

**NARRATIVE SUPPLEMENT TO THE TRACK I VINEYARD EROSION CONTROL PLAN
FOR MILLER VINEYARD
3906 SILVERADO TRAIL, NAPA COUNTY, CALIFORNIA
(APN 021-030-006)**

- 1. The nature and purpose of all/any land clearing, grading or earthmoving activity, the amount of cut & fill, the location of spoils storage and disposal area, the total number of acres of grading involved including but not limited to roads, vineyard avenues, trenching for irrigation or pipes, reservoirs, wells, water tanks, septic systems, etc. Indicate the areas of land clearing, grading or earthmoving activity that will occur on 30% or greater slopes. (Note: slopes shall be calculated in whole percentages)**

The purpose of this erosion control plan is to provide construction plans, specifications, and erosion and sediment mitigation measures for the land preparation and planting of 4.6± acres of new vineyard located at 3906 Silverado Trail, Napa County, California (APN 021-030-006). The 27.76± acre parcel is located on the east side of Silverado Trail between Bale Lane and Larkmead Lane (see location map and site plan on the Erosion Control Plan prepared by Bartelt Engineering).

The Track I vineyard planting will occur in one (1) phase. The vineyard planting will consist of developing and planting Vineyard Blocks B1, B2, and B3, having of a disturbed area of 6.0± acres as shown on the Erosion Control plan prepared by Bartelt Engineering (Erosion Control Plan). The Track I plan proposes the continued operation of existing Vineyard Block A, 1.0± acres, that was installed without an approved Erosion Control Plan sometime around the summer of 2009, as shown on Google Earth's Historical Imagery. After proposed Vineyard Blocks B1, B2, and B3 are planted, the subject parcel will have a cumulative area of 5.6± acres of planted vineyard.

The vineyard blocks proposed for planting are located on the parcel (APN 021-030-006). See the Erosion Control Plan for an overall site plan and vineyard block locations. Land disturbing activity will include ripping and discing of the soil and planting of Vineyard Block(s) B1, B2, and B3. The vines will be planted with seven (7) foot vinerow spacing and four (4) foot spacing between vines. The vinerows will have various orientations based on the terrain with each block planted generally perpendicular to contour (up and down hill direction). Grading will include minor cuts and fills for land smoothing only. Rock spoils generated as a result of land disturbing activity will be used onsite as part of the erosion control measures.

2. **Comprehensive description of existing site conditions, including topography, vegetation (including under-story and canopy cover) and soils. Provide extent of tree cover canopy covered and shrub and brush without a tree canopy covered areas in acres for each parcel. Identify and indicate the project boundaries in watershed, including municipal watershed, and in the water deficient area. The plan preparer is required to visit the site and the narrative must include the date, purpose and persons making each visit. The description shall verify the source or validity of the topographic map. Wide angle or panoramic photographs documenting existing site conditions shall be provided. A photo location map indicating the date of the site visit and by whom it was made shall accompany such documentation.**

The subject parcel is located on the easterly side of the Napa Valley northwesterly of St. Helena and approximately 5± miles from the City of Calistoga, CA. More specifically, the parcel lies east of Silverado Trail between Bale Lane and Larkmead Lane. The parcel is surrounded by existing vineyards, woodlands, and grasslands. An unnamed ephemeral stream is located on the westerly side of the subject parcel and runs in a north and south direction towards the Napa River. The proposed vineyards blocks are located within the Napa River – Bale Mill Reach and Dutch Henry Creek sub-watersheds of the Napa River Watershed which is not a municipal watershed. The subject parcel is not located within a groundwater deficient area.

The existing ground slopes within the existing and proposed vineyard blocks vary from 13% to 23% with the average slope being approximately 18%. The slopes of the vineyard site have been calculated using a 1"=10' topographic map having a five (5) foot contour interval, prepared by Terra Firma Surveys, Inc., dated October 19, 2020 and contours provided by Napa County Topo Tile J04. Actual slopes may vary throughout the vineyard block. Slope sections at various points throughout the vineyard block are shown on the Erosion Control Plan. Representatives from Bartelt Engineering have visited the site various times and most recently in June 2022, to explore site features. An aerial image of site conditions in 2018 is shown on the Overall Site Plan of the Erosion Control Plan.

The recent 2020 Glass Wildfire destroyed much of the vegetation on the parcel. The pre-Glass Wildfire vegetation within the project area, based on a 2016 photo, consisted of woodland and grasses. The parcel cover was approximately 94% tree canopy (which mostly consisted of Douglas-fir), 1.7% grass, and 4.3% vineyard. Coverage areas are based on the subject parcel size and vegetated mapping provided by Napa County GIS shape files and the project Biologist. Refer to the Erosion Control Plan 70 Percent Vegetation Retention Exhibit prepared by Bartelt Engineering and the Biological Resource Reconnaissance Survey prepared by Forest Ecosystem Management.

The proposed vineyard blocks are not located within an area that has been designated to contain sensitive, rare, threatened, or endangered plant or animal habitats as recorded in Napa County's Environmental Sensitivity Maps. A Biological Resource Reconnaissance Survey dated July 2022 prepared by Forest Ecosystem Management and Salix Natural Resource Management determined that the proposed project would have a less than significant impact on local or regional special-status

species and that no potential habitats for special-status plants or animal species were observed during surveys of the project site and surrounding areas. Cultural Resource Reconnaissance indicates that three (3) recorded Native American archaeological studies, P-28-000681 Holopono #2, P-28-000682 Holopono #1, and P-28-001195 M1, were performed on neighboring parcels between 1980 and 1993. The archaeological survey performed under an Emergency Notice for fire salvage, dated March 15, 2021, by Salix Natural Resource Management, indicates that there were no archaeological or historical sites identified in the proposed vineyard block areas.

- 3. All natural and man-made features on-site including but not limited to streams, watercourses (drainage, channels, etc.), wetlands, riparian habitat, lakes, reservoirs, roads, water tanks, septic systems, reservoirs, ponds, etc. Indicate which ones may be affected by the proposed activity. For blueline and County-definition streams indicate top, toe and slope of bank, channel depth and existing and proposed setback conditions. The entire length of blueline streams and 41 County-named streams on the parcel(s) shall be included in photo documentation (a recent aerial may be included). Provide the name and distance of the nearest blueline and/or County-definitional stream(s) to the project site.**

Man-made features onsite include a residence, barn, pool, vineyard, driveway, other residential structures, water tank, and septic dispersal field. None of these existing features will be affected by the proposed vineyards.

There are no lakes or reservoirs that will be affected by this project. There are no blueline streams that run through the subject vineyard blocks. Dutch Henry Creek is approximately 0.25 miles from the proposed vineyards blocks. An unnamed ephemeral stream is located on the westerly side of the subject parcel and runs in a north and south direction towards the Napa River. The location and route of the ephemeral stream is shown on the Erosion Control Plan. The proposed vineyard development will not alter the existing drainage pattern from what currently exists. All proposed vineyard block configurations are located outside of the required Napa County setbacks to the ephemeral stream and are shown on the Erosion Control Plan.

- 4. Location and source of water for irrigation or other uses. Provide copies of all necessary permits.**

There are three (3) existing groundwater wells located on the parcel. Well #1 (Project Well) will be the primary source of irrigation water for the existing and proposed vineyards. Well(s) #2 and #3 will provide supplemental vineyard irrigation if necessary; however, well(s) #2 and #3 will primarily be used to provide water for residential use.

Refer to the Water Availability Analysis for additional information on existing and proposed water use.

- 5. Soil types/soil series identified in the Soil Conservation Service (SCS) Napa County Soil Survey, or if prepared, a site-specified soils report.**

The following soil types are found on and/or adjacent to the parcel:

- 104 – Bale clay loam, 0 to 2 percent slopes
- 107 – Boomer loam, volcanic bedrock, 2 to 35 percent slopes
- 108 – Boomer gravelly loam, volcanic bedrock, 11 to 43 percent slopes
- 109 – Boomer gravelly loam, volcanic bedrock, 14 to 60 percent slopes

The approximate location of the soil types on the parcel are shown on the Erosion Control Plan.

6. **Critical areas of erosion and slope instability such as gullies, landslides, etc. within or potentially effecting the “development site: (i.e., the area disturbed by the project) or potentially affected by the work to be undertaken within the development site. In the case of landslides a report indicating the probable effects of the planned work on slope stability and erosion levels shall be prepared and submitted by a registered geologist.**

It is our understanding that the development site does not contain landslides or areas susceptible to creep as recorded in the Napa County Environmental Sensitivity Maps/GIS.

7. **Any erosion calculations prepared.**

Universal Soil Loss Equation (USDA, 1987) calculations are attached.

8. **Any/all proposed erosion control methods including, but not limited to:**

The proposed erosion control methods are specified on the Erosion Control Plan and outlined below. The proposed vineyard planting consists primarily of land ripping and discing, constructing a new trellis system, installing a new irrigation system, and planting of the vineyard. Vegetative cover in the form of a grass cover crop will be established and maintained within the vineyard block and on all adjacent disturbed areas. Drainage patterns throughout the vineyard areas will be primarily via sheet flow as the slopes do not warrant excessive surface controls or concentrating flows, except for the upper portion of vineyard Block B2. The Universal Soil Loss Equation has been employed to determine where sheet flow may reach excessive velocities that could cause sheet and rill erosion. On these moderately sloped portions of the project, diversion swales will be used to limit soil loss. In places where flows are concentrated by proposing drainage improvements, such concentrated flows are directed into energy dissipation structures. The runoff from the proposed vineyard blocks will be allowed to drain naturally through natural grass buffers.

- 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.**

Prefabricated silt fences and/or wattle sediment barriers will be installed in the vineyard blocks where sediment barriers are shown on the Erosion Control Plan and where it is deemed appropriate during the course of construction and maintenance. The sediment barriers are intended to provide temporary sediment control while the cover crop is being established. The silt fence and/or wattle sediment barriers will be ground keyed for stability to prevent

the transportation of surface erosion sediment off the hillside and into watercourses. An installation detail for the silt fence and the wattle sediment barrier is shown on the Erosion Control Plan. The Vineyard Manager may select from silt fence or wattle sediment barrier options for sediment barriers.

Erosion control measures will also include the installation of waterbars on all perimeter avenues over 10% as shown on the Erosion Control Plan. The waterbars will be graded at an angle to the perimeter avenue, to channel runoff into graded swales or energy dissipation pads surrounding the vineyard. Water bars are spaced at intervals depending on the steepness of the slope. Construction details for the waterbars are shown on the Erosion Control Plan.

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.

After grading and smoothing has been completed for the vineyard blocks and perimeter avenues, a cover crop will be planted to stabilize the disturbed area during the first winter. It is intended to cultivate every vinerow during the first three (3) years after replanting the vineyard block to encourage proper establishment of the vine root system. During this three (3) year period the vinerows will be annually seeded, fertilized and mulched by October 15th for non-municipal watersheds to establish a cover crop density of 80%.

After the initial three (3) year development period every other vinerow will be cultivated, annually alternating between vinerows.

The tilled and non-tilled areas will be seeded and mulched each fall to stabilize the vineyard block as well as any other erosion prone areas. In addition, seed, mulch, and/or compost will be spread over the area under the vines to achieve maximum coverage of all exposed soil. Seed may be applied by hand, mechanical seed drill, or by mechanical broadcaster. Irrigation of the cover crop is highly recommended prior to the rainy season. The seeding specification for the cover crop is shown on the Erosion Control Plan. This mix of annual grasses should be able to reseed itself under natural conditions. A program of mulching and reseeding disturbed areas every year will assure that appropriate plant residues and densities will be achieved in the vineyard and avenues. The cover crop will be maintained with a surface grazing and/or mowing program to avoid soil disruption which might increase erosion potential. Maximum cover density will be developed and the cover crop will be monitored in late fall and late spring to time the mowing in order to allow for the maturing of seed heads to insure regermination and also to verify stand purity. The grazing, mowing, and/or cultivation program will be the primary defense against non-native weed infestation. In areas where the soil is too poor to adequately support the cover crop, remedial soil amendments such as lime, gypsum, and/or compost will be applied as needed based on laboratory analysis of the soils in the area(s) requiring remedial amendments. In vineyard areas where mechanized methods are used and strip spraying is

determined necessary, a post emergent herbicide application along a 12 inch strip under the trellis will be used to control weeds. Herbicides will not be used in the vineyard for the first two growing seasons of the new vines. Fertilization and mulching of the seed mix will be required and performed as detailed on the Erosion Control Plan.

In the planted vineyard block, alternate rows may be tilled in a given year; every other row will remain non-tilled and will be mowed as needed. Weak cover crop areas will be reseeded prior to October 15th of each year. Shredded cane prunings and/or recently mowed cover crops will be incorporated into the soil using a disc or spader to increase organic matter and work towards building soil humus content. During post-harvest operations the soil will be amended using compost and lime applied to alternating vinerows using a disc or cultivator to nurture the micro-flora, micro-fauna, and replenish nutrients.

All disturbed and/or tilled areas of the vineyard will be seeded by October 15th of each year. Straw bales used for mulch will be stockpiled and tarped at the top of each vineyard block by October 1st of each year. All winterization activities will be complete by October 15th unless the owner/applicant applies for and receives an extension of time in which to complete winterization, in which case seeding and spreading straw mulch on all disturbed areas and those rows that have been tilled in any given year will occur within one (1) week of the end of harvest of the vineyard block or within one (1) week of a total of two (2) inches of rainfall that occurs after October 15th of any given year.

Vineyard avenues, access roads or staging areas that are not rocked will be seeded with a permanent cover crop to achieve densities of 80%.

- 9. Storm water stabilization measures to handle any increased peak rates of runoff from the development of the site that would result in flooding or channel degradation downstream. Include calculations of estimated increased runoff and/or explanation of why an increase is/is not expected.**

Drainage patterns throughout the vineyard areas will be primarily via sheet flow as the slopes do not warrant excessive surface controls or concentrating flows, except for the upper portion of vineyard Block B2 where diversion swales will be used to limit soil loss. Refer to the Universal Soil Loss Equation for Miller Vineyard prepared by Bartelt Engineering for additional information on stormwater runoff and the Erosion Control Plan for the proposed stormwater improvements.

- 10. An implementation schedule showing the following:**

- a) The proposed vegetation clearing, earthmoving/grading and construction/planting schedule.**

April (Groundbreaking Year)

Remove existing vegetation, complete site ripping and grading.

Prior to
October 15 Complete winterization of the site. Apply seed and fertilizer for temporary cover crop over entire project area, including vineyard and adjacent disturbed areas. Install temporary erosion control measures including silt fence and straw wattle sediment barriers.

October to April Maintain erosion and sediment control devices in good working order during rainy season. Inspect after all rain events producing significant runoff. Re-seed temporary cover crop as necessary to maintain appropriate cover over entire project area.

April to October (Planting Year) Complete fine grading. Install any rock-lined vineyard avenues, sediment filters, water bars, and diversion swales. Install irrigation system, layout, and stake vineyard. Install trellis system, and plant rootstock.

Prior to
October 15 Complete winterization of the site. Apply seed and fertilizer for temporary cover crop over entire project area, including vineyard, and adjacent disturbed areas. Install temporary erosion control measures including silt fence and straw wattle sediment barriers.

Winter Maintain erosion and sediment control devices in good working order during rainy season. Inspect after all rain events producing significant runoff. Re-seed temporary cover crop as necessary to maintain appropriate cover over entire project area.

Spring (Following completion of plant)

See annual maintenance schedule

- b) The proposed schedule for winterizing the site (by October 15th of each year the permit is in effect, except in a municipal watershed, where the deadline for completion is September 1st).**

Annual Maintenance

Vineyard Development for the First Three (3) Years:

1. Cultivate every vinerow to properly establish the root system of the young vines.

2. Establish and maintain a cover crop with 80% vegetal coverage during the rainy season (December – March).
3. Mulch vineyard at a rate of 4,000 pounds of straw per acre.

Vineyard Maintenance After Year Three (3) of Development:

1. Mow grass and apply herbicide as necessary. Maintain cover crop coverage during the spring and summer months (April – August) on all vineyard blocks.
2. Establish and maintain a cover crop with the minimum coverage specified for each vineyard block during the rainy season (December – March) on all vineyard blocks.
3. Mulch vineyard at rate of 4,000 pounds of straw per acre.

Farming Activities Scheduled Throughout Calendar Year

January

- a. Maintain and monitor vineyard avenues, storm drain infrastructure, drainage swales, diverting ditches, water bars, and erosion control measures during rain events
- b. Pruning and tying vines
- c. Pruning wounds spray protection

February

- a. Maintain and monitor vineyard avenues, storm drain infrastructure, drainage swales, diverting ditches, water bars, and erosion control measures during rain events
- b. Pruning and tying vines
- c. Pruning wounds spray protection
- d. Shred or burn pruned canes

March

- a. Maintain and monitor vineyard avenues, storm drain infrastructure, drainage swales, diverting ditches, water bars, and erosion control measures during rain events
- b. Finish pruning and tying vines
- c. Pruning wounds spray protection
- d. Shred or burn pruned canes
- e. Mow cover crops in vinerows and avenues in preparation for frost season (first pass)

April

- a. Maintain and monitor vineyard avenues, storm drain infrastructure, drainage swales, diverting ditches, water bars, and erosion control measures during rain events
- b. Spading and/or discing mowed cover crops on alternating vinerows (first pass)
- c. Shoot thinning
- d. Sulfur application to protect against powdery mildew

May

- a. Mow cover crops on alternating vinerows, not cultivated, and vineyard avenues (second pass)
- b. Spading and/or discing on alternating vinerows to pull soil moisture (delay irrigation) and for mechanical control of weeds (second pass)
- c. Sulfur application to protect against powdery mildew
- d. Lateral removal

June

- a. Sulfur application to protect against powdery mildew
- b. Hedging vine canopy

July

- a. Sulfur application to protect against powdery mildew
- b. Leaf removal

August

- a. Pre-harvest cleaning and maintenance of all diversion ditches, drainage swales, and storm drain systems by October 15th for non-municipal watershed

September

- a. Start harvest
- b. Spread and incorporate soil amendments (compost, gypsum, dolomite, etc.) in all vinerows after harvest
- c. Start erosion control measures for vineyard blocks

October

- a. Finish harvest
- b. Spread and incorporate soil amendments (compost, gypsum, dolomite, etc.) in all vinerows after harvest
- c. Seed all vinerows or areas with a weak cover crop by October 15th
- d. Finalize erosion control measures in all blocks and avenues on or before October 15th
- e. Spread straw mulch by October 15th –or–
- f. Spread straw mulch within one (1) week of the end of harvest of the individual vineyard blocks or within one (1) week of a total of two (2) inches of rainfall that occurs after October 15th (with approved extension from Napa County Planning, Building & Environmental Services)

November

- a. Maintain and monitor vineyard avenues, storm drain infrastructure, drainage swales, diverting ditches, water bars, and erosion control measures during rain events

December

- a. Maintain and monitor vineyard avenues, storm drain infrastructure, drainage swales, diverting ditches, water bars, and erosion control measures during rain events

- c) **The proposed schedule for installation of all interim erosion and sediment control measures (including vegetative measures) and the stage of completion of such devices/measures at the end of the grading season (i.e., on October 15th [except in 5 designated municipal watersheds where it is September 1st] of each year the permit will be in effect).**

See sections 10.a and 10.b of this Narrative Supplement above and the Notes on the Erosion Control Plan.

- d) **The proposed schedule for installation of any permanent erosion and sediment control devices required.**

See sections 10.a and 10.b of this Narrative Supplement above and the Notes on the Erosion Control Plan.

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

Typical erosion control cost for a project of this size can range from \$30,000.00 to \$50,000.00 per acre.