Exhibit C

Laird Family Vineyards
Jamieson Vineyard
Narrative-USLE
Prepared by Napa Valley Vineyard Engineering, Inc
July 19, 2017
Revised February 20, 2018

INTRODUCTION

This analysis is to predict the affect the proposed vineyard development project will have on local soil erosion. Modeling of existing and proposed conditions was performed using the Universal Soil Loss Equation (USLE). Following is a summary of the data used and the results of the analysis.

RAINFALL DATA

The 2-year, 6 hour rainfall depth is used to determine the "R" value in the USLE. The rainfall depth for the project site was obtained from the National Oceanic and Atmospheric Administration (NOAA) Atlas 14, Volume 6, Version 2, Precipitation Frequency Data for California, which uses the latitude and longitude of a site to interpolate rainfall depths between data points. The latitude and longitude of the project are estimated to be 38.226°, N 122.235° W, based on information obtained from All Topo V7 USGS mapping software. The 2-year, 6 hour rainfall depth at the project site ranges from 1.31-inches to 1.67-inches. This analysis conservatively uses the high end of the range (1.67-inches), which equals an "R" value of 50.36. "R" is constant in the pre-project and post-project models.

SOIL EROSIVENESS

Each soil type listed in the United States Department of Agriculture, Soil Conservation Service (SCS), Napa County Soil Survey has an erodibility factor ("K"). Soils within the project area are mapped as:

SCS #131/132/134, Fagan clay loam, "K" = 0.32
SCS #116, Clear Lake clay, drained, "K" = 0.17

Transects 17B and 17C cross an area mapped as SCS #116. However, slope steepness along those transects suggest that the actual soil typed is likely Fagan clay loam; therefore, this analysis assumes SCS# 132 the entire length of those transects.

"K" is constant in the pre-project and post-project models.

SLOPE LENGTH and STEEPNESS

Napa County contour mapping (2002) was used to determine slope steepness on the project site. Transects were selected to analyze the soil loss from the longest and

steepest slopes throughout the project area. Where slope steepness along a transect varies significantly, complex slope equations were used to estimate soil loss. Slope lengths and gradients used in the pre-project and post-project models are identified on the USLE transect maps and in the USLE spreadsheets included in the Appendix.

VEGETATIVE COVER

Cover factors ("C") for pre-project and post-project conditions were determined using the guidelines provided in the SCS pamphlet entitled "The Universal Soil Loss Equation: Special Applications For Napa County, California (guide).

Pre-Project

The existing project site conditions consist of pasture land that is alternately grazed, and the amount of ground cover is dependent upon cattle access. In areas where cattle access is restricted the ground cover is generally 75 to 80%. In areas where grazing is active, the ground cover is considerably less. Conservatively, this analysis assumes a 75% cover throughout the project area, except within Block 20A where the cover is very sparse (60%), and Blocks 21 & 22 where cattle have no access and cover is consistent (80%). Site observation and air photos were used to estimate the percentage of "woody" vegetation vs. "grassy" vegetation along each selected transect, and a weighted average was calculated to determine the "C" factor. Detailed "C" factor calculations for each transect are shown on the USLE spreadsheets included in the Appendix.

Post-Project

The project proposes a no-till permanent cover crop, which may be mowed and spot sprayed around the base of each vine using springtime applications of post-emergent contact sprays. No pre-emergent sprays shall be used. Using these practices, a minimum ground cover of 80% will be obtained each winter. Using the table in the guide, "USLE "C" Factors for Vineyards", the C factor for 80% ground cover is 0.022.

PRACTICE FACTOR

The accepted practice factor for the existing conditions is 1.0. Using the table in the guide, "P ("Practice") Factors for USLE in Napa Valley Vineyards, the practice factor for vineyard rows running uphill and downhill is 1.0. Although there are areas where the vineyard rows are closer to cross-slope, this analysis conservatively assumes an uphill/downhill orientation. The practice factor remains constant in the pre-project and post-project models.

RESULTS

Calculations to determine the predicted soil loss using the parameters described above are shown in the USLE spreadsheets, and results are summarized on Table 1 in the Appendix.

CONCLUSION

The analysis presented above and the supporting information in the Appendix, demonstrate that the proposed vineyard development will not increase soil loss from the project site.

Laird Family Vineyards
Jamieson Vineyard
USLE-TABLE 1

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Transect	pre- project soil loss (tons/acre)	post-project soil loss (tons/acre)
15A1	2.24	1.26
15A2	2.35	1.33
15B	2.16	1.22
16	1.49	0.94
17A	2.23	1.54
17B	2.30	1.58
17C	3.84	2.64
17D	3.16	2.17
18A	2.42	1.52
18B	1.52	0.96
18C	3.24	1.83
18D	4.28	2.96
19	2.00	1.26
20A	1.77	0.93
20B	5.59	3.15
20C	4.35	2.74
20D	3.43	2.36
20E	2.24	1.41
20F	6.32	3.97
20G1	3.12	1.96
20G2	4.02	2.53
21	0.29	0.26
22	0.34	0.34

APPENDIX

USLE SPREADSHEET & TRANSECT MAP

		Napa Valley Vineyard Engineering Inc.									
		USLE CALCULATIONS A=(R)(K)(LS)(C)(P)									
FOR:	Laird-Jamieson Pre										
DATE:	2/20/2018										
	TRANSECT:	15A1		15A2		15B		17A			
	SOIL TYPE:	132		132		132		134			
FACTOR:	DESCRIPTION	Value	/Describe	Value	/Describe	Value	/Describe	Value	/Describe	Value	/Describe
R	Rainfall	50.36		50.36		50.36		50.36			
K	Soil Erosiveness	0.32		0.32		0.32		0.32			
	Slope length (ft)	417		370		311		405			
S	Gradient	12.0		13.0		13.0		14.0			
LS	Calculated LS	3.56		3.74		3.43		4.33		0.00	
C	Cover	0.039	*	0.039	*	0.039	*	0.032	**		
P	Practice	1		1		1		1			
A	Soil loss, tons/acre	2.24		2.35		2.16		2.23		0.00	

*no canopy, 75%cover

50%G	.021(.5)=	0.011
50%W	.055(.5)=	0.028
		0.039

**no canopy, 75%cover

70%G	.021(.7)=	0.015
30%W	.055(.3)=	0.017
		0.032

		Napa Valley Vineyard Engineering Inc.									
		USLE CALCULATIONS A=(R)(K)(LS)(C)(P)									
FOR:	Laird-Jamieson Pre										
DATE:	7/19/2017										
	TRANSECT:	16 upper		16 lower							
	SOIL TYPE:	132		132							
FACTOR:	DESCRIPTION	Value	/Describe	Value	/Describe	Value	/Describe	Value	/Describe	Value	/Describe
	Slope length (ft)	445		445							
S	Gradient	16.0		5.0							
LS	Calculated LS	5.44		1.13							
F	Fraction	0.35		0.65							
K	Soil Erosiveness	0.32		0.32							
C	Cover	0.035	*	0.035							
	Product	0.021		0.008							
	Combined LS	0.0295									
R	Rainfall	50.36									
P	Practice	1									
A	Soil loss, tons/acre	1.49									
		*no canopy, 75%cover									
		60%G	.021(.6)=	0.013							
		40%W	.055(.4)=	0.022							
				0.035							

		Napa Valley Vineyard Engineering Inc.									
		USLE CALCULATIONS A=(R)(K)(LS)(C)(P)									
FOR:	Laird-Jamieson Pre										
DATE:	2/20/2018										
	TRANSECT:	17B upper		17B mid		17B lower					
	SOIL TYPE:	132		132		132					
FACTOR:	DESCRIPTION	Value	/Describe	Value	/Describe	Value	/Describe	Value	/Describe	Value	/Describe
	Slope length (ft)	835		835		835					
S	Gradient	10.0		15.0		8.0					
LS	Calculated LS	3.92		6.83		2.86					
F	Fraction	0.19		0.35		0.46					
K	Soil Erosiveness	0.32		0.32		0.32					
C	Cover	0.032	*	0.032		0.032					
	Product	0.008		0.024		0.013					
	Combined LS	0.0456									
R	Rainfall	50.36									
P	Practice	1									
A	Soil loss, tons/acre	2.30									

*no canopy, 75%cover

70%G	.021(.7)=	0.015
30%W	.055(.3)=	0.017
		0.032

		Napa Valley Vineyard Engineering Inc.									
		USLE CALCULATIONS A=(R)(K)(LS)(C)(P)									
FOR:	Laird-Jamieson Pre										
DATE:	2/20/2018										
	TRANSECT:	17C upper		17C mid		17C lower					
	SOIL TYPE:	132		132		132					
FACTOR:	DESCRIPTION	Value	/Describe	Value	/Describe	Value	/Describe	Value	/Describe	Value	/Describe
	Slope length (ft)	409		409		409					
S	Gradient	15.6		26.0		19.0					
LS	Calculated LS	5.04		9.91		6.57					
F	Fraction	0.19		0.35		0.46					
K	Soil Erosiveness	0.32		0.32		0.32					
C	Cover	0.032	*	0.032		0.032					
	Product	0.010		0.036		0.031					
	Combined LS	0.0763									
R	Rainfall	50.36									
P	Practice	1									
A	Soil loss, tons/acre	3.84									

*no canopy, 75%cover

70%G	.021(.7)=	0.015
30%W	.055(.3)=	0.017
		0.032

Napa Valley Vineyard Engineering Inc.

USLE CALCULATIONS A=(R)(K)(LS)(C)(P)

FOR:	Laird-Jamieson Pre										
DATE:	2/20/2018										
	TRANSECT:	17D upper		17D mid		17D lower					
	SOIL TYPE:	132		132		132					
FACTOR:	DESCRIPTION	Value	/Describe	Value	/Describe	Value	/Describe	Value	/Describe	Value	/Describe
	Slope length (ft)	285		285		285					
S	Gradient	13.0		24.0		21.0					
LS	Calculated LS	3.28		7.46		6.27					
F	Fraction	0.19		0.35		0.46					
K	Soil Erosiveness	0.32		0.32		0.32					
C	Cover	0.032	*	0.032		0.032					
	Product	0.006		0.027		0.030					
	Combined LS	0.0627									
R	Rainfall	50.36									
P	Practice	1									
A	Soil loss, tons/acre	3.16									

*no canopy, 75%cover

70%G	.021(.7)=	0.015
30%W	.055(.3)=	0.017
		0.032

		Napa Valley Vineyard Engineering Inc.									
		USLE CALCULATIONS A=(R)(K)(LS)(C)(P)									
FOR:	Laird-Jamieson Pre										
DATE:	2/20/2018										
	TRANSECT:	18A upper		18A lower							
	SOIL TYPE:	132		132							
FACTOR:	DESCRIPTION	Value	/Describe	Value	/Describe	Value	/Describe	Value	/Describe	Value	/Describe
	Slope length (ft)	827		827							
S	Gradient	18.0		6.0							
LS	Calculated LS	8.70		1.93							
F	Fraction	0.35		0.65							
K	Soil Erosiveness	0.32		0.32							
C	Cover	0.035	*	0.035							
	Product	0.034		0.014		0.000					
	Combined LS	0.0481									
R	Rainfall	50.36									
P	Practice	1									
A	Soil loss, tons/acre	2.42									
		*no canopy, 75%cover									
		60%G	.021(.6)=	0.013							
		40%W	.055(.4)=	0.022							
				0.035							

		Napa Valley Vineyard Engineering Inc.									
		USLE CALCULATIONS A=(R)(K)(LS)(C)(P)									
FOR:	Laird-Jamieson Pre										
DATE:	2/20/2018										
	TRANSECT:	18B upper		18B upper		18B upper					
	SOIL TYPE:	134		134		134					
FACTOR:	DESCRIPTION	Value	/Describe	Value	/Describe	Value	/Describe	Value	/Describe	Value	/Describe
	Slope length (ft)	818		818		818					
S	Gradient	14.0		7.0		5.0					
LS	Calculated LS	6.16		2.35		1.53					
F	Fraction	0.19		0.35		0.46					
K	Soil Erosiveness	0.32		0.32		0.32					
C	Cover	0.035	*	0.035		0.0350					
	Product	0.013		0.009		0.008					
	Combined LS	0.0302									
R	Rainfall	50.36									
P	Practice	1									
A	Soil loss, tons/acre	1.52									
		*no canopy, 75%cover									
		60%G	.021(.6)=	0.013							
		40%W	.055(.4)=	0.022							
				0.035							

		Napa Valley Vineyard Engineering Inc.									
		USLE CALCULATIONS A=(R)(K)(LS)(C)(P)									
FOR:	Laird-Jamieson Pre										
DATE:	2/20/2018										
	TRANSECT:	18C upper		18C upper		18C upper					
	SOIL TYPE:	134		134		134					
FACTOR:	DESCRIPTION	Value	/Describe	Value	/Describe	Value	/Describe	Value	/Describe	Value	/Describe
	Slope length (ft)	597		597		597					
S	Gradient	7.0		18.0		13.0					
LS	Calculated LS	2.01		7.39		4.75					
F	Fraction	0.19		0.35		0.46					
K	Soil Erosiveness	0.32		0.32		0.32					
C	Cover	0.039	*	0.039		0.039					
	Product	0.005		0.032		0.027					
	Combined LS	0.0643									
R	Rainfall	50.36									
P	Practice	1									
A	Soil loss, tons/acre	3.24									

*no canopy, 75%cover

50%G	.021(.5)=	0.011
50%W	.055(.5)=	0.028
		0.039

		Napa Valley Vineyard Engineering Inc.									
		USLE CALCULATIONS A=(R)(K)(LS)(C)(P)									
FOR:	Laird-Jamieson Pre										
DATE:	2/20/2018										
	TRANSECT:	18Dupper		18D lower							
	SOIL TYPE:	132		132							
FACTOR:	DESCRIPTION	Value	/Describe	Value	/Describe	Value	/Describe	Value	/Describe	Value	/Describe
	Slope length (ft)	385		385							
S	Gradient	13.0		26.0							
LS	Calculated LS	3.82		9.62							
F	Fraction	0.35		0.65							
K	Soil Erosiveness	0.32		0.32							
C	Cover	0.035	*	0.035							
	Product	0.015		0.070		0.000					
	Combined LS	0.0850									
R	Rainfall	50.36									
P	Practice	1									
A	Soil loss, tons/acre	4.28									
		*no canopy, 75%cover									
		60%G	.021(.6)=	0.013							
		40%W	.055(.4)=	0.022							
				0.035							

		Napa Valley Vineyard Engineering Inc.									
		USLE CALCULATIONS A=(R)(K)(LS)(C)(P)									
FOR:	Laird-Jamieson Pre										
DATE:	2/20/2018										
	TRANSECT:	19		20A		20B		20C			
	SOIL TYPE:	134		134		134		134			
FACTOR:	DESCRIPTION	Value	/Describe	Value	/Describe	Value	/Describe	Value	/Describe	Value	/Describe
R	Rainfall	50.36		50.36		50.36		50			
K	Soil Erosiveness	0.32		0.32		0.32		0.32			
	Slope length (ft)	138		287		452		564			
S	Gradient	18.0		11.0		23.0		19.0			
LS	Calculated LS	3.55		2.62		8.89		7.72		0.00	
C	Cover	0.035	***	0.042	**	0.039	*	0.035	***		
P	Practice	1		1		1		1			
A	Soil loss, tons/acre	2.00		1.77		5.59		4.35		0.00	

		*no canopy, 75%cover			**no canopy, 60% cover				***no canopy, 75%cover		
		50%G	.021(.5)=	0.011	100%G=	0.042			60%G	.021(.6)=	0.013
		50%W	.055(.5)=	0.028					40%W	.055(.4)=	0.022
				0.039							0.035

		Napa Valley Vineyard Engineering Inc.									
		USLE CALCULATIONS A=(R)(K)(LS)(C)(P)									
FOR:	Laird-Jamieson Pre										
DATE:	2/20/2018										
	TRANSECT:	20D upper		20D lower							
	SOIL TYPE:	134		134							
FACTOR:	DESCRIPTION	Value	/Describe	Value	/Describe	Value	/Describe	Value	/Describe	Value	/Describe
	Slope length (ft)	726		726							
S	Gradient	23.0		11.0							
LS	Calculated LS	11.27		4.17							
F	Fraction	0.35		0.65							
K	Soil Erosiveness	0.32		0.32							
C	Cover	0.032	*	0.032							
	Product	0.040		0.028							
	Combined LS	0.0681									
R	Rainfall	50.36									
P	Practice	1									
A	Soil loss, tons/acre	3.43									
		*no canopy, 75%cover									
		70%G	.021(.7)=	0.015							
		30%W	.055(.3)=	0.017							
				0.032							

Napa Valley Vineyard Engineering Inc.

USLE CALCULATIONS A=(R)(K)(LS)(C)(P)

FOR:	Laird-Jamieson Pre										
DATE:	2/20/2018										
	TRANSECT:	20E		20G1		20G2		21		20F	
	SOIL TYPE:	134		134		134		116		134	
FACTOR:	DESCRIPTION	Value	/Describe	Value	/Describe	Value	/Describe	Value	/Describe	Value	/Describe
R	Rainfall	50.36		50.36		50.36		50.36		50	
K	Soil Erosiveness	0.32		0.32		0.32		0.17		0.32	
	Slope length (ft)	417		389		290		411		1188	
S	Gradient	13.0		17.0		23.0		6.0		19.0	
LS	Calculated LS	3.97		5.52		7.12		1.36		11.20	
C	Cover	0.035	*	0.035	*	0.035	*	0.025	**	0.035	*
P	Practice	1				1		1			
A	Soil loss, tons/acre	2.24		3.12		4.02		0.29		6.32	

*no canopy, 75%cover

60%G	.021(.6)=	0.013
40%W	.055(.4)=	0.022
		0.035

**no canopy, 80%cover

60%G	.013(.6)=	0.008
40%W	.043(.4)=	0.017
		0.025

		Napa Valley Vineyard Engineering Inc.									
		USLE CALCULATIONS A=(R)(K)(LS)(C)(P)									
FOR:	Laird-Jamieson Pre										
DATE:	2/20/2018										
	TRANSECT:	22 upper		22 lower							
	SOIL TYPE:	116		116							
FACTOR:	DESCRIPTION	Value	/Describe	Value	/Describe	Value	/Describe	Value	/Describe	Value	/Describe
	Slope length (ft)	578		578							
S	Gradient	9.0		5.0							
LS	Calculated LS	2.81		1.29							
F	Fraction	0.35		0.65							
K	Soil Erosiveness	0.17		0.17							
C	Cover	0.022	*	0.022							
	Product	0.004		0.003							
	Combined LS	0.0068									
R	Rainfall	50.36									
P	Practice	1									
A	Soil loss, tons/acre	0.34									
		*no canopy, 80%cover									
		70%G	.013(.7)=	0.009							
		30%W	.043(.3)=	0.013							
				0.022							

		Napa Valley Vineyard Engineering Inc.									
		USLE CALCULATIONS A=(R)(K)(LS)(C)(P)									
FOR:	Laird-Jamieson Post										
DATE:	7/19/2017										
	TRANSECT:	15A1		15A2		15B		17A			
	SOIL TYPE:	132		132		132		134			
FACTOR:	DESCRIPTION	Value	/Describe	Value	/Describe	Value	/Describe	Value	/Describe	Value	/Describe
R	Rainfall	50.36		50.36		50.36		50.36			
K	Soil Erosiveness	0.32		0.32		0.32		0.32			
	Slope length (ft)	417		370		311		405			
S	Gradient	12.0		13.0		13.0		14.0			
LS	Calculated LS	3.56		3.74		3.43		4.33		0.00	
C	Cover	0.022	*	0.022	*	0.022	*	0.022	*		
P	Practice	1		1		1		1			
A	Soil loss, tons/acre	1.26		1.33		1.22		1.54		0.00	

*no till/spot spray (80% cover)

		Napa Valley Vineyard Engineering Inc.									
		USLE CALCULATIONS A=(R)(K)(LS)(C)(P)									
FOR:	Laird-Jamieson Post										
DATE:	7/19/2017										
	TRANSECT:	16 upper		16 lower							
	SOIL TYPE:	132		132							
FACTOR:	DESCRIPTION	Value	/Describe	Value	/Describe	Value	/Describe	Value	/Describe	Value	/Describe
	Slope length (ft)	445		445							
S	Gradient	16.0		5.0							
LS	Calculated LS	5.44		1.13							
F	Fraction	0.35		0.65							
K	Soil Erosiveness	0.32		0.32							
C	Cover	0.022	*	0.022							
	Product	0.013		0.005							
	Combined LS	0.0186									
R	Rainfall	50.36									
P	Practice	1									
A	Soil loss, tons/acre	0.94									
		*no till/spot spray (80% cover)									

		Napa Valley Vineyard Engineering Inc.									
		USLE CALCULATIONS A=(R)(K)(LS)(C)(P)									
FOR:	Laird-Jamieson Post										
DATE:	7/19/2017										
	TRANSECT:	17B upper		17B mid		17B lower					
	SOIL TYPE:	132		132		132					
FACTOR:	DESCRIPTION	Value	/Describe	Value	/Describe	Value	/Describe	Value	/Describe	Value	/Describe
	Slope length (ft)	835		835		835					
S	Gradient	10.0		15.0		8.0					
LS	Calculated LS	3.92		6.83		2.86					
F	Fraction	0.19		0.35		0.46					
K	Soil Erosiveness	0.32		0.32		0.32					
C	Cover	0.022	*	0.022		0.022					
	Product	0.005		0.017		0.009					
	Combined LS	0.0313									
R	Rainfall	50.36									
P	Practice	1									
A	Soil loss, tons/acre	1.58									
		*no till/spot spray (80% cover)									

		Napa Valley Vineyard Engineering Inc.									
		USLE CALCULATIONS A=(R)(K)(LS)(C)(P)									
FOR:	Laird-Jamieson Post										
DATE:	7/19/2017										
	TRANSECT:	17C upper		17C mid		17C lower					
	SOIL TYPE:	132		132		132					
FACTOR:	DESCRIPTION	Value	/Describe	Value	/Describe	Value	/Describe	Value	/Describe	Value	/Describe
	Slope length (ft)	409		409		409					
S	Gradient	15.6		26.0		19.0					
LS	Calculated LS	5.04		9.91		6.57					
F	Fraction	0.19		0.35		0.46					
K	Soil Erosiveness	0.32		0.32		0.32					
C	Cover	0.022	*	0.022		0.022					
	Product	0.007		0.024		0.021					
	Combined LS	0.0525									
R	Rainfall	50.36									
P	Practice	1									
A	Soil loss, tons/acre	2.64									
		*no till/spot spray (80% cover)									

		Napa Valley Vineyard Engineering Inc.									
		USLE CALCULATIONS A=(R)(K)(LS)(C)(P)									
FOR:	Laird-Jamieson Post										
DATE:	7/19/2017										
	TRANSECT:	17D upper		17D mid		17D lower					
	SOIL TYPE:	132		132		132					
FACTOR:	DESCRIPTION	Value	/Describe	Value	/Describe	Value	/Describe	Value	/Describe	Value	/Describe
	Slope length (ft)	285		285		285					
S	Gradient	13.0		24.0		21.0					
LS	Calculated LS	3.28		7.46		6.27					
F	Fraction	0.19		0.35		0.46					
K	Soil Erosiveness	0.32		0.32		0.32					
C	Cover	0.022	*	0.022		0.022					
	Product	0.004		0.018		0.020					
	Combined LS	0.0431									
R	Rainfall	50.36									
P	Practice	1									
A	Soil loss, tons/acre	2.17									
		*no till/spot spray (80% cover)									

		Napa Valley Vineyard Engineering Inc.									
		USLE CALCULATIONS		A=(R)(K)(LS)(C)(P)							
FOR:	Laird-Jamieson Post										
DATE:	7/19/2017										
	TRANSECT:	18A upper		18A lower							
	SOIL TYPE:	132		132							
FACTOR:	DESCRIPTION	Value	/Describe	Value	/Describe	Value	/Describe	Value	/Describe	Value	/Describe
	Slope length (ft)	827		827							
S	Gradient	18.0		6.0							
LS	Calculated LS	8.70		1.93							
F	Fraction	0.35		0.65							
K	Soil Erosiveness	0.32		0.32							
C	Cover	0.022	*	0.022							
	Product	0.021		0.009		0.000					
	Combined LS	0.0303									
R	Rainfall	50.36									
P	Practice	1									
A	Soil loss, tons/acre	1.52									
		*no till/spot spray (80% cover)									

		Napa Valley Vineyard Engineering Inc.									
		USLE CALCULATIONS A=(R)(K)(LS)(C)(P)									
FOR:	Laird-Jamieson Post										
DATE:	7/19/2017										
	TRANSECT:	18B upper		18B upper		18B upper					
	SOIL TYPE:	134		134		134					
FACTOR:	DESCRIPTION	Value	/Describe	Value	/Describe	Value	/Describe	Value	/Describe	Value	/Describe
	Slope length (ft)	818		818		818					
S	Gradient	14.0		7.0		5.0					
LS	Calculated LS	6.16		2.35		1.53					
F	Fraction	0.19		0.35		0.46					
K	Soil Erosiveness	0.32		0.32		0.32					
C	Cover	0.022	*	0.022		0.0220					
	Product	0.008		0.006		0.005					
	Combined LS	0.0190									
R	Rainfall	50.36									
P	Practice	1									
A	Soil loss, tons/acre	0.96									
		*no till/spot spray (80% cover)									

		Napa Valley Vineyard Engineering Inc.									
		USLE CALCULATIONS A=(R)(K)(LS)(C)(P)									
FOR:	Laird-Jamieson Post										
DATE:	7/19/2017										
	TRANSECT:	18C upper		18C upper		18C upper					
	SOIL TYPE:	134		134		134					
FACTOR:	DESCRIPTION	Value	/Describe	Value	/Describe	Value	/Describe	Value	/Describe	Value	/Describe
	Slope length (ft)	597		597		597					
S	Gradient	7.0		18.0		13.0					
LS	Calculated LS	2.01		7.39		4.75					
F	Fraction	0.19		0.35		0.46					
K	Soil Erosiveness	0.32		0.32		0.32					
C	Cover	0.022	*	0.022		0.022					
	Product	0.003		0.018		0.015					
	Combined LS	0.0363									
R	Rainfall	50.36									
P	Practice	1									
A	Soil loss, tons/acre	1.83									
		*no till/spot spray (80% cover)									

		Napa Valley Vineyard Engineering Inc.									
		USLE CALCULATIONS		A=(R)(K)(LS)(C)(P)							
FOR:	Laird-Jamieson Post										
DATE:	7/19/2017										
	TRANSECT:	18Dupper		18D lower							
	SOIL TYPE:	132		132							
FACTOR:	DESCRIPTION	Value	/Describe	Value	/Describe	Value	/Describe	Value	/Describe	Value	/Describe
	Slope length (ft)	385		385							
S	Gradient	13.0		26.0							
LS	Calculated LS	3.82		9.62							
F	Fraction	0.35		0.65							
K	Soil Erosiveness	0.32		0.32							
C	Cover	0.022	*	0.022							
	Product	0.009		0.044		0.000					
	Combined LS	0.0534									
R	Rainfall	50.36									
P	Practice	1									
A	Soil loss, tons/acre	2.69									
		*no till/spot spray (80% cover)									

		Napa Valley Vineyard Engineering Inc.									
		USLE CALCULATIONS A=(R)(K)(LS)(C)(P)									
FOR:	Laird-Jamieson Post										
DATE:	7/19/2017										
	TRANSECT:	19		20A		20B		20C			
	SOIL TYPE:	134		134		134		134			
FACTOR:	DESCRIPTION	Value	/Describe	Value	/Describe	Value	/Describe	Value	/Describe	Value	/Describe
R	Rainfall	50.36		50.36		50.36		50			
K	Soil Erosiveness	0.32		0.32		0.32		0.32			
	Slope length (ft)	138		287		452		564			
S	Gradient	18.0		11.0		23.0		19.0			
LS	Calculated LS	3.55		2.62		8.89		7.72		0.00	
C	Cover	0.022	*	0.022	*	0.022	*	0.022	*		
P	Practice	1		1		1		1			
A	Soil loss, tons/acre	1.26		0.93		3.15		2.74		0.00	

*no till/spot spray (80% cover)

		Napa Valley Vineyard Engineering Inc.									
		USLE CALCULATIONS A=(R)(K)(LS)(C)(P)									
FOR:	Laird-Jamieson Post										
DATE:	2/20/2018										
	TRANSECT:	20D upper		20D lower							
	SOIL TYPE:	134		134							
FACTOR:	DESCRIPTION	Value	/Describe	Value	/Describe	Value	/Describe	Value	/Describe	Value	/Describe
	Slope length (ft)	726		726							
S	Gradient	23.0		11.0							
LS	Calculated LS	11.27		4.17							
F	Fraction	0.35		0.65							
K	Soil Erosiveness	0.32		0.32							
C	Cover	0.022	*	0.022							
	Product	0.028		0.019							
	Combined LS	0.0468									
R	Rainfall	50.36									
P	Practice	1									
A	Soil loss, tons/acre	2.36									
		*no till/spot spray (80% cover)									

Napa Valley Vineyard Engineering Inc.

USLE CALCULATIONS A=(R)(K)(LS)(C)(P)

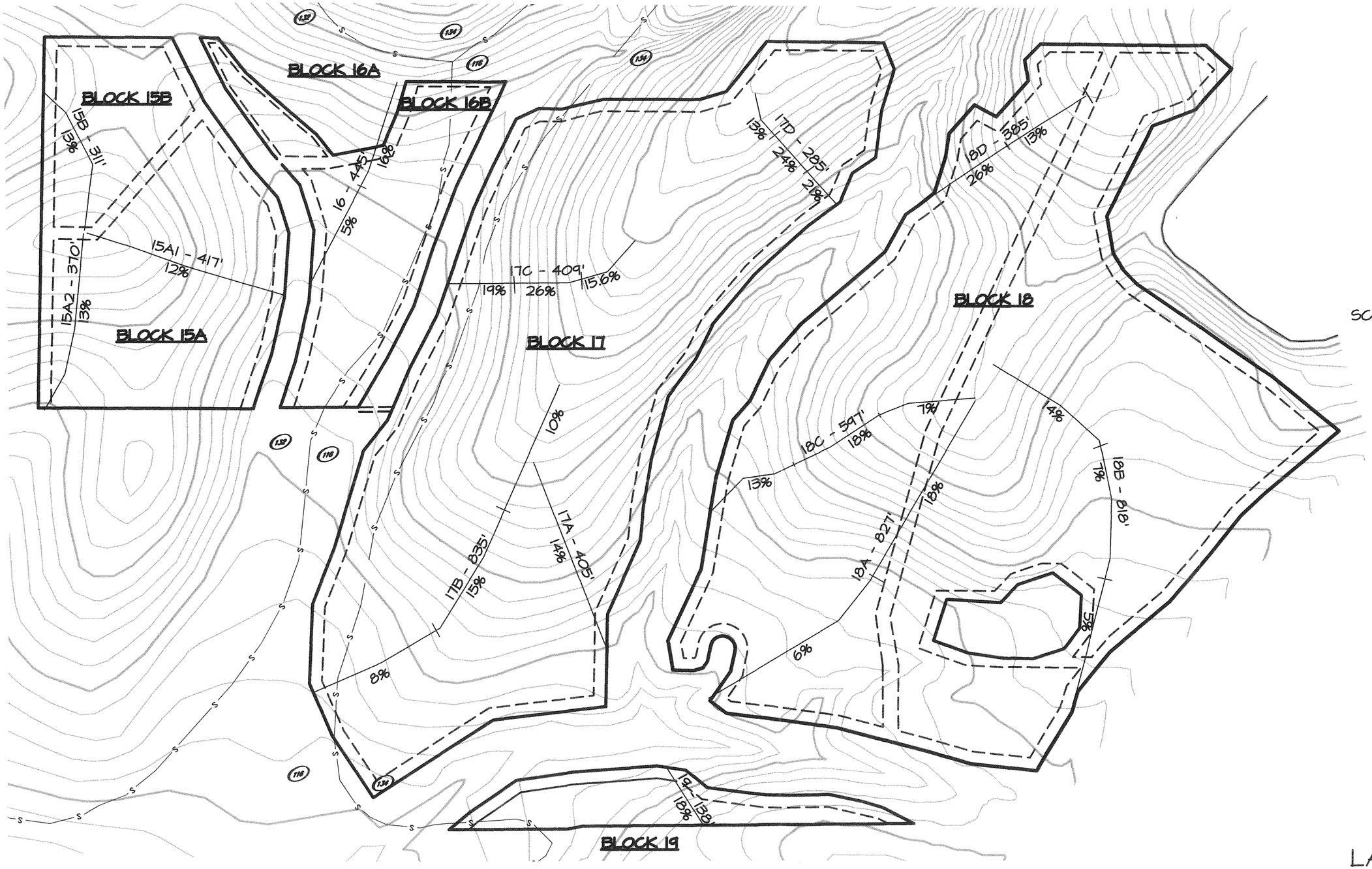
FOR: Laird-Jamieson Post

DATE: 2/20/2018

	TRANSECT:	20E		20G1		20G2		21		20F	
	SOIL TYPE:	134		134		134		116		134	
FACTOR:	DESCRIPTION	Value	/Describe	Value	/Describe	Value	/Describe	Value	/Describe	Value	/Describe
R	Rainfall	50.36		50.36		50.36		50.36		50	
K	Soil Erosiveness	0.32		0.32		0.32		0.17		0.32	
	Slope length (ft)	417		389		290		411		1188	
S	Gradient	13.0		17.0		23.0		6.0		19.0	
LS	Calculated LS	3.97		5.52		7.12		1.36		11.20	
C	Cover	0.022	*	0.022	*	0.022	*	0.022	*	0.022	
P	Practice	1				1		1			
A	Soil loss, tons/acre	1.41		1.96		2.53		0.26		3.97	

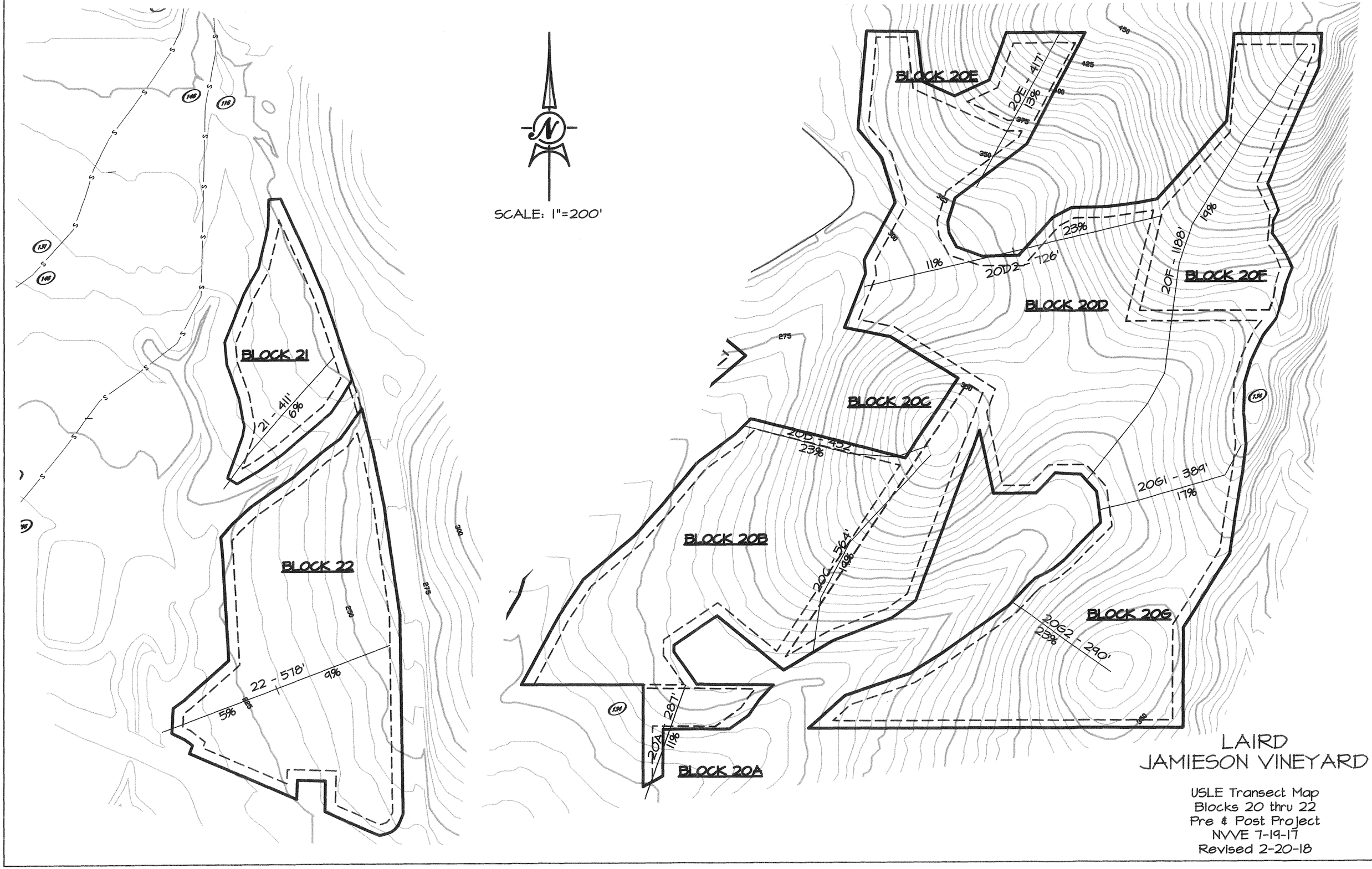
*no till/spot spray (80% cover)

		Napa Valley Vineyard Engineering Inc.									
		USLE CALCULATIONS A=(R)(K)(LS)(C)(P)									
FOR:	Laird-Jamieson Post										
DATE:	7/19/2017										
	TRANSECT:	22 upper		22 lower							
	SOIL TYPE:	116		116							
FACTOR:	DESCRIPTION	Value	/Describe	Value	/Describe	Value	/Describe	Value	/Describe	Value	/Describe
	Slope length (ft)	578		578							
S	Gradient	9.0		5.0							
LS	Calculated LS	2.81		1.29							
F	Fraction	0.35		0.65							
K	Soil Erosiveness	0.17		0.17							
C	Cover	0.022	*	0.022							
	Product	0.004		0.003							
	Combined LS	0.0068									
R	Rainfall	50.36									
P	Practice	1									
A	Soil loss, tons/acre	0.34									
		*no till/spot spray (80% cover)									



LAIRD JAMIESON VINEYARD

USLE Transect Map
Blocks 15 thru 19
Pre & Post Project8
NVVE 7-19-17
Revised 2-20-18


SCALE: 1"=200'
BLOCK 21
21 - 411'
6%
BLOCK 22
22 - 578'
9%
5%
BLOCK 20E
20E - 417'
13%
BLOCK 20D
20D2 - 726'
23%
11%
BLOCK 20F
20F - 1188'
19%
BLOCK 20C
20C - 564'
19%
20D - 452'
23%
BLOCK 20B
BLOCK 20G
20G1 - 389'
17%
20G2 - 290'
23%
BLOCK 20A
20A - 287'
11%
LAIRD
JAMIESON VINEYARD
USLE Transect Map
Blocks 20 thru 22
Pre & Post Project
NVVE 7-19-17
Revised 2-20-18