#### SILVER OAK CELLARS CARMELITE VINEYARD

**EROSION CONTROL PLAN** 



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#### SILVER OAK CELLARS CARMELITE VINEYARD

#### **EROSION CONTROL PLAN**



#### **MARCH 2021**

#### **PREPARED BY:**

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

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#### SILVER OAK CELLARS CARMELITE VINEYARD

#### **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 3.0 net acres (4.3 gross acres) of proposed vineyard on the property located at 20 Mt. Carmel Drive in Oakville. The ranch is located on APN 027-280-006 which consists of approximately 28.17 acres per the Napa County Assessor's Office.
- b) Activities to be accomplished include removing 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 To Kalon Creek Watershed.
- b) The elevations in the vineyard area range from approximately 252 to 362 feet above mean sea level per topographic mapping. Ground slopes within the project boundary range between 12 and 21 percent. There are small pockets of areas with slope over 30% in the vineyard blocks which total approximately 0.5 acres, please see the Site Plan for the locations.
- c) Topographic mapping was provided by PPI Engineering and was completed in March 2020. Supplemental topographic mapping was provided by Napa County.
- d) Existing vegetation consists of grass and trees. The area is currently managed. Please see the biological report prepared by WRA dated December 2020.
- e) Please see Appendix C for Vegetation Retention Calculations to demonstrate compliance with County Code Section 18.108.020(C) (70% Vegetation Retention) and County Code Section 18.108.020(D) (3:1 Tree Preservation). This project proposes to retain 76% of the tree canopy that existed on the property on areas under 50% slope and outside of stream setbacks, exceeding the 70% retention requirement and meeting the 3:1 tree preservation ratio.

- f) There are structures on the property. Please see the cultural resources report prepared by Flaherty Cultural Resource Services dated September 2020.
- g) Please see Figure 4 in Appendix C for the Proposed Deer Fence map. The proposed deer fence includes blocks fenced individually.
- h) Site visits of the property were performed by Jim Bushey and Annalee Sanborn of PPI Engineering on Friday, March 20, 2020 and Tuesday, April 14, 2020 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 of the property were performed by PPI staff throughout the year to further evaluate the vineyard development area.

## 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. Ephemeral drainages are in the vicinity but will not be affected by the project.
- b) All ephemeral or intermittent streams that do not meet the Napa County definition of a stream have been avoided with a minimum 35' buffer in accordance with Napa County Conservation Regulation 18.108.025.
- c) There is an existing network of paved and dirt roads throughout the property. The existing road network is sufficient for access to proposed vineyard blocks. The existing roads shall be maintained and surfaced with crushed rock as needed. Please see Figure 6 in Appendix C for the roads which will be used as primary access to the vineyard blocks. Vineyard Block 2 will utilize an existing paved driveway from Mt. Carmel Road. Access to Block 1 will be from an existing road that connects from Block 2.

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

a) The proposed water source is groundwater. Please see the Site Plan for the location. Please see WAA prepared by Ricard C. Slade & Associates dated March 2021.

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

- a) The USDA SCS Napa County Soil Survey maps the soil within the project boundary as Felton gravelly loams with 30 to 50 percent slopes, and Hambright-rock outcrop with 2 to 30 percent slopes.
- b) Minimal 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' 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 March 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 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 85% percent 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 blocks are 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 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. No strip spraying shall be performed in order to achieve 85% vegetative cover. Spot spraying of contact or systemic herbicides in spring (no earlier than February 15) will be allowed provided the 85% vegetative cover is achieved. If the owner chooses to farm without herbicide, an alternative will be to hand-hoe around the base of the vine. Other methods of vegetation management may be allowed with prior approval from the Engineer and provided the minimum cover requirements are achieved.
- 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 85% percent 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 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.
- 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 mainlines are existing and are located within existing roadways, proposed vineyards and vineyard avenues, and/or within proposed clearing limits. One short section of mainline will be installed in an existing road, see Figure 7. 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 strawmulched 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 March 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 \$500 to \$1,000 per acre.

#### SILVER OAK CELLARS CARMELITE VINEYARD

#### **EROSION CONTROL PLAN**

#### STANDARD PROVISIONS

#### **SECTION 1 - SCOPE OF WORK**

These specifications cover the construction of the erosion control measures for approximately 3.0 acres of vineyard to be developed by Silver Oak Cellars.

The drawing numbered 12011201A 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 Discalced Carmelite Fathers Oakville Inc. The Lessee, Silver Oak Cellars, 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.

#### SILVER OAK CELLARS CARMELITE VINEYARD

#### **EROSION CONTROL PLAN**

#### SPECIAL PROVISIONS

#### **SECTION 1 - TEMPORARY MEASURES**

#### 1.1 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 2 - MAINTENANCE**

#### 2.1 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.

#### 2.2 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.

#### 2.3 DROP INLETS:

Drop inlets are designed with trash racks at the ground surface. Debris shall be removed from trash racks after each storm event or as necessary to ensure a clear flow path for water entering the drop inlet. Damaged trash racks shall be repaired immediately in order to ensure that unacceptable quantities of debris do not enter the storm drainage piping system. Drop inlets shall also be inspected annually for any sediment that may have accumulated within the riser. Sediment shall be removed and spread in a safe location and protected as necessary.

#### 2.4 WATERBARS:

Waterbars, shall be installed if necessary, each fall by the Owner. Waterbars shall be constructed such that water is directed off of vineyard avenues into vegetated vineyard areas. Waterbars shall be located 100' apart maximum on slopes exceeding 15%.

## **APPENDIX** A

## PHOTOGRAPHIC DOCUMENTATION



Photo 1

7/22/2020



Photo 2

7/22/2020

## **APPENDIX B**

USLE CALCULATIONS

#### PPI Engineering

#### Napa County Maximum Length of Slope for a soil loss of 5 tons per acre

NAME: Silver Oak Cellars DATE: 6/2/20

Cover Type: Permanent Cover Crop

Soil Unit No.	(100-182)	136	-K=	0.15
Soil Name	Felton		-R=	75
			-T=	3

Pe	ercent	65%	70%	75%	80%	85%	90%
C	over	Up & Down Hill					
		C= 0.058	C= 0.046	C= 0.034	C= 0.022	C= 0.015	C= 0.010
		P= 1.0					
	2	18,739,031	40,580,183	111,150,121	474,347,663	1,700,334,174	6,569,080,139
	4	160,951	287,322	611,739	1,816,381	4,731,899	13,039,580
	6	13,019	20,698	37,886	90,488	194,650	437,962
	8	5,995	9,531	17,446	41,669	89,634	201,676
	10	3,198	5,085	9,307	22,230	47,819	107,594
	12	1,936	3,077	5,633	13,453	28,939	65,113
Р	14	1,269	2,018	3,694	8,822	18,978	42,701
E	16	883	1,404	2,570	6,138	13,204	29,710
R	18	643	1,022	1,871	4,470	9,615	21,633
С	20	486	772	1,413	3,375	7,259	16,333
Е	22	378	600	1,099	2,624	5,644	12,700
Ν	24	301	478	875	2,091	4,498	10,120
Т	26	245	389	712	1,701	3,660	8,234
	28	203	322	590	1,409	3,031	6,820
S	30	171	271	496	1,186	2,550	5,738
L	32	145	231	423	1,011	2,175	4,893
Ο	34	126	200	365	873	1,877	4,224
Р	36	110	174	319	761	1,638	3,685
E	38	97	153	281	671	1,443	3,247
	40	86	136	250	596	1,283	2,886
	42	77	122	224	534	1,149	2,585
	44	69	110	202	482	1,037	2,333
	46	63	100	183	438	942	2,120
	48	58	92	168	400	861	1,937
	50	53	84	154	368	791	1,781

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: Silver Oak Cellars DATE: 6/2/20

Cover Type: Permanent Cover Crop

Soil Unit No.	(100-182)	151	-K=	0.10
Soil Name	Hambright-R	ock Outcrop	-R=	75
			-T=	1

Pe	ercent	65%	70%	75%	80%	85%	90%
Co	over	Up & Down Hill					
		C= 0.058	C= 0.046	C= 0.034	C= 0.022	C= 0.015	C= 0.010
		P= 1.0					
	2	13,189,317	28,562,037	78,232,125	333,865,812	1,196,766,620	4,623,594,560
	4	123,680	220,788	470,081	1,395,768	3,636,149	10,020,050
	6	10,545	16,765	30,688	73,295	157,666	354,749
	8	4,856	7,720	14,131	33,752	72,603	163,358
	10	2,591	4,119	7,539	18,006	38,734	87,151
[	12	1,568	2,493	4,562	10,897	23,441	52,741
Р	14	1,028	1,635	2,992	7,146	15,372	34,588
Е	16	715	1,137	2,082	4,972	10,696	24,065
R	18	521	828	1,516	3,620	7,788	17,523
С	20	393	625	1,144	2,733	5,880	13,229
Е	22	306	486	890	2,125	4,572	10,287
Ν	24	244	387	709	1,694	3,643	8,197
Т	26	198	315	577	1,378	2,964	6,670
	28	164	261	478	1,141	2,455	5,525
S	30	138	220	402	960	2,066	4,648
L	32	118	187	343	819	1,762	3,964
Ο	34	102	162	296	707	1,521	3,421
Р	36	89	141	258	617	1,327	2,985
E	38	78	124	228	543	1,169	2,630
	40	69	110	202	483	1,039	2,338
Iſ	42	62	99	181	433	931	2,094
	44	56	89	163	390	840	1,890
	46	51	81	149	355	763	1,717
	48	47	74	136	324	697	1,569
	50	43	68	125	298	641	1,442

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

## **APPENDIX C**

## **VEGETATION RETENTION CALCULATIONS**

#### SILVER OAK CELLARS CARMELITE VINEYARD CANOPY CALCULATIONS BASED ON 2016 PARCELS AND VEGETATION

Parcel	Acres
027-280-006	28.17
Proposed Vineyard Area	4.3
Vineyard Under Development	1.4
Developed after 2016	0

	Tree Canopy Cover
Existing in 2016 (acres)	10.6
30% Allowed to be Removed (acres)	3.2
Removed after 2016 (acres)	0.0
Removed for Vineyard Under Development (acres)	0.2
Proposed to be Removed (acres)	1.6
Proposed to be Retained (percent)	83%

Note: some rounding may occur

Note: 2016 parcels were determined by comparing parcel shapfiles obtained from Napa County dated 3-11-2016 and 12-6-2016. No changes in parcel boundary were noted, so the 3-11-2016 shapefile was used in this analysis.

Note: Tree canopy is based on site-specific Biological Study.



#### SILVER OAK CELLARS CARMELITE VINEYARD

#### **3:1 Tree Preservation Calculations**

	APN 027-280-006
Proposed Clearing Limits (acres)	4.3
Vineyard Under Development (acres)	1.4
Trees Existing in 2016 (acres) <sup>1</sup>	10.6
Trees Proposed to be Removed for ECP (acres)	1.6
Trees Proposed to be Removed for Vineyard Under Development (acres)	0.2
Trees on Less than 50% Slopes Outside Setbacks on Parcel (acres)	7.6
Trees Preserved on Less than 50% Slopes and Outside Setbacks (acres)	5.8
Trees Preserved (percent) <sup>2</sup>	76%

Notes:

1. Source: Site-Specific Biological Study

2. 75% retention (or higher) is the same as 3:1 preservation (or higher)

Some rounding may occur



## **APPENDIX D**

SUPPORTING FIGURES













Image: Section of the section of th	NOTES: 1. OWNER: DISCALCED CARN SITE ADDRESS: 20 MT. C APN: 027–280–006 2. ACCESS TO PROJECT IS F 3. EXISTING VEGETATION COI 4. DISTURBED AREAS SHALL OF THE YEAR OF CONSTR 5. PERMANENT COVER CROP A PERMANENT COVER CROP BLA
I inch = 100 fL         Linch = 100 fL         LEGEND         PPI ENGINEERING 10' INDEX CONTOUR         PPI ENGINEERING 2' INTERMEDIATE CONTOUR         NAPA COUNTY 25' INTERMEDIATE CONTOUR         NAPA COUNTY 25' INTERMEDIATE CONTOUR         NAPA COUNTY 5' S' INTERMEDIATE CONTOUR         NAPA COUNTY 6' INTERMEDIATE CONTOUR         NAPA COUNTY 5' S' INTERMEDIATE CONTOUR         VINEYARD UNDER DEVELOPMENT         POTENTIAL WATERS OF THE U.S.         TOP OF BANK, APPROXIMATE         EXISTING FENCE         EXISTING FENCE         EXISTING FENCE         EXISTING WELL, APPROXIMATE LOCATION	NOTES: 1. OWNER: DISCALCED CARM SITE ADDRESS: 20 MT. C APN: 027–280–006 2. ACCESS TO PROJECT IS I 3. EXISTING VEGETATION COI 4. DISTURBED AREAS SHALL OF THE YEAR OF CONSTR 5. PERMANENT COVER CROP A PERMANENT COVER CROP A PERMANENT COVER CROP BLA
Image: Sector	NOTES: 1. OWNER: DISCALCED CARM SITE ADDRESS: 20 MT. C APN: 027-280-006 2. ACCESS TO PROJECT IS I 3. EXISTING VEGETATION COI 4. DISTURBED AREAS SHALL OF THE YEAR OF CONSTR 5. PERMANENT COVER CROP A PERMANENT COVER CROP A PERMANENT COVER CROP DWA BLA
Impersion       PPI ENGINEERING 10' INDEX CONTOUR         PPI ENGINEERING 2' INTERMEDIATE CONTOUR         NAPA COUNTY 25' INDEX CONTOUR         NAPA COUNTY 5' INTERMEDIATE         NEYARD UNDER DEVELOPMENT         POTENTIAL WATERS OF THE U.S.         TOP OF BANK, APPROXIMATE         STETETETETETETETETETETETETETETETETETETE	<ul> <li>SITE ADDRESS: 20 MT. C APN: 027-280-006</li> <li>2. ACCESS TO PROJECT IS I</li> <li>3. EXISTING VEGETATION COI</li> <li>4. DISTURBED AREAS SHALL OF THE YEAR OF CONSTF</li> <li>5. PERMANENT COVER CROP A PERMANENT COVER CROP A PERMANENT COVER CR DWA BLA</li> </ul>
PPI ENGINEERING 2' INTERMEDIATE CONTOUR   NAPA COUNTY 25' INDEX CONTOUR   NAPA COUNTY 5' INTERMEDIATE CONTOUR   NAPA COUNTY 5' INTERMEDIATE CONTOUR   APPROXIMATE PROPERTY LINE LOCATION   REFER   POTENTIAL WATERS OF THE U.S.   TOP OF BANK, APPROXIMATE   STORE	<ol> <li>EXISTING VEGETATION CO</li> <li>DISTURBED AREAS SHALL OF THE YEAR OF CONSTF</li> <li>PERMANENT COVER CROP A PERMANENT COVER CR VAR DWA BLA</li> </ol>
NAPA COUNTY 25' INDEX CONTOUR   NAPA COUNTY 25' INDEX CONTOUR   NAPA COUNTY 5' INTERMEDIATE CONTOUR   APPROXIMATE PROPERTY LINE LOCATION   ITTEES   Image: statisting vineyard area   Image: statisting vineyarea   <	<ol> <li>DISTURBED AREAS SHALL OF THE YEAR OF CONSTF</li> <li>PERMANENT COVER CROP A PERMANENT COVER CR VAR DWA BLA</li> </ol>
NAPA COUNTY 5' INTERMEDIATE CONTOUR   TREES   APPROXIMATE PROPERTY LINE LOCATION   EXISTING VINEYARD AREA   VINEYARD UNDER DEVELOPMENT   POTENTIAL WATERS OF THE U.S.   TOP OF BANK, APPROXIMATE   STORE   EXISTING FENCE   EXISTING BUILDING   EXISTING WELL, APPROXIMATE LOCATION	5. PERMANENT COVER CROF A PERMANENT COVER CR VAF DW/ BLA
TREES        APPROXIMATE PROPERTY LINE LOCATION         EXISTING VINEYARD AREA	BLA
EXISTING VINEYARD AREA     VINEYARD UNDER DEVELOPMENT   POTENTIAL WATERS OF THE U.S.   TOP OF BANK, APPROXIMATE     35' SETBACK     EXISTING ROAD     EXISTING FENCE     EXISTING BUILDING     EXISTING WELL, APPROXIMATE LOCATION	ZOF
VINEYARD UNDER DEVELOPMENT   POTENTIAL WATERS OF THE U.S.   TOP OF BANK, APPROXIMATE   35' SETBACK   ETITETETETETETETETETETETETETETETETETETE	A PRE-APPROVED ALTER
POTENTIAL WATERS OF THE U.S.   TOP OF BANK, APPROXIMATE   35' SETBACK   STITUTION   WETLANDS   EXISTING ROAD   X    X    X   X <tr< th=""><th>THE PERMANENT COVER OUNTIL ADEQUATE COVERA</th></tr<>	THE PERMANENT COVER OUNTIL ADEQUATE COVERA
TOP OF BANK, APPROXIMATE   35' SETBACK   WETLANDS   EXISTING ROAD	THIS OPTION IS USED, SE MAY BE DISKED EACH SF
35' SETBACK   Image: Set Back   Image: Set Back </th <th>PERMANENT SEED MIX WI</th>	PERMANENT SEED MIX WI
WETLANDS   EXISTING ROAD	OF CONTACT OR SYSTEMI TO FARM WITHOUT HERBI PRIOR APPROVAL FROM
EXISTING ROAD	8. FERTILIZER SHALL BE AP ACHIEVED. SITE-SPECIFI
	9. THE VINEYARD AVENUES AVENUES SHALL BE SEED WILL BE MANAGED FACH
EXISTING BUILDING EXISTING WELL, APPROXIMATE LOCATION	ACHIEVED. SEEDING AND
EXISTING WELL, APPROXIMATE LOCATION	NEEDED TO ENSURE THEF AND TO MINIMIZE EROSIO
	11. THE OWNER HAS THE FRE PROPOSED VINEROW DIRE
EXISTING SURFACE DRAINAGE LINE, ASSUMED LOCATION	13. <u>SLOPE CALCULATIONS:</u> AVERAGE SLOPE <sup>1</sup> (21% +
- · EXISTING DITCH, APPROXIMATE LOCATION	14. THE PROJECT CURRENTLY
O EXISTING DROP INLET, APPROXIMATE LOCATION	15. REQUESTS FOR FURTHER NAPA, (707) 253–1806.
EXISTING DROP INLET, APPROXIMATE LOCATION	16. PROPERTY LINES AS SHO
EXISTING JUNCTION BOX, APPROXIMATE LOCATION	18. AT LEAST 48 HOURS PRI IT IS THE OWNER'S RESP THEREFORE MAY NOT BE
EXISTING CULVERT, APPROXIMATE LOCATION	19. IT IS THE OWNER'S RESP FRAMES SPECIFIED FOR 1
PROPOSED VINEYARD CLEARING LIMITS	SERVICES DEPARTMENT. CONSTRUCTION IN ORDER MUST BE NOTIFIED AT LE
PROPOSED VINEYARD BLOCK BOUNDARY	20. THE EXISTING WATER CRO FACILITATE CROSSING. T
PROPOSED STRAW WATTLE (SEE DETAIL 1, THIS SHEET)	TAKEN TO NOT DISTURB
PROPOSED VINEROW DIRECTION	
AREA WHERE GROUND SLOPE IS 30 PERCENT OR GREATER	
PHOTO POINT NUMBER & LOCATION (SEE APPENDIX A)	
AVERAGE SURFACE SLOPE	
151 SOIL TYPE BOUNDARY	
USDA SOIL CLASSIFICATIONS:	
123 COOMBS GRAVELLY LOAM 2-5% SLOPES	
136 FELTON GRAVELLY LOAM 30-50% SLOPES	

HAMBRIGHT-ROCK OUTCROP 2-30% SLOPES

YOLO LOAM 0-15% SLOPE



MELITE FATHERS OAKVILLE INC CARMEL DRIVE, OAKVILLE

# $\frac{\text{VICINITY MAP}}{\text{USGS RUTHERFORD QUADRANGLE}}$ $\frac{\text{TOWNSHIP 7 N., RANGE 5 W.}}{\text{SCALE: 1"} = \pm 2000'}$

FROM MT. CARMEL DRIVE. THE SITE IS GATED AND LOCKED. ADMITTANCE IS AVAILABLE UPON REQUEST.

. 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 RUCTION.

IP (NO-TILL): ROP STRATEGY WILL BE UTILIZED. THE PERMANENT COVER CROP WILL BE GENERATED THE FIRST YEAR BY SEEDING WITH THE FOLLOWING MIX: ARIETY RATE (LBS/ACRE)

<u>ETY</u>	<u>R</u> A
RF BARLEY	
NDO BROME	
RO FESCUE	
ISON CLOVER	

RNATIVE SEED MIX MAY BE ALLOWED.

CROP WILL BE MANAGED EACH YEAR SUCH THAT ANY AREAS WHICH HAVE LESS THAN 85% PERCENT VEGETATIVE COVER WILL BE RESEEDED AND MULCHED AGE IS ACHIEVED. THE PERMANENT COVER CROP SHALL BE MOWED ONLY AND NOT DISKED.

TION OF USING A DWARF BARLEY COVER CROP IN THE FIRST THREE YEARS THAT THE BLOCKS ARE PLANTED TO AID WITH VINEYARD ESTABLISHMENT. IF EED 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 PRING AFTER APRIL 1 FOR THE FIRST THREE YEARS. AN ALTERNATIVE COVER CROP SEED MIX MAY BE USED UPON PRIOR APPROVAL. EACH YEAR THE (, 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 LL BE SEEDED PRIOR TO OCTOBER 15 OF THE FOURTH (OR EARLIER) YEAR.

BICIDES WILL BE USED FOR WEED MANAGEMENT. NO STRIP SPRAYING SHALL BE PERFORMED IN ORDER TO ACHIEVE 85% VEGETATIVE COVER. SPOT SPRAYING IC HERBICIDES IN SPRING (NO EARLIER THAN FEBRUARY 15) WILL BE ALLOWED PROVIDED THE 85% VEGETATIVE COVER IS ACHIEVED. IF THE OWNER CHOOSES CIDE, AN ALTERNATIVE WILL BE TO HAND-HOE AROUND THE BASE OF THE VINE. OTHER METHODS OF VEGETATION MANAGEMENT MAY BE ALLOWED WITH THE ENGINEER AND PROVIDED THE MINIMUM COVER REQUIREMENTS ARE ACHIEVED.

PPLIED AS NECESSARY BY VINEYARD MANAGEMENT PERSONNEL FOR BOTH THE VINEYARD AND TO ENSURE SPECIFIED PERCENT VEGETATIVE COVER CROP IS IC SOIL ANALYSIS SHOULD BE PERFORMED.

SHALL BE MOWED ONLY AND SHALL NOT BE DISKED. UNLESS OTHERWISE NOTED, ALL AVENUES SHALL CONFORM TO THE NATURAL GRADE. VINEYARD DED AND MULCHED PRIOR TO OCTOBER 15 OF THE YEAR OF CONSTRUCTION AND IN SUBSEQUENT YEARS IN BARE OR DISTURBED AREAS. THE COVER CROP YEAR SUCH THAT ANY AVENUES WHICH HAVE LESS THAN 85% VEGETATIVE COVER WILL BE RESEEDED AND MULCHED UNTIL ADEQUATE COVERAGE IS MULCHING IS NOT REQUIRED ON AVENUES AND ROADS PROPERLY SURFACED WITH GRAVEL.

D 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 RE IS ADEQUATE ROOM FOR EQUIPMENT. WIDTH OF TILLAGE EQUIPMENT SHALL BE NO MORE THAN 75% OF ROW WIDTH TO ALLOW FOR BENCH FORMATION

REEDOM TO FURTHER SUBDIVIDE VINEYARD BLOCKS WITHIN THE FOOTPRINT OF THE PROPOSED VINEYARD FOR IRRIGATION AND VITICULTURE PURPOSES. THE ECTIONS SHALL NOT BE ALTERED WITHOUT AN APPROVED MODIFICATION FROM NAPA COUNTY. EXISTING WELL, THE PROPOSED WATER SOURCE, IS SHOWN ON THE SITE PLAN.

· 21% + 12% + 17%) / 4 = 18%

© 2

Y HAS NO DEER FENCE. SEE APPENDIX C FOR THE PROPOSED DEER FENCE MAP.

INFORMATION, CLARIFICATION OF WORK TO BE DONE, OR INSPECTION INFORMATION CAN BE MADE TO JIM BUSHEY OR MATT BUENO AT PPI ENGINEERING IN

OWN ARE APPROXIMATE. OWNER SHALL BE RESPONSIBLE FOR SURVEYING PROPERTY LINE(S) AS NECESSARY PRIOR TO ANY SITE DISTURBANCE.

ESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS.

IOR TO EXCAVATING, THE CONTRACTOR SHALL CALL UNDERGROUND SERVICES ALERT (U.S.A.) AT 1-800-642-2444 IN ORDER TO LOCATE EXISTING UTILITIES. PONSIBILITY TO LOCATE ANY ADDITIONAL UNDERGROUND UTILITIES THAT MAY HAVE BEEN INSTALLED "IN-HOUSE" OR BY PRIVATE CONTRACTORS AND E LOCATED THROUGH UNDERGROUND SERVICE ALERT.

PONSIBILITY TO INSTALL ALL STRUCTURAL MEASURES AS SHOWN ON THE SITE PLAN AND DETAILS AND AS DESCRIBED IN THE SPECIFICATIONS WITHIN THE TIME THIS PROJECT. ANY DEVIATION FROM THESE PLANS MUST BE REVIEWED AND APPROVED BY NAPA COUNTY PLANNING, BUILDING AND ENVIRONMENTAL IT IS THE OWNER'S RESPONSIBILITY TO INITIATE THIS MODIFICATION PROCESS. PPI ENGINEERING MUST BE NOTIFIED AT LEAST 48 HOURS IN ADVANCE OF R TO SCHEDULE A PRE-CONSTRUCTION MEETING WITH THE OWNER/MANAGER AND CONTRACTOR(S). FOR ONGOING MULTI-YEAR PROJECTS PPI ENGINEERING EAST 48 HOURS IN ADVANCE OF RESUMING CONSTRUCTION EACH YEAR.

OSSING SHALL BE PROTECTED AGAINST POSSIBLE DAMAGE FROM HEAVY EQUIPMENT DURING CONSTRUCTION BY USING TRENCH PLATES OR TIRES TO TRENCH PLATES OR TIRES SHALL TEMPORARILY BE PLACED OVER CROSSING TO ALLOW HEAVY EQUIPMENT TO CROSS DURING DEVELOPMENT. CARE SHALL BE EXISTING VEGETATION IN THE VICINITY AND PLATES/TIRES MUST BE REMOVED IMMEDIATELY AFTER CROSSING.

State					
No. 49931 EXPIRES: 9-30-22 Civil VIE OF CALLFORM	SI C,	LVER OAK ARMELITE V	CELLARS /INEYARD		
	ERC	SION CONT	TROL PLAN		
		SITE PL	_AN		
2800 JEFFERSON STREET NAPA, CA 94558 707/253–1806 FAX 707/253–1604	DESIGN ENGINEER: J.	BUSHEY, M. BUEN	10		
JOB NO: 12011201 D21 PPI ENGINEERING, INC. DWG. NO: 12011201A	scale: AS SHOWN	DRAWN BY: JCJ	DATE: 3-31-21	SHEET: OF:	1 1