

GEOTECHNICAL MODEL

Ground surface

Point	x [m]	y [m]	Polygon points								
			Point	x [m]	y [m]	Point	x [m]	y [m]			
1	-19,64	-6,00	2	-1,21	-1,40	3	-0,60	0	4	0	0
5	5,25	0,20	6	6,40	1,00	7	12,00	3,50	8	20,00	5,70

Soil layer boundaries

Description	Parameters			Polygon points					
	ϕ [°]	γ [kN/m ³]	c [kN/m ²]	Point	x [m]	y [m]	Point	x [m]	y [m]
Preperine in humus	22,00	18,50	1,00	1	0	0	2	5,25	0,20
				3	6,40	1,00	4	12,00	3,50
				5	20,00	5,70			
Tezko gnetna glina	19,00	21,50	1,00	1	-19,55	-6,55	2	0,25	-1,40
				3	9,20	1,05	4	20,00	4,70
Srednje gnetna glina	18,00	21,00	0	1	-19,55	-8,25	2	0,25	-3,12
				3	9,20	-0,70	4	20,00	2,90
Preperel glinovec	33,00	22,00	12,00	1	-19,55	-9,25	2	0,25	-4,12
				3	9,20	-1,73	4	20,00	1,90

Water table

Water pressure variable

Parameters			Polygon points								
γ_w [kN/m ³]	State	u	Point	x [m]	y [m]	Point	x [m]	y [m]	Point	x [m]	y [m]
10,00	active	dynamic	1	-0,18	-5,20	2	1,08	-3,75	3	9,15	-1,63
			4	20,01	2,07						

State : Groundwater active or inactive in the analysis
u : Pore pressure calculated hydrodynamically or hydrostatically

Shear resistances

Parameters			Geometry			
W_1 [kN/m]	W_2 [kN/m]	L_E [m]	x_1 [m]	y_1 [m]	x_2 [m]	y_2 [m]
100,00	150,00	0	0	0	-0,20	-3,70
150,00	200,00	0	-0,20	-3,70	-0,20	-5,80
200,00	200,00	0	-3,30	-5,50	-0,20	-5,80
100,00	100,00	0	0	0	-0,60	0
100,00	150,00	0	-0,60	0	-2,20	-3,70
150,00	200,00	0	-2,20	-3,70	-3,30	-4,50
200,00	200,00	0	-3,30	-4,50	-3,30	-5,50

L_E : Length of transmission zone

LOADS

Distributed load

Description	Action	x_1 [m]	y_1 [m]	x_2 [m]	y_2 [m]	p_1 [kN/m ²]	p_2 [kN/m ²]	Orientation
	Live load	1,00	0,04	3,50	0,13	-15,00	-15,00	y

Nr.:

Resistance factor (1)

Name	LS 1 [-]	LS 2 [-]	LS 3 [-]	Serviceability [-]	global [-]
Prestressed anchor		1,35	1,35		1,00
Shear resistance		1,30	1,30		1,00
Soil reinforcement element		1,35	1,35		1,00
Friction angle $\gamma_{M\phi}$		1,20	1,20		1,00
Cohesion γ_{Mc}		1,50	1,50		1,00

Analysis parameters (1)

Name	LS 1	LS 2	LS 3	Serviceability	global
Partial safety factor ultimate resistance		1,000	1,000		1,400

Actions (1)

Name	Type	Set	LS Type 1		LS Type 2		LS Type 3		ψ -Factors ψ_0 [-]
			γ [-]	γ_{inf} [-]	γ [-]	γ_{inf} [-]	γ [-]	γ_{inf} [-]	
Dead load	permanent		1,10	0,90	1,35	0,80	1,00	1,00	
Live load	variable		1,10		1,35		1,10		0,70
Water pressure variable	variable		1,05		1,20		1,00		0,70

LS Type 1 : Limit state type 1
LS Type 2 : Limit state type 2
LS Type 3 : Limit state type 3
 ψ -Factors : Reduction factors

Actions (2)

Name	ψ -Factors			u
	ψ_1 [-]	ψ_2 [-]	$\psi_{1'}$ [-]	
Dead load				Yes
Live load	0,70	0,70	1,00	Yes
Water pressure variable	0,70	0,70	1,00	Yes

ψ -Factors : Reduction factors
u : Action is used

CALCULATION OPTIONS

Options

Method	δ_T [-]	n_L	Straight extensions of slip circles	
Janbu	0,0200	200,000	with	Safety factor determined iteratively

δ_T : Convergence tolerance of the iteration
 n_L : Number of slices

Limit state specification: !Global safety

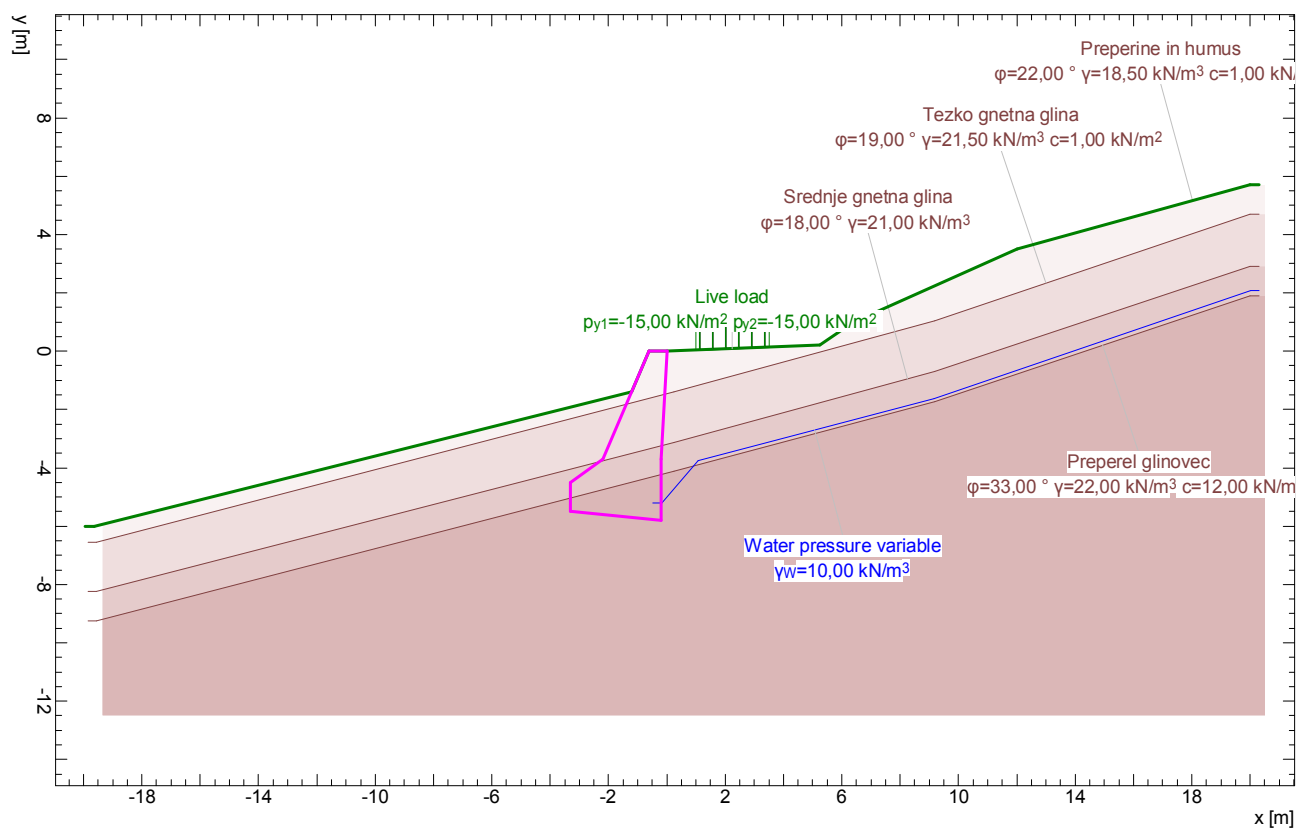
Description

Accidental design situation: Global safety factor
Analysis parameter: AP2

Action combinations

No	Action Name	1	Action combinations
1	Dead load	1	
2	Live load	1	
3	Water pressure variable	1	

soil model



LIMIT VALUES

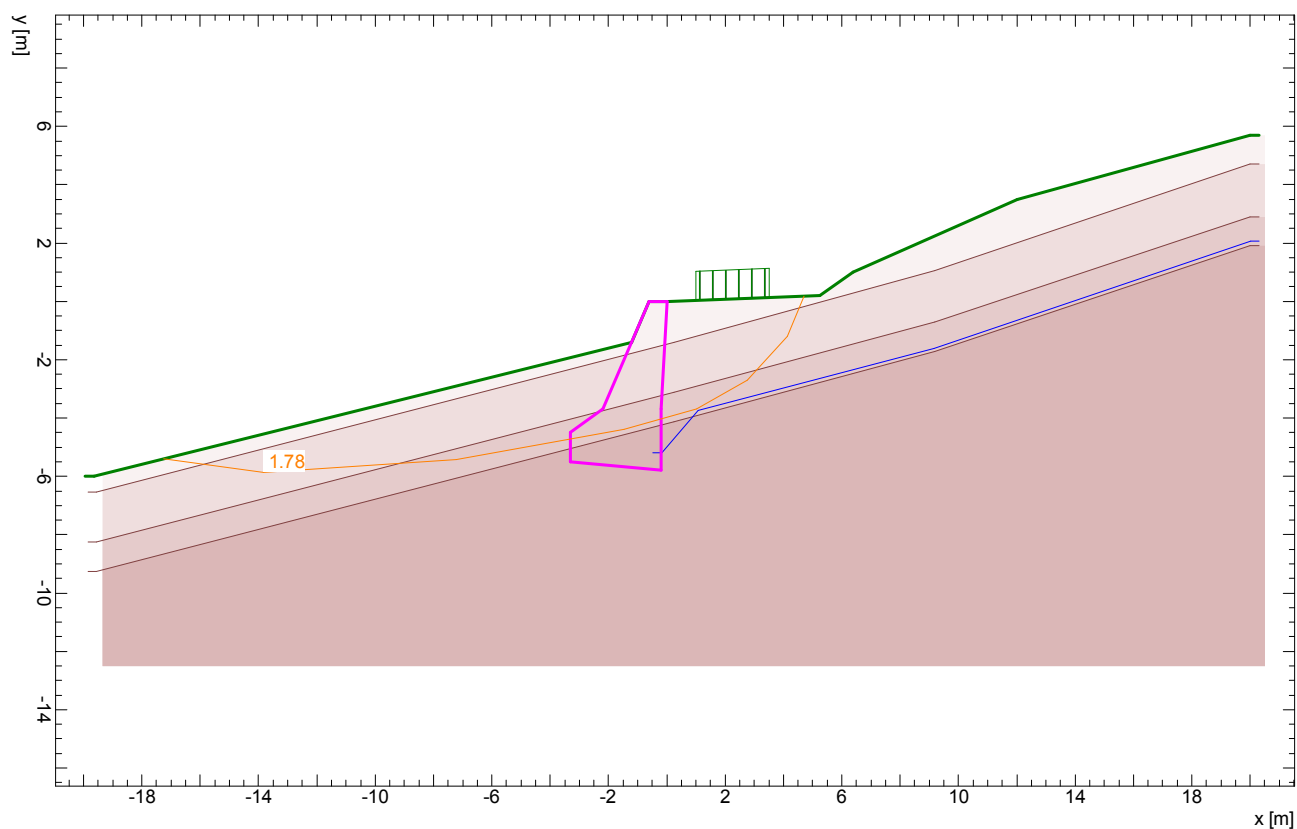
Slip lines

Polygon No.	Anchor	F_{ex} [-]	L_{req} [m]	L_{min} [m]	Remark see footnotes
1		1,78			

Points of the slip line with minimum safety

Point	x [m]	y [m]	Point	x [m]	y [m]	Point	x [m]	y [m]	Point	x [m]	y [m]
1	-17,25	-5,40	2	-13,84	-5,86	3	-7,23	-5,42	4	-1,47	-4,39
5	1,03	-3,68	6	2,75	-2,69	7	4,12	-1,20	8	4,70	0,18

Limit state values



LIMIT VALUES

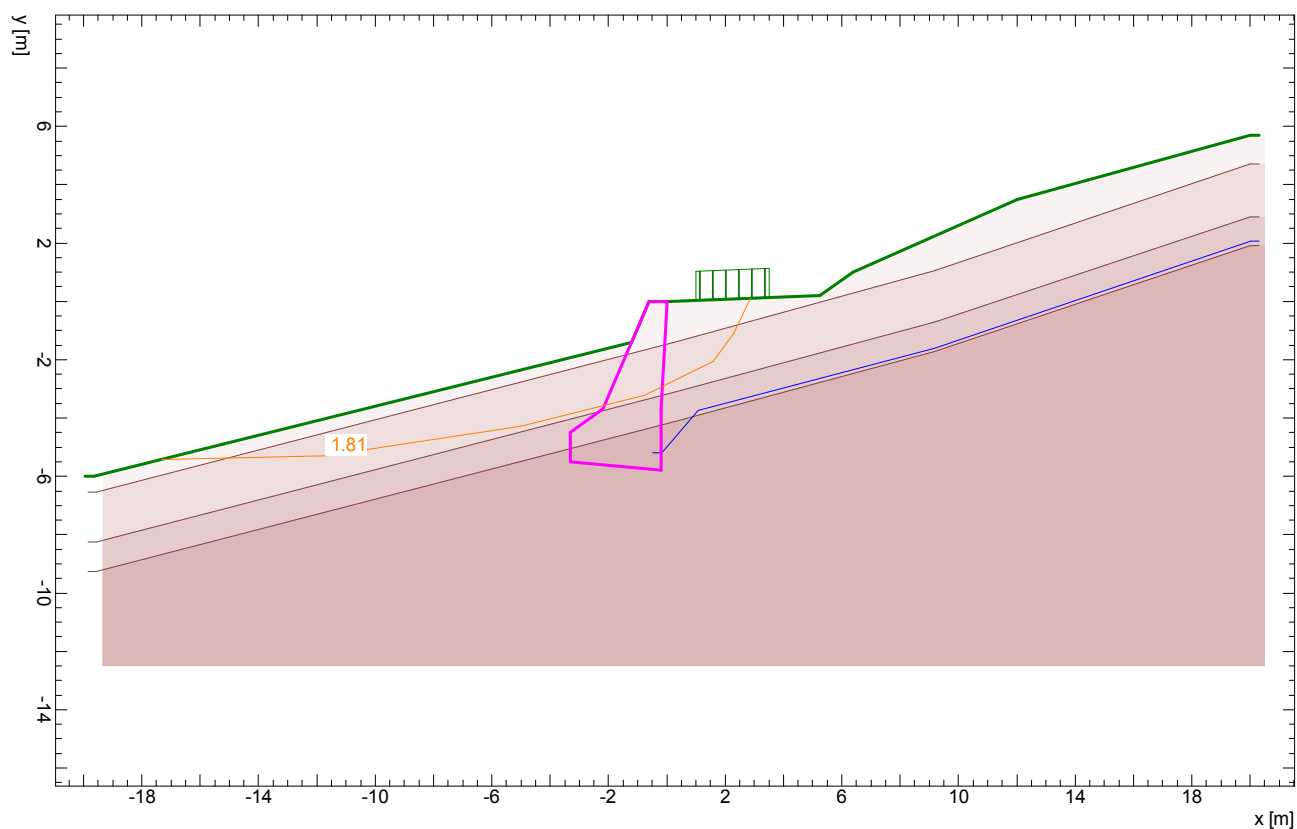
Slip lines

Polygon No.	Anchor	F_{ex} [-]	L_{req} [m]	L_{min} [m]	Remark see footnotes
1		1,81			

Points of the slip line with minimum safety

Point	x [m]	y [m]	Point	x [m]	y [m]	Point	x [m]	y [m]	Point	x [m]	y [m]
1	-17,34	-5,42	2	-11,72	-5,28	3	-5,02	-4,28	4	-0,75	-3,21
5	1,59	-2,05	6	2,30	-1,09	7	2,86	0,11			

Limit state values



!Global safety, AC 1

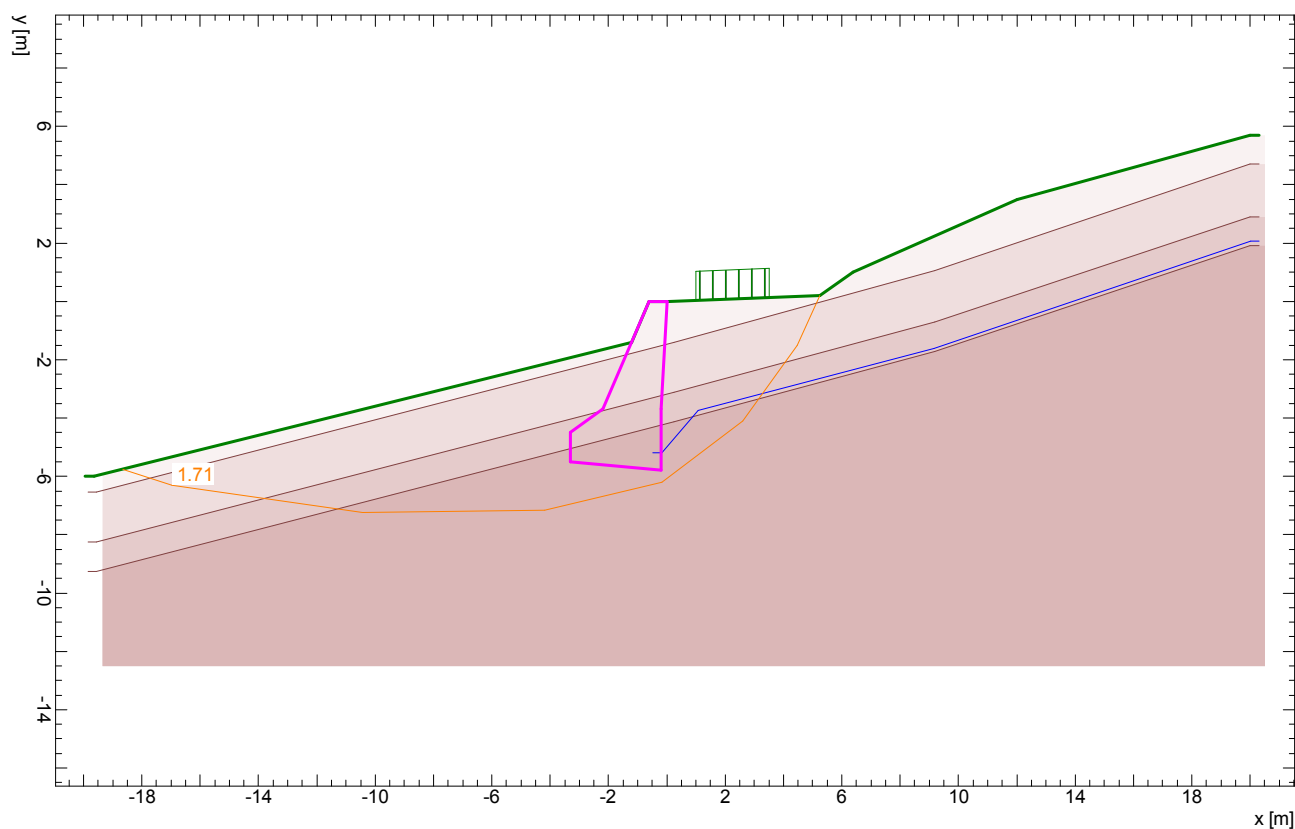
Slip lines

Polygon No.	Anchor	F _{ex} [-]	L _{req} [m]	L _{min} [m]	Remark see footnotes
1		1,71			

Points of the slip line with minimum safety

Point	x [m]	y [m]	Point	x [m]	y [m]	Point	x [m]	y [m]	Point	x [m]	y [m]
1	-18,67	-5,75	2	-16,96	-6,31	3	-10,44	-7,25	4	-4,19	-7,16
5	-0,17	-6,20	6	2,59	-4,10	7	4,47	-1,51	8	5,25	0,20

!Global safety / AC 1



LIMIT VALUES

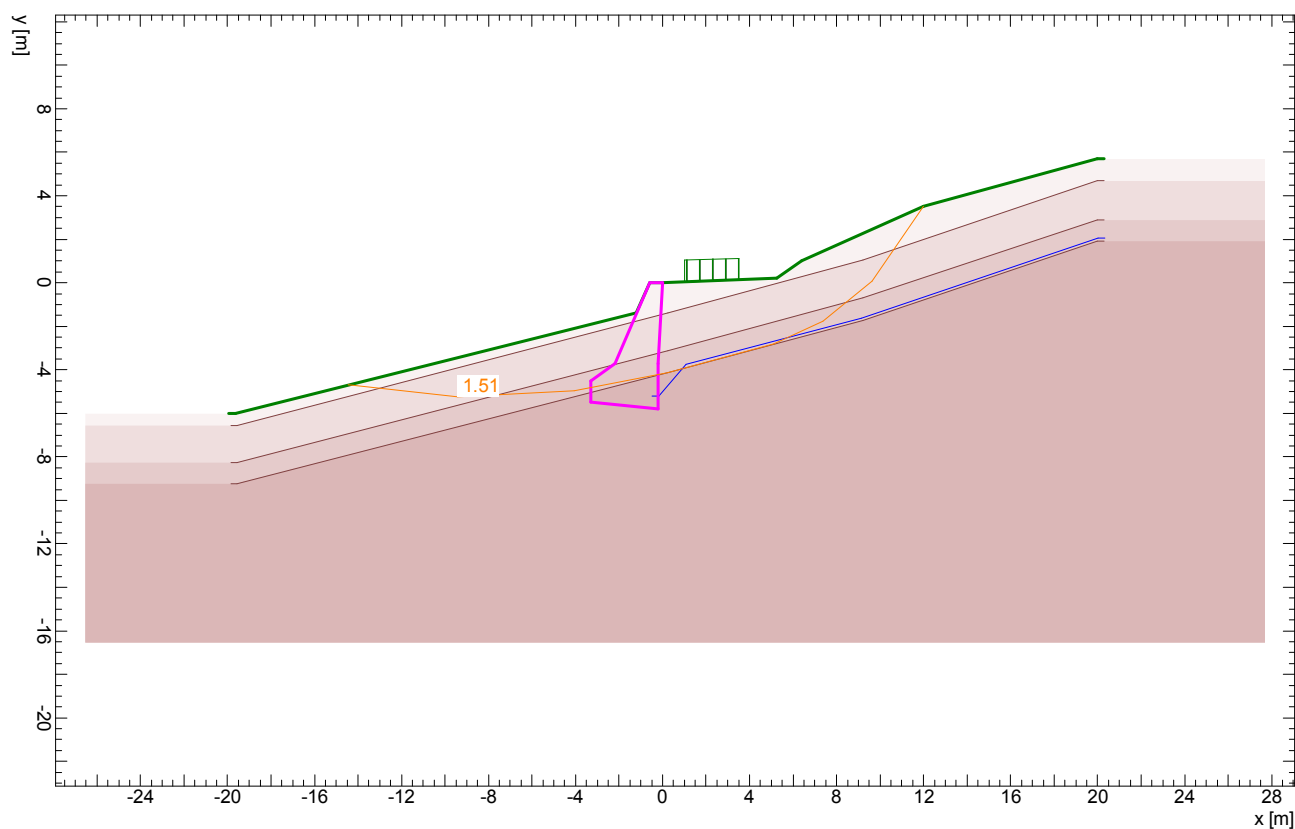
Slip lines

Polygon No.	Anchor	F_{ex} [-]	L_{req} [m]	L_{min} [m]	Remark see footnotes
1		1,51			

Points of the slip line with minimum safety

Point	x [m]	y [m]	Point	x [m]	y [m]	Point	x [m]	y [m]	Point	x [m]	y [m]
1	-14,45	-4,70	2	-9,41	-5,25	3	-4,06	-4,98	4	0,25	-4,12
5	5,10	-2,82	6	7,36	-1,76	7	9,64	0,06	8	12,00	3,50

Limit state values



LIMIT VALUES

Slip circle with minimum safety

Circle No.	x [m]	y [m]	R [m]	point of constraint	Anchor	F _{ex} [-]	L _{req} [m]	L _{min} [m]	Remark see footnotes
121	-10,89	6,89	12,00			1,19			

F_{ex} : existing safety, required safety F_{req} = 1.00
 L_{req} : calculated required free anchor length between L_{min} - L_{max}
 L_{min} : input minimum free anchor length

Legend of the footnotes

Footnote	Remark
2)	does not intersect with the ground surface (or incorrect).

Limit state values

