

EXHIBIT E



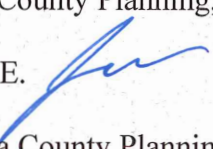
VINEYARD DESIGN
EROSION CONTROL
WATER DEVELOPMENT
DRAINAGE
PERMITTING
GPS/GIS

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MEMORANDUM

Date: October 15, 2019

To: Patrick Ryan, Napa County Planning, Building, and Environmental Services

From: James R. Bushey, P.E. 

Cc: Brian Bordona, Napa County Planning, Building, and Environmental Services

Re: Hibbard Ranch Track I ECP #P19-00069-ECPA
APN 050-380-014
Revised Soil Loss Analysis

This memo transmits the findings of a revised soil loss modeling analysis for the above-referenced Track I Erosion Control Plan (ECP). The original analysis submitted in February 2019 was revised to incorporate comments per Napa County staff. The Universal Soil Loss Equation (USLE) was used to predict pre-project and post-project soil loss from within the proposed vineyard development areas. A combination of topographic maps, aerial imagery, and a site visit were used to determine pre-project transect locations, slopes, and cover values. Pre-project and post-project cover values are consistent with the United States Department of Agriculture (USDA) – Natural Resource Conservation Service (NRCS) publication titled “The Universal Soil Loss Equation Special Applications for Napa County, California” (May 1994).

A site visit was conducted on August 17, 2018 by Matt Bueno and Rachel Rosasco of PPI Engineering to determine the pre-project cover values for each block and/or transect area. All proposed development areas were inspected, and the cover values used in this analysis represent existing conditions at the time of the site visit. An additional site visit occurred with you and PPI Engineering staff on April 11, 2019 to confirm pre-project conditions. The conditions used in the analysis were all confirmed except for Block 2A which has been updated in this analysis per your comments. The area has been historically grazed and is currently intermittently grazed for fire protection and fuel-load reduction purposes. Post-project cover values were calculated using the percent cover specified in the ECP. This analysis is limited to the proposed vineyard areas as well as vineyard avenues (54.3 gross acres). Additionally, two proposed access roads were added to this revised analysis.

The model, summarized on page 2 of the supporting documents (attached), predicts a net decrease of approximately 45.8 tons of soil loss per year for the project. The ECP has been designed to ensure compliance with Napa County policies requiring no-net-increases in soil loss for post-project conditions. Please see the following supporting documents that contain data tables, calculations, maps of transect locations, and results from the analysis.



SUPPORTING DOCUMENTS

**V. Sattui Winery, Hibbard Ranch Track I ECP
USLE Calculation Sheets**

V. Sattui Winery, Hibbard Ranch
 USLE Calculations
 PPI Engineering
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USLE Calculations - Transect Summary Sheet

Proposed Transect	Proposed Development Acres	Pre-Project Soil Loss (tons/year)	Post-Project Soil Loss (tons/year)	Net Increase/Decrease (tons/year)
1AB	1.24	3.90	3.12	0.78
1B1	1.30	4.39	3.51	0.88
1B2	2.41	9.85	7.88	1.97
1B3	1.43	3.95	3.16	0.79
1B4	1.45	4.08	3.26	0.82
1BC	1.35	2.56	2.05	0.51
1D	0.93	1.31	1.05	0.26
2A	0.28	0.23	0.18	0.05
2B	0.39	0.72	0.57	0.14
3	1.29	3.93	3.14	0.79
4A	1.45	5.50	5.08	0.42
4AB	0.83	4.13	2.21	1.92
4C	0.34	0.64	0.51	0.13
5	5.45	23.89	19.11	4.78
6A1	0.61	0.97	0.78	0.19
6AB	5.41	24.47	19.57	4.89
6B1	1.54	3.09	2.47	0.62
6C	6.25	28.20	22.56	5.64
6CD	0.88	1.68	1.35	0.34
6D	0.57	1.31	1.05	0.26
6DE	0.49	1.14	0.91	0.23
7A1	1.34	2.89	2.31	0.58
7A2	2.13	14.74	11.79	2.95
7B	0.56	1.59	1.27	0.32
7BC1	0.42	0.50	0.40	0.10
7BC2	2.09	13.25	10.60	2.65
7C	3.67	16.19	8.68	7.51
7D	1.18	4.31	3.45	0.86
8A1	1.10	4.15	3.32	0.83
8A2	0.76	1.36	1.09	0.27
8AB	1.16	4.30	3.44	0.86
8BC	0.91	1.74	1.39	0.35
8CD	0.37	0.77	0.61	0.15
8E	0.50	0.24	0.20	0.05
8F	0.37	1.09	0.88	0.22
8CGH	0.68	3.29	2.63	0.66
9	0.98	4.71	3.77	0.94
VAR1	0.10	0.36	0.29	0.07
VAR2	0.07	0.33	0.27	0.07
Totals	54.28	205.74	159.90	45.84

Note: Individual estimates may not add to the totals due to rounding

V. Sattui Winery, Hibbard Ranch
 USLE Calculations Pre-Project
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Blocks 1A & 1B, Transect 1AB

Proposed Development Acres:	1.24
Soil Unit No. (100-182):	131
Soil Name:	Fagan
K, Soil Erodibility:	0.32
T, Soil Loss Tolerance (tons/acre):	4
R, Rainfall:	65
Total Transect Length (ft):	454
Number of Segments:	1
Individual Segment Lengths (ft):	454
Segment:	
Gradient (%):	16
m:	
Individual LS:	5.50
Factor:	
Product:	
LS, Length and Steepness:	5.50
Total Transect Average Gradient (%):	16
Farming Practice:	Up & Down Hill
P, Practice Factor (Table 6) ¹ :	1.00
Vegetative Canopy:	No Canopy
Canopy Cover:	0%
Ground Cover:	70%
Percent Grass:	100%
Percent Weeds:	0%
C, Cover (Table 5) ¹ :	0.028
A, Soil Loss (tons/acre):	3.14
Soil Loss in Proposed Development (tons):	3.90

¹ Tables 5 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
 USLE Calculations Post-Project
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Blocks 1A & 1B, Transect 1AB

Proposed Development Acres:	1.24
Soil Unit No. (100-182):	131
Soil Name:	Fagan
K, Soil Erodibility:	0.32
T, Soil Loss Tolerance (tons/acre):	4
R, Rainfall:	65
Total Transect Length (ft):	454
Number of Segments:	1
Individual Segment Lengths (ft):	454
Segment:	
Gradient (%):	16
m:	
Individual LS:	5.50
Factor:	
Product:	
LS, Length and Steepness:	5.50
Total Transect Average Gradient (%):	16
Farming Practice:	Up & Down Hill
P, Practice Factor (Table 6) ¹ :	1.00
Cover Strategy:	Permanent
Age of Development:	Over 3 Years
Ground Cover:	80%
C, Cover (Table 4) ¹ :	0.022
A, Soil Loss (tons/acre):	2.52
Soil Loss in Proposed Development (tons):	3.12

¹ Tables 4 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
 USLE Calculations Pre-Project
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Block 1B, Transect 1B1

Proposed Development Acres:	1.30
Soil Unit No. (100-182):	131
Soil Name:	Fagan
K, Soil Erodibility:	0.32
T, Soil Loss Tolerance (tons/acre):	4
R, Rainfall:	65
Total Transect Length (ft):	381
Number of Segments:	1
Individual Segment Lengths (ft):	381
Segment:	
Gradient (%):	18
m:	
Individual LS:	5.90
Factor:	
Product:	
LS, Length and Steepness:	5.90
Total Transect Average Gradient (%):	18
Farming Practice:	Up & Down Hill
P, Practice Factor (Table 6) ¹ :	1.00
Vegetative Canopy:	No Canopy
Canopy Cover:	0%
Ground Cover:	70%
Percent Grass:	100%
Percent Weeds:	0%
C, Cover (Table 5) ¹ :	0.028
A, Soil Loss (tons/acre):	3.38
Soil Loss in Proposed Development (tons):	4.39

¹ Tables 5 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
 USLE Calculations Post-Project
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Block 1B, Transect 1B1

Proposed Development Acres:	1.30
Soil Unit No. (100-182):	131
Soil Name:	Fagan
K, Soil Erodibility:	0.32
T, Soil Loss Tolerance (tons/acre):	4
R, Rainfall:	65
Total Transect Length (ft):	381
Number of Segments:	1
Individual Segment Lengths (ft):	381
Segment:	
Gradient (%):	18
m:	
Individual LS:	5.90
Factor:	
Product:	
LS, Length and Steepness:	5.90
Total Transect Average Gradient (%):	18
Farming Practice:	Up & Down Hill
P, Practice Factor (Table 6) ¹ :	1.00
Cover Strategy:	Permanent
Age of Development:	Over 3 Years
Ground Cover:	80%
C, Cover (Table 4) ¹ :	0.022
A, Soil Loss (tons/acre):	2.70
Soil Loss in Proposed Development (tons):	3.51

¹ Tables 4 & 6 - USLE Special Applications for Napa County

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Block 1B, Transect 1B2

Proposed Development Acres:	2.41
Soil Unit No. (100-182):	131
Soil Name:	Fagan
K, Soil Erodibility:	0.32
T, Soil Loss Tolerance (tons/acre):	4
R, Rainfall:	65
Total Transect Length (ft):	422
Number of Segments:	1
Individual Segment Lengths (ft):	422
Segment:	
Gradient (%):	20
m:	
Individual LS:	7.15
Factor:	
Product:	
LS, Length and Steepness:	7.15
Total Transect Average Gradient (%):	20
Farming Practice:	Up & Down Hill
P, Practice Factor (Table 6) ¹ :	1.00
Vegetative Canopy:	No Canopy
Canopy Cover:	0%
Ground Cover:	70%
Percent Grass:	100%
Percent Weeds:	0%
C, Cover (Table 5) ¹ :	0.028
A, Soil Loss (tons/acre):	4.09
Soil Loss in Proposed Development (tons):	9.85

¹ Tables 5 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
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Block 1B, Transect 1B2

Proposed Development Acres:	2.41
Soil Unit No. (100-182):	131
Soil Name:	Fagan
K, Soil Erodibility:	0.32
T, Soil Loss Tolerance (tons/acre):	4
R, Rainfall:	65
Total Transect Length (ft):	422
Number of Segments:	1
Individual Segment Lengths (ft):	422
Segment:	
Gradient (%):	20
m:	
Individual LS:	7.15
Factor:	
Product:	
LS, Length and Steepness:	7.15
Total Transect Average Gradient (%):	20
Farming Practice:	Up & Down Hill
P, Practice Factor (Table 6) ¹ :	1.00
Cover Strategy:	Permanent
Age of Development:	Over 3 Years
Ground Cover:	80%
C, Cover (Table 4) ¹ :	0.022
A, Soil Loss (tons/acre):	3.27
Soil Loss in Proposed Development (tons):	7.88

¹ Tables 4 & 6 - USLE Special Applications for Napa County

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Block 1B, Transect 1B3

Proposed Development Acres:	1.43
Soil Unit No. (100-182):	131
Soil Name:	Fagan
K, Soil Erodibility:	0.32
T, Soil Loss Tolerance (tons/acre):	4
R, Rainfall:	65
Total Transect Length (ft):	298
Number of Segments:	1
Individual Segment Lengths (ft):	298
Segment:	
Gradient (%):	17
m:	
Individual LS:	4.83
Factor:	
Product:	
LS, Length and Steepness:	4.83
Total Transect Average Gradient (%):	17
Farming Practice:	Up & Down Hill
P, Practice Factor (Table 6) ¹ :	1.00
Vegetative Canopy:	No Canopy
Canopy Cover:	0%
Ground Cover:	70%
Percent Grass:	100%
Percent Weeds:	0%
C, Cover (Table 5) ¹ :	0.028
A, Soil Loss (tons/acre):	2.77
Soil Loss in Proposed Development (tons):	3.95

¹ Tables 5 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
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Block 1B, Transect 1B3

Proposed Development Acres:	1.43
Soil Unit No. (100-182):	131
Soil Name:	Fagan
K, Soil Erodibility:	0.32
T, Soil Loss Tolerance (tons/acre):	4
R, Rainfall:	65
Total Transect Length (ft):	298
Number of Segments:	1
Individual Segment Lengths (ft):	298
Segment:	
Gradient (%):	17
m:	
Individual LS:	4.83
Factor:	
Product:	
LS, Length and Steepness:	4.83
Total Transect Average Gradient (%):	17
Farming Practice:	Up & Down Hill
P, Practice Factor (Table 6) ¹ :	1.00
Cover Strategy:	Permanent
Age of Development:	Over 3 Years
Ground Cover:	80%
C, Cover (Table 4) ¹ :	0.022
A, Soil Loss (tons/acre):	2.21
Soil Loss in Proposed Development (tons):	3.16

¹ Tables 4 & 6 - USLE Special Applications for Napa County

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Block 1B, Transect 1B4

Proposed Development Acres:	1.45	
Soil Unit No. (100-182):	131	
Soil Name:	Fagan	
K, Soil Erodibility:	0.32	
T, Soil Loss Tolerance (tons/acre):	4	
R, Rainfall:	65	
Total Transect Length (ft):	199	
Number of Segments:	2	
Individual Segment Lengths (ft):	100	
Segment:	1	2
Gradient (%):	12	24
m:		
Individual LS:	2.46	6.24
Factor:	0.35	0.65
Product:	0.86	4.05
LS, Length and Steepness:	4.91	
Total Transect Average Gradient (%):	18	
Farming Practice:	Up & Down Hill	
P, Practice Factor (Table 6) ¹ :	1.00	
Vegetative Canopy:	No Canopy	
Canopy Cover:	0%	
Ground Cover:	70%	
Percent Grass:	100%	
Percent Weeds:	0%	
C, Cover (Table 5) ¹ :	0.028	
A, Soil Loss (tons/acre):	2.81	
Soil Loss in Proposed Development (tons):	4.08	

¹ Tables 5 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
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Block 1B, Transect 1B4

Proposed Development Acres:	1.45	
Soil Unit No. (100-182):	131	
Soil Name:	Fagan	
K, Soil Erodibility:	0.32	
T, Soil Loss Tolerance (tons/acre):	4	
R, Rainfall:	65	
Total Transect Length (ft):	199	
Number of Segments:	2	
Individual Segment Lengths (ft):	100	
Segment:	1	2
Gradient (%):	12	24
m:		
Individual LS:	2.46	6.24
Factor:	0.35	0.65
Product:	0.86	4.05
LS, Length and Steepness:	4.91	
Total Transect Average Gradient (%):	18	
Farming Practice:	Up & Down Hill	
P, Practice Factor (Table 6) ¹ :	1.00	
Cover Strategy:	Permanent	
Age of Development:	Over 3 Years	
Ground Cover:	80%	
C, Cover (Table 4) ¹ :	0.022	
A, Soil Loss (tons/acre):	2.25	
Soil Loss in Proposed Development (tons):	3.26	

¹ Tables 4 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
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Blocks 1B & 1C, Transect 1BC

Proposed Development Acres:	1.35		
Soil Unit No. (100-182):	136		
Soil Name:	Felton		
K, Soil Erodibility:	0.15		
T, Soil Loss Tolerance (tons/acre):	3		
R, Rainfall:	65		
Total Transect Length (ft):	361		
Number of Segments:	3		
Individual Segment Lengths (ft):	120		
Segment:	1	2	3
Gradient (%):	8	18	28
m:	0.5		
Individual LS:	1.88	5.75	10.23
Factor:	0.19	0.35	0.46
Product:	0.36	2.01	4.71
LS, Length and Steepness:	7.07		
Total Transect Average Gradient (%):	18		
Farming Practice:	Up & Down Hill		
P, Practice Factor (Table 6) ¹ :	1.00		
Vegetative Canopy:	No Canopy		
Canopy Cover:	0%		
Ground Cover:	70%		
Percent Grass:	100%		
Percent Weeds:	0%		
C, Cover (Table 5) ¹ :	0.028		
A, Soil Loss (tons/acre):	1.90		
Soil Loss in Proposed Development (tons):	2.56		

¹ Tables 5 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
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Blocks 1B & 1C, Transect 1BC

Proposed Development Acres:	1.35		
Soil Unit No. (100-182):	136		
Soil Name:	Felton		
K, Soil Erodibility:	0.15		
T, Soil Loss Tolerance (tons/acre):	3		
R, Rainfall:	65		
Total Transect Length (ft):	361		
Number of Segments:	3		
Individual Segment Lengths (ft):	120		
Segment:	1	2	3
Gradient (%):	8	18	28
m:	0.5		
Individual LS:	1.88	5.75	10.23
Factor:	0.19	0.35	0.46
Product:	0.36	2.01	4.71
LS, Length and Steepness:	7.07		
Total Transect Average Gradient (%):	18		
Farming Practice:	Up & Down Hill		
P, Practice Factor (Table 6) ¹ :	1.00		
Cover Strategy:	Permanent		
Age of Development:	Over 3 Years		
Ground Cover:	80%		
C, Cover (Table 4) ¹ :	0.022		
A, Soil Loss (tons/acre):	1.52		
Soil Loss in Proposed Development (tons):	2.05		

¹ Tables 4 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
 USLE Calculations Pre-Project
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Block 1D, Transect 1D

Proposed Development Acres:	0.93
Soil Unit No. (100-182):	131
Soil Name:	Fagan
K, Soil Erodibility:	0.32
T, Soil Loss Tolerance (tons/acre):	4
R, Rainfall:	65
Total Transect Length (ft):	77
Number of Segments:	1
Individual Segment Lengths (ft):	77
Segment:	
Gradient (%):	17
m:	
Individual LS:	2.46
Factor:	
Product:	
LS, Length and Steepness:	2.46
Total Transect Average Gradient (%):	17
Farming Practice:	Up & Down Hill
P, Practice Factor (Table 6) ¹ :	1.00
Vegetative Canopy:	No Canopy
Canopy Cover:	0%
Ground Cover:	70%
Percent Grass:	100%
Percent Weeds:	0%
C, Cover (Table 5) ¹ :	0.028
A, Soil Loss (tons/acre):	1.41
Soil Loss in Proposed Development (tons):	1.31

¹ Tables 5 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
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Block 1D, Transect 1D

Proposed Development Acres:	0.93
Soil Unit No. (100-182):	131
Soil Name:	Fagan
K, Soil Erodibility:	0.32
T, Soil Loss Tolerance (tons/acre):	4
R, Rainfall:	65
Total Transect Length (ft):	77
Number of Segments:	1
Individual Segment Lengths (ft):	77
Segment:	
Gradient (%):	17
m:	
Individual LS:	2.46
Factor:	
Product:	
LS, Length and Steepness:	2.46
Total Transect Average Gradient (%):	17
Farming Practice:	Up & Down Hill
P, Practice Factor (Table 6) ¹ :	1.00
Cover Strategy:	Permanent
Age of Development:	Over 3 Years
Ground Cover:	80%
C, Cover (Table 4) ¹ :	0.022
A, Soil Loss (tons/acre):	1.12
Soil Loss in Proposed Development (tons):	1.05

¹ Tables 4 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
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Block 2A, Transect 2A

Proposed Development Acres:	0.28
Soil Unit No. (100-182):	136
Soil Name:	Felton
K, Soil Erodibility:	0.15
T, Soil Loss Tolerance (tons/acre):	3
R, Rainfall:	65
Total Transect Length (ft):	88
Number of Segments:	1
Individual Segment Lengths (ft):	88
Segment:	
Gradient (%):	19
m:	
Individual LS:	3.05
Factor:	
Product:	
LS, Length and Steepness:	3.05
Total Transect Average Gradient (%):	19
Farming Practice:	Up & Down Hill
P, Practice Factor (Table 6) ¹ :	1.00
Vegetative Canopy:	Trees 13' Tall
Canopy Cover:	25%
Ground Cover:	80%
Percent Grass:	50%
Percent Weeds:	50%
C, Cover (Table 5) ¹ :	0.028
A, Soil Loss (tons/acre):	0.82
Soil Loss in Proposed Development (tons):	0.23

¹ Tables 5 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
 USLE Calculations Post-Project
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Block 2A, Transect 2A

Proposed Development Acres:	0.28
Soil Unit No. (100-182):	136
Soil Name:	Felton
K, Soil Erodibility:	0.15
T, Soil Loss Tolerance (tons/acre):	3
R, Rainfall:	65
Total Transect Length (ft):	88
Number of Segments:	1
Individual Segment Lengths (ft):	88
Segment:	
Gradient (%):	19
m:	
Individual LS:	3.05
Factor:	
Product:	
LS, Length and Steepness:	3.05
Total Transect Average Gradient (%):	19
Farming Practice:	Up & Down Hill
P, Practice Factor (Table 6) ¹ :	1.00
Cover Strategy:	Permanent
Age of Development:	Over 3 Years
Ground Cover:	80%
C, Cover (Table 4) ¹ :	0.022
A, Soil Loss (tons/acre):	0.65
Soil Loss in Proposed Development (tons):	0.18

¹ Tables 4 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
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Block 2B, Transect 2B

Proposed Development Acres:	0.39
Soil Unit No. (100-182):	136
Soil Name:	Felton
K, Soil Erodibility:	0.15
T, Soil Loss Tolerance (tons/acre):	3
R, Rainfall:	65
Total Transect Length (ft):	241
Number of Segments:	1
Individual Segment Lengths (ft):	241
Segment:	
Gradient (%):	24
m:	
Individual LS:	6.86
Factor:	
Product:	
LS, Length and Steepness:	6.86
Total Transect Average Gradient (%):	24
Farming Practice:	Up & Down Hill
P, Practice Factor (Table 6) ¹ :	1.00
Vegetative Canopy:	No Canopy
Canopy Cover:	0%
Ground Cover:	70%
Percent Grass:	100%
Percent Weeds:	0%
C, Cover (Table 5) ¹ :	0.028
A, Soil Loss (tons/acre):	1.84
Soil Loss in Proposed Development (tons):	0.72

¹ Tables 5 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
 USLE Calculations Post-Project
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Block 2B, Transect 2B

Proposed Development Acres:	0.39
Soil Unit No. (100-182):	136
Soil Name:	Felton
K, Soil Erodibility:	0.15
T, Soil Loss Tolerance (tons/acre):	3
R, Rainfall:	65
Total Transect Length (ft):	241
Number of Segments:	1
Individual Segment Lengths (ft):	241
Segment:	
Gradient (%):	24
m:	
Individual LS:	6.86
Factor:	
Product:	
LS, Length and Steepness:	6.86
Total Transect Average Gradient (%):	24
Farming Practice:	Up & Down Hill
P, Practice Factor (Table 6) ¹ :	1.00
Cover Strategy:	Permanent
Age of Development:	Over 3 Years
Ground Cover:	80%
C, Cover (Table 4) ¹ :	0.022
A, Soil Loss (tons/acre):	1.47
Soil Loss in Proposed Development (tons):	0.57

¹ Tables 4 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
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Block 3, Transect 3

Proposed Development Acres:	1.29	
Soil Unit No. (100-182):	132	
Soil Name:	Fagan	
K, Soil Erodibility:	0.32	
T, Soil Loss Tolerance (tons/acre):	4	
R, Rainfall:	65	
Total Transect Length (ft):	381	
Number of Segments:	2	
Individual Segment Lengths (ft):	191	
Segment:	1	2
Gradient (%):	23	13
m:		
Individual LS:	8.16	3.80
Factor:	0.35	0.65
Product:	2.86	2.47
LS, Length and Steepness:	5.33	
Total Transect Average Gradient (%):	18	
Farming Practice:	Up & Down Hill	
P, Practice Factor (Table 6) ¹ :	1.00	
Vegetative Canopy:	No Canopy	
Canopy Cover:	0%	
Ground Cover:	70%	
Percent Grass:	100%	
Percent Weeds:	0%	
C, Cover (Table 5) ¹ :	0.028	
A, Soil Loss (tons/acre):	3.05	
Soil Loss in Proposed Development (tons):	3.93	

¹ Tables 5 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
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Block 3, Transect 3

Proposed Development Acres:	1.29	
Soil Unit No. (100-182):	132	
Soil Name:	Fagan	
K, Soil Erodibility:	0.32	
T, Soil Loss Tolerance (tons/acre):	4	
R, Rainfall:	65	
Total Transect Length (ft):	381	
Number of Segments:	2	
Individual Segment Lengths (ft):	191	
Segment:	1	2
Gradient (%):	23	13
m:		
Individual LS:	8.16	3.80
Factor:	0.35	0.65
Product:	2.86	2.47
LS, Length and Steepness:	5.33	
Total Transect Average Gradient (%):	18	
Farming Practice:	Up & Down Hill	
P, Practice Factor (Table 6) ¹ :	1.00	
Cover Strategy:	Permanent	
Age of Development:	Over 3 Years	
Ground Cover:	80%	
C, Cover (Table 4) ¹ :	0.022	
A, Soil Loss (tons/acre):	2.44	
Soil Loss in Proposed Development (tons):	3.14	

¹ Tables 4 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
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Block 4A, Transect 4A

Proposed Development Acres:	1.45
Soil Unit No. (100-182):	132
Soil Name:	Fagan
K, Soil Erodibility:	0.32
T, Soil Loss Tolerance (tons/acre):	4
R, Rainfall:	65
Total Transect Length (ft):	320
Number of Segments:	1
Individual Segment Lengths (ft):	320
Segment:	
Gradient (%):	21
m:	
Individual LS:	6.64
Factor:	
Product:	
LS, Length and Steepness:	6.64
Total Transect Average Gradient (%):	21
Farming Practice:	Up & Down Hill
P, Practice Factor (Table 6) ¹ :	1.00
Vegetative Canopy:	No Canopy
Canopy Cover:	0%
Ground Cover:	70%
Percent Grass:	100%
Percent Weeds:	0%
C, Cover (Table 5) ¹ :	0.028
A, Soil Loss (tons/acre):	3.80
Soil Loss in Proposed Development (tons):	5.50

¹ Tables 5 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
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Block 4A, Transect 4A

Proposed Development Acres:	1.45
Soil Unit No. (100-182):	132
Soil Name:	Fagan
K, Soil Erodibility:	0.32
T, Soil Loss Tolerance (tons/acre):	4
R, Rainfall:	75
Total Transect Length (ft):	320
Number of Segments:	1
Individual Segment Lengths (ft):	320
Segment:	
Gradient (%):	21
m:	
Individual LS:	6.64
Factor:	
Product:	
LS, Length and Steepness:	6.64
Total Transect Average Gradient (%):	21
Farming Practice:	Up & Down Hill
P, Practice Factor (Table 6) ¹ :	1.00
Cover Strategy:	Permanent
Age of Development:	Over 3 Years
Ground Cover:	80%
C, Cover (Table 4) ¹ :	0.022
A, Soil Loss (tons/acre):	3.51
Soil Loss in Proposed Development (tons):	5.08

¹ Tables 4 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
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Blocks 4A & 4B, Transect 4AB

Proposed Development Acres:	0.83
Soil Unit No. (100-182):	132
Soil Name:	Fagan
K, Soil Erodibility:	0.32
T, Soil Loss Tolerance (tons/acre):	4
R, Rainfall:	75
Total Transect Length (ft):	262
Number of Segments:	1
Individual Segment Lengths (ft):	262
Segment:	
Gradient (%):	25
m:	
Individual LS:	7.54
Factor:	
Product:	
LS, Length and Steepness:	7.54
Total Transect Average Gradient (%):	25
Farming Practice:	Up & Down Hill
P, Practice Factor (Table 6) ¹ :	1.00
Vegetative Canopy:	No Canopy
Canopy Cover:	0%
Ground Cover:	70%
Percent Grass:	100%
Percent Weeds:	0%
C, Cover (Table 5) ¹ :	0.028
A, Soil Loss (tons/acre):	4.98
Soil Loss in Proposed Development (tons):	4.13

¹ Tables 5 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
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Blocks 4A & 4B, Transect 4AB

Proposed Development Acres:	0.83
Soil Unit No. (100-182):	132
Soil Name:	Fagan
K, Soil Erodibility:	0.32
T, Soil Loss Tolerance (tons/acre):	4
R, Rainfall:	75
Total Transect Length (ft):	262
Number of Segments:	1
Individual Segment Lengths (ft):	262
Segment:	
Gradient (%):	25
m:	
Individual LS:	7.54
Factor:	
Product:	
LS, Length and Steepness:	7.54
Total Transect Average Gradient (%):	25
Farming Practice:	Cross Slope With Strips
P, Practice Factor (Table 6) ¹ :	0.67
Cover Strategy:	Permanent
Age of Development:	Over 3 Years
Ground Cover:	80%
C, Cover (Table 4) ¹ :	0.022
A, Soil Loss (tons/acre):	2.67
Soil Loss in Proposed Development (tons):	2.21

¹ Tables 4 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
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Block 4C, Transect 4C

Proposed Development Acres:	0.34
Soil Unit No. (100-182):	132
Soil Name:	Fagan
K, Soil Erodibility:	0.32
T, Soil Loss Tolerance (tons/acre):	4
R, Rainfall:	75
Total Transect Length (ft):	144
Number of Segments:	1
Individual Segment Lengths (ft):	144
Segment:	
Gradient (%):	15
m:	
Individual LS:	2.84
Factor:	
Product:	
LS, Length and Steepness:	2.84
Total Transect Average Gradient (%):	15
Farming Practice:	Up & Down Hill
P, Practice Factor (Table 6) ¹ :	1.00
Vegetative Canopy:	No Canopy
Canopy Cover:	0%
Ground Cover:	70%
Percent Grass:	100%
Percent Weeds:	0%
C, Cover (Table 5) ¹ :	0.028
A, Soil Loss (tons/acre):	1.87
Soil Loss in Proposed Development (tons):	0.64

¹ Tables 5 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
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Block 4C, Transect 4C

Proposed Development Acres:	0.34
Soil Unit No. (100-182):	132
Soil Name:	Fagan
K, Soil Erodibility:	0.32
T, Soil Loss Tolerance (tons/acre):	4
R, Rainfall:	75
Total Transect Length (ft):	144
Number of Segments:	1
Individual Segment Lengths (ft):	144
Segment:	
Gradient (%):	15
m:	
Individual LS:	2.84
Factor:	
Product:	
LS, Length and Steepness:	2.84
Total Transect Average Gradient (%):	15
Farming Practice:	Up & Down Hill
P, Practice Factor (Table 6) ¹ :	1.00
Cover Strategy:	Permanent
Age of Development:	Over 3 Years
Ground Cover:	80%
C, Cover (Table 4) ¹ :	0.022
A, Soil Loss (tons/acre):	1.50
Soil Loss in Proposed Development (tons):	0.51

¹ Tables 4 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
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Block 5, Transect 5

Proposed Development Acres:	5.45	
Soil Unit No. (100-182):	132	
Soil Name:	Fagan	
K, Soil Erodibility:	0.32	
T, Soil Loss Tolerance (tons/acre):	4	
R, Rainfall:	65	
Total Transect Length (ft):	628	
Number of Segments:	2	
Individual Segment Lengths (ft):	314	
Segment:	1	2
Gradient (%):	22	16
m:		
Individual LS:	9.89	6.47
Factor:	0.35	0.65
Product:	3.46	4.20
LS, Length and Steepness:	7.66	
Total Transect Average Gradient (%):	19	
Farming Practice:	Up & Down Hill	
P, Practice Factor (Table 6) ¹ :	1.00	
Vegetative Canopy:	No Canopy	
Canopy Cover:	0%	
Ground Cover:	70%	
Percent Grass:	100%	
Percent Weeds:	0%	
C, Cover (Table 5) ¹ :	0.028	
A, Soil Loss (tons/acre):	4.38	
Soil Loss in Proposed Development (tons):	23.89	

¹ Tables 5 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
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Block 5, Transect 5

Proposed Development Acres:	5.45	
Soil Unit No. (100-182):	132	
Soil Name:	Fagan	
K, Soil Erodibility:	0.32	
T, Soil Loss Tolerance (tons/acre):	4	
R, Rainfall:	65	
Total Transect Length (ft):	628	
Number of Segments:	2	
Individual Segment Lengths (ft):	314	
Segment:	1	2
Gradient (%):	22	16
m:		
Individual LS:	9.89	6.47
Factor:	0.35	0.65
Product:	3.46	4.20
LS, Length and Steepness:	7.66	
Total Transect Average Gradient (%):	19	
Farming Practice:	Up & Down Hill	
P, Practice Factor (Table 6) ¹ :	1.00	
Cover Strategy:	Permanent	
Age of Development:	Over 3 Years	
Ground Cover:	80%	
C, Cover (Table 4) ¹ :	0.022	
A, Soil Loss (tons/acre):	3.51	
Soil Loss in Proposed Development (tons):	19.11	

¹ Tables 4 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
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Block 6A, Transect 6A1

Proposed Development Acres:	0.61
Soil Unit No. (100-182):	132
Soil Name:	Fagan
K, Soil Erodibility:	0.32
T, Soil Loss Tolerance (tons/acre):	4
R, Rainfall:	75
Total Transect Length (ft):	319
Number of Segments:	1
Individual Segment Lengths (ft):	319
Segment:	
Gradient (%):	10
m:	
Individual LS:	2.42
Factor:	
Product:	
LS, Length and Steepness:	2.42
Total Transect Average Gradient (%):	10
Farming Practice:	Up & Down Hill
P, Practice Factor (Table 6) ¹ :	1.00
Vegetative Canopy:	No Canopy
Canopy Cover:	0%
Ground Cover:	70%
Percent Grass:	100%
Percent Weeds:	0%
C, Cover (Table 5) ¹ :	0.028
A, Soil Loss (tons/acre):	1.60
Soil Loss in Proposed Development (tons):	0.97

¹ Tables 5 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
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Block 6A, Transect 6A1

Proposed Development Acres:	0.61
Soil Unit No. (100-182):	132
Soil Name:	Fagan
K, Soil Erodibility:	0.32
T, Soil Loss Tolerance (tons/acre):	4
R, Rainfall:	75
Total Transect Length (ft):	319
Number of Segments:	1
Individual Segment Lengths (ft):	319
Segment:	
Gradient (%):	10
m:	
Individual LS:	2.42
Factor:	
Product:	
LS, Length and Steepness:	2.42
Total Transect Average Gradient (%):	10
Farming Practice:	Up & Down Hill
P, Practice Factor (Table 6) ¹ :	1.00
Cover Strategy:	Permanent
Age of Development:	Over 3 Years
Ground Cover:	80%
C, Cover (Table 4) ¹ :	0.022
A, Soil Loss (tons/acre):	1.28
Soil Loss in Proposed Development (tons):	0.78

¹ Tables 4 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
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Blocks 6A & 6B, Transect 6AB

Proposed Development Acres:	5.41
Soil Unit No. (100-182):	132
Soil Name:	Fagan
K, Soil Erodibility:	0.32
T, Soil Loss Tolerance (tons/acre):	4
R, Rainfall:	75
Total Transect Length (ft):	840
Number of Segments:	1
Individual Segment Lengths (ft):	840
Segment:	
Gradient (%):	15
m:	
Individual LS:	6.85
Factor:	
Product:	
LS, Length and Steepness:	6.85
Total Transect Average Gradient (%):	15
Farming Practice:	Up & Down Hill
P, Practice Factor (Table 6) ¹ :	1.00
Vegetative Canopy:	No Canopy
Canopy Cover:	0%
Ground Cover:	70%
Percent Grass:	100%
Percent Weeds:	0%
C, Cover (Table 5) ¹ :	0.028
A, Soil Loss (tons/acre):	4.52
Soil Loss in Proposed Development (tons):	24.47

¹ Tables 5 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
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Blocks 6A & 6B, Transect 6AB

Proposed Development Acres:	5.41
Soil Unit No. (100-182):	132
Soil Name:	Fagan
K, Soil Erodibility:	0.32
T, Soil Loss Tolerance (tons/acre):	4
R, Rainfall:	75
Total Transect Length (ft):	840
Number of Segments:	1
Individual Segment Lengths (ft):	840
Segment:	
Gradient (%):	15
m:	
Individual LS:	6.85
Factor:	
Product:	
LS, Length and Steepness:	6.85
Total Transect Average Gradient (%):	15
Farming Practice:	Up & Down Hill
P, Practice Factor (Table 6) ¹ :	1.00
Cover Strategy:	Permanent
Age of Development:	Over 3 Years
Ground Cover:	80%
C, Cover (Table 4) ¹ :	0.022
A, Soil Loss (tons/acre):	3.62
Soil Loss in Proposed Development (tons):	19.57

¹ Tables 4 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
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Block 6B, Transect 6B1

Proposed Development Acres:	1.54	
Soil Unit No. (100-182):	132	
Soil Name:	Fagan	
K, Soil Erodibility:	0.32	
T, Soil Loss Tolerance (tons/acre):	4	
R, Rainfall:	75	
Total Transect Length (ft):	402	
Number of Segments:	2	
Individual Segment Lengths (ft):	201	
Segment:	1	2
Gradient (%):	14	9
m:		0.5
Individual LS:	4.32	2.35
Factor:	0.35	0.65
Product:	1.51	1.53
LS, Length and Steepness:	3.04	
Total Transect Average Gradient (%):	12	
Farming Practice:	Up & Down Hill	
P, Practice Factor (Table 6) ¹ :	1.00	
Vegetative Canopy:	No Canopy	
Canopy Cover:	0%	
Ground Cover:	70%	
Percent Grass:	100%	
Percent Weeds:	0%	
C, Cover (Table 5) ¹ :	0.028	
A, Soil Loss (tons/acre):	2.00	
Soil Loss in Proposed Development (tons):	3.09	

¹ Tables 5 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
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Block 6B, Transect 6B1

Proposed Development Acres:	1.54	
Soil Unit No. (100-182):	132	
Soil Name:	Fagan	
K, Soil Erodibility:	0.32	
T, Soil Loss Tolerance (tons/acre):	4	
R, Rainfall:	75	
Total Transect Length (ft):	402	
Number of Segments:	2	
Individual Segment Lengths (ft):	201	
Segment:	1	2
Gradient (%):	14	9
m:		0.5
Individual LS:	4.32	2.35
Factor:	0.35	0.65
Product:	1.51	1.53
LS, Length and Steepness:	3.04	
Total Transect Average Gradient (%):	12	
Farming Practice:	Up & Down Hill	
P, Practice Factor (Table 6) ¹ :	1.00	
Cover Strategy:	Permanent	
Age of Development:	Over 3 Years	
Ground Cover:	80%	
C, Cover (Table 4) ¹ :	0.022	
A, Soil Loss (tons/acre):	1.60	
Soil Loss in Proposed Development (tons):	2.47	

¹ Tables 4 & 6 - USLE Special Applications for Napa County

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Block 6C, Transect 6C

Proposed Development Acres:	6.25
Soil Unit No. (100-182):	132
Soil Name:	Fagan
K, Soil Erodibility:	0.32
T, Soil Loss Tolerance (tons/acre):	4
R, Rainfall:	75
Total Transect Length (ft):	511
Number of Segments:	1
Individual Segment Lengths (ft):	511
Segment:	
Gradient (%):	18
m:	
Individual LS:	6.84
Factor:	
Product:	
LS, Length and Steepness:	6.84
Total Transect Average Gradient (%):	18
Farming Practice:	Up & Down Hill
P, Practice Factor (Table 6) ¹ :	1.00
Vegetative Canopy:	No Canopy
Canopy Cover:	0%
Ground Cover:	70%
Percent Grass:	100%
Percent Weeds:	0%
C, Cover (Table 5) ¹ :	0.028
A, Soil Loss (tons/acre):	4.51
Soil Loss in Proposed Development (tons):	28.20

¹ Tables 5 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
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Block 6C, Transect 6C

Proposed Development Acres:	6.25
Soil Unit No. (100-182):	132
Soil Name:	Fagan
K, Soil Erodibility:	0.32
T, Soil Loss Tolerance (tons/acre):	4
R, Rainfall:	75
Total Transect Length (ft):	511
Number of Segments:	1
Individual Segment Lengths (ft):	511
Segment:	
Gradient (%):	18
m:	
Individual LS:	6.84
Factor:	
Product:	
LS, Length and Steepness:	6.84
Total Transect Average Gradient (%):	18
Farming Practice:	Up & Down Hill
P, Practice Factor (Table 6) ¹ :	1.00
Cover Strategy:	Permanent
Age of Development:	Over 3 Years
Ground Cover:	80%
C, Cover (Table 4) ¹ :	0.022
A, Soil Loss (tons/acre):	3.61
Soil Loss in Proposed Development (tons):	22.56

¹ Tables 4 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
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Blocks 6C & 6D, Transect 6CD

Proposed Development Acres:	0.88
Soil Unit No. (100-182):	132
Soil Name:	Fagan
K, Soil Erodibility:	0.32
T, Soil Loss Tolerance (tons/acre):	4
R, Rainfall:	75
Total Transect Length (ft):	107
Number of Segments:	1
Individual Segment Lengths (ft):	107
Segment:	
Gradient (%):	17
m:	
Individual LS:	2.90
Factor:	
Product:	
LS, Length and Steepness:	2.90
Total Transect Average Gradient (%):	17
Farming Practice:	Up & Down Hill
P, Practice Factor (Table 6) ¹ :	1.00
Vegetative Canopy:	No Canopy
Canopy Cover:	0%
Ground Cover:	70%
Percent Grass:	100%
Percent Weeds:	0%
C, Cover (Table 5) ¹ :	0.028
A, Soil Loss (tons/acre):	1.91
Soil Loss in Proposed Development (tons):	1.68

¹ Tables 5 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
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Blocks 6C & 6D, Transect 6CD

Proposed Development Acres:	0.88
Soil Unit No. (100-182):	132
Soil Name:	Fagan
K, Soil Erodibility:	0.32
T, Soil Loss Tolerance (tons/acre):	4
R, Rainfall:	75
Total Transect Length (ft):	107
Number of Segments:	1
Individual Segment Lengths (ft):	107
Segment:	
Gradient (%):	17
m:	
Individual LS:	2.90
Factor:	
Product:	
LS, Length and Steepness:	2.90
Total Transect Average Gradient (%):	17
Farming Practice:	Up & Down Hill
P, Practice Factor (Table 6) ¹ :	1.00
Cover Strategy:	Permanent
Age of Development:	Over 3 Years
Ground Cover:	80%
C, Cover (Table 4) ¹ :	0.022
A, Soil Loss (tons/acre):	1.53
Soil Loss in Proposed Development (tons):	1.35

¹ Tables 4 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
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Block 6D, Transect 6D

Proposed Development Acres:	0.57
Soil Unit No. (100-182):	132
Soil Name:	Fagan
K, Soil Erodibility:	0.32
T, Soil Loss Tolerance (tons/acre):	4
R, Rainfall:	75
Total Transect Length (ft):	115
Number of Segments:	1
Individual Segment Lengths (ft):	115
Segment:	
Gradient (%):	19
m:	
Individual LS:	3.49
Factor:	
Product:	
LS, Length and Steepness:	3.49
Total Transect Average Gradient (%):	19
Farming Practice:	Up & Down Hill
P, Practice Factor (Table 6) ¹ :	1.00
Vegetative Canopy:	No Canopy
Canopy Cover:	0%
Ground Cover:	70%
Percent Grass:	100%
Percent Weeds:	0%
C, Cover (Table 5) ¹ :	0.028
A, Soil Loss (tons/acre):	2.30
Soil Loss in Proposed Development (tons):	1.31

¹ Tables 5 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
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Block 6D, Transect 6D

Proposed Development Acres:	0.57
Soil Unit No. (100-182):	132
Soil Name:	Fagan
K, Soil Erodibility:	0.32
T, Soil Loss Tolerance (tons/acre):	4
R, Rainfall:	75
Total Transect Length (ft):	115
Number of Segments:	1
Individual Segment Lengths (ft):	115
Segment:	
Gradient (%):	19
m:	
Individual LS:	3.49
Factor:	
Product:	
LS, Length and Steepness:	3.49
Total Transect Average Gradient (%):	19
Farming Practice:	Up & Down Hill
P, Practice Factor (Table 6) ¹ :	1.00
Cover Strategy:	Permanent
Age of Development:	Over 3 Years
Ground Cover:	80%
C, Cover (Table 4) ¹ :	0.022
A, Soil Loss (tons/acre):	1.84
Soil Loss in Proposed Development (tons):	1.05

¹ Tables 4 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
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Blocks 6D & 6E, Transect 6DE

Proposed Development Acres:	0.49
Soil Unit No. (100-182):	133
Soil Name:	Fagan
K, Soil Erodibility:	0.32
T, Soil Loss Tolerance (tons/acre):	4
R, Rainfall:	75
Total Transect Length (ft):	266
Number of Segments:	1
Individual Segment Lengths (ft):	266
Segment:	
Gradient (%):	14
m:	
Individual LS:	3.51
Factor:	
Product:	
LS, Length and Steepness:	3.51
Total Transect Average Gradient (%):	14
Farming Practice:	Up & Down Hill
P, Practice Factor (Table 6) ¹ :	1.00
Vegetative Canopy:	No Canopy
Canopy Cover:	0%
Ground Cover:	70%
Percent Grass:	100%
Percent Weeds:	0%
C, Cover (Table 5) ¹ :	0.028
A, Soil Loss (tons/acre):	2.32
Soil Loss in Proposed Development (tons):	1.14

¹ Tables 5 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
 USLE Calculations Post-Project
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Blocks 6D & 6E, Transect 6DE

Proposed Development Acres:	0.49
Soil Unit No. (100-182):	133
Soil Name:	Fagan
K, Soil Erodibility:	0.32
T, Soil Loss Tolerance (tons/acre):	4
R, Rainfall:	75
Total Transect Length (ft):	266
Number of Segments:	1
Individual Segment Lengths (ft):	266
Segment:	
Gradient (%):	14
m:	
Individual LS:	3.51
Factor:	
Product:	
LS, Length and Steepness:	3.51
Total Transect Average Gradient (%):	14
Farming Practice:	Up & Down Hill
P, Practice Factor (Table 6) ¹ :	1.00
Cover Strategy:	Permanent
Age of Development:	Over 3 Years
Ground Cover:	80%
C, Cover (Table 4) ¹ :	0.022
A, Soil Loss (tons/acre):	1.85
Soil Loss in Proposed Development (tons):	0.91

¹ Tables 4 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
 USLE Calculations Pre-Project
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Block 7A1, Transect 7A1

Proposed Development Acres:	1.34
Soil Unit No. (100-182):	133
Soil Name:	Fagan
K, Soil Erodibility:	0.32
T, Soil Loss Tolerance (tons/acre):	4
R, Rainfall:	75
Total Transect Length (ft):	447
Number of Segments:	1
Individual Segment Lengths (ft):	447
Segment:	
Gradient (%):	11
m:	
Individual LS:	3.27
Factor:	
Product:	
LS, Length and Steepness:	3.27
Total Transect Average Gradient (%):	11
Farming Practice:	Up & Down Hill
P, Practice Factor (Table 6) ¹ :	1.00
Vegetative Canopy:	No Canopy
Canopy Cover:	0%
Ground Cover:	70%
Percent Grass:	100%
Percent Weeds:	0%
C, Cover (Table 5) ¹ :	0.028
A, Soil Loss (tons/acre):	2.16
Soil Loss in Proposed Development (tons):	2.89

¹ Tables 5 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
 USLE Calculations Post-Project
 PPI Engineering
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Block 7A1, Transect 7A1

Proposed Development Acres:	1.34
Soil Unit No. (100-182):	133
Soil Name:	Fagan
K, Soil Erodibility:	0.32
T, Soil Loss Tolerance (tons/acre):	4
R, Rainfall:	75
Total Transect Length (ft):	447
Number of Segments:	1
Individual Segment Lengths (ft):	447
Segment:	
Gradient (%):	11
m:	
Individual LS:	3.27
Factor:	
Product:	
LS, Length and Steepness:	3.27
Total Transect Average Gradient (%):	11
Farming Practice:	Up & Down Hill
P, Practice Factor (Table 6) ¹ :	1.00
Cover Strategy:	Permanent
Age of Development:	Over 3 Years
Ground Cover:	80%
C, Cover (Table 4) ¹ :	0.022
A, Soil Loss (tons/acre):	1.73
Soil Loss in Proposed Development (tons):	2.31

¹ Tables 4 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
 USLE Calculations Pre-Project
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Blocks 7A2 & 7B, Transect 7A2

Proposed Development Acres:	2.13
Soil Unit No. (100-182):	133
Soil Name:	Fagan
K, Soil Erodibility:	0.32
T, Soil Loss Tolerance (tons/acre):	4
R, Rainfall:	75
Total Transect Length (ft):	506
Number of Segments:	1
Individual Segment Lengths (ft):	506
Segment:	
Gradient (%):	25
m:	
Individual LS:	10.48
Factor:	
Product:	
LS, Length and Steepness:	10.48
Total Transect Average Gradient (%):	25
Farming Practice:	Up & Down Hill
P, Practice Factor (Table 6) ¹ :	1.00
Vegetative Canopy:	No Canopy
Canopy Cover:	0%
Ground Cover:	70%
Percent Grass:	100%
Percent Weeds:	0%
C, Cover (Table 5) ¹ :	0.028
A, Soil Loss (tons/acre):	6.92
Soil Loss in Proposed Development (tons):	14.74

¹ Tables 5 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
 USLE Calculations Post-Project
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Blocks 7A1 & 7B, Transect 7A1

Proposed Development Acres:	2.13
Soil Unit No. (100-182):	133
Soil Name:	Fagan
K, Soil Erodibility:	0.32
T, Soil Loss Tolerance (tons/acre):	4
R, Rainfall:	75
Total Transect Length (ft):	506
Number of Segments:	1
Individual Segment Lengths (ft):	506
Segment:	
Gradient (%):	25
m:	
Individual LS:	10.48
Factor:	
Product:	
LS, Length and Steepness:	10.48
Total Transect Average Gradient (%):	25
Farming Practice:	Up & Down Hill
P, Practice Factor (Table 6) ¹ :	1.00
Cover Strategy:	Permanent
Age of Development:	Over 3 Years
Ground Cover:	80%
C, Cover (Table 4) ¹ :	0.022
A, Soil Loss (tons/acre):	5.54
Soil Loss in Proposed Development (tons):	11.79

¹ Tables 4 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
 USLE Calculations Pre-Project
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Block 7B, Transect 7B

Proposed Development Acres:	0.56
Soil Unit No. (100-182):	133
Soil Name:	Fagan
K, Soil Erodibility:	0.32
T, Soil Loss Tolerance (tons/acre):	4
R, Rainfall:	75
Total Transect Length (ft):	134
Number of Segments:	1
Individual Segment Lengths (ft):	134
Segment:	
Gradient (%):	21
m:	
Individual LS:	4.30
Factor:	
Product:	
LS, Length and Steepness:	4.30
Total Transect Average Gradient (%):	21
Farming Practice:	Up & Down Hill
P, Practice Factor (Table 6) ¹ :	1.00
Vegetative Canopy:	No Canopy
Canopy Cover:	0%
Ground Cover:	70%
Percent Grass:	100%
Percent Weeds:	0%
C, Cover (Table 5) ¹ :	0.028
A, Soil Loss (tons/acre):	2.84
Soil Loss in Proposed Development (tons):	1.59

¹ Tables 5 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
 USLE Calculations Post-Project
 PPI Engineering
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Block 7B, Transect 7B

Proposed Development Acres:	0.56
Soil Unit No. (100-182):	133
Soil Name:	Fagan
K, Soil Erodibility:	0.32
T, Soil Loss Tolerance (tons/acre):	4
R, Rainfall:	75
Total Transect Length (ft):	134
Number of Segments:	1
Individual Segment Lengths (ft):	134
Segment:	
Gradient (%):	21
m:	
Individual LS:	4.30
Factor:	
Product:	
LS, Length and Steepness:	4.30
Total Transect Average Gradient (%):	21
Farming Practice:	Up & Down Hill
P, Practice Factor (Table 6) ¹ :	1.00
Cover Strategy:	Permanent
Age of Development:	Over 3 Years
Ground Cover:	80%
C, Cover (Table 4) ¹ :	0.022
A, Soil Loss (tons/acre):	2.27
Soil Loss in Proposed Development (tons):	1.27

¹ Tables 4 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
 USLE Calculations Pre-Project
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Blocks 7B & 7C, Transect 7BC1

Proposed Development Acres:	0.42
Soil Unit No. (100-182):	133
Soil Name:	Fagan
K, Soil Erodibility:	0.32
T, Soil Loss Tolerance (tons/acre):	4
R, Rainfall:	75
Total Transect Length (ft):	177
Number of Segments:	1
Individual Segment Lengths (ft):	177
Segment:	
Gradient (%):	10
m:	
Individual LS:	1.80
Factor:	
Product:	
LS, Length and Steepness:	1.80
Total Transect Average Gradient (%):	10
Farming Practice:	Up & Down Hill
P, Practice Factor (Table 6) ¹ :	1.00
Vegetative Canopy:	No Canopy
Canopy Cover:	0%
Ground Cover:	70%
Percent Grass:	100%
Percent Weeds:	0%
C, Cover (Table 5) ¹ :	0.028
A, Soil Loss (tons/acre):	1.19
Soil Loss in Proposed Development (tons):	0.50

¹ Tables 5 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
 USLE Calculations Post-Project
 PPI Engineering
 10/15/2019
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Blocks 7B & 7C, Transect 7BC1

Proposed Development Acres:	0.42
Soil Unit No. (100-182):	133
Soil Name:	Fagan
K, Soil Erodibility:	0.32
T, Soil Loss Tolerance (tons/acre):	4
R, Rainfall:	75
Total Transect Length (ft):	177
Number of Segments:	1
Individual Segment Lengths (ft):	177
Segment:	
Gradient (%):	10
m:	
Individual LS:	1.80
Factor:	
Product:	
LS, Length and Steepness:	1.80
Total Transect Average Gradient (%):	10
Farming Practice:	Up & Down Hill
P, Practice Factor (Table 6) ¹ :	1.00
Cover Strategy:	Permanent
Age of Development:	Over 3 Years
Ground Cover:	80%
C, Cover (Table 4) ¹ :	0.022
A, Soil Loss (tons/acre):	0.95
Soil Loss in Proposed Development (tons):	0.40

¹ Tables 4 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
 USLE Calculations Pre-Project
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Blocks 7B & 7C, Transect 7BC2

Proposed Development Acres:	2.09
Soil Unit No. (100-182):	133
Soil Name:	Fagan
K, Soil Erodibility:	0.32
T, Soil Loss Tolerance (tons/acre):	4
R, Rainfall:	75
Total Transect Length (ft):	472
Number of Segments:	1
Individual Segment Lengths (ft):	472
Segment:	
Gradient (%):	24
m:	
Individual LS:	9.60
Factor:	
Product:	
LS, Length and Steepness:	9.60
Total Transect Average Gradient (%):	24
Farming Practice:	Up & Down Hill
P, Practice Factor (Table 6) ¹ :	1.00
Vegetative Canopy:	No Canopy
Canopy Cover:	0%
Ground Cover:	70%
Percent Grass:	100%
Percent Weeds:	0%
C, Cover (Table 5) ¹ :	0.028
A, Soil Loss (tons/acre):	6.34
Soil Loss in Proposed Development (tons):	13.25

¹ Tables 5 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
 USLE Calculations Post-Project
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Blocks 7B & 7C, Transect 7BC2

Proposed Development Acres:	2.09
Soil Unit No. (100-182):	133
Soil Name:	Fagan
K, Soil Erodibility:	0.32
T, Soil Loss Tolerance (tons/acre):	4
R, Rainfall:	75
Total Transect Length (ft):	472
Number of Segments:	1
Individual Segment Lengths (ft):	472
Segment:	
Gradient (%):	24
m:	
Individual LS:	9.60
Factor:	
Product:	
LS, Length and Steepness:	9.60
Total Transect Average Gradient (%):	24
Farming Practice:	Up & Down Hill
P, Practice Factor (Table 6) ¹ :	1.00
Cover Strategy:	Permanent
Age of Development:	Over 3 Years
Ground Cover:	80%
C, Cover (Table 4) ¹ :	0.022
A, Soil Loss (tons/acre):	5.07
Soil Loss in Proposed Development (tons):	10.60

¹ Tables 4 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
 USLE Calculations Pre-Project
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Block 7C, Transect 7C

Proposed Development Acres:	3.67
Soil Unit No. (100-182):	133
Soil Name:	Fagan
K, Soil Erodibility:	0.32
T, Soil Loss Tolerance (tons/acre):	4
R, Rainfall:	75
Total Transect Length (ft):	169
Number of Segments:	1
Individual Segment Lengths (ft):	169
Segment:	
Gradient (%):	27
m:	
Individual LS:	6.69
Factor:	
Product:	
LS, Length and Steepness:	6.69
Total Transect Average Gradient (%):	27
Farming Practice:	Up & Down Hill
P, Practice Factor (Table 6) ¹ :	1.00
Vegetative Canopy:	No Canopy
Canopy Cover:	0%
Ground Cover:	70%
Percent Grass:	100%
Percent Weeds:	0%
C, Cover (Table 5) ¹ :	0.028
A, Soil Loss (tons/acre):	4.41
Soil Loss in Proposed Development (tons):	16.19

¹ Tables 5 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
 USLE Calculations Post-Project
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Block 7C, Transect 7C

Proposed Development Acres:	3.67
Soil Unit No. (100-182):	133
Soil Name:	Fagan
K, Soil Erodibility:	0.32
T, Soil Loss Tolerance (tons/acre):	4
R, Rainfall:	75
Total Transect Length (ft):	169
Number of Segments:	1
Individual Segment Lengths (ft):	169
Segment:	
Gradient (%):	27
m:	
Individual LS:	6.69
Factor:	
Product:	
LS, Length and Steepness:	6.69
Total Transect Average Gradient (%):	27
Farming Practice:	Cross Slope With Strips
P, Practice Factor (Table 6) ¹ :	0.67
Cover Strategy:	Permanent
Age of Development:	Over 3 Years
Ground Cover:	80%
C, Cover (Table 4) ¹ :	0.022
A, Soil Loss (tons/acre):	2.37
Soil Loss in Proposed Development (tons):	8.68

¹ Tables 4 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
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Block 7D, Transect 7D

Proposed Development Acres:	1.18
Soil Unit No. (100-182):	133
Soil Name:	Fagan
K, Soil Erodibility:	0.32
T, Soil Loss Tolerance (tons/acre):	4
R, Rainfall:	65
Total Transect Length (ft):	446
Number of Segments:	1
Individual Segment Lengths (ft):	446
Segment:	
Gradient (%):	18
m:	
Individual LS:	6.39
Factor:	
Product:	
LS, Length and Steepness:	6.39
Total Transect Average Gradient (%):	18
Farming Practice:	Up & Down Hill
P, Practice Factor (Table 6) ¹ :	1.00
Vegetative Canopy:	No Canopy
Canopy Cover:	0%
Ground Cover:	70%
Percent Grass:	100%
Percent Weeds:	0%
C, Cover (Table 5) ¹ :	0.028
A, Soil Loss (tons/acre):	3.65
Soil Loss in Proposed Development (tons):	4.31

¹ Tables 5 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
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Block 7D, Transect 7D

Proposed Development Acres:	1.18
Soil Unit No. (100-182):	133
Soil Name:	Fagan
K, Soil Erodibility:	0.32
T, Soil Loss Tolerance (tons/acre):	4
R, Rainfall:	65
Total Transect Length (ft):	446
Number of Segments:	1
Individual Segment Lengths (ft):	446
Segment:	
Gradient (%):	18
m:	
Individual LS:	6.39
Factor:	
Product:	
LS, Length and Steepness:	6.39
Total Transect Average Gradient (%):	18
Farming Practice:	Up & Down Hill
P, Practice Factor (Table 6) ¹ :	1.00
Cover Strategy:	Permanent
Age of Development:	Over 3 Years
Ground Cover:	80%
C, Cover (Table 4) ¹ :	0.022
A, Soil Loss (tons/acre):	2.92
Soil Loss in Proposed Development (tons):	3.45

¹ Tables 4 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
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Block 8A, Transect 8A1

Proposed Development Acres:	1.10
Soil Unit No. (100-182):	131
Soil Name:	Fagan
K, Soil Erodibility:	0.32
T, Soil Loss Tolerance (tons/acre):	4
R, Rainfall:	65
Total Transect Length (ft):	359
Number of Segments:	1
Individual Segment Lengths (ft):	359
Segment:	
Gradient (%):	20
m:	
Individual LS:	6.59
Factor:	
Product:	
LS, Length and Steepness:	6.59
Total Transect Average Gradient (%):	20
Farming Practice:	Up & Down Hill
P, Practice Factor (Table 6) ¹ :	1.00
Vegetative Canopy:	No Canopy
Canopy Cover:	0%
Ground Cover:	70%
Percent Grass:	100%
Percent Weeds:	0%
C, Cover (Table 5) ¹ :	0.028
A, Soil Loss (tons/acre):	3.77
Soil Loss in Proposed Development (tons):	4.15

¹ Tables 5 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
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Block 8A, Transect 8A1

Proposed Development Acres:	1.10
Soil Unit No. (100-182):	131
Soil Name:	Fagan
K, Soil Erodibility:	0.32
T, Soil Loss Tolerance (tons/acre):	4
R, Rainfall:	65
Total Transect Length (ft):	359
Number of Segments:	1
Individual Segment Lengths (ft):	359
Segment:	
Gradient (%):	20
m:	
Individual LS:	6.59
Factor:	
Product:	
LS, Length and Steepness:	6.59
Total Transect Average Gradient (%):	20
Farming Practice:	Up & Down Hill
P, Practice Factor (Table 6) ¹ :	1.00
Cover Strategy:	Permanent
Age of Development:	Over 3 Years
Ground Cover:	80%
C, Cover (Table 4) ¹ :	0.022
A, Soil Loss (tons/acre):	3.02
Soil Loss in Proposed Development (tons):	3.32

¹ Tables 4 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
 USLE Calculations Pre-Project
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Block 8A, Transect 8A2

Proposed Development Acres:	0.76	
Soil Unit No. (100-182):	131	
Soil Name:	Fagan	
K, Soil Erodibility:	0.32	
T, Soil Loss Tolerance (tons/acre):	4	
R, Rainfall:	65	
Total Transect Length (ft):	267	
Number of Segments:	2	
Individual Segment Lengths (ft):	134	
Segment:	1	2
Gradient (%):	6	16
m:	0.5	
Individual LS:	1.10	4.22
Factor:	0.35	0.65
Product:	0.38	2.74
LS, Length and Steepness:	3.12	
Total Transect Average Gradient (%):	11	
Farming Practice:	Up & Down Hill	
P, Practice Factor (Table 6) ¹ :	1.00	
Vegetative Canopy:	No Canopy	
Canopy Cover:	0%	
Ground Cover:	70%	
Percent Grass:	100%	
Percent Weeds:	0%	
C, Cover (Table 5) ¹ :	0.028	
A, Soil Loss (tons/acre):	1.79	
Soil Loss in Proposed Development (tons):	1.36	

¹ Tables 5 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
 USLE Calculations Post-Project
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Block 8A, Transect 8A2

Proposed Development Acres:	0.76	
Soil Unit No. (100-182):	131	
Soil Name:	Fagan	
K, Soil Erodibility:	0.32	
T, Soil Loss Tolerance (tons/acre):	4	
R, Rainfall:	65	
Total Transect Length (ft):	267	
Number of Segments:	2	
Individual Segment Lengths (ft):	134	
Segment:	1	2
Gradient (%):	6	16
m:	0.5	
Individual LS:	1.10	4.22
Factor:	0.35	0.65
Product:	0.38	2.74
LS, Length and Steepness:	3.12	
Total Transect Average Gradient (%):	11	
Farming Practice:	Up & Down Hill	
P, Practice Factor (Table 6) ¹ :	1.00	
Cover Strategy:	Permanent	
Age of Development:	Over 3 Years	
Ground Cover:	80%	
C, Cover (Table 4) ¹ :	0.022	
A, Soil Loss (tons/acre):	1.43	
Soil Loss in Proposed Development (tons):	1.09	

¹ Tables 4 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
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Blocks 8A & 8B, Transect 8AB

Proposed Development Acres:	1.16
Soil Unit No. (100-182):	131
Soil Name:	Fagan
K, Soil Erodibility:	0.32
T, Soil Loss Tolerance (tons/acre):	4
R, Rainfall:	65
Total Transect Length (ft):	397
Number of Segments:	1
Individual Segment Lengths (ft):	397
Segment:	
Gradient (%):	19
m:	
Individual LS:	6.48
Factor:	
Product:	
LS, Length and Steepness:	6.48
Total Transect Average Gradient (%):	19
Farming Practice:	Up & Down Hill
P, Practice Factor (Table 6) ¹ :	1.00
Vegetative Canopy:	No Canopy
Canopy Cover:	0%
Ground Cover:	70%
Percent Grass:	100%
Percent Weeds:	0%
C, Cover (Table 5) ¹ :	0.028
A, Soil Loss (tons/acre):	3.70
Soil Loss in Proposed Development (tons):	4.30

¹ Tables 5 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
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Blocks 8A & 8B, Transect 8AB

Proposed Development Acres:	1.16
Soil Unit No. (100-182):	131
Soil Name:	Fagan
K, Soil Erodibility:	0.32
T, Soil Loss Tolerance (tons/acre):	4
R, Rainfall:	65
Total Transect Length (ft):	397
Number of Segments:	1
Individual Segment Lengths (ft):	397
Segment:	
Gradient (%):	19
m:	
Individual LS:	6.48
Factor:	
Product:	
LS, Length and Steepness:	6.48
Total Transect Average Gradient (%):	19
Farming Practice:	Up & Down Hill
P, Practice Factor (Table 6) ¹ :	1.00
Cover Strategy:	Permanent
Age of Development:	Over 3 Years
Ground Cover:	80%
C, Cover (Table 4) ¹ :	0.022
A, Soil Loss (tons/acre):	2.96
Soil Loss in Proposed Development (tons):	3.44

¹ Tables 4 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
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Blocks 8B & 8C, Transect 8BC

Proposed Development Acres:	0.91	
Soil Unit No. (100-182):	131	
Soil Name:	Fagan	
K, Soil Erodibility:	0.32	
T, Soil Loss Tolerance (tons/acre):	4	
R, Rainfall:	75	
Total Transect Length (ft):	266	
Number of Segments:	2	
Individual Segment Lengths (ft):	133	
Segment:	1	2
Gradient (%):	6	15
m:	0.5	
Individual LS:	1.10	3.86
Factor:	0.35	0.65
Product:	0.38	2.51
LS, Length and Steepness:	2.89	
Total Transect Average Gradient (%):	11	
Farming Practice:	Up & Down Hill	
P, Practice Factor (Table 6) ¹ :	1.00	
Vegetative Canopy:	No Canopy	
Canopy Cover:	0%	
Ground Cover:	70%	
Percent Grass:	100%	
Percent Weeds:	0%	
C, Cover (Table 5) ¹ :	0.028	
A, Soil Loss (tons/acre):	1.91	
Soil Loss in Proposed Development (tons):	1.74	

¹ Tables 5 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
 USLE Calculations Post-Project
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Blocks 8B & 8C, Transect 8BC

Proposed Development Acres:	0.91	
Soil Unit No. (100-182):	131	
Soil Name:	Fagan	
K, Soil Erodibility:	0.32	
T, Soil Loss Tolerance (tons/acre):	4	
R, Rainfall:	75	
Total Transect Length (ft):	266	
Number of Segments:	2	
Individual Segment Lengths (ft):	133	
Segment:	1	2
Gradient (%):	6	15
m:	0.5	
Individual LS:	1.10	3.86
Factor:	0.35	0.65
Product:	0.38	2.51
LS, Length and Steepness:	2.89	
Total Transect Average Gradient (%):	11	
Farming Practice:	Up & Down Hill	
P, Practice Factor (Table 6) ¹ :	1.00	
Cover Strategy:	Permanent	
Age of Development:	Over 3 Years	
Ground Cover:	80%	
C, Cover (Table 4) ¹ :	0.022	
A, Soil Loss (tons/acre):	1.53	
Soil Loss in Proposed Development (tons):	1.39	

¹ Tables 4 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
 USLE Calculations Pre-Project
 PPI Engineering
 10/15/2019
 ALB

Blocks 8C & 8D, Transect 8CD

Proposed Development Acres:	0.37
Soil Unit No. (100-182):	131
Soil Name:	Fagan
K, Soil Erodibility:	0.32
T, Soil Loss Tolerance (tons/acre):	4
R, Rainfall:	65
Total Transect Length (ft):	168
Number of Segments:	1
Individual Segment Lengths (ft):	168
Segment:	
Gradient (%):	17
m:	
Individual LS:	3.63
Factor:	
Product:	
LS, Length and Steepness:	3.63
Total Transect Average Gradient (%):	17
Farming Practice:	Up & Down Hill
P, Practice Factor (Table 6) ¹ :	1.00
Vegetative Canopy:	No Canopy
Canopy Cover:	0%
Ground Cover:	70%
Percent Grass:	100%
Percent Weeds:	0%
C, Cover (Table 5) ¹ :	0.028
A, Soil Loss (tons/acre):	2.08
Soil Loss in Proposed Development (tons):	0.77

¹ Tables 5 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
 USLE Calculations Post-Project
 PPI Engineering
 10/15/2019
 ALB

Blocks 8C & 8D, Transect 8CD

Proposed Development Acres:	0.37
Soil Unit No. (100-182):	131
Soil Name:	Fagan
K, Soil Erodibility:	0.32
T, Soil Loss Tolerance (tons/acre):	4
R, Rainfall:	65
Total Transect Length (ft):	168
Number of Segments:	1
Individual Segment Lengths (ft):	168
Segment:	
Gradient (%):	17
m:	
Individual LS:	3.63
Factor:	
Product:	
LS, Length and Steepness:	3.63
Total Transect Average Gradient (%):	17
Farming Practice:	Up & Down Hill
P, Practice Factor (Table 6) ¹ :	1.00
Cover Strategy:	Permanent
Age of Development:	Over 3 Years
Ground Cover:	80%
C, Cover (Table 4) ¹ :	0.022
A, Soil Loss (tons/acre):	1.66
Soil Loss in Proposed Development (tons):	0.61

¹ Tables 4 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
 USLE Calculations Pre-Project
 PPI Engineering
 10/15/2019
 ALB

Block 8E, Transect 8E

Proposed Development Acres:	0.50
Soil Unit No. (100-182):	131
Soil Name:	Fagan
K, Soil Erodibility:	0.32
T, Soil Loss Tolerance (tons/acre):	4
R, Rainfall:	65
Total Transect Length (ft):	256
Number of Segments:	1
Individual Segment Lengths (ft):	256
Segment:	
Gradient (%):	5
m:	0.5
Individual LS:	0.86
Factor:	
Product:	
LS, Length and Steepness:	0.86
Total Transect Average Gradient (%):	5
Farming Practice:	Up & Down Hill
P, Practice Factor (Table 6) ¹ :	1.00
Vegetative Canopy:	No Canopy
Canopy Cover:	0%
Ground Cover:	70%
Percent Grass:	100%
Percent Weeds:	0%
C, Cover (Table 5) ¹ :	0.028
A, Soil Loss (tons/acre):	0.49
Soil Loss in Proposed Development (tons):	0.24

¹ Tables 5 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
 USLE Calculations Post-Project
 PPI Engineering
 10/15/2019
 ALB

Block 8E, Transect 8E

Proposed Development Acres:	0.50
Soil Unit No. (100-182):	131
Soil Name:	Fagan
K, Soil Erodibility:	0.32
T, Soil Loss Tolerance (tons/acre):	4
R, Rainfall:	65
Total Transect Length (ft):	256
Number of Segments:	1
Individual Segment Lengths (ft):	256
Segment:	
Gradient (%):	5
m:	0.5
Individual LS:	0.86
Factor:	
Product:	
LS, Length and Steepness:	0.86
Total Transect Average Gradient (%):	5
Farming Practice:	Up & Down Hill
P, Practice Factor (Table 6) ¹ :	1.00
Cover Strategy:	Permanent
Age of Development:	Over 3 Years
Ground Cover:	80%
C, Cover (Table 4) ¹ :	0.022
A, Soil Loss (tons/acre):	0.39
Soil Loss in Proposed Development (tons):	0.20

¹ Tables 4 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
 USLE Calculations Pre-Project
 PPI Engineering
 10/15/2019
 ALB

Block 8F, Transect 8F

Proposed Development Acres:	0.37
Soil Unit No. (100-182):	131
Soil Name:	Fagan
K, Soil Erodibility:	0.32
T, Soil Loss Tolerance (tons/acre):	4
R, Rainfall:	65
Total Transect Length (ft):	194
Number of Segments:	1
Individual Segment Lengths (ft):	194
Segment:	
Gradient (%):	21
m:	
Individual LS:	5.17
Factor:	
Product:	
LS, Length and Steepness:	5.17
Total Transect Average Gradient (%):	21
Farming Practice:	Up & Down Hill
P, Practice Factor (Table 6) ¹ :	1.00
Vegetative Canopy:	No Canopy
Canopy Cover:	0%
Ground Cover:	70%
Percent Grass:	100%
Percent Weeds:	0%
C, Cover (Table 5) ¹ :	0.028
A, Soil Loss (tons/acre):	2.96
Soil Loss in Proposed Development (tons):	1.09

¹ Tables 5 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
 USLE Calculations Post-Project
 PPI Engineering
 10/15/2019
 ALB

Block 8F, Transect 8F

Proposed Development Acres:	0.37
Soil Unit No. (100-182):	131
Soil Name:	Fagan
K, Soil Erodibility:	0.32
T, Soil Loss Tolerance (tons/acre):	4
R, Rainfall:	65
Total Transect Length (ft):	194
Number of Segments:	1
Individual Segment Lengths (ft):	194
Segment:	
Gradient (%):	21
m:	
Individual LS:	5.17
Factor:	
Product:	
LS, Length and Steepness:	5.17
Total Transect Average Gradient (%):	21
Farming Practice:	Up & Down Hill
P, Practice Factor (Table 6) ¹ :	1.00
Cover Strategy:	Permanent
Age of Development:	Over 3 Years
Ground Cover:	80%
C, Cover (Table 4) ¹ :	0.022
A, Soil Loss (tons/acre):	2.37
Soil Loss in Proposed Development (tons):	0.88

¹ Tables 4 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
 USLE Calculations Pre-Project
 PPI Engineering
 10/15/2019
 ALB

Blocks 8C, 8G, & 8H, Transect 8CGH

Proposed Development Acres:	0.68
Soil Unit No. (100-182):	133
Soil Name:	Fagan
K, Soil Erodibility:	0.32
T, Soil Loss Tolerance (tons/acre):	4
R, Rainfall:	75
Total Transect Length (ft):	390
Number of Segments:	1
Individual Segment Lengths (ft):	390
Segment:	
Gradient (%):	21
m:	
Individual LS:	7.33
Factor:	
Product:	
LS, Length and Steepness:	7.33
Total Transect Average Gradient (%):	21
Farming Practice:	Up & Down Hill
P, Practice Factor (Table 6) ¹ :	1.00
Vegetative Canopy:	No Canopy
Canopy Cover:	0%
Ground Cover:	70%
Percent Grass:	100%
Percent Weeds:	0%
C, Cover (Table 5) ¹ :	0.028
A, Soil Loss (tons/acre):	4.84
Soil Loss in Proposed Development (tons):	3.29

¹ Tables 5 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
 USLE Calculations Post-Project
 PPI Engineering
 10/15/2019
 ALB

Blocks 8C, 8G, & 8H, Transect 8CGH

Proposed Development Acres:	0.68
Soil Unit No. (100-182):	133
Soil Name:	Fagan
K, Soil Erodibility:	0.32
T, Soil Loss Tolerance (tons/acre):	4
R, Rainfall:	75
Total Transect Length (ft):	390
Number of Segments:	1
Individual Segment Lengths (ft):	390
Segment:	
Gradient (%):	21
m:	
Individual LS:	7.33
Factor:	
Product:	
LS, Length and Steepness:	7.33
Total Transect Average Gradient (%):	21
Farming Practice:	Up & Down Hill
P, Practice Factor (Table 6) ¹ :	1.00
Cover Strategy:	Permanent
Age of Development:	Over 3 Years
Ground Cover:	80%
C, Cover (Table 4) ¹ :	0.022
A, Soil Loss (tons/acre):	3.87
Soil Loss in Proposed Development (tons):	2.63

¹ Tables 4 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
 USLE Calculations Pre-Project
 PPI Engineering
 10/15/2019
 ALB

Block 9, Transect 9

Proposed Development Acres:	0.98
Soil Unit No. (100-182):	133
Soil Name:	Fagan
K, Soil Erodibility:	0.32
T, Soil Loss Tolerance (tons/acre):	4
R, Rainfall:	75
Total Transect Length (ft):	303
Number of Segments:	1
Individual Segment Lengths (ft):	303
Segment:	
Gradient (%):	23
m:	
Individual LS:	7.28
Factor:	
Product:	
LS, Length and Steepness:	7.28
Total Transect Average Gradient (%):	23
Farming Practice:	Up & Down Hill
P, Practice Factor (Table 6) ¹ :	1.00
Vegetative Canopy:	No Canopy
Canopy Cover:	0%
Ground Cover:	70%
Percent Grass:	100%
Percent Weeds:	0%
C, Cover (Table 5) ¹ :	0.028
A, Soil Loss (tons/acre):	4.81
Soil Loss in Proposed Development (tons):	4.71

¹ Tables 5 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
 USLE Calculations Post-Project
 PPI Engineering
 10/15/2019
 ALB

Block 9, Transect 9

Proposed Development Acres:	0.98
Soil Unit No. (100-182):	133
Soil Name:	Fagan
K, Soil Erodibility:	0.32
T, Soil Loss Tolerance (tons/acre):	4
R, Rainfall:	75
Total Transect Length (ft):	303
Number of Segments:	1
Individual Segment Lengths (ft):	303
Segment:	
Gradient (%):	23
m:	
Individual LS:	7.28
Factor:	
Product:	
LS, Length and Steepness:	7.28
Total Transect Average Gradient (%):	23
Farming Practice:	Up & Down Hill
P, Practice Factor (Table 6) ¹ :	1.00
Cover Strategy:	Permanent
Age of Development:	Over 3 Years
Ground Cover:	80%
C, Cover (Table 4) ¹ :	0.022
A, Soil Loss (tons/acre):	3.84
Soil Loss in Proposed Development (tons):	3.77

¹ Tables 4 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
 USLE Calculations Pre-Project
 PPI Engineering
 10/15/2019
 ALB

Vineyard Access Road 1, Transect VAR1

Proposed Development Acres:	0.10
Soil Unit No. (100-182):	131
Soil Name:	Fagan
K, Soil Erodibility:	0.32
T, Soil Loss Tolerance (tons/acre):	4
R, Rainfall:	65
Total Transect Length (ft):	147
Number of Segments:	1
Individual Segment Lengths (ft):	147
Segment:	
Gradient (%):	27
m:	
Individual LS:	6.24
Factor:	
Product:	
LS, Length and Steepness:	6.24
Total Transect Average Gradient (%):	27
Farming Practice:	Up & Down Hill
P, Practice Factor (Table 6) ¹ :	1.00
Vegetative Canopy:	No Canopy
Canopy Cover:	0%
Ground Cover:	70%
Percent Grass:	100%
Percent Weeds:	0%
C, Cover (Table 5) ¹ :	0.028
A, Soil Loss (tons/acre):	3.57
Soil Loss in Proposed Development (tons):	0.36

¹ Tables 5 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
 USLE Calculations Post-Project
 PPI Engineering
 10/15/2019
 ALB

Vineyard Access Road 1, Transect VAR1

Proposed Development Acres:	0.10
Soil Unit No. (100-182):	131
Soil Name:	Fagan
K, Soil Erodibility:	0.32
T, Soil Loss Tolerance (tons/acre):	4
R, Rainfall:	65
Total Transect Length (ft):	147
Number of Segments:	1
Individual Segment Lengths (ft):	147
Segment:	
Gradient (%):	27
m:	
Individual LS:	6.24
Factor:	
Product:	
LS, Length and Steepness:	6.24
Total Transect Average Gradient (%):	27
Farming Practice:	Up & Down Hill
P, Practice Factor (Table 6) ¹ :	1.00
Cover Strategy:	Permanent
Age of Development:	Over 3 Years
Ground Cover:	80%
C, Cover (Table 4) ¹ :	0.022
A, Soil Loss (tons/acre):	2.85
Soil Loss in Proposed Development (tons):	0.29

¹ Tables 4 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
 USLE Calculations Pre-Project
 PPI Engineering
 10/15/2019
 ALB

Vineyard Access Road 2, Transect VAR2

Proposed Development Acres:	0.07
Soil Unit No. (100-182):	131
Soil Name:	Fagan
K, Soil Erodibility:	0.32
T, Soil Loss Tolerance (tons/acre):	4
R, Rainfall:	65
Total Transect Length (ft):	148
Number of Segments:	1
Individual Segment Lengths (ft):	148
Segment:	
Gradient (%):	34
m:	
Individual LS:	8.33
Factor:	
Product:	
LS, Length and Steepness:	8.33
Total Transect Average Gradient (%):	34
Farming Practice:	Up & Down Hill
P, Practice Factor (Table 6) ¹ :	1.00
Vegetative Canopy:	No Canopy
Canopy Cover:	0%
Ground Cover:	70%
Percent Grass:	100%
Percent Weeds:	0%
C, Cover (Table 5) ¹ :	0.028
A, Soil Loss (tons/acre):	4.76
Soil Loss in Proposed Development (tons):	0.33

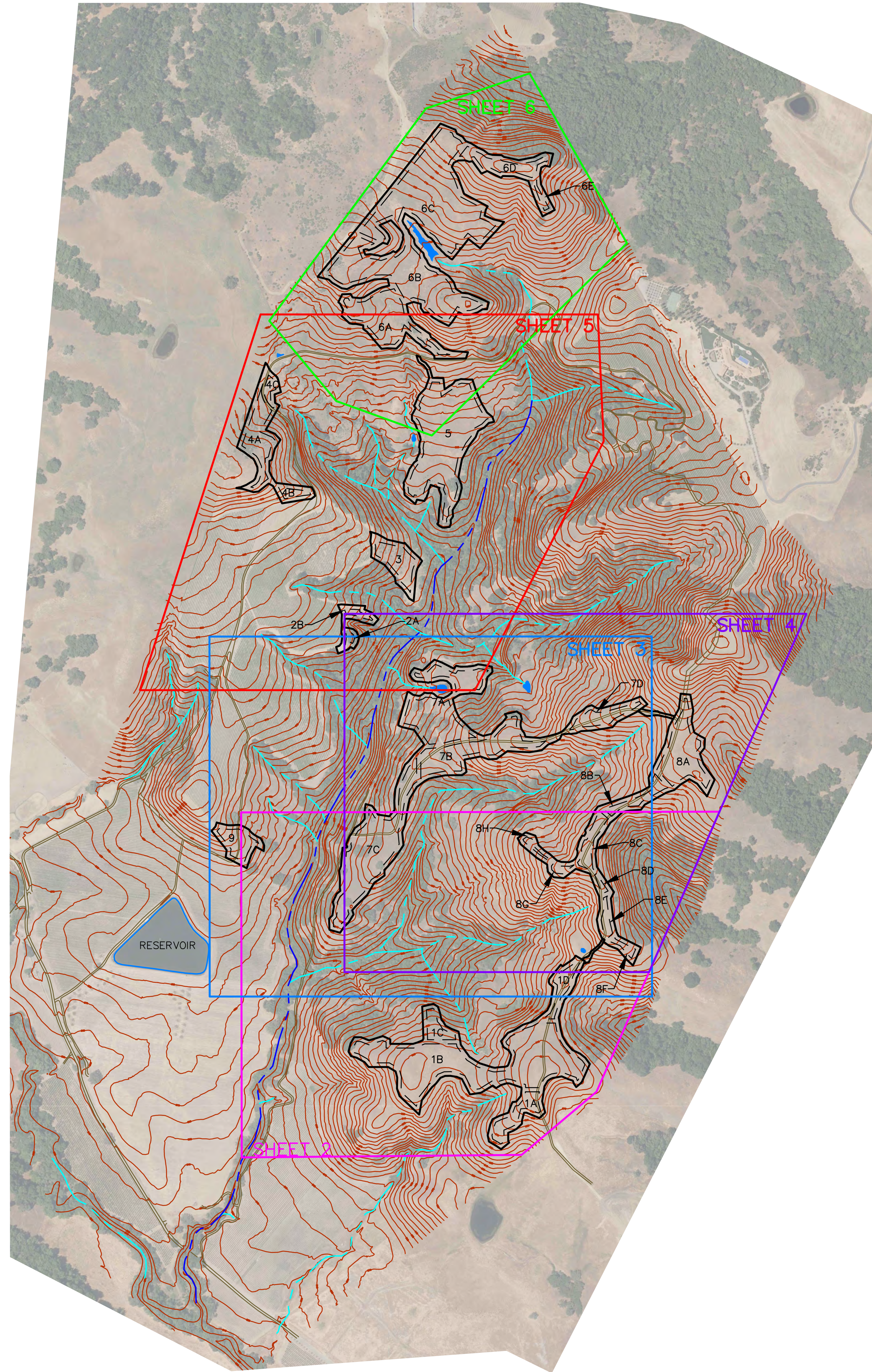
¹ Tables 5 & 6 - USLE Special Applications for Napa County

V. Sattui Winery, Hibbard Ranch
 USLE Calculations Post-Project
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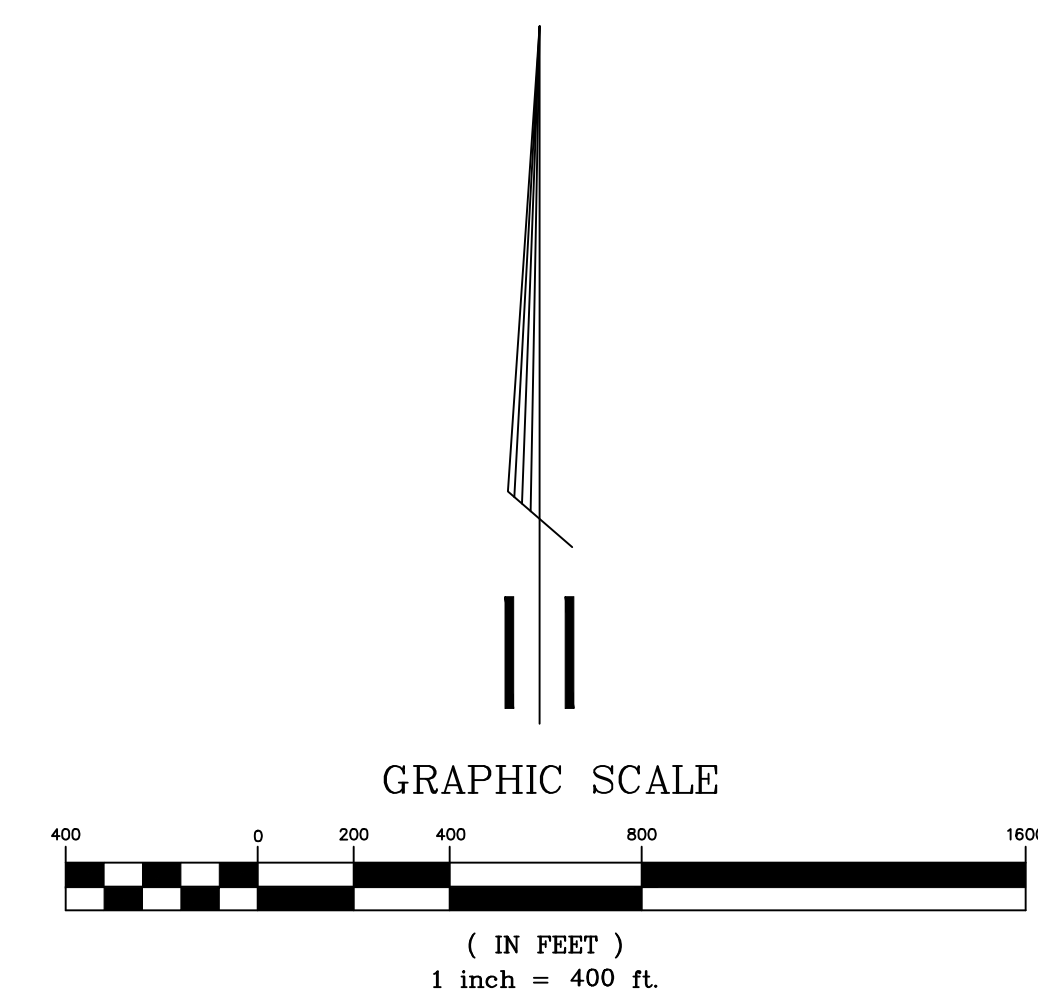
Vineyard Access Road 2, Transect VAR2

Proposed Development Acres:	0.07
Soil Unit No. (100-182):	131
Soil Name:	Fagan
K, Soil Erodibility:	0.32
T, Soil Loss Tolerance (tons/acre):	4
R, Rainfall:	65
Total Transect Length (ft):	148
Number of Segments:	1
Individual Segment Lengths (ft):	148
Segment:	
Gradient (%):	34
m:	
Individual LS:	8.33
Factor:	
Product:	
LS, Length and Steepness:	8.33
Total Transect Average Gradient (%):	34
Farming Practice:	Up & Down Hill
P, Practice Factor (Table 6) ¹ :	1.00
Cover Strategy:	Permanent
Age of Development:	Over 3 Years
Ground Cover:	80%
C, Cover (Table 4) ¹ :	0.022
A, Soil Loss (tons/acre):	3.81
Soil Loss in Proposed Development (tons):	0.27

¹ Tables 4 & 6 - USLE Special Applications for Napa County



TOPOGRAPHIC MAPPING PROVIDED BY AMERICAN AERIAL MAPPING, INC. MAY 2017. 2' CONTOUR INTERVAL.
 INTERMEDIATE CONTOURS ARE TURNED OFF FOR THIS VIEW.
 2014 NAPA COUNTY ORTHOPHOTO.



- LEGEND**
- U.S.G.S. BLUE LINE STREAM
 - EPHEMERAL STREAM, MAPPED BY WRA
 - WETLAND, MAPPED BY WRA
 - EXISTING RESERVOIR
 - EXISTING ROAD
 - PROPOSED VINEYARD DEVELOPMENT AREA
 - PROPOSED VINEYARD BLOCK BOUNDARY

V. SATTUI WINERY INC.	
HIBBARD RANCH	
SOIL LOSS ANALYSIS	
SITE PLAN	
DESIGN ENGINEER: J. BUSHEY, M. BUENO, A. LEMIRE-BAETEN	
SCALE: AS SHOWN	DRAWN BY: ALB
DATE: 10-14-19	SHEET: 1 OF 6

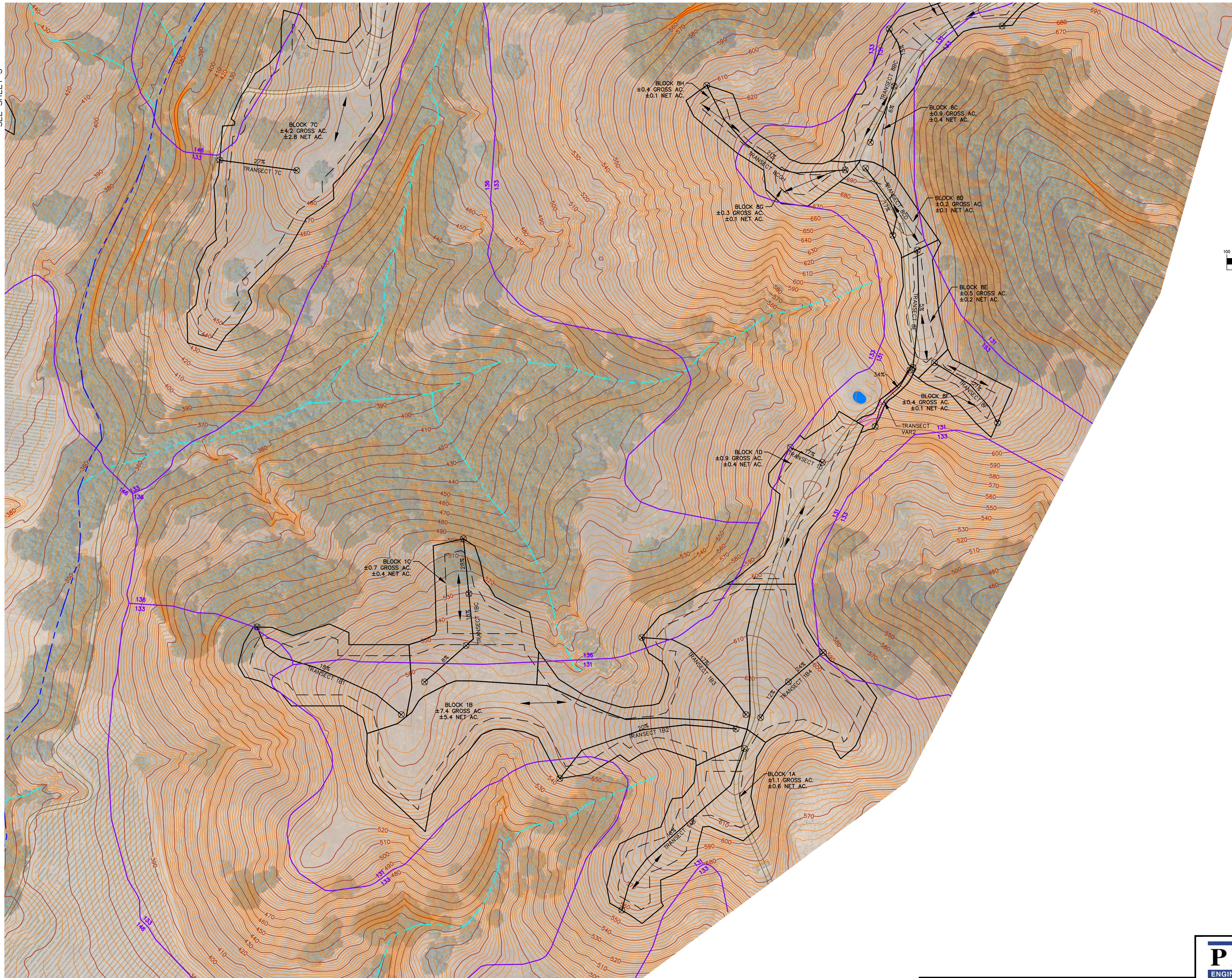
PPI
 ENGINEERING
 2800 JEFFERSON STREET
 NAPA, CA 94558
 707/253-1806 FAX 707/253-1604

REV. NO.	DESCRIPTION	BY	DATE
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SEE SHEET 3

SEE SHEET 4



GRAPHIC SCALE



(IN FEET)
1 inch = 100 ft.

LEGEND

- U.S.G.S. BLUE LINE STREAM
- EPHEMERAL STREAM, MAPPED BY WRA
- WETLAND, MAPPED BY WRA
- EXISTING ROAD
- PROPOSED VINEYARD DEVELOPMENT AREA BY TRANSECT
- PROPOSED VINEYARD BLOCK BOUNDARY
- PROPOSED ROAD
- PROPOSED VINEYARD DIRECTION
- USLE TRANSECT WITH SLOPE
- SOIL TYPE BOUNDARY

USDA SOIL CLASSIFICATIONS:

- 131 FAGAN CLAY LOAM, 5-15% SLOPE
- 133 FAGAN CLAY LOAM, 30-50% SLOPE
- 136 FAGAN CLAY LOAM, 30-50% SLOPE
- 146 HAIRE LOAM, 2-9% SLOPE

V. SATTUI WINERY INC.
HIBBARD RANCH
SOIL LOSS ANALYSIS
BLOCK 1



2800 JEFFERSON STREET
NAPA, CA 94958
707/253-1806 FAX 707/253-1604

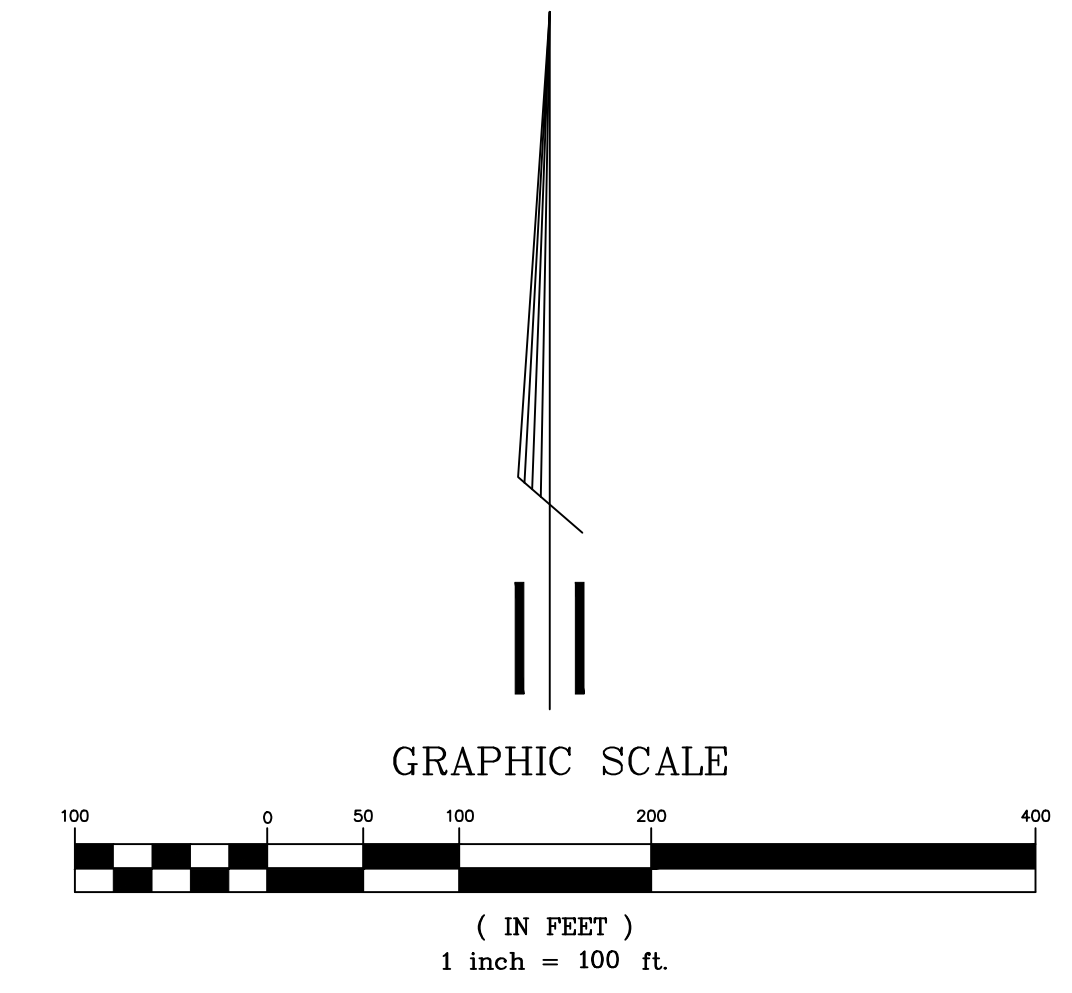
DESIGN ENGINEER:
J. BUSHEY, M. BUENO, A. LEMIRE-BAETEN

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JOB NO: 11711201	SCALE: AS SHOWN	DRAWN BY: ALB	DATE: 10-14-19	SHEET: 2 OF: 6
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DWG. NO: 11711201V



- LEGEND**
- U.S.G.S. BLUE LINE STREAM
 - EPHEMERAL STREAM, MAPPED BY WRA
 - █ WETLAND, MAPPED BY WRA
 - EXISTING ROAD
 - PROPOSED VINEYARD DEVELOPMENT AREA BY TRANSECT
 - PROPOSED VINEYARD BLOCK BOUNDARY
 - PROPOSED ROAD
 - PROPOSED VNEROW DIRECTION
 - ⊗ X% USLE TRANSECT WITH SLOPE
 - 133 SOIL TYPE BOUNDARY
 - 136

- USDA SOIL CLASSIFICATIONS:**
- 131 FAGAN CLAY LOAM, 5-15% SLOPE
 - 132 FAGAN CLAY LOAM, 15-30% SLOPE
 - 133 FAGAN CLAY LOAM, 30-50% SLOPE
 - 136 FELTON GRAVELLY LOAM, 30-50% SLOPE
 - 146 HAIRE LOAM, 2-9% SLOPE

SEE SHEET 4

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SEE SHEET 2

V. SATTUI WINERY INC.
 HIBBARD RANCH
 SOIL LOSS ANALYSIS
 BLOCKS 7 & 9



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 NAPA, CA 94558
 707/253-1806 FAX 707/253-1804

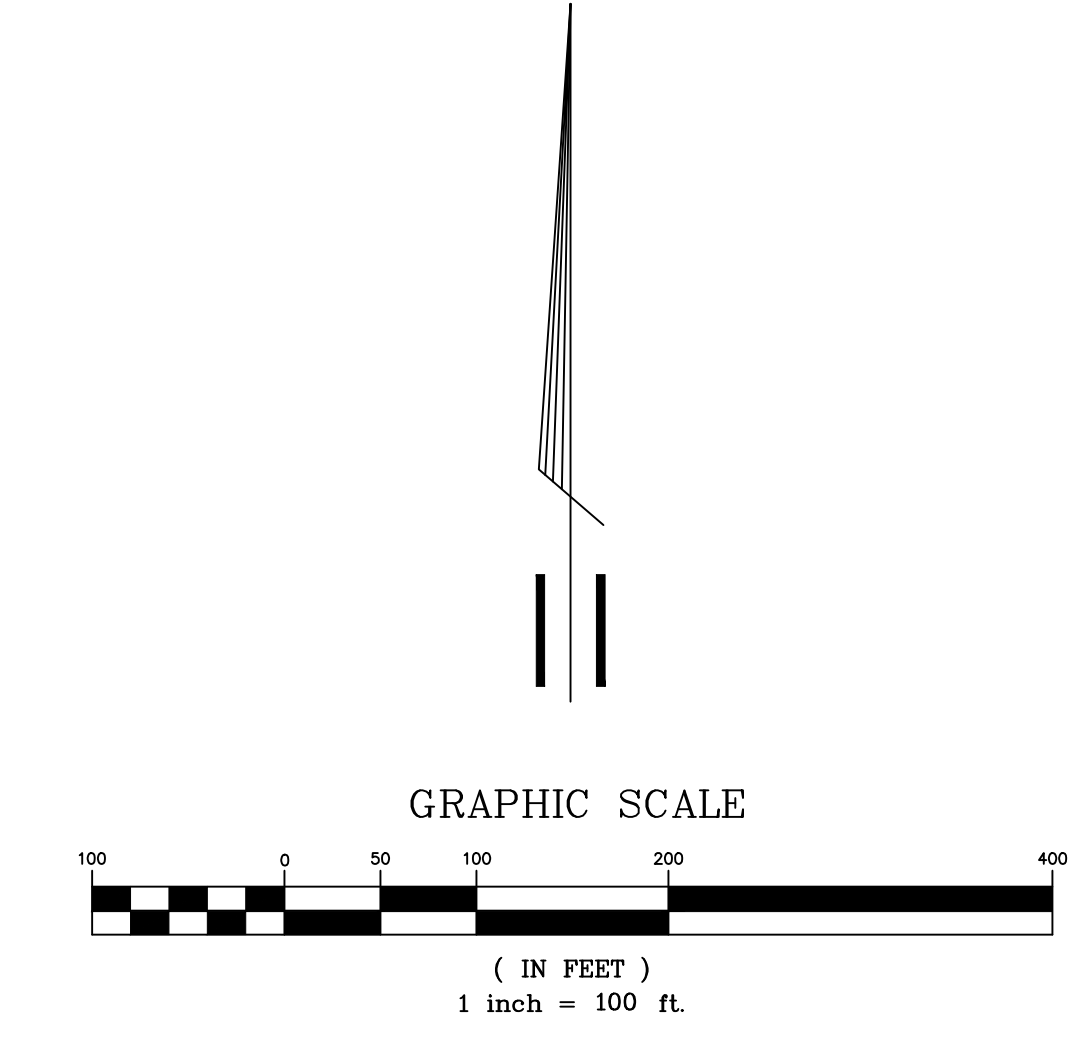
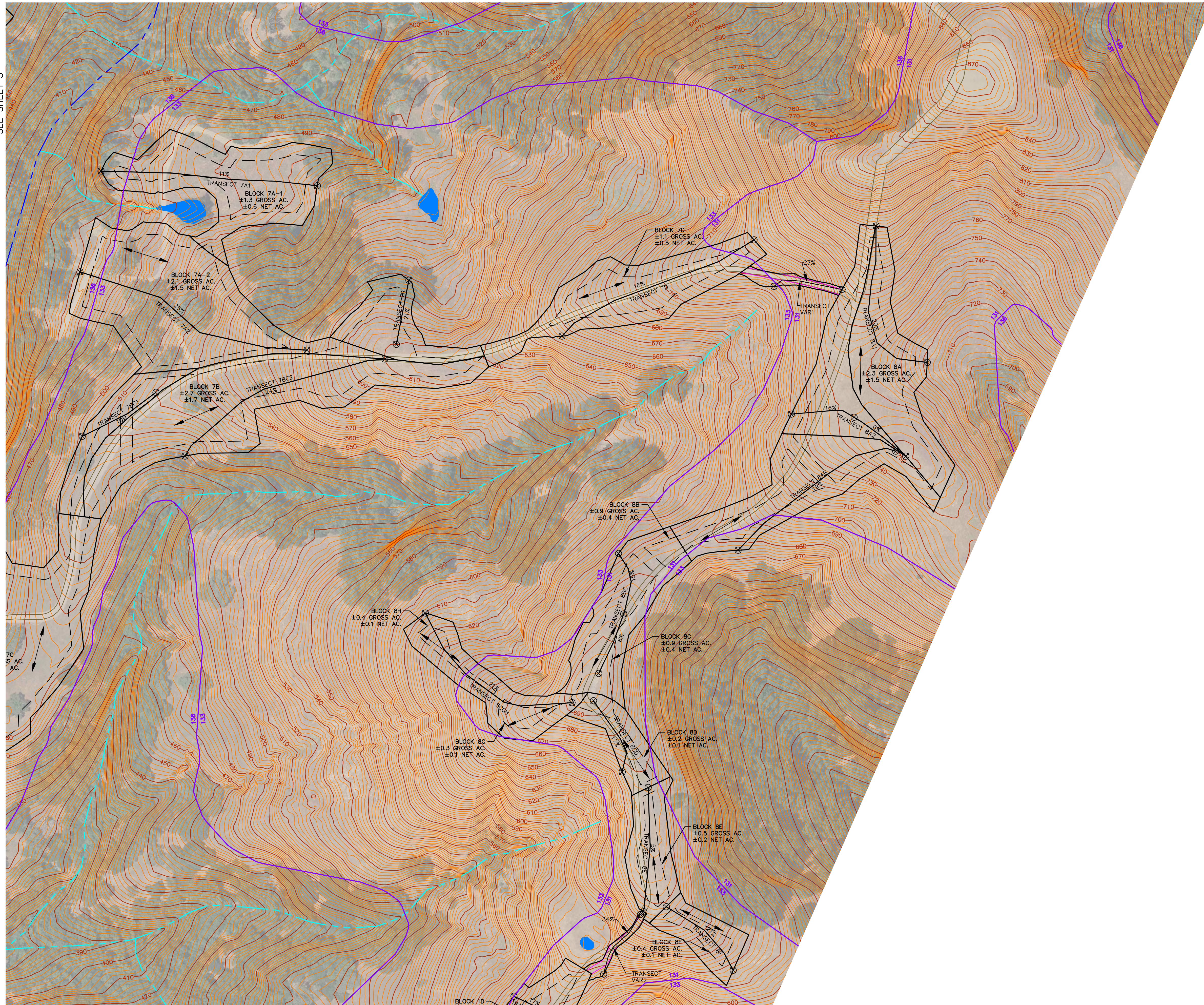
DESIGN ENGINEER:
 J. BUSHEY, M. BUENO, A. LEMIRE-BAETEN

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1	THIS DRAWING SUPERSEDES DRAWING 11711201U, INCORPORATED CHANGES BASED ON NAPA COUNTY COMMENTS.	ALB	10-14-19

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DWG. NO: 11711201V				OF: 6

SEE SHEET 3

SEE SHEET 3



LEGEND

- EPHEMERAL STREAM, MAPPED BY WRA
- WETLAND, MAPPED BY WRA
- EXISTING ROAD
- PROPOSED VINEYARD DEVELOPMENT AREA BY TRANSECT
- PROPOSED VINEYARD BLOCK BOUNDARY
- PROPOSED ROAD
- PROPOSED VINEYARD DIRECTION
- USLE TRANSECT WITH SLOPE
- SOIL TYPE BOUNDARY

- USDA SOIL CLASSIFICATIONS:**
- FAGAN CLAY LOAM, 5-15% SLOPE
 - FAGAN CLAY LOAM, 30-50% SLOPE
 - FELTON GRAVELLY LOAM, 30-50% SLOPE

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SEE SHEET 2

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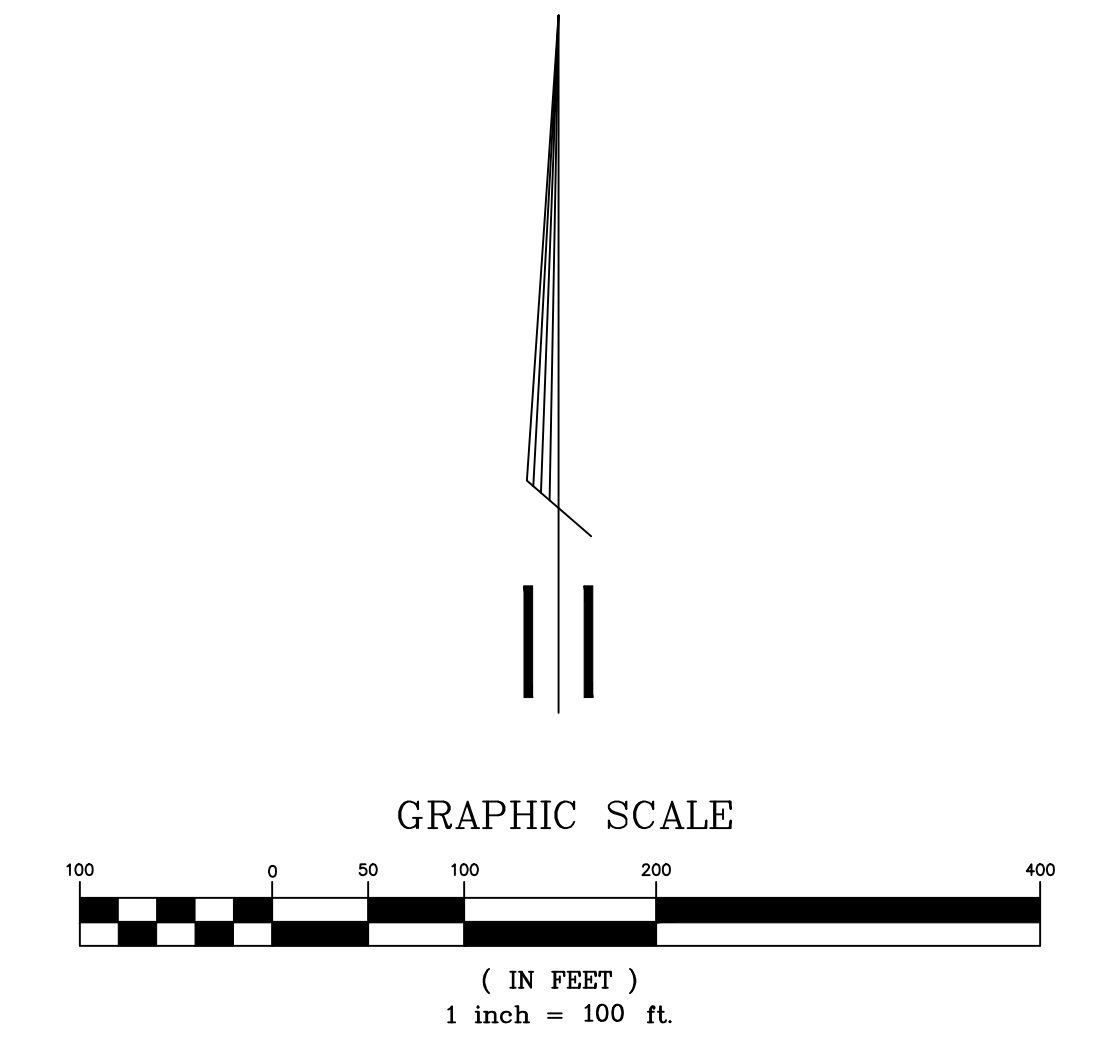
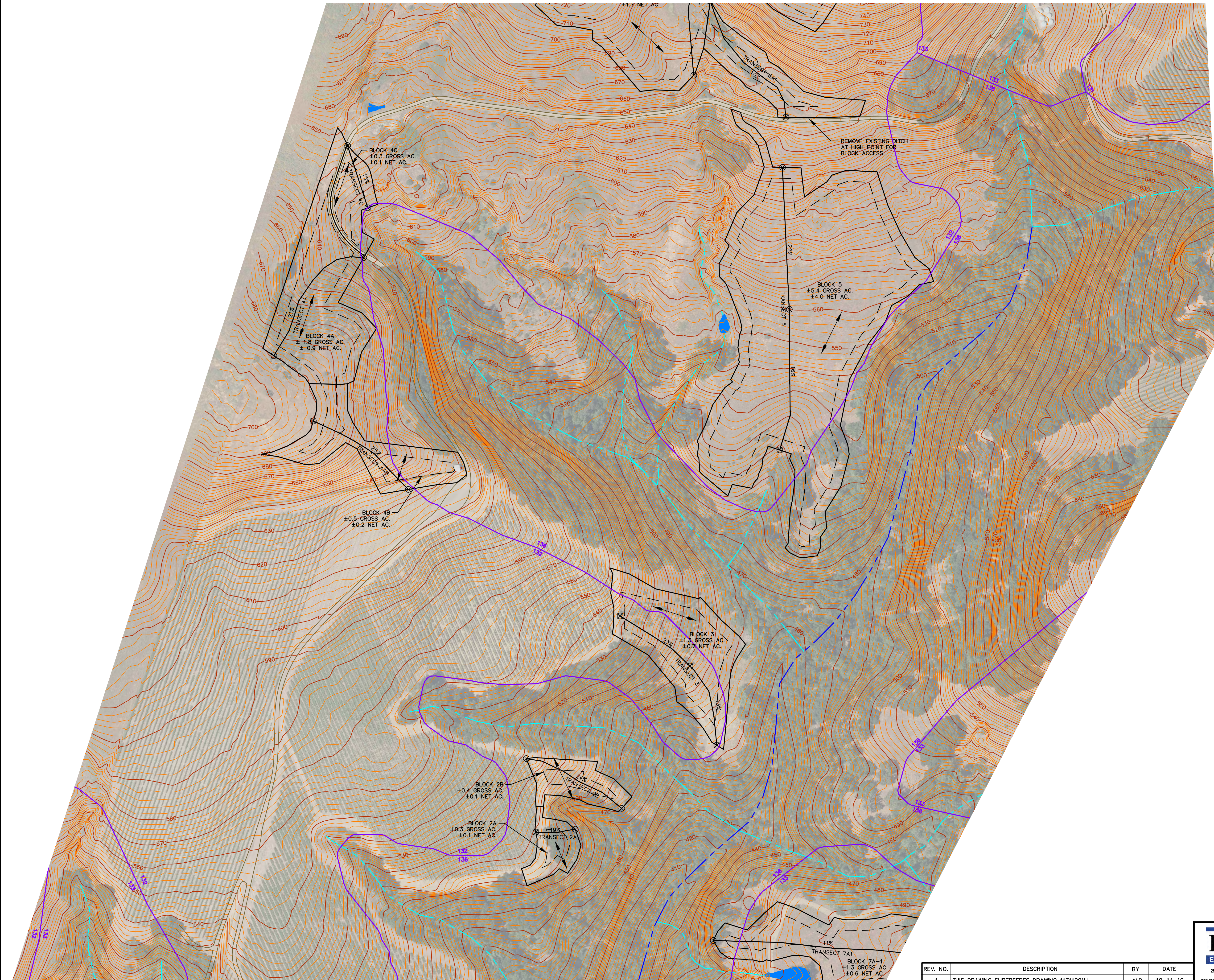
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2800 JEFFERSON STREET
NAPA, CA 94958
707/253-1806 FAX 707/253-1604
JOB NO: 11711201
DWG. NO: 11711201V

V. SATTUI WINERY INC.
HIBBARD RANCH
SOIL LOSS ANALYSIS
BLOCK 8

DESIGN ENGINEER:
J. BUSHEY, M. BUENO, A. LEMIRE-BAETEN

SCALE: AS SHOWN DRAWN BY: ALB DATE: 10-14-19 SHEET: 4 OF: 6

SEE SHEET 6



LEGEND

- U.S.G.S. BLUE LINE STREAM
- EPHEMERAL STREAM, MAPPED BY WRA
- WETLAND, MAPPED BY WRA
- EXISTING ROAD
- PROPOSED VINEYARD DEVELOPMENT AREA BY TRANSECT
- PROPOSED VINEYARD BLOCK BOUNDARY
- USLE TRANSECT WITH SLOPE
- SOIL TYPE BOUNDARY

USDA SOIL CLASSIFICATIONS:

- 132 FAGAN CLAY LOAM, 15-30% SLOPE
- 133 FAGAN CLAY LOAM, 30-50% SLOPE
- 136 FELTON GRAVELLY LOAM, 30-50% SLOPE

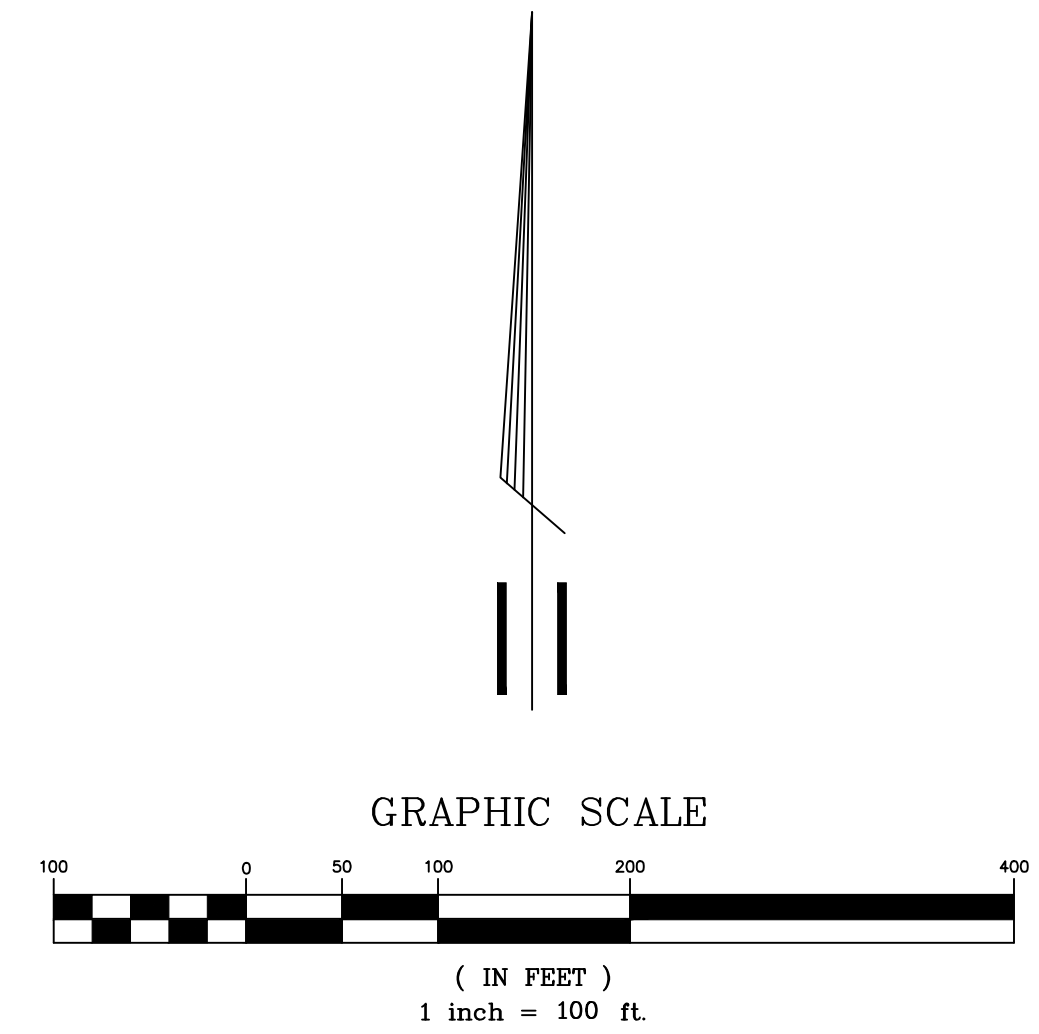
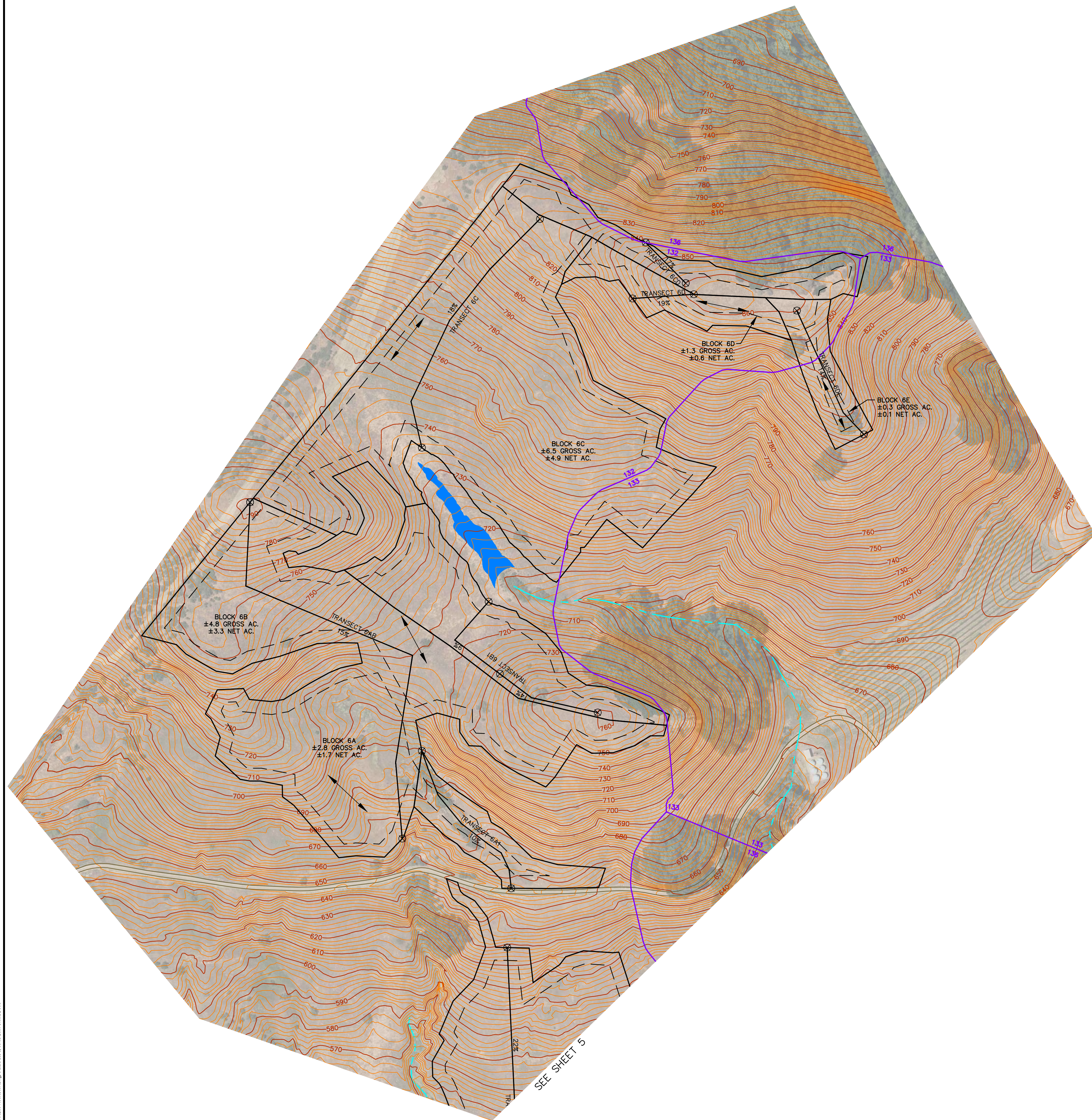
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2014 NAPA COUNTY ORTHOPHOTO.

SEE SHEET 3

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1	THIS DRAWING SUPERSEDES DRAWING 11711201U, INCORPORATED CHANGES BASED ON NAPA COUNTY COMMENTS.	ALB	10-14-19

PPI
ENGINEERING
2800 JEFFERSON STREET
NAPA, CA 94958
707/253-1806 FAX 707/253-1604

V. SATTUI WINERY INC. HIBBARD RANCH			
SOIL LOSS ANALYSIS			
BLOCKS 2-5			
DESIGN ENGINEER: J. BUSHEY, M. BUENO, A. LEMIRE-BAETEN			
SCALE: AS SHOWN	DRAWN BY: ALB	DATE: 10-14-19	SHEET: 5 OF: 6



LEGEND

- EPHEMERAL STREAM, MAPPED BY WRA
- WETLAND, MAPPED BY WRA
- EXISTING ROAD
- PROPOSED VINEYARD DEVELOPMENT AREA BY TRANSECT
- PROPOSED VINEYARD BLOCK BOUNDARY
- PROPOSED VINEYARD DIRECTION
- X USLE TRANSECT WITH SLOPE
- SOIL TYPE BOUNDARY

USDA SOIL CLASSIFICATIONS:

- 132 FAGAN CLAY LOAM, 15-30% SLOPE
- 133 FAGAN CLAY LOAM, 30-50% SLOPE
- 136 FELTON GRAVELLY LOAM, 30-50% SLOPE

SEE SHEET 5

TOPOGRAPHIC MAPPING PROVIDED BY AMERICAN AERIAL MAPPING, INC. MAY 2017. 2' CONTOUR INTERVAL. 2014 NAPA COUNTY ORTHOPHOTO.

REV. NO.	DESCRIPTION	BY	DATE
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V. SATTUI WINERY INC. HIBBARD RANCH			
SOIL LOSS ANALYSIS BLOCK 6			
DESIGN ENGINEER: J. BUSHEY, M. BUENO, A. LEMIRE-BAETEN			
SCALE: AS SHOWN	DRAWN BY: ALB	DATE: 10-14-19	SHEET: 6 OF: 6

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