

PALOMA
EXCAVATION PLAN
GRAND AVE & LINDA VISTA DRIVE

REV #0

DESIGN CALCULATIONS
June 6, 2025

PREPARED BY:
SCOTT F CANNON, PE



MZB ENGINEERING, INC

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engineering@mzbinc.com

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M Z B E N G I N E E R I N G , I N C

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PLANS FOR CONSTRUCTION ON
PALOMA
IN SAN DIEGO COUNTY
-
EXCAVATION PLAN
REVISION 0

INDEX TO PLANS

SHEET NO.	TITLE
1	COVER
2	NOTES
3	PLAN VIEW / SECTION VIEW

LOCATION MAP



Underground Service Alert



Call: TOLL FREE
1-800-422-4133

TWO WORKING DAYS BEFORE YOU DIG

June 3, 2025



DESIGN BY: S.CANNON	REV. 0	DATE 6-3-25	DESCRIPTION RELEASED FOR CONSTRUCTION
DRAWN BY: S.CANNON			
SCALE: AS SHOWN			

MZB ENGINEERING INC.
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CORONA, CA 92882
(949) 254-4792



PALOMA EXCAVATION PLAN
COVER
PROJECT: CITY OF SAN MARCOS PUBLIC IMPROVEMENT
CONTRACTOR: KANA PIPELINE
CONTRACT NO: -

SHEET NUMBER:
1
OF 3 SHEETS
Paloma File

1. ALL EXCAVATIONS SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH OSHA CFR 29, PART 1926, SUBPART P, AND CAL/OSHA SAFETY ORDERS TITLE 8, SECTION 1504, AND 1539-1547.

- LOCATION AND PROTECTION OF EXISTING UTILITIES:

- SURVEYING AND GROUND ELEVATION INFORMATION:

- COMPETENT PERSONS:

- ENVIRONMENTAL/SWPPP COMPLIANCE:

- CAL/OSHA REQUIREMENTS:

- CONSTRUCTION REQUIREMENTS:

- ### CONTROLLING FIELD DIMENSIONS

- LAVENDER

1. THE FOLLOWING SOIL DESCRIPTIONS ARE ASSUMED TO BE PRESENT DURING EXCAVATION. IF SOILS DIFFER FROM THOSE DESCRIBED BELOW, STOP THE EXCAVATION AND CONSULT WITH THE DESIGN ENGINEER.

350.0' TO 400.0' - (SM) SILTY SANDSTONE

EXCAVATION SLOPE DESIGN BASED ON BORING LOGS B-3 TO B-6, & TP 1 TO TP 4 OF THE INFORMATION PROVIDED IN THE NMG GEOTECHNICAL INC REPORT, SAN MARCOS, CA DATED APRIL 23, 2024.

544.0' TO 540.0'	540.0' TO 536.0'	536.0' TO BELOW
$\gamma = 115$ PCF	$\gamma = 115$ PCF	$\gamma = 125$ PCF
$\phi = 23^\circ$	$\phi = 23^\circ$	$\phi = 33^\circ$
$S_u = 225$ PSF	$S_u = 225$ PSF	$S_u = 100$ PSF

1. IF K-RAIL IS LESS THAN 2FT FROM TOP OF SLOPE IT MUST BE PINNED. SEE 2015 CALTRANS STANDARD PLAN T3B.
2. K-RAIL MAY NOT BE PLACED CLOSER THAN 3" FROM TOP OF SLOPE. (200PSF).
3. SLOPES WERE DESIGNED WITH A HS20-44 TRAFFIC SURCHARGE (300PSF) PLACED 2FT FROM TOP OF SLOPE OR AS SHOWN IN THE SURCHARGE TABLE(S) IN THESE PLANS.
4. FOR SURCHARGE OFFSETS REFER TO "ASSUMED SURCHARGES & MIN. OFFSETS" TABLES ON SECTION VIEWS..
5. IF HIGHER GROUND PRESSURE IS ANTICIPATED, CONSULT WITH THE DESIGN ENGINEER.

June 3, 2025



DESIGN BY: SCANNON	REV.	DATE	DESCRIPTION
	0	6-3-25	RELEASED FOR CONSTRUCTION
DRAWN BY: SCANNON			
SCALE: AS SHOWN			

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PALOMA EXCAVATION PLAN	
NOTES	
PROJECT: CITY OF SAN MARCOS PUBLIC IMPROVEMENT	
CONTRACTOR: KANA PIPELINE	CONTRACT NO: -

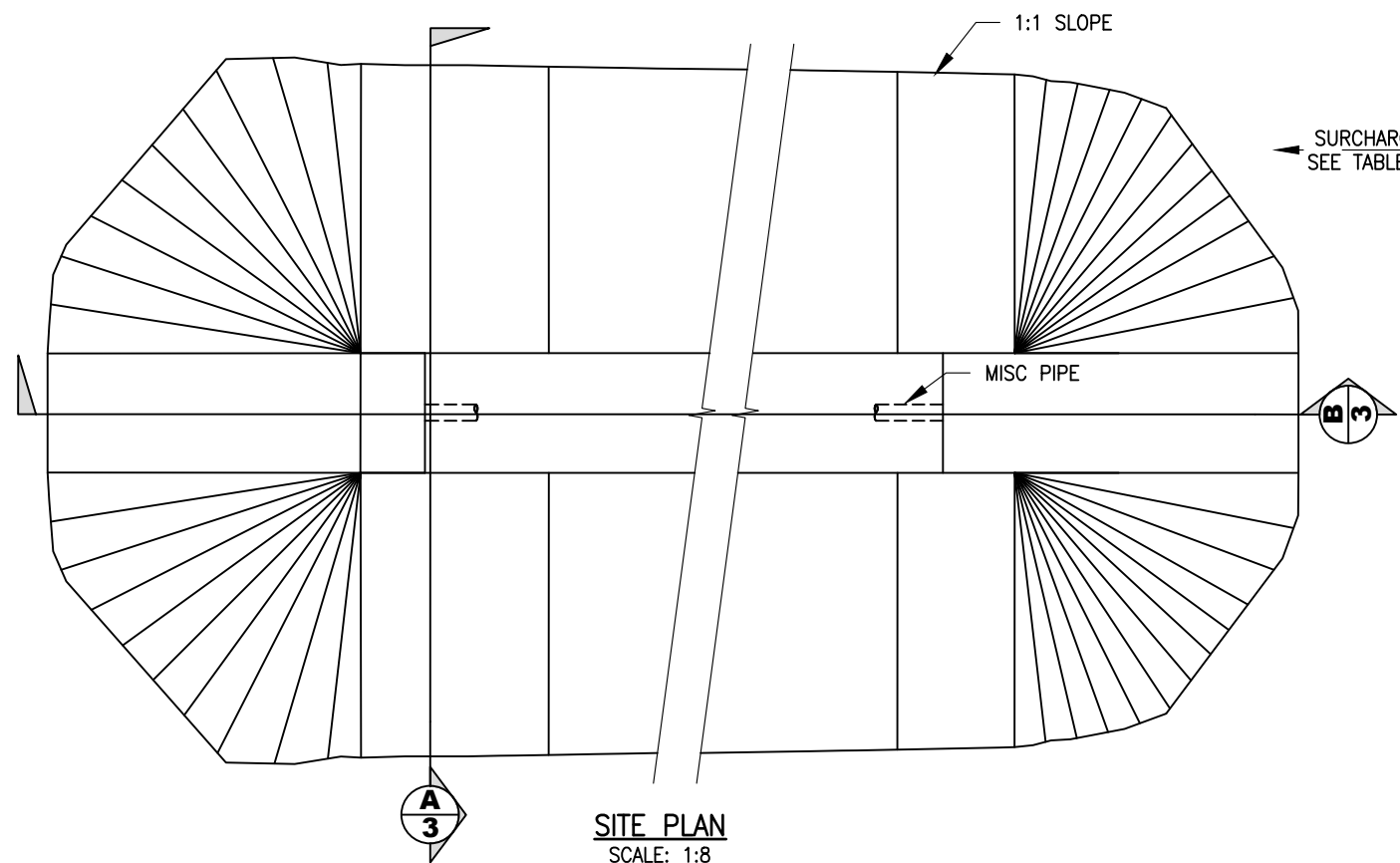
SHEET NUMBER:			

2

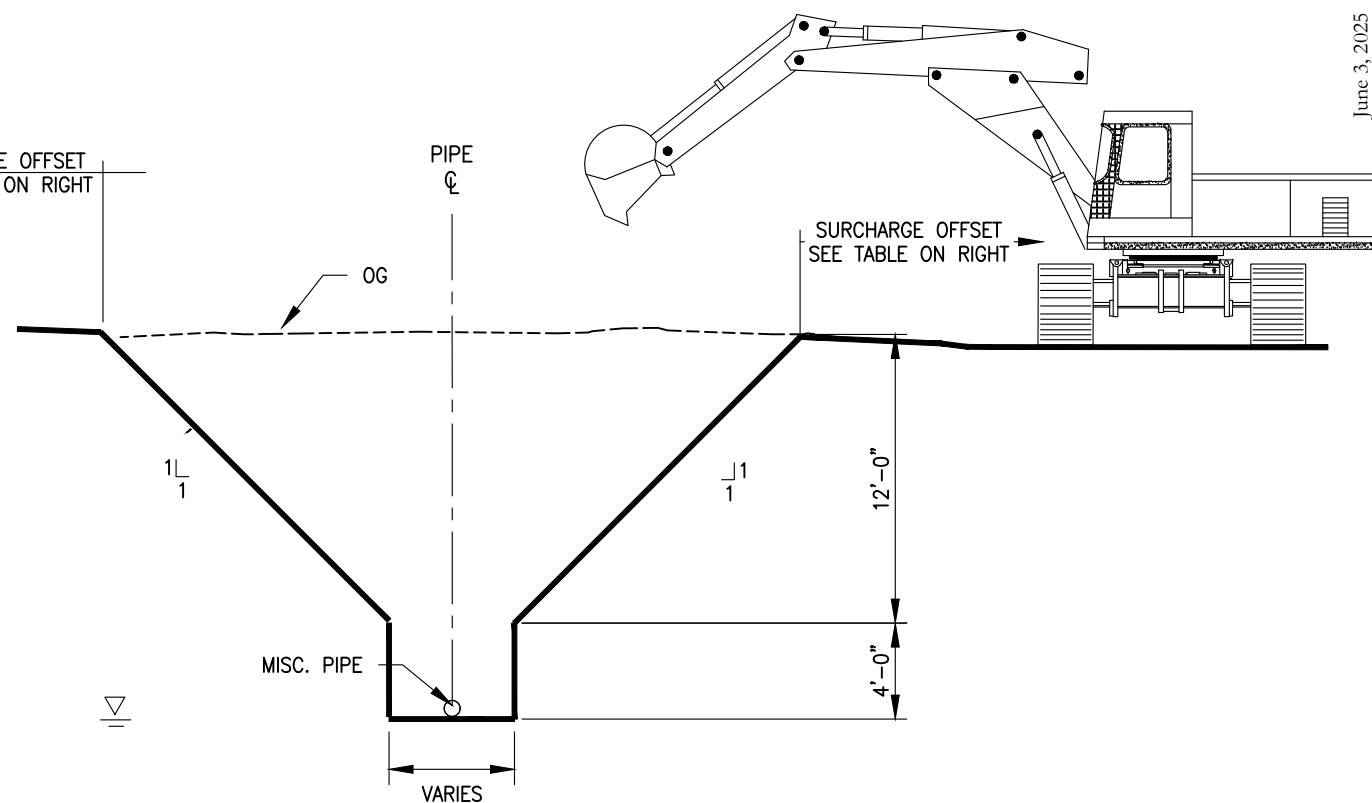
OF 3 SHEETS

Paloma File





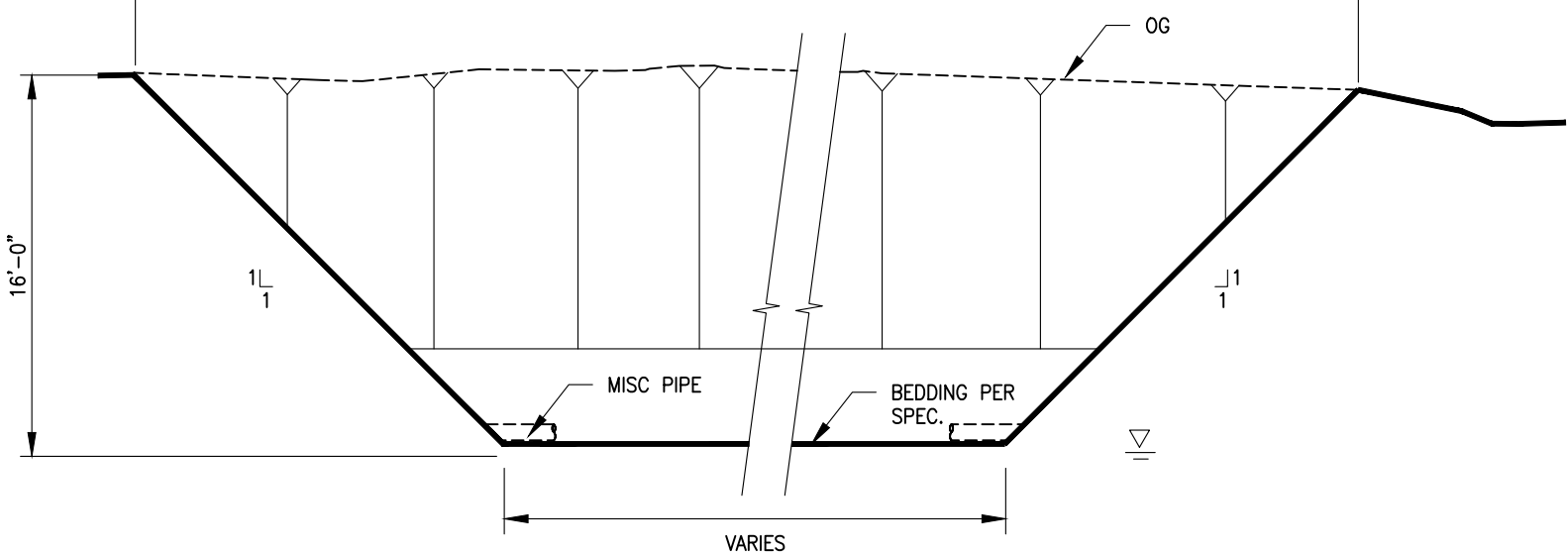
SURCHARGE OFFSET
SEE TABLE ON RIGHT



SURCHARGE OFFSET
SEE TABLE ON RIGHT

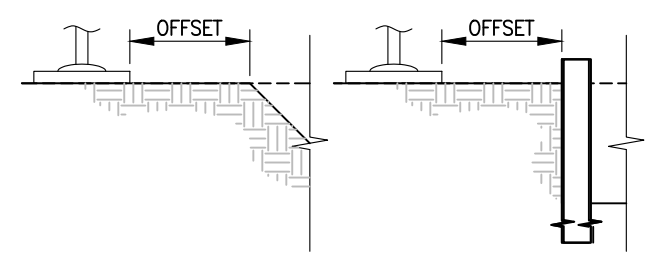
SURCHARGE OFFSET
SEE TABLE ON RIGHT

SURCHARGE OFFSET
SEE TABLE ON RIGHT



ASSUMED MINIMUM OFFSETS	
SURCHARGE	OFFSET
HS 20-44 TRAFFIC	5 FT
CAT 330 EXCAVATOR	4 FT
3 CY LOADER	12 FT
K-RAIL	2 FT
CONCRETE TRUCK	12 FT
SPOIL PILE*	3 FT

*SPOIL PILE HT = 8 FT W/ 1:1 SLOPE



Underground Service Alert

Call: TOLL FREE
1-800-422-4133

TWO WORKING DAYS BEFORE YOU DIG

June 3, 2025



DESIGN BY:	REV.	DATE	DESCRIPTION
SCANNON	0	6-3-25	RELEASED FOR CONSTRUCTION
DRAWN BY:			
SCANNON			
SCALE:			AS SHOWN

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PALOMA EXCAVATION PLAN

PLAN VIEW / SECTION VIEW

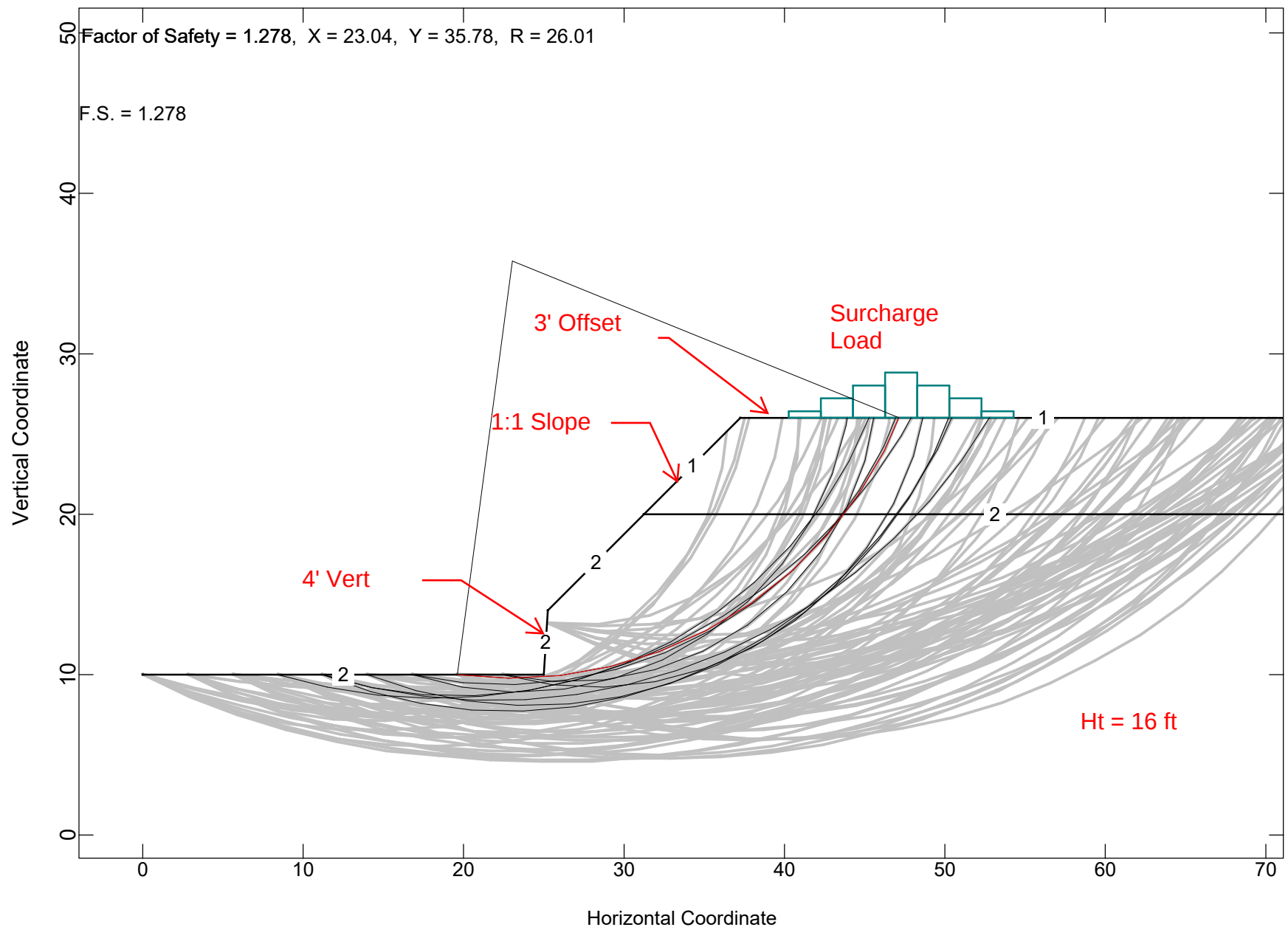
PROJECT: CITY OF SAN MARCOS PUBLIC IMPROVEMENT

CONTRACTOR: KANA PIPELINE CONTRACT NO: -

SHEET NUMBER:
3
OF 3 SHEETS
Paloma File

Slope Stability Analysis

Spoils Pile Surcharge Load



=====

STABLPro for Windows, Version 2015.4.5

Upgraded from:
FHWA-PCSTABLE

Serial Number : 357267753

--Slope Stability Analysis--
Simplified Janbu, Simplified Bishop
or Spencer Method of Slices

=====

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Las Vegas, NV, USA

Path to file locations :

D:\Dropbox\Korpi_Cannon_Engineering\Projects\KC-0119 - MZB Engineering\Design\Excav
- Shoring\7.0 Paloma\Design\

Name of input data file : 8. Spoil - Vert - 4ft.sl4d
Name of output file : 8. Spoil - Vert - 4ft.sl4o
Name of plot output file : 8. Spoil - Vert - 4ft.sl4p

Time and Date of Analysis

Date: June 03, 2025 Time: 12:48:04

1

PROBLEM DESCRIPTION New Slope

BOUNDARY COORDINATES

5 Top Boundaries
6 Total Boundaries

Boundary No.	X-Left ft.	Y-Left ft.	X-Right ft.	Y-Right ft.	Soil Type Below Bnd
1	0.00	10.00	25.00	10.00	2
2	25.00	10.00	25.25	14.00	2
3	25.25	14.00	31.25	20.00	2
4	31.25	20.00	37.25	26.00	1
5	37.25	26.00	75.00	26.00	1
6	31.25	20.00	75.00	20.00	2

1

ISOTROPIC SOIL PARAMETERS

2 Type(s) of Soil

Soil Type No.	Total Unit Wt. pcf	Saturated Unit Wt. pcf	Cohesion Intercept psf	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant psf	Piez. Surface No.
1	115.0	115.0	225.0	23.0	0.00	0.0	0
2	125.0	125.0	100.0	33.0	0.00	0.0	0

1

BOUNDARY LOAD(S)

7 Load(s) Specified

Load No.	X-Left ft.	X-Right ft.	Intensity psf	Deflection (deg)
1	40.25	42.25	230.0	0.0
2	42.25	44.25	690.0	0.0
3	44.25	46.25	1150.0	0.0
4	46.25	48.25	1610.0	0.0
5	48.25	50.25	1150.0	0.0
6	50.25	52.25	690.0	0.0
7	52.25	54.25	230.0	0.0

NOTE - Intensity Is Specified As A Uniformly Distributed Force Acting On A Horizontally Projected Surface.

1

A Critical Failure Surface Searching Method, Using A Random Technique For Generating Circular Surfaces, Has Been Specified.

100 Trial Surfaces Have Been Generated.

10 Surfaces Initiate From Each Of 10 Points Equally Spaced
Along The Ground Surface Between $X = 0.00$ ft.
and $X = 25.20$ ft.

Each Surface Terminates Between $X = 36.00$ ft.
and $X = 75.00$ ft.

Unless Further Limitations Were Imposed, The Minimum Elevation
At Which A Surface Extends Is $Y = 0.00$ ft.

3.20 ft. Line Segments Define Each Trial Failure Surface.

Restrictions Have Been Imposed Upon The Angle Of Initiation.
The Angle Has Been Restricted Between The Angles Of -25.0
And 0.0 deg.

1

Following Are Displayed The Ten Most Critical Of The Trial
Failure Surfaces Examined. They Are Ordered - Most Critical
First.

* * Safety Factors Are Calculated By The Modified Bishop Method * *

Failure Surface Specified By 12 Coordinate Points

Point No.	X-Surf ft.	Y-Surf ft.
1	19.60	10.00
2	22.79	9.77
3	25.99	9.94
4	29.14	10.50
5	32.20	11.44
6	35.12	12.75

7	37.86	14.40
8	40.37	16.38
9	42.62	18.66
10	44.57	21.19
11	46.20	23.95
12	47.10	26.00

Circle Center At X = 23.0 ; Y = 35.8 and Radius, 26.0

*** 1.278 ***

Individual data on the 20 slices

Slice No.	Width Ft	Weight Lbs	Water	Water	Tie	Tie	Earthquake		Surcharge Load Lbs
			Force Top Lbs	Force Bot Lbs	Force Norm Lbs	Force Tan Lbs	Force Hor Lbs	Force Ver Lbs	
1	3.2	0.45E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	2.2	0.47E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	0.2	0.66E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4	0.7	0.41E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5	3.2	0.24E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6	2.1	0.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
7	0.9	0.11E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8	2.9	0.37E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
9	2.1	0.30E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
10	0.6	0.85E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
11	2.4	0.30E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
12	0.1	0.14E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.27E+02
13	1.9	0.19E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.43E+03
14	0.4	0.32E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.25E+03
15	1.0	0.80E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.71E+03
16	0.6	0.39E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.41E+03
17	0.3	0.19E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.37E+03
18	1.6	0.64E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.19E+04
19	0.0	0.11E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.55E+02
20	0.8	0.94E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.14E+04

Failure Surface Specified By 13 Coordinate Points

Point No.	X-Surf ft.	Y-Surf ft.
--------------	---------------	---------------

1	16.80	10.00
2	19.96	9.50
3	23.16	9.38
4	26.35	9.65
5	29.48	10.31
6	32.51	11.35
7	35.39	12.74
8	38.08	14.48
9	40.53	16.53
10	42.72	18.86
11	44.62	21.44
12	46.18	24.23
13	46.91	26.00

Circle Center At X = 22.5 ; Y = 35.7 and Radius, 26.3

*** 1.315 ***

1

Failure Surface Specified By 16 Coordinate Points

Point No.	X-Surf ft.	Y-Surf ft.
1	8.40	10.00
2	11.50	9.21
3	14.66	8.72
4	17.86	8.53
5	21.06	8.64
6	24.23	9.06
7	27.35	9.77
8	30.39	10.77
9	33.32	12.05
10	36.12	13.61
11	38.75	15.42
12	41.21	17.48
13	43.46	19.75
14	45.48	22.23
15	47.26	24.89
16	47.86	26.00

Circle Center At X = 18.3 ; Y = 42.4 and Radius, 33.9

*** 1.377 ***

Failure Surface Specified By 15 Coordinate Points

Point No.	X-Surf ft.	Y-Surf ft.
1	14.00	10.00
2	17.04	9.00
3	20.18	8.36
4	23.36	8.08
5	26.56	8.17
6	29.73	8.62
7	32.82	9.43
8	35.81	10.60
9	38.63	12.09
10	41.27	13.90
11	43.69	16.01
12	45.84	18.37
13	47.71	20.97
14	49.27	23.76
15	50.21	26.00

Circle Center At X = 24.2 ; Y = 35.9 and Radius, 27.9

*** 1.422 ***

1

Failure Surface Specified By 16 Coordinate Points

Point No.	X-Surf ft.	Y-Surf ft.
1	11.20	10.00
2	14.22	8.93
3	17.33	8.20
4	20.51	7.79
5	23.71	7.72
6	26.89	8.00
7	30.03	8.61
8	33.09	9.55
9	36.04	10.81
10	38.83	12.37
11	41.44	14.22

12	43.84	16.34
13	46.00	18.70
14	47.90	21.28
15	49.51	24.04
16	50.39	26.00

Circle Center At X = 22.7 ; Y = 37.8 and Radius, 30.1

*** 1.443 ***

Failure Surface Specified By 14 Coordinate Points

Point No.	X-Surf ft.	Y-Surf ft.
1	11.20	10.00
2	14.30	9.19
3	17.47	8.75
4	20.67	8.68
5	23.85	8.98
6	26.98	9.65
7	30.01	10.68
8	32.90	12.05
9	35.62	13.75
10	38.11	15.75
11	40.36	18.02
12	42.33	20.55
13	44.00	23.28
14	45.24	26.00

Circle Center At X = 19.7 ; Y = 36.2 and Radius, 27.5

*** 1.445 ***

1

Failure Surface Specified By 12 Coordinate Points

Point No.	X-Surf ft.	Y-Surf ft.
1	22.40	10.00
2	25.54	9.36

3	28.73	9.21
4	31.92	9.55
5	35.01	10.37
6	37.94	11.65
7	40.64	13.37
8	43.05	15.47
9	45.12	17.92
10	46.78	20.65
11	48.01	23.60
12	48.60	26.00

Circle Center At X = 28.1 ; Y = 30.2 and Radius, 20.9

*** 1.457 ***

Failure Surface Specified By 11 Coordinate Points

Point No.	X-Surf ft.	Y-Surf ft.
1	22.40	10.00
2	25.57	9.57
3	28.77	9.67
4	31.91	10.31
5	34.90	11.45
6	37.65	13.07
7	40.10	15.13
8	42.18	17.57
9	43.82	20.32
10	44.98	23.30
11	45.54	26.00

Circle Center At X = 26.6 ; Y = 28.8 and Radius, 19.2

*** 1.470 ***

1

Failure Surface Specified By 17 Coordinate Points

Point No.	X-Surf ft.	Y-Surf ft.
--------------	---------------	---------------

1	11.20	10.00
2	14.30	9.19
3	17.45	8.66
4	20.64	8.41
5	23.84	8.44
6	27.03	8.76
7	30.17	9.36
8	33.24	10.24
9	36.23	11.39
10	39.10	12.80
11	41.84	14.47
12	44.41	16.36
13	46.81	18.48
14	49.01	20.81
15	50.99	23.32
16	52.75	26.00
17	52.75	26.00

Circle Center At X = 21.8 ; Y = 44.3 and Radius, 35.9

*** 1.479 ***

Failure Surface Specified By 13 Coordinate Points

Point No.	X-Surf ft.	Y-Surf ft.
1	16.80	10.00
2	19.90	9.21
3	23.09	8.91
4	26.28	9.10
5	29.41	9.78
6	32.40	10.93
7	35.17	12.52
8	37.67	14.53
9	39.83	16.89
10	41.60	19.55
11	42.94	22.45
12	43.83	25.53
13	43.89	26.00

Circle Center At X = 23.5 ; Y = 29.7 and Radius, 20.8

*** 1.486 ***

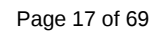
	Y	A	X	I	S	F	T
	0.00	9.38	18.75	28.13	37.50	46.88	
X	0.00	+-----+*	+-----+	+-----+	+-----+	+-----+	
	-						
	-	...					
	-						
	-						
	-	. 3					
	9.38	+					
	-	..35					
	-						
	-	..354					
	-						
	-	...342					
A	18.75	+					
	-	..5321					
	-	7					
	-	..541.					
	-	3* .*					
	-	421.					
X	28.13	+	3....				
	-	491...					
	-	78..... *					
	-	4913...					
	-	78.1 . . .					
	-	45023.. . . .					
I	37.50	+	7.81.6.. . . *				
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	-	 74 138. 6					
S	46.88	+	9 7 1313/4				
	-	 45 7. 34/5					
	-	 45 45/6					
	-	9. .6/7					
	-	9					
	-	7/					
	56.25	+					
	-						
	-						
	-						
	-						

F 65.63 +

T 75.00 + *

50 Factor of Safety = 1.351, X = 23.37, Y = 29.61, R = 19.97

Vertical Coordinate



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STABLPro for Windows, Version 2015.4.5

Upgraded from:
FHWA-PCSTABLE

Serial Number : 357267753

--Slope Stability Analysis--
Simplified Janbu, Simplified Bishop
or Spencer Method of Slices

=====

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Las Vegas, NV, USA

Path to file locations :

D:\Dropbox\Korpi_Cannon_Engineering\Projects\KC-0119 - MZB Engineering\Design\Excav
- Shoring\7.0 Paloma\Design\

Name of input data file : 3. Excavator.sl4d
Name of output file : 3. Excavator.sl4o
Name of plot output file : 3. Excavator.sl4p

Time and Date of Analysis

Date: June 03, 2025 Time: 13:00:45

1

PROBLEM DESCRIPTION New Slope

BOUNDARY COORDINATES

5 Top Boundaries
6 Total Boundaries

Boundary No.	X-Left ft.	Y-Left ft.	X-Right ft.	Y-Right ft.	Soil Type Below Bnd
1	0.00	10.00	25.00	10.00	2
2	25.00	10.00	25.25	14.00	2
3	25.25	14.00	31.25	20.00	2
4	31.25	20.00	37.25	26.00	1
5	37.25	26.00	75.00	26.00	1
6	31.25	20.00	75.00	20.00	2

1

ISOTROPIC SOIL PARAMETERS

2 Type(s) of Soil

Soil Type No.	Total Unit Wt. pcf	Saturated Unit Wt. pcf	Cohesion Intercept psf	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant psf	Piez. Surface No.
1	115.0	115.0	225.0	23.0	0.00	0.0	0
2	125.0	125.0	100.0	33.0	0.00	0.0	0

1

BOUNDARY LOAD(S)

2 Load(s) Specified

Load No.	X-Left ft.	X-Right ft.	Intensity psf	Deflection (deg)
1	40.25	42.50	900.0	0.0
2	48.75	51.00	900.0	0.0

NOTE - Intensity Is Specified As A Uniformly Distributed Force Acting On A Horizontally Projected Surface.

1

A Critical Failure Surface Searching Method, Using A Random Technique For Generating Circular Surfaces, Has Been Specified.

100 Trial Surfaces Have Been Generated.

10 Surfaces Initiate From Each Of 10 Points Equally Spaced
Along The Ground Surface Between $X = 0.00$ ft.
and $X = 25.20$ ft.

Each Surface Terminates Between $X = 35.00$ ft.
and $X = 75.00$ ft.

Unless Further Limitations Were Imposed, The Minimum Elevation
At Which A Surface Extends Is $Y = 0.00$ ft.

3.20 ft. Line Segments Define Each Trial Failure Surface.

Restrictions Have Been Imposed Upon The Angle Of Initiation.
The Angle Has Been Restricted Between The Angles Of -25.0
And 0.0 deg.

1

Following Are Displayed The Ten Most Critical Of The Trial
Failure Surfaces Examined. They Are Ordered - Most Critical
First.

* * Safety Factors Are Calculated By The Modified Bishop Method * *

Failure Surface Specified By 11 Coordinate Points

Point No.	X-Surf ft.	Y-Surf ft.
1	19.60	10.00
2	22.78	9.65
3	25.98	9.81
4	29.11	10.48
5	32.09	11.65
6	34.85	13.27
7	37.31	15.31
8	39.41	17.72
9	41.11	20.44
10	42.34	23.39
11	42.97	26.00

Circle Center At X = 23.4 ; Y = 29.6 and Radius, 20.0

*** 1.351 ***

Individual data on the 17 slices

Slice No.	Width Ft	Weight Lbs	Water	Water	Tie	Tie	Earthquake		Surcharge Load Lbs
			Force Top Lbs	Force Bot Lbs	Force Norm Lbs	Force Tan Lbs	Force Hor Lbs	Force Ver Lbs	
1	3.2	0.70E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	2.2	0.81E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	0.2	0.70E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4	0.7	0.42E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5	3.1	0.24E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6	2.1	0.22E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
7	0.8	0.93E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8	2.8	0.33E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
9	2.4	0.31E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
10	0.1	0.74E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
11	2.1	0.24E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
12	0.8	0.75E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
13	0.6	0.44E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.52E+03
14	0.3	0.18E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.25E+03
15	1.2	0.58E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.11E+04
16	0.2	0.41E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.14E+03
17	0.5	0.53E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Failure Surface Specified By 12 Coordinate Points

Point No.	X-Surf ft.	Y-Surf ft.
1	16.80	10.00
2	19.97	9.55
3	23.17	9.61
4	26.32	10.17
5	29.34	11.22
6	32.16	12.73
7	34.70	14.68
8	36.91	17.00

9	38.72	19.64
10	40.08	22.53
11	40.98	25.60
12	41.03	26.00

Circle Center At X = 21.2 ; Y = 29.7 and Radius, 20.2

*** 1.425 ***

1

Failure Surface Specified By 13 Coordinate Points

Point No.	X-Surf ft.	Y-Surf ft.
1	16.80	10.00
2	19.96	9.50
3	23.16	9.40
4	26.34	9.71
5	29.46	10.42
6	32.47	11.53
7	35.30	13.01
8	37.93	14.84
9	40.30	16.98
10	42.38	19.42
11	44.14	22.09
12	45.53	24.97
13	45.88	26.00

Circle Center At X = 22.3 ; Y = 34.5 and Radius, 25.1

*** 1.493 ***

Failure Surface Specified By 14 Coordinate Points

Point No.	X-Surf ft.	Y-Surf ft.
1	11.20	10.00
2	14.30	9.19
3	17.47	8.77
4	20.67	8.72

5	23.85	9.06
6	26.97	9.78
7	29.98	10.86
8	32.84	12.30
9	35.50	14.07
10	37.93	16.15
11	40.10	18.51
12	41.97	21.11
13	43.51	23.91
14	44.35	26.00

Circle Center At X = 19.4 ; Y = 35.3 and Radius, 26.6

*** 1.504 ***

1

Failure Surface Specified By 11 Coordinate Points

Point No.	X-Surf ft.	Y-Surf ft.
1	16.80	10.00
2	19.95	9.42
3	23.15	9.43
4	26.29	10.03
5	29.27	11.21
6	31.97	12.91
7	34.32	15.09
8	36.22	17.66
9	37.62	20.54
10	38.45	23.63
11	38.64	26.00

Circle Center At X = 21.5 ; Y = 26.6 and Radius, 17.2

*** 1.514 ***

Failure Surface Specified By 11 Coordinate Points

Point No.	X-Surf ft.	Y-Surf ft.
-----------	------------	------------

1	22.40	10.00
2	25.57	9.57
3	28.77	9.71
4	31.89	10.42
5	34.84	11.67
6	37.51	13.42
7	39.83	15.62
8	41.73	18.20
9	43.13	21.08
10	44.01	24.15
11	44.19	26.00

Circle Center At X = 26.4 ; Y = 27.5 and Radius, 17.9

*** 1.523 ***

1

Failure Surface Specified By 9 Coordinate Points

Point No.	X-Surf ft.	Y-Surf ft.
1	25.20	13.21
2	28.40	13.14
3	31.53	13.79
4	34.44	15.11
5	36.99	17.06
6	39.03	19.52
7	40.47	22.38
8	41.24	25.48
9	41.25	26.00

Circle Center At X = 27.1 ; Y = 27.3 and Radius, 14.3

*** 1.575 ***

Failure Surface Specified By 10 Coordinate Points

Point No.	X-Surf ft.	Y-Surf ft.
1	16.80	10.00

2	19.88	9.11
3	23.07	8.95
4	26.22	9.53
5	29.15	10.81
6	31.71	12.73
7	33.76	15.19
8	35.20	18.05
9	35.94	21.16
10	35.95	24.70

Circle Center At X = 22.2 ; Y = 22.8 and Radius, 13.9

*** 1.602 ***

1

Failure Surface Specified By 13 Coordinate Points

Point No.	X-Surf ft.	Y-Surf ft.
1	16.80	10.00
2	19.83	8.97
3	22.98	8.42
4	26.18	8.36
5	29.35	8.80
6	32.41	9.72
7	35.30	11.11
8	37.93	12.93
9	40.25	15.13
10	42.20	17.67
11	43.74	20.47
12	44.82	23.48
13	45.30	26.00

Circle Center At X = 24.9 ; Y = 28.9 and Radius, 20.6

*** 1.606 ***

Failure Surface Specified By 15 Coordinate Points

Point No.	X-Surf ft.	Y-Surf ft.
--------------	---------------	---------------

1	8.40	10.00
2	11.39	8.86
3	14.50	8.10
4	17.68	7.72
5	20.88	7.74
6	24.05	8.14
7	27.15	8.93
8	30.14	10.08
9	32.96	11.60
10	35.57	13.45
11	37.94	15.60
12	40.03	18.02
13	41.80	20.68
14	43.24	23.54
15	44.13	26.00

Circle Center At X = 19.2 ; Y = 33.9 and Radius, 26.2

*** 1.636 ***

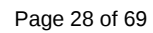
1

	Y	A	X	I	S	F	T
	0.00	9.38	18.75	28.13	37.50	46.88	
X	0.00	+-----+*	+-----+	+-----+	+-----+	+-----+	
	-						
	-	...					
	-						
	-						
	-	. 0					
	9.38	+					
	-	.0.4					
	-						
	-	..04.					
	-						
	-	..04.2					
A	18.75	+					
	-	..0421					
	-	6					
	-	...91.					
	-	6*	7*				
	-	912.					
X	28.13	+	6...7				

	-	9.12..
	-	6..57.. *
	-	9.142. .
	-	6.1.2. . .
	-	9.34...5. .8 .8.
I	37.50 +	6.142...5.. .*
	-	 6 1 2.. 5. 5
	-	9 304 1 2..22/1
	-	 6.304 1 .1/
	-	 6 304.1
	-	9 33
S	46.88 +	
	-	 /2
	-	
	-	 2/
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	56.25 +	
	-	
	-	
	-	
	-	
	-	
F	65.63 +	
	-	
	-	
	-	
	-	
	-	
T	75.00 +	* *

Factor of Safety = 1.442, $X = 23.37$, $Y = 29.61$, $R = 19.97$

Vertical Coordinate



=====

STABLPro for Windows, Version 2015.4.5

Upgraded from:
FHWA-PCSTABLE

Serial Number : 357267753

--Slope Stability Analysis--
Simplified Janbu, Simplified Bishop
or Spencer Method of Slices

=====

This program is licensed to :

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Path to file locations :

D:\Dropbox\Korpi_Cannon_Engineering\Projects\KC-0119 - MZB Engineering\Design\Excav
- Shoring\7.0 Paloma\Design\

Name of input data file : 4. Traffic - Vert.sl4d
Name of output file : 4. Traffic - Vert.sl4o
Name of plot output file : 4. Traffic - Vert.sl4p

Time and Date of Analysis

Date: June 03, 2025 Time: 13:47:26

1

PROBLEM DESCRIPTION New Slope

BOUNDARY COORDINATES

5 Top Boundaries
6 Total Boundaries

Boundary No.	X-Left ft.	Y-Left ft.	X-Right ft.	Y-Right ft.	Soil Type Below Bnd
1	0.00	10.00	25.00	10.00	2
2	25.00	10.00	25.25	14.00	2
3	25.25	14.00	31.25	20.00	2
4	31.25	20.00	37.25	26.00	1
5	37.25	26.00	75.00	26.00	1
6	31.25	20.00	75.00	20.00	2

1

ISOTROPIC SOIL PARAMETERS

2 Type(s) of Soil

Soil Type No.	Total Unit Wt. pcf	Saturated Unit Wt. pcf	Cohesion Intercept psf	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant psf	Piez. Surface No.
1	115.0	115.0	225.0	23.0	0.00	0.0	0
2	125.0	125.0	100.0	33.0	0.00	0.0	0

1

BOUNDARY LOAD(S)

2 Load(s) Specified

Load No.	X-Left ft.	X-Right ft.	Intensity psf	Deflection (deg)
1	39.25	41.25	200.0	0.0
2	41.25	75.00	300.0	0.0

NOTE - Intensity Is Specified As A Uniformly Distributed Force Acting On A Horizontally Projected Surface.

1

A Critical Failure Surface Searching Method, Using A Random Technique For Generating Circular Surfaces, Has Been Specified.

100 Trial Surfaces Have Been Generated.

10 Surfaces Initiate From Each Of 10 Points Equally Spaced
Along The Ground Surface Between X = 0.00 ft.
and X = 25.20 ft.

Each Surface Terminates Between X = 35.00 ft.
and X = 75.00 ft.

Unless Further Limitations Were Imposed, The Minimum Elevation
At Which A Surface Extends Is Y = 0.00 ft.

3.20 ft. Line Segments Define Each Trial Failure Surface.

Restrictions Have Been Imposed Upon The Angle Of Initiation.
The Angle Has Been Restricted Between The Angles Of -25.0
And 0.0 deg.

1

Following Are Displayed The Ten Most Critical Of The Trial
Failure Surfaces Examined. They Are Ordered - Most Critical
First.

* * Safety Factors Are Calculated By The Modified Bishop Method * *

Failure Surface Specified By 11 Coordinate Points

Point No.	X-Surf ft.	Y-Surf ft.
1	19.60	10.00
2	22.78	9.65
3	25.98	9.81
4	29.11	10.48
5	32.09	11.65
6	34.85	13.27
7	37.31	15.31
8	39.41	17.72
9	41.11	20.44
10	42.34	23.39
11	42.97	26.00

Circle Center At X = 23.4 ; Y = 29.6 and Radius, 20.0

*** 1.442 ***

Individual data on the 17 slices

Slice No.	Width Ft	Weight Lbs	Water	Water	Tie	Tie	Earthquake		Surcharge Load Lbs
			Force Top Lbs	Force Bot Lbs	Force Norm Lbs	Force Tan Lbs	Force Hor Lbs	Force Ver Lbs	
1	3.2	0.70E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	2.2	0.81E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	0.2	0.70E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4	0.7	0.42E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5	3.1	0.24E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6	2.1	0.22E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
7	0.8	0.93E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8	2.8	0.33E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
9	2.4	0.31E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
10	0.1	0.74E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
11	1.9	0.22E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
12	0.2	0.16E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.33E+02
13	1.4	0.12E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.28E+03
14	0.3	0.18E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.55E+02
15	0.1	0.90E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.29E+02
16	1.1	0.49E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.33E+03
17	0.6	0.94E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.19E+03

Failure Surface Specified By 12 Coordinate Points

Point No.	X-Surf ft.	Y-Surf ft.
1	16.80	10.00
2	19.97	9.55
3	23.17	9.61
4	26.32	10.17
5	29.34	11.22
6	32.16	12.73
7	34.70	14.68
8	36.91	17.00

9	38.72	19.64
10	40.08	22.53
11	40.98	25.60
12	41.03	26.00

Circle Center At X = 21.2 ; Y = 29.7 and Radius, 20.2

*** 1.457 ***

1

Failure Surface Specified By 13 Coordinate Points

Point No.	X-Surf ft.	Y-Surf ft.
1	16.80	10.00
2	19.96	9.50
3	23.16	9.40
4	26.34	9.71
5	29.46	10.42
6	32.47	11.53
7	35.30	13.01
8	37.93	14.84
9	40.30	16.98
10	42.38	19.42
11	44.14	22.09
12	45.53	24.97
13	45.88	26.00

Circle Center At X = 22.3 ; Y = 34.5 and Radius, 25.1

*** 1.482 ***

Failure Surface Specified By 11 Coordinate Points

Point No.	X-Surf ft.	Y-Surf ft.
1	16.80	10.00
2	19.95	9.42
3	23.15	9.43
4	26.29	10.03

5	29.27	11.21
6	31.97	12.91
7	34.32	15.09
8	36.22	17.66
9	37.62	20.54
10	38.45	23.63
11	38.64	26.00

Circle Center At X = 21.5 ; Y = 26.6 and Radius, 17.2

*** 1.514 ***

1

Failure Surface Specified By 14 Coordinate Points

Point No.	X-Surf ft.	Y-Surf ft.
1	11.20	10.00
2	14.30	9.19
3	17.47	8.77
4	20.67	8.72
5	23.85	9.06
6	26.97	9.78
7	29.98	10.86
8	32.84	12.30
9	35.50	14.07
10	37.93	16.15
11	40.10	18.51
12	41.97	21.11
13	43.51	23.91
14	44.35	26.00

Circle Center At X = 19.4 ; Y = 35.3 and Radius, 26.6

*** 1.553 ***

Failure Surface Specified By 11 Coordinate Points

Point No.	X-Surf ft.	Y-Surf ft.
--------------	---------------	---------------

1	22.40	10.00
2	25.57	9.57
3	28.77	9.71
4	31.89	10.42
5	34.84	11.67
6	37.51	13.42
7	39.83	15.62
8	41.73	18.20
9	43.13	21.08
10	44.01	24.15
11	44.19	26.00

Circle Center At X = 26.4 ; Y = 27.5 and Radius, 17.9

*** 1.567 ***

1

Failure Surface Specified By 10 Coordinate Points

Point No.	X-Surf ft.	Y-Surf ft.
1	16.80	10.00
2	19.88	9.11
3	23.07	8.95
4	26.22	9.53
5	29.15	10.81
6	31.71	12.73
7	33.76	15.19
8	35.20	18.05
9	35.94	21.16
10	35.95	24.70

Circle Center At X = 22.2 ; Y = 22.8 and Radius, 13.9

*** 1.602 ***

Failure Surface Specified By 16 Coordinate Points

Point No.	X-Surf ft.	Y-Surf ft.
--------------	---------------	---------------

1	8.40	10.00
2	11.50	9.21
3	14.67	8.73
4	17.86	8.55
5	21.06	8.69
6	24.23	9.13
7	27.34	9.88
8	30.36	10.93
9	33.27	12.26
10	36.04	13.87
11	38.63	15.74
12	41.04	17.85
13	43.23	20.19
14	45.18	22.72
15	46.88	25.44
16	47.16	26.00

Circle Center At X = 18.1 ; Y = 41.6 and Radius, 33.0

*** 1.620 ***

1

Failure Surface Specified By 13 Coordinate Points

Point No.	X-Surf ft.	Y-Surf ft.
1	16.80	10.00
2	19.83	8.97
3	22.98	8.42
4	26.18	8.36
5	29.35	8.80
6	32.41	9.72
7	35.30	11.11
8	37.93	12.93
9	40.25	15.13
10	42.20	17.67
11	43.74	20.47
12	44.82	23.48
13	45.30	26.00

Circle Center At X = 24.9 ; Y = 28.9 and Radius, 20.6

*** 1.621 ***

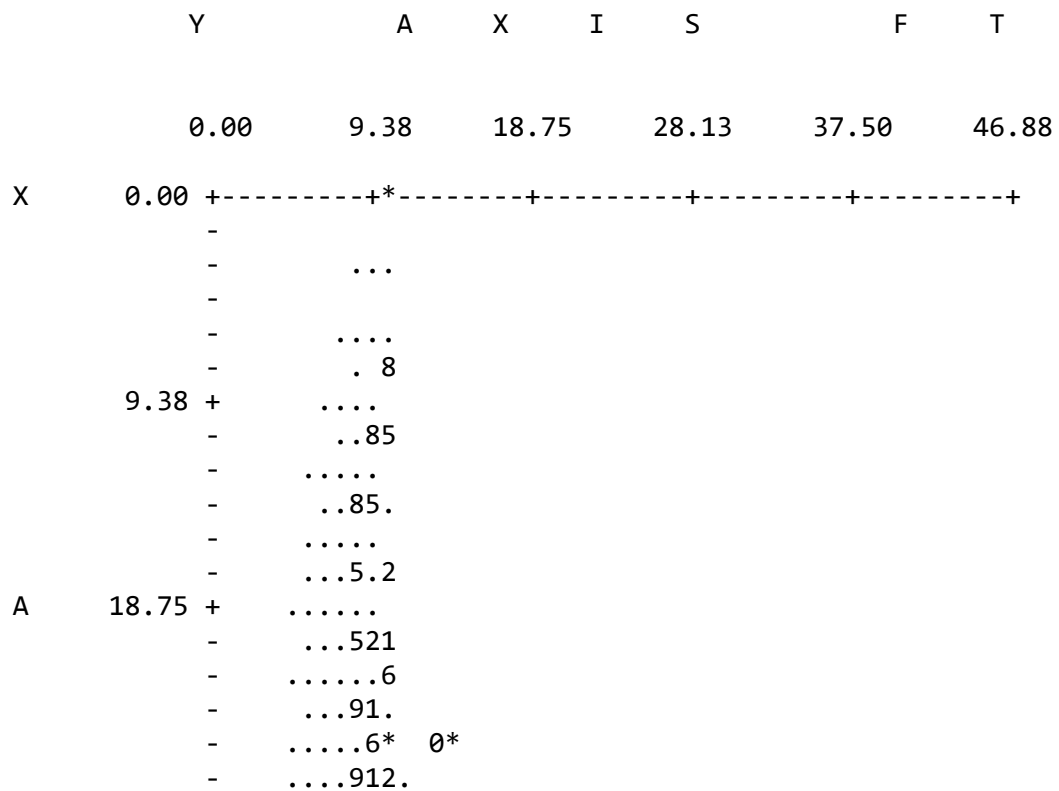
Failure Surface Specified By 9 Coordinate Points

Point No.	X-Surf ft.	Y-Surf ft.
1	25.20	13.21
2	28.40	13.14
3	31.53	13.79
4	34.44	15.11
5	36.99	17.06
6	39.03	19.52
7	40.47	22.38
8	41.24	25.48
9	41.25	26.00

Circle Center At X = 27.1 ; Y = 27.3 and Radius, 14.3

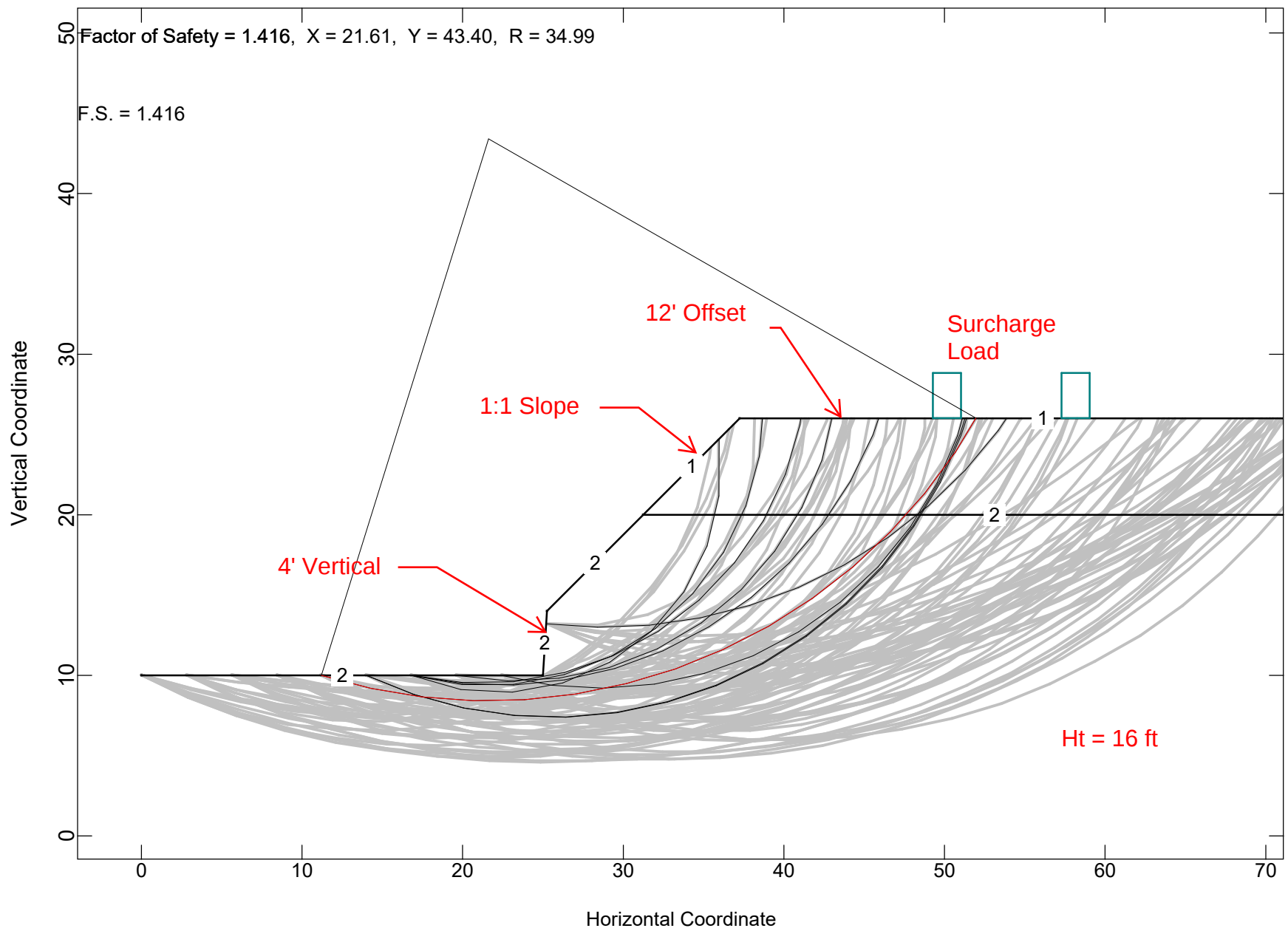
*** 1.651 ***

1



X	28.13	+	6...0	
		-	9.12..	
		-	6..40..	*
		-	9.152.	.
		-	6.1.2.	.
		-	9.35...4.	.7 .7.
I	37.50	+	6.152...4..	.*
		-	 6 1 2.. 4.	4/1
		-	9 385 1 2..	221/2
		-	 6.3.5 1	.
		-	 6 3.5.1	
		-	89 33	
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3 CY Loader Surcharge



=====

STABLPro for Windows, Version 2015.4.5

Upgraded from:
FHWA-PCSTABLE

Serial Number : 357267753

--Slope Stability Analysis--
Simplified Janbu, Simplified Bishop
or Spencer Method of Slices

=====

This program is licensed to :

Korpi Cannon Engineering PLLC
Las Vegas, NV, USA

Path to file locations :

D:\Dropbox\Korpi_Cannon_Engineering\Projects\KC-0119 - MZB Engineering\Design\Excav
- Shoring\7.0 Paloma\Design\

Name of input data file : 5. Loader - Vert.sl4d
Name of output file : 5. Loader - Vert.sl4o
Name of plot output file : 5. Loader - Vert.sl4p

Time and Date of Analysis

Date: June 03, 2025 Time: 14:02:21

1

PROBLEM DESCRIPTION New Slope

BOUNDARY COORDINATES

5 Top Boundaries
6 Total Boundaries

Boundary No.	X-Left ft.	Y-Left ft.	X-Right ft.	Y-Right ft.	Soil Type Below Bnd
1	0.00	10.00	25.00	10.00	2
2	25.00	10.00	25.25	14.00	2
3	25.25	14.00	31.25	20.00	2
4	31.25	20.00	37.25	26.00	1
5	37.25	26.00	75.00	26.00	1
6	31.25	20.00	75.00	20.00	2

1

ISOTROPIC SOIL PARAMETERS

2 Type(s) of Soil

Soil Type No.	Total Unit Wt. pcf	Saturated Unit Wt. pcf	Cohesion Intercept psf	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant psf	Piez. Surface No.
1	115.0	115.0	225.0	23.0	0.00	0.0	0
2	125.0	125.0	100.0	33.0	0.00	0.0	0

1

BOUNDARY LOAD(S)

2 Load(s) Specified

Load No.	X-Left ft.	X-Right ft.	Intensity psf	Deflection (deg)
1	49.25	51.00	4700.0	0.0
2	57.25	59.00	4700.0	0.0

NOTE - Intensity Is Specified As A Uniformly Distributed Force Acting On A Horizontally Projected Surface.

1

A Critical Failure Surface Searching Method, Using A Random Technique For Generating Circular Surfaces, Has Been Specified.

100 Trial Surfaces Have Been Generated.

10 Surfaces Initiate From Each Of 10 Points Equally Spaced
Along The Ground Surface Between X = 0.00 ft.
and X = 25.20 ft.

Each Surface Terminates Between X = 35.00 ft.
and X = 75.00 ft.

Unless Further Limitations Were Imposed, The Minimum Elevation
At Which A Surface Extends Is Y = 0.00 ft.

3.20 ft. Line Segments Define Each Trial Failure Surface.

Restrictions Have Been Imposed Upon The Angle Of Initiation.
The Angle Has Been Restricted Between The Angles Of -25.0
And 0.0 deg.

1

Following Are Displayed The Ten Most Critical Of The Trial
Failure Surfaces Examined. They Are Ordered - Most Critical
First.

* * Safety Factors Are Calculated By The Modified Bishop Method * *

Failure Surface Specified By 16 Coordinate Points

Point No.	X-Surf ft.	Y-Surf ft.
1	11.20	10.00
2	14.30	9.19
3	17.45	8.66
4	20.64	8.43
5	23.84	8.49
6	27.02	8.84
7	30.16	9.48
8	33.22	10.40
9	36.19	11.60
10	39.04	13.06
11	41.73	14.78

12	44.27	16.74
13	46.61	18.92
14	48.74	21.31
15	50.64	23.88
16	51.93	26.00

Circle Center At X = 21.6 ; Y = 43.4 and Radius, 35.0

*** 1.416 ***

Individual data on the 22 slices

Slice No.	Width Ft	Weight Lbs	Water	Water	Tie	Tie	Earthquake		Surcharge Load Lbs
			Force Top Lbs	Force Bot Lbs	Force Norm Lbs	Force Tan Lbs	Force Hor Lbs	Force Ver Lbs	
1	3.1	0.16E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	3.2	0.42E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	3.2	0.58E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4	3.2	0.62E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5	1.2	0.21E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6	0.2	0.11E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
7	1.8	0.14E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8	3.1	0.32E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
9	1.1	0.13E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
10	2.0	0.27E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
11	3.0	0.45E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
12	1.1	0.17E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
13	1.8	0.29E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
14	2.7	0.39E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
15	2.5	0.31E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
16	2.3	0.23E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
17	1.0	0.73E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
18	1.2	0.72E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
19	0.5	0.26E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
20	1.4	0.49E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.66E+04
21	0.4	0.75E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.17E+04
22	0.9	0.82E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Failure Surface Specified By 13 Coordinate Points

Point	X-Surf	Y-Surf
-------	--------	--------

No.	ft.	ft.
1	22.40	10.00
2	25.54	9.38
3	28.74	9.20
4	31.93	9.45
5	35.05	10.12
6	38.06	11.21
7	40.90	12.70
8	43.50	14.56
9	45.83	16.75
10	47.85	19.23
11	49.51	21.97
12	50.79	24.90
13	51.10	26.00

Circle Center At X = 28.5 ; Y = 32.9 and Radius, 23.7

*** 1.447 ***

1

Failure Surface Specified By 16 Coordinate Points

Point No.	X-Surf ft.	Y-Surf ft.
1	14.00	10.00
2	16.97	8.81
3	20.06	7.97
4	23.22	7.50
5	26.42	7.41
6	29.61	7.70
7	32.74	8.37
8	35.77	9.39
9	38.66	10.77
10	41.37	12.48
11	43.85	14.49
12	46.08	16.79
13	48.02	19.33
14	49.66	22.08
15	50.95	25.01
16	51.25	26.00

Circle Center At X = 25.6 ; Y = 34.5 and Radius, 27.1

*** 1.492 ***

Failure Surface Specified By 16 Coordinate Points

Point No.	X-Surf ft.	Y-Surf ft.
1	14.00	10.00
2	16.97	8.80
3	20.06	7.96
4	23.22	7.49
5	26.42	7.39
6	29.61	7.67
7	32.74	8.33
8	35.77	9.35
9	38.66	10.72
10	41.38	12.42
11	43.87	14.42
12	46.11	16.71
13	48.06	19.25
14	49.70	21.99
15	51.01	24.91
16	51.35	26.00

Circle Center At X = 25.6 ; Y = 34.5 and Radius, 27.1

*** 1.497 ***

1

Failure Surface Specified By 12 Coordinate Points

Point No.	X-Surf ft.	Y-Surf ft.
1	16.80	10.00
2	19.97	9.55
3	23.17	9.61
4	26.32	10.17
5	29.34	11.22
6	32.16	12.73
7	34.70	14.68
8	36.91	17.00
9	38.72	19.64

10	40.08	22.53
11	40.98	25.60
12	41.03	26.00

Circle Center At X = 21.2 ; Y = 29.7 and Radius, 20.2

*** 1.498 ***

Failure Surface Specified By 11 Coordinate Points

Point No.	X-Surf ft.	Y-Surf ft.
1	16.80	10.00
2	19.95	9.42
3	23.15	9.43
4	26.29	10.03
5	29.27	11.21
6	31.97	12.91
7	34.32	15.09
8	36.22	17.66
9	37.62	20.54
10	38.45	23.63
11	38.64	26.00

Circle Center At X = 21.5 ; Y = 26.6 and Radius, 17.2

*** 1.514 ***

1

Failure Surface Specified By 11 Coordinate Points

Point No.	X-Surf ft.	Y-Surf ft.
1	19.60	10.00
2	22.78	9.65
3	25.98	9.81
4	29.11	10.48
5	32.09	11.65
6	34.85	13.27
7	37.31	15.31

8	39.41	17.72
9	41.11	20.44
10	42.34	23.39
11	42.97	26.00

Circle Center At X = 23.4 ; Y = 29.6 and Radius, 20.0

*** 1.521 ***

Failure Surface Specified By 12 Coordinate Points

Point No.	X-Surf ft.	Y-Surf ft.
1	25.20	13.21
2	28.39	13.00
3	31.59	13.12
4	34.76	13.57
5	37.86	14.36
6	40.87	15.46
7	43.74	16.87
8	46.45	18.57
9	48.97	20.55
10	51.26	22.77
11	53.32	25.23
12	53.84	26.00

Circle Center At X = 28.8 ; Y = 43.6 and Radius, 30.6

*** 1.599 ***

1

Failure Surface Specified By 10 Coordinate Points

Point No.	X-Surf ft.	Y-Surf ft.
1	16.80	10.00
2	19.88	9.11
3	23.07	8.95
4	26.22	9.53
5	29.15	10.81

6	31.71	12.73
7	33.76	15.19
8	35.20	18.05
9	35.94	21.16
10	35.95	24.70

Circle Center At X = 22.2 ; Y = 22.8 and Radius, 13.9

*** 1.602 ***

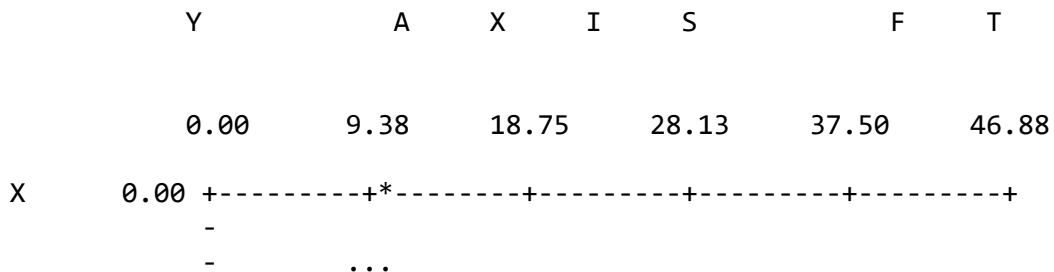
Failure Surface Specified By 13 Coordinate Points

Point No.	X-Surf ft.	Y-Surf ft.
1	16.80	10.00
2	19.96	9.50
3	23.16	9.40
4	26.34	9.71
5	29.46	10.42
6	32.47	11.53
7	35.30	13.01
8	37.93	14.84
9	40.30	16.98
10	42.38	19.42
11	44.14	22.09
12	45.53	24.97
13	45.88	26.00

Circle Center At X = 22.3 ; Y = 34.5 and Radius, 25.1

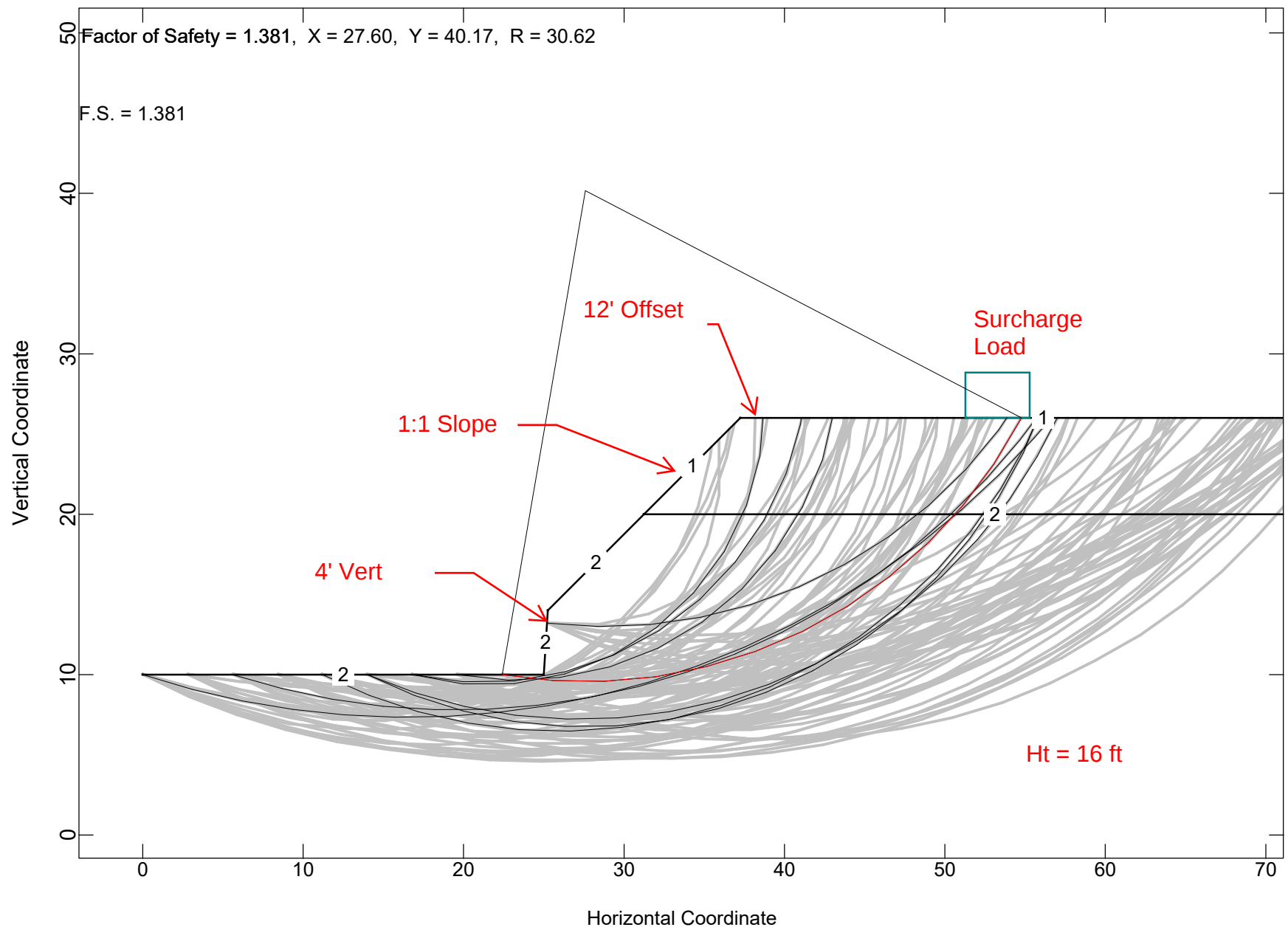
*** 1.610 ***

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		-	..315.
		-	2* 8*
		-	...3175.
X	28.13	+	2...8
		-	...3.175..
		-	2...6... *
		-	...3.17.5. .
		-	2..7.5. . .
		-	3.1.0....6. .9 .9.
I	37.50	+	2..87.5...6.. .*
		-	3..1 . 7 5.. 6. 6
		-	32.8 0.. 7 5..55
		-	1. ..0.. 7 .
		-	32.1 . . 0...7
		-	2... ... 00
S	46.88	+	4.1...
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		-	 8..211/
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F	65.63	+	
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T	75.00	+	* *

Concrete Truck Surchage Load



=====

STABLPro for Windows, Version 2015.4.5

Upgraded from:
FHWA-PCSTABLE

Serial Number : 357267753

--Slope Stability Analysis--
Simplified Janbu, Simplified Bishop
or Spencer Method of Slices

=====

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Las Vegas, NV, USA

Path to file locations :

D:\Dropbox\Korpi_Cannon_Engineering\Projects\KC-0119 - MZB Engineering\Design\Excav
- Shoring\7.0 Paloma\Design\

Name of input data file : 6. Concrete Truck - Vert.sl4d
Name of output file : 6. Concrete Truck - Vert.sl4o
Name of plot output file : 6. Concrete Truck - Vert.sl4p

Time and Date of Analysis

Date: June 03, 2025 Time: 14:09:13

1

PROBLEM DESCRIPTION New Slope

BOUNDARY COORDINATES

5 Top Boundaries
6 Total Boundaries

Boundary No.	X-Left ft.	Y-Left ft.	X-Right ft.	Y-Right ft.	Soil Type Below Bnd
1	0.00	10.00	25.00	10.00	2
2	25.00	10.00	25.25	14.00	2
3	25.25	14.00	31.25	20.00	2
4	31.25	20.00	37.25	26.00	1
5	37.25	26.00	75.00	26.00	1
6	31.25	20.00	75.00	20.00	2

1

ISOTROPIC SOIL PARAMETERS

2 Type(s) of Soil

Soil Type No.	Total Unit Wt. pcf	Saturated Unit Wt. pcf	Cohesion Intercept psf	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant psf	Piez. Surface No.
1	115.0	115.0	225.0	23.0	0.00	0.0	0
2	125.0	125.0	100.0	33.0	0.00	0.0	0

1

BOUNDARY LOAD(S)

1 Load(s) Specified

Load No.	X-Left ft.	X-Right ft.	Intensity psf	Deflection (deg)
1	51.25	55.25	3361.0	0.0

NOTE - Intensity Is Specified As A Uniformly Distributed Force Acting On A Horizontally Projected Surface.

1

A Critical Failure Surface Searching Method, Using A Random Technique For Generating Circular Surfaces, Has Been Specified.

100 Trial Surfaces Have Been Generated.

10 Surfaces Initiate From Each Of 10 Points Equally Spaced
Along The Ground Surface Between X = 0.00 ft.
and X = 25.20 ft.

Each Surface Terminates Between X = 35.00 ft.
and X = 75.00 ft.

Unless Further Limitations Were Imposed, The Minimum Elevation
At Which A Surface Extends Is Y = 0.00 ft.

3.20 ft. Line Segments Define Each Trial Failure Surface.

Restrictions Have Been Imposed Upon The Angle Of Initiation.
The Angle Has Been Restricted Between The Angles Of -25.0
And 0.0 deg.

1

Following Are Displayed The Ten Most Critical Of The Trial
Failure Surfaces Examined. They Are Ordered - Most Critical
First.

* * Safety Factors Are Calculated By The Modified Bishop Method * *

Failure Surface Specified By 14 Coordinate Points

Point No.	X-Surf ft.	Y-Surf ft.
1	22.40	10.00
2	25.58	9.62
3	28.78	9.58
4	31.96	9.87
5	35.10	10.49
6	38.16	11.44
7	41.10	12.70
8	43.90	14.26
9	46.51	16.10
10	48.92	18.20
11	51.10	20.55
12	53.02	23.11

13	54.66	25.86
14	54.73	26.00

Circle Center At X = 27.6 ; Y = 40.2 and Radius, 30.6

*** 1.381 ***

Individual data on the 19 slices

Slice No.	Width Ft	Weight Lbs	Water Force	Water Force	Tie Force	Tie Force	Earthquake Force		Surcharge Load Lbs
			Top Lbs	Bot Lbs	Norm Lbs	Tan Lbs	Hor Lbs	Ver Lbs	
1	2.6	0.50E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	0.2	0.73E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	0.3	0.19E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4	3.2	0.25E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5	2.5	0.28E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6	0.7	0.94E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
7	3.1	0.47E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8	2.1	0.37E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
9	0.9	0.16E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
10	2.9	0.49E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
11	2.8	0.42E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
12	2.6	0.34E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
13	2.4	0.25E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
14	1.7	0.13E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
15	0.5	0.34E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
16	0.2	0.93E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
17	1.8	0.83E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.59E+04
18	1.6	0.29E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.55E+04
19	0.1	0.55E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.22E+03

Failure Surface Specified By 19 Coordinate Points

Point No.	X-Surf ft.	Y-Surf ft.
1	5.60	10.00
2	8.68	9.12
3	11.81	8.46
4	14.98	8.03

5	18.17	7.82
6	21.37	7.84
7	24.56	8.08
8	27.73	8.56
9	30.85	9.25
10	33.92	10.16
11	36.91	11.29
12	39.82	12.63
13	42.62	14.17
14	45.31	15.91
15	47.87	17.83
16	50.29	19.93
17	52.55	22.19
18	54.64	24.61
19	55.68	26.00

Circle Center At X = 19.5 ; Y = 52.9 and Radius, 45.1

*** 1.454 ***

1

Failure Surface Specified By 12 Coordinate Points

Point No.	X-Surf ft.	Y-Surf ft.
1	16.80	10.00
2	19.97	9.55
3	23.17	9.61
4	26.32	10.17
5	29.34	11.22
6	32.16	12.73
7	34.70	14.68
8	36.91	17.00
9	38.72	19.64
10	40.08	22.53
11	40.98	25.60
12	41.03	26.00

Circle Center At X = 21.2 ; Y = 29.7 and Radius, 20.2

*** 1.498 ***

Failure Surface Specified By 12 Coordinate Points

Point No.	X-Surf ft.	Y-Surf ft.
1	25.20	13.21
2	28.39	13.00
3	31.59	13.12
4	34.76	13.57
5	37.86	14.36
6	40.87	15.46
7	43.74	16.87
8	46.45	18.57
9	48.97	20.55
10	51.26	22.77
11	53.32	25.23
12	53.84	26.00

Circle Center At X = 28.8 ; Y = 43.6 and Radius, 30.6

*** 1.512 ***

1

Failure Surface Specified By 11 Coordinate Points

Point No.	X-Surf ft.	Y-Surf ft.
1	16.80	10.00
2	19.95	9.42
3	23.15	9.43
4	26.29	10.03
5	29.27	11.21
6	31.97	12.91
7	34.32	15.09
8	36.22	17.66
9	37.62	20.54
10	38.45	23.63
11	38.64	26.00

Circle Center At X = 21.5 ; Y = 26.6 and Radius, 17.2

*** 1.514 ***

Failure Surface Specified By 11 Coordinate Points

Point No.	X-Surf ft.	Y-Surf ft.
1	19.60	10.00
2	22.78	9.65
3	25.98	9.81
4	29.11	10.48
5	32.09	11.65
6	34.85	13.27
7	37.31	15.31
8	39.41	17.72
9	41.11	20.44
10	42.34	23.39
11	42.97	26.00

Circle Center At X = 23.4 ; Y = 29.6 and Radius, 20.0

*** 1.521 ***

1

Failure Surface Specified By 18 Coordinate Points

Point No.	X-Surf ft.	Y-Surf ft.
1	11.20	10.00
2	14.12	8.70
3	17.16	7.68
4	20.28	6.97
5	23.45	6.57
6	26.65	6.49
7	29.84	6.71
8	33.00	7.25
9	36.08	8.09
10	39.07	9.24
11	41.94	10.67
12	44.64	12.37
13	47.17	14.33
14	49.50	16.53
15	51.59	18.95
16	53.45	21.56

17	55.03	24.34
18	55.77	26.00

Circle Center At X = 25.9 ; Y = 39.1 and Radius, 32.6

*** 1.553 ***

Failure Surface Specified By 17 Coordinate Points

Point No.	X-Surf ft.	Y-Surf ft.
1	14.00	10.00
2	16.93	8.71
3	19.98	7.73
4	23.11	7.09
5	26.29	6.77
6	29.49	6.80
7	32.67	7.17
8	35.80	7.86
9	38.83	8.89
10	41.73	10.23
11	44.48	11.87
12	47.04	13.79
13	49.38	15.97
14	51.48	18.39
15	53.31	21.02
16	54.85	23.82
17	55.76	26.00

Circle Center At X = 27.6 ; Y = 37.0 and Radius, 30.2

*** 1.561 ***

1

Failure Surface Specified By 21 Coordinate Points

Point No.	X-Surf ft.	Y-Surf ft.
1	0.00	10.00
2	3.07	9.09

3	6.18	8.36
4	9.34	7.83
5	12.52	7.49
6	15.72	7.34
7	18.92	7.39
8	22.11	7.64
9	25.28	8.07
10	28.42	8.70
11	31.51	9.53
12	34.55	10.53
13	37.52	11.72
14	40.41	13.09
15	43.21	14.64
16	45.91	16.35
17	48.51	18.22
18	50.98	20.25
19	53.33	22.43
20	55.54	24.74
21	56.60	26.00

Circle Center At X = 16.5 ; Y = 59.8 and Radius, 52.5

*** 1.583 ***

Failure Surface Specified By 17 Coordinate Points

Point No.	X-Surf ft.	Y-Surf ft.
1	14.00	10.00
2	16.99	8.86
3	20.08	8.01
4	23.23	7.47
5	26.42	7.23
6	29.62	7.31
7	32.80	7.69
8	35.92	8.38
9	38.96	9.37
10	41.90	10.65
11	44.69	12.21
12	47.32	14.04
13	49.76	16.11
14	51.99	18.40
15	53.98	20.90
16	55.73	23.59
17	56.98	26.00

Circle Center At X = 27.2 ; Y = 40.2 and Radius, 33.0

*** 1.597 ***

1

	Y	A	X	I	S	F	T
	0.00	9.38	18.75	28.13	37.50	46.88	
X	0.00	+	-----+*	-----+	-----+	-----+	-----+
	-						
	-	.9.					
	-						
	-	.9.2					
	-	. .					
	9.38	+	.9.2				
	-	...7					
	-	..92.					
	-	..7.8					
	-	..92.					
	-	..78.3					
A	18.75	+	...2..				
	-	.78036					
	-	...2..1					
	-	.78.3.					
	-	21* 4*					
	-	..70.63.					
X	28.13	+	21...4				
	-	..70..63..					
	-	21..4.... *					
	-	...7...6.3. .					
	-	1..4.3. . .					
	-	...87.....5. . . .					
I	37.50	+	19.46.3...5.. *				
	-	. .87..2. . 6 3.. 5. 5					
	-	1.4 . . . 6 3..33					
	-	7...2.. . . . 6 .					
	-	8.19.46					
	-	7.. 2....					
S	46.88	+	7.1..4....				
	-	1..4.. . . .					
	-	87. 2.....					
	-	 7 1 4..../1					
	-	 8721 44					

		-	0 82 11/
	56.25	+	09 2
		-	
		-	
		-	
		-	
		-	
F	65.63	+	
		-	
		-	
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		-	
		-	
T	75.00	+	* *

Reference Documents

GeoTek, Inc.
LOG OF EXPLORATORY BORING

CLIENT:	AOA San Marcos, LLC	DRILLER:	Baja Exploration	LOGGED BY:	MSB
PROJECT NAME:	Grand and Linda Vista	DRILL METHOD:	HSA	OPERATOR:	Manny
PROJECT NO.:	3637-SD	HAMMER:	140 lbs/ 30 in	RIG TYPE:	
LOCATION:	See Boring Location Map	ELEVATION:		DATE:	4/20/2020

Depth (ft)	SAMPLES			USCS Symbol	BORING NO.: B-3 MATERIAL DESCRIPTION AND COMMENTS	Laboratory Testing		
	Sample Type	Blows/ 6 in	Sample Number			Water Content (%)	Dry Density (pcf)	Others
				CL	Asphalt - 2", Base - 8" Silty SAND base, dark brown Artificial Fill Sandy CLAY, dark brown cuttings			
5		12 17 21	S-1	CL	Older Alluvium Sandy CLAY, cuttings turn reddish light brown, moist, soft Sandy CLAY, red brown, damp, stiff			
10		24 35 50	R-1		Santiago Formation (Tsa) recovered as Sandy CLAY, light brown/white with red-orange mottling throughout, moist, stiff, poorly graded recovered as Sandy CLAY cuttings, orange-brown	13.2	120.5	
15		24 30 37	S-2		recovered as SAND, coarse grained, light brown/white, with red mottling			
20		4 13 50			recovered as sandy CLAY cuttings, orange brown recovered as CLAY, gray-olive, very moist, very stiff			
25					HOLE TERMINATED AT 20 FEET No groundwater encountered Backfilled with soil cuttings and asphalt patch			
30								

LEGEND	Sample type:  ---Ring  ---SPT  ---Small Bulk  ---Large Bulk  ---No Recovery  ---Water Table						
	Lab testing: AL = Atterberg Limits SR = Sulfate/Resisitivity Test EI = Expansion Index SH = Shear Test SA = Sieve Analysis CO = Consolidation test RV = R-Value Test MD = Maximum Density						

GeoTek, Inc.
LOG OF EXPLORATORY BORING

CLIENT:	AOA San Marcos, LLC	DRILLER:	Baja Exploration	LOGGED BY:	MSB
PROJECT NAME:	Grand and Linda Vista	DRILL METHOD:	HSA	OPERATOR:	Manny
PROJECT NO.:	3637-SD	HAMMER:	140 lbs/ 30 in	RIG TYPE:	
LOCATION:	See Boring Location Map	ELEVATION:		DATE:	4/20/2020

Depth (ft)	SAMPLES		USCS Symbol	BORING NO.: B-4	Laboratory Testing		
	Sample Type	Blows/ 6 in			Water Content (%)	Dry Density (pcf)	Others
				MATERIAL DESCRIPTION AND COMMENTS			
				<u>Fill</u>			El, AL, SA, SR
			CL	Sandy CLAY cuttings, dark brown, stiff to medium stiff, damp, some organics			
			BB-1				
5							
			CL	<u>Older Alluvium</u> Sandy CLAY, red brown, stiff, damp, gray mottling orange-brown in color.	12.5	120.1	
			R-1				
10							
			S-1	<u>Santiago Formation (Tsa)</u> recovered as Silty SAND, light brown/white, orange mottling, coarse grained			
			R-2	recovered as Silty SAND, orange red-brown, dense, moist			
15							
			S-2	recovered as SAND, white/gray, coarse grained, saturated, dense, groundwater			
			BB-2				
20							
			R-3				
25							
			S-3	Cuttings turn to mud slurry			
30							

LEGEND	Sample type:  ---Ring  ---SPT  ---Small Bulk  ---Large Bulk  ---No Recovery  ---Water Table						
	Lab testing: AL = Atterberg Limits SR = Sulfate/Resistivity Test EI = Expansion Index SH = Shear Test SA = Sieve Analysis CO = Consolidation test RV = R-Value Test MD = Maximum Density						

GeoTek, Inc.
LOG OF EXPLORATORY BORING

CLIENT:	AOA San Marcos, LLC	DRILLER:	Baja Exploration	LOGGED BY:	MSB
PROJECT NAME:	Grand and Linda Vista	DRILL METHOD:	HSA	OPERATOR:	Manny
PROJECT NO.:	3637-SD	HAMMER:	140 lbs/ 30 in	RIG TYPE:	
LOCATION:	See Boring Location Map	ELEVATION:		DATE:	4/20/2020

Depth (ft)	SAMPLES			USCS Symbol	BORING NO.: B-4 Cont.	Laboratory Testing		
	Sample Type	Blows/ 6 in	Sample Number			Water Content (%)	Dry Density (pcf)	Others
30		13 50	S-3		recovered as SAND, white-gray, saturated, coarse, dense, orange mottling			
35		50	R-4					
40		24 36 50	S-4		recovered as SAND, coarse grained, black, moist, very dense			
50		50	S-5					
55					HOLE TERMINATED AT 50 FEET Groundwater at 20 feet Backfilled with soil cuttings and bentonite			
60								

LEGEND	Sample type:  ---Ring  ---SPT  ---Small Bulk  ---Large Bulk  ---No Recovery  ---Water Table						
	Lab testing: AL = Atterberg Limits SR = Sulfate/Resistivity Test EI = Expansion Index SH = Shear Test SA = Sieve Analysis CO = Consolidation test RV = R-Value Test MD = Maximum Density						

GeoTek, Inc.
LOG OF EXPLORATORY BORING

CLIENT:	AOA San Marcos, LLC	DRILLER:	Baja Exploration	LOGGED BY:	MSB
PROJECT NAME:	Grand and Linda Vista	DRILL METHOD:	HSA	OPERATOR:	Manny
PROJECT NO.:	3637-SD	HAMMER:	140 lbs/ 30 in	RIG TYPE:	
LOCATION:	See Boring Location Map	ELEVATION:		DATE:	4/20/2020

Depth (ft)	SAMPLES			USCS Symbol	BORING NO.: B-5	Laboratory Testing		
	Sample Type	Blows/ 6 in	Sample Number			Water Content (%)	Dry Density (pcf)	Others
	MATERIAL DESCRIPTION AND COMMENTS							
				SC	Artificial Fill Clayey SAND cuttings, reddish brown, moist, loose			
5		16 50	R-1 BB-1		Santiago Formation (Tsa) Cuttings turn bright red recovered as Sandy CLAY, white/gray, damp, stiff, high plasticity	15.8	108.3	EI, MD, AL, SA, RV
10		12 18 24	S-1		recovered as clayey SAND, olive gray with orange mottling, dense, dry, mottled			
15		7 8 7	S-2		recovered as Sandy CLAY, olive gray, very stiff			SR
					HOLE TERMINATED AT 15 FEET No groundwater encountered Backfilled with soil cuttings			
20								
25								
30								

LEGEND	Sample type:	 ---Ring	 ---SPT	 ---Small Bulk	 ---Large Bulk	 ---No Recovery	 ---Water Table
	Lab testing:	AL = Atterberg Limits	SH = Shear Test	EI = Expansion Index	CO = Consolidation test	SA = Sieve Analysis	RV = R-Value Test MD = Maximum Density

GeoTek, Inc.
LOG OF EXPLORATORY BORING

CLIENT:	AOA San Marcos, LLC	DRILLER:	Baja Exploration	LOGGED BY:	MSB
PROJECT NAME:	Grand and Linda Vista	DRILL METHOD:	HSA	OPERATOR:	Manny
PROJECT NO.:	3637-SD	HAMMER:	140 lbs/ 30 in	RIG TYPE:	
LOCATION:	See Boring Location Map	ELEVATION:		DATE:	4/20/2020

Depth (ft)	SAMPLES			USCS Symbol	BORING NO.: B-6	Laboratory Testing		
	Sample Type	Blows/ 6 in	Sample Number			Water Content (%)	Dry Density (pcf)	Others
					MATERIAL DESCRIPTION AND COMMENTS			
				SC	Artificial Fill Clay SAND cuttings, dark brown, moist, loose, organics			
5		12 24 34	S-1	SC	<u>Older Alluvium</u> Top 12" of sampler: clayey SAND, light brown, medium dense, moist			
					<u>Santiago Formation (Tsa)</u> Bottom 6" - SAND, bright red, coarse, damp			
10		11 12 37	R-1		recovered as sandy CLAY, bright red/orange			
					recovered as CLAY, mottled gray/olive with yellow orange, fine, highly plastic			
					HOLE TERMINATED AT 10 FEET No groundwater encountered Backfilled with soil cuttings			
15								
20								
25								
30								

LEGEND	Sample type:	 ---Ring	 ---SPT	 ---Small Bulk	 ---Large Bulk	 ---No Recovery	 ---Water Table
	Lab testing:	AL = Atterberg Limits	SR = Sulfate/Resistivity Test	EI = Expansion Index	SH = Shear Test	SA = Sieve Analysis	RV = R-Value Test
						CO = Consolidation test	MD = Maximum Density

Date: 5/22/97		Logged by: SM			
DEPTH (ft)	SAMPLE	T-1	MOISTURE (%)	DRY DENSITY (pcf)	RELATIVE COMPACTION (%)
		DESCRIPTION			
- -		<u>FILL:</u>			
- -	☐	Clayey sand, red-brown, dry, small pieces of A.C. and trash. ST-1	13.2	119.2	91.9
- 5 -	☐	<u>ALLUVIUM:</u>	19.2	108.2	84.4
- -	☒	Silty clayey sand, fine grained, brown, moist porous. ST-2	17.6	105.8	82.5
- -		Sandy clay, brown with grey streaks, moist.			
- -	☐		15.7	111.3	-----
- 10 -	☒	Sand, fine to coarse grained, brown water seeping at 5', very moist, caving. ST-3	26.0	101.0	-----
- -		<u>BEDROCK:</u>			
- -		Clayey weathered, blocky, olive to grey in color, moist. ST-4			
- 15 -		End trench at 10½'			

Date: 5/22/97		Logged by: SM			
DEPTH (ft)	SAMPLE	T-2	MOISTURE (%)	DRY DENSITY (pcf)	RELATIVE COMPACTION (%)
		DESCRIPTION			
- -		<u>FILL:</u>			
- -	☐	Clayey silty sand, brown, pieces of asphalt.	10.6	106.7	82.3
- 5 -	☐	<u>ALLUVIUM:</u>	15.8	113.2	87.2
- -	☒	Silty sand, fine grained, porous, brown, grades clayey with depth. ST-2	16.1	101.3	78.1
- -	☒	Clayey sand, fine grained, mottled, grey with rust streaks, moist.	11.2	118.3	-----
- 10 -		<u>BEDROCK:</u>			
- -		Sandstone, tan color, fine to coarse grained, poorly sorted, massive, friable, moist, locally cemented. ST-5			
- 15 -		End trench at 8½' hard digging..			

VINJE & MIDDLETON ENGINEERING, INC 2450 Vineyard Avenue, Suite 102 Escondido, California 92029-1229 Office 760-743-1214 Fax 760-739-0343	TEST TRENCH LOGS	
	Star Builders Supply - San Marcos	
	PROJECT NO. 97-184-P	PLATE 2
▼ Sand Cone Test ■ Bulk Sample □ Chunk Sample ○ Driven Rings		

Date: 5/22/97		Logged by: SM			
DEPTH (ft)	SAMPLE	T-3	MOISTURE (%)	DRY DENSITY (pcf)	RELATIVE COMPACTION (%)
		DESCRIPTION			
- -		<u>FILL:</u>			
- -	☐	Clayey sand, small rocks and asphalt.	12.5	113.2	87.3
- -	☐	<u>ALLUVIUM:</u>	16.0	103.8	80.0
- 5 -	☐	Clayey sand, fine grained, brown to tan in color with rust colored stains, porous, moist. ST-2	18.1	101.7	79.3
- -	☐	Sandy clay, brown with rust colored stains, moist.	17.9	104.2	81.3
- 10 -	☒	Clayey sand, fine to medium grained, water seeps at 6'. Brown/grey with rust colored stains. ST-3	22.4	105.3	-----
- -		<u>BEDROCK:</u>			
- -		Clayey sandstone, weathered, fine grained, massive friable, white with orange/yellow staining. ST-6			
- 15 -		End trench at 9½'			

Date: 5/22/97		Logged by: SM			
DEPTH (ft)	SAMPLE	T-4	MOISTURE (%)	DRY DENSITY (pcf)	RELATIVE COMPACTION (%)
		DESCRIPTION			
- -		<u>FILL:</u>			
- -	☐	Clayey sand, pieces of asphalt, dry, loose.	4.9	123.0	94.8
- -	☐	<u>ALLUVIUM:</u>	11.9	118.7	91.5
- 5 -	☐	Silty sand, fine grained, grades clayey with depth, brown, porous ST-2	14.9	114.0	87.9
- -	☐	Silty clayey sand, fine grained, brown/grey in color. ST-2	15.7	117.5	-----
- 10 -		<u>BEDROCK:</u>			
- -		Clayey sandstone, fine to medium grained blocky, mottled appearance, moist tan/grey weathered, hard digging. ST-6			
- 15 -		End trench at 8½'			

VINJE & MIDDLETON ENGINEERING, INC 2450 Vineyard Avenue, Suite 102 Escondido, California 92029-1229 Office 760-743-1214 Fax 760-739-0343	TEST TRENCH LOGS	
	Star Builders Supply - San Marcos	
	PROJECT NO. 97-184-P	PLATE 3
▼ Sand Cone Test ■ Bulk Sample □ Chunk Sample ○ Driven Rings		