THREE TWINS LLC
704 GREENFIELD RD

EROSION CONTROL PLAN
REVISED APRIL 2019

PPI
ENGINEERING

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THREE TWINS LLC
704 GREENFIELD RD

EROSION CONTROL PLAN

REVISED APRIL 2019

PREPARED BY:

PPI ENGINEERING
2800 JEFFERSON STREET
NAPA, CALIFORNIA 94558
(707) 253-1806

TABLE OF CONTENTS

THREE TWINS LLC
704 GREENFIELD RD

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 1.7 net acres (2.5 gross acres) of proposed vineyard on the Three Twins Vineyard located at 704 Greenfield Road in St. Helena. The ranch is located on APN 025-380-017 which consists of approximately 22.96 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, laying out the vine rows, and installing erosion control measures.

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

a) The site is located in the Lake Hennessey Watershed.

b) The elevations in the vineyard area range from approximately 540 to 620 feet above mean sea level per topographic mapping. Ground slopes within the project boundary range between 10 and 23 percent. There are small pockets of areas with slope over 30% which total approximately 0.2 acres; please see Sheet 1 for the locations.

c) Topographic mapping was provided by Michael W. Brooks and Associates, flown January 2005.

d) Existing vegetation consists of grass and trees. The area is currently grazed. Please see the biological report prepared by WRA, Inc.

e) Please see Appendix C for Vegetation Retention Calculations based on the existing vegetation and parcel configuration in 1993. This project proposes to retain 87% of the tree canopy and 47% of the brush and open (grass) cover that existed on the property in 1993.

f) There is one residential structure and several appurtenant structures on the property. Please see Cultural Resources Reconnaissance prepared by Flaherty Cultural Resource Services dated June 27, 2017.

g) The entire property is currently deer fenced. No additional deer fence is proposed.

h) A site visit of the property was performed by Jim Bushey and Annalee Sanborn of PPI Engineering on Tuesday, June 20, 2017 to evaluate the vineyard development area and to collect photographic documentation. Photographs of pre-project conditions can be found in Appendix A.

Additional site visits were performed by PPI Engineering staff from 2017 to 2019.

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.

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

a) The proposed water source is an existing groundwater well. Please see the Vicinity Map for the location. Please see the WAA prepared by OEI.

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

a) The USDA – Web Soil Survey maps the soil within the project boundary as Sobrante Loam with 30 to 50 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 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 29, 2018.

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 September 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 8 pounds per acre, Zorro Fescue at 12 pounds per acre, and Crimson Clover at 6 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 September 15. The permanent seed mix will be seeded prior to September 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 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 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 September 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 that 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 6 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 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 September 1
  - 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 Memo prepared by PPI Engineering dated October 29, 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.
September 1:	All tillage and erosion control completed.
September 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 September 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 $5,000 per acre.

12. Additional Environmental Commitments: Excerpts from the Biological Resources Reconnaissance Survey Report (WRA, August 2018) & the Response to Comments Memo (WRA, February 13, 2019)

All Bird species (including non-special-status): A variety of native bird species with baseline protections under the MBTA and CFGC may use vegetation within the Project Areas for nesting. Therefore, it is recommended that tree and vegetation removal occurs from September 1 to January 31, outside of the general bird nesting season. If tree/vegetation removal during this time is not feasible, a pre-construction nesting bird survey conducted by a qualified biologist no more than 14 days prior to the initiation of tree removal or ground disturbance is recommended. If active bird nests are found during the survey, an appropriate no-disturbance buffer should be established by the qualified biologist. Once it is determined that the young have fledged (let the nest) or the nest otherwise becomes inactive (e.g., due to predation), the buffer may be lifted and work may be initiated within the buffer.

Bat species: Removal and trimming of trees during the bat maternity season (generally, April through August) could impact bat breeding and potentially result in the take of bats. WRA recommends that any tree removal be performed from September through March, outside of the general bat maternity season. If tree removal during this period is not feasible, it is recommended that a bat habitat assessment and survey effort (the latter if needed) be performed by a qualified biologist no more than 14 days prior to tree removal to determine if bats are present in the trees. If no suitable roosting habitat for bats is found, then no further study is warranted. If special-status bat species or bat maternity roosts are detected, then roost trees should avoided until the end of the maternity roosting season. If this avoidance is not feasible, appropriate species- and roost- specific mitigation measures should be developed in consultation with CDFW. Irrespective of time of year, all felled trees should remain on the ground for at least 24 hours prior to chipping, off-site removal, or other processing to allow any bats present within the felled trees to escape.

Most of the trees scheduled for removal have no potential to support bats. The majority of trees are small diameter blue Oak (Quercus douglasii) or coast live oak (Quercus agrifolia) which are healthy and did not provide suitable mass to maintain stable thermal conditions required by roosting bats. Several hollow stumps were also investigated but were deemed unsuitable for bats due to evidence of occupancy of bat predators (i.e., mesocarnivores).

One large snag located in the eastern portion of the Project Area has the potential to support roosting bats. The snag has a large cavity which was investigated to the extent practical; however, there was no way to fully investigate the upper sections of the trunk which contained fissures and basal cavities that appear to be suitable for bat roosting. The snag is featured in Attachment B.

Recommendations

Because work to fell the snag is proposed to begin outside of the maternity season, and the snag appears to support suitable features for bat roosting we recommend the project proceed in the following fashion

The snag should be removed outside of the maternity roosting season using a two-phase cut system described below.

- Day 1, Any surrounding trees should be removed, and any external limbs can also be removed. If any exfoliating bark has developed it may also be partially peeled off to cause disturbance to the snag.
- Day 2, The snag should be felled in sections and lowered to the ground under the observation of a bat biologist. The sections should be allowed to lie for 24 hours before being processed or off-hauled.

APPENDIX A

PHOTOGRAPHIC DOCUMENTATION

Photo 1 8/2/2018

Photo 2 8/2/2018

APPENDIX B

USLE CALCULATIONS

PPI Engineering

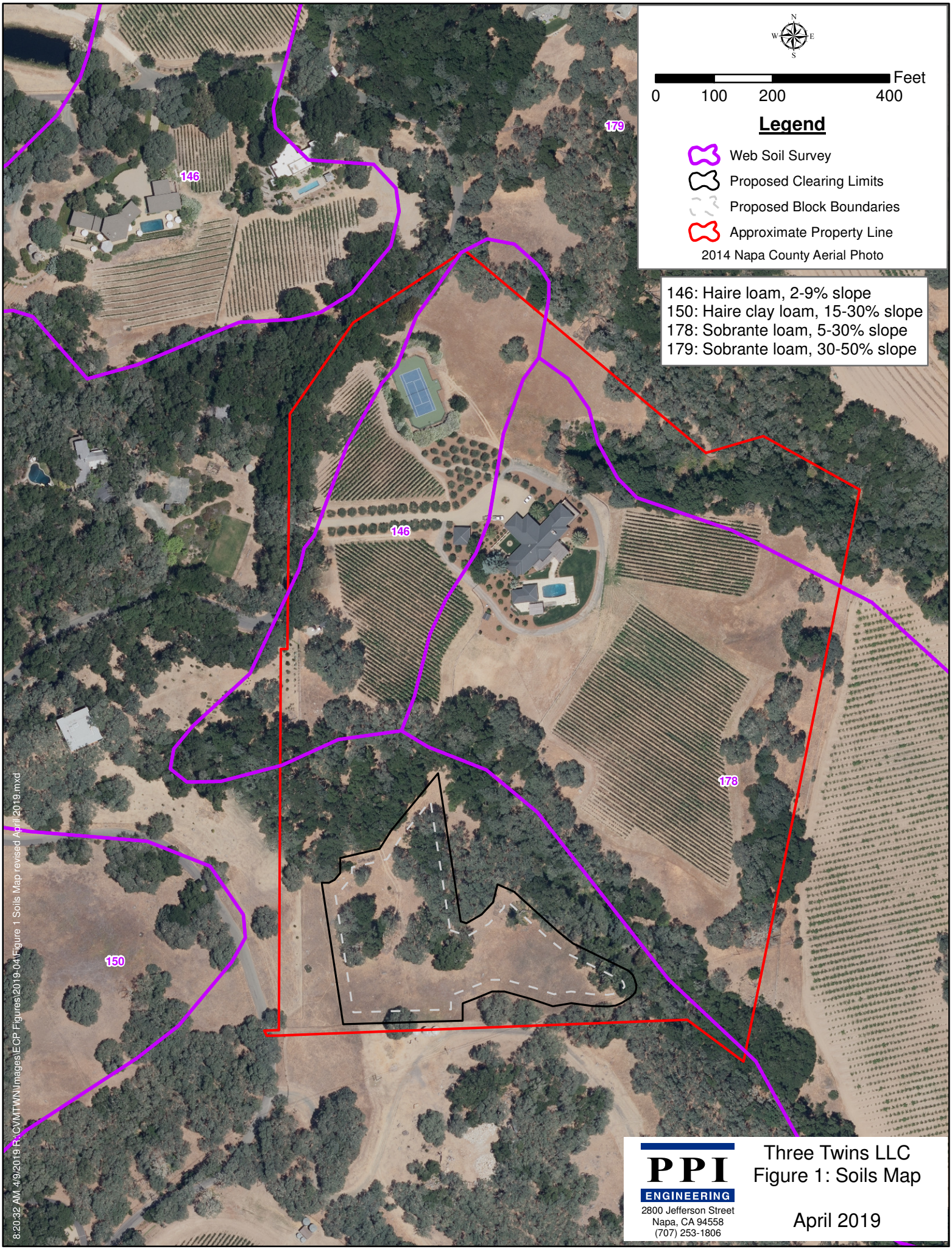
Napa County
Maximum Length of Slope
for a soil loss of 4 tons per acre

NAME: Three Twins DATE: 8/13/18

Cover Type: Permanent Cover Crop
Soil Unit No. (100-182)--- 178 & 179 -K= 0.32
Soil Name Sobrante -R= 65
-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	1,148,186	2,486,447	6,810,438	29,064,436	104,183,612	402,503,525
	4	19,822	35,385	75,338	223,694	582,751	1,605,874
	6	2,437	3,875	7,093	16,941	36,443	81,996
	8	1,122	1,784	3,266	7,801	16,781	37,758
	10	599	952	1,743	4,162	8,953	20,144
	12	362	576	1,055	2,519	5,418	12,191
	14	238	378	692	1,652	3,553	7,995
	16	165	263	481	1,149	2,472	5,562
	18	120	191	350	837	1,800	4,050
	20	91	145	265	632	1,359	3,058
	22	71	112	206	491	1,057	2,378
	24	56	90	164	391	842	1,895
	26	46	73	133	319	685	1,542
	28	38	60	110	264	568	1,277
	30	32	51	93	222	477	1,074
	32	27	43	79	189	407	916
	34	24	37	68	163	351	791
	36	21	33	60	143	307	690
	38	18	29	53	126	270	608
	40	16	26	47	112	240	540
	42	14	23	42	100	215	484
	44	13	21	38	90	194	437
	46	12	19	34	82	176	397
	48	11	17	31	75	161	363
	50	10	16	29	69	148	333

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



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Three Twins LLC
Figure 1: Soils Map

April 2019

APPENDIX C

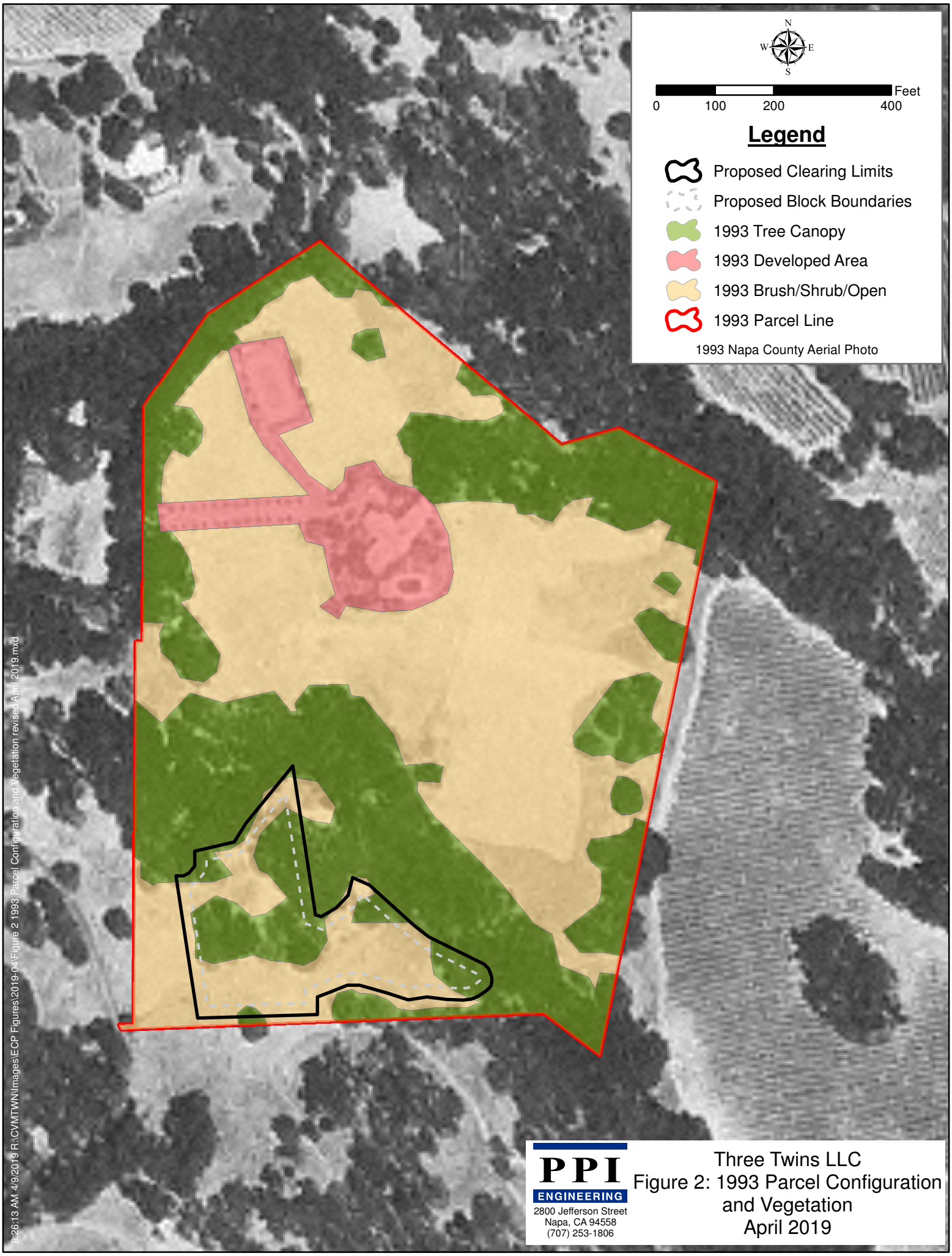
VEGETATION RETENTION CALCULATIONS

THREE TWINS LLC
VEGETATION RETENTION CALCULATIONS
BASED ON 1993 PARCELS AND VEGETATION

Parcel	Acres
025-380-017	23.5
Proposed Vineyard Area	2.5
Developed in 1993	1.8
Post-1993 Development Area	5.3

	Tree Canopy Cover	Brush/ Shrub/Open Cover
Existing in 1993	9.4	12.4
Allowed to be Removed (acres)	3.8	7.4
Acres Removed Post-1993 Development (acres)	0.1	5.2
Proposed to be Removed (acres)	1.1	1.4
Proposed to be Retained (percent)	87%	47%

Note: some rounding may occur



8:26:13 AM 4/9/2019 R:\CVM\TWN\Images\ECP Figures\2019-04\Figure 2 1993 Parcel Configuration and Vegetation revised April 2019.mxd

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Three Twins LLC
Figure 2: 1993 Parcel Configuration and Vegetation
April 2019

APPENDIX D

ROAD PLAN

THREE TWINS LLC
704 GREENFIELD RD

EROSION CONTROL PLAN

R O A D P L A N

SECTION 1 - INTRODUCTION

Road systems can be a significant but easily controlled source of sediment production and delivery to stream channels (Napolitano et. al. 2009). The recommendations contained within this Road Plan are consistent with recent road management plans prepared by the Napa County Resource Conservation District (RCD) and with guidance presented within the Mendocino County RCD's *Forest and Ranch Roads Handbook* (Weaver, W.E., and Hagans, D.K. 2014).

The Three Twins property contains an existing road network of graveled and dirt roads and vegetated vineyard avenues throughout the property at Assessor's Parcel Number (APN) 025-380-017. This plan addresses road improvements associated with the proposed new vineyard blocks requested in this Track I Erosion Control Plan (ECP).

The main driveway that provides access from Greenfield Road to the existing vineyard blocks and residence is shown as "Existing Graveled Roads" on Figure 3 of this ECP. The graveled roads are in excellent condition and will continue to be maintained in their current state, and no changes or improvements to the graveled roads are required as a result of this project. An existing dirt road provides the primary access point to the proposed vineyard blocks. This existing dirt road is used during ongoing grazing operations on the property. Section 2 below discusses proposed improvements and recommendations to ensure that the increased usage of this existing road does not increase erosion or sedimentation to local waterways.

SECTION 2 - PROPOSED IMPROVEMENTS

2.1 VEGETATED ROAD

In addition to the graveled primary roads on the property, there are also several dirt roads that provide access to the vineyard blocks for farming equipment and workers. The dirt road providing primary access to the proposed vineyard block will be vegetated. Per the *Forest and Ranch Roads Handbook*, "[v]egetation protects erodible soil from raindrop impact and soil particle detachment, increases surface roughness and reduces surface runoff velocity."

2.2 PROPOSED WATERBARS

Waterbars are recommended in two locations uphill of the proposed vineyard block as shown on Figure 3. Waterbars function similar to rolling dips in that they direct water off of a road surface where it can slow and disperse concentrated flow. The waterbar and specifications are shown in

Detail 1 on page 4 of this Road Plan. Waterbars typically require annual installation prior to the rainy season (usually post-harvest to minimize traffic damage and maintenance).

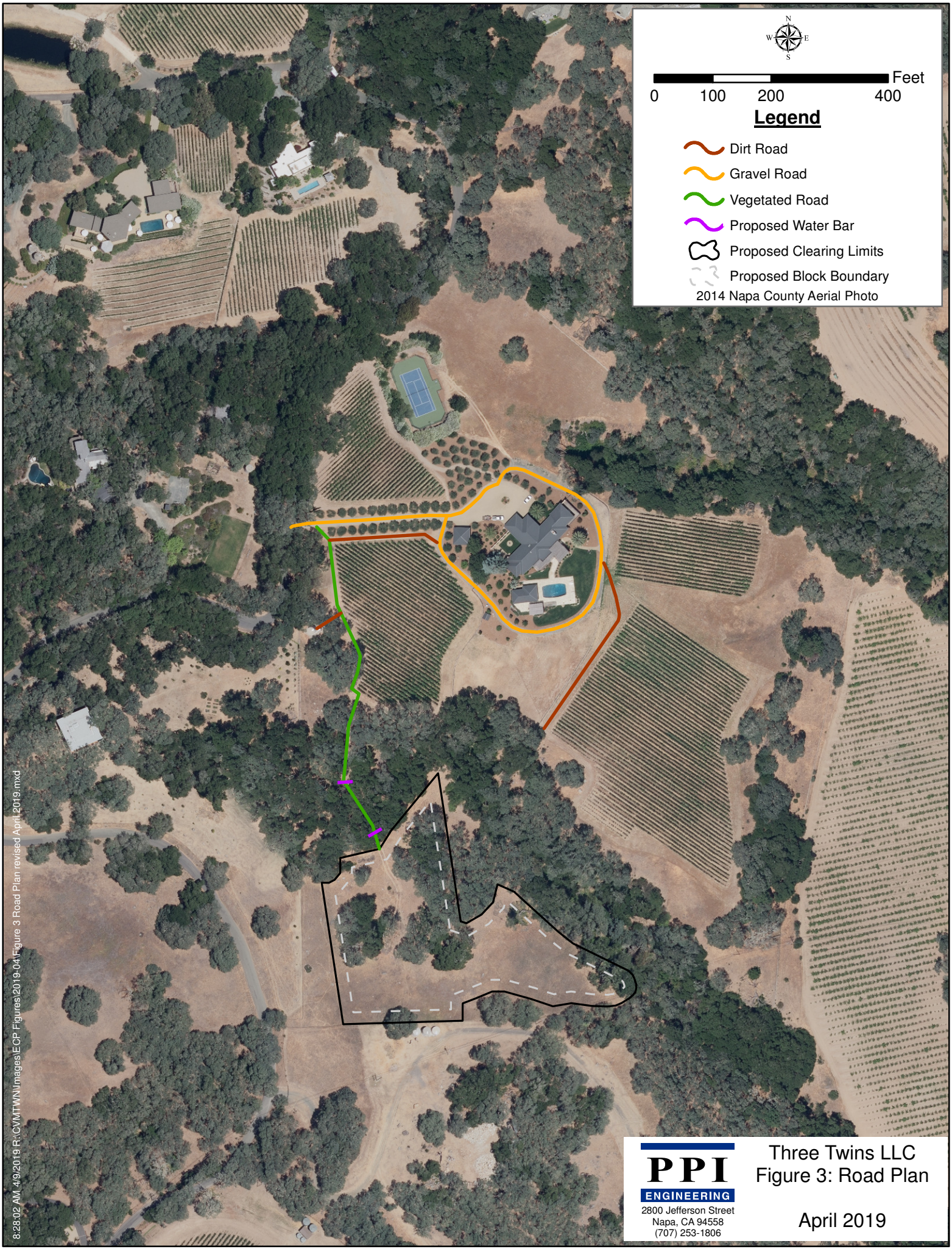
SECTION 3 - CONCLUSIONS

Road-related sediment can be prevented from entering the stream system through a variety of best management practices and erosion prevention treatments that generally involve dispersing road runoff and disconnecting road surface and ditch drainage. The recommendations in this Road Plan are consistent with guidance from the Napa County RCD and the Handbook for Forest and Ranch Roads and will ensure that the existing road network will be upgraded as necessary to minimize potential for erosion and sediment delivery to local drainages.

SECTION 4 - REFERENCES

Napolitano, Potter, Whyte 2009. *Napa River Sediment TMDL and Habitat Enhancement Plan.* California Regional Water Quality Control Board, San Francisco Bay Region.

Weaver, W.E., and Hagans, D.K., 2014, *Handbook for Forest and Ranch Roads*: A Guide for Planning, Designing, Constructing, Reconstructing, Maintaining and Closing Wildland Roads: Ukiah, CA, Mendocino County Resource Conservation District.



8:28:02 AM 4/9/2019 R:\CVMTWN\Images\ECP Figures\2019-04\Figure 3 Road Plan revised April 2019.mxd

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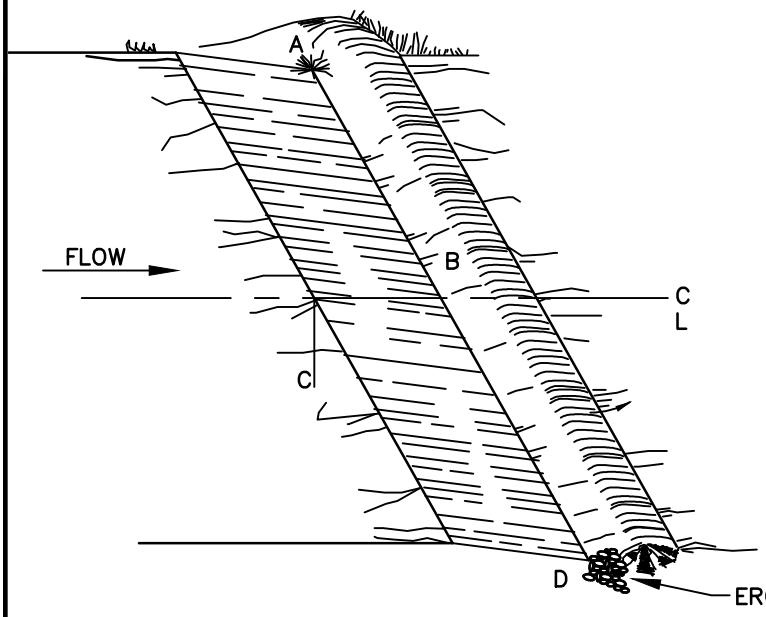
Three Twins LLC
Figure 3: Road Plan

April 2019



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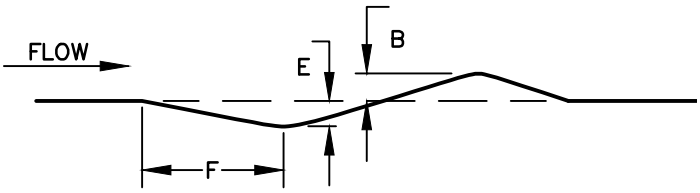

CROSS SECTION

NOTES:

1. SPECIFICATIONS ARE AVERAGE AND MAY BE ADJUSTED TO CONDITIONS AS DIRECTED IN FIELD BY THE ENGINEER.
2. A, TIE–IN TO BANK.
3. B, CROSS DRAIN BERM HEIGHT 4 TO 6 INCHES ABOVE THE ROAD.
4. C, ANGLE DRAIN 30 TO 45 DEGREES DOWNGRADE WITH ROAD CENTERLINE.
5. D, DRAIN OUTLET CUT 8 TO 16 INCHES INTO ROADBED.
6. E, DEPTH 4 TO 6 INCHES.
7. F, 3 TO 4 FEET.

WATERBAR

N.T.S.

PPI ENGINEERING

JOB NO: 11710301
DWG. NO: 11710301B
SCALE: NTS

THREE TWINS LLC
704 GREENFIELD ROAD
ROAD PLAN
DETAIL, PAGE 4

DESIGN ENGINEER: J BUSHEY
DATE: 4-8-19
SHEET: 4
OF: 4

APPENDIX E

SUPPLEMENTAL INFORMATION

8:30:49 AM 4/9/2019 R:\CVMTWN\Images\ECP Figures\2019-04\Figure 4 Chemical Mixing & Storage Area revised April 2019.mxd

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Three Twins LLC
Figure 4: Chemical Mixing & Storage Location
April 2019

Tag ID	DBH (in)	Species	Tag ID	DBH (in)	Species
2505	17.3	Coast Live Oak	2540	11.7	Coast Live Oak
2506	8.7	Coast Live Oak	2541	18.2	Blue Oak
2507	10.6	Coast Live Oak	2542	11.9	Blue Oak
2508	17.3	Coast Live Oak	2543	13.1	Blue Oak
2509	14.1	Coast Live Oak	2544	11.4	Blue Oak
2510	13	Coast Live Oak	2545	17.2	Coast Live Oak
2511	10.7	Coast Live Oak	2549	6.9	Blue Oak
2512	12.9	Coast Live Oak	2550	7.2	Blue Oak
2513	6.9	Blue Oak	2551	8.5	Blue Oak
2517	7.9	Blue Oak	2552	10.1	Blue Oak
2518	13.6	Coast Live Oak	2553	22.4	Blue Oak
2523	17.7	Blue Oak	2554	15.3	Blue Oak
2526	23.6	Blue Oak	2555	21.6	Blue Oak
2527	10.8	Coast Live Oak	2557	19.8	Blue Oak
2528	23.6	Coast Live Oak	2558	13.4	Blue Oak
2529	19.9	Blue Oak	2559	15.8	Coast Live Oak
2530	17.1	Coast Live Oak	2560	14.5	Blue Oak
2531	22.1	Coast Live Oak	2561	12.8	Blue Oak
2532	17.5	Coast Live Oak	2563	10.6	Blue Oak
2533	16.2	Blue Oak	2564	9.2	Coast Live Oak
2534	21.6	Blue Oak	2565	15.4	Blue Oak
2535	14.5	Blue Oak	2566	10.1	Coast Live Oak
2536	20.3	Blue Oak	2567	10.7	Coast Live Oak
2537	16.3	Blue Oak	2568	7.7	Blue Oak
2538	18.8	Blue Oak	2569	8.7	Blue Oak
2539	21	Blue Oak	2570	11.5	Blue Oak
			2571	16.9	Blue Oak
			2572	14.9	Blue Oak
			2573	15.2	Blue Oak
			2574	6.7	Blue Oak
			2575	13.2	Blue Oak
			2576	16.3	Blue Oak
			2577	31	Blue Oak
			2578	14	Coast Live Oak

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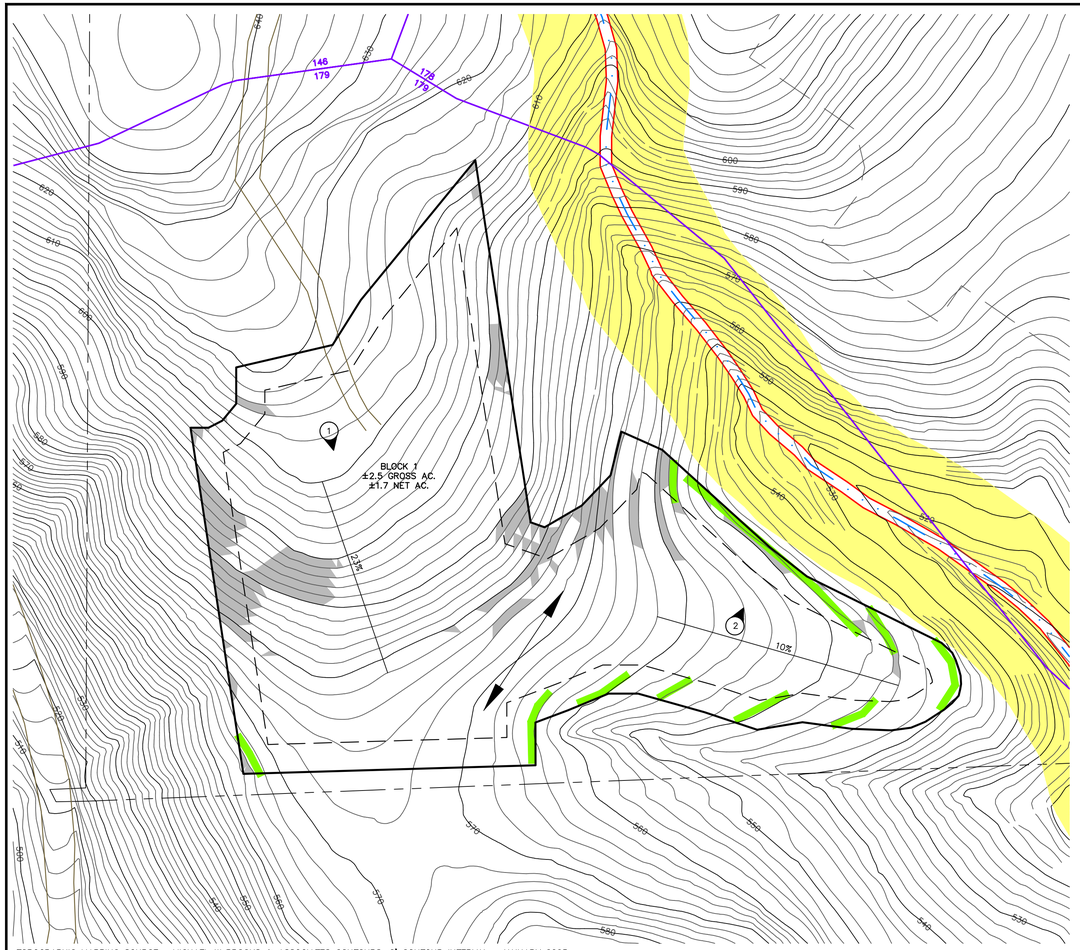
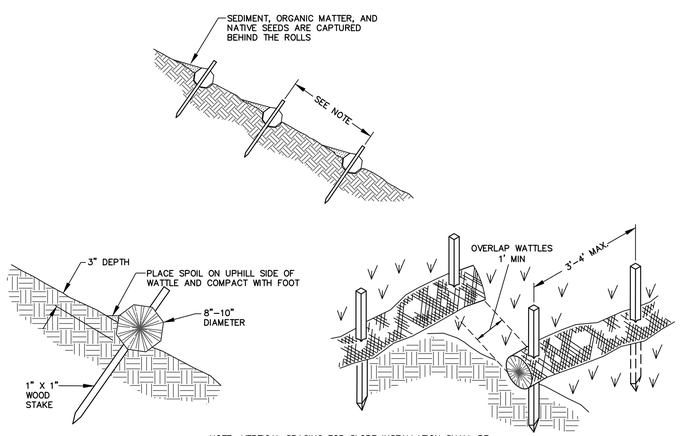
Three Twins LLC
Figure 5: Tree Survey

April 2019



TOPOGRAPHIC MAPPING SOURCE: MICHAEL W BROOKS & ASSOCIATES CONTOURS, 2' CONTOUR INTERVAL. JANUARY 2005.



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.

1/1 STRAW WATTLE INSTALLATION
N.T.S.

GRAPHIC SCALE

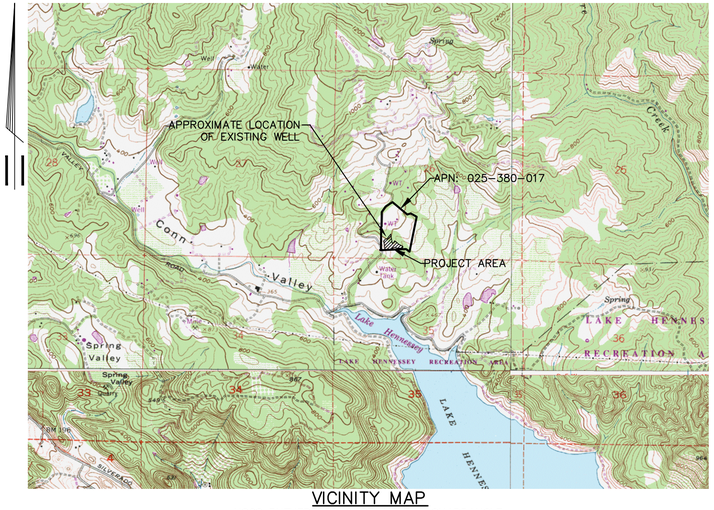
50 0 25 50 100 200
(IN FEET)
1 inch = 50 ft.

LEGEND

- APPROXIMATE PROPERTY LINE LOCATION
- EXISTING VINEYARD AREA
- WATERS OF THE U.S., MAPPED BY WRA
- TOP OF BANK, MAPPED BY WRA
- 50' SETBACK
- EXISTING ROAD
- PROPOSED VINEYARD CLEARING LIMITS
- PROPOSED VINEYARD BLOCK BOUNDARY
- PROPOSED STRAW WATTLE (SEE DETAIL 1, THIS SHEET)
- AREA WHERE GROUND SLOPE IS 30 PERCENT OR GREATER
- PROPOSED VINEROW DIRECTION
- X — PHOTO POINT NUMBER & LOCATION (SEE APPENDIX A)
- X% — AVERAGE SURFACE SLOPE
- 146 / 179 — SOIL TYPE BOUNDARY

USDA SOIL CLASSIFICATIONS:

- 146 — HAIRE LOAM 2–9% SLOPE
- 178 — SOBRANTE LOAM 5–30% SLOPE
- 179 — SOBRANTE LOAM 30–50% SLOPE



VICINITY MAP

USGS RUTHERFORD & ST. HELENA QUADRANGLE
TOWNSHIP 8 N., RANGE 5 W.
SCALE: 1" = ±2000'

NOTES:

1. OWNER: THREE TWINS LLC
   SITE ADDRESS: 704 GREENFIELD ROAD
   APN: 025–380–017
2. ACCESS TO PROJECT IS FROM GREENFIELD 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 POUNDS PER ACRE PRIOR TO SEPTEMBER 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 (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 PRIOR TO SEPTEMBER 15. THE PERMANENT SEED MIX WILL BE SEEDED PRIOR TO SEPTEMBER 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 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.
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 SEPTEMBER 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 THAT 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 6', HOWEVER IN AREAS WHERE CROSS–SLOPE EXCEEDS 15% THE OWNER SHALL INCREASE THE ROW SPACING AS NEEDED TO ENSURE 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. SLOPE CALCULATIONS:
    AVERAGE SLOPE: 17%
14. THE PROJECT IS CURRENTLY DEER FENCED. NO ADDITIONAL DEER FENCE IS NEEDED FOR THE PROPOSED VINEYARD.
15. 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.
16. PROPERTY LINES AS SHOWN ARE APPROXIMATE. OWNER SHALL BE RESPONSIBLE FOR SURVEYING PROPERTY LINE(S) AS NECESSARY PRIOR TO ANY SITE DISTURBANCE.
17. THE OWNER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS.
18. 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.
19. 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.

REV. NO.	DESCRIPTION	BY	DATE
1	THIS DRAWING SUPERSEDES DRAWING 11710301A. ADDED WATERS OF THE U.S., TOP OF BANK AND ASSOCIATED SETBACK.	JCJ	4–8–19

PPI ENGINEERING
2800 JEFFERSON STREET
NAPA, CA 94558
707/253–1806 FAX 707/253–1604

JOB NO: 11710301
DWG. NO: 11710301B

THREE TWINS LLC
704 GREENFIELD ROAD

EROSION CONTROL PLAN

SITE PLAN

DESIGN ENGINEER: J. BUSHEY

SCALE:	DRAWN BY:	DATE:	SHEET:
AS SHOWN	CC	4–8–19	1 OF: 1

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