

Odränerad Analys

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File Information

Created By: [Petter Karlsson](#)
Revision Number: 79
Last Edited By: [Karlsson, Petter](#)
Date: 2011-01-14
Time: 07:44:39
File Name: [V21610_odränerad.gsz](#)
Directory: [V:_UPPDRAAG\227763\G_Text\V21610\](#)

Project Settings

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

Analysis Settings

Odränerad Analys

Kind: [SLOPE/W](#)
Method: [Morgenstern-Price](#)
Settings
Apply Phreatic Correction: [No](#)
Side Function
Interslice force function option: [Half-Sine](#)
PWP Conditions Source: [Piezometric Line](#)
Use Staged Rapid Drawdown: [No](#)
Slip Surface
Direction of movement: [Right to Left](#)
Use Passive Mode: [No](#)
Slip Surface Option: [Entry and Exit](#)
Critical slip surfaces saved: [5](#)
Optimize Critical Slip Surface Location: [Yes](#)
Tension Crack
Tension Crack Option: [Tension Crack Line](#)
Percentage Wet: [0.5](#)
Tension Crack Fluid Unit Weight: [9.807 kN/m³](#)

FOS Distribution

FOS Calculation Option: Constant

Advanced

Number of Slices: 30

Optimization Tolerance: 0.01

Minimum Slip Surface Depth: 0.1 m

Optimization Maximum Iterations: 2000

Optimization Convergence Tolerance: 1e-007

Starting Optimization Points: 8

Ending Optimization Points: 16

Complete Passes per Insertion: 1

Driving Side Maximum Convex Angle: 5 °

Resisting Side Maximum Convex Angle: 1 °

Materials

Crust

Model: Mohr-Coulomb

Unit Weight: 18 kN/m³

Cohesion: 30 kPa

Phi: 0 °

Phi-B: 0 °

Pore Water Pressure

Piezometric Line: 1

CI 1

Model: S=f(datum)

Unit Weight: 16.2 kN/m³

C-Datum: 20 kPa

C-Rate of Change: 0 kPa/m

Limiting C: 0 kPa

Elevation: 26 m

Pore Water Pressure

Piezometric Line: 1

CI 2

Model: S=f(datum)

Unit Weight: 16.2 kN/m³

C-Datum: 20 kPa

C-Rate of Change: 1.85 kPa/m

Limiting C: 0 kPa

Elevation: 15 m

Pore Water Pressure

Piezometric Line: 1

CI 3

Model: $S=f(\text{datum})$
Unit Weight: 17.2 kN/m³
C-Datum: 20 kPa
C-Rate of Change: 1.85 kPa/m
Limiting C: 0 kPa
Elevation: 15 m
Pore Water Pressure
Piezometric Line: 1

CI 4

Model: $S=f(\text{datum})$
Unit Weight: 16.2 kN/m³
C-Datum: 25 kPa
C-Rate of Change: 0 kPa/m
Limiting C: 0 kPa
Elevation: 15 m
Pore Water Pressure
Piezometric Line: 1

CI 5

Model: $S=f(\text{datum})$
Unit Weight: 16.2 kN/m³
C-Datum: 25 kPa
C-Rate of Change: 1.67 kPa/m
Limiting C: 0 kPa
Elevation: 7 m
Pore Water Pressure
Piezometric Line: 1

CI 6

Model: $S=f(\text{datum})$
Unit Weight: 17.2 kN/m³
C-Datum: 25 kPa
C-Rate of Change: 1.67 kPa/m
Limiting C: 0 kPa
Elevation: 7 m
Pore Water Pressure
Piezometric Line: 1

CI 7

Model: $S=f(\text{depth})$
Unit Weight: 17.2 kN/m³
C-Top of Layer: 3 kPa
C-Rate of Change: 11 kPa/m
Limiting C: 25 kPa
Pore Water Pressure

Piezometric Line: 1

CI 8

Model: $S=f(\text{depth})$

Unit Weight: 17.2 kN/m^3

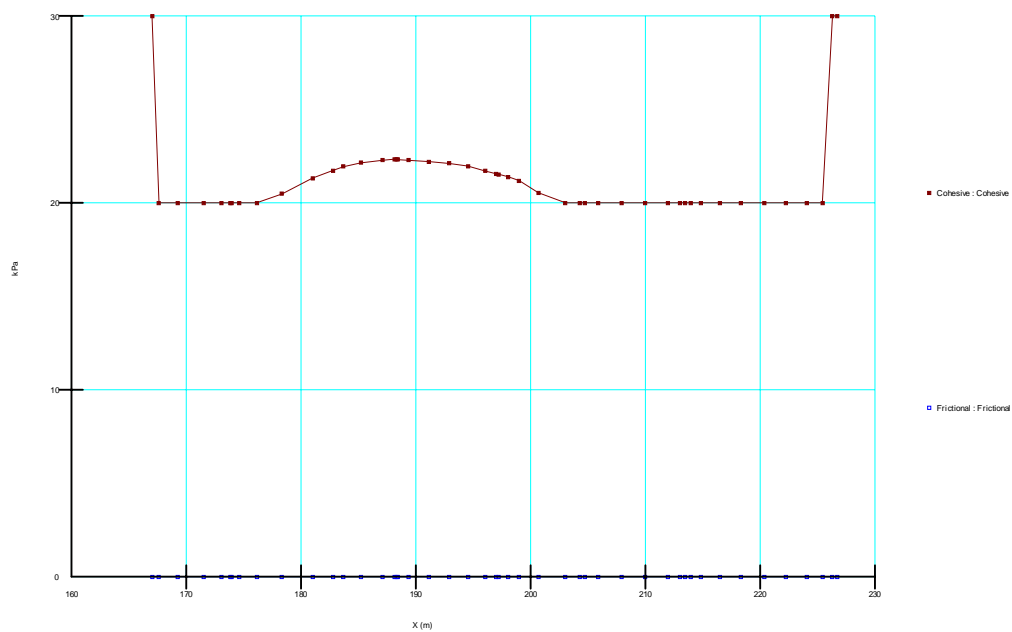
C-Top of Layer: 25 kPa

C-Rate of Change: 1.71 kPa/m

Limiting C: 0 kPa

Pore Water Pressure

Piezometric Line: 1



Figur 1. Kohesion och friktion.



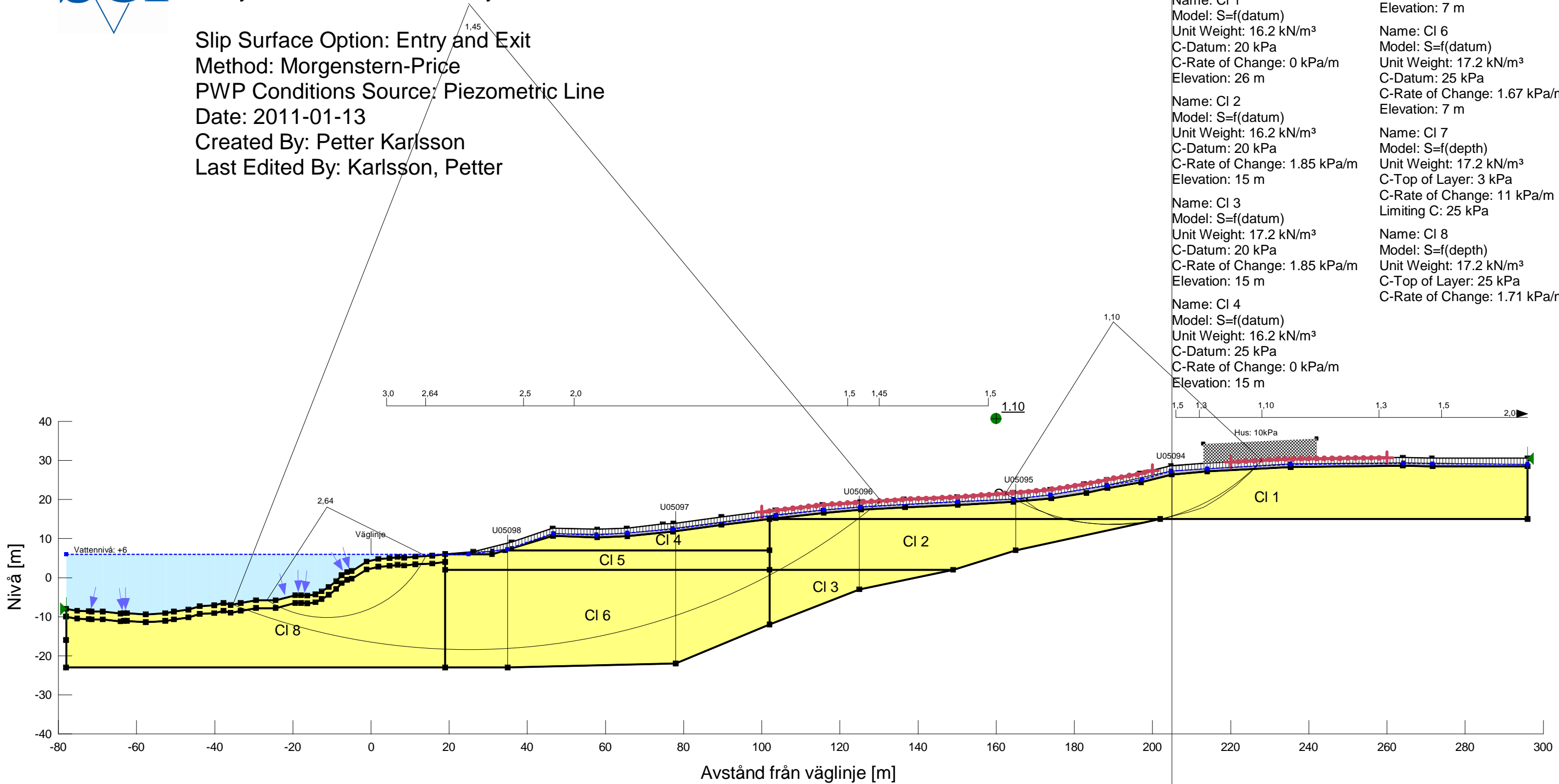
KLIMATANPASSNING SKREDFÖRUTSÄTTNINGAR I GÖTA ÄLVDALLEN

Sektion: V21610
 Delområde: Intagan - Ström
 Analysmetod: Odränerad analys

Slip Surface Option: Entry and Exit
 Method: Morgenstern-Price
 PWP Conditions Source: Piezometric Line
 Date: 2011-01-13
 Created By: Petter Karlsson
 Last Edited By: Karlsson, Petter

Skala 1:1000 (A3)

- | | |
|--|---|
| Name: Crust
Model: Mohr-Coulomb
Unit Weight: 18 kN/m ³
Cohesion: 30 kPa | Name: CI 5
Model: S=f(datum)
Unit Weight: 16.2 kN/m ³
C-Datum: 25 kPa
C-Rate of Change: 1.67 kPa/m
Elevation: 7 m |
| Name: CI 1
Model: S=f(datum)
Unit Weight: 16.2 kN/m ³
C-Datum: 20 kPa
C-Rate of Change: 0 kPa/m
Elevation: 26 m | Name: CI 6
Model: S=f(datum)
Unit Weight: 17.2 kN/m ³
C-Datum: 25 kPa
C-Rate of Change: 1.67 kPa/m
Elevation: 7 m |
| Name: CI 2
Model: S=f(datum)
Unit Weight: 16.2 kN/m ³
C-Datum: 20 kPa
C-Rate of Change: 1.85 kPa/m
Elevation: 15 m | Name: CI 7
Model: S=f(depth)
Unit Weight: 17.2 kN/m ³
C-Top of Layer: 3 kPa
C-Rate of Change: 11 kPa/m
Limiting C: 25 kPa |
| Name: CI 3
Model: S=f(datum)
Unit Weight: 17.2 kN/m ³
C-Datum: 20 kPa
C-Rate of Change: 1.85 kPa/m
Elevation: 15 m | Name: CI 8
Model: S=f(depth)
Unit Weight: 17.2 kN/m ³
C-Top of Layer: 25 kPa
C-Rate of Change: 1.71 kPa/m |
| Name: CI 4
Model: S=f(datum)
Unit Weight: 16.2 kN/m ³
C-Datum: 25 kPa
C-Rate of Change: 0 kPa/m
Elevation: 15 m | |



Kombinerad Analys

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File Information

Created By: [Petter Karlsson](#)
Revision Number: [102](#)
Last Edited By: [Karlsson, Petter](#)
Date: [2011-01-14](#)
Time: [07:54:05](#)
File Name: [V21610_kombinerad.gsz](#)
Directory: [V:_UPPDRAAG\227763\G_Text\V21610\](#)
Last Solved Date: [2011-01-14](#)
Last Solved Time: [07:55:25](#)

Project Settings

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

Analysis Settings

Kombinerad Analys

Kind: [SLOPE/W](#)
Method: [Morgenstern-Price](#)
Settings
 Side Function
 Interslice force function option: [Half-Sine](#)
 PWP Conditions Source: [Pressure Head Spatial Function](#)
 Pressure Head Spatial Fn.: [Uppmätta värde](#)
Slip Surface
 Direction of movement: [Right to Left](#)
 Use Passive Mode: [No](#)
 Slip Surface Option: [Entry and Exit](#)
 Critical slip surfaces saved: [5](#)
 Optimize Critical Slip Surface Location: [Yes](#)
 Tension Crack
 Tension Crack Option: [Tension Crack Line](#)
 Percentage Wet: [0.5](#)

Tension Crack Fluid Unit Weight: 9.807 kN/m³

FOS Distribution

FOS Calculation Option: Constant

Advanced

Number of Slices: 30

Optimization Tolerance: 0.01

Minimum Slip Surface Depth: 0.5 m

Optimization Maximum Iterations: 2000

Optimization Convergence Tolerance: 1e-007

Starting Optimization Points: 8

Ending Optimization Points: 16

Complete Passes per Insertion: 1

Driving Side Maximum Convex Angle: 5 °

Resisting Side Maximum Convex Angle: 1 °

Materials

Crust

Model: Combined, S=f(depth)

Unit Weight: 18 kN/m³

Phi: 30 °

C-Top of Layer: 0 kPa

C-Rate of Change: 0 kPa/m

Cu-Top of Layer: 30 kPa

Cu-Rate of Change: 0 kPa/m

C/Cu Ratio: 0.1

CI 1

Model: Combined, S=f(datum)

Unit Weight: 16.2 kN/m³

Phi: 30 °

C-Datum: 0 kPa

C-Rate of Change: 0 kPa/m

Cu-Datum: 20 kPa

Cu-Rate of Change: 0 kPa/m

C/Cu Ratio: 0.1

Elevation: 26 m

CI 2

Model: Combined, S=f(datum)

Unit Weight: 16.2 kN/m³

Phi: 30 °

C-Datum: 0 kPa

C-Rate of Change: 0 kPa/m

Cu-Datum: 20 kPa

Cu-Rate of Change: 1.85 kPa/m

C/Cu Ratio: 0.1
Elevation: 15 m

CI 3

Model: Combined, $S=f(\text{datum})$
Unit Weight: 17.2 kN/m³
Phi: 30 °
C-Datum: 0 kPa
C-Rate of Change: 0 kPa/m
Cu-Datum: 20 kPa
Cu-Rate of Change: 1.85 kPa/m
C/Cu Ratio: 0.1
Elevation: 15 m

CI 4

Model: Combined, $S=f(\text{datum})$
Unit Weight: 16.2 kN/m³
Phi: 30 °
C-Datum: 0 kPa
C-Rate of Change: 0 kPa/m
Cu-Datum: 25 kPa
Cu-Rate of Change: 0 kPa/m
C/Cu Ratio: 0.1
Elevation: 15 m

CI 5

Model: Combined, $S=f(\text{datum})$
Unit Weight: 16.2 kN/m³
Phi: 30 °
C-Datum: 0 kPa
C-Rate of Change: 0 kPa/m
Cu-Datum: 25 kPa
Cu-Rate of Change: 1.67 kPa/m
C/Cu Ratio: 0.1
Elevation: 7 m

CI 6

Model: Combined, $S=f(\text{datum})$
Unit Weight: 17.2 kN/m³
Phi: 30 °
C-Datum: 0 kPa
C-Rate of Change: 0 kPa/m
Cu-Datum: 25 kPa
Cu-Rate of Change: 1.67 kPa/m
C/Cu Ratio: 0.1
Elevation: 7 m

CI 7

Model: Combined, $S=f(\text{depth})$

Unit Weight: 17.2 kN/m³

Phi: 30 °

C-Top of Layer: 0 kPa

C-Rate of Change: 0 kPa/m

Cu-Top of Layer: 3 kPa

Cu-Rate of Change: 11 kPa/m

C/Cu Ratio: 0.1

CI 8

Model: Combined, $S=f(\text{depth})$

Unit Weight: 17.2 kN/m³

Phi: 30 °

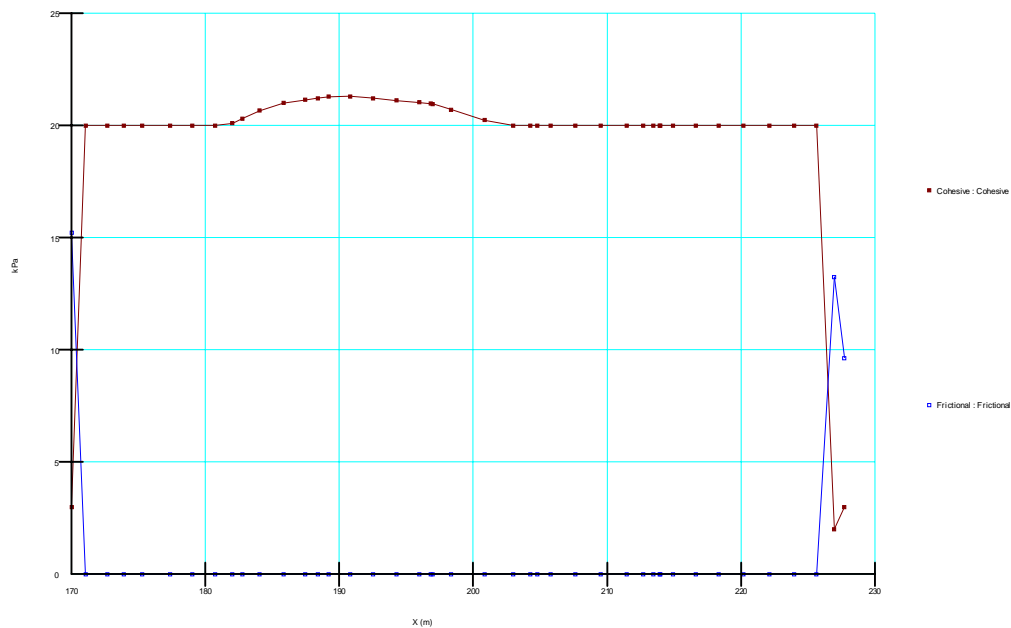
C-Top of Layer: 0 kPa

C-Rate of Change: 0 kPa/m

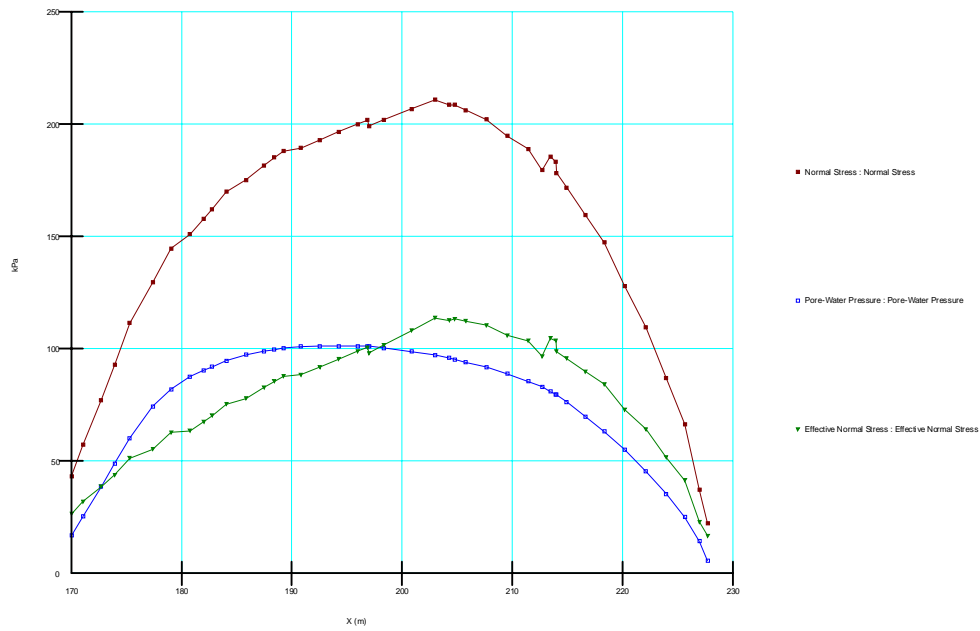
Cu-Top of Layer: 25 kPa

Cu-Rate of Change: 1.71 kPa/m

C/Cu Ratio: 0.1



Figur 1. Kohesion och friktion.



Figur 2. Totalspänning, effektivspänning och portryck.



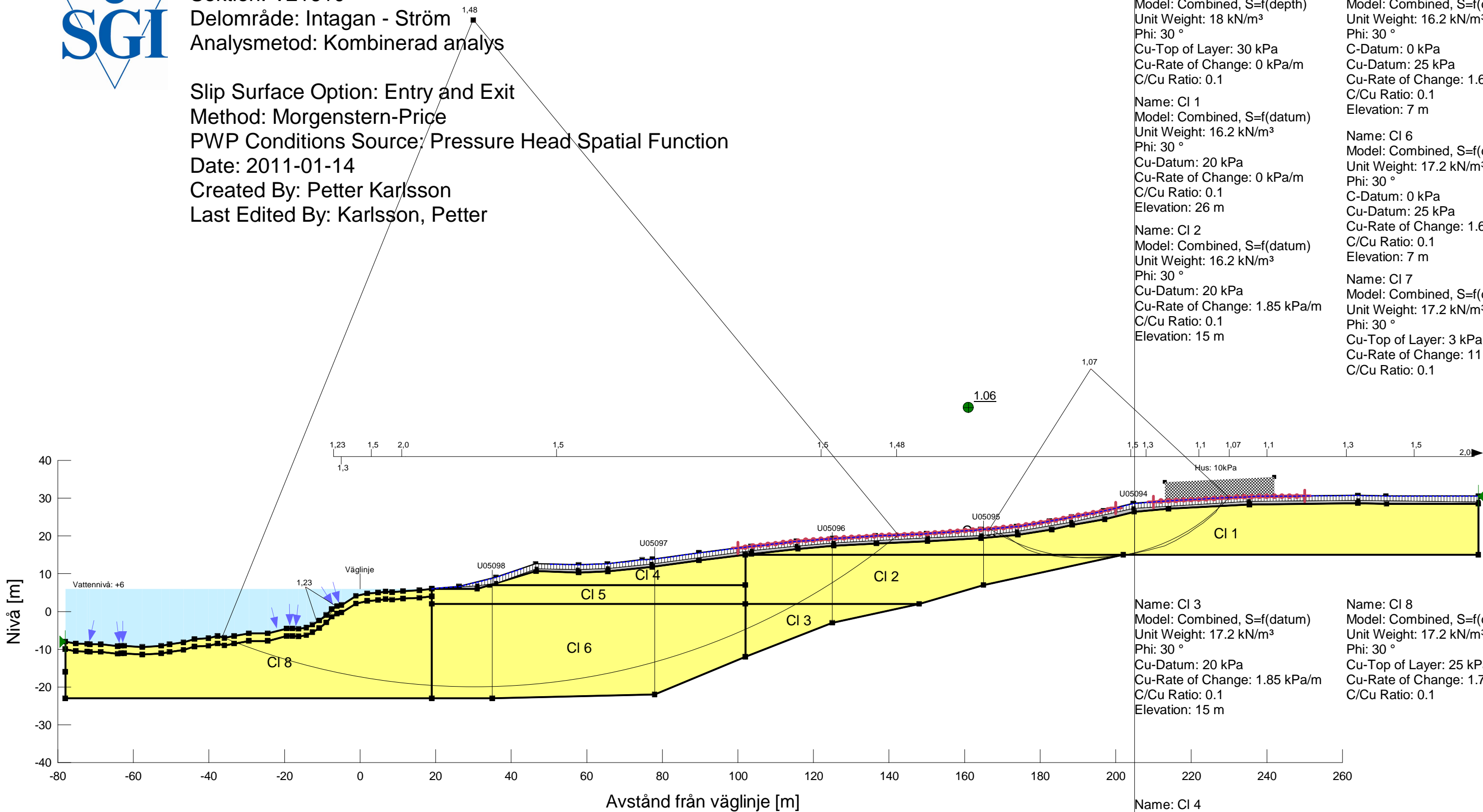
KLIMATANPASSNING SKREDFÖRUTSÄTTNINGAR I GÖTA ÄLVDALEN

Sektion: V21610
 Delområde: Intagan - Ström
 Analysmetod: Kombinerad analys

Slip Surface Option: Entry and Exit
 Method: Morgenstern-Price
 PWP Conditions Source: Pressure Head Spatial Function
 Date: 2011-01-14
 Created By: Petter Karlsson
 Last Edited By: Karlsson, Petter

Skala 1:1000 (A3)

- Name: Crust
 Model: Combined, $S=f(\text{depth})$
 Unit Weight: 18 kN/m³
 Phi: 30 °
 Cu-Top of Layer: 30 kPa
 Cu-Rate of Change: 0 kPa/m
 C/Cu Ratio: 0.1
- Name: CI 1
 Model: Combined, $S=f(\text{datum})$
 Unit Weight: 16.2 kN/m³
 Phi: 30 °
 Cu-Datum: 20 kPa
 Cu-Rate of Change: 0 kPa/m
 C/Cu Ratio: 0.1
 Elevation: 26 m
- Name: CI 2
 Model: Combined, $S=f(\text{datum})$
 Unit Weight: 16.2 kN/m³
 Phi: 30 °
 Cu-Datum: 20 kPa
 Cu-Rate of Change: 1.85 kPa/m
 C/Cu Ratio: 0.1
 Elevation: 15 m
- Name: CI 3
 Model: Combined, $S=f(\text{datum})$
 Unit Weight: 17.2 kN/m³
 Phi: 30 °
 Cu-Datum: 20 kPa
 Cu-Rate of Change: 1.85 kPa/m
 C/Cu Ratio: 0.1
 Elevation: 15 m
- Name: CI 4
 Model: Combined, $S=f(\text{datum})$
 Unit Weight: 16.2 kN/m³
 Phi: 30 °
 Cu-Datum: 25 kPa
 Cu-Rate of Change: 0 kPa/m
 C/Cu Ratio: 0.1
 Elevation: 15 m
- Name: CI 5
 Model: Combined, $S=f(\text{datum})$
 Unit Weight: 16.2 kN/m³
 Phi: 30 °
 C-Datum: 0 kPa
 Cu-Datum: 25 kPa
 Cu-Rate of Change: 1.67 kPa/m
 C/Cu Ratio: 0.1
 Elevation: 7 m
- Name: CI 6
 Model: Combined, $S=f(\text{datum})$
 Unit Weight: 17.2 kN/m³
 Phi: 30 °
 C-Datum: 0 kPa
 Cu-Datum: 25 kPa
 Cu-Rate of Change: 1.67 kPa/m
 C/Cu Ratio: 0.1
 Elevation: 7 m
- Name: CI 7
 Model: Combined, $S=f(\text{depth})$
 Unit Weight: 17.2 kN/m³
 Phi: 30 °
 Cu-Top of Layer: 3 kPa
 Cu-Rate of Change: 11 kPa/m
 C/Cu Ratio: 0.1
- Name: CI 8
 Model: Combined, $S=f(\text{depth})$
 Unit Weight: 17.2 kN/m³
 Phi: 30 °
 Cu-Top of Layer: 25 kPa
 Cu-Rate of Change: 1.71 kPa/m
 C/Cu Ratio: 0.1



Directory: V:\UPPDRAG\227763\G_Text\V21610\
 File Name: V21610_kombinerad.gsz

Name: CI 3
 Model: Combined, $S=f(\text{datum})$
 Unit Weight: 17.2 kN/m³
 Phi: 30 °
 Cu-Datum: 20 kPa
 Cu-Rate of Change: 1.85 kPa/m
 C/Cu Ratio: 0.1
 Elevation: 15 m



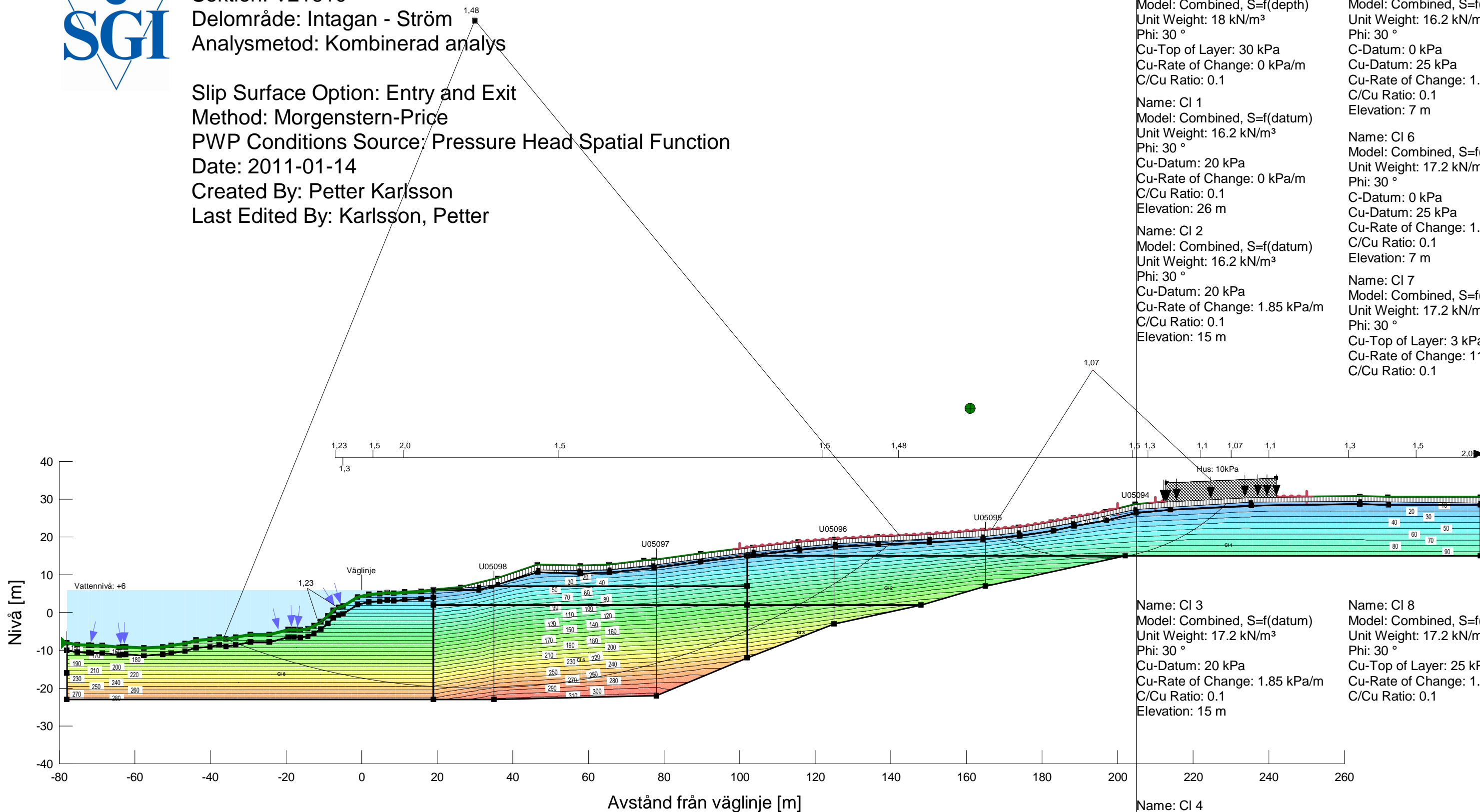
KLIMATANPASSNING SKREDFÖRUTSÄTTNINGAR I GÖTA ÄLVDALEN

Sektion: V21610
 Delområde: Intagan - Ström
 Analysmetod: Kombinerad analys

Slip Surface Option: Entry and Exit
 Method: Morgenstern-Price
 PWP Conditions Source: Pressure Head Spatial Function
 Date: 2011-01-14
 Created By: Petter Karlsson
 Last Edited By: Karlsson, Petter

Skala 1:1000 (A3)

- Name: Crust
 Model: Combined, S=f(depth)
 Unit Weight: 18 kN/m³
 Phi: 30 °
 Cu-Top of Layer: 30 kPa
 Cu-Rate of Change: 0 kPa/m
 C/Cu Ratio: 0.1
- Name: CI 1
 Model: Combined, S=f(datum)
 Unit Weight: 16.2 kN/m³
 Phi: 30 °
 Cu-Datum: 20 kPa
 Cu-Rate of Change: 0 kPa/m
 C/Cu Ratio: 0.1
 Elevation: 26 m
- Name: CI 2
 Model: Combined, S=f(datum)
 Unit Weight: 16.2 kN/m³
 Phi: 30 °
 Cu-Datum: 20 kPa
 Cu-Rate of Change: 1.85 kPa/m
 C/Cu Ratio: 0.1
 Elevation: 15 m
- Name: CI 3
 Model: Combined, S=f(datum)
 Unit Weight: 17.2 kN/m³
 Phi: 30 °
 Cu-Datum: 20 kPa
 Cu-Rate of Change: 1.85 kPa/m
 C/Cu Ratio: 0.1
 Elevation: 15 m
- Name: CI 4
 Model: Combined, S=f(datum)
 Unit Weight: 16.2 kN/m³
 Phi: 30 °
 Cu-Datum: 25 kPa
 Cu-Rate of Change: 0 kPa/m
 C/Cu Ratio: 0.1
 Elevation: 15 m
- Name: CI 5
 Model: Combined, S=f(datum)
 Unit Weight: 16.2 kN/m³
 Phi: 30 °
 C-Datum: 0 kPa
 Cu-Datum: 25 kPa
 Cu-Rate of Change: 1.67 kPa/m
 C/Cu Ratio: 0.1
 Elevation: 7 m
- Name: CI 6
 Model: Combined, S=f(datum)
 Unit Weight: 17.2 kN/m³
 Phi: 30 °
 C-Datum: 0 kPa
 Cu-Datum: 25 kPa
 Cu-Rate of Change: 1.67 kPa/m
 C/Cu Ratio: 0.1
 Elevation: 7 m
- Name: CI 7
 Model: Combined, S=f(depth)
 Unit Weight: 17.2 kN/m³
 Phi: 30 °
 Cu-Top of Layer: 3 kPa
 Cu-Rate of Change: 11 kPa/m
 C/Cu Ratio: 0.1
- Name: CI 8
 Model: Combined, S=f(depth)
 Unit Weight: 17.2 kN/m³
 Phi: 30 °
 Cu-Top of Layer: 25 kPa
 Cu-Rate of Change: 1.71 kPa/m
 C/Cu Ratio: 0.1



Directory: V:_UPPDRAG\227763\G_Text\V21610\
 File Name: V21610_kombinerad.gsz