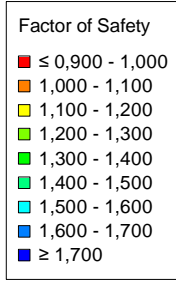
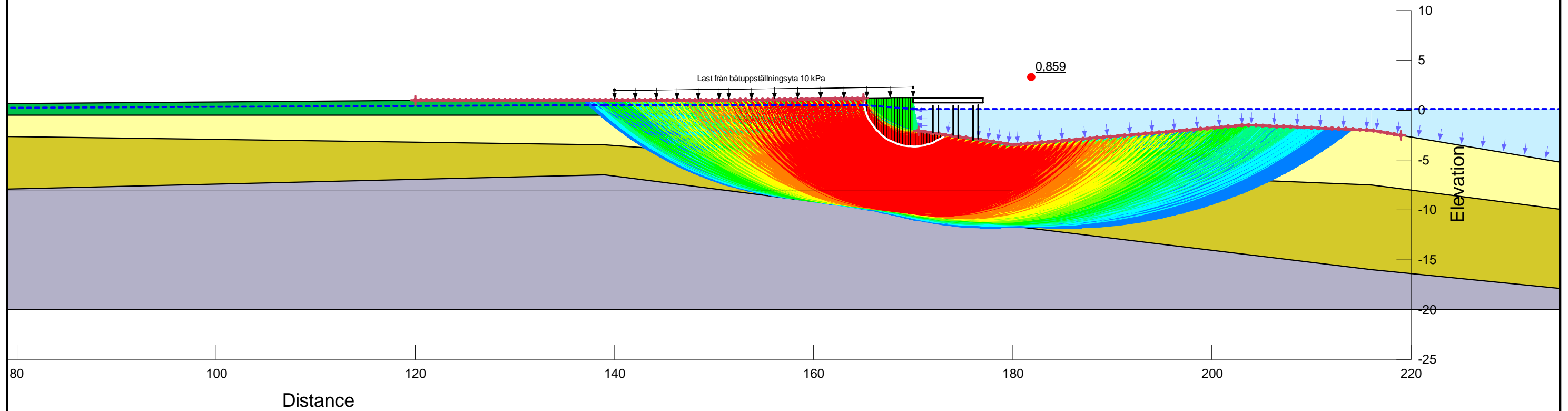


Title: Gamleby Hamn, section F odränerad
 Created By: Horndahl, Jacob
 Date: 2019-09-23
 Method: Morgenstern-Price
 Scale: 1:400 (A3)

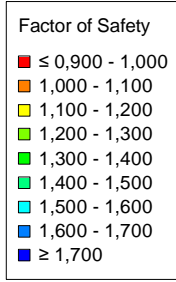


Color	Name	Unit Weight (kN/m ³)	C-Top of Layer (kPa)	C-Rate of Change ((kN/m ²)/m)	Cohesion (kPa)	Cohesion' (kPa)	Phi' (°)	Phi-B (°)	Constant Unit Wt. Above Water Table (kN/m ³)	Piezometric Line
Green	Fyllning	20				0	32	0	18	1
Yellow	Gyttja	13			10					1
Olive	Lera	15	10	0						1
Grey	Morän	22				0	35	0	20	1

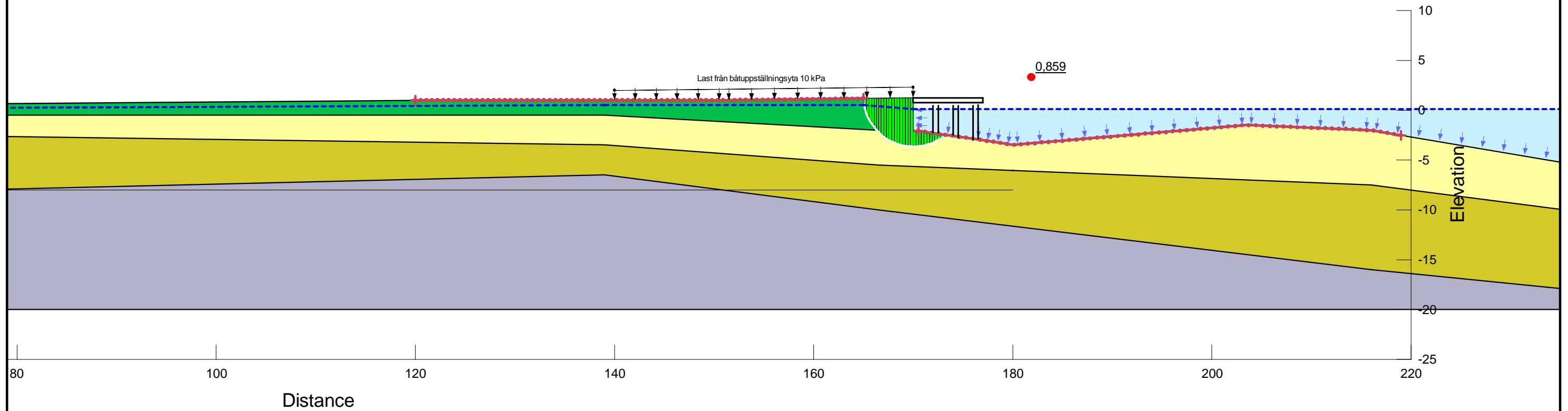


Gamleby Hamn Sektion F, odränerad	
Sektion F_odrän.gsz	
2019-09-23	1:400

Title: Gamleby Hamn, section F odränerad
 Created By: Horndahl, Jacob
 Date: 2019-09-23
 Method: Morgenstern-Price
 Scale: 1:400 (A3)

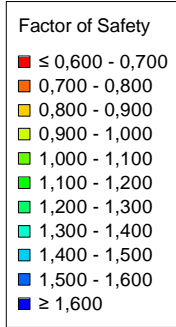


Color	Name	Unit Weight (kN/m ³)	C-Top of Layer (kPa)	C-Rate of Change ((kN/m ²)/m)	Cohesion (kPa)	Cohesion' (kPa)	Phi' (°)	Phi-B (°)	Constant Unit Wt. Above Water Table (kN/m ³)	Piezometric Line
Green	Fyllning	20				0	32	0	18	1
Yellow	Gyttja	13			10					1
Olive Green	Lera	15	10	0						1
Grey	Morän	22				0	35	0	20	1

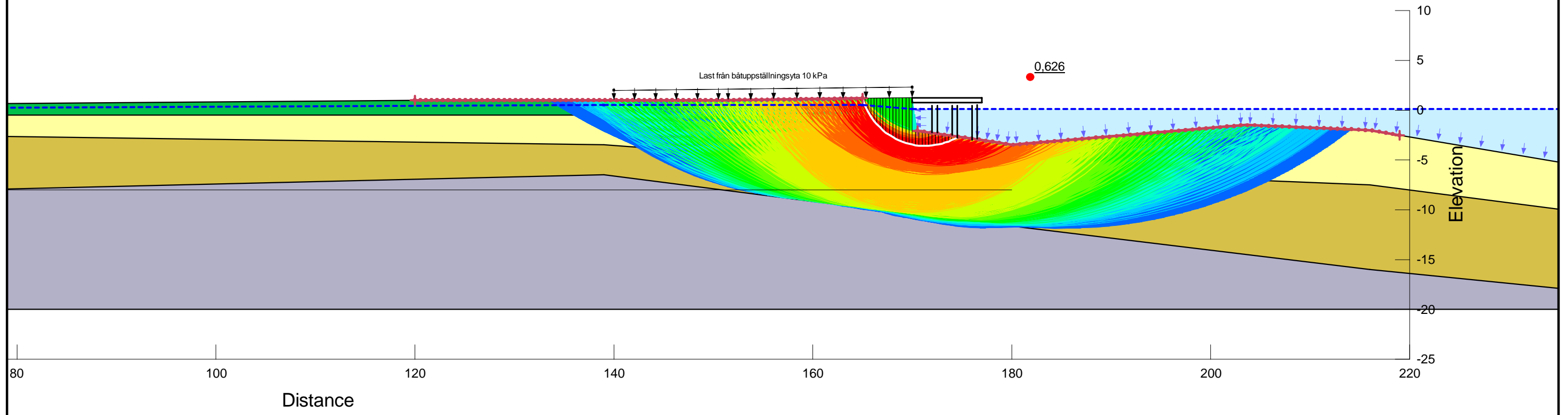


Gamleby Hamn Sektion F, odränerad
Sektion F_odrän.gsz
2019-09-23
1:400

Title: Gamleby Hamn, section F kombinerad
 Created By: Horndahl, Jacob
 Date: 2019-09-23
 Method: Morgenstern-Price
 Scale: 1:400 (A3)

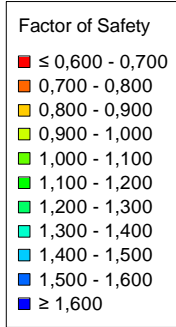


Color	Name	Unit Weight (kN/m ³)	Cohesion' (kPa)	Phi' (°)	C-Top of Layer (kPa)	C-Rate of Change ((kN/m ²)/m)	Cu-Top of Layer (kPa)	Cu-Rate of Change ((kN/m ²)/m)	C/Cu Ratio	Phi-B (°)	Constant Unit Wt. Above Water Table (kN/m ³)	Piezometric Line
Green	Fyllning	20	0	32						0	18	1
Yellow	Gyttja (Komb)	13		20	1	0	10	0	0,1			1
Brown	Lera (Komb)	15		25	1	0	10	0	0,1			1
Grey	Morän	22	0	35						0	20	1

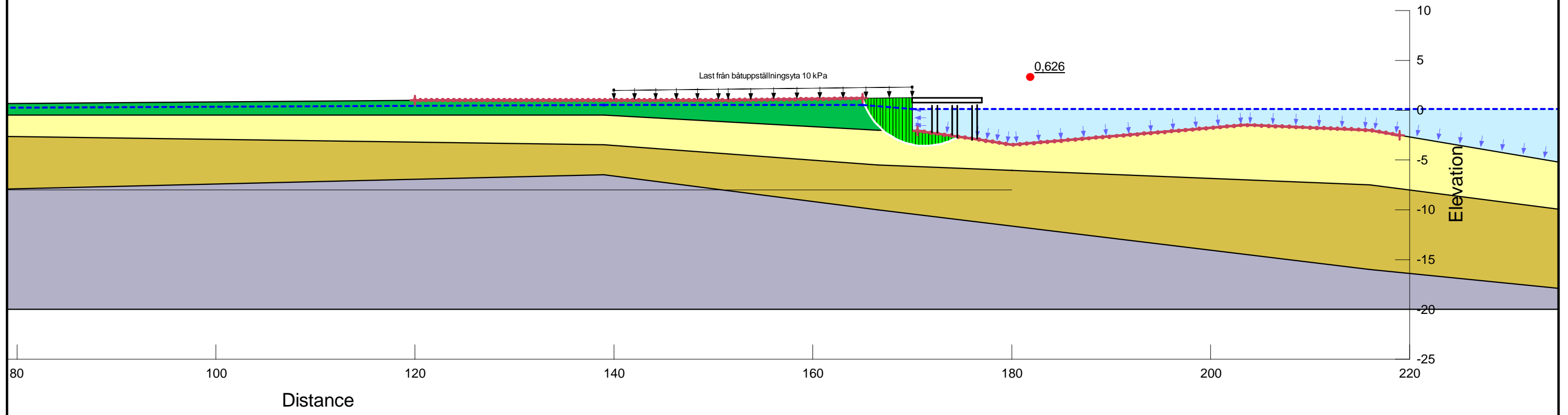


Gamleby Hamn Sektion F, kombinerad	
Sektion F_kombinerad.gsz	
2019-09-23	1:400

Title: Gamleby Hamn, section F kombinerad
 Created By: Horndahl, Jacob
 Date: 2019-09-23
 Method: Morgenstern-Price
 Scale: 1:400 (A3)



Color	Name	Unit Weight (kN/m ³)	Cohesion' (kPa)	Phi' (°)	C-Top of Layer (kPa)	C-Rate of Change ((kN/m ²)/m)	Cu-Top of Layer (kPa)	Cu-Rate of Change ((kN/m ²)/m)	C/Cu Ratio	Phi-B (°)	Constant Unit Wt. Above Water Table (kN/m ³)	Piezometric Line
Green	Fyllning	20	0	32						0	18	1
Yellow	Gyttja (Komb)	13		20	1	0	10	0	0,1			1
Olive	Lera (Komb)	15		25	1	0	10	0	0,1			1
Grey	Morän	22	0	35						0	20	1



Gamleby Hamn Sektion F, kombinerad	
Sektion F_kombinerad.gsz	
2019-09-23	1:400

Gamleby Hamn Sektion F, odränerad

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File Information

File Version: 9.01
Title: Gamleby Hamn, section F odränerad
Created By: Horndahl, Jacob
Last Edited By: Horndahl, Jacob
Revision Number: 100
Date: 2019-09-23
Time: 15:16:12
Tool Version: 9.1.1.16749
File Name: Sektion F_odrän.gsz
Directory: O:\JKP\290261\G_Berakningar\Slope\Sektion F\

Project Settings

Unit System: International System of Units (SI)

Analysis Settings

Gamleby Hamn Sektion F, odränerad

Kind: SLOPE/W

Method: Morgenstern-Price

Settings

Side Function

Interslice force function option: Half-Sine

PWP Conditions from: Piezometric Line

Apply Phreatic Correction: No

Use Staged Rapid Drawdown: No

Unit Weight of Water: 9,807 kN/m³

Slip Surface

Direction of movement: Left to Right

Use Passive Mode: No

Slip Surface Option: Entry and Exit

Critical slip surfaces saved: 1

Optimize Critical Slip Surface Location: No

Tension Crack Option: (none)

Distribution

F of S Calculation Option: Constant

Advanced

Geometry Settings

Minimum Slip Surface Depth: 0,1 m

Number of Slices: 30

Factor of Safety Convergence Settings

Maximum Number of Iterations: 100

Tolerable difference in F of S: 0,001

Solution Settings

Search Method: Root Finder

Tolerable difference between starting and converged F of S: 3

Maximum iterations to calculate converged lambda: 20

Max Absolute Lambda: 2

Materials

Fyllning

Model: Mohr-Coulomb
Unit Weight: 20 kN/m³
Cohesion': 0 kPa
Phi': 32 °
Phi-B: 0 °
Constant Unit Wt. Above Water Table: 18 kN/m³
Pore Water Pressure
Piezometric Line: 1

Gyttja

Model: Undrained (Phi=0)
Unit Weight: 13 kN/m³
Cohesion: 10 kPa
Pore Water Pressure
Piezometric Line: 1

Lera

Model: S=f(depth)
Unit Weight: 15 kN/m³
C-Top of Layer: 10 kPa
C-Rate of Change: 0 (kN/m²)/m
Pore Water Pressure
Piezometric Line: 1

Morän

Model: Mohr-Coulomb
Unit Weight: 22 kN/m³
Cohesion': 0 kPa
Phi': 35 °
Phi-B: 0 °
Constant Unit Wt. Above Water Table: 20 kN/m³
Pore Water Pressure
Piezometric Line: 1

Slip Surface Entry and Exit

Left Type: Range
Left-Zone Left Coordinate: (120; 0,987603) m
Left-Zone Right Coordinate: (165; 1,184211) m
Left-Zone Increment: 80
Right Type: Range
Right-Zone Left Coordinate: (170,5; -2,071429) m
Right-Zone Right Coordinate: (219; -2,509434) m
Right-Zone Increment: 70
Radius Increments: 8

Slip Surface Limits

Left Coordinate: (34; 0,5) m
Right Coordinate: (251; -7) m

Piezometric Lines

Piezometric Line 1

Coordinates

	X	Y
Coordinate 1	21,5 m	0 m
Coordinate 2	139 m	0,5 m
Coordinate 3	165 m	0,5 m
Coordinate 4	170 m	0,1 m
Coordinate 5	251 m	0,1 m

Surcharge Loads

Surcharge Load 1

Surcharge (Unit Weight): 10 kN/m³

Direction: Vertical

Coordinates

	X	Y
	140 m	2 m
	170 m	2,3 m

Points

	X	Y
Point 1	166,5 m	-10 m
Point 2	216 m	-16 m
Point 3	251 m	-19,5 m
Point 4	251 m	-20 m
Point 5	34 m	-20 m
Point 6	34 m	-9 m
Point 7	139 m	-6,5 m
Point 8	166,5 m	-5,5 m
Point 9	216 m	-7,5 m
Point 10	251 m	-12 m
Point 11	34 m	-2 m
Point 12	139 m	-3,5 m
Point 13	166,5 m	-2 m
Point 14	170 m	-2 m
Point 15	170 m	1,25 m
Point 16	151 m	1 m
Point 17	121,5 m	1 m
Point 18	61 m	0,5 m
Point 19	34 m	0,5 m
Point 20	34 m	-0,5 m
Point 21	139 m	-0,5 m
Point 22	177 m	-3 m
Point 23	180 m	-3,5 m
Point 24	203,5 m	-1,5 m
Point 25	216 m	-2 m
Point 26	242,5 m	-6,5 m
Point 27	251 m	-7 m
Point 28	180 m	-6,045455 m

Regions

	Material	Points	Area
Region 1	Morän	1;2;3;4;5;6;7	2 034,6 m ²
Region 2	Lera	8;28;9;10;3;2;1;7;6;11;12	1 229,9 m ²
Region 3	Fyllning	13;14;15;16;17;18;19;20;21	203,63 m ²
Region 4	Gyttja	22;23;24;25;26;27;10;9;28;8;12;11;20;21;13;14	703,75 m ²

Gamleby Hamn Sektion F, kombinerad

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File Information

File Version: 9.01
Title: Gamleby Hamn, section F kombinerad
Created By: Horndahl, Jacob
Last Edited By: Horndahl, Jacob
Revision Number: 105
Date: 2019-09-23
Time: 15:18:33
Tool Version: 9.1.1.16749
File Name: Sektion F_kombinerad.gsz
Directory: O:\JKP\290261\G_Berakningar\Slope\Sektion F\

Project Settings

Unit System: International System of Units (SI)

Analysis Settings

Gamleby Hamn Sektion F, kombinerad

Kind: SLOPE/W

Method: Morgenstern-Price

Settings

Side Function

Interslice force function option: Half-Sine

PWP Conditions from: Piezometric Line

Apply Phreatic Correction: No

Use Staged Rapid Drawdown: No

Unit Weight of Water: 9,807 kN/m³

Slip Surface

Direction of movement: Left to Right

Use Passive Mode: No

Slip Surface Option: Entry and Exit

Critical slip surfaces saved: 1

Optimize Critical Slip Surface Location: No

Tension Crack Option: (none)

Distribution

F of S Calculation Option: Constant

Advanced

Geometry Settings

Minimum Slip Surface Depth: 0,1 m

Number of Slices: 30

Factor of Safety Convergence Settings

Maximum Number of Iterations: 100

Tolerable difference in F of S: 0,001

Solution Settings

Search Method: Root Finder

Tolerable difference between starting and converged F of S: 3

Maximum iterations to calculate converged lambda: 20

Max Absolute Lambda: 2

Materials

Fyllning

Model: Mohr-Coulomb
Unit Weight: 20 kN/m³
Cohesion': 0 kPa
Phi': 32 °
Phi-B: 0 °
Constant Unit Wt. Above Water Table: 18 kN/m³
Pore Water Pressure
Piezometric Line: 1

Morän

Model: Mohr-Coulomb
Unit Weight: 22 kN/m³
Cohesion': 0 kPa
Phi': 35 °
Phi-B: 0 °
Constant Unit Wt. Above Water Table: 20 kN/m³
Pore Water Pressure
Piezometric Line: 1

Gyttja (Komb)

Model: Combined, S=f(depth)
Unit Weight: 13 kN/m³
Phi': 20 °
C-Top of Layer: 1 kPa
C-Rate of Change: 0 (kN/m²)/m
Cu-Top of Layer: 10 kPa
Cu-Rate of Change: 0 (kN/m²)/m
C/Cu Ratio: 0,1
Pore Water Pressure
Piezometric Line: 1

Lera (Komb)

Model: Combined, S=f(depth)
Unit Weight: 15 kN/m³
Phi': 25 °
C-Top of Layer: 1 kPa
C-Rate of Change: 0 (kN/m²)/m
Cu-Top of Layer: 10 kPa
Cu-Rate of Change: 0 (kN/m²)/m
C/Cu Ratio: 0,1
Pore Water Pressure
Piezometric Line: 1

Slip Surface Entry and Exit

Left Type: Range
Left-Zone Left Coordinate: (120; 0,987603) m
Left-Zone Right Coordinate: (165; 1,184211) m
Left-Zone Increment: 80
Right Type: Range
Right-Zone Left Coordinate: (170,5; -2,071429) m
Right-Zone Right Coordinate: (219; -2,509434) m
Right-Zone Increment: 70
Radius Increments: 8

Slip Surface Limits

Left Coordinate: (34; 0,5) m

Right Coordinate: (251; -7) m

Piezometric Lines

Piezometric Line 1

Coordinates

	X	Y
Coordinate 1	21,5 m	0 m
Coordinate 2	139 m	0,5 m
Coordinate 3	165 m	0,5 m
Coordinate 4	170 m	0,1 m
Coordinate 5	251 m	0,1 m

Surcharge Loads

Surcharge Load 1

Surcharge (Unit Weight): 10 kN/m³

Direction: Vertical

Coordinates

	X	Y
	140 m	2 m
	170 m	2,3 m

Points

	X	Y
Point 1	166,5 m	-10 m
Point 2	216 m	-16 m
Point 3	251 m	-19,5 m
Point 4	251 m	-20 m
Point 5	34 m	-20 m
Point 6	34 m	-9 m
Point 7	139 m	-6,5 m
Point 8	166,5 m	-5,5 m
Point 9	216 m	-7,5 m
Point 10	251 m	-12 m
Point 11	34 m	-2 m
Point 12	139 m	-3,5 m
Point 13	166,5 m	-2 m
Point 14	170 m	-2 m
Point 15	170 m	1,25 m
Point 16	151 m	1 m
Point 17	121,5 m	1 m
Point 18	61 m	0,5 m
Point 19	34 m	0,5 m
Point 20	34 m	-0,5 m
Point 21	139 m	-0,5 m

Point 22	177 m	-3 m
Point 23	180 m	-3,5 m
Point 24	203,5 m	-1,5 m
Point 25	216 m	-2 m
Point 26	242,5 m	-6,5 m
Point 27	251 m	-7 m
Point 28	180 m	-6,045455 m

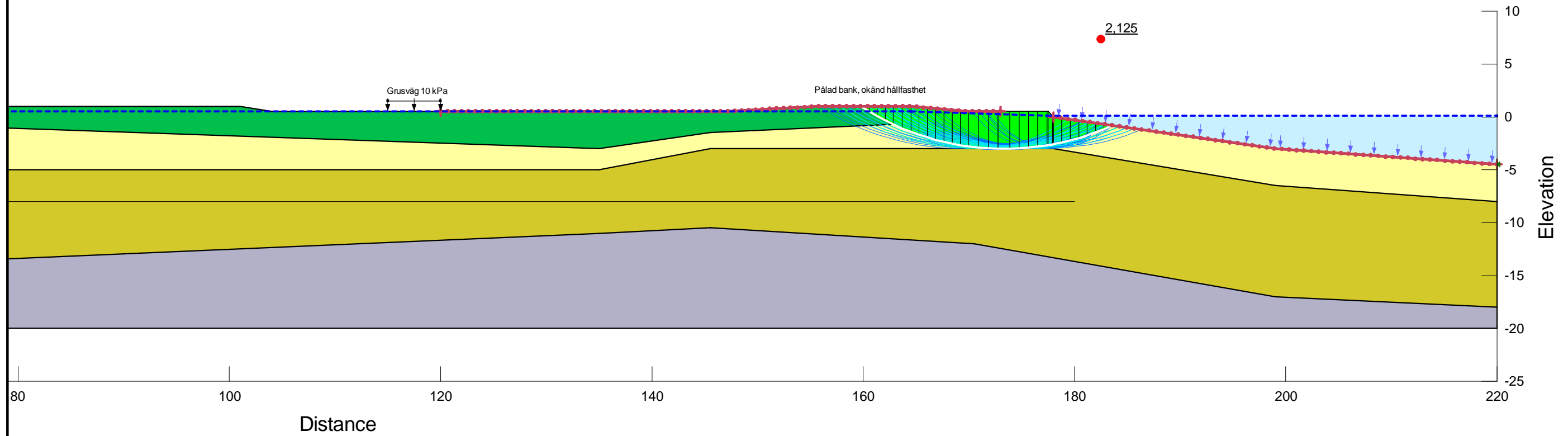
Regions

	Material	Points	Area
Region 1	Morän	1;2;3;4;5;6;7	2 034,6 m ²
Region 2	Lera (Komb)	8;28;9;10;3;2;1;7;6;11;12	1 229,9 m ²
Region 3	Fyllning	13;14;15;16;17;18;19;20;21	203,63 m ²
Region 4	Gyttja (Komb)	22;23;24;25;26;27;10;9;28;8;12;11;20;21;13;14	703,75 m ²

Title: Gamleby Hamn, section G, odränerad
 Created By: Horndahl, Jacob
 Date: 2019-09-25
 Method: Morgenstern-Price
 Scale: 1:400 (A3)

Factor of Safety	
■	≤ 1,500 - 1,600
■	1,600 - 1,700
■	1,700 - 1,800
■	1,800 - 1,900
■	1,900 - 2,000
■	2,000 - 2,100
■	2,100 - 2,200
■	2,200 - 2,300
■	2,300 - 2,400
■	≥ 2,400

Color	Name	Unit Weight (kN/m³)	C-Top of Layer (kPa)	C-Rate of Change ((kN/m²)/m)	C-Maximum (kPa)	Cohesion (kPa)	Cohesion' (kPa)	Phi' (°)	Phi-B (°)	Constant Unit Wt. Above Water Table (kN/m³)	Piezometric Line
■	Fyllning	20					0	32	0	18	1
■	Gyttja	12,5				5					1
■	Lera	15	10	1,54	20						1
■	Morän	22					0	35	0	20	1

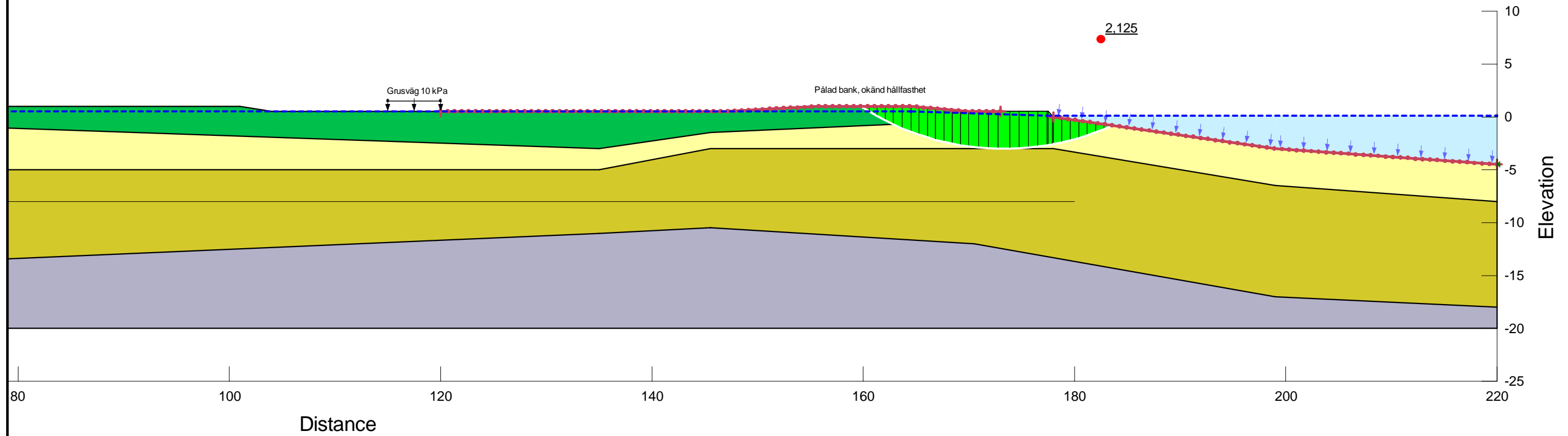


Gamleby Hamn Sektion G, odränerad	
Sektion G_odrän.gsz	
2019-09-25	1:400

Title: Gamleby Hamn, section G, odränerad
 Created By: Horndahl, Jacob
 Date: 2019-09-25
 Method: Morgenstern-Price
 Scale: 1:400 (A3)

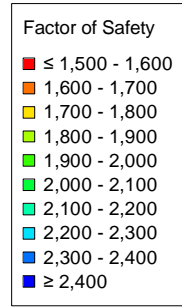
Factor of Safety	
■	≤ 1,500 - 1,600
■	1,600 - 1,700
■	1,700 - 1,800
■	1,800 - 1,900
■	1,900 - 2,000
■	2,000 - 2,100
■	2,100 - 2,200
■	2,200 - 2,300
■	2,300 - 2,400
■	≥ 2,400

Color	Name	Unit Weight (kN/m³)	C-Top of Layer (kPa)	C-Rate of Change ((kN/m²)/m)	C-Maximum (kPa)	Cohesion (kPa)	Cohesion' (kPa)	Phi' (°)	Phi-B (°)	Constant Unit Wt. Above Water Table (kN/m³)	Piezometric Line
■	Fyllning	20					0	32	0	18	1
■	Gyttja	12,5				5					1
■	Lera	15	10	1,54	20						1
■	Morän	22					0	35	0	20	1

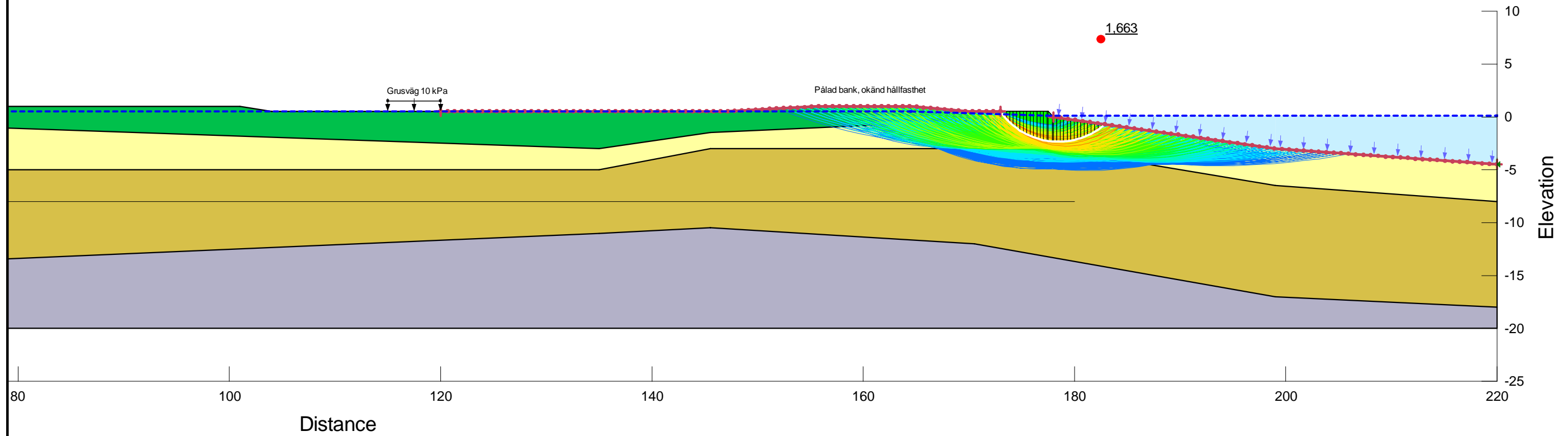


Gamleby Hamn Sektion G, odränerad	
Sektion G_odrän.gsz	
2019-09-25	1:400

Title: Gamleby Hamn, section G, kombinerad
 Created By: Horndahl, Jacob
 Date: 2019-09-25
 Method: Morgenstern-Price
 Scale: 1:400 (A3)



Color	Name	Unit Weight (kN/m ³)	Cohesion' (kPa)	Phi' (°)	C-Top of Layer (kPa)	C-Rate of Change ((kN/m ²)/m)	Cu-Top of Layer (kPa)	Cu-Rate of Change ((kN/m ²)/m)	C/Cu Ratio	Phi-B (°)	Constant Unit Wt. Above Water Table (kN/m ³)	Piezometric Line
Green	Fyllning	20	0	32						0	18	1
Yellow	Gyttja (Komb)	12,5		20	0,5	0	5	0	0,1			1
Olive	Lera (Komb)	15		25	1	0,154	10	1,54	0,1			1
Grey	Morän	22	0	35						0	20	1

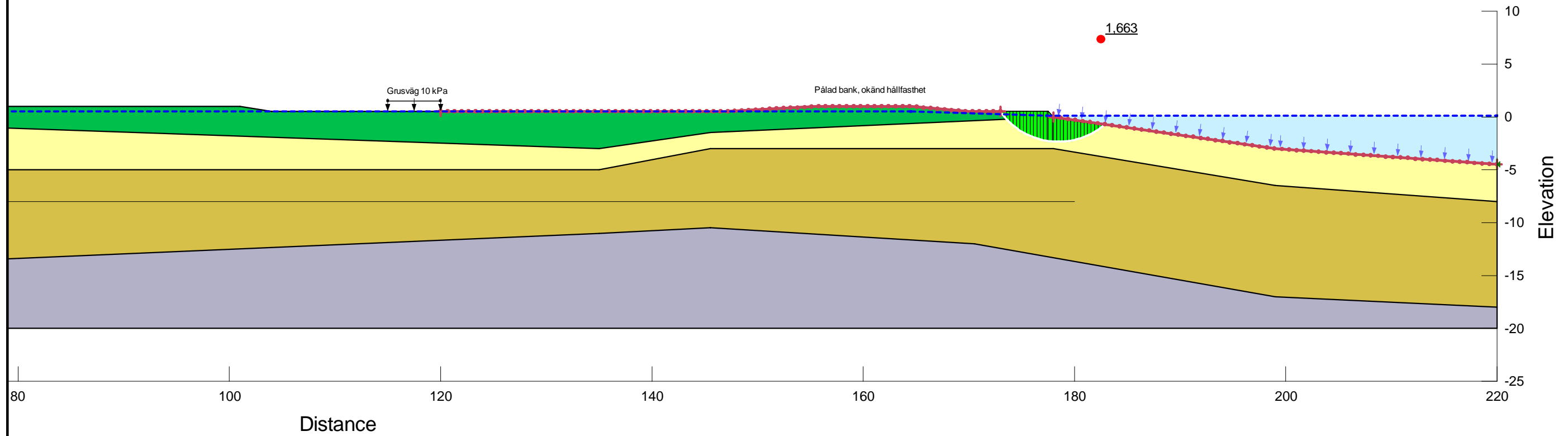


Gamleby Hamn Sektion G, kombinerad	
Sektion G_kombinerad.gsz	
2019-09-25	1:400

Title: Gamleby Hamn, section G, kombinerad
 Created By: Horndahl, Jacob
 Date: 2019-09-25
 Method: Morgenstern-Price
 Scale: 1:400 (A3)

Factor of Safety	
■	≤ 1,500 - 1,600
■	1,600 - 1,700
■	1,700 - 1,800
■	1,800 - 1,900
■	1,900 - 2,000
■	2,000 - 2,100
■	2,100 - 2,200
■	2,200 - 2,300
■	2,300 - 2,400
■	≥ 2,400

Color	Name	Unit Weight (kN/m³)	Cohesion' (kPa)	Phi' (°)	C-Top of Layer (kPa)	C-Rate of Change ((kN/m²)/m)	Cu-Top of Layer (kPa)	Cu-Rate of Change ((kN/m²)/m)	C/Cu Ratio	Phi-B (°)	Constant Unit Wt. Above Water Table (kN/m³)	Piezometric Line
■	Fyllning	20	0	32						0	18	1
■	Gyttja (Komb)	12,5		20	0,5	0	5	0	0,1			1
■	Lera (Komb)	15		25	1	0,154	10	1,54	0,1			1
■	Morän	22	0	35						0	20	1



Gamleby Hamn Sektion G, kombinerad	
Sektion G_kombinerad.gsz	
2019-09-25	1:400

Gamleby Hamn Sektion G, odränerad

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File Information

File Version: 9.01
Title: Gamleby Hamn, section G, odränerad
Created By: Horndahl, Jacob
Last Edited By: Horndahl, Jacob
Revision Number: 111
Date: 2019-09-25
Time: 10:42:18
Tool Version: 9.1.1.16749
File Name: Sektion G_odrän.gsz
Directory: O:\JKP\290261\G_Berakningar\Slope\Sektion G\

Project Settings

Unit System: International System of Units (SI)

Analysis Settings

Gamleby Hamn Sektion G, odränerad

Kind: SLOPE/W

Method: Morgenstern-Price

Settings

Side Function

Interslice force function option: Half-Sine

PWP Conditions from: Piezometric Line

Apply Phreatic Correction: No

Use Staged Rapid Drawdown: No

Unit Weight of Water: 9,807 kN/m³

Slip Surface

Direction of movement: Left to Right

Use Passive Mode: No

Slip Surface Option: Entry and Exit

Critical slip surfaces saved: 1

Optimize Critical Slip Surface Location: No

Tension Crack Option: (none)

Distribution

F of S Calculation Option: Constant

Advanced

Geometry Settings

Minimum Slip Surface Depth: 0,1 m

Number of Slices: 30

Factor of Safety Convergence Settings

Maximum Number of Iterations: 100

Tolerable difference in F of S: 0,001

Solution Settings

Search Method: Root Finder

Tolerable difference between starting and converged F of S: 3

Maximum iterations to calculate converged lambda: 20

Max Absolute Lambda: 2

Materials

Fyllning

Model: Mohr-Coulomb
Unit Weight: 20 kN/m³
Cohesion': 0 kPa
Phi': 32 °
Phi-B: 0 °
Constant Unit Wt. Above Water Table: 18 kN/m³
Pore Water Pressure
Piezometric Line: 1

Gyttja

Model: Undrained (Phi=0)
Unit Weight: 12,5 kN/m³
Cohesion: 5 kPa
Pore Water Pressure
Piezometric Line: 1

Lera

Model: S=f(depth)
Unit Weight: 15 kN/m³
C-Top of Layer: 10 kPa
C-Rate of Change: 1,54 (kN/m²)/m
C-Maximum: 20 kPa
Pore Water Pressure
Piezometric Line: 1

Morän

Model: Mohr-Coulomb
Unit Weight: 22 kN/m³
Cohesion': 0 kPa
Phi': 35 °
Phi-B: 0 °
Constant Unit Wt. Above Water Table: 20 kN/m³
Pore Water Pressure
Piezometric Line: 1

Slip Surface Entry and Exit

Left Type: Range
Left-Zone Left Coordinate: (120; 0,5) m
Left-Zone Right Coordinate: (173; 0,5) m
Left-Zone Increment: 80
Right Type: Range
Right-Zone Left Coordinate: (178; 0) m
Right-Zone Right Coordinate: (220; -4,5) m
Right-Zone Increment: 60
Radius Increments: 8

Slip Surface Limits

Left Coordinate: (0; 5) m
Right Coordinate: (220; -4,5) m

Piezometric Lines

Piezometric Line 1

Coordinates

	X	Y
Coordinate 1	0 m	2,5 m
Coordinate 2	33 m	0,5 m
Coordinate 3	164,5 m	0,5 m
Coordinate 4	177,4 m	0,1 m
Coordinate 5	220 m	0,1 m

Surcharge Loads

Surcharge Load 1

Surcharge (Unit Weight): 10 kN/m³

Direction: Vertical

Coordinates

	X	Y
	0 m	6 m
	10 m	5,5 m

Surcharge Load 2

Surcharge (Unit Weight): 10 kN/m³

Direction: Vertical

Coordinates

	X	Y
	115 m	1,5 m
	120 m	1,5 m

Points

	X	Y
Point 1	220 m	-4,5 m
Point 2	199 m	-3 m
Point 3	178 m	0 m
Point 4	145,5 m	-1,5 m
Point 5	135 m	-3 m
Point 6	77,5 m	-1 m
Point 7	47 m	-0,5 m
Point 8	24,5 m	0 m
Point 9	0 m	1 m
Point 10	0 m	-3,5 m
Point 11	47 m	-3,5 m
Point 12	77,5 m	-5 m
Point 13	135 m	-5 m
Point 14	145,5 m	-3 m
Point 15	178 m	-3 m
Point 16	199 m	-6,5 m
Point 17	220 m	-8 m

Point 18	177,5 m	0,5 m
Point 19	170 m	0,5 m
Point 20	164,5 m	1 m
Point 21	155,5 m	1 m
Point 22	147 m	0,5 m
Point 23	132 m	0,5 m
Point 24	104 m	0,5 m
Point 25	101 m	1 m
Point 26	77,5 m	1 m
Point 27	62 m	1 m
Point 28	44 m	1 m
Point 29	33 m	1,5 m
Point 30	17,5 m	3 m
Point 31	14 m	3,5 m
Point 32	10 m	4,5 m
Point 33	0 m	5 m
Point 34	0 m	-7 m
Point 35	24,5 m	-7,5 m
Point 36	47 m	-8,5 m
Point 37	77,5 m	-13,5 m
Point 38	135 m	-11 m
Point 39	145,5 m	-10,5 m
Point 40	170,5 m	-12 m
Point 41	199 m	-17 m
Point 42	220 m	-18 m
Point 43	0 m	-20 m
Point 44	220 m	-20 m

Regions

	Material	Points	Area
Region 1	Gyttja	1;2;3;4;5;6;7;8;9;10;11;12;13;14;15;16;17	683,63 m ²
Region 2	Fyllning	9;8;7;6;5;4;3;18;19;20;21;22;23;24;25;26;27;28;29;30;31;32;33	406,88 m ²
Region 3	Lera	10;34;35;36;37;38;39;40;41;42;17;16;15;14;13;12;11	1 599,3 m ²
Region 4	Morän	34;43;44;42;41;40;39;38;37;36;35	1 827,6 m ²

Gamleby Hamn Sektion G, kombinerad

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File Information

File Version: 9.01
Title: Gamleby Hamn, section G, kombinerad
Created By: Horndahl, Jacob
Last Edited By: Horndahl, Jacob
Revision Number: 113
Date: 2019-09-25
Time: 10:43:14
Tool Version: 9.1.1.16749
File Name: Sektion G_kombinerad.gsz
Directory: O:\JKP\290261\G_Berakningar\Slope\Sektion G\
Last Solved Date: 2019-09-25
Last Solved Time: 10:43:52

Project Settings

Unit System: International System of Units (SI)

Analysis Settings

Gamleby Hamn Sektion G, kombinerad

Kind: SLOPE/W

Method: Morgenstern-Price

Settings

Side Function

Interslice force function option: Half-Sine

PWP Conditions from: Piezometric Line

Apply Phreatic Correction: No

Use Staged Rapid Drawdown: No

Unit Weight of Water: 9,807 kN/m³

Slip Surface

Direction of movement: Left to Right

Use Passive Mode: No

Slip Surface Option: Entry and Exit

Critical slip surfaces saved: 1

Optimize Critical Slip Surface Location: No

Tension Crack Option: (none)

Distribution

F of S Calculation Option: Constant

Advanced

Geometry Settings

Minimum Slip Surface Depth: 0,1 m

Number of Slices: 30

Factor of Safety Convergence Settings

Maximum Number of Iterations: 100

Tolerable difference in F of S: 0,001

Solution Settings

Search Method: Root Finder

Tolerable difference between starting and converged F of S: 3

Maximum iterations to calculate converged lambda: 20

Max Absolute Lambda: 2

Materials

Fyllning

Model: Mohr-Coulomb
Unit Weight: 20 kN/m³
Cohesion': 0 kPa
Phi': 32 °
Phi-B: 0 °
Constant Unit Wt. Above Water Table: 18 kN/m³
Pore Water Pressure
Piezometric Line: 1

Morän

Model: Mohr-Coulomb
Unit Weight: 22 kN/m³
Cohesion': 0 kPa
Phi': 35 °
Phi-B: 0 °
Constant Unit Wt. Above Water Table: 20 kN/m³
Pore Water Pressure
Piezometric Line: 1

Gyttja (Komb)

Model: Combined, S=f(depth)
Unit Weight: 12,5 kN/m³
Phi': 20 °
C-Top of Layer: 0,5 kPa
C-Rate of Change: 0 (kN/m²)/m
Cu-Top of Layer: 5 kPa
Cu-Rate of Change: 0 (kN/m²)/m
C/Cu Ratio: 0,1
Pore Water Pressure
Piezometric Line: 1

Lera (Komb)

Model: Combined, S=f(depth)
Unit Weight: 15 kN/m³
Phi': 25 °
C-Top of Layer: 1 kPa
C-Rate of Change: 0,154 (kN/m²)/m
Cu-Top of Layer: 10 kPa
Cu-Rate of Change: 1,54 (kN/m²)/m
C/Cu Ratio: 0,1
Pore Water Pressure
Piezometric Line: 1

Slip Surface Entry and Exit

Left Type: Range
Left-Zone Left Coordinate: (120; 0,5) m
Left-Zone Right Coordinate: (173; 0,5) m
Left-Zone Increment: 80
Right Type: Range
Right-Zone Left Coordinate: (178; 0) m

Right-Zone Right Coordinate: (220; -4,5) m

Right-Zone Increment: 60

Radius Increments: 8

Slip Surface Limits

Left Coordinate: (0; 5) m

Right Coordinate: (220; -4,5) m

Piezometric Lines

Piezometric Line 1

Coordinates

	X	Y
Coordinate 1	0 m	2,5 m
Coordinate 2	33 m	0,5 m
Coordinate 3	164,5 m	0,5 m
Coordinate 4	177,4 m	0,1 m
Coordinate 5	220 m	0,1 m

Surcharge Loads

Surcharge Load 1

Surcharge (Unit Weight): 10 kN/m³

Direction: Vertical

Coordinates

	X	Y
	0 m	6 m
	10 m	5,5 m

Surcharge Load 2

Surcharge (Unit Weight): 10 kN/m³

Direction: Vertical

Coordinates

	X	Y
	115 m	1,5 m
	120 m	1,5 m

Points

	X	Y
Point 1	220 m	-4,5 m
Point 2	199 m	-3 m
Point 3	178 m	0 m
Point 4	145,5 m	-1,5 m
Point 5	135 m	-3 m
Point 6	77,5 m	-1 m
Point 7	47 m	-0,5 m
Point 8	24,5 m	0 m

Point 9	0 m	1 m
Point 10	0 m	-3,5 m
Point 11	47 m	-3,5 m
Point 12	77,5 m	-5 m
Point 13	135 m	-5 m
Point 14	145,5 m	-3 m
Point 15	178 m	-3 m
Point 16	199 m	-6,5 m
Point 17	220 m	-8 m
Point 18	177,5 m	0,5 m
Point 19	170 m	0,5 m
Point 20	164,5 m	1 m
Point 21	155,5 m	1 m
Point 22	147 m	0,5 m
Point 23	132 m	0,5 m
Point 24	104 m	0,5 m
Point 25	101 m	1 m
Point 26	77,5 m	1 m
Point 27	62 m	1 m
Point 28	44 m	1 m
Point 29	33 m	1,5 m
Point 30	17,5 m	3 m
Point 31	14 m	3,5 m
Point 32	10 m	4,5 m
Point 33	0 m	5 m
Point 34	0 m	-7 m
Point 35	24,5 m	-7,5 m
Point 36	47 m	-8,5 m
Point 37	77,5 m	-13,5 m
Point 38	135 m	-11 m
Point 39	145,5 m	-10,5 m
Point 40	170,5 m	-12 m
Point 41	199 m	-17 m
Point 42	220 m	-18 m
Point 43	0 m	-20 m
Point 44	220 m	-20 m

Regions

	Material	Points	Area
Region 1	Gyttja (Komb)	1;2;3;4;5;6;7;8;9;10;11;12;13;14;15;16;17	683,63 m ²
Region 2	Fyllning	9;8;7;6;5;4;3;18;19;20;21;22;23;24;25;26;27;28;29;30;31;32;33	406,88 m ²
Region 3	Lera (Komb)	10;34;35;36;37;38;39;40;41;42;17;16;15;14;13;12;11	1 599,3 m ²
Region 4	Morän	34;43;44;42;41;40;39;38;37;36;35	1 827,6 m ²

Slip Results

Slip Surfaces Analysed: 44084 of 44469 converged

Current Slip Surface

Slip Surface: 43 988

Factor of Safety: 1,663

Volume: 16,820816 m³

Weight: 227,76928 kN
 Resisting Moment: 238,50855 kN·m
 Activating Moment: 143,39654 kN·m
 Resisting Force: 31,823417 kN
 Activating Force: 19,131161 kN
 Slip Rank: 1 of 44 469 slip surfaces
 Exit: (182,88156; -0,69736508) m
 Entry: (173; 0,5) m
 Radius: 6,7189477 m
 Center: (178,48375; 4,3823586) m

Slip Slices

	X	Y	PWP	Base Normal Stress	Frictional Strength	Cohesive Strength	Suction Strength	Base Material
Slice 1	173,10068 m	0,36509531 m	-1,2923953 kPa	1,6102005 kPa	1,0061649 kPa	0 kPa	0 kPa	Fyllning
Slice 2	173,38761 m	0,012953797 m	2,0738019 kPa	6,9355135 kPa	3,0379346 kPa	0 kPa	0 kPa	Fyllning
Slice 3	173,73329 m	-0,36384819 m	5,6639802 kPa	13,234134 kPa	2,7553105 kPa	0,5 kPa	0 kPa	Gyttja (Komb)
Slice 4	174,05213 m	-0,66343076 m	8,5050281 kPa	16,722282 kPa	2,9908358 kPa	0,5 kPa	0 kPa	Gyttja (Komb)
Slice 5	174,37098 m	-0,9269423 m	10,992327 kPa	19,871814 kPa	3,2318688 kPa	0,5 kPa	0 kPa	Gyttja (Komb)
Slice 6	174,68982 m	-1,1595746 m	13,176794 kPa	22,571661 kPa	3,4194519 kPa	0,5 kPa	0 kPa	Gyttja (Komb)
Slice 7	175,00867 m	-1,3651042 m	15,095465 kPa	25,064653 kPa	3,6284879 kPa	0,5 kPa	0 kPa	Gyttja (Komb)
Slice 8	175,32751 m	-1,5463663 m	16,776143 kPa	27,206393 kPa	3,7963006 kPa	0,5 kPa	0 kPa	Gyttja (Komb)
Slice 9	175,64636 m	-1,7055391 m	18,240193 kPa	29,212066 kPa	3,993435 kPa	0,5 kPa	0 kPa	Gyttja (Komb)
Slice 10	175,9652 m	-1,844324 m	19,504298 kPa	30,903542 kPa	4,1489856 kPa	0,5 kPa	0 kPa	Gyttja (Komb)
Slice 11	176,28404 m	-1,9640634 m	20,581624 kPa	32,532251 kPa	4,3496726 kPa	0,5 kPa	0 kPa	Gyttja (Komb)
Slice 12	176,60289 m	-2,0658218 m	21,48261 kPa	33,861661 kPa	0 kPa	5 kPa	0 kPa	Gyttja (Komb)
Slice 13	176,92173 m	-2,150442 m	22,215522 kPa	35,155937 kPa	0 kPa	5 kPa	0 kPa	Gyttja (Komb)
Slice 14	177,24058 m	-2,218585 m	22,786842 kPa	36,152612 kPa	0 kPa	5 kPa	0 kPa	Gyttja (Komb)
Slice 15	177,45 m	-2,2563952 m	23,109167 kPa	36,82579 kPa	0 kPa	5 kPa	0 kPa	Gyttja (Komb)
Slice 16	177,7 m	-2,2876816 m	23,415994 kPa	33,85967 kPa	3,8011873 kPa	0,5 kPa	0 kPa	Gyttja (Komb)
Slice 17	177,95 m	-2,315167 m	23,685543 kPa	30,298148 kPa	2,4067913 kPa	0,5 kPa	0 kPa	Gyttja (Komb)
Slice 18	178,16272 m	-2,3269377 m	23,800978 kPa	30,019482 kPa	2,2633505 kPa	0,5 kPa	0 kPa	Gyttja (Komb)
Slice 19	178,48816 m	-2,334617 m	23,876289 kPa	30,274141 kPa	2,3286276 kPa	0,5 kPa	0 kPa	Gyttja (Komb)
Slice 20	178,81359 m	-2,3265103 m	23,796787 kPa	30,322955 kPa	2,3753309 kPa	0,5 kPa	0 kPa	Gyttja (Komb)
Slice 21	179,13903 m	-2,3025602 m	23,561908 kPa	30,154739 kPa	2,3995943 kPa	0,5 kPa	0 kPa	Gyttja (Komb)
Slice 22	179,46447 m	-2,2625948 m	23,169967 kPa	29,75716 kPa	2,3975423 kPa	0,5 kPa	0 kPa	Gyttja (Komb)

Slice 23	179,7899 m	-2,2063219 m	22,618099 kPa	29,117074 kPa	2,3654335 kPa	0,5 kPa	0 kPa	Gyttja (Komb)
Slice 24	180,11534 m	-2,1333181 m	21,90215 kPa	28,220807 kPa	2,2998028 kPa	0,5 kPa	0 kPa	Gyttja (Komb)
Slice 25	180,44078 m	-2,0430114 m	21,016513 kPa	27,054354 kPa	2,1975945 kPa	0,5 kPa	0 kPa	Gyttja (Komb)
Slice 26	180,76621 m	-1,9346576 m	19,953887 kPa	25,603467 kPa	2,0562789 kPa	0,5 kPa	0 kPa	Gyttja (Komb)
Slice 27	181,09165 m	-1,8073058 m	18,704948 kPa	23,85356 kPa	1,8739416 kPa	0,5 kPa	0 kPa	Gyttja (Komb)
Slice 28	181,41709 m	-1,6597505 m	17,257873 kPa	21,789387 kPa	1,6493362 kPa	0,5 kPa	0 kPa	Gyttja (Komb)
Slice 29	181,74253 m	-1,4904626 m	15,597667 kPa	19,394374 kPa	1,3818886 kPa	0,5 kPa	0 kPa	Gyttja (Komb)
Slice 30	182,06796 m	-1,2974898 m	13,705182 kPa	16,649488 kPa	1,0716398 kPa	0,5 kPa	0 kPa	Gyttja (Komb)
Slice 31	182,3934 m	-1,0783071 m	11,555658 kPa	13,531396 kPa	0,71910969 kPa	0,5 kPa	0 kPa	Gyttja (Komb)
Slice 32	182,71884 m	-0,82958571 m	9,1164471 kPa	10,009534 kPa	0,32505704 kPa	0,5 kPa	0 kPa	Gyttja (Komb)