

Exhibit F

HYDROLOGIC ANALYSIS, REVISED
KELLER VINEYARD
NEW VINEYARD DEVELOPMENT
275 LONG RANCH ROAD
ST. HELENA, CA 94574
APN 032-030-070
MAY 15, 2025



The following analysis evaluates the proposed development of approximately 16.7 acres of new vineyard on an approximately 152.6-acre parcel near the headwaters of the Hennessey, Rector and Vine Hill Creek watersheds, east of St. Helena, California, to determine the project's potential to increase runoff or peak flow. This analysis was prepared by David Steiner, CPESC, CPSWQ, at the request and under the supervision of Mr. Mike Muelrath, PE, of Applied Civil Engineering. This analysis makes use of only the "Weighted Curve Number" portion of USDA Technical Release 55, as expressed in Version 1.00.10 of WinTR-55 "Small Watershed Hydrology", a Windows-based application. As none of the other parameters factored into a full modeling by the application—storm data, time of concentration, or stream flow data—will be affected by the proposal, a comparison of the site's pre- and post-project land use and hydrologic condition (weighted Curve Numbers) will predict any potential change in peak flow or runoff, with a level of certainty equal to that of the full model.

Determining a realistic hydrologic baseline ("pre-project condition") for this site has required a bit of forensic calculation. The main residence, guest houses, and utilities at or near the top of the ridge separating the watersheds have been protected by clearing firebreaks, that is removal of the pre-existing brush cover ("fuel load") immediately downslope of these improvements, in part within the project area. Without judging the legitimacy of this clearing, we are looking to the condition of the surrounding, undisturbed cover, as well as "Land Cover" mapping, prepared in February 2025 by WRA Environmental Consultants, to extrapolate that baseline. The latter resource indicates approximately 1.5 acres of "developed" land—entered in the model as "farmstead", and assigned a curve number of 86. Also included are 6.0 acres of "Scrub oak chaparral", and 9.2 acres of "Chamise chaparral" within the project area. We interpret these cover types as "Broadleaf chaparral" and "Narrowleaf chaparral", respectively. A site visit on August 13, 2024 revealed old burnt stumps and a lack of duff or significant leaf litter on the soil's surface, testifying to the site's history of periodic wildfire, limiting the hydrologic condition to "fair" (<75% cover) with respective Curve Numbers of 81 and 86. See accompanying copies of the relevant USDA Curve Number table consulted for vineyard and chaparral Curve Numbers.¹ The pre-project, weighted CN of the proposed vineyard area is 84. The ECP calls for maintenance of the proposed vineyard under non-tilled practices, with 80% cover ("good" hydrologic condition) implying a post-project Runoff Curve number (CN) of 81.

While the preponderance of the project is in the Vine Hill Creek Watershed, it may be noted that a small portion (approximately 0.2 acres)--a northerly strip of the proposed Block C-- lies in the Rector Watershed. The pre- and post-project Runoff Curve numbers of this area are 86 and 81, respectively.

Conclusion: Assuming the maintenance of the cover crop standards specified by the ECP, the project will not result in any increase in peak flow or runoff.

¹ *Engineering Field Handbook, Part 650, Chapter 2, Supplement 1, USDA/NRCS, Oct 2008.*

DAS

Keller, CN only
Pre-project, rev 3
Napa County, California

Sub-Area Land Use and Curve Number Details

Sub-Area Identifier	Land Use		Hydrologic Soil Group	Sub-Area Area (ac)	Curve Number
Main	Narrowleaf Chaparral	(fair)	D	9.2	86
	Broadleaf Chaparral	(fair)	D	6	81
	Farmsteads		D	1.5	86
	Total Area / Weighted Curve Number			16.7	84
				====	==

DAS

Keller, CN only
Post-project, rev 3
Napa County, California

Sub-Area Land Use and Curve Number Details

Sub-Area Identifier	Land Use	Hydrologic Soil Group	Sub-Area Area (ac)	Curve Number
Main	Vineyard (annual grass)	(good) D	16.7	81
Total Area / Weighted Curve Number			16.7 ====	81 ==

Land Use	Cover	Hydrologic 1/ Condition	Hydrologic Soil Group			
	Treatment or Practice		A	B	C	D
Orchards, deciduous		(See accompanying land-use description)				
Orchards, Evergreen		Poor	55	72	81	86
		Fair	42	64	76	82
		Good	33	58	72	79
Vineyards		(See accompanying land-use description)				
NON-CULTIVATED AGRICULTURAL LAND (Grassland, Woodland, Brushland)						
Annual grass		Poor	65	78	86	89
		Fair	49	69	79	84
		Good	38	61	75	81
Broadleaf chaparral		Poor	53	70	80	85
		Fair	40	63	75	81
		Good	31	57	71	78
Meadow		Poor	63	77	84	90
		Fair	58	70	78	84
		Good	30	58	72	78
Narrowleaf chaparral		Poor	70	82	88	90
		Fair	55	72	81	86
Open brush		Poor	61	76	84	88
		Fair	46	66	77	83
		Good	41	63	75	81

Close-seeded legumes or rotation meadow, contour - Close-seeded legumes or rotation meadow planted on the contour or in straight rows on land with 2 percent slopes or less.

Irrigated pasture - Irrigated land that is planted to perennial grasses and legumes for production of forage and which is cultivated only to establish or renew the stand of plants. For hydrologic purposes, dryland pasture is considered as annual grass.

Orchards, Deciduous - Land planted to such deciduous trees as apples, apricots, pears, walnuts, and almonds. Soil protection during the rainy season is dependent on ground cover. This ground cover may be annual grass or perennial grass cover crops with or without legumes, occasionally legumes alone.

Use curve numbers that apply to the land use or the kind and condition of cover during storm periods; for example, Annual grass curve numbers for annual grass or grass-legume cover. Where orchards are kept bare by disking or the use of herbicides, use Fallow curve numbers.

Because of management practices, ground cover in orchards is seldom continuous. Only orchards untilled with more than 75 percent of the ground surface continuously protected by cover are in Good Hydrologic Condition, others are Fair or Poor.

Orchards, Evergreen - Land planted to evergreen trees which include citrus, avocado, and Christmas tree plantations. Soil protection is dependent on ground cover or litter. This ground cover may be annual grass or perennial grass cover crops with or without legumes alone; or the ground protection may be litter where tree canopy is sufficiently dense to produce an effective amount of fallen leaves.

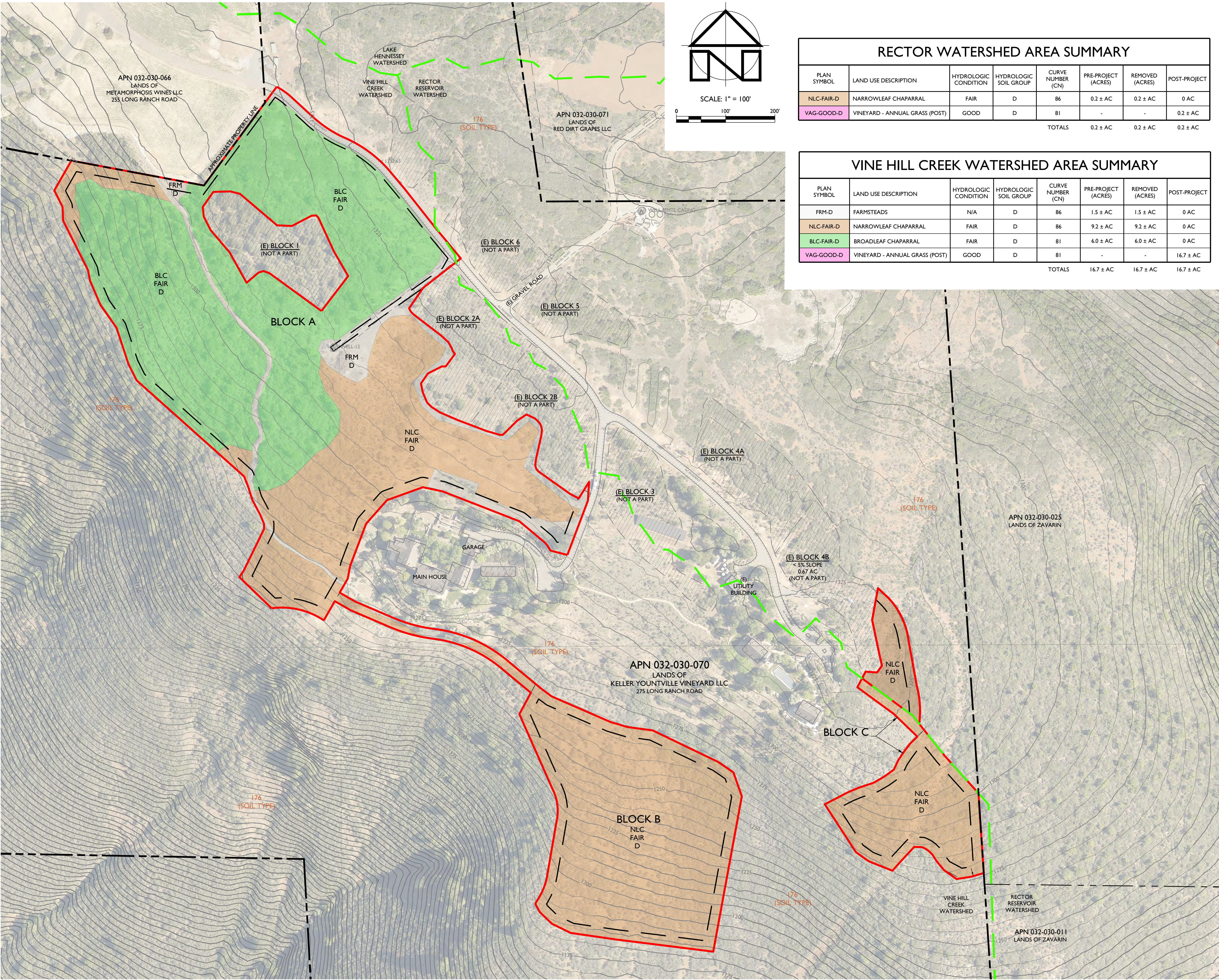
Because of management practices, ground cover in orchards is seldom continuous. Only untilled orchards with more than 75 percent of the ground surface continuously protected by litter or plant cover are in Good Hydrologic Condition, others are Fair or Poor.

Vineyards - Land planted to grapes. Soil protection during the rainy season is dependent on ground cover. This ground cover may be annual grass or perennial grass cover crops with or without legumes, occasionally legumes alone.

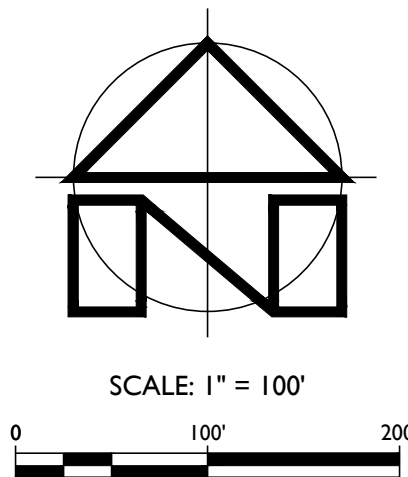
Use curve numbers that apply to the land use or the kind and condition of cover during the storm periods; for example, Annual grass curve numbers for annual grass or grass legume cover. Where vineyards are kept bare by disking or the use of herbicides, use Fallow curve numbers.

KELLER YOUNTVILLE VINEYARD LLC

WATERSHED EXHIBIT

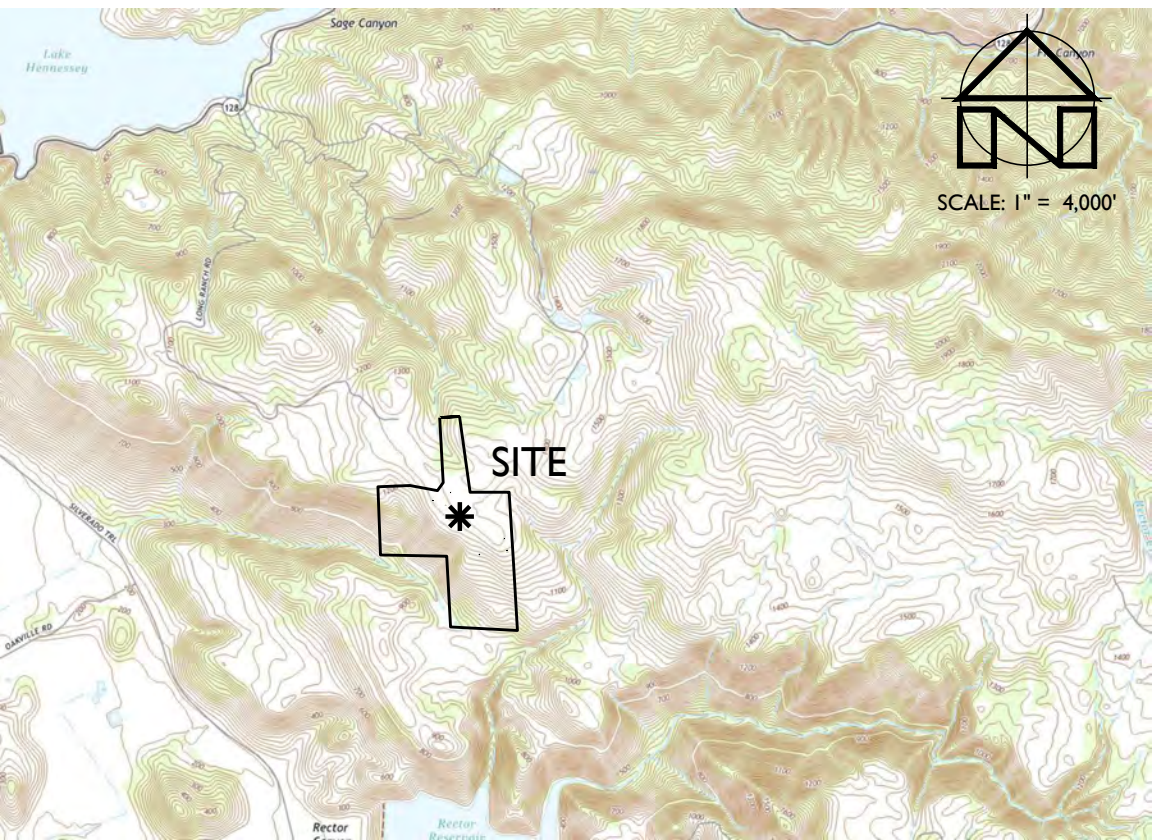


WATERSHED AREAS - EXISTING CONDITIONS
SCALE: 1" = 100'



RECTOR WATERSHED AREA SUMMARY							
PLAN SYMBOL	LAND USE DESCRIPTION	HYDROLOGIC CONDITION	HYDROLOGIC SOIL GROUP	CURVE NUMBER (CN)	PRE-PROJECT (ACRES)	REMOVED (ACRES)	POST-PROJECT
NLC-FAIR-D	NARROWLEAF CHAPARRAL	FAIR	D	86	0.2 ± AC	0.2 ± AC	0 AC
VAG-GOOD-D	VINEYARD - ANNUAL GRASS (POST)	GOOD	D	81	-	-	0.2 ± AC
TOTALS					0.2 ± AC	0.2 ± AC	0.2 ± AC

VINE HILL CREEK WATERSHED AREA SUMMARY							
PLAN SYMBOL	LAND USE DESCRIPTION	HYDROLOGIC CONDITION	HYDROLOGIC SOIL GROUP	CURVE NUMBER (CN)	PRE-PROJECT (ACRES)	REMOVED (ACRES)	POST-PROJECT
FRM-D	FARMSTEADS	N/A	D	86	1.5 ± AC	1.5 ± AC	0 AC
NLC-FAIR-D	NARROWLEAF CHAPARRAL	FAIR	D	86	9.2 ± AC	9.2 ± AC	0 AC
BLC-FAIR-D	BROADLEAF CHAPARRAL	FAIR	D	81	6.0 ± AC	6.0 ± AC	0 AC
VAG-GOOD-D	VINEYARD - ANNUAL GRASS (POST)	GOOD	D	81	-	-	16.7 ± AC
TOTALS					16.7 ± AC	16.7 ± AC	16.7 ± AC



LOCATION MAP
SCALE: 1" = 4,000'

PROJECT INFORMATION:

PROPERTY OWNER & APPLICANT:
KELLER YOUNTVILLE VINEYARD LLC
POST OFFICE BOX 546
NAPA, CA 94559

SITE ADDRESS:
275 LONG RANCH ROAD
SAINT HELENA, CA 94574

ASSESSOR'S PARCEL NUMBER:
032-030-070

PARCEL SIZE:
152.6 ± ACRES

SHEET INDEX:

- 1 WATERSHED AREAS - EXISTING CONDITIONS
- 2 WATERSHED AREAS - PROPOSED CONDITIONS

NOTES:

1. FADED BACKGROUND REPRESENTS EXISTING TOPOGRAPHIC FEATURES. TOPOGRAPHIC INFORMATION WAS TAKEN FROM ELEVATION DATA DERIVED FROM BARE-EARTH SURFACE DIGITAL ELEVATION MODELS (DEMS) CREATED FROM LIDAR DATA FLOWN IN 2018 IN RESPONSE TO THE WIDESPREAD 2017 FIRES IN NORTHERN CALIFORNIA AS PART OF ONGOING NATIONWIDE 3DEP (U.S. GEOLOGICAL SURVEY 3D ELEVATION PROGRAM) EFFORTS. APPLIED CIVIL ENGINEERING INCORPORATED ASSUMES NO LIABILITY REGARDING THE ACCURACY OR COMPLETENESS OF THE TOPOGRAPHIC INFORMATION.
2. CONTOUR INTERVAL: FIVE (5) FEET, HIGHLIGHTED EVERY TWENTY FIVE (25) FEET.
3. VERTICAL DATUM: NAVD 88

LEGEND:

- APPROXIMATE PROPERTY LINE
- SOIL TYPE BOUNDARY
- COUNTY DEFINED WATERSHED BOUNDARY
- EXISTING VINEYARD BLOCK
- PROPOSED VINEYARD AVENUE
- PROPOSED VINEYARD BLOCK
- WATERSHED AREA

SOILS TYPE LEGEND:

- | TYPE | HSG | DESCRIPTION |
|------|-----|---|
| 176 | D | ROCK OUTCROP-HAMBRIGHT COMPLEX, 50 TO 75 PERCENT SLOPES |
- SOIL TYPE BOUNDARIES SHOWN ON THIS MAP ARE BASED ON THE NAPA COUNTY GEOGRAPHIC INFORMATION SYSTEM DATA AND SHOULD BE CONSIDERED APPROXIMATE.

PREPARED UNDER THE
DIRECTION OF:



DRAWN BY:
PowerCAD LLC

CHECKED BY:
MRM

DATE:
JUNE 25, 2025

REVISIONS: BY:
6/25/2025 YMS
PERMIT SUBMITTAL

JOB NUMBER:
23-123

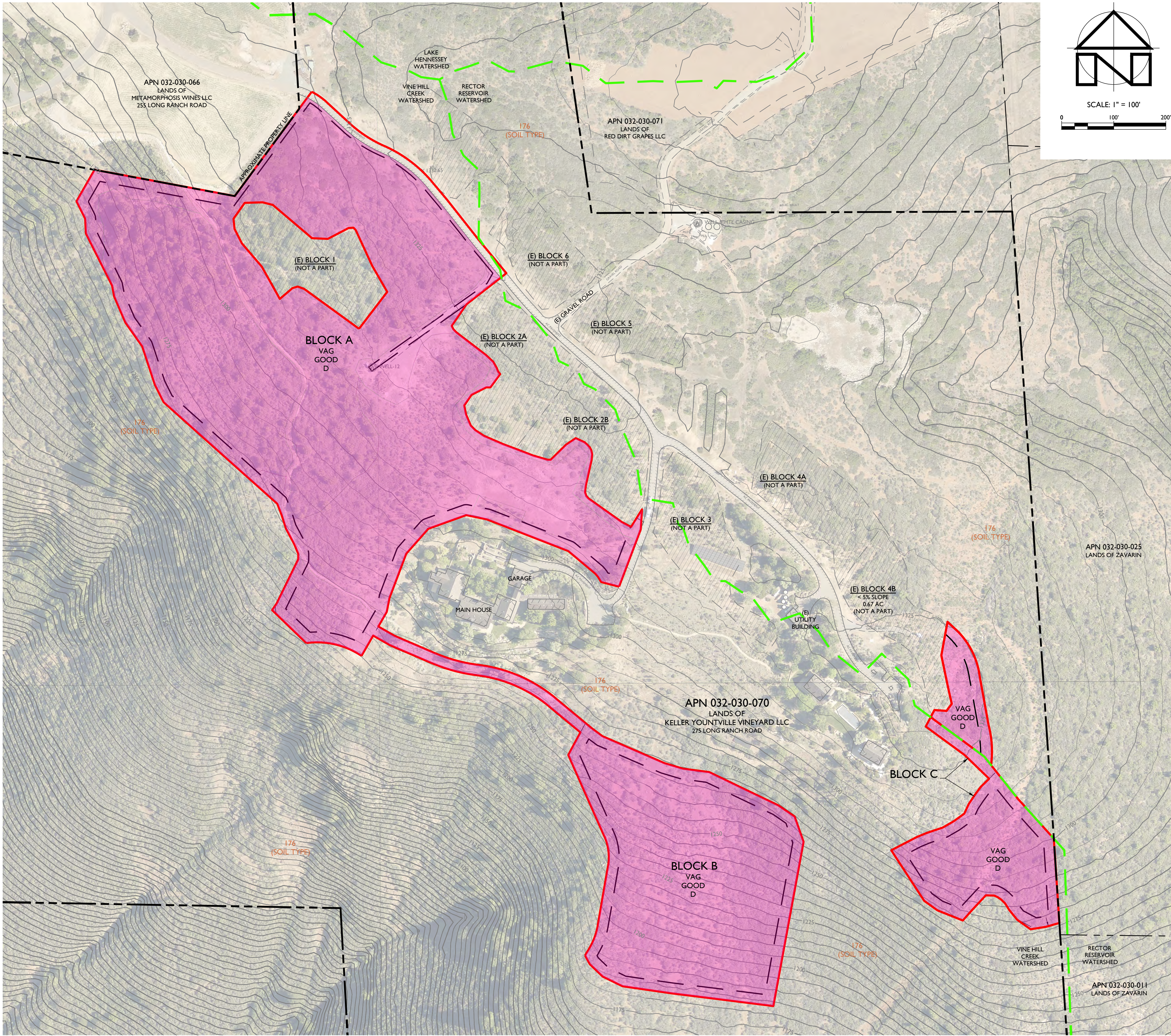
FILE:
23-123EXH-WTRSHD.DWG

ORIGINAL SIZE:
24" X 36"

SHEET NUMBER:

1

OF



WATERSHED AREAS - PROPOSED CONDITIONS
SCALE: 1" = 100'

RECTOR WATERSHED AREA SUMMARY							
PLAN SYMBOL	LAND USE DESCRIPTION	HYDROLOGIC CONDITION	HYDROLOGIC SOIL GROUP	CURVE NUMBER (CN)	PRE-PROJECT (ACRES)	REMOVED (ACRES)	POST-PROJECT
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TOTALS					0.2 ± AC	0.2 ± AC	0.2 ± AC

VINE HILL CREEK WATERSHED AREA SUMMARY							
PLAN SYMBOL	LAND USE DESCRIPTION	HYDROLOGIC CONDITION	HYDROLOGIC SOIL GROUP	CURVE NUMBER (CN)	PRE-PROJECT (ACRES)	REMOVED (ACRES)	POST-PROJECT
FRM-D	FARMSTEADS	N/A	D	86	1.5 ± AC	1.5 ± AC	0 AC
NLC-FAIR-D	NARROWLEAF CHAPARRAL	FAIR	D	86	9.2 ± AC	9.2 ± AC	0 AC
BLC-FAIR-D	BROADLEAF CHAPARRAL	FAIR	D	81	6.0 ± AC	6.0 ± AC	0 AC
VAG-GOOD-D	VINEYARD - ANNUAL GRASS (POST)	GOOD	D	81	-	-	16.7 ± AC
TOTALS					16.7 ± AC	16.7 ± AC	16.7 ± AC

LEGEND:

- APPROXIMATE PROPERTY LINE
- SOIL TYPE BOUNDARY
- COUNTY DEFINED WATERSHED BOUNDARY
- EXISTING VINEYARD BLOCK
- PROPOSED VINEYARD AVENUE
- PROPOSED VINEYARD BLOCK
- WATERSHED AREA

SOILS TYPE LEGEND:

TYPE	HSG	DESCRIPTION
176	D	ROCK OUTCROP-HAMBRIGHT COMPLEX, 50 TO 75 PERCENT SLOPES

SOIL TYPE BOUNDARIES SHOWN ON THIS MAP ARE BASED ON THE NAPA COUNTY GEOGRAPHIC INFORMATION SYSTEM DATA AND SHOULD BE CONSIDERED APPROXIMATE.

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