All. 8
Verifiche di stabilità del versante con software SSAP 4.6.9
(Slope Stability Analysis Program 4.6.9 (1991-2015) del dr. geol. L. Borselli
Tabelle e grafici

DATI GENERALI SEZIONE AA' VERSANTI LIGURE ED EMILIANO:

Data: 17/12/2015
Localita' : Passo della Cappelletta, Comune di Varese Ligure (SP)
Modello pendio: mod1.mod

PARAMETRI DEL MODELLO DEL PENDIO
PARAMETRI GEOMETRICI - Coordinate X Y (in m)

SUP T.		SUP 2		SUP 3		SUP 4	
X	Y	X	Y	X	Y	X	Y
0.00	8.96	0.00	5.89	-	-	-	-
2.85	9.96	7.31	9.19	-	-	-	-
3.74	10.96	14.01	11.19	-	-	-	-
6.00	11.96	19.31	12.60	-	-	-	-
10.74	12.96	29.79	15.31	-	-	-	-
13.17	13.96	40.99	19.21	-	-	-	-
22.90	15.96	49.89	22.01	-	-	-	-
27.43	16.96	59.69	26.16	-	-	-	-
35.26	19.71	62.24	27.14	-	-	-	-
41.08	21.96	67.38	29.14	-	-	-	-
44.78	22.96	73.11	30.47	-	-	-	-
48.61	23.96	77.29	29.91	-	-	-	-
54.85	26.96	82.37	28.60	-	-	-	-
59.69	28.96	90.19	24.81	-	-	-	-
62.29	29.96	98.29	20.91	-	-	-	-
64.85	30.96	108.89	16.19	-	-	-	-
68.15	31.96	125.20	10.35	-	-	-	-
72.42	32.96	-	-	-	-	-	-
73.11	33.07	-	-	-	-	-	-
73.79	32.96	-	-	-	-	-	-
79.99	31.96	-	-	-	-	-	-
83.16	30.95	-	-	-	-	-	-
84.14	29.96	-	-	-	-	-	-
87.63	29.06	-	-	-	-	-	-
89.53	27.96	-	-	-	-	-	-
91.46	26.69	-	-	-	-	-	-
93.37	25.96	-	-	-	-	-	-
95.32	24.96	-	-	-	-	-	-
97.47	23.96	-	-	-	-	-	-
99.60	22.96	-	-	-	-	-	-
102.31	21.96	-	-	-	-	-	-
105.29	20.96	-	-	-	-	-	-
107.47	19.96	-	-	-	-	-	-
110.38	18.96	-	-	-	-	-	-
113.34	17.96	-	-	-	-	-	-
116.33	16.96	-	-	-	-	-	-
119.32	15.96	-	-	-	-	-	-
122.30	14.96	-	-	-	-	-	-
125.20	13.96	-	-	-	-	-	-

----SUP FALDA----------

X	Y (in m)
0.00	8.96
2.85	9.96
3.74	10.96
6.00	11.96
10.74	12.96
13.17	13.96
22.90	15.96
27.43	16.96
35.26	19.71
41.08	21.96
44.78	22.96
48.61	23.96
54.85	26.96
59.69	28.96
62.29	29.96
64.85	30.96
68.15	31.96
72.42	32.96
73.11	33.07
73.79	32.96
79.99	31.96
83.16	30.95
84.14	29.96
87.63	29.06
89.53	27.96
91.46	26.69
93.37	25.96
95.32	24.96
97.47	23.96
99.60	22.96
102.31	21.96
105.29	20.96
107.47	19.96
110.38	18.96
113.34	17.96
116.33	16.96
119.32	15.96
122.30	14.96
125.20	13.96

------GESTIONE ACQUIFERI----------
Strati esclusi da acquifero:
Esclusione sovraccarico pendio sommerso: NON ATTIVATA

Peso unitario fluido (kN/m^3): 9.81
Parametri funzione dissipazione superficiale pressione dei fluidi:
Coefficiente A 0
Coefficiente K 0.000800
Pressione minima fluidi Uo_Min (kPa) 0.01

------- PARAMETRI GEOMECCANICI ----------

	fi`	C`	Cu	Gamm	Gamm_sat	STR_IDX	sgci	GSI	mi	D
STRATO 1	28.52	0.00	0.00	17.65	18.92	1.713	0.00	0.00	0.00	0.00
STRATO 2	0.00	0.00	0.00	20.40	24.42	5.560	25.00	30.00	4.00	0.00

Note: fi`_____ Angolo di attrito interno efficace(in gradi)
C` _____ Coesione efficace (in Kpa)
Cu _____ Resistenza al taglio Non drenata (in Kpa)
Gamm _____ Peso di volume terreno fuori falda (in KN/m^3)
Gamm_sat __ Peso di volume terreno immerso (in KN/m^3)
STR_IDX ___ Indice di resistenza (usato in solo in 'SNIFF SEARCH) (adimensionale)
---- SOLO Per AMMASSI ROCCIOSI FRATTURATI - Parametri Criterio di Rottura di Hoek (2002)-
sigci _____ Resistenza Compressione Uniassiale Roccia Intatta (in MPa)
GSI _____ Geological Strenght Index ammasso(adimensionale)
mi _____ Indice litologico ammasso(adimensionale)
D _____ Fattore di disturbo ammasso(adimensionale)
Fattore di riduzione NTC2008 gammaPHI=1.25 e gammaC=1.25 - ATTIVATO (solo per ROCCE)

SEZIONE AA' VERSANTE LIGURE CON TOTALE SATURAZIONE

– VERIFICA GLOBALE

---------- INFORMAZIONI GENERAZIONE SUPERFICI RANDOM ----------
*** PARAMETRI PER LA GENERAZIONE DELLE SUPERFICI
METODO DI RICERCA: CONVEX RANDOM - Chen (1992)
FILTRAGGIO SUPERFICI : ATTIVATO
COORDINATE X1,X2,Y OSTACOLO : 0.00 0.00 0.00
LUNGHEZZA MEDIA SEGMENTI (m): 5.0 (+/-) 50%
RANGE ASCISSE RANDOM STARTING POINT (Xmin .. Xmax): 0.10 112.78
LIVELLO MINIMO CONSIDERATO (Ymin): 0.00
RANGE ASCISSE AMMESSO PER LA TERMINAZIONE (Xmin .. Xmax): 12.62 122.70
*** TOTALE SUPERFICI GENERATE : 10000
---------- INFORMAZIONI PARAMETRI DI CALCOLO ----------
METODO DI CALCOLO : MORGENSTERN & PRICE (Morgenstern & Price, 1965)
COEFFICIENTE SISMICO UTILIZZATO Kh : 0.109
COEFFICIENTE SISMICO UTILIZZATO Kv (assunto Positivo): 0.055
FORZA ORIZZONTALE ADDIZIONALE IN TESTA (kN/m): 0.00
FORZA ORIZZONTALE ADDIZIONALE ALLA BASE (kN/m): 0.00

N.B. Le forze orizzontali addizionali in testa e alla base sono poste uguali a 0
durante le tutte le verifiche globali.
I valori >0 impostati dall'utente sono utilizzati solo in caso di verifica singola
---------- RISULTATO FINALE ELABORAZIONI ----------

* DATI RELATIVI ALLE 10 SUPERFICI GENERATE CON MINOR Fs *
Fattore di sicurezza (FS) 0.320 - Min. - X Y Lambda= 0.614

X	Y
49.19	24.24
49.28	24.27
49.37	24.31
49.46	24.34
49.56	24.38
49.65	24.41
49.74	24.45
49.83	24.48
49.92	24.52
50.01	24.55
50.10	24.58
50.20	24.62
50.29	24.65
50.38	24.69
50.47	24.72
50.56	24.75
50.65	24.79
50.75	24.82
50.84	24.85
50.93	24.89
51.02	24.92
51.11	24.95
51.20	24.99
51.30	25.03
51.39	25.06
51.48	25.10
51.57	25.14
51.66	25.18
51.75	25.22
51.84	25.27
51.94	25.31
52.03	25.35
52.12	25.40
52.21	25.45
52.30	25.49
52.39	25.54
52.49	25.58
52.58	25.62
52.67	25.67
52.76	25.71
52.85	25.76
52.94	25.80
53.04	25.85
53.13	25.89
53.22	25.94
53.31	25.98
53.40	26.03
53.49	26.08
53.58	26.13
53.68	26.18
53.77	26.23
53.86	26.28
53.95	26.33
54.04	26.39
54.13	26.44
54.23	26.50
54.32	26.56

54.41 26.62
54.50 26.68
54.59 26.75
54.68 26.82
54.78 26.89
54.87 26.97

Fattore di sicurezza (FS) 0.320 - N.2 -- X Y Lambda= 0.635

48.85 24.08
48.95 24.11
49.05 24.15
49.15 24.19
49.25 24.23
49.36 24.27
49.46 24.30
49.56 24.34
49.66 24.38
49.76 24.42
49.86 24.46
49.96 24.49
50.06 24.53
50.16 24.57
50.26 24.61
50.36 24.64
50.46 24.68
50.56 24.72
50.66 24.76
50.76 24.79
50.87 24.83
50.97 24.87
51.07 24.91
51.17 24.95
51.27 25.00
51.37 25.04
51.47 25.08
51.57 25.13
51.67 25.18
51.77 25.23
51.87 25.28
51.97 25.33
52.07 25.38
52.17 25.43
52.27 25.49
52.38 25.54
52.48 25.59
52.58 25.64
52.68 25.69
52.78 25.74
52.88 25.79
52.98 25.84
53.08 25.89
53.18 25.94
53.28 25.98
53.38 26.03
53.48 26.08
53.58 26.13
53.68 26.18
53.78 26.24
53.89 26.29
53.99 26.35
54.09 26.40
54.19 26.46
54.29 26.52
54.39 26.58
54.49 26.64
54.59 26.70
54.69 26.76
54.79 26.83
54.89 26.89
54.99 26.96
55.09 27.03
55.19 27.10

Fattore di sicurezza (FS) 0.320 - N.3 -- X Y Lambda= 0.619

48.84 24.07
48.94 24.11
49.04 24.14
49.13 24.18
49.23 24.22
49.32 24.25
49.42 24.29
49.51 24.32
49.61 24.36
49.71 24.40
49.80 24.43
49.90 24.47
49.99 24.50
50.09 24.54
50.18 24.57
50.28 24.61
50.37 24.64
50.47 24.67
50.57 24.71
50.66 24.74
50.76 24.78
50.85 24.81
50.95 24.85
51.04 24.89
51.14 24.93
51.24 24.96
51.33 25.01
51.43 25.05
51.52 25.09
51.62 25.14
51.71 25.18
51.81 25.23
51.91 25.28
52.00 25.33
52.10 25.37
52.19 25.42

52.29 25.47
52.38 25.52
52.48 25.56
52.57 25.61
52.67 25.66
52.77 25.70
52.86 25.75
52.96 25.79
53.05 25.84
53.15 25.89
53.24 25.94
53.34 25.99
53.44 26.04
53.53 26.09
53.63 26.14
53.72 26.20
53.82 26.25
53.91 26.31
54.01 26.37
54.11 26.43
54.20 26.49
54.30 26.55
54.39 26.62
54.49 26.69
54.58 26.75
54.68 26.82
54.78 26.90
54.87 26.97

Fattore di sicurezza (FS) 0.320 - N.4 -- X Y Lambda= 0.658

49.25 24.27
49.34 24.30
49.43 24.34
49.52 24.37
49.62 24.40
49.71 24.44
49.80 24.47
49.89 24.51
49.98 24.54
50.07 24.58
50.17 24.61
50.26 24.64
50.35 24.68
50.44 24.71
50.53 24.74
50.62 24.78
50.72 24.81
50.81 24.84
50.90 24.87
50.99 24.90
51.08 24.94
51.18 24.97
51.27 25.01
51.36 25.04
51.45 25.08
51.54 25.12
51.63 25.16
51.73 25.21
51.82 25.25
51.91 25.30
52.00 25.34
52.09 25.39
52.18 25.44
52.28 25.49
52.37 25.54
52.46 25.59
52.55 25.64
52.64 25.68
52.74 25.73
52.83 25.78
52.92 25.83
53.01 25.88
53.10 25.92
53.19 25.97
53.29 26.02
53.38 26.07
53.47 26.11
53.56 26.16
53.65 26.21
53.74 26.26
53.84 26.31
53.93 26.36
54.02 26.41
54.11 26.47
54.20 26.52
54.30 26.57
54.39 26.62
54.48 26.68
54.57 26.74
54.66 26.80
54.75 26.86
54.85 26.93
54.94 27.00

Fattore di sicurezza (FS) 0.321 - N.5 -- X Y Lambda= 0.629

49.20 24.24
49.29 24.28
49.38 24.31
49.47 24.34
49.56 24.38
49.65 24.41
49.74 24.44
49.83 24.48
49.92 24.51
50.01 24.54
50.10 24.58
50.19 24.61
50.28 24.64
50.37 24.67
50.46 24.71

50.55 24.74
50.64 24.77
50.73 24.80
50.82 24.83
50.92 24.86
51.01 24.90
51.10 24.93
51.19 24.96
51.28 25.00
51.37 25.04
51.46 25.07
51.55 25.11
51.64 25.15
51.73 25.20
51.82 25.24
51.91 25.28
52.00 25.33
52.09 25.37
52.18 25.42
52.27 25.47
52.36 25.51
52.45 25.56
52.54 25.60
52.63 25.65
52.72 25.69
52.81 25.74
52.90 25.78
52.99 25.83
53.08 25.87
53.17 25.92
53.26 25.96
53.35 26.01
53.44 26.06
53.53 26.11
53.62 26.16
53.71 26.21
53.80 26.26
53.89 26.32
53.98 26.38
54.07 26.43
54.16 26.49
54.26 26.55
54.35 26.62
54.44 26.68
54.53 26.74
54.62 26.80
54.71 26.87
54.80 26.93

Fattore di sicurezza (FS) 0.321 - N.6 -- X Y Lambda= 0.667

49.07 24.18
49.17 24.22
49.26 24.25
49.36 24.29
49.45 24.32
49.55 24.36
49.64 24.40
49.73 24.43
49.83 24.47
49.92 24.50
50.02 24.54
50.11 24.57
50.21 24.61
50.30 24.64
50.40 24.68
50.49 24.71
50.59 24.74
50.68 24.77
50.78 24.81
50.87 24.84
50.97 24.88
51.06 24.91
51.16 24.95
51.25 24.99
51.34 25.03
51.44 25.07
51.53 25.11
51.63 25.16
51.72 25.20
51.82 25.25
51.91 25.30
52.01 25.35
52.10 25.40
52.20 25.45
52.29 25.51
52.39 25.56
52.48 25.61
52.58 25.66
52.67 25.71
52.77 25.76
52.86 25.81
52.96 25.86
53.05 25.91
53.14 25.96
53.24 26.01
53.33 26.07
53.43 26.12
53.52 26.17
53.62 26.22
53.71 26.27
53.81 26.32
53.90 26.38
54.00 26.43
54.09 26.48
54.19 26.54
54.28 26.59
54.38 26.65
54.47 26.70
54.57 26.76

54.66 26.82
54.75 26.88
54.85 26.94
54.94 27.00

Fattore di sicurezza (FS) 0.321 - N.7 – X Y Lambda= 0.611

49.21 24.25
49.30 24.28
49.40 24.32
49.49 24.35
49.58 24.38
49.67 24.42
49.76 24.45
49.85 24.49
49.94 24.52
50.03 24.55
50.12 24.59
50.21 24.62
50.30 24.65
50.39 24.68
50.48 24.72
50.57 24.75
50.66 24.78
50.75 24.81
50.84 24.84
50.93 24.88
51.02 24.91
51.11 24.94
51.20 24.98
51.29 25.01
51.38 25.05
51.47 25.09
51.56 25.13
51.65 25.17
51.74 25.21
51.83 25.25
51.92 25.29
52.01 25.34
52.10 25.38
52.19 25.43
52.29 25.47
52.38 25.52
52.47 25.56
52.56 25.60
52.65 25.65
52.74 25.69
52.83 25.73
52.92 25.78
53.01 25.82
53.10 25.86
53.19 25.90
53.28 25.95
53.37 25.99
53.46 26.04
53.55 26.09
53.64 26.14
53.73 26.19
53.82 26.24
53.91 26.30
54.00 26.36
54.09 26.41
54.18 26.47
54.27 26.53
54.36 26.60
54.45 26.66
54.54 26.73
54.63 26.80
54.72 26.87
54.81 26.94

Fattore di sicurezza (FS) 0.321 - N.8 – X Y Lambda= 0.664

49.05 24.17
49.15 24.21
49.24 24.24
49.33 24.28
49.43 24.31
49.52 24.35
49.61 24.38
49.70 24.42
49.80 24.45
49.89 24.49
49.98 24.52
50.07 24.56
50.17 24.59
50.26 24.62
50.35 24.66
50.44 24.69
50.54 24.72
50.63 24.76
50.72 24.79
50.81 24.82
50.91 24.85
51.00 24.89
51.09 24.93
51.18 24.96
51.28 25.00
51.37 25.04
51.46 25.08
51.56 25.13
51.65 25.17
51.74 25.22
51.83 25.27
51.93 25.32
52.02 25.36
52.11 25.41
52.20 25.46
52.30 25.52
52.39 25.57
52.48 25.62
52.57 25.67

52.67 25.72
52.76 25.77
52.85 25.82
52.94 25.87
53.04 25.93
53.13 25.98
53.22 26.03
53.32 26.08
53.41 26.13
53.50 26.19
53.59 26.24
53.69 26.29
53.78 26.34
53.87 26.39
53.96 26.44
54.06 26.49
54.15 26.55
54.24 26.60
54.33 26.65
54.43 26.70
54.52 26.76
54.61 26.82
54.70 26.87
54.80 26.93

Fattore di sicurezza (FS) 0.321 - N.9 -- X Y Lambda= 0.654

48.75 24.03
48.84 24.06
48.94 24.10
49.04 24.13
49.13 24.17
49.23 24.20
49.33 24.24
49.43 24.28
49.52 24.31
49.62 24.35
49.72 24.38
49.81 24.42
49.91 24.45
50.01 24.48
50.11 24.52
50.20 24.55
50.30 24.59
50.40 24.62
50.49 24.65
50.59 24.68
50.69 24.72
50.79 24.75
50.88 24.79
50.98 24.83
51.08 24.87
51.17 24.91
51.27 24.95
51.37 24.99
51.47 25.04
51.56 25.09
51.66 25.14
51.76 25.19
51.85 25.24
51.95 25.29
52.05 25.34
52.15 25.39
52.24 25.45
52.34 25.50
52.44 25.55
52.53 25.60
52.63 25.65
52.73 25.70
52.82 25.75
52.92 25.80
53.02 25.85
53.12 25.90
53.21 25.96
53.31 26.01
53.41 26.06
53.50 26.11
53.60 26.17
53.70 26.22
53.80 26.28
53.89 26.33
53.99 26.39
54.09 26.44
54.18 26.50
54.28 26.56
54.38 26.62
54.48 26.68
54.57 26.75
54.67 26.82
54.77 26.89
54.86 26.97

Fattore di sicurezza (FS) 0.321 - N.10 -- X Y Lambda= 0.666

48.61 23.96
48.72 24.00
48.83 24.04
48.94 24.08
49.04 24.12
49.15 24.16
49.26 24.19
49.37 24.23
49.48 24.27
49.58 24.31
49.69 24.35
49.80 24.39
49.91 24.43
50.02 24.47
50.13 24.51
50.23 24.56
50.34 24.60
50.45 24.64

50.56	24.68
50.67	24.72
50.77	24.77
50.88	24.81
50.99	24.86
51.10	24.90
51.21	24.95
51.31	25.00
51.42	25.05
51.53	25.11
51.64	25.16
51.75	25.21
51.85	25.27
51.96	25.33
52.07	25.39
52.18	25.45
52.29	25.51
52.39	25.57
52.50	25.63
52.61	25.69
52.72	25.74
52.83	25.80
52.93	25.86
53.04	25.92
53.15	25.98
53.26	26.03
53.37	26.09
53.47	26.15
53.58	26.21
53.69	26.26
53.80	26.32
53.91	26.38
54.01	26.43
54.12	26.49
54.23	26.55
54.34	26.61
54.45	26.66
54.55	26.72
54.66	26.78
54.77	26.84
54.88	26.89
54.99	26.95
55.09	27.01
55.20	27.07
55.31	27.12
55.42	27.18
55.53	27.24

---------- ANALISI DEFICIT DI RESISTENZA ----------

DATI RELATIVI ALLE 10 SUPERFICI GENERATE CON MINOR Fs *

Analisi Deficit in riferimento a FS(progetto) = 1.100

Sup N.	FS	FTR(kN/m)	FTA(kN/m)	Bilancio(kN/m)	ESITO
1	0.320	3.3	10.2	-8.0	Deficit
2	0.320	3.6	11.4	-8.9	Deficit
3	0.320	3.7	11.6	-9.1	Deficit
4	0.320	3.0	9.5	-7.4	Deficit
5	0.321	3.3	10.2	-8.0	Deficit
6	0.321	3.0	9.3	-7.3	Deficit
7	0.321	3.4	10.6	-8.3	Deficit
8	0.321	2.8	8.6	-6.7	Deficit
9	0.321	3.8	11.8	-9.2	Deficit
10	0.321	3.5	11.0	-8.6	Deficit

Esito analisi: DEFICIT di RESISTENZA!

Valore massimo di DEFICIT di RESITENZA(kN/m): -9.2

Note: FTR --> Forza totale Resistente rispetto alla superficie di scivolamento (componente Orizzontale)

FTA --> Forza totale Agente rispetto alla superficie di scivolamento (componente Orizzontale)

IMPORTANTE! : Il Deficit o il Surplus di resistenza viene espresso in kN per metro di LARGHEZZA rispetto al fronte della scarpata

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TABELLA PARAMETRI CONCI DELLA SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	dx (m)	alpha (gradi)	W (kN/m)	ru (-)	U (kPa)	phi' (gradi)	c'/Cu (kPa)
49.189	0.090	20.65	0.01	0.52	0.05	28.52	0.00
49.279	0.001	20.65	0.00	0.52	0.09	28.52	0.00
49.280	0.090	20.69	0.03	0.52	0.14	28.52	0.00
49.371	0.001	20.69	0.00	0.52	0.19	28.52	0.00
49.372	0.090	20.75	0.04	0.52	0.23	28.52	0.00
49.463	0.001	20.75	0.00	0.52	0.28	28.52	0.00
49.464	0.090	20.80	0.06	0.52	0.32	28.52	0.00
49.554	0.001	20.80	0.00	0.52	0.37	28.52	0.00
49.555	0.090	20.83	0.08	0.52	0.41	28.52	0.00
49.646	0.001	20.83	0.00	0.52	0.46	28.52	0.00
49.647	0.090	20.83	0.09	0.52	0.50	28.52	0.00
49.737	0.001	20.83	0.00	0.52	0.55	28.52	0.00
49.738	0.090	20.80	0.11	0.52	0.59	28.52	0.00
49.829	0.001	20.80	0.00	0.52	0.64	28.52	0.00
49.830	0.060	20.73	0.08	0.52	0.67	28.52	0.00
49.890	0.032	20.73	0.05	0.52	0.72	28.52	0.00
49.922	0.090	20.63	0.14	0.52	0.78	28.52	0.00
50.012	0.001	20.63	0.00	0.52	0.82	28.52	0.00
50.013	0.090	20.51	0.16	0.52	0.87	28.52	0.00
50.104	0.001	20.51	0.00	0.52	0.92	28.52	0.00
50.105	0.090	20.39	0.18	0.52	0.97	28.52	0.00
50.195	0.001	20.39	0.00	0.52	1.02	28.52	0.00
50.196	0.090	20.29	0.20	0.52	1.07	28.52	0.00
50.287	0.001	20.29	0.00	0.52	1.12	28.52	0.00
50.288	0.090	20.23	0.21	0.52	1.17	28.52	0.00
50.378	0.001	20.23	0.00	0.52	1.22	28.52	0.00
50.379	0.090	20.13	0.23	0.52	1.27	28.52	0.00
50.470	0.001	20.13	0.00	0.52	1.32	28.52	0.00
50.471	0.090	19.99	0.25	0.52	1.37	28.52	0.00
50.561	0.001	19.99	0.00	0.52	1.43	28.52	0.00
50.563	0.090	19.86	0.27	0.52	1.48	28.52	0.00
50.653	0.001	19.86	0.00	0.52	1.53	28.52	0.00
50.654	0.090	19.79	0.29	0.52	1.59	28.52	0.00
50.745	0.001	19.79	0.00	0.52	1.64	28.52	0.00

50.746	0.090	19.82	0.31	0.52	1.70	28.52	0.00
50.836	0.001	19.82	0.00	0.52	1.75	28.52	0.00
50.837	0.090	19.97	0.33	0.52	1.80	28.52	0.00
50.928	0.001	19.97	0.00	0.52	1.86	28.52	0.00
50.929	0.090	20.25	0.35	0.52	1.91	28.52	0.00
51.019	0.001	20.25	0.00	0.52	1.96	28.52	0.00
51.020	0.090	20.65	0.37	0.52	2.00	28.52	0.00
51.111	0.001	20.65	0.00	0.52	2.05	28.52	0.00
51.112	0.090	21.15	0.38	0.52	2.09	28.52	0.00
51.203	0.001	21.15	0.00	0.52	2.13	28.52	0.00
51.204	0.090	21.70	0.40	0.52	2.17	28.52	0.00
51.294	0.001	21.70	0.01	0.52	2.21	28.52	0.00
51.295	0.090	22.27	0.41	0.52	2.24	28.52	0.00
51.386	0.001	22.27	0.01	0.52	2.27	28.52	0.00
51.387	0.090	22.80	0.42	0.52	2.30	28.52	0.00
51.477	0.001	22.80	0.01	0.52	2.33	28.52	0.00
51.478	0.090	23.29	0.43	0.52	2.35	28.52	0.00
51.569	0.001	23.29	0.01	0.52	2.37	28.52	0.00
51.570	0.090	23.89	0.44	0.52	2.39	28.52	0.00
51.660	0.001	23.89	0.01	0.52	2.41	28.52	0.00
51.662	0.090	24.51	0.44	0.52	2.42	28.52	0.00
51.752	0.001	24.51	0.01	0.52	2.43	28.52	0.00
51.753	0.090	25.10	0.45	0.52	2.43	28.52	0.00
51.844	0.001	25.10	0.01	0.52	2.44	28.52	0.00
51.845	0.090	25.59	0.45	0.52	2.44	28.52	0.00
51.935	0.001	25.59	0.01	0.52	2.44	28.52	0.00
51.936	0.090	25.96	0.45	0.52	2.44	28.52	0.00
52.027	0.001	25.96	0.01	0.52	2.44	28.52	0.00
52.028	0.090	26.19	0.45	0.52	2.43	28.52	0.00
52.118	0.001	26.19	0.01	0.52	2.43	28.52	0.00
52.119	0.090	26.28	0.45	0.52	2.42	28.52	0.00
52.210	0.001	26.28	0.01	0.52	2.41	28.52	0.00
52.211	0.090	26.25	0.44	0.52	2.41	28.52	0.00
52.301	0.001	26.25	0.01	0.52	2.40	28.52	0.00
52.303	0.090	26.13	0.44	0.52	2.40	28.52	0.00
52.393	0.001	26.13	0.01	0.52	2.39	28.52	0.00
52.394	0.090	25.98	0.44	0.52	2.39	28.52	0.00
52.485	0.001	25.98	0.01	0.52	2.39	28.52	0.00
52.486	0.090	25.88	0.44	0.52	2.39	28.52	0.00
52.576	0.001	25.88	0.01	0.52	2.38	28.52	0.00
52.577	0.090	25.88	0.44	0.52	2.38	28.52	0.00
52.668	0.001	25.88	0.01	0.52	2.38	28.52	0.00
52.669	0.090	25.89	0.44	0.52	2.38	28.52	0.00
52.759	0.001	25.89	0.01	0.52	2.38	28.52	0.00
52.760	0.090	25.88	0.44	0.52	2.37	28.52	0.00
52.851	0.001	25.88	0.01	0.52	2.37	28.52	0.00
52.852	0.090	25.90	0.44	0.52	2.37	28.52	0.00
52.942	0.001	25.90	0.01	0.52	2.37	28.52	0.00
52.944	0.090	25.97	0.44	0.52	2.37	28.52	0.00
53.034	0.001	25.97	0.01	0.52	2.36	28.52	0.00
53.035	0.090	26.11	0.43	0.52	2.36	28.52	0.00
53.126	0.001	26.11	0.01	0.52	2.35	28.52	0.00
53.127	0.090	26.35	0.43	0.52	2.35	28.52	0.00
53.217	0.001	26.35	0.01	0.52	2.34	28.52	0.00
53.218	0.090	26.68	0.43	0.52	2.33	28.52	0.00
53.309	0.001	26.68	0.01	0.52	2.32	28.52	0.00
53.310	0.090	27.09	0.42	0.52	2.31	28.52	0.00
53.400	0.001	27.09	0.01	0.52	2.29	28.52	0.00
53.402	0.090	27.59	0.42	0.52	2.28	28.52	0.00
53.492	0.001	27.59	0.01	0.52	2.26	28.52	0.00
53.493	0.090	28.15	0.41	0.52	2.23	28.52	0.00
53.584	0.001	28.15	0.01	0.52	2.21	28.52	0.00
53.585	0.090	28.73	0.40	0.52	2.18	28.52	0.00
53.675	0.001	28.73	0.00	0.52	2.15	28.52	0.00
53.676	0.090	29.31	0.39	0.52	2.11	28.52	0.00
53.767	0.001	29.31	0.00	0.52	2.07	28.52	0.00
53.768	0.090	29.80	0.37	0.52	2.03	28.52	0.00
53.858	0.001	29.80	0.00	0.52	1.99	28.52	0.00
53.859	0.090	30.20	0.36	0.52	1.95	28.52	0.00
53.950	0.001	30.20	0.00	0.52	1.90	28.52	0.00
53.951	0.090	30.60	0.34	0.52	1.85	28.52	0.00
54.041	0.001	30.60	0.00	0.52	1.80	28.52	0.00
54.043	0.090	31.09	0.32	0.52	1.75	28.52	0.00
54.133	0.001	31.09	0.00	0.52	1.69	28.52	0.00
54.134	0.090	31.73	0.30	0.52	1.63	28.52	0.00
54.225	0.001	31.73	0.00	0.52	1.57	28.52	0.00
54.226	0.090	32.54	0.28	0.52	1.50	28.52	0.00
54.316	0.001	32.54	0.00	0.52	1.43	28.52	0.00
54.317	0.090	33.52	0.25	0.52	1.35	28.52	0.00
54.408	0.001	33.52	0.00	0.52	1.26	28.52	0.00
54.409	0.090	34.66	0.22	0.52	1.17	28.52	0.00
54.499	0.001	34.66	0.00	0.52	1.08	28.52	0.00
54.500	0.090	35.91	0.18	0.52	0.97	28.52	0.00
54.591	0.001	35.91	0.00	0.52	0.86	28.52	0.00
54.592	0.090	37.20	0.13	0.52	0.73	28.52	0.00
54.682	0.001	37.20	0.00	0.52	0.61	28.52	0.00
54.684	0.090	38.48	0.09	0.52	0.47	28.52	0.00
54.774	0.001	38.48	0.00	0.52	0.33	28.52	0.00
54.775	0.075	39.65	0.03	0.52	0.20	28.52	0.00
54.850	0.017	39.65	0.00	0.52	0.03	28.52	0.00

LEGENDA SIMBOLI
X(m) : Ascissa sinistra concio
dx(m) : Larghezza concio
alpha(gradi) : Angolo pendenza base concio
W(kN/m) : Forza peso concio
ru(-) : Coefficiente locale pressione interstiziale
U(kPa) : Pressione totale dei pori base concio
phi'(gradi) : Angolo di attrito efficace base concio
c'/Cu (kPa) : Coesione efficace / Resistenza al taglio in condizioni non drenate

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TABELLA DIAGRAMMA DELLE FORZE DELLA SUPERFICIE INDIVIDUATA CON MINOR FS

X	ht	yt	yt'	E(x)	T(x)	E'	rho(x)	local_FS_FEM	local_FS_q-pFEM		
(m)	(m)	(m)	(--)	(kN/m)	(kN/m)	(kN)	(--)	(--)	(--)		
49.189	0.000	24.238	0.429	0.0000000000E+000	0.0000000000E+000	0.0000000000E+000	0.014	0.410	1.078		
49.279	0.005	24.277	0.429	4.1576779100E-003	9.7296987043E-005	4.6134919102E-002	0.014	0.465	1.262		
49.280	0.005	24.278	0.429	4.2249416178E-003	9.9785148988E-005	7.1065629634E-002	0.014	0.465	1.269		

49.371	0.009	24.316	0.429	1.0665723054E-002	4.9910403682E-004	7.1290026282E-002	0.028	0.548	29.194
49.372	0.009	24.317	0.430	1.0753536548E-002	5.0570829220E-004	7.7253851339E-002	0.094	0.549	29.569
49.463	0.014	24.356	0.430	1.7740472897E-002	1.2408480072E-003	7.7173257109E-002	0.042	0.699	37.312
49.464	0.014	24.356	0.430	1.7820905736E-002	1.2508109117E-003	6.2417531985E-002	0.457	0.701	37.212
49.554	0.019	24.395	0.430	2.3456542930E-002	2.1795296375E-003	6.2190405286E-002	0.055	0.986	20.185
49.555	0.019	24.396	0.431	2.3516175970E-002	2.1935415600E-003	4.8700360218E-002	0.944	0.990	20.056
49.646	0.023	24.435	0.431	2.7916422403E-002	3.2570139723E-003	4.8589788542E-002	0.070	1.427	12.587
49.647	0.023	24.435	0.425	2.7965929515E-002	3.2726099695E-003	4.1199077432E-002	0.819	1.433	12.525
49.737	0.027	24.474	0.425	3.1689349726E-002	4.4015043592E-003	4.1137489284E-002	0.083	2.024	8.489
49.738	0.027	24.474	0.426	3.1733216722E-002	4.4187821685E-003	4.0251817903E-002	0.644	2.032	8.453
49.829	0.032	24.513	0.426	3.5375528958E-002	5.7050018166E-003	4.0298274056E-002	0.096	2.839	5.458
49.830	0.032	24.513	0.435	3.5423650313E-002	5.7253681880E-003	4.6730286647E-002	0.390	2.851	5.421
49.890	0.035	24.539	0.427	3.8233458807E-002	6.7457364579E-003	4.9318154087E-002	0.171	3.472	3.489
49.922	0.036	24.552	0.425	3.9940106086E-002	7.3912782679E-003	6.2564513467E-002	0.627	3.764	2.473
50.012	0.041	24.591	0.429	4.5866200254E-002	9.6017056157E-003	7.1834579545E-002	0.125	4.063	0.220
50.013	0.041	24.591	0.428	4.5946615061E-002	9.6364831058E-003	7.1978795918E-002	0.854	4.058	0.220
50.104	0.046	24.630	0.428	5.3345301995E-002	1.2508142562E-002	9.7111416903E-002	0.140	3.357	0.220
50.105	0.046	24.631	0.428	5.3454210301E-002	1.2554949396E-002	9.7660324302E-002	1.486	3.342	0.220
50.195	0.051	24.669	0.428	6.5017644714E-002	1.6831075245E-002	1.6566414731E-001	0.154	2.347	0.220
50.196	0.051	24.670	0.427	6.5203534056E-002	1.6901618101E-002	1.6677953902E-001	12.241	2.334	0.220
50.287	0.056	24.709	0.427	8.4806936597E-002	2.4057559834E-002	2.6944560085E-001	0.169	1.552	0.220
50.288	0.056	24.709	0.427	8.5109000742E-002	2.4177335505E-002	2.7076271392E-001	0.970	1.543	0.220
50.378	0.062	24.748	0.427	1.1414572814E-001	3.5309778585E-002	3.7027060965E-001	0.184	1.031	0.220
50.379	0.062	24.748	0.426	1.1456050191E-001	3.5484790891E-002	3.7150692399E-001	0.550	1.025	0.220
50.470	0.067	24.787	0.426	1.5270095222E-001	5.1226585856E-002	4.7139736921E-001	0.199	0.707	0.220
50.471	0.067	24.787	0.425	1.5322880451E-001	5.1467263612E-002	4.7260845356E-001	0.431	0.704	0.220
50.561	0.073	24.826	0.425	2.0028425269E-001	7.2517408620E-002	5.6617198048E-001	0.214	0.500	0.270
50.563	0.073	24.826	0.421	2.0091802808E-001	7.2831607290E-002	5.6726559758E-001	0.384	0.498	0.278
50.653	0.078	24.864	0.421	2.5606797821E-001	9.9625440955E-002	6.5033482600E-001	0.230	0.360	0.989
50.654	0.078	24.865	0.420	2.5679580318E-001	1.0001793459E-001	6.5130017308E-001	0.366	0.358	1.001
50.745	0.084	24.903	0.420	3.1916451089E-001	1.3283373853E-001	7.2783131489E-001	0.246	0.261	2.109
50.746	0.084	24.903	0.421	3.1997900098E-001	1.3330869638E-001	7.2879489007E-001	0.361	0.260	2.118
50.836	0.089	24.941	0.421	3.8922524469E-001	1.7246282942E-001	7.9854280450E-001	0.262	0.220	2.398
50.837	0.089	24.942	0.422	3.9011866359E-001	1.7302154561E-001	7.9923814466E-001	0.362	0.220	2.401
50.928	0.095	24.980	0.422	4.6438039326E-001	2.1792583760E-001	8.3603312192E-001	0.277	0.220	2.468
50.929	0.095	24.980	0.425	4.6531546447E-001	2.1855178456E-001	8.3623829993E-001	0.367	0.220	2.469
51.019	0.100	25.019	0.425	5.4116551915E-001	2.6747175783E-001	8.3564455564E-001	0.292	0.220	2.402
51.020	0.100	25.019	0.429	5.4209994418E-001	2.6813910692E-001	8.3547182223E-001	0.375	0.220	2.400
51.111	0.104	25.058	0.429	6.1693565905E-001	3.1927273402E-001	8.1923213024E-001	0.305	0.220	2.220
51.112	0.104	25.058	0.434	6.1785171828E-001	3.1996254955E-001	8.1903931700E-001	0.383	0.220	2.217
51.203	0.109	25.098	0.434	6.9103482882E-001	3.7224513672E-001	7.9567541484E-001	0.318	0.220	1.913
51.204	0.109	25.098	0.439	6.9192440789E-001	3.7294175660E-001	7.9523852514E-001	0.391	0.220	1.909
51.294	0.113	25.138	0.439	7.6176662689E-001	4.2467630305E-001	7.4332738208E-001	0.329	0.220	1.389
51.295	0.113	25.138	0.445	7.6259743155E-001	4.2535018818E-001	7.4247490167E-001	0.399	0.220	1.382
51.386	0.116	25.179	0.445	8.2618711809E-001	4.7408874584E-001	6.5921263802E-001	0.339	0.220	1.135
51.387	0.116	25.179	0.450	8.2692367969E-001	4.7470736039E-001	6.5804675418E-001	0.406	0.220	1.133
51.477	0.119	25.220	0.451	8.8210252404E-001	5.1836047870E-001	5.6212579718E-001	0.347	0.220	1.016
51.478	0.119	25.220	0.456	8.8273049616E-001	5.1890309651E-001	5.6093322706E-001	0.412	0.220	1.015
51.569	0.121	25.262	0.456	9.2896631192E-001	5.5632598709E-001	4.6029825861E-001	0.353	0.220	0.941
51.570	0.121	25.262	0.462	9.2948036451E-001	5.5677800501E-001	4.5902847113E-001	0.417	0.220	0.940
51.660	0.123	25.304	0.462	9.6638001923E-001	5.8698395755E-001	3.5731415420E-001	0.358	0.220	0.889
51.662	0.123	25.304	0.468	9.6677892308E-001	5.8733517745E-001	3.5608183251E-001	0.421	0.220	0.889
51.752	0.124	25.347	0.468	9.9457272874E-001	6.0990020310E-001	2.5943271885E-001	0.362	0.220	0.853
51.753	0.124	25.347	0.475	9.9486221121E-001	6.1014851940E-001	2.5827510614E-001	0.424	0.220	0.853
51.844	0.124	25.390	0.475	1.0140562883E+000	6.2513725491E-001	1.6652748827E-001	0.364	0.220	0.828
51.845	0.124	25.391	0.480	1.0142418804E+000	6.2528556805E-001	1.6538300528E-001	0.425	0.220	0.828
51.935	0.124	25.434	0.480	1.0248231594E+000	6.3280617932E-001	6.8639753110E-002	0.364	0.220	0.811
51.936	0.124	25.435	0.484	1.0248992801E+000	6.3285559285E-001	6.7494276945E-002	0.424	0.220	0.811
52.027	0.124	25.479	0.484	1.0272433322E+000	6.3355995670E-001	-1.0174459189E-002	0.364	0.220	0.800
52.028	0.124	25.479	0.486	1.0272315397E+000	6.3353208442E-001	-1.0914189916E-002	0.424	0.220	0.800
52.118	0.124	25.523	0.486	1.0241022635E+000	6.2972578154E-001	-5.2639728383E-002	0.363	0.220	0.794
52.119	0.124	25.524	0.487	1.0240432139E+000	6.2965555102E-001	-5.2963367867E-002	0.422	0.220	0.794
52.210	0.123	25.568	0.487	1.0182811456E+000	6.2371454575E-001	-7.3940675292E-002	0.361	0.220	0.792
52.211	0.123	25.568	0.486	1.0181982922E+000	6.2362553800E-001	-7.4234270535E-002	0.421	0.220	0.792
52.301	0.122	25.612	0.487	1.0103931733E+000	6.1644105001E-001	-9.7312526665E-002	0.360	0.220	0.793
52.303	0.122	25.613	0.483	1.0102842121E+000	6.1633874763E-001	-9.7552416886E-002	0.419	0.220	0.793
52.393	0.122	25.656	0.483	1.0007271724E+000	6.0843388999E-001	-1.1211732973E-001	0.359	0.220	0.797
52.394	0.122	25.657	0.484	1.0006017225E+000	6.0832780455E-001	-1.1223590849E-001	0.418	0.220	0.797
52.485	0.121	25.701	0.484	9.9015330354E-001	6.0034255667E-001	-1.1742540203E-001	0.358	0.220	0.803
52.486	0.121	25.701	0.484	9.9002197342E-001	6.0023951856E-001	-1.1744397947E-001	0.418	0.220	0.803
52.576	0.121	25.745	0.484	9.7938500171E-001	5.9252388803E-001	-1.1749856006E-001	0.357	0.220	0.811
52.577	0.121	25.746	0.485	9.7925359912E-001	5.9242559777E-001	-1.1750067413E-001	0.417	0.220	0.811
52.668	0.121	25.789	0.485	9.6868218317E-001	5.8497193977E-001	-1.1497402695E-001	0.356	0.220	0.822
52.669	0.121	25.790	0.483	9.6855363765E-001	5.8487775216E-001	-1.1491565125E-001	0.417	0.220	0.822
52.759	0.121	25.834	0.483	9.5824245314E-001	5.7765706216E-001	-1.1514510987E-001	0.356	0.220	0.834
52.760	0.121	25.834	0.483	9.5811363090E-001	5.7756298715E-001	-1.1523982604E-001	0.417	0.220	0.835
52.851	0.121	25.878	0.483	9.4705477072E-001	5.6985319928E-001	-1.3235734208E-001	0.355	0.220	0.850
52.852	0.121	25.879	0.483	9.4690657175E-001	5.6974566751E-001	-1.3268067987E-001	0.417	0.220	0.850
52.942	0.121	25.922	0.483	9.3353607363E-001	5.6047499226E-001	-1.6420113570E-001	0.354	0.220	0.869
52.944	0.121	25.923	0.484	9.3335221146E-001	5.6034154738E-001	-1.6461611991E-001	0.417	0.220	0.869
53.034	0.120	25.967	0.484	9.1706402888E-001	5.4895277881E-001	-1.9446767011E-001	0.353	0.220	0.893
53.035	0.120	25.967	0.485	9.1684635425E-001	5.4879088482E-001	-1.9481968301E-001	0.417	0.220	0.893
53.126	0.120	26.011	0.485	8.9780235712E-001	5.3512405325E-001	-2.2824705135E-001	0.352	0.220	0.922
53.127	0.120	26.012	0.488	8.9754682346E-001	5.3492689023E-001	-2.2874732790E-001	0.417	0.220	0.922
53.217	0.119	26.056	0.488	8.7476036590E-001	5.1811616445E-001	-2.7786209003E-001	0.349	0.220	0.959
53.218	0.119	26.056	0.492	8.7444923005E-001	5.1786887791E-001	-2.7857066479E-001	0.416	0.220	0.959
53.309	0.118	26.101	0.492	8.4649050541E-001	4.9683659069E-001	-3.4072158458E-001	0.346	0.220	1.006
53.310	0.118	26.101	0.496	8.4610902577E-001	4.9652737144E-001	-3.4151287019E-001	0.414	0.220	1.007
53.400	0.117	26.146	0.496	8.1241406085E-001	4.7082739565E-001	-4.0320026501E-001	0.342	0.220	1.068
53.402	0.117	26.147	0.502	8.1196272054E-001	4.7045553165E-001	-4.0397248929E-001	0.411	0.220	1.069
53.492	0.115	26.192	0.502	7.7261138813E-001	4.4018514552E-001	-4.6542661643E-001	0.336	0.220	1.152
53.493	0.115	26.193	0.508	7.7209048404E-001	4.3975259516E-001	-4.6615307762E-001	0.406	0.220	1.154
53.584	0.113	26.239	0.508	7.2740346640E-001	4.0534764720E-001	-5.2021724772E-001	0.329	0.220	1.270
53.585	0.113	26.239	0.514	7.2682135606E-001	4.0486418848E-001	-5.2082307077E-001	0.400	0.220	1.272
53.675	0.109	26.286	0.514	6.7763331232E-001	3.6725634403E-001	-5.6535284493E-001	0.320	0.220	1.450
53.676	0.109	26.286	0.521	6.7700078108E-001	3.6673589053E-001	-5.6585988284E-001	0.393	0.220	1.453
53.767	0.106	26.333	0.521	6.2399626202E-001	3.2693486525E-001	-6.0550907495E-001	0.309	0.220	1.796
53.768	0.106	26.334	0.527	6.2331885112E-001	3.2639025966E-001	-6.0596589851E-001	0.384	0.220	1.805
53.858	0.102	26.382	0.527	5.6694854942E-001	2.8535623127E-001	-6.3913375513E-001	0.297	0.220	2.459
53.859	0.102	26.382	0.531	5.6623358626E-001	2.8480151804E-001	-6.3949935477E-001	0.374	0.220	2.464
53.950	0.097	26.430	0.531	5.0715460642E-001	2.4355398515E-001	-6.6549731667E-001	0.284	0.220	2.833
53.951	0.097	26.431	0.536	5.0641021083E-001	2.4300210049E-001	-6.6577244444E-001	0.362	0.220	2.836
54.041	0.092	26.479	0.536	4.4530869994E-001	2.0243433211E-001	-6.8360230413E-001	0.268	0.220	3.029
54.043	0.092	26.480	0.542	4.4454412188E-001	2.0189667929E-001	-6.8376152692E-001	0.350	0.220	3.030
54.133	0.086	26.529	0.542	3.8228828858E-001	1.6285048600E-001	-6.9109897765E-001	0.252	0.220	3.030
54.134	0.086	26.530	0.549	3.8151537990E-001	1.6233816036E-001	-6.9116358359E-001	0.338	0.220	3.027
54.225	0.080	26.579	0.550	3.1884990792E-001	1.2554109969E-001	-6.9212029326E-001	0.233	0.220	2.778
54.226	0.080	26.580	0.559	3.1807594688E-001	1.2506317336E-001	-6.9202360885E-001	0.323	0.220	2.774

54.316	0.073	26.631	0.559	2.5625053519E-001	9.1464566290E-002	-6.6998210152E-001	0.211	0.256	2.454
54.317	0.073	26.631	0.571	2.5550153551E-001	9.1037886902E-002	-6.6952099879E-001	0.308	0.257	2.446
54.408	0.065	26.683	0.572	1.9706048230E-001	6.2002775521E-002	-6.1834268908E-001	0.186	0.377	0.755
54.409	0.064	26.684	0.586	1.9636940747E-001	6.1644465909E-002	-6.1756851718E-001	0.289	0.379	0.732
54.499	0.055	26.737	0.586	1.4347630228E-001	3.8159633482E-002	-5.5178150284E-001	0.157	0.537	0.220
54.500	0.055	26.737	0.602	1.4285966142E-001	3.7878522355E-002	-5.5101364147E-001	0.264	0.539	0.220
54.591	0.044	26.792	0.602	9.5715410176E-002	2.0057906297E-002	-4.9055152295E-001	0.124	0.697	0.220
54.592	0.044	26.792	0.620	9.5167271644E-002	1.9866921800E-002	-4.8973361521E-001	0.229	0.697	0.220
54.682	0.031	26.848	0.620	5.4283876532E-002	8.1045186699E-003	-4.0899430110E-001	0.089	0.753	0.220
54.684	0.031	26.849	0.638	5.3827158585E-002	7.9818606411E-003	-4.0779488270E-001	0.183	0.752	0.220
54.774	0.017	26.907	0.638	2.1778399127E-002	1.7805139958E-003	-2.9670141779E-001	0.049	0.645	2.544
54.775	0.017	26.908	0.655	2.1447428640E-002	1.7232786818E-003	-2.9520279656E-001	0.087	0.644	2.544
54.850	0.003	26.957	0.649	3.1120463161E-003	1.3137363334E-004	-1.9601847986E-001	0.028	0.521	1.057

LEGENDA SIMBOLI
X(m) : Ascissa sinistra concio
ht(m) : Altezza linea di thrust da nodo sinistro base concio
yt(m) : coordinata Y linea di trust
yt'(-) : gradiente pendenza locale linea di trust
E(x)(kN/m) : Forza Normale interconcio
T(x)(kN/m) : Forza Tangenziale interconcio
E' (kN) : derivata Forza normale interconcio
Rho(x) (-) : fattore mobilizzazione resistenza al taglio verticale interconcio ZhU et al.(2003)
FS_FEM(x) (-) : fattore di sicurezza locale stimato (locale in X) by qFEM
FS_q-pFEM(x) (-) : fattore di sicurezza locale stimato (locale in X) by q-pFEM Procedure

TABELLA SFORZI DI TAGLIO DISTRIBUITI LUNGO SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	dx (m)	dl (m)	alpha (gradi)	TauStress (kPa)	Tau (kN/m)
49.189	0.090	0.097	20.653	0.040	0.004
49.279	0.001	0.001	20.653	0.080	0.000
49.280	0.090	0.097	20.693	0.120	0.012
49.371	0.001	0.001	20.693	0.161	0.000
49.372	0.090	0.097	20.748	0.200	0.019
49.463	0.001	0.001	20.748	0.240	0.000
49.464	0.090	0.097	20.798	0.280	0.027
49.554	0.001	0.001	20.798	0.319	0.000
49.555	0.090	0.097	20.829	0.359	0.035
49.646	0.001	0.001	20.829	0.398	0.000
49.647	0.090	0.097	20.830	0.437	0.042
49.737	0.001	0.001	20.830	0.476	0.001
49.738	0.090	0.097	20.796	0.515	0.050
49.829	0.001	0.001	20.796	0.555	0.001
49.830	0.060	0.064	20.727	0.580	0.037
49.890	0.032	0.034	20.727	0.620	0.021
49.922	0.090	0.097	20.630	0.672	0.065
50.012	0.001	0.001	20.630	0.713	0.001
50.013	0.090	0.097	20.513	0.752	0.073
50.104	0.001	0.001	20.513	0.793	0.001
50.105	0.090	0.097	20.393	0.832	0.080
50.195	0.001	0.001	20.393	0.874	0.001
50.196	0.090	0.096	20.292	0.915	0.088
50.287	0.001	0.001	20.292	0.957	0.001
50.288	0.090	0.096	20.228	0.999	0.096
50.378	0.001	0.001	20.228	1.042	0.001
50.379	0.090	0.096	20.133	1.083	0.104
50.470	0.001	0.001	20.133	1.126	0.001
50.471	0.090	0.096	19.989	1.166	0.112
50.561	0.001	0.001	19.989	1.211	0.001
50.563	0.090	0.096	19.859	1.252	0.120
50.653	0.001	0.001	19.859	1.297	0.002
50.654	0.090	0.096	19.791	1.340	0.129
50.745	0.001	0.001	19.791	1.386	0.002
50.746	0.090	0.096	19.822	1.433	0.138
50.836	0.001	0.001	19.822	1.479	0.002
50.837	0.090	0.096	19.974	1.530	0.147
50.928	0.001	0.001	19.974	1.575	0.002
50.929	0.090	0.096	20.253	1.631	0.157
51.019	0.001	0.001	20.253	1.674	0.002
51.020	0.090	0.097	20.652	1.733	0.168
51.111	0.001	0.001	20.652	1.773	0.002
51.112	0.090	0.097	21.147	1.835	0.178
51.203	0.001	0.001	21.147	1.872	0.002
51.204	0.090	0.097	21.704	1.933	0.188
51.294	0.001	0.001	21.704	1.966	0.002
51.295	0.090	0.098	22.274	2.023	0.198
51.386	0.001	0.001	22.274	2.052	0.002
51.387	0.090	0.098	22.796	2.104	0.206
51.477	0.001	0.001	22.796	2.129	0.003
51.478	0.090	0.098	23.293	2.175	0.214
51.569	0.001	0.001	23.293	2.196	0.003
51.570	0.090	0.099	23.887	2.242	0.222
51.660	0.001	0.001	23.887	2.258	0.003
51.662	0.090	0.099	24.513	2.299	0.229
51.752	0.001	0.001	24.513	2.310	0.003
51.753	0.090	0.100	25.100	2.344	0.234
51.844	0.001	0.001	25.100	2.349	0.003
51.845	0.090	0.100	25.594	2.374	0.238
51.935	0.001	0.001	25.594	2.374	0.003
51.936	0.090	0.101	25.962	2.389	0.240
52.027	0.001	0.001	25.962	2.386	0.003
52.028	0.090	0.101	26.189	2.392	0.241
52.118	0.001	0.001	26.189	2.387	0.003
52.119	0.090	0.101	26.278	2.385	0.241
52.210	0.001	0.001	26.278	2.379	0.003
52.211	0.090	0.101	26.246	2.372	0.239
52.301	0.001	0.001	26.246	2.367	0.003
52.303	0.090	0.101	26.131	2.358	0.238
52.393	0.001	0.001	26.131	2.353	0.003
52.394	0.090	0.101	25.984	2.344	0.236
52.485	0.001	0.001	25.984	2.341	0.003
52.486	0.090	0.101	25.878	2.334	0.235
52.576	0.001	0.001	25.878	2.332	0.003
52.577	0.090	0.101	25.878	2.330	0.234
52.668	0.001	0.001	25.878	2.328	0.003
52.669	0.090	0.101	25.889	2.327	0.234
52.759	0.001	0.001	25.889	2.325	0.003

52.760	0.090	0.101	25.882	2.323	0.234
52.851	0.001	0.001	25.882	2.321	0.003
52.852	0.090	0.101	25.898	2.319	0.233
52.942	0.001	0.001	25.898	2.317	0.003
52.944	0.090	0.101	25.968	2.318	0.233
53.034	0.001	0.001	25.968	2.315	0.003
53.035	0.090	0.101	26.113	2.317	0.233
53.126	0.001	0.001	26.113	2.313	0.003
53.127	0.090	0.101	26.347	2.317	0.234
53.217	0.001	0.001	26.347	2.310	0.003
53.218	0.090	0.101	26.675	2.315	0.234
53.309	0.001	0.001	26.675	2.305	0.003
53.310	0.090	0.102	27.095	2.309	0.235
53.400	0.001	0.001	27.095	2.295	0.003
53.402	0.090	0.102	27.592	2.296	0.234
53.492	0.001	0.001	27.592	2.277	0.003
53.493	0.090	0.103	28.147	2.273	0.233
53.584	0.001	0.001	28.147	2.248	0.003
53.585	0.090	0.103	28.733	2.238	0.231
53.675	0.001	0.001	28.733	2.207	0.003
53.676	0.090	0.104	29.312	2.189	0.227
53.767	0.001	0.001	29.312	2.151	0.003
53.768	0.090	0.104	29.803	2.123	0.221
53.858	0.001	0.001	29.803	2.080	0.003
53.859	0.090	0.105	30.199	2.044	0.214
53.950	0.001	0.001	30.199	1.996	0.003
53.951	0.090	0.105	30.602	1.954	0.205
54.041	0.001	0.001	30.602	1.902	0.002
54.043	0.090	0.106	31.093	1.856	0.196
54.133	0.001	0.001	31.093	1.797	0.002
54.134	0.090	0.106	31.728	1.745	0.186
54.225	0.001	0.001	31.728	1.679	0.002
54.226	0.090	0.107	32.536	1.618	0.174
54.316	0.001	0.001	32.536	1.542	0.002
54.317	0.090	0.109	33.519	1.468	0.159
54.408	0.001	0.001	33.519	1.379	0.002
54.409	0.090	0.110	34.657	1.289	0.142
54.499	0.001	0.001	34.657	1.185	0.002
54.500	0.090	0.112	35.905	1.074	0.120
54.591	0.001	0.001	35.905	0.953	0.001
54.592	0.090	0.114	37.205	0.821	0.093
54.682	0.001	0.001	37.205	0.680	0.001
54.684	0.090	0.116	38.481	0.526	0.061
54.774	0.001	0.001	38.481	0.367	0.001
54.775	0.075	0.097	39.652	0.222	0.022
54.850	0.017	0.022	39.652	0.039	0.001

LEGENDA SIMBOLI
X(m) : Ascissa sinistra concio
dx(m) : Larghezza concio
dl(m) : lunghezza base concio
alpha(gradi) : Angolo pendenza base concio
TauStress(kPa) : Sforzo di taglio su base concio
TauF (kN/m) : Forza di taglio su base concio

CRITERIO DI ROTTURA secondo Hoek (2002,2007)
Strato 2 -- Parametri di resistenza al taglio equivalenti dell'ammasso roccioso
Fattore di riduzione NTC2008 gammaPHI=1.25e gammaC=1.25 - ATTIVATO

Sigma'(kPa)	Phi'(deg)	c'(kPa)
20.00	48.00	53.50
40.00	45.70	55.27
60.00	43.99	57.37
80.00	42.62	59.58
100.00	41.47	61.84
120.00	40.49	64.10
140.00	39.62	66.34
160.00	38.86	68.56
180.00	38.16	70.75
200.00	37.54	72.90
220.00	36.96	75.03
240.00	36.43	77.12
260.00	35.93	79.18
280.00	35.47	81.21
300.00	35.04	83.22
320.00	34.64	85.19
340.00	34.25	87.13
360.00	33.89	89.05
380.00	33.55	90.95
400.00	33.22	92.82
420.00	32.91	94.66
440.00	32.62	96.48
460.00	32.33	98.29
480.00	32.06	100.07
500.00	31.80	101.83
600.00	30.63	110.34
700.00	29.64	118.45
800.00	28.79	126.20
900.00	28.04	133.65
1000.00	27.37	140.82
1100.00	26.77	147.75
1200.00	26.22	154.47
1300.00	25.72	160.99
1400.00	25.26	167.33
1500.00	24.84	173.51
1700.00	24.07	185.43
1900.00	23.40	196.83
2100.00	22.80	207.78
2300.00	22.26	218.34
2500.00	21.78	228.54
2700.00	21.33	238.41
2900.00	20.92	248.00
3100.00	20.54	257.33
3300.00	20.19	266.41
3500.00	19.86	275.27
3700.00	19.55	283.92
3900.00	19.26	292.38
4100.00	18.99	300.66

SEZIONE AA' VERSANTE LIGURE CON ASSENZA DI FALDA

– VERIFICA GLOBALE

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----- GESTIONE ACQUIFERI ----------
Strati esclusi da acquifero:
STRATO 1
STRATO 2
Esclusione sovraccarico pendio sommerso: NON ATTIVATA
Peso unitario fluido (kN/m^3): 9.81
Parametri funzione dissipazione superficiale pressione dei fluidi:
Coefficiente A 0
Coefficiente K 0.000800
Pressione minima fluidi Uo_Min (kPa) 0.01
---------- INFORMAZIONI GENERAZIONE SUPERFICI RANDOM ----------
 *** PARAMETRI PER LA GENERAZIONE DELLE SUPERFICI
    METODO DI RICERCA: CONVEX RANDOM - Chen (1992)
    FILTRAGGIO SUPERFICI : ATTIVATO
    COORDINATE X1,X2,Y OSTACOLO : 0.00 0.00 0.00
    LUNGHEZZA MEDIA SEGMENTI (m): 5.0 (+/-) 50%
    RANGE ASCISSE RANDOM STARTING POINT (Xmin .. Xmax): 0.10 112.78
    LIVELLO MINIMO CONSIDERATO (Ymin): 0.00
    RANGE ASCISSE AMMESSO PER LA TERMINAZIONE (Xmin .. Xmax): 12.62 122.70
 *** TOTALE SUPERFICI GENERATE : 10000
---------- INFORMAZIONI PARAMETRI DI CALCOLO ----------
    METODO DI CALCOLO : MORGENSTERN & PRICE (Morgenstern & Price, 1965)
    COEFFICIENTE SISMICO UTILIZZATO Kh : 0.109
    COEFFICIENTE SISMICO UTILIZZATO Kv (assunto Positivo): 0.055
    FORZA ORIZZONTALE ADDIZIONALE IN TESTA (kN/m): 0.00
    FORZA ORIZZONTALE ADDIZIONALE ALLA BASE (kN/m): 0.00
    N.B. Le forze orizzontali addizionali in testa e alla base sono poste uguali a 0
       durante le tutte le verifiche globali.
       I valori >0 impostati dall'utente sono utilizzati solo in caso di verifica singola
---------- RISULTATO FINALE ELABORAZIONI ----------
    * DATI RELATIVI ALLE 10 SUPERFICI GENERATE CON MINOR Fs *
Fattore di sicurezza (FS) 0.907 - Min. - X Y Lambda= 0.763
                          48.62  23.97
                          48.77  24.02
                          48.92  24.07
                          49.07  24.13
                          49.22  24.18
                          49.37  24.24
                          49.52  24.29
                          49.67  24.34
                          49.82  24.40
                          49.97  24.45
                          50.12  24.51
                          50.27  24.57
                          50.42  24.63
                          50.57  24.68
                          50.72  24.74
                          50.87  24.81
                          51.02  24.87
                          51.17  24.93
                          51.32  24.99
                          51.47  25.06
                          51.62  25.12
                          51.77  25.19
                          51.92  25.26
                          52.07  25.33
                          52.22  25.39
                          52.37  25.46
                          52.52  25.53
                          52.67  25.60
                          52.83  25.67
                          52.98  25.74
                          53.13  25.82
                          53.28  25.89
                          53.43  25.96
                          53.58  26.04
                          53.73  26.11
                          53.88  26.18
                          54.03  26.26
                          54.18  26.33
                          54.33  26.41
                          54.48  26.48
                          54.63  26.55
                          54.78  26.63
                          54.93  26.70
                          55.08  26.77
                          55.23  26.85
                          55.38  26.92
                          55.53  26.99
                          55.68  27.07
                          55.83  27.14
                          55.98  27.21
                          56.13  27.29
                          56.28  27.36
                          56.43  27.43
                          56.58  27.51
                          56.73  27.58
                          56.88  27.65
                          57.03  27.73
                          57.18  27.80
                          57.33  27.87
                          57.48  27.95
                          57.63  28.02
                          57.78  28.09
                          57.93  28.17
                          58.08  28.24
                          58.23  28.31
                          58.38  28.39
                          58.53  28.46
                          58.68  28.53
                          58.83  28.61
```

Fattore di sicurezza (FS) 0.912 - N.2 -- X Y Lambda= 0.771

49.50	24.39
49.64	24.44
49.78	24.49
49.92	24.54
50.05	24.59
50.19	24.63
50.33	24.68
50.46	24.73
50.60	24.78
50.74	24.83
50.88	24.88
51.01	24.93
51.15	24.99
51.29	25.04
51.42	25.09
51.56	25.15
51.70	25.20
51.84	25.26
51.97	25.32
52.11	25.38
52.25	25.44
52.39	25.49
52.52	25.56
52.66	25.62
52.80	25.68
52.93	25.74
53.07	25.80
53.21	25.87
53.35	25.93
53.48	26.00
53.62	26.06
53.76	26.13
53.89	26.19
54.03	26.26
54.17	26.33
54.31	26.40
54.44	26.46
54.58	26.53
54.72	26.60
54.85	26.67
54.99	26.73
55.13	26.80
55.27	26.87
55.40	26.93
55.54	27.00
55.68	27.07
55.81	27.13
55.95	27.20
56.09	27.27
56.23	27.33
56.36	27.40
56.50	27.47
56.64	27.53
56.78	27.60
56.91	27.67
57.05	27.73
57.19	27.80
57.32	27.87
57.46	27.94
57.60	28.00
57.74	28.07
57.87	28.14
58.01	28.21
58.15	28.28
58.28	28.35
58.42	28.42
58.56	28.49

Fattore di sicurezza (FS) 0.914 - N.3 -- X Y Lambda= 0.746

49.14	24.22
49.29	24.27
49.44	24.32
49.59	24.37
49.74	24.41
49.90	24.46
50.05	24.51
50.20	24.56
50.35	24.61
50.50	24.66
50.65	24.71
50.80	24.77
50.95	24.82
51.10	24.88
51.25	24.94
51.40	24.99
51.55	25.06
51.70	25.12
51.85	25.18
52.00	25.25
52.15	25.31
52.30	25.38
52.45	25.45
52.60	25.51
52.75	25.58
52.90	25.65
53.05	25.72
53.20	25.79
53.35	25.87
53.50	25.94
53.65	26.01
53.80	26.08
53.95	26.16
54.10	26.23
54.25	26.31
54.40	26.38
54.55	26.45
54.70	26.53

	54.85	26.60				
	55.00	26.68				
	55.15	26.75				
	55.30	26.83				
	55.46	26.90				
	55.61	26.98				
	55.76	27.05				
	55.91	27.13				
	56.06	27.20				
	56.21	27.27				
	56.36	27.35				
	56.51	27.42				
	56.66	27.49				
	56.81	27.57				
	56.96	27.64				
	57.11	27.72				
	57.26	27.79				
	57.41	27.86				
	57.56	27.94				
	57.71	28.01				
	57.86	28.09				
	58.01	28.16				
	58.16	28.23				
	58.31	28.31				
	58.46	28.38				
	58.61	28.45				
	58.76	28.53				
	58.91	28.60				
	59.06	28.68				
	59.21	28.75				
	59.36	28.82				
Fattore di sicurezza (FS)	0.915	- N.4 --	X	Y	Lambda=	0.702
	48.98	24.14				
	49.13	24.18				
	49.28	24.21				
	49.43	24.25				
	49.57	24.28				
	49.72	24.32				
	49.87	24.35				
	50.02	24.39				
	50.16	24.42				
	50.31	24.46				
	50.46	24.50				
	50.61	24.55				
	50.75	24.59				
	50.90	24.64				
	51.05	24.69				
	51.19	24.75				
	51.34	24.80				
	51.49	24.86				
	51.64	24.93				
	51.78	24.99				
	51.93	25.06				
	52.08	25.13				
	52.23	25.20				
	52.37	25.27				
	52.52	25.34				
	52.67	25.41				
	52.82	25.49				
	52.96	25.56				
	53.11	25.63				
	53.26	25.71				
	53.40	25.78				
	53.55	25.86				
	53.70	25.93				
	53.85	26.01				
	53.99	26.09				
	54.14	26.16				
	54.29	26.24				
	54.44	26.32				
	54.58	26.39				
	54.73	26.47				
	54.88	26.55				
	55.03	26.62				
	55.17	26.70				
	55.32	26.78				
	55.47	26.85				
	55.61	26.93				
	55.76	27.01				
	55.91	27.08				
	56.06	27.16				
	56.20	27.23				
	56.35	27.31				
	56.50	27.38				
	56.65	27.46				
	56.79	27.54				
	56.94	27.61				
	57.09	27.69				
	57.24	27.76				
	57.38	27.84				
	57.53	27.92				
	57.68	27.99				
	57.82	28.07				
	57.97	28.14				
	58.12	28.22				
	58.27	28.30				
	58.41	28.37				
	58.56	28.45				
	58.71	28.52				
	58.86	28.60				
	59.00	28.68				
Fattore di sicurezza (FS)	0.916	- N.5 --	X	Y	Lambda=	0.754
	48.66	23.99				
	48.81	24.04				
	48.97	24.10				
	49.12	24.16				
	49.27	24.21				
	49.42	24.27				

	49.57	24.33				
	49.72	24.39				
	49.87	24.44				
	50.02	24.50				
	50.18	24.56				
	50.33	24.61				
	50.48	24.67				
	50.63	24.73				
	50.78	24.78				
	50.93	24.84				
	51.08	24.89				
	51.24	24.95				
	51.39	25.00				
	51.54	25.06				
	51.69	25.11				
	51.84	25.16				
	51.99	25.22				
	52.14	25.28				
	52.29	25.34				
	52.45	25.40				
	52.60	25.46				
	52.75	25.52				
	52.90	25.59				
	53.05	25.65				
	53.20	25.72				
	53.35	25.80				
	53.50	25.87				
	53.66	25.94				
	53.81	26.02				
	53.96	26.09				
	54.11	26.17				
	54.26	26.25				
	54.41	26.32				
	54.56	26.40				
	54.71	26.48				
	54.87	26.56				
	55.02	26.63				
	55.17	26.71				
	55.32	26.79				
	55.47	26.86				
	55.62	26.94				
	55.77	27.02				
	55.93	27.09				
	56.08	27.17				
	56.23	27.25				
	56.38	27.33				
	56.53	27.40				
	56.68	27.48				
	56.83	27.56				
	56.98	27.63				
	57.14	27.71				
	57.29	27.79				
	57.44	27.87				
	57.59	27.94				
	57.74	28.02				
	57.89	28.10				
	58.04	28.18				
	58.19	28.25				
	58.35	28.33				
	58.50	28.41				
	58.65	28.49				
	58.80	28.57				
	58.95	28.65				
Fattore di sicurezza (FS)	0.918	- N.6 --	X	Y	Lambda=	0.737
	48.66	23.98				
	48.81	24.03				
	48.96	24.08				
	49.11	24.12				
	49.25	24.17				
	49.40	24.21				
	49.55	24.26				
	49.70	24.31				
	49.85	24.35				
	49.99	24.40				
	50.14	24.44				
	50.29	24.49				
	50.44	24.54				
	50.59	24.59				
	50.73	24.64				
	50.88	24.68				
	51.03	24.73				
	51.18	24.78				
	51.33	24.83				
	51.47	24.88				
	51.62	24.93				
	51.77	24.99				
	51.92	25.04				
	52.07	25.10				
	52.22	25.15				
	52.36	25.22				
	52.51	25.28				
	52.66	25.34				
	52.81	25.41				
	52.96	25.48				
	53.10	25.55				
	53.25	25.63				
	53.40	25.70				
	53.55	25.78				
	53.70	25.86				
	53.84	25.94				
	53.99	26.02				
	54.14	26.10				
	54.29	26.18				
	54.44	26.26				
	54.58	26.34				
	54.73	26.42				
	54.88	26.49				
	55.03	26.57				

	55.18	26.65				
	55.33	26.72				
	55.47	26.80				
	55.62	26.87				
	55.77	26.95				
	55.92	27.02				
	56.07	27.10				
	56.21	27.18				
	56.36	27.25				
	56.51	27.33				
	56.66	27.41				
	56.81	27.49				
	56.95	27.56				
	57.10	27.64				
	57.25	27.72				
	57.40	27.80				
	57.55	27.88				
	57.69	27.96				
	57.84	28.05				
	57.99	28.13				
	58.14	28.22				
	58.29	28.31				
	58.44	28.41				
	58.58	28.50				
Fattore di sicurezza (FS)	0.922	- N.7 --	X	Y	Lambda=	0.722
	48.66	23.99				
	48.81	24.03				
	48.95	24.07				
	49.09	24.11				
	49.24	24.16				
	49.38	24.20				
	49.53	24.24				
	49.67	24.28				
	49.81	24.32				
	49.96	24.37				
	50.10	24.41				
	50.25	24.46				
	50.39	24.51				
	50.53	24.56				
	50.68	24.61				
	50.82	24.66				
	50.97	24.71				
	51.11	24.76				
	51.25	24.82				
	51.40	24.88				
	51.54	24.93				
	51.69	24.99				
	51.83	25.05				
	51.97	25.11				
	52.12	25.17				
	52.26	25.23				
	52.40	25.30				
	52.55	25.36				
	52.69	25.42				
	52.84	25.49				
	52.98	25.55				
	53.12	25.62				
	53.27	25.69				
	53.41	25.76				
	53.56	25.83				
	53.70	25.90				
	53.84	25.96				
	53.99	26.03				
	54.13	26.10				
	54.28	26.16				
	54.42	26.23				
	54.56	26.30				
	54.71	26.36				
	54.85	26.43				
	55.00	26.49				
	55.14	26.55				
	55.28	26.62				
	55.43	26.68				
	55.57	26.74				
	55.72	26.81				
	55.86	26.88				
	56.00	26.95				
	56.15	27.02				
	56.29	27.09				
	56.44	27.17				
	56.58	27.25				
	56.72	27.33				
	56.87	27.41				
	57.01	27.50				
	57.15	27.59				
	57.30	27.68				
	57.44	27.77				
	57.59	27.86				
	57.73	27.96				
	57.87	28.06				
	58.02	28.17				
	58.16	28.28				
	58.31	28.39				
Fattore di sicurezza (FS)	0.924	- N.8 --	X	Y	Lambda=	0.725
	48.71	24.01				
	48.86	24.06				
	49.00	24.11				
	49.14	24.16				
	49.29	24.21				
	49.43	24.26				
	49.58	24.31				
	49.72	24.36				
	49.86	24.41				
	50.01	24.46				
	50.15	24.51				
	50.30	24.55				
	50.44	24.60				
	50.59	24.65				

50.73 24.70
50.87 24.75
51.02 24.79
51.16 24.84
51.31 24.89
51.45 24.94
51.59 24.98
51.74 25.03
51.88 25.08
52.03 25.13
52.17 25.18
52.32 25.23
52.46 25.29
52.60 25.34
52.75 25.40
52.89 25.46
53.04 25.52
53.18 25.58
53.32 25.64
53.47 25.71
53.61 25.77
53.76 25.84
53.90 25.91
54.05 25.98
54.19 26.04
54.33 26.11
54.48 26.18
54.62 26.26
54.77 26.33
54.91 26.40
55.05 26.47
55.20 26.55
55.34 26.62
55.49 26.70
55.63 26.78
55.78 26.85
55.92 26.93
56.06 27.01
56.21 27.09
56.35 27.17
56.50 27.25
56.64 27.34
56.79 27.42
56.93 27.50
57.07 27.59
57.22 27.67
57.36 27.76
57.51 27.85
57.65 27.94
57.79 28.03
57.94 28.12
58.08 28.22
58.23 28.31
58.37 28.42

Fattore di sicurezza (FS) 0.924 - N.9 -- X Y Lambda= 0.766

49.38 24.33
49.53 24.38
49.67 24.43
49.82 24.48
49.96 24.53
50.11 24.58
50.25 24.63
50.40 24.68
50.54 24.73
50.69 24.78
50.84 24.83
50.98 24.88
51.13 24.93
51.27 24.99
51.42 25.04
51.56 25.10
51.71 25.15
51.85 25.21
52.00 25.27
52.14 25.33
52.29 25.39
52.43 25.45
52.58 25.51
52.73 25.57
52.87 25.63
53.02 25.70
53.16 25.76
53.31 25.82
53.45 25.89
53.60 25.96
53.74 26.02
53.89 26.09
54.03 26.16
54.18 26.23
54.33 26.30
54.47 26.37
54.62 26.44
54.76 26.51
54.91 26.58
55.05 26.65
55.20 26.71
55.34 26.78
55.49 26.85
55.63 26.92
55.78 26.98
55.93 27.05
56.07 27.12
56.22 27.18
56.36 27.25
56.51 27.32
56.65 27.39
56.80 27.46
56.94 27.53

57.09 27.60
57.23 27.67
57.38 27.75
57.53 27.82
57.67 27.90
57.82 27.97
57.96 28.05
58.11 28.13
58.25 28.21
58.40 28.29
58.54 28.37
58.69 28.46
58.83 28.55
58.98 28.64
59.13 28.73

Fattore di sicurezza (FS) 0.925 - N.10 -- X Y Lambda= 0.760

49.68 24.47
49.83 24.52
49.97 24.57
50.12 24.63
50.26 24.68
50.41 24.73
50.55 24.78
50.70 24.83
50.84 24.88
50.99 24.93
51.13 24.98
51.28 25.03
51.43 25.08
51.57 25.13
51.72 25.18
51.86 25.23
52.01 25.28
52.15 25.34
52.30 25.39
52.44 25.44
52.59 25.49
52.73 25.54
52.88 25.60
53.02 25.65
53.17 25.71
53.32 25.77
53.46 25.83
53.61 25.90
53.75 25.96
53.90 26.03
54.04 26.10
54.19 26.17
54.33 26.24
54.48 26.32
54.62 26.39
54.77 26.47
54.91 26.54
55.06 26.62
55.21 26.69
55.35 26.77
55.50 26.84
55.64 26.92
55.79 26.99
55.93 27.07
56.08 27.14
56.22 27.22
56.37 27.29
56.51 27.36
56.66 27.44
56.81 27.51
56.95 27.59
57.10 27.66
57.24 27.73
57.39 27.81
57.53 27.88
57.68 27.96
57.82 28.03
57.97 28.11
58.11 28.18
58.26 28.25
58.40 28.33
58.55 28.40
58.70 28.48
58.84 28.55
58.99 28.63
59.13 28.70
59.28 28.77
59.42 28.85

---------- ANALISI DEFICIT DI RESISTENZA ----------

DATI RELATIVI ALLE 10 SUPERFICI GENERATE CON MINOR Fs *

Analisi Deficit in riferimento a FS(progetto) = 1.100

Sup N.	FS	FTR(kN/m)	FTA(kN/m)	Bilancio(kN/m)	ESITO
1	0.907	18.1	19.9	-3.8	Deficit
2	0.912	15.6	17.1	-3.2	Deficit
3	0.914	21.1	23.1	-4.3	Deficit
4	0.915	28.0	30.5	-5.6	Deficit
5	0.916	23.5	25.7	-4.7	Deficit
6	0.918	30.7	33.4	-6.1	Deficit
7	0.922	32.0	34.7	-6.2	Deficit
8	0.924	31.7	34.3	-6.0	Deficit
9	0.924	23.5	25.5	-4.5	Deficit
10	0.925	22.9	24.8	-4.3	Deficit

Esito analisi: DEFICIT di RESISTENZA!

Valore massimo di DEFICIT di RESITENZA(kN/m): -6.2

Note: FTR --> Forza totale Resistente rispetto alla superficie
di scivolamento (componente Orizzontale)
FTA --> Forza totale Agente rispetto alla superficie
di scivolamento (componente Orizzontale)

IMPORTANTE! : Il Deficit o il Surplus di resistenza viene espresso in kN
per metro di LARGHEZZA rispetto al fronte della scarpata

TABELLA PARAMETRI CONCI DELLA SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	dx (m)	alpha (gradi)	W (kN/m)	ru (-)	U (kPa)	phi' (gradi)	c'/Cu (kPa)
48.621	0.149	19.99	0.02	0.00	0.00	28.52	0.00
48.770	0.001	19.99	0.00	0.00	0.00	28.52	0.00
48.771	0.149	19.93	0.07	0.00	0.00	28.52	0.00
48.921	0.001	19.93	0.00	0.00	0.00	28.52	0.00
48.921	0.149	19.85	0.12	0.00	0.00	28.52	0.00
49.071	0.001	19.85	0.00	0.00	0.00	28.52	0.00
49.071	0.149	19.78	0.17	0.00	0.00	28.52	0.00
49.221	0.001	19.78	0.00	0.00	0.00	28.52	0.00
49.222	0.149	19.75	0.22	0.00	0.00	28.52	0.00
49.371	0.001	19.75	0.00	0.00	0.00	28.52	0.00
49.372	0.149	19.77	0.27	0.00	0.00	28.52	0.00
49.521	0.001	19.77	0.00	0.00	0.00	28.52	0.00
49.522	0.149	19.85	0.33	0.00	0.00	28.52	0.00
49.671	0.001	19.85	0.00	0.00	0.00	28.52	0.00
49.672	0.149	20.00	0.37	0.00	0.00	28.52	0.00
49.821	0.001	20.00	0.00	0.00	0.00	28.52	0.00
49.822	0.068	20.22	0.19	0.00	0.00	28.52	0.00
49.890	0.082	20.22	0.24	0.00	0.00	28.52	0.00
49.972	0.149	20.49	0.47	0.00	0.00	28.52	0.00
50.122	0.001	20.49	0.00	0.00	0.00	28.52	0.00
50.122	0.149	20.80	0.51	0.00	0.00	28.52	0.00
50.272	0.001	20.80	0.00	0.00	0.00	28.52	0.00
50.273	0.149	21.14	0.55	0.00	0.00	28.52	0.00
50.422	0.001	21.14	0.00	0.00	0.00	28.52	0.00
50.423	0.149	21.48	0.59	0.00	0.00	28.52	0.00
50.572	0.001	21.48	0.00	0.00	0.00	28.52	0.00
50.573	0.149	21.79	0.63	0.00	0.00	28.52	0.00
50.722	0.001	21.79	0.00	0.00	0.00	28.52	0.00
50.723	0.149	22.08	0.66	0.00	0.00	28.52	0.00
50.873	0.001	22.08	0.00	0.00	0.00	28.52	0.00
50.873	0.149	22.39	0.69	0.00	0.00	28.52	0.00
51.023	0.001	22.39	0.00	0.00	0.00	28.52	0.00
51.023	0.149	22.70	0.72	0.00	0.00	28.52	0.00
51.173	0.001	22.70	0.00	0.00	0.00	28.52	0.00
51.173	0.149	23.01	0.74	0.00	0.00	28.52	0.00
51.323	0.001	23.01	0.00	0.00	0.00	28.52	0.00
51.324	0.149	23.31	0.76	0.00	0.00	28.52	0.00
51.473	0.001	23.31	0.00	0.00	0.00	28.52	0.00
51.474	0.149	23.59	0.78	0.00	0.00	28.52	0.00
51.623	0.001	23.59	0.00	0.00	0.00	28.52	0.00
51.624	0.149	23.85	0.80	0.00	0.00	28.52	0.00
51.773	0.001	23.85	0.00	0.00	0.00	28.52	0.00
51.774	0.149	24.09	0.81	0.00	0.00	28.52	0.00
51.924	0.001	24.09	0.00	0.00	0.00	28.52	0.00
51.924	0.149	24.30	0.83	0.00	0.00	28.52	0.00
52.074	0.001	24.30	0.00	0.00	0.00	28.52	0.00
52.074	0.149	24.50	0.84	0.00	0.00	28.52	0.00
52.224	0.001	24.50	0.00	0.00	0.00	28.52	0.00
52.225	0.149	24.67	0.85	0.00	0.00	28.52	0.00
52.374	0.001	24.67	0.00	0.00	0.00	28.52	0.00
52.375	0.149	24.84	0.86	0.00	0.00	28.52	0.00
52.524	0.001	24.84	0.00	0.00	0.00	28.52	0.00
52.525	0.149	25.00	0.86	0.00	0.00	28.52	0.00
52.674	0.001	25.00	0.00	0.00	0.00	28.52	0.00
52.675	0.149	25.18	0.87	0.00	0.00	28.52	0.00
52.824	0.001	25.18	0.00	0.00	0.00	28.52	0.00
52.825	0.149	25.37	0.87	0.00	0.00	28.52	0.00
52.975	0.001	25.37	0.00	0.00	0.00	28.52	0.00
52.975	0.149	25.56	0.87	0.00	0.00	28.52	0.00
53.125	0.001	25.56	0.00	0.00	0.00	28.52	0.00
53.125	0.149	25.75	0.87	0.00	0.00	28.52	0.00
53.275	0.001	25.75	0.00	0.00	0.00	28.52	0.00
53.276	0.149	25.92	0.87	0.00	0.00	28.52	0.00
53.425	0.001	25.92	0.00	0.00	0.00	28.52	0.00
53.426	0.149	26.06	0.87	0.00	0.00	28.52	0.00
53.575	0.001	26.06	0.00	0.00	0.00	28.52	0.00
53.576	0.149	26.17	0.87	0.00	0.00	28.52	0.00
53.725	0.001	26.17	0.00	0.00	0.00	28.52	0.00
53.726	0.149	26.24	0.86	0.00	0.00	28.52	0.00
53.876	0.001	26.24	0.00	0.00	0.00	28.52	0.00
53.876	0.149	26.29	0.86	0.00	0.00	28.52	0.00
54.026	0.001	26.29	0.00	0.00	0.00	28.52	0.00
54.026	0.149	26.30	0.85	0.00	0.00	28.52	0.00
54.176	0.001	26.30	0.00	0.00	0.00	28.52	0.00
54.177	0.149	26.29	0.85	0.00	0.00	28.52	0.00
54.326	0.001	26.29	0.00	0.00	0.00	28.52	0.00
54.327	0.149	26.26	0.84	0.00	0.00	28.52	0.00
54.476	0.001	26.26	0.00	0.00	0.00	28.52	0.00
54.477	0.149	26.22	0.83	0.00	0.00	28.52	0.00
54.626	0.001	26.22	0.00	0.00	0.00	28.52	0.00
54.627	0.149	26.19	0.83	0.00	0.00	28.52	0.00
54.776	0.001	26.19	0.00	0.00	0.00	28.52	0.00
54.777	0.073	26.17	0.40	0.00	0.00	28.52	0.00
54.850	0.077	26.17	0.42	0.00	0.00	28.52	0.00
54.927	0.149	26.14	0.79	0.00	0.00	28.52	0.00
55.077	0.001	26.14	0.00	0.00	0.00	28.52	0.00
55.077	0.149	26.09	0.76	0.00	0.00	28.52	0.00
55.227	0.001	26.09	0.00	0.00	0.00	28.52	0.00
55.228	0.149	26.04	0.73	0.00	0.00	28.52	0.00
55.377	0.001	26.04	0.00	0.00	0.00	28.52	0.00
55.378	0.149	25.99	0.70	0.00	0.00	28.52	0.00
55.527	0.001	25.99	0.00	0.00	0.00	28.52	0.00
55.528	0.149	25.96	0.67	0.00	0.00	28.52	0.00
55.677	0.001	25.96	0.00	0.00	0.00	28.52	0.00
55.678	0.149	25.93	0.64	0.00	0.00	28.52	0.00
55.828	0.001	25.93	0.00	0.00	0.00	28.52	0.00
55.828	0.149	25.92	0.61	0.00	0.00	28.52	0.00
55.978	0.001	25.92	0.00	0.00	0.00	28.52	0.00
55.978	0.149	25.92	0.58	0.00	0.00	28.52	0.00
56.128	0.001	25.92	0.00	0.00	0.00	28.52	0.00
56.128	0.149	25.93	0.54	0.00	0.00	28.52	0.00
56.278	0.001	25.93	0.00	0.00	0.00	28.52	0.00
56.279	0.149	25.95	0.51	0.00	0.00	28.52	0.00
56.428	0.001	25.95	0.00	0.00	0.00	28.52	0.00

56.429	0.149	25.98	0.48	0.00	0.00	28.52	0.00
56.578	0.001	25.98	0.00	0.00	0.00	28.52	0.00
56.579	0.149	26.00	0.45	0.00	0.00	28.52	0.00
56.728	0.001	26.00	0.00	0.00	0.00	28.52	0.00
56.729	0.149	26.01	0.42	0.00	0.00	28.52	0.00
56.879	0.001	26.01	0.00	0.00	0.00	28.52	0.00
56.879	0.149	26.01	0.39	0.00	0.00	28.52	0.00
57.029	0.001	26.01	0.00	0.00	0.00	28.52	0.00
57.029	0.149	26.01	0.36	0.00	0.00	28.52	0.00
57.179	0.001	26.01	0.00	0.00	0.00	28.52	0.00
57.180	0.149	26.01	0.33	0.00	0.00	28.52	0.00
57.329	0.001	26.01	0.00	0.00	0.00	28.52	0.00
57.330	0.149	26.01	0.30	0.00	0.00	28.52	0.00
57.479	0.001	26.01	0.00	0.00	0.00	28.52	0.00
57.480	0.149	26.01	0.27	0.00	0.00	28.52	0.00
57.629	0.001	26.01	0.00	0.00	0.00	28.52	0.00
57.630	0.149	26.01	0.23	0.00	0.00	28.52	0.00
57.779	0.001	26.01	0.00	0.00	0.00	28.52	0.00
57.780	0.149	26.01	0.20	0.00	0.00	28.52	0.00
57.930	0.001	26.01	0.00	0.00	0.00	28.52	0.00
57.930	0.149	26.01	0.17	0.00	0.00	28.52	0.00
58.080	0.001	26.01	0.00	0.00	0.00	28.52	0.00
58.080	0.149	26.01	0.14	0.00	0.00	28.52	0.00
58.230	0.001	26.01	0.00	0.00	0.00	28.52	0.00
58.231	0.149	26.01	0.11	0.00	0.00	28.52	0.00
58.380	0.001	26.01	0.00	0.00	0.00	28.52	0.00
58.381	0.149	26.01	0.08	0.00	0.00	28.52	0.00
58.530	0.001	26.01	0.00	0.00	0.00	28.52	0.00
58.531	0.149	26.01	0.05	0.00	0.00	28.52	0.00
58.680	0.001	26.01	0.00	0.00	0.00	28.52	0.00
58.681	0.149	26.01	0.02	0.00	0.00	28.52	0.00
58.831	0.001	26.01	0.00	0.00	0.00	28.52	0.00

LEGENDA SIMBOLI
X(m) : Ascissa sinistra concio
dx(m) : Larghezza concio
alpha(gradi) : Angolo pendenza base concio
W(kN/m) : Forza peso concio
ru(-) : Coefficiente locale pressione interstiziale
U(kPa) : Pressione totale dei pori base concio
phi'(gradi) : Angolo di attrito efficace base concio
c'/Cu (kPa) : Coesione efficace / Resistenza al taglio in condizioni non drenate

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TABELLA DIAGRAMMA DELLE FORZE DELLA SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	ht (m)	yt (m)	yt' (--)	E(x) (kN/m)	T(x) (kN/m)	E' (kN)	rho(x) (--)	local_FS_FEM (--)	local_FS_q-pFEM (--)	
48.621	0.000	23.965	0.422	0.0000000000E+000	0.0000000000E+000	0.0000000000E+000	0.071	1.783	1.856	
48.770	0.009	24.028	0.422	5.1482760372E-003	2.1994086635E-004	3.4475592672E-002	0.071	2.900	2.867	
48.771	0.009	24.029	0.422	5.1765561731E-003	2.2189405103E-004	5.1331633300E-002	0.072	2.910	2.869	
48.921	0.018	24.092	0.421	1.2855789169E-002	1.1067132054E-003	5.1418769570E-002	0.144	7.404	3.548	
48.921	0.018	24.092	0.421	1.2897152932E-002	1.1123151938E-003	7.4904672866E-002	0.144	7.422	3.547	
49.071	0.027	24.155	0.421	2.4102825598E-002	3.1332533038E-003	8.9495911219E-002	0.217	9.610	3.091	
49.071	0.027	24.155	0.420	2.4162819608E-002	3.1451476349E-003	8.9637388456E-002	0.217	9.609	3.089	
49.221	0.036	24.218	0.420	4.0037022573E-002	6.9686714061E-003	1.2316584167E-001	0.291	7.599	2.666	
49.222	0.036	24.218	0.420	4.0119573132E-002	6.9913968940E-003	1.2331796127E-001	0.291	7.590	2.664	
49.371	0.045	24.281	0.420	6.0985160848E-002	1.3290874003E-002	1.5569807258E-001	0.364	5.544	2.335	
49.372	0.045	24.281	0.420	6.1089501366E-002	1.3326191861E-002	1.5584735561E-001	0.364	5.538	2.334	
49.521	0.054	24.344	0.420	8.6860652509E-002	2.2892861648E-002	1.8839522657E-001	0.440	4.350	2.097	
49.522	0.054	24.344	0.419	8.6986889504E-002	2.2943293545E-002	1.8852982068E-001	0.440	4.347	2.096	
49.671	0.063	24.407	0.418	1.1718436580E-001	3.5725651218E-002	2.1381996698E-001	0.509	3.585	1.905	
49.672	0.063	24.407	0.423	1.1732761792E-001	3.5792011339E-002	2.1390975536E-001	0.509	3.583	1.904	
49.821	0.071	24.471	0.424	1.5054218917E-001	5.1957624472E-002	2.2891966188E-001	0.576	3.155	1.713	
49.822	0.072	24.471	0.427	1.5069554146E-001	5.2038801273E-002	2.2896767361E-001	0.576	3.154	1.712	
49.890	0.076	24.500	0.426	1.6638911511E-001	6.0542518833E-002	2.3329708572E-001	0.607	2.984	1.632	
49.972	0.080	24.535	0.426	1.8577895853E-001	7.1669646783E-002	2.3811423917E-001	0.644	2.800	1.543	
50.122	0.088	24.599	0.427	2.2209075375E-001	9.4667022621E-002	2.4737610904E-001	0.712	2.509	1.415	
50.122	0.088	24.599	0.430	2.2225646410E-001	9.4779217349E-002	2.4741059920E-001	0.712	2.508	1.415	
50.272	0.096	24.663	0.430	2.5966717678E-001	1.2068082232E-001	2.5201618289E-001	0.776	2.279	1.316	
50.273	0.096	24.664	0.434	2.5983598521E-001	1.2080506543E-001	2.5202088765E-001	0.776	2.278	1.316	
50.422	0.103	24.728	0.434	2.9739201853E-001	1.4864085398E-001	2.4918600603E-001	0.834	2.097	1.237	
50.423	0.103	24.729	0.437	2.9755891977E-001	1.4876497330E-001	2.4915649045E-001	0.835	2.097	1.237	
50.572	0.109	24.794	0.437	3.3415803076E-001	1.7705512468E-001	2.3967475922E-001	0.885	1.955	1.172	
50.573	0.109	24.794	0.440	3.3431855352E-001	1.7718897099E-001	2.3962257061E-001	0.885	1.954	1.172	
50.722	0.115	24.860	0.440	3.6923506936E-001	2.0661910520E-001	2.2731238286E-001	0.934	1.842	1.118	
50.723	0.116	24.860	0.443	3.6938730871E-001	2.0675417641E-001	2.2725188745E-001	0.934	1.842	1.118	
50.873	0.121	24.927	0.443	4.0226888458E-001	2.3614048896E-001	2.1221888331E-001	0.980	1.755	1.072	
50.873	0.121	24.927	0.446	4.0241100965E-001	2.3627390343E-001	2.1214562395E-001	0.980	1.754	1.072	
51.023	0.126	24.994	0.446	4.3285017334E-001	2.6497652254E-001	1.9481185281E-001	1.022	1.691	1.036	
51.023	0.126	24.994	0.450	4.3298063596E-001	2.6510548271E-001	1.9473028985E-001	1.022	1.691	1.036	
51.173	0.131	25.061	0.450	4.6069170477E-001	2.9255031759E-001	1.7579246091E-001	1.060	1.644	1.004	
51.173	0.131	25.061	0.453	4.6080942553E-001	2.9267235214E-001	1.7570437789E-001	1.060	1.644	1.004	
51.323	0.135	25.129	0.453	4.8556648092E-001	3.1834482111E-001	1.5526183467E-001	1.094	1.614	0.977	
51.324	0.135	25.129	0.456	4.8567044726E-001	3.1845766519E-001	1.5516633835E-001	1.095	1.614	0.977	
51.473	0.139	25.198	0.456	5.0721351509E-001	3.4186379808E-001	1.3273505710E-001	1.125	1.600	0.955	
51.474	0.139	25.198	0.459	5.0730238954E-001	3.4196520089E-001	1.3263097427E-001	1.125	1.600	0.955	
51.623	0.142	25.266	0.459	5.2538598642E-001	3.6267137721E-001	1.0934955650E-001	1.152	1.603	0.937	
51.624	0.142	25.267	0.461	5.2545919690E-001	3.6275985274E-001	1.0924616574E-001	1.152	1.603	0.937	
51.773	0.145	25.336	0.461	5.4008904875E-001	3.8056083708E-001	8.6667554309E-002	1.176	1.621	0.922	
51.774	0.145	25.336	0.464	5.4014706777E-001	3.8063590494E-001	8.6568713558E-002	1.176	1.621	0.922	
51.924	0.148	25.405	0.464	5.5145809579E-001	3.9547724656E-001	6.4849716585E-002	1.197	1.655	0.909	
51.924	0.148	25.406	0.466	5.5150150138E-001	3.9553876730E-001	6.4752973224E-002	1.197	1.656	0.909	
52.074	0.150	25.475	0.466	5.5725495378E-001	4.0568853745E-001	0.0000000000E+000	1.215	1.709	0.900	
52.074	0.150	25.476	0.468	5.5725495378E-001	4.0571507000E-001	0.0000000000E+000	1.215	1.709	0.900	
52.224	0.152	25.546	0.468	5.5725495378E-001	4.1089311057E-001	0.0000000000E+000	1.231	1.783	0.893	
52.225	0.152	25.546	0.470	5.5725495378E-001	4.1091578246E-001	0.0000000000E+000	1.231	1.784	0.893	
52.374	0.153	25.616	0.470	5.5725495378E-001	4.1530446016E-001	0.0000000000E+000	1.244	1.882	0.887	
52.375	0.153	25.617	0.472	5.5725495378E-001	4.1532348201E-001	0.0000000000E+000	1.244	1.882	0.887	
52.524	0.155	25.687	0.472	5.5725495378E-001	4.1895368063E-001	0.0000000000E+000	1.255	2.008	0.884	
52.525	0.155	25.687	0.474	5.5725495378E-001	4.1896913308E-001	0.0000000000E+000	1.255	2.009	0.884	
52.674	0.156	25.758	0.474	5.5725495378E-001	4.2184494003E-001	0.0000000000E+000	1.264	2.173	0.882	
52.675	0.156	25.759	0.475	5.5725495378E-001	4.2185678512E-001	0.0000000000E+000	1.264	2.174	0.882	
52.824	0.157	25.830	0.475	5.5093119302E-001	4.1915159614E-001	-6.3495679355E-002	1.270	2.393	0.882	
52.825	0.157	25.830	0.477	5.5088863313E-001	4.1912726286E-001	-6.3581891450E-002	1.270	2.394	0.882	
52.975	0.157	25.901	0.477	5.3997694175E-001	4.1210237271E-001	-8.2197623848E-002	1.274	2.693	0.882	
52.975	0.157	25.902	0.480	5.3992185676E-001	4.1206456802E-001	-8.2278051160E-002	1.274	2.694	0.882	
53.125	0.157	25.973	0.480	5.2631806665E-001	4.0218167464E-001	-9.9481988303E-002	1.276	3.104	0.884	
53.125	0.157	25.974	0.482	5.2625140643E-001	4.0213136648E-001	-9.9555587567E-002	1.276	3.106	0.884	

53.275	0.157	26.046	0.482	5.1018365676E-001	3.8964372929E-001	-1.1514134033E-001	1.275	3.665	0.886
53.276	0.157	26.046	0.483	5.1010651007E-001	3.8958224512E-001	-1.1520730516E-001	1.275	3.668	0.886
53.425	0.157	26.118	0.483	4.9182876219E-001	3.7481216959E-001	-1.2910932082E-001	1.272	4.416	0.889
53.426	0.157	26.119	0.485	4.9174226121E-001	3.7474107312E-001	-1.2916986619E-001	1.272	4.419	0.889
53.575	0.156	26.191	0.485	4.7145001313E-001	3.5800046249E-001	-1.4201779503E-001	1.268	5.373	0.891
53.576	0.156	26.191	0.486	4.7135486851E-001	3.5792111366E-001	-1.4207001598E-001	1.268	5.378	0.891
53.725	0.155	26.264	0.486	4.4933915720E-001	3.3960917897E-001	-1.5182545085E-001	1.262	6.453	0.894
53.726	0.155	26.264	0.487	4.4923744913E-001	3.3952399827E-001	-1.5185985700E-001	1.262	6.458	0.894
53.876	0.154	26.337	0.487	4.2606905687E-001	3.2024503326E-001	-1.5745509687E-001	1.255	7.309	0.896
53.876	0.154	26.337	0.486	4.2596358391E-001	3.2015690103E-001	-1.5747160988E-001	1.255	7.311	0.896
54.026	0.153	26.410	0.486	4.0221591867E-001	3.0049066535E-001	-1.5993938253E-001	1.247	7.531	0.898
54.026	0.153	26.410	0.479	4.0210878454E-001	3.0040178256E-001	-1.5994733604E-001	1.247	7.530	0.898
54.176	0.151	26.482	0.479	3.7807632826E-001	2.8068194696E-001	-1.6139701858E-001	1.239	7.019	0.900
54.177	0.151	26.482	0.477	3.7796821939E-001	2.8059327239E-001	-1.6140014821E-001	1.239	7.016	0.900
54.326	0.148	26.554	0.477	3.5383699203E-001	2.6103911433E-001	-1.6114089075E-001	1.232	6.149	0.901
54.327	0.148	26.554	0.475	3.5372905765E-001	2.6095182903E-001	-1.6113528263E-001	1.232	6.145	0.901
54.476	0.146	26.625	0.475	3.2978579116E-001	2.4160264040E-001	-1.5889037059E-001	1.223	5.269	0.903
54.477	0.146	26.625	0.473	3.2967936716E-001	2.4151668294E-001	-1.5887600992E-001	1.223	5.266	0.903
54.626	0.143	26.696	0.473	3.0621228040E-001	2.2240416768E-001	-1.5484549097E-001	1.212	4.532	0.905
54.627	0.143	26.696	0.470	3.0610856809E-001	2.2231750739E-001	-1.5482418537E-001	1.212	4.529	0.905
54.776	0.139	26.767	0.470	2.8334555109E-001	2.0296801608E-001	-1.4959011937E-001	1.196	3.966	0.907
54.777	0.139	26.767	0.468	2.8324536046E-001	2.0287958010E-001	-1.4956436249E-001	1.196	3.964	0.907
54.850	0.138	26.801	0.467	2.7245076694E-001	1.9330520154E-001	-1.4660839069E-001	1.184	3.753	0.908
54.927	0.136	26.837	0.468	2.6125169856E-001	1.8278164252E-001	-1.4323280387E-001	1.168	3.562	0.910
55.077	0.132	26.907	0.468	2.4034948721E-001	1.6271827177E-001	-1.3639680363E-001	1.130	3.270	0.914
55.077	0.132	26.907	0.465	2.4025813553E-001	1.6262812463E-001	-1.3636588698E-001	1.130	3.269	0.914
55.227	0.129	26.977	0.465	2.2038889725E-001	1.4337817197E-001	-1.2948290106E-001	1.086	3.064	0.919
55.228	0.129	26.977	0.462	2.2030217662E-001	1.4329303317E-001	-1.2945212788E-001	1.086	3.063	0.919
55.377	0.125	27.046	0.462	2.0146725243E-001	1.2552536986E-001	-1.2251599964E-001	1.040	2.913	0.925
55.378	0.125	27.046	0.459	2.0138519874E-001	1.2545127348E-001	-1.2248423645E-001	1.040	2.913	0.925
55.527	0.120	27.115	0.459	1.8362496752E-001	1.0968889729E-001	-1.1500000918E-001	0.997	2.800	0.933
55.528	0.120	27.115	0.457	1.8354794933E-001	1.0961937150E-001	-1.1496496685E-001	0.997	2.800	0.933
55.677	0.116	27.184	0.457	1.6694291574E-001	9.5216781017E-002	-1.0728316842E-001	0.952	2.711	0.941
55.678	0.116	27.184	0.456	1.6687106578E-001	9.5154596699E-002	-1.0725020769E-001	0.952	2.710	0.941
55.828	0.111	27.252	0.456	1.5136243721E-001	8.2271602684E-002	-1.0043584383E-001	0.907	2.636	0.950
55.828	0.111	27.252	0.451	1.5129517211E-001	8.2215915209E-002	-1.0040786401E-001	0.907	2.636	0.950
55.978	0.106	27.320	0.451	1.3672785905E-001	7.0663438820E-002	-9.4633782113E-002	0.863	2.573	0.960
55.978	0.106	27.320	0.450	1.3666447910E-001	7.0613436440E-002	-9.4609432946E-002	0.863	2.573	0.960
56.128	0.101	27.387	0.450	1.2292857586E-001	6.0247310652E-002	-8.9109876683E-002	0.818	2.513	0.970
56.128	0.101	27.388	0.450	1.2286889637E-001	6.0202534797E-002	-8.9084279369E-002	0.818	2.513	0.970
56.278	0.095	27.455	0.450	1.0997660970E-001	5.0953541013E-002	-8.3441691244E-002	0.773	2.460	0.981
56.279	0.095	27.455	0.450	1.0992072662E-001	5.0913707377E-002	-8.3416957530E-002	0.773	2.459	0.981
56.428	0.090	27.522	0.450	9.7854600115E-002	4.2704518498E-002	-7.8090361623E-002	0.729	2.412	0.993
56.429	0.090	27.523	0.450	9.7802300886E-002	4.2669229150E-002	-7.8067437432E-002	0.728	2.412	0.993
56.578	0.084	27.590	0.450	8.6504337035E-002	3.5412459034E-002	-7.3162090031E-002	0.683	2.370	1.005
56.579	0.084	27.590	0.450	8.6455338281E-002	3.5381328857E-002	-7.3140972744E-002	0.683	2.370	1.005
56.728	0.079	27.658	0.450	7.5867627260E-002	2.8998278837E-002	-6.8550449495E-002	0.638	2.333	1.018
56.729	0.078	27.658	0.451	7.5821717214E-002	2.8970986053E-002	-6.8530187957E-002	0.638	2.333	1.018
56.879	0.073	27.725	0.451	6.5915614985E-002	2.3399587371E-002	-6.4026607736E-002	0.593	2.301	1.032
56.879	0.073	27.726	0.451	6.5872734987E-002	2.3375880485E-002	-6.4006749046E-002	0.592	2.301	1.032
57.029	0.067	27.793	0.451	5.6633962468E-002	1.8560152339E-002	-5.9611700760E-002	0.547	2.273	1.046
57.029	0.067	27.793	0.451	5.6594039617E-002	1.8539771673E-002	-5.9592053321E-002	0.547	2.273	1.046
57.179	0.062	27.861	0.451	4.8014952204E-002	1.4425195897E-002	-5.5182385908E-002	0.502	2.249	1.062
57.180	0.062	27.861	0.451	4.7977996309E-002	1.4407904771E-002	-5.5162471710E-002	0.501	2.249	1.062
57.329	0.056	27.928	0.451	4.0066278861E-002	1.0943520161E-002	-5.0681838074E-002	0.456	2.229	1.081
57.330	0.056	27.929	0.450	4.0032337647E-002	1.0929085507E-002	-5.0661630147E-002	0.456	2.229	1.081
57.479	0.050	27.996	0.451	3.2796571910E-002	8.0626252597E-003	-4.6156507306E-002	0.410	2.213	1.103
57.480	0.050	27.996	0.451	3.2765661729E-002	8.0507994431E-003	-4.6136744504E-002	0.410	2.213	1.103
57.629	0.045	28.064	0.451	2.6181466667E-002	5.7216494668E-003	-4.2005739863E-002	0.365	2.203	1.136
57.630	0.045	28.064	0.451	2.6153336310E-002	5.7121278533E-003	-4.1987361211E-002	0.365	2.202	1.137
57.779	0.039	28.131	0.451	2.0197920877E-002	3.8626066345E-003	-3.7569975637E-002	0.319	2.199	1.207
57.780	0.039	28.132	0.451	2.0172762803E-002	3.8551928718E-003	-3.7548326868E-002	0.319	2.199	1.208
57.930	0.034	28.199	0.451	1.4944402502E-002	2.4499364170E-003	-3.2259508545E-002	0.274	2.195	1.264
57.930	0.034	28.199	0.451	1.4922802806E-002	2.4444701234E-003	-3.2234000701E-002	0.273	2.195	1.264
58.080	0.028	28.267	0.451	1.0539508238E-002	1.4400666232E-003	-2.6395932015E-002	0.228	2.202	1.332
58.080	0.028	28.267	0.451	1.0521836244E-002	1.4362944823E-003	-2.6370041448E-002	0.228	2.202	1.333
58.230	0.022	28.334	0.451	6.9935200821E-003	7.6462358719E-004	-2.0888863239E-002	0.183	2.243	1.439
58.231	0.022	28.335	0.450	6.9795363771E-003	7.6219419918E-004	-2.0864420404E-002	0.182	2.244	1.439
58.380	0.017	28.402	0.451	4.2619779829E-003	3.4969903429E-004	-1.5573650529E-002	0.137	2.378	1.627
58.381	0.017	28.402	0.450	4.2515538500E-003	3.4822644044E-004	-1.5551277671E-002	0.137	2.379	1.628
58.530	0.011	28.469	0.451	2.2773328743E-003	1.2471341162E-004	-1.1025745657E-002	0.091	2.835	2.037
58.531	0.011	28.470	0.450	2.2699535864E-003	1.2394763463E-004	-1.1007724711E-002	0.091	2.838	2.039
58.680	0.005	28.537	0.451	9.0048660830E-004	2.4775097385E-005	-7.4659682149E-003	0.046	4.086	3.254
58.681	0.006	28.537	0.452	8.9549040014E-004	2.4448397129E-005	-7.4519757772E-003	0.046	4.077	3.258
58.831	0.000	28.605	0.451	3.0307369225E-006	4.1373837570E-008	-4.5311129233E-003	0.551	0.407	0.850

LEGENDA SIMBOLI
X(m) : Ascissa sinistra concio
ht(m) : Altezza linea di thrust da nodo sinistro base concio
yt(m) : coordinata Y linea di trust
yt'(-) : gradiente pendenza locale linea di trust
E(x)(kN/m) : Forza Normale interconcio
T(x)(kN/m) : Forza Tangenziale interconcio
E' (kN) : derivata Forza normale interconcio
Rho(x) (-) : fattore mobilizzazione resistenza al taglio verticale interconcio ZhU et al.(2003)
FS_FEM(x) (-) : fattore di sicurezza locale stimato (locale in X) by qFEM
FS_q-pFEM(x) (-) : fattore di sicurezza locale stimato (locale in X) by q-pFEM Procedure

TABELLA SFORZI DI TAGLIO DISTRIBUITI LUNGO SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	dx (m)	dl (m)	alpha (gradi)	TauStress (kPa)	Tau (kN/m)
48.621	0.149	0.159	19.994	0.068	0.011
48.770	0.001	0.001	19.994	0.136	0.000
48.771	0.149	0.159	19.928	0.205	0.033
48.921	0.001	0.001	19.928	0.274	0.000
48.921	0.149	0.159	19.848	0.343	0.054
49.071	0.001	0.001	19.848	0.412	0.000
49.071	0.149	0.159	19.781	0.482	0.076
49.221	0.001	0.001	19.781	0.552	0.000
49.222	0.149	0.159	19.750	0.622	0.099
49.371	0.001	0.001	19.750	0.692	0.000
49.372	0.149	0.159	19.771	0.763	0.121
49.521	0.001	0.001	19.771	0.833	0.001
49.522	0.149	0.159	19.854	0.905	0.144
49.671	0.001	0.001	19.854	0.974	0.001
49.672	0.149	0.159	20.003	1.047	0.167
49.821	0.001	0.001	20.003	1.115	0.001

49.822	0.068	0.072	20.217	1.152	0.083
49.890	0.082	0.088	20.217	1.218	0.107
49.972	0.149	0.160	20.488	1.327	0.212
50.122	0.001	0.001	20.488	1.391	0.001
50.122	0.149	0.160	20.802	1.463	0.234
50.272	0.001	0.001	20.802	1.523	0.001
50.273	0.149	0.160	21.140	1.594	0.255
50.422	0.001	0.001	21.140	1.651	0.001
50.423	0.149	0.161	21.478	1.719	0.276
50.572	0.001	0.001	21.478	1.772	0.001
50.573	0.149	0.161	21.787	1.836	0.296
50.722	0.001	0.001	21.787	1.886	0.001
50.723	0.149	0.161	22.078	1.946	0.314
50.873	0.001	0.001	22.078	1.993	0.001
50.873	0.149	0.162	22.386	2.051	0.332
51.023	0.001	0.001	22.386	2.094	0.002
51.023	0.149	0.162	22.701	2.149	0.348
51.173	0.001	0.001	22.701	2.188	0.002
51.173	0.149	0.162	23.012	2.240	0.364
51.323	0.001	0.001	23.012	2.276	0.002
51.324	0.149	0.163	23.311	2.323	0.378
51.473	0.001	0.001	23.311	2.355	0.002
51.474	0.149	0.163	23.593	2.399	0.391
51.623	0.001	0.001	23.593	2.427	0.002
51.624	0.149	0.163	23.852	2.466	0.403
51.773	0.001	0.001	23.852	2.491	0.002
51.774	0.149	0.164	24.089	2.526	0.414
51.924	0.001	0.001	24.089	2.548	0.002
51.924	0.149	0.164	24.302	2.579	0.423
52.074	0.001	0.001	24.302	2.598	0.002
52.074	0.149	0.164	24.495	2.625	0.431
52.224	0.001	0.001	24.495	2.641	0.002
52.225	0.149	0.164	24.672	2.665	0.438
52.374	0.001	0.001	24.672	2.679	0.002
52.375	0.149	0.165	24.839	2.701	0.445
52.524	0.001	0.001	24.839	2.712	0.002
52.525	0.149	0.165	25.004	2.731	0.450
52.674	0.001	0.001	25.004	2.741	0.002
52.675	0.149	0.165	25.179	2.758	0.456
52.824	0.001	0.001	25.179	2.765	0.002
52.825	0.149	0.165	25.370	2.780	0.460
52.975	0.001	0.001	25.370	2.784	0.002
52.975	0.149	0.166	25.565	2.797	0.463
53.125	0.001	0.001	25.565	2.798	0.002
53.125	0.149	0.166	25.751	2.807	0.466
53.275	0.001	0.001	25.751	2.806	0.002
53.276	0.149	0.166	25.918	2.812	0.467
53.425	0.001	0.001	25.918	2.809	0.002
53.426	0.149	0.166	26.059	2.811	0.468
53.575	0.001	0.001	26.059	2.805	0.002
53.576	0.149	0.167	26.169	2.804	0.467
53.725	0.001	0.001	26.169	2.797	0.002
53.726	0.149	0.167	26.245	2.792	0.465
53.876	0.001	0.001	26.245	2.784	0.002
53.876	0.149	0.167	26.288	2.777	0.463
54.026	0.001	0.001	26.288	2.768	0.002
54.026	0.149	0.167	26.300	2.760	0.460
54.176	0.001	0.001	26.300	2.751	0.002
54.177	0.149	0.167	26.288	2.741	0.457
54.326	0.001	0.001	26.288	2.732	0.002
54.327	0.149	0.167	26.259	2.722	0.454
54.476	0.001	0.001	26.259	2.714	0.002
54.477	0.149	0.167	26.223	2.704	0.451
54.626	0.001	0.001	26.223	2.696	0.002
54.627	0.149	0.167	26.195	2.687	0.448
54.776	0.001	0.001	26.195	2.679	0.002
54.777	0.073	0.081	26.173	2.675	0.217
54.850	0.077	0.086	26.173	2.644	0.228
54.927	0.149	0.167	26.135	2.563	0.427
55.077	0.001	0.001	26.135	2.511	0.002
55.077	0.149	0.166	26.088	2.457	0.409
55.227	0.001	0.001	26.088	2.405	0.002
55.228	0.149	0.166	26.038	2.352	0.391
55.377	0.001	0.001	26.038	2.301	0.002
55.378	0.149	0.166	25.992	2.249	0.374
55.527	0.001	0.001	25.992	2.199	0.002
55.528	0.149	0.166	25.955	2.148	0.357
55.677	0.001	0.001	25.955	2.099	0.002
55.678	0.149	0.166	25.930	2.049	0.341
55.828	0.001	0.001	25.930	1.999	0.001
55.828	0.149	0.166	25.919	1.950	0.324
55.978	0.001	0.001	25.919	1.901	0.001
55.978	0.149	0.166	25.921	1.852	0.308
56.128	0.001	0.001	25.921	1.803	0.001
56.128	0.149	0.166	25.934	1.755	0.292
56.278	0.001	0.001	25.934	1.705	0.001
56.279	0.149	0.166	25.955	1.657	0.275
56.428	0.001	0.001	25.955	1.607	0.001
56.429	0.149	0.166	25.979	1.558	0.259
56.578	0.001	0.001	25.979	1.508	0.001
56.579	0.149	0.166	25.998	1.459	0.243
56.728	0.001	0.001	25.998	1.408	0.001
56.729	0.149	0.166	26.006	1.358	0.226
56.879	0.001	0.001	26.006	1.308	0.001
56.879	0.149	0.166	26.007	1.258	0.209
57.029	0.001	0.001	26.007	1.208	0.001
57.029	0.149	0.166	26.007	1.157	0.192
57.179	0.001	0.001	26.007	1.107	0.001
57.180	0.149	0.166	26.007	1.057	0.176
57.329	0.001	0.001	26.007	1.006	0.001
57.330	0.149	0.166	26.007	0.956	0.159
57.479	0.001	0.001	26.007	0.906	0.001
57.480	0.149	0.166	26.007	0.855	0.142
57.629	0.001	0.001	26.007	0.805	0.001
57.630	0.149	0.166	26.008	0.755	0.126
57.779	0.001	0.001	26.008	0.705	0.001
57.780	0.149	0.166	26.008	0.654	0.109
57.930	0.001	0.001	26.008	0.604	0.000

57.930	0.149	0.166	26.008	0.554	0.092
58.080	0.001	0.001	26.008	0.503	0.000
58.080	0.149	0.166	26.008	0.453	0.075
58.230	0.001	0.001	26.008	0.403	0.000
58.231	0.149	0.166	26.008	0.352	0.059
58.380	0.001	0.001	26.008	0.302	0.000
58.381	0.149	0.166	26.008	0.252	0.042
58.530	0.001	0.001	26.008	0.201	0.000
58.531	0.149	0.166	26.008	0.151	0.025
58.680	0.001	0.001	26.008	0.101	0.000
58.681	0.149	0.166	26.008	0.051	0.008
58.831	0.001	0.001	26.008	0.001	0.000

LEGENDA SIMBOLI
X(m) : Ascissa sinistra concio
dx(m) : Larghezza concio
dl(m) : lunghezza base concio
alpha(gradi) : Angolo pendenza base concio
TauStress(kPa) : Sforzo di taglio su base concio
TauF (kN/m) : Forza di taglio su base concio

CRITERIO DI ROTTURA secondo Hoek (2002,2007)
Strato 2 -- Parametri di resistenza al taglio equivalenti dell'ammasso roccioso
Fattore di riduzione NTC2008 gammaPHI=1.25e gammaC=1.25 - ATTIVATO

Sigma'(kPa)	Phi'(deg)	c'(kPa)
20.00	48.00	53.50
40.00	45.70	55.27
60.00	43.99	57.37
80.00	42.62	59.58
100.00	41.47	61.84
120.00	40.49	64.10
140.00	39.62	66.34
160.00	38.86	68.56
180.00	38.16	70.75
200.00	37.54	72.90
220.00	36.96	75.03
240.00	36.43	77.12
260.00	35.93	79.18
280.00	35.47	81.21
300.00	35.04	83.22
320.00	34.64	85.19
340.00	34.25	87.13
360.00	33.89	89.05
380.00	33.55	90.95
400.00	33.22	92.82
420.00	32.91	94.66
440.00	32.62	96.48
460.00	32.33	98.29
480.00	32.06	100.07
500.00	31.80	101.83
600.00	30.63	110.34
700.00	29.64	118.45
800.00	28.79	126.20
900.00	28.04	133.65
1000.00	27.37	140.82
1100.00	26.77	147.75
1200.00	26.22	154.47
1300.00	25.72	160.99
1400.00	25.26	167.33
1500.00	24.84	173.51
1700.00	24.07	185.43
1900.00	23.40	196.83
2100.00	22.80	207.78
2300.00	22.26	218.34
2500.00	21.78	228.54
2700.00	21.33	238.41
2900.00	20.92	248.00
3100.00	20.54	257.33
3300.00	20.19	266.41
3500.00	19.86	275.27
3700.00	19.55	283.92
3900.00	19.26	292.38
4100.00	18.99	300.66

SEZIONE AA' VERSANTE EMILIANO CON TOTALE SATURAZIONE

- VERIFICA GLOBALE

------ GESTIONE ACQUIFERI ----------
Strati esclusi da acquifero:
Esclusione sovraccarico pendio sommerso: NON ATTIVATA
Peso unitario fluido (kN/m^3): 9.81
Parametri funzione dissipazione superficiale pressione dei fluidi:
Coefficiente A 0
Coefficiente K 0.000800
Pressione minima fluidi Uo_Min (kPa) 0.01
---------- INFORMAZIONI GENERAZIONE SUPERFICI RANDOM ----------
*** PARAMETRI PER LA GENERAZIONE DELLE SUPERFICI
METODO DI RICERCA: CONVEX RANDOM - Chen (1992)
FILTRAGGIO SUPERFICI : ATTIVATO
COORDINATE X1,X2,Y OSTACOLO : 0.00 0.00 0.00
LUNGHEZZA MEDIA SEGMENTI (m): 5.0 (+/-) 50%
RANGE ASCISSE RANDOM STARTING POINT (Xmin .. Xmax): 0.10 112.78
LIVELLO MINIMO CONSIDERATO (Ymin): 0.00
RANGE ASCISSE AMMESSO PER LA TERMINAZIONE (Xmin .. Xmax): 12.62 122.70
*** TOTALE SUPERFICI GENERATE : 10000
---------- INFORMAZIONI PARAMETRI DI CALCOLO ----------
METODO DI CALCOLO : MORGENSTERN & PRICE (Morgenstern & Price, 1965)
COEFFICIENTE SISMICO UTILIZZATO Kh : 0.109
COEFFICIENTE SISMICO UTILIZZATO Kv (assunto Positivo): 0.055
FORZA ORIZZONTALE ADDIZIONALE IN TESTA (kN/m): 0.00
FORZA ORIZZONTALE ADDIZIONALE ALLA BASE (kN/m): 0.00

N.B. Le forze orizzontali addizionali in testa e alla base sono poste uguali a 0
durante le tutte le verifiche globali.
I valori >0 impostati dall'utente sono utilizzati solo in caso di verifica singola

---------- RISULTATO FINALE ELABORAZIONI ----------

* DATI RELATIVI ALLE 10 SUPERFICI GENERATE CON MINOR Fs *

Fattore di sicurezza (FS) 0.100 - Min. - X Y Lambda= 1.250
41.42 26.02
42.42 26.76

Fattore di sicurezza (FS) 0.100 - N.2 -- X Y Lambda= 1.250
41.51 26.11
42.36 26.74

Fattore di sicurezza (FS) 0.100 - N.3 -- X Y Lambda= 1.250
41.54 26.14
42.35 26.74

Fattore di sicurezza (FS) 0.100 - N.4 -- X Y Lambda= 1.250
41.52 26.12
42.36 26.74

Fattore di sicurezza (FS) 0.100 - N.5 -- X Y Lambda= 1.250
41.21 25.81
42.55 26.80

Fattore di sicurezza (FS) 0.100 - N.6 -- X Y Lambda= 1.221
41.20 25.80
42.55 26.80

Fattore di sicurezza (FS) 0.100 - N.7 -- X Y Lambda= 1.250
41.44 26.04
42.41 26.76

Fattore di sicurezza (FS) 0.100 - N.8 -- X Y Lambda= 1.250
41.25 25.85
42.52 26.79

Fattore di sicurezza (FS) 0.100 - N.9 -- X Y Lambda= 1.250
41.18 25.78
42.56 26.81

Fattore di sicurezza (FS) 0.100 - N.10 -- X Y Lambda= 1.250
41.18 25.78
42.57 26.81

---------- ANALISI DEFICIT DI RESISTENZA ----------

DATI RELATIVI ALLE 10 SUPERFICI GENERATE CON MINOR Fs *

Analisi Deficit in riferimento a FS(progetto) = 1.100

Sup N.	FS	FTR(kN/m)	FTA(kN/m)	Bilancio(kN/m)	ESITO
1	0.100	0.1	1.1	-1.1	Deficit
2	0.100	0.1	0.8	-0.8	Deficit
3	0.100	0.1	0.7	-0.7	Deficit
4	0.100	0.1	0.8	-0.8	Deficit
5	0.100	0.2	2.0	-2.0	Deficit
6	0.100	0.2	2.0	-2.0	Deficit
7	0.100	0.1	1.0	-1.0	Deficit
8	0.100	0.2	1.8	-1.8	Deficit
9	0.100	0.2	2.1	-2.1	Deficit
10	0.100	0.2	2.1	-2.1	Deficit

Esito analisi: DEFICIT di RESISTENZA!

Valore massimo di DEFICIT di RESITENZA(kN/m): -2.1

Note: FTR --> Forza totale Resistente rispetto alla superficie di scivolamento (componente Orizzontale)

FTA --> Forza totale Agente rispetto alla superficie di scivolamento (componente Orizzontale)

IMPORTANTE! : Il Deficit o il Surplus di resistenza viene espresso in kN per metro di LARGHEZZA rispetto al fronte della scarpata

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TABELLA PARAMETRI CONCI DELLA SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	dx (m)	alpha (gradi)	W (kN/m)	ru (-)	U (kPa)	phi' (gradi)	c'/Cu (kPa)
41.422	0.017	36.59	0.00	0.00	0.00	28.52	0.00
41.439	0.017	36.59	0.00	0.52	0.06	28.52	0.00
41.455	0.017	36.59	0.00	0.52	0.10	28.52	0.00
41.472	0.017	36.59	0.00	0.52	0.15	28.52	0.00
41.488	0.017	36.59	0.01	0.52	0.19	28.52	0.00
41.505	0.017	36.59	0.01	0.52	0.23	28.52	0.00
41.522	0.017	36.59	0.01	0.52	0.27	28.52	0.00
41.538	0.017	36.59	0.01	0.52	0.31	28.52	0.00
41.555	0.017	36.59	0.01	0.52	0.36	28.52	0.00
41.571	0.017	36.59	0.01	0.52	0.40	28.52	0.00
41.588	0.017	36.59	0.01	0.52	0.44	28.52	0.00
41.604	0.017	36.59	0.02	0.52	0.48	28.52	0.00
41.621	0.017	36.59	0.02	0.52	0.52	28.52	0.00
41.637	0.017	36.59	0.02	0.52	0.56	28.52	0.00
41.654	0.017	36.59	0.02	0.52	0.61	28.52	0.00
41.670	0.017	36.59	0.02	0.52	0.65	28.52	0.00
41.687	0.017	36.59	0.02	0.52	0.69	28.52	0.00
41.704	0.017	36.59	0.02	0.52	0.73	28.52	0.00
41.720	0.017	36.59	0.03	0.52	0.77	28.52	0.00
41.737	0.017	36.59	0.03	0.52	0.82	28.52	0.00
41.753	0.017	36.59	0.03	0.52	0.86	28.52	0.00
41.770	0.017	36.59	0.03	0.52	0.90	28.52	0.00
41.786	0.017	36.59	0.03	0.52	0.94	28.52	0.00
41.803	0.017	36.59	0.03	0.52	0.98	28.52	0.00
41.819	0.017	36.59	0.03	0.52	1.02	28.52	0.00
41.836	0.017	36.59	0.04	0.52	1.07	28.52	0.00
41.852	0.017	36.59	0.04	0.52	1.11	28.52	0.00
41.869	0.017	36.59	0.04	0.52	1.15	28.52	0.00
41.886	0.017	36.59	0.04	0.52	1.19	28.52	0.00
41.902	0.017	36.59	0.04	0.52	1.23	28.52	0.00
41.919	0.017	36.59	0.04	0.52	1.28	28.52	0.00
41.935	0.017	36.59	0.04	0.52	1.32	28.52	0.00
41.952	0.017	36.59	0.05	0.52	1.36	28.52	0.00
41.968	0.017	36.59	0.05	0.52	1.40	28.52	0.00
41.985	0.017	36.59	0.05	0.52	1.44	28.52	0.00
42.001	0.017	36.59	0.05	0.52	1.48	28.52	0.00
42.018	0.017	36.59	0.05	0.52	1.53	28.52	0.00
42.034	0.006	36.59	0.02	0.52	1.55	28.52	0.00
42.040	0.017	36.59	0.05	0.52	1.53	28.52	0.00
42.057	0.017	36.59	0.05	0.52	1.46	28.52	0.00
42.073	0.017	36.59	0.05	0.52	1.39	28.52	0.00
42.090	0.017	36.59	0.04	0.52	1.32	28.52	0.00
42.106	0.017	36.59	0.04	0.52	1.25	28.52	0.00
42.123	0.017	36.59	0.04	0.52	1.18	28.52	0.00
42.139	0.017	36.59	0.04	0.52	1.12	28.52	0.00
42.156	0.017	36.59	0.04	0.52	1.05	28.52	0.00
42.172	0.017	36.59	0.03	0.52	0.98	28.52	0.00

42.189	0.017	36.59	0.03	0.52	0.91	28.52	0.00
42.205	0.017	36.59	0.03	0.52	0.84	28.52	0.00
42.222	0.017	36.59	0.03	0.52	0.77	28.52	0.00
42.239	0.017	36.59	0.02	0.52	0.70	28.52	0.00
42.255	0.017	36.59	0.02	0.52	0.63	28.52	0.00
42.272	0.017	36.59	0.02	0.52	0.57	28.52	0.00
42.288	0.017	36.59	0.02	0.52	0.50	28.52	0.00
42.305	0.017	36.59	0.01	0.52	0.43	28.52	0.00
42.321	0.017	36.59	0.01	0.52	0.36	28.52	0.00
42.338	0.017	36.59	0.01	0.52	0.29	28.52	0.00
42.354	0.017	36.59	0.01	0.52	0.22	28.52	0.00
42.371	0.017	36.59	0.01	0.52	0.15	28.52	0.00
42.387	0.017	36.59	0.00	0.52	0.09	28.52	0.00
42.404	0.012	36.59	0.00	0.52	0.03	28.52	0.00

LEGENDA SIMBOLI
X(m) : Ascissa sinistra concio
dx(m) : Larghezza concio
alpha(gradi) : Angolo pendenza base concio
W(kN/m) : Forza peso concio
ru(-) : Coefficiente locale pressione interstiziale
U(kPa) : Pressione totale dei pori base concio
phi'(gradi) : Angolo di attrito efficace base concio
c'/Cu (kPa) : Coesione efficace / Resistenza al taglio in condizioni non drenate

TABELLA DIAGRAMMA DELLE FORZE DELLA SUPERFICIE INDIVIDUATA CON MINOR FS

X	ht	yt	yt'	E(x)	T(x)	E'	rho(x)	local_FS_FEM	local_FS_q-pFEM
(m)	(m)	(m)	(--)	(kN/m)	(kN/m)	(kN)	(--)	(--)	(--)
41.422	0.000	26.022	0.871	0.0000000000E+000	0.0000000000E+000	0.0000000000E+000	0.003	0.968	0.220
41.439	0.002	26.037	0.871	1.5937823457E-004	5.4272350698E-006	9.7770891535E-003	0.003	0.968	0.220
41.455	0.004	26.051	0.871	3.2351682562E-004	2.2362191080E-005	9.8707149418E-003	0.005	0.484	0.220
41.472	0.006	26.065	0.871	4.8599306997E-004	5.0463894284E-005	9.8181532171E-003	0.008	0.417	0.220
41.488	0.009	26.080	0.871	6.4839243148E-004	8.9824846248E-005	5.9751894746E-003	0.012	0.404	0.220
41.505	0.011	26.094	0.871	6.8370777840E-004	1.1839680006E-004	1.0672746145E-003	0.012	0.400	0.220
41.522	0.013	26.109	0.871	6.8370777840E-004	1.4207616007E-004	0.0000000000E+000	0.011	0.396	0.220
41.538	0.015	26.123	0.871	6.8370777840E-004	1.6575552008E-004	0.0000000000E+000	0.011	0.392	0.220
41.555	0.017	26.138	0.871	6.8370777840E-004	1.8943488009E-004	2.3426868216E-002	0.011	0.389	0.220
41.571	0.019	26.152	0.871	1.4588859445E-003	4.5474013792E-004	1.5405719914E-002	0.029	0.385	0.220
41.588	0.021	26.166	0.871	1.7455996880E-003	6.0456652322E-004	1.9326207244E-002	0.036	0.380	0.220
41.604	0.023	26.181	0.871	2.1004939370E-003	8.0022765686E-004	2.3640564026E-002	0.046	0.375	0.220
41.621	0.026	26.195	0.871	2.5305457133E-003	1.0517072620E-003	2.8453793405E-002	0.060	0.369	0.220
41.637	0.028	26.210	0.871	3.0450570992E-003	1.3710024554E-003	3.3815857369E-002	0.079	0.363	0.220
41.654	0.030	26.224	0.871	3.6528673723E-003	1.7711746164E-003	3.9780068749E-002	0.107	0.356	0.220
41.670	0.032	26.238	0.871	4.3654292274E-003	2.2678673597E-003	4.6473073765E-002	0.150	0.349	0.220
41.687	0.034	26.253	0.871	5.1936308392E-003	2.8779980756E-003	5.3699878492E-002	0.219	0.340	0.220
41.704	0.036	26.267	0.871	6.1426614292E-003	3.6166371542E-003	6.1046183461E-002	0.345	0.331	0.220
41.720	0.038	26.282	0.871	7.2162071874E-003	4.4986368731E-003	6.8842850837E-002	0.630	0.321	0.220
41.737	0.040	26.296	0.871	8.4244508483E-003	5.5436351697E-003	7.7312262916E-002	1.797	0.310	0.220
41.753	0.043	26.311	0.871	9.7758987983E-003	6.7715194822E-003	8.6029289309E-002	3.865	0.298	0.220
41.770	0.045	26.325	0.871	1.1266029596E-002	8.1938804293E-003	9.3968360196E-002	1.116	0.286	0.220
41.786	0.047	26.339	0.871	1.2886149513E-002	9.8185032092E-003	1.0201003244E-001	0.720	0.273	0.220
41.803	0.049	26.354	0.871	1.4646084515E-002	1.1666720982E-002	1.1082663809E-001	0.564	0.259	0.220
41.819	0.051	26.368	0.871	1.6551364203E-002	1.3757656965E-002	1.1922588497E-001	0.482	0.244	0.220
41.836	0.053	26.383	0.871	1.8576320800E-002	1.6084188370E-002	1.2517341094E-001	0.434	0.230	0.220
41.852	0.055	26.397	0.871	2.0685686303E-002	1.8626991737E-002	1.2967900062E-001	0.405	0.220	0.220
41.869	0.058	26.411	0.871	2.2862325943E-002	2.1378814345E-002	1.3321326251E-001	0.386	0.220	0.220
41.886	0.060	26.426	0.871	2.5079913927E-002	2.4321116757E-002	1.3419435005E-001	0.375	0.220	0.220
41.902	0.062	26.440	0.871	2.7289194685E-002	2.7408682316E-002	1.3258829499E-001	0.369	0.220	0.220
41.919	0.064	26.455	0.871	2.9433257806E-002	3.0581517276E-002	1.2505941657E-001	0.366	0.220	0.220
41.935	0.066	26.469	0.871	3.1371077568E-002	3.3681433731E-002	1.0756590585E-001	0.368	0.220	0.220
41.952	0.068	26.483	0.871	3.2952632104E-002	3.6520736540E-002	8.3070486169E-002	0.374	0.220	0.220
41.968	0.070	26.498	0.871	3.4131774145E-002	3.9009666965E-002	5.9575439415E-002	0.384	0.220	0.220
41.985	0.072	26.512	0.828	3.4882835259E-002	4.1075993745E-002	2.9091051800E-002	0.398	0.220	0.220
42.001	0.073	26.525	0.759	3.5018299891E-002	4.2545525913E-002	-1.4714789373E-002	0.420	0.220	0.220
42.018	0.073	26.537	0.712	3.4363182474E-002	4.2643234480E-002	-6.3986038692E-002	0.448	0.220	0.220
42.034	0.072	26.549	0.672	3.2919727208E-002	4.1149659010E-002	-1.1073336793E-001	0.279	0.220	0.220
42.040	0.071	26.552	0.633	3.2257808384E-002	4.0279237367E-002	-1.2592714817E-001	0.481	0.220	0.220
42.057	0.070	26.563	0.628	2.9844677713E-002	3.6616651977E-002	-1.6372884332E-001	0.490	0.220	0.220
42.073	0.068	26.573	0.608	2.6910995422E-002	3.1842682971E-002	-1.8900455461E-001	0.506	0.220	0.220
42.090	0.065	26.583	0.591	2.3629106961E-002	2.6526355521E-002	-2.0792965289E-001	0.539	0.231	0.220
42.106	0.063	26.593	0.578	2.0015485811E-002	2.1332152967E-002	-2.2718337553E-001	0.633	0.250	0.220
42.123	0.060	26.602	0.569	1.6230052665E-002	1.6375153598E-002	-2.2582778156E-001	0.949	0.271	0.220
42.139	0.057	26.612	0.564	1.2686972284E-002	1.2079242233E-002	-1.9920544536E-001	5.725	0.293	0.220
42.156	0.054	26.621	0.562	9.6721716683E-003	8.6590691540E-003	-1.6600078013E-001	0.852	0.313	0.220
42.172	0.051	26.630	0.565	7.2281661198E-003	6.0601940866E-003	-1.2918822956E-001	0.314	0.332	0.220
42.189	0.048	26.640	0.549	5.3600947028E-003	4.1892979031E-003	-9.8610392387E-002	0.165	0.349	0.220
42.205	0.045	26.648	0.531	3.8982700229E-003	2.8251911287E-003	-7.9637775666E-002	0.097	0.363	0.220
42.222	0.041	26.657	0.531	2.7160305725E-003	1.8140023244E-003	-6.2166369607E-002	0.058	0.375	0.220
42.239	0.038	26.666	0.531	1.8536762889E-003	1.1326798855E-003	-4.2545812743E-002	0.035	0.385	0.220
42.255	0.034	26.675	0.531	1.2789164774E-003	7.0877932095E-004	-2.8058645788E-002	0.023	0.392	0.220
42.272	0.031	26.683	0.531	8.8906150124E-004	4.4218435545E-004	-1.9950697197E-002	0.015	0.397	0.220
42.288	0.027	26.692	0.531	6.7040930447E-004	2.9532780673E-004	0.0000000000E+000	0.011	0.401	0.220
42.305	0.024	26.701	0.531	6.7040930447E-004	2.5722029343E-004	0.0000000000E+000	0.012	0.404	0.220
42.321	0.020	26.710	0.531	6.7040930447E-004	2.1911278013E-004	0.0000000000E+000	0.012	0.406	0.220
42.338	0.017	26.719	0.531	6.7040930447E-004	1.8100526683E-004	0.0000000000E+000	0.013	0.406	0.220
42.354	0.013	26.727	0.531	1.2427239138E-004	2.6489091377E-005	0.0000000000E+000	0.003	0.408	0.220
42.371	0.010	26.736	0.531	1.2427239138E-004	1.9510241705E-005	0.0000000000E+000	0.003	0.413	0.220
42.387	0.006	26.745	0.531	1.2427239138E-004	1.2564710415E-005	0.0000000000E+000	0.003	0.407	0.220
42.404	0.003	26.754	0.531	1.2427239138E-004	6.1804198458E-006	0.0000000000E+000	0.013	0.622	0.220

LEGENDA SIMBOLI
X(m) : Ascissa sinistra concio
ht(m) : Altezza linea di thrust da nodo sinistro base concio
yt(m) : coordinata Y linea di trust
yt'(-) : gradiente pendenza locale linea di trust
E(x)(kN/m) : Forza Normale interconcio
T(x)(kN/m) : Forza Tangenziale interconcio
E' (kN) : derivata Forza normale interconcio
Rho(x) (-) : fattore mobilizzazione resistenza al taglio verticale interconcio ZhU et al.(2003)
FS_FEM(x) (-) : fattore di sicurezza locale stimato (locale in X) by qFEM
FS_q-pFEM(x) (-) : fattore di sicurezza locale stimato (locale in X) by q-pFEM Procedure

TABELLA SFORZI DI TAGLIO DISTRIBUITI LUNGO SUPERFICIE INDIVIDUATA CON MINOR FS

X	dx	dl	alpha	TauStress	Tau
(m)	(m)	(m)	(gradi)	(kPa)	(kN/m)
41.422	0.017	0.021	36.590	0.022	0.000

41.439	0.017	0.021	36.590	0.070	0.001
41.455	0.017	0.021	36.590	0.117	0.002
41.472	0.017	0.021	36.590	0.163	0.003
41.488	0.017	0.021	36.590	0.210	0.004
41.505	0.017	0.021	36.590	0.257	0.005
41.522	0.017	0.021	36.590	0.303	0.006
41.538	0.017	0.021	36.590	0.350	0.007
41.555	0.017	0.021	36.590	0.397	0.008
41.571	0.017	0.021	36.590	0.443	0.009
41.588	0.017	0.021	36.590	0.490	0.010
41.604	0.017	0.021	36.590	0.537	0.011
41.621	0.017	0.021	36.590	0.583	0.012
41.637	0.017	0.021	36.590	0.630	0.013
41.654	0.017	0.021	36.590	0.677	0.014
41.670	0.017	0.021	36.590	0.723	0.015
41.687	0.017	0.021	36.590	0.770	0.016
41.704	0.017	0.021	36.590	0.817	0.017
41.720	0.017	0.021	36.590	0.863	0.018
41.737	0.017	0.021	36.590	0.910	0.019
41.753	0.017	0.021	36.590	0.957	0.020
41.770	0.017	0.021	36.590	1.003	0.021
41.786	0.017	0.021	36.590	1.050	0.022
41.803	0.017	0.021	36.590	1.097	0.023
41.819	0.017	0.021	36.590	1.143	0.024
41.836	0.017	0.021	36.590	1.190	0.025
41.852	0.017	0.021	36.590	1.237	0.025
41.869	0.017	0.021	36.590	1.283	0.026
41.886	0.017	0.021	36.590	1.330	0.027
41.902	0.017	0.021	36.590	1.377	0.028
41.919	0.017	0.021	36.590	1.423	0.029
41.935	0.017	0.021	36.590	1.470	0.030
41.952	0.017	0.021	36.590	1.517	0.031
41.968	0.017	0.021	36.590	1.563	0.032
41.985	0.017	0.021	36.590	1.610	0.033
42.001	0.017	0.021	36.590	1.657	0.034
42.018	0.017	0.021	36.590	1.703	0.035
42.034	0.006	0.007	36.590	1.735	0.012
42.040	0.017	0.021	36.590	1.704	0.035
42.057	0.017	0.021	36.590	1.628	0.034
42.073	0.017	0.021	36.590	1.551	0.032
42.090	0.017	0.021	36.590	1.475	0.030
42.106	0.017	0.021	36.590	1.398	0.029
42.123	0.017	0.021	36.590	1.321	0.027
42.139	0.017	0.021	36.590	1.245	0.026
42.156	0.017	0.021	36.590	1.168	0.024
42.172	0.017	0.021	36.590	1.092	0.022
42.189	0.017	0.021	36.590	1.015	0.021
42.205	0.017	0.021	36.590	0.938	0.019
42.222	0.017	0.021	36.590	0.862	0.018
42.239	0.017	0.021	36.590	0.785	0.016
42.255	0.017	0.021	36.590	0.709	0.015
42.272	0.017	0.021	36.590	0.632	0.013
42.288	0.017	0.021	36.590	0.555	0.011
42.305	0.017	0.021	36.590	0.479	0.010
42.321	0.017	0.021	36.590	0.402	0.008
42.338	0.017	0.021	36.590	0.326	0.007
42.354	0.017	0.021	36.590	0.249	0.005
42.371	0.017	0.021	36.590	0.172	0.004
42.387	0.017	0.021	36.590	0.096	0.002
42.404	0.012	0.015	36.590	0.029	0.000

LEGENDA SIMBOLI
X(m) : Ascissa sinistra concio
dx(m) : Larghezza concio
dl(m) : lunghezza base concio
alpha(gradi) : Angolo pendenza base concio
TauStress(kPa) : Sforzo di taglio su base concio
TauF (kN/m) : Forza di taglio su base concio

CRITERIO DI ROTTURA secondo Hoek (2002,2007)
Strato 2 -- Parametri di resistenza al taglio equivalenti dell'ammasso roccioso
Fattore di riduzione NTC2008 gammaPHI=1.25e gammaC=1.25 - ATTIVATO

Sigma'(kPa)	Phi'(deg)	c'(kPa)
20.00	48.00	53.50
40.00	45.70	55.27
60.00	43.99	57.37
80.00	42.62	59.58
100.00	41.47	61.84
120.00	40.49	64.10
140.00	39.62	66.34
160.00	38.86	68.56
180.00	38.16	70.75
200.00	37.54	72.90
220.00	36.96	75.03
240.00	36.43	77.12
260.00	35.93	79.18
280.00	35.47	81.21
300.00	35.04	83.22
320.00	34.64	85.19
340.00	34.25	87.13
360.00	33.89	89.05
380.00	33.55	90.95
400.00	33.22	92.82
420.00	32.91	94.66
440.00	32.62	96.48
460.00	32.33	98.29
480.00	32.06	100.07
500.00	31.80	101.83
600.00	30.63	110.34
700.00	29.64	118.45
800.00	28.79	126.20
900.00	28.04	133.65
1000.00	27.37	140.82
1100.00	26.77	147.75
1200.00	26.22	154.47
1300.00	25.72	160.99
1400.00	25.26	167.33

1500.00	24.84	173.51
1700.00	24.07	185.43
1900.00	23.40	196.83
2100.00	22.80	207.78
2300.00	22.26	218.34
2500.00	21.78	228.54
2700.00	21.33	238.41
2900.00	20.92	248.00
3100.00	20.54	257.33
3300.00	20.19	266.41
3500.00	19.86	275.27
3700.00	19.55	283.92
3900.00	19.26	292.38
4100.00	18.99	300.66

SEZIONE AA' VERSANTE EMILIANO CON ASSENZA DI FALDA

– VERIFICA GLOBALE

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------ GESTIONE ACQUIFERI ----------------------------------------
Strati esclusi da acquifero:
STRATO 1
STRATO 2
Esclusione sovraccarico pendio sommerso:  NON ATTIVATA
Peso unitario fluido (kN/m^3):              9.81
Parametri funzione dissipazione superficiale pressione dei fluidi:
Coefficiente A                                          0
Coefficiente K                                  0.000800
Pressione minima fluidi Uo_Min (kPa)     0.01
 ---------- INFORMAZIONI GENERAZIONE SUPERFICI RANDOM ----------------------------------------
 *** PARAMETRI PER LA GENERAZIONE DELLE SUPERFICI
    METODO DI RICERCA: CONVEX RANDOM      - Chen    (1992)
    FILTRAGGIO SUPERFICI : ATTIVATO
    COORDINATE X1,X2,Y OSTACOLO :          0.00          0.00          0.00
    LUNGHEZZA MEDIA SEGMENTI (m):                        5.0   (+/-) 50%
    RANGE ASCISSE RANDOM STARTING POINT (Xmin .. Xmax):          0.10          112.78
    LIVELLO MINIMO CONSIDERATO (Ymin):                   0.00
    RANGE ASCISSE AMMESSO PER LA TERMINAZIONE (Xmin .. Xmax):    12.62         122.70
 *** TOTALE SUPERFICI GENERATE :                        10000
 ---------- INFORMAZIONI PARAMETRI DI CALCOLO ----------------------------------------
    METODO DI CALCOLO : MORGENSTERN & PRICE  (Morgenstern & Price, 1965)
    COEFFICIENTE SISMICO UTILIZZATO Kh :  0.109
    COEFFICIENTE SISMICO UTILIZZATO Kv (assunto Positivo):  0.055
    FORZA ORIZZONTALE ADDIZIONALE IN TESTA (kN/m): 0.00
    FORZA ORIZZONTALE ADDIZIONALE ALLA BASE  (kN/m): 0.00
    N.B. Le forze orizzontali addizionali in testa e alla base sono poste uguali a 0
         durante le tutte le verifiche globali.
         I valori >0 impostati dall'utente sono utilizzati solo in caso di verifica singola

 ---------- RISULTATO FINALE ELABORAZIONI ----------
      * DATI RELATIVI ALLE 10 SUPERFICI GENERATE CON MINOR Fs *
Fattore di sicurezza (FS)   0.521  - Min. -   X      Y      Lambda=  1.250
                                              41.10  25.70
                                              42.33  26.73
Fattore di sicurezza (FS)   0.521  - N.2 --   X      Y      Lambda=  1.250
                                              41.46  26.06
                                              42.22  26.70
Fattore di sicurezza (FS)   0.521  - N.3 --   X      Y      Lambda=  1.250
                                              41.55  26.15
                                              42.19  26.69
Fattore di sicurezza (FS)   0.521  - N.4 --   X      Y      Lambda=  1.250
                                              41.62  26.22
                                              42.17  26.68
Fattore di sicurezza (FS)   0.521  - N.5 --   X      Y      Lambda=  1.250
                                              41.19  25.79
                                              2.30   26.72
Fattore di sicurezza (FS)   0.521  - N.6 --   X      Y      Lambda=  1.250
                                              41.57  26.17
                                              42.19  26.69
Fattore di sicurezza (FS)   0.521  - N.7 --   X      Y      Lambda=  1.250
                                              41.24  25.84
                                              42.29  26.72
Fattore di sicurezza (FS)   0.521  - N.8 --   X      Y      Lambda=  1.250
                                              41.05  25.65
                                              42.35  26.74
Fattore di sicurezza (FS)   0.521  - N.9 --   X      Y      Lambda=  1.250
                                              41.05  25.65
                                              42.35  26.74
Fattore di sicurezza (FS)   0.521  - N.10 --  X      Y      Lambda=  1.250
                                              41.65  26.25
                                              42.16  26.68
---------- ANALISI DEFICIT DI RESISTENZA ----------
# DATI RELATIVI ALLE 10 SUPERFICI GENERATE CON MINOR Fs *
 # Analisi Deficit in riferimento a FS(progetto) = 1.100
  Sup N.   FS      FTR(kN/m)    FTA(kN/m)  Bilancio(kN/m)   ESITO
    1    0.521       0.7          1.3         -0.7        Deficit
    2    0.521       0.2          0.5         -0.3        Deficit
    3    0.521       0.2          0.3         -0.2        Deficit
    4    0.521       0.1          0.2         -0.1        Deficit
    5    0.521       0.5          1.0         -0.6        Deficit
    6    0.521       0.2          0.3         -0.2        Deficit
    7    0.521       0.5          0.9         -0.5        Deficit
    8    0.521       0.7          1.4         -0.8        Deficit
    9    0.521       0.7          1.4         -0.8        Deficit
   10    0.521       0.1          0.2         -0.1        Deficit
  Esito analisi:  DEFICIT di RESISTENZA!
  Valore massimo di DEFICIT di RESITENZA(kN/m):       -0.8
  Note: FTR --> Forza totale Resistente rispetto alla superficie
            di scivolamento (componente Orizzontale)
        FTA --> Forza totale Agente rispetto alla superficie
            di scivolamento (componente Orizzontale)
  IMPORTANTE! : Il Deficit o il Surplus di resistenza viene espresso in kN
            per metro di LARGHEZZA rispetto al fronte della scarpata
-------------------------------------------------------------------------------
TABELLA PARAMETRI CONCI  DELLA SUPERFICIE INDIVIDUATA CON MINOR FS
-------------------------------------------------------------------------------
      X         dx        alpha       W          ru         U        phi'      c'/Cu
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(m)	(m)	(gradi)	(kN/m)	(-)	(kPa)	(gradi)	(kPa)
41.101	0.020	40.00	0.00	0.00	0.00	28.52	0.00
41.122	0.020	40.00	0.00	0.00	0.00	28.52	0.00
41.142	0.020	40.00	0.00	0.00	0.00	28.52	0.00
41.163	0.020	40.00	0.00	0.00	0.00	28.52	0.00
41.183	0.020	40.00	0.01	0.00	0.00	28.52	0.00
41.203	0.020	40.00	0.01	0.00	0.00	28.52	0.00
41.224	0.020	40.00	0.01	0.00	0.00	28.52	0.00
41.244	0.020	40.00	0.01	0.00	0.00	28.52	0.00
41.265	0.020	40.00	0.01	0.00	0.00	28.52	0.00
41.285	0.020	40.00	0.01	0.00	0.00	28.52	0.00
41.306	0.020	40.00	0.01	0.00	0.00	28.52	0.00
41.326	0.020	40.00	0.01	0.00	0.00	28.52	0.00
41.347	0.020	40.00	0.02	0.00	0.00	28.52	0.00
41.367	0.020	40.00	0.02	0.00	0.00	28.52	0.00
41.387	0.020	40.00	0.02	0.00	0.00	28.52	0.00
41.408	0.020	40.00	0.02	0.00	0.00	28.52	0.00
41.428	0.020	40.00	0.02	0.00	0.00	28.52	0.00
41.449	0.020	40.00	0.02	0.00	0.00	28.52	0.00
41.469	0.020	40.00	0.02	0.00	0.00	28.52	0.00
41.490	0.020	40.00	0.02	0.00	0.00	28.52	0.00
41.510	0.020	40.00	0.03	0.00	0.00	28.52	0.00
41.531	0.020	40.00	0.03	0.00	0.00	28.52	0.00
41.551	0.020	40.00	0.03	0.00	0.00	28.52	0.00
41.572	0.020	40.00	0.03	0.00	0.00	28.52	0.00
41.592	0.020	40.00	0.03	0.00	0.00	28.52	0.00
41.612	0.020	40.00	0.03	0.00	0.00	28.52	0.00
41.633	0.020	40.00	0.03	0.00	0.00	28.52	0.00
41.653	0.020	40.00	0.03	0.00	0.00	28.52	0.00
41.674	0.020	40.00	0.04	0.00	0.00	28.52	0.00
41.694	0.020	40.00	0.04	0.00	0.00	28.52	0.00
41.715	0.020	40.00	0.04	0.00	0.00	28.52	0.00
41.735	0.020	40.00	0.04	0.00	0.00	28.52	0.00
41.756	0.020	40.00	0.04	0.00	0.00	28.52	0.00
41.776	0.020	40.00	0.04	0.00	0.00	28.52	0.00
41.796	0.020	40.00	0.04	0.00	0.00	28.52	0.00
41.817	0.020	40.00	0.04	0.00	0.00	28.52	0.00
41.837	0.020	40.00	0.05	0.00	0.00	28.52	0.00
41.858	0.020	40.00	0.05	0.00	0.00	28.52	0.00
41.878	0.020	40.00	0.05	0.00	0.00	28.52	0.00
41.899	0.020	40.00	0.05	0.00	0.00	28.52	0.00
41.919	0.020	40.00	0.05	0.00	0.00	28.52	0.00
41.940	0.020	40.00	0.05	0.00	0.00	28.52	0.00
41.960	0.020	40.00	0.05	0.00	0.00	28.52	0.00
41.980	0.020	40.00	0.05	0.00	0.00	28.52	0.00
42.001	0.020	40.00	0.06	0.00	0.00	28.52	0.00
42.021	0.019	40.00	0.05	0.00	0.00	28.52	0.00
42.040	0.020	40.00	0.06	0.00	0.00	28.52	0.00
42.060	0.020	40.00	0.05	0.00	0.00	28.52	0.00
42.081	0.020	40.00	0.05	0.00	0.00	28.52	0.00
42.101	0.020	40.00	0.04	0.00	0.00	28.52	0.00
42.122	0.020	40.00	0.04	0.00	0.00	28.52	0.00
42.142	0.020	40.00	0.04	0.00	0.00	28.52	0.00
42.163	0.020	40.00	0.03	0.00	0.00	28.52	0.00
42.183	0.020	40.00	0.03	0.00	0.00	28.52	0.00
42.204	0.020	40.00	0.02	0.00	0.00	28.52	0.00
42.224	0.020	40.00	0.02	0.00	0.00	28.52	0.00
42.244	0.020	40.00	0.02	0.00	0.00	28.52	0.00
42.265	0.020	40.00	0.01	0.00	0.00	28.52	0.00
42.285	0.020	40.00	0.01	0.00	0.00	28.52	0.00
42.306	0.020	40.00	0.00	0.00	0.00	28.52	0.00
42.326	0.005	40.00	0.00	0.00	0.00	28.52	0.00

LEGENDA SIMBOLI
X(m) : Ascissa sinistra concio
dx(m) : Larghezza concio
alpha(gradi) : Angolo pendenza base concio
W(kN/m) : Forza peso concio
ru(-) : Coefficiente locale pressione interstiziale
U(kPa) : Pressione totale dei pori base concio
phi'(gradi) : Angolo di attrito efficace base concio
c'/Cu (kPa) : Coesione efficace / Resistenza al taglio in condizioni non drenate

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TABELLA DIAGRAMMA DELLE FORZE DELLA SUPERFICIE INDIVIDUATA CON MINOR FS

X	ht	yt	yt'	E(x)	T(x)	E'	rho(x)	local_FS_FEM	local_FS_q-pFEM		
(m)	(m)	(m)	(--)	(kN/m)	(kN/m)	(kN)	(--)	(--)	(--)		
41.101	0.000	25.701	0.920	0.0000000000E+000	0.0000000000E+000	0.0000000000E+000	0.0000000000E+000	0.380	1.120	1.009	
41.122	0.002	25.720	0.920	2.5248540680E-006	7.1420225843E-008	1.2348340132E-004		0.380	1.120	1.009	
41.142	0.003	25.739	0.920	5.0497081360E-006	2.8568090337E-007	1.2348340132E-004		0.190	1.120	1.009	
41.163	0.005	25.758	0.920	7.5745622039E-006	6.4278203259E-007	1.2348340132E-004		0.127	1.120	1.009	
41.183	0.007	25.776	0.920	1.0099416272E-005	1.1427236135E-006	-6.3590073129E-005		0.108	1.120	1.009	
41.203	0.008	25.795	0.920	4.9741211227E-006	7.0351165729E-007	-1.2533177379E-004		0.193	1.120	1.009	
41.224	0.010	25.814	0.920	4.9741211227E-006	8.4421398875E-007	0.0000000000E+000		0.193	1.120	1.009	
41.244	0.012	25.833	0.920	4.9741211227E-006	9.8491632021E-007	0.0000000000E+000		0.193	1.120	1.009	
41.265	0.013	25.852	0.920	4.9741211227E-006	1.1256186517E-006	4.3404027709E-004		0.217	1.120	1.009	
41.285	0.015	25.870	0.920	2.2723686612E-005	5.7850382933E-006	0.0000000000E+000		0.244	1.120	1.009	
41.306	0.016	25.889	0.920	2.2723686612E-005	6.4278203259E-006	0.0000000000E+000		0.271	1.120	1.009	
41.326	0.018	25.908	0.920	2.2723686612E-005	7.0706023585E-006	0.0000000000E+000		0.298	1.120	1.009	
41.347	0.020	25.927	0.920	2.2723686612E-005	7.7133843911E-006	0.0000000000E+000		0.325	1.120	1.009	
41.367	0.021	25.946	0.920	6.1067880074E-005	2.2456451620E-005	0.0000000000E+000		0.352	1.120	1.009	
41.387	0.023	25.964	0.920	6.1067880074E-005	2.4183870976E-005	0.0000000000E+000		0.379	1.119	1.009	
41.408	0.025	25.983	0.920	6.1067880074E-005	2.5911290331E-005	0.0000000000E+000		0.407	1.119	1.009	
41.428	0.026	26.002	0.920	6.1067880074E-005	2.7638709687E-005	0.0000000000E+000		0.434	1.119	1.009	
41.449	0.028	26.021	0.920	1.1878310209E-004	5.7120042480E-005	0.0000000000E+000		0.461	1.119	1.009	
41.469	0.030	26.040	0.920	1.1878310209E-004	6.0480044979E-005	0.0000000000E+000		0.488	1.119	1.009	
41.490	0.031	26.058	0.920	1.1878310209E-004	6.3840047478E-005	0.0000000000E+000		0.515	1.119	1.009	
41.510	0.033	26.077	0.920	1.1878310209E-004	6.7200049977E-005	0.0000000000E+000		0.542	1.119	1.009	
41.531	0.035	26.096	0.920	1.9045139503E-004	1.1313276208E-004	0.0000000000E+000		0.569	1.118	1.009	
41.551	0.036	26.115	0.920	1.9045139503E-004	1.1852003646E-004	0.0000000000E+000		0.596	1.118	1.009	
41.572	0.038	26.134	0.920	1.9045139503E-004	1.2390731085E-004	0.0000000000E+000		0.623	1.118	1.009	
41.592	0.039	26.152	0.920	1.9045139503E-004	1.2929458523E-004	0.0000000000E+000		0.651	1.118	1.009	
41.612	0.041	26.171	0.920	2.6906040675E-004	1.9027193749E-004	0.0000000000E+000		0.678	1.118	1.009	
41.633	0.043	26.190	0.920	2.6906040675E-004	1.9788281499E-004	0.0000000000E+000		0.705	1.118	1.009	
41.653	0.044	26.209	0.920	2.6906040675E-004	2.0549369249E-004	0.0000000000E+000		0.732	1.118	1.009	
41.674	0.046	26.228	0.920	2.6906040675E-004	2.1310456999E-004	0.0000000000E+000		0.759	1.118	1.009	
41.694	0.048	26.246	0.920	3.4664032711E-004	2.8435575431E-004	0.0000000000E+000		0.786	1.118	1.009	
41.715	0.049	26.265	0.920	3.4664032711E-004	2.9416112514E-004	0.0000000000E+000		0.813	1.118	1.009	

41.735	0.051	26.284	0.920	3.4664032711E-004	3.0396649598E-004	0.0000000000E+000	0.840	1.117	1.009
41.756	0.053	26.303	0.920	3.4664032711E-004	3.1377186682E-004	0.0000000000E+000	0.867	1.117	1.009
41.776	0.054	26.322	0.920	4.1369305835E-004	3.8616873626E-004	0.0000000000E+000	0.895	1.117	1.009
41.796	0.056	26.340	0.920	4.1369305835E-004	3.9787081918E-004	0.0000000000E+000	0.922	1.117	1.009
41.817	0.058	26.359	0.920	4.1369305835E-004	4.0957290210E-004	0.0000000000E+000	0.949	1.117	1.009
41.837	0.059	26.378	0.920	4.1369305835E-004	4.2127498501E-004	0.0000000000E+000	0.976	1.117	1.009
41.858	0.061	26.397	0.920	4.5906712697E-004	4.8046621670E-004	0.0000000000E+000	1.003	1.117	1.009
41.878	0.063	26.416	0.920	4.5906712697E-004	4.9345179012E-004	0.0000000000E+000	1.030	1.117	1.009
41.899	0.064	26.435	0.920	4.5906712697E-004	5.0643736355E-004	0.0000000000E+000	1.057	1.117	1.009
41.919	0.066	26.453	0.909	4.5906712697E-004	5.1942293697E-004	0.0000000000E+000	1.084	1.117	1.009
41.940	0.067	26.472	0.886	4.6765141651E-004	5.4236424135E-004	0.0000000000E+000	1.111	1.118	1.009
41.960	0.068	26.490	0.863	4.6765141651E-004	5.5559220883E-004	0.0000000000E+000	1.138	1.118	1.009
41.980	0.068	26.507	0.838	4.6765141651E-004	5.6898044444E-004	0.0000000000E+000	1.166	1.118	1.009
42.001	0.068	26.524	0.809	4.6765141651E-004	5.8016438760E-004	0.0000000000E+000	1.189	1.118	1.009
42.021	0.067	26.540	0.774	3.8458943224E-004	4.8073679030E-004	0.0000000000E+000	1.198	1.118	1.009
42.040	0.065	26.554	0.738	3.8458943224E-004	4.7539613948E-004	0.0000000000E+000	1.185	1.118	1.009
42.060	0.063	26.569	0.709	3.8458943224E-004	4.5717504938E-004	0.0000000000E+000	1.139	1.118	1.009
42.081	0.060	26.583	0.679	3.8458943224E-004	4.2849964593E-004	0.0000000000E+000	1.068	1.118	1.009
42.101	0.056	26.597	0.653	2.2318425940E-004	2.2870566531E-004	0.0000000000E+000	0.982	1.118	1.009
42.122	0.052	26.610	0.632	2.2318425940E-004	2.0832928415E-004	0.0000000000E+000	0.894	1.118	1.009
42.142	0.048	26.623	0.620	2.2318425940E-004	1.8794793323E-004	0.0000000000E+000	0.807	1.118	1.009
42.163	0.043	26.635	0.609	2.2318425940E-004	1.6756658231E-004	0.0000000000E+000	0.719	1.119	1.009
42.183	0.038	26.647	0.589	9.8881633744E-005	6.5210316275E-005	0.0000000000E+000	0.632	1.119	1.009
42.204	0.033	26.659	0.579	9.8881633744E-005	5.6180372666E-005	0.0000000000E+000	0.544	1.119	1.009
42.224	0.028	26.671	0.579	9.8881633744E-005	4.7150429058E-005	0.0000000000E+000	0.457	1.119	1.009
42.244	0.022	26.683	0.579	9.8881633744E-005	3.8120485449E-005	0.0000000000E+000	0.369	1.119	1.009
42.265	0.017	26.695	0.579	1.7598591012E-005	5.1778918833E-006	0.0000000000E+000	0.282	1.119	1.009
42.285	0.012	26.707	0.579	1.7598591012E-005	3.5974451798E-006	0.0000000000E+000	0.196	1.120	1.009
42.306	0.006	26.718	0.579	1.7598591012E-005	2.0464495968E-006	0.0000000000E+000	0.111	1.118	1.009
42.326	0.001	26.730	0.579	1.7598591012E-005	9.8159775464E-007	0.0000000000E+000	0.054	1.201	1.105

LEGENDA SIMBOLI
X(m) : Ascissa sinistra concio
ht(m) : Altezza linea di thrust da nodo sinistro base concio
yt(m) : coordinata Y linea di trust
yt'(-) : gradiente pendenza locale linea di trust
E(x)(kN/m) : Forza Normale interconcio
T(x)(kN/m) : Forza Tangenziale interconcio
E' (kN) : derivata Forza normale interconcio
Rho(x) (-) : fattore mobilizzazione resistenza al taglio verticale interconcio ZhU et al.(2003)
FS_FEM(x) (-) : fattore di sicurezza locale stimato (locale in X) by qFEM
FS_q-pFEM(x) (-) : fattore di sicurezza locale stimato (locale in X) by q-pFEM Procedure

TABELLA SFORZI DI TAGLIO DISTRIBUITI LUNGO SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	dx (m)	dl (m)	alpha (gradi)	TauStress (kPa)	Tau (kN/m)
41.101	0.020	0.027	40.000	0.017	0.000
41.122	0.020	0.027	40.000	0.051	0.001
41.142	0.020	0.027	40.000	0.085	0.002
41.163	0.020	0.027	40.000	0.119	0.003
41.183	0.020	0.027	40.000	0.153	0.004
41.203	0.020	0.027	40.000	0.187	0.005
41.224	0.020	0.027	40.000	0.221	0.006
41.244	0.020	0.027	40.000	0.256	0.007
41.265	0.020	0.027	40.000	0.290	0.008
41.285	0.020	0.027	40.000	0.324	0.009
41.306	0.020	0.027	40.000	0.358	0.010
41.326	0.020	0.027	40.000	0.392	0.010
41.347	0.020	0.027	40.000	0.426	0.011
41.367	0.020	0.027	40.000	0.460	0.012
41.387	0.020	0.027	40.000	0.494	0.013
41.408	0.020	0.027	40.000	0.528	0.014
41.428	0.020	0.027	40.000	0.562	0.015
41.449	0.020	0.027	40.000	0.596	0.016
41.469	0.020	0.027	40.000	0.630	0.017
41.490	0.020	0.027	40.000	0.664	0.018
41.510	0.020	0.027	40.000	0.698	0.019
41.531	0.020	0.027	40.000	0.732	0.020
41.551	0.020	0.027	40.000	0.767	0.020
41.572	0.020	0.027	40.000	0.801	0.021
41.592	0.020	0.027	40.000	0.835	0.022
41.612	0.020	0.027	40.000	0.869	0.023
41.633	0.020	0.027	40.000	0.903	0.024
41.653	0.020	0.027	40.000	0.937	0.025
41.674	0.020	0.027	40.000	0.971	0.026
41.694	0.020	0.027	40.000	1.005	0.027
41.715	0.020	0.027	40.000	1.039	0.028
41.735	0.020	0.027	40.000	1.073	0.029
41.756	0.020	0.027	40.000	1.107	0.030
41.776	0.020	0.027	40.000	1.141	0.030
41.796	0.020	0.027	40.000	1.175	0.031
41.817	0.020	0.027	40.000	1.209	0.032
41.837	0.020	0.027	40.000	1.244	0.033
41.858	0.020	0.027	40.000	1.278	0.034
41.878	0.020	0.027	40.000	1.312	0.035
41.899	0.020	0.027	40.000	1.346	0.036
41.919	0.020	0.027	40.000	1.380	0.037
41.940	0.020	0.027	40.000	1.414	0.038
41.960	0.020	0.027	40.000	1.448	0.039
41.980	0.020	0.027	40.000	1.482	0.040
42.001	0.020	0.027	40.000	1.516	0.040
42.021	0.019	0.024	40.000	1.549	0.038
42.040	0.020	0.027	40.000	1.509	0.040
42.060	0.020	0.027	40.000	1.399	0.037
42.081	0.020	0.027	40.000	1.289	0.034
42.101	0.020	0.027	40.000	1.179	0.031
42.122	0.020	0.027	40.000	1.069	0.029
42.142	0.020	0.027	40.000	0.959	0.026
42.163	0.020	0.027	40.000	0.849	0.023
42.183	0.020	0.027	40.000	0.739	0.020
42.204	0.020	0.027	40.000	0.629	0.017
42.224	0.020	0.027	40.000	0.519	0.014
42.244	0.020	0.027	40.000	0.409	0.011
42.265	0.020	0.027	40.000	0.299	0.008
42.285	0.020	0.027	40.000	0.189	0.005
42.306	0.020	0.027	40.000	0.079	0.002
42.326	0.005	0.006	40.000	0.012	0.000

LEGENDA SIMBOLI
X(m) : Ascissa sinistra concio
dx(m) : Larghezza concio
dl(m) : lunghezza base concio
alpha(gradi) : Angolo pendenza base concio
TauStress(kPa) : Sforzo di taglio su base concio
TauF (kN/m) : Forza di taglio su base concio

CRITERIO DI ROTTURA secondo Hoek (2002,2007)
Strato 2 -- Parametri di resistenza al taglio equivalenti dell'ammasso roccioso
Fattore di riduzione NTC2008 gammaPHI=1.25e gammaC=1.25 - ATTIVATO

Sigma'(kPa)	Phi'(deg)	c'(kPa)
20.00	48.00	53.50
40.00	45.70	55.27
60.00	43.99	57.37
80.00	42.62	59.58
100.00	41.47	61.84
120.00	40.49	64.10
140.00	39.62	66.34
160.00	38.86	68.56
180.00	38.16	70.75
200.00	37.54	72.90
220.00	36.96	75.03
240.00	36.43	77.12
260.00	35.93	79.18
280.00	35.47	81.21
300.00	35.04	83.22
320.00	34.64	85.19
340.00	34.25	87.13
360.00	33.89	89.05
380.00	33.55	90.95
400.00	33.22	92.82
420.00	32.91	94.66
440.00	32.62	96.48
460.00	32.33	98.29
480.00	32.06	100.07
500.00	31.80	101.83
600.00	30.63	110.34
700.00	29.64	118.45
800.00	28.79	126.20
900.00	28.04	133.65
1000.00	27.37	140.82
1100.00	26.77	147.75
1200.00	26.22	154.47
1300.00	25.72	160.99
1400.00	25.26	167.33
1500.00	24.84	173.51
1700.00	24.07	185.43
1900.00	23.40	196.83
2100.00	22.80	207.78
2300.00	22.26	218.34
2500.00	21.78	228.54
2700.00	21.33	238.41
2900.00	20.92	248.00
3100.00	20.54	257.33
3300.00	20.19	266.41
3500.00	19.86	275.27
3700.00	19.55	283.92
3900.00	19.26	292.38
4100.00	18.99	300.66

DATI GENERALI SEZIONE BB' VERSANTI LIGURE ED EMILIANO:

Data: 17/12/2015
Localita' : Passo della Cappelletta, Comune di Varese Ligure (SP)
Modello pendio: mod1.mod

---------- PARAMETRI DEL MODELLO DEL PENDIO ----------
---------- PARAMETRI GEOMETRICI - Coordinate X Y (in m)

SUP T.		SUP 2		SUP 3		SUP 4	
X	Y	X	Y	X	Y	X	Y
0.00	10.15	0.00	5.10	-	-	-	-
6.78	13.58	14.45	11.14	-	-	-	-
10.60	13.58	30.85	20.63	-	-	-	-
15.47	15.15	47.05	29.98	-	-	-	-
22.60	20.15	59.95	35.95	-	-	-	-
31.67	25.15	69.85	37.10	-	-	-	-
39.80	30.15	80.68	35.95	-	-	-	-
48.08	35.15	95.93	29.45	-	-	-	-
59.95	40.15	126.25	17.30	-	-	-	-
70.31	41.95	146.00	9.50	-	-	-	-
80.68	40.15	-	-	-	-	-	-
93.84	35.15	-	-	-	-	-	-
104.83	30.15	-	-	-	-	-	-
117.99	25.15	-	-	-	-	-	-
131.42	20.15	-	-	-	-	-	-
146.00	15.15	-	-	-	-	-	-

---- SUP FALDA --------

X	Y (in m)
0.00	10.15
6.78	13.58
10.60	13.58
15.47	15.15
22.60	20.15
31.67	25.15
39.80	30.15
48.08	35.15
59.95	40.15
70.31	41.95
80.68	40.15
93.84	35.15
104.83	30.15
117.99	25.15
131.42	20.15

146.00 15.15

---------- GESTIONE ACQUIFERI ----------

Strati esclusi da acquifero:
Esclusione sovraccarico pendio sommerso: NON ATTIVATA
Peso unitario fluido (kN/m^3): 9.81
Parametri funzione dissipazione superficiale pressione dei fluidi:
Coefficiente A 0
Coefficiente K 0.000800
Pressione minima fluidi Uo_Min (kPa) 0.01

---------- PARAMETRI GEOMECCANICI ----------

	fi`	C`	Cu	Gamm	Gamm_sat	STR_IDX	sgci	GSI	mi	D
STRATO 1	28.52	0.00	0.00	17.65	18.92	1.713	0.00	0.00	0.00	0.00
STRATO 2	0.00	0.00	0.00	20.40	24.42	5.560	25.00	30.00	4.00	0.00

Note: fi`_____ Angolo di attrito interno efficace(in gradi)
C`_____ Coesione efficace (in Kpa)
Cu _____ Resistenza al taglio Non drenata (in Kpa)
Gamm _____ Peso di volume terreno fuori falda (in KN/m^3)
Gamm_sat __ Peso di volume terreno immerso (in KN/m^3)
STR_IDX ___ Indice di resistenza (usato in solo in 'SNIFF SEARCH) (adimensionale)
---- SOLO Per AMMASSI ROCCIOSI FRATTURATI - Parametri Criterio di Rottura di Hoek (2002)-
sigci _____ Resistenza Compressione Uniassiale Roccia Intatta (in MPa)
GSI _____ Geological Strenght Index ammasso(adimensionale)
mi _____ Indice litologico ammasso(adimensionale)
D _____ Fattore di disturbo ammasso(adimensionale)
Fattore di riduzione NTC2008 gammaPHI=1.25 e gammaC=1.25 - ATTIVATO (solo per ROCCE)

SEZIONE BB' VERSANTE LIGURE CON TOTALE SATURAZIONE

- VERIFICA GLOBALE

---------- INFORMAZIONI GENERAZIONE SUPERFICI RANDOM ----------
*** PARAMETRI PER LA GENERAZIONE DELLE SUPERFICI
METODO DI RICERCA: CONVEX RANDOM - Chen (1992)
FILTRAGGIO SUPERFICI : ATTIVATO
COORDINATE X1,X2,Y OSTACOLO : 0.00 0.00 0.00
LUNGHEZZA MEDIA SEGMENTI (m): 5.8 (+/-) 50%
RANGE ASCISSE RANDOM STARTING POINT (Xmin .. Xmax): 0.10 131.50
LIVELLO MINIMO CONSIDERATO (Ymin): 0.00
RANGE ASCISSE AMMESSO PER LA TERMINAZIONE (Xmin .. Xmax): 14.70 143.08
*** TOTALE SUPERFICI GENERATE : 10000
---------- INFORMAZIONI PARAMETRI DI CALCOLO ----------
METODO DI CALCOLO : MORGENSTERN & PRICE (Morgenstern & Price, 1965)
COEFFICIENTE SISMICO UTILIZZATO Kh : 0.102
COEFFICIENTE SISMICO UTILIZZATO Kv (assunto Positivo): 0.051
FORZA ORIZZONTALE ADDIZIONALE IN TESTA (kN/m): 0.00
FORZA ORIZZONTALE ADDIZIONALE ALLA BASE (kN/m): 0.00
N.B. Le forze orizzontali addizionali in testa e alla base sono poste uguali a 0
durante le tutte le verifiche globali.
I valori >0 impostati dall'utente sono utilizzati solo in caso di verifica singola
---------- RISULTATO FINALE ELABORAZIONI ----------
* DATI RELATIVI ALLE 10 SUPERFICI GENERATE CON MINOR Fs *
Fattore di sicurezza (FS) 0.177 - Min. - X Y Lambda= 0.915

X	Y
15.62	15.26
15.81	15.35
15.99	15.45
16.18	15.54
16.36	15.64
16.55	15.73
16.73	15.82
16.92	15.92
17.10	16.01
17.29	16.11
17.47	16.21
17.66	16.31
17.84	16.41
18.03	16.51
18.21	16.62
18.40	16.73
18.58	16.84
18.77	16.95
18.95	17.07
19.14	17.18
19.32	17.30
19.51	17.42
19.69	17.55
19.88	17.67
20.06	17.79
20.25	17.92
20.43	18.04
20.62	18.17
20.80	18.29
20.99	18.41
21.17	18.53
21.36	18.66
21.54	18.78
21.72	18.90
21.91	19.02
22.09	19.14
22.28	19.26
22.46	19.38
22.65	19.50
22.83	19.62
23.02	19.75
23.20	19.87
23.39	19.99
23.57	20.11
23.76	20.23
23.94	20.35
24.13	20.47
24.31	20.59
24.50	20.71
24.68	20.84
24.87	20.96
25.05	21.08
25.24	21.20
25.42	21.32

25.61 21.44
25.79 21.56
25.98 21.68
26.16 21.81
26.35 21.93
26.53 22.05
26.72 22.17
26.90 22.29
27.09 22.41
27.27 22.53
27.46 22.65
27.64 22.77
27.83 22.90
28.01 23.02
28.20 23.14
28.38 23.26
28.57 23.38
28.75 23.50
28.94 23.62
29.12 23.74

Fattore di sicurezza (FS) 0.177 - N.2 -- X Y Lambda= 0.865

15.73 15.33
15.92 15.42
16.10 15.51
16.28 15.60
16.47 15.69
16.65 15.77
16.83 15.86
17.02 15.94
17.20 16.03
17.38 16.12
17.57 16.21
17.75 16.30
17.93 16.40
18.12 16.50
18.30 16.60
18.48 16.70
18.67 16.81
18.85 16.92
19.03 17.03
19.22 17.14
19.40 17.26
19.58 17.38
19.77 17.50
19.95 17.62
20.13 17.74
20.32 17.86
20.50 17.99
20.68 18.11
20.87 18.23
21.05 18.35
21.23 18.48
21.42 18.60
21.60 18.72
21.78 18.84
21.97 18.96
22.15 19.09
22.33 19.21
22.52 19.33
22.70 19.45
22.88 19.58
23.07 19.70
23.25 19.82
23.43 19.94
23.62 20.07
23.80 20.19
23.98 20.31
24.17 20.44
24.35 20.56
24.53 20.68
24.72 20.80
24.90 20.93
25.08 21.05
25.27 21.17
25.45 21.29
25.63 21.42
25.82 21.54
26.00 21.66
26.18 21.78
26.37 21.90
26.55 22.03
26.73 22.15
26.92 22.27
27.10 22.39
27.28 22.52
27.47 22.64
27.65 22.76
27.83 22.88
28.02 23.01
28.20 23.13
28.38 23.25
28.57 23.37
28.75 23.50
28.93 23.62
29.12 23.74

Fattore di sicurezza (FS) 0.178 - N.3 -- X Y Lambda= 0.888

15.91 15.46
16.10 15.55
16.28 15.64
16.46 15.73
16.65 15.82
16.83 15.91
17.01 16.00
17.20 16.09
17.38 16.18
17.56 16.27
17.75 16.37
17.93 16.46

	18.11	16.56
	18.30	16.66
	18.48	16.77
	18.66	16.87
	18.85	16.98
	19.03	17.09
	19.21	17.21
	19.40	17.32
	19.58	17.44
	19.76	17.56
	19.95	17.69
	20.13	17.81
	20.32	17.93
	20.50	18.06
	20.68	18.18
	20.87	18.30
	21.05	18.43
	21.23	18.55
	21.42	18.67
	21.60	18.79
	21.78	18.91
	21.97	19.03
	22.15	19.15
	22.33	19.28
	22.52	19.40
	22.70	19.52
	22.88	19.64
	23.07	19.76
	23.25	19.88
	23.43	20.00
	23.62	20.12
	23.80	20.24
	23.98	20.36
	24.17	20.48
	24.35	20.60
	24.53	20.72
	24.72	20.84
	24.90	20.96
	25.08	21.09
	25.27	21.21
	25.45	21.33
	25.63	21.45
	25.82	21.57
	26.00	21.69
	26.18	21.81
	26.37	21.93
	26.55	22.05
	26.73	22.17
	26.92	22.29
	27.10	22.41
	27.29	22.54
	27.47	22.66
	27.65	22.78
	27.84	22.90
	28.02	23.02
	28.20	23.14
	28.39	23.26
	28.57	23.38
	28.75	23.50
	28.94	23.62
	29.12	23.74
Fattore di sicurezza (FS)	0.178 - N.4 --	X Y Lambda= 0.913
	15.56	15.21
	15.75	15.31
	15.94	15.41
	16.13	15.50
	16.32	15.59
	16.50	15.69
	16.69	15.78
	16.88	15.87
	17.07	15.97
	17.26	16.07
	17.44	16.16
	17.63	16.26
	17.82	16.37
	18.01	16.47
	18.20	16.58
	18.38	16.69
	18.57	16.80
	18.76	16.92
	18.95	17.03
	19.14	17.15
	19.32	17.27
	19.51	17.40
	19.70	17.52
	19.89	17.65
	20.08	17.78
	20.26	17.91
	20.45	18.03
	20.64	18.16
	20.83	18.29
	21.02	18.41
	21.21	18.54
	21.39	18.66
	21.58	18.78
	21.77	18.91
	21.96	19.03
	22.15	19.15
	22.33	19.28
	22.52	19.40
	22.71	19.52
	22.90	19.64
	23.09	19.77
	23.27	19.89
	23.46	20.01
	23.65	20.13
	23.84	20.26
	24.03	20.38

24.21 20.50
24.40 20.62
24.59 20.75
24.78 20.87
24.97 20.99
25.16 21.12
25.34 21.24
25.53 21.36
25.72 21.48
25.91 21.61
26.10 21.73
26.28 21.85
26.47 21.98
26.66 22.10
26.85 22.22
27.04 22.35
27.22 22.47
27.41 22.59
27.60 22.71
27.79 22.84
27.98 22.96
28.16 23.08
28.35 23.21
28.54 23.33
28.73 23.45
28.92 23.57
29.11 23.70
29.29 23.82
29.48 23.94

Fattore di sicurezza (FS) 0.178 - N.5 -- X Y Lambda= 0.837

15.67 15.29
15.86 15.37
16.04 15.45
16.22 15.54
16.40 15.62
16.58 15.69
16.77 15.77
16.95 15.85
17.13 15.93
17.31 16.02
17.50 16.10
17.68 16.19
17.86 16.28
18.04 16.37
18.22 16.46
18.41 16.56
18.59 16.66
18.77 16.76
18.95 16.86
19.14 16.97
19.32 17.07
19.50 17.18
19.68 17.30
19.86 17.41
20.05 17.53
20.23 17.64
20.41 17.76
20.59 17.88
20.78 18.00
20.96 18.12
21.14 18.24
21.32 18.36
21.51 18.49
21.69 18.61
21.87 18.74
22.05 18.86
22.23 18.99
22.42 19.12
22.60 19.24
22.78 19.37
22.96 19.50
23.15 19.63
23.33 19.76
23.51 19.88
23.69 20.01
23.87 20.14
24.06 20.26
24.24 20.39
24.42 20.52
24.60 20.64
24.79 20.77
24.97 20.90
25.15 21.02
25.33 21.15
25.52 21.27
25.70 21.40
25.88 21.52
26.06 21.65
26.24 21.78
26.43 21.90
26.61 22.03
26.79 22.15
26.97 22.28
27.16 22.41
27.34 22.53
27.52 22.66
27.70 22.78
27.88 22.91
28.07 23.04
28.25 23.16
28.43 23.29
28.61 23.41
28.80 23.54
28.98 23.67

Fattore di sicurezza (FS) 0.178 - N.6 -- X Y Lambda= 0.829

15.60 15.24
15.79 15.32
15.98 15.41

16.17 15.49
16.36 15.57
16.54 15.65
16.73 15.73
16.92 15.81
17.11 15.89
17.30 15.97
17.49 16.06
17.68 16.15
17.87 16.24
18.06 16.34
18.24 16.44
18.43 16.55
18.62 16.66
18.81 16.77
19.00 16.89
19.19 17.01
19.38 17.13
19.57 17.26
19.76 17.39
19.94 17.52
20.13 17.66
20.32 17.79
20.51 17.92
20.70 18.05
20.89 18.19
21.08 18.32
21.27 18.44
21.46 18.57
21.64 18.70
21.83 18.83
22.02 18.96
22.21 19.08
22.40 19.21
22.59 19.33
22.78 19.46
22.97 19.58
23.16 19.71
23.34 19.83
23.53 19.96
23.72 20.08
23.91 20.21
24.10 20.34
24.29 20.46
24.48 20.59
24.67 20.72
24.86 20.84
25.05 20.97
25.23 21.09
25.42 21.22
25.61 21.35
25.80 21.47
25.99 21.60
26.18 21.72
26.37 21.85
26.56 21.98
26.75 22.10
26.93 22.23
27.12 22.36
27.31 22.48
27.50 22.61
27.69 22.73
27.88 22.86
28.07 22.99
28.26 23.11
28.45 23.24
28.63 23.37
28.82 23.49
29.01 23.62
29.20 23.74
29.39 23.87
29.58 24.00

Fattore di sicurezza (FS) 0.179 - N.7 -- X Y Lambda= 0.816

15.49 15.17
15.67 15.24
15.86 15.31
16.04 15.38
16.22 15.45
16.40 15.52
16.59 15.59
16.77 15.65
16.95 15.72
17.13 15.80
17.32 15.87
17.50 15.95
17.68 16.04
17.86 16.12
18.04 16.22
18.23 16.31
18.41 16.41
18.59 16.52
18.77 16.63
18.96 16.74
19.14 16.85
19.32 16.97
19.50 17.10
19.69 17.22
19.87 17.35
20.05 17.47
20.23 17.60
20.41 17.72
20.60 17.85
20.78 17.97
20.96 18.10
21.14 18.22
21.33 18.35
21.51 18.47
21.69 18.60

	21.87	18.72
	22.06	18.84
	22.24	18.97
	22.42	19.09
	22.60	19.21
	22.78	19.34
	22.97	19.46
	23.15	19.58
	23.33	19.71
	23.51	19.83
	23.70	19.95
	23.88	20.08
	24.06	20.20
	24.24	20.32
	24.43	20.44
	24.61	20.57
	24.79	20.69
	24.97	20.81
	25.15	20.93
	25.34	21.06
	25.52	21.18
	25.70	21.31
	25.88	21.43
	26.07	21.56
	26.25	21.69
	26.43	21.82
	26.61	21.95
	26.80	22.08
	26.98	22.22
	27.16	22.35
	27.34	22.48
	27.52	22.62
	27.71	22.75
	27.89	22.89
	28.07	23.03
	28.25	23.16
	28.44	23.30
	28.62	23.43
	28.80	23.57
Fattore di sicurezza (FS)	0.179 - N.8 –	X Y Lambda= 0.978
	15.77	15.36
	15.95	15.47
	16.13	15.57
	16.32	15.67
	16.50	15.78
	16.68	15.88
	16.86	15.98
	17.04	16.08
	17.22	16.19
	17.40	16.29
	17.58	16.40
	17.76	16.50
	17.95	16.61
	18.13	16.71
	18.31	16.82
	18.49	16.93
	18.67	17.04
	18.85	17.15
	19.03	17.26
	19.21	17.37
	19.39	17.48
	19.58	17.60
	19.76	17.71
	19.94	17.82
	20.12	17.94
	20.30	18.05
	20.48	18.17
	20.66	18.28
	20.84	18.40
	21.02	18.51
	21.21	18.63
	21.39	18.74
	21.57	18.86
	21.75	18.98
	21.93	19.10
	22.11	19.21
	22.29	19.33
	22.47	19.45
	22.65	19.57
	22.83	19.68
	23.02	19.80
	23.20	19.92
	23.38	20.04
	23.56	20.15
	23.74	20.27
	23.92	20.39
	24.10	20.51
	24.28	20.62
	24.46	20.74
	24.65	20.86
	24.83	20.98
	25.01	21.09
	25.19	21.21
	25.37	21.33
	25.55	21.45
	25.73	21.56
	25.91	21.68
	26.09	21.80
	26.28	21.91
	26.46	22.03
	26.64	22.15
	26.82	22.27
	27.00	22.38
	27.18	22.50
	27.36	22.62
	27.54	22.74
	27.72	22.85
	27.91	22.97

28.09 23.09
28.27 23.20
28.45 23.32
28.63 23.44
28.81 23.56
28.99 23.67

Fattore di sicurezza (FS) 0.180 - N.9 -- X Y Lambda= 0.810

15.80 15.38
15.98 15.45
16.16 15.52
16.34 15.59
16.53 15.65
16.71 15.72
16.89 15.78
17.07 15.85
17.25 15.92
17.43 15.99
17.62 16.06
17.80 16.14
17.98 16.22
18.16 16.30
18.34 16.39
18.52 16.48
18.71 16.57
18.89 16.67
19.07 16.77
19.25 16.88
19.43 16.99
19.62 17.10
19.80 17.22
19.98 17.33
20.16 17.45
20.34 17.57
20.52 17.70
20.71 17.82
20.89 17.94
21.07 18.06
21.25 18.19
21.43 18.31
21.61 18.44
21.80 18.57
21.98 18.70
22.16 18.83
22.34 18.96
22.52 19.09
22.70 19.22
22.89 19.35
23.07 19.48
23.25 19.61
23.43 19.74
23.61 19.87
23.79 20.00
23.98 20.13
24.16 20.26
24.34 20.39
24.52 20.52
24.70 20.65
24.88 20.78
25.07 20.91
25.25 21.03
25.43 21.16
25.61 21.29
25.79 21.42
25.98 21.55
26.16 21.68
26.34 21.81
26.52 21.94
26.70 22.06
26.88 22.19
27.07 22.32
27.25 22.45
27.43 22.58
27.61 22.71
27.79 22.84
27.97 22.97
28.16 23.10
28.34 23.23
28.52 23.36
28.70 23.48
28.88 23.61

Fattore di sicurezza (FS) 0.180 - N.10 -- X Y Lambda= 0.807

16.10 15.59
16.28 15.66
16.46 15.74
16.64 15.80
16.82 15.87
17.00 15.94
17.18 16.01
17.36 16.08
17.54 16.15
17.72 16.22
17.90 16.30
18.09 16.38
18.27 16.46
18.45 16.55
18.63 16.64
18.81 16.74
18.99 16.84
19.17 16.95
19.35 17.06
19.53 17.18
19.71 17.29
19.89 17.42
20.07 17.54
20.25 17.67
20.43 17.80
20.61 17.92
20.79 18.05

20.97	18.18
21.15	18.30
21.33	18.43
21.51	18.55
21.69	18.68
21.87	18.80
22.05	18.92
22.23	19.05
22.41	19.17
22.59	19.29
22.77	19.41
22.96	19.54
23.14	19.66
23.32	19.78
23.50	19.90
23.68	20.03
23.86	20.15
24.04	20.27
24.22	20.40
24.40	20.52
24.58	20.65
24.76	20.77
24.94	20.89
25.12	21.01
25.30	21.14
25.48	21.26
25.66	21.38
25.84	21.51
26.02	21.63
26.20	21.75
26.38	21.88
26.56	22.00
26.74	22.12
26.92	22.25
27.10	22.37
27.28	22.49
27.46	22.62
27.64	22.74
27.83	22.86
28.01	22.99
28.19	23.11
28.37	23.23
28.55	23.36
28.73	23.48
28.91	23.60
29.09	23.73

---------- ANALISI DEFICIT DI RESISTENZA ----------

DATI RELATIVI ALLE 10 SUPERFICI GENERATE CON MINOR Fs *

Analisi Deficit in riferimento a FS(progetto) = 1.100

Sup N.	FS	FTR(kN/m)	FTA(kN/m)	Bilancio(kN/m)	ESITO
1	0.177	11.8	66.9	-61.8	Deficit
2	0.177	13.5	76.1	-70.2	Deficit
3	0.178	12.1	68.2	-62.9	Deficit
4	0.178	12.7	71.5	-66.0	Deficit
5	0.178	16.1	90.5	-83.5	Deficit
6	0.178	15.6	87.7	-80.8	Deficit
7	0.179	18.2	102.0	-94.0	Deficit
8	0.179	9.9	55.4	-51.0	Deficit
9	0.180	18.5	102.8	-94.6	Deficit
10	0.180	15.6	87.0	-80.0	Deficit

Esito analisi: DEFICIT di RESISTENZA!

Valore massimo di DEFICIT di RESITENZA(kN/m): -94.6

Note: FTR --> Forza totale Resistente rispetto alla superficie di scivolamento (componente Orizzontale)

FTA --> Forza totale Agente rispetto alla superficie di scivolamento (componente Orizzontale)

IMPORTANTE! : Il Deficit o il Surplus di resistenza viene espresso in kN per metro di LARGHEZZA rispetto al fronte della scarpata

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TABELLA PARAMETRI CONCI DELLA SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	dx (m)	alpha (gradi)	W (kN/m)	ru (-)	U (kPa)	phi' (gradi)	c'/Cu (kPa)
15.623	0.184	27.38	0.06	0.52	0.17	28.52	0.00
15.807	0.001	27.38	0.00	0.52	0.33	28.52	0.00
15.808	0.184	27.27	0.19	0.52	0.50	28.52	0.00
15.992	0.001	27.27	0.00	0.52	0.67	28.52	0.00
15.993	0.184	27.12	0.31	0.52	0.84	28.52	0.00
16.177	0.001	27.12	0.00	0.52	1.01	28.52	0.00
16.178	0.184	26.98	0.44	0.52	1.19	28.52	0.00
16.362	0.001	26.98	0.00	0.52	1.36	28.52	0.00
16.363	0.184	26.89	0.57	0.52	1.54	28.52	0.00
16.547	0.001	26.89	0.00	0.52	1.71	28.52	0.00
16.548	0.184	26.88	0.70	0.52	1.89	28.52	0.00
16.731	0.001	26.88	0.00	0.52	2.06	28.52	0.00
16.733	0.184	26.96	0.83	0.52	2.24	28.52	0.00
16.916	0.001	26.96	0.01	0.52	2.41	28.52	0.00
16.918	0.184	27.15	0.96	0.52	2.59	28.52	0.00
17.101	0.001	27.15	0.01	0.52	2.76	28.52	0.00
17.102	0.184	27.45	1.09	0.52	2.92	28.52	0.00
17.286	0.001	27.45	0.01	0.52	3.09	28.52	0.00
17.287	0.184	27.85	1.21	0.52	3.24	28.52	0.00
17.471	0.001	27.85	0.01	0.52	3.40	28.52	0.00
17.472	0.184	28.33	1.32	0.52	3.55	28.52	0.00
17.656	0.001	28.33	0.01	0.52	3.69	28.52	0.00
17.657	0.184	28.86	1.43	0.52	3.83	28.52	0.00
17.841	0.001	28.86	0.01	0.52	3.97	28.52	0.00
17.842	0.184	29.42	1.52	0.52	4.09	28.52	0.00
18.026	0.001	29.42	0.01	0.52	4.22	28.52	0.00
18.027	0.184	29.95	1.61	0.52	4.33	28.52	0.00
18.211	0.001	29.95	0.01	0.52	4.44	28.52	0.00
18.212	0.184	30.42	1.69	0.52	4.55	28.52	0.00
18.396	0.001	30.42	0.01	0.52	4.65	28.52	0.00
18.397	0.184	30.87	1.77	0.52	4.74	28.52	0.00
18.580	0.001	30.87	0.01	0.52	4.84	28.52	0.00
18.582	0.184	31.38	1.83	0.52	4.92	28.52	0.00
18.765	0.001	31.38	0.01	0.52	5.00	28.52	0.00
18.766	0.184	31.91	1.89	0.52	5.07	28.52	0.00

18.950	0.001	31.91	0.01	0.52	5.15	28.52	0.00
18.951	0.184	32.41	1.94	0.52	5.21	28.52	0.00
19.135	0.001	32.41	0.01	0.52	5.27	28.52	0.00
19.136	0.184	32.86	1.98	0.52	5.32	28.52	0.00
19.320	0.001	32.86	0.01	0.52	5.37	28.52	0.00
19.321	0.184	33.24	2.01	0.52	5.41	28.52	0.00
19.505	0.001	33.24	0.01	0.52	5.45	28.52	0.00
19.506	0.184	33.53	2.04	0.52	5.48	28.52	0.00
19.690	0.001	33.53	0.01	0.52	5.52	28.52	0.00
19.691	0.184	33.73	2.07	0.52	5.55	28.52	0.00
19.875	0.001	33.73	0.01	0.52	5.58	28.52	0.00
19.876	0.184	33.84	2.09	0.52	5.61	28.52	0.00
20.060	0.001	33.84	0.01	0.52	5.64	28.52	0.00
20.061	0.184	33.86	2.11	0.52	5.66	28.52	0.00
20.244	0.001	33.86	0.01	0.52	5.69	28.52	0.00
20.246	0.184	33.82	2.13	0.52	5.72	28.52	0.00
20.429	0.001	33.82	0.01	0.52	5.75	28.52	0.00
20.431	0.184	33.73	2.15	0.52	5.78	28.52	0.00
20.614	0.001	33.73	0.01	0.52	5.81	28.52	0.00
20.615	0.184	33.62	2.18	0.52	5.84	28.52	0.00
20.799	0.001	33.62	0.01	0.52	5.87	28.52	0.00
20.800	0.184	33.54	2.20	0.52	5.91	28.52	0.00
20.984	0.001	33.54	0.01	0.52	5.94	28.52	0.00
20.985	0.184	33.50	2.23	0.52	5.98	28.52	0.00
21.169	0.001	33.50	0.01	0.52	6.01	28.52	0.00
21.170	0.184	33.47	2.25	0.52	6.05	28.52	0.00
21.354	0.001	33.47	0.01	0.52	6.09	28.52	0.00
21.355	0.184	33.41	2.28	0.52	6.13	28.52	0.00
21.539	0.001	33.41	0.01	0.52	6.16	28.52	0.00
21.540	0.184	33.34	2.31	0.52	6.20	28.52	0.00
21.724	0.001	33.34	0.01	0.52	6.24	28.52	0.00
21.725	0.184	33.27	2.34	0.52	6.28	28.52	0.00
21.909	0.001	33.27	0.02	0.52	6.32	28.52	0.00
21.910	0.184	33.20	2.37	0.52	6.37	28.52	0.00
22.093	0.001	33.20	0.02	0.52	6.41	28.52	0.00
22.095	0.184	33.15	2.40	0.52	6.45	28.52	0.00
22.278	0.001	33.15	0.02	0.52	6.50	28.52	0.00
22.280	0.184	33.12	2.44	0.52	6.54	28.52	0.00
22.463	0.001	33.12	0.02	0.52	6.58	28.52	0.00
22.464	0.136	33.10	1.82	0.52	6.62	28.52	0.00
22.600	0.049	33.10	0.66	0.52	6.63	28.52	0.00
22.649	0.184	33.11	2.42	0.52	6.51	28.52	0.00
22.833	0.001	33.11	0.02	0.52	6.42	28.52	0.00
22.834	0.184	33.13	2.36	0.52	6.33	28.52	0.00
23.018	0.001	33.13	0.01	0.52	6.24	28.52	0.00
23.019	0.184	33.17	2.29	0.52	6.14	28.52	0.00
23.203	0.001	33.17	0.01	0.52	6.05	28.52	0.00
23.204	0.184	33.21	2.22	0.52	5.96	28.52	0.00
23.388	0.001	33.21	0.01	0.52	5.86	28.52	0.00
23.389	0.184	33.24	2.15	0.52	5.77	28.52	0.00
23.573	0.001	33.24	0.01	0.52	5.67	28.52	0.00
23.574	0.184	33.26	2.08	0.52	5.58	28.52	0.00
23.758	0.001	33.26	0.01	0.52	5.48	28.52	0.00
23.759	0.184	33.26	2.01	0.52	5.39	28.52	0.00
23.942	0.001	33.26	0.01	0.52	5.29	28.52	0.00
23.944	0.184	33.26	1.94	0.52	5.20	28.52	0.00
24.127	0.001	33.26	0.01	0.52	5.10	28.52	0.00
24.128	0.184	33.25	1.87	0.52	5.01	28.52	0.00
24.312	0.001	33.25	0.01	0.52	4.91	28.52	0.00
24.313	0.184	33.25	1.80	0.52	4.82	28.52	0.00
24.497	0.001	33.25	0.01	0.52	4.73	28.52	0.00
24.498	0.184	33.24	1.72	0.52	4.63	28.52	0.00
24.682	0.001	33.24	0.01	0.52	4.54	28.52	0.00
24.683	0.184	33.24	1.65	0.52	4.44	28.52	0.00
24.867	0.001	33.24	0.01	0.52	4.35	28.52	0.00
24.868	0.184	33.23	1.58	0.52	4.25	28.52	0.00
25.052	0.001	33.23	0.01	0.52	4.16	28.52	0.00
25.053	0.184	33.23	1.51	0.52	4.07	28.52	0.00
25.237	0.001	33.23	0.01	0.52	3.97	28.52	0.00
25.238	0.184	33.23	1.44	0.52	3.88	28.52	0.00
25.422	0.001	33.23	0.01	0.52	3.78	28.52	0.00
25.423	0.184	33.23	1.37	0.52	3.69	28.52	0.00
25.606	0.001	33.23	0.01	0.52	3.59	28.52	0.00
25.608	0.184	33.24	1.30	0.52	3.50	28.52	0.00
25.791	0.001	33.24	0.01	0.52	3.41	28.52	0.00
25.793	0.184	33.24	1.23	0.52	3.31	28.52	0.00
25.976	0.001	33.24	0.01	0.52	3.22	28.52	0.00
25.977	0.184	33.24	1.16	0.52	3.12	28.52	0.00
26.161	0.001	33.24	0.01	0.52	3.03	28.52	0.00
26.162	0.184	33.24	1.09	0.52	2.93	28.52	0.00
26.346	0.001	33.24	0.01	0.52	2.84	28.52	0.00
26.347	0.184	33.25	1.02	0.52	2.74	28.52	0.00
26.531	0.001	33.25	0.01	0.52	2.65	28.52	0.00
26.532	0.184	33.25	0.95	0.52	2.56	28.52	0.00
26.716	0.001	33.25	0.01	0.52	2.46	28.52	0.00
26.717	0.184	33.25	0.88	0.52	2.37	28.52	0.00
26.901	0.001	33.25	0.01	0.52	2.27	28.52	0.00
26.902	0.184	33.25	0.81	0.52	2.18	28.52	0.00
27.086	0.001	33.25	0.00	0.52	2.08	28.52	0.00
27.087	0.184	33.25	0.74	0.52	1.99	28.52	0.00
27.271	0.001	33.25	0.00	0.52	1.89	28.52	0.00
27.272	0.184	33.25	0.67	0.52	1.80	28.52	0.00
27.455	0.001	33.25	0.00	0.52	1.70	28.52	0.00
27.457	0.184	33.25	0.60	0.52	1.61	28.52	0.00
27.640	0.001	33.25	0.00	0.52	1.51	28.52	0.00
27.642	0.184	33.25	0.53	0.52	1.42	28.52	0.00
27.825	0.001	33.25	0.00	0.52	1.33	28.52	0.00
27.826	0.184	33.25	0.46	0.52	1.23	28.52	0.00
28.010	0.001	33.25	0.00	0.52	1.14	28.52	0.00
28.011	0.184	33.25	0.39	0.52	1.04	28.52	0.00
28.195	0.001	33.25	0.00	0.52	0.95	28.52	0.00
28.196	0.184	33.25	0.32	0.52	0.85	28.52	0.00
28.380	0.001	33.25	0.00	0.52	0.76	28.52	0.00
28.381	0.184	33.25	0.25	0.52	0.66	28.52	0.00
28.565	0.001	33.25	0.00	0.52	0.57	28.52	0.00
28.566	0.184	33.25	0.18	0.52	0.47	28.52	0.00
28.750	0.001	33.25	0.00	0.52	0.38	28.52	0.00
28.751	0.184	33.25	0.11	0.52	0.28	28.52	0.00

28.935	0.001	33.25	0.00	0.52	0.19	28.52	0.00
28.936	0.184	33.25	0.04	0.52	0.10	28.52	0.00
29.120	0.001	33.25	0.00	0.52	0.00	28.52	0.00

LEGENDA SIMBOLI
X(m) : Ascissa sinistra concio
dx(m) : Larghezza concio
alpha(gradi) : Angolo pendenza base concio
W(kN/m) : Forza peso concio
ru(-) : Coefficiente locale pressione interstiziale
U(kPa) : Pressione totale dei pori base concio
phi'(gradi) : Angolo di attrito efficace base concio
c'/Cu (kPa) : Coesione efficace / Resistenza al taglio in condizioni non drenate

TABELLA DIAGRAMMA DELLE FORZE DELLA SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	ht (m)	yt (m)	yt' (--)	E(x) (kN/m)	T(x) (kN/m)	E' (kN)	rho(x) (--)	local_FS_FEM (--)	local_FS_q-pFEM (--)		
15.623	0.000	15.257	0.610	0.0000000000E+000	0.0000000000E+000	0.0000000000E+000		0.016	0.896	0.220	
15.807	0.017	15.369	0.610	4.7982446297E-003	2.2379544009E-004	2.6107332629E-002		0.016	0.758	0.220	
15.808	0.017	15.370	0.608	4.8271645353E-003	2.2622942563E-004	3.6095703879E-002		0.006	0.757	0.220	
15.992	0.034	15.482	0.608	1.1472227917E-002	1.0808219971E-003	3.6345017166E-002		0.032	0.706	0.220	
15.993	0.034	15.483	0.606	1.1547245073E-002	1.0907575814E-003	1.3168306288E-001		0.006	0.706	0.220	
16.177	0.051	15.594	0.606	3.5820016335E-002	5.1092260801E-003	1.3269490336E-001		0.047	0.970	0.220	
16.178	0.051	15.595	0.605	3.6082119647E-002	5.1562634546E-003	3.5006166136E-001		0.015	0.972	0.220	
16.362	0.069	15.706	0.605	1.0054532784E-001	1.9254321909E-002	3.5177565326E-001		0.063	1.229	0.220	
16.363	0.069	15.707	0.605	1.0112434292E-001	1.9394229071E-002	6.3572582323E-001		0.072	1.229	0.220	
16.547	0.087	15.818	0.605	2.1808905364E-001	5.2432603364E-002	7.7027229336E-001		0.079	0.936	0.683	
16.548	0.087	15.818	0.604	2.1899674394E-001	5.2713881924E-002	7.7189422987E-001		1.393	0.933	0.692	
16.731	0.105	15.929	0.604	3.8526946081E-001	1.1144451855E-001	1.0407744040E+000		0.094	0.571	1.898	
16.733	0.105	15.930	0.605	3.8649563857E-001	1.1190984091E-001	1.0425018256E+000		0.324	0.569	1.904	
16.916	0.123	16.041	0.605	6.0159044548E-001	2.0307428152E-001	1.2905548603E+000		0.110	0.344	2.643	
16.918	0.123	16.042	0.607	6.0311046508E-001	2.0375717463E-001	1.2919584396E+000		0.231	0.343	2.648	
17.101	0.140	16.154	0.607	8.5837375645E-001	3.3028559942E-001	1.4747613029E+000		0.125	0.233	3.492	
17.102	0.141	16.154	0.610	8.6011034406E-001	3.3118908691E-001	1.4757010964E+000		0.214	0.233	3.495	
17.286	0.157	16.266	0.610	1.1428501870E+000	4.9185406370E-001	1.5939948804E+000		0.140	0.220	3.491	
17.287	0.157	16.267	0.615	1.1447269467E+000	4.9296214881E-001	1.5946203285E+000		0.214	0.220	3.491	
17.471	0.173	16.380	0.615	1.4465560298E+000	6.8543683688E-001	1.6936711705E+000		0.154	0.220	3.320	
17.472	0.173	16.381	0.620	1.4485501699E+000	6.8674163638E-001	1.6943734794E+000		0.220	0.220	3.319	
17.656	0.188	16.495	0.620	1.7696300621E+000	9.1093677805E-001	1.7961726092E+000		0.168	0.220	3.055	
17.657	0.188	16.495	0.626	1.7717447574E+000	9.1243704904E-001	1.7966949779E+000		0.228	0.220	3.053	
17.841	0.202	16.610	0.626	2.1071044124E+000	1.1649144965E+000	1.8407125144E+000		0.180	0.220	2.722	
17.842	0.202	16.611	0.633	2.1092712370E+000	1.1665660184E+000	1.8407225827E+000		0.236	0.220	2.719	
18.026	0.215	16.727	0.633	2.4448141793E+000	1.4374701057E+000	1.7975200499E+000		0.191	0.220	2.328	
18.027	0.215	16.728	0.639	2.4469298313E+000	1.4391968690E+000	1.7969729310E+000		0.244	0.220	2.326	
18.211	0.226	16.845	0.639	2.7672642878E+000	1.7159247924E+000	1.6819777789E+000		0.202	0.220	1.870	
18.212	0.226	16.846	0.644	2.7692437424E+000	1.7176499250E+000	1.6811160587E+000		0.252	0.220	1.867	
18.396	0.237	16.965	0.644	3.0658615498E+000	1.9903837577E+000	1.5494360945E+000		0.211	0.220	1.302	
18.397	0.237	16.965	0.650	3.0676849936E+000	1.9920654793E+000	1.5485953605E+000		0.260	0.220	1.299	
18.580	0.247	17.085	0.650	3.3394574468E+000	2.2553327501E+000	1.4054492283E+000		0.220	0.220	1.008	
18.582	0.247	17.085	0.656	3.3411112930E+000	2.2569334754E+000	1.4044357557E+000		0.268	0.220	1.007	
18.765	0.255	17.206	0.656	3.5834803449E+000	2.5031089578E+000	1.2278123953E+000		0.227	0.220	0.896	
18.766	0.255	17.207	0.662	3.5849249431E+000	2.5045736887E+000	1.2265601518E+000		0.275	0.220	0.895	
18.950	0.262	17.328	0.662	3.7912496259E+000	2.7247069098E+000	1.0142926585E+000		0.234	0.220	0.827	
18.951	0.262	17.329	0.668	3.7924427586E+000	2.7259801857E+000	1.0128399079E+000		0.281	0.220	0.826	
19.135	0.268	17.452	0.668	3.9571862829E+000	2.9123891033E+000	7.7903890333E-001		0.240	0.220	0.781	
19.136	0.268	17.453	0.674	3.9581024494E+000	2.9134321278E+000	7.7752820622E-001		0.286	0.220	0.780	
19.320	0.273	17.576	0.674	4.0794149457E+000	3.0621286020E+000	5.3977385860E-001		0.244	0.220	0.749	
19.321	0.274	17.577	0.678	4.0800493955E+000	3.0629253288E+000	5.3815638203E-001		0.291	0.220	0.749	
19.505	0.278	17.702	0.678	4.1557158959E+000	3.1708925139E+000	2.8847102871E-001		0.248	0.220	0.728	
19.506	0.278	17.703	0.682	4.1560545844E+000	3.1714273070E+000	2.8696123566E-001		0.296	0.220	0.728	
19.690	0.281	17.828	0.682	4.1888374005E+000	3.2405413151E+000	8.0228722766E-002		0.252	0.220	0.716	
19.691	0.281	17.829	0.684	4.1889311857E+000	3.2408544296E+000	7.9112949345E-002		0.300	0.220	0.716	
19.875	0.284	17.954	0.684	4.1895063144E+000	3.2800814630E+000	-6.2648648373E-002		0.255	0.220	0.710	
19.876	0.284	17.955	0.686	4.1894321393E+000	3.2802390819E+000	-6.3374581749E-002		0.305	0.220	0.710	
20.060	0.287	18.081	0.686	4.1683549684E+000	3.2991698076E+000	-1.6348795048E-001		0.258	0.220	0.710	
20.061	0.287	18.082	0.686	4.1681621453E+000	3.2992194818E+000	-1.6411873905E-001		0.309	0.220	0.710	
20.244	0.290	18.208	0.686	4.1281050375E+000	3.3014117101E+000	-2.7410006349E-001		0.260	0.220	0.716	
20.246	0.290	18.209	0.684	4.1277819571E+000	3.3013520911E+000	-2.7481353585E-001		0.313	0.220	0.716	
20.429	0.293	18.335	0.684	4.0676394860E+000	3.2869983601E+000	-3.7584962691E-001		0.263	0.220	0.726	
20.431	0.293	18.335	0.686	4.0671967209E+000	3.2868425319E+000	-3.7640817169E-001		0.318	0.220	0.726	
20.614	0.296	18.461	0.686	3.9911177805E+000	3.2597879761E+000	-4.4577988622E-001		0.266	0.220	0.742	
20.615	0.296	18.462	0.683	3.9905928319E+000	3.2595674691E+000	-4.4610759786E-001		0.324	0.220	0.742	
20.799	0.299	18.588	0.683	3.9049534655E+000	3.2250081604E+000	-4.8127839468E-001		0.269	0.220	0.764	
20.800	0.299	18.589	0.680	3.9043868398E+000	3.2247546885E+000	-4.8141867355E-001		0.330	0.220	0.764	
20.984	0.302	18.713	0.679	3.8143106931E+000	3.1866028638E+000	-4.9847207878E-001		0.272	0.220	0.792	
20.985	0.302	18.714	0.678	3.8137238423E+000	3.1863315326E+000	-4.9858763116E-001		0.336	0.220	0.792	
21.169	0.305	18.839	0.678	3.7207949958E+000	3.1455142215E+000	-5.0875488251E-001		0.275	0.220	0.828	
21.170	0.305	18.839	0.675	3.7201961101E+000	3.1452295188E+000	-5.0875203743E-001		0.343	0.220	0.828	
21.354	0.308	18.964	0.675	3.6266407280E+000	3.1033426827E+000	-5.1190769164E-001		0.279	0.220	0.875	
21.355	0.308	18.964	0.672	3.6260380828E+000	3.1030505357E+000	-5.1198698635E-001		0.351	0.220	0.876	
21.539	0.310	19.088	0.672	3.5298966537E+000	3.0582827094E+000	-5.4004664379E-001		0.282	0.220	0.933	
21.540	0.310	19.089	0.668	3.5292607627E+000	3.0579571685E+000	-5.4033273229E-001		0.359	0.220	0.934	
21.724	0.312	19.211	0.668	3.4249961733E+000	3.0053214429E+000	-5.9869811627E-001		0.286	0.220	1.010	
21.725	0.312	19.212	0.664	3.4242911507E+000	3.0049295037E+000	-5.9913556640E-001		0.368	0.220	1.011	
21.909	0.314	19.334	0.664	3.3079658846E+000	2.9404181375E+000	-6.6510237166E-001		0.289	0.220	1.115	
21.910	0.314	19.335	0.659	3.3071827427E+000	2.9399471989E+000	-6.6545566516E-001		0.378	0.220	1.116	
22.093	0.315	19.456	0.659	3.1803683789E+000	2.8632589032E+000	-7.1390323146E-001		0.293	0.220	1.269	
22.095	0.315	19.457	0.654	3.1795278236E+000	2.8627027323E+000	-7.1420047402E-001		0.390	0.220	1.270	
22.278	0.315	19.577	0.653	3.0439510867E+000	2.7668177746E+000	-7.6260593011E-001		0.296	0.220	1.554	
22.280	0.315	19.578	0.647	3.0430531805E+000	2.7661295625E+000	-7.6293689507E-001		0.401	0.220	1.557	
22.463	0.314	19.697	0.647	2.8978852930E+000	2.6442485473E+000	-8.1871876876E-001		0.297	0.220	1.925	
22.464	0.314	19.697	0.643	2.8969213031E+000	2.6433764821E+000	-8.1910042507E-001		0.374	0.220	1.926	
22.600	0.312	19.785	0.641	2.7828319733E+000	2.5320645768E+000	-8.6415267752E-001		0.321	0.220	2.017	
22.649	0.312	19.816	0.637	2.7398071757E+000	2.4866138380E+000	-8.8059087621E-001		0.416	0.220	2.015	
22.833	0.309	19.933	0.637	2.5727507017E+000	2.3000445934E+000	-9.3565503882E-001		0.291	0.220	1.971	
22.834	0.309	19.934	0.631	2.5716490969E+000	2.2987858259E+000	-9.3597215812E-001		0.416	0.220	1.970	
23.018	0.305	20.049	0.631	2.3946120569E+000	2.0915750546E+000	-9.9189345151E-001		0.285	0.220	1.817	
23.019	0.305	20.050	0.625	2.3934442343E+000	2.0902226729E+000	-9.9223733163E-001		0.414	0.220	1.816	
23.203	0.300	20.165	0.625	2.2070657005E+000	1.8732655190E+000	-1.0310279026E+000		0.277	0.220	1.550	
23.204	0.299	20.166	0.620	2.2058519378E+000	1.8718963217E+000	-1.0311550536E+000		0.412	0.220	1.548	
23.388	0.293	20.280	0.620	2.0159649505E+000	1.6599934164E+000	-1.0285652074E+000		0.268	0.220	1.146	
23.389	0.293	20.280	0.616	2.0147542539E+000	1.6586844209E+000	-1.0284083650E+000		0.412	0.220	1.143	
23.573	0.286	20.394	0.616	1.8291328881E+000	1.4577892677E+000	-9.8769193337E-001		0.260	0.220	0.533	
23.574	0.286	20.394	0.613	1.8279704091E+000	1.4565781242E+000	-9.8736005896E-001		0.414	0.220	0.527	
23.758	0.278	20.507	0.613	1.6512565269E+000	1.2721807387E+000	-9.3824505771E-001		0.251	0.220	0.220	
23.759	0.278	20.508	0.610	1.6501522321E+000	1.2710721758E+000	-9.3795197584E-001		0.417	0.220	0.220	
23.942	0.269	20.620	0.610	1.4823984617E+000	1.1026423980E+000	-8.8659786442E-001		0.243	0.220	0.220	

23.944	0.269	20.620	0.606	1.4813550018E+000	1.1016345940E+000	-8.8624089524E-001	0.424	0.220	0.220
24.127	0.260	20.732	0.606	1.3238116560E+000	9.4944167240E-001	-8.2813654437E-001	0.234	0.220	0.220
24.128	0.260	20.732	0.603	1.3228370298E+000	9.4853586989E-001	-8.2775359644E-001	0.435	0.220	0.220
24.312	0.251	20.843	0.603	1.1763016867E+000	8.1235270760E-001	-7.6725061912E-001	0.225	0.248	0.220
24.313	0.250	20.844	0.603	1.1753987380E+000	8.1154556536E-001	-7.6685954878E-001	0.451	0.248	0.220
24.497	0.241	20.955	0.603	1.0401536980E+000	6.9068576290E-001	-7.0518000767E-001	0.217	0.271	0.220
24.498	0.241	20.956	0.603	1.0393238226E+000	6.8997257817E-001	-7.0477861903E-001	0.475	0.271	0.220
24.682	0.231	21.066	0.603	9.1572254896E-001	5.8375093491E-001	-6.3966799008E-001	0.208	0.291	0.220
24.683	0.231	21.067	0.603	9.1496981711E-001	5.8312850795E-001	-6.3922359090E-001	0.511	0.291	0.220
24.867	0.222	21.178	0.603	8.0402551117E-001	4.9122258612E-001	-5.6853340767E-001	0.199	0.309	0.220
24.868	0.222	21.179	0.603	8.0335651691E-001	4.9068878202E-001	-5.6808808394E-001	0.565	0.309	0.220
25.052	0.212	21.290	0.603	7.0510026342E-001	4.1209657735E-001	-5.0330356526E-001	0.191	0.324	0.220
25.053	0.212	21.290	0.603	7.0450801583E-001	4.1164081154E-001	-5.0292536064E-001	0.648	0.324	0.220
25.237	0.202	21.401	0.603	6.1713809338E-001	3.4433786624E-001	-4.5025312571E-001	0.182	0.337	0.220
25.238	0.202	21.402	0.603	6.1660824851E-001	3.4394631139E-001	-4.4995353293E-001	0.789	0.337	0.220
25.422	0.193	21.513	0.603	5.3799129192E-001	2.8592640047E-001	-4.0677430009E-001	0.174	0.347	0.220
25.423	0.193	21.513	0.603	5.3751260892E-001	2.8558837255E-001	-4.0650826093E-001	1.083	0.347	0.220
25.606	0.183	21.624	0.603	4.6677047692E-001	2.3570831408E-001	-3.6306845463E-001	0.165	0.355	0.220
25.608	0.183	21.625	0.603	4.6634325159E-001	2.3542000260E-001	-3.6278752351E-001	2.031	0.355	0.220
25.791	0.174	21.736	0.603	4.0362042197E-001	1.9312148981E-001	-3.2065513068E-001	0.157	0.362	0.220
25.793	0.174	21.736	0.603	4.0324310973E-001	1.9287817204E-001	-3.2039850623E-001	27.314	0.362	0.220
25.976	0.164	21.847	0.603	3.4790413450E-001	1.5723706951E-001	-2.8289517254E-001	0.148	0.369	0.220
25.977	0.164	21.848	0.603	3.4757125228E-001	1.5703247432E-001	-2.8267186008E-001	1.465	0.369	0.220
26.161	0.154	21.959	0.603	2.9867909415E-001	1.2706481823E-001	-2.5041135182E-001	0.139	0.375	0.220
26.162	0.154	21.960	0.603	2.9838443173E-001	1.2689295198E-001	-2.5022021131E-001	0.678	0.375	0.220
26.346	0.145	22.070	0.603	2.5503495146E-001	1.0172754024E-001	-2.2223290934E-001	0.131	0.381	0.220
26.347	0.145	22.071	0.603	2.5477344736E-001	1.0158350235E-001	-2.2206265537E-001	0.406	0.381	0.220
26.531	0.135	22.182	0.603	2.1636889961E-001	8.0558724399E-002	-1.9636113100E-001	0.122	0.387	0.220
26.532	0.135	22.183	0.603	2.1613784292E-001	8.0438981648E-002	-1.9620426975E-001	0.270	0.387	0.220
26.716	0.125	22.294	0.603	1.8225567213E-001	6.3016458568E-002	-1.7309512854E-001	0.114	0.394	0.220
26.717	0.125	22.294	0.603	1.8205199301E-001	6.2917630546E-002	-1.7295577872E-001	0.190	0.394	0.220
26.901	0.116	22.405	0.603	1.5219339313E-001	4.8578780929E-002	-1.5251674637E-001	0.105	0.401	0.220
26.902	0.116	22.406	0.603	1.5201392839E-001	4.8497776245E-002	-1.5239391412E-001	0.138	0.401	0.220
27.086	0.106	22.517	0.603	1.2570493032E-001	3.6783775926E-002	-1.3438249109E-001	0.096	0.409	0.220
27.087	0.106	22.517	0.603	1.2554680408E-001	3.6717911493E-002	-1.3427406268E-001	0.101	0.409	0.220
27.271	0.097	22.628	0.603	1.0237443406E-001	2.7236264656E-002	-1.1827297162E-001	0.088	0.416	0.220
27.272	0.096	22.629	0.603	1.0223526477E-001	2.7183281957E-002	-1.1817571347E-001	0.075	0.416	0.220
27.455	0.087	22.740	0.603	8.1841171014E-002	1.9598342925E-002	-1.0438851980E-001	0.079	0.424	0.220
27.457	0.087	22.740	0.603	8.1718335092E-002	1.9556171225E-002	-1.0430976002E-001	0.055	0.424	0.220
27.640	0.077	22.851	0.603	6.3655452984E-002	1.3551449648E-002	-9.2350053011E-002	0.071	0.432	0.220
27.642	0.077	22.852	0.603	6.3546787580E-002	1.3518395262E-002	-9.2272494305E-002	0.040	0.433	0.220
27.825	0.068	22.963	0.603	4.7748072433E-002	8.8956659831E-003	-7.9457296254E-002	0.062	0.442	0.220
27.826	0.068	22.964	0.603	4.7654589615E-002	8.8708091949E-003	-7.9370029140E-002	0.028	0.442	0.220
28.010	0.058	23.074	0.603	3.4365213459E-002	5.4887548874E-003	-6.5139154899E-002	0.053	0.454	0.220
28.011	0.058	23.075	0.603	3.4288588950E-002	5.4711624106E-003	-6.5045910221E-002	0.019	0.454	0.220
28.195	0.048	23.186	0.603	2.3646063389E-002	3.1480044654E-003	-5.1124090494E-002	0.045	0.466	0.220
28.196	0.048	23.187	0.603	2.3585929614E-002	3.1363156150E-003	-5.1043239432E-002	0.013	0.466	0.220
28.380	0.039	23.298	0.603	1.5320321416E-002	1.6322253946E-003	-3.9015866979E-002	0.036	0.481	0.220
28.381	0.039	23.298	0.603	1.5274437539E-002	1.6249514616E-003	-3.8940861856E-002	0.008	0.481	0.220
28.565	0.029	23.409	0.603	9.1491564514E-003	7.3181706665E-004	-2.8039807551E-002	0.027	0.507	0.220
28.566	0.029	23.410	0.603	9.1161864211E-003	7.2734157847E-004	-2.7976299121E-002	0.006	0.508	0.220
28.750	0.019	23.521	0.603	4.8143888042E-003	2.5715361143E-004	-1.9252844959E-002	0.019	0.589	0.220
28.751	0.019	23.522	0.603	4.7917534347E-003	2.5488473767E-004	-1.9204670732E-002	0.006	0.590	0.220
28.935	0.009	23.632	0.603	1.8862503717E-003	5.0720823532E-005	-1.2757807269E-002	0.009	1.389	0.220
28.936	0.010	23.633	0.605	1.8712532021E-003	4.9769762153E-005	-1.2722398275E-002	0.006	1.404	0.220
29.120	0.000	23.744	0.603	8.9881663497E-006	1.1953110186E-007	-7.6512567721E-003	0.038	0.220	0.905

LEGENDA SIMBOLI
X(m) : Ascissa sinistra concio
ht(m) : Altezza linea di thrust da nodo sinistro base concio
yt(m) : coordinata Y linea di trust
yt'(-) : gradiente pendenza locale linea di trust
E(x)(kN/m) : Forza Normale interconcio
T(x)(kN/m) : Forza Tangenziale interconcio
E' (kN) : derivata Forza normale interconcio
Rho(x) (-) : fattore mobilizzazione resistenza al taglio verticale interconcio ZhU et al.(2003)
FS_FEM(x) (-) : fattore di sicurezza locale stimato (locale in X) by qFEM
FS_q-pFEM(x) (-) : fattore di sicurezza locale stimato (locale in X) by q-pFEM Procedure

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TABELLA SFORZI DI TAGLIO DISTRIBUITI LUNGO SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	dx (m)	dl (m)	alpha (gradi)	TauStress (kPa)	Tau (kN/m)
15.623	0.184	0.207	27.383	0.164	0.034
15.807	0.001	0.001	27.383	0.328	0.000
15.808	0.184	0.207	27.268	0.494	0.102
15.992	0.001	0.001	27.268	0.661	0.001
15.993	0.184	0.206	27.119	0.828	0.171
16.177	0.001	0.001	27.119	0.998	0.001
16.178	0.184	0.206	26.980	1.166	0.240
16.362	0.001	0.001	26.980	1.338	0.002
16.363	0.184	0.206	26.890	1.509	0.311
16.547	0.001	0.001	26.890	1.682	0.002
16.548	0.184	0.206	26.877	1.854	0.382
16.731	0.001	0.001	26.877	2.027	0.003
16.733	0.184	0.206	26.961	2.202	0.454
16.916	0.001	0.001	26.961	2.374	0.003
16.918	0.184	0.206	27.152	2.551	0.527
17.101	0.001	0.001	27.152	2.720	0.004
17.102	0.184	0.207	27.450	2.898	0.600
17.286	0.001	0.001	27.450	3.061	0.004
17.287	0.184	0.208	27.847	3.239	0.673
17.471	0.001	0.001	27.847	3.396	0.005
17.472	0.184	0.209	28.326	3.571	0.745
17.656	0.001	0.001	28.326	3.719	0.005
17.657	0.184	0.210	28.860	3.889	0.816
17.841	0.001	0.001	28.860	4.028	0.005
17.842	0.184	0.211	29.415	4.189	0.884
18.026	0.001	0.001	29.415	4.317	0.006
18.027	0.184	0.212	29.951	4.468	0.947
18.211	0.001	0.001	29.951	4.585	0.006
18.212	0.184	0.213	30.421	4.723	1.006
18.396	0.001	0.001	30.421	4.830	0.007
18.397	0.184	0.214	30.874	4.957	1.061
18.580	0.001	0.001	30.874	5.055	0.007
18.582	0.184	0.215	31.383	5.175	1.114
18.765	0.001	0.001	31.383	5.262	0.007
18.766	0.184	0.216	31.909	5.371	1.162

18.950	0.001	0.001	31.909	5.446	0.008
18.951	0.184	0.218	32.412	5.542	1.206
19.135	0.001	0.001	32.412	5.606	0.008
19.136	0.184	0.219	32.863	5.687	1.244
19.320	0.001	0.001	32.863	5.741	0.008
19.321	0.184	0.220	33.241	5.808	1.276
19.505	0.001	0.001	33.241	5.852	0.008
19.506	0.184	0.220	33.533	5.907	1.302
19.690	0.001	0.001	33.533	5.945	0.008
19.691	0.184	0.221	33.732	5.989	1.323
19.875	0.001	0.001	33.732	6.022	0.009
19.876	0.184	0.221	33.840	6.058	1.340
20.060	0.001	0.001	33.840	6.088	0.009
20.061	0.184	0.221	33.864	6.119	1.354
20.244	0.001	0.001	33.864	6.149	0.009
20.246	0.184	0.221	33.821	6.177	1.366
20.429	0.001	0.001	33.821	6.207	0.009
20.431	0.184	0.221	33.731	6.235	1.377
20.614	0.001	0.001	33.731	6.268	0.009
20.615	0.184	0.221	33.625	6.297	1.389
20.799	0.001	0.001	33.625	6.332	0.009
20.800	0.184	0.220	33.539	6.365	1.403
20.984	0.001	0.001	33.539	6.402	0.009
20.985	0.184	0.220	33.505	6.438	1.419
21.169	0.001	0.001	33.505	6.477	0.009
21.170	0.184	0.220	33.470	6.514	1.435
21.354	0.001	0.001	33.470	6.553	0.009
21.355	0.184	0.220	33.410	6.590	1.450
21.539	0.001	0.001	33.410	6.630	0.009
21.540	0.184	0.220	33.339	6.668	1.466
21.724	0.001	0.001	33.339	6.710	0.009
21.725	0.184	0.220	33.267	6.749	1.483
21.909	0.001	0.001	33.267	6.793	0.010
21.910	0.184	0.220	33.202	6.835	1.501
22.093	0.001	0.001	33.202	6.880	0.010
22.095	0.184	0.219	33.151	6.923	1.519
22.278	0.001	0.001	33.151	6.970	0.010
22.280	0.184	0.219	33.118	7.015	1.539
22.463	0.001	0.001	33.118	7.063	0.010
22.464	0.136	0.162	33.105	7.097	1.149
22.600	0.049	0.059	33.105	7.106	0.418
22.649	0.184	0.219	33.111	6.983	1.532
22.833	0.001	0.001	33.111	6.885	0.010
22.834	0.184	0.219	33.133	6.788	1.489
23.018	0.001	0.001	33.133	6.689	0.009
23.019	0.184	0.219	33.168	6.592	1.447
23.203	0.001	0.001	33.168	6.492	0.009
23.204	0.184	0.220	33.207	6.394	1.404
23.388	0.001	0.001	33.207	6.294	0.009
23.389	0.184	0.220	33.242	6.195	1.361
23.573	0.001	0.001	33.242	6.093	0.009
23.574	0.184	0.220	33.262	5.992	1.317
23.758	0.001	0.001	33.262	5.891	0.008
23.759	0.184	0.220	33.262	5.789	1.272
23.942	0.001	0.001	33.262	5.687	0.008
23.944	0.184	0.220	33.258	5.585	1.227
24.127	0.001	0.001	33.258	5.483	0.008
24.128	0.184	0.220	33.253	5.381	1.182
24.312	0.001	0.001	33.253	5.279	0.007
24.313	0.184	0.220	33.247	5.177	1.137
24.497	0.001	0.001	33.247	5.075	0.007
24.498	0.184	0.220	33.242	4.974	1.093
24.682	0.001	0.001	33.242	4.872	0.007
24.683	0.184	0.220	33.237	4.771	1.048
24.867	0.001	0.001	33.237	4.669	0.007
24.868	0.184	0.220	33.234	4.568	1.003
25.052	0.001	0.001	33.234	4.467	0.006
25.053	0.184	0.220	33.232	4.366	0.959
25.237	0.001	0.001	33.232	4.264	0.006
25.238	0.184	0.220	33.232	4.163	0.914
25.422	0.001	0.001	33.232	4.062	0.006
25.423	0.184	0.220	33.233	3.961	0.870
25.606	0.001	0.001	33.233	3.860	0.005
25.608	0.184	0.220	33.235	3.758	0.826
25.791	0.001	0.001	33.235	3.657	0.005
25.793	0.184	0.220	33.238	3.556	0.781
25.976	0.001	0.001	33.238	3.454	0.005
25.977	0.184	0.220	33.241	3.353	0.737
26.161	0.001	0.001	33.241	3.252	0.005
26.162	0.184	0.220	33.244	3.150	0.692
26.346	0.001	0.001	33.244	3.049	0.004
26.347	0.184	0.220	33.245	2.947	0.647
26.531	0.001	0.001	33.245	2.846	0.004
26.532	0.184	0.220	33.246	2.744	0.603
26.716	0.001	0.001	33.246	2.643	0.004
26.717	0.184	0.220	33.246	2.541	0.558
26.901	0.001	0.001	33.246	2.440	0.003
26.902	0.184	0.220	33.247	2.338	0.514
27.086	0.001	0.001	33.247	2.236	0.003
27.087	0.184	0.220	33.247	2.135	0.469
27.271	0.001	0.001	33.247	2.033	0.003
27.272	0.184	0.220	33.248	1.932	0.424
27.455	0.001	0.001	33.248	1.830	0.003
27.457	0.184	0.220	33.248	1.729	0.380
27.640	0.001	0.001	33.248	1.627	0.002
27.642	0.184	0.220	33.249	1.525	0.335
27.825	0.001	0.001	33.249	1.424	0.002
27.826	0.184	0.220	33.249	1.322	0.290
28.010	0.001	0.001	33.249	1.220	0.002
28.011	0.184	0.220	33.249	1.119	0.246
28.195	0.001	0.001	33.249	1.017	0.001
28.196	0.184	0.220	33.250	0.916	0.201
28.380	0.001	0.001	33.250	0.814	0.001
28.381	0.184	0.220	33.250	0.712	0.156
28.565	0.001	0.001	33.250	0.611	0.001
28.566	0.184	0.220	33.250	0.509	0.112
28.750	0.001	0.001	33.250	0.407	0.001
28.751	0.184	0.220	33.250	0.306	0.067

28.935	0.001	0.001	33.250	0.204	0.000
28.936	0.184	0.220	33.251	0.102	0.022
29.120	0.001	0.001	33.251	0.001	0.000

LEGENDA SIMBOLI
X(m) : Ascissa sinistra concio
dx(m) : Larghezza concio
dl(m) : lunghezza base concio
alpha(gradi) : Angolo pendenza base concio
TauStress(kPa) : Sforzo di taglio su base concio
TauF (kN/m) : Forza di taglio su base concio

CRITERIO DI ROTTURA secondo Hoek (2002,2007)
Strato 2 -- Parametri di resistenza al taglio equivalenti dell'ammasso roccioso
Fattore di riduzione NTC2008 gammaPHI=1.25e gammaC=1.25 - ATTIVATO

Sigma'(kPa)	Phi'(deg)	c'(kPa)
20.00	48.00	53.50
40.00	45.70	55.27
60.00	43.99	57.37
80.00	42.62	59.58
100.00	41.47	61.84
120.00	40.49	64.10
140.00	39.62	66.34
160.00	38.86	68.56
180.00	38.16	70.75
200.00	37.54	72.90
220.00	36.96	75.03
240.00	36.43	77.12
260.00	35.93	79.18
280.00	35.47	81.21
300.00	35.04	83.22
320.00	34.64	85.19
340.00	34.25	87.13
360.00	33.89	89.05
380.00	33.55	90.95
400.00	33.22	92.82
420.00	32.91	94.66
440.00	32.62	96.48
460.00	32.33	98.29
480.00	32.06	100.07
500.00	31.80	101.83
600.00	30.63	110.34
700.00	29.64	118.45
800.00	28.79	126.20
900.00	28.04	133.65
1000.00	27.37	140.82
1100.00	26.77	147.75
1200.00	26.22	154.47
1300.00	25.72	160.99
1400.00	25.26	167.33
1500.00	24.84	173.51
1700.00	24.07	185.43
1900.00	23.40	196.83
2100.00	22.80	207.78
2300.00	22.26	218.34
2500.00	21.78	228.54
2700.00	21.33	238.41
2900.00	20.92	248.00
3100.00	20.54	257.33
3300.00	20.19	266.41
3500.00	19.86	275.27
3700.00	19.55	283.92
3900.00	19.26	292.38
4100.00	18.99	300.66

SEZIONE BB' VERSANTE LIGURE IN ASSENZA DI FALDA

– VERIFICA GLOBALE

----- GESTIONE ACQUIFERI ----------
Strati esclusi da acquifero:
STRATO 1
STRATO 2
Esclusione sovraccarico pendio sommerso: NON ATTIVATA
Peso unitario fluido (kN/m^3): 9.81
Parametri funzione dissipazione superficiale pressione dei fluidi:
Coefficiente A 0
Coefficiente K 0.000800
Pressione minima fluidi Uo_Min (kPa) 0.01
---------- INFORMAZIONI GENERAZIONE SUPERFICI RANDOM ----------
*** PARAMETRI PER LA GENERAZIONE DELLE SUPERFICI
METODO DI RICERCA: CONVEX RANDOM - Chen (1992)
FILTRAGGIO SUPERFICI : ATTIVATO
COORDINATE X1,X2,Y OSTACOLO : 0.00 0.00 0.00
LUNGHEZZA MEDIA SEGMENTI (m): 5.8 (+/-) 50%
RANGE ASCISSE RANDOM STARTING POINT (Xmin .. Xmax): 0.10 131.50
LIVELLO MINIMO CONSIDERATO (Ymin): 0.00
RANGE ASCISSE AMMESSO PER LA TERMINAZIONE (Xmin .. Xmax): 14.70 143.08
*** TOTALE SUPERFICI GENERATE : 10000
---------- INFORMAZIONI PARAMETRI DI CALCOLO ----------
METODO DI CALCOLO : MORGENSTERN & PRICE (Morgenstern & Price, 1965)
COEFFICIENTE SISMICO UTILIZZATO Kh : 0.102
COEFFICIENTE SISMICO UTILIZZATO Kv (assunto Positivo): 0.051
FORZA ORIZZONTALE ADDIZIONALE IN TESTA (kN/m): 0.00
FORZA ORIZZONTALE ADDIZIONALE ALLA BASE (kN/m): 0.00
N.B. Le forze orizzontali addizionali in testa e alla base sono poste uguali a 0
durante le tutte le verifiche globali.
I valori >0 impostati dall'utente sono utilizzati solo in caso di verifica singola
---------- RISULTATO FINALE ELABORAZIONI ----------
* DATI RELATIVI ALLE 10 SUPERFICI GENERATE CON MINOR Fs *
Fattore di sicurezza (FS) 0.680 - Min. - X Y Lambda= 1.039
15.54 15.20
15.71 15.28
15.89 15.36
16.06 15.45
16.23 15.53

16.41 15.61
16.58 15.69
16.75 15.77
16.93 15.86
17.10 15.94
17.27 16.02
17.45 16.11
17.62 16.20
17.79 16.29
17.97 16.38
18.14 16.47
18.31 16.57
18.49 16.66
18.66 16.76
18.83 16.86
19.01 16.96
19.18 17.07
19.35 17.17
19.53 17.28
19.70 17.38
19.88 17.49
20.05 17.60
20.22 17.72
20.40 17.83
20.57 17.94
20.74 18.06
20.92 18.18
21.09 18.30
21.26 18.42
21.44 18.54
21.61 18.66
21.78 18.78
21.96 18.91
22.13 19.03
22.30 19.15
22.48 19.28
22.65 19.40
22.82 19.52
23.00 19.65
23.17 19.77
23.34 19.89
23.52 20.01
23.69 20.14
23.86 20.26
24.04 20.38
24.21 20.50
24.38 20.62
24.56 20.74
24.73 20.86
24.90 20.98
25.08 21.10
25.25 21.22
25.42 21.35
25.60 21.47
25.77 21.59
25.94 21.71
26.12 21.83
26.29 21.95
26.47 22.07
26.64 22.20
26.81 22.32
26.99 22.44
27.16 22.56
27.33 22.68
27.51 22.80
27.68 22.92
27.85 23.05

Fattore di sicurezza (FS) 0.684 - N.2 -- X Y Lambda= 1.144

16.53 15.89
16.69 15.97
16.85 16.06
17.02 16.14
17.18 16.22
17.35 16.30
17.51 16.38
17.67 16.46
17.84 16.55
18.00 16.63
18.16 16.71
18.33 16.80
18.49 16.89
18.65 16.98
18.82 17.07
18.98 17.16
19.14 17.26
19.31 17.35
19.47 17.45
19.64 17.55
19.80 17.65
19.96 17.75
20.13 17.86
20.29 17.96
20.45 18.07
20.62 18.17
20.78 18.28
20.94 18.39
21.11 18.49
21.27 18.60
21.43 18.71
21.60 18.82
21.76 18.93
21.93 19.04
22.09 19.15
22.25 19.26
22.42 19.37
22.58 19.48
22.74 19.60
22.91 19.71

23.07 19.82
23.23 19.93
23.40 20.04
23.56 20.15
23.72 20.26
23.89 20.37
24.05 20.48
24.22 20.59
24.38 20.71
24.54 20.82
24.71 20.93
24.87 21.04
25.03 21.15
25.20 21.26
25.36 21.37
25.52 21.48
25.69 21.59
25.85 21.70
26.01 21.81
26.18 21.92
26.34 22.03
26.51 22.14
26.67 22.25
26.83 22.36
27.00 22.47
27.16 22.58
27.32 22.69
27.49 22.80
27.65 22.91
27.81 23.02

Fattore di sicurezza (FS) 0.685 - N.3 -- X Y Lambda= 1.250

15.60 15.24
15.77 15.34
15.95 15.44
16.13 15.54
16.31 15.64
16.48 15.73
16.66 15.83
16.84 15.93
17.01 16.03
17.19 16.13
17.37 16.23
17.54 16.33
17.72 16.43
17.90 16.54
18.07 16.64
18.25 16.75
18.43 16.85
18.60 16.96
18.78 17.07
18.96 17.18
19.14 17.29
19.31 17.40
19.49 17.51
19.67 17.62
19.84 17.73
20.02 17.84
20.20 17.96
20.37 18.07
20.55 18.18
20.73 18.30
20.90 18.41
21.08 18.53
21.26 18.64
21.44 18.76
21.61 18.88
21.79 18.99
21.97 19.11
22.14 19.23
22.32 19.34
22.50 19.46
22.67 19.58
22.85 19.69
23.03 19.81
23.20 19.93
23.38 20.05
23.56 20.16
23.74 20.28
23.91 20.40
24.09 20.52
24.27 20.63
24.44 20.75
24.62 20.87
24.80 20.98
24.97 21.10
25.15 21.22
25.33 21.33
25.50 21.44
25.68 21.56
25.86 21.67
26.04 21.78
26.21 21.89
26.39 22.00
26.57 22.11
26.74 22.22
26.92 22.33
27.10 22.45
27.27 22.56
27.45 22.68
27.63 22.81
27.80 22.94
27.98 23.07
28.16 23.21

Fattore di sicurezza (FS) 0.685 - N.4 -- X Y Lambda= 1.145

15.56 15.21
15.74 15.31
15.92 15.41
16.09 15.51

16.27 15.60
16.45 15.70
16.63 15.80
16.80 15.90
16.98 15.99
17.16 16.09
17.34 16.19
17.51 16.29
17.69 16.39
17.87 16.48
18.05 16.58
18.22 16.68
18.40 16.78
18.58 16.88
18.76 16.98
18.93 17.08
19.11 17.18
19.29 17.28
19.47 17.39
19.64 17.49
19.82 17.59
20.00 17.70
20.18 17.81
20.35 17.91
20.53 18.02
20.71 18.14
20.89 18.25
21.06 18.36
21.24 18.48
21.42 18.60
21.60 18.72
21.77 18.84
21.95 18.96
22.13 19.09
22.31 19.21
22.48 19.33
22.66 19.46
22.84 19.58
23.02 19.70
23.19 19.82
23.37 19.94
23.55 20.07
23.73 20.19
23.90 20.31
24.08 20.43
24.26 20.55
24.44 20.67
24.61 20.79
24.79 20.91
24.97 21.03
25.15 21.15
25.32 21.27
25.50 21.39
25.68 21.51
25.86 21.63
26.03 21.75
26.21 21.87
26.39 21.99
26.57 22.11
26.74 22.23
26.92 22.35
27.10 22.47
27.28 22.59
27.45 22.71
27.63 22.83
27.81 22.95
27.99 23.07
28.16 23.19
28.34 23.31

Fattore di sicurezza (FS) 0.686 - N.5 -- X Y Lambda= 0.960

15.59 15.24
15.77 15.30
15.94 15.37
16.12 15.44
16.29 15.50
16.47 15.56
16.64 15.63
16.82 15.69
17.00 15.76
17.17 15.83
17.35 15.90
17.52 15.97
17.70 16.05
17.87 16.13
18.05 16.22
18.22 16.31
18.40 16.41
18.57 16.50
18.75 16.61
18.92 16.71
19.10 16.82
19.27 16.93
19.45 17.05
19.62 17.17
19.80 17.29
19.97 17.41
20.15 17.53
20.32 17.65
20.50 17.77
20.67 17.89
20.85 18.01
21.03 18.13
21.20 18.26
21.38 18.38
21.55 18.51
21.73 18.63
21.90 18.75
22.08 18.88

	22.25	19.01				
	22.43	19.13				
	22.60	19.26				
	22.78	19.38				
	22.95	19.51				
	23.13	19.63				
	23.30	19.76				
	23.48	19.88				
	23.65	20.01				
	23.83	20.13				
	24.00	20.26				
	24.18	20.38				
	24.35	20.51				
	24.53	20.63				
	24.71	20.75				
	24.88	20.88				
	25.06	21.00				
	25.23	21.13				
	25.41	21.25				
	25.58	21.38				
	25.76	21.50				
	25.93	21.62				
	26.11	21.75				
	26.28	21.87				
	26.46	22.00				
	26.63	22.12				
	26.81	22.25				
	26.98	22.37				
	27.16	22.50				
	27.33	22.62				
	27.51	22.74				
	27.68	22.87				
	27.86	22.99				
	28.03	23.12				
	28.21	23.24				
Fattore di sicurezza (FS)	0.686	- N.6 --	X	Y	Lambda=	1.030
	15.82	15.40				
	15.99	15.48				
	16.16	15.56				
	16.34	15.64				
	16.51	15.72				
	16.68	15.79				
	16.85	15.87				
	17.03	15.95				
	17.20	16.03				
	17.37	16.12				
	17.54	16.20				
	17.72	16.28				
	17.89	16.37				
	18.06	16.45				
	18.23	16.54				
	18.41	16.63				
	18.58	16.72				
	18.75	16.81				
	18.92	16.90				
	19.10	17.00				
	19.27	17.09				
	19.44	17.19				
	19.61	17.29				
	19.79	17.39				
	19.96	17.49				
	20.13	17.59				
	20.30	17.70				
	20.48	17.81				
	20.65	17.92				
	20.82	18.03				
	20.99	18.14				
	21.17	18.26				
	21.34	18.38				
	21.51	18.50				
	21.68	18.62				
	21.86	18.75				
	22.03	18.87				
	22.20	19.00				
	22.37	19.12				
	22.55	19.25				
	22.72	19.37				
	22.89	19.50				
	23.06	19.62				
	23.24	19.75				
	23.41	19.87				
	23.58	19.99				
	23.75	20.12				
	23.93	20.24				
	24.10	20.36				
	24.27	20.48				
	24.44	20.60				
	24.62	20.72				
	24.79	20.85				
	24.96	20.97				
	25.13	21.09				
	25.30	21.21				
	25.48	21.33				
	25.65	21.45				
	25.82	21.58				
	25.99	21.70				
	26.17	21.82				
	26.34	21.94				
	26.51	22.06				
	26.68	22.19				
	26.86	22.31				
	27.03	22.43				
	27.20	22.55				
	27.37	22.67				
	27.55	22.80				
	27.72	22.92				
	27.89	23.04				
	28.06	23.16				

Fattore di sicurezza (FS) 0.686 - N.7 -- X Y Lambda= 0.970

15.47	15.15
15.65	15.22
15.83	15.29
16.01	15.36
16.18	15.43
16.36	15.49
16.54	15.56
16.72	15.63
16.89	15.69
17.07	15.77
17.25	15.84
17.43	15.92
17.60	16.00
17.78	16.08
17.96	16.17
18.14	16.27
18.31	16.36
18.49	16.46
18.67	16.57
18.84	16.68
19.02	16.79
19.20	16.90
19.38	17.02
19.55	17.14
19.73	17.26
19.91	17.38
20.09	17.50
20.26	17.63
20.44	17.75
20.62	17.87
20.80	17.99
20.97	18.12
21.15	18.24
21.33	18.37
21.51	18.49
21.68	18.61
21.86	18.74
22.04	18.86
22.22	18.99
22.39	19.12
22.57	19.24
22.75	19.37
22.93	19.49
23.10	19.62
23.28	19.74
23.46	19.87
23.63	19.99
23.81	20.12
23.99	20.25
24.17	20.37
24.34	20.50
24.52	20.62
24.70	20.75
24.88	20.87
25.05	21.00
25.23	21.12
25.41	21.24
25.59	21.37
25.76	21.49
25.94	21.61
26.12	21.73
26.30	21.84
26.47	21.96
26.65	22.08
26.83	22.20
27.01	22.31
27.18	22.43
27.36	22.56
27.54	22.69
27.72	22.82
27.89	22.96
28.07	23.11
28.25	23.26

Fattore di sicurezza (FS) 0.686 - N.8 -- X Y Lambda= 1.174

16.23	15.68
16.40	15.77
16.58	15.85
16.75	15.94
16.92	16.02
17.09	16.11
17.26	16.19
17.43	16.27
17.60	16.36
17.78	16.44
17.95	16.53
18.12	16.62
18.29	16.71
18.46	16.81
18.63	16.90
18.80	17.00
18.98	17.10
19.15	17.20
19.32	17.31
19.49	17.42
19.66	17.53
19.83	17.64
20.00	17.75
20.18	17.86
20.35	17.98
20.52	18.09
20.69	18.20
20.86	18.32
21.03	18.43
21.20	18.54
21.38	18.66
21.55	18.77
21.72	18.89

	21.89	19.00
	22.06	19.11
	22.23	19.23
	22.40	19.34
	22.58	19.46
	22.75	19.57
	22.92	19.69
	23.09	19.80
	23.26	19.92
	23.43	20.03
	23.60	20.15
	23.78	20.26
	23.95	20.38
	24.12	20.49
	24.29	20.60
	24.46	20.72
	24.63	20.83
	24.80	20.95
	24.98	21.06
	25.15	21.18
	25.32	21.29
	25.49	21.40
	25.66	21.52
	25.83	21.63
	26.00	21.75
	26.18	21.86
	26.35	21.98
	26.52	22.09
	26.69	22.21
	26.86	22.32
	27.03	22.43
	27.20	22.55
	27.38	22.66
	27.55	22.78
	27.72	22.89
	27.89	23.01
	28.06	23.12
	28.23	23.23
	28.40	23.35
Fattore di sicurezza (FS)	0.686 - N.9 –	X Y Lambda= 1.149
	16.45	15.84
	16.62	15.92
	16.79	16.00
	16.95	16.09
	17.12	16.17
	17.29	16.25
	17.46	16.33
	17.62	16.41
	17.79	16.49
	17.96	16.58
	18.13	16.66
	18.29	16.75
	18.46	16.84
	18.63	16.93
	18.80	17.02
	18.96	17.12
	19.13	17.22
	19.30	17.32
	19.47	17.42
	19.63	17.52
	19.80	17.63
	19.97	17.73
	20.14	17.84
	20.30	17.95
	20.47	18.06
	20.64	18.17
	20.81	18.28
	20.97	18.39
	21.14	18.50
	21.31	18.61
	21.48	18.72
	21.64	18.84
	21.81	18.95
	21.98	19.06
	22.15	19.17
	22.31	19.28
	22.48	19.40
	22.65	19.51
	22.82	19.62
	22.98	19.74
	23.15	19.85
	23.32	19.96
	23.49	20.08
	23.65	20.19
	23.82	20.30
	23.99	20.41
	24.16	20.53
	24.32	20.64
	24.49	20.75
	24.66	20.86
	24.83	20.98
	24.99	21.09
	25.16	21.20
	25.33	21.31
	25.50	21.42
	25.66	21.54
	25.83	21.65
	26.00	21.76
	26.16	21.87
	26.33	21.99
	26.50	22.10
	26.67	22.21
	26.83	22.32
	27.00	22.44
	27.17	22.55
	27.34	22.66
	27.50	22.77
	27.67	22.89

27.84 23.00
28.01 23.11
28.17 23.22
Fattore di sicurezza (FS) 0.687 - N.10 -- X Y Lambda= 1.004
16.00 15.52
16.17 15.59
16.35 15.67
16.52 15.74
16.69 15.81
16.87 15.88
17.04 15.95
17.22 16.02
17.39 16.09
17.56 16.16
17.74 16.24
17.91 16.32
18.09 16.40
18.26 16.49
18.43 16.58
18.61 16.67
18.78 16.76
18.95 16.86
19.13 16.96
19.30 17.07
19.48 17.17
19.65 17.28
19.82 17.40
20.00 17.51
20.17 17.62
20.34 17.74
20.52 17.86
20.69 17.97
20.87 18.09
21.04 18.21
21.21 18.33
21.39 18.45
21.56 18.57
21.73 18.69
21.91 18.81
22.08 18.93
22.26 19.05
22.43 19.18
22.60 19.30
22.78 19.42
22.95 19.54
23.12 19.67
23.30 19.79
23.47 19.91
23.65 20.03
23.82 20.16
23.99 20.28
24.17 20.40
24.34 20.52
24.52 20.64
24.69 20.76
24.86 20.88
25.04 21.00
25.21 21.13
25.38 21.25
25.56 21.37
25.73 21.49
25.91 21.61
26.08 21.73
26.25 21.85
26.43 21.97
26.60 22.10
26.77 22.22
26.95 22.34
27.12 22.46
27.30 22.58
27.47 22.70
27.64 22.82
27.82 22.95
27.99 23.07
28.16 23.19
28.34 23.31

---------- ANALISI DEFICIT DI RESISTENZA ----------
DATI RELATIVI ALLE 10 SUPERFICI GENERATE CON MINOR Fs *
Analisi Deficit in riferimento a FS(progetto) = 1.100

Sup N.	FS	FTR(kN/m)	FTA(kN/m)	Bilancio(kN/m)	ESITO
1	0.680	48.3	71.0	-29.8	Deficit
2	0.684	34.8	50.9	-21.1	Deficit
3	0.685	36.1	52.7	-21.9	Deficit
4	0.685	42.8	62.4	-25.9	Deficit
5	0.686	59.6	87.0	-36.1	Deficit
6	0.686	51.7	75.5	-31.3	Deficit
7	0.686	60.7	88.4	-36.6	Deficit
8	0.686	39.1	56.9	-23.6	Deficit
9	0.686	37.4	54.5	-22.6	Deficit
10	0.687	53.1	77.3	-31.9	Deficit

Esito analisi: DEFICIT di RESISTENZA!
Valore massimo di DEFICIT di RESITENZA(kN/m): -36.6
Note: FTR --> Forza totale Resistente rispetto alla superficie
di scivolamento (componente Orizzontale)
FTA --> Forza totale Agente rispetto alla superficie
di scivolamento (componente Orizzontale)
IMPORTANTE! : Il Deficit o il Surplus di resistenza viene espresso in kN
per metro di LARGHEZZA rispetto al fronte della scarpata

TABELLA PARAMETRI CONCI DELLA SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	dx (m)	alpha (gradi)	W (kN/m)	ru (-)	U (kPa)	phi' (gradi)	c'/Cu (kPa)
15.540	0.172	25.51	0.06	0.00	0.00	28.52	0.00
15.712	0.001	25.51	0.00	0.00	0.00	28.52	0.00
15.713	0.172	25.42	0.19	0.00	0.00	28.52	0.00
15.885	0.001	25.42	0.00	0.00	0.00	28.52	0.00
15.887	0.172	25.31	0.31	0.00	0.00	28.52	0.00

16.059	0.001	25.31	0.00	0.00	0.00	28.52	0.00
16.060	0.172	25.22	0.44	0.00	0.00	28.52	0.00
16.232	0.001	25.22	0.00	0.00	0.00	28.52	0.00
16.233	0.172	25.17	0.57	0.00	0.00	28.52	0.00
16.406	0.001	25.17	0.00	0.00	0.00	28.52	0.00
16.407	0.172	25.19	0.69	0.00	0.00	28.52	0.00
16.579	0.001	25.19	0.01	0.00	0.00	28.52	0.00
16.580	0.172	25.29	0.82	0.00	0.00	28.52	0.00
16.752	0.001	25.29	0.01	0.00	0.00	28.52	0.00
16.754	0.172	25.47	0.95	0.00	0.00	28.52	0.00
16.926	0.001	25.47	0.01	0.00	0.00	28.52	0.00
16.927	0.172	25.73	1.07	0.00	0.00	28.52	0.00
17.099	0.001	25.73	0.01	0.00	0.00	28.52	0.00
17.101	0.172	26.08	1.19	0.00	0.00	28.52	0.00
17.273	0.001	26.08	0.01	0.00	0.00	28.52	0.00
17.274	0.172	26.49	1.30	0.00	0.00	28.52	0.00
17.446	0.001	26.49	0.01	0.00	0.00	28.52	0.00
17.447	0.172	26.94	1.41	0.00	0.00	28.52	0.00
17.620	0.001	26.94	0.01	0.00	0.00	28.52	0.00
17.621	0.172	27.41	1.52	0.00	0.00	28.52	0.00
17.793	0.001	27.41	0.01	0.00	0.00	28.52	0.00
17.794	0.172	27.86	1.62	0.00	0.00	28.52	0.00
17.966	0.001	27.86	0.01	0.00	0.00	28.52	0.00
17.968	0.172	28.26	1.71	0.00	0.00	28.52	0.00
18.140	0.001	28.26	0.01	0.00	0.00	28.52	0.00
18.141	0.172	28.66	1.80	0.00	0.00	28.52	0.00
18.313	0.001	28.66	0.01	0.00	0.00	28.52	0.00
18.314	0.172	29.08	1.88	0.00	0.00	28.52	0.00
18.487	0.001	29.08	0.01	0.00	0.00	28.52	0.00
18.488	0.172	29.49	1.96	0.00	0.00	28.52	0.00
18.660	0.001	29.49	0.01	0.00	0.00	28.52	0.00
18.661	0.172	29.91	2.03	0.00	0.00	28.52	0.00
18.833	0.001	29.91	0.02	0.00	0.00	28.52	0.00
18.835	0.172	30.31	2.10	0.00	0.00	28.52	0.00
19.007	0.001	30.31	0.02	0.00	0.00	28.52	0.00
19.008	0.172	30.71	2.16	0.00	0.00	28.52	0.00
19.180	0.001	30.71	0.02	0.00	0.00	28.52	0.00
19.182	0.172	31.10	2.22	0.00	0.00	28.52	0.00
19.354	0.001	31.10	0.02	0.00	0.00	28.52	0.00
19.355	0.172	31.47	2.27	0.00	0.00	28.52	0.00
19.527	0.001	31.47	0.02	0.00	0.00	28.52	0.00
19.528	0.172	31.82	2.32	0.00	0.00	28.52	0.00
19.701	0.001	31.82	0.02	0.00	0.00	28.52	0.00
19.702	0.172	32.16	2.36	0.00	0.00	28.52	0.00
19.874	0.001	32.16	0.02	0.00	0.00	28.52	0.00
19.875	0.172	32.49	2.40	0.00	0.00	28.52	0.00
20.047	0.001	32.49	0.02	0.00	0.00	28.52	0.00
20.049	0.172	32.81	2.43	0.00	0.00	28.52	0.00
20.221	0.001	32.81	0.02	0.00	0.00	28.52	0.00
20.222	0.172	33.11	2.46	0.00	0.00	28.52	0.00
20.394	0.001	33.11	0.02	0.00	0.00	28.52	0.00
20.395	0.172	33.42	2.48	0.00	0.00	28.52	0.00
20.568	0.001	33.42	0.02	0.00	0.00	28.52	0.00
20.569	0.172	33.74	2.51	0.00	0.00	28.52	0.00
20.741	0.001	33.74	0.02	0.00	0.00	28.52	0.00
20.742	0.172	34.09	2.52	0.00	0.00	28.52	0.00
20.914	0.001	34.09	0.02	0.00	0.00	28.52	0.00
20.916	0.172	34.42	2.53	0.00	0.00	28.52	0.00
21.088	0.001	34.42	0.02	0.00	0.00	28.52	0.00
21.089	0.172	34.74	2.54	0.00	0.00	28.52	0.00
21.261	0.001	34.74	0.02	0.00	0.00	28.52	0.00
21.263	0.172	35.00	2.54	0.00	0.00	28.52	0.00
21.435	0.001	35.00	0.02	0.00	0.00	28.52	0.00
21.436	0.172	35.22	2.54	0.00	0.00	28.52	0.00
21.608	0.001	35.22	0.02	0.00	0.00	28.52	0.00
21.609	0.172	35.38	2.54	0.00	0.00	28.52	0.00
21.782	0.001	35.38	0.02	0.00	0.00	28.52	0.00
21.783	0.172	35.48	2.53	0.00	0.00	28.52	0.00
21.955	0.001	35.48	0.02	0.00	0.00	28.52	0.00
21.956	0.172	35.53	2.52	0.00	0.00	28.52	0.00
22.128	0.001	35.53	0.02	0.00	0.00	28.52	0.00
22.130	0.172	35.53	2.52	0.00	0.00	28.52	0.00
22.302	0.001	35.53	0.02	0.00	0.00	28.52	0.00
22.303	0.172	35.49	2.51	0.00	0.00	28.52	0.00
22.475	0.001	35.49	0.02	0.00	0.00	28.52	0.00
22.477	0.123	35.42	1.80	0.00	0.00	28.52	0.00
22.600	0.050	35.42	0.72	0.00	0.00	28.52	0.00
22.650	0.172	35.36	2.43	0.00	0.00	28.52	0.00
22.822	0.001	35.36	0.02	0.00	0.00	28.52	0.00
22.823	0.172	35.31	2.35	0.00	0.00	28.52	0.00
22.995	0.001	35.31	0.02	0.00	0.00	28.52	0.00
22.997	0.172	35.27	2.26	0.00	0.00	28.52	0.00
23.169	0.001	35.27	0.02	0.00	0.00	28.52	0.00
23.170	0.172	35.20	2.17	0.00	0.00	28.52	0.00
23.342	0.001	35.20	0.02	0.00	0.00	28.52	0.00
23.344	0.172	35.12	2.09	0.00	0.00	28.52	0.00
23.516	0.001	35.12	0.02	0.00	0.00	28.52	0.00
23.517	0.172	35.04	2.01	0.00	0.00	28.52	0.00
23.689	0.001	35.04	0.01	0.00	0.00	28.52	0.00
23.690	0.172	34.97	1.92	0.00	0.00	28.52	0.00
23.863	0.001	34.97	0.01	0.00	0.00	28.52	0.00
23.864	0.172	34.91	1.84	0.00	0.00	28.52	0.00
24.036	0.001	34.91	0.01	0.00	0.00	28.52	0.00
24.037	0.172	34.86	1.76	0.00	0.00	28.52	0.00
24.209	0.001	34.86	0.01	0.00	0.00	28.52	0.00
24.211	0.172	34.84	1.68	0.00	0.00	28.52	0.00
24.383	0.001	34.84	0.01	0.00	0.00	28.52	0.00
24.384	0.172	34.84	1.60	0.00	0.00	28.52	0.00
24.556	0.001	34.84	0.01	0.00	0.00	28.52	0.00
24.558	0.172	34.86	1.52	0.00	0.00	28.52	0.00
24.730	0.001	34.86	0.01	0.00	0.00	28.52	0.00
24.731	0.172	34.89	1.44	0.00	0.00	28.52	0.00
24.903	0.001	34.89	0.01	0.00	0.00	28.52	0.00
24.904	0.172	34.93	1.36	0.00	0.00	28.52	0.00
25.076	0.001	34.93	0.01	0.00	0.00	28.52	0.00
25.078	0.172	34.97	1.28	0.00	0.00	28.52	0.00
25.250	0.001	34.97	0.01	0.00	0.00	28.52	0.00
25.251	0.172	34.99	1.19	0.00	0.00	28.52	0.00

25.423	0.001	34.99	0.01	0.00	0.00	28.52	0.00
25.425	0.172	34.99	1.11	0.00	0.00	28.52	0.00
25.597	0.001	34.99	0.01	0.00	0.00	28.52	0.00
25.598	0.172	34.99	1.03	0.00	0.00	28.52	0.00
25.770	0.001	34.99	0.01	0.00	0.00	28.52	0.00
25.771	0.172	34.99	0.95	0.00	0.00	28.52	0.00
25.944	0.001	34.99	0.01	0.00	0.00	28.52	0.00
25.945	0.172	34.99	0.87	0.00	0.00	28.52	0.00
26.117	0.001	34.99	0.01	0.00	0.00	28.52	0.00
26.118	0.172	34.99	0.78	0.00	0.00	28.52	0.00
26.290	0.001	34.99	0.01	0.00	0.00	28.52	0.00
26.292	0.172	34.99	0.70	0.00	0.00	28.52	0.00
26.464	0.001	34.99	0.00	0.00	0.00	28.52	0.00
26.465	0.172	34.99	0.62	0.00	0.00	28.52	0.00
26.637	0.001	34.99	0.00	0.00	0.00	28.52	0.00
26.639	0.172	34.99	0.54	0.00	0.00	28.52	0.00
26.811	0.001	34.99	0.00	0.00	0.00	28.52	0.00
26.812	0.172	34.99	0.45	0.00	0.00	28.52	0.00
26.984	0.001	34.99	0.00	0.00	0.00	28.52	0.00
26.985	0.172	34.99	0.37	0.00	0.00	28.52	0.00
27.157	0.001	34.99	0.00	0.00	0.00	28.52	0.00
27.159	0.172	34.99	0.29	0.00	0.00	28.52	0.00
27.331	0.001	34.99	0.00	0.00	0.00	28.52	0.00
27.332	0.172	34.99	0.21	0.00	0.00	28.52	0.00
27.504	0.001	34.99	0.00	0.00	0.00	28.52	0.00
27.506	0.172	34.99	0.12	0.00	0.00	28.52	0.00
27.678	0.001	34.99	0.00	0.00	0.00	28.52	0.00
27.679	0.172	34.99	0.04	0.00	0.00	28.52	0.00
27.851	0.001	34.99	0.00	0.00	0.00	28.52	0.00

LEGENDA SIMBOLI
X(m) : Ascissa sinistra concio
dx(m) : Larghezza concio
alpha(gradi) : Angolo pendenza base concio
W(kN/m) : Forza peso concio
ru(-) : Coefficiente locale pressione interstiziale
U(kPa) : Pressione totale dei pori base concio
phi'(gradi) : Angolo di attrito efficace base concio
c'/Cu (kPa) : Coesione efficace / Resistenza al taglio in condizioni non drenate

TABELLA DIAGRAMMA DELLE FORZE DELLA SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	ht (m)	yt (m)	yt' (--)	E(x) (kN/m)	T(x) (kN/m)	E' (kN)	rho(x) (--)	local_FS_FEM (--)	local_FS_q-pFEM (--)		
15.540	0.000	15.199	0.589	0.0000000000E+000	0.0000000000E+000	0.0000000000E+000	0.063	3.250	3.593		
15.712	0.019	15.300	0.589	1.8355851522E-002	9.3018005798E-004	1.0680870702E-001	0.063	6.737	4.863		
15.713	0.019	15.301	0.588	1.8522558440E-002	9.4392092692E-004	1.5645111876E-001	0.064	6.809	4.855		
15.885	0.039	15.402	0.588	4.5487300550E-002	4.6428969230E-003	1.5690309966E-001	0.128	6.677	3.098		
15.887	0.039	15.403	0.587	4.5732389118E-002	4.6822373923E-003	2.3525149786E-001	0.128	6.667	3.092		
16.059	0.059	15.504	0.587	8.6284158212E-002	1.3285047039E-002	2.3598623172E-001	0.193	6.464	2.433		
16.060	0.059	15.505	0.586	8.6656662898E-002	1.3371403785E-002	3.5120632401E-001	0.193	6.469	2.430		
16.232	0.079	15.606	0.586	1.4718967652E-001	3.0326412121E-002	4.1773900507E-001	0.258	8.284	2.077		
16.233	0.079	15.607	0.586	1.4773015770E-001	3.0493562081E-002	4.1875319720E-001	0.258	8.297	2.075		
16.406	0.099	15.707	0.586	2.3101236707E-001	5.9629966381E-002	5.4626635437E-001	0.323	10.332	1.842		
16.407	0.099	15.708	0.586	2.3171890049E-001	5.9899833176E-002	5.4722194613E-001	0.323	10.339	1.841		
16.579	0.119	15.809	0.586	3.3722128114E-001	1.0455416452E-001	6.7846971958E-001	0.388	10.546	1.671		
16.580	0.119	15.810	0.587	3.3809865260E-001	1.0495306094E-001	6.7942081990E-001	0.388	10.540	1.670		
16.752	0.139	15.911	0.587	4.6505721484E-001	1.6810128768E-001	7.8966026850E-001	0.452	9.305	1.539		
16.754	0.139	15.912	0.589	4.6607809665E-001	1.6864287352E-001	7.9033826263E-001	0.453	9.295	1.538		
16.926	0.158	16.013	0.589	6.0861503698E-001	2.5075153019E-001	8.5880230536E-001	0.516	8.350	1.377		
16.927	0.158	16.014	0.592	6.0972506359E-001	2.5142989330E-001	8.5916398504E-001	0.516	8.343	1.376		
17.099	0.177	16.115	0.592	7.6096451487E-001	3.5102458761E-001	8.9510921008E-001	0.577	7.389	1.267		
17.101	0.177	16.116	0.595	7.6212137241E-001	3.5182654159E-001	8.9533677359E-001	0.578	7.381	1.267		
17.273	0.195	16.219	0.595	9.1917283327E-001	4.6783475619E-001	9.3020864906E-001	0.637	6.510	1.185		
17.274	0.196	16.219	0.600	9.2037506174E-001	4.6875890207E-001	9.3045688961E-001	0.637	6.504	1.185		
17.446	0.213	16.323	0.600	1.0829894676E+000	6.0081374468E-001	9.5664834863E-001	0.694	5.756	1.117		
17.447	0.213	16.323	0.605	1.0842257935E+000	6.0185165442E-001	9.5678904211E-001	0.695	5.750	1.117		
17.620	0.230	16.428	0.605	1.2500617367E+000	7.4815406246E-001	9.6742183586E-001	0.749	5.138	1.059		
17.621	0.230	16.428	0.610	1.2513119056E+000	7.4928901433E-001	9.6744015443E-001	0.749	5.134	1.059		
17.793	0.246	16.533	0.610	1.4175847061E+000	9.0730867651E-001	9.6200495482E-001	0.801	4.656	1.010		
17.794	0.246	16.534	0.615	1.4188278006E+000	9.0852017216E-001	9.6190807862E-001	0.801	4.652	1.009		
17.966	0.261	16.640	0.615	1.5829186315E+000	1.0754240738E+000	9.4282697117E-001	0.850	4.302	0.967		
17.968	0.261	16.641	0.619	1.5841368874E+000	1.0766910293E+000	9.4264408830E-001	0.851	4.300	0.966		
18.140	0.275	16.747	0.619	1.7440596089E+000	1.2497677134E+000	9.1409379449E-001	0.897	4.067	0.929		
18.141	0.275	16.748	0.624	1.7452406908E+000	1.2510708996E+000	9.1384349538E-001	0.897	4.065	0.928		
18.313	0.288	16.856	0.624	1.8993347970E+000	1.4276195387E+000	8.7463682698E-001	0.941	3.933	0.895		
18.314	0.288	16.856	0.629	1.9004648318E+000	1.4289370979E+000	8.7429601673E-001	0.941	3.932	0.895		
18.487	0.301	16.965	0.629	2.0466787719E+000	1.6057597041E+000	8.2253126558E-001	0.982	3.892	0.867		
18.488	0.301	16.965	0.633	2.0477414118E+000	1.6070662289E+000	8.2209585195E-001	0.982	3.893	0.866		
18.660	0.313	17.074	0.633	2.1839291865E+000	1.7806831919E+000	7.5859565739E-001	1.020	3.948	0.841		
18.661	0.313	17.075	0.638	2.1849091547E+000	1.7819527499E+000	7.5808208476E-001	1.021	3.949	0.841		
18.833	0.324	17.185	0.638	2.3093045675E+000	1.9490624499E+000	6.8639142142E-001	1.056	4.116	0.820		
18.835	0.324	17.186	0.643	2.3101912005E+000	1.9502724051E+000	6.8583315544E-001	1.056	4.118	0.820		
19.007	0.334	17.297	0.643	2.4216019863E+000	2.1080501685E+000	6.0752127994E-001	1.089	4.420	0.801		
19.008	0.334	17.297	0.648	2.4223866642E+000	2.1091800444E+000	6.0690952634E-001	1.090	4.423	0.801		
19.180	0.343	17.409	0.648	2.5197190667E+000	2.2549762154E+000	5.2346746510E-001	1.120	4.870	0.785		
19.182	0.343	17.410	0.652	2.5203951088E+000	2.2560080499E+000	5.2282968312E-001	1.120	4.874	0.785		
19.354	0.352	17.522	0.652	2.6030196254E+000	2.3877165812E+000	4.3692932238E-001	1.148	5.463	0.772		
19.355	0.352	17.523	0.657	2.6035838294E+000	2.3886366888E+000	4.3627817183E-001	1.148	5.468	0.772		
19.527	0.359	17.636	0.657	2.6711633851E+000	2.5045910447E+000	3.4862014071E-001	1.173	6.147	0.761		
19.528	0.359	17.637	0.661	2.6716134610E+000	2.5053879389E+000	3.4795348191E-001	1.174	6.152	0.761		
19.701	0.366	17.750	0.661	2.7237672326E+000	2.6040612185E+000	2.5757047994E-001	1.196	6.765	0.753		
19.702	0.366	17.751	0.665	2.7240996372E+000	2.6047235128E+000	2.5688561530E-001	1.197	6.768	0.753		
19.874	0.373	17.866	0.665	2.7604503612E+000	2.6847555572E+000	1.6533934210E-001	1.217	7.027	0.746		
19.875	0.373	17.867	0.669	2.7606635753E+000	2.6852749469E+000	1.6464791672E-001	1.217	7.027	0.746		
20.047	0.378	17.982	0.669	2.7810349670E+000	2.7456469775E+000	7.1812603722E-002	1.235	6.668	0.740		
20.049	0.378	17.983	0.673	2.7811273135E+000	2.7460160530E+000	7.1110349422E-002	1.236	6.662	0.740		
20.221	0.383	18.098	0.673	2.7852916022E+000	2.7857814767E+000	-2.2802885551E-002	1.252	5.764	0.737		
20.222	0.383	18.099	0.677	2.7852616791E+000	2.7859938708E+000	-2.3508530602E-002	1.252	5.755	0.737		
20.394	0.387	18.216	0.677	2.7731629079E+000	2.8044702811E+000	-1.1672930783E-001	1.266	4.719	0.734		
20.395	0.387	18.217	0.681	2.7730116180E+000	2.8045225691E+000	-1.1741919910E-001	1.266	4.711	0.734		
20.568	0.391	18.334	0.681	2.7450069555E+000	2.8015426326E+000	-2.0747571634E-001	1.277	3.802	0.733		
20.569	0.391	18.335	0.685	2.7447384137E+000	2.8014354677E+000	-2.0814123544E-001	1.277	3.795	0.733		
20.741	0.394	18.453	0.685	2.7014040784E+000	2.7772077290E+000	-2.9455530382E-001	1.287	3.086	0.733		
20.742	0.394	18.453	0.689	2.7010230314E+000	2.7769438206E+000	-2.9518366546E-001	1.287	3.081	0.733		
20.914	0.396	18.572	0.689	2.6432053785E+000	2.7321993363E+000	-3.7544114115E-001	1.294	2.552	0.734		
20.916	0.396	18.573	0.693	2.6427198408E+000	2.7317869544E+000	-3.7601603811E-001	1.294	2.549	0.734		
21.088	0.397	18.692	0.693	2.5716331300E+000	2.6679675180E+000	-4.4866697800E-001	1.298	2.161	0.736		

21.089	0.397	18.693	0.697	2.5710530038E+000	2.6674195545E+000	-4.4918294624E-001	1.298	2.158	0.736
21.261	0.398	18.813	0.697	2.4880377080E+000	2.5864480056E+000	-5.1422169820E-001	1.301	1.875	0.739
21.263	0.398	18.814	0.701	2.4873729029E+000	2.5857798454E+000	-5.1468411689E-001	1.301	1.873	0.739
21.435	0.398	18.935	0.701	2.3935270405E+000	2.4896161926E+000	-5.7539549591E-001	1.302	1.664	0.742
21.436	0.398	18.936	0.704	2.3927831983E+000	2.4888405547E+000	-5.7583448970E-001	1.302	1.663	0.742
21.608	0.398	19.057	0.704	2.2889799447E+000	2.3793886322E+000	-6.2792335581E-001	1.301	1.512	0.746
21.609	0.398	19.058	0.696	2.2881682919E+000	2.3785248906E+000	-6.2825566134E-001	1.301	1.511	0.746
21.782	0.395	19.177	0.696	2.1767518621E+000	2.2592704241E+000	-6.6323943032E-001	1.299	1.401	0.751
21.783	0.395	19.178	0.687	2.1758946621E+000	2.2583493351E+000	-6.6343221871E-001	1.299	1.400	0.751
21.955	0.391	19.297	0.687	2.0599667736E+000	2.1335070458E+000	-6.8115520274E-001	1.296	1.319	0.756
21.956	0.391	19.297	0.683	2.0590864923E+000	2.1325588100E+000	-6.8123896518E-001	1.296	1.318	0.756
22.128	0.385	19.415	0.683	1.9410451005E+000	2.0043247389E+000	-6.8990171047E-001	1.292	1.260	0.762
22.130	0.385	19.416	0.679	1.9401535328E+000	2.0033547479E+000	-6.8996018591E-001	1.292	1.259	0.762
22.302	0.379	19.533	0.679	1.8209034879E+000	1.8706353203E+000	-6.9443679121E-001	1.286	1.218	0.768
22.303	0.379	19.534	0.673	1.8200060952E+000	1.8696221325E+000	-6.9444036046E-001	1.286	1.218	0.768
22.475	0.372	19.649	0.673	1.7007115998E+000	1.7302218634E+000	-6.9003490853E-001	1.273	1.191	0.775
22.477	0.372	19.650	0.675	1.6998199438E+000	1.7291562183E+000	-6.8996368454E-001	1.273	1.191	0.776
22.600	0.368	19.734	0.667	1.6151393701E+000	1.6241781767E+000	-6.8054160047E-001	1.258	1.180	0.781
22.650	0.365	19.766	0.659	1.5812941141E+000	1.5804878253E+000	-6.7533763377E-001	1.251	1.176	0.784
22.822	0.357	19.880	0.663	1.4669233916E+000	1.4287188665E+000	-6.5249351504E-001	1.219	1.169	0.792
22.823	0.356	19.881	0.657	1.4660803275E+000	1.4275856550E+000	-6.5230039840E-001	1.219	1.169	0.792
22.995	0.348	19.994	0.657	1.3560981968E+000	1.2781384892E+000	-6.2505212991E-001	1.179	1.168	0.802
22.997	0.347	19.995	0.651	1.3552906129E+000	1.2770456866E+000	-6.2482965945E-001	1.179	1.168	0.802
23.169	0.338	20.107	0.651	1.2504167578E+000	1.1354034284E+000	-5.9322253942E-001	1.136	1.172	0.812
23.170	0.338	20.108	0.645	1.2496503214E+000	1.1343872091E+000	-5.9297616113E-001	1.136	1.172	0.812
23.342	0.327	20.219	0.645	1.1504195755E+000	1.0059883979E+000	-5.6005959038E-001	1.094	1.179	0.822
23.344	0.327	20.219	0.641	1.1496959933E+000	1.0050662905E+000	-5.5981440810E-001	1.094	1.179	0.822
23.516	0.316	20.330	0.640	1.0561154357E+000	8.8707309327E-001	-5.2772238693E-001	1.051	1.188	0.832
23.517	0.316	20.331	0.636	1.0554336362E+000	8.8623798666E-001	-5.2748533938E-001	1.051	1.188	0.832
23.689	0.305	20.440	0.636	9.6735006895E-001	7.7953002074E-001	-4.9593231362E-001	1.008	1.197	0.843
23.690	0.305	20.441	0.633	9.6670935243E-001	7.7877622578E-001	-4.9569217441E-001	1.008	1.197	0.843
23.863	0.294	20.550	0.633	8.8424715092E-001	6.8275414725E-001	-4.6170566186E-001	0.966	1.205	0.853
23.864	0.294	20.551	0.630	8.8365068269E-001	6.8207886330E-001	-4.6143662620E-001	0.966	1.205	0.853
24.036	0.282	20.659	0.630	8.0726736509E-001	5.9636452222E-001	-4.2665373724E-001	0.924	1.212	0.863
24.037	0.282	20.660	0.625	8.0671617698E-001	5.9576295861E-001	-4.2640944914E-001	0.924	1.212	0.864
24.209	0.270	20.768	0.625	7.3591476399E-001	5.1925543900E-001	-3.9752467275E-001	0.883	1.219	0.874
24.211	0.269	20.768	0.624	7.3540118153E-001	5.1871683369E-001	-3.9733700029E-001	0.883	1.219	0.874
24.383	0.257	20.876	0.624	6.6895582161E-001	4.4991701310E-001	-3.7573991349E-001	0.842	1.224	0.883
24.384	0.257	20.877	0.624	6.6847036114E-001	4.4943067142E-001	-3.7559785343E-001	0.841	1.224	0.883
24.556	0.244	20.984	0.624	6.0540936560E-001	3.8719691929E-001	-3.5696766400E-001	0.800	1.227	0.893
24.558	0.244	20.985	0.624	6.0494816897E-001	3.8675717497E-001	-3.5681734179E-001	0.800	1.227	0.893
24.730	0.232	21.092	0.624	5.4523656680E-001	3.3067977565E-001	-3.3731039144E-001	0.759	1.230	0.902
24.731	0.232	21.093	0.624	5.4480076599E-001	3.3028464324E-001	-3.3717007762E-001	0.759	1.230	0.902
24.903	0.219	21.200	0.624	4.8835438239E-001	2.7996456479E-001	-3.1876060514E-001	0.717	1.233	0.911
24.904	0.219	21.201	0.625	4.8794255088E-001	2.7961073883E-001	-3.1862301321E-001	0.717	1.233	0.911
25.076	0.206	21.309	0.625	4.3468392598E-001	2.3469184843E-001	-3.0015784232E-001	0.676	1.234	0.920
25.078	0.206	21.310	0.625	4.3429613548E-001	2.3437716778E-001	-3.0001798202E-001	0.675	1.234	0.920
25.250	0.194	21.417	0.625	3.8426298948E-001	1.9458900755E-001	-2.8134402329E-001	0.634	1.236	0.928
25.251	0.193	21.418	0.626	3.8389951099E-001	1.9431147463E-001	-2.8120458622E-001	0.633	1.236	0.928
25.423	0.181	21.526	0.626	3.3706774233E-001	1.5935318597E-001	-2.6315969134E-001	0.592	1.238	0.937
25.425	0.181	21.527	0.626	3.3672775741E-001	1.5911024865E-001	-2.6302838162E-001	0.591	1.238	0.937
25.597	0.168	21.634	0.626	2.9294829491E-001	1.2862234258E-001	-2.4571837258E-001	0.549	1.241	0.945
25.598	0.168	21.635	0.626	2.9263084701E-001	1.2841142440E-001	-2.4558957494E-001	0.549	1.241	0.946
25.770	0.155	21.743	0.626	2.5182852016E-001	1.0207281292E-001	-2.2854098620E-001	0.507	1.244	0.955
25.771	0.155	21.744	0.626	2.5153326891E-001	1.0189161349E-001	-2.2841362786E-001	0.507	1.244	0.955
25.944	0.142	21.851	0.626	2.1367453448E-001	7.9396961312E-002	-2.1149391624E-001	0.465	1.248	0.965
25.945	0.142	21.852	0.626	2.1340131209E-001	7.9243229340E-002	-2.1136707981E-001	0.465	1.248	0.965
26.117	0.129	21.960	0.626	1.7847381764E-001	6.0293256097E-002	-1.9446439919E-001	0.423	1.253	0.977
26.118	0.129	21.961	0.625	1.7822260190E-001	6.0164783576E-002	-1.9433732267E-001	0.422	1.253	0.977
26.290	0.116	22.068	0.626	1.4622038809E-001	4.4461616152E-002	-1.7775670599E-001	0.381	1.260	0.993
26.292	0.116	22.069	0.626	1.4599075626E-001	4.4356070330E-002	-1.7764003775E-001	0.380	1.260	0.993
26.464	0.103	22.177	0.626	1.1673888700E-001	3.1556458045E-002	-1.6214009734E-001	0.338	1.271	1.021
26.465	0.103	22.178	0.626	1.1652943876E-001	3.1471326917E-002	-1.6201885883E-001	0.338	1.271	1.022
26.637	0.090	22.285	0.626	9.0115053939E-002	2.1317544446E-002	-1.4436460189E-001	0.296	1.285	1.082
26.639	0.090	22.286	0.626	8.9928591654E-002	2.1251429530E-002	-1.4421942398E-001	0.296	1.285	1.082
26.811	0.077	22.394	0.626	6.6860994975E-002	1.3559465054E-002	-1.2335319750E-001	0.254	1.303	1.121
26.812	0.077	22.395	0.626	6.6701698035E-002	1.3510837214E-002	-1.2318756838E-001	0.253	1.303	1.121
26.984	0.065	22.502	0.626	4.7409619855E-002	8.0142119155E-003	-1.0109626354E-001	0.212	1.331	1.178
26.985	0.064	22.503	0.626	4.7279080800E-002	7.9805757571E-003	-1.0093652871E-001	0.211	1.332	1.178
27.157	0.052	22.611	0.626	3.1674562717E-002	4.2850221720E-003	-8.0394560106E-002	0.169	1.382	1.269
27.159	0.052	22.612	0.625	3.1570772039E-002	4.2632554415E-003	-8.0240263170E-002	0.169	1.382	1.270
27.331	0.039	22.719	0.626	1.9487858158E-002	1.9794778993E-003	-6.0492286530E-002	0.127	1.490	1.435
27.332	0.039	22.720	0.625	1.9409776622E-002	1.9657337245E-003	-6.0353018035E-002	0.127	1.491	1.436
27.504	0.026	22.828	0.626	1.0523152891E-002	7.1394134044E-004	-4.3478813931E-002	0.085	1.797	1.809
27.506	0.026	22.829	0.625	1.0467040428E-002	7.0669747474E-004	-4.3365388117E-002	0.084	1.800	1.813
27.678	0.013	22.936	0.626	4.2057041864E-003	1.4380142149E-004	-2.9901332150E-002	0.043	3.269	3.047
27.679	0.013	22.937	0.628	4.1671223884E-003	1.4067365293E-004	-2.9810988592E-002	0.042	3.278	3.053
27.851	0.000	23.045	0.626	2.3833787906E-005	4.0228898557E-007	-1.8485339828E-002	0.053	0.265	0.713

LEGENDA SIMBOLI
X(m) : Ascissa sinistra concio
ht(m) : Altezza linea di thrust da nodo sinistro base concio
yt(m) : coordinata Y linea di trust
yt'(-) : gradiente pendenza locale linea di trust
E(x)(kN/m) : Forza Normale interconcio
T(x)(kN/m) : Forza Tangenziale interconcio
E' (kN) : derivata Forza normale interconcio
Rho(x) (-) : fattore mobilizzazione resistenza al taglio verticale interconcio ZhU et al.(2003)
FS_FEM(x) (-) : fattore di sicurezza locale stimato (locale in X) by qFEM
FS_q-pFEM(x) (-) : fattore di sicurezza locale stimato (locale in X) by q-pFEM Procedure

TABELLA SFORZI DI TAGLIO DISTRIBUITI LUNGO SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	dx (m)	dl (m)	alpha (gradi)	TauStress (kPa)	Tau (kN/m)
15.540	0.172	0.191	25.508	0.169	0.032
15.712	0.001	0.001	25.508	0.339	0.000
15.713	0.172	0.191	25.421	0.509	0.097
15.885	0.001	0.001	25.421	0.681	0.001
15.887	0.172	0.190	25.314	0.852	0.162
16.059	0.001	0.001	25.314	1.024	0.001
16.060	0.172	0.190	25.222	1.196	0.228
16.232	0.001	0.001	25.222	1.369	0.002
16.233	0.172	0.190	25.174	1.542	0.293
16.406	0.001	0.001	25.174	1.717	0.002
16.407	0.172	0.190	25.190	1.891	0.360
16.579	0.001	0.001	25.190	2.065	0.003
16.580	0.172	0.190	25.285	2.242	0.427

16.752	0.001	0.001	25.285	2.415	0.003
16.754	0.172	0.191	25.466	2.595	0.495
16.926	0.001	0.001	25.466	2.765	0.004
16.927	0.172	0.191	25.732	2.947	0.563
17.099	0.001	0.001	25.732	3.115	0.004
17.101	0.172	0.192	26.077	3.299	0.632
17.273	0.001	0.001	26.077	3.461	0.005
17.274	0.172	0.192	26.485	3.645	0.701
17.446	0.001	0.001	26.485	3.803	0.005
17.447	0.172	0.193	26.937	3.985	0.769
17.620	0.001	0.001	26.937	4.136	0.006
17.621	0.172	0.194	27.405	4.315	0.837
17.793	0.001	0.001	27.405	4.458	0.006
17.794	0.172	0.195	27.857	4.630	0.901
17.966	0.001	0.001	27.857	4.767	0.007
17.968	0.172	0.195	28.264	4.930	0.964
18.140	0.001	0.001	28.264	5.061	0.007
18.141	0.172	0.196	28.665	5.218	1.024
18.313	0.001	0.001	28.665	5.342	0.008
18.314	0.172	0.197	29.076	5.494	1.082
18.487	0.001	0.001	29.076	5.611	0.008
18.488	0.172	0.198	29.492	5.757	1.138
18.660	0.001	0.001	29.492	5.867	0.009
18.661	0.172	0.199	29.906	6.006	1.193
18.833	0.001	0.001	29.906	6.109	0.009
18.835	0.172	0.199	30.314	6.240	1.244
19.007	0.001	0.001	30.314	6.336	0.009
19.008	0.172	0.200	30.712	6.459	1.293
19.180	0.001	0.002	30.712	6.548	0.010
19.182	0.172	0.201	31.096	6.662	1.339
19.354	0.001	0.002	31.096	6.743	0.010
19.355	0.172	0.202	31.467	6.849	1.382
19.527	0.001	0.002	31.467	6.924	0.010
19.528	0.172	0.203	31.822	7.021	1.422
19.701	0.001	0.002	31.822	7.089	0.011
19.702	0.172	0.203	32.163	7.178	1.460
19.874	0.001	0.002	32.163	7.239	0.011
19.875	0.172	0.204	32.490	7.320	1.494
20.047	0.001	0.002	32.490	7.375	0.011
20.049	0.172	0.205	32.806	7.448	1.525
20.221	0.001	0.002	32.806	7.496	0.012
20.222	0.172	0.206	33.114	7.562	1.554
20.394	0.001	0.002	33.114	7.604	0.012
20.395	0.172	0.206	33.418	7.662	1.580
20.568	0.001	0.002	33.418	7.698	0.012
20.569	0.172	0.207	33.744	7.750	1.604
20.741	0.001	0.002	33.744	7.779	0.012
20.742	0.172	0.208	34.088	7.825	1.626
20.914	0.001	0.002	34.088	7.846	0.012
20.916	0.172	0.209	34.425	7.883	1.645
21.088	0.001	0.002	34.425	7.897	0.012
21.089	0.172	0.209	34.736	7.924	1.660
21.261	0.001	0.002	34.736	7.931	0.012
21.263	0.172	0.210	35.005	7.950	1.671
21.435	0.001	0.002	35.005	7.950	0.013
21.436	0.172	0.211	35.223	7.960	1.677
21.608	0.001	0.002	35.223	7.956	0.013
21.609	0.172	0.211	35.383	7.958	1.680
21.782	0.001	0.002	35.383	7.950	0.013
21.783	0.172	0.211	35.485	7.946	1.680
21.955	0.001	0.002	35.485	7.936	0.013
21.956	0.172	0.212	35.531	7.927	1.677
22.128	0.001	0.002	35.531	7.916	0.013
22.130	0.172	0.211	35.528	7.905	1.672
22.302	0.001	0.002	35.528	7.894	0.013
22.303	0.172	0.211	35.486	7.881	1.666
22.475	0.001	0.002	35.486	7.871	0.012
22.477	0.123	0.152	35.422	7.861	1.191
22.600	0.050	0.061	35.422	7.815	0.479
22.650	0.172	0.211	35.355	7.635	1.611
22.822	0.001	0.002	35.355	7.497	0.012
22.823	0.172	0.211	35.308	7.358	1.552
22.995	0.001	0.002	35.308	7.222	0.011
22.997	0.172	0.211	35.269	7.085	1.494
23.169	0.001	0.002	35.269	6.949	0.011
23.170	0.172	0.211	35.204	6.812	1.435
23.342	0.001	0.002	35.204	6.678	0.011
23.344	0.172	0.210	35.125	6.542	1.377
23.516	0.001	0.002	35.125	6.410	0.010
23.517	0.172	0.210	35.043	6.276	1.320
23.689	0.001	0.002	35.043	6.146	0.010
23.690	0.172	0.210	34.968	6.014	1.263
23.863	0.001	0.002	34.968	5.886	0.009
23.864	0.172	0.210	34.907	5.757	1.208
24.036	0.001	0.002	34.907	5.630	0.009
24.037	0.172	0.210	34.864	5.502	1.154
24.209	0.001	0.002	34.864	5.376	0.008
24.211	0.172	0.210	34.843	5.250	1.101
24.383	0.001	0.002	34.843	5.125	0.008
24.384	0.172	0.210	34.842	5.000	1.049
24.556	0.001	0.002	34.842	4.874	0.008
24.558	0.172	0.210	34.861	4.749	0.996
24.730	0.001	0.002	34.861	4.624	0.007
24.731	0.172	0.210	34.893	4.498	0.944
24.903	0.001	0.002	34.893	4.372	0.007
24.904	0.172	0.210	34.931	4.246	0.891
25.076	0.001	0.002	34.931	4.119	0.006
25.078	0.172	0.210	34.967	3.992	0.838
25.250	0.001	0.002	34.967	3.864	0.006
25.251	0.172	0.210	34.988	3.736	0.785
25.423	0.001	0.002	34.988	3.607	0.006
25.425	0.172	0.210	34.991	3.478	0.731
25.597	0.001	0.002	34.991	3.349	0.005
25.598	0.172	0.210	34.992	3.221	0.677
25.770	0.001	0.002	34.992	3.092	0.005
25.771	0.172	0.210	34.992	2.963	0.623
25.944	0.001	0.002	34.992	2.834	0.004
25.945	0.172	0.210	34.992	2.706	0.568

26.117	0.001	0.002	34.992	2.577	0.004
26.118	0.172	0.210	34.993	2.448	0.514
26.290	0.001	0.002	34.993	2.319	0.004
26.292	0.172	0.210	34.993	2.191	0.460
26.464	0.001	0.002	34.993	2.062	0.003
26.465	0.172	0.210	34.993	1.933	0.406
26.637	0.001	0.002	34.993	1.804	0.003
26.639	0.172	0.210	34.993	1.675	0.352
26.811	0.001	0.002	34.993	1.547	0.002
26.812	0.172	0.210	34.994	1.418	0.298
26.984	0.001	0.002	34.994	1.289	0.002
26.985	0.172	0.210	34.994	1.160	0.244
27.157	0.001	0.002	34.994	1.031	0.002
27.159	0.172	0.210	34.993	0.903	0.190
27.331	0.001	0.002	34.993	0.774	0.001
27.332	0.172	0.210	34.993	0.645	0.136
27.504	0.001	0.002	34.993	0.516	0.001
27.506	0.172	0.210	34.993	0.387	0.081
27.678	0.001	0.002	34.993	0.259	0.000
27.679	0.172	0.210	34.993	0.130	0.027
27.851	0.001	0.002	34.993	0.001	0.000

LEGENDA SIMBOLI
X(m) : Ascissa sinistra concio
dx(m) : Larghezza concio
dl(m) : lunghezza base concio
alpha(gradi) : Angolo pendenza base concio
TauStress(kPa) : Sforzo di taglio su base concio
TauF (kN/m) : Forza di taglio su base concio

CRITERIO DI ROTTURA secondo Hoek (2002,2007)
Strato 2 -- Parametri di resistenza al taglio equivalenti dell'ammasso roccioso
Fattore di riduzione NTC2008 gammaPHI=1.25e gammaC=1.25 - ATTIVATO

Sigma'(kPa)	Phi'(deg)	c'(kPa)
20.00	48.00	53.50
40.00	45.70	55.27
60.00	43.99	57.37
80.00	42.62	59.58
100.00	41.47	61.84
120.00	40.49	64.10
140.00	39.62	66.34
160.00	38.86	68.56
180.00	38.16	70.75
200.00	37.54	72.90
220.00	36.96	75.03
240.00	36.43	77.12
260.00	35.93	79.18
280.00	35.47	81.21
300.00	35.04	83.22
320.00	34.64	85.19
340.00	34.25	87.13
360.00	33.89	89.05
380.00	33.55	90.95
400.00	33.22	92.82
420.00	32.91	94.66
440.00	32.62	96.48
460.00	32.33	98.29
480.00	32.06	100.07
500.00	31.80	101.83
600.00	30.63	110.34
700.00	29.64	118.45
800.00	28.79	126.20
900.00	28.04	133.65
1000.00	27.37	140.82
1100.00	26.77	147.75
1200.00	26.22	154.47
1300.00	25.72	160.99
1400.00	25.26	167.33
1500.00	24.84	173.51
1700.00	24.07	185.43
1900.00	23.40	196.83
2100.00	22.80	207.78
2300.00	22.26	218.34
2500.00	21.78	228.54
2700.00	21.33	238.41
2900.00	20.92	248.00
3100.00	20.54	257.33
3300.00	20.19	266.41
3500.00	19.86	275.27
3700.00	19.55	283.92
3900.00	19.26	292.38
4100.00	18.99	300.66

SEZIONE BB' VERSANTE EMILIANO CON TOTALE SATURAZIONE

– VERIFICA GLOBALE

------ GESTIONE ACQUIFERI ------ ----------
Strati esclusi da acquifero:
Esclusione sovraccarico pendio sommerso: NON ATTIVATA
Peso unitario fluido (kN/m^3): 9.81
Parametri funzione dissipazione superficiale pressione dei fluidi:
Coefficiente A 0
Coefficiente K 0.000800
Pressione minima fluidi Uo_Min (kPa) 0.01
---------- INFORMAZIONI GENERAZIONE SUPERFICI RANDOM ----------
*** PARAMETRI PER LA GENERAZIONE DELLE SUPERFICI
METODO DI RICERCA: CONVEX RANDOM - Chen (1992)
FILTRAGGIO SUPERFICI : ATTIVATO
COORDINATE X1,X2,Y OSTACOLO : 0.00 0.00 0.00
LUNGHEZZA MEDIA SEGMENTI (m): 5.8 (+/-) 50%
RANGE ASCISSE RANDOM STARTING POINT (Xmin .. Xmax): 0.10 131.50
LIVELLO MINIMO CONSIDERATO (Ymin): 0.00
RANGE ASCISSE AMMESSO PER LA TERMINAZIONE (Xmin .. Xmax): 14.70 143.08
*** TOTALE SUPERFICI GENERATE : 10000
---------- INFORMAZIONI PARAMETRI DI CALCOLO ----------

METODO DI CALCOLO : MORGENSTERN & PRICE (Morgenstern & Price, 1965)
COEFFICIENTE SISMICO UTILIZZATO Kh : 0.102
COEFFICIENTE SISMICO UTILIZZATO Kv (assunto Positivo): 0.051
FORZA ORIZZONTALE ADDIZIONALE IN TESTA (kN/m): 0.00
FORZA ORIZZONTALE ADDIZIONALE ALLA BASE (kN/m): 0.00
N.B. Le forze orizzontali addizionali in testa e alla base sono poste uguali a 0
durante le tutte le verifiche globali.
I valori >0 impostati dall'utente sono utilizzati solo in caso di verifica singola

---------- RISULTATO FINALE ELABORAZIONI ----------

* DATI RELATIVI ALLE 10 SUPERFICI GENERATE CON MINOR Fs *

Fattore di sicurezza (FS) 0.352 - Min. - X Y Lambda= 0.618

X	Y
41.55	29.80
41.70	29.85
41.86	29.91
42.02	29.96
42.18	30.01
42.34	30.06
42.50	30.12
42.65	30.17
42.81	30.22
42.97	30.28
43.13	30.33
43.29	30.39
43.44	30.45
43.60	30.51
43.76	30.57
43.92	30.63
44.08	30.70
44.24	30.76
44.39	30.83
44.55	30.90
44.71	30.97
44.87	31.04
45.03	31.11
45.19	31.19
45.34	31.26
45.50	31.33
45.66	31.41
45.82	31.48
45.98	31.56
46.13	31.63
46.29	31.71
46.45	31.79
46.61	31.86
46.77	31.94
46.93	32.02
47.08	32.10
47.24	32.18
47.40	32.25
47.56	32.33
47.72	32.41
47.87	32.49
48.03	32.57
48.19	32.65
48.35	32.73
48.51	32.80
48.67	32.88
48.82	32.96
48.98	33.04
49.14	33.11
49.30	33.19
49.46	33.27
49.61	33.35
49.77	33.42
49.93	33.50
50.09	33.58
50.25	33.66
50.41	33.73
50.56	33.81
50.72	33.89
50.88	33.97
51.04	34.05
51.20	34.12
51.36	34.20
51.51	34.28
51.67	34.36
51.83	34.43
51.99	34.51
52.15	34.59
52.30	34.67
52.46	34.75

Fattore di sicurezza (FS) 0.352 - N.2 -- X Y Lambda= 0.605

X	Y
42.45	30.21
42.59	30.26
42.73	30.31
42.87	30.36
43.02	30.41
43.16	30.46
43.30	30.50
43.44	30.55
43.58	30.60
43.73	30.65
43.87	30.70
44.01	30.75
44.15	30.80
44.29	30.86
44.44	30.91
44.58	30.96
44.72	31.02
44.86	31.07
45.00	31.13
45.15	31.18
45.29	31.24
45.43	31.30
45.57	31.35
45.71	31.41
45.86	31.47
46.00	31.53

46.14 31.59
46.28 31.65
46.42 31.72
46.57 31.78
46.71 31.84
46.85 31.91
46.99 31.97
47.13 32.04
47.28 32.11
47.42 32.17
47.56 32.24
47.70 32.31
47.84 32.38
47.99 32.45
48.13 32.52
48.27 32.58
48.41 32.65
48.55 32.72
48.70 32.79
48.84 32.86
48.98 32.93
49.12 33.01
49.26 33.08
49.41 33.15
49.55 33.22
49.69 33.30
49.83 33.37
49.97 33.44
50.12 33.52
50.26 33.60
50.40 33.67
50.54 33.75
50.68 33.83
50.82 33.91
50.97 33.98
51.11 34.06
51.25 34.14
51.39 34.22
51.53 34.30
51.68 34.38
51.82 34.46
51.96 34.54

Fattore di sicurezza (FS) 0.352 - N.3 -- X Y Lambda= 0.619

41.26 29.67
41.42 29.72
41.58 29.77
41.74 29.82
41.90 29.87
42.06 29.92
42.22 29.97
42.38 30.02
42.54 30.08
42.70 30.13
42.86 30.18
43.02 30.24
43.18 30.29
43.34 30.35
43.50 30.41
43.66 30.47
43.82 30.54
43.98 30.60
44.14 30.67
44.29 30.74
44.45 30.80
44.61 30.88
44.77 30.95
44.93 31.02
45.09 31.09
45.25 31.17
45.41 31.24
45.57 31.32
45.73 31.39
45.89 31.47
46.05 31.55
46.21 31.63
46.37 31.71
46.53 31.79
46.69 31.87
46.85 31.95
47.01 32.03
47.17 32.11
47.33 32.19
47.49 32.27
47.65 32.36
47.81 32.44
47.97 32.52
48.13 32.60
48.29 32.68
48.45 32.76
48.61 32.84
48.77 32.92
48.93 33.00
49.09 33.08
49.25 33.16
49.41 33.24
49.57 33.32
49.73 33.40
49.89 33.48
50.05 33.56
50.21 33.64
50.37 33.72
50.53 33.80
50.69 33.88
50.85 33.96
51.01 34.04
51.17 34.12
51.33 34.20
51.49 34.28

51.65 34.36
51.80 34.44
51.96 34.52
52.12 34.60
52.28 34.68

Fattore di sicurezza (FS) 0.352 - N.4 -- X Y Lambda= 0.577

41.58 29.81
41.73 29.87
41.88 29.92
42.03 29.97
42.19 30.02
42.34 30.07
42.49 30.12
42.64 30.17
42.79 30.22
42.95 30.27
43.10 30.32
43.25 30.38
43.40 30.43
43.56 30.49
43.71 30.54
43.86 30.60
44.01 30.65
44.16 30.71
44.32 30.77
44.47 30.83
44.62 30.89
44.77 30.95
44.93 31.01
45.08 31.07
45.23 31.14
45.38 31.20
45.53 31.26
45.69 31.33
45.84 31.40
45.99 31.46
46.14 31.53
46.30 31.60
46.45 31.67
46.60 31.74
46.75 31.81
46.90 31.89
47.06 31.96
47.21 32.03
47.36 32.10
47.51 32.17
47.67 32.24
47.82 32.31
47.97 32.38
48.12 32.44
48.27 32.51
48.43 32.58
48.58 32.65
48.73 32.71
48.88 32.78
49.04 32.85
49.19 32.92
49.34 32.99
49.49 33.06
49.64 33.14
49.80 33.21
49.95 33.29
50.10 33.37
50.25 33.45
50.41 33.54
50.56 33.62
50.71 33.71
50.86 33.79
51.01 33.89
51.17 33.98
51.32 34.08
51.47 34.19
51.62 34.29
51.78 34.41
51.93 34.52

Fattore di sicurezza (FS) 0.353 - N.5 -- X Y Lambda= 0.632

42.52 30.24
42.66 30.29
42.80 30.33
42.94 30.38
43.08 30.42
43.22 30.47
43.36 30.51
43.50 30.56
43.64 30.60
43.78 30.65
43.92 30.70
44.06 30.74
44.20 30.79
44.34 30.84
44.48 30.89
44.62 30.94
44.75 31.00
44.89 31.05
45.03 31.10
45.17 31.16
45.31 31.21
45.45 31.27
45.59 31.33
45.73 31.39
45.87 31.45
46.01 31.51
46.15 31.57
46.29 31.64
46.43 31.70
46.57 31.77
46.71 31.84
46.85 31.91

46.99 31.98
47.13 32.05
47.27 32.12
47.41 32.19
47.55 32.26
47.69 32.34
47.83 32.41
47.97 32.48
48.11 32.55
48.25 32.62
48.39 32.69
48.53 32.76
48.67 32.83
48.81 32.91
48.95 32.98
49.09 33.05
49.23 33.12
49.37 33.19
49.51 33.26
49.65 33.33
49.79 33.40
49.93 33.46
50.07 33.53
50.21 33.60
50.35 33.67
50.49 33.74
50.63 33.80
50.77 33.87
50.91 33.94
51.05 34.01
51.19 34.08
51.33 34.16
51.47 34.24
51.61 34.32
51.75 34.41
51.89 34.51

Fattore di sicurezza (FS) 0.353 - N.6 -- X Y Lambda= 0.614

42.46 30.22
42.60 30.26
42.75 30.31
42.89 30.35
43.03 30.39
43.18 30.44
43.32 30.48
43.46 30.53
43.61 30.57
43.75 30.62
43.90 30.66
44.04 30.71
44.18 30.76
44.33 30.81
44.47 30.86
44.62 30.91
44.76 30.96
44.90 31.02
45.05 31.07
45.19 31.13
45.34 31.19
45.48 31.24
45.62 31.30
45.77 31.36
45.91 31.42
46.06 31.49
46.20 31.55
46.34 31.61
46.49 31.68
46.63 31.75
46.77 31.82
46.92 31.88
47.06 31.96
47.21 32.03
47.35 32.10
47.49 32.17
47.64 32.24
47.78 32.31
47.93 32.39
48.07 32.46
48.21 32.53
48.36 32.60
48.50 32.67
48.65 32.73
48.79 32.80
48.93 32.87
49.08 32.94
49.22 33.01
49.36 33.08
49.51 33.15
49.65 33.22
49.80 33.29
49.94 33.36
50.08 33.43
50.23 33.51
50.37 33.58
50.52 33.66
50.66 33.74
50.80 33.82
50.95 33.89
51.09 33.98
51.24 34.06
51.38 34.14
51.52 34.23
51.67 34.32
51.81 34.41
51.96 34.50
52.10 34.60

Fattore di sicurezza (FS) 0.353 - N.7 -- X Y Lambda= 0.582

42.40 30.19
42.55 30.24

42.70 30.29
42.85 30.34
42.99 30.39
43.14 30.43
43.29 30.48
43.44 30.53
43.58 30.58
43.73 30.63
43.88 30.68
44.03 30.73
44.17 30.78
44.32 30.84
44.47 30.89
44.62 30.95
44.77 31.00
44.91 31.06
45.06 31.12
45.21 31.18
45.36 31.24
45.50 31.30
45.65 31.36
45.80 31.42
45.95 31.48
46.09 31.55
46.24 31.61
46.39 31.68
46.54 31.74
46.68 31.81
46.83 31.87
46.98 31.94
47.13 32.01
47.28 32.08
47.42 32.15
47.57 32.21
47.72 32.28
47.87 32.35
48.01 32.42
48.16 32.49
48.31 32.55
48.46 32.62
48.60 32.69
48.75 32.75
48.90 32.82
49.05 32.88
49.20 32.94
49.34 33.01
49.49 33.07
49.64 33.14
49.79 33.20
49.93 33.27
50.08 33.34
50.23 33.42
50.38 33.49
50.52 33.57
50.67 33.65
50.82 33.74
50.97 33.82
51.12 33.91
51.26 34.00
51.41 34.09
51.56 34.18
51.71 34.28
51.85 34.37
52.00 34.46
52.15 34.55
52.30 34.65
52.44 34.74

Fattore di sicurezza (FS) 0.353 - N.8 -- X Y Lambda= 0.637

41.18 29.64
41.34 29.69
41.50 29.75
41.67 29.80
41.83 29.86
41.99 29.92
42.15 29.97
42.31 30.03
42.47 30.08
42.63 30.14
42.79 30.20
42.95 30.25
43.12 30.31
43.28 30.37
43.44 30.43
43.60 30.49
43.76 30.55
43.92 30.61
44.08 30.67
44.24 30.73
44.40 30.79
44.57 30.85
44.73 30.92
44.89 30.98
45.05 31.05
45.21 31.12
45.37 31.19
45.53 31.26
45.69 31.33
45.85 31.41
46.02 31.49
46.18 31.56
46.34 31.64
46.50 31.73
46.66 31.81
46.82 31.89
46.98 31.98
47.14 32.06
47.30 32.15
47.47 32.23

47.63 32.31
47.79 32.40
47.95 32.48
48.11 32.56
48.27 32.65
48.43 32.73
48.59 32.81
48.75 32.89
48.92 32.97
49.08 33.05
49.24 33.13
49.40 33.21
49.56 33.30
49.72 33.38
49.88 33.46
50.04 33.54
50.20 33.62
50.37 33.70
50.53 33.78
50.69 33.87
50.85 33.95
51.01 34.03
51.17 34.11
51.33 34.19
51.49 34.27
51.65 34.36
51.82 34.44
51.98 34.52
52.14 34.60
52.30 34.68

Fattore di sicurezza (FS) 0.353 - N.9 -- X Y Lambda= 0.617

41.38 29.73
41.54 29.78
41.70 29.82
41.86 29.87
42.01 29.92
42.17 29.97
42.33 30.02
42.49 30.06
42.64 30.11
42.80 30.16
42.96 30.21
43.11 30.26
43.27 30.32
43.43 30.37
43.59 30.43
43.74 30.49
43.90 30.54
44.06 30.60
44.22 30.66
44.37 30.73
44.53 30.79
44.69 30.86
44.85 30.92
45.00 30.99
45.16 31.06
45.32 31.13
45.48 31.20
45.63 31.27
45.79 31.34
45.95 31.42
46.11 31.49
46.26 31.57
46.42 31.65
46.58 31.72
46.74 31.80
46.89 31.88
47.05 31.96
47.21 32.04
47.36 32.12
47.52 32.20
47.68 32.28
47.84 32.36
47.99 32.44
48.15 32.52
48.31 32.60
48.47 32.68
48.62 32.76
48.78 32.84
48.94 32.92
49.10 33.00
49.25 33.08
49.41 33.16
49.57 33.24
49.73 33.32
49.88 33.41
50.04 33.49
50.20 33.57
50.36 33.65
50.51 33.74
50.67 33.82
50.83 33.90
50.98 33.99
51.14 34.07
51.30 34.16
51.46 34.24
51.61 34.32
51.77 34.41
51.93 34.49
52.09 34.58
52.24 34.66

Fattore di sicurezza (FS) 0.353 - N.10 -- X Y Lambda= 0.632

41.55 29.80
41.70 29.85
41.86 29.91
42.02 29.96
42.17 30.01
42.33 30.06

42.48	30.12
42.64	30.17
42.80	30.22
42.95	30.27
43.11	30.33
43.26	30.38
43.42	30.44
43.58	30.49
43.73	30.55
43.89	30.61
44.05	30.67
44.20	30.73
44.36	30.79
44.51	30.85
44.67	30.91
44.83	30.97
44.98	31.03
45.14	31.10
45.29	31.17
45.45	31.23
45.61	31.30
45.76	31.37
45.92	31.45
46.07	31.52
46.23	31.60
46.39	31.67
46.54	31.75
46.70	31.83
46.86	31.91
47.01	32.00
47.17	32.08
47.32	32.16
47.48	32.24
47.64	32.32
47.79	32.40
47.95	32.49
48.10	32.57
48.26	32.65
48.42	32.73
48.57	32.81
48.73	32.89
48.88	32.97
49.04	33.04
49.20	33.12
49.35	33.20
49.51	33.28
49.66	33.36
49.82	33.44
49.98	33.52
50.13	33.60
50.29	33.68
50.45	33.76
50.60	33.84
50.76	33.92
50.91	34.00
51.07	34.07
51.23	34.15
51.38	34.23
51.54	34.31
51.69	34.39
51.85	34.47
52.01	34.55
52.16	34.63

---------- ANALISI DEFICIT DI RESISTENZA ----------

DATI RELATIVI ALLE 10 SUPERFICI GENERATE CON MINOR Fs *

Analisi Deficit in riferimento a FS(progetto) = 1.100

Sup N.	FS	FTR(kN/m)	FTA(kN/m)	Bilancio(kN/m)	ESITO
1	0.352	6.3	17.9	-13.4	Deficit
2	0.352	6.7	19.1	-14.3	Deficit
3	0.352	7.4	21.0	-15.7	Deficit
4	0.352	9.9	28.2	-21.1	Deficit
5	0.353	6.6	18.8	-14.0	Deficit
6	0.353	8.5	24.1	-18.0	Deficit
7	0.353	9.0	25.6	-19.1	Deficit
8	0.353	7.7	21.9	-16.4	Deficit
9	0.353	9.3	26.2	-19.6	Deficit
10	0.353	7.2	20.4	-15.3	Deficit

Esito analisi: DEFICIT di RESISTENZA!

Valore massimo di DEFICIT di RESITENZA(kN/m): -21.1

Note: FTR --> Forza totale Resistente rispetto alla superficie di scivolamento (componente Orizzontale)

FTA --> Forza totale Agente rispetto alla superficie di scivolamento (componente Orizzontale)

IMPORTANTE! : Il Deficit o il Surplus di resistenza viene espresso in kN per metro di LARGHEZZA rispetto al fronte della scarpata

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TABELLA PARAMETRI CONCI DELLA SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	dx (m)	alpha (gradi)	W (kN/m)	ru (-)	U (kPa)	phi' (gradi)	c'/Cu (kPa)
41.546	0.157	18.66	0.03	0.52	0.09	28.52	0.00
41.704	0.001	18.66	0.00	0.52	0.18	28.52	0.00
41.704	0.157	18.56	0.09	0.52	0.27	28.52	0.00
41.862	0.001	18.56	0.00	0.52	0.37	28.52	0.00
41.863	0.157	18.43	0.15	0.52	0.46	28.52	0.00
42.020	0.001	18.43	0.00	0.52	0.56	28.52	0.00
42.021	0.157	18.32	0.21	0.52	0.65	28.52	0.00
42.178	0.001	18.32	0.00	0.52	0.75	28.52	0.00
42.179	0.157	18.26	0.27	0.52	0.84	28.52	0.00
42.336	0.001	18.26	0.00	0.52	0.94	28.52	0.00
42.337	0.157	18.28	0.33	0.52	1.04	28.52	0.00
42.495	0.001	18.28	0.00	0.52	1.14	28.52	0.00
42.495	0.157	18.40	0.39	0.52	1.23	28.52	0.00
42.653	0.001	18.40	0.00	0.52	1.32	28.52	0.00
42.654	0.157	18.61	0.45	0.52	1.42	28.52	0.00
42.811	0.001	18.61	0.00	0.52	1.51	28.52	0.00
42.812	0.157	18.92	0.51	0.52	1.60	28.52	0.00
42.969	0.001	18.92	0.00	0.52	1.68	28.52	0.00

42.970	0.157	19.32	0.56	0.52	1.76	28.52	0.00
43.127	0.001	19.32	0.00	0.52	1.84	28.52	0.00
43.128	0.157	19.78	0.61	0.52	1.92	28.52	0.00
43.286	0.001	19.78	0.00	0.52	1.99	28.52	0.00
43.286	0.157	20.29	0.66	0.52	2.06	28.52	0.00
43.444	0.001	20.29	0.00	0.52	2.12	28.52	0.00
43.445	0.157	20.79	0.70	0.52	2.18	28.52	0.00
43.602	0.001	20.79	0.00	0.52	2.24	28.52	0.00
43.603	0.157	21.26	0.73	0.52	2.29	28.52	0.00
43.760	0.001	21.26	0.00	0.52	2.34	28.52	0.00
43.761	0.157	21.68	0.76	0.52	2.39	28.52	0.00
43.919	0.001	21.68	0.00	0.52	2.43	28.52	0.00
43.919	0.157	22.14	0.79	0.52	2.47	28.52	0.00
44.077	0.001	22.14	0.00	0.52	2.51	28.52	0.00
44.078	0.157	22.62	0.81	0.52	2.54	28.52	0.00
44.235	0.001	22.62	0.00	0.52	2.57	28.52	0.00
44.236	0.157	23.08	0.83	0.52	2.59	28.52	0.00
44.393	0.001	23.08	0.00	0.52	2.61	28.52	0.00
44.394	0.157	23.52	0.84	0.52	2.63	28.52	0.00
44.551	0.001	23.52	0.00	0.52	2.64	28.52	0.00
44.552	0.157	23.91	0.85	0.52	2.65	28.52	0.00
44.710	0.001	23.91	0.00	0.52	2.66	28.52	0.00
44.710	0.157	24.25	0.85	0.52	2.66	28.52	0.00
44.868	0.001	24.25	0.00	0.52	2.67	28.52	0.00
44.869	0.157	24.54	0.85	0.52	2.67	28.52	0.00
45.026	0.001	24.54	0.00	0.52	2.67	28.52	0.00
45.027	0.157	24.77	0.85	0.52	2.66	28.52	0.00
45.184	0.001	24.77	0.00	0.52	2.66	28.52	0.00
45.185	0.157	24.94	0.84	0.52	2.65	28.52	0.00
45.342	0.001	24.94	0.00	0.52	2.64	28.52	0.00
45.343	0.157	25.08	0.84	0.52	2.63	28.52	0.00
45.501	0.001	25.08	0.00	0.52	2.62	28.52	0.00
45.501	0.157	25.20	0.83	0.52	2.61	28.52	0.00
45.659	0.001	25.20	0.00	0.52	2.60	28.52	0.00
45.660	0.157	25.31	0.82	0.52	2.58	28.52	0.00
45.817	0.001	25.31	0.00	0.52	2.57	28.52	0.00
45.818	0.157	25.44	0.81	0.52	2.55	28.52	0.00
45.975	0.001	25.44	0.00	0.52	2.54	28.52	0.00
45.976	0.157	25.59	0.80	0.52	2.52	28.52	0.00
46.133	0.001	25.59	0.00	0.52	2.50	28.52	0.00
46.134	0.157	25.75	0.79	0.52	2.48	28.52	0.00
46.292	0.001	25.75	0.00	0.52	2.46	28.52	0.00
46.293	0.157	25.89	0.78	0.52	2.43	28.52	0.00
46.450	0.001	25.89	0.00	0.52	2.41	28.52	0.00
46.451	0.157	26.03	0.76	0.52	2.38	28.52	0.00
46.608	0.001	26.03	0.00	0.52	2.36	28.52	0.00
46.609	0.157	26.14	0.74	0.52	2.33	28.52	0.00
46.766	0.001	26.14	0.00	0.52	2.30	28.52	0.00
46.767	0.157	26.23	0.72	0.52	2.27	28.52	0.00
46.925	0.001	26.23	0.00	0.52	2.24	28.52	0.00
46.925	0.157	26.30	0.71	0.52	2.21	28.52	0.00
47.083	0.001	26.30	0.00	0.52	2.18	28.52	0.00
47.084	0.157	26.35	0.69	0.52	2.15	28.52	0.00
47.241	0.001	26.35	0.00	0.52	2.12	28.52	0.00
47.242	0.157	26.38	0.67	0.52	2.09	28.52	0.00
47.399	0.001	26.38	0.00	0.52	2.06	28.52	0.00
47.400	0.157	26.39	0.65	0.52	2.02	28.52	0.00
47.557	0.001	26.39	0.00	0.52	1.99	28.52	0.00
47.558	0.157	26.39	0.63	0.52	1.96	28.52	0.00
47.716	0.001	26.39	0.00	0.52	1.93	28.52	0.00
47.716	0.157	26.37	0.60	0.52	1.90	28.52	0.00
47.874	0.001	26.37	0.00	0.52	1.86	28.52	0.00
47.875	0.157	26.35	0.58	0.52	1.83	28.52	0.00
48.032	0.001	26.35	0.00	0.52	1.80	28.52	0.00
48.033	0.157	26.33	0.56	0.52	1.77	28.52	0.00
48.190	0.001	26.33	0.00	0.52	1.74	28.52	0.00
48.191	0.157	26.31	0.55	0.52	1.71	28.52	0.00
48.348	0.001	26.31	0.00	0.52	1.68	28.52	0.00
48.349	0.157	26.27	0.53	0.52	1.65	28.52	0.00
48.507	0.001	26.27	0.00	0.52	1.62	28.52	0.00
48.507	0.157	26.22	0.51	0.52	1.59	28.52	0.00
48.665	0.001	26.22	0.00	0.52	1.56	28.52	0.00
48.666	0.157	26.18	0.49	0.52	1.53	28.52	0.00
48.823	0.001	26.18	0.00	0.52	1.50	28.52	0.00
48.824	0.157	26.14	0.47	0.52	1.48	28.52	0.00
48.981	0.001	26.14	0.00	0.52	1.45	28.52	0.00
48.982	0.157	26.11	0.45	0.52	1.42	28.52	0.00
49.140	0.001	26.11	0.00	0.52	1.39	28.52	0.00
49.140	0.157	26.09	0.44	0.52	1.37	28.52	0.00
49.298	0.001	26.09	0.00	0.52	1.34	28.52	0.00
49.299	0.157	26.08	0.42	0.52	1.31	28.52	0.00
49.456	0.001	26.08	0.00	0.52	1.29	28.52	0.00
49.457	0.157	26.08	0.40	0.52	1.26	28.52	0.00
49.614	0.001	26.08	0.00	0.52	1.23	28.52	0.00
49.615	0.157	26.10	0.38	0.52	1.20	28.52	0.00
49.772	0.001	26.10	0.00	0.52	1.18	28.52	0.00
49.773	0.157	26.12	0.37	0.52	1.15	28.52	0.00
49.931	0.001	26.12	0.00	0.52	1.12	28.52	0.00
49.931	0.139	26.14	0.31	0.52	1.10	28.52	0.00
50.070	0.020	26.14	0.04	0.52	1.07	28.52	0.00
50.090	0.157	26.16	0.33	0.52	1.04	28.52	0.00
50.247	0.001	26.16	0.00	0.52	1.01	28.52	0.00
50.248	0.157	26.16	0.31	0.52	0.98	28.52	0.00
50.405	0.001	26.16	0.00	0.52	0.95	28.52	0.00
50.406	0.157	26.16	0.30	0.52	0.93	28.52	0.00
50.563	0.001	26.16	0.00	0.52	0.90	28.52	0.00
50.564	0.157	26.16	0.28	0.52	0.87	28.52	0.00
50.722	0.001	26.16	0.00	0.52	0.84	28.52	0.00
50.722	0.157	26.16	0.26	0.52	0.81	28.52	0.00
50.880	0.001	26.16	0.00	0.52	0.79	28.52	0.00
50.881	0.157	26.16	0.24	0.52	0.76	28.52	0.00
51.038	0.001	26.16	0.00	0.52	0.73	28.52	0.00
51.039	0.157	26.16	0.22	0.52	0.70	28.52	0.00
51.196	0.001	26.16	0.00	0.52	0.67	28.52	0.00
51.197	0.157	26.16	0.21	0.52	0.65	28.52	0.00
51.354	0.001	26.16	0.00	0.52	0.62	28.52	0.00
51.355	0.157	26.16	0.19	0.52	0.59	28.52	0.00
51.513	0.001	26.16	0.00	0.52	0.56	28.52	0.00

51.514	0.157	26.16	0.17	0.52	0.53	28.52	0.00
51.671	0.001	26.16	0.00	0.52	0.50	28.52	0.00
51.672	0.157	26.16	0.15	0.52	0.48	28.52	0.00
51.829	0.001	26.16	0.00	0.52	0.45	28.52	0.00
51.830	0.157	26.16	0.13	0.52	0.42	28.52	0.00
51.987	0.001	26.16	0.00	0.52	0.39	28.52	0.00
51.988	0.157	26.16	0.12	0.52	0.36	28.52	0.00
52.146	0.001	26.16	0.00	0.52	0.34	28.52	0.00
52.146	0.014	26.16	0.01	0.52	0.33	28.52	0.00
52.160	0.145	26.16	0.07	0.52	0.25	28.52	0.00
52.305	0.157	26.16	0.03	0.52	0.09	28.52	0.00
52.462	0.001	26.16	0.00	0.52	0.00	28.52	0.00

LEGENDA SIMBOLI
X(m) : Ascissa sinistra concio
dx(m) : Larghezza concio
alpha(gradi) : Angolo pendenza base concio
W(kN/m) : Forza peso concio
ru(-) : Coefficiente locale pressione interstiziale
U(kPa) : Pressione totale dei pori base concio
phi'(gradi) : Angolo di attrito efficace base concio
c'/Cu (kPa) : Coesione efficace / Resistenza al taglio in condizioni non drenate

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TABELLA DIAGRAMMA DELLE FORZE DELLA SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	ht (m)	yt (m)	yt' (--)	E(x) (kN/m)	T(x) (kN/m)	E' (kN)	rho(x) (--)	local_FS_FEM (--)	local_FS_q-pFEM (--)		
41.546	0.000	29.801	0.396	0.0000000000E+000	0.0000000000E+000	0.0000000000E+000	0.028	1.396	0.220		
41.704	0.009	29.864	0.396	5.0968356522E-003	2.1644758066E-004	3.2409430306E-002	0.028	2.694	0.220		
41.704	0.009	29.864	0.395	5.1275518370E-003	2.1859409895E-004	4.8633561570E-002	0.012	2.710	0.220		
41.862	0.019	29.926	0.395	1.2791235264E-002	1.0982976488E-003	4.8770515847E-002	0.056	6.186	0.220		
41.863	0.019	29.926	0.394	1.2843619221E-002	1.1051330388E-003	9.3879177195E-002	0.020	6.180	0.220		
42.020	0.028	29.988	0.394	2.7644021720E-002	3.5968122060E-003	9.4212624811E-002	0.085	2.824	0.220		
42.021	0.028	29.989	0.393	2.7749160999E-002	3.6159351383E-003	1.7630635595E-001	0.058	2.813	0.220		
42.178	0.038	30.051	0.393	5.5537754217E-002	9.7002406102E-003	2.2554020992E-001	0.114	1.252	0.220		
42.179	0.038	30.051	0.393	5.5720322912E-002	9.7451854432E-003	2.2605300524E-001	0.191	1.249	0.220		
42.336	0.048	30.113	0.393	9.8693552708E-002	2.1636923569E-002	3.1788523726E-001	0.143	0.721	0.220		
42.337	0.048	30.113	0.393	9.8950770038E-002	2.1716491582E-002	3.1835537161E-001	1.403	0.720	0.220		
42.495	0.058	30.175	0.393	1.5633767023E-001	4.1198961047E-002	4.1011684444E-001	0.171	0.471	0.220		
42.495	0.058	30.175	0.394	1.5666945365E-001	4.1322637154E-002	4.1056678264E-001	0.969	0.470	0.220		
42.653	0.068	30.237	0.394	2.2767802468E-001	6.9888524511E-002	4.8799971979E-001	0.199	0.326	0.220		
42.654	0.068	30.237	0.396	2.2807273504E-001	7.0061048223E-002	4.8833696627E-001	0.571	0.326	0.220		
42.811	0.077	30.300	0.396	3.0945039390E-001	1.0797231391E-001	5.4175488703E-001	0.226	0.249	0.265		
42.812	0.077	30.300	0.399	3.0988851979E-001	1.0819203551E-001	5.4197242171E-001	0.491	0.249	0.269		
42.969	0.086	30.363	0.399	3.9816646823E-001	1.5479554422E-001	5.7832856722E-001	0.252	0.220	0.754		
42.970	0.086	30.363	0.403	3.9863414918E-001	1.5505833858E-001	5.7850484546E-001	0.470	0.220	0.756		
43.127	0.094	30.427	0.403	4.9258976923E-001	2.0983312376E-001	6.1571913136E-001	0.276	0.220	1.087		
43.128	0.094	30.427	0.407	4.9308768555E-001	2.1013789319E-001	6.1590296321E-001	0.466	0.220	1.088		
43.286	0.102	30.491	0.407	5.9234830563E-001	2.7255434897E-001	6.4133527649E-001	0.298	0.220	1.320		
43.286	0.102	30.491	0.412	5.9286688470E-001	2.7289432057E-001	6.4139711069E-001	0.469	0.220	1.321		
43.444	0.108	30.556	0.412	6.9391413540E-001	3.4068269483E-001	6.3705293606E-001	0.318	0.220	1.473		
43.445	0.108	30.557	0.417	6.9442918399E-001	3.4104191257E-001	6.3694662821E-001	0.474	0.220	1.474		
43.602	0.114	30.622	0.417	7.9232482351E-001	4.1073104051E-001	6.0300834453E-001	0.336	0.220	1.546		
43.603	0.114	30.623	0.422	7.9281229662E-001	4.1109093449E-001	6.0278191272E-001	0.482	0.220	1.546		
43.760	0.119	30.689	0.422	8.8409219964E-001	4.7955162596E-001	5.5727902900E-001	0.351	0.220	1.497		
43.761	0.119	30.689	0.426	8.8454269598E-001	4.7989988566E-001	5.5704726193E-001	0.490	0.220	1.495		
43.919	0.124	30.756	0.426	9.6844337992E-001	5.4532447807E-001	5.0742226317E-001	0.365	0.220	1.181		
43.919	0.124	30.757	0.431	9.6885354458E-001	5.4565214435E-001	5.0714148749E-001	0.498	0.220	1.180		
44.077	0.128	30.825	0.431	1.0440871458E+000	6.0599339741E-001	4.4695765733E-001	0.376	0.220	1.039		
44.078	0.128	30.825	0.436	1.0444483987E+000	6.0628884515E-001	4.4662029912E-001	0.504	0.220	1.038		
44.235	0.131	30.894	0.436	1.1093162084E+000	6.5933367166E-001	3.7608054509E-001	0.385	0.220	0.951		
44.236	0.131	30.894	0.441	1.1096201344E+000	6.5958593595E-001	3.7569626286E-001	0.509	0.220	0.951		
44.393	0.133	30.963	0.441	1.1627209209E+000	7.0347122379E-001	2.9835817260E-001	0.392	0.220	0.892		
44.394	0.133	30.964	0.445	1.1629619960E+000	7.0367234498E-001	2.9795385731E-001	0.513	0.220	0.892		
44.551	0.135	31.034	0.445	1.2036071643E+000	7.3726658825E-001	2.1718939491E-001	0.397	0.220	0.852		
44.552	0.135	31.034	0.449	1.2037825971E+000	7.3741211119E-001	2.1675282147E-001	0.515	0.220	0.852		
44.710	0.136	31.105	0.449	1.2312346412E+000	7.5991693986E-001	1.3293810390E-001	0.400	0.220	0.824		
44.710	0.136	31.105	0.453	1.2313419629E+000	7.6000451419E-001	1.3252768096E-001	0.517	0.220	0.824		
44.868	0.136	31.176	0.453	1.2462862163E+000	7.7183993173E-001	5.9917985103E-002	0.401	0.220	0.806		
44.869	0.136	31.177	0.456	1.2463345289E+000	7.7187601297E-001	5.9585805453E-002	0.517	0.220	0.806		
45.026	0.136	31.248	0.456	1.2510173941E+000	7.7470346595E-001	2.0916769960E-003	0.401	0.220	0.795		
45.027	0.136	31.249	0.458	1.2510189778E+000	7.7469764129E-001	1.8258234746E-003	0.516	0.220	0.795		
45.184	0.135	31.321	0.458	1.2473198146E+000	7.7010883006E-001	-4.9103172541E-002	0.400	0.220	0.792		
45.185	0.135	31.321	0.460	1.2472800007E+000	7.7006687211E-001	-4.9378627070E-002	0.514	0.220	0.792		
45.342	0.135	31.394	0.460	1.2353441088E+000	7.5862435460E-001	-1.0168440046E-001	0.398	0.220	0.793		
45.343	0.135	31.394	0.461	1.2352617874E+000	7.5854805313E-001	-1.0194178857E-001	0.512	0.220	0.793		
45.501	0.134	31.467	0.462	1.2154462425E+000	7.4091126213E-001	-1.4863806807E-001	0.395	0.220	0.800		
45.501	0.133	31.467	0.463	1.2153259715E+000	7.4080553418E-001	-1.4885849727E-001	0.509	0.220	0.800		
45.659	0.132	31.540	0.463	1.1887322333E+000	7.1799766987E-001	-1.8770869555E-001	0.391	0.220	0.812		
45.660	0.132	31.540	0.464	1.1885803882E+000	7.1786793208E-001	-1.8788789349E-001	0.506	0.220	0.813		
45.817	0.131	31.613	0.464	1.1564415022E+000	6.9087723573E-001	-2.1946518263E-001	0.387	0.220	0.830		
45.818	0.131	31.614	0.465	1.1562639929E+000	6.9072804525E-001	-2.1961331023E-001	0.503	0.220	0.830		
45.975	0.129	31.687	0.465	1.1195096222E+000	6.6027830401E-001	-2.4682844028E-001	0.382	0.220	0.852		
45.976	0.129	31.687	0.467	1.1193099961E+000	6.6011253656E-001	-2.4695709558E-001	0.499	0.220	0.852		
46.133	0.127	31.761	0.467	1.0785971288E+000	6.2675203605E-001	-2.6959028995E-001	0.376	0.220	0.879		
46.134	0.127	31.761	0.469	1.0783791081E+000	6.2657278953E-001	-2.6969534528E-001	0.495	0.220	0.880		
46.292	0.125	31.835	0.469	1.0344180366E+000	5.9092224186E-001	-2.8828316737E-001	0.370	0.220	0.913		
46.293	0.125	31.835	0.470	1.0341849093E+000	5.9073265408E-001	-2.8836953965E-001	0.491	0.220	0.913		
46.450	0.123	31.909	0.470	9.8756207071E-001	5.5339476895E-001	-3.0344953160E-001	0.363	0.220	0.953		
46.451	0.123	31.910	0.472	9.8731668785E-001	5.5319799342E-001	-3.0351782645E-001	0.485	0.220	0.953		
46.608	0.120	31.984	0.472	9.3859986637E-001	5.1480127882E-001	-3.1478824563E-001	0.355	0.220	1.001		
46.609	0.120	31.984	0.473	9.3834532435E-001	5.1460072321E-001	-3.1483475742E-001	0.480	0.220	1.001		
46.766	0.117	32.059	0.473	8.8816193153E-001	4.7581028237E-001	-3.2240842044E-001	0.347	0.220	1.058		
46.767	0.117	32.059	0.474	8.8790123414E-001	4.7560923548E-001	-3.2244023804E-001	0.474	0.220	1.058		
46.925	0.114	32.134	0.474	8.3677757117E-001	4.3700941928E-001	-3.2632023099E-001	0.338	0.220	1.126		
46.925	0.114	32.134	0.475	8.3651372116E-001	4.3681097630E-001	-3.2632658836E-001	0.468	0.220	1.126		
47.083	0.111	32.209	0.475	7.8520496551E-001	3.9905838546E-001	-3.2465031053E-001	0.329	0.220	1.207		
47.084	0.111	32.209	0.475	7.8494247771E-001	3.9886610685E-001	-3.2462701307E-001	0.461	0.220	1.208		
47.241	0.108	32.284	0.475	7.3433198058E-001	3.6260837358E-001	-3.1772151558E-001	0.320	0.220	1.306		
47.242	0.108	32.284	0.475	7.3407510403E-001	3.6242524218E-001	-3.1767611790E-001	0.455	0.220	1.306		
47.399	0.105	32.359	0.475	6.8481452494E-001	3.2810857342E-001	-3.0805881963E-001	0.310	0.220	1.427		
47.400	0.105	32.360	0.476	6.8456546444E-001	3.2793613284E-001	-3.0800537037E-001	0.449	0.220	1.428		
47.557	0.101	32.435	0.476	6.3697738387E-001	2.9577186057E-001	-2.9628275286E-001	0.301	0.220	1.580		
47.558	0.101	32.435	0.475	6.3673784972E-001	2.9561106796E-001	-2.9621754583E-001	0.444	0.220	1.580		
47.716	0.098	32.510	0.475	5.9113762116E-001	2.6574535060E-001	-2.8307150170E-001	0.291	0.220	1.777		
47.716	0.098	32.510	0.475	5.9090877052E-001	2.6559659930E-001	-2.8300256112E-001	0.438	0.220	1.778		
47.874	0.095	32.585	0.475	5.4742460914E-001	2.3803968290E-001	-2.6949111742E-001	0.282	0.220	2.049		
47.875	0.095	32.585	0.475	5.4720673933E-001	2.3790276931E-001	-2.6942128890E-001	0.434	0.220	2.050		

48.032	0.092	32.660	0.475	5.0587921683E-001	2.1259634387E-001	-2.5559434463E-001	0.272	0.220	2.461
48.033	0.092	32.660	0.474	5.0567258461E-001	2.1247093771E-001	-2.5552129520E-001	0.430	0.220	2.463
48.190	0.088	32.735	0.474	4.6661450800E-001	1.8937185009E-001	-2.4045856689E-001	0.263	0.220	3.341
48.191	0.088	32.735	0.474	4.6642011723E-001	1.8925787046E-001	-2.4037717906E-001	0.426	0.220	3.346
48.348	0.085	32.810	0.474	4.2983213499E-001	1.6834664349E-001	-2.2460740689E-001	0.254	0.220	3.565
48.349	0.085	32.810	0.477	4.2965055968E-001	1.6824376909E-001	-2.2452864901E-001	0.424	0.220	3.565
48.507	0.082	32.885	0.477	3.9547051406E-001	1.4938590545E-001	-2.1008472056E-001	0.245	0.220	3.428
48.507	0.082	32.886	0.473	3.9530067725E-001	1.4929313838E-001	-2.1001554954E-001	0.423	0.220	3.427
48.665	0.079	32.960	0.473	3.6325470602E-001	1.3227232007E-001	-1.9743572996E-001	0.236	0.220	3.042
48.666	0.079	32.961	0.473	3.6309509330E-001	1.3218851541E-001	-1.9737471885E-001	0.423	0.220	3.040
48.823	0.076	33.035	0.473	3.3295328410E-001	1.1680906667E-001	-1.8556515988E-001	0.228	0.220	2.413
48.824	0.076	33.035	0.473	3.3280327003E-001	1.1673342028E-001	-1.8550249781E-001	0.424	0.220	2.409
48.981	0.074	33.110	0.473	3.0456479315E-001	1.0288240414E-001	-1.7335083283E-001	0.219	0.234	1.496
48.982	0.074	33.110	0.473	3.0442465445E-001	1.0281441756E-001	-1.7328961337E-001	0.428	0.234	1.490
49.140	0.071	33.185	0.473	2.7806133537E-001	9.0368819905E-002	-1.6186861910E-001	0.211	0.265	0.220
49.140	0.071	33.185	0.473	2.7793047842E-001	9.0307711894E-002	-1.6181292281E-001	0.434	0.266	0.220
49.298	0.068	33.259	0.473	2.5328014896E-001	7.9108345921E-002	-1.5161035631E-001	0.203	0.299	0.220
49.299	0.068	33.260	0.472	2.5315758374E-001	7.9053278352E-002	-1.5156113354E-001	0.443	0.299	0.220
49.456	0.065	33.334	0.472	2.3002880525E-001	6.8951401981E-002	-1.4245925424E-001	0.195	0.334	0.220
49.457	0.065	33.334	0.472	2.2991363744E-001	6.8901698036E-002	-1.4241434500E-001	0.456	0.335	0.220
49.614	0.063	33.409	0.472	2.0817998132E-001	5.9753530835E-002	-1.3376685309E-001	0.186	0.373	0.220
49.615	0.063	33.409	0.472	2.0807184128E-001	5.9708796792E-002	-1.3372321364E-001	0.473	0.373	0.220
49.772	0.060	33.484	0.472	1.8767782401E-001	5.1510606871E-002	-1.2549960887E-001	0.178	0.415	0.220
49.773	0.060	33.484	0.472	1.8757636733E-001	5.1470315539E-002	-1.2545880812E-001	0.498	0.415	0.220
49.931	0.057	33.558	0.472	1.6843882424E-001	4.4094884870E-002	-1.1780108734E-001	0.170	0.460	0.220
49.931	0.057	33.559	0.471	1.6834359106E-001	4.4058677770E-002	-1.1776319083E-001	0.426	0.460	0.220
50.070	0.054	33.624	0.472	1.5246092285E-001	3.8185313551E-002	-1.1146774895E-001	0.178	0.504	0.220
50.090	0.054	33.633	0.475	1.5028470511E-001	3.7390505976E-002	-1.1060764862E-001	0.586	0.510	0.220
50.247	0.051	33.708	0.473	1.3340599021E-001	3.1446617879E-002	-1.0391439436E-001	0.153	0.565	0.220
50.248	0.051	33.708	0.473	1.3332198342E-001	3.1417574260E-002	-1.0388081332E-001	0.673	0.565	0.220
50.405	0.048	33.783	0.473	1.1747938068E-001	2.6140595880E-002	-9.7458007807E-002	0.145	0.627	0.220
50.406	0.048	33.783	0.474	1.1740059374E-001	2.6114898889E-002	-9.7425641792E-002	0.837	0.628	0.220
50.563	0.046	33.858	0.474	1.0255458323E-001	2.1463531191E-002	-9.1253666785E-002	0.136	0.700	0.220
50.564	0.046	33.858	0.473	1.0248081230E-001	2.1440970223E-002	-9.1222614009E-002	1.242	0.700	0.220
50.722	0.043	33.933	0.473	8.8591776709E-002	1.7397268498E-002	-8.5290003892E-002	0.128	0.786	0.220
50.722	0.043	33.933	0.473	8.8522827274E-002	1.7377619457E-002	-8.5260042770E-002	3.605	0.787	0.220
50.880	0.040	34.008	0.473	7.5557971342E-002	1.3846037768E-002	-7.9492132577E-002	0.119	0.893	0.220
50.881	0.040	34.008	0.473	7.5493709576E-002	1.3829052088E-002	-7.9462717612E-002	2.235	0.894	0.220
51.038	0.037	34.082	0.473	6.3436792270E-002	1.0792267518E-002	-7.3745289338E-002	0.111	1.026	0.220
51.039	0.037	34.083	0.473	6.3377176785E-002	1.0777752226E-002	-7.3716744150E-002	0.683	1.026	0.220
51.196	0.034	34.157	0.473	5.2199446789E-002	8.1954817422E-003	-6.8324811973E-002	0.102	1.187	0.220
51.197	0.034	34.158	0.473	5.2144213834E-002	8.1832122332E-003	-6.8296798775E-002	0.341	1.188	0.220
51.354	0.031	34.232	0.473	4.1841490309E-002	6.0201961895E-003	-6.2472318206E-002	0.094	1.383	0.220
51.355	0.031	34.232	0.473	4.1790991127E-002	6.0100470500E-003	-6.2440053465E-002	0.195	1.384	0.220
51.513	0.029	34.307	0.473	3.2483178714E-002	4.2474792452E-003	-5.5672657277E-002	0.085	1.748	0.220
51.514	0.029	34.307	0.473	3.2438179328E-002	4.2393572258E-003	-5.5635681184E-002	0.117	1.750	0.220
51.671	0.026	34.382	0.473	2.4259344492E-002	2.8361971401E-003	-4.8256712918E-002	0.076	2.343	0.220
51.672	0.026	34.382	0.473	2.4220341640E-002	2.8297367310E-003	-4.8218889394E-002	0.071	2.346	0.220
51.829	0.023	34.457	0.473	1.7187131251E-002	1.7652881399E-003	-4.1314059892E-002	0.067	3.144	0.220
51.830	0.023	34.457	0.473	1.7153740066E-002	1.7606296648E-003	-4.1280788904E-002	0.042	3.147	0.220
51.987	0.020	34.531	0.473	1.1165614199E-002	9.9244197773E-004	-3.4755754037E-002	0.059	2.998	0.220
51.988	0.020	34.532	0.425	1.1137526343E-002	9.8899937838E-004	-3.4721029412E-002	0.024	2.994	0.220
52.146	0.009	34.599	0.425	6.2265037669E-003	4.6248713940E-004	-2.7533483343E-002	0.049	1.731	0.220
52.146	0.009	34.599	0.302	6.2042572954E-003	4.6021757919E-004	-2.7494327533E-002	0.094	1.728	0.220
52.160	0.007	34.603	0.458	5.8335238470E-003	4.2678415233E-004	-2.6830277044E-002	0.015	1.710	0.220
52.305	0.004	34.671	0.469	2.4769370244E-003	9.9735193091E-005	-1.9559051802E-002	0.012	1.212	0.220
52.462	0.000	34.745	0.465	9.6763845379E-006	1.9485351545E-007	-1.1985000013E-002	0.069	0.220	0.598

LEGENDA SIMBOLI
X(m) : Ascissa sinistra concio
ht(m) : Altezza linea di thrust da nodo sinistro base concio
yt(m) : coordinata Y linea di trust
yt'(-) : gradiente pendenza locale linea di trust
E(x)(kN/m) : Forza Normale interconcio
T(x)(kN/m) : Forza Tangenziale interconcio
E' (kN) : derivata Forza normale interconcio
Rho(x) (-) : fattore mobilizzazione resistenza al taglio verticale interconcio ZhU et al.(2003)
FS_FEM(x) (-) : fattore di sicurezza locale stimato (locale in X) by qFEM
FS_q-pFEM(x) (-) : fattore di sicurezza locale stimato (locale in X) by q-pFEM Procedure

TABELLA SFORZI DI TAGLIO DISTRIBUITI LUNGO SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	dx (m)	dl (m)	alpha (gradi)	TauStress (kPa)	Tau (kN/m)
41.546	0.157	0.166	18.657	0.072	0.012
41.704	0.001	0.001	18.657	0.145	0.000
41.704	0.157	0.166	18.556	0.219	0.036
41.862	0.001	0.001	18.556	0.292	0.000
41.863	0.157	0.166	18.430	0.366	0.061
42.020	0.001	0.001	18.430	0.441	0.000
42.021	0.157	0.166	18.321	0.516	0.085
42.178	0.001	0.001	18.321	0.592	0.001
42.179	0.157	0.166	18.264	0.667	0.111
42.336	0.001	0.001	18.264	0.744	0.001
42.337	0.157	0.166	18.284	0.821	0.136
42.495	0.001	0.001	18.284	0.897	0.001
42.495	0.157	0.166	18.397	0.976	0.162
42.653	0.001	0.001	18.397	1.051	0.001
42.654	0.157	0.166	18.610	1.132	0.188
42.811	0.001	0.001	18.610	1.205	0.001
42.812	0.157	0.166	18.922	1.287	0.214
42.969	0.001	0.001	18.922	1.358	0.001
42.970	0.157	0.167	19.320	1.441	0.240
43.127	0.001	0.001	19.320	1.507	0.001
43.128	0.157	0.167	19.785	1.590	0.266
43.286	0.001	0.001	19.785	1.651	0.001
43.286	0.157	0.168	20.288	1.732	0.291
43.444	0.001	0.001	20.288	1.787	0.002
43.445	0.157	0.168	20.793	1.863	0.314
43.602	0.001	0.001	20.793	1.913	0.002
43.603	0.157	0.169	21.257	1.982	0.335
43.760	0.001	0.001	21.257	2.026	0.002
43.761	0.157	0.169	21.681	2.089	0.354
43.919	0.001	0.001	21.681	2.128	0.002
43.919	0.157	0.170	22.140	2.186	0.372
44.077	0.001	0.001	22.140	2.219	0.002
44.078	0.157	0.171	22.615	2.273	0.388
44.235	0.001	0.001	22.615	2.300	0.002

44.236	0.157	0.171	23.082	2.347	0.401
44.393	0.001	0.001	23.082	2.367	0.002
44.394	0.157	0.172	23.520	2.406	0.413
44.551	0.001	0.001	23.520	2.420	0.002
44.552	0.157	0.172	23.913	2.450	0.422
44.710	0.001	0.001	23.913	2.458	0.002
44.710	0.157	0.173	24.254	2.481	0.428
44.868	0.001	0.001	24.254	2.484	0.002
44.869	0.157	0.173	24.538	2.498	0.432
45.026	0.001	0.001	24.538	2.497	0.002
45.027	0.157	0.173	24.766	2.505	0.434
45.184	0.001	0.001	24.766	2.500	0.002
45.185	0.157	0.174	24.944	2.502	0.434
45.342	0.001	0.001	24.944	2.495	0.002
45.343	0.157	0.174	25.082	2.492	0.433
45.501	0.001	0.001	25.082	2.483	0.002
45.501	0.157	0.174	25.196	2.477	0.431
45.659	0.001	0.001	25.196	2.466	0.002
45.660	0.157	0.174	25.306	2.458	0.428
45.817	0.001	0.001	25.306	2.445	0.002
45.818	0.157	0.174	25.437	2.436	0.425
45.975	0.001	0.001	25.437	2.421	0.002
45.976	0.157	0.175	25.592	2.411	0.421
46.133	0.001	0.001	25.592	2.393	0.002
46.134	0.157	0.175	25.747	2.380	0.416
46.292	0.001	0.001	25.747	2.360	0.002
46.293	0.157	0.175	25.893	2.344	0.410
46.450	0.001	0.001	25.893	2.321	0.002
46.451	0.157	0.175	26.026	2.302	0.403
46.608	0.001	0.001	26.026	2.277	0.002
46.609	0.157	0.175	26.140	2.255	0.395
46.766	0.001	0.001	26.140	2.228	0.002
46.767	0.157	0.175	26.233	2.204	0.387
46.925	0.001	0.001	26.233	2.175	0.002
46.925	0.157	0.176	26.304	2.149	0.377
47.083	0.001	0.001	26.304	2.119	0.002
47.084	0.157	0.176	26.353	2.091	0.367
47.241	0.001	0.001	26.353	2.060	0.002
47.242	0.157	0.176	26.381	2.030	0.357
47.399	0.001	0.001	26.381	1.999	0.002
47.400	0.157	0.176	26.391	1.968	0.346
47.557	0.001	0.001	26.391	1.937	0.002
47.558	0.157	0.176	26.385	1.906	0.335
47.716	0.001	0.001	26.385	1.875	0.002
47.716	0.157	0.176	26.370	1.844	0.324
47.874	0.001	0.001	26.370	1.813	0.002
47.875	0.157	0.176	26.350	1.782	0.313
48.032	0.001	0.001	26.350	1.751	0.002
48.033	0.157	0.176	26.334	1.721	0.302
48.190	0.001	0.001	26.334	1.690	0.002
48.191	0.157	0.176	26.309	1.660	0.291
48.348	0.001	0.001	26.309	1.630	0.001
48.349	0.157	0.176	26.269	1.600	0.281
48.507	0.001	0.001	26.269	1.571	0.001
48.507	0.157	0.175	26.224	1.541	0.270
48.665	0.001	0.001	26.224	1.513	0.001
48.666	0.157	0.175	26.178	1.484	0.260
48.823	0.001	0.001	26.178	1.456	0.001
48.824	0.157	0.175	26.138	1.428	0.250
48.981	0.001	0.001	26.138	1.401	0.001
48.982	0.157	0.175	26.107	1.374	0.241
49.140	0.001	0.001	26.107	1.348	0.001
49.140	0.157	0.175	26.087	1.321	0.232
49.298	0.001	0.001	26.087	1.295	0.001
49.299	0.157	0.175	26.080	1.269	0.222
49.456	0.001	0.001	26.080	1.243	0.001
49.457	0.157	0.175	26.085	1.217	0.213
49.614	0.001	0.001	26.085	1.191	0.001
49.615	0.157	0.175	26.099	1.166	0.204
49.772	0.001	0.001	26.099	1.139	0.001
49.773	0.157	0.175	26.120	1.113	0.195
49.931	0.001	0.001	26.120	1.087	0.001
49.931	0.139	0.154	26.141	1.063	0.164
50.070	0.020	0.022	26.141	1.036	0.023
50.090	0.157	0.175	26.157	1.006	0.176
50.247	0.001	0.001	26.157	0.979	0.001
50.248	0.157	0.175	26.162	0.952	0.167
50.405	0.001	0.001	26.162	0.925	0.001
50.406	0.157	0.175	26.162	0.897	0.157
50.563	0.001	0.001	26.162	0.870	0.001
50.564	0.157	0.175	26.162	0.843	0.148
50.722	0.001	0.001	26.162	0.816	0.001
50.722	0.157	0.175	26.162	0.788	0.138
50.880	0.001	0.001	26.162	0.761	0.001
50.881	0.157	0.175	26.161	0.734	0.129
51.038	0.001	0.001	26.161	0.707	0.001
51.039	0.157	0.175	26.161	0.679	0.119
51.196	0.001	0.001	26.161	0.652	0.001
51.197	0.157	0.175	26.161	0.625	0.110
51.354	0.001	0.001	26.161	0.598	0.001
51.355	0.157	0.175	26.161	0.570	0.100
51.513	0.001	0.001	26.161	0.543	0.000
51.514	0.157	0.175	26.161	0.516	0.090
51.671	0.001	0.001	26.161	0.489	0.000
51.672	0.157	0.175	26.161	0.461	0.081
51.829	0.001	0.001	26.161	0.434	0.000
51.830	0.157	0.175	26.161	0.407	0.071
51.987	0.001	0.001	26.161	0.380	0.000
51.988	0.157	0.175	26.161	0.352	0.062
52.146	0.001	0.001	26.161	0.325	0.000
52.146	0.014	0.015	26.161	0.323	0.005
52.160	0.145	0.161	26.161	0.244	0.039
52.305	0.157	0.175	26.161	0.084	0.015
52.462	0.001	0.001	26.161	0.001	0.000

LEGENDA SIMBOLI
X(m) : Ascissa sinistra concio
dx(m) : Larghezza concio

dl(m) : lunghezza base concio
alpha(gradi) : Angolo pendenza base concio
TauStress(kPa) : Sforzo di taglio su base concio
TauF (kN/m) : Forza di taglio su base concio

CRITERIO DI ROTTURA secondo Hoek (2002,2007)
Strato 2 -- Parametri di resistenza al taglio equivalenti dell'ammasso roccioso
Fattore di riduzione NTC2008 gammaPHI=1.25e gammaC=1.25 - ATTIVATO

Sigma'(kPa)	Phi'(deg)	c'(kPa)
20.00	48.00	53.50
40.00	45.70	55.27
60.00	43.99	57.37
80.00	42.62	59.58
100.00	41.47	61.84
120.00	40.49	64.10
140.00	39.62	66.34
160.00	38.86	68.56
180.00	38.16	70.75
200.00	37.54	72.90
220.00	36.96	75.03
240.00	36.43	77.12
260.00	35.93	79.18
280.00	35.47	81.21
300.00	35.04	83.22
320.00	34.64	85.19
340.00	34.25	87.13
360.00	33.89	89.05
380.00	33.55	90.95
400.00	33.22	92.82
420.00	32.91	94.66
440.00	32.62	96.48
460.00	32.33	98.29
480.00	32.06	100.07
500.00	31.80	101.83
600.00	30.63	110.34
700.00	29.64	118.45
800.00	28.79	126.20
900.00	28.04	133.65
1000.00	27.37	140.82
1100.00	26.77	147.75
1200.00	26.22	154.47
1300.00	25.72	160.99
1400.00	25.26	167.33
1500.00	24.84	173.51
1700.00	24.07	185.43
1900.00	23.40	196.83
2100.00	22.80	207.78
2300.00	22.26	218.34
2500.00	21.78	228.54
2700.00	21.33	238.41
2900.00	20.92	248.00
3100.00	20.54	257.33
3300.00	20.19	266.41
3500.00	19.86	275.27
3700.00	19.55	283.92
3900.00	19.26	292.38
4100.00	18.99	300.66

SEZIONE BB' VERSANTE EMILIANO IN ASSENZA DI FALDA

– VERIFICA GLOBALE

------ GESTIONE ACQUIFERI ------
Strati esclusi da acquifero:
STRATO 1
STRATO 2
Esclusione sovraccarico pendio sommerso: NON ATTIVATA
Peso unitario fluido (kN/m^3): 9.81
Parametri funzione dissipazione superficiale pressione dei fluidi:
Coefficiente A 0
Coefficiente K 0.000800
Pressione minima fluidi Uo_Min (kPa) 0.01
---------- INFORMAZIONI GENERAZIONE SUPERFICI RANDOM ----------
*** PARAMETRI PER LA GENERAZIONE DELLE SUPERFICI
METODO DI RICERCA: CONVEX RANDOM - Chen (1992)
FILTRAGGIO SUPERFICI : ATTIVATO
COORDINATE X1,X2,Y OSTACOLO : 0.00 0.00 0.00
LUNGHEZZA MEDIA SEGMENTI (m): 5.8 (+/-) 50%
RANGE ASCISSE RANDOM STARTING POINT (Xmin .. Xmax): 0.10 131.50
LIVELLO MINIMO CONSIDERATO (Ymin): 0.00
RANGE ASCISSE AMMESSO PER LA TERMINAZIONE (Xmin .. Xmax): 14.70 143.08
*** TOTALE SUPERFICI GENERATE : 10000
---------- INFORMAZIONI PARAMETRI DI CALCOLO ----------
METODO DI CALCOLO : MORGENSTERN & PRICE (Morgenstern & Price, 1965)
COEFFICIENTE SISMICO UTILIZZATO Kh : 0.102
COEFFICIENTE SISMICO UTILIZZATO Kv (assunto Positivo): 0.051
FORZA ORIZZONTALE ADDIZIONALE IN TESTA (kN/m): 0.00
FORZA ORIZZONTALE ADDIZIONALE ALLA BASE (kN/m): 0.00
N.B. Le forze orizzontali addizionali in testa e alla base sono poste uguali a 0
durante le tutte le verifiche globali.
I valori >0 impostati dall'utente sono utilizzati solo in caso di verifica singola
---------- RISULTATO FINALE ELABORAZIONI ----------
* DATI RELATIVI ALLE 10 SUPERFICI GENERATE CON MINOR Fs *
Fattore di sicurezza (FS) 0.951 - Min. - X Y Lambda= 0.673
41.36 29.72
41.55 29.78
41.74 29.84
41.93 29.90
42.12 29.96
42.31 30.02
42.50 30.08
42.69 30.14
42.88 30.20
43.07 30.26
43.26 30.32
43.45 30.38
43.64 30.45

43.83 30.52
44.02 30.59
44.21 30.66
44.40 30.73
44.59 30.80
44.78 30.88
44.97 30.96
45.16 31.04
45.35 31.12
45.54 31.20
45.73 31.29
45.92 31.37
46.11 31.46
46.30 31.54
46.49 31.63
46.68 31.71
46.87 31.80
47.06 31.89
47.25 31.98
47.44 32.07
47.63 32.16
47.82 32.25
48.01 32.34
48.20 32.43
48.39 32.52
48.58 32.61
48.77 32.70
48.97 32.79
49.16 32.88
49.35 32.97
49.54 33.07
49.73 33.16
49.92 33.25
50.11 33.34
50.30 33.43
50.49 33.52
50.68 33.61
50.87 33.70
51.06 33.79
51.25 33.88
51.44 33.97
51.63 34.06
51.82 34.15
52.01 34.24
52.20 34.33
52.39 34.42
52.58 34.52
52.77 34.61
52.96 34.70
53.15 34.79
53.34 34.88
53.53 34.97
53.72 35.06
53.91 35.15
54.10 35.24
54.29 35.33
54.48 35.42
54.67 35.51
54.86 35.60
55.05 35.69
55.24 35.78
55.43 35.87

Fattore di sicurezza (FS) 0.953 - N.2 – X Y Lambda= 0.673

40.90 29.53
41.09 29.58
41.28 29.62
41.48 29.67
41.67 29.72
41.86 29.76
42.05 29.81
42.24 29.86
42.43 29.90
42.62 29.95
42.82 30.00
43.01 30.06
43.20 30.11
43.39 30.18
43.58 30.24
43.77 30.31
43.97 30.38
44.16 30.45
44.35 30.53
44.54 30.61
44.73 30.69
44.92 30.77
45.11 30.86
45.31 30.95
45.50 31.04
45.69 31.13
45.88 31.23
46.07 31.32
46.26 31.41
46.46 31.50
46.65 31.60
46.84 31.69
47.03 31.78
47.22 31.88
47.41 31.97
47.61 32.06
47.80 32.16
47.99 32.25
48.18 32.34
48.37 32.44
48.56 32.53
48.75 32.63
48.95 32.72
49.14 32.81
49.33 32.91

	49.52	33.00				
	49.71	33.10				
	49.90	33.19				
	50.10	33.29				
	50.29	33.38				
	50.48	33.47				
	50.67	33.57				
	50.86	33.66				
	51.05	33.75				
	51.25	33.85				
	51.44	33.94				
	51.63	34.04				
	51.82	34.13				
	52.01	34.22				
	52.20	34.32				
	52.39	34.41				
	52.59	34.50				
	52.78	34.60				
	52.97	34.69				
	53.16	34.79				
	53.35	34.88				
	53.54	34.97				
	53.74	35.07				
	53.93	35.16				
	54.12	35.26				
	54.31	35.35				
	54.50	35.45				
	54.69	35.55				
	54.88	35.64				
	55.08	35.74				
Fattore di sicurezza (FS)	0.953	- N.3 --	X	Y	Lambda=	0.666
	39.94	29.16				
	40.14	29.22				
	40.34	29.27				
	40.54	29.32				
	40.74	29.37				
	40.94	29.42				
	41.14	29.47				
	41.34	29.52				
	41.54	29.57				
	41.74	29.62				
	41.94	29.68				
	42.14	29.73				
	42.34	29.79				
	42.54	29.85				
	42.74	29.91				
	42.94	29.98				
	43.14	30.04				
	43.34	30.11				
	43.54	30.19				
	43.74	30.26				
	43.94	30.34				
	44.14	30.42				
	44.34	30.50				
	44.54	30.58				
	44.74	30.67				
	44.94	30.75				
	45.14	30.84				
	45.34	30.93				
	45.54	31.02				
	45.74	31.11				
	45.94	31.20				
	46.14	31.30				
	46.34	31.39				
	46.54	31.49				
	46.74	31.58				
	46.94	31.68				
	47.14	31.78				
	47.34	31.88				
	47.54	31.98				
	47.74	32.08				
	47.94	32.18				
	48.14	32.28				
	48.34	32.38				
	48.53	32.48				
	48.73	32.59				
	48.93	32.69				
	49.13	32.79				
	49.33	32.89				
	49.53	32.99				
	49.73	33.09				
	49.93	33.19				
	50.13	33.28				
	50.33	33.38				
	50.53	33.48				
	50.73	33.58				
	50.93	33.68				
	51.13	33.78				
	51.33	33.88				
	51.53	33.98				
	51.73	34.07				
	51.93	34.17				
	52.13	34.27				
	52.33	34.37				
	52.53	34.47				
	52.73	34.57				
	52.93	34.67				
	53.13	34.77				
	53.33	34.87				
	53.53	34.97				
	53.73	35.06				
	53.93	35.16				
	54.13	35.26				
	54.33	35.36				
	54.53	35.46				
	54.73	35.56				
	54.93	35.66				
	55.13	35.76				

Fattore di sicurezza (FS) 0.954 - N.4 -- X Y Lambda= 0.664

40.27	29.29
40.47	29.34
40.67	29.38
40.87	29.43
41.06	29.47
41.26	29.52
41.46	29.56
41.66	29.61
41.85	29.65
42.05	29.70
42.25	29.75
42.45	29.80
42.64	29.86
42.84	29.92
43.04	29.98
43.24	30.04
43.43	30.11
43.63	30.18
43.83	30.26
44.02	30.33
44.22	30.41
44.42	30.50
44.62	30.58
44.81	30.67
45.01	30.76
45.21	30.85
45.41	30.94
45.60	31.03
45.80	31.13
46.00	31.22
46.20	31.31
46.39	31.41
46.59	31.51
46.79	31.60
46.99	31.70
47.18	31.80
47.38	31.89
47.58	31.99
47.78	32.09
47.97	32.19
48.17	32.29
48.37	32.39
48.57	32.49
48.76	32.59
48.96	32.69
49.16	32.79
49.36	32.89
49.55	32.99
49.75	33.09
49.95	33.19
50.15	33.28
50.34	33.38
50.54	33.48
50.74	33.58
50.93	33.68
51.13	33.77
51.33	33.87
51.53	33.97
51.72	34.07
51.92	34.17
52.12	34.26
52.32	34.36
52.51	34.46
52.71	34.56
52.91	34.66
53.11	34.76
53.30	34.85
53.50	34.95
53.70	35.05
53.90	35.15
54.09	35.25
54.29	35.35
54.49	35.44
54.69	35.54
54.88	35.64
55.08	35.74

Fattore di sicurezza (FS) 0.954 - N.5 -- X Y Lambda= 0.673

41.31	29.69
41.50	29.76
41.69	29.82
41.88	29.88
42.06	29.94
42.25	30.00
42.44	30.07
42.63	30.13
42.82	30.19
43.00	30.25
43.19	30.32
43.38	30.38
43.57	30.44
43.76	30.51
43.94	30.57
44.13	30.64
44.32	30.71
44.51	30.78
44.70	30.85
44.89	30.92
45.07	30.99
45.26	31.06
45.45	31.13
45.64	31.20
45.83	31.28
46.01	31.35
46.20	31.42
46.39	31.50

	46.58	31.58				
	46.77	31.66				
	46.96	31.73				
	47.14	31.81				
	47.33	31.89				
	47.52	31.97				
	47.71	32.06				
	47.90	32.14				
	48.08	32.22				
	48.27	32.31				
	48.46	32.39				
	48.65	32.48				
	48.84	32.56				
	49.03	32.65				
	49.21	32.74				
	49.40	32.83				
	49.59	32.92				
	49.78	33.01				
	49.97	33.10				
	50.15	33.19				
	50.34	33.28				
	50.53	33.37				
	50.72	33.47				
	50.91	33.56				
	51.10	33.65				
	51.28	33.75				
	51.47	33.84				
	51.66	33.94				
	51.85	34.03				
	52.04	34.13				
	52.22	34.22				
	52.41	34.32				
	52.60	34.42				
	52.79	34.52				
	52.98	34.61				
	53.16	34.71				
	53.35	34.81				
	53.54	34.91				
	53.73	35.01				
	53.92	35.11				
	54.11	35.20				
	54.29	35.30				
	54.48	35.40				
	54.67	35.50				
	54.86	35.60				
	55.05	35.70				
	55.23	35.80				
Fattore di sicurezza (FS)	0.954	- N.6 --	X	Y	Lambda=	0.676
	40.82	29.50				
	41.02	29.54				
	41.21	29.59				
	41.40	29.63				
	41.60	29.68				
	41.79	29.72				
	41.98	29.76				
	42.18	29.80				
	42.37	29.85				
	42.56	29.89				
	42.76	29.94				
	42.95	29.99				
	43.14	30.05				
	43.34	30.11				
	43.53	30.17				
	43.72	30.24				
	43.92	30.31				
	44.11	30.38				
	44.30	30.46				
	44.50	30.54				
	44.69	30.62				
	44.88	30.71				
	45.08	30.80				
	45.27	30.89				
	45.46	30.99				
	45.66	31.08				
	45.85	31.18				
	46.04	31.27				
	46.24	31.37				
	46.43	31.46				
	46.62	31.56				
	46.82	31.65				
	47.01	31.75				
	47.20	31.84				
	47.40	31.94				
	47.59	32.03				
	47.78	32.13				
	47.98	32.22				
	48.17	32.32				
	48.36	32.41				
	48.56	32.51				
	48.75	32.61				
	48.94	32.70				
	49.14	32.80				
	49.33	32.89				
	49.52	32.99				
	49.72	33.09				
	49.91	33.18				
	50.10	33.28				
	50.30	33.37				
	50.49	33.47				
	50.68	33.56				
	50.88	33.66				
	51.07	33.75				
	51.26	33.85				
	51.46	33.94				
	51.65	34.04				
	51.84	34.14				
	52.04	34.23				
	52.23	34.33				

52.42 34.42
52.62 34.52
52.81 34.61
53.00 34.71
53.20 34.80
53.39 34.90
53.58 34.99
53.78 35.09
53.97 35.19
54.16 35.28
54.36 35.38
54.55 35.47
54.74 35.57
54.94 35.66
55.13 35.76

Fattore di sicurezza (FS) 0.954 - N.7 – X Y Lambda= 0.667

39.97 29.17
40.17 29.22
40.37 29.27
40.57 29.32
40.77 29.36
40.97 29.41
41.17 29.45
41.37 29.50
41.57 29.54
41.77 29.59
41.97 29.64
42.17 29.69
42.37 29.75
42.57 29.81
42.77 29.87
42.97 29.94
43.17 30.01
43.37 30.08
43.57 30.16
43.77 30.24
43.97 30.32
44.17 30.41
44.37 30.50
44.57 30.59
44.77 30.69
44.97 30.78
45.17 30.88
45.37 30.97
45.57 31.07
45.77 31.17
45.97 31.26
46.17 31.36
46.37 31.46
46.57 31.55
46.77 31.65
46.97 31.75
47.17 31.85
47.37 31.94
47.57 32.04
47.77 32.14
47.97 32.24
48.17 32.34
48.37 32.44
48.57 32.53
48.77 32.63
48.97 32.73
49.17 32.83
49.37 32.93
49.57 33.03
49.77 33.13
49.97 33.22
50.17 33.32
50.37 33.42
50.57 33.52
50.76 33.62
50.96 33.71
51.16 33.81
51.36 33.91
51.56 34.01
51.76 34.10
51.96 34.20
52.16 34.30
52.36 34.40
52.56 34.50
52.76 34.59
52.96 34.69
53.16 34.79
53.36 34.89
53.56 34.99
53.76 35.08
53.96 35.18
54.16 35.28
54.36 35.38
54.56 35.48
54.76 35.57
54.96 35.67
55.16 35.77

Fattore di sicurezza (FS) 0.955 - N.8 – X Y Lambda= 0.701

40.53 29.39
40.73 29.44
40.93 29.49
41.13 29.54
41.33 29.59
41.53 29.64
41.73 29.68
41.93 29.73
42.13 29.78
42.33 29.83
42.53 29.89
42.73 29.95
42.93 30.01
43.13 30.07

	43.33	30.14				
	43.53	30.22				
	43.73	30.29				
	43.93	30.37				
	44.13	30.46				
	44.33	30.55				
	44.53	30.64				
	44.73	30.73				
	44.93	30.83				
	45.13	30.93				
	45.33	31.03				
	45.52	31.13				
	45.72	31.24				
	45.92	31.34				
	46.12	31.44				
	46.32	31.54				
	46.52	31.63				
	46.72	31.73				
	46.92	31.83				
	47.12	31.93				
	47.32	32.02				
	47.52	32.12				
	47.72	32.21				
	47.92	32.30				
	48.12	32.40				
	48.32	32.49				
	48.52	32.58				
	48.72	32.68				
	48.92	32.77				
	49.12	32.86				
	49.32	32.96				
	49.52	33.05				
	49.72	33.15				
	49.92	33.24				
	50.12	33.34				
	50.32	33.43				
	50.52	33.53				
	50.72	33.62				
	50.92	33.72				
	51.12	33.81				
	51.32	33.91				
	51.52	34.00				
	51.72	34.10				
	51.92	34.19				
	52.12	34.29				
	52.32	34.38				
	52.52	34.48				
	52.72	34.57				
	52.92	34.67				
	53.12	34.76				
	53.32	34.86				
	53.52	34.95				
	53.72	35.05				
	53.92	35.14				
	54.12	35.24				
	54.31	35.33				
	54.51	35.43				
	54.71	35.52				
	54.91	35.62				
	55.11	35.71				
	55.31	35.81				
	55.51	35.90				
Fattore di sicurezza (FS)	0.955	- N.9 --	X	Y	Lambda=	0.636
	40.47	29.36				
	40.67	29.42				
	40.87	29.47				
	41.06	29.52				
	41.26	29.57				
	41.46	29.62				
	41.66	29.67				
	41.86	29.72				
	42.06	29.78				
	42.25	29.83				
	42.45	29.88				
	42.65	29.94				
	42.85	30.00				
	43.05	30.06				
	43.25	30.13				
	43.44	30.20				
	43.64	30.27				
	43.84	30.34				
	44.04	30.42				
	44.24	30.49				
	44.43	30.58				
	44.63	30.66				
	44.83	30.75				
	45.03	30.83				
	45.23	30.92				
	45.43	31.01				
	45.62	31.10				
	45.82	31.19				
	46.02	31.28				
	46.22	31.37				
	46.42	31.46				
	46.62	31.55				
	46.81	31.64				
	47.01	31.72				
	47.21	31.81				
	47.41	31.90				
	47.61	31.99				
	47.81	32.08				
	48.00	32.17				
	48.20	32.26				
	48.40	32.35				
	48.60	32.44				
	48.80	32.53				
	49.00	32.62				
	49.19	32.72				

	49.39	32.81				
	49.59	32.90				
	49.79	33.00				
	49.99	33.09				
	50.18	33.18				
	50.38	33.28				
	50.58	33.37				
	50.78	33.47				
	50.98	33.57				
	51.18	33.66				
	51.37	33.76				
	51.57	33.86				
	51.77	33.96				
	51.97	34.06				
	52.17	34.16				
	52.37	34.26				
	52.56	34.36				
	52.76	34.46				
	52.96	34.57				
	53.16	34.67				
	53.36	34.78				
	53.56	34.88				
	53.75	34.99				
	53.95	35.09				
	54.15	35.20				
	54.35	35.31				
	54.55	35.41				
	54.75	35.52				
	54.94	35.63				
	55.14	35.73				
	55.34	35.84				
Fattore di sicurezza (FS)	0.955	- N.10 --	X	Y	Lambda=	0.666
	40.81	29.49				
	41.01	29.55				
	41.21	29.60				
	41.41	29.65				
	41.61	29.70				
	41.80	29.75				
	42.00	29.81				
	42.20	29.86				
	42.40	29.91				
	42.60	29.96				
	42.80	30.02				
	43.00	30.08				
	43.20	30.14				
	43.40	30.20				
	43.60	30.27				
	43.80	30.34				
	43.99	30.41				
	44.19	30.48				
	44.39	30.56				
	44.59	30.63				
	44.79	30.72				
	44.99	30.80				
	45.19	30.89				
	45.39	30.97				
	45.59	31.06				
	45.79	31.15				
	45.99	31.25				
	46.18	31.34				
	46.38	31.43				
	46.58	31.52				
	46.78	31.62				
	46.98	31.71				
	47.18	31.80				
	47.38	31.90				
	47.58	32.00				
	47.78	32.09				
	47.98	32.19				
	48.17	32.29				
	48.37	32.39				
	48.57	32.48				
	48.77	32.58				
	48.97	32.68				
	49.17	32.78				
	49.37	32.88				
	49.57	32.98				
	49.77	33.07				
	49.97	33.17				
	50.17	33.27				
	50.36	33.37				
	50.56	33.46				
	50.76	33.56				
	50.96	33.66				
	51.16	33.76				
	51.36	33.85				
	51.56	33.95				
	51.76	34.05				
	51.96	34.14				
	52.16	34.24				
	52.36	34.34				
	52.55	34.43				
	52.75	34.53				
	52.95	34.63				
	53.15	34.73				
	53.35	34.82				
	53.55	34.92				
	53.75	35.02				
	53.95	35.11				
	54.15	35.21				
	54.35	35.31				
	54.55	35.41				
	54.74	35.50				
	54.94	35.60				
	55.14	35.70				
	55.34	35.80				
	55.54	35.89				
	55.74	35.99				

---------- ANALISI DEFICIT DI RESISTENZA ----------
DATI RELATIVI ALLE 10 SUPERFICI GENERATE CON MINOR Fs *
Analisi Deficit in riferimento a FS(progetto) = 1.100

Sup N.	FS	FTR(kN/m)	FTA(kN/m)	Bilancio(kN/m)	ESITO
1	0.951	36.2	38.0	-5.7	Deficit
2	0.953	46.1	48.4	-7.1	Deficit
3	0.953	51.2	53.7	-7.9	Deficit
4	0.954	52.1	54.6	-8.0	Deficit
5	0.954	45.5	47.7	-7.0	Deficit
6	0.954	48.9	51.2	-7.5	Deficit
7	0.954	50.2	52.6	-7.7	Deficit
8	0.955	43.1	45.2	-6.6	Deficit
9	0.955	54.9	57.5	-8.4	Deficit
10	0.955	50.3	52.7	-7.7	Deficit

Esito analisi: DEFICIT di RESISTENZA!
Valore massimo di DEFICIT di RESITENZA(kN/m): -8.4
Note: FTR --> Forza totale Resistente rispetto alla superficie di scivolamento (componente Orizzontale)
FTA --> Forza totale Agente rispetto alla superficie di scivolamento (componente Orizzontale)
IMPORTANTE! : Il Deficit o il Surplus di resistenza viene espresso in kN per metro di LARGHEZZA rispetto al fronte della scarpata

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TABELLA PARAMETRI CONCI DELLA SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	dx (m)	alpha (gradi)	W (kN/m)	ru (-)	U (kPa)	phi' (gradi)	c'/Cu (kPa)
41.357	0.189	17.79	0.04	0.00	0.00	28.52	0.00
41.546	0.001	17.79	0.00	0.00	0.00	28.52	0.00
41.547	0.189	17.69	0.13	0.00	0.00	28.52	0.00
41.736	0.001	17.69	0.00	0.00	0.00	28.52	0.00
41.737	0.189	17.57	0.23	0.00	0.00	28.52	0.00
41.927	0.001	17.57	0.00	0.00	0.00	28.52	0.00
41.928	0.189	17.45	0.32	0.00	0.00	28.52	0.00
42.117	0.001	17.45	0.00	0.00	0.00	28.52	0.00
42.118	0.189	17.38	0.41	0.00	0.00	28.52	0.00
42.307	0.001	17.38	0.00	0.00	0.00	28.52	0.00
42.308	0.189	17.37	0.51	0.00	0.00	28.52	0.00
42.497	0.001	17.37	0.00	0.00	0.00	28.52	0.00
42.498	0.189	17.44	0.60	0.00	0.00	28.52	0.00
42.687	0.001	17.44	0.00	0.00	0.00	28.52	0.00
42.688	0.189	17.60	0.70	0.00	0.00	28.52	0.00
42.878	0.001	17.60	0.00	0.00	0.00	28.52	0.00
42.879	0.189	17.86	0.79	0.00	0.00	28.52	0.00
43.068	0.001	17.86	0.00	0.00	0.00	28.52	0.00
43.069	0.189	18.19	0.87	0.00	0.00	28.52	0.00
43.258	0.001	18.19	0.01	0.00	0.00	28.52	0.00
43.259	0.189	18.60	0.95	0.00	0.00	28.52	0.00
43.448	0.001	18.60	0.01	0.00	0.00	28.52	0.00
43.449	0.189	19.07	1.03	0.00	0.00	28.52	0.00
43.638	0.001	19.07	0.01	0.00	0.00	28.52	0.00
43.639	0.189	19.56	1.10	0.00	0.00	28.52	0.00
43.829	0.001	19.56	0.01	0.00	0.00	28.52	0.00
43.830	0.189	20.05	1.16	0.00	0.00	28.52	0.00
44.019	0.001	20.05	0.01	0.00	0.00	28.52	0.00
44.020	0.189	20.49	1.22	0.00	0.00	28.52	0.00
44.209	0.001	20.49	0.01	0.00	0.00	28.52	0.00
44.210	0.189	20.90	1.27	0.00	0.00	28.52	0.00
44.399	0.001	20.90	0.01	0.00	0.00	28.52	0.00
44.400	0.189	21.35	1.32	0.00	0.00	28.52	0.00
44.589	0.001	21.35	0.01	0.00	0.00	28.52	0.00
44.590	0.189	21.81	1.36	0.00	0.00	28.52	0.00
44.780	0.001	21.81	0.01	0.00	0.00	28.52	0.00
44.781	0.189	22.27	1.39	0.00	0.00	28.52	0.00
44.970	0.001	22.27	0.01	0.00	0.00	28.52	0.00
44.971	0.189	22.70	1.42	0.00	0.00	28.52	0.00
45.160	0.001	22.70	0.01	0.00	0.00	28.52	0.00
45.161	0.189	23.10	1.44	0.00	0.00	28.52	0.00
45.350	0.001	23.10	0.01	0.00	0.00	28.52	0.00
45.351	0.189	23.45	1.46	0.00	0.00	28.52	0.00
45.540	0.001	23.45	0.01	0.00	0.00	28.52	0.00
45.541	0.189	23.75	1.47	0.00	0.00	28.52	0.00
45.731	0.001	23.75	0.01	0.00	0.00	28.52	0.00
45.732	0.189	23.99	1.48	0.00	0.00	28.52	0.00
45.921	0.001	23.99	0.01	0.00	0.00	28.52	0.00
45.922	0.189	24.18	1.48	0.00	0.00	28.52	0.00
46.111	0.001	24.18	0.01	0.00	0.00	28.52	0.00
46.112	0.189	24.33	1.48	0.00	0.00	28.52	0.00
46.301	0.001	24.33	0.01	0.00	0.00	28.52	0.00
46.302	0.189	24.44	1.49	0.00	0.00	28.52	0.00
46.491	0.001	24.44	0.01	0.00	0.00	28.52	0.00
46.492	0.189	24.54	1.49	0.00	0.00	28.52	0.00
46.682	0.001	24.54	0.01	0.00	0.00	28.52	0.00
46.683	0.189	24.64	1.48	0.00	0.00	28.52	0.00
46.872	0.001	24.64	0.01	0.00	0.00	28.52	0.00
46.873	0.189	24.76	1.48	0.00	0.00	28.52	0.00
47.062	0.001	24.76	0.01	0.00	0.00	28.52	0.00
47.063	0.189	24.90	1.48	0.00	0.00	28.52	0.00
47.252	0.001	24.90	0.01	0.00	0.00	28.52	0.00
47.253	0.189	25.04	1.47	0.00	0.00	28.52	0.00
47.442	0.001	25.04	0.01	0.00	0.00	28.52	0.00
47.443	0.189	25.17	1.46	0.00	0.00	28.52	0.00
47.633	0.001	25.17	0.01	0.00	0.00	28.52	0.00
47.634	0.189	25.29	1.45	0.00	0.00	28.52	0.00
47.823	0.001	25.29	0.01	0.00	0.00	28.52	0.00
47.824	0.189	25.39	1.44	0.00	0.00	28.52	0.00
48.013	0.001	25.39	0.01	0.00	0.00	28.52	0.00
48.014	0.189	25.48	1.42	0.00	0.00	28.52	0.00
48.203	0.001	25.48	0.01	0.00	0.00	28.52	0.00
48.204	0.189	25.56	1.41	0.00	0.00	28.52	0.00
48.393	0.001	25.56	0.01	0.00	0.00	28.52	0.00
48.394	0.189	25.61	1.39	0.00	0.00	28.52	0.00
48.583	0.001	25.61	0.01	0.00	0.00	28.52	0.00
48.585	0.189	25.65	1.37	0.00	0.00	28.52	0.00
48.774	0.001	25.65	0.01	0.00	0.00	28.52	0.00
48.775	0.189	25.66	1.36	0.00	0.00	28.52	0.00
48.964	0.001	25.66	0.01	0.00	0.00	28.52	0.00

48.965	0.189	25.67	1.34	0.00	0.00	28.52	0.00
49.154	0.001	25.67	0.01	0.00	0.00	28.52	0.00
49.155	0.189	25.66	1.32	0.00	0.00	28.52	0.00
49.344	0.001	25.66	0.01	0.00	0.00	28.52	0.00
49.345	0.189	25.65	1.31	0.00	0.00	28.52	0.00
49.534	0.001	25.65	0.01	0.00	0.00	28.52	0.00
49.536	0.189	25.63	1.29	0.00	0.00	28.52	0.00
49.725	0.001	25.63	0.01	0.00	0.00	28.52	0.00
49.726	0.189	25.62	1.27	0.00	0.00	28.52	0.00
49.915	0.001	25.62	0.01	0.00	0.00	28.52	0.00
49.916	0.154	25.60	1.03	0.00	0.00	28.52	0.00
50.070	0.036	25.60	0.24	0.00	0.00	28.52	0.00
50.106	0.189	25.56	1.24	0.00	0.00	28.52	0.00
50.295	0.001	25.56	0.01	0.00	0.00	28.52	0.00
50.296	0.189	25.52	1.23	0.00	0.00	28.52	0.00
50.485	0.001	25.52	0.01	0.00	0.00	28.52	0.00
50.487	0.189	25.47	1.21	0.00	0.00	28.52	0.00
50.676	0.001	25.47	0.01	0.00	0.00	28.52	0.00
50.677	0.189	25.44	1.20	0.00	0.00	28.52	0.00
50.866	0.001	25.44	0.01	0.00	0.00	28.52	0.00
50.867	0.189	25.40	1.18	0.00	0.00	28.52	0.00
51.056	0.001	25.40	0.01	0.00	0.00	28.52	0.00
51.057	0.189	25.38	1.17	0.00	0.00	28.52	0.00
51.246	0.001	25.38	0.01	0.00	0.00	28.52	0.00
51.247	0.189	25.37	1.16	0.00	0.00	28.52	0.00
51.436	0.001	25.37	0.01	0.00	0.00	28.52	0.00
51.438	0.189	25.37	1.15	0.00	0.00	28.52	0.00
51.627	0.001	25.37	0.01	0.00	0.00	28.52	0.00
51.628	0.189	25.37	1.13	0.00	0.00	28.52	0.00
51.817	0.001	25.37	0.01	0.00	0.00	28.52	0.00
51.818	0.189	25.39	1.12	0.00	0.00	28.52	0.00
52.007	0.001	25.39	0.01	0.00	0.00	28.52	0.00
52.008	0.152	25.41	0.89	0.00	0.00	28.52	0.00
52.160	0.038	25.41	0.22	0.00	0.00	28.52	0.00
52.198	0.189	25.43	1.06	0.00	0.00	28.52	0.00
52.387	0.001	25.43	0.01	0.00	0.00	28.52	0.00
52.389	0.189	25.45	0.99	0.00	0.00	28.52	0.00
52.578	0.001	25.45	0.01	0.00	0.00	28.52	0.00
52.579	0.189	25.45	0.93	0.00	0.00	28.52	0.00
52.768	0.001	25.45	0.01	0.00	0.00	28.52	0.00
52.769	0.189	25.45	0.87	0.00	0.00	28.52	0.00
52.958	0.001	25.45	0.00	0.00	0.00	28.52	0.00
52.959	0.189	25.45	0.80	0.00	0.00	28.52	0.00
53.148	0.001	25.45	0.00	0.00	0.00	28.52	0.00
53.149	0.189	25.45	0.74	0.00	0.00	28.52	0.00
53.338	0.001	25.45	0.00	0.00	0.00	28.52	0.00
53.340	0.189	25.45	0.67	0.00	0.00	28.52	0.00
53.529	0.001	25.45	0.00	0.00	0.00	28.52	0.00
53.530	0.189	25.45	0.61	0.00	0.00	28.52	0.00
53.719	0.001	25.45	0.00	0.00	0.00	28.52	0.00
53.720	0.189	25.45	0.55	0.00	0.00	28.52	0.00
53.909	0.001	25.45	0.00	0.00	0.00	28.52	0.00
53.910	0.189	25.45	0.48	0.00	0.00	28.52	0.00
54.099	0.001	25.45	0.00	0.00	0.00	28.52	0.00
54.100	0.189	25.46	0.42	0.00	0.00	28.52	0.00
54.289	0.001	25.46	0.00	0.00	0.00	28.52	0.00
54.291	0.189	25.46	0.35	0.00	0.00	28.52	0.00
54.480	0.001	25.46	0.00	0.00	0.00	28.52	0.00
54.481	0.189	25.46	0.29	0.00	0.00	28.52	0.00
54.670	0.001	25.46	0.00	0.00	0.00	28.52	0.00
54.671	0.189	25.46	0.22	0.00	0.00	28.52	0.00
54.860	0.001	25.46	0.00	0.00	0.00	28.52	0.00
54.861	0.189	25.46	0.16	0.00	0.00	28.52	0.00
55.050	0.001	25.46	0.00	0.00	0.00	28.52	0.00
55.051	0.189	25.46	0.10	0.00	0.00	28.52	0.00
55.240	0.001	25.46	0.00	0.00	0.00	28.52	0.00
55.242	0.189	25.46	0.03	0.00	0.00	28.52	0.00
55.431	0.001	25.46	0.00	0.00	0.00	28.52	0.00

LEGENDA SIMBOLI
X(m) : Ascissa sinistra concio
dx(m) : Larghezza concio
alpha(gradi) : Angolo pendenza base concio
W(kN/m) : Forza peso concio
ru(-) : Coefficiente locale pressione interstiziale
U(kPa) : Pressione totale dei pori base concio
phi'(gradi) : Angolo di attrito efficace base concio
c'/Cu (kPa) : Coesione efficace / Resistenza al taglio in condizioni non drenate

TABELLA DIAGRAMMA DELLE FORZE DELLA SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	ht (m)	yt (m)	yt' (--)	E(x) (kN/m)	T(x) (kN/m)	E' (kN)	rho(x) (--)	local_FS_FEM (--)	local_FS_q-pFEM (--)		
41.357	0.000	29.715	0.388	0.0000000000E+000	0.0000000000E+000	0.0000000000E+000	0.0000000000E+000	0.071	1.491	1.529	
41.546	0.013	29.788	0.388	1.2468950051E-002	5.0557288514E-004	6.6015055464E-002	0.071	2.246	2.140		
41.547	0.013	29.789	0.387	1.2556041884E-002	5.1134065770E-004	9.4061489515E-002	0.071	2.255	2.145		
41.736	0.026	29.862	0.387	3.0359414487E-002	2.4857189255E-003	9.4254110354E-002	0.143	4.601	3.301		
41.737	0.026	29.862	0.385	3.0483142740E-002	2.5018462113E-003	1.3630580844E-001	0.144	4.611	3.302		
41.927	0.039	29.935	0.385	5.6284734518E-002	6.9752732543E-003	1.6415131182E-001	0.217	5.274	3.093		
41.928	0.039	29.936	0.385	5.6466209456E-002	7.0097213803E-003	1.6451343281E-001	0.217	5.273	3.092		
42.117	0.052	30.008	0.385	9.3914422941E-002	1.5623180910E-002	2.3343581170E-001	0.291	4.331	2.721		
42.118	0.052	30.009	0.384	9.4172445595E-002	1.5686963682E-002	2.3386246242E-001	0.292	4.326	2.720		
42.307	0.066	30.082	0.385	1.4514063921E-001	3.0306164586E-002	3.0322993631E-001	0.365	3.360	2.399		
42.308	0.066	30.082	0.384	1.4547570660E-001	3.0408440392E-002	3.0360224566E-001	0.366	3.356	2.398		
42.497	0.079	30.155	0.384	2.0938440362E-001	5.2592581139E-002	3.7327701095E-001	0.440	2.712	2.146		
42.498	0.079	30.155	0.385	2.0979684451E-001	5.2742493042E-002	3.7368413058E-001	0.440	2.709	2.145		
42.687	0.093	30.228	0.385	2.8655145093E-001	8.3977546039E-002	4.3471572605E-001	0.513	2.288	1.948		
42.688	0.093	30.228	0.386	2.8703167431E-001	8.4180589702E-002	4.3500446868E-001	0.513	2.287	1.947		
42.878	0.106	30.301	0.386	3.7305667647E-001	1.2460099108E-001	4.7004154389E-001	0.585	2.029	1.777		
42.879	0.106	30.302	0.389	3.7357581806E-001	1.2485315922E-001	4.7016243306E-001	0.585	2.028	1.776		
43.068	0.118	30.375	0.389	4.6368433127E-001	1.7319245770E-001	4.7961234474E-001	0.654	1.846	1.606		
43.069	0.118	30.376	0.392	4.6421397926E-001	1.7348413816E-001	4.7961961483E-001	0.654	1.845	1.605		
43.258	0.130	30.450	0.392	5.5498369056E-001	2.2818385802E-001	4.8142669629E-001	0.720	1.692	1.458		
43.259	0.130	30.450	0.396	5.5551535476E-001	2.2850868445E-001	4.8145677208E-001	0.720	1.691	1.457		
43.448	0.142	30.525	0.396	6.4685437971E-001	2.8884590582E-001	4.8339691813E-001	0.782	1.565	1.344		
43.449	0.142	30.525	0.400	6.4738819630E-001	2.8919983585E-001	4.8338467376E-001	0.782	1.564	1.344		
43.638	0.152	30.601	0.400	7.3827504769E-001	3.5392209115E-001	4.7612507709E-001	0.839	1.460	1.257		
43.639	0.152	30.601	0.405	7.3880079958E-001	3.5429575572E-001	4.7605072456E-001	0.839	1.460	1.256		

43.829	0.161	30.678	0.405	8.2726139734E-001	4.2153228331E-001	4.5774782716E-001	0.892	1.374	1.188
43.830	0.161	30.679	0.410	8.2776681966E-001	4.2191421158E-001	4.5760962171E-001	0.892	1.373	1.187
44.019	0.170	30.756	0.410	9.1177025943E-001	4.8959649018E-001	4.2950945936E-001	0.940	1.303	1.132
44.020	0.170	30.757	0.414	9.1224447138E-001	4.8997514999E-001	4.2932369945E-001	0.940	1.302	1.132
44.209	0.178	30.835	0.414	9.9028953780E-001	5.5621757431E-001	3.9566773432E-001	0.983	1.244	1.086
44.210	0.178	30.835	0.418	9.9072636712E-001	5.5658364012E-001	3.9546270539E-001	0.983	1.244	1.086
44.399	0.185	30.914	0.418	1.0620477063E+000	6.1988454629E-001	3.5815508053E-001	1.022	1.197	1.048
44.400	0.185	30.915	0.423	1.0624430957E+000	6.2022985829E-001	3.5792455626E-001	1.022	1.197	1.048
44.589	0.191	30.995	0.423	1.1262637999E+000	6.7910130273E-001	3.1643696500E-001	1.055	1.159	1.016
44.590	0.191	30.995	0.428	1.1266131066E+000	6.7941746811E-001	3.1618360670E-001	1.056	1.159	1.016
44.780	0.196	31.076	0.428	1.1821974367E+000	7.3245085281E-001	2.7122335863E-001	1.085	1.130	0.990
44.781	0.196	31.077	0.432	1.1824968038E+000	7.3273041337E-001	2.7095276636E-001	1.085	1.130	0.990
44.970	0.200	31.158	0.432	1.2292914057E+000	7.7875749664E-001	2.2373037798E-001	1.109	1.108	0.968
44.971	0.200	31.159	0.437	1.2295383207E+000	7.7899477650E-001	2.2345109051E-001	1.109	1.108	0.968
45.160	0.204	31.241	0.437	1.2672619601E+000	8.1722311977E-001	1.7532851431E-001	1.129	1.093	0.951
45.161	0.204	31.242	0.441	1.2674554174E+000	8.1741470355E-001	1.7503704774E-001	1.129	1.093	0.951
45.350	0.207	31.325	0.441	1.2957330693E+000	8.4723368067E-001	1.2399673020E-001	1.145	1.085	0.938
45.351	0.207	31.326	0.444	1.2958698388E+000	8.4737604032E-001	1.2370289700E-001	1.145	1.085	0.938
45.540	0.209	31.410	0.444	1.3147036452E+000	8.6865040705E-001	7.6769680549E-002	1.157	1.084	0.927
45.541	0.209	31.410	0.447	1.3147882854E+000	8.6874628674E-001	7.6520119155E-002	1.157	1.084	0.927
45.731	0.210	31.495	0.447	1.3255224743E+000	8.8242879169E-001	3.8582050459E-002	1.165	1.089	0.920
45.732	0.210	31.495	0.450	1.3255649735E+000	8.8248557017E-001	3.8387214810E-002	1.165	1.089	0.920
45.921	0.211	31.580	0.450	1.3298842409E+000	8.8991221738E-001	8.1363638390E-003	1.171	1.100	0.915
45.922	0.211	31.581	0.452	1.3298931344E+000	8.8993697352E-001	7.9705233743E-003	1.171	1.100	0.915
46.111	0.211	31.666	0.452	1.3286563406E+000	8.9196910608E-001	-2.1486213521E-002	1.175	1.119	0.912
46.112	0.211	31.667	0.454	1.3286325163E+000	8.9196400721E-001	-2.1661282942E-002	1.175	1.119	0.912
46.301	0.212	31.753	0.454	1.3217780732E+000	8.8884567768E-001	-5.0399442550E-002	1.177	1.144	0.912
46.302	0.212	31.753	0.455	1.3217223281E+000	8.8881267532E-001	-5.0559188851E-002	1.177	1.145	0.912
46.491	0.212	31.839	0.455	1.3096739837E+000	8.8106172412E-001	-7.6343345867E-002	1.178	1.178	0.913
46.492	0.212	31.840	0.456	1.3095895985E+000	8.8100406769E-001	-7.6484512684E-002	1.178	1.178	0.913
46.682	0.212	31.926	0.456	1.2929427977E+000	8.6917443143E-001	-9.9063583336E-002	1.177	1.220	0.916
46.683	0.212	31.926	0.457	1.2928333323E+000	8.6909508659E-001	-9.9186494376E-002	1.177	1.220	0.916
46.872	0.211	32.013	0.457	1.2721729772E+000	8.5365411749E-001	-1.1892242118E-001	1.175	1.271	0.920
46.873	0.211	32.013	0.458	1.2720415892E+000	8.5355538996E-001	-1.1903098022E-001	1.175	1.271	0.920
47.062	0.211	32.100	0.458	1.2478318548E+000	8.3484051455E-001	-1.3664618673E-001	1.171	1.332	0.925
47.063	0.211	32.100	0.460	1.2476809019E+000	8.3472403510E-001	-1.3674061636E-001	1.171	1.333	0.925
47.252	0.210	32.187	0.460	1.2203746634E+000	8.1306512591E-001	-1.5175217638E-001	1.166	1.405	0.932
47.253	0.210	32.188	0.461	1.2202070350E+000	8.1293303732E-001	-1.5183531444E-001	1.166	1.405	0.932
47.442	0.209	32.275	0.461	1.1901683298E+000	7.8864096336E-001	-1.6581855992E-001	1.160	1.491	0.940
47.443	0.209	32.275	0.462	1.1899851688E+000	7.8849455422E-001	-1.6589959367E-001	1.160	1.492	0.940
47.633	0.207	32.363	0.462	1.1573048268E+000	7.6175413694E-001	-1.7972023633E-001	1.152	1.593	0.949
47.634	0.207	32.363	0.464	1.1571063147E+000	7.6159436972E-001	-1.7980009002E-001	1.152	1.593	0.949
47.823	0.206	32.451	0.464	1.1218450645E+000	7.3262039638E-001	-1.9290894182E-001	1.143	1.713	0.959
47.824	0.206	32.452	0.465	1.1216319925E+000	7.3244885531E-001	-1.9298027669E-001	1.143	1.714	0.959
48.013	0.204	32.540	0.465	1.0840746636E+000	7.0163308215E-001	-2.0392618183E-001	1.133	1.857	0.969
48.014	0.204	32.540	0.466	1.0838494312E+000	7.0145248731E-001	-2.0398656385E-001	1.133	1.858	0.969
48.203	0.202	32.628	0.466	1.0443447277E+000	6.6923548876E-001	-2.1351323748E-001	1.122	2.030	0.980
48.204	0.202	32.629	0.467	1.0441089144E+000	6.6904801292E-001	-2.1356217374E-001	1.122	2.031	0.980
48.393	0.199	32.717	0.467	1.0030311264E+000	6.3587837764E-001	-2.2035803755E-001	1.110	2.241	0.991
48.394	0.199	32.717	0.467	1.0027877649E+000	6.3568704367E-001	-2.2038785908E-001	1.110	2.242	0.991
48.583	0.197	32.806	0.467	9.6073793503E-001	6.0213565442E-001	-2.2382174765E-001	1.097	2.503	1.003
48.585	0.197	32.806	0.468	9.6049075884E-001	6.0194376203E-001	-2.2383275140E-001	1.097	2.505	1.003
48.774	0.195	32.895	0.468	9.1806025850E-001	5.6854016391E-001	-2.2463752710E-001	1.084	2.840	1.014
48.775	0.195	32.895	0.468	9.1781218726E-001	5.6835028756E-001	-2.2463797595E-001	1.084	2.842	1.014
48.964	0.192	32.984	0.468	8.7533603200E-001	5.3542531661E-001	-2.2450714802E-001	1.071	3.271	1.025
48.965	0.192	32.984	0.468	8.7508810709E-001	5.3523866029E-001	-2.2450332977E-001	1.071	3.274	1.025
49.154	0.190	33.073	0.468	8.3274038687E-001	5.0298781533E-001	-2.2317528128E-001	1.057	3.837	1.035
49.155	0.190	33.073	0.466	8.3249393704E-001	5.0280557037E-001	-2.2316373216E-001	1.057	3.841	1.035
49.344	0.187	33.161	0.466	7.9051978418E-001	4.7144625183E-001	-2.2059079652E-001	1.044	4.576	1.045
49.345	0.187	33.162	0.466	7.9027619218E-001	4.7126955894E-001	-2.2057246878E-001	1.044	4.581	1.045
49.534	0.184	33.250	0.466	7.4889588053E-001	4.4086945086E-001	-2.1693342320E-001	1.030	5.520	1.053
49.536	0.184	33.250	0.466	7.4865633054E-001	4.4069927401E-001	-2.1690945270E-001	1.030	5.526	1.053
49.725	0.182	33.338	0.466	7.0805314011E-001	4.1158238051E-001	-2.1241452029E-001	1.018	6.664	1.059
49.726	0.182	33.339	0.466	7.0781858281E-001	4.1141888672E-001	-2.1238622657E-001	1.017	6.671	1.059
49.915	0.179	33.427	0.466	6.6813968931E-001	3.8352078779E-001	-2.0710713147E-001	1.005	7.881	1.064
49.916	0.179	33.428	0.466	6.6791099619E-001	3.8336441045E-001	-2.0707316022E-001	1.005	7.888	1.064
50.070	0.177	33.499	0.470	6.3639528613E-001	3.6147515543E-001	-2.0219472829E-001	0.994	8.694	1.066
50.106	0.178	33.517	0.470	6.2909666325E-001	3.5655856343E-001	-2.0104327060E-001	0.992	8.817	1.066
50.295	0.175	33.605	0.466	5.9163212010E-001	3.3115076900E-001	-1.9530237740E-001	0.980	9.042	1.066
50.296	0.175	33.606	0.466	5.9141646191E-001	3.3100848311E-001	-1.9527068539E-001	0.980	9.041	1.066
50.485	0.173	33.694	0.466	5.5498353134E-001	3.0683093012E-001	-1.9016967940E-001	0.968	8.395	1.063
50.487	0.173	33.694	0.465	5.5477353935E-001	3.0669530370E-001	-1.9014148180E-001	0.968	8.390	1.063
50.676	0.171	33.782	0.465	5.1926948194E-001	2.8365299848E-001	-1.8536385748E-001	0.956	7.279	1.058
50.677	0.171	33.783	0.464	5.1906479732E-001	2.8352364532E-001	-1.8533525495E-001	0.956	7.272	1.058
50.866	0.168	33.870	0.464	4.8451333129E-001	2.6168219731E-001	-1.7992456800E-001	0.945	6.094	1.051
50.867	0.168	33.871	0.462	4.8431465643E-001	2.6155923858E-001	-1.7989042453E-001	0.945	6.087	1.051
51.056	0.166	33.958	0.462	4.5084669992E-001	2.4074285697E-001	-1.7417213693E-001	0.935	5.101	1.043
51.057	0.166	33.959	0.460	4.5065437601E-001	2.4062598486E-001	-1.7414080863E-001	0.935	5.096	1.043
51.246	0.163	34.046	0.460	4.1819395600E-001	2.2080788333E-001	-1.6939972702E-001	0.924	4.323	1.033
51.247	0.163	34.046	0.458	4.1800689818E-001	2.2069620685E-001	-1.6937594933E-001	0.924	4.319	1.033
51.436	0.160	34.133	0.458	3.8632497136E-001	2.0170847440E-001	-1.6588769939E-001	0.914	3.736	1.023
51.438	0.160	34.133	0.456	3.8614178860E-001	2.0160105000E-001	-1.6586995618E-001	0.914	3.733	1.023
51.627	0.157	34.220	0.456	3.5505869026E-001	1.8314791265E-001	-1.6283968343E-001	0.903	3.306	1.013
51.628	0.157	34.220	0.453	3.5487887442E-001	1.8304339945E-001	-1.6282020693E-001	0.903	3.304	1.013
51.817	0.153	34.306	0.453	3.2442335017E-001	1.6485328433E-001	-1.5936088997E-001	0.889	2.987	1.004
51.818	0.153	34.306	0.451	3.2424737580E-001	1.6474935906E-001	-1.5934180701E-001	0.889	2.985	1.004
52.007	0.148	34.391	0.451	2.9443979593E-001	1.4642876857E-001	-1.5578988314E-001	0.871	2.752	0.996
52.008	0.148	34.392	0.445	2.9426776762E-001	1.4632382099E-001	-1.5576619975E-001	0.870	2.751	0.996
52.160	0.144	34.459	0.446	2.7089341559E-001	1.3129838997E-001	-1.5202123863E-001	0.848	2.611	0.991
52.198	0.143	34.477	0.444	2.6507746469E-001	1.2757640966E-001	-1.5090834556E-001	0.842	2.581	0.990
52.387	0.136	34.560	0.443	2.3712389213E-001	1.0906740372E-001	-1.4451678259E-001	0.805	2.457	0.986
52.389	0.136	34.561	0.442	2.3696432245E-001	1.0896405731E-001	-1.4447579289E-001	0.805	2.457	0.986
52.578	0.130	34.644	0.442	2.1032638879E-001	9.1354197655E-002	-1.3723753050E-001	0.760	2.366	0.986
52.579	0.130	34.645	0.439	2.1017485820E-001	9.1258129993E-002	-1.3719567451E-001	0.760	2.365	0.986
52.768	0.123	34.728	0.439	1.8490286318E-001	7.5109571234E-002	-1.3003633594E-001	0.711	2.298	0.988
52.769	0.123	34.729	0.437	1.8475928567E-001	7.5023228827E-002	-1.2999323660E-001	0.711	2.298	0.988
52.958	0.116	34.811	0.437	1.6088782864E-001	6.0809949677E-002	-1.2243260267E-001	0.662	2.249	0.992
52.959	0.116	34.812	0.435	1.6075264914E-001	6.0734486989E-002	-1.2238756077E-001	0.661	2.248	0.992
53.148	0.108	34.894	0.435	1.3834636719E-001	4.8272738395E-002	-1.1456020466E-001	0.611	2.212	1.000
53.149	0.108	34.894	0.433	1.3821988201E-001	4.8207645248E-002	-1.1451387595E-001	0.611	2.212	1.000
53.338	0.100	34.976	0.433	1.1732251982E-001	3.7529400834E-002	-1.0647384021E-001	0.560	2.186	1.011
53.340	0.100	34.977	0.433	1.1720496527E-001	3.7474022296E-002	-1.0642620017E-001	0.560	2.186	1.011
53.529	0.091	35.059	0.433	9.7861066786E-002	2.8461343596E-002	-9.8111037627E-002	0.509	2.167	1.026
53.530	0.091	35.059	0.428	9.7752748539E-002	2.8415014323E-002	-9.8061381403E-002	0.509	2.167	1.026
53.719	0.082	35.140	0.428	7.9999743909E-002	2.0942537817E-002	-8.9798093641E-002	0.458	2.153	1.048
53.720	0.082	35.140	0.428	7.9900604523E-002	2.0904464491E-002	-8.9750723957E-002	0.458	2.153	1.049
53.909	0.073	35.221	0.428	6.3713264983E-002	1.4827823141E-002	-8.1322878769E-002	0.407	2.144	1.093
53.910	0.073	35.222	0.428	6.3623487482E-002	1.4797277037E-002	-8.1270862387E-002	0.407	2.144	1.093

54.099	0.064	35.303	0.428	4.9137730115E-002	1.0007816625E-002	-7.1726902914E-002	0.357	2.135	1.149
54.100	0.064	35.303	0.428	4.9058553709E-002	9.9842471975E-003	-7.1667464079E-002	0.356	2.135	1.149
54.289	0.055	35.384	0.428	3.6500550155E-002	6.3732267926E-003	-6.1026001295E-002	0.306	2.127	1.195
54.291	0.055	35.385	0.428	3.6433193383E-002	6.3559371566E-003	-6.0962133139E-002	0.305	2.127	1.195
54.480	0.046	35.466	0.428	2.5931633658E-002	3.7740976992E-003	-5.0229601213E-002	0.255	2.136	1.262
54.481	0.046	35.466	0.428	2.5876197146E-002	3.7621022561E-003	-5.0170065755E-002	0.254	2.136	1.262
54.670	0.037	35.547	0.428	1.7357961189E-002	2.0216920881E-003	-3.9886026662E-002	0.204	2.180	1.367
54.671	0.037	35.547	0.428	1.7313947482E-002	2.0139377373E-003	-3.9826081791E-002	0.204	2.180	1.367
54.860	0.027	35.628	0.428	1.0725398194E-002	9.3782591368E-004	-3.0051887534E-002	0.153	2.319	1.554
54.861	0.027	35.629	0.428	1.0692240785E-002	9.3277636526E-004	-2.9998661855E-002	0.153	2.321	1.555
55.050	0.018	35.710	0.428	5.8278868448E-003	3.4025357548E-004	-2.1740657393E-002	0.102	2.773	1.965
55.051	0.018	35.710	0.427	5.8039020573E-003	3.3757272838E-004	-2.1697590877E-002	0.102	2.777	1.968
55.240	0.009	35.791	0.428	2.3462471444E-003	6.8922208656E-005	-1.5120525731E-002	0.051	4.135	3.219
55.242	0.009	35.792	0.429	2.3295683047E-003	6.7751501113E-005	-1.5086102681E-002	0.051	4.126	3.224
55.431	0.000	35.873	0.428	1.0479997772E-005	1.5240085511E-007	-9.5061528235E-003	0.167	0.220	0.650

LEGENDA SIMBOLI
X(m) : Ascissa sinistra concio
ht(m) : Altezza linea di thrust da nodo sinistro base concio
yt(m) : coordinata Y linea di trust
yt'(-) : gradiente pendenza locale linea di trust
E(x)(kN/m) : Forza Normale interconcio
T(x)(kN/m) : Forza Tangenziale interconcio
E' (kN) : derivata Forza normale interconcio
Rho(x) (-) : fattore mobilizzazione resistenza al taglio verticale interconcio ZhU et al.(2003)
FS_FEM(x) (-) : fattore di sicurezza locale stimato (locale in X) by qFEM
FS_q-pFEM(x) (-) : fattore di sicurezza locale stimato (locale in X) by q-pFEM Procedure

TABELLA SFORZI DI TAGLIO DISTRIBUITI LUNGO SUPERFICIE INDIVIDUATA CON MINOR FS

X (m)	dx (m)	dl (m)	alpha (gradi)	TauStress (kPa)	Tau (kN/m)
41.357	0.189	0.199	17.785	0.090	0.018
41.546	0.001	0.001	17.785	0.181	0.000
41.547	0.189	0.198	17.689	0.272	0.054
41.736	0.001	0.001	17.689	0.364	0.000
41.737	0.189	0.198	17.566	0.455	0.090
41.927	0.001	0.001	17.566	0.548	0.001
41.928	0.189	0.198	17.454	0.640	0.127
42.117	0.001	0.001	17.454	0.734	0.001
42.118	0.189	0.198	17.381	0.826	0.164
42.307	0.001	0.001	17.381	0.921	0.001
42.308	0.189	0.198	17.373	1.016	0.201
42.497	0.001	0.001	17.373	1.110	0.001
42.498	0.189	0.198	17.444	1.207	0.239
42.687	0.001	0.001	17.444	1.301	0.002
42.688	0.189	0.198	17.604	1.401	0.278
42.878	0.001	0.001	17.604	1.493	0.002
42.879	0.189	0.199	17.856	1.597	0.317
43.068	0.001	0.001	17.856	1.687	0.002
43.069	0.189	0.199	18.193	1.793	0.357
43.258	0.001	0.001	18.193	1.879	0.002
43.259	0.189	0.200	18.604	1.987	0.396
43.448	0.001	0.001	18.604	2.069	0.002
43.449	0.189	0.200	19.068	2.177	0.436
43.638	0.001	0.001	19.068	2.255	0.003
43.639	0.189	0.201	19.560	2.361	0.474
43.829	0.001	0.001	19.560	2.432	0.003
43.830	0.189	0.201	20.048	2.534	0.510
44.019	0.001	0.001	20.048	2.599	0.003
44.020	0.189	0.202	20.495	2.693	0.544
44.209	0.001	0.001	20.495	2.753	0.003
44.210	0.189	0.202	20.904	2.839	0.575
44.399	0.001	0.001	20.904	2.894	0.003
44.400	0.189	0.203	21.348	2.978	0.605
44.589	0.001	0.001	21.348	3.026	0.004
44.590	0.189	0.204	21.810	3.106	0.633
44.780	0.001	0.001	21.810	3.148	0.004
44.781	0.189	0.204	22.267	3.220	0.658
44.970	0.001	0.001	22.267	3.256	0.004
44.971	0.189	0.205	22.702	3.320	0.681
45.160	0.001	0.001	22.702	3.349	0.004
45.161	0.189	0.206	23.098	3.404	0.700
45.350	0.001	0.001	23.098	3.426	0.004
45.351	0.189	0.206	23.448	3.472	0.716
45.540	0.001	0.001	23.448	3.489	0.004
45.541	0.189	0.207	23.745	3.525	0.728
45.731	0.001	0.001	23.745	3.537	0.004
45.732	0.189	0.207	23.989	3.565	0.738
45.921	0.001	0.001	23.989	3.573	0.004
45.922	0.189	0.207	24.181	3.593	0.745
46.111	0.001	0.001	24.181	3.598	0.004
46.112	0.189	0.208	24.330	3.612	0.750
46.301	0.001	0.001	24.330	3.615	0.004
46.302	0.189	0.208	24.445	3.624	0.753
46.491	0.001	0.001	24.445	3.624	0.004
46.492	0.189	0.208	24.541	3.631	0.755
46.682	0.001	0.001	24.541	3.629	0.004
46.683	0.189	0.208	24.637	3.634	0.756
46.872	0.001	0.001	24.637	3.631	0.004
46.873	0.189	0.208	24.756	3.635	0.757
47.062	0.001	0.001	24.756	3.630	0.004
47.063	0.189	0.208	24.896	3.634	0.758
47.252	0.001	0.001	24.896	3.626	0.004
47.253	0.189	0.209	25.036	3.627	0.757
47.442	0.001	0.001	25.036	3.617	0.004
47.443	0.189	0.209	25.168	3.615	0.755
47.633	0.001	0.001	25.168	3.602	0.004
47.634	0.189	0.209	25.288	3.597	0.752
47.823	0.001	0.001	25.288	3.582	0.004
47.824	0.189	0.209	25.395	3.574	0.748
48.013	0.001	0.001	25.395	3.557	0.004
48.014	0.189	0.209	25.484	3.546	0.743
48.203	0.001	0.001	25.484	3.528	0.004
48.204	0.189	0.210	25.556	3.514	0.736
48.393	0.001	0.001	25.556	3.494	0.004
48.394	0.189	0.210	25.610	3.478	0.729
48.583	0.001	0.001	25.610	3.457	0.004

48.585	0.189	0.210	25.646	3.439	0.721
48.774	0.001	0.001	25.646	3.418	0.004
48.775	0.189	0.210	25.665	3.398	0.713
48.964	0.001	0.001	25.665	3.377	0.004
48.965	0.189	0.210	25.670	3.356	0.704
49.154	0.001	0.001	25.670	3.334	0.004
49.155	0.189	0.210	25.664	3.312	0.695
49.344	0.001	0.001	25.664	3.291	0.004
49.345	0.189	0.210	25.650	3.269	0.686
49.534	0.001	0.001	25.650	3.248	0.004
49.536	0.189	0.210	25.633	3.226	0.677
49.725	0.001	0.001	25.633	3.206	0.004
49.726	0.189	0.210	25.619	3.184	0.668
49.915	0.001	0.001	25.619	3.164	0.004
49.916	0.154	0.171	25.596	3.146	0.537
50.070	0.036	0.040	25.596	3.126	0.125
50.106	0.189	0.210	25.560	3.100	0.650
50.295	0.001	0.001	25.560	3.081	0.004
50.296	0.189	0.210	25.518	3.060	0.641
50.485	0.001	0.001	25.518	3.041	0.004
50.487	0.189	0.209	25.475	3.020	0.633
50.676	0.001	0.001	25.475	3.003	0.004
50.677	0.189	0.209	25.436	2.983	0.625
50.866	0.001	0.001	25.436	2.966	0.004
50.867	0.189	0.209	25.403	2.947	0.617
51.056	0.001	0.001	25.403	2.931	0.004
51.057	0.189	0.209	25.380	2.913	0.610
51.246	0.001	0.001	25.380	2.897	0.004
51.247	0.189	0.209	25.368	2.880	0.603
51.436	0.001	0.001	25.368	2.865	0.004
51.438	0.189	0.209	25.367	2.849	0.596
51.627	0.001	0.001	25.367	2.833	0.003
51.628	0.189	0.209	25.375	2.817	0.590
51.817	0.001	0.001	25.375	2.801	0.003
51.818	0.189	0.209	25.391	2.786	0.583
52.007	0.001	0.001	25.391	2.769	0.003
52.008	0.152	0.168	25.411	2.757	0.463
52.160	0.038	0.043	25.411	2.728	0.116
52.198	0.189	0.209	25.431	2.634	0.552
52.387	0.001	0.001	25.431	2.555	0.003
52.389	0.189	0.209	25.446	2.476	0.518
52.578	0.001	0.001	25.446	2.396	0.003
52.579	0.189	0.209	25.451	2.316	0.485
52.768	0.001	0.001	25.451	2.237	0.003
52.769	0.189	0.209	25.452	2.157	0.452
52.958	0.001	0.001	25.452	2.077	0.003
52.959	0.189	0.209	25.452	1.997	0.418
53.148	0.001	0.001	25.452	1.917	0.002
53.149	0.189	0.209	25.453	1.838	0.385
53.338	0.001	0.001	25.453	1.758	0.002
53.340	0.189	0.209	25.453	1.678	0.351
53.529	0.001	0.001	25.453	1.598	0.002
53.530	0.189	0.209	25.454	1.518	0.318
53.719	0.001	0.001	25.454	1.438	0.002
53.720	0.189	0.209	25.454	1.359	0.285
53.909	0.001	0.001	25.454	1.279	0.002
53.910	0.189	0.209	25.455	1.199	0.251
54.099	0.001	0.001	25.455	1.119	0.001
54.100	0.189	0.209	25.455	1.039	0.218
54.289	0.001	0.001	25.455	0.959	0.001
54.291	0.189	0.209	25.456	0.879	0.184
54.480	0.001	0.001	25.456	0.800	0.001
54.481	0.189	0.209	25.456	0.720	0.151
54.670	0.001	0.001	25.456	0.640	0.001
54.671	0.189	0.209	25.457	0.560	0.117
54.860	0.001	0.001	25.457	0.480	0.001
54.861	0.189	0.209	25.458	0.400	0.084
55.050	0.001	0.001	25.458	0.320	0.000
55.051	0.189	0.209	25.458	0.240	0.050
55.240	0.001	0.001	25.458	0.160	0.000
55.242	0.189	0.209	25.459	0.080	0.017
55.431	0.001	0.001	25.459	0.000	0.000

LEGENDA SIMBOLI
X(m) : Ascissa sinistra concio
dx(m) : Larghezza concio
dl(m) : lunghezza base concio
alpha(gradi) : Angolo pendenza base concio
TauStress(kPa) : Sforzo di taglio su base concio
TauF (kN/m) : Forza di taglio su base concio

CRITERIO DI ROTTURA secondo Hoek (2002,2007)
Strato 2 -- Parametri di resistenza al taglio equivalenti dell'ammasso roccioso
Fattore di riduzione NTC2008 gammaPHI=1.25e gammaC=1.25 - ATTIVATO

Sigma'(kPa)	Phi'(deg)	c'(kPa)
20.00	48.00	53.50
40.00	45.70	55.27
60.00	43.99	57.37
80.00	42.62	59.58
100.00	41.47	61.84
120.00	40.49	64.10
140.00	39.62	66.34
160.00	38.86	68.56
180.00	38.16	70.75
200.00	37.54	72.90
220.00	36.96	75.03
240.00	36.43	77.12
260.00	35.93	79.18
280.00	35.47	81.21
300.00	35.04	83.22
320.00	34.64	85.19
340.00	34.25	87.13
360.00	33.89	89.05
380.00	33.55	90.95
400.00	33.22	92.82
420.00	32.91	94.66
440.00	32.62	96.48

460.00	32.33	98.29
480.00	32.06	100.07
500.00	31.80	101.83
600.00	30.63	110.34
700.00	29.64	118.45
800.00	28.79	126.20
900.00	28.04	133.65
1000.00	27.37	140.82
1100.00	26.77	147.75
1200.00	26.22	154.47
1300.00	25.72	160.99
1400.00	25.26	167.33
1500.00	24.84	173.51
1700.00	24.07	185.43
1900.00	23.40	196.83
2100.00	22.80	207.78
2300.00	22.26	218.34
2500.00	21.78	228.54
2700.00	21.33	238.41
2900.00	20.92	248.00
3100.00	20.54	257.33
3300.00	20.19	266.41
3500.00	19.86	275.27
3700.00	19.55	283.92
3900.00	19.26	292.38
4100.00	18.99	300.66