

Engineering Report

Unpermitted Grading Investigation

Forensic Slope Failure Analysis

22197 Old Santa Cruz Hwy
Los Gatos, CA 95033 - May 2024

Methods & Equipment

- David White Model LT6-900
- Survey Rod -
- 400 ft Tape

Figure 1 shows the 2016 topological survey done by Tom Milo with the affected area being much steeper than the surrounding terrain. The level area is most likely the result of grading associated with a building site application, prior to the 1960s.

Figure 2 traces Google Earth (Keyhole) history images back to 1985 to show the subject flat area.

Figure 3 captures topological data from the 2016 survey with 1-sq ft resolution averaged over 25-sq ft area with half-ft elevation resolution, using the 308 to 318 reference elevation from the survey.

Figure 4 contrasts the 2016 survey data to field measurements obtained in April 2024.

Figure 5 calculates total Fill volume and maximum vertical displacement.

Figures 6 & 7 show slide calculations and summary



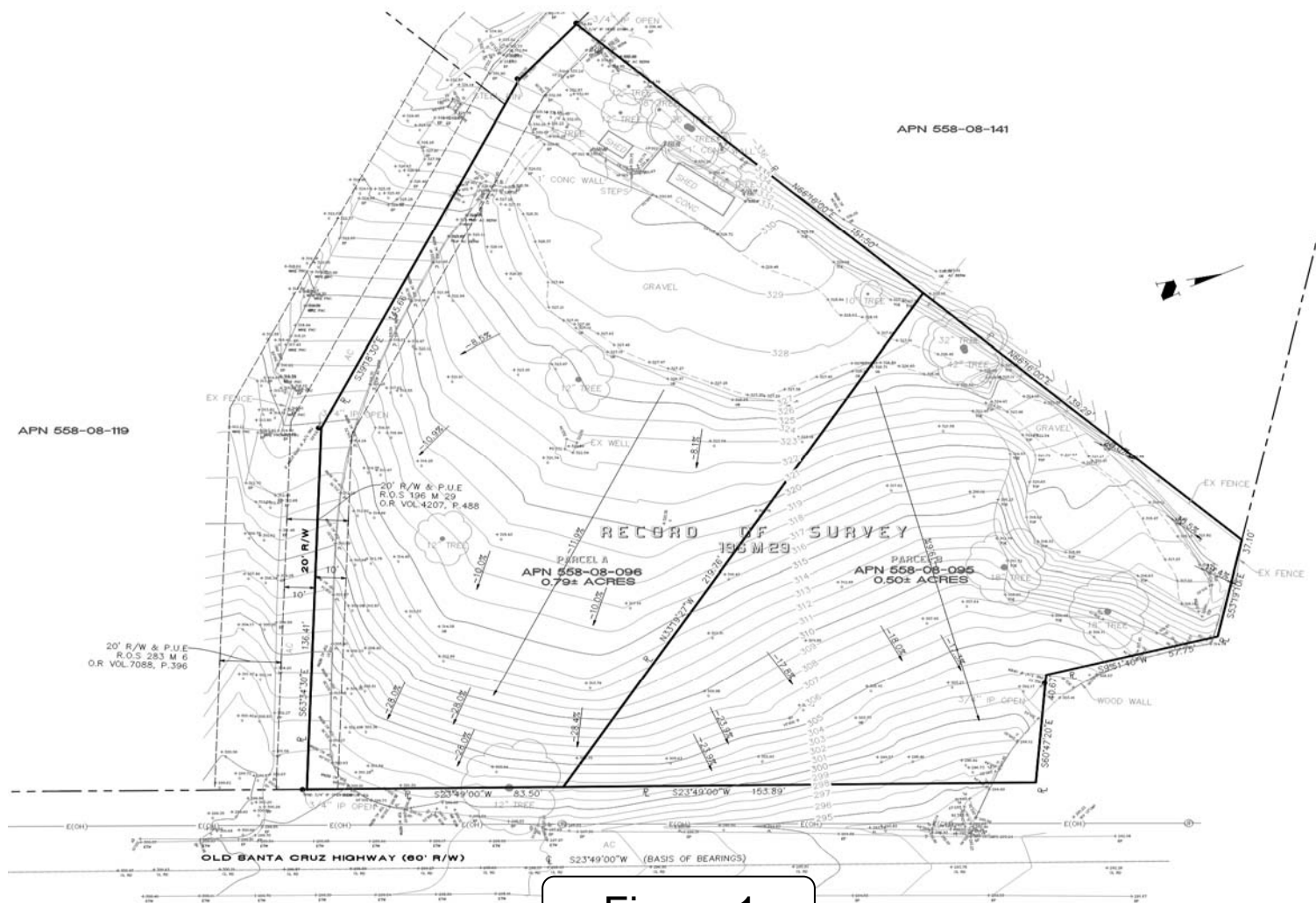


Figure 2

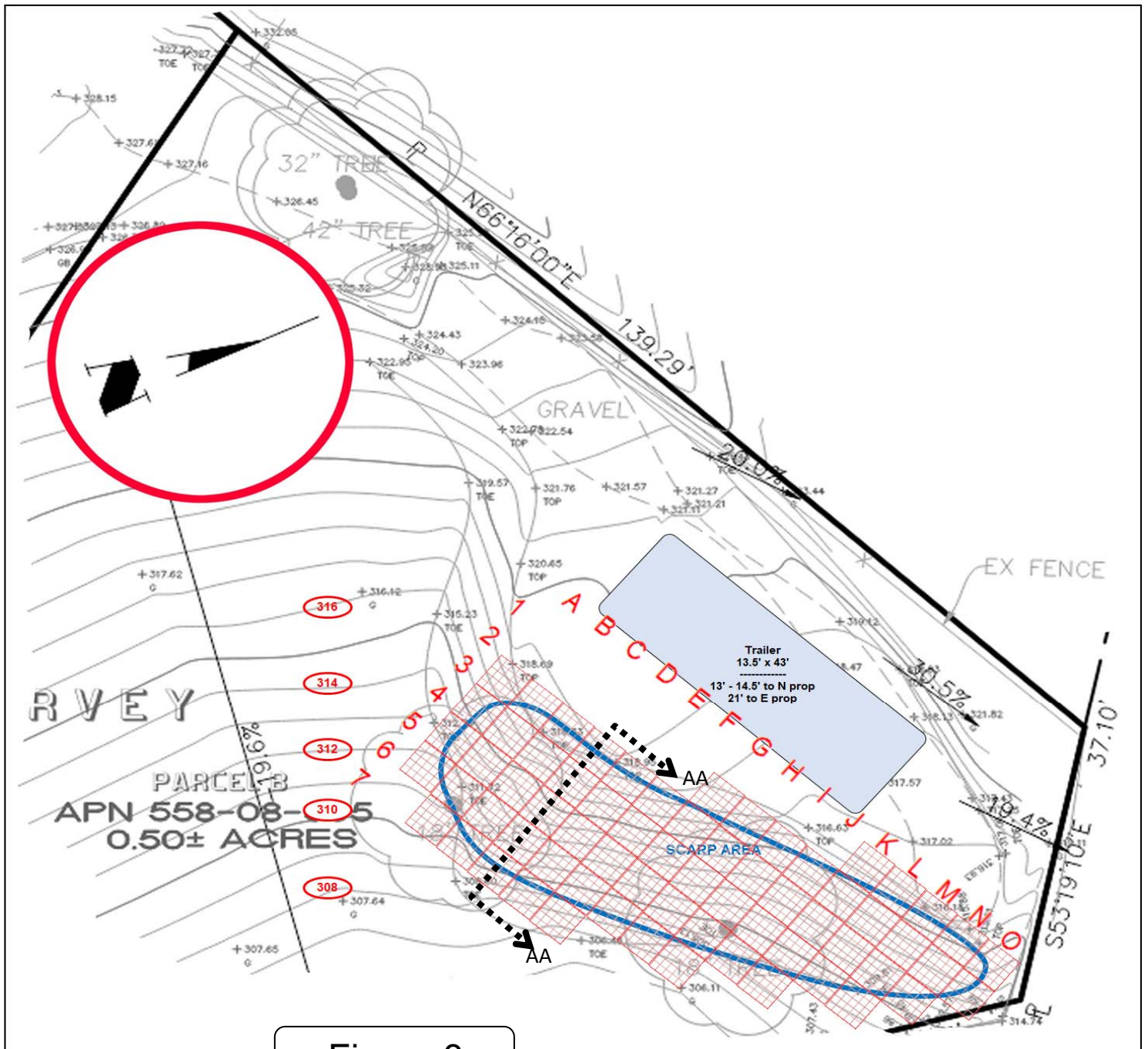


Figure 3

DO NOT SCALE
 Scale Reference - 37.1 ft NE line = 4.03 inch
 (unnormalized)

Known Quantities - Original Profile (2016 Survey) - After Slide Profile (Field Investigation)															
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1											316.0	316.0	315.5	315.0	314.5
2							317.5	316.5	315.0	314.0	314.0	314.0	313.5	313.0	312.5
3	317.5	318.0	318.0	318.0	318.0	317.5	316.0	314.5	313.0	312.0	312.0	311.5	311.0	311.0	
4	316.0	316.5	316.5	316.5	316.0	315.0	314.0	312.5	311.0	310.0	310.0	309.5	309.5		
5	313.5	314.0	314.0	314.5	314.5	312.0	311.5	310.0	309.0	308.0	308.0				
6	311.5	312.0	312.0	312.0	311.0	310.0	309.0	308.0	307.0						
7		310.5	310.0	310.0	309.0	308.0									

Figure 4

Quantities To Be Determined - Filled Profile (extrapolated) - Fill Amount (calculated)															
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1											316.5	316.5	316.0	315.5	315.0
2							317.5	317.0	317.0	317.0	0.46	0.46	0.46	0.46	0.46
3	317.5	318.0	318.0	318.0	318.0	317.5	317.5	316.5	315.0	315.0	315.5	316.0	315.5	315.0	
4	316.0	316.5	317.0	317.0	317.0	317.0	315.0	314.0	314.0	314.0	314.0	314.0	314.0		
5	313.5	314.0	317.0	317.0	317.0	317.0	315.0	312.0	312.0	312.0	312.0				
6	311.5	312.0	315.0	315.0	315.0	315.0	310.0	308.0	307.0						
7		310.5	310.0	310.0	309.0	308.0									
Σ	0.00	0.00	6.02	5.56	6.94	11.11	6.48	5.56	9.26	12.96	13.89	10.65	8.80	4.17	0.46

Figure 5

Slide Volume															
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.50	0.50	0.50	0.50
2	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00
3	0.50	1.00	1.00	1.00	1.00	1.00	1.00	0.50	0.00	0.00	0.50	1.00	0.50	0.00	0.00
4	0.50	1.00	2.50	2.50	4.50	5.00	3.00	2.00	4.00	4.00	3.00	3.00	3.50	0.00	0.00
5	2.50	3.00	6.00	6.00	7.00	7.00	4.00	1.00	3.00	3.00	2.00	0.00	0.00	0.00	0.00
6	1.50	2.00	6.00	6.00	6.00	7.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	2.50	2.00	2.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

