

SLOPE/W

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File Information

Title: SLOPE STABILITY MODELING
OF MANGTI LANDSLIDE-Upper Level
Comments: ANAND MEHTA
Revision Number: 4390912
Date: 12/11/2008
Time: 8:34:43 AM
File Name: MANGTI LANDSLIDE(
normal case)_eq_anchor.gsz
Directory: G:\
Last Solved Date: 12/11/2008
Last Solved Time: 8:34:46 AM

Project Settings

Length(L) Units: meters
Time(t) Units: Seconds
Force(F) Units: kN
Pressure(p) Units: kPa
Strength Units: kPa
Unit Weight of Water: 9.807 kN/m³
View: 2D

Analysis Settings

SLOPE/W

Kind: SLOPE/W
Method: GLE
Settings
Side Function
Interslice force function
option: Half-Sine
Lambda
Lambda: 0
Lambda: -1.25
Lambda: -1
Lambda: -0.75
Lambda: -0.5
Lambda: -0.25
Lambda: 0.25
Lambda: 0.5
Lambda: 0.75
Lambda: 1

Lambda: 1.25
Lambda: 0
Lambda: 0
Lambda: 0
Lambda: 0

PWP Conditions Source: (none)
SlipSurface
Direction of movement: Right
to Left
Use Passive Mode: No
Slip Surface Option: Entry and
Exit
Critical slip surfaces saved: 1
Optimize Critical Slip Surface
Location: No
Tension Crack
Tension Crack Option:
(none)

FOS Distribution
FOS Calculation Option:
Constant

Advanced
Number of Slices: 30
Optimization Tolerance: 0.01
Minimum Slip Surface Depth:
0.1 m
Optimization Maximum
Iterations: 2000
Optimization Convergence
Tolerance: 1e-007
Starting Optimization Points: 8
Ending Optimization Points: 16
Complete Passes per Insertion:
1
Driving Side Maximum Convex
Angle: 5 °
Resisting Side Maximum
Convex Angle: 1 °

Materials

BED ROCK (BIOTITE GNEISS)

Model: Bedrock (Impenetrable)

BOULDER-COBBLE MIX SOIL

Model: Mohr-Coulomb
Unit Weight: 16.793 kN/m³
Cohesion: 0 kPa
Phi: 30 °
Phi-B: 0 °

SILTY SAND

Model: Mohr-Coulomb
 Unit Weight: 21.015 kN/m³
 Cohesion: 12 kPa
 Phi: 29 °
 Phi-B: 0 °

POORLYGRADED SAND

Model: Mohr-Coulomb
 Unit Weight: 21.541 kN/m³
 Cohesion: 17 kPa
 Phi: 28 °
 Phi-B: 0 °

POORLYGRDED SAND

Model: Mohr-Coulomb
 Unit Weight: 14.092 kN/m³
 Cohesion: 13 kPa
 Phi: 29 °
 Phi-B: 0 °

Slip Surface Entry and Exit

Left Projection: Range
 Left-Zone Left Coordinate: (307.889, 233.14455) m
 Left-Zone Right Coordinate: (333, 255) m
 Left-Zone Increment: 4
 Right Projection: Range
 Right-Zone Left Coordinate: (380, 294) m
 Right-Zone Right Coordinate: (394.0774, 306.89784) m
 Right-Zone Increment: 4
 Radius Increments: 4

Slip Surface Limits

Left Coordinate: (0, 0) m
 Right Coordinate: (478, 386) m

Surcharge Loads**Surcharge Load 1**

Surcharge (Unit Weight): 25 kN/m³
 Direction: Normal

Coordinates

	X (m)	Y (m)
	299.9968	229.9456
	332.992	258.976
	333	255

Surcharge Load 2

Surcharge (Unit Weight): 25 kN/m³
 Direction: Normal

Coordinates

	X (m)	Y (m)
	338	255
	338.0096	259.0488
	358.0072	273.984

Seismic Loads

Horz Seismic Load: 0.24
 Vert Seismic Load: 0.16
 Ignore seismic load in strength: No

Reinforcements**Reinforcement 1**

Type: Anchor
 Outside Point: (353.63147, 266.58995) m
 Inside Point: (370.8704, 242.848) m
 Slip Surface Intersection: (362.23, 254.75) m
 Total Length: 29.340434 m
 Reinforcement Direction: 125.98 °
 Applied Load Option: Constant
 F of S Dependent: No
 Bond Length: 15 m
 Bond Diameter: 0.31831 m
 Bond Safety Factor: 1
 Bond Skin Friction: 335 kPa
 Bond Resistance: 167.50006 kN/m
 Anchor Spacing: 2 m
 Bar Capacity: 5000 kN
 Bar Safety Factor: 1
 Bar Load: 2500 kN
 Load Distribution: Even along reinf.
 Shear Capacity: 0 kN

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Shear Safety Factor: 1
 Shear Option: Parallel to Slip
 Shear Load: 0 kN
 Applied Load: 2500 kN
 Anchor Load Used: 2500 kN
 Resisting Force Used: 167.5 kN/m
 Available Bond Length: 14.71 m
 Required Bond Length: 14.925 m
 Governing Component: Bar

Reinforcement 2

Type: Anchor
 Outside Point: (341.5432, 257.9512) m
 Inside Point: (357.0944, 233.328) m
 Slip Surface Intersection: (349.27, 245.71) m
 Total Length: 29.122874 m
 Reinforcement Direction: 122.28 °
 Applied Load Option: Constant
 F of S Dependent: No
 Bond Length: 15 m
 Bond Diameter: 0.31831 m
 Bond Safety Factor: 1
 Bond Skin Friction: 335 kPa
 Bond Resistance: 167.50006 kN/m
 Anchor Spacing: 2 m
 Bar Capacity: 5000 kN
 Bar Safety Factor: 1
 Bar Load: 2500 kN
 Load Distribution: Even along reinf.
 Shear Capacity: 0 kN
 Shear Safety Factor: 1
 Shear Option: Parallel to Slip
 Shear Load: 0 kN
 Applied Load: 2500 kN
 Anchor Load Used: 2500 kN

Resisting Force Used: 167.5 kN/m
 Available Bond Length: 14.648 m
 Required Bond Length: 14.925 m
 Governing Component: Bar

Reinforcement 3

Type: Anchor
 Outside Point: (319.61363, 243.61885) m
 Inside Point: (329.9904, 228.3552) m
 Slip Surface Intersection: (324.92, 235.82) m
 Total Length: 18.456879 m
 Reinforcement Direction: 124.21 °
 Applied Load Option: Constant
 F of S Dependent: No
 Bond Length: 9 m
 Bond Diameter: 0.31831 m
 Bond Safety Factor: 1
 Bond Skin Friction: 335 kPa
 Bond Resistance: 167.50006 kN/m
 Anchor Spacing: 2 m
 Bar Capacity: 3000 kN
 Bar Safety Factor: 1
 Bar Load: 1500 kN
 Load Distribution: Even along reinf.
 Shear Capacity: 0 kN
 Shear Safety Factor: 1
 Shear Option: Parallel to Slip
 Shear Load: 0 kN
 Applied Load: 1500 kN
 Anchor Load Used: 1500 kN
 Resisting Force Used: 167.5 kN/m
 Available Bond Length: 9 m
 Required Bond Length: 8.9552 m
 Governing Component: Bar

Regions

	Material	Points	Area (m ²)
Region 1	BED ROCK (BIOTITE GNEISS)	1,2,3,4,5,6,7,8,9,10,11	71189
Region 2	BOULDER-COBBLE MIX SOIL	12,13,14,15,16,4,3,2,1	12004
Region 3	SILTY SAND	6,17,18,19,20,21,22,9,8,7	1805
Region	POORLYGRAD	5,23,60,34,63,33,59,24,25,30,57,26,20,19,18,	114.46822

ANNEXURE - 5

4	ED SAND	17,6	
Region 5	POORLYGRDE D SAND	26,31,58,32,27,35,28,29,22,21,20	94

Points

	X (m)	Y (m)
Point 1	147	0
Point 2	232	152
Point 3	266	187
Point 4	277	205
Point 5	293	219
Point 6	296	219
Point 7	351	239
Point 8	373	254
Point 9	405	316
Point 10	478	386
Point 11	478	0
Point 12	0	0
Point 13	71	40
Point 14	75	40
Point 15	183	125
Point 16	184	134
Point 17	313	236
Point 18	333	252
Point 19	338	254
Point 20	343	257
Point 21	376	282
Point 22	387	301
Point 23	313	238
Point 24	333	255
Point 25	338	255
Point 26	344	260
Point 27	363	273
Point 28	378	288
Point 29	380	294
Point 30	340.12963	256.77469
Point 31	347.9477	262.70106

Point 32	358.34438	269.81458
Point 33	325.94773	249.00557
Point 34	315.5942	240.2006
Point 35	366.9568	276.9568
Point 36		
Point 37		
Point 38		
Point 39		
Point 40		
Point 41		
Point 42		
Point 43		
Point 44		
Point 45		
Point 46		
Point 47		
Point 48		
Point 49		
Point 50		
Point 51		
Point 52		
Point 53		
Point 54		
Point 55		
Point 56		
Point 57	341.5432	257.9512
Point 58	353.63147	266.58995
Point 59	327.32318	250.1747
Point 60	314.77971	239.50968
Point 61		
Point 62		
Point 63	319.61363	243.61885

Critical Slip Surfaces

	Number	FOS	Center (m)	Radius (m)	Entry (m)	Exit (m)
1	24	1.125	(301.903, 327.377)	94.422	(394.077, 306.898)	(307.889, 233.144)

Slices of Slip Surface: 24

	Slip Surface	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
1	24	309.1103	233.23805	0	123.06008	65.432205	17
2	24	311.6658	233.4703	0	189.74905	105.17962	12
3	24	313.88985	233.7229	0	243.34918	134.89065	12
4	24	315.18695	233.89465	0	274.2264	152.00618	12
5	24	317.6039	234.2915	0	328.85853	182.28926	12
6	24	321.19715	234.9611	0	655.69585	363.45815	12
7	24	324.3642	235.6796	0	730.17973	404.74523	12
8	24	326.63545	236.25415	0	512.11977	283.87263	12
9	24	328.7404	236.861	0	531.81252	294.78849	12
10	24	331.5748	237.7504	0	549.52949	304.60917	12
11	24	332.996	238.221	0	484.03339	268.30409	12
12	24	334.25	238.67825	0	391.82353	217.19133	12
13	24	336.75	239.6305	0	348.98586	193.44602	12
14	24	338.0048	240.1289	0	397.76118	220.48262	12
15	24	339.0696	240.58485	0	462.60404	256.42561	12
16	24	340.8364	241.3587	0	452.23559	250.67828	12
17	24	342.2716	242.0231	0	885.17815	490.66226	12
18	24	343.5	242.61295	0	1064.3388	589.97264	12
19	24	345.97385	243.9004	0	556.9036	308.6967	12
20	24	349.36865	245.769	0	585.7117	324.6653	12
21	24	352.21055	247.4903	0	359.07584	199.03899	12
22	24	354.7254	249.12355	0	537.96578	298.1993	12
23	24	356.91325	250.64625	0	513.49541	284.63516	12
24	24	358.1758	251.55565	0	1408.706	780.85847	12
25	24	359.5083	252.57715	0	365.18535	202.42554	12
26	24	361.8361	254.42975	0	341.37181	189.22548	12
27	24	364.9784	257.1633	0	164.44337	91.152446	12

ANNEXURE – 5

28	24	368.464	260.4393	0	152.63211	84.60536	12
29	24	371.4784	263.5818	0	142.48296	78.979593	12
30	24	374.4928	267.03885	0	131.64373	72.971311	12
31	24	377	270.1647	0	124.9441	69.257645	12
32	24	379	272.8923	0	137.10069	75.996155	12
33	24	381.75	277.0858	0	145.92642	80.888334	12
34	24	385.25	283.1632	0	132.22519	73.293622	12
35	24	388.76935	290.6466	0	97.482985	54.035701	12
36	24	392.30805	300.86445	0	30.475517	16.892855	12

**A Detailed Report of The Stability Modeling Derived From Geo-SLOPE/W For
Upper Level – Mangti Landslide**

SLOPE/W

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File Information

Title: SLOPE STABILITY MODELING
OF MANGTI LANDSLIDE-Lower Level
Comments: ANAND MEHTA
Revision Number: 4390912
Date: 12/12/2008
Time: 11:00:36 AM
File Name: MANGTI LANDSLIDE
DWN (normal
case)_EQ_ANCHOR.gsz
Directory: G:\
Last Solved Date: 12/12/2008
Last Solved Time: 11:00:40 AM

Project Settings

Length(L) Units: meters
Time(t) Units: Seconds
Force(F) Units: kN
Pressure(p) Units: kPa
Strength Units: kPa
Unit Weight of Water: 9.807 kN/m³
View: 2D

Analysis Settings

SLOPE/W

Kind: SLOPE/W
Method: GLE
Settings
Side Function
Interslice force function
option: Half-Sine
Lambda
Lambda: 0
Lambda: -1.25
Lambda: -1
Lambda: -0.75
Lambda: -0.5
Lambda: -0.25
Lambda: 0.25
Lambda: 0.5
Lambda: 0.75
Lambda: 1
Lambda: 1.25

Lambda: 0

Lambda: 0

Lambda: 0

Lambda: 0

PWP Conditions Source: (none)

SlipSurface

Direction of movement: Right
to Left

Use Passive Mode: No

Slip Surface Option: Entry and
Exit

Critical slip surfaces saved: 1

Optimize Critical Slip Surface

Location: No

Tension Crack

Tension Crack Option:
(none)

FOS Distribution

FOS Calculation Option:
Constant

Advanced

Number of Slices: 30

Optimization Tolerance: 0.01

Minimum Slip Surface Depth:
0.1 m

Optimization Maximum

Iterations: 2000

Optimization Convergence

Tolerance: 1e-007

Starting Optimization Points: 8

Ending Optimization Points: 16

Complete Passes per Insertion:
1

Driving Side Maximum Convex

Angle: 5 °

Resisting Side Maximum

Convex Angle: 1 °

Materials

BED ROCK (BIOTITE GNEISS)

Model: Bedrock (Impenetrable)

BOULDER-COBBLE MIX SOIL

Model: Mohr-Coulomb

Unit Weight: 16.793 kN/m³

Cohesion: 0 kPa

Phi: 30 °

Phi-B: 0 °

SILTY SAND

Model: Mohr-Coulomb
 Unit Weight: 21.015 kN/m³
 Cohesion: 12 kPa
 Phi: 29 °
 Phi-B: 0 °

POORLYGRADED SAND

Model: Mohr-Coulomb
 Unit Weight: 21.541 kN/m³
 Cohesion: 17 kPa
 Phi: 28 °
 Phi-B: 0 °

POORLYGRDED SAND

Model: Mohr-Coulomb
 Unit Weight: 14.092 kN/m³
 Cohesion: 13 kPa
 Phi: 29 °
 Phi-B: 0 °

Slip Surface Entry and Exit

Left Projection: Range
 Left-Zone Left Coordinate:
 (55.66888, 31.36275) m
 Left-Zone Right Coordinate: (71, 40)
 m
 Left-Zone Increment: 4
 Right Projection: Range
 Right-Zone Left Coordinate:
 (185.1141, 134.85055) m
 Right-Zone Right Coordinate:
 (198.78218, 145.28532) m
 Right-Zone Increment: 4
 Radius Increments: 4

Slip Surface Limits

Left Coordinate: (0, 0) m
 Right Coordinate: (478, 386) m

Surcharge Loads**Surcharge Load 1**

Surcharge (Unit Weight): 25 kN/m³
 Direction: Normal

Coordinates

	X (m)	Y (m)
	75	40
	75	44.97266
	106.00781	69.02148

Surcharge Load 2

Surcharge (Unit Weight): 25 kN/m³
 Direction: Normal

Coordinates

	X (m)	Y (m)
	53.98633	34.95117
	71.03516	45

Seismic Loads

Horz Seismic Load: 0.24
 Vert Seismic Load: 0.16
 Ignore seismic load in strength: No

Reinforcements**Reinforcement 1**

Type: Anchor
 Outside Point: (108.6875, 66.54688)
 m
 Inside Point: (136.85156, 38.54688)
 m
 Slip Surface Intersection: (126.02,
 49.315) m
 Total Length: 39.714157 m
 Reinforcement Direction: 135.17 °
 Applied Load Option: Constant
 F of S Dependent: No
 Bond Length: 15 m
 Bond Diameter: 0.31831 m
 Bond Safety Factor: 1
 Bond Skin Friction: 335 kPa
 Bond Resistance: 83.75003 kN/m
 Anchor Spacing: 4 m
 Bar Capacity: 5000 kN
 Bar Safety Factor: 1
 Bar Load: 1250 kN
 Load Distribution: Even along reinf.
 Shear Capacity: 0 kN

Shear Safety Factor: 1
 Shear Option: Parallel to Slip
 Shear Load: 0 kN
 Applied Load: 1250 kN
 Anchor Load Used: 1250 kN
 Resisting Force Used: 83.75 kN/m
 Available Bond Length: 15 m
 Required Bond Length: 14.925 m
 Governing Component: Bar

Reinforcement 2

Type: Anchor
 Outside Point: (118.14844, 73.92969) m
 Inside Point: (147.40625, 44.72656) m
 Slip Surface Intersection: (136.49, 55.622) m
 Total Length: 41.338145 m
 Reinforcement Direction: 135.05 °
 Applied Load Option: Constant
 F of S Dependent: No
 Bond Length: 15 m
 Bond Diameter: 0.31831 m
 Bond Safety Factor: 1
 Bond Skin Friction: 335 kPa
 Bond Resistance: 83.75003 kN/m
 Anchor Spacing: 4 m
 Bar Capacity: 5000 kN
 Bar Safety Factor: 1
 Bar Load: 1250 kN
 Load Distribution: Even along reinf.
 Shear Capacity: 0 kN
 Shear Safety Factor: 1
 Shear Option: Parallel to Slip
 Shear Load: 0 kN
 Applied Load: 1250 kN
 Anchor Load Used: 1250 kN
 Resisting Force Used: 83.75 kN/m
 Available Bond Length: 15 m
 Required Bond Length: 14.925 m
 Governing Component: Bar

Reinforcement 3

Type: Anchor
 Outside Point: (79.92188, 43.79688) m
 Inside Point: (99.00781, 24.32813) m
 Slip Surface Intersection: (88.46, 35.088) m
 Total Length: 27.26362 m

Reinforcement Direction: 134.43 °
 Applied Load Option: Constant
 F of S Dependent: No
 Bond Length: 15 m
 Bond Diameter: 0.31831 m
 Bond Safety Factor: 1
 Bond Skin Friction: 335 kPa
 Bond Resistance: 167.50006 kN/m
 Anchor Spacing: 2 m
 Bar Capacity: 5000 kN
 Bar Safety Factor: 1
 Bar Load: 2500 kN
 Load Distribution: Even along reinf.
 Shear Capacity: 0 kN
 Shear Safety Factor: 1
 Shear Option: Parallel to Slip
 Shear Load: 0 kN
 Applied Load: 2500 kN
 Anchor Load Used: 2500 kN
 Resisting Force Used: 167.5 kN/m
 Available Bond Length: 15 m
 Required Bond Length: 14.925 m
 Governing Component: Bar

Reinforcement 4

Type: Anchor
 Outside Point: (88.34375, 50.41406) m
 Inside Point: (111.3125, 27.5) m
 Slip Surface Intersection: (100.43, 38.352) m
 Total Length: 32.444069 m
 Reinforcement Direction: 135.07 °
 Applied Load Option: Constant
 F of S Dependent: No
 Bond Length: 15 m
 Bond Diameter: 0.31831 m
 Bond Safety Factor: 1
 Bond Skin Friction: 335 kPa
 Bond Resistance: 167.50006 kN/m
 Anchor Spacing: 2 m
 Bar Capacity: 5000 kN
 Bar Safety Factor: 1
 Bar Load: 2500 kN
 Load Distribution: Even along reinf.
 Shear Capacity: 0 kN
 Shear Safety Factor: 1
 Shear Option: Parallel to Slip
 Shear Load: 0 kN
 Applied Load: 2500 kN
 Anchor Load Used: 2500 kN

Resisting Force Used: 167.5 kN/m
Available Bond Length: 15 m
Required Bond Length: 14.925 m
Governing Component: Bar

Reinforcement 5

Type: Anchor
Outside Point: (98.84375, 58.72656) m
Inside Point: (124.82031, 32.80469) m
Slip Surface Intersection: (114.1, 43.501) m
Total Length: 36.697752 m
Reinforcement Direction: 135.06 °
Applied Load Option: Constant
F of S Dependent: No
Bond Length: 15 m
Bond Diameter: 0.31831 m
Bond Safety Factor: 1
Bond Skin Friction: 335 kPa
Bond Resistance: 167.50006 kN/m
Anchor Spacing: 2 m
Bar Capacity: 5000 kN
Bar Safety Factor: 1
Bar Load: 2500 kN
Load Distribution: Even along reinf.
Shear Capacity: 0 kN
Shear Safety Factor: 1
Shear Option: Parallel to Slip
Shear Load: 0 kN
Applied Load: 2500 kN
Anchor Load Used: 2500 kN
Resisting Force Used: 167.5 kN/m
Available Bond Length: 15 m
Required Bond Length: 14.925 m
Governing Component: Bar

Reinforcement 6

Type: Nail
Outside Point: (71, 40) m
Inside Point: (77.7002, 30.62402) m
Slip Surface Intersection: (76.139, 32.809) m
Total Length: 11.523961 m
Reinforcement Direction: 125.55 °
Applied Load Option: Variable
F of S Dependent: No
Bond Diameter: 0.31831 m
Bond Safety Factor: 1

Bond Skin Friction: 335 kPa
Bond Resistance: 167.50006 kN/m
Nail Spacing: 2 m
Bar Capacity: 3000 kN
Bar Safety Factor: 1
Bar Load: 1500 kN
Load Distribution: Even along reinf.
Shear Capacity: 0 kN
Shear Safety Factor: 1
Shear Option: Parallel to Slip
Shear Load: 0 kN
Applied Load: 1500 kN
Nail Load Used: 449.76 kN
Resisting Force Used: 167.5 kN/m
Available Bond Length: 2.6852 m
Required Bond Length: 2.6852 m
Governing Component: Bond

Reinforcement 7

Type: Nail
Outside Point: (67.53516, 38.08203) m
Inside Point: (74.00879, 29.05176) m
Slip Surface Intersection: (71.718, 32.247) m
Total Length: 11.11097 m
Reinforcement Direction: 125.64 °
Applied Load Option: Variable
F of S Dependent: No
Bond Diameter: 0.31831 m
Bond Safety Factor: 1
Bond Skin Friction: 335 kPa
Bond Resistance: 167.50006 kN/m
Nail Spacing: 2 m
Bar Capacity: 3000 kN
Bar Safety Factor: 1
Bar Load: 1500 kN
Load Distribution: Even along reinf.
Shear Capacity: 0 kN
Shear Safety Factor: 1
Shear Option: Parallel to Slip
Shear Load: 0 kN
Applied Load: 1500 kN
Nail Load Used: 658.53 kN
Resisting Force Used: 167.5 kN/m
Available Bond Length: 3.9315 m
Required Bond Length: 3.9315 m
Governing Component: Bond

Regions

	Material	Points	Area (m ²)
Region 1	BED ROCK (BIOTITE GNEISS)	1,2,3,4,5,6,7,8,9,10,11	71189
Region 2	BOULDER-COBBLE MIX SOIL	12,13,14,15,16,4,3,2,1	12004
Region 3	SILTY SAND	6,17,18,19,20,21,22,9,8,7	1805
Region 4	POORLYGRADED SAND	5,23,24,25,26,20,19,18,17,6	114.5
Region 5	POORLYGRDED SAND	26,27,28,29,22,21,20	94

Points

	X (m)	Y (m) `
Point 1	147	0
Point 2	232	152
Point 3	266	187
Point 4	277	205
Point 5	293	219
Point 6	296	219
Point 7	351	239
Point 8	373	254
Point 9	405	316
Point 10	478	386
Point 11	478	0
Point 12	0	0
Point 13	71	40
Point 14	75	40
Point 15	183	125
Point 16	184	134
Point 17	313	236
Point 18	333	252
Point 19	338	254
Point 20	343	257
Point 21	376	282
Point 22	387	301
Point 23	313	238

Point 24	333	255
Point 25	338	255
Point 26	344	260
Point 27	363	273
Point 28	378	288
Point 29	380	294
Point 30		
Point 31		
Point 32		
Point 33		
Point 34		
Point 35		
Point 36		
Point 37		
Point 38		
Point 39		
Point 40		
Point 41		
Point 42		
Point 43		
Point 44		
Point 45		
Point 46		
Point 47		
Point 48	57.69141	32.44922

Critical Slip Surfaces

	Number	FOS	Center (m)	Radius (m)	Entry (m)	Exit (m)
1	24	1.115	(55.699,	146.815	(198.782,	(55.6689,

ANNEXURE – 5

		178.178)		145.285)	31.3627)
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Slices of Slip Surface: 24

	Slip Surface	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
1	24	58.224065	31.406705	0	155.46661	89.758688	0
2	24	63.33444	31.583745	0	236.6558	136.63329	0
3	24	68.444815	31.93953	0	315.24323	182.00577	0
4	24	71.01758	32.164075	0	14517.596	8381.7381	0
5	24	73.01758	32.401435	0	337.27839	194.72777	0
6	24	77.583985	33.026545	0	453.52151	261.84076	0
7	24	82.751955	33.90065	0	775.8572	447.94136	0
8	24	87.919925	34.966525	0	860.3588	496.72839	0
9	24	93.08789	36.228495	0	916.56398	529.17846	0
10	24	98.255835	37.691855	0	945.72703	546.01576	0
11	24	103.4238	39.362985	0	853.21984	492.6067	0
12	24	108.4138	41.177135	0	678.56147	391.76765	0
13	24	113.2258	43.127785	0	725.5487	418.89574	0
14	24	118.0378	45.28126	0	503.57424	290.73872	0
15	24	122.84985	47.64762	0	538.23694	310.75124	0
16	24	127.6619	50.2387	0	502.34373	290.02829	0
17	24	132.4739	53.06849	0	406.59406	234.74719	0
18	24	137.2859	56.153645	0	376.66986	217.47044	0
19	24	142.0979	59.514135	0	295.96241	170.87398	0
20	24	146.9099	63.17417	0	275.17926	158.87482	0
21	24	151.7219	67.163495	0	256.70963	148.21137	0
22	24	156.5339	71.519225	0	239.90614	138.50987	0
23	24	161.34595	76.288595	0	223.9892	129.32023	0
24	24	166.158	81.53325	0	207.935	120.05133	0
25	24	170.97	87.3362	0	190.51624	109.99461	0
26	24	175.782	93.813915	0	170.15292	98.237834	0
27	24	180.594	101.1392	0	144.71875	83.553408	0
28	24	183.5	105.9242	0	159.44604	92.056213	0
29	24	186.4637	111.65125	0	169.83896	98.056567	0
30	24	191.3911	122.49795	0	120.14843	69.367728	0
31	24	196.3185	136.89365	0	46.833862	27.039543	0

**A Detailed Report of The Stability Modeling Derived From Geo-SLOPE/W For
Lower Level – Mangti Landslide**