

**DARIOUSH ESTATE  
2100 CURRY LANE**

**EROSION CONTROL PLAN  
REVISED JULY 2019**



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**DARIOUSH ESTATE  
2100 CURRY LANE**

**EROSION CONTROL PLAN**



**REVISED JULY 2019  
ORIGINAL SUBMITTAL DECEMBER 2018**

**PREPARED BY:**

**PPI ENGINEERING  
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**DARIOUSH ESTATE  
2100 CURRY LANE**

**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 5.8 net acres (8.3 gross acres) of proposed vineyard on the Darioush Estate located at 2100 Curry Lane in southern Napa County. The ranch is located on APN 045-380-010 which consists of approximately 23.62 acres per the Napa County Assessor's Office.
- b) Activities to be accomplished include removal of brush 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, installation of trellis system and deer fence, laying out the vine rows, and installing erosion control measures.
- c) Ripping will not occur outside of the clearing limits. The average depth of ripping will be 24" with maximum ripping depths up to 36" depending on site conditions.

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

- a) The site is located in the Kreuse Creek Watershed.
- b) The elevations in the vineyard area range from approximately 150 to 240 feet above mean sea level per topographic mapping. Ground slopes within the project boundary range between 15 and 21 percent. There are small pockets of areas with slope over 30% which total approximately 0.3 acres, please see Sheet 1 for the locations.
- c) Topographic mapping was provided by American Aerial Mapping, Inc., flown on January 13, 2018.
- d) Existing vegetation consists of grass, brush and trees. The area is currently grazed. Please see the biological report prepared by WRA dated December 2018.
- e) There are structures on the property. Please see the cultural resources report prepared by Flaherty Cultural Resource Services dated September 2018.
- f) A portion of the property is currently deer fenced. Please see Figure 2 in Appendix D for the Proposed Deer Fence map. The proposed deer fence includes blocks fenced individually.

*Revised July 2019*

- g) A site visit of the property was performed by Matt Bueno and Austin Lemire-Baeten of PPI Engineering on Thursday, June 28, 2018 to evaluate the vineyard development area and to collect photographic documentation. Photographs of pre-project conditions can be found in Appendix A.

An additional site visit of the property was performed by Jim Bushey and Annalee Sanborn of PPI Engineering on Saturday, September 15, 2018 to further evaluate the vineyard development area. Site visits were also performed by other PPI Engineering staff in 2018.

**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. The blue-line stream, Kreuse Creek, is in the vicinity but will not be affected by the project.
- b) Kreuse Creek is located on the property and meets the Napa County definition of a stream and has the appropriate setbacks, determined by slope as outlined in Napa County Conservation Regulation 18.108.025, shown on Sheet 1. Prior to construction the Engineer shall stake the appropriate stream setbacks adjacent to vineyard blocks based on in-field determination of the top of bank and slope.
- c) There are two existing driveways from Curry Lane that provide access to the proposed vineyard blocks. The existing road network is sufficient for access to proposed vineyard blocks as shown on Figure 3. An existing bridge over Kreuse Creek will provide access to the southernmost vineyard block. No new roads would be required for this project and there is no potential for increased erosion as a result of increased use of the existing driveways.

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

- a) The proposed water source is recycled water. A connection to the recycled water pipeline is available at the end of Curry Lane, see the Vicinity Map for the location.

**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 soils within the project boundary as Haire Loam with 2 to 9 percent slopes, Hambright Rock-Outcrop Complex with 30 to 75 percent slopes and Sobrante Loam with 5 to 30 percent slopes.
- b) Some rock is expected to be generated as a result of this project. 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

*Revised July 2019*

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 the revised pre-project soil loss analysis prepared by PPI Engineering dated April 2019.

**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 pounds per acre, Blando Brome at 9 pounds per acre, and Zorro Fescue at 13 pounds per 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 (or a pre-approved alternative) 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 pounds per acre if broadcast or at a rate of 60 pounds per 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 pounds per acre and straw wattles 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 strip sprayed in the vinerows for weed management. Contact or systemic herbicides may be applied in spring (no earlier than February 15<sup>th</sup> 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 foot in order to achieve 80% vegetative cover (based on a six-foot minimum row spacing). If the owner chooses to farm without herbicide, an alternative will be to hand-hoe around the base of the vine only, or other methods that do not result in a continuous bare strip.
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 feet by 7 feet, 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 the hydrology report prepared by PPI Engineering dated December, 2018.

**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.

## **APPENDIX A**

### **PHOTOGRAPHIC DOCUMENTATION**



**Photo 1**

9/19/2018



**Photo 2**

10/5/2018

## **APPENDIX B**

### **USLE CALCULATIONS**

PPI Engineering

Napa County  
Maximum Length of Slope  
for a soil loss of 6 tons per acre

NAME: Darioush - Curry Lane

DATE: 1/8/18

Cover Type: Permanent Cover Crop

Soil Unit No. (100-182)--- 146

Soil Name Haire

-K= 0.32

-R= 40

-T= 4

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
	2	22,378,263	48,461,098	132,736,143	566,468,830	2,030,549,289	7,844,834,981
	4	183,867	328,230	698,837	2,074,992	5,405,613	14,896,118
	6	14,482	23,023	42,143	100,656	216,522	487,174
	8	6,669	10,602	19,406	46,351	99,706	224,338
	10	3,558	5,656	10,353	24,728	53,193	119,684
P	12	2,153	3,423	6,266	14,965	32,191	72,429
E	14	1,412	2,245	4,109	9,814	21,111	47,499
R	16	982	1,562	2,859	6,828	14,688	33,048
C	18	715	1,137	2,082	4,972	10,695	24,064
E	20	540	859	1,572	3,754	8,075	18,168
N	22	420	668	1,222	2,919	6,279	14,127
T	24	335	532	974	2,326	5,003	11,258
S	26	272	433	792	1,892	4,071	9,160
L	28	226	359	656	1,568	3,372	7,587
O	30	190	302	552	1,319	2,837	6,383
P	32	162	257	471	1,125	2,419	5,443
E	34	140	222	406	971	2,088	4,698
	36	122	194	355	847	1,822	4,100
	38	107	171	312	746	1,605	3,612
	40	95	152	278	663	1,427	3,210
	42	85	136	249	594	1,278	2,876
	44	77	123	225	536	1,153	2,595
	46	70	111	204	487	1,048	2,358
	48	64	102	186	445	958	2,155
	50	59	94	171	409	880	1,981

NOTES:

C=Cover and Management Factor

P=Practice Factor

PPI Engineering

Napa County  
Maximum Length of Slope  
for a soil loss of 6 tons per acre

NAME: Darioush - Curry Lane

DATE: 1/8/18

Cover Type: Permanent Cover Crop

Soil Unit No. (100-182)--- 146

Soil Name Haire

-K= 0.32

-R= 40

-T= 4

Percent Cover		65% Cross-Slope	70% Cross-Slope	75% Cross-Slope	80% Cross-Slope	85% Cross-Slope	90% Cross-Slope
		C= 0.058 P= 0.6	C= 0.046 P= 0.6	C= 0.034 P= 0.6	C= 0.022 P= 0.6	C= 0.015 P= 0.6	C= 0.010 P= 0.6
P E R M A N E N T C O V E R	2	122,834,814	266,004,107	728,591,812	3,109,360,738	11,145,732,828	43,060,483,806
	4	659,364	1,177,065	2,506,096	7,441,119	19,385,045	53,418,904
	6	40,228	63,954	117,064	279,599	601,450	1,353,261
	8	18,524	29,450	53,907	128,752	276,960	623,160
	10	9,883	15,711	28,759	68,689	147,758	332,455
	12	5,981	9,508	17,404	41,569	89,419	201,193
	14	3,922	6,235	11,414	27,261	58,640	131,941
	16	2,729	4,338	7,941	18,967	40,800	91,800
	18	1,987	3,159	5,782	13,811	29,709	66,845
	20	1,500	2,385	4,366	10,427	22,429	50,466
	22	1,166	1,854	3,395	8,108	17,440	39,241
	24	930	1,478	2,705	6,461	13,898	31,271
	26	756	1,202	2,201	5,257	11,308	25,443
	28	626	996	1,823	4,354	9,367	21,075
	30	527	838	1,534	3,663	7,880	17,729
	32	449	715	1,308	3,124	6,720	15,120
	34	388	617	1,129	2,697	5,800	13,051
	36	339	538	985	2,353	5,061	11,388
	38	298	474	868	2,073	4,459	10,033
	40	265	421	771	1,842	3,963	8,917
	42	237	378	691	1,651	3,551	7,989
	44	214	341	624	1,490	3,204	7,209
	46	195	310	567	1,353	2,911	6,549
	48	178	283	518	1,237	2,660	5,986
	50	164	260	476	1,137	2,445	5,502

NOTES:

C=Cover and Management Factor

P=Practice Factor



PPI Engineering

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

NAME: Darioush - Curry Lane

DATE: 1/8/18

Cover Type: Permanent Cover Crop

Soil Unit No. (100-182)--- 152

Soil Name Hambright-Rock Outcrop

-K= 0.10

-R= 40

-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
P E R C E N T S L O P E	2	107,207,616	232,162,735	635,899,459	2,713,784,012	9,727,758,889	37,582,275,708
	4	595,392	1,062,866	2,262,954	6,719,181	17,504,306	48,236,196
	6	37,074	58,940	107,886	257,679	554,296	1,247,166
	8	17,072	27,141	49,680	118,658	255,246	574,305
	10	9,108	14,480	26,504	63,304	136,173	306,390
	12	5,512	8,763	16,040	38,310	82,408	185,419
	14	3,615	5,747	10,519	25,123	54,043	121,597
	16	2,515	3,998	7,319	17,480	37,601	84,603
	18	1,831	2,911	5,329	12,728	27,380	61,605
	20	1,383	2,198	4,023	9,609	20,671	46,510
	22	1,075	1,709	3,128	7,472	16,073	36,164
	24	857	1,362	2,493	5,954	12,809	28,819
	26	697	1,108	2,028	4,845	10,422	23,449
	28	577	918	1,680	4,013	8,632	19,422
	30	486	772	1,413	3,376	7,262	16,339
	32	414	659	1,205	2,879	6,193	13,934
	34	358	568	1,040	2,485	5,346	12,028
	36	312	496	908	2,168	4,664	10,495
	38	275	437	800	1,910	4,109	9,246
	40	244	388	711	1,698	3,652	8,218
	42	219	348	637	1,521	3,272	7,362
	44	198	314	575	1,373	2,953	6,644
	46	179	285	522	1,247	2,683	6,036
	48	164	261	477	1,140	2,452	5,517
	50	151	240	439	1,048	2,254	5,071

NOTES:

C=Cover and Management Factor

P=Practice Factor



PPI Engineering

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

NAME: Darioush - Curry Lane

DATE: 1/8/18

Cover Type: Permanent Cover Crop

Soil Unit No. (100-182)--- 152

-K= 0.10

Soil Name Hambright-Rock Outcrop

-R= 40

-T= 1

Percent Cover		65% Cross-Slope	70% Cross-Slope	75% Cross-Slope	80% Cross-Slope	85% Cross-Slope	90% Cross-Slope
		C= 0.058 P= 0.6	C= 0.046 P= 0.6	C= 0.034 P= 0.6	C= 0.022 P= 0.6	C= 0.015 P= 0.6	C= 0.010 P= 0.6
P E R M A N E N T C O V E R	2	588,465,129	1,274,346,715	3,490,467,095	14,896,024,302	53,395,897,446	206,289,995,702
	4	2,135,133	3,811,539	8,115,170	24,095,627	62,772,118	172,979,616
	6	102,983	163,722	299,684	715,775	1,539,711	3,464,349
	8	47,422	75,392	138,001	329,605	709,018	1,595,290
	10	25,300	40,221	73,623	175,844	378,260	851,084
	12	15,311	24,341	44,555	106,416	228,912	515,053
	14	10,041	15,963	29,219	69,787	150,120	337,769
	16	6,986	11,106	20,329	48,556	104,448	235,009
	18	5,087	8,087	14,803	35,356	76,055	171,124
	20	3,840	6,106	11,176	26,693	57,419	129,194
	22	2,986	4,747	8,690	20,756	44,647	100,457
	24	2,380	3,783	6,925	16,540	35,579	80,054
	26	1,936	3,078	5,634	13,458	28,949	65,135
	28	1,604	2,550	4,667	11,147	23,978	53,951
	30	1,349	2,145	3,926	9,378	20,172	45,387
	32	1,151	1,829	3,348	7,997	17,203	38,707
	34	993	1,579	2,890	6,903	14,849	33,411
	36	867	1,378	2,522	6,023	12,957	29,152
	38	764	1,214	2,222	5,307	11,415	25,684
	40	679	1,079	1,975	4,716	10,146	22,828
	42	608	967	1,769	4,225	9,089	20,451
	44	549	872	1,596	3,813	8,202	18,456
	46	498	792	1,450	3,464	7,451	16,766
	48	456	724	1,326	3,166	6,811	15,324
	50	419	666	1,218	2,910	6,260	14,086

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: Darioush - Curry Lane

DATE: 1/8/18

Cover Type: Permanent Cover Crop

Soil Unit No. (100-182)--- 178

Soil Name Sobrante

-K= 0.32

-R= 40

-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
	2	5,792,367	12,543,622	34,357,291	146,624,229	525,585,360	2,030,549,289
	4	66,723	119,111	253,599	752,988	1,961,629	5,405,613
	6	6,436	10,233	18,730	44,736	96,232	216,522
	8	2,964	4,712	8,625	20,600	44,314	99,706
	10	1,581	2,514	4,601	10,990	23,641	53,193
P	12	957	1,521	2,785	6,651	14,307	32,191
E	14	628	998	1,826	4,362	9,382	21,111
R	16	437	694	1,271	3,035	6,528	14,688
C	18	318	505	925	2,210	4,753	10,695
	20	240	382	698	1,668	3,589	8,075
E	22	187	297	543	1,297	2,790	6,279
N	24	149	236	433	1,034	2,224	5,003
T	26	121	192	352	841	1,809	4,071
	28	100	159	292	697	1,499	3,372
S	30	84	134	245	586	1,261	2,837
L	32	72	114	209	500	1,075	2,419
O	34	62	99	181	431	928	2,088
P	36	54	86	158	376	810	1,822
E	38	48	76	139	332	713	1,605
	40	42	67	123	295	634	1,427
	42	38	60	111	264	568	1,278
	44	34	55	100	238	513	1,153
	46	31	50	91	216	466	1,048
	48	28	45	83	198	426	958
	50	26	42	76	182	391	880

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: Darioush - Curry Lane

DATE: 1/8/18

Cover Type: Permanent Cover Crop

Soil Unit No. (100-182)--- 178

Soil Name Sobrante

-K= 0.32

-R= 40

-T= 2

Percent Cover		65% Cross-Slope	70% Cross-Slope	75% Cross-Slope	80% Cross-Slope	85% Cross-Slope	90% Cross-Slope
		C= 0.058 P= 0.6	C= 0.046 P= 0.6	C= 0.034 P= 0.6	C= 0.022 P= 0.6	C= 0.015 P= 0.6	C= 0.010 P= 0.6
PERCENT SLOPE	2	31,794,441	68,852,239	188,587,981	804,823,843	2,884,950,407	11,145,732,828
	4	239,275	427,142	909,431	2,700,288	7,034,588	19,385,045
	6	17,879	28,424	52,029	124,266	267,311	601,450
	8	8,233	13,089	23,958	57,223	123,093	276,960
	10	4,392	6,983	12,782	30,528	65,670	147,758
	12	2,658	4,226	7,735	18,475	39,742	89,419
	14	1,743	2,771	5,073	12,116	26,062	58,640
	16	1,213	1,928	3,529	8,430	18,133	40,800
	18	883	1,404	2,570	6,138	13,204	29,709
	20	667	1,060	1,940	4,634	9,969	22,429
	22	518	824	1,509	3,603	7,751	17,440
	24	413	657	1,202	2,872	6,177	13,898
	26	336	534	978	2,336	5,026	11,308
	28	278	443	810	1,935	4,163	9,367
	30	234	372	682	1,628	3,502	7,880
	32	200	318	581	1,388	2,987	6,720
	34	172	274	502	1,198	2,578	5,800
	36	150	239	438	1,046	2,249	5,061
	38	133	211	386	921	1,982	4,459
	40	118	187	343	819	1,761	3,963
	42	106	168	307	734	1,578	3,551
	44	95	151	277	662	1,424	3,204
	46	87	138	252	601	1,294	2,911
	48	79	126	230	550	1,182	2,660
	50	73	116	212	505	1,087	2,445

NOTES:

C=Cover and Management Factor

P=Practice Factor

## **APPENDIX C**

### **SLOPE CALCULATIONS**

**Darioush Estate  
2100 Curry Lane**

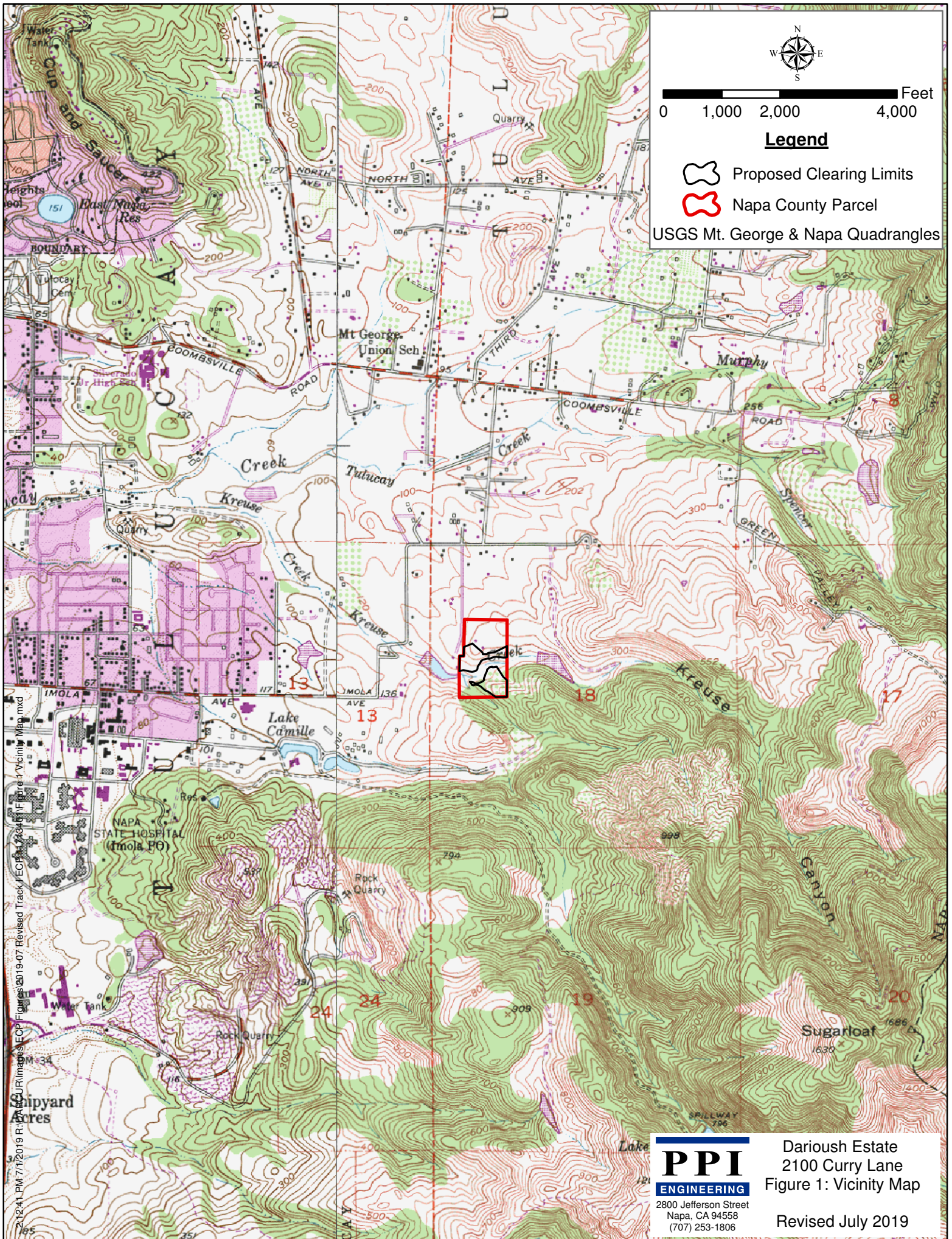
**Average Slope Of Proposed Vineyard Blocks**

<b>Block</b>	<b>Gross Acres</b>	<b>Net Acres</b>	<b>Slope #1</b>	<b>Slope #2</b>	<b>Average slope</b>
A	4.3	3.0	18%	21%	20%
B	2.2	1.6	15%	21%	18%
C	1.8	1.2	15%	19%	17%
<b>Total</b>	<b>8.3</b>	<b>5.8</b>			<b>18%</b>

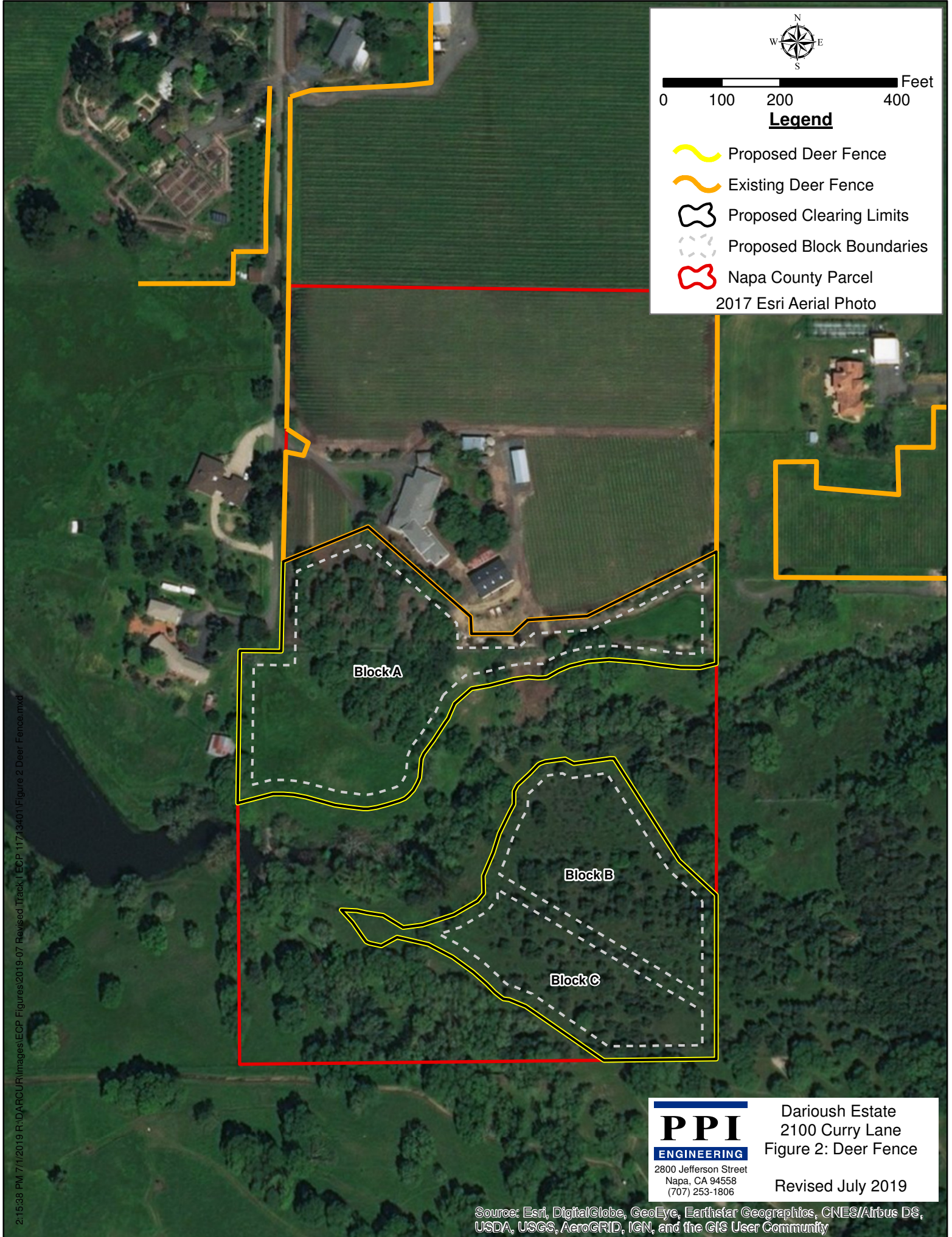
## **APPENDIX D**

### **SUPPORTING FIGURES**

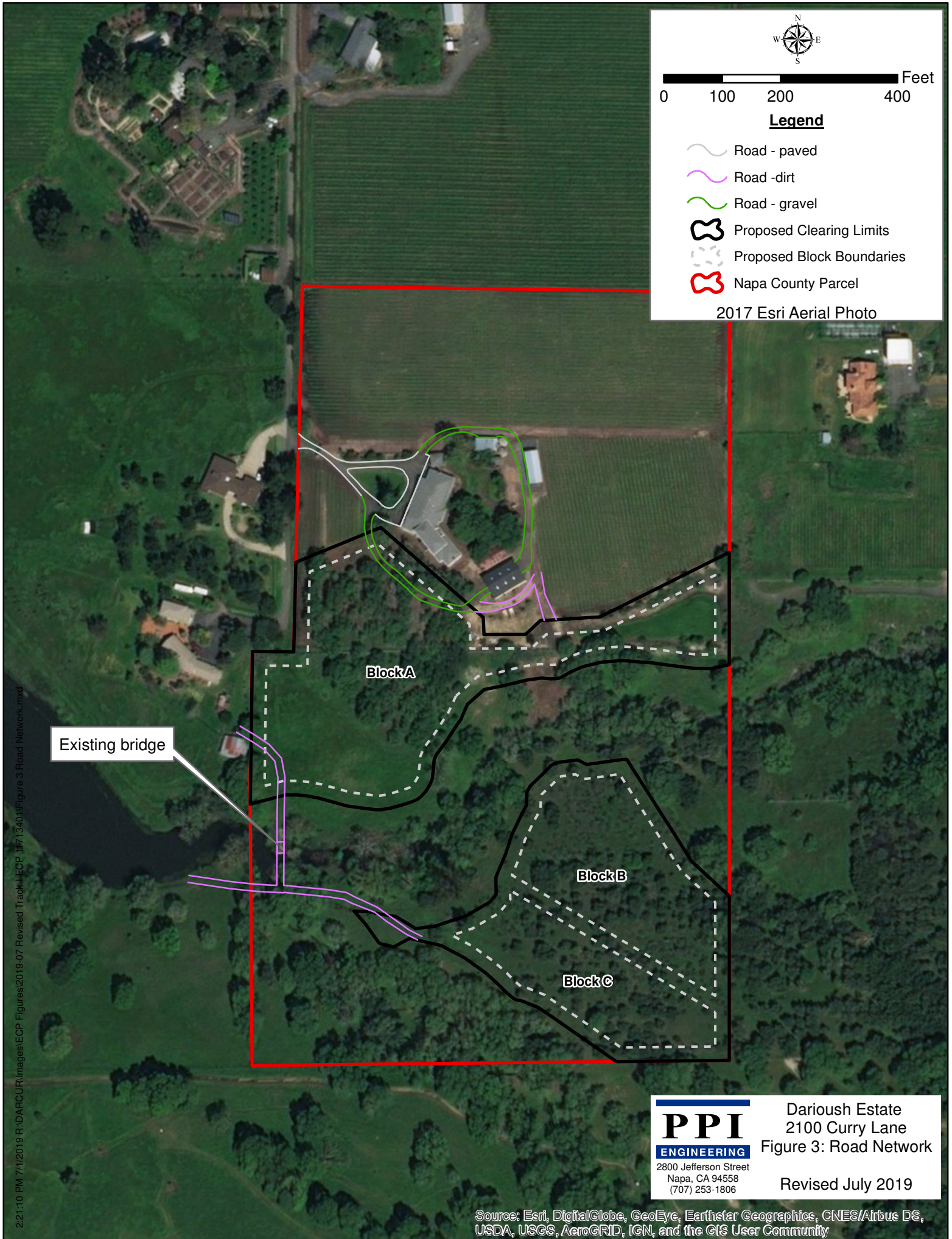




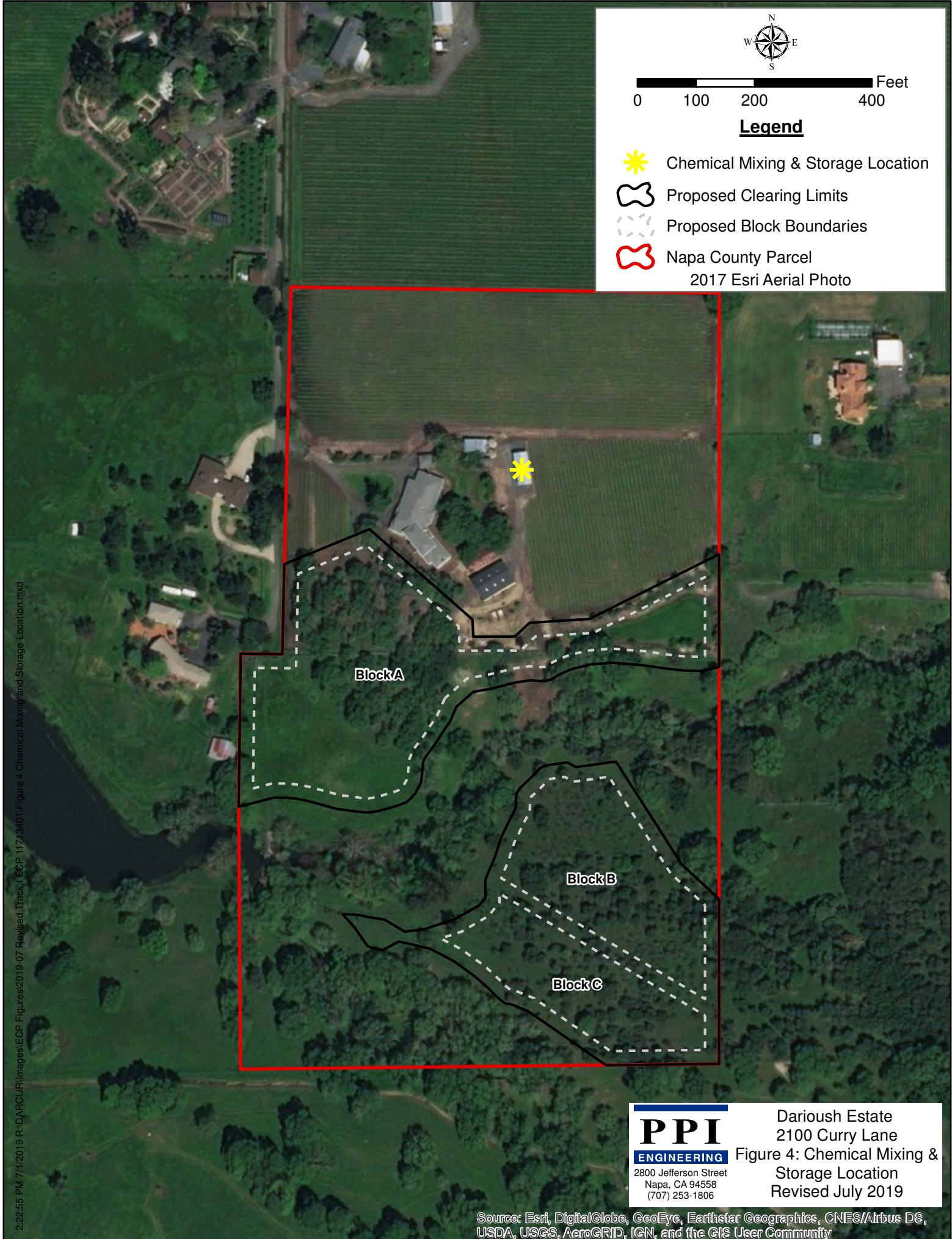












0 100 200 400 Feet

**Legend**

- Chemical Mixing & Storage Location
- Proposed Clearing Limits
- Proposed Block Boundaries
- Napa County Parcel

2017 Esri Aerial Photo

2:22:55 PM 7/11/2019 R:\DARC\R\Images\ECP Figures 2019-07 Revised Track\1 ECP 11713.40\Figure 4 Chemical Mixing and Storage Location.mxd

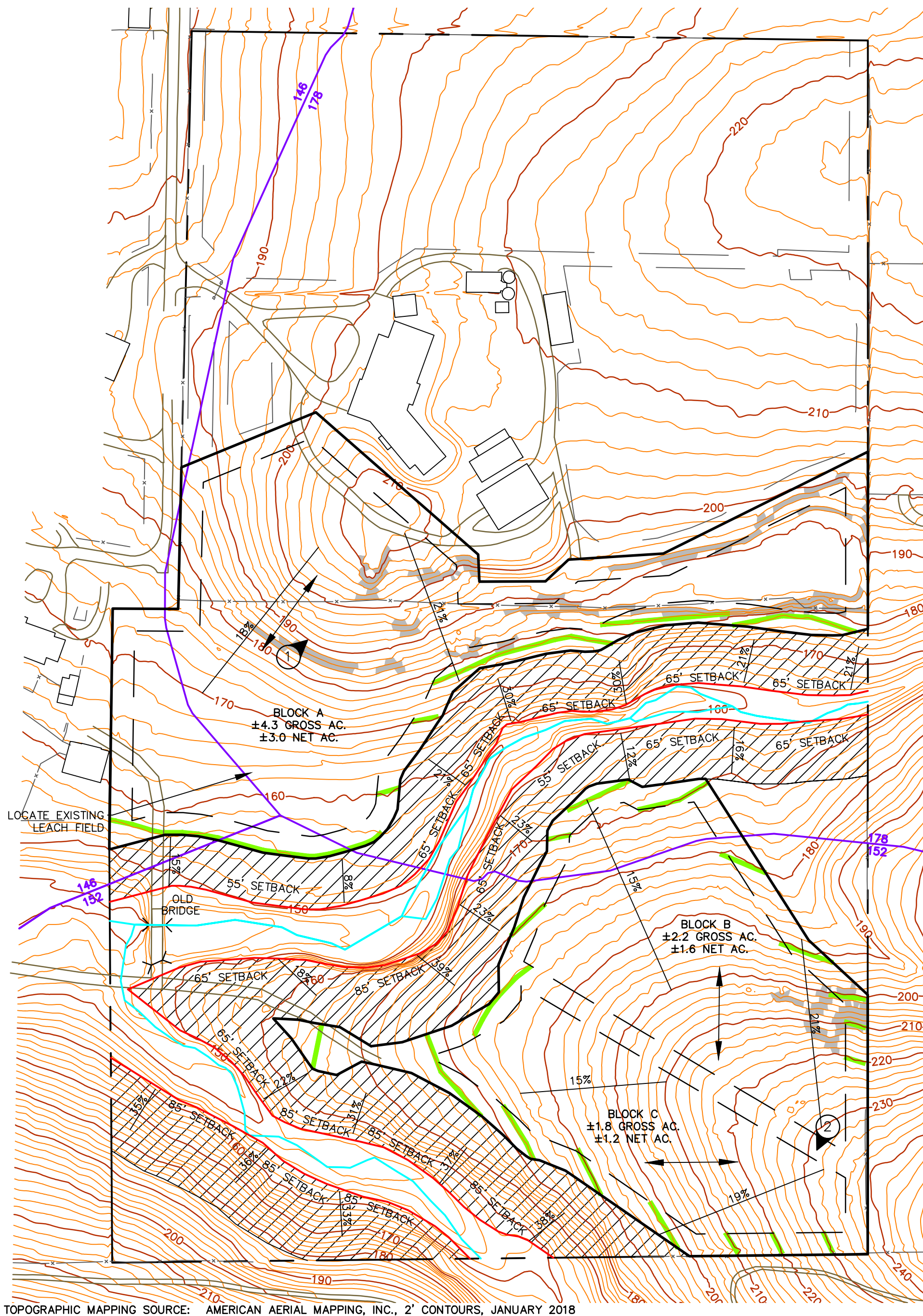
**PPI**  
ENGINEERING  
2800 Jefferson Street  
Napa, CA 94558  
(707) 253-1806

Darioush Estate  
2100 Curry Lane

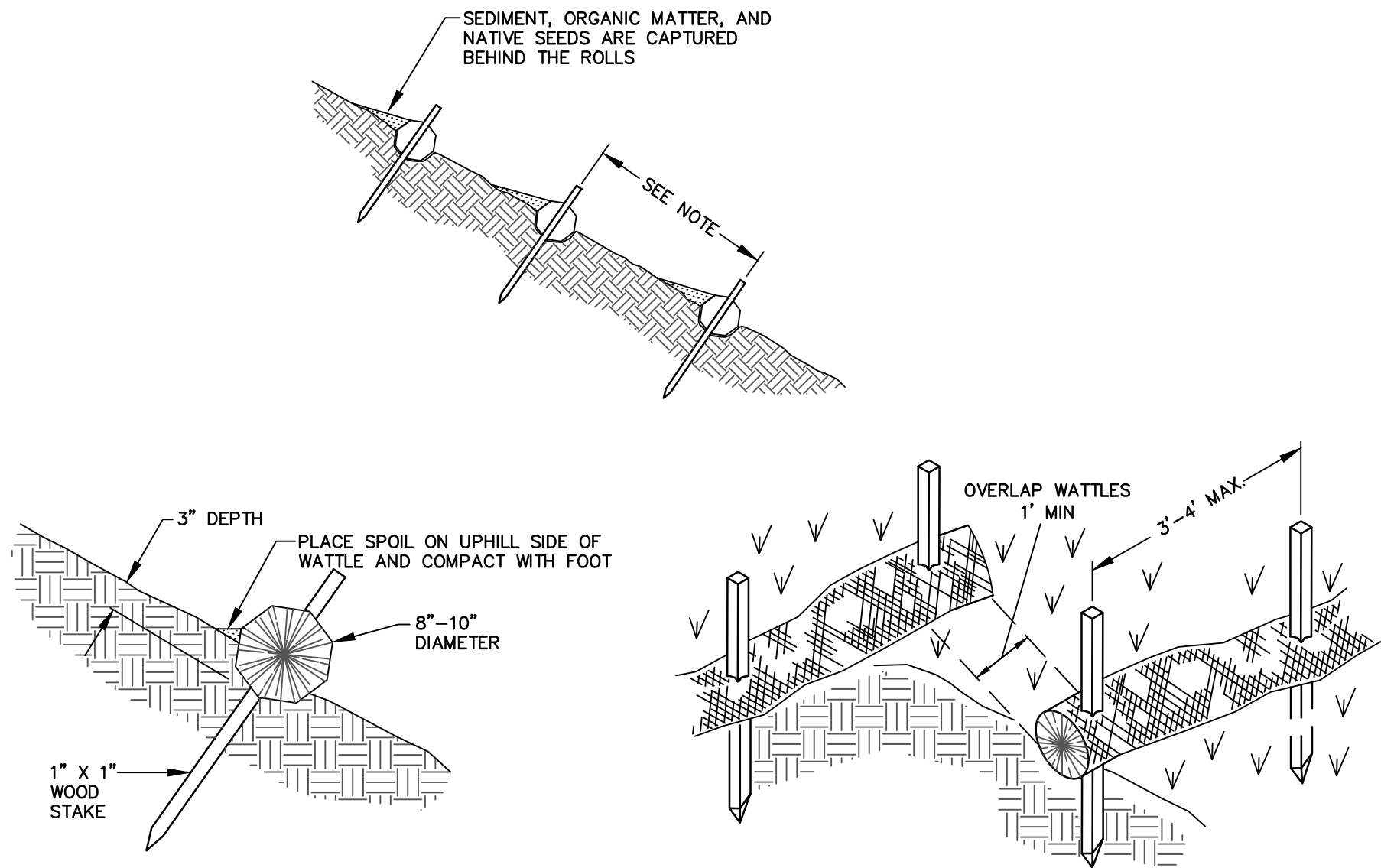
**Figure 4: Chemical Mixing & Storage Location**  
Revised July 2019

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



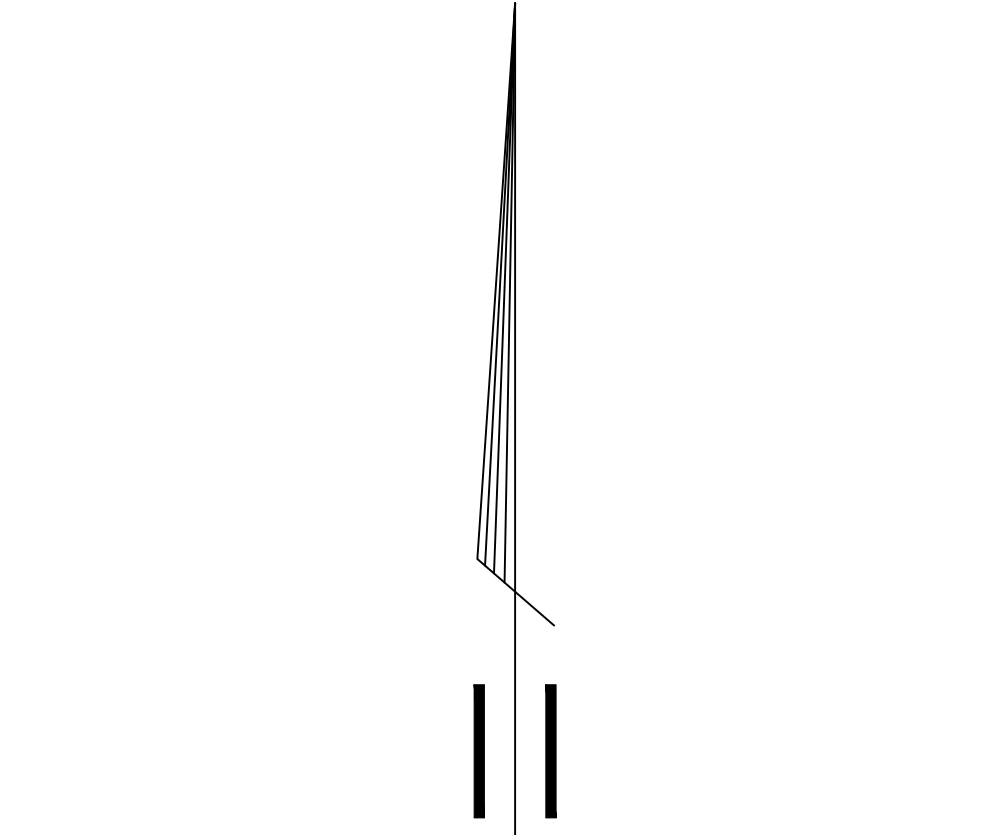


TOPOGRAPHIC MAPPING SOURCE: AMERICAN AERIAL MAPPING, INC., 2' CONTOURS, JANUARY 2018



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.

# 1 STRAW WATTLE INSTALLATION N.T.S.



## GRAPHIC SCALE

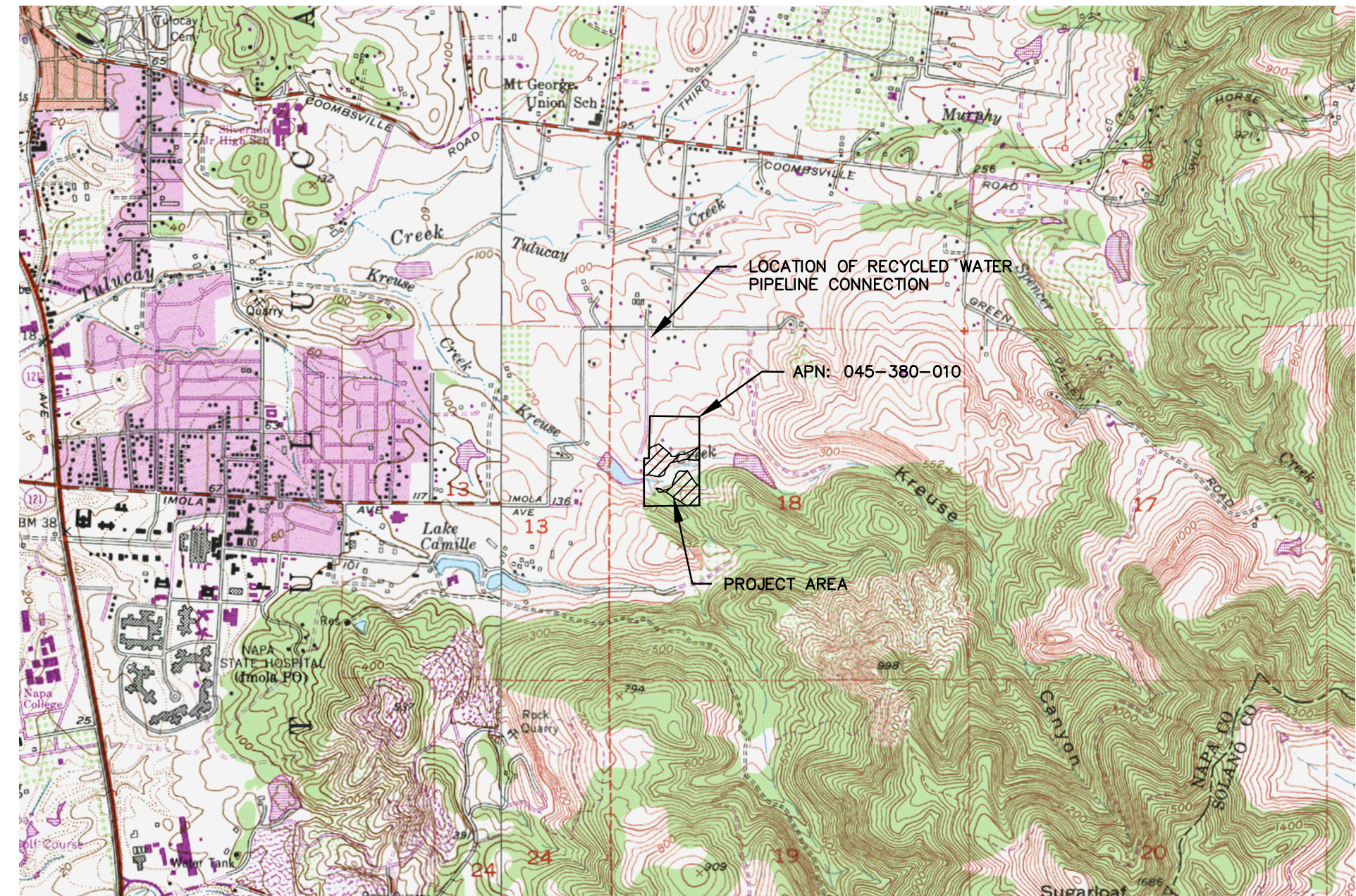
( IN FEET )  
1 inch = 100 ft.

## LEGEND

- NAPA COUNTY PARCEL
- EXISTING VINEYARD AREA
- EXISTING ROAD
- EXISTING FENCE
- EXISTING BUILDING
- EXISTING CULVERT
- USGS BLUE LINE STREAM
- TOP OF BANK MAPPED BY WRA
- NAPA COUNTY STREAM SETBACK
- PROPOSED CLEARING LIMITS
- PROPOSED BLOCK BOUNDARY
- PROPOSED STRAW WATTLE (SEE DETAIL 1, THIS SHEET)
- AREA WHERE GROUND SLOPE IS 30 PERCENT OR GREATER
- PROPOSED VINEYARD DIRECTION
- PHOTO POINT NUMBER & LOCATION (SEE APPENDIX A)
- AVERAGE SURFACE SLOPE
- SOIL TYPE BOUNDARY

## USDA SOIL CLASSIFICATIONS:

- HAIRE LOAM, 2 TO 9% SLOPES
- HAMBRIGHT ROCK-OUTCROP COMPLEX, 30 TO 75% SLOPES
- SOBRANTE LOAM, 5 TO 30% SLOPES



## VICINITY MAP

USGS MT. GEORGE & NAPA QUADRANGLES  
TOWNSHIP 5 N., RANGE 3 W.  
SCALE: 1" = ±2000'

## NOTES:

- OWNER: DK 2014 LLC  
SITE ADDRESS: 2100 CURRY LANE  
APN: 045-380-010
- ACCESS TO PROJECT IS FROM CURRY LANE. THE SITE IS GATED AND LOCKED. ADMITTANCE IS AVAILABLE UPON REQUEST.
- EXISTING VEGETATION CONSISTS OF GRASS, BRUSH, AND TREES.
- DISTURBED AREAS SHALL BE SEEDED AS DESCRIBED BELOW. STRAW MULCH SHALL BE APPLIED TO ALL DISTURBED AREAS AT A RATE OF 3,000 POUNDS PER ACRE PRIOR TO OCTOBER 15 OF THE YEAR OF CONSTRUCTION.
- 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	9
ZORRO FESCUE	13

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.

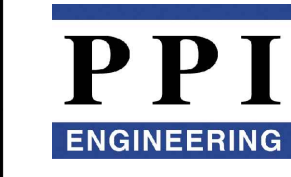
- THE OWNER HAS THE OPTION OF USING A DWARF BARLEY (OR A PRE-APPROVED ALTERNATIVE) COVER CROP IN THE FIRST THREE YEARS THAT THE BLOCK IS PLANTED TO AID WITH VINEYARD ESTABLISHMENT. IF THIS OPTION IS USED, SEED SHALL BE APPLIED AT A RATE OF 120 POUNDS PER ACRE IF BROADCAST OR AT A RATE OF 60 POUNDS PER 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.
- NO PRE-EMERGENT HERBICIDES WILL BE STRIP SPRAYED IN THE VINEYARDS 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 STRIP SHALL BE NO WIDER THAN 1 FOOT IN ORDER TO ACHIEVE 80% VEGETATIVE COVER (BASED ON A SIX-FOOT MINIMUM ROW SPACING). IF THE OWNER CHOOSES TO FARM WITHOUT HERBICIDE, AN ALTERNATIVE WILL BE TO HAND-HOE AROUND THE BASE OF THE VINE ONLY, OR OTHER METHODS THAT DO NOT RESULT IN A CONTINUOUS BARE STRIP.
- 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.
- 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.
- THE PROPOSED VINE BY ROW SPACING IS EXPECTED TO BE 4' BY 7', 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.
- THE OWNER HAS THE FREEDOM TO FURTHER SUBDIVIDE VINEYARD BLOCKS WITHIN THE FOOTPRINT OF THE PROPOSED VINEYARD FOR IRRIGATION AND VITICULTURE PURPOSES. THE PROPOSED VINEYARD DIRECTIONS SHALL NOT BE ALTERED WITHOUT AN APPROVED MODIFICATION FROM NAPA COUNTY.
- THE PROPOSED WATER SOURCE IS RECYCLED WATER. THE LOCATION OF THE CONNECTION TO THE RECYCLED WATER PIPELINE IS SHOWN ON THE VICINITY MAP.
- A PORTION OF THE PROJECT IS CURRENTLY DEER FENCED. SEE APPENDIX D FOR THE PROPOSED DEER FENCE MAP.
- 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.
- PROPERTY LINES AS SHOWN ARE APPROXIMATE. OWNER SHALL BE RESPONSIBLE FOR SURVEYING PROPERTY LINE(S) AS NECESSARY PRIOR TO ANY SITE DISTURBANCE.
- THE OWNER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS.
- 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.
- 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.



DARIOUSH ESTATE  
2100 CURRY LANE

EROSION CONTROL PLAN  
SITE PLAN

DESIGN ENGINEER:  
J. BUSHEY, M. BUENO



JOB NO: 11713401

DWG. NO: 11713401B

REV. NO.	DESCRIPTION	BY	DATE
1	THIS DRAWING SUPERSEDES DRAWING 11713401A. CLEARING LIMITS AND BLOCK BOUNDARIES WERE UPDATED. NOTES 5, 7, & 9 WERE UPDATED.	ALB	07/01/2019

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SCALE:	DRAWN BY:	DATE:	SHEET:
AS SHOWN	ALB, RR	07-01-19	1

OF: 1