED UNDER THE DIRECTION OF:

FOR USE PERMIT REVIEW, NOT FOR CONSTRUCTION

DRAWN BY: PowerCAD LLC

CHECKED BY: MRM

DATE: JANUARY 25, 2021

REVISIONS:	BY:
3/18/2019 PERMIT SUBMITTAL	SMI
1 6/21/2019 RESPONSE TO COMMENTS	BT
2 4/17/2020 RESPONSE TO COMMENTS	SMI
3 1/25/2021 CLIENT REVISION	YMS

JOB NUMBER: 18-155

FILE: 18-155CONC-P&P.DWG

ORIGINAL SIZE: 24" X 36"

SHEET NUMBER: C3 OF 9

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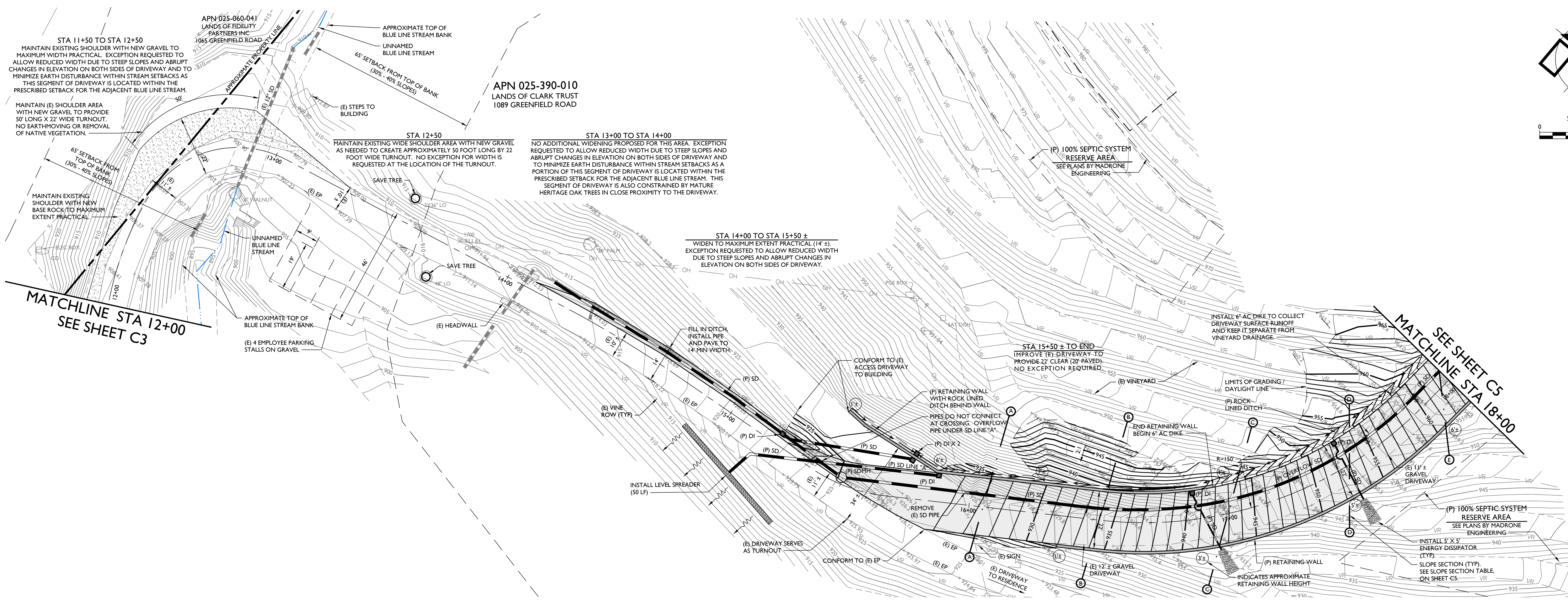
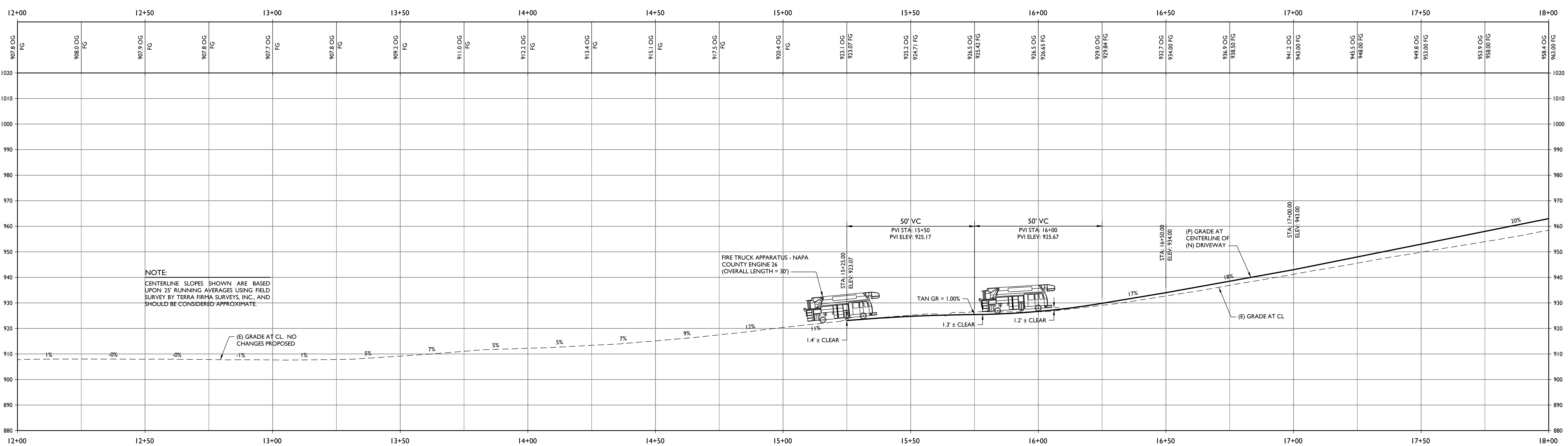


DRIVEWAY PLAN
STA 12+00 TO STA 18+00
SCALE: 1" = 20'



DRIVEWAY PROFILE
STA 12+00 TO STA 18+00
HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 20'

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AMIZETTA WINERY

USE PERMIT CONCEPTUAL SITE IMPROVEMENT PLANS
DRIVEWAY PLAN & PROFILE STA 12+00 TO STA 18+00

PREPARED UNDER THE DIRECTION OF:

REGISTERED PROFESSIONAL ENGINEER MICHAEL R. MUELRATH STATE OF CALIFORNIA
FOR USE PERMIT REVIEW NOT FOR CONSTRUCTION

DRAWN BY: PowerCAD LLC

CHECKED BY: MRM

DATE: JANUARY 25, 2021

REVISIONS:	BY:
3/18/2019 PERMIT SUBMITTAL	SMI
1 6/21/2019 RESPONSE TO COMMENTS	BT
2 4/17/2020 RESPONSE TO COMMENTS	SMI
1/25/2021 CLIENT REVISION	YMS

JOB NUMBER: 18-155

FILE: 18-155CONC-P&P.DWG

ORIGINAL SIZE: 24" X 36"

SHEET NUMBER: C4 OF 9

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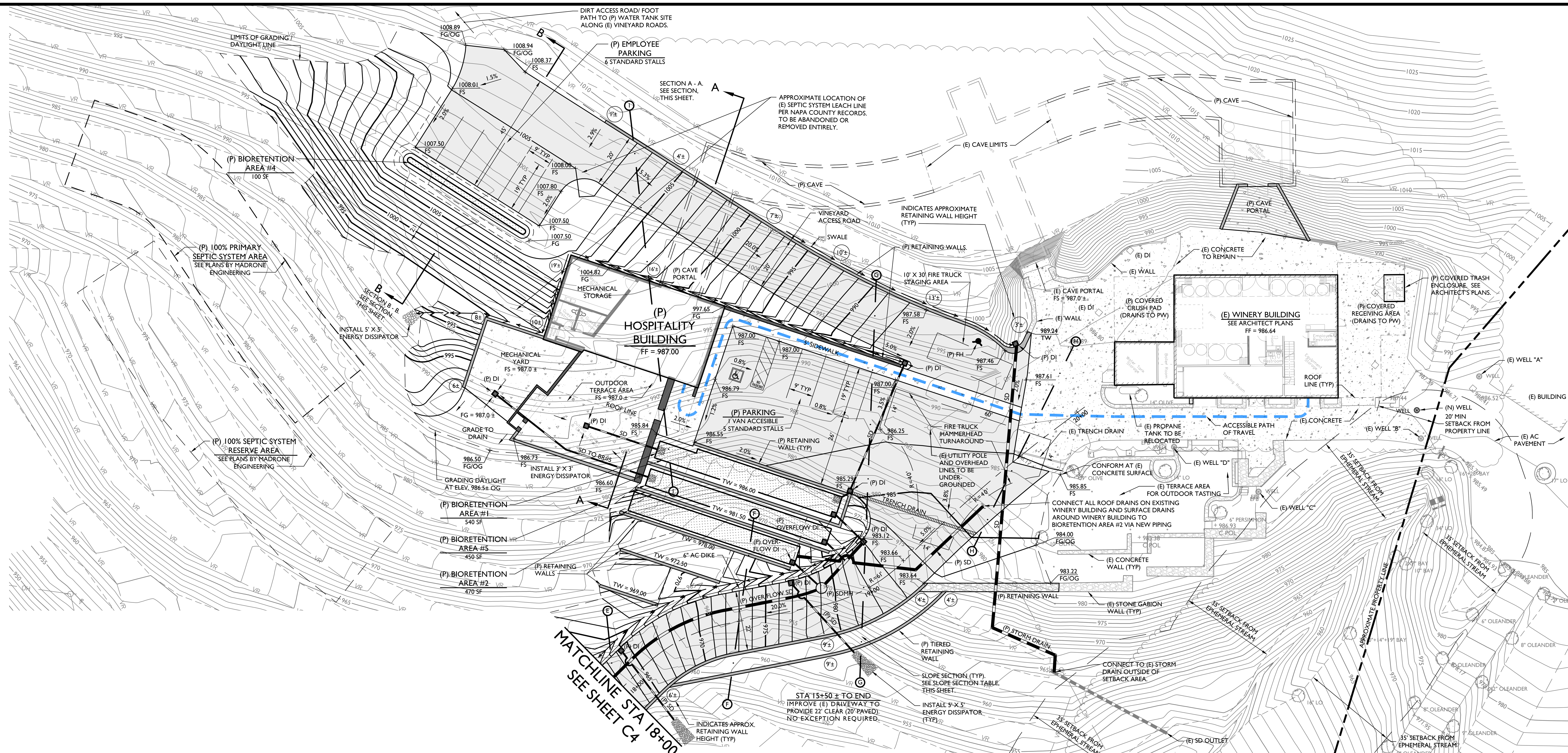
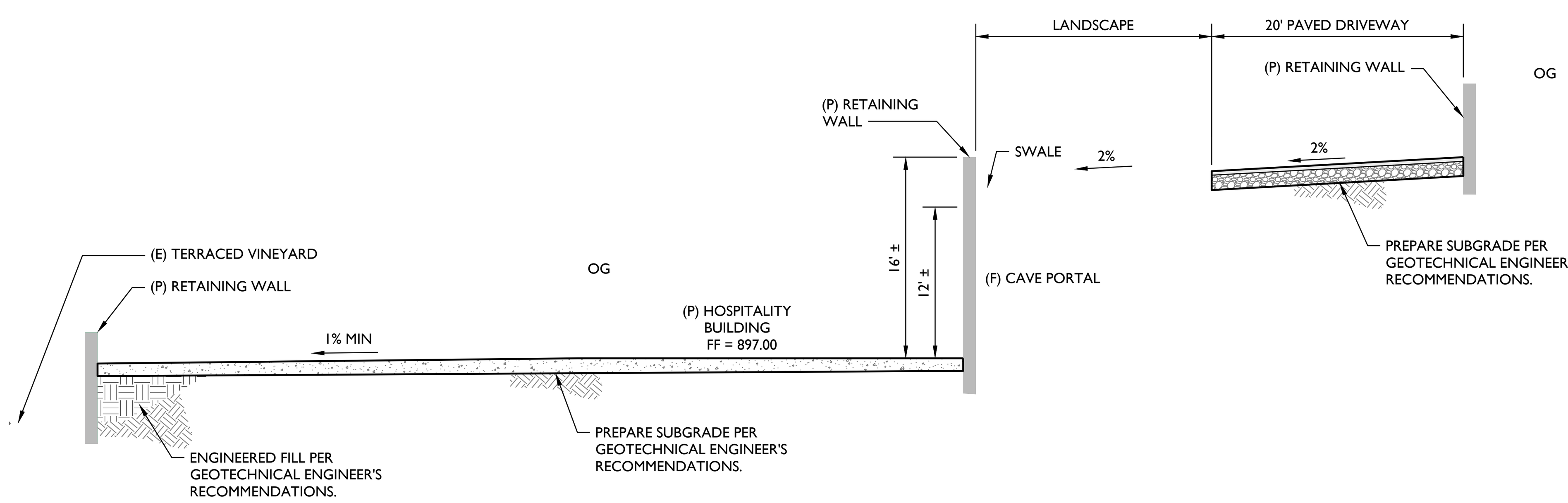


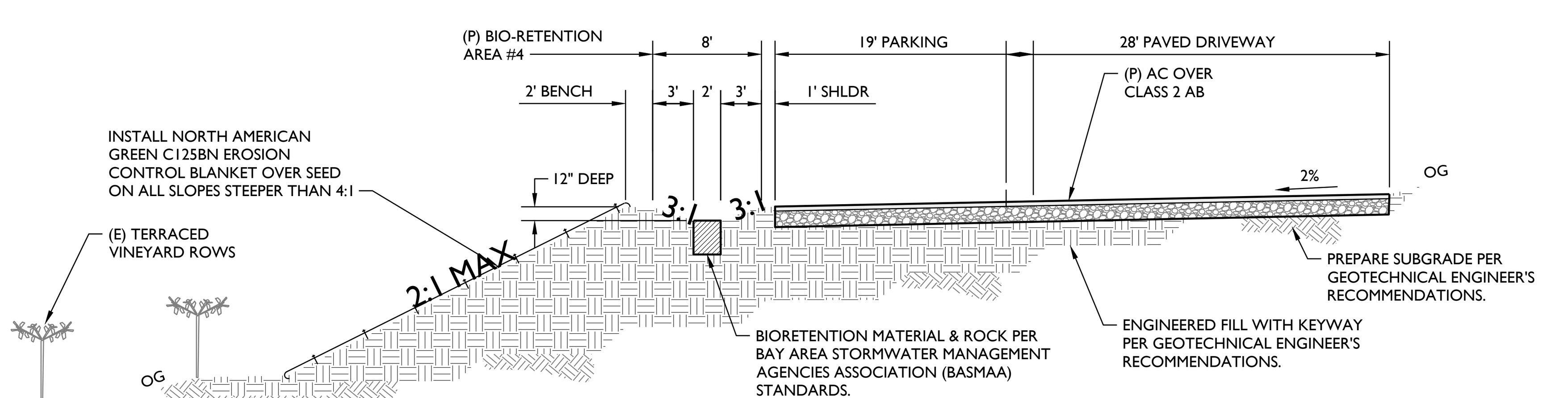
DRIVEWAY PLAN
STA 18+00 TO STA 20+00 ±

SCALE: 1" = 20'



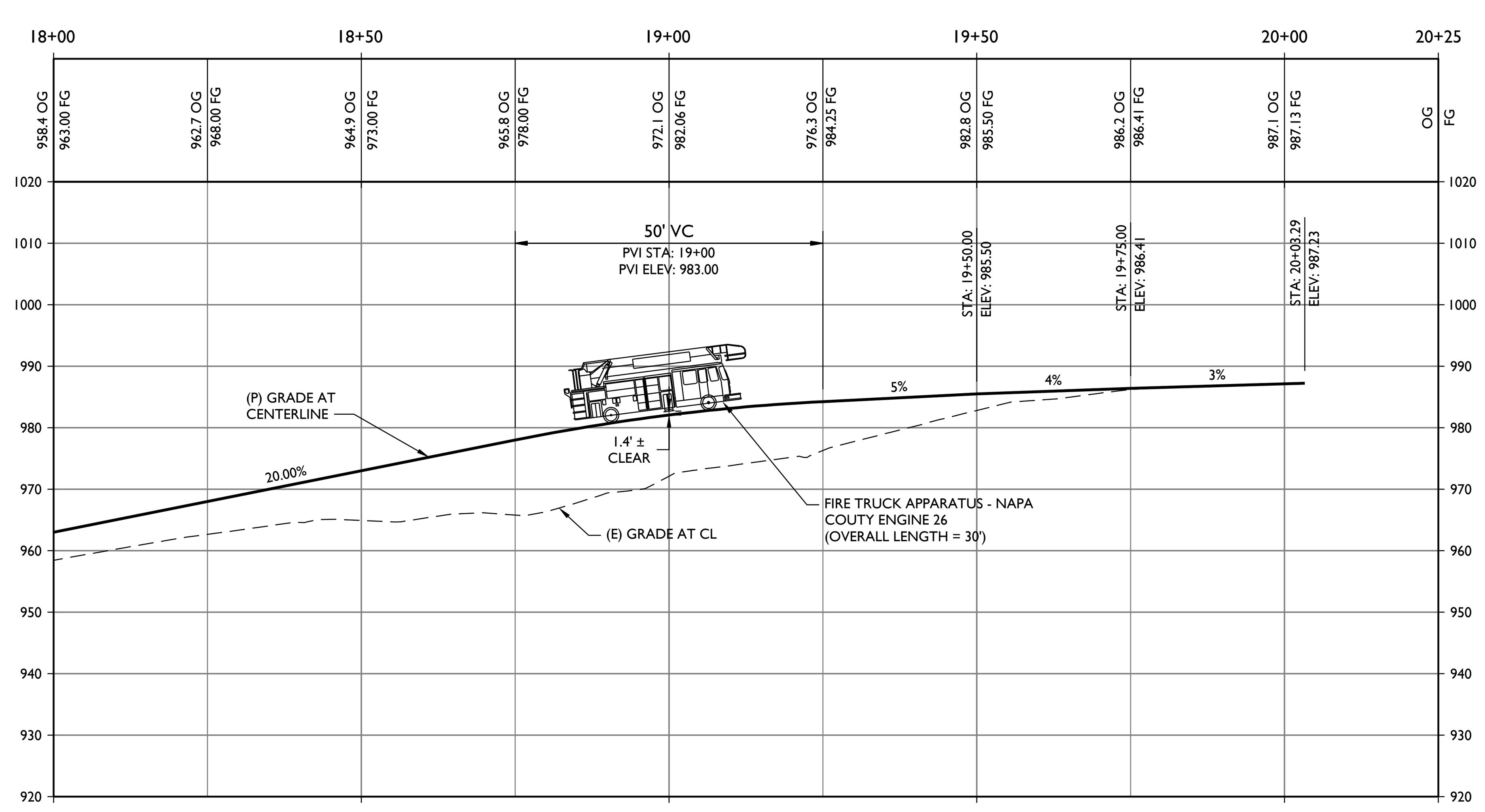
SECTION A - A

HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 10'



SECTION B - B

HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 10'



DRIVEWAY PROFILE
STA 18+00 TO STA 20+00 ±

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 20'

SLOPE SECTIONS

A-A	46%
B-B	40%
C-C	28%
D-D	23%
E-E	27%
F-F	22%
G-G	29%
H-H	8%
I-I	22%
AVERAGE	27%

GRADING QUANTITIES*

DRIVEWAY & SITE GRADING		
	CUT	-2,600 ± CY
	FILL	+3,600 ± CY
CAVE EXCAVTION SPOILS		+1,000 ± CY
	CUT	-5,100 ± CY
TOTAL		-4,100 ± CY**
SPOILS DIPOSAL AREA	FILL	+2,700 ± CY
	NET**	-1,400 ± CY (CUT)

* THIS ESTIMATE IS PROVIDED AS A TOOL FOR THE REVIEWING AGENCIES TO EVALUATE THE ENVIRONMENTAL IMPACTS OF THE PROJECT. IT IS NOT INTENDED TO BE USED FOR CONSTRUCTION PURPOSES. CONTRACTOR IS TO PERFORM THEIR OWN EARTHWORK CALCULATIONS AND SHALL NOT USE THE ESTIMATES PRESENTED ABOVE. THIS ESTIMATE IS BASED ON IN PLACE VOLUMES AND DOES NOT INCLUDE FLUFF, SHRINKAGE, PAVING, AGGREGATES OR SELECT FILL VOLUMES.

** EXCESS SOIL CUT FROM THE PROJECT WILL BE PLACED IN THE SOIL DISPOSAL AREA. ANY REMAINING EXCESS WILL BE HAULED OFFSITE TO A PRE-APPROVED LOCATION.

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AMIZETTA WINERY

USE PERMIT CONCEPTUAL SITE IMPROVEMENT PLANS
DRIVEWAY PLAN & PROFILE STA 18+00 TO STA 20+00 ±

PREPARED UNDER THE DIRECTION OF:

REGISTERED PROFESSIONAL ENGINEER
MICHAEL R. MUELRATH
NO. 67415
EXP. 12/31/2022
1/25/2021
CIVIL
STATE OF CALIFORNIA
FOR USE PERMIT REVIEW NOT FOR CONSTRUCTION

DRAWN BY: PowerCAD LLC

CHECKED BY: MRM

DATE: JANUARY 25, 2021

REVISIONS:	BY:
3/18/2019 PERMIT SUBMITTAL	SMI
1 6/21/2019 RESPONSE TO COMMENTS	BT
2 4/17/2020 RESPONSE TO COMMENTS	SMI
3 1/25/2021 CLIENT REVISION	YMS

JOB NUMBER: 18-155

FILE: 18-155CONC-P&P.DWG

ORIGINAL SIZE: 24" X 36"

SHEET NUMBER: C5 OF 9

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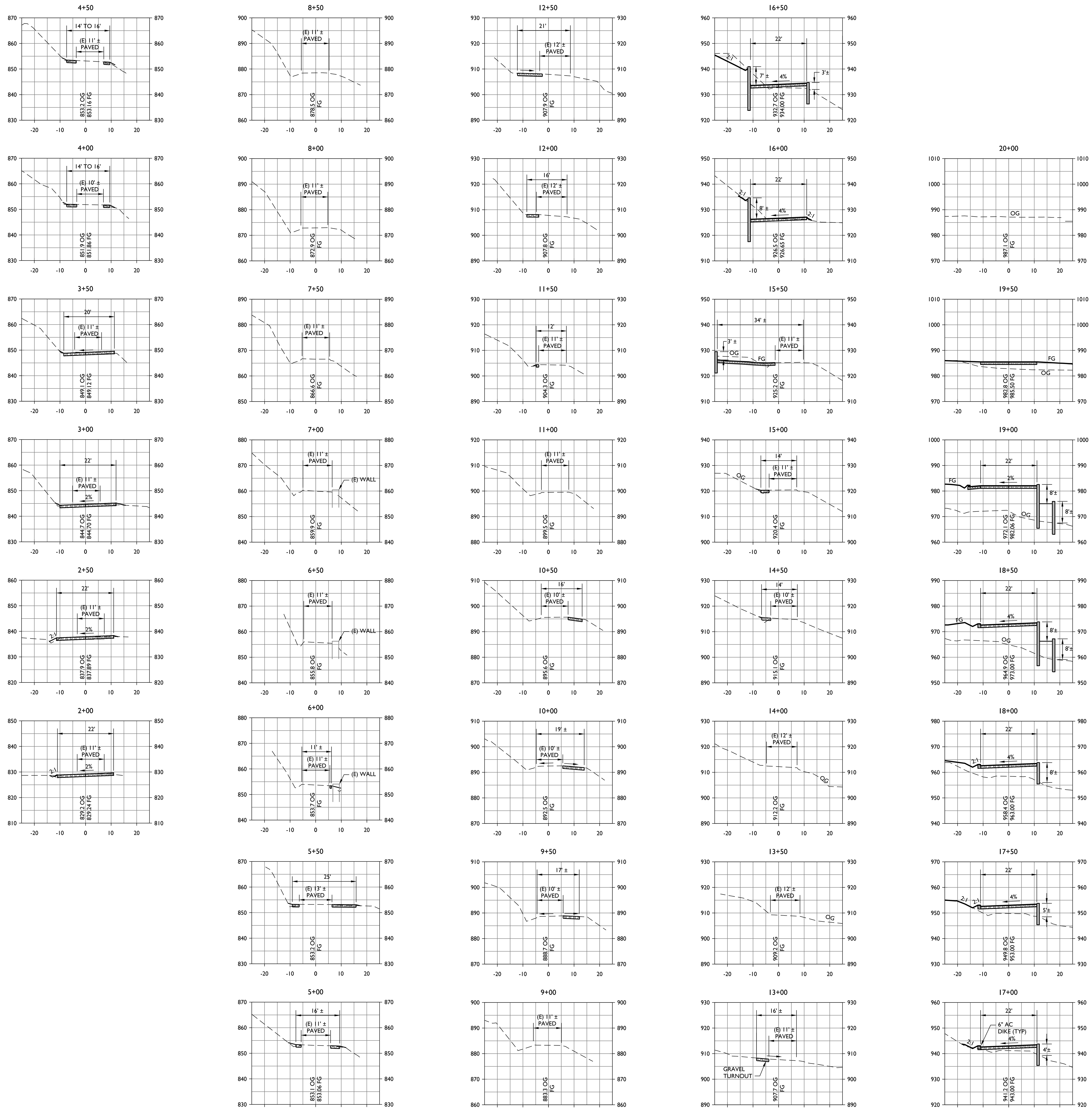

DRIVEWAY SECTIONS STA 2+00 TO STA 20+00

SCALE: 1" = 20'

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AMIZETTA WINERY

USE PERMIT CONCEPTUAL SITE IMPROVEMENT PLANS

DRIVEWAY SECTIONS STA 2+00 TO STA 20+00

PREPARED UNDER THE DIRECTION OF:

FOR USE PERMIT REVIEW NOT FOR CONSTRUCTION

DRAWN BY: PowerCAD LLC

CHECKED BY: MRM

DATE: JANUARY 25, 2021

REVISIONS:	BY:
3/18/2019 PERMIT SUBMITTAL	SMI
1 6/21/2019 RESPONSE TO COMMENTS	BT
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3 1/25/2021 CLIENT REVISION	YMS

JOB NUMBER: 18-155

FILE: 18-155CONC-SECT.DWG

ORIGINAL SIZE: 24" X 36"

SHEET NUMBER: C6 OF 9

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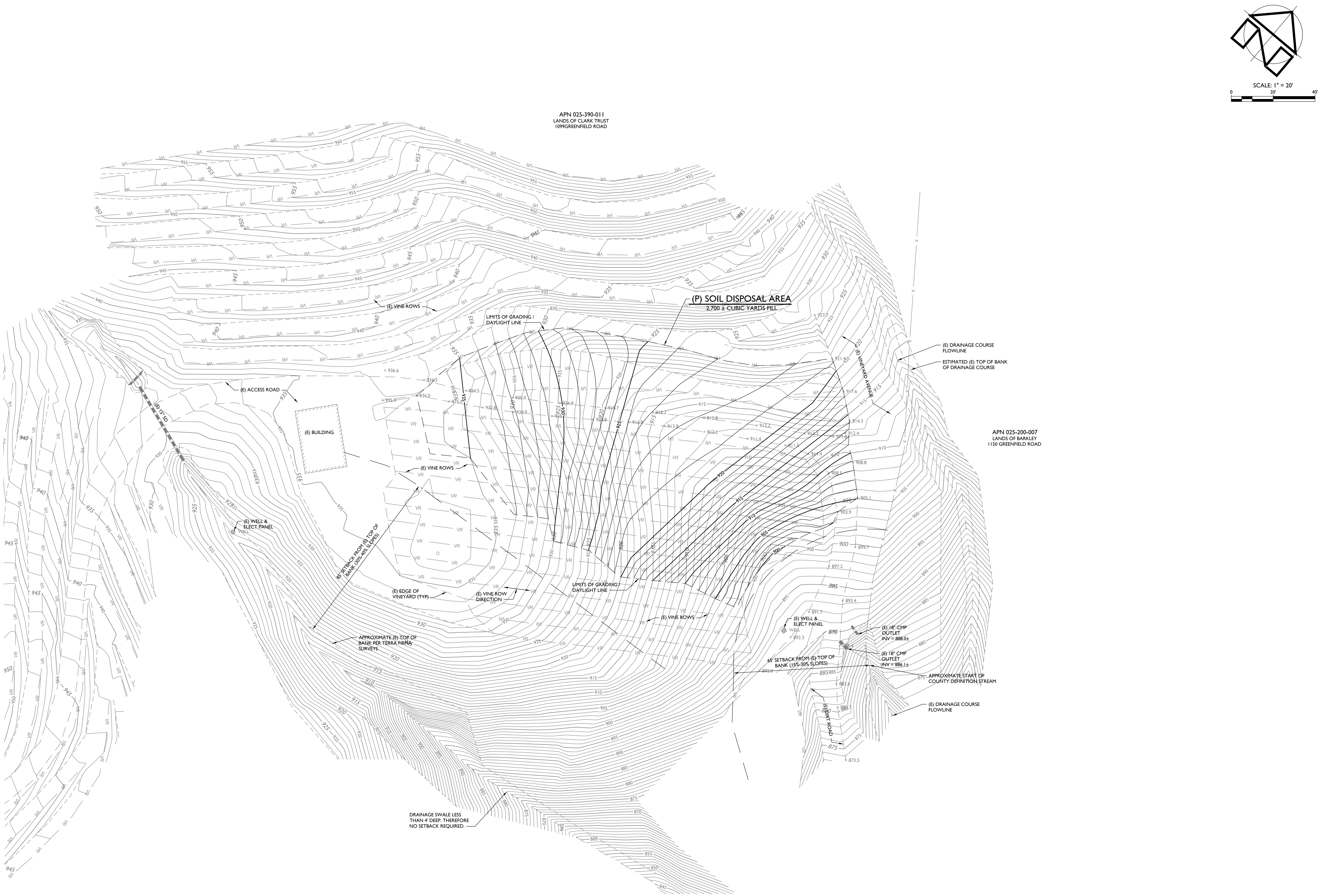

SOIL DISPOSAL AREA GRADING PLAN

SCALE: 1" = 20'

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AMIZETTA WINERY

USE PERMIT CONCEPTUAL SITE IMPROVEMENT PLANS
SOIL DISPOSAL AREA GRADING PLAN

PREPARED UNDER THE DIRECTION OF:

REGISTERED PROFESSIONAL ENGINEER
MICHAEL R. MUELRATH
MRM
NO. 67435
EXP. 12/31/2022
1/25/2021
CIVIL
STATE OF CALIFORNIA

FOR USE PERMIT REVIEW NOT FOR CONSTRUCTION

DRAWN BY: PowerCAD LLC

CHECKED BY: MRM

DATE: JANUARY 25, 2021

REVISIONS:	BY:
3/18/2019 PERMIT SUBMITTAL	SMI
1 6/21/2019 RESPONSE TO COMMENTS	BT
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3 1/25/2021 CLIENT REVISION	YMS

JOB NUMBER: 18-155

FILE: 18-155CONC-GRAD.DWG

ORIGINAL SIZE: 24" X 36"

SHEET NUMBER: C7 OF 9

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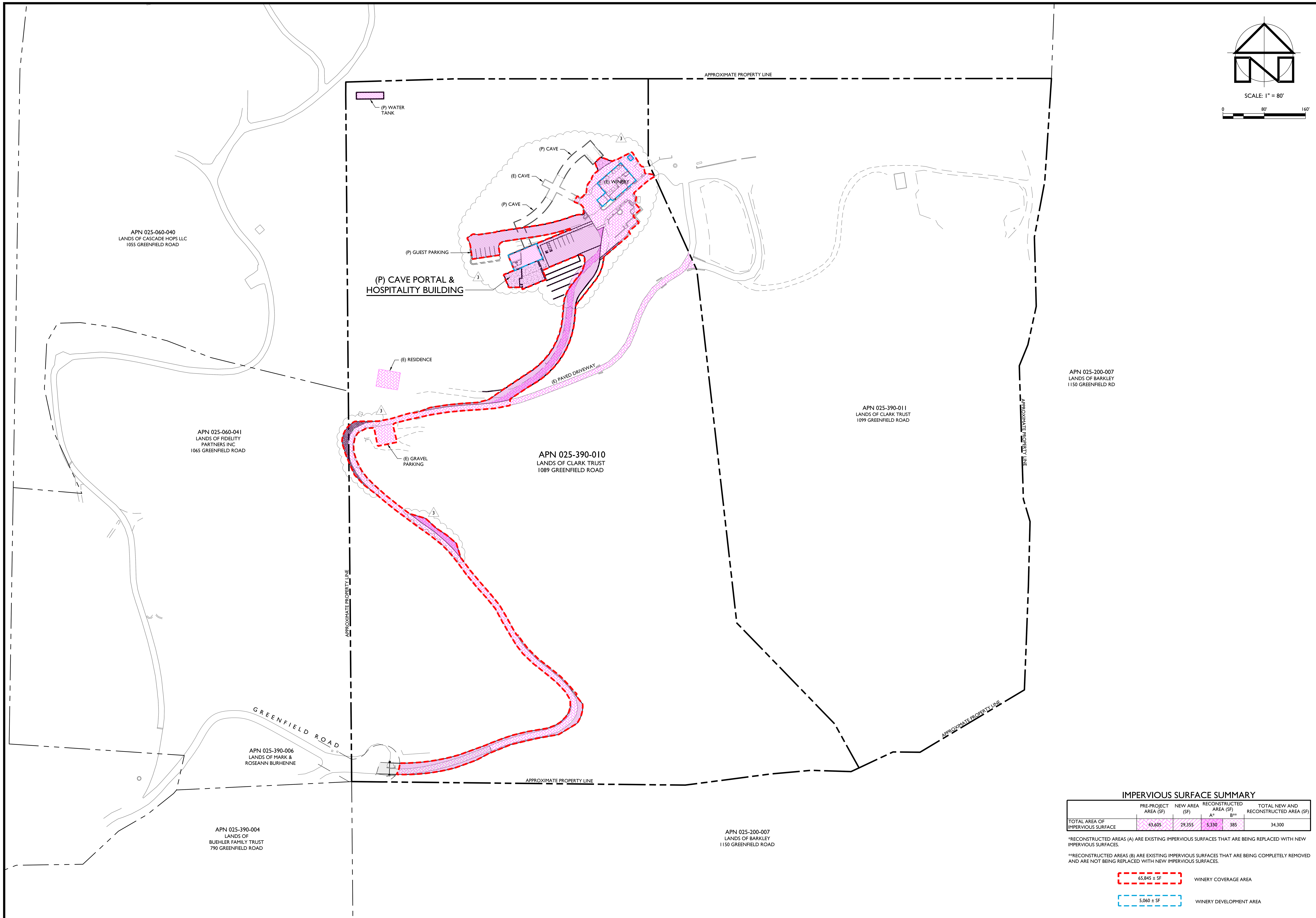

IMPERVIOUS SURFACE SUMMARY

	PRE-PROJECT AREA (SF)	NEW AREA (SF)	RECONSTRUCTED AREA (SF) A*	RECONSTRUCTED AREA (SF) B**	TOTAL NEW AND RECONSTRUCTED AREA (SF)
TOTAL AREA OF IMPERVIOUS SURFACE	43,605	29,355	5,330	385	34,300

*RECONSTRUCTED AREAS (A) ARE EXISTING IMPERVIOUS SURFACES THAT ARE BEING REPLACED WITH NEW IMPERVIOUS SURFACES.

**RECONSTRUCTED AREAS (B) ARE EXISTING IMPERVIOUS SURFACES THAT ARE BEING COMPLETELY REMOVED AND ARE NOT BEING REPLACED WITH NEW IMPERVIOUS SURFACES.

65,845 ± SF — WINERY COVERAGE AREA

5,060 ± SF — WINERY DEVELOPMENT AREA

IMPERVIOUS SURFACE EXHIBIT

SCALE: 1" = 80'

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AMIZETTA WINERY

USE PERMIT CONCEPTUAL SITE IMPROVEMENT PLANS

IMPERVIOUS SURFACE EXHIBIT

PREPARED UNDER THE DIRECTION OF:

REGISTERED PROFESSIONAL ENGINEER
MICHAEL R. MUELRATH
MRM
NO. 67435
Exp. 12/31/2022
1/25/2021
CIVIL
STATE OF CALIFORNIA
FOR USE PERMIT REVIEW NOT FOR CONSTRUCTION

DRAWN BY: PowerCAD LLC

CHECKED BY: MRM

DATE: JANUARY 25, 2021

REVISIONS:	BY:
3/18/2019 PERMIT SUBMITTAL	SMI
1 6/21/2019 RESPONSE TO COMMENTS	BT
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3 1/25/2021 CLIENT REVISION	YMS

JOB NUMBER: 18-155

FILE: 18-155CONC-ISE.DWG

ORIGINAL SIZE: 24" X 36"

SHEET NUMBER: C8 OF 9

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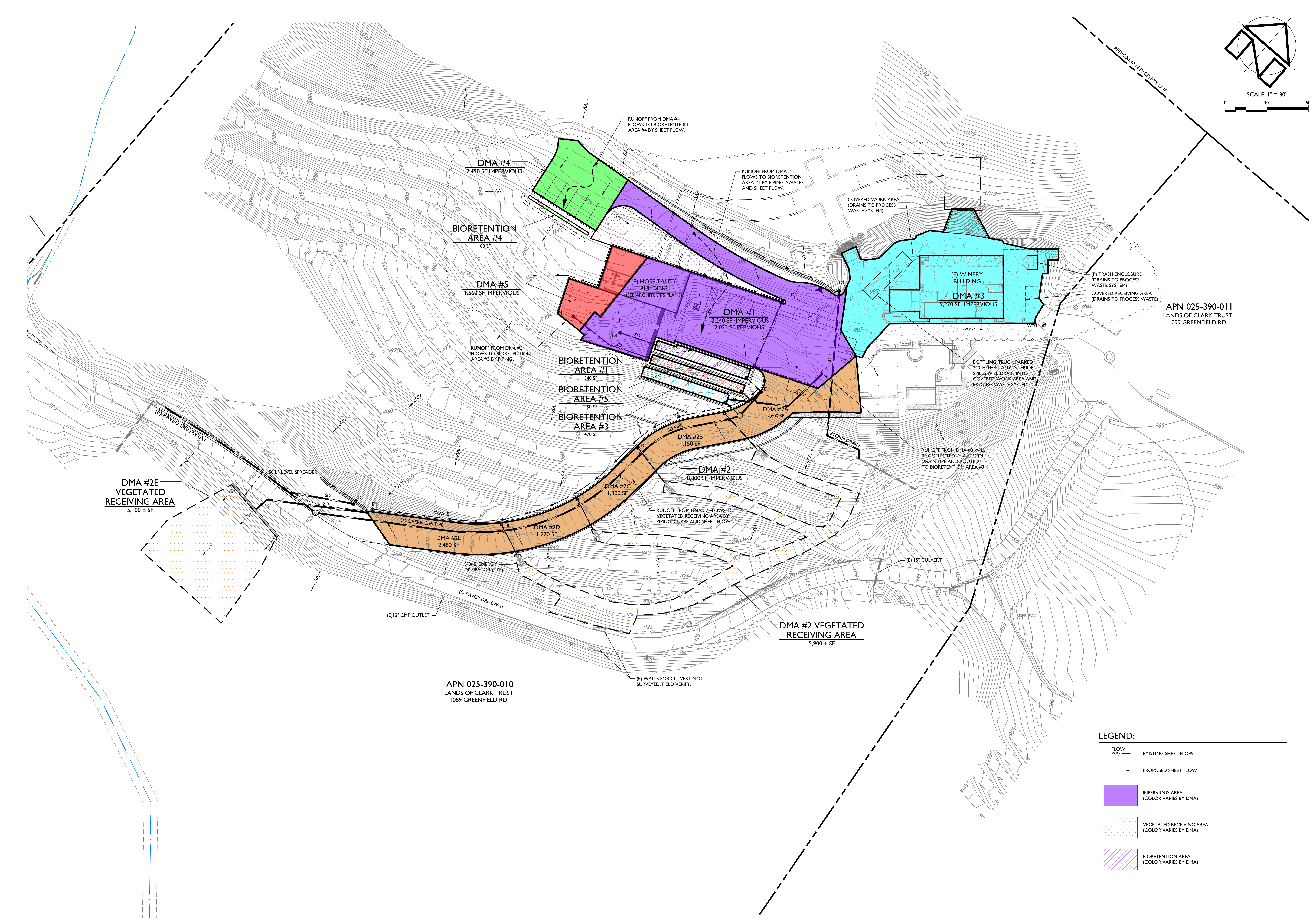

STORMWATER CONTROL PLAN

SCALE: 1" = 30'

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AMIZETTA WINERY

USE PERMIT CONCEPTUAL SITE IMPROVEMENT PLANS

STORMWATER CONTROL PLAN

PREPARED UNDER THE DIRECTION OF:

REGISTERED PROFESSIONAL ENGINEER
MICHAEL R. MUELRATH
MRM
NO. 67435
Exp. 12/31/2022
1/25/2021
CIVIL
STATE OF CALIFORNIA
FOR USE PERMIT REVIEW NOT FOR CONSTRUCTION

DRAWN BY: PowerCAD LLC

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DATE: JANUARY 25, 2021

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3/18/2019 PERMIT SUBMITTAL	SMI
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2 4/17/2020 RESPONSE TO COMMENTS	SMI
3 1/25/2021 CLIENT REVISION	YMS

JOB NUMBER: 18-155

FILE: 18-155CONC-SCP.DWG

ORIGINAL SIZE: 24" X 36"

SHEET NUMBER: C9 OF 9

APPENDIX 2: Correspondence with LAFCO

Mike Muelrath

From: Freeman, Brendon <bfreeman@napa.lafco.ca.gov>
Sent: Saturday, February 23, 2019 2:12 PM
To: Mike Muelrath
Subject: RE: Water Service at 1089 Greenfield Road

Greetings Mike,

All good here at LAFCO and I hope the same is true for your team.

I am confirming 1089 Greenfield Road (APN 025-390-010) is located outside the jurisdictional boundary of any city or special district in Napa County that is authorized to provide public water service. Cities and special districts may not extend water service outside their jurisdictional boundaries unless there exists a documented threat to public health or safety (CA Gov. Code 56133). If there is a threat to public health or safety involving 1089 Greenfield Road, a city or special district may request formal authorization from LAFCO to provide public water service, and LAFCO approval would need to occur at a noticed public hearing. Given there are currently no known documented threats to public health or safety involving 1089 Greenfield Road, there are no public water service options available to Amizetta Winery involving a city or special district.

Please let me know if you have any questions or if there's anything else I can provide that may be helpful.

Thank you,

Brendon Freeman, Executive Officer
Local Agency Formation Commission of Napa County
1030 Seminary Street, Suite B
Napa, California 94559
Office: (707) 259-8645
Mobile: (707) 363-1783
www.napa.lafco.ca.gov

From: Mike Muelrath <mike@appliedcivil.com>
Sent: Saturday, February 23, 2019 1:56 PM
To: Freeman, Brendon <bfreeman@napa.lafco.ca.gov>
Subject: Water Service at 1089 Greenfield Road

Hi Brendon,

Hope all is well with you!

We are working on a public water system application for the Amizetta Winery at 1089 Greenfield Road. Similar to previous projects we have discussed we need a note from you relative to this properties ability to connect to an existing public water system.

I look forward to your response and feel free to call with any questions.

Thank you,

Mike

Applied Civil Engineering Incorporated
(707) 320-4968 (Telephone)
(707) 320-2395 (Facsimile)
(707) 227-7166 (Mobile)

APPENDIX 3: Budgeting Spreadsheets

FIVE YEAR BUDGET PROJECTION (Small Community Water System)

INSTRUCTIONS: Yellow-shaded cells are for data entry; all other cells are locked except line item descriptions which can be changed if needed. Years 2 through 5 will be compounded automatically by the inflation factor in Cell G6.

System Name: Sullivan Rutherford Estate Water System

Inflation Factor (%): 3.0

System ID Number: TBD

LINE		EXPENSES AND SOURCE OF FUNDS	2019	2020	2021	2022	2023
1	**OPERATIONS AND MAINTENANCE (O&M) EXPENSES**						
2		Salaries and Benefits	6,240.00	6,427.20	6,620.02	6,818.62	7,023.17
3		Contract Operation and Maintenance	0.00	0.00	0.00	0.00	0.00
4		Power and Other Utilities	2,500.00	2,575.00	2,652.25	2,731.82	2,813.77
5		Fees Regulatory	674.00	694.22	715.05	736.50	758.59
6		Treatment Chemicals	0.00	0.00	0.00	0.00	0.00
7		Coliform Monitoring	240.00	247.20	254.62	262.25	270.12
8		Chemical Monitoring	50.00	51.50	53.05	54.64	56.28
9		Transportation	0.00	0.00	0.00	0.00	0.00
10		Materials, Supplies, and Parts	500.00	515.00	530.45	546.36	562.75
11		Office Supplies	100.00	103.00	106.09	109.27	112.55
12		Miscellaneous	500.00	515.00	530.45	546.36	562.75
13		Additional O&M for New Project	0.00	0.00	0.00	0.00	0.00
14		**Total O&M Expenses:**	10,804.00	11,128.12	11,461.96	11,805.82	12,160.00
16	**GENERAL AND ADMINISTRATIVE EXPENSES**						
17		Engineering and Professional Services	680.00	700.40	721.41	743.05	765.35
18		Depreciation and Amortization	0.00	0.00	0.00	0.00	0.00
19		Insurance	0.00	0.00	0.00	0.00	0.00
20		Existing Contribution to CIP (From CIP J48)	8,153.75	8,153.75	8,153.75	8,153.75	8,153.75
21		O&M Reserve	0.00	0.00	0.00	0.00	0.00
22		Other Reserves	0.00	0.00	0.00	0.00	0.00
23		Miscellaneous	100.00	103.00	106.09	109.27	112.55
24	**	New Funding Project Costs	0.00	0.00	0.00	0.00	0.00
25		Additional New Project Contribution to CIP (From CIP J59)	0.00	0.00	0.00	0.00	0.00
26	**	Debt Service	0.00	0.00	0.00	0.00	0.00
27		**Total General and Administrative Expenses:**	8,933.75	8,957.15	8,981.25	9,006.08	9,031.65
28		**TOTAL EXPENSES (Line 14+ Line 27):**	19,737.75	20,085.27	20,443.22	20,811.90	21,191.64
30	**REVENUES RECEIVED**						
31		Cash Revenues (Water Rates)	0.00	0.00	0.00	0.00	0.00
32	**	Depreciation Reserves	0.00	0.00	0.00	0.00	0.00
33	**	Fees and Services	0.00	0.00	0.00	0.00	0.00
34	**	Hookup Charges	0.00	0.00	0.00	0.00	0.00
35	**	Withdrawal from CIP or Other Reserves	0.00	0.00	0.00	0.00	0.00
36	**	Other Fund Sources: Interest, Etc.	0.00	0.00	0.00	0.00	0.00
37	**	Grants	0.00	0.00	0.00	0.00	0.00
38	**	SRF Loan	0.00	0.00	0.00	0.00	0.00
39	**	Business Loans	0.00	0.00	0.00	0.00	0.00
40		**TOTAL REVENUE (Lines 31 through 39):**	0.00	0.00	0.00	0.00	0.00
41		**NET LOSS OR GAIN:**	-19,737.75	-20,085.27	-20,443.22	-20,811.90	-21,191.64

Report Prepared by (Name and Title): ______________________ Date: ____________

(** Inflation factor not applied to future year projections)

	2019	2020	2021	2022	2023
Number of Customers:	1	1	1	1	1
Average Monthly Revenue Needed Per Customer:	1644.81	1673.77	1703.60	1734.32	1765.97

(total expenses ÷ # of customers ÷ 12)

SIMPLIFIED CAPITAL IMPROVEMENT PLAN (CIP)

Date: 6/28/2019
System ID No.: TBD
System Name: Sullivan Rutherford Estate Water System
Service Connections: 1

*Enter information only in YELLOW shaded cells

QTY	COMPONENT			UNIT COST	INSTALLED COST	AVG LIFE, YEARS	ANNUAL RESERVE	MONTHLY RESERVE	MONTHLY RESERVE PER CUSTOMER
1	Drilled Well, 6", steel casing	Depth:	500	80	40000	25	1600.00	133.33	133.33
0	Drilled Well, 8", steel casing	Depth:	0	130	0	25	0.00	0.00	0.00
0	Drilled Well, 12", steel casing	Depth:		200	0	25	0.00	0.00	0.00
1	Wellhead Electrical Controls			700	700	25	28.00	2.33	2.33
0	Submersible Pump, 20 HP			9000	0	7	0.00	0.00	0.00
0	Submersible Pump, 3 HP			2000	0	7	0.00	0.00	0.00
1	Submersible Pump, 5 HP			3500	3500	7	500.00	41.67	41.67
1	Booster Pump Station, 10 HP, complete			14000	14000	5	2800.00	233.33	233.33
1	Booster Pump Station Electrical Controls			5000	5000	5	1000.00	83.33	83.33
0	Pressure Tank	Gallons:		1.5	0	10	0.00	0.00	0.00
1	Pressure Tank	Gallons:	80	1.5	120	10	12.00	1.00	1.00
1	Storage Tank, Plastic	Gallons:	10000	0.5	5000	10	500.00	41.67	41.67
0	Storage Tank, Redwood	Gallons:		1.3	0	40	0.00	0.00	0.00
0	Storage Tank, Redwood	Gallons:		1.3	0	40	0.00	0.00	0.00
0	Storage Tank, Steel	Gallons:		1.2	0	50	0.00	0.00	0.00
0	Storage Tank, Steel	Gallons:		1.2	0	50	0.00	0.00	0.00
0	Storage Tank, Steel	Gallons:		1.2	0	50	0.00	0.00	0.00
0	Storage Tank, Concrete	Gallons:		1.5	0	80	0.00	0.00	0.00
1	Master Meter, 2"			450	450	10	45.00	3.75	3.75
0	Master Meter, 3"			800	0	10	0.00	0.00	0.00
0	Master Meter, 4"			2500	0	10	0.00	0.00	0.00
0	Hypochlorinator w/ Tank & Pump, Complete			800	0	10	0.00	0.00	0.00
0	Pipe w/ sand bedding, 1" (Enter linear feet for quantity)			20	0	50	0.00	0.00	0.00
1500	Pipe w/ sand bedding, 2" (Enter linear feet for quantity)			25	37500	50	750.00	62.50	62.50
0	Pipe w/ sand bedding, 3" (Enter linear feet for quantity)			30	0	50	0.00	0.00	0.00
0	Pipe w/ sand bedding, 4" (Enter linear feet for quantity)			35	0	50	0.00	0.00	0.00
0	Pipe w/ sand bedding, 6" (Enter linear feet for quantity)			50	0	50	0.00	0.00	0.00
0	Standpipe Hydrant, 1-1/2"			700	0	20	0.00	0.00	0.00
0	Standpipe Hydrant, 2-1/2"			900	0	20	0.00	0.00	0.00
0	Customer Meter w/ Box & Shutoff, Complete			250	0	20	0.00	0.00	0.00
10	Distribution Valve, 2"			150	1500	10	150.00	12.50	12.50
0	Distribution Valve, 3"			250	0	10	0.00	0.00	0.00
0	Distribution Valve, 4"			600	0	20	0.00	0.00	0.00
0	Distribution Valve, 6"			850	0	20	0.00	0.00	0.00
1	Air & Vacuum Relief Valve, Typical			375	375	20	18.75	1.56	1.56
1	Calcite Filter and Softening			7500	7500	20	375.00	31.25	31.25
1	UV			7500	7500	20	375.00	31.25	31.25
0				7500	0	1	0.00	0.00	0.00
0									
	SUBTOTAL Existing CIP Costs				$123,145.00		$8,153.75	$679.48	$679.48
	NEW Project CIP Costs								
	OTHER ITEM				0	1	0.00	0.00	0.00
	OTHER ITEM				0	1	0.00	0.00	0.00
	OTHER ITEM				0	1	0.00	0.00	0.00
	OTHER ITEM				0	1	0.00	0.00	0.00
	OTHER ITEM				0	1	0.00	0.00	0.00
	OTHER ITEM				0	1	0.00	0.00	0.00
	OTHER ITEM				0	1	0.00	0.00	0.00
	OTHER ITEM				0	1	0.00	0.00	0.00
	SUBTOTAL New Project CIP Costs				$0.00		$0.00	$0.00	$0.00
	TOTAL Existing and New Project CIP:				$123,145.00		$8,153.75	$679.48	$679.48

Report Prepared by (Title): ______________________________ Date: ______________

NOTE: Installed costs are averages and include all materials and contracted labor and equipment.

NOTES:

APPENDIX 4: Ownership Documents

Recording Requested By and When Recorded Mail to:

Spencer and Amizetta Clark
1099 Greenfield Road
St. Helena, CA 94574

APN: 025-390-010-000

2019-0002759

Recorded
Official Records
County of
Napa
JOHN TUTEUR
Assessor-Recorder-Co.

02:42PM 20-Feb-2019

REC FEE 18.00
CC1-CONFORMED C 1.00
HOUSING TAX 75.00

JW
Page 1 of 2

SPACE ABOVE THIS LINE FOR RECORDER'S USE

Re: 1089 Greenfield Rd., St. Helena, CA 94574

GRANT DEED

The undersigned grantor(s) declare(s):

Gift. No tax due.
R & T Code § 11930

Documentary transfer tax is $-0-
( ) Computed on full value of property conveyed, or
( ) Computed on full value less value of liens and encumbrances remaining at time of sale.
( ) Unincorporated area: (X) City of ______________________
(X) Realty not sold.

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged,

SPENCER C. CLARK and AMIZETTA M. CLARK, husband and wife as community property,

hereby GRANT to

PERRY M. CLARK, Trustee of THE PERRY MCFADDEN CLARK DYNASTY TRUST dated December 20, 2011, as to an undivided four and five tenths percent (4.5%) interest, PERRY M. CLARK, Trustee of THE WILLIAM EDWARD CLARK DYNASTY TRUST dated December 20, 2011, as to an undivided three and five tenths percent (3.5%) interest, PERRY M. CLARK, Trustee of THE SPENCER CLEMENTS CLARK, JR. DYNASTY TRUST dated December 20, 2011, as to an undivided fourteen and five tenths percent (14.5%) interest, and PERRY M. CLARK, Trustee of THE AMIZETTA CAROL CLARK DYNASTY TRUST dated December 20, 2011, as to an undivided fourteen and five tenths percent (14.5%) interest as tenants in common, in that real property in the County of Napa, State of California, described as:

FOR LEGAL DESCRIPTION, SEE EXHIBIT "A" ATTACHED HERETO AND BY REFERENCE MADE A PART HEREOF.

Date: 1/1/18

A Notary Public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State Of California)
)ss.
County Of Napa)

On 1/1/2018, before me, Miel P. Novak, a notary public, personally appeared Spencer C. Clark and Amizetta M. Clark, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature ______________________

Spencer C. Clark
SPENCER C. CLARK

Amizetta M. Clark
AMIZETTA M. CLARK

MIEL P. NOVAK
Notary Public - California
Napa County
Commission # 2204564
My Comm. Expires Aug 7, 2021

(SEAL)

Mail Tax Statements to: Perry M. Clark, 1099 Greenfield Rd., St. Helena, CA 94574

END OF DOCUMENT

EXHIBIT "A"

LEGAL DESCRIPTION

Parcel 1, as shown on the Map entitled, "Parcel Map of the Lands of Joseph N. Burroughs", filed January 4, 1974 in Book 5 of Parcel Maps at Page 85, said Napa County Recorders.

APN: 025-390-011

Recording Requested by and When Recorded Mail to:

Spencer and Amizetta Clark
1099 Greenfield Road
St. Helena, CA 94574

APN: 025-390-010-000

2019-0002758

Recorded
Official Records
County of
Napa
JOHN TUTEUR
Assessor-Recorder-Co.

02:42PM 20-Feb-2019

REC FEE	18.00
CC1-CONFORMED C	1.00
HOUSING TAX	75.00

JW
Page 1 of 2

SPACE ABOVE THIS LINE FOR RECORDER'S USE

Re: 1089 Greenfield Rd., St. Helena, CA 94574

GRANT DEED

The undersigned grantor(s) declare(s):

Transfer is pursuant to a trust, not a sale. No tax due.
R & T Code § 11930

Documentary transfer tax is $- 0 -
( ) Computed on full value of property conveyed, or
( ) Computed on full value less value of liens and encumbrances remaining at time of sale.
( ) Unincorporated area: ( ) City of ________________
(x) Realty not sold.

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged,

SPENCER C. CLARK and AMIZETTA M. CLARK, Trustees of THE SPENCER C. CLARK AND AMIZETTA M. CLARK TRUST dated April 28, 1993, as amended

hereby GRANT to

SPENCER C. CLARK and AMIZETTA M. CLARK, husband and wife, as community property, an undivided thirty-seven (37%) percent interest in that real property in the County of Napa, State of California, described as:

FOR LEGAL DESCRIPTION, SEE EXHIBIT "A" ATTACHED HERETO AND BY REFERENCE MADE A PART HEREOF.

Date: 1/1/18

Spencer C. Clark TTE

Spencer C. Clark, Trustee
The Spencer C. Clark and Amizetta M. Clark Trust dated April 28, 1993

Amizetta M Clark

Amizetta M. Clark, Trustee
The Spencer C. Clark and Amizetta M. Clark Trust dated April 28, 1993

A Notary Public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California)
) ss.
County of Napa)

On 1-1-2018, before me, Miel P. Novak, a notary public, personally appeared Spencer C. Clark and Amizetta M. Clark, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature ______________________

MIEL P. NOVAK
Notary Public – California
Napa County
Commission # 2204564
My Comm. Expires Aug 7, 2021

(SEAL)

Mail Tax Statements to: Spencer & Amizetta Clark, 1099 Greenfield Road, St. Helena, CA 94574

END OF DOCUMENT

EXHIBIT "A"

LEGAL DESCRIPTION

Parcel 1, as shown on the Map entitled, "Parcel Map of the Lands of Joseph N. Burroughs", filed January 4, 1974 in Book 5 of Parcel Maps at Page 85, said Napa County Recorders.

APN: 025-390-011