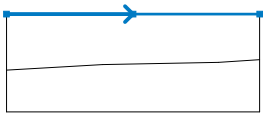
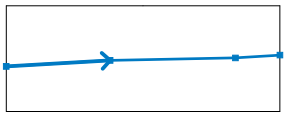
Settlement analysis

Project

Date : 18.9.2006

Type of analysis : Analysis using constrained modulus
Restriction of influence zone : based on structural strength

Interface

No.	Interface location	Coordinates of interface points [m]					
		X	Z	X	Z	X	Z
1		-15,00	0,00	0,00	0,00	15,00	0,00
2		-15,00	-6,72	-3,61	-6,05	10,12	-5,78
		15,00	-5,47				

Soil parameters

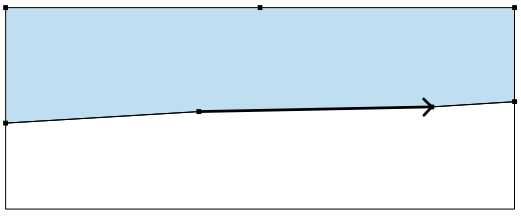
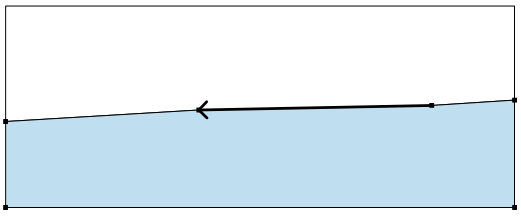
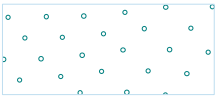
Clay

Unit weight : γ = 21,00 kN/m^3
Coeff. of structural strength : m = 0,20
Constrained modulus : M_{dmt} = 3,00 MPa
Saturated unit weight : γ_{sat} = 21,00 kN/m^3

Sand

Unit weight : γ = 18,50 kN/m^3
Coeff. of structural strength : m = 0,10
Constrained modulus : M_{dmt} = 16,00 MPa
Saturated unit weight : γ_{sat} = 18,50 kN/m^3

Assigning and surfaces

No.	Surface position	Coordinates of surface points [m]				Assigned soil
		X	Z	X	Z	
1		-3,61	-6,05	10,12	-5,78	Clay
		15,00	-5,47	15,00	0,00	
		0,00	0,00	-15,00	0,00	
		-15,00	-6,72			
2		10,12	-5,78	-3,61	-6,05	Sand
		-15,00	-6,72	-15,00	-11,72	
		15,00	-11,72	15,00	-5,47	

Water

Water type : No water

Analysis setting

Layout and refinement of holes : standard

Horizontal layout
Layout pattern : exact
Add holes : by number of sections
Number of sections : 20

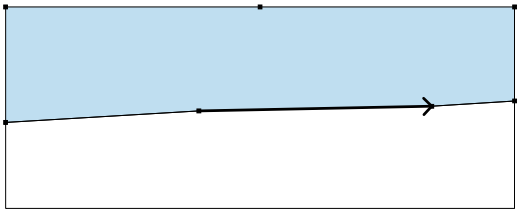
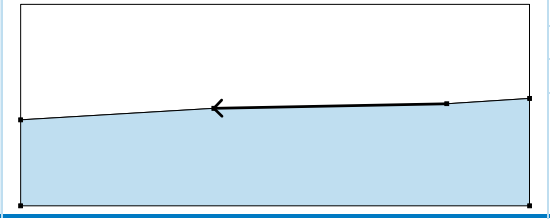
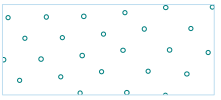
Vertical refinement

No.	From depth [m]	Refinement [m]
1	0,00	0,10
2	2,00	0,30
3	5,00	0,50
4	10,00	2,00
5	30,00	10,00

Results
Analysis performed, method Analysis using constrained modulus

Stage 2

Assigning and surfaces

No.	Surface position	Coordinates of surface points [m]				Assigned soil
		X	Z	X	Z	
1		-3,61	-6,05	10,12	-5,78	Clay
		15,00	-5,47	15,00	0,00	
		0,00	0,00	-15,00	0,00	
		-15,00	-6,72			
2		10,12	-5,78	-3,61	-6,05	Sand
		-15,00	-6,72	-15,00	-11,72	
		15,00	-11,72	15,00	-5,47	

Surcharge

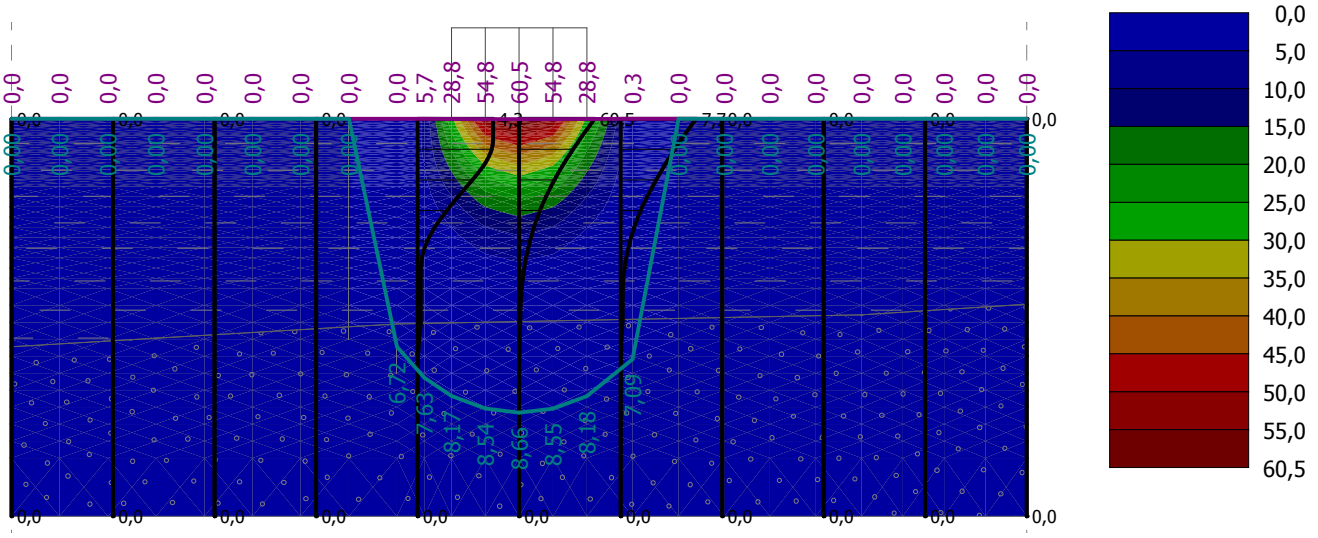
No.	Surcharge		Type	Location	Origin	Length	Width	Slope	Magnitude		
	new	change		z [m]	x [m]	l [m]	b [m]	α [°]	q, q_1, f, F	q_2	unit
1	Yes		strip	on terrain	-2,00	4,00			60,00		kN/m^2

Water
Water type : No water

Results
Analysis performed, method Analysis using constrained modulus
Maximum settlement = 60,5 mm
Maximum depth of influence zone = 8,66 m

Name : Analysis — Stage : 2

Results : overall; variable : Settlement; range : <0,0; 60,5> mm



Name : Analysis — Stage : 2

Results : compared to previous stage; variable : Sigma Z, tot.; range : <0,000; 60,000> kPa