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Stormwater Control Plan

Vineyard 29 P20-00062-MOD
Planning Commission Hearing Date November 1, 2023

STORMWATER CONTROL PLAN FOR A REGULATED PROJECT

Prepared for

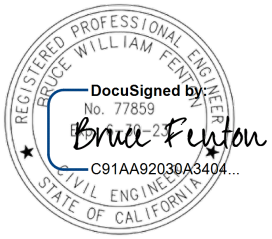
VINEYARD 29
2929 HIGHWAY 29
SAINT HELENA, CALIFORNIA

APN 022-200-027

THIS REPORT WAS PREPARED IN CONJUNCTION WITH THE INSTRUCTIONS, CRITERIA, AND MINIMUM REQUIREMENTS IN THE BAY AREA STORMWATER MANAGEMENT AGENCIES ASSOCIATION'S (BASMAA'S) POST CONSTRUCTION MANUAL.

Property Owner:

Vineyard 29, LLC
Po Box 93
St Helena, CA 94574



Project #4115029.0
December 9, 2021

1515 Fourth Street, Napa, CA 94559 www.rsacivil.com (707) 252-3301 v. (707) 252-4966 f.

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ATTACHMENTS

1. **Vicinity Map, USGS Map, Soils Map, FIRMETTE Map**
2. **Drainage Management Areas Exhibit**

I. Project Data

Table 1. Project Data Form

Project Name/Number	Vineyard 29 (4115029.0)
Application Submittal Date	December 2021
Project Location	2929 Highway 29 St Helena, CA 94574 APN: 022-200-027
Project Phase	Entitlements
Project Type and Description	Revisions to production, visitation and employee numbers. Only construction activity is new driveway entry, and left turn lane widening of Highway 29.
Total Project Site Area (acres)	+/- 0.50 acres
Total New and Replaced Impervious Surface Area	19,246 sq. ft
Total Pre-Project Impervious Surface Area	12,696 sq. ft
Total Post-Project Impervious Surface Area	19,246 sq. ft

II. Setting

II.A. Project Location and Description

The Vineyard 29 project is located at 2929 Highway 29 St. Helena, California. Refer to Attachment 1 for Vicinity Map. The APN is 022-200-027 and the parcel has an area of 24.64 ± acres. The parcel currently has a winery. Vineyards surround the immediate area around the parcel. The neighboring parcels consist of wineries, vineyard agricultural land, and residences. The project will include the construction of a new driveway to the property. Refer to Attachment 2 for Drainage Management Areas Exhibit.

The proposed area to be disturbed is less than 1 acre, so this project will not require a Stormwater Pollution Prevention Plan or Notice of Intent (NOI).

II.B. Existing Site Features and Conditions

The existing site currently has an AC driveway, winery, caves, and surrounding vineyards. Access to the parcel is off of State Highway 29. The site is bounded by wineries, vineyards, and residences.

The predominant soil type in the project area is Aiken Loam, which is of the Hydraulic Soil Group C. The remainder of the parcel surrounding the project site has the soil type Perkins gravelly loam, which is of the Hydraulic Soil Group B. Refer to Attachment 1 for Soils Map. The project area is below the winery site in an area with more gentle slopes toward the adjacent drainage on the property. Stormwater is ultimately conveyed to the Napa River. Refer to Attachment 1 for a Vicinity Map, USGS Site Map, FIRMETTE, and Soil Map, showing the parcel topography, features, and boundary.

II.C. Opportunities and Constraints for Stormwater Control

Stormwater treatment facilities have been integrated into the planning, design, construction, operation, and maintenance of the proposed improvements. The following potential opportunities and constraints were considered in determining the best stormwater control design for this development.

Opportunities for the site include existing vineyard areas.

Constraints include the site location and existing grades.

III. Low Impact Development Design Strategies

III.A. Optimization of Site Layout

1. Limitation of development envelope

   The area of the proposed improvements is in a currently developed area of the site.

2. Preservation of natural drainage features

   Overland flows will be restored to the maximum extent possible.

3. Setbacks from creeks, wetlands, and riparian habitats

   There are no creeks, wetlands, or riparian areas on the property.

4. Minimization of imperviousness

   Walkways and parking areas are designed to the minimum widths necessary without compromising public safety and a walkable environment. Landscaped areas are used instead of decorative impervious areas. Existing trees will be preserved to the maximum extent practicable.

5. Use of drainage as a design element

   Vineyard cover crop will be retained for treatment of overland flow.

III.B. Use of Permeable Pavements

Permeable pavements are not in the scope of this project.

III.C. Dispersal of Runoff to Pervious Areas

Stormwater runoff will be directed to landscaped areas to the maximum extent practicable.

III.D. Stormwater Control Measures

Self-Retaining areas have been incorporated as stormwater control measures.

IV. Documentation of Drainage

IV.A Drainage Management Areas

Table 2. Drainage Management Areas

DMA Name	Pervious Area (square feet)	Impervious Area (square feet)	Total Area (square feet)
DMA-1	19,204	6,550	25,754
DMA-2	13,457	12,696	26,153

Drainage Management Area Descriptions

DMA 1, totaling 25,754 square feet, consists of existing vineyards, and proposed driveway. Runoff from the impervious portions of this area will flow via sheet flow to the pervious area in the vineyard below, which is a self-retaining area 1 in the vineyard. See Stormwater Control Plan Exhibit in Attachment 2.

DMA 2, totaling 26,153 square feet, consists of the proposed left turn lane widening areas. Runoff from this area will sheet flow to pervious landscape areas to the maximum extent practicable. See Stormwater Control Plan Exhibit in Attachment 2.

IV.B. Tabulation and Sizing Calculations

Table 3. Information Summary for Bioretention Facility Design

DMA	Total Project Area (Square Feet)

This site does not contain any Bioretention Areas.

Table 4. Self-Treating Areas

DMA Name	Area (square feet)

This site does not contain any Self-Treating Areas.

Table 5. Self-Retaining Areas

DMA Name	Area (square feet)
SRA-1	19,204
SRA-2	13,457

Table 6. Areas Draining to Self-Retaining Areas

DMA Name	Area (square feet)	Post-project surface type	Runoff factor	Product (Area x runoff factor) [A]	Receiving self-retaining DMA	Receiving self-retaining DMA Area (square feet) [B]	Ratio [A]/[B]
$DMA\text{-}1_{impv}$	6,550	Paved	1	6,550	SRA-1	19,204	.34
$DMA\text{-}2_{impv}$	12,696	Paved	1	12,696	SRA-2	13,457	.94

Table 7. Areas Draining to Bioretention Facilities

DMA Name	DMA Area (Square Feet)	Post-project surface type	DMA Runoff Factor	DMA Area x Runoff Factor	Facility Name		
					Bioretention Facility 1		
					Sizing Factor	Minimum Facility size	Proposed Facility
Total							

This site does not contain any Bioretention Areas.

V. Source Control Measures

V.A. Site activities and potential sources of pollutants

The site activities and potential sources of pollutants for the Vineyard 29 Winery project are listed in Table 8, below.

Table 8. Control Table

Potential Sources of Runoff Pollutants	Permanent Source Control BMPs	Operational Source Control BMPs
A. On-site storm drain inlets (unauthorized non-stormwater discharges and accidental spills or leaks)	▪ Mark all inlets with the words "No Dumping! Flows to River" or similar.	▪ Maintain and periodically repaint or replace inlet markings. ▪ Provide stormwater pollution prevention information to new site owners, lessees, or operators. ▪ See applicable operational BMPs in Fact Sheet SC-74, "Drainage System Maintenance." ▪ Include the following in lease agreements: "Tenant shall not allow anyone to discharge anything to storm drains or to store or deposit materials so as to create a potential discharge to storm drains."
B. Interior floor drains and elevator shaft sump pumps	N/A	N/A
C. Interior parking garages	N/A	N/A
D_1. Need for future indoor & structural pest control	▪ Building design shall incorporate features that discourage entry of pests.	▪ Provide Integrated Pest Management information to owners, lessees, and operators.
D_2. Landscape / outdoor pesticide use / building and grounds maintenance	▪ Final landscape plans will accomplish all of the following: ▪ Preserve existing native trees, shrubs, and ground cover to the maximum extent possible. ▪ Minimize irrigation and runoff, to promote surface infiltration where appropriate, and to minimize the use of fertilizers and pesticides that can contribute to stormwater pollution. ▪ Where landscaped areas are used to retain or detain stormwater, specify plants that are tolerant of saturated soil conditions. ▪ Use pest-resistant plants, especially adjacent to hardscape. ▪ To insure successful establishment, select plants appropriate to site soils, slopes, climate, sun, wind, rain, land use, air movement, ecological	▪ Maintain landscaping using minimum or no pesticides. ▪ See applicable operational BMPs in Fact Sheet SC-41, "Building and Grounds Maintenance." ▪ Provide IPM information to new owners, lessees and operators.

Potential Sources of Runoff Pollutants	Permanent Source Control BMPs	Operational Source Control BMPs
	consistency, and plant interactions.	
E. Pools, spas, ponds, decorative fountains, and other water features	N/A	N/A
F. Food service	N/A	N/A
G. Refuse areas	▪ Refuse areas shall be paved with an impervious surface, designed not to allow run-on from adjoining areas, and screened to prevent off-site transport of trash. ▪ Refuse areas shall contain a roof to minimize direct precipitation. ▪ No drain connections shall be made to the Refuse area.	▪ Provide adequate number of receptacles. ▪ Inspect receptacles regularly; repair or replace leaky receptacles. ▪ Keep receptacles covered. ▪ Prohibit/prevent dumping of liquid or hazardous wastes. ▪ Post "no hazardous materials" signs. ▪ Inspect and pick up litter daily and clean up spills immediately. ▪ Keep spill control materials available on-site. ▪ Clean by dry-sweeping only, or with wet/dry vacuum. ▪ See Fact Sheet SC-34, "Waste Handling and Disposal"
H. Industrial processes	N/A	N/A
I. Outdoor Storage of Equipment or Materials	N/A	N/A
J. Vehicle / equipment cleaning	N/A	N/A
K. Vehicle / equipment repair and maintenance	N/A	N/A
L. Fuel dispensing areas	N/A	N/A
M. Loading docks	N/A	N/A
N. Fire sprinkler test water	N/A	N/A
O. Miscellaneous drain or wash water or other sources • Boiler drain lines • Condensate drain lines • Rooftop equipment • Drainage sumps • Roofing, gutters, and trim • Other sources	▪ Boiler drain lines shall be directly or indirectly connected to the sanitary sewer system and may not discharge to the storm drain. ▪ Condensate drain lines may discharge to landscaped areas if the flow is small enough that runoff will not occur. Condensate drain lines may not discharge to the storm drain system. ▪ Rooftop equipment with potential to produce pollutants shall be roofed and/or have secondary containment. ▪ Any drainage sumps on-site shall feature a sediment sump to reduce the quantity of sediment in pumped water.	▪ If architectural copper is used, implement the following BMPs for management of rinsewater during installation: ▪ If possible, purchase copper materials that have been pre-patinated at the factory. ▪ If patination is done on-site, prevent rinse water from entering storm drains by discharging to landscaping or by collecting in a tank and hauling off-site. ▪ Consider coating the copper materials with an impervious coating that prevents further corrosion and runoff. ▪ Implement the following BMPs during routine maintenance: ▪ Prevent rinse water from entering storm drains by discharging to landscaping or

Potential Sources of Runoff Pollutants	Permanent Source Control BMPs	Operational Source Control BMPs
		by collecting in a tank and hauling off-site.
P. Plazas, sidewalks, and parking lots		▪ Sweep plazas, sidewalks, and parking lots regularly to prevent accumulation of litter and debris. Collect debris from pressure washing to prevent entry into the storm drain system. Collect washwater containing any cleaning agent or degreaser and discharge to the sanitary sewer, not to a storm drain.

V.C. Features, Materials, and Methods of Construction of Source Control BMPs

Source control BMPs will be designed and implemented per construction specifications and CASQA BMP fact sheets.

VI. Stormwater Facility Maintenance

VI.A. Ownership and Responsibility for Maintenance in Perpetuity

The applicant accepts responsibility for interim operation and maintenance of stormwater treatment and flow-control facilities until such time as this responsibility is formally transferred to a subsequent owner.

VI.B. Summary of Maintenance Requirements for Each Stormwater Facility

The site incorporates no Bioretention Facilities so there is no need for maintenance.

VII. Construction Checklist

Table 9. Construction Checklist

Stormwater Control Plan Page #	Source Control or Treatment Control Measure	Sheet
4	A. On-site storm drain inlets	C4.0
5	D1. Need for Future indoor & structural pest control	Arch
5	D2. Landscape/ outdoor pesticide use/ building and ground maintenance	Arch
5	G. Refuse areas	Arch
6	O. Miscellaneous drain or wash	Arch
6	P. Plazas, sidewalks, and parking lots	C1.0

VIII. Conclusion/Certifications

The design of stormwater treatment facilities and other stormwater pollution control measures in this plan are in accordance with the current edition of the BASMAA Post-Construction Manual, dated January, 2019.

ATTACHMENT 1

VICINITY MAP, USGS MAP, SOILS MAP, FIRMETTE MAP

VINEYARD 29
VICINITY MAP
NAPA COUNTY CALIFORNIA

VICINITY MAP
SCALE: 1" = 3000'

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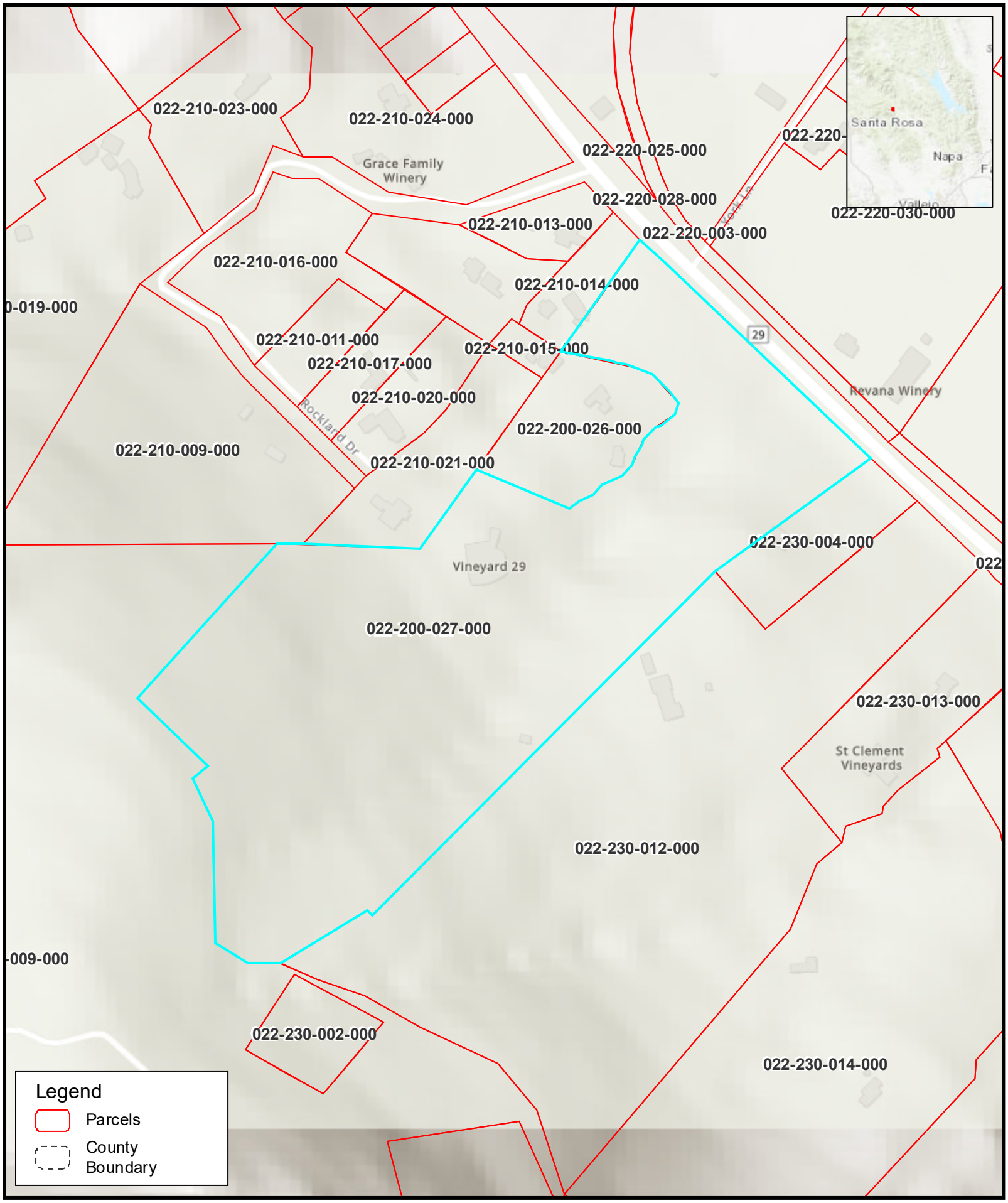
MAY 14, 2015 4115029.0 Exh-Vic Map.dwg



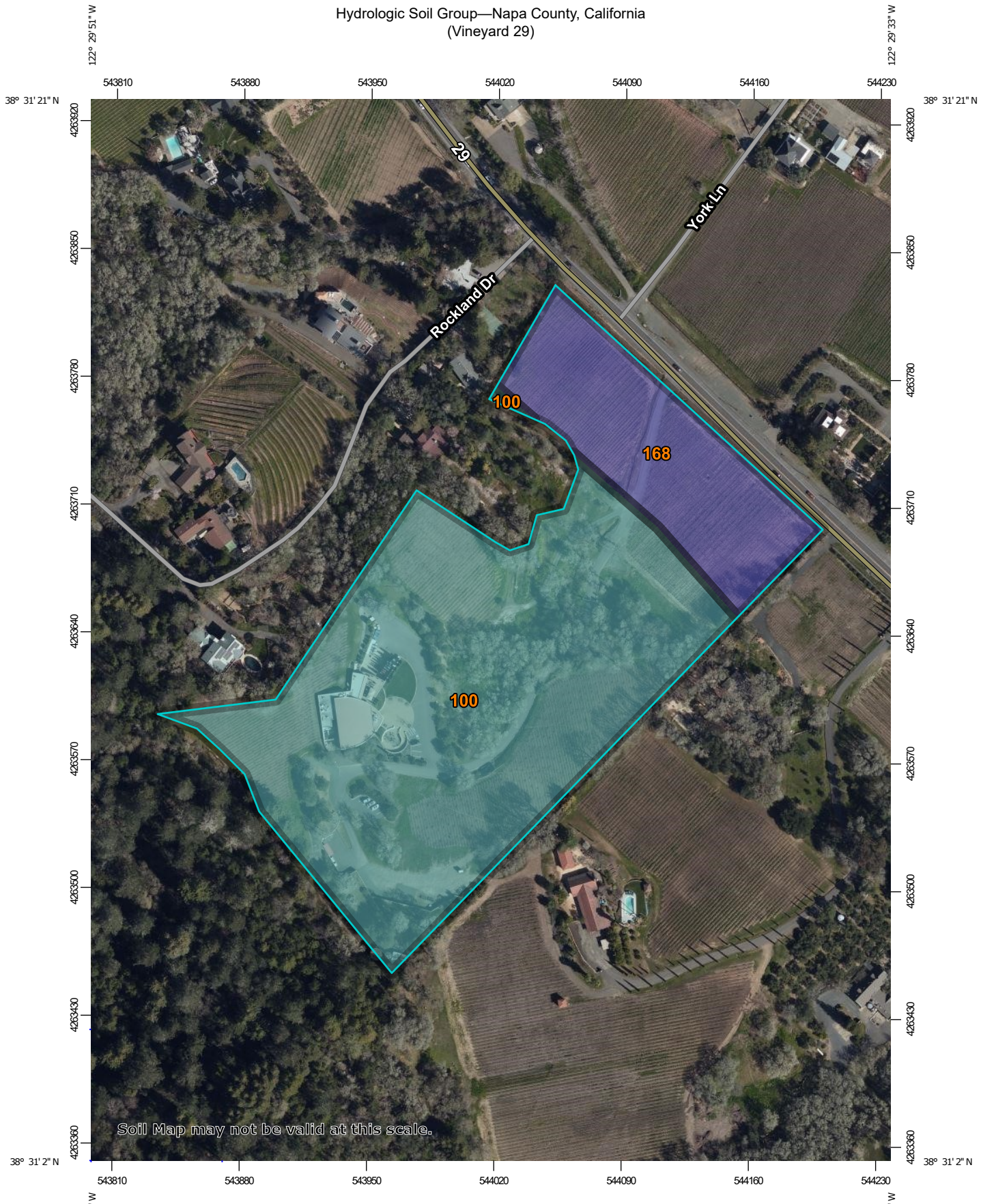
Vineyard 29

County of Napa | ITS Dept

Printed On: 12/2/2021

0 0.0275 0.055 0.11 mi

Hydrologic Soil Group—Napa County, California
(Vineyard 29)



Map Scale: 1:2,830 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 40 80 160 240

Feet: 0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Napa County, California
Survey Area Data: Version 14, Sep 9, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 15, 2019—Apr 10, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
100	Aiken loam, 2 to 15 percent slopes	C	9.9	77.2%
168	Perkins gravelly loam, 1 to 10 percent slopes, MLRA 14	B	2.9	22.8%
Totals for Area of Interest			**12.9**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

National Flood Hazard Layer FIRMette

FEMA

122°30'4"W 38°31'25"N

122°29'27"W 38°30'57"N

Feet 1:6,000

0 250 500 1,000 1,500 2,000

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 12/2/2021 at 4:38 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

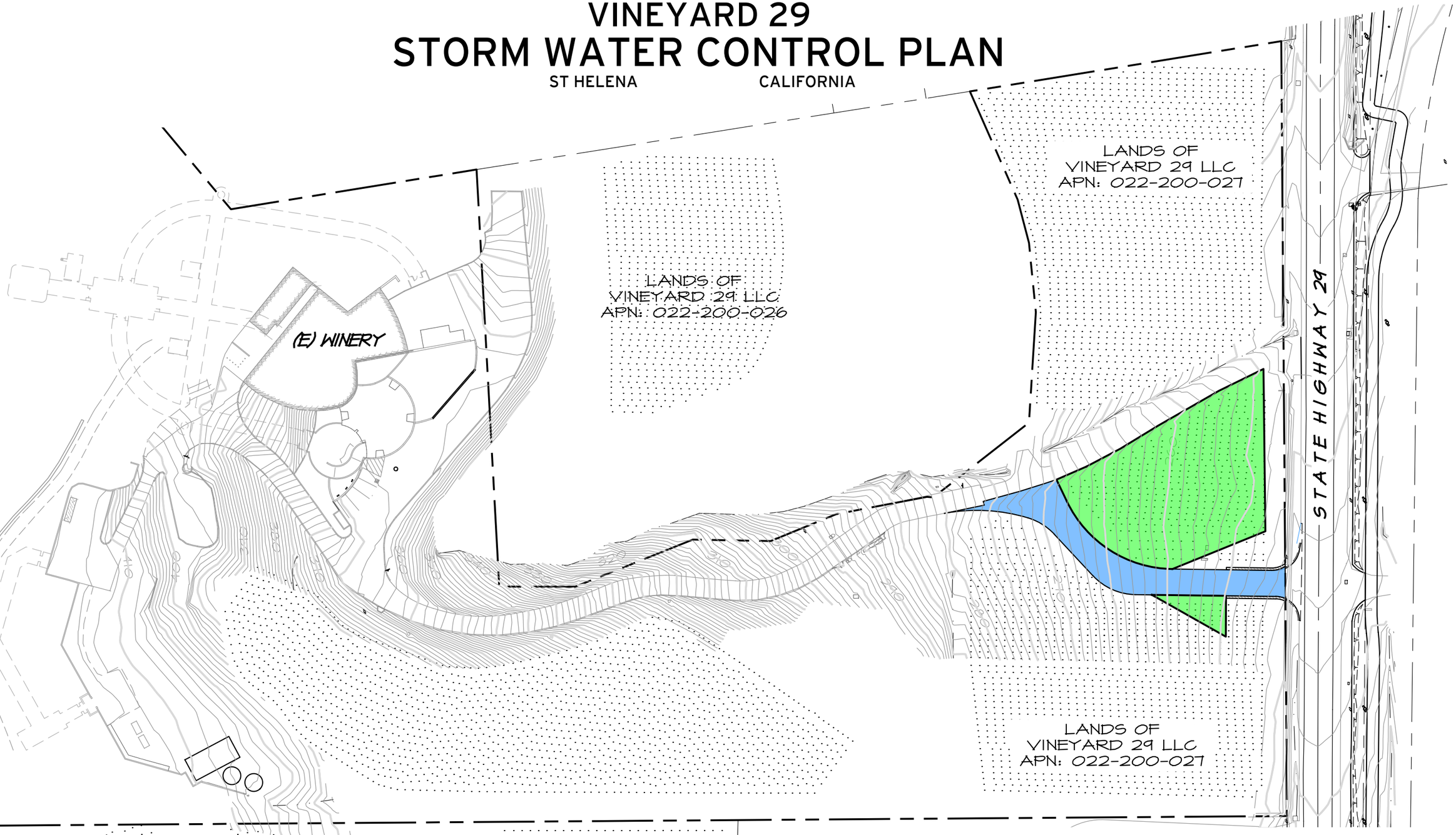
This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

ATTACHMENT 2

STORMWATER CONTROL PLAN EXHIBIT

VINEYARD 29
STORM WATER CONTROL PLAN

ST HELENA CALIFORNIA



DRAINAGE MANAGEMENT AREAS

	AREA
PERVIOUS	19,204 S.F.
IMPERVIOUS	6,550 S.F.

GRAPHIC SCALE

80 0 80

(IN FEET)

1 INCH = 80 FT

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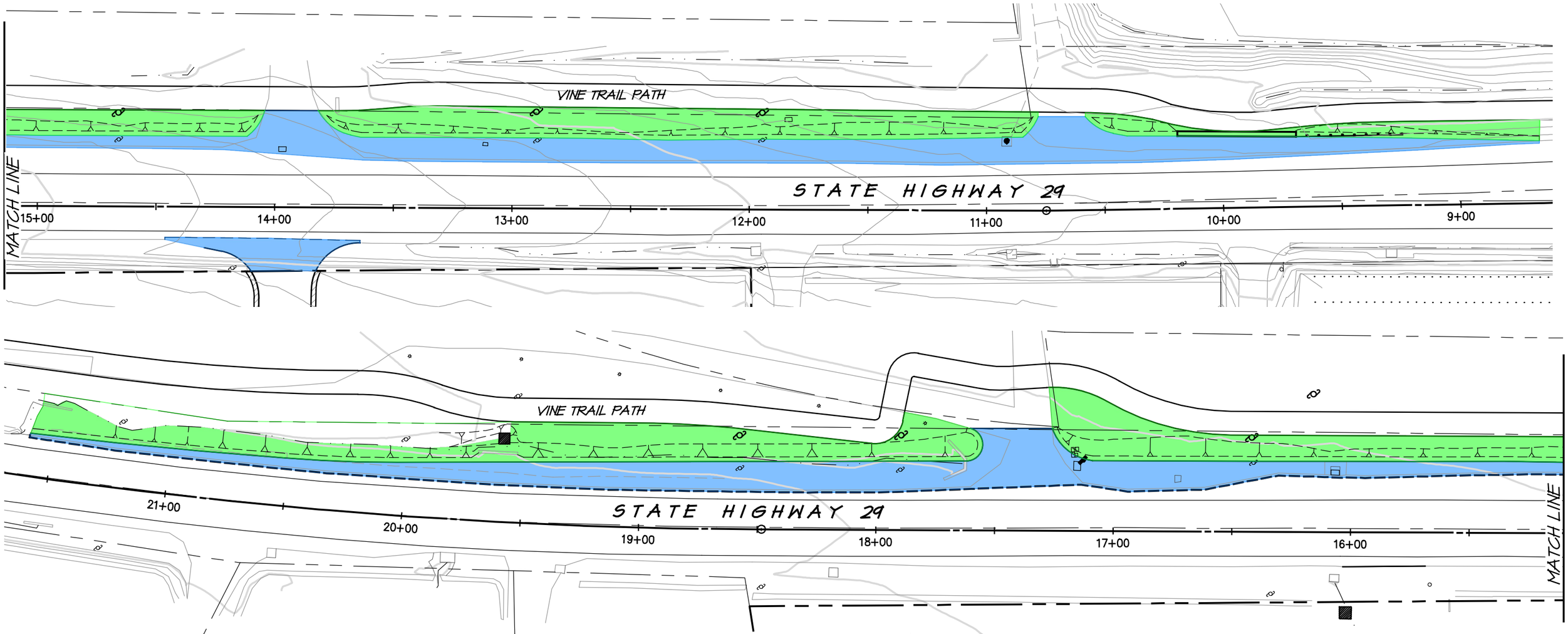
VINEYARD 29
STORM WATER CONTROL PLAN

ST HELENA CALIFORNIA



DRAINAGE MANAGEMENT AREAS

	AREA
PERVIOUS	13,457 S.F.
IMPERVIOUS	12,696 S.F.

GRAPHIC SCALE

40 0 40

(IN FEET)

1 INCH = 40 FT

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