

**MILLER VINEYARD
30 LUPINE HILL ROAD
USLE - Analysis**

Prepared by Napa Valley Vineyard Engineering, Inc
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INTRODUCTION

Miller Vineyard seeks approval of approximately 4.52 net acres of proposed for new vineyard. The project lies within APN 052-170-054 a parcel totaling about 10.47 acres, located at 30 Lupine Hill Road, Napa.

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 Miller Vineyard project are estimated to be, 38.3123° N, -122.2532° W, based on information obtained from the National Oceanic and Atmospheric Administration (NOAA) Atlas 14 Precipitation Frequency Data. The 2 year, 6 hour rainfall depth at the project site ranges from 1.32-inches to 1.69-inches. This analysis conservatively uses the high end of the range (1.69-inches), which equals an "R" value of 50. "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"). The SCS soil maps indicate that soils on the project site as:

SCS# 152, Hambright rock-Outcrop - K value of 0.10

SCS# 178, Sobrante loam – K value of 0.32

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

SLOPE LENGTH and STEEPNESS

The topographic mapping by Adobe Associates, Inc. 2024 was used to determine slope steepness on the project site. The Slope lengths were selected to analyze the soil loss from the longest and steepest slopes using an average end method in the blocks for the project area, as

shown on the map included in the Appendix. The slope lengths and gradients for the blocks from the pre-project to the post-project models do not change and are identified on the map and in the USLE worksheets 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 vineyard site conditions for Blocks A and B consists of approximately 100% grazing grass cover.

Post Project

The project proposes a "permanent non-till cover crop with strip spray cultivation scheme with no ripping or tillage (refer to ECP narrative).

PRACTICE FACTOR

The accepted practice factor for the existing conditions is 1.

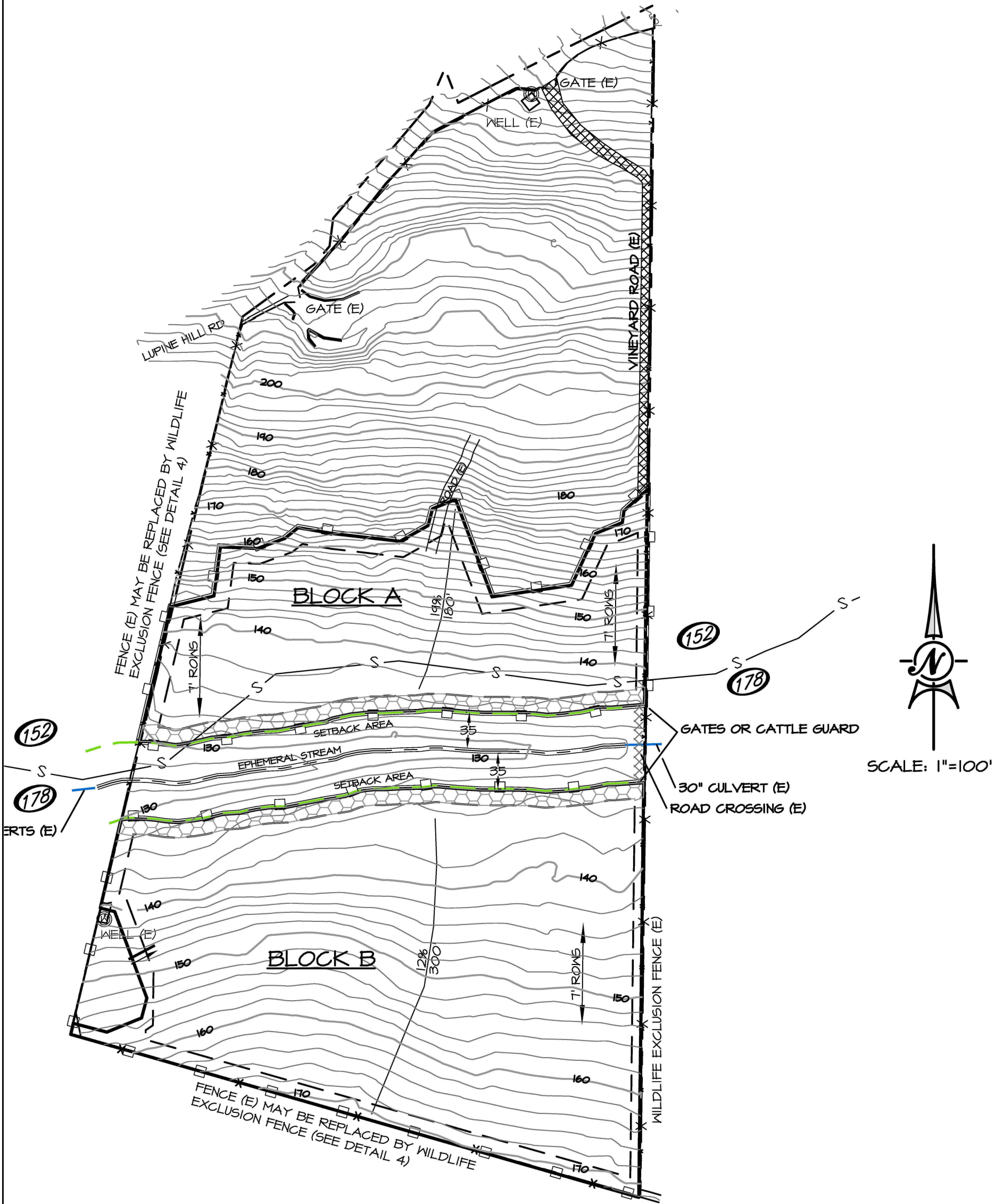
RESULTS, CONCLUSION

The pre-project and post-project modeling is presented with Appendix. A comparison of pre-project and post-project modeling shown:

Blocks	Soil Loss (tons/ac.)	
	Pre Project	Post Project
A	0.61	0.48
B	1.35	1.06

The analysis shows, in each case, that the estimated post-project soil loss is less than the pre-project condition, and that the proposed vineyard project will not result in increased soil loss.





MILLER VINEYARD
30 LUPINE HILL ROAD
USLE PRE AND POST MAP

EROSION CONTROL PLAN
TRACK 1

NYVE 3-4-25 REVISION 1