Tab 1 - Current Ground structure

Groundwater level (related to ground level)	-0,1	**Valid input**
Groundwater level (after excavation)	-0,7	
σgroundwater pressure (KN/m2)	10	

Soil types		Top level of layer	Bottom level of layer	Preconsolidation pressure	σpore pressure not filled with water (KN/m2)	σpore pressure filled with water (KN/m2)	Cp	Cs	C'p	C's
Layer 1	Clay weak, silty	-0,7	-6	0	13	14	50	340	30	270
Layer 2	Clay , silty	-6	-12	0	16	17	59	240	12	110
Layer 3	Loose Sand, silty	-12	-16	0	18	20	300	1E+09	550	1E+09
Layer 4	Medium Sand	-16	-22	0	17	19	600	1E+09	200	1E+09
Layer 5	Coarse Sand	-22	-25	0	17	19	1800	1E+09	600	1E+09

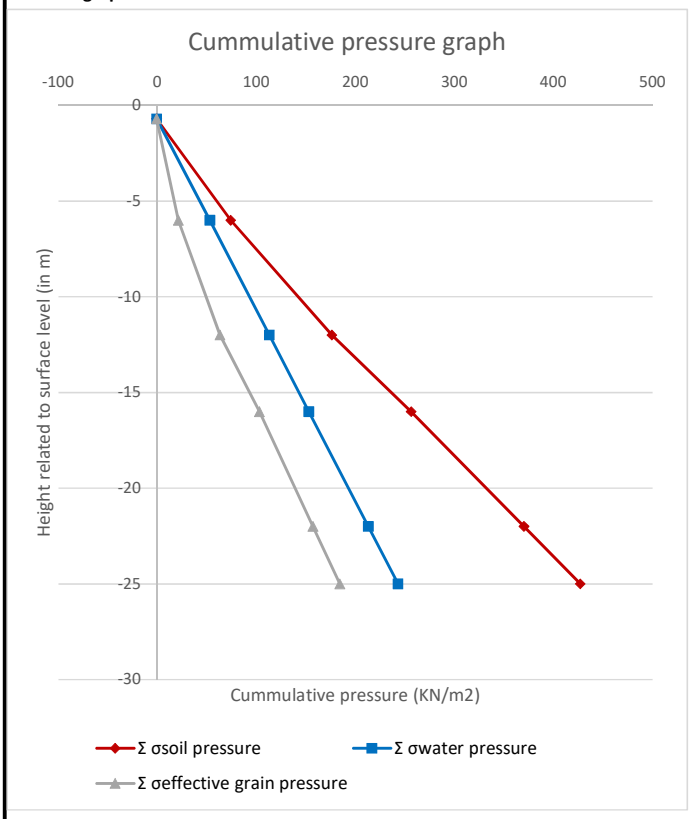
**All parameters are related to surface level*

Soil Layer 1	
Clay weak, silty	
σsoil pressure	74,2
Σ σsoil pressure	**74,2**
σwater pressure	53
Σ σwater pressure	**53**
σeffective grain pressure	21,2
Σ σeffective grain pressure	**21,2**
Heights and thickness	
Startingpoint layer A	-0,7
Height ground water	5,3
Bottom level layer A	-6
Layer thickness	5,3

Soil Layer 2	
Clay , silty	
σsoil pressure	102
Σ σsoil pressure	**176,2**
σwater pressure	60
Σ σwater pressure	**113**
σeffective grain pressure	42
Σ σeffective grain pressure	**63,2**
Heights and thickness	
Startingpoint layer A	-6
Height ground water	6
Bottom level layer A	-12
Layer thickness	6

Soil Layer 3	
Loose Sand, silty	
σsoil pressure	80
Σ σsoil pressure	**256,2**
σwater pressure	40
Σ σwater pressure	**153**
σeffective grain pressure	40
Σ σeffective grain pressure	**103,2**
Heights and thickness	
Startingpoint layer A	-12
Height ground water	4
Bottom level layer A	-16
Layer thickness	4

Pressure graph



Soil Layer 4	
Medium Sand	
σsoil pressure	114
Σ σsoil pressure	**370,2**
σwater pressure	60
Σ σwater pressure	**213**
σeffective grain pressure	54
Σ σeffective grain pressure	**157,2**
Heights and thickness	
Startingpoint layer A	-16
Height ground water	6
Bottom level layer A	-22
Layer thickness	6

Soil Layer 5	
Coarse Sand	
σsoil pressure	57
Σ σsoil pressure	**427,2**
σwater pressure	30
Σ σwater pressure	**243**
σeffective grain pressure	27
Σ σeffective grain pressure	**184,2**
Heights and thickness	
Startingpoint layer A	-22
Height ground water	3
Bottom level layer A	-25
Layer thickness	3

Tab 2 - Load new road construction

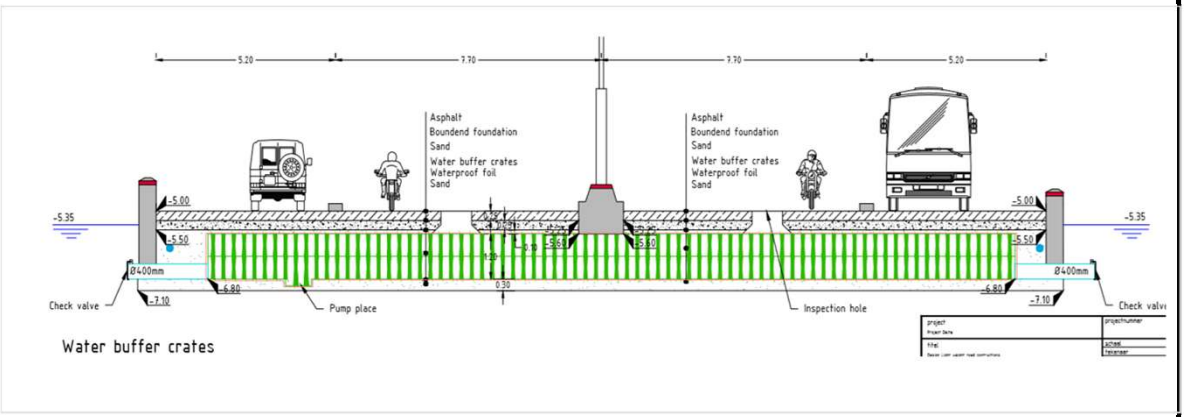
Possible road constructions:	
	○ Solution 1 : Raising with current method ◉ Solution 2: Water buffer crates ○ Solution 3: Lava stones ○ Solution 4: Bamboo chips ○ Solution 5: Plastic road ○ Solution 6: Bamboo chips + plastic

New situation	
Height on top of layer 1	1,4
Excavation height of layer 1	0,7

Chosen solution:	2

Weight solution kg	2330
Force (in KN)	23,3
Thickness solution	2,1

Picture of the solution



Tab - 3 Output soil subsidence

New road construction	
Chosen solution	2
Height of top road related to layer 1	**1,4**
Load (KN/m2)	**23,3**

Time of subsidence calculated (in days): **3650**

Subsidence calculation table

Layer	Layer thickness	Preconsolidation pressure	Σ σeffective grain pressure (KN/m2)	k̆	Cp	Cs	C'p	C's	Subsidence	Σ Subsidence
Clay weak, silty	5,3	0	21	11	50	340	30	270	0,287	0,599
Clay , silty	6,0	0	63	42	59	240	12	110	0,305	0,313
Loose Sand, silty	4,0	0	103	83	300	1E+09	550	1E+09	0,002	0,007
Medium Sand	6,0	0	157	130	600	1E+09	200	1E+09	0,005	0,006
Coarse Sand	3,0	0	184	171	1800	1E+09	600	1E+09	0,001	0,001
								Total subsidence		0,599

Subsidence graph