RED BOAT LLC
RED BOAT VINEYARD

EROSION CONTROL PLAN

PPI
ENGINEERING

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RED BOAT LLC
RED BOAT VINEYARD

EROSION CONTROL PLAN



NOVEMBER 2021

PREPARED BY:

PPI ENGINEERING
2800 JEFFERSON STREET
NAPA, CALIFORNIA 94558
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RED BOAT LLC
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EROSION CONTROL PLAN

NARRATIVE

1. The nature and purpose of the land disturbing activity and the amount of grading involved.

a) This ECP addresses the development of approximately 7.0 net acres (9.0 gross acres) of proposed vineyard located at 1373 Soda Canyon Road in Napa. The ranch is located on APN 039-380-037 which consists of approximately 18.34 acres per the Napa County Assessor's Office.

b) Activities to be accomplished include removing grass and trees within the proposed clearing limits, ripping, rock removal, cultivating the soil to prepare for planting, seeding cover crop, mulching, trenching for irrigation pipelines, installing trellis system and deer fence, laying out the vinerows, and installing erosion control measures.

2. General description of existing site conditions, including topography, vegetation and soils.

a) The site is located in the Oak Knoll Creek and Soda Creek Watersheds.

b) The elevations in the vineyard area range from approximately 136 to 250 feet above mean sea level per topographic mapping. Ground slopes within the project boundary range between 9 and 26 percent. There are small pockets of areas with slope over 30% in several vineyard blocks which total approximately 0.8 acres, please see Sheet 1 for the locations.

c) Topographic mapping was provided by American Aerial Mapping, Inc., flown on April 9, 2021.

d) Existing vegetation consists of grass and trees. The ridgetop areas were burnt during the Atlas Fire in October 2017, and few trees remain. The area is currently grazed. Please see the biological report prepared by WRA dated September 2021.

e) Please see Appendix C for Vegetation Retention Calculations to demonstrate compliance with County Code Section 18.108.020(D) (3:1 Tree Preservation). The project has been designed to meet the 3:1 tree preservation requirement on areas under 50% slope and outside stream setbacks. The 3:1 Tree Preservation analysis is based on the 2018 Napa County aerial photo supplemented with WRA tree survey data because the property burned in the 2017 fires.

f) There are structures on the property. Please see the cultural resources report prepared by Flaherty Cultural Resource Services dated September 2021.

g) A portion of the property is currently deer fenced. Please see Figure 3 in Appendix E for the Proposed Deer Fence map.

h) A site visit of the property was performed by Matt Bueno and Rachel Rosasco of PPI Engineering on Tuesday June 8, 2021 to evaluate the vineyard development area and to collect photographic documentation. Photographs of pre-project conditions can be found in Appendix A.

3. Natural and man-made features onsite including streams, lakes, reservoirs, roads, drainage, and other areas that may be affected by the proposed activity.

a) No natural or man-made features are expected to be adversely affected by this project. Soda Creek is in the vicinity but will not be affected by the project.

b) There is an existing network of paved and dirt roads on the property. The existing road network is sufficient for access to proposed vineyard blocks. See Figure 2 in Appendix E.

4. Location and source of water for irrigation or other uses.

a) The location of the existing well, the proposed water source, is shown on the Vicinity Map. Please see the WAA prepared by Richard C. Slade & Associates dated November 2021.

5. Soil types/soil series identified in the Soil Conservation Service (SCS) Napa County Soil Survey.

a) The USDA – NRCS Web Soil Survey maps the soil within the project boundary as Hambright rock-Outcrop with 30 to 75 percent slopes and Sobrante Loam with 30 to 50 percent slopes.

b) Some rock is expected to be generated as a result of this project. In many locations rock will be used for rock-filled avenues that will help retain sediment as well as disperse runoff from vineyard blocks. Rock-filled avenues shall be located as shown on Sheet 1 and at the downslope edge of vineyard blocks as determined by the Engineer in the field at the time of construction. The toe of the rock avenue fill slope shall not extend past the proposed clearing limits. Because of the nature of the rock-filled avenues, the proposed block boundary location is conceptual and not exact. Rock may be crushed and used on the existing roads where needed. Rock not used immediately will be stockpiled for

future use inside the proposed clearing limits. Stockpiles are expected to be less than 20 feet in height. Rock staging areas shall be located inside of proposed clearing limits. Temporary rock stockpiles shall also be located inside of proposed clearing limits. No grading activities, ground disturbance or rock storage will occur outside of the proposed clearing limits.

6. Critical areas, if any, within the development site that have serious erosion potential or problems.

a) There are no areas with serious erosion potential or problems.

7. Erosion calculations

a) Universal Soil Loss Equation (USLE) spreadsheets for this project are in Appendix B of this report.

b) Please see pre-project versus post-project soil loss analysis prepared by PPI Engineering dated October 2021.

8. Proposed erosion control methods including:

a) All drainage systems and facilities, walls, cribbing or other erosion protection devices to be constructed with, or as a part of the proposed work.

1. The final pass with disking equipment shall be performed across slopes to prevent channeling water downhill the first winter after development.

2. Straw wattles shall be installed the year of construction in the approximate locations shown on the Site Plan. Additional temporary erosion control measures shall be installed as needed.

b) Proposed vegetative erosion control measures including location, type and quantity of seed, mulch, fertilizer and irrigation, timing and methods of planting, mulching and maintenance of plant material and slopes until a specified percentage of plant coverage is uniformly established.

1. Disturbed areas shall be seeded as described below. Straw mulch shall be applied to all disturbed areas at a rate of 3,000 lbs/acre prior to October 15 of the year of construction.

2. A permanent cover crop strategy will be utilized. The permanent cover crop will be generated the first year by seeding with the following mix: Dwarf Barley at 50

lbs/acre, Blando Brome at 8 lbs/acre, Zorro Fescue at 12 lbs/acre, and Crimson Clover at 6 lbs/acre. A pre-approved alternative seed mix may be allowed.

The permanent cover crop will be managed each year such that any areas which have less than 80% vegetative cover will be reseeded and mulched until adequate coverage is achieved. The permanent cover crop shall be mowed only and not disked.

3. The owner has the option of using a Dwarf Barley cover crop in the first three years that the block is planted to aid with vineyard establishment. If this option is used, seed shall be applied at a rate of 120 lbs/acre if broadcast or at a rate of 60 lbs/acre if drilled. The cover crop within the vineyard may be disked each spring after April 1 for the first three years. An alternative cover crop seed mix may be used upon prior approval. Each year the owner chooses to disk, the area shall be straw mulched at a rate of 3,000 lbs/acre and straw wattles shall be installed prior to October 15. The permanent seed mix will be seeded prior to October 15 of the fourth (or earlier) year.

4. No pre-emergent herbicides will be used for weed management. Contact or systemic herbicides may be applied in spring (no earlier than February 15 to ensure adequate vegetative cover in the spray strips for the remainder of the rainy season). The width of the spray strip shall be no wider than 1' in order to achieve 80% vegetative cover (based on a seven-foot minimum row spacing).

5. Fertilizer shall be applied as necessary by vineyard management personnel for both the vineyard and to ensure specified percent vegetative cover crop is achieved. Site-specific soil analysis should be performed.

6. The vineyard avenues shall be mowed only and shall not be disked. Unless otherwise noted, all avenues shall conform to the natural grade. Vineyard avenues shall be seeded and mulched prior to October 15 of the year of construction and in subsequent years in bare or disturbed areas. The cover crop will be managed each year such that any avenues which have less than 80% vegetative cover will be reseeded and mulched until adequate coverage is achieved. Seeding and mulching is not required on avenues and roads properly surfaced with gravel.

7. The proposed vine by row spacing is expected to be 4' by 5' in hand-farmed Block 1 and is 4' by 7' in tractor-farmed Blocks 2 and 3. However, in areas where cross-slope exceeds 15% the owner shall increase the row spacing as needed to ensure there is adequate room for equipment. Width of tillage equipment shall be no more than 75% of row width to allow for bench formation and to minimize erosion.

8. The owner has the freedom to further subdivide vineyard blocks within the footprint of the proposed vineyard for irrigation and viticulture purposes. The proposed vinerow directions shall not be altered without an approved modification from Napa County.

9. Irrigation pipelines shall be located within existing roadways, vineyards and vineyard avenues, and/or within proposed clearing limits. Regardless of pipeline location, pipeline trenches located on ground slopes greater than 15% shall be backfilled using imported or select native granular material to a depth of 6 inches above the pipelines such that voids do not form below haunches of pipe. Backfill shall be wheel rolled or otherwise compacted to reduce settlement. Final grading over trenches shall be mounded and water-barred such that water is directed away from trenches.

10. As stated in the Napa County Protocol for Re-Planting/Renewal of Approved Non-Tilled Vineyard Cover Crops dated March 23, 2004, when it becomes necessary, either by routine or emergency, to re-establish or renew vineyard cover crop the following measures should be followed:
    - Seek professional consultation, including soil nutrient analysis, to determine the reasons for the original cover crop's failure. Adjust soil fertility, irrigation and seed selection accordingly.
    - When tillage is necessary, alternate rows should be tilled, seeded, and straw-mulched to effectively accomplish the re-establishment/renewal process over a two-year period.
    - Tillage and re-seeding should be conducted in the following manner:
        - In year 1, till to prepare seed bed and sow desired cover crop in every other row ("the evens"), leaving the alternate rows ("the odds") untilled and mowed only.
        - Mulch all tilled rows having an up and down hill (perpendicular to contour) row direction with 3,000 lbs/acre of loose straw, or approved equivalent, after seeding.
        - Tilled rows with cross-slope (parallel to contour) row direction and slope gradients less than 15% may not require straw mulch.
        - In year 2, till to prepare seed bed and sow desired cover crop in "odd" rows.
        - In year 2, leave "even" rows untilled and mowed only.
        - Mulch rows tilled in year 2 as specified above.
        - Put all re-establishment measures in place by October 15
        - In year 3, return all rows to non-tilled culture.

9. Stormwater stabilization measures, if the development of the site will result in increased peak rates of runoff that may cause flooding or channel degradation downstream.

a) No significant increase in quantity or rate of runoff is expected as a result of this project.

b) Please see hydrology report prepared by PPI Engineering dated October 2021.

10. An implementation schedule showing the following:

a) The proposed clearing, grading, and/or construction schedule.

DATE	DESCRIPTION
April 1:	Commence clearing and tillage operations.
October 1:	All tillage and erosion control completed.
October 15:	All winterization complete, including seeding, straw mulching, and straw wattle installation.

b) The proposed schedule for winterizing the site (generally by October 15 of each year the permit is in effect.)

The site shall be winterized and all necessary erosion control measures described in the Erosion Control Plan shall be installed by October 15.

c) The proposed schedule of installation of all interim erosion and sediment control measures, including the stage of completion of such devices at the end of the grading season (generally October 15) of each year the permit will be in effect.

See Item 10a).

d) The schedule for installation of permanent erosion and sediment control devices where required.

See Item 10a).

11. The estimated cost of implementation of the erosion and sediment control measures.

Typical costs for installing erosion control measures as described in this plan range from $1,000 to $2,000 per acre.

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EROSION CONTROL PLAN

S T A N D A R D P R O V I S I O N S

SECTION 1 - SCOPE OF WORK

These specifications cover the construction of the erosion control measures for approximately 7.0 acres of vineyard to be developed by Viet Phu Inc.

The drawing numbered 12110401A, Sheets 1 through 2, and these Specifications describe in detail the construction of the complete erosion control system. Requests for further information or clarification of the work to be done can be made to Jim Bushey or Matt Bueno at the Napa office of PPI Engineering, phone (707) 253-1806.

All costs for the complete construction of the erosion control system must be included in the bid items, since no other payment will be made outside of the bid items. This includes all costs for moving onto and off of the job site, all equipment, tools, materials, labor, fuel, taxes, and incidentals for furnishing and installing the erosion control system.

Surveying adequate for construction will be provided by the Owner, at the Owner's expense. The Contractor will be responsible for preserving construction survey stakes and markers for the duration of their intended use. Any restaking costs or additional survey work requested by the Contractor shall be deducted from the final payment to the Contractor. The Owner does not guarantee that the project being bid will be awarded. The Owner also reserves the right to change the quantities of actual work performed as needed with payment made according to the new quantities at the unit price bid.

SECTION 2 - AUTHORITY OF OWNER AND ENGINEER

The property is owned by Red Boat LLC. Red Boat LLC or the appointed representative shall have the final say in the event of a dispute with the Contractor.

The Owner shall appoint PPI Engineering as the Engineer to perform periodic review of the work. PPI Engineering shall report any unsatisfactory work to the Owner. The Contractor shall be responsible for any engineering fees or repair costs associated with bringing the unsatisfactory work into compliance with the Plans and Specifications.

SECTION 3 - CHANGES IN WORK

Materials and the manner of performance of the work performed in this contract shall be according to the Plans and Specifications. Modifications to the Plans or Specifications shall be agreed upon in writing by the Contractor, Owner, and Engineer before the work in question is performed. Materials and construction methods shall be as specified on the Plans and Specifications. The burden of proof that a given material or method constitutes an equivalent to the one specified will rest with the Contractor.

SECTION 4 - UTILITIES

At least two working days prior to beginning any excavation on the project, the Contractor shall contact Underground Service Alert (USA) at 1-800-642-2444 and request field location of all existing utilities.

Certain facilities at the site are existing. The Contractor shall be careful to avoid damaging existing facilities and shall notify the Owner immediately if any damage does occur. The cost of repairing any damage shall be the sole responsibility of the Contractor.

SECTION 5 - PROSECUTION OF THE WORK

Unless otherwise provided, the contract time shall commence upon issuance of a Notice to Proceed by the Owner. The work shall start within ten days thereafter and be diligently prosecuted to completion within the time specified in the Contractor's bid. If weather conditions prevent completion of the project within the specified amount of time, the Owner may extend the completion date of the project.

SECTION 6 - RESPONSIBILITIES OF THE CONTRACTOR

The Contractor agrees that in accordance with generally accepted construction practices, Contractor will be required to assume sole and complete responsibility for job site conditions during the course of construction of the project, including the safety of all persons and property. This requirement shall be made to apply continuously and not be limited to normal working hours. Contractor further agrees to defend, indemnify and hold design professional harmless from any and all liability, real or alleged, in connection with the performance of the work on this project, excepting liability arising from the sole negligence of design professional.

The Contractor shall be responsible for controlling dust and mud generated from construction activities. The Contractor shall not allow dust or mud to obstruct vehicular traffic on County roads or State Highways. The Contractor shall be responsible for cleaning all vehicles prior to leaving the site as required by the California Highway Patrol. The Contractor, at their own expense, shall

provide adequate dust control and prevention of mud tracking on roads, and take other preventative measures as directed by the Owner.

The Contractor shall be responsible for following all safety laws that may be applicable. Of particular concern are the trench safety regulations issued by CAL-OSHA. The Contractor alone shall be responsible for the safety of their equipment and methods and for any damage or injury which may result from their failure, improper construction, maintenance, or operation.

The Contractor shall be responsible for installing necessary sediment retention measures to keep sediment from leaving the site if construction activities continue beyond October 1.

The Contractor shall keep the work site clean and free of rubbish and debris throughout the project. Materials and equipment shall be removed from the site as soon as they are no longer necessary or the project is completed.

The Contractor shall also be responsible for ensuring that all permits which are necessary for construction have been obtained and that copies of these permits are maintained onsite at all times.

The Contractor shall, at their own expense, furnish all necessary light, power, pumps, and water necessary for the work.

SECTION 7 - MEASUREMENT AND PAYMENT

Payment shall be made at the unit prices bid according to the actual quantities installed. Measurement of the final quantities shall be the responsibility of the Owner's Engineer.

The Engineer shall periodically observe the project during construction and upon completion of the project any unfinished or unacceptable work observed will be brought to the Contractor’s attention verbally and in writing. Final payment will be made upon satisfactory completion of all work items required by these Plans and Specifications.

SECTION 8 - GUARANTEE

In addition to the guarantees from suppliers, the Contractor shall guarantee the work he performs for a period of two years. Any repairs needed to the system within two years of completion due to faulty workmanship or materials shall be promptly repaired at no expense to the Owner. Any costs incurred by the Owner and/or Engineer within two years of completion due to rubbish or debris placed in a trench or other excavation shall be paid by the Contractor.

Unless otherwise provided in writing, payment by the Owner to the Contractor for installation of this system shall constitute acceptance of all provisions in this document by the Contractor.

RED BOAT LLC
RED BOAT VINEYARD

EROSION CONTROL PLAN

SPECIAL PROVISIONS

SECTION 1 – ROCK-FILLED AVENUES

1.1 GENERAL:

Rock-filled avenues will be constructed as shown in Detail 1, Sheet 2 along the vineyard edges from excess fieldstone as staked in the field by the Engineer and as shown on the Plans. Additional locations will be determined in the field by the Engineer during construction.

1.2 MATERIALS:

Rock shall be clean, well-graded field rock generated onsite.

1.3 INSTALLATION:

Field rock generated by ripping within the vineyard areas shall be used to construct outsloped avenues at the edges of certain vineyard areas. Vegetation shall be stripped and a bench cut as shown on the details. Rock shall be placed and shaped using a bulldozer and/or excavator, with smaller rock placed in voids and on top of the avenue to the extent possible. The toe of the fill slope shall not extend past the clearing limits.

SECTION 2 – ROLLING DIP

2.1 GENERAL:

Rolling dips shall be constructed and maintained as shown on Detail 3, Sheet 2 in locations specified by the Plans.

2.2 INSTALLATION:

The existing roadway within the location of the rolling dip shall be scarified and any vegetation shall be removed and thoroughly incorporated. Excavation into the existing road bed shall begin approximately 20 to 25 feet uphill from the rolling dip location, progressively steepening the grade until the axis is reached. The axis of the rolling dip shall be angled approximately 30 degrees to the road alignment. Fill shall be used to achieve approximately 12" minimum of elevation between the axis of the trough and the top of the reverse grade. Fill shall be moisture conditioned as necessary and compacted to 90% compaction per ASTM D1557. Construction shall be such that vehicles can easily drive over the rolling dips yet allows the trough to

effectively convey surface flow, when present, off the road. Existing dense vegetation shall help diffuse the surface flow on the downstream side of the trough. In the event that existing grade is too rocky for uniform excavation, the Engineer may approve the use of Caltrans Class 2 Aggregate Base to construct the rolling dip as shown in Detail 3, Sheet 2.

SECTION 3 - TEMPORARY MEASURES

3.1 GENERAL:

Temporary erosion control measures shall be constructed by the Owner. These measures can include water bars, straw wattles, straw mulching, straw bale dikes, and other practices as needed. The measures shall be constructed in conformance with the detail drawings and maintained in a functional condition throughout the rainy season.

SECTION 4 - MAINTENANCE

4.1 GENERAL:

The erosion control measures described in these Specifications and shown on the Plans and Details require regular maintenance in order to function as intended. Vineyard management personnel shall assure that the erosion control measures are monitored throughout the rainy season each year and necessary repairs and/or maintenance are performed immediately. Maintenance operations shall include, but not be limited to the following activities.

4.2 STRAW WATTLES:

Straw wattles shall be monitored and repaired as needed to ensure water does not run under the wattle or between adjacent wattles. Should excessive erosion cause the wattle to fill with sediment, this material shall be removed to a protected location and the source of the sediment located and protected as needed.

4.3 ROLLING DIPS:

The rolling dips shall be monitored and repaired as needed to ensure water is directed off of the roadway. Any accumulated sediment shall be cleaned out by hand. In the event that a rolling dip requires removal of sediment on a regular basis, another rolling dip should be constructed uphill as this indicates that spacing is too wide between rolling dips.

APPENDIX A

PHOTOGRAPHIC DOCUMENTATION



Photo 1

6/8/2021



Photo 2

6/8/2021

APPENDIX B

USLE CALCULATIONS

PPI Engineering

Napa County
Maximum Length of Slope
for a soil loss of 3 tons per acre

NAME: Red Boat Vineyard DATE: 4/22/21

Cover Type: Permanent Cover Crop
Soil Unit No. (100-182)--- 152 -K= 0.10
Soil Name Hambright-Rock Outcrop -R= 50
-T= 1

Percent Cover		65% Up & Down Hill	70% Up & Down Hill	75% Up & Down Hill	80% Up & Down Hill	85% Up & Down Hill	90% Up & Down Hill
		C= 0.058 P= 1.0	C= 0.046 P= 1.0	C= 0.034 P= 1.0	C= 0.022 P= 1.0	C= 0.015 P= 1.0	C= 0.010 P= 1.0
PERCENT SLOPE	2	50,955,678	110,346,727	302,242,409	1,289,858,963	4,623,594,560	17,862,819,944
	4	340,822	608,420	1,295,391	3,846,284	10,020,050	27,612,010
	6	23,727	37,721	69,047	164,914	354,749	798,186
	8	10,926	17,370	31,795	75,941	163,358	367,555
	10	5,829	9,267	16,963	40,514	87,151	196,090
	12	3,528	5,608	10,265	24,518	52,741	118,668
	14	2,313	3,678	6,732	16,079	34,588	77,822
	16	1,610	2,559	4,684	11,187	24,065	54,146
	18	1,172	1,863	3,411	8,146	17,523	39,427
	20	885	1,407	2,575	6,150	13,229	29,766
	22	688	1,094	2,002	4,782	10,287	23,145
	24	548	872	1,596	3,811	8,197	18,444
	26	446	709	1,298	3,101	6,670	15,007
	28	370	587	1,075	2,568	5,525	12,430
	30	311	494	905	2,161	4,648	10,457
	32	265	421	771	1,843	3,964	8,918
	34	229	364	666	1,590	3,421	7,698
	36	200	317	581	1,388	2,985	6,717
	38	176	280	512	1,223	2,630	5,918
	40	156	249	455	1,087	2,338	5,260
	42	140	223	408	974	2,094	4,712
	44	126	201	368	879	1,890	4,252
	46	115	183	334	798	1,717	3,863
	48	105	167	305	729	1,569	3,531
	50	96	153	281	671	1,442	3,245

NOTES:
C=Cover and Management Factor
P=Practice Factor

PPI Engineering

Napa County
Maximum Length of Slope
for a soil loss of 4 tons per acre

NAME: Red Boat Vineyard DATE: 4/22/21

Cover Type: Permanent Cover Crop
Soil Unit No. (100-182)--- 179 -K= 0.32
Soil Name Sobrante -R= 50
-T= 2

Percent Cover		65% Up & Down Hill	70% Up & Down Hill	75% Up & Down Hill	80% Up & Down Hill	85% Up & Down Hill	90% Up & Down Hill
		C= 0.058 P= 1.0	C= 0.046 P= 1.0	C= 0.034 P= 1.0	C= 0.022 P= 1.0	C= 0.015 P= 1.0	C= 0.010 P= 1.0
PERCENT SLOPE	2	2,753,107	5,961,972	16,329,988	69,690,357	249,810,222	965,118,148
	4	38,194	68,183	145,169	431,036	1,122,902	3,094,353
	6	4,119	6,549	11,987	28,631	61,588	138,574
	8	1,897	3,016	5,520	13,184	28,361	63,812
	10	1,012	1,609	2,945	7,034	15,130	34,043
	12	612	974	1,782	4,257	9,156	20,602
	14	402	639	1,169	2,791	6,005	13,511
	16	279	444	813	1,942	4,178	9,400
	18	203	323	592	1,414	3,042	6,845
	20	154	244	447	1,068	2,297	5,168
	22	119	190	348	830	1,786	4,018
	24	95	151	277	662	1,423	3,202
	26	77	123	225	538	1,158	2,605
	28	64	102	187	446	959	2,158
	30	54	86	157	375	807	1,815
	32	46	73	134	320	688	1,548
	34	40	63	116	276	594	1,336
	36	35	55	101	241	518	1,166
	38	31	49	89	212	457	1,027
	40	27	43	79	189	406	913
	42	24	39	71	169	364	818
	44	22	35	64	153	328	738
	46	20	32	58	139	298	671
	48	18	29	53	127	272	613
	50	17	27	49	116	250	563

NOTES:
C=Cover and Management Factor
P=Practice Factor

APPENDIX C

VEGETATION RETENTION CALCULATIONS

RED BOAT LLC
RED BOAT VINEYARD

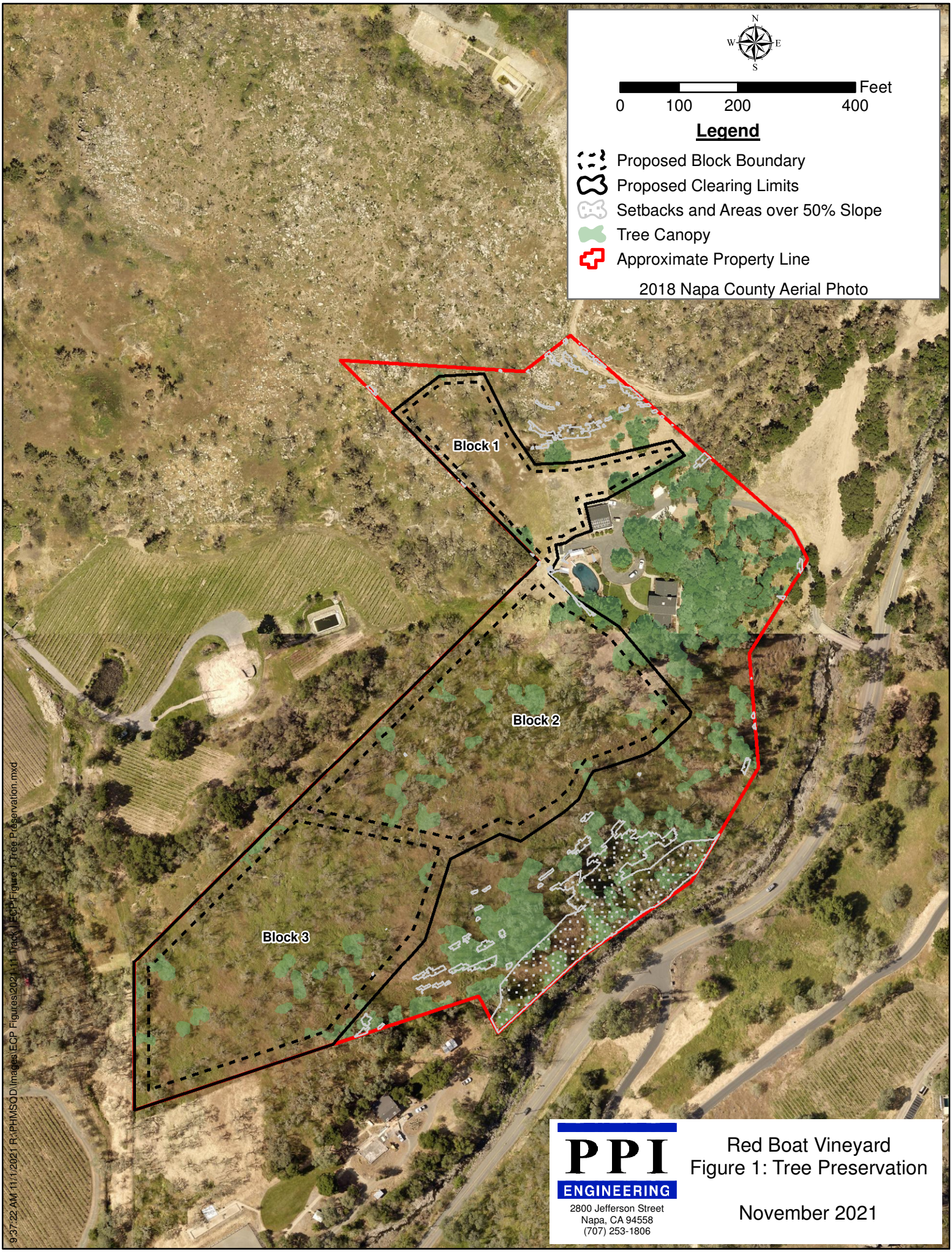
3:1 Tree Preservation Calculations

	APN 039-380-037
Proposed Clearing Limits (acres)	9.0
Trees Existing in 2018 (acres)[1]	3.2
Trees Proposed to be Removed (acres)	0.7
Trees on Less than 50% Slopes Outside Setbacks on Parcel (acres)	2.9
Trees Preserved on Less than 50% Slopes and Outside Setbacks (acres)	2.2
Trees Preserved (percent)[2]	76%

Notes:

1. Source: Aerial Photo and WRA post-fire tree count
2. 75% retention (or higher) is the same as 3:1 preservation (or higher)

Some rounding may occur



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Red Boat Vineyard
Figure 1: Tree Preservation

November 2021

APPENDIX D

SLOPE CALCULATIONS

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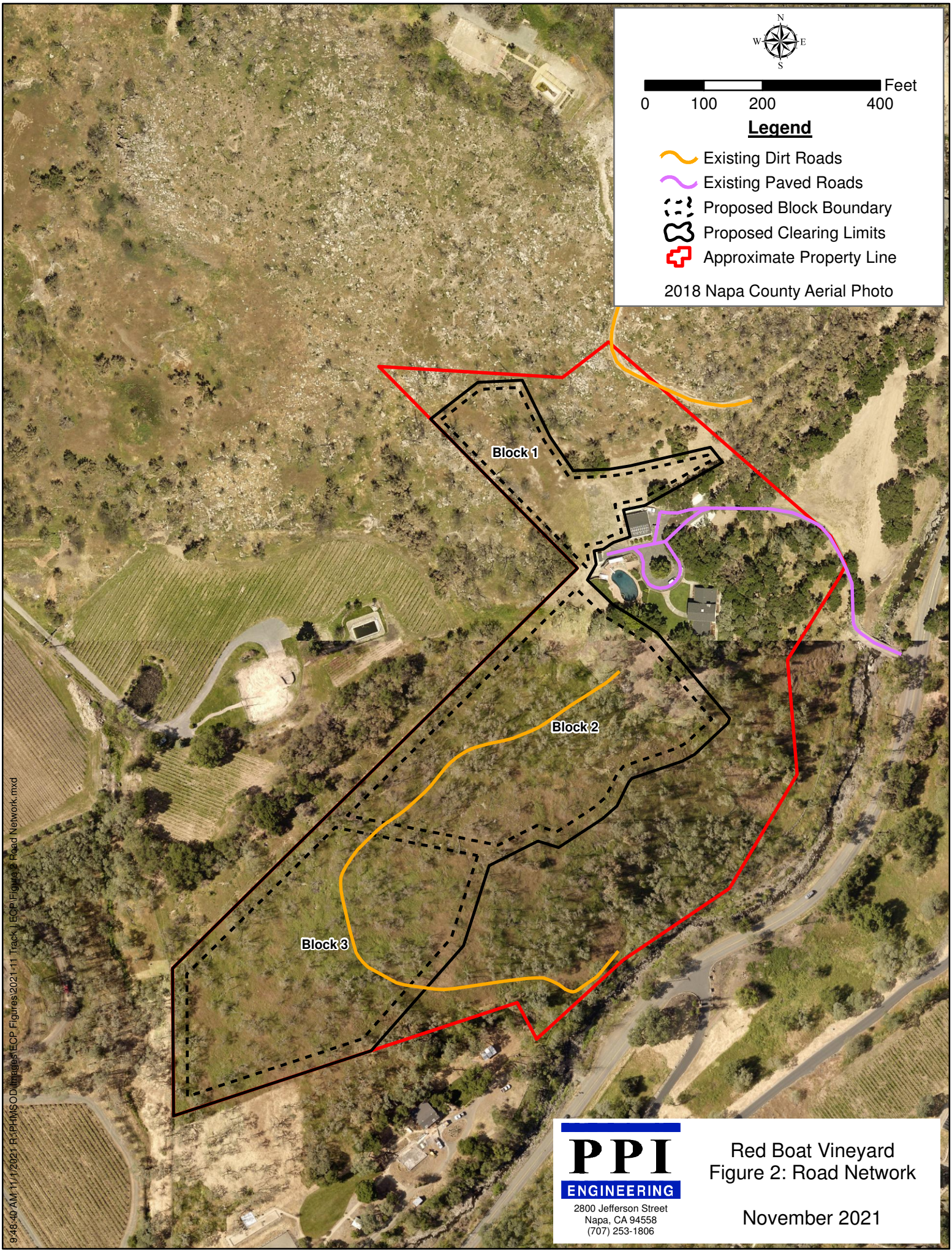
Average Slope Of Proposed Vineyard Blocks

Block	Gross Acres	Net Acres	Slope #1	Slope #2	Average slope
1	1.3	1.0	20%	23%	22%
2	3.9	3.0	9%	26%	18%
3	3.8	3.0	21%	25%	23%
Total	**9.0**	**7.0**			**21%**

APPENDIX E

SUPPORTING FIGURES



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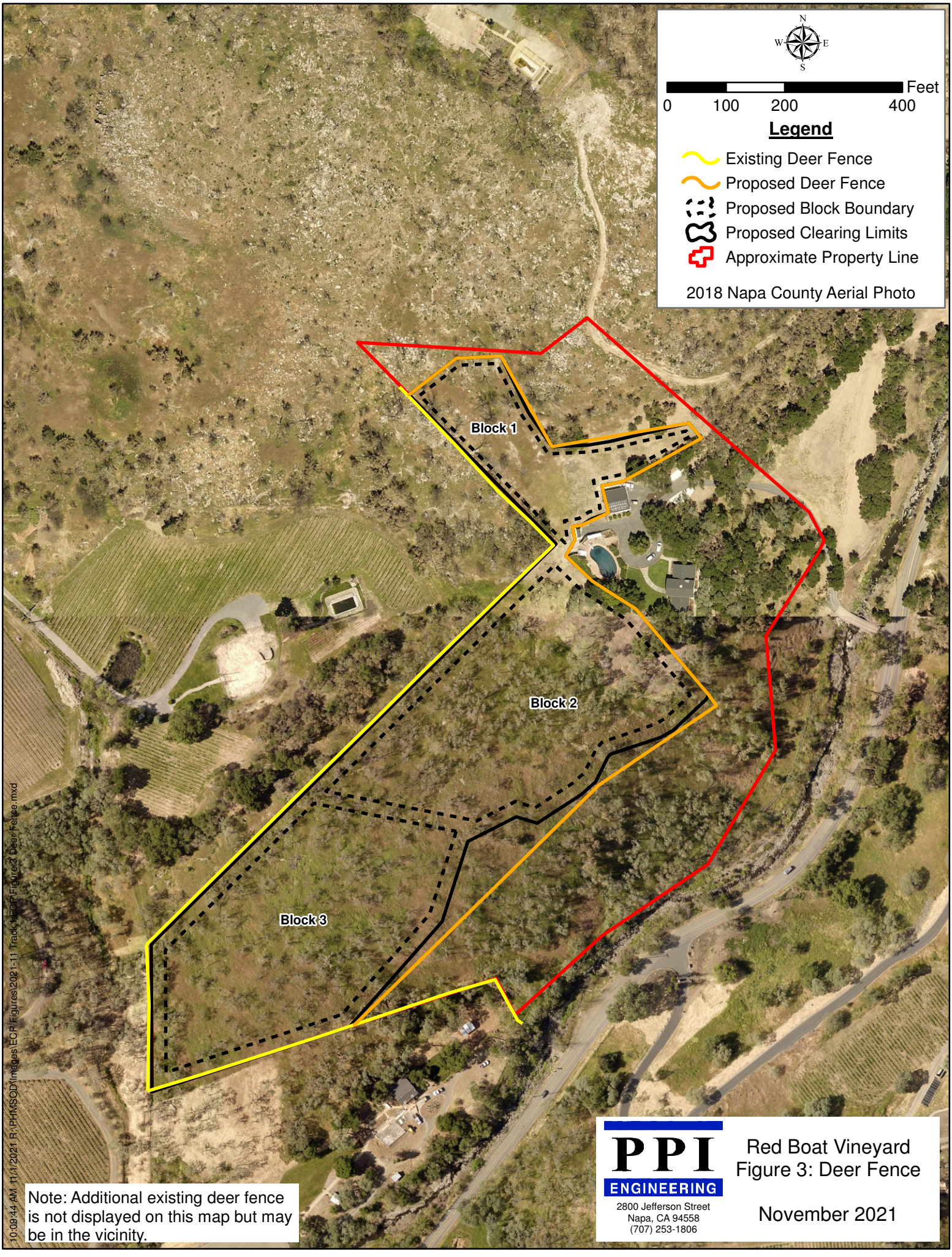
Red Boat Vineyard
Figure 2: Road Network

November 2021

9:48:40 AM 11/1/2021 R:\PHMSOD\Images\ECP Figures\2021-11 Track | ECP Figure 2 Road Network.mxd


N
W
E
S
Feet
0
100
200
400
Legend
Existing Deer Fence
Proposed Deer Fence
Proposed Block Boundary
Proposed Clearing Limits
Approximate Property Line
2018 Napa County Aerial Photo
Block 1
Block 2
Block 3
10:09:44 AM 11/1/2021 R:\PHMSOD\Images\EOP Figures\2021-11 Track 1_EOP Figure3 Deer Fence.mxd
Note: Additional existing deer fence is not displayed on this map but may be in the vicinity.
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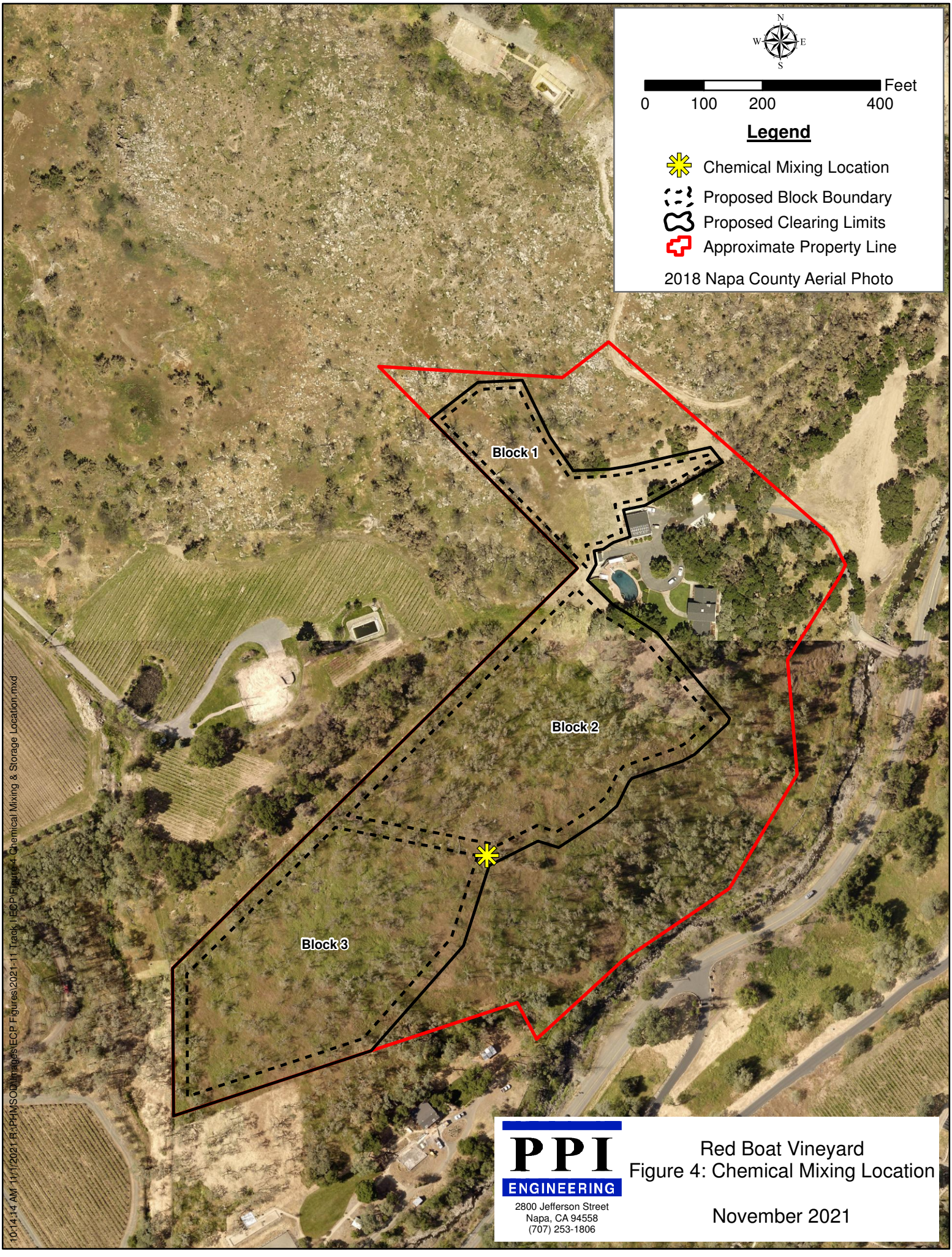
Red Boat Vineyard
Figure 3: Deer Fence
November 2021



10:14:14 AM 11/1/2021 R:\PHMSOD\Images\ECP Figures\2021-11 Track I ECP\Figure 4 Chemical Mixing & Storage Location.mxd

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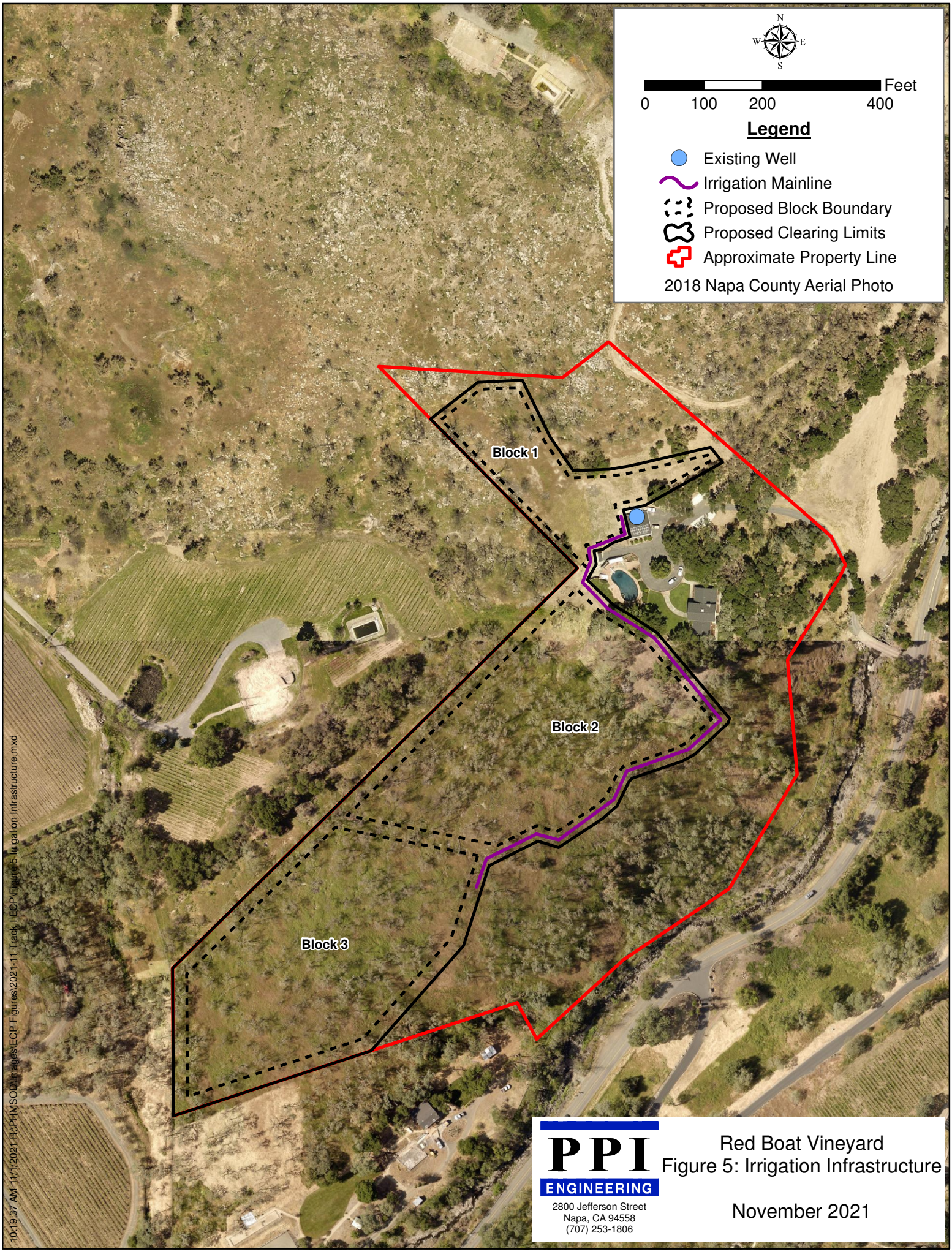
Red Boat Vineyard
Figure 4: Chemical Mixing Location

November 2021



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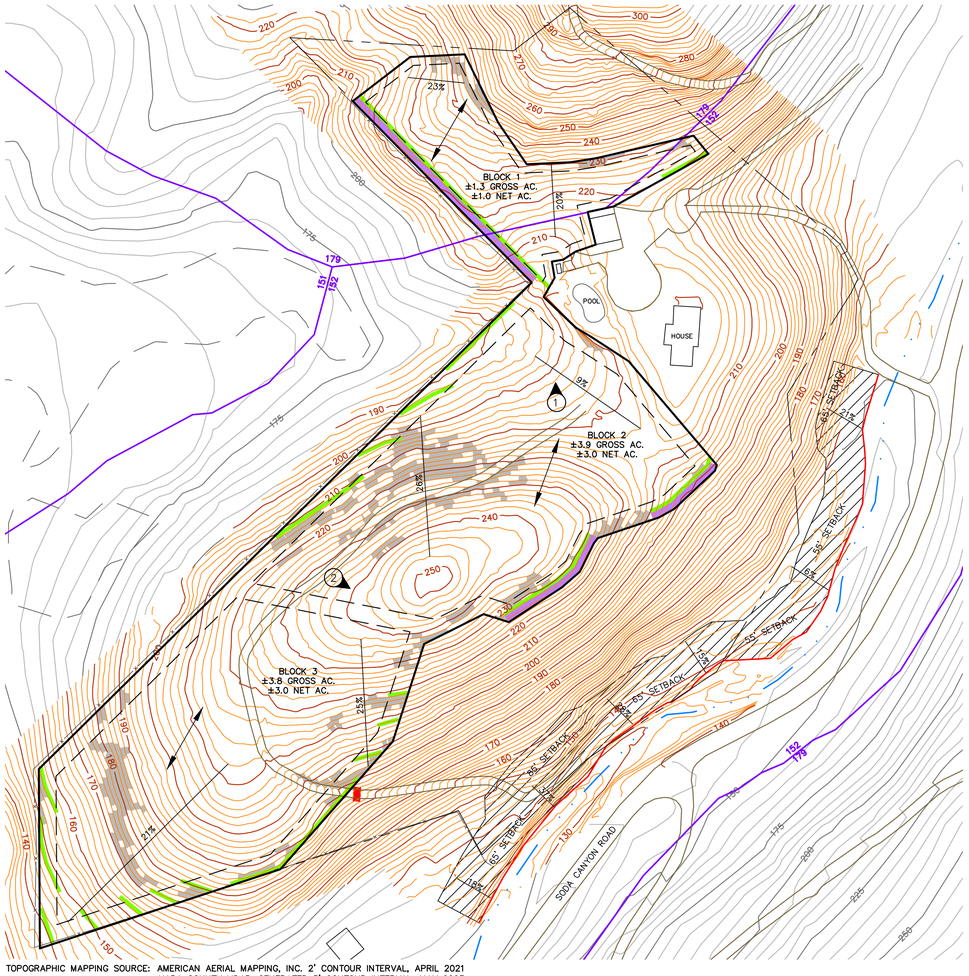
Red Boat Vineyard
Figure 5: Irrigation Infrastructure

November 2021



TOPOGRAPHIC MAPPING SOURCE: AMERICAN AERIAL MAPPING, INC. 2' CONTOUR INTERVAL, APRIL 2021
NAPA COUNTY LIDAR–GENERATED 5' CONTOUR INTERVAL, MAY 2003

GRAPHIC SCALE

100 0 50 100 200 400

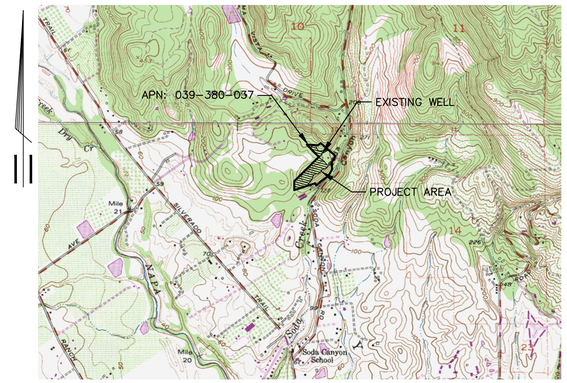
(IN FEET)
1 inch = 100 ft.

LEGEND

- AMERICAN AERIAL MAPPING, INC. 10' INDEX CONTOUR
- AMERICAN AERIAL MAPPING, INC. 2' INTERMEDIATE CONTOUR
- NAPA COUNTY 25' INDEX CONTOUR
- NAPA COUNTY 5' INTERMEDIATE CONTOUR
- APPROXIMATE PROPERTY LINE LOCATION
- U.S.G.S. BLUE LINE STREAM
- TOP OF BANK, APPROXIMATE
- NAPA COUNTY STREAM SETBACK
- EXISTING VINEYARD AREA
- EXISTING ROAD
- EXISTING FENCE
- EXISTING BUILDING
- PROPOSED VINEYARD CLEARING LIMITS
- PROPOSED VINEYARD BLOCK BOUNDARY
- PROPOSED STRAW WATTLE (SEE DETAIL 2, SHEET 2)
- PROPOSED ROCK–FILLED AVENUE (SEE DETAIL 1, SHEET 2)
- PROPOSED ROLLING DIP (SEE DETAIL 3, SHEET 2)
- AREA WHERE GROUND SLOPE IS 30 PERCENT OR GREATER
- PROPOSED VINEROW DIRECTION
- X PHOTO POINT NUMBER & LOCATION (SEE APPENDIX A)
- X% AVERAGE SURFACE SLOPE
- 179 / 152 SOIL TYPE BOUNDARY

USDA SOIL CLASSIFICATIONS:

- 151 HAMBRIGHT–ROCK OUTCROP COMPLEX, 2–30% SLOPE
- 152 HAMBRIGHT ROCK–OUTCROP COMPLEX, 30–75% SLOPE
- 179 SOBRANTE LOAM 30–50% SLOPE



VICINITY MAP

USGS NAPA & YOUNTVILLE QUADRANGLES
TOWNSHIP 6 N., RANGE 4 W.
SCALE: 1" = ±2000'

NOTES:

1. OWNER: RED BOAT LLC
   SITE ADDRESS: 1373 SODA CANYON ROAD
   APN: 039–380–037
2. ACCESS TO PROJECT IS FROM SODA CANYON ROAD. THE SITE IS GATED AND LOCKED. ADMITTANCE IS AVAILABLE UPON REQUEST.
3. EXISTING VEGETATION CONSISTS OF GRASS AND TREES.
4. DISTURBED AREAS SHALL BE SEEDED AS DESCRIBED BELOW. STRAW MULCH SHALL BE APPLIED TO ALL DISTURBED AREAS AT A RATE OF 3,000 LBS/ACRE PRIOR TO OCTOBER 15 OF THE YEAR OF CONSTRUCTION.
5. PERMANENT COVER CROP (NO–TILL):
   A PERMANENT COVER CROP STRATEGY WILL BE UTILIZED. THE PERMANENT COVER CROP WILL BE GENERATED THE FIRST YEAR BY SEEDING WITH THE FOLLOWING MIX:

VARIETY	RATE (LBS/ACRE)
DWARF BARLEY	50
BLANDO BROME	8
ZORRO FESCUE	12
CRIMSON CLOVER	6

   A PRE–APPROVED ALTERNATIVE SEED MIX MAY BE ALLOWED.

   THE PERMANENT COVER CROP WILL BE MANAGED EACH YEAR SUCH THAT ANY AREAS WHICH HAVE LESS THAN 80% VEGETATIVE COVER WILL BE RESEEDED AND MULCHED UNTIL ADEQUATE COVERAGE IS ACHIEVED. THE PERMANENT COVER CROP SHALL BE MOWED ONLY AND NOT DISKED.
6. THE OWNER HAS THE OPTION OF USING A DWARF BARLEY COVER CROP IN THE FIRST THREE YEARS THAT THE BLOCK IS PLANTED TO AID WITH VINEYARD ESTABLISHMENT. IF THIS OPTION IS USED, SEED SHALL BE APPLIED AT A RATE OF 120 LBS/ACRE IF BROADCAST OR AT A RATE OF 60 LBS/ACRE IF DRILLED. THE COVER CROP WITHIN THE VINEYARD MAY BE DISKED EACH SPRING AFTER APRIL 1 FOR THE FIRST THREE YEARS. AN ALTERNATIVE COVER CROP SEED MIX MAY BE USED UPON PRIOR APPROVAL. EACH YEAR THE OWNER CHOOSES TO DISK, THE AREA SHALL BE STRAW MULCHED AT A RATE OF 3,000 LBS/ACRE AND STRAW WATTLES SHALL BE INSTALLED PRIOR TO OCTOBER 15. THE PERMANENT SEED MIX WILL BE SEEDED PRIOR TO OCTOBER 15 OF THE FOURTH (OR EARLIER) YEAR.
7. NO PRE–EMERGENT HERBICIDES WILL BE USED FOR WEED MANAGEMENT. CONTACT OR SYSTEMIC HERBICIDES MAY BE APPLIED IN SPRING (NO EARLIER THAN FEBRUARY 15TH TO ENSURE ADEQUATE VEGETATIVE COVER IN THE SPRAY STRIPS FOR THE REMAINDER OF THE RAINY SEASON). THE WIDTH OF THE SPRAY STRIP SHALL BE NO WIDER THAN 1' IN ORDER TO ACHIEVE 80% VEGETATIVE COVER (BASED ON A SEVEN–FOOT MINIMUM ROW SPACING).
8. FERTILIZER SHALL BE APPLIED AS NECESSARY BY VINEYARD MANAGEMENT PERSONNEL FOR BOTH THE VINEYARD AND TO ENSURE SPECIFIED PERCENT VEGETATIVE COVER CROP IS ACHIEVED. SITE–SPECIFIC SOIL ANALYSIS SHOULD BE PERFORMED.
9. THE VINEYARD AVENUES SHALL BE MOWED ONLY AND SHALL NOT BE DISKED. UNLESS OTHERWISE NOTED, ALL AVENUES SHALL CONFORM TO THE NATURAL GRADE. VINEYARD AVENUES SHALL BE SEEDED AND MULCHED PRIOR TO OCTOBER 15 OF THE YEAR OF CONSTRUCTION AND IN SUBSEQUENT YEARS IN BARE OR DISTURBED AREAS. THE COVER CROP WILL BE MANAGED EACH YEAR SUCH THAT ANY AVENUES WHICH HAVE LESS THAN 80% VEGETATIVE COVER WILL BE RESEEDED AND MULCHED UNTIL ADEQUATE COVERAGE IS ACHIEVED. SEEDING AND MULCHING IS NOT REQUIRED ON AVENUES AND ROADS PROPERLY SURFACED WITH GRAVEL.
10. THE PROPOSED VINE BY ROW SPACING IS EXPECTED TO BE 4' BY 5' IN HAND–FARMED BLOCK 1 AND IS 4' BY 7' IN TRACTOR–FARMED BLOCKS 2 AND 3. HOWEVER, IN AREAS WHERE CROSS–SLOPE EXCEEDS 15% THE OWNER SHALL INCREASE THE ROW SPACING AS NEEDED TO ENSURE THERE IS ADEQUATE ROOM FOR EQUIPMENT. WIDTH OF TILLAGE EQUIPMENT SHALL BE NO MORE THAN 75% OF ROW WIDTH TO ALLOW FOR BENCH FORMATION AND TO MINIMIZE EROSION.
11. THE OWNER HAS THE FREEDOM TO FURTHER SUBDIVIDE VINEYARD BLOCKS WITHIN THE FOOTPRINT OF THE PROPOSED VINEYARD FOR IRRIGATION AND VITICULTURE PURPOSES. THE PROPOSED VINEROW DIRECTIONS SHALL NOT BE ALTERED WITHOUT AN APPROVED MODIFICATION FROM NAPA COUNTY.
12. THE LOCATION OF THE EXISTING WELL, THE PROPOSED WATER SOURCE, IS SHOWN ON THE VICINITY MAP.
13. A PORTION OF THE PROPERTY IS CURRENTLY DEER FENCED. PLEASE SEE FIGURE 3 IN APPENDIX E FOR THE PROPOSED DEER FENCE MAP.
14. REQUESTS FOR FURTHER INFORMATION, CLARIFICATION OF WORK TO BE DONE, OR INSPECTION INFORMATION CAN BE MADE TO JIM BUSHEY OR MATT BUENO AT PPI ENGINEERING IN NAPA, (707) 253–1806.
15. PROPERTY LINES AS SHOWN ARE APPROXIMATE. OWNER SHALL BE RESPONSIBLE FOR SURVEYING PROPERTY LINE(S) AS NECESSARY PRIOR TO ANY SITE DISTURBANCE.
16. THE OWNER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS.
17. AT LEAST 48 HOURS PRIOR TO EXCAVATING, THE CONTRACTOR SHALL CALL UNDERGROUND SERVICES ALERT (U.S.A.) AT 1–800–642–2444 IN ORDER TO LOCATE EXISTING UTILITIES. IT IS THE OWNER'S RESPONSIBILITY TO LOCATE ANY ADDITIONAL UNDERGROUND UTILITIES THAT MAY HAVE BEEN INSTALLED "IN–HOUSE" OR BY PRIVATE CONTRACTORS AND THEREFORE MAY NOT BE LOCATED THROUGH UNDERGROUND SERVICE ALERT.
18. IT IS THE OWNER'S RESPONSIBILITY TO INSTALL ALL STRUCTURAL MEASURES AS SHOWN ON THE SITE PLAN AND DETAILS AND AS DESCRIBED IN THE SPECIFICATIONS WITHIN THE TIME FRAMES SPECIFIED FOR THIS PROJECT. ANY DEVIATION FROM THESE PLANS MUST BE REVIEWED AND APPROVED BY NAPA COUNTY PLANNING, BUILDING AND ENVIRONMENTAL SERVICES DEPARTMENT. IT IS THE OWNER'S RESPONSIBILITY TO INITIATE THIS MODIFICATION PROCESS. PPI ENGINEERING MUST BE NOTIFIED AT LEAST 48 HOURS IN ADVANCE OF CONSTRUCTION IN ORDER TO SCHEDULE A PRE–CONSTRUCTION MEETING WITH THE OWNER/MANAGER AND CONTRACTOR(S). FOR ONGOING MULTI–YEAR PROJECTS PPI ENGINEERING MUST BE NOTIFIED AT LEAST 48 HOURS IN ADVANCE OF RESUMING CONSTRUCTION EACH YEAR.

REGISTERED PROFESSIONAL ENGINEER
MATTHEW S. BUENO
No. 84114
EXPIRES: 9-30-23
Civil
STATE OF CALIFORNIA

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NAPA, CA 94558
707/253–1806 FAX 707/253–1604

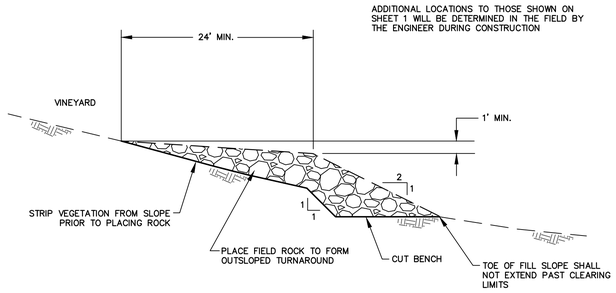
JOB NO: 12110401
DWG. NO: 12110401A

RED BOAT LLC
RED BOAT VINEYARD
EROSION CONTROL PLAN
SITE PLAN

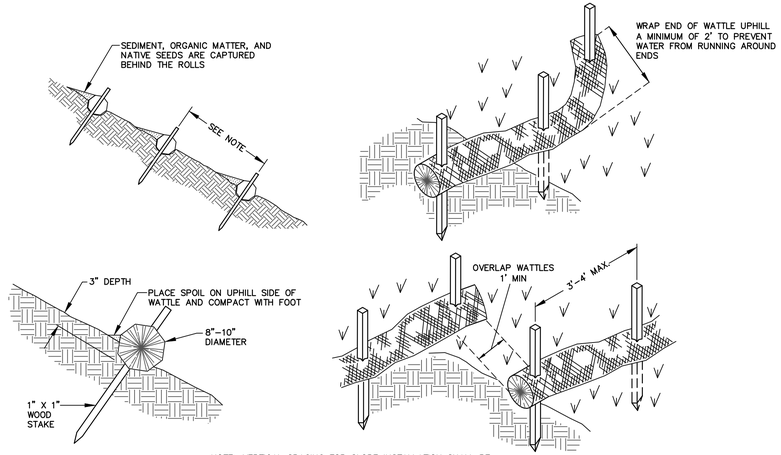
DESIGN ENGINEER: J. BUSHEY, M. BUENO, R. ROSASCO

SCALE:	DRAWN BY:	DATE:	SHEET:
AS SHOWN	JCJ	11–01–21	1 OF: 2

D:\PPI\WORK\12110401 - 1373 Soda Canyon Road Phase 3 EIS\Drawings\12110401-Dwg-1 Site Plan, 11/1/2021 8:45:43 AM

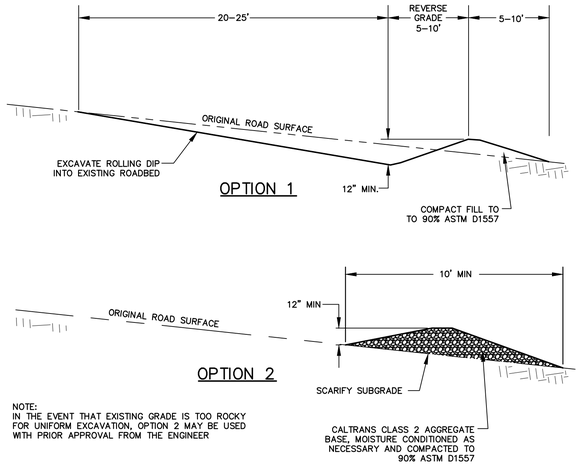


1/2 ROCK–FILLED AVENUE
N.T.S.



NOTE: VERTICAL SPACING FOR SLOPE INSTALLATION SHALL BE DETERMINED BY SITE CONDITIONS. WATTLE SPACING AND LOCATIONS SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.

2/2 STRAW WATTLE INSTALLATION
N.T.S.



NOTE:
IN THE EVENT THAT EXISTING GRADE IS TOO ROCKY FOR UNIFORM EXCAVATION, OPTION 2 MAY BE USED WITH PRIOR APPROVAL FROM THE ENGINEER

3/2 TYPICAL ROLLING DIP
N.T.S.

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RED BOAT LLC
RED BOAT VINEYARD
EROSION CONTROL PLAN
DETAILS

DESIGN ENGINEER: J. BUSHEY, M. BUENO, R. ROSASCO

JOB NO: 12110401	SCALE: AS SHOWN	DRAWN BY: JCJ	DATE: 11–01–21	SHEET: 2 OF: 2
DWG. NO: 12110401A				

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