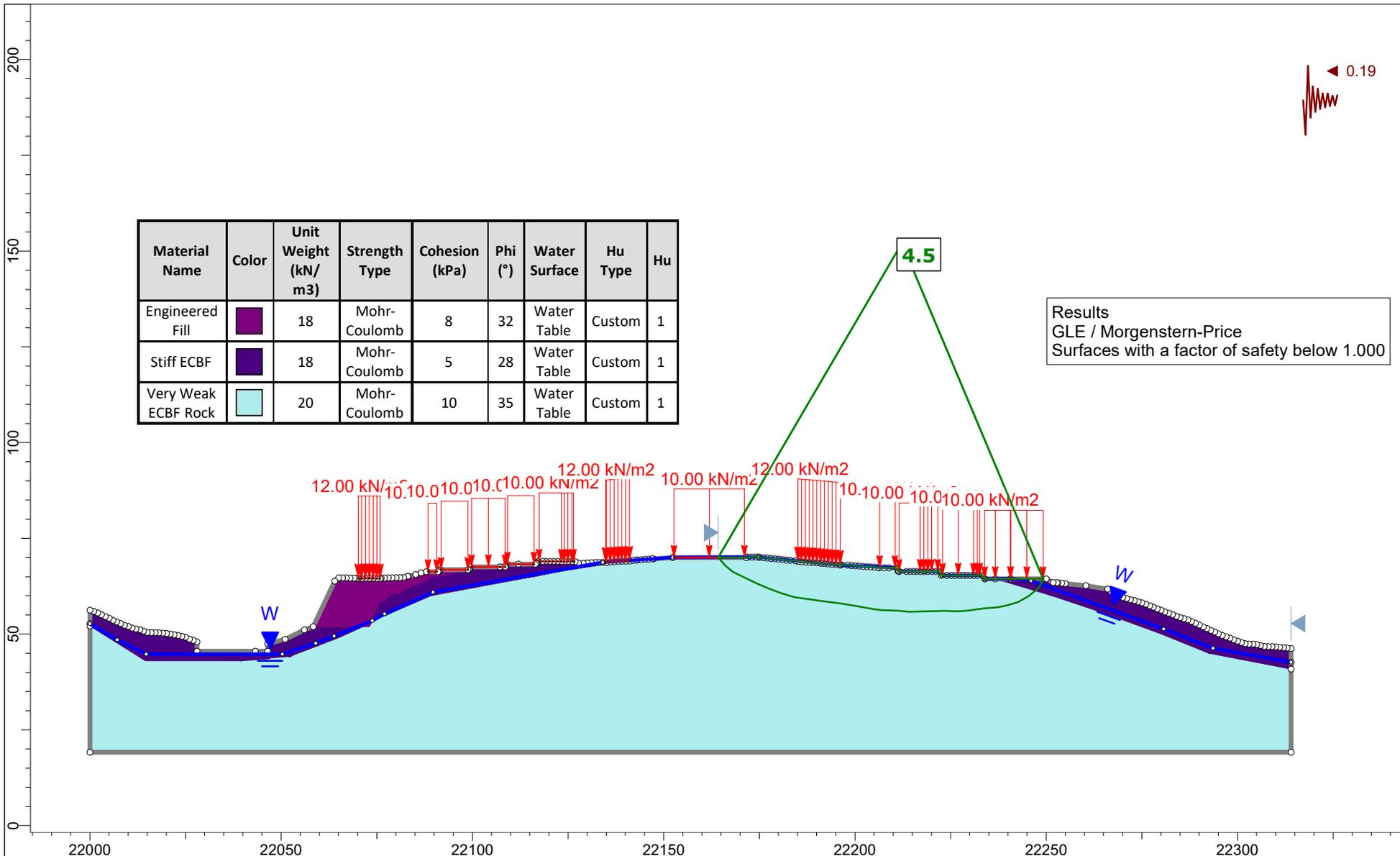


Material Name	Color	Unit Weight (kN/m <sup>3</sup> )	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu	Ru Value
Engineered Fill	Dark Purple	18	Mohr-Coulomb	8	32	Water Table	Custom	1	
Stiff ECBF	Medium Purple	18	Mohr-Coulomb	5	28	Water Table	Custom	1	
Stiff ECBF (Ru=0.44)	Dark Purple with Diagonal Lines	18	Mohr-Coulomb	5	28	None			0.44
Very Weak ECBF Rock	Light Blue	20	Mohr-Coulomb	10	35	Water Table	Custom	1	

Results  
GLE / Morgenstern-Price  
Surfaces with a factor of safety below 1.300

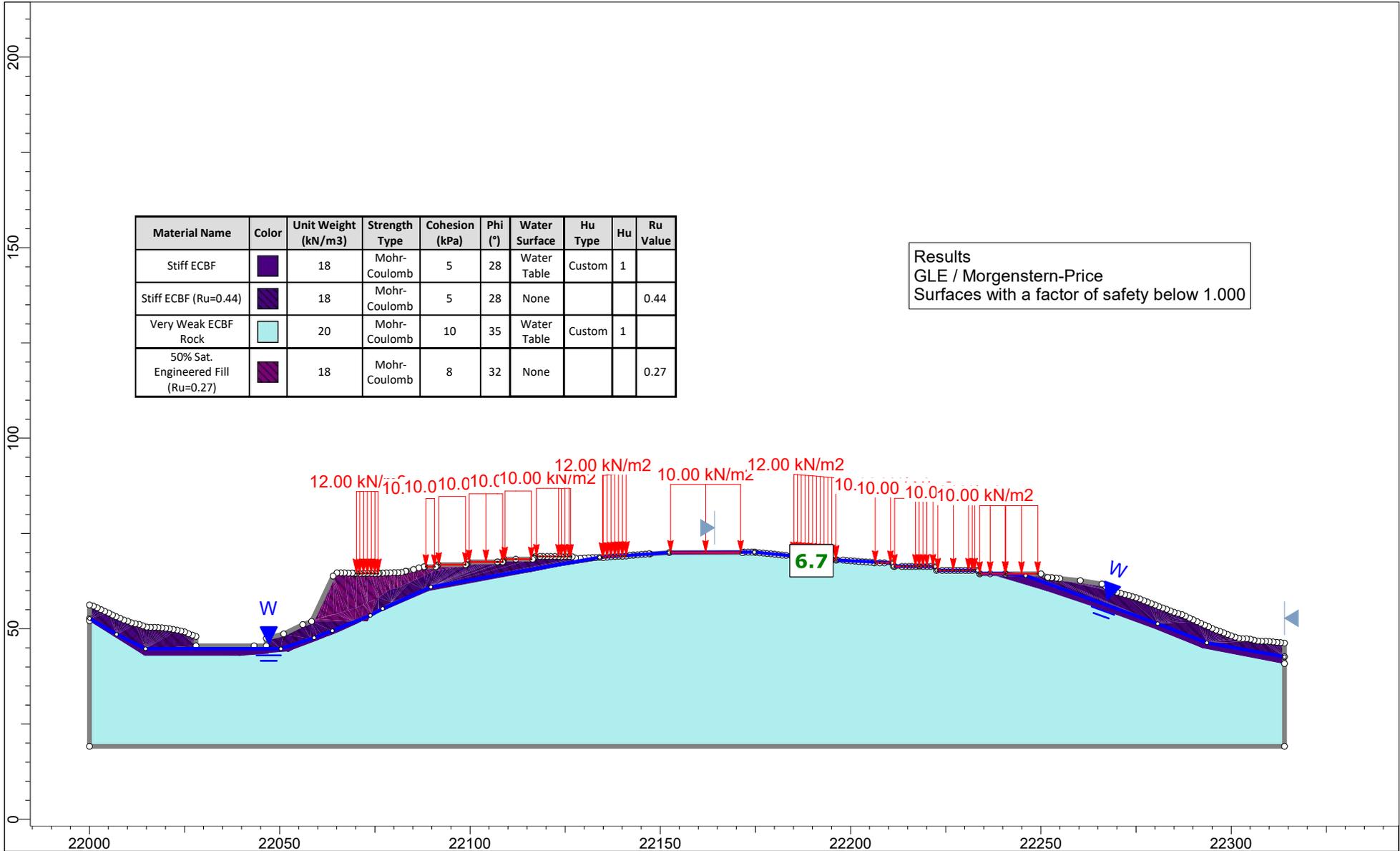
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	Group		Section V - Proposed GL (L-R)	Scenario Extreme (Worst Case GW)
	Drawn By		LKB	Company Riley Consultants Ltd
	Date		19/12/2025	File Name Section V.sldm



Material Name	Color	Unit Weight (kN/m <sup>3</sup> )	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu
Engineered Fill		18	Mohr-Coulomb	8	32	Water Table	Custom	1
Stiff ECBF		18	Mohr-Coulomb	5	28	Water Table	Custom	1
Very Weak ECBF Rock		20	Mohr-Coulomb	10	35	Water Table	Custom	1

Results  
GLE / Morgenstern-Price  
Surfaces with a factor of safety below 1.000

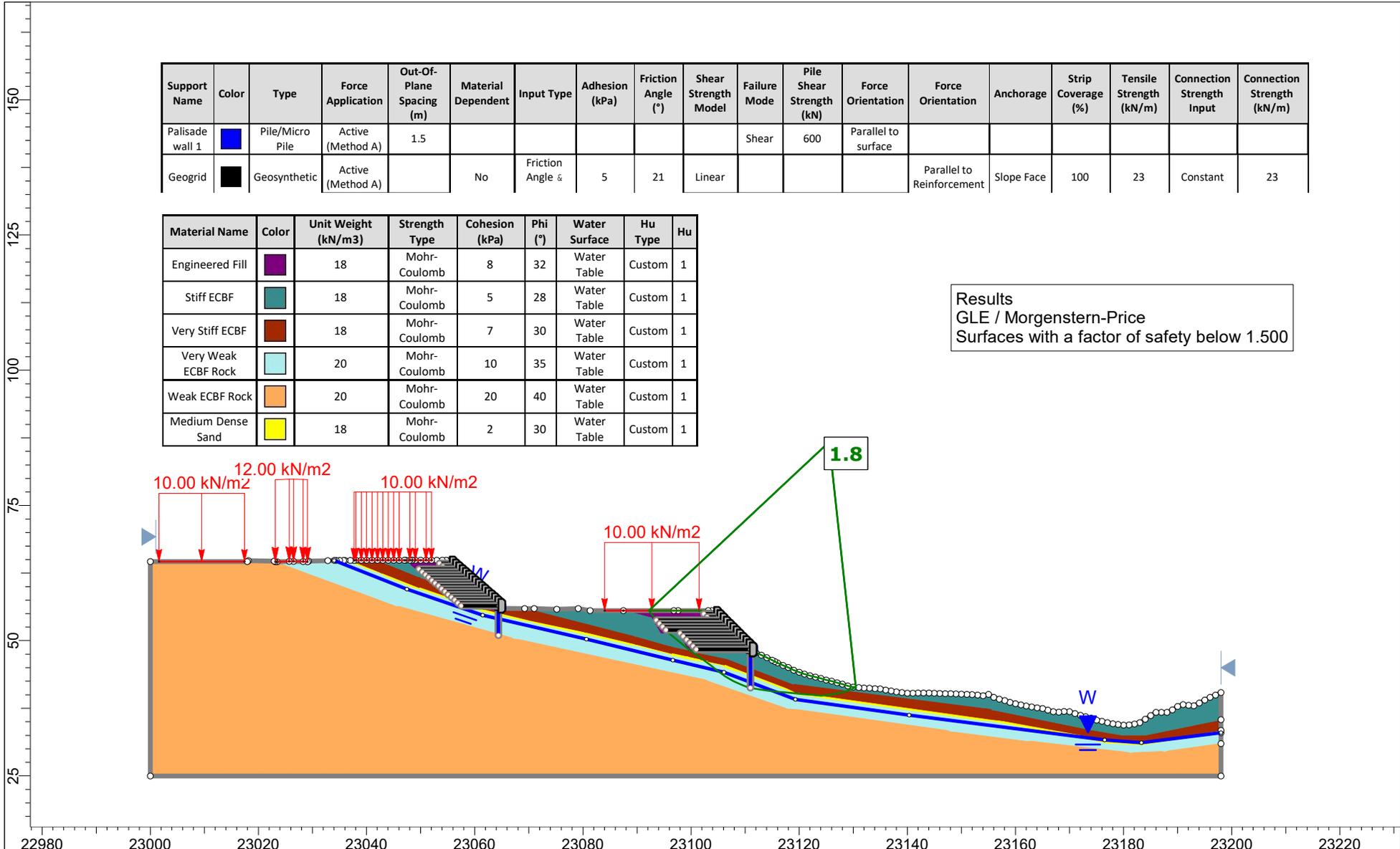
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	Group		Section V - Proposed GL (L-R)	Scenario
	Drawn By		LKB	Company
	Date		19/12/2025	File Name
			Riley Consultants Ltd	
			Section V.slm	



Material Name	Color	Unit Weight (kN/m3)	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu	Ru Value
Stiff ECBF		18	Mohr-Coulomb	5	28	Water Table	Custom	1	
Stiff ECBF (Ru=0.44)		18	Mohr-Coulomb	5	28	None			0.44
Very Weak ECBF Rock		20	Mohr-Coulomb	10	35	Water Table	Custom	1	
50% Sat. Engineered Fill (Ru=0.27)		18	Mohr-Coulomb	8	32	None			0.27

Results  
GLE / Morgenstern-Price  
Surfaces with a factor of safety below 1.000

	Project		240065 - Russell Road, Waunui	
	Group		Section V - Proposed GL (L-R)	Scenario
	Drawn By		LKB	Company
	Date		19/12/2025	File Name
			Extreme (50% Fill Saturation)	
			Riley Consultants Ltd	
			Section V.slm	

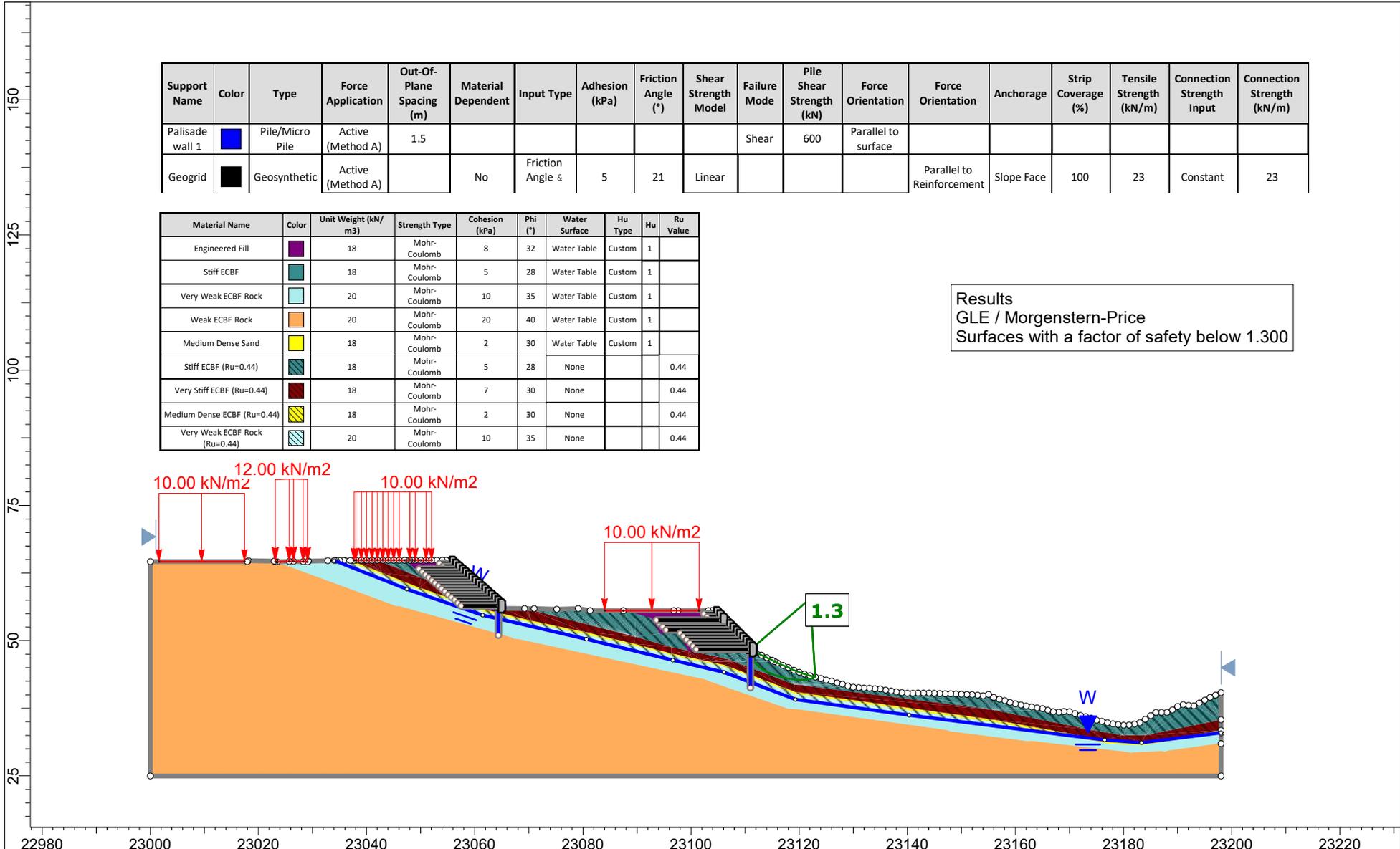


Support Name	Color	Type	Force Application	Out-Of-Plane Spacing (m)	Material Dependent	Input Type	Adhesion (kPa)	Friction Angle (°)	Shear Strength Model	Failure Mode	Pile Shear Strength (kN)	Force Orientation	Force Orientation	Anchorage	Strip Coverage (%)	Tensile Strength (kN/m)	Connection Strength Input	Connection Strength (kN/m)
Palisade wall 1	Blue	Pile/Micro Pile	Active (Method A)	1.5						Shear	600	Parallel to surface						
Geogrid	Black	Geosynthetic	Active (Method A)		No	Friction Angle &	5	21	Linear				Parallel to Reinforcement	Slope Face	100	23	Constant	23

Material Name	Color	Unit Weight (kN/m <sup>3</sup> )	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu
Engineered Fill	Purple	18	Mohr-Coulomb	8	32	Water Table	Custom	1
Stiff ECBF	Teal	18	Mohr-Coulomb	5	28	Water Table	Custom	1
Very Stiff ECBF	Brown	18	Mohr-Coulomb	7	30	Water Table	Custom	1
Very Weak ECBF Rock	Light Blue	20	Mohr-Coulomb	10	35	Water Table	Custom	1
Weak ECBF Rock	Orange	20	Mohr-Coulomb	20	40	Water Table	Custom	1
Medium Dense Sand	Yellow	18	Mohr-Coulomb	2	30	Water Table	Custom	1



Project		240065 - Russell Road, Waunui	
Group	Section W - Proposed GL & Remedials	Scenario	Normal (Measured GW)
Drawn By	LKB	Company	Riley Consultants Ltd
Date	19/12/2025	File Name	Section W.sldm

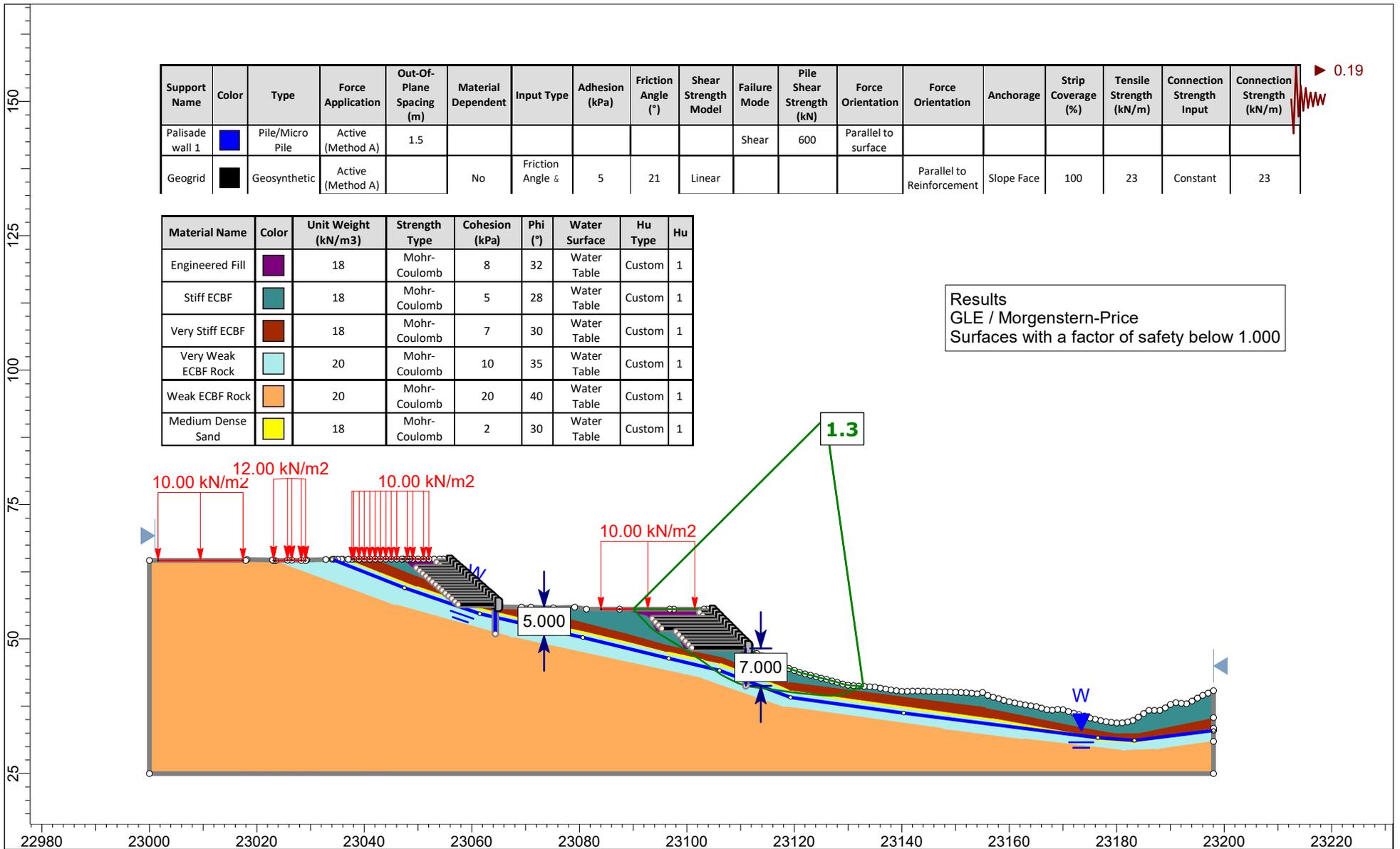


Support Name	Color	Type	Force Application	Out-Of-Plane Spacing (m)	Material Dependent	Input Type	Adhesion (kPa)	Friction Angle (°)	Shear Strength Model	Failure Mode	Pile Shear Strength (kN)	Force Orientation	Force Orientation	Anchorage	Strip Coverage (%)	Tensile Strength (kN/m)	Connection Strength Input	Connection Strength (kN/m)
Palisade wall 1	Blue	Pile/Micro Pile	Active (Method A)	1.5						Shear	600	Parallel to surface						
Geogrid	Black	Geosynthetic	Active (Method A)		No	Friction Angle &	5	21	Linear				Parallel to Reinforcement	Slope Face	100	23	Constant	23

Material Name	Color	Unit Weight (kN/m <sup>3</sup> )	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu	Ru Value
Engineered Fill	Purple	18	Mohr-Coulomb	8	32	Water Table	Custom	1	
Stiff ECBF	Teal	18	Mohr-Coulomb	5	28	Water Table	Custom	1	
Very Weak ECBF Rock	Light Blue	20	Mohr-Coulomb	10	35	Water Table	Custom	1	
Weak ECBF Rock	Orange	20	Mohr-Coulomb	20	40	Water Table	Custom	1	
Medium Dense Sand	Yellow	18	Mohr-Coulomb	2	30	Water Table	Custom	1	
Stiff ECBF (Ru=0.44)	Dark Teal	18	Mohr-Coulomb	5	28	None			0.44
Very Stiff ECBF (Ru=0.44)	Dark Red	18	Mohr-Coulomb	7	30	None			0.44
Medium Dense ECBF (Ru=0.44)	Yellow-Orange	18	Mohr-Coulomb	2	30	None			0.44
Very Weak ECBF Rock (Ru=0.44)	Light Blue-White	20	Mohr-Coulomb	10	35	None			0.44

Results  
GLE / Morgenstern-Price  
Surfaces with a factor of safety below 1.300

	Project		240065 - Russell Road, Waunui	
	Group	Section W - Proposed GL & Remedials	Scenario	Extreme (Worst Case GW)
	Drawn By	LKB	Company	Riley Consultants Ltd
	Date	19/12/2025	File Name	Section W.sldm

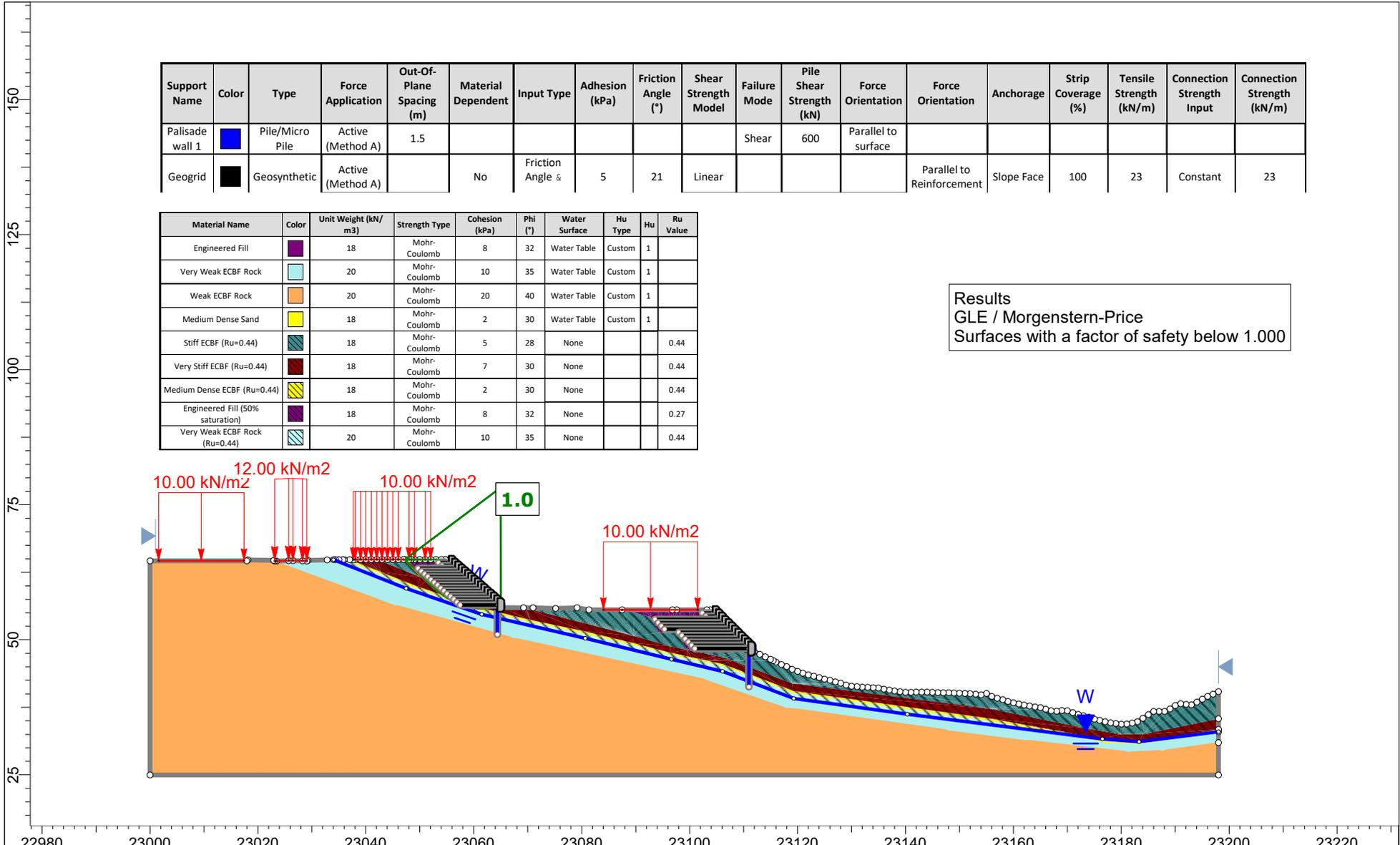


Support Name	Color	Type	Force Application	Out-Of-Plane Spacing (m)	Material Dependent	Input Type	Adhesion (kPa)	Friction Angle (°)	Shear Strength Model	Failure Mode	Pile Shear Strength (kN)	Force Orientation	Force Orientation	Anchorage	Strip Coverage (%)	Tensile Strength (kN/m)	Connection Strength Input	Connection Strength (kN/m)
Palisade wall 1	Blue	Pile/Micro Pile	Active (Method A)	1.5						Shear	600	Parallel to surface						
Geogrid	Black	Geosynthetic	Active (Method A)		No	Friction Angle &	5	21	Linear				Parallel to Reinforcement	Slope Face	100	23	Constant	23

Material Name	Color	Unit Weight (kN/m³)	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu
Engineered Fill	Purple	18	Mohr-Coulomb	8	32	Water Table	Custom	1
Stiff ECBF	Teal	18	Mohr-Coulomb	5	28	Water Table	Custom	1
Very Stiff ECBF	Brown	18	Mohr-Coulomb	7	30	Water Table	Custom	1
Very Weak ECBF Rock	Light Blue	20	Mohr-Coulomb	10	35	Water Table	Custom	1
Weak ECBF Rock	Orange	20	Mohr-Coulomb	20	40	Water Table	Custom	1
Medium Dense Sand	Yellow	18	Mohr-Coulomb	2	30	Water Table	Custom	1

Results  
GLE / Morgenstern-Price  
Surfaces with a factor of safety below 1.000

	Project		240065 - Russell Road, Waunui	
	Group	Section W - Proposed GL & Remedials	Scenario	Seismic (0.19g)
	Drawn By	LKB	Company	Riley Consultants Ltd
	Date	19/12/2025	File Name	Section W.sldm

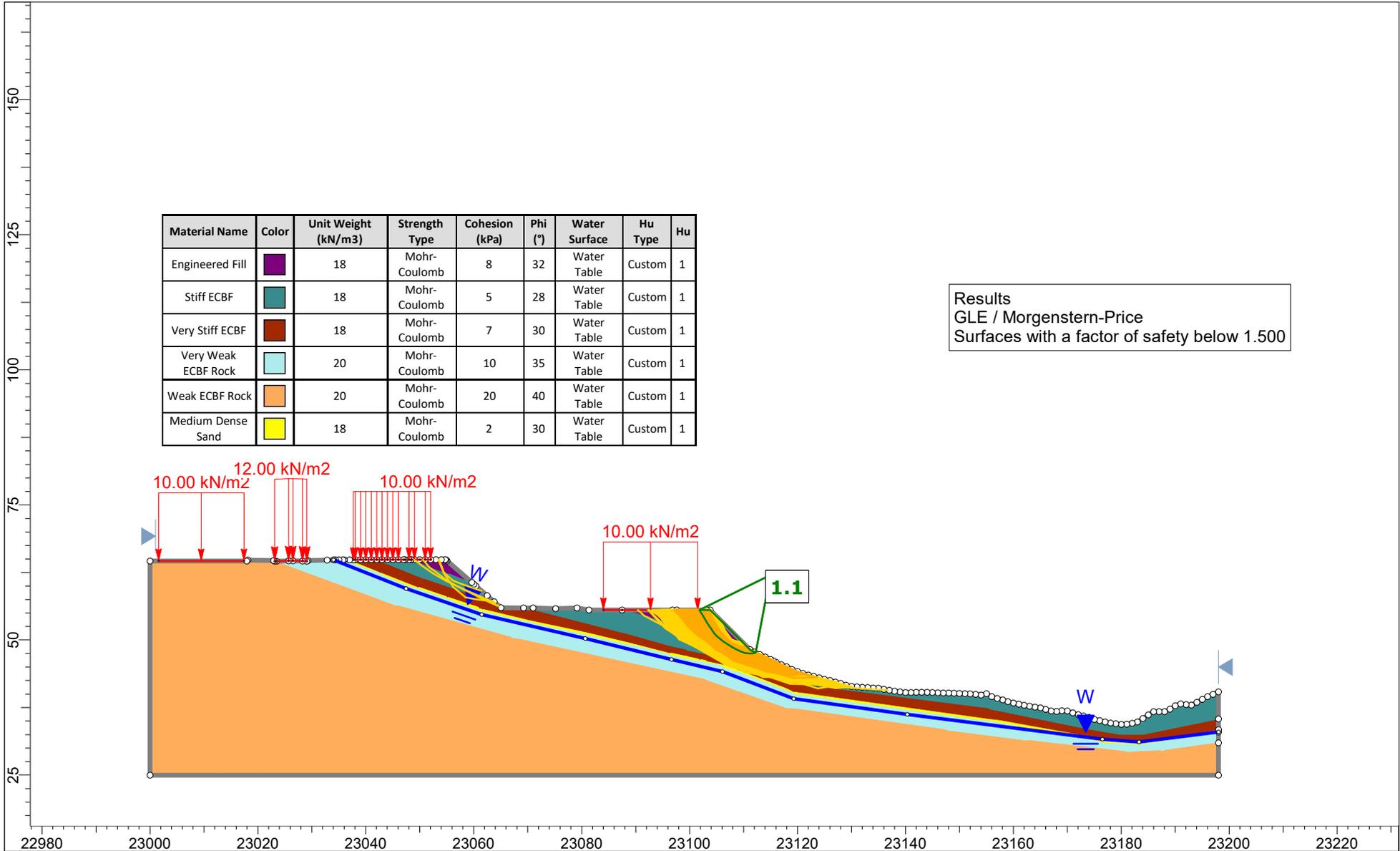


Support Name	Color	Type	Force Application	Out-Of-Plane Spacing (m)	Material Dependent	Input Type	Adhesion (kPa)	Friction Angle (°)	Shear Strength Model	Failure Mode	Pile Shear Strength (kN)	Force Orientation	Force Orientation	Anchorage	Strip Coverage (%)	Tensile Strength (kN/m)	Connection Strength Input	Connection Strength (kN/m)
Palisade wall 1	Blue	Pile/Micro Pile	Active (Method A)	1.5						Shear	600	Parallel to surface						
Geogrid	Black	Geosynthetic	Active (Method A)		No	Friction Angle &	5	21	Linear				Parallel to Reinforcement	Slope Face	100	23	Constant	23

Material Name	Color	Unit Weight (kN/m3)	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu	Ru Value
Engineered Fill	Purple	18	Mohr-Coulomb	8	32	Water Table	Custom	1	
Very Weak ECBF Rock	Light Blue	20	Mohr-Coulomb	10	35	Water Table	Custom	1	
Weak ECBF Rock	Orange	20	Mohr-Coulomb	20	40	Water Table	Custom	1	
Medium Dense Sand	Yellow	18	Mohr-Coulomb	2	30	Water Table	Custom	1	
Stiff ECBF (Ru=0.44)	Green	18	Mohr-Coulomb	5	28	None			0.44
Very Stiff ECBF (Ru=0.44)	Dark Red	18	Mohr-Coulomb	7	30	None			0.44
Medium Dense ECBF (Ru=0.44)	Yellow-Black	18	Mohr-Coulomb	2	30	None			0.44
Engineered Fill (50% saturation)	Purple	18	Mohr-Coulomb	8	32	None			0.27
Very Weak ECBF Rock (Ru=0.44)	Light Blue	20	Mohr-Coulomb	10	35	None			0.44

Results  
GLE / Morgenstern-Price  
Surfaces with a factor of safety below 1.000

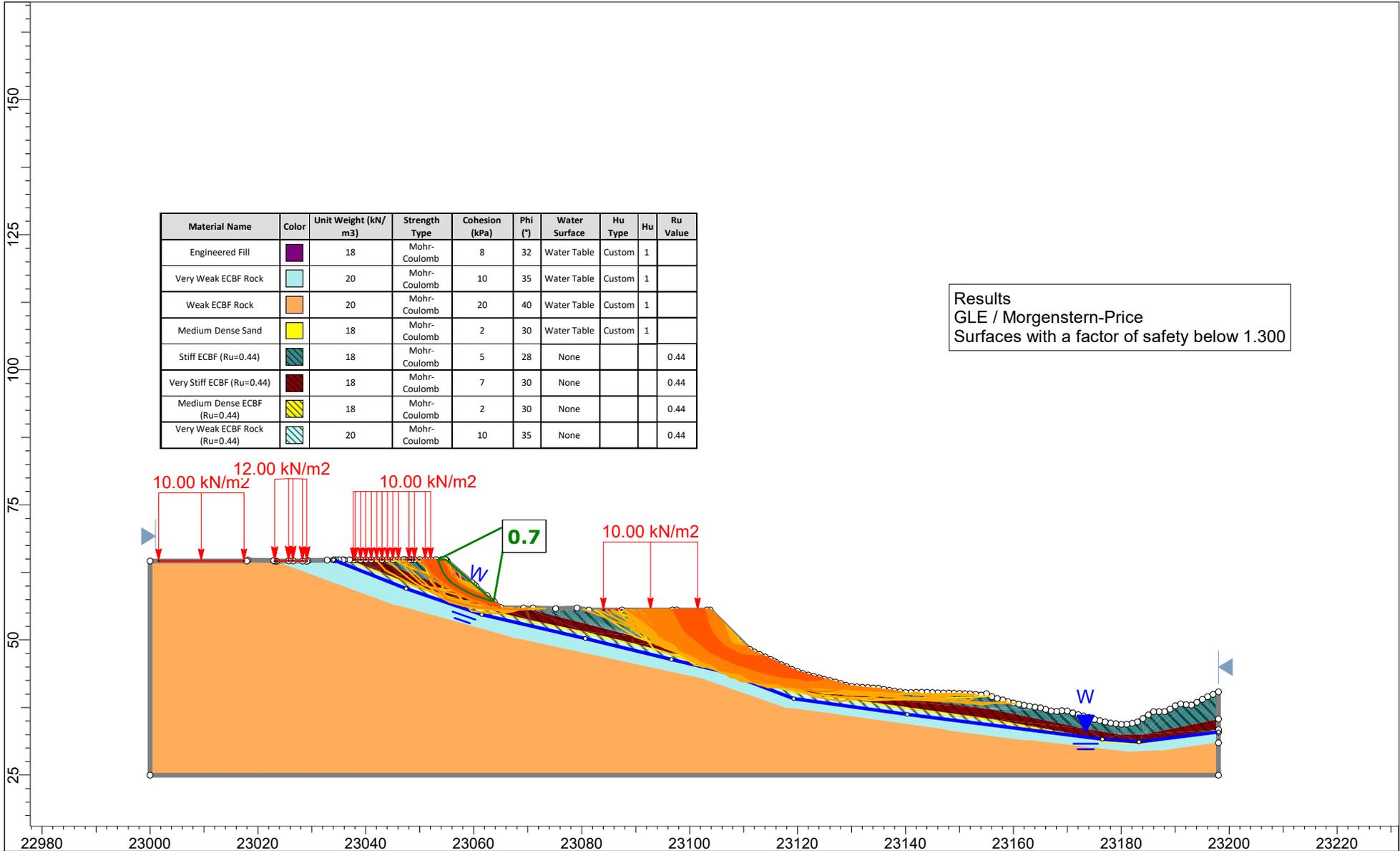
	Project		240065 - Russell Road, Waunui	
	Group	Section W - Proposed GL & Remedials	Scenario	Extreme (50% fill saturation)
	Drawn By	LKB	Company	Riley Consultants Ltd
	Date	19/12/2025	File Name	Section W.sldm



Material Name	Color	Unit Weight (kN/m <sup>3</sup> )	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu
Engineered Fill	■	18	Mohr-Coulomb	8	32	Water Table	Custom	1
Stiff ECBF	■	18	Mohr-Coulomb	5	28	Water Table	Custom	1
Very Stiff ECBF	■	18	Mohr-Coulomb	7	30	Water Table	Custom	1
Very Weak ECBF Rock	■	20	Mohr-Coulomb	10	35	Water Table	Custom	1
Weak ECBF Rock	■	20	Mohr-Coulomb	20	40	Water Table	Custom	1
Medium Dense Sand	■	18	Mohr-Coulomb	2	30	Water Table	Custom	1

Results  
GLE / Morgenstern-Price  
Surfaces with a factor of safety below 1.500

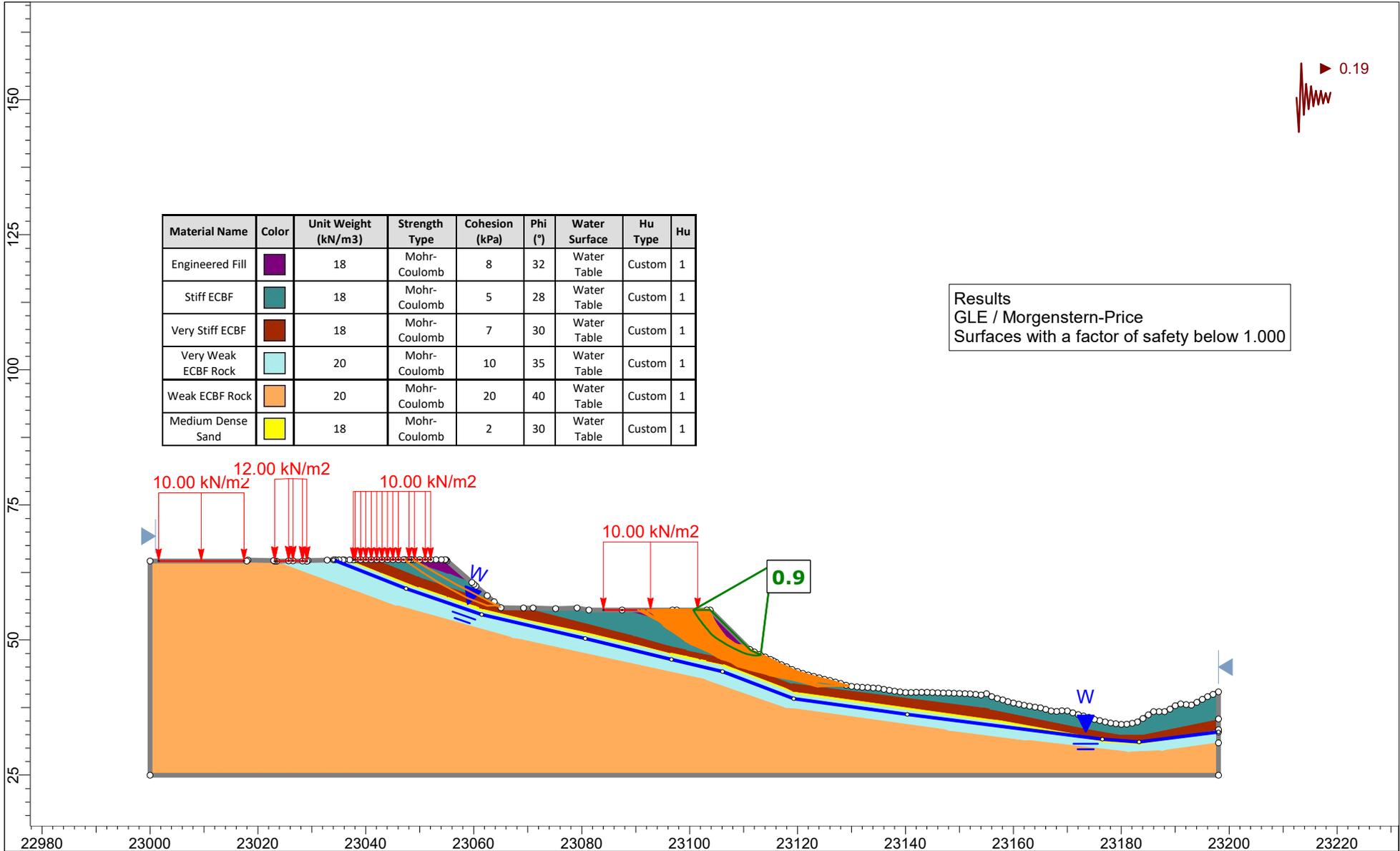
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	Group		Section W - Proposed GL	Scenario
	Drawn By		LKB	Company
	Date		19/12/2025	File Name
			Normal (Measured GW)	
			Riley Consultants Ltd	
			Section W.sldm	



Material Name	Color	Unit Weight (kN/m <sup>3</sup> )	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu	Ru Value
Engineered Fill	Dark Purple	18	Mohr-Coulomb	8	32	Water Table	Custom	1	
Very Weak ECBF Rock	Light Blue	20	Mohr-Coulomb	10	35	Water Table	Custom	1	
Weak ECBF Rock	Orange	20	Mohr-Coulomb	20	40	Water Table	Custom	1	
Medium Dense Sand	Yellow	18	Mohr-Coulomb	2	30	Water Table	Custom	1	
Stiff ECBF (Ru=0.44)	Dark Green	18	Mohr-Coulomb	5	28	None			0.44
Very Stiff ECBF (Ru=0.44)	Dark Red	18	Mohr-Coulomb	7	30	None			0.44
Medium Dense ECBF (Ru=0.44)	Yellow-Black	18	Mohr-Coulomb	2	30	None			0.44
Very Weak ECBF Rock (Ru=0.44)	Light Blue-Black	20	Mohr-Coulomb	10	35	None			0.44

Results  
GLE / Morgenstern-Price  
Surfaces with a factor of safety below 1.300

	Project		240065 - Russell Road, Waunui	
	Group		Section W - Proposed GL	Scenario Extreme (Worst Case GW)
	Drawn By		LKB	Company Riley Consultants Ltd
	Date		19/12/2025	File Name Section W.sldm

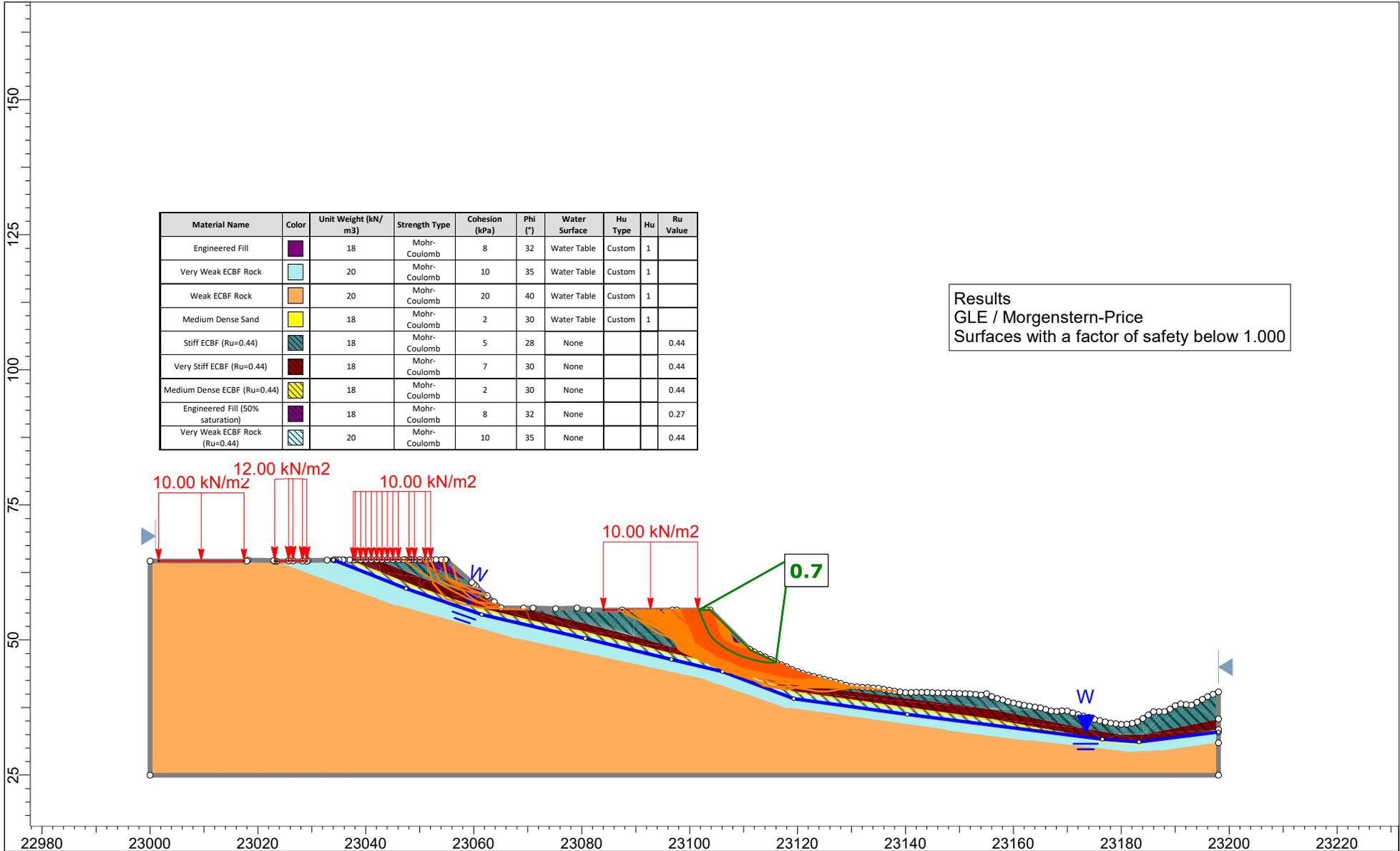


Material Name	Color	Unit Weight (kN/m <sup>3</sup> )	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu
Engineered Fill	Purple	18	Mohr-Coulomb	8	32	Water Table	Custom	1
Stiff ECBF	Teal	18	Mohr-Coulomb	5	28	Water Table	Custom	1
Very Stiff ECBF	Brown	18	Mohr-Coulomb	7	30	Water Table	Custom	1
Very Weak ECBF Rock	Light Blue	20	Mohr-Coulomb	10	35	Water Table	Custom	1
Weak ECBF Rock	Orange	20	Mohr-Coulomb	20	40	Water Table	Custom	1
Medium Dense Sand	Yellow	18	Mohr-Coulomb	2	30	Water Table	Custom	1

Results  
GLE / Morgenstern-Price  
Surfaces with a factor of safety below 1.000



Project		240065 - Russell Road, Waunui	
Group	Section W - Proposed GL	Scenario	Seismic (0.19g)
Drawn By	LKB	Company	Riley Consultants Ltd
Date	19/12/2025	File Name	Section W.sldm



Material Name	Color	Unit Weight (kN/m <sup>3</sup> )	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu	Ru Value
Engineered Fill	[Purple]	18	Mohr-Coulomb	8	32	Water Table	Custom	1	
Very Weak ECBF Rock	[Light Blue]	20	Mohr-Coulomb	10	35	Water Table	Custom	1	
Weak ECBF Rock	[Orange]	20	Mohr-Coulomb	20	40	Water Table	Custom	1	
Medium Dense Sand	[Yellow]	18	Mohr-Coulomb	2	30	Water Table	Custom	1	
Stiff ECBF (Ru=0.44)	[Green]	18	Mohr-Coulomb	5	28	None			0.44
Very Stiff ECBF (Ru=0.44)	[Dark Red]	18	Mohr-Coulomb	7	30	None			0.44
Medium Dense ECBF (Ru=0.44)	[Yellow-Orange]	18	Mohr-Coulomb	2	30	None			0.44
Engineered Fill (50% saturation)	[Purple]	18	Mohr-Coulomb	8	32	None			0.27
Very Weak ECBF Rock (Ru=0.44)	[Light Blue]	20	Mohr-Coulomb	10	35	None			0.44

Results  
GLE / Morgenstern-Price  
Surfaces with a factor of safety below 1.000

	Project		240065 - Russell Road, Waunui	
	Group		Section W - Proposed GL	Scenario
	Drawn By		LKB	Company
	Date		19/12/2025	File Name
				Section W.sldm

Support Name	Color	Type	Force Application	Out-Of-Plane Spacing (m)	Material Dependent	Input Type	Adhesion (kPa)	Friction Angle (°)	Shear Strength Model	Failure Mode	Pile Shear Strength (kN)	Force Orientation	Force Orientation	Anchorage	Strip Coverage (%)	Tensile Strength (kN/m)	Connection Strength Input	Connection Strength (kN/m)
Palisade wall 1	Blue	Pile/Micro Pile	Active (Method A)	1.5						Shear	600	Parallel to surface						
Geogrid	Black	Geosynthetic	Active (Method A)		No	Friction Angle & Adhesion	5	21	Linear				Parallel to Reinforcement	Slope Face	100	23	Constant	23
Retaining Wall	Pink	Pile/Micro Pile	Active (Method A)	1.5						Shear	120	Parallel to surface						

Material Name	Color	Unit Weight (kN/m <sup>3</sup> )	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu
Engineered Fill	Dark Purple	18	Mohr-Coulomb	8	32	Water Table	Custom	1
Medium Dense ECBF	Brown	18	Mohr-Coulomb	2	30	Water Table	Custom	1
Stiff ECBF	Dark Purple	18	Mohr-Coulomb	5	28	Water Table	Custom	1
Very Stiff ECBF	Blue-Gray	18	Mohr-Coulomb	7	30	Water Table	Custom	1
Very Weak ECBF Rock	Light Blue	20	Mohr-Coulomb	10	35	Water Table	Custom	1
Weak ECBF Rock	Orange	20	Mohr-Coulomb	20	40	Water Table	Custom	1

150

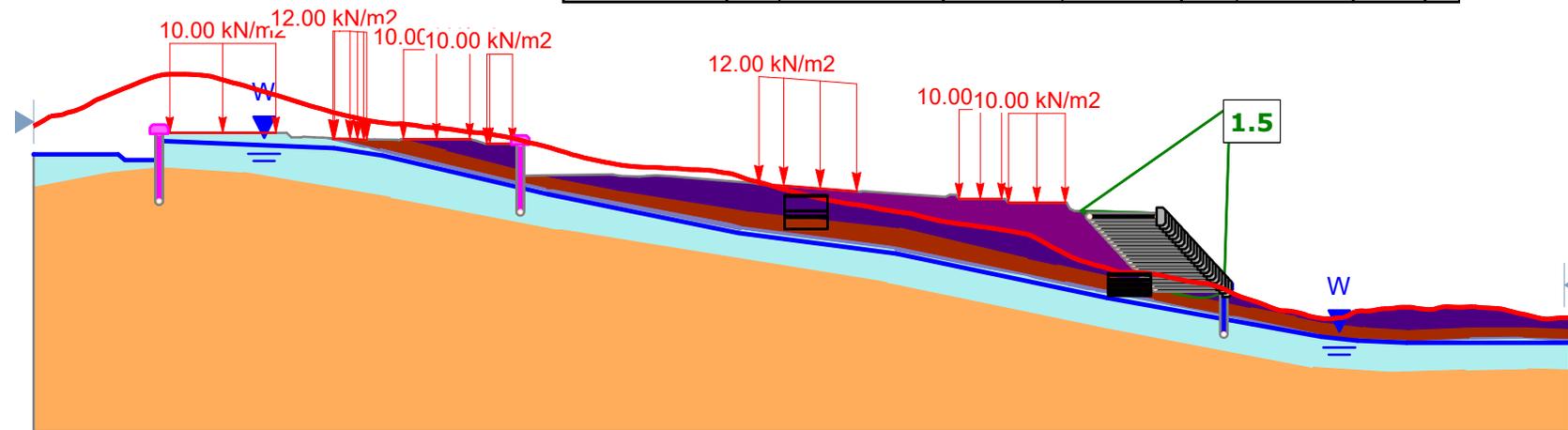
100

50

0

--- Existing ground profile

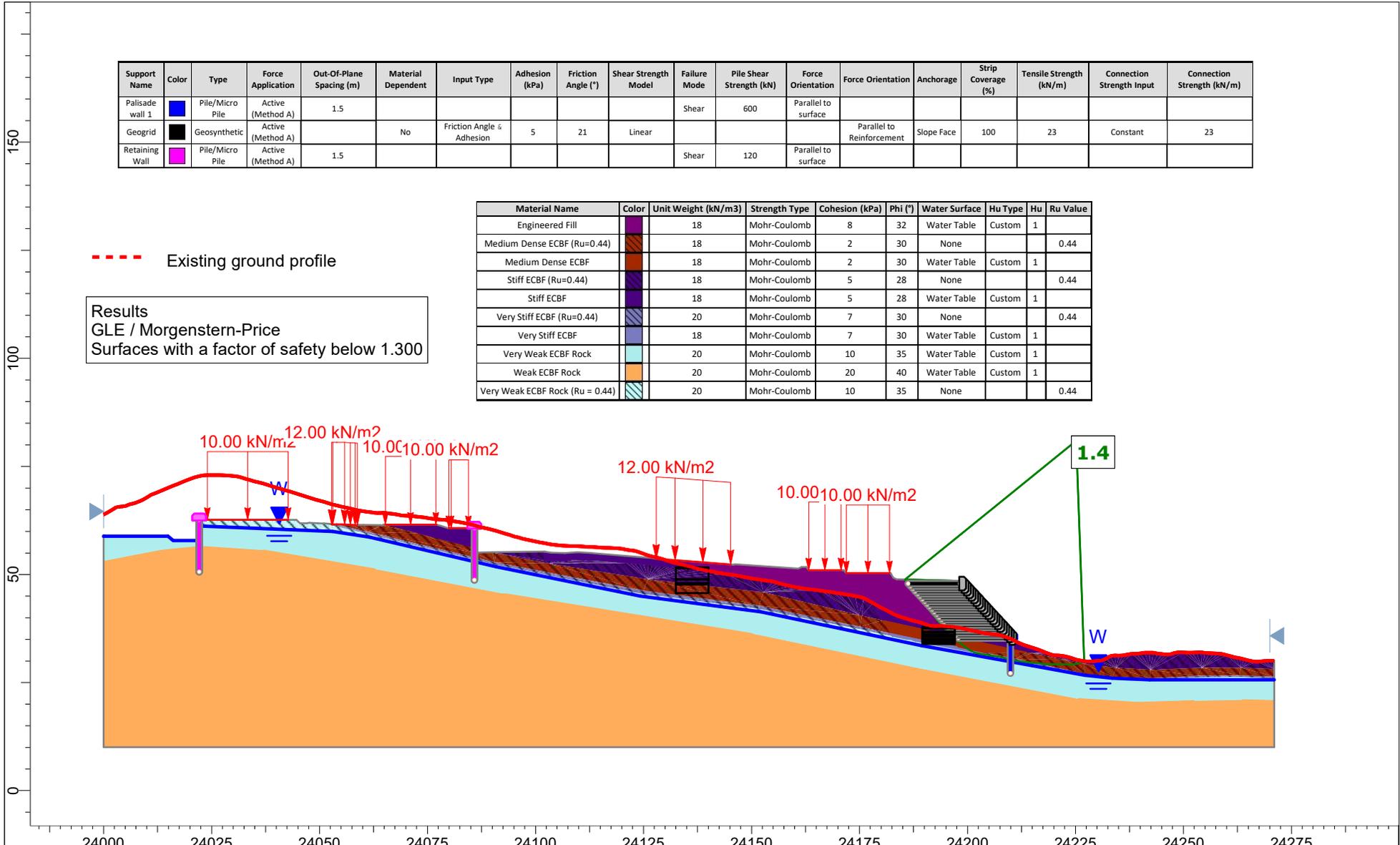
Results  
GLE / Morgenstern-Price  
Surfaces with a factor of safety below 1.500



24000 24025 24050 24075 24100 24125 24150 24175 24200 24225 24250 24275



Project	240065 - Russell Road, Waunui		
Group	Section X - Proposed GL & remedials	Scenario	Normal (Measured GW)
Drawn By	LKB	Company	Riley Consultants Ltd
Date	19/12/2025	File Name	Section X.sldm



Support Name	Color	Type	Force Application	Out-Of-Plane Spacing (m)	Material Dependent	Input Type	Adhesion (kPa)	Friction Angle (°)	Shear Strength Model	Failure Mode	Pile Shear Strength (kN)	Force Orientation	Force Orientation	Anchorage	Strip Coverage (%)	Tensile Strength (kN/m)	Connection Strength Input	Connection Strength (kN/m)
Palisade wall 1	Blue	Pile/Micro Pile	Active (Method A)	1.5						Shear	600	Parallel to surface						
Geogrid	Black	Geosynthetic	Active (Method A)		No	Friction Angle & Adhesion	5	21	Linear				Parallel to Reinforcement	Slope Face	100	23	Constant	23
Retaining Wall	Pink	Pile/Micro Pile	Active (Method A)	1.5						Shear	120	Parallel to surface						

Material Name	Color	Unit Weight (kN/m <sup>3</sup> )	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu	Ru Value
Engineered Fill	Light Blue	18	Mohr-Coulomb	8	32	Water Table	Custom	1	
Medium Dense ECBF (Ru=0.44)	Dark Blue	18	Mohr-Coulomb	2	30	None	Custom	1	0.44
Medium Dense ECBF	Dark Blue	18	Mohr-Coulomb	2	30	Water Table	Custom	1	
Stiff ECBF (Ru=0.44)	Dark Blue	18	Mohr-Coulomb	5	28	None			0.44
Stiff ECBF	Dark Blue	18	Mohr-Coulomb	5	28	Water Table	Custom	1	
Very Stiff ECBF (Ru=0.44)	Dark Blue	20	Mohr-Coulomb	7	30	None			0.44
Very Stiff ECBF	Dark Blue	18	Mohr-Coulomb	7	30	Water Table	Custom	1	
Very Weak ECBF Rock	Light Blue	20	Mohr-Coulomb	10	35	Water Table	Custom	1	
Weak ECBF Rock	Light Blue	20	Mohr-Coulomb	20	40	Water Table	Custom	1	
Very Weak ECBF Rock (Ru = 0.44)	Light Blue	20	Mohr-Coulomb	10	35	None			0.44

--- Existing ground profile

Results  
GLE / Morgenstern-Price  
Surfaces with a factor of safety below 1.300

1.4



	Project		240065 - Russell Road, Waunui	
	Group	Section X - Proposed GL & remedials	Scenario	Extreme (Worst Credible GW)
	Drawn By	LKB	Company	Riley Consultants Ltd
	Date	19/12/2025	File Name	Section X.sldm

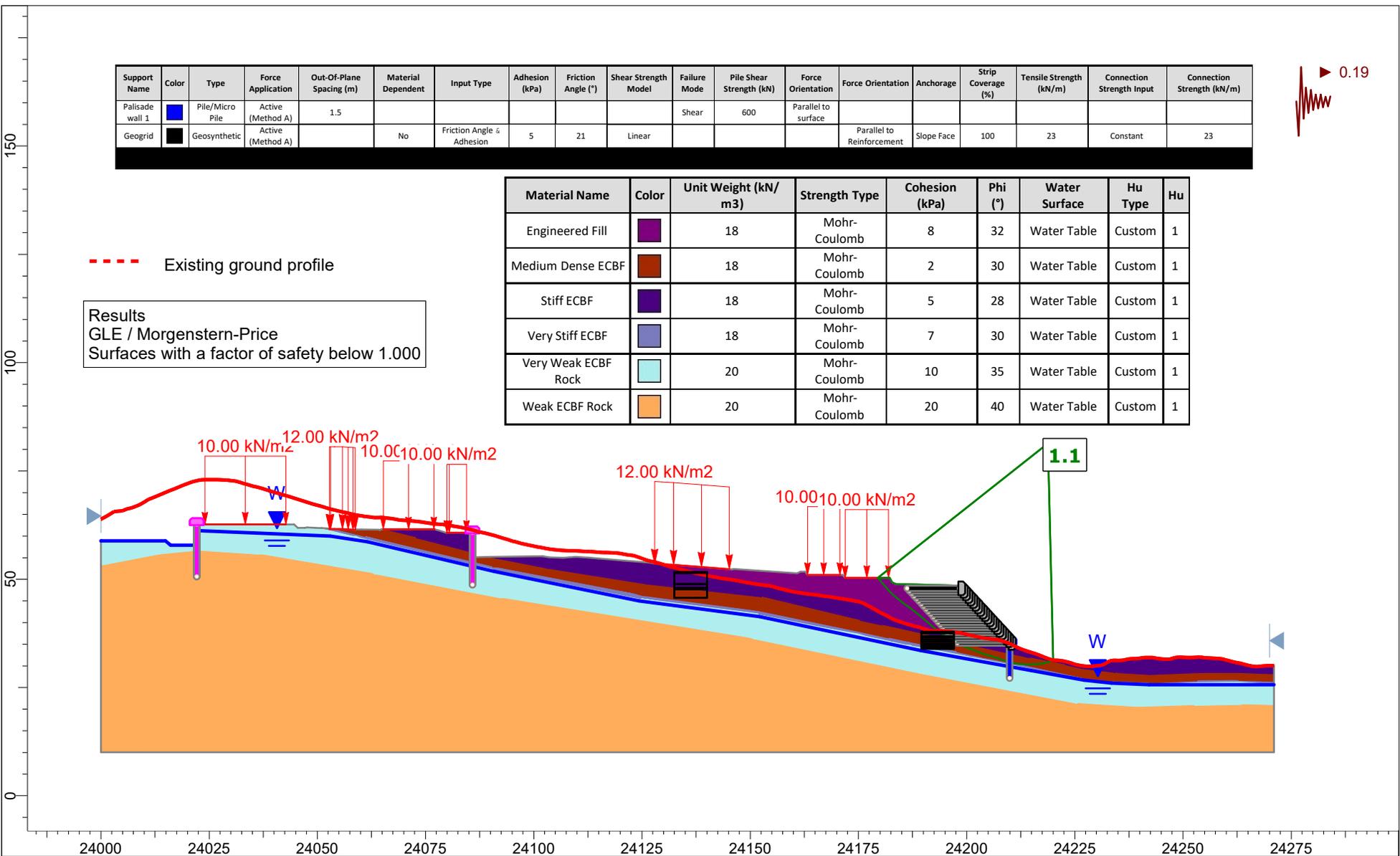


Support Name	Color	Type	Force Application	Out-Of-Plane Spacing (m)	Material Dependent	Input Type	Adhesion (kPa)	Friction Angle (°)	Shear Strength Model	Failure Mode	Pile Shear Strength (kN)	Force Orientation	Force Orientation	Anchorage	Strip Coverage (%)	Tensile Strength (kN/m)	Connection Strength Input	Connection Strength (kN/m)
Palisade wall 1	Blue	Pile/Micro Pile	Active (Method A)	1.5						Shear	600	Parallel to surface						
Geogrid	Black	Geosynthetic	Active (Method A)		No	Friction Angle & Adhesion	5	21	Linear				Parallel to Reinforcement	Slope Face	100	23	Constant	23

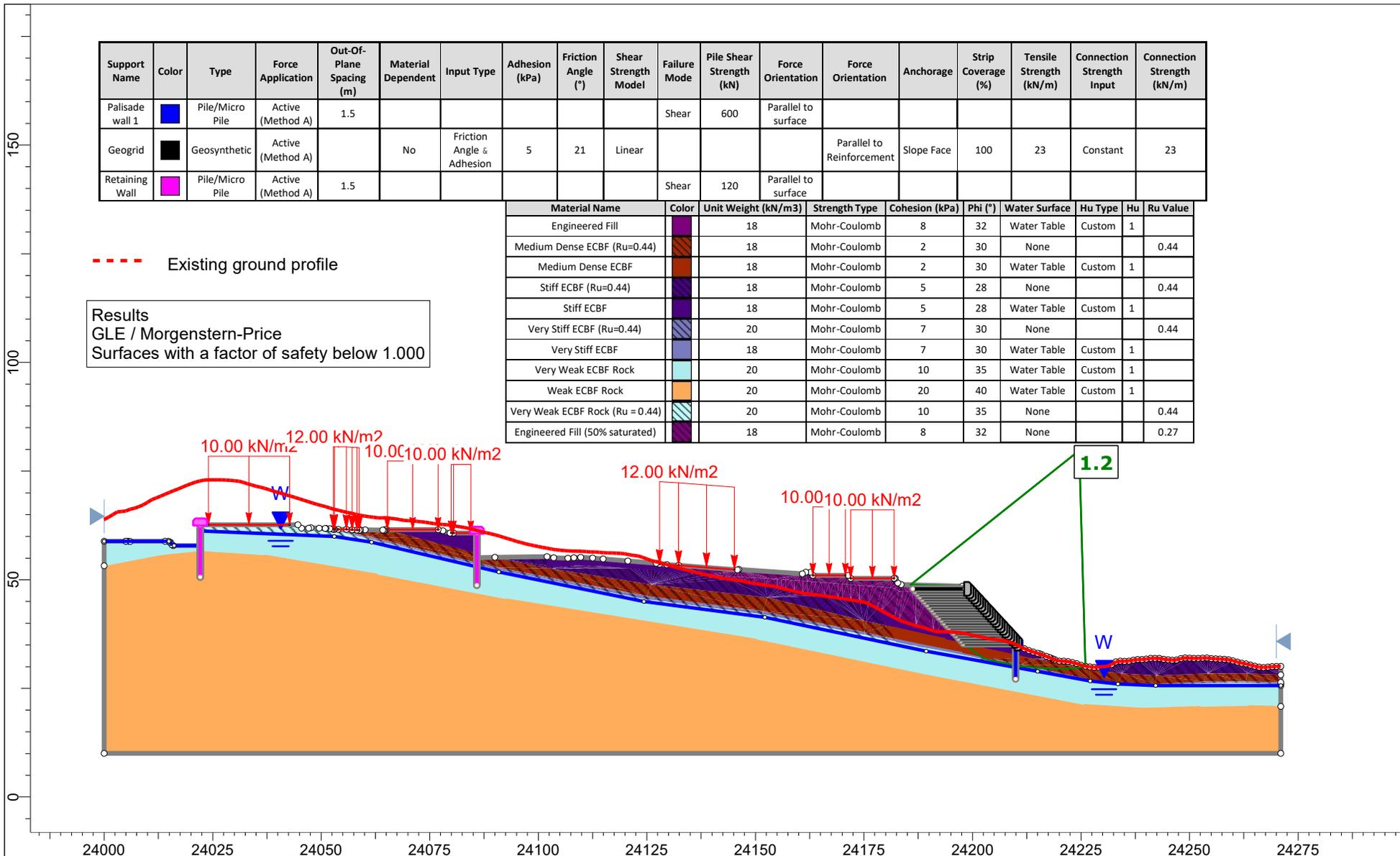
Material Name	Color	Unit Weight (kN/m <sup>3</sup> )	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu
Engineered Fill	Purple	18	Mohr-Coulomb	8	32	Water Table	Custom	1
Medium Dense ECBF	Brown	18	Mohr-Coulomb	2	30	Water Table	Custom	1
Stiff ECBF	Dark Purple	18	Mohr-Coulomb	5	28	Water Table	Custom	1
Very Stiff ECBF	Light Purple	18	Mohr-Coulomb	7	30	Water Table	Custom	1
Very Weak ECBF Rock	Light Blue	20	Mohr-Coulomb	10	35	Water Table	Custom	1
Weak ECBF Rock	Orange	20	Mohr-Coulomb	20	40	Water Table	Custom	1

--- Existing ground profile

Results  
GLE / Morgenstern-Price  
Surfaces with a factor of safety below 1.000



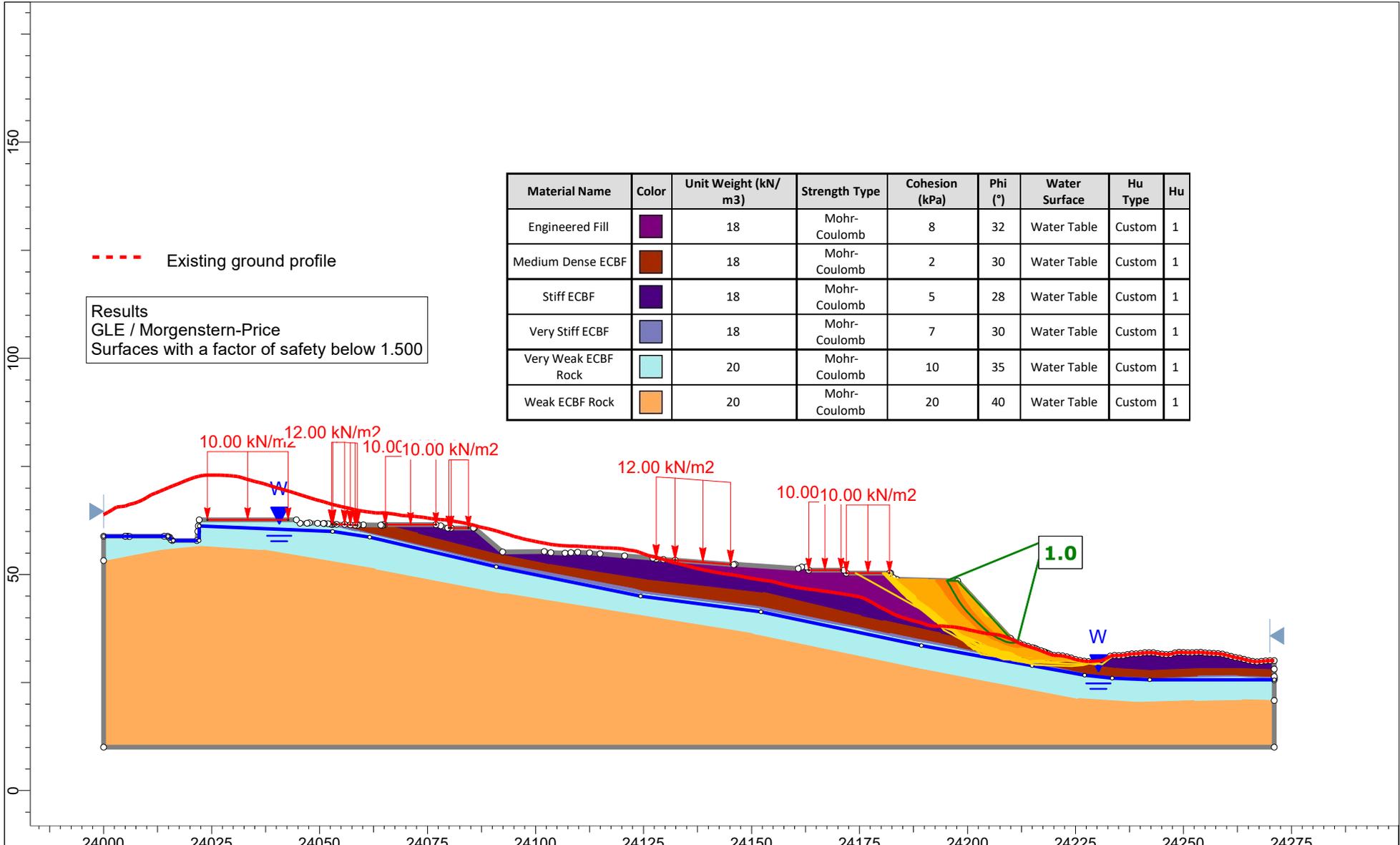
	Project		240065 - Russell Road, Waunui	
	Group	Section X - Proposed GL & remedials	Scenario	Seismic (0.19g)
	Drawn By	LKB	Company	Riley Consultants Ltd
	Date	19/12/2025	File Name	Section X.sldm



Support Name	Color	Type	Force Application	Out-Of-Plane Spacing (m)	Material Dependent	Input Type	Adhesion (kPa)	Friction Angle (°)	Shear Strength Model	Failure Mode	Pile Shear Strength (kN)	Force Orientation	Force Orientation	Anchorage	Strip Coverage (%)	Tensile Strength (kN/m)	Connection Strength Input	Connection Strength (kN/m)
Palisade wall 1	Blue	Pile/Micro Pile	Active (Method A)	1.5						Shear	600	Parallel to surface						
Geogrid	Black	Geosynthetic	Active (Method A)		No	Friction Angle & Adhesion	5	21	Linear			Parallel to Reinforcement	Slope Face	100	23	Constant	23	
Retaining Wall	Pink	Pile/Micro Pile	Active (Method A)	1.5						Shear	120	Parallel to surface						

Material Name	Color	Unit Weight (kN/m <sup>3</sup> )	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu	Ru Value
Engineered Fill	Light Blue	18	Mohr-Coulomb	8	32	Water Table	Custom	1	
Medium Dense ECBF (Ru=0.44)	Dark Blue	18	Mohr-Coulomb	2	30	None	Custom	1	0.44
Medium Dense ECBF	Light Blue	18	Mohr-Coulomb	2	30	Water Table	Custom	1	
Stiff ECBF (Ru=0.44)	Dark Blue	18	Mohr-Coulomb	5	28	None	Custom	1	0.44
Stiff ECBF	Light Blue	18	Mohr-Coulomb	5	28	Water Table	Custom	1	
Very Stiff ECBF (Ru=0.44)	Dark Blue	20	Mohr-Coulomb	7	30	None	Custom	1	0.44
Very Stiff ECBF	Light Blue	18	Mohr-Coulomb	7	30	Water Table	Custom	1	
Very Weak ECBF Rock	Light Blue	20	Mohr-Coulomb	10	35	Water Table	Custom	1	
Weak ECBF Rock	Light Blue	20	Mohr-Coulomb	20	40	Water Table	Custom	1	
Very Weak ECBF Rock (Ru = 0.44)	Light Blue	20	Mohr-Coulomb	10	35	None	Custom	1	0.44
Engineered Fill (50% saturated)	Light Blue	18	Mohr-Coulomb	8	32	None	Custom	1	0.27

	Project		240065 - Russell Road, Waunui	
	Group		Section X - Proposed GL & remedials	Scenario
	Drawn By		LKB	Company
	Date		19/12/2025	File Name
			Extreme (50% fill saturation)	Riley Consultants Ltd
			Section X.sldm	



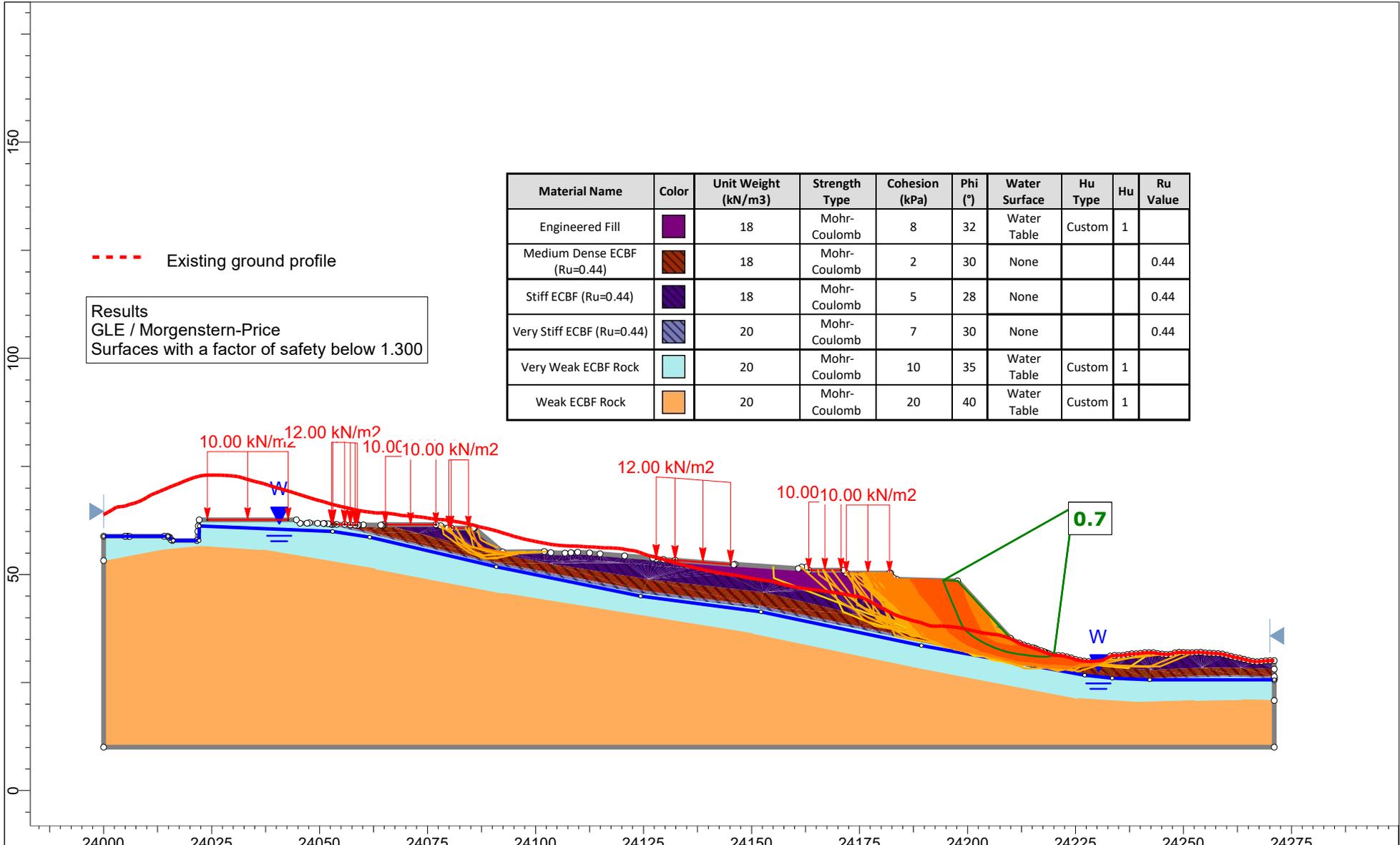
Material Name	Color	Unit Weight (kN/m <sup>3</sup> )	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu
Engineered Fill	Dark Purple	18	Mohr-Coulomb	8	32	Water Table	Custom	1
Medium Dense ECBF	Brown	18	Mohr-Coulomb	2	30	Water Table	Custom	1
Stiff ECBF	Purple	18	Mohr-Coulomb	5	28	Water Table	Custom	1
Very Stiff ECBF	Blue-Gray	18	Mohr-Coulomb	7	30	Water Table	Custom	1
Very Weak ECBF Rock	Light Blue	20	Mohr-Coulomb	10	35	Water Table	Custom	1
Weak ECBF Rock	Orange	20	Mohr-Coulomb	20	40	Water Table	Custom	1

--- Existing ground profile

Results  
GLE / Morgenstern-Price  
Surfaces with a factor of safety below 1.500



Project	240065 - Russell Road, Waunui		
Group	Section X - Proposed GL	Scenario	Normal (Measured GW)
Drawn By	LKB	Company	Riley Consultants Ltd
Date	19/12/2025	File Name	Section X.sldm



Material Name	Color	Unit Weight (kN/m <sup>3</sup> )	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu	Ru Value
Engineered Fill		18	Mohr-Coulomb	8	32	Water Table	Custom	1	
Medium Dense ECBF (Ru=0.44)		18	Mohr-Coulomb	2	30	None			0.44
Stiff ECBF (Ru=0.44)		18	Mohr-Coulomb	5	28	None			0.44
Very Stiff ECBF (Ru=0.44)		20	Mohr-Coulomb	7	30	None			0.44
Very Weak ECBF Rock		20	Mohr-Coulomb	10	35	Water Table	Custom	1	
Weak ECBF Rock		20	Mohr-Coulomb	20	40	Water Table	Custom	1	

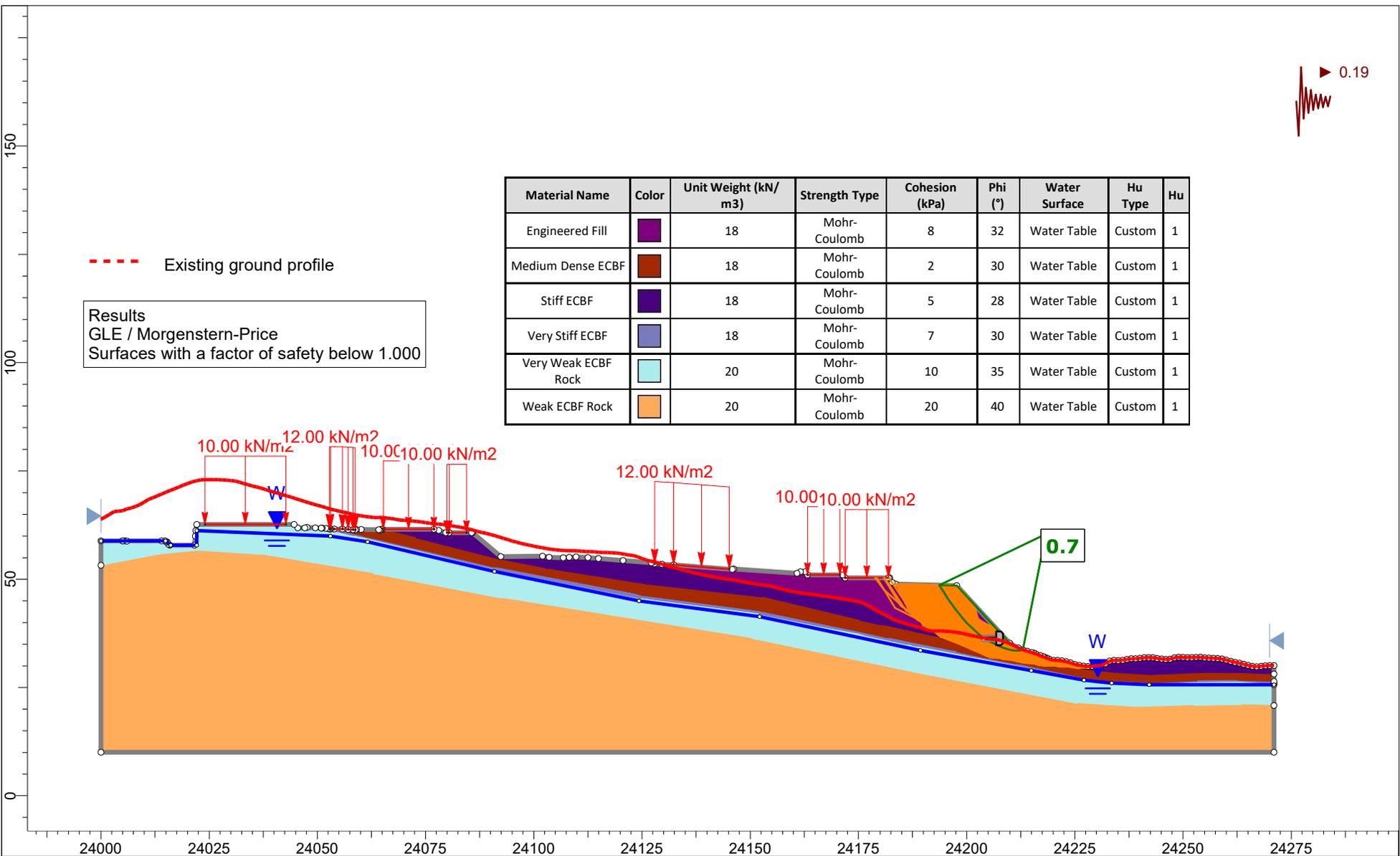
	Project		240065 - Russell Road, Waunui	
	Group		Section X - Proposed GL	Scenario
	Drawn By		LKB	Company
	Date		19/12/2025	File Name
				Section X.sldm



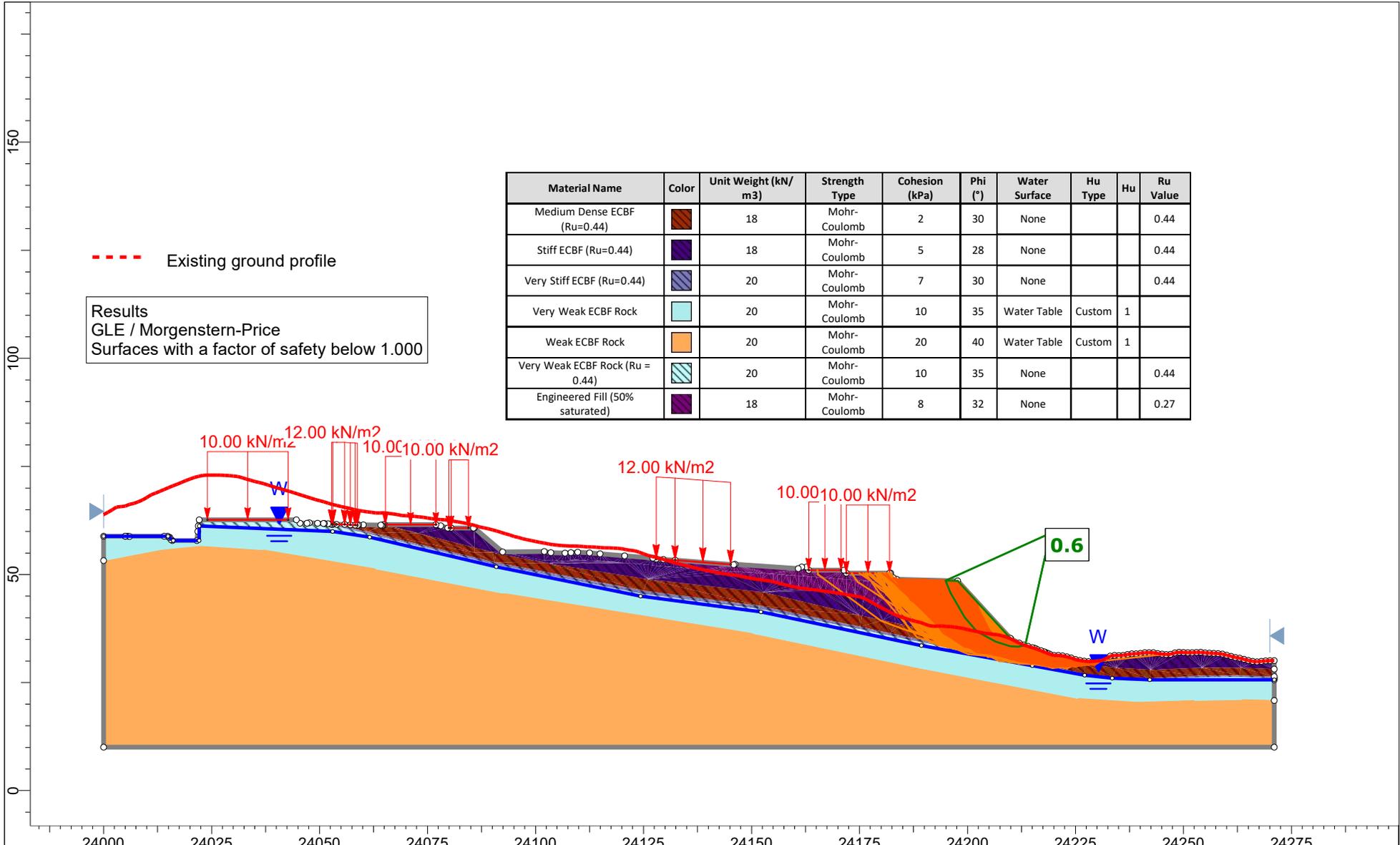
Material Name	Color	Unit Weight (kN/m <sup>3</sup> )	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu
Engineered Fill		18	Mohr-Coulomb	8	32	Water Table	Custom	1
Medium Dense ECBF		18	Mohr-Coulomb	2	30	Water Table	Custom	1
Stiff ECBF		18	Mohr-Coulomb	5	28	Water Table	Custom	1
Very Stiff ECBF		18	Mohr-Coulomb	7	30	Water Table	Custom	1
Very Weak ECBF Rock		20	Mohr-Coulomb	10	35	Water Table	Custom	1
Weak ECBF Rock		20	Mohr-Coulomb	20	40	Water Table	Custom	1

--- Existing ground profile

Results  
GLE / Morgenstern-Price  
Surfaces with a factor of safety below 1.000



	Project		240065 - Russell Road, Waunui	
	Group	Section X - Proposed GL	Scenario	Seismic (0.19g)
	Drawn By	LKB	Company	Riley Consultants Ltd
	Date	19/12/2025	File Name	Section X.sldm



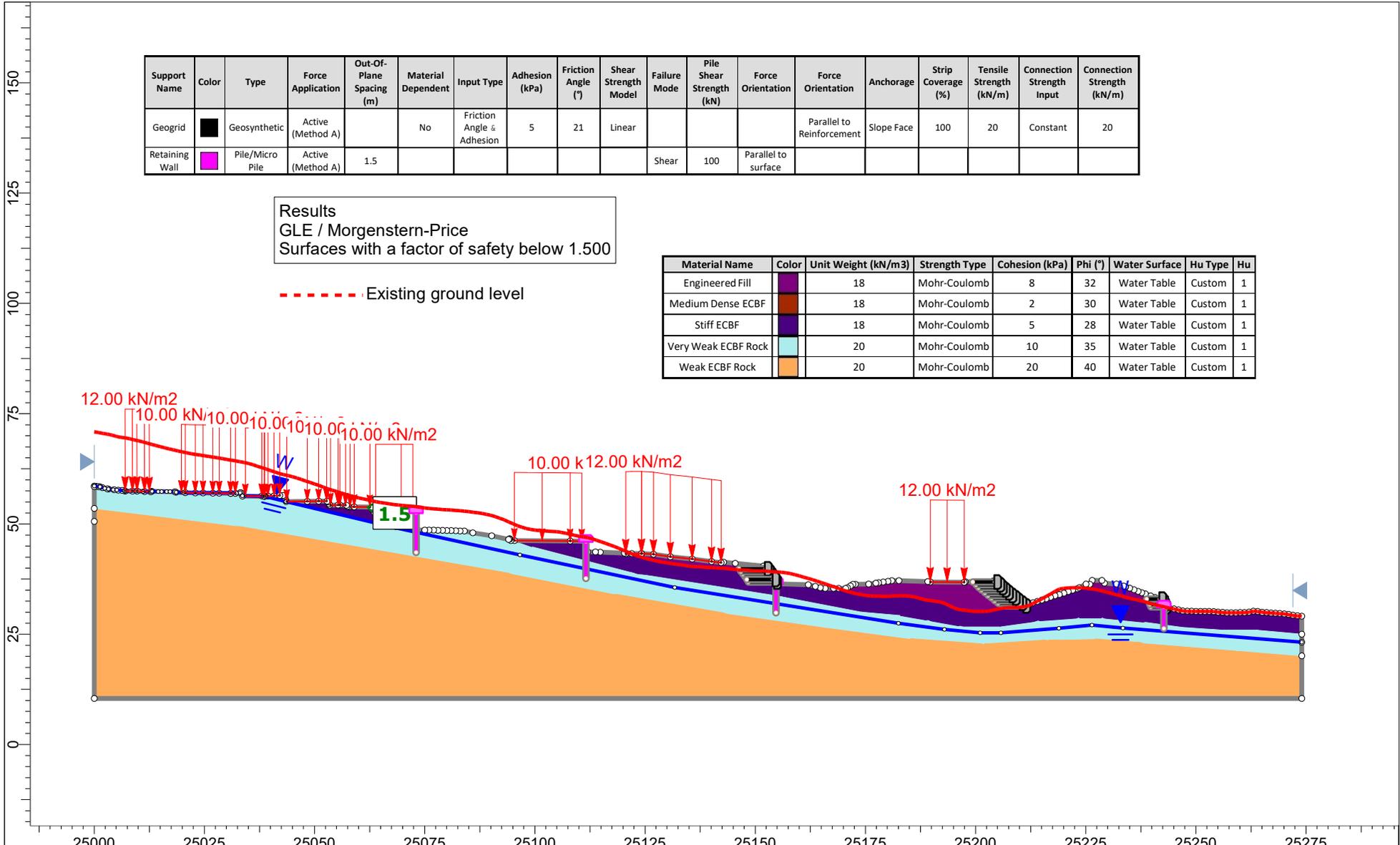
Material Name	Color	Unit Weight (kN/m <sup>3</sup> )	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu	Ru Value
Medium Dense ECBF (Ru=0.44)		18	Mohr-Coulomb	2	30	None			0.44
Stiff ECBF (Ru=0.44)		18	Mohr-Coulomb	5	28	None			0.44
Very Stiff ECBF (Ru=0.44)		20	Mohr-Coulomb	7	30	None			0.44
Very Weak ECBF Rock		20	Mohr-Coulomb	10	35	Water Table	Custom	1	
Weak ECBF Rock		20	Mohr-Coulomb	20	40	Water Table	Custom	1	
Very Weak ECBF Rock (Ru = 0.44)		20	Mohr-Coulomb	10	35	None			0.44
Engineered Fill (50% saturated)		18	Mohr-Coulomb	8	32	None			0.27

--- Existing ground profile

Results  
GLE / Morgenstern-Price  
Surfaces with a factor of safety below 1.000



Project	240065 - Russell Road, Waunui		
Group	Section X - Proposed GL	Scenario	Extreme (50% fill saturation)
Drawn By	LKB	Company	Riley Consultants Ltd
Date	19/12/2025	File Name	Section X.sldm



Support Name	Color	Type	Force Application	Out-Of-Plane Spacing (m)	Material Dependent	Input Type	Adhesion (kPa)	Friction Angle (°)	Shear Strength Model	Failure Mode	Pile Shear Strength (kN)	Force Orientation	Force Orientation	Anchorage	Strip Coverage (%)	Tensile Strength (kN/m)	Connection Strength Input	Connection Strength (kN/m)
Geogrid	Black	Geosynthetic	Active (Method A)		No	Friction Angle & Adhesion	5	21	Linear				Parallel to Reinforcement	Slope Face	100	20	Constant	20
Retaining Wall	Pink	Pile/Micro Pile	Active (Method A)	1.5						Shear	100	Parallel to surface						

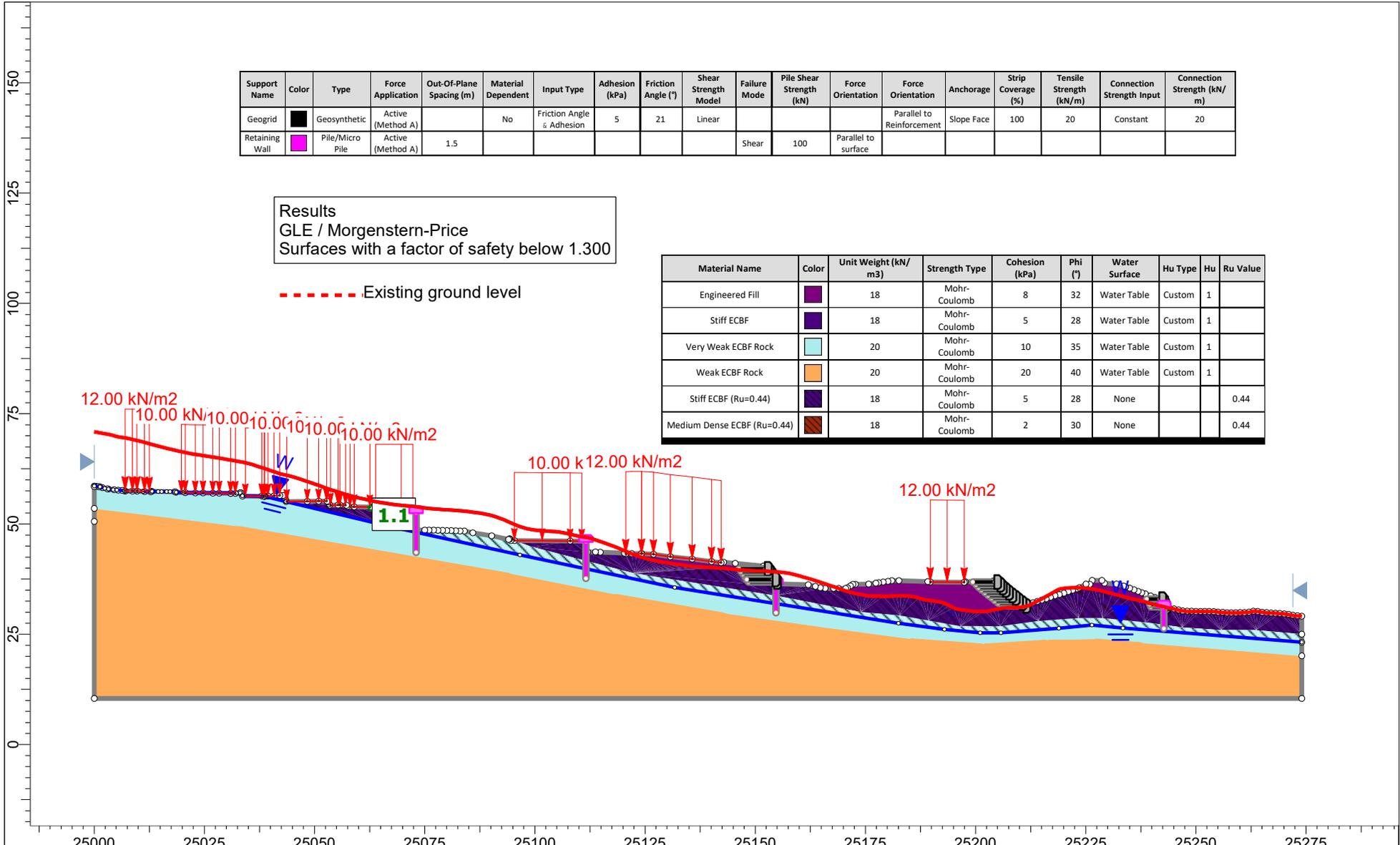
Results  
GLE / Morgenstern-Price  
Surfaces with a factor of safety below 1.500

--- Existing ground level

Material Name	Color	Unit Weight (kN/m3)	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu
Engineered Fill	Black	18	Mohr-Coulomb	8	32	Water Table	Custom	1
Medium Dense ECBF	Brown	18	Mohr-Coulomb	2	30	Water Table	Custom	1
Stiff ECBF	Dark Blue	18	Mohr-Coulomb	5	28	Water Table	Custom	1
Very Weak ECBF Rock	Light Blue	20	Mohr-Coulomb	10	35	Water Table	Custom	1
Weak ECBF Rock	Orange	20	Mohr-Coulomb	20	40	Water Table	Custom	1



Project	240065 - Russell Road, Waunui		
Group	Section Y - Proposed GL & Remedials	Scenario	Normal (Measured GW)
Drawn By	LKB	Company	Riley Consultants Ltd
Date	19/12/2025	File Name	Section Y.sldm



Support Name	Color	Type	Force Application	Out-Of-Plane Spacing (m)	Material Dependent	Input Type	Adhesion (kPa)	Friction Angle (°)	Shear Strength Model	Failure Mode	Pile Shear Strength (kN)	Force Orientation	Force Orientation	Anchorage	Strip Coverage (%)	Tensile Strength (kN/m)	Connection Strength Input	Connection Strength (kN/m)
Geogrid	Black	Geosynthetic	Active (Method A)		No	Friction Angle & Adhesion	5	21	Linear				Parallel to Reinforcement	Slope Face	100	20	Constant	20
Retaining Wall	Pink	Pile/Micro Pile	Active (Method A)	1.5						Shear	100	Parallel to surface						

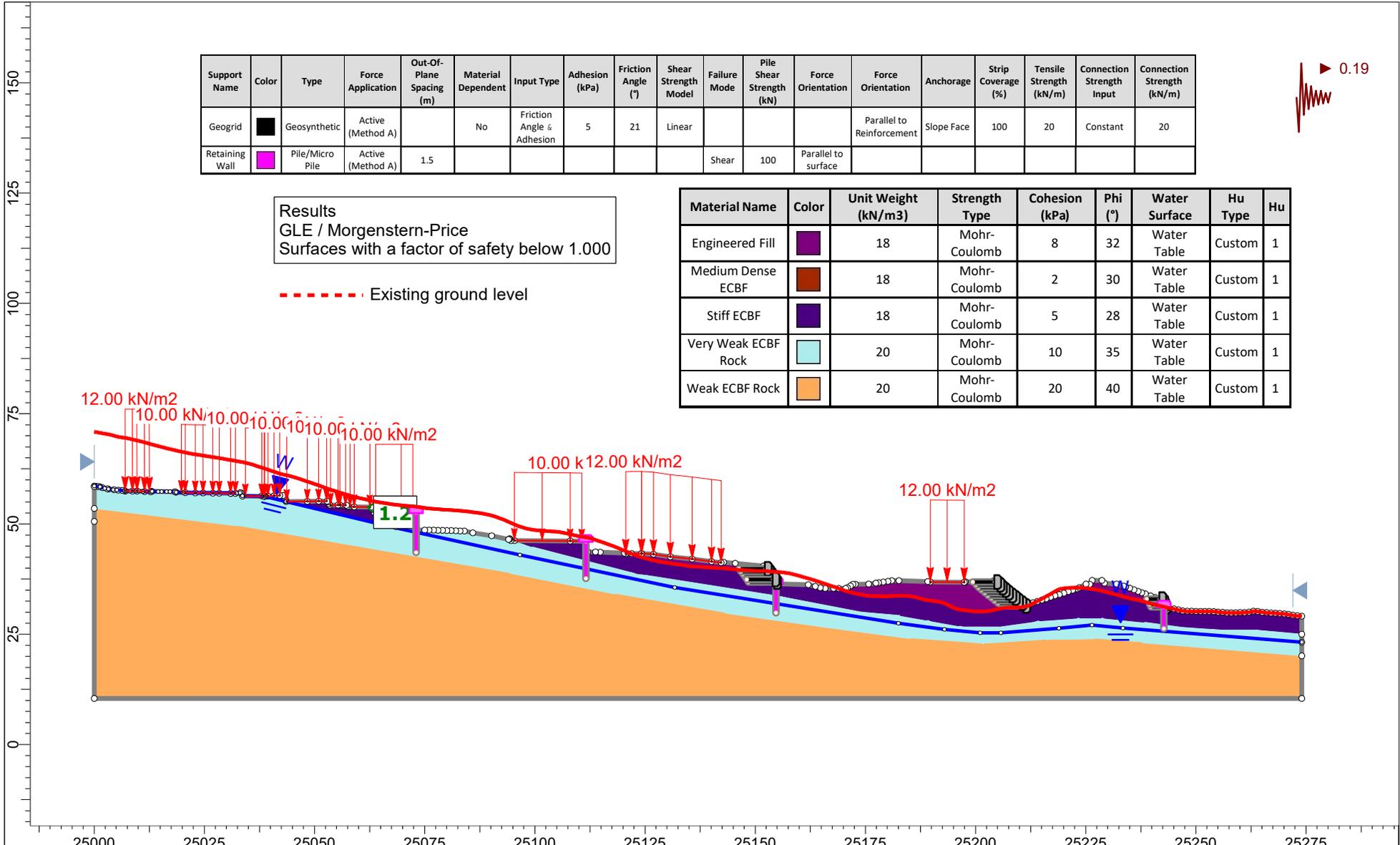
Results  
GLE / Morgenstern-Price  
Surfaces with a factor of safety below 1.300

--- Existing ground level

Material Name	Color	Unit Weight (kN/m <sup>3</sup> )	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu	Ru Value
Engineered Fill	Purple	18	Mohr-Coulomb	8	32	Water Table	Custom	1	
Stiff ECBF	Dark Purple	18	Mohr-Coulomb	5	28	Water Table	Custom	1	
Very Weak ECBF Rock	Light Blue	20	Mohr-Coulomb	10	35	Water Table	Custom	1	
Weak ECBF Rock	Orange	20	Mohr-Coulomb	20	40	Water Table	Custom	1	
Stiff ECBF (Ru=0.44)	Dark Blue	18	Mohr-Coulomb	5	28	None			0.44
Medium Dense ECBF (Ru=0.44)	Brown	18	Mohr-Coulomb	2	30	None			0.44



Project	240065 - Russell Road, Waunui		
Group	Section Y - Proposed GL & Remedials	Scenario	Extreme (Worst Case GW)
Drawn By	LKB	Company	Riley Consultants Ltd
Date	19/12/2025	File Name	Section Y.sldm



Support Name	Color	Type	Force Application	Out-Of-Plane Spacing (m)	Material Dependent	Input Type	Adhesion (kPa)	Friction Angle (°)	Shear Strength Model	Failure Mode	Pile Shear Strength (kN)	Force Orientation	Force Orientation	Anchorage	Strip Coverage (%)	Tensile Strength (kN/m)	Connection Strength Input	Connection Strength (kN/m)
Geogrid	Black	Geosynthetic	Active (Method A)		No	Friction Angle & Adhesion	5	21	Linear			Parallel to Reinforcement	Slope Face	100	20	Constant	20	
Retaining Wall	Pink	Pile/Micro Pile	Active (Method A)	1.5						Shear	100	Parallel to surface						

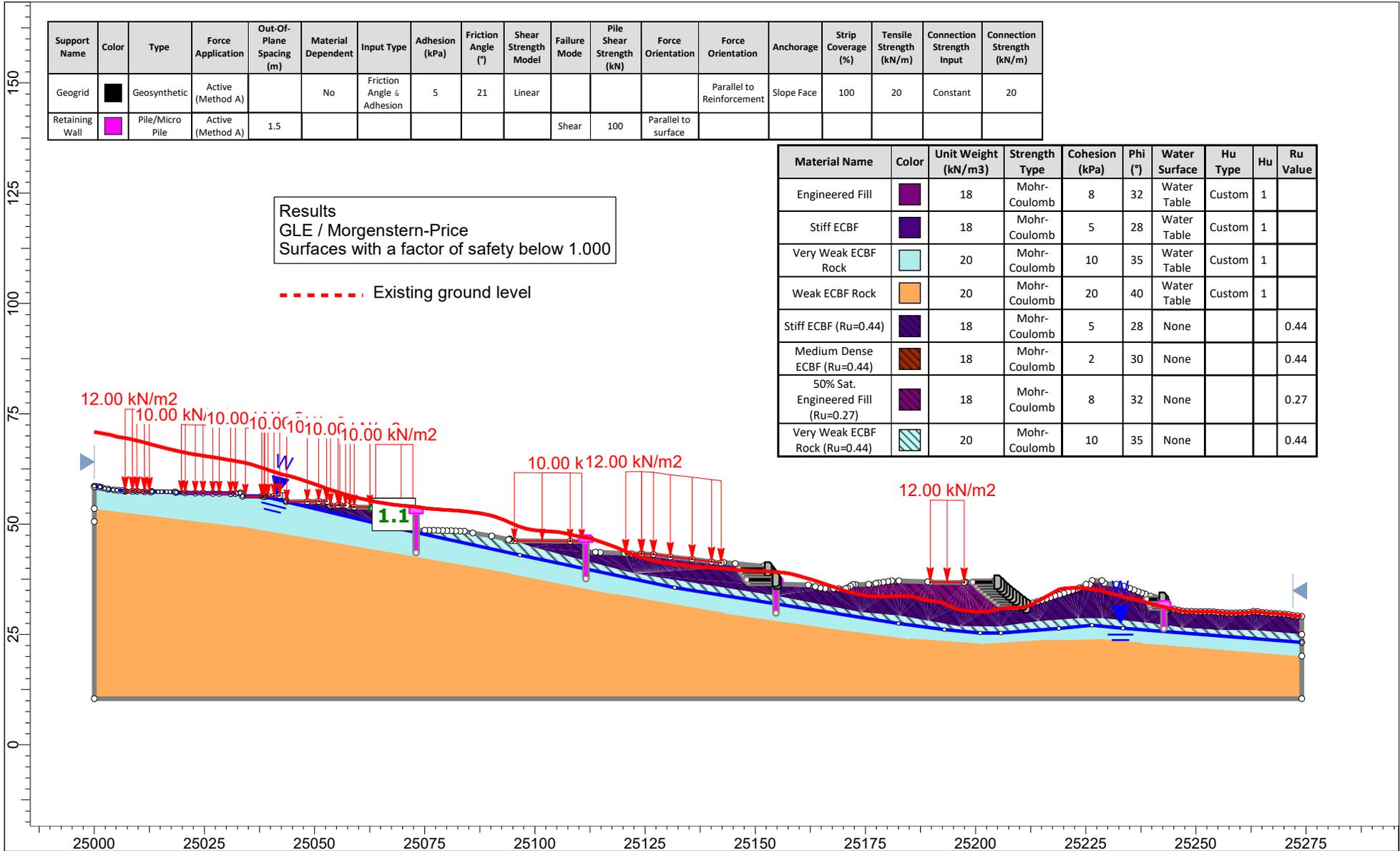
Results  
GLE / Morgenstern-Price  
Surfaces with a factor of safety below 1.000

--- Existing ground level

Material Name	Color	Unit Weight (kN/m3)	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu
Engineered Fill	Dark Purple	18	Mohr-Coulomb	8	32	Water Table	Custom	1
Medium Dense ECBF	Brown	18	Mohr-Coulomb	2	30	Water Table	Custom	1
Stiff ECBF	Purple	18	Mohr-Coulomb	5	28	Water Table	Custom	1
Very Weak ECBF Rock	Light Blue	20	Mohr-Coulomb	10	35	Water Table	Custom	1
Weak ECBF Rock	Orange	20	Mohr-Coulomb	20	40	Water Table	Custom	1



Project	240065 - Russell Road, Waunui		
Group	Section Y - Proposed GL & Remedials	Scenario	Seismic (0.19g)
Drawn By	LKB	Company	Riley Consultants Ltd
Date	19/12/2025	File Name	Section Y.sldm



Support Name	Color	Type	Force Application	Out-Of-Plane Spacing (m)	Material Dependent	Input Type	Adhesion (kPa)	Friction Angle (°)	Shear Strength Model	Failure Mode	Pile Shear Strength (kN)	Force Orientation	Force Orientation	Anchorage	Strip Coverage (%)	Tensile Strength (kN/m)	Connection Strength Input	Connection Strength (kN/m)
Geogrid	Black	Geosynthetic	Active (Method A)		No	Friction Angle & Adhesion	5	21	Linear				Parallel to Reinforcement	Slope Face	100	20	Constant	20
Retaining Wall	Pink	Pile/Micro Pile	Active (Method A)	1.5						Shear	100	Parallel to surface						

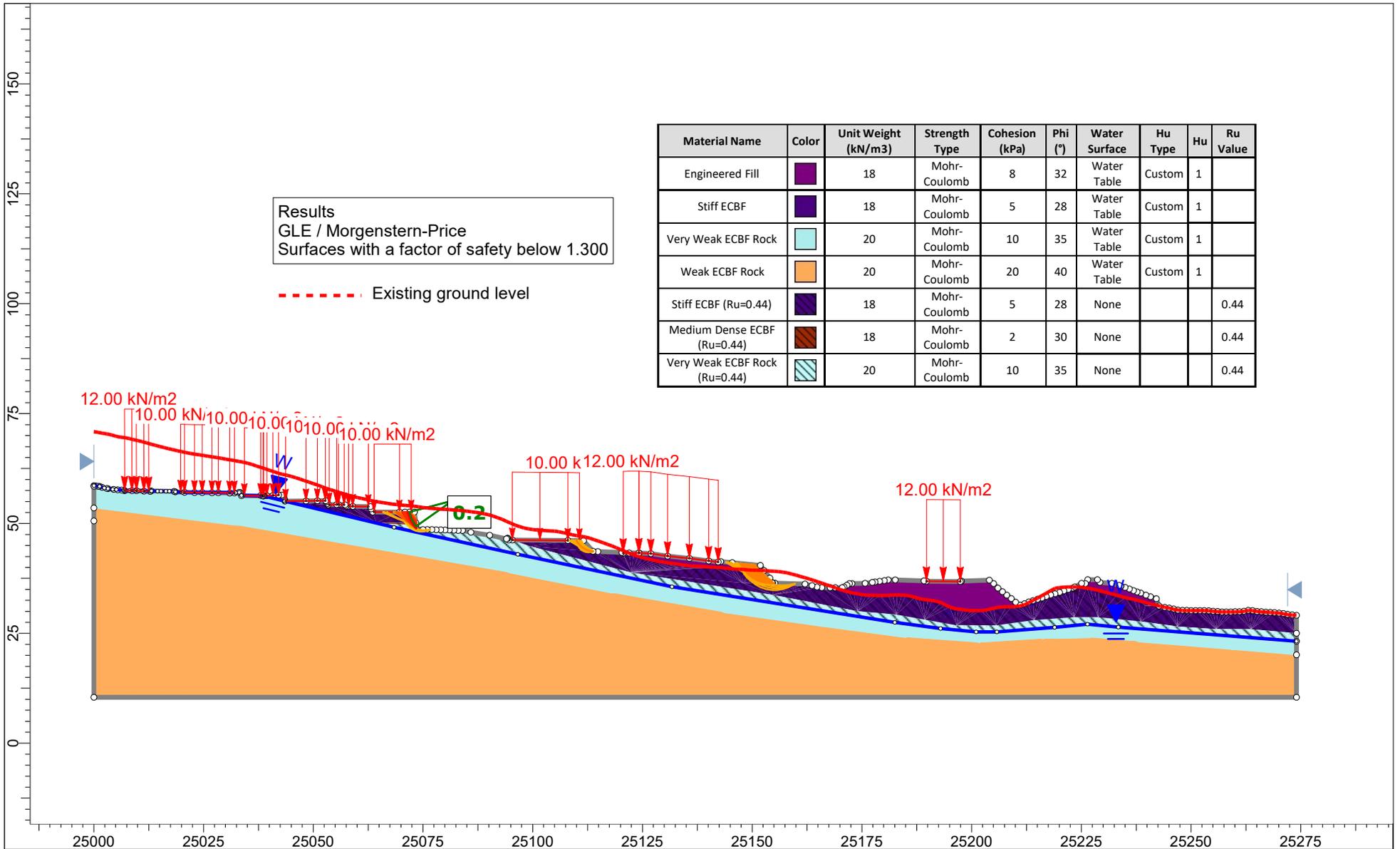
Material Name	Color	Unit Weight (kN/m3)	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu	Ru Value
Engineered Fill	Purple	18	Mohr-Coulomb	8	32	Water Table	Custom	1	
Stiff ECBF	Dark Purple	18	Mohr-Coulomb	5	28	Water Table	Custom	1	
Very Weak ECBF Rock	Light Blue	20	Mohr-Coulomb	10	35	Water Table	Custom	1	
Weak ECBF Rock	Orange	20	Mohr-Coulomb	20	40	Water Table	Custom	1	
Stiff ECBF (Ru=0.44)	Dark Purple	18	Mohr-Coulomb	5	28	None			0.44
Medium Dense ECBF (Ru=0.44)	Brown	18	Mohr-Coulomb	2	30	None			0.44
50% Sat. Engineered Fill (Ru=0.27)	Purple	18	Mohr-Coulomb	8	32	None			0.27
Very Weak ECBF Rock (Ru=0.44)	Light Blue	20	Mohr-Coulomb	10	35	None			0.44

Results  
GLE / Morgenstern-Price  
Surfaces with a factor of safety below 1.000

--- Existing ground level

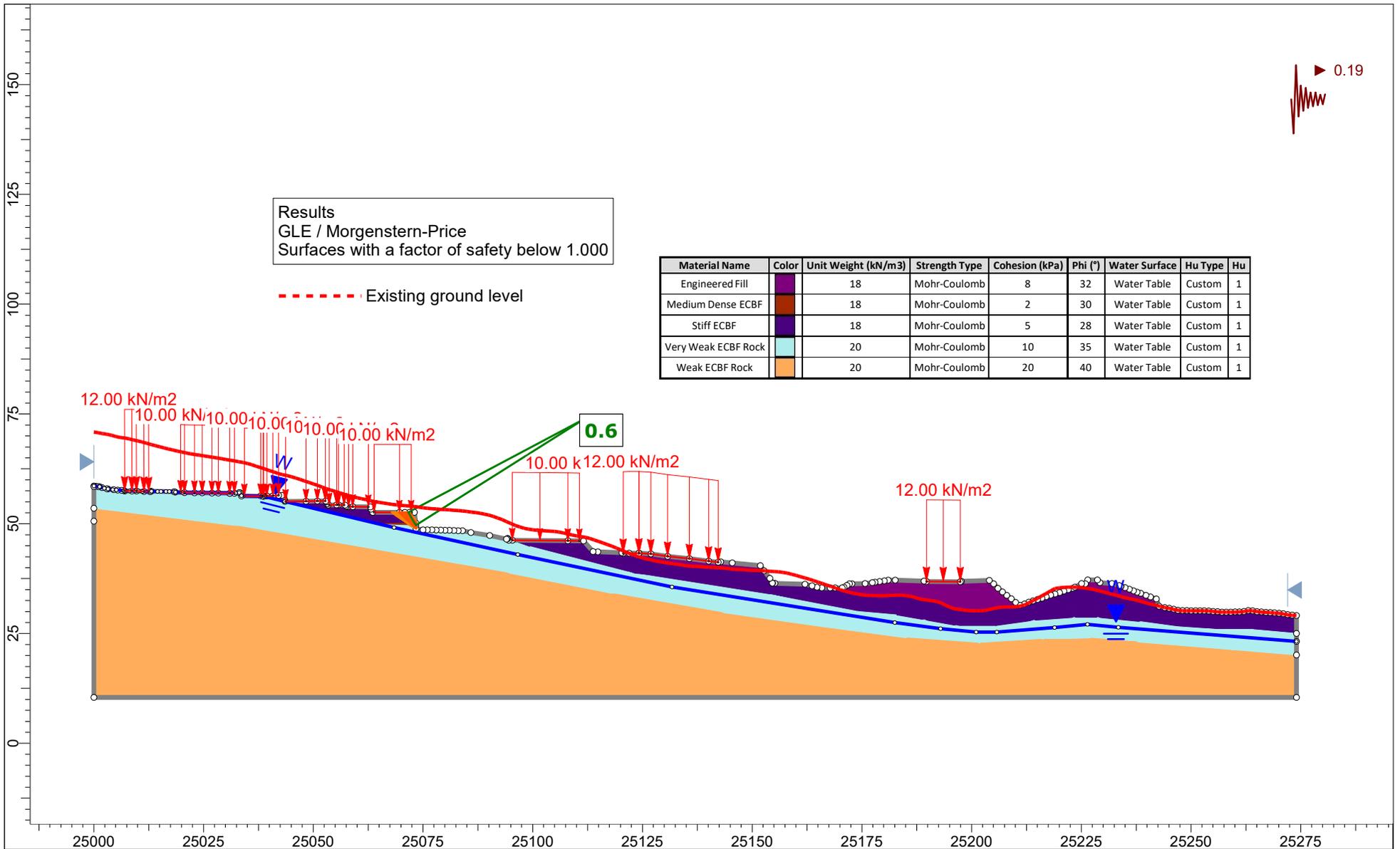
	Project		240065 - Russell Road, Waunui	
	Group		Section Y - Proposed GL & Remedials	Scenario
	Drawn By		LKB	Company
	Date		19/12/2025	File Name
				Section Y.sldm





Material Name	Color	Unit Weight (kN/m3)	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu	Ru Value
Engineered Fill	■	18	Mohr-Coulomb	8	32	Water Table	Custom	1	
Stiff ECFB	■	18	Mohr-Coulomb	5	28	Water Table	Custom	1	
Very Weak ECFB Rock	■	20	Mohr-Coulomb	10	35	Water Table	Custom	1	
Weak ECFB Rock	■	20	Mohr-Coulomb	20	40	Water Table	Custom	1	
Stiff ECFB (Ru=0.44)	■	18	Mohr-Coulomb	5	28	None			0.44
Medium Dense ECFB (Ru=0.44)	■	18	Mohr-Coulomb	2	30	None			0.44
Very Weak ECFB Rock (Ru=0.44)	■	20	Mohr-Coulomb	10	35	None			0.44

	Project		240065 - Russell Road, Waunui	
	Group		Section Y - Proposed GL	Scenario
	Drawn By		LKB	Company
	Date		19/12/2025	File Name
				Section Y.sldm



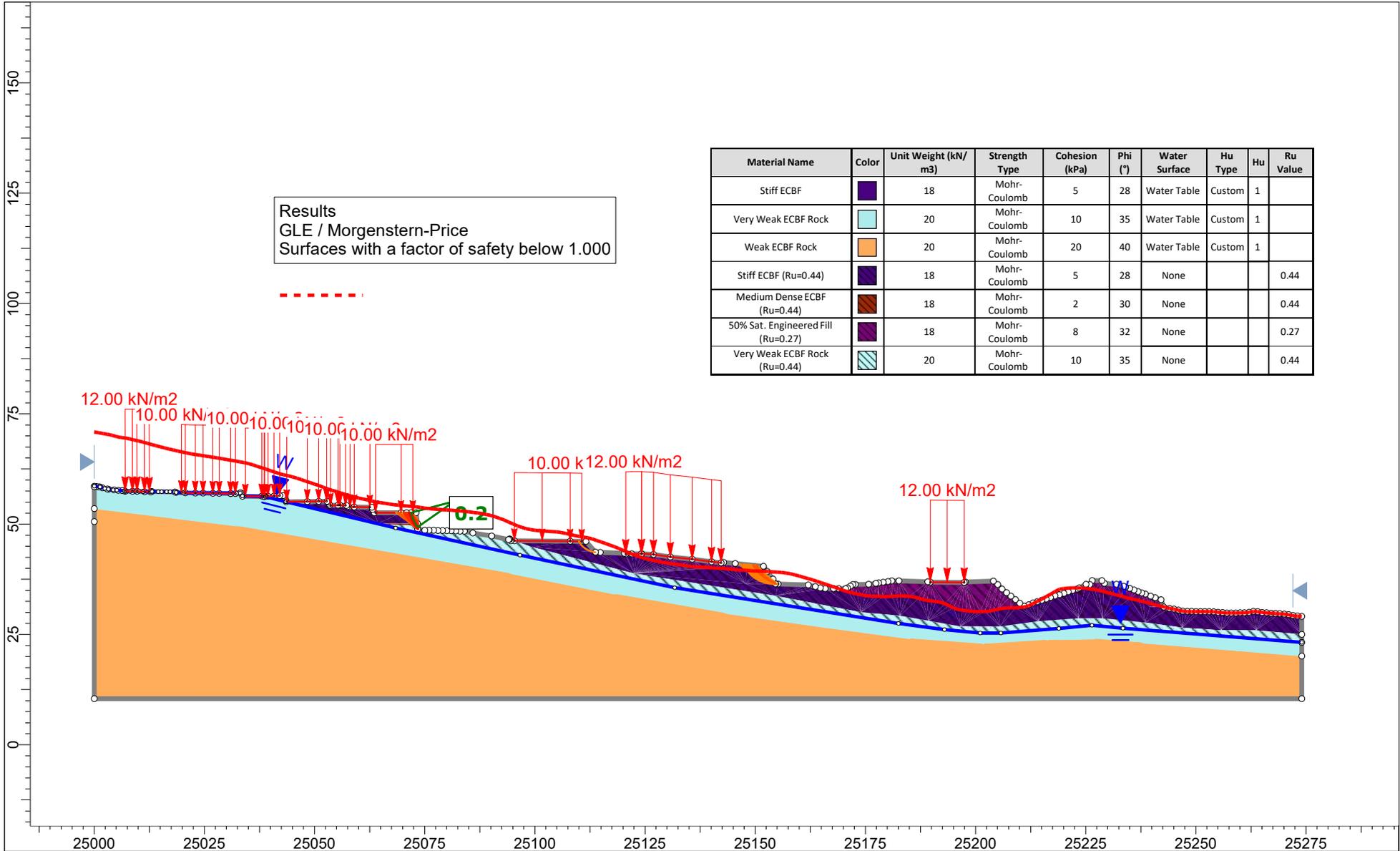
Results  
GLE / Morgenstern-Price  
Surfaces with a factor of safety below 1.000

--- Existing ground level

Material Name	Color	Unit Weight (kN/m <sup>3</sup> )	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu
Engineered Fill	Orange	18	Mohr-Coulomb	8	32	Water Table	Custom	1
Medium Dense ECBF	Dark Blue	18	Mohr-Coulomb	2	30	Water Table	Custom	1
Stiff ECBF	Light Blue	18	Mohr-Coulomb	5	28	Water Table	Custom	1
Very Weak ECBF Rock	Light Cyan	20	Mohr-Coulomb	10	35	Water Table	Custom	1
Weak ECBF Rock	Orange	20	Mohr-Coulomb	20	40	Water Table	Custom	1



Project	240065 - Russell Road, Waunui		
Group	Section Y - Proposed GL	Scenario	Seismic (0.19g)
Drawn By	LKB	Company	Riley Consultants Ltd
Date	19/12/2025	File Name	Section Y.sldm



Results  
GLE / Morgenstern-Price  
Surfaces with a factor of safety below 1.000

Material Name	Color	Unit Weight (kN/m <sup>3</sup> )	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu	Ru Value
Stiff ECBF	Dark Purple	18	Mohr-Coulomb	5	28	Water Table	Custom	1	
Very Weak ECBF Rock	Light Blue	20	Mohr-Coulomb	10	35	Water Table	Custom	1	
Weak ECBF Rock	Orange	20	Mohr-Coulomb	20	40	Water Table	Custom	1	
Stiff ECBF (Ru=0.44)	Dark Purple	18	Mohr-Coulomb	5	28	None			0.44
Medium Dense ECBF (Ru=0.44)	Brown	18	Mohr-Coulomb	2	30	None			0.44
50% Sat. Engineered Fill (Ru=0.27)	Purple	18	Mohr-Coulomb	8	32	None			0.27
Very Weak ECBF Rock (Ru=0.44)	Light Blue with Diagonal Lines	20	Mohr-Coulomb	10	35	None			0.44

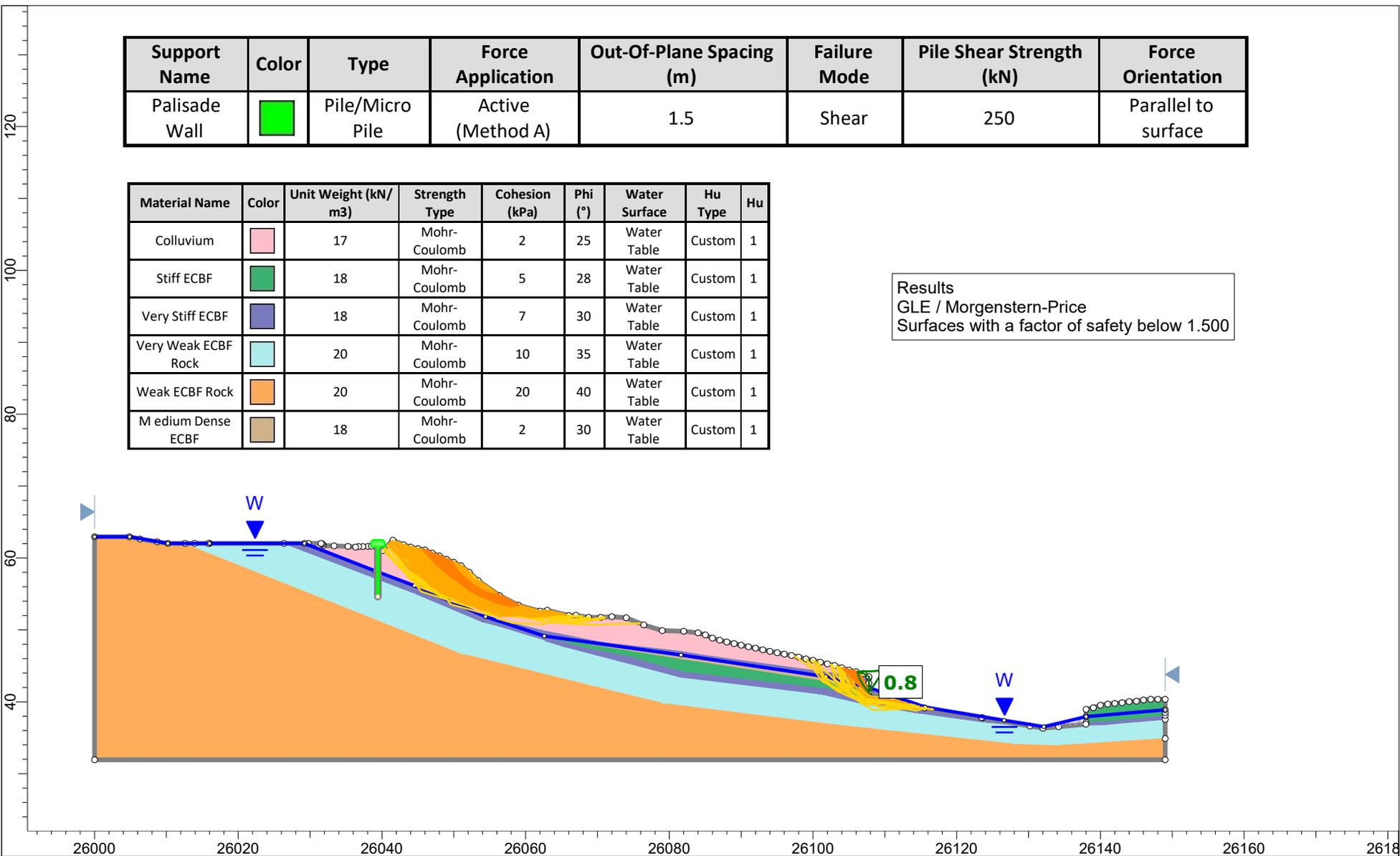


Project	240065 - Russell Road, Waunui		
Group	Section Y - Proposed GL	Scenario	Extreme (50% Fill Saturation)
Drawn By	LKB	Company	Riley Consultants Ltd
Date	19/12/2025	File Name	Section Y.sldm

Support Name	Color	Type	Force Application	Out-Of-Plane Spacing (m)	Failure Mode	Pile Shear Strength (kN)	Force Orientation
Palisade Wall		Pile/Micro Pile	Active (Method A)	1.5	Shear	250	Parallel to surface

Material Name	Color	Unit Weight (kN/m <sup>3</sup> )	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu
Colluvium		17	Mohr-Coulomb	2	25	Water Table	Custom	1
Stiff ECBF		18	Mohr-Coulomb	5	28	Water Table	Custom	1
Very Stiff ECBF		18	Mohr-Coulomb	7	30	Water Table	Custom	1
Very Weak ECBF Rock		20	Mohr-Coulomb	10	35	Water Table	Custom	1
Weak ECBF Rock		20	Mohr-Coulomb	20	40	Water Table	Custom	1
Medium Dense ECBF		18	Mohr-Coulomb	2	30	Water Table	Custom	1

Results  
GLE / Morgenstern-Price  
Surfaces with a factor of safety below 1.500

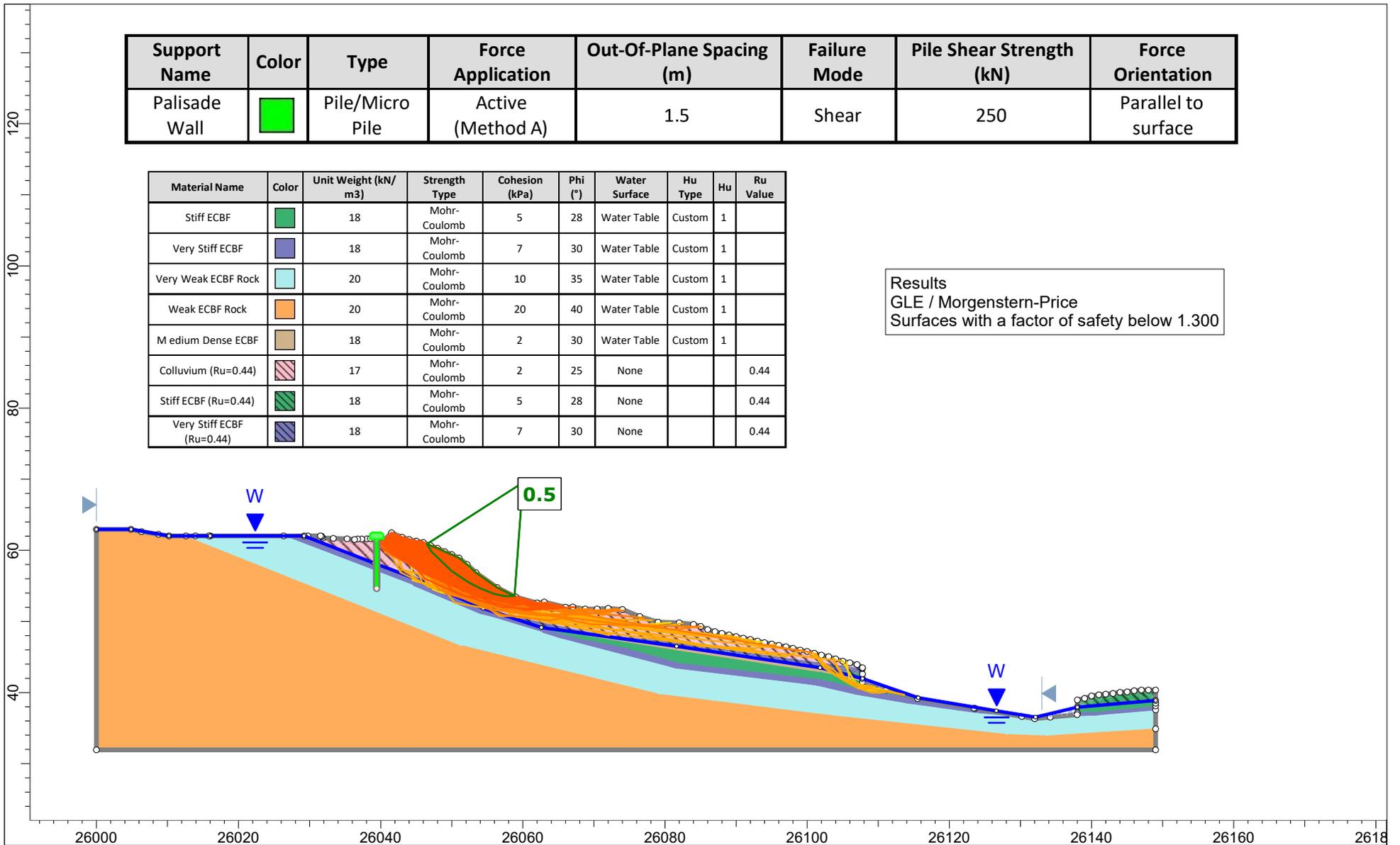


	Project		240065 - Russell Road, Waunui	
	Group		Section Z - Proposed GL & remedials	Scenario
	Drawn By		LKB	Company
	Date		19/12/2025	File Name
			Normal (Measured GW)	
			Riley Consultants Ltd	
			Section Z.slmd	

Support Name	Color	Type	Force Application	Out-Of-Plane Spacing (m)	Failure Mode	Pile Shear Strength (kN)	Force Orientation
Palisade Wall		Pile/Micro Pile	Active (Method A)	1.5	Shear	250	Parallel to surface

Material Name	Color	Unit Weight (kN/m <sup>3</sup> )	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu	Ru Value
Stiff ECBF		18	Mohr-Coulomb	5	28	Water Table	Custom	1	
Very Stiff ECBF		18	Mohr-Coulomb	7	30	Water Table	Custom	1	
Very Weak ECBF Rock		20	Mohr-Coulomb	10	35	Water Table	Custom	1	
Weak ECBF Rock		20	Mohr-Coulomb	20	40	Water Table	Custom	1	
Medium Dense ECBF		18	Mohr-Coulomb	2	30	Water Table	Custom	1	
Colluvium (Ru=0.44)		17	Mohr-Coulomb	2	25	None			0.44
Stiff ECBF (Ru=0.44)		18	Mohr-Coulomb	5	28	None			0.44
Very Stiff ECBF (Ru=0.44)		18	Mohr-Coulomb	7	30	None			0.44

Results  
GLE / Morgenstern-Price  
Surfaces with a factor of safety below 1.300



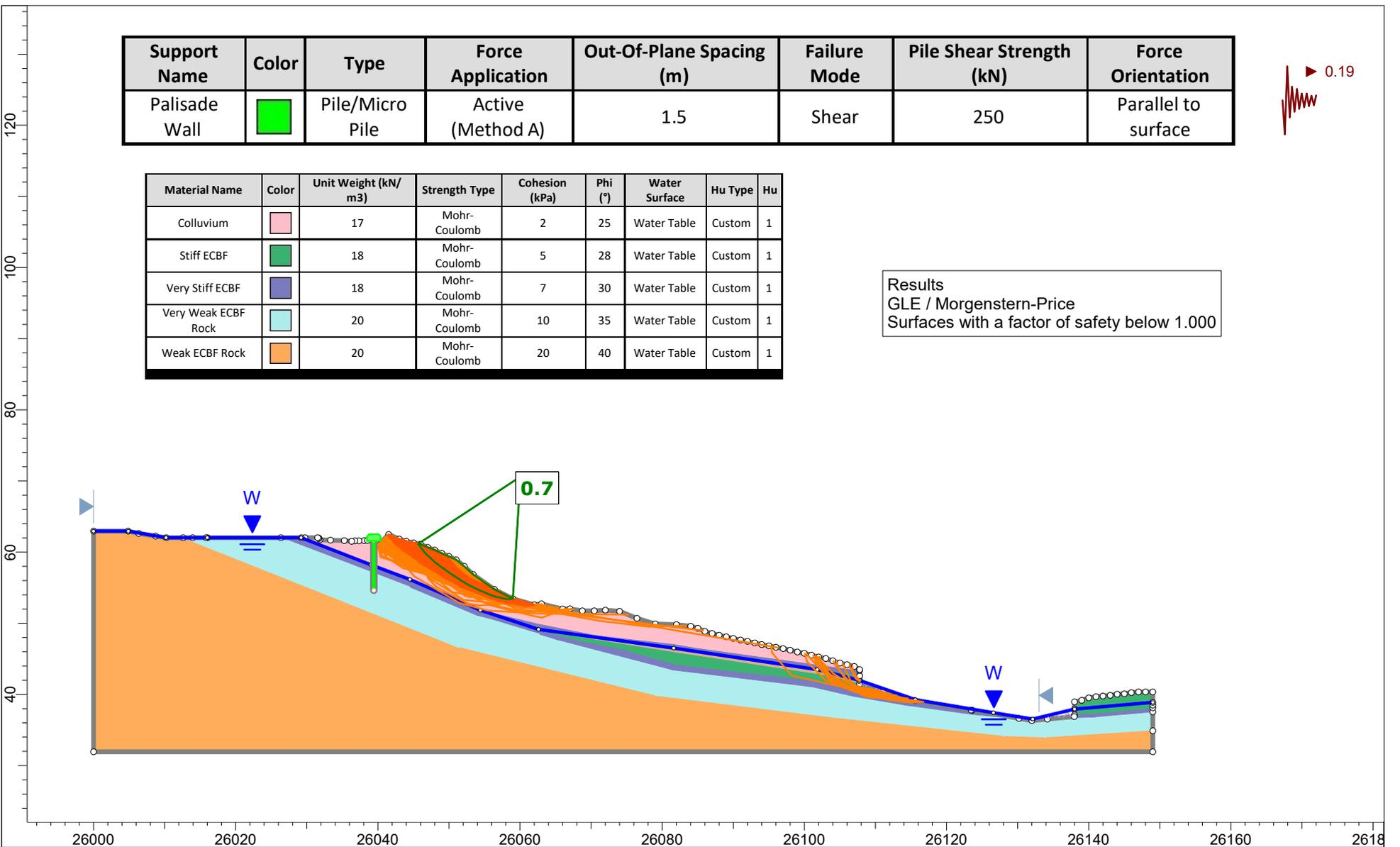
Project	240065 - Russell Road, Waunui		
Group	Section Z - Proposed GL & remedials	Scenario	Extreme (Worst Credible GW)
Drawn By	LKB	Company	Riley Consultants Ltd
Date	19/12/2025	File Name	Section Z.slmd

Support Name	Color	Type	Force Application	Out-Of-Plane Spacing (m)	Failure Mode	Pile Shear Strength (kN)	Force Orientation
Palisade Wall		Pile/Micro Pile	Active (Method A)	1.5	Shear	250	Parallel to surface

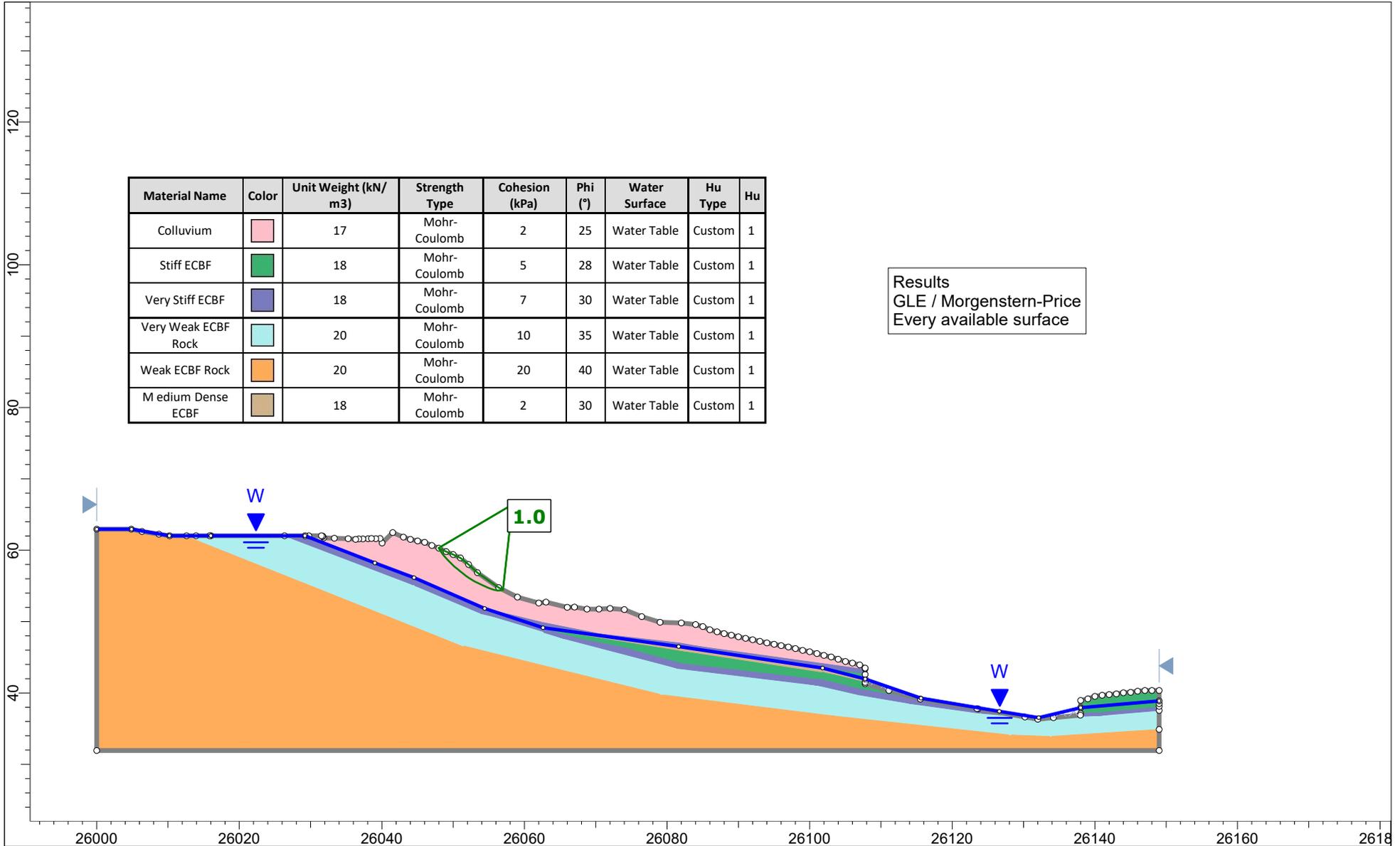


Material Name	Color	Unit Weight (kN/m <sup>3</sup> )	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu
Colluvium		17	Mohr-Coulomb	2	25	Water Table	Custom	1
Stiff ECBF		18	Mohr-Coulomb	5	28	Water Table	Custom	1
Very Stiff ECBF		18	Mohr-Coulomb	7	30	Water Table	Custom	1
Very Weak ECBF Rock		20	Mohr-Coulomb	10	35	Water Table	Custom	1
Weak ECBF Rock		20	Mohr-Coulomb	20	40	Water Table	Custom	1

Results  
GLE / Morgenstern-Price  
Surfaces with a factor of safety below 1.000



	Project		240065 - Russell Road, Waunui	
	Group		Section Z - Proposed GL & remedials	
	Scenario		Seismic (0.19g)	
	Drawn By		LKB	
Company		Riley Consultants Ltd		
Date		19/12/2025		
File Name		Section Z.slmd		

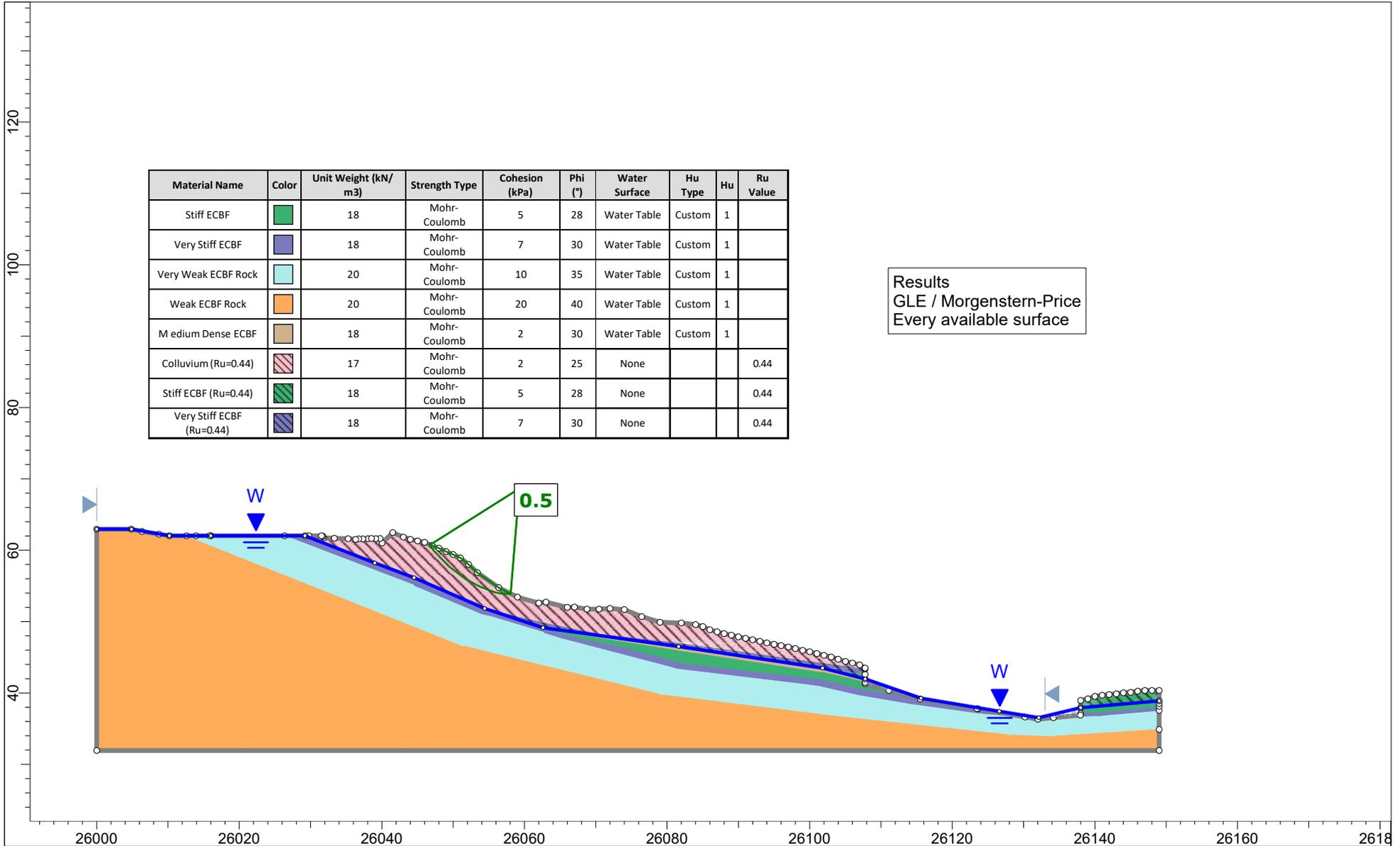


Material Name	Color	Unit Weight (kN/m <sup>3</sup> )	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu
Colluvium	<span style="color: pink;">■</span>	17	Mohr-Coulomb	2	25	Water Table	Custom	1
Stiff ECBF	<span style="color: green;">■</span>	18	Mohr-Coulomb	5	28	Water Table	Custom	1
Very Stiff ECBF	<span style="color: purple;">■</span>	18	Mohr-Coulomb	7	30	Water Table	Custom	1
Very Weak ECBF Rock	<span style="color: cyan;">■</span>	20	Mohr-Coulomb	10	35	Water Table	Custom	1
Weak ECBF Rock	<span style="color: orange;">■</span>	20	Mohr-Coulomb	20	40	Water Table	Custom	1
Medium Dense ECBF	<span style="color: brown;">■</span>	18	Mohr-Coulomb	2	30	Water Table	Custom	1

Results  
GLE / Morgenstern-Price  
Every available surface

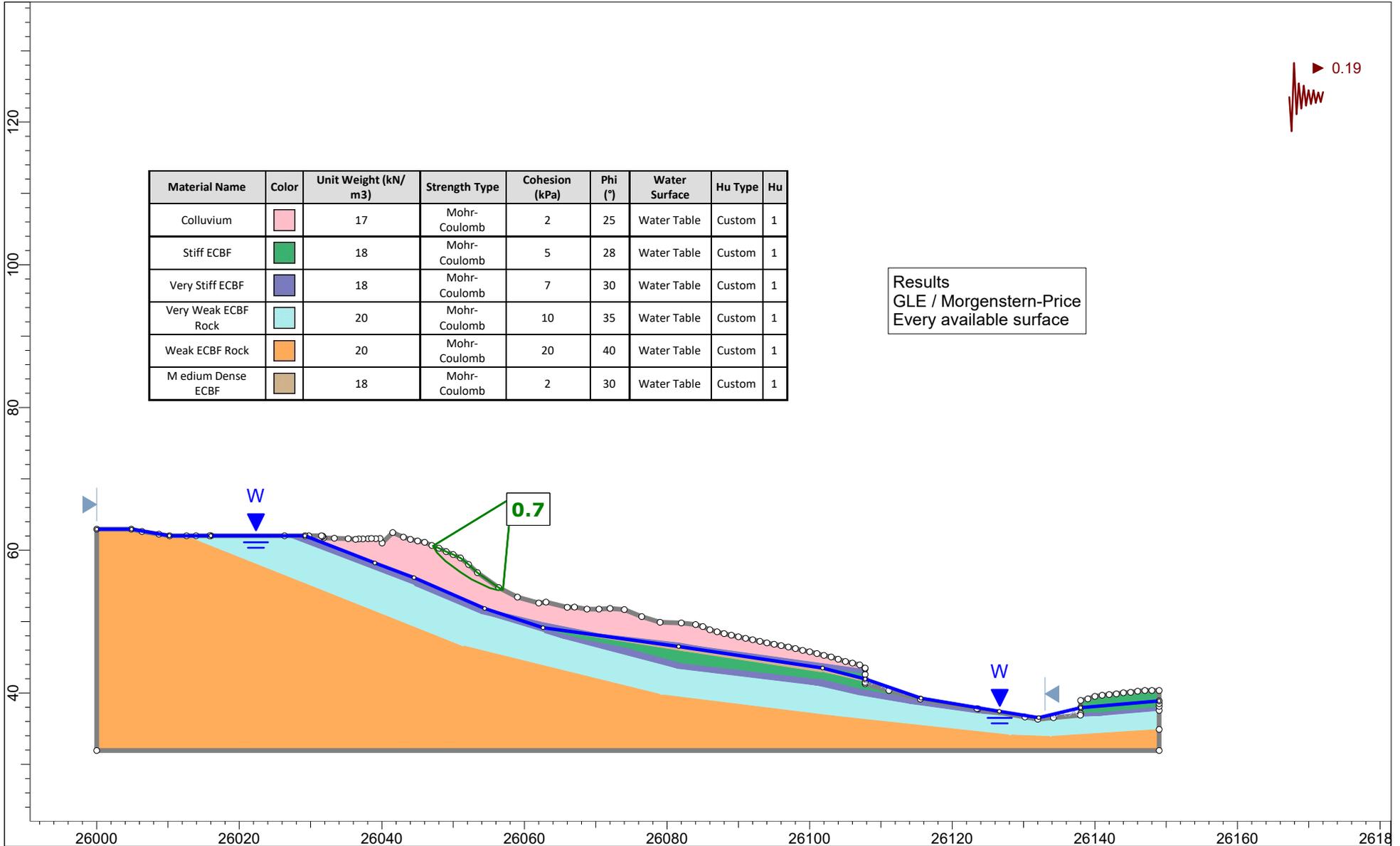


Project		240065 - Russell Road, Waunui	
Group	Section Z - Proposed GL	Scenario	Normal (Measured GW)
Drawn By	LKB	Company	Riley Consultants Ltd
Date	19/12/2025	File Name	Section Z.sldm



Material Name	Color	Unit Weight (kN/m <sup>3</sup> )	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu	Ru Value
Stiff ECBF	Green	18	Mohr-Coulomb	5	28	Water Table	Custom	1	
Very Stiff ECBF	Blue	18	Mohr-Coulomb	7	30	Water Table	Custom	1	
Very Weak ECBF Rock	Cyan	20	Mohr-Coulomb	10	35	Water Table	Custom	1	
Weak ECBF Rock	Orange	20	Mohr-Coulomb	20	40	Water Table	Custom	1	
Medium Dense ECBF	Brown	18	Mohr-Coulomb	2	30	Water Table	Custom	1	
Colluvium (Ru=0.44)	Red Hatched	17	Mohr-Coulomb	2	25	None			0.44
Stiff ECBF (Ru=0.44)	Green Hatched	18	Mohr-Coulomb	5	28	None			0.44
Very Stiff ECBF (Ru=0.44)	Blue Hatched	18	Mohr-Coulomb	7	30	None			0.44

	Project		240065 - Russell Road, Waunui	
	Group		Section Z - Proposed GL	Scenario
	Drawn By		LKB	Company
	Date		19/12/2025	File Name
				Section Z.slmd
SLIDEINTERPRET 9.038				

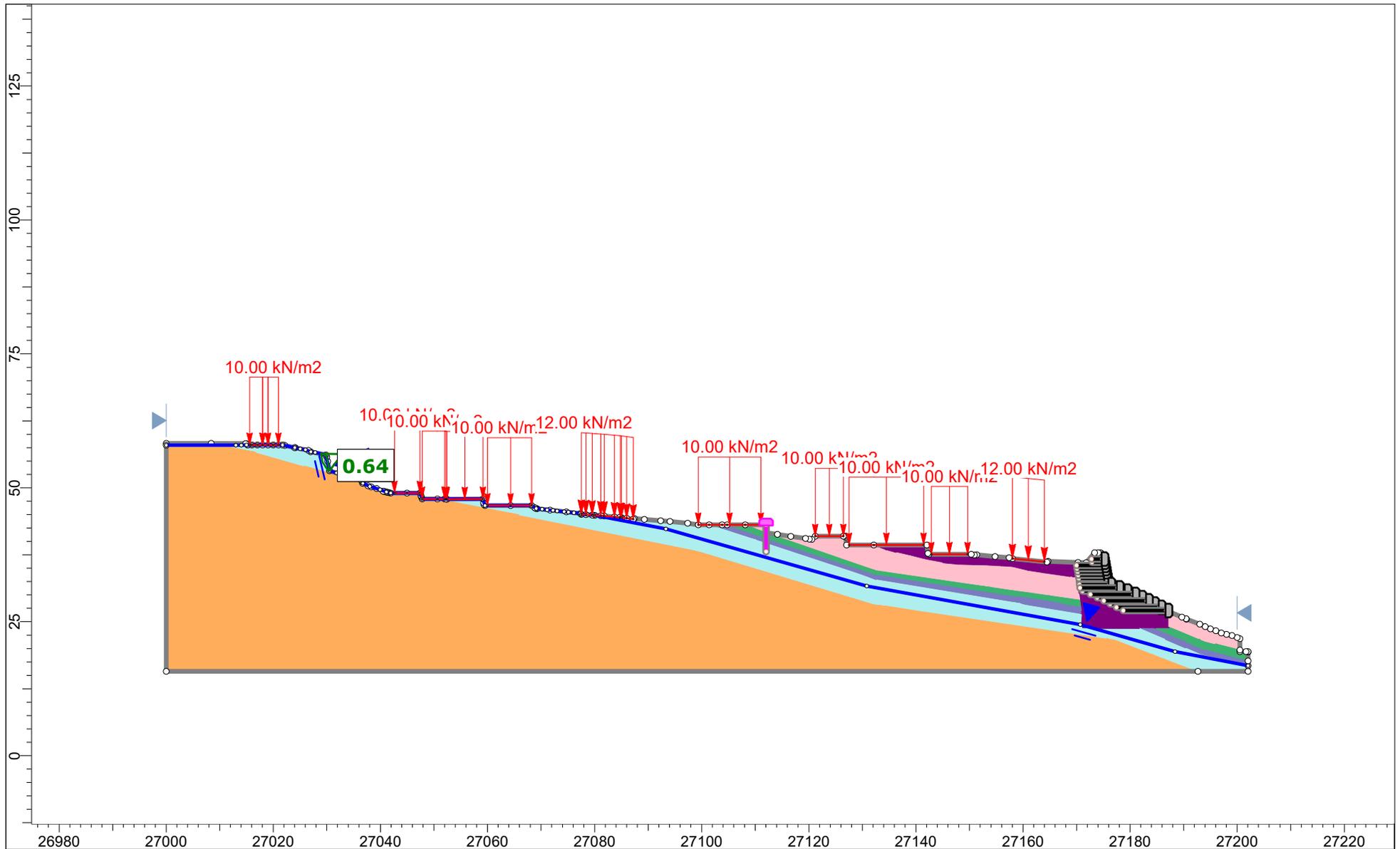


Material Name	Color	Unit Weight (kN/m <sup>3</sup> )	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu
Colluvium		17	Mohr-Coulomb	2	25	Water Table	Custom	1
Stiff ECBF		18	Mohr-Coulomb	5	28	Water Table	Custom	1
Very Stiff ECBF		18	Mohr-Coulomb	7	30	Water Table	Custom	1
Very Weak ECBF Rock		20	Mohr-Coulomb	10	35	Water Table	Custom	1
Weak ECBF Rock		20	Mohr-Coulomb	20	40	Water Table	Custom	1
Medium Dense ECBF		18	Mohr-Coulomb	2	30	Water Table	Custom	1

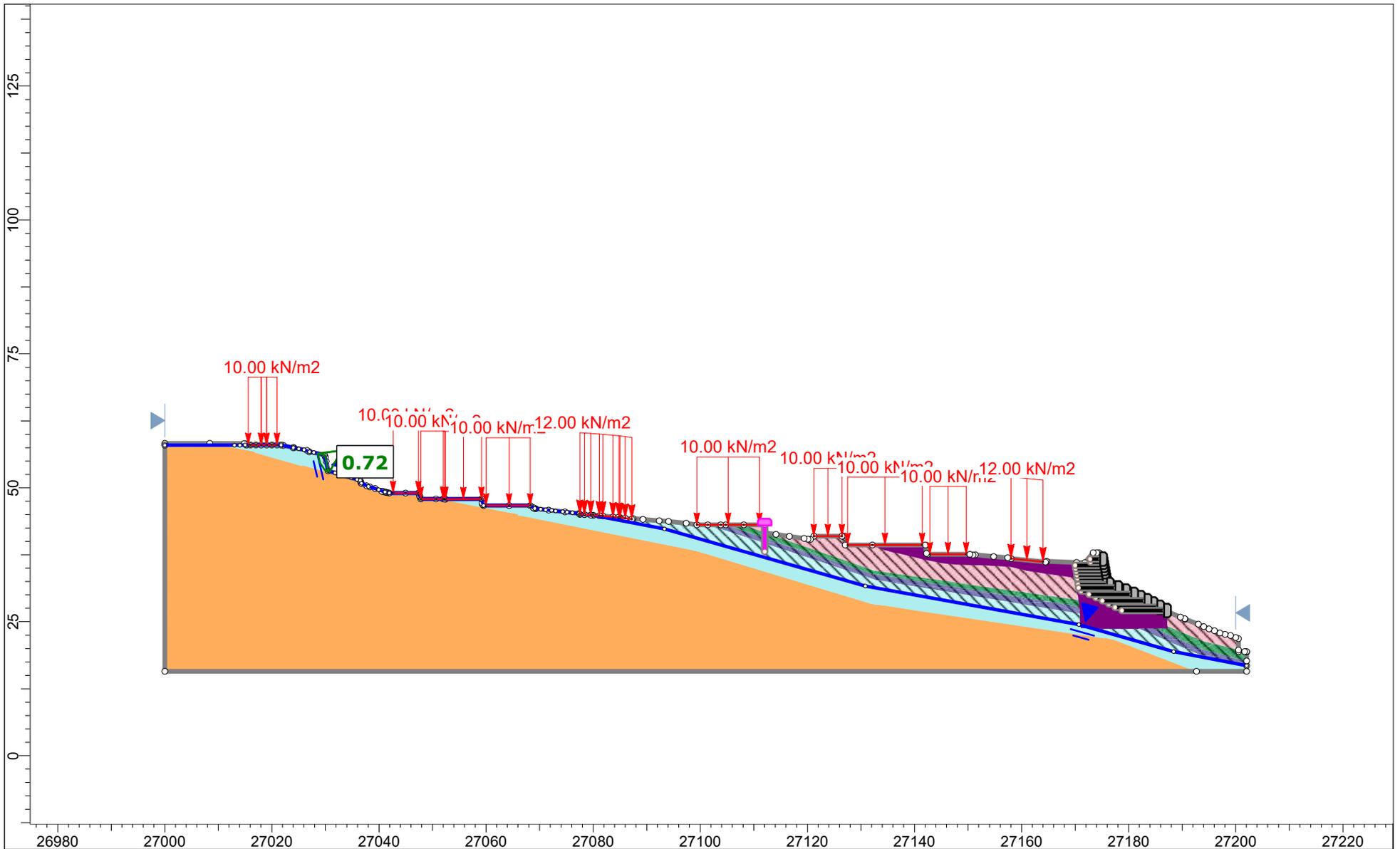
Results  
GLE / Morgenstern-Price  
Every available surface



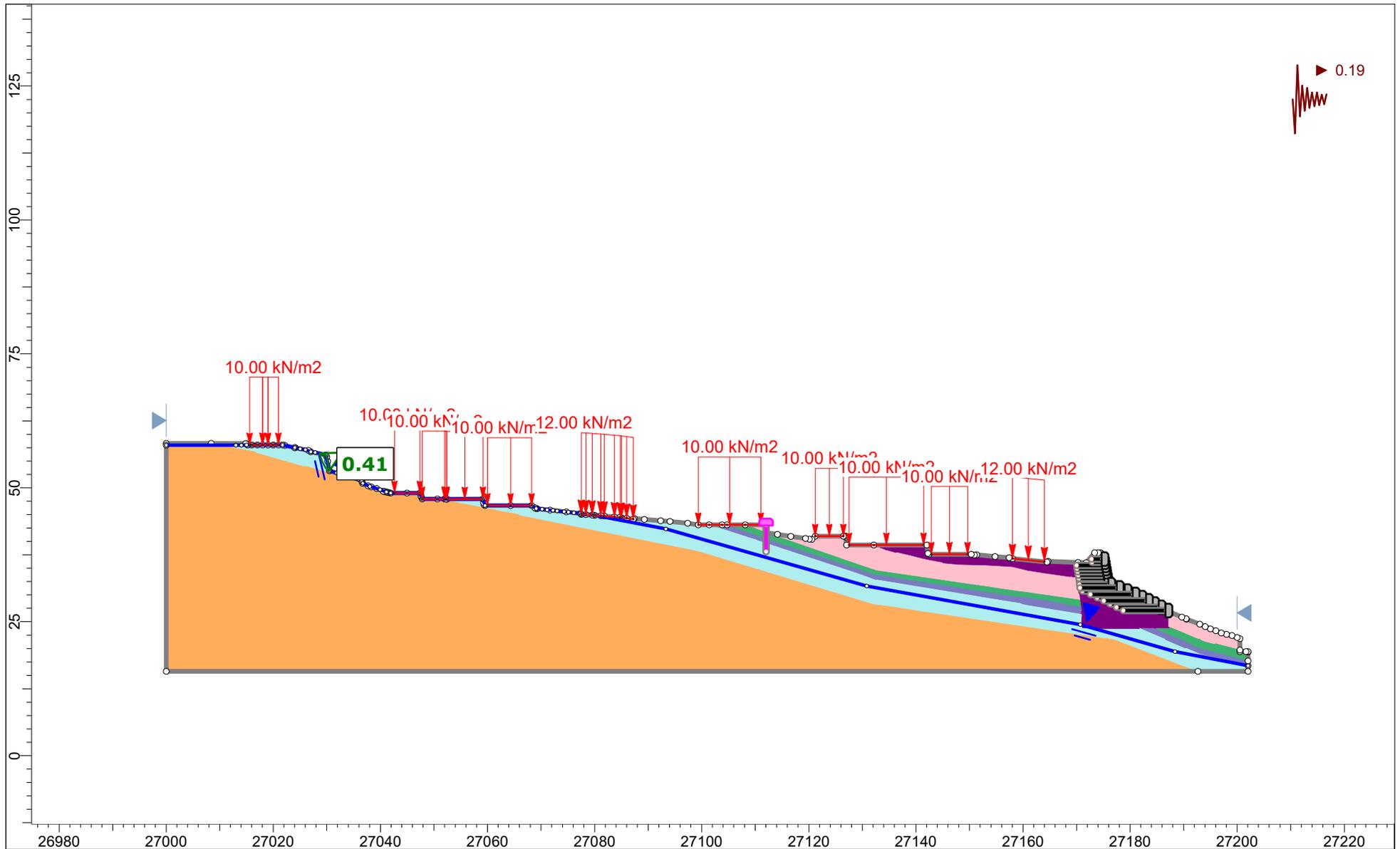
Project		240065 - Russell Road, Waunui	
Group	Section Z - Proposed GL	Scenario	Seismic (0.19g)
Drawn By	LKB	Company	Riley Consultants Ltd
Date	19/12/2025	File Name	Section Z.slmd



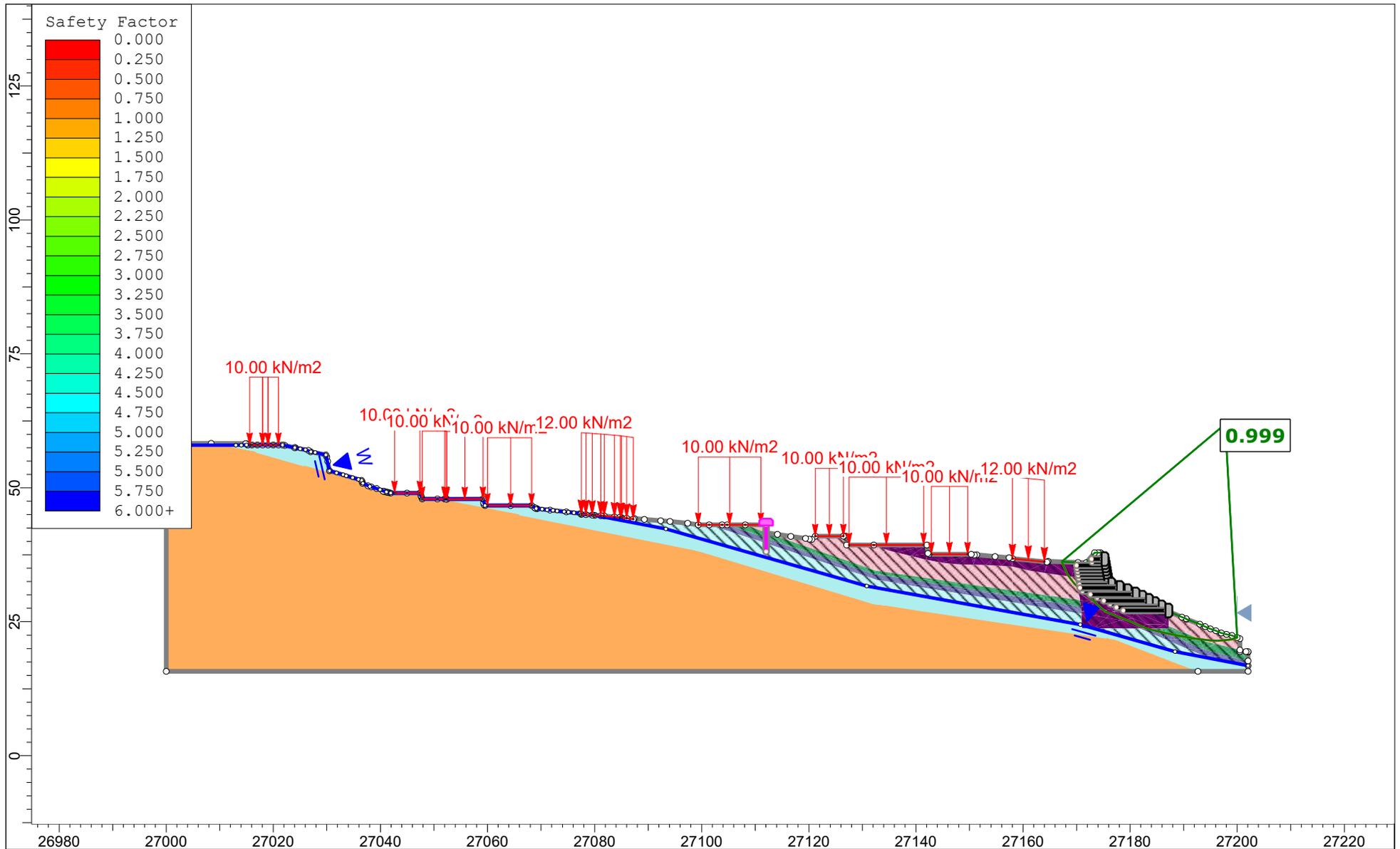
	<i>Project</i> 240065 - Russell Road, Wainui - Stage 1	
	<i>Group</i> Section AA - erosion & remedials	<i>Scenario</i> Normal (Measured GW)
	<i>Drawn By</i> RS	<i>Company</i> Riley Consultants Ltd
	<i>Date</i> 10/12/2024	<i>File Name</i> Section AA.slm



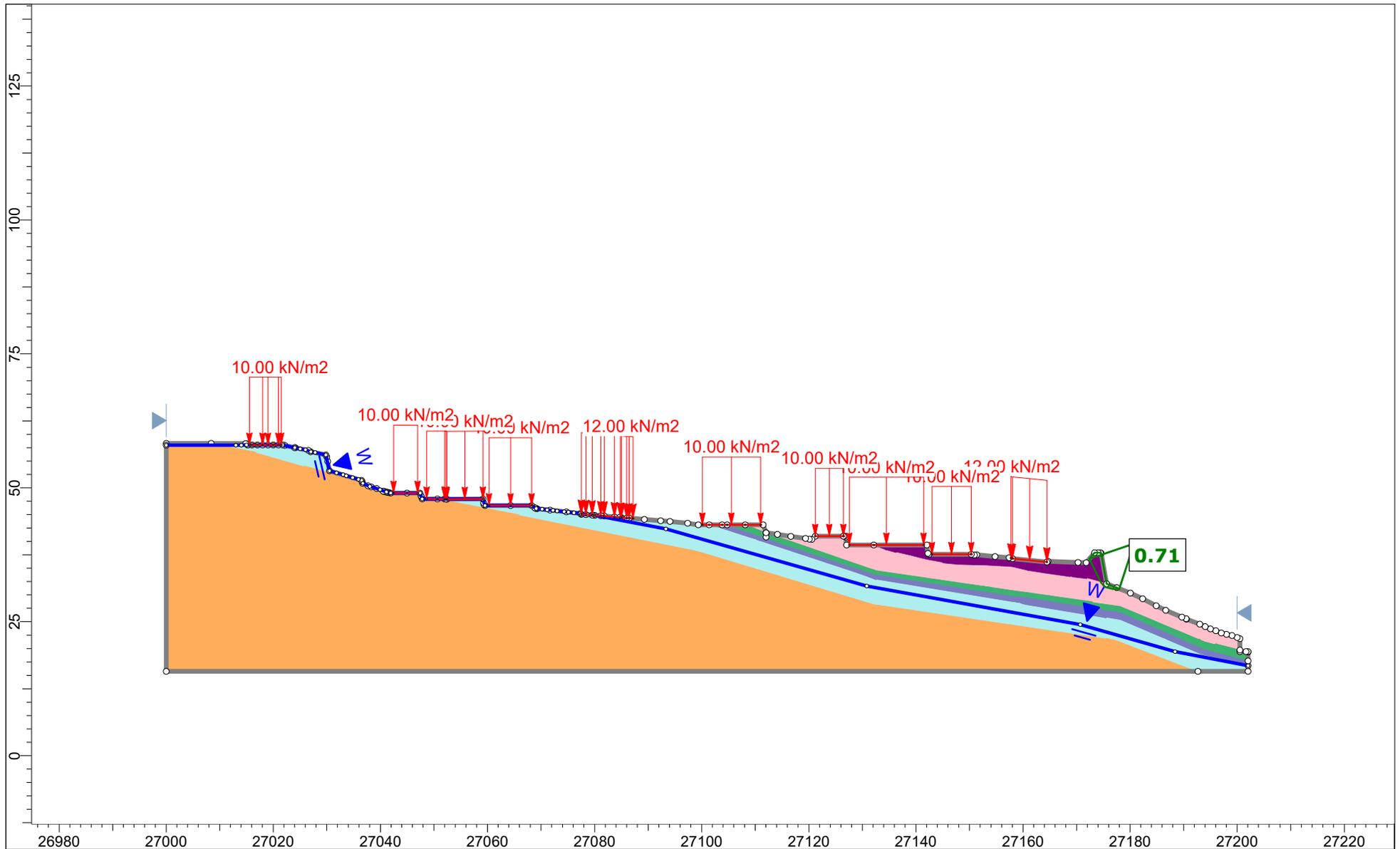
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	240065 - Russell Road, Wainui - Stage 1		
	Group	Section AA - erosion & remedials	Scenario
	Drawn By	RS	Company
Date	10/12/2024	File Name	Section AA.slm
		Extreme (Worst Credible GW)	
		Riley Consultants Ltd	



	<i>Project</i> 240065 - Russell Road, Wainui - Stage 1	
	<i>Group</i> Section AA - erosion & remedials	<i>Scenario</i> Seismic (0.19g)
	<i>Drawn By</i> RS	<i>Company</i> Riley Consultants Ltd
	<i>Date</i> 10/12/2024	<i>File Name</i> Section AA.slm

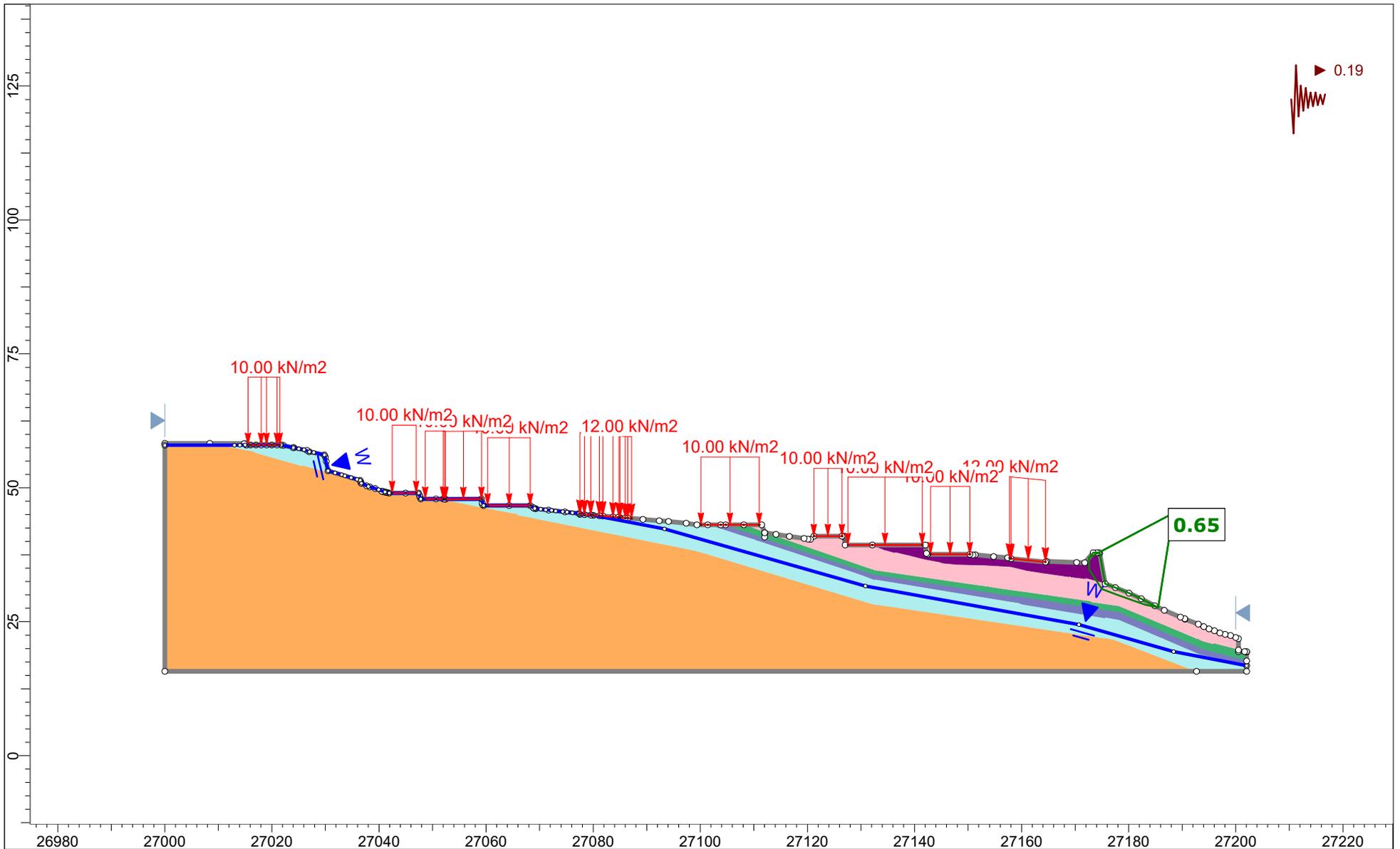


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	<i>Group</i> Section AA - erosion & remedials	<i>Scenario</i> Extreme (50% fill saturation)
	<i>Drawn By</i> RS	<i>Company</i> Riley Consultants Ltd
	<i>Date</i> 10/12/2024	<i>File Name</i> Section AA.slmd

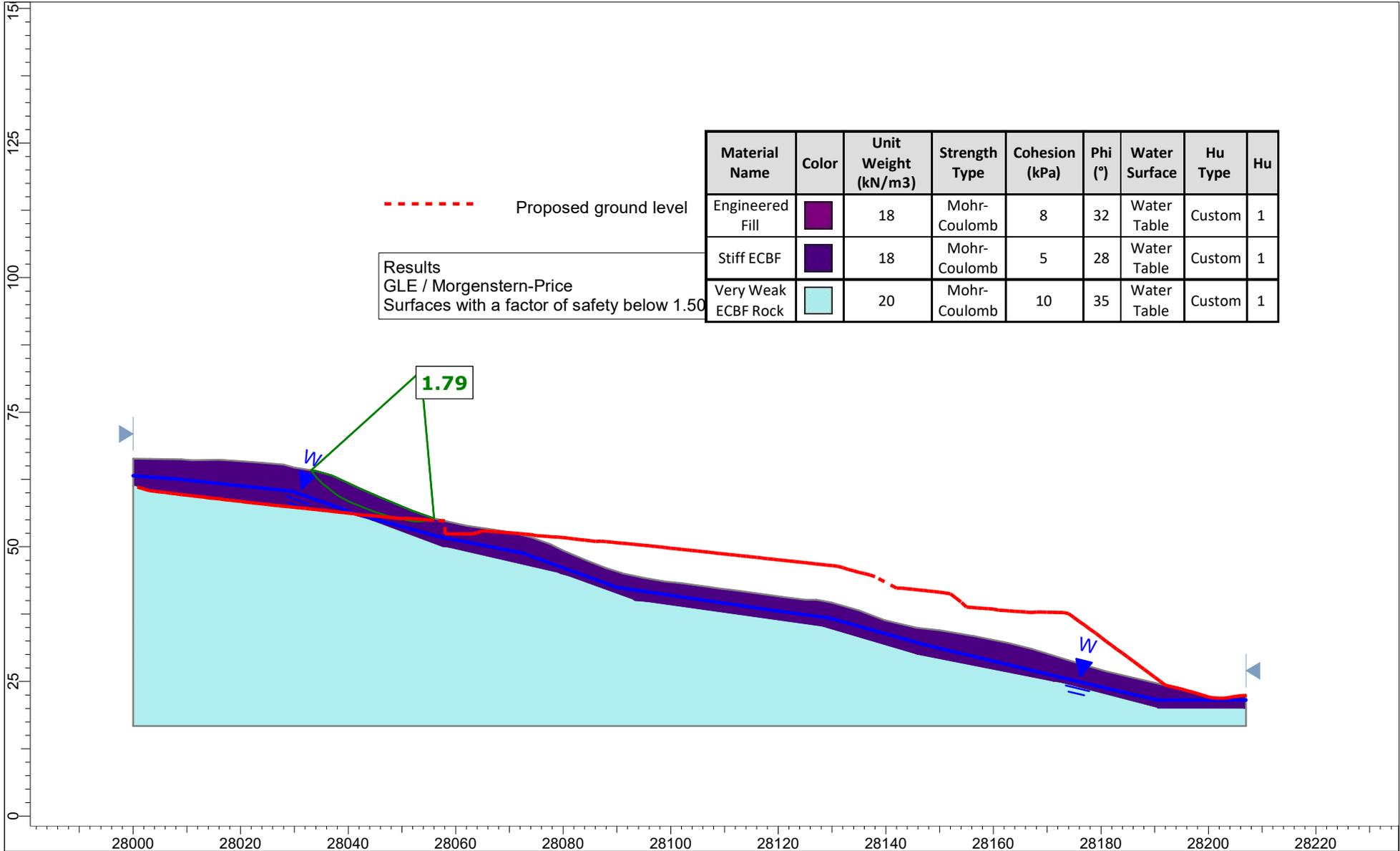


	Project		240065 - Russell Road, Wainui - Stage 1	
	Group	Section AA - Proposed GL	Scenario	Normal (Measured GW)
	Drawn By	RS	Company	Riley Consultants Ltd
	Date	10/12/2024	File Name	Section AA.slm





	Project		240065 - Russell Road, Wainui - Stage 1	
	Group	Section AA - Proposed GL	Scenario	Seismic (0.19g)
	Drawn By	RS	Company	Riley Consultants Ltd
	Date	10/12/2024	File Name	Section AA.slmd



----- Proposed ground level

Results  
GLE / Morgenstern-Price  
Surfaces with a factor of safety below 1.50

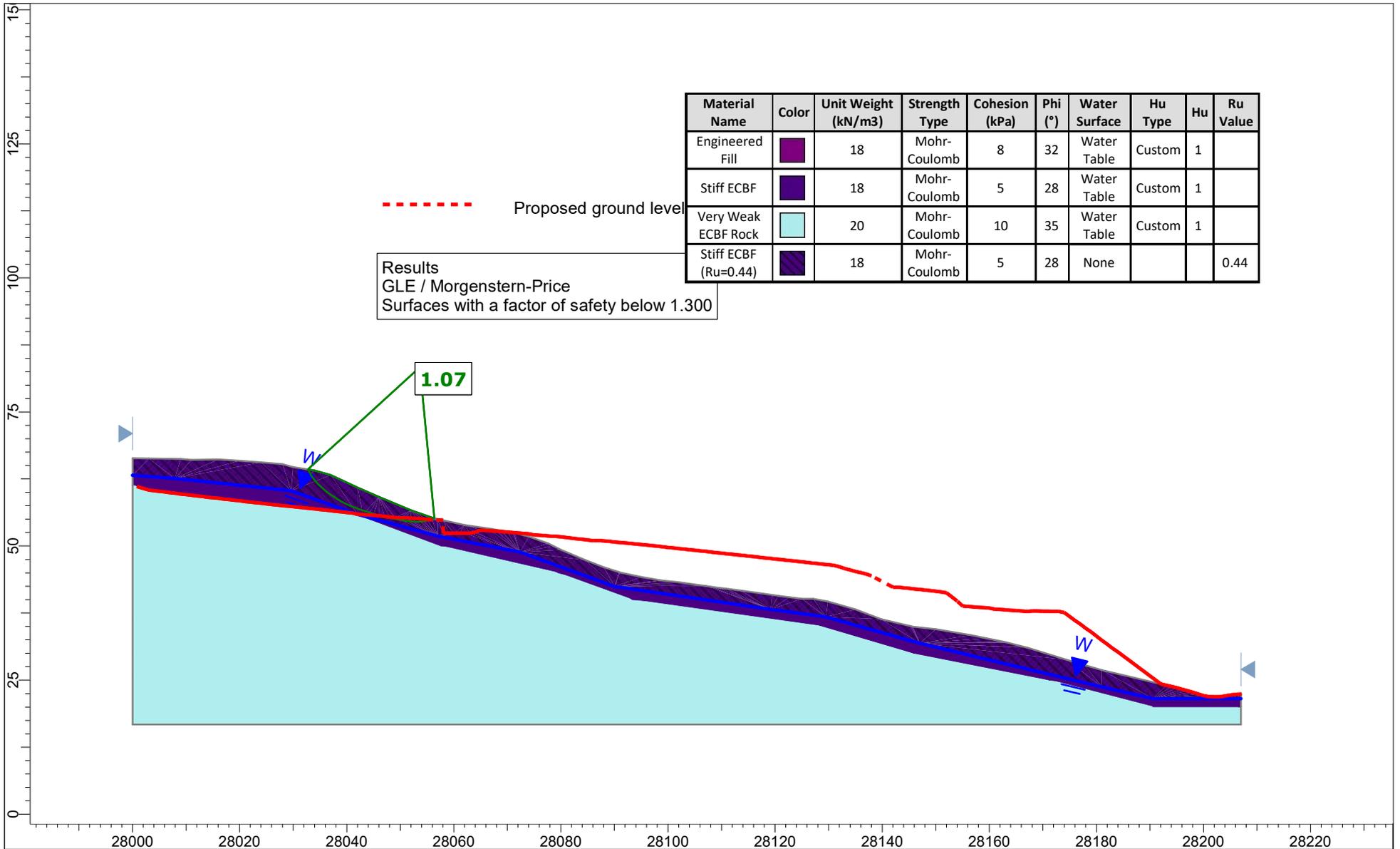
Material Name	Color	Unit Weight (kN/m <sup>3</sup> )	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu
Engineered Fill		18	Mohr-Coulomb	8	32	Water Table	Custom	1
Stiff ECBF		18	Mohr-Coulomb	5	28	Water Table	Custom	1
Very Weak ECBF Rock		20	Mohr-Coulomb	10	35	Water Table	Custom	1

1.79

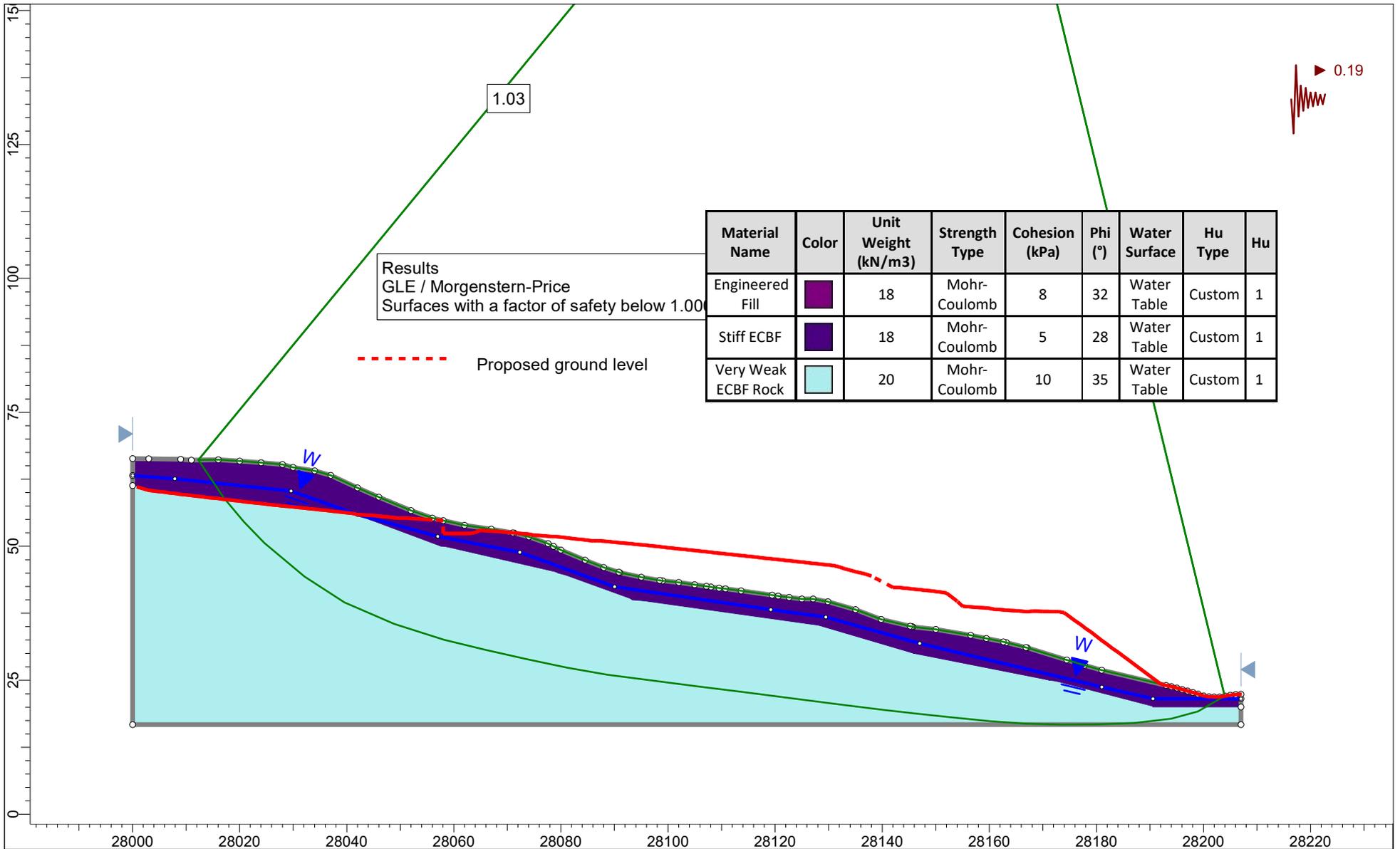


SLIDEINTERPRET 9.028

Project		240065 - Russell Road, Wainui - Stage 2	
Group	Section AB - Existing GL	Scenario	Normal (Measured GW)
Drawn By	RS	Company	Riley Consultants Ltd
Date	10/12/2024	File Name	Section AB.slmd



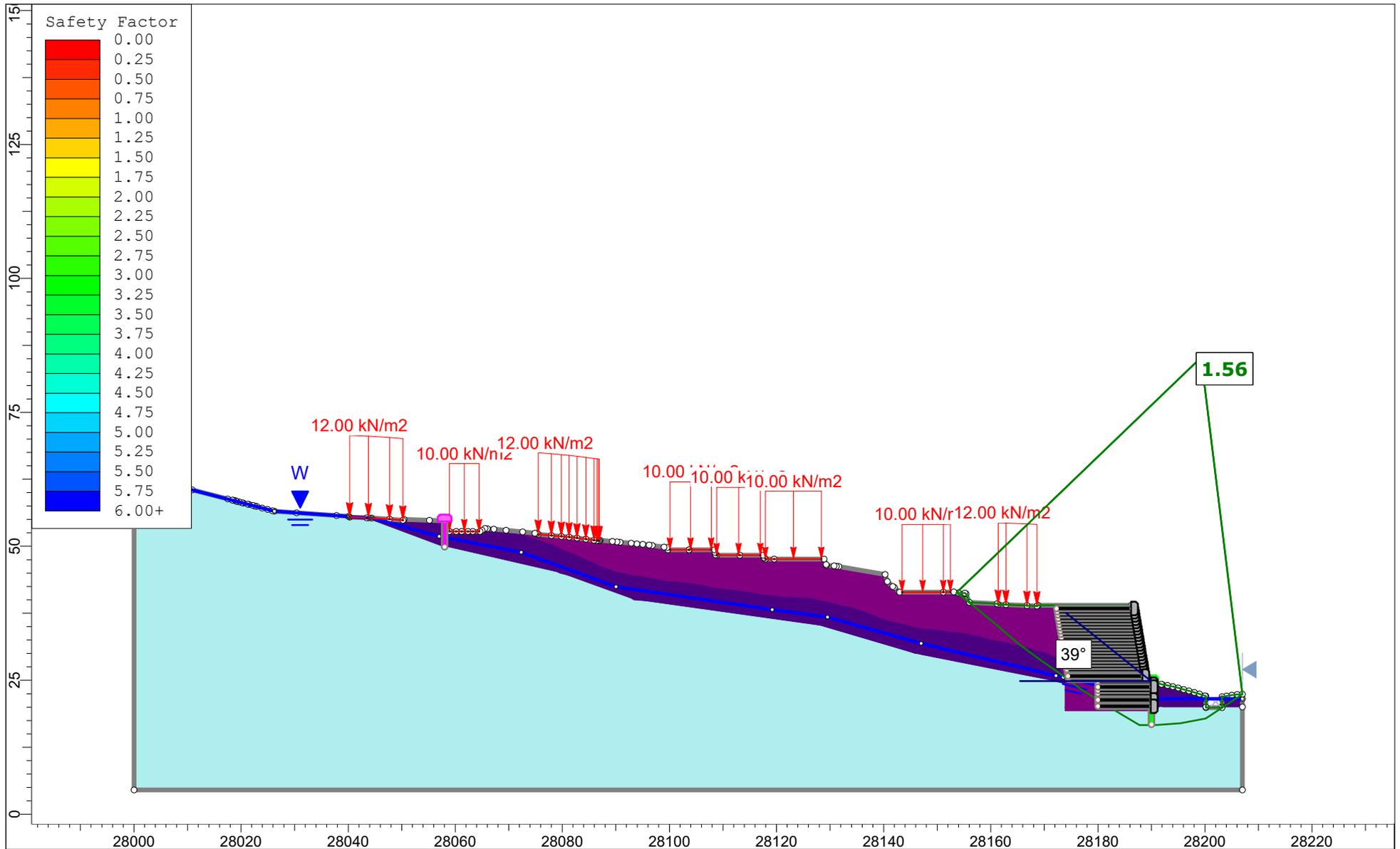
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	Group		Section AB - Existing GL	Scenario
	Drawn By		RS	Company
	Date		10/12/2024	File Name
			Extreme (Worst Credible GW)	
			Riley Consultants Ltd	
			Section AB.slmd	



Material Name	Color	Unit Weight (kN/m3)	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu
Engineered Fill	Dark Purple	18	Mohr-Coulomb	8	32	Water Table	Custom	1
Stiff ECBF	Dark Purple	18	Mohr-Coulomb	5	28	Water Table	Custom	1
Very Weak ECBF Rock	Light Blue	20	Mohr-Coulomb	10	35	Water Table	Custom	1

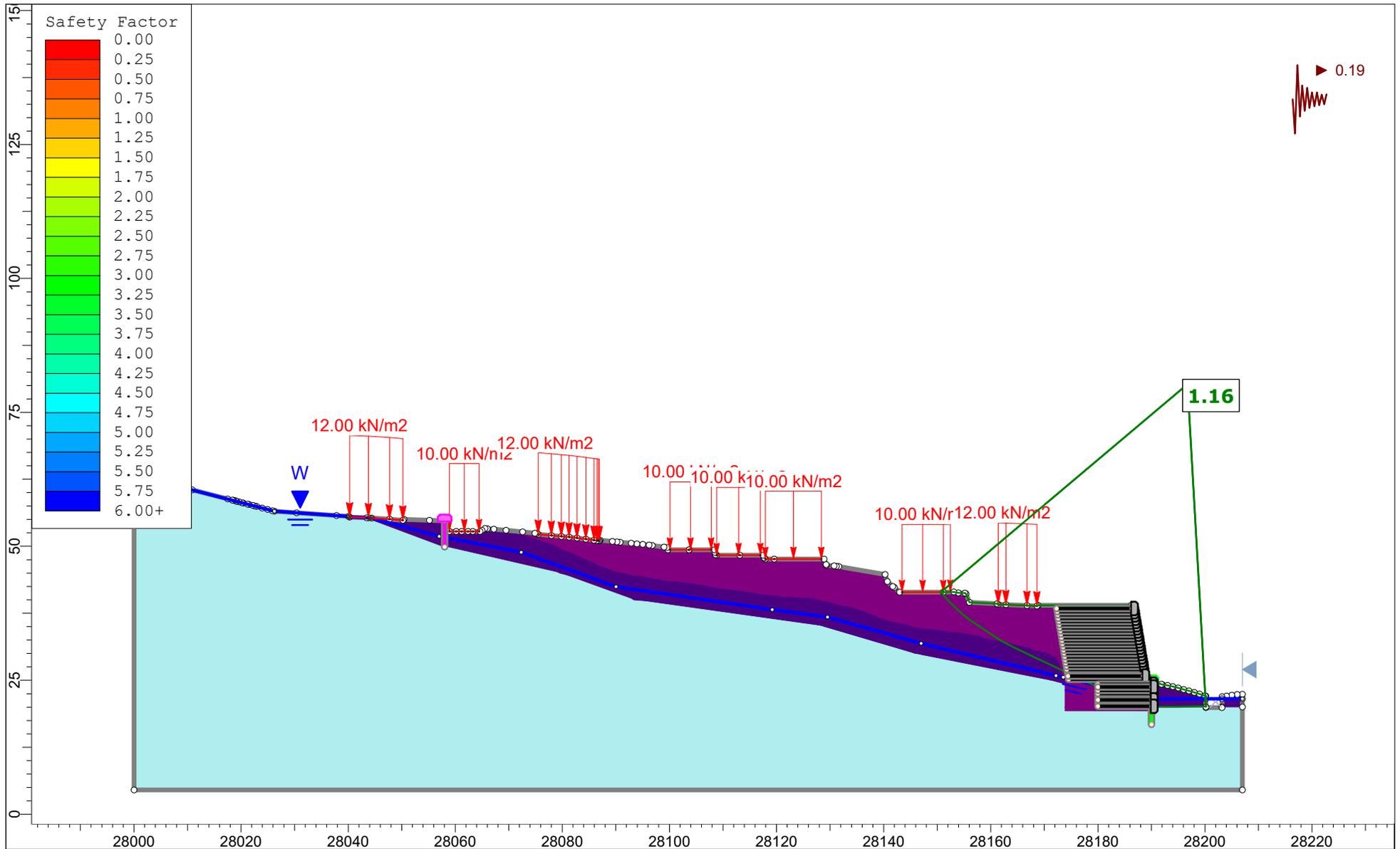


Project		240065 - Russell Road, Wainui - Stage 2	
Group	Section AB - Existing GL	Scenario	Seismic (0.19g)
Drawn By	RS	Company	Riley Consultants Ltd
Date	10/12/2024	File Name	Section AB.slmd

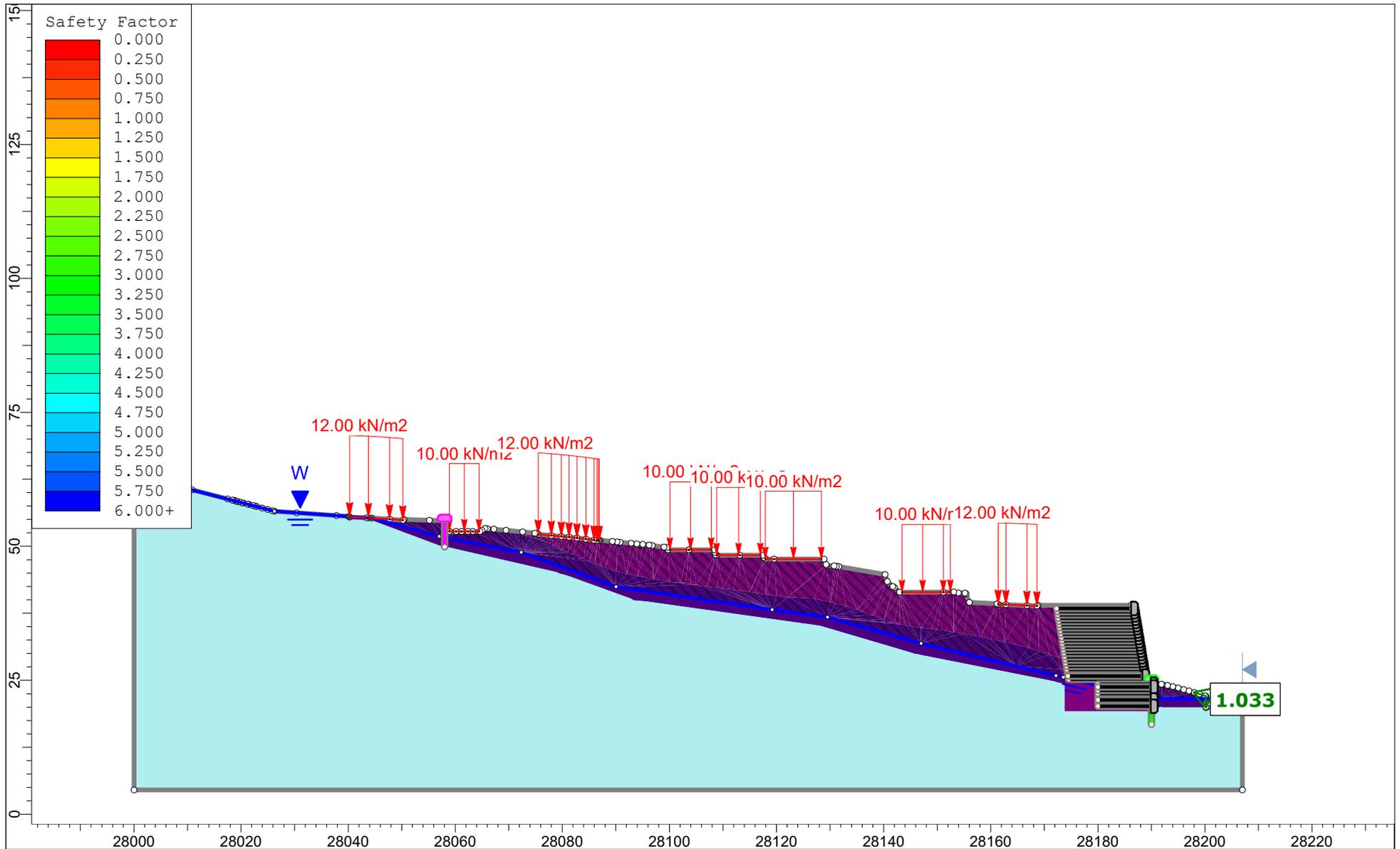


	Project		240065 - Russell Road, Wainui - Stage 2		
	Group		Section AB - erosion & remedials	Scenario	Normal (Measured GW)
	Drawn By		RS	Company	Riley Consultants Ltd
	Date		10/12/2024	File Name	Section AB.slmd

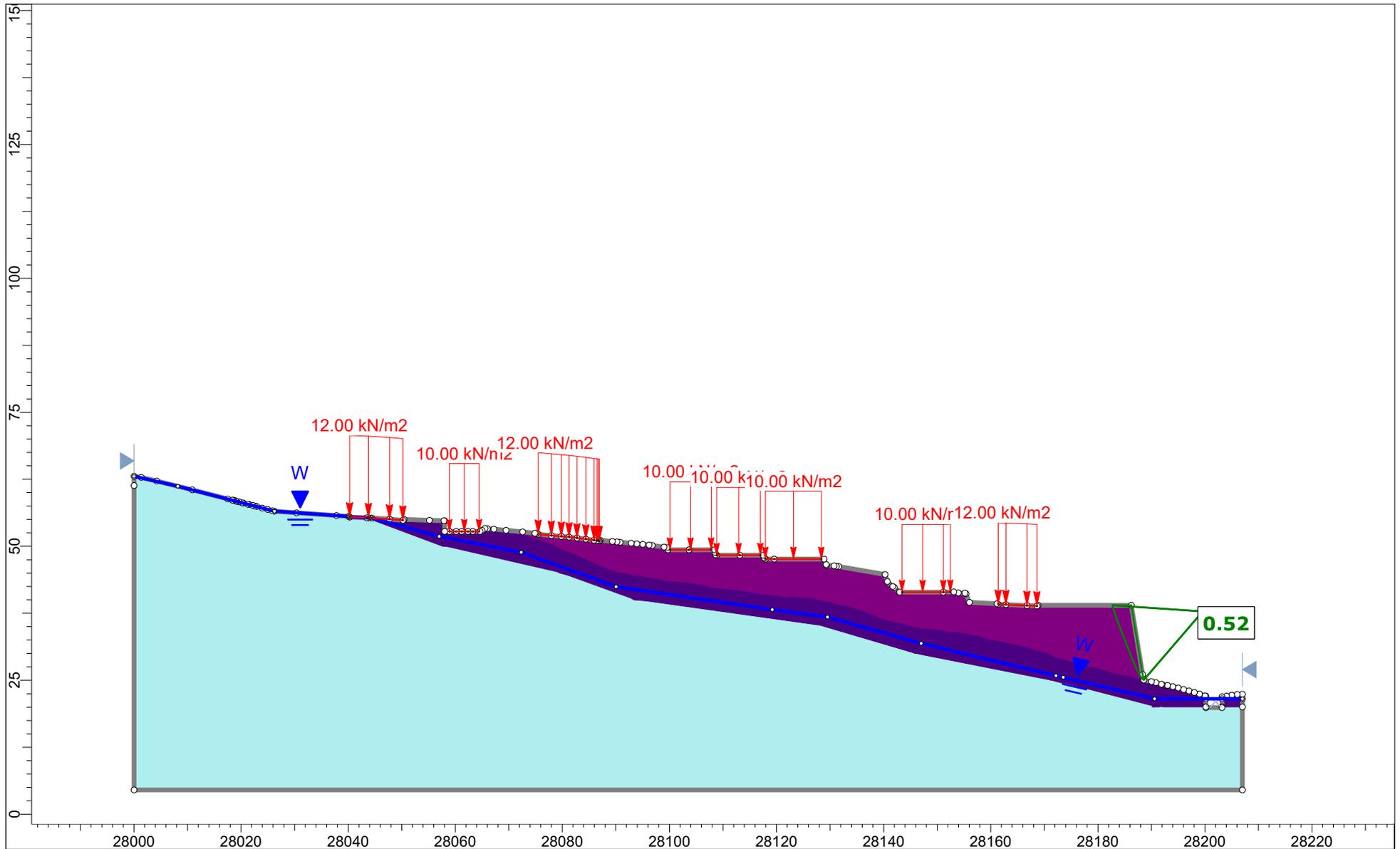




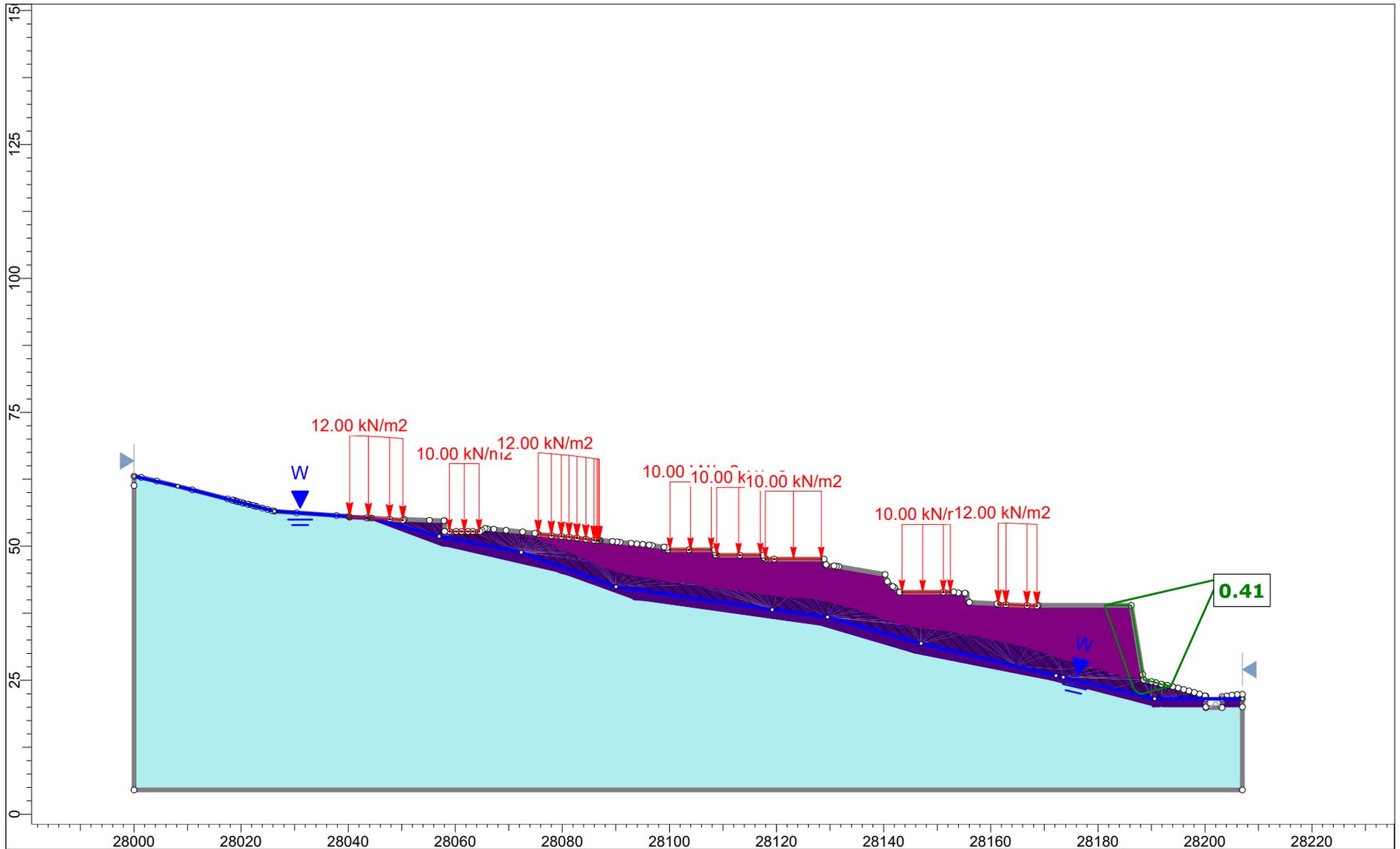
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	<i>Group</i> Section AB - erosion & remedials	<i>Scenario</i> Seismic (0.19g)	
	<i>Drawn By</i> RS	<i>Company</i> Riley Consultants Ltd	
	<i>Date</i> 10/12/2024	<i>File Name</i> Section AB.slm	



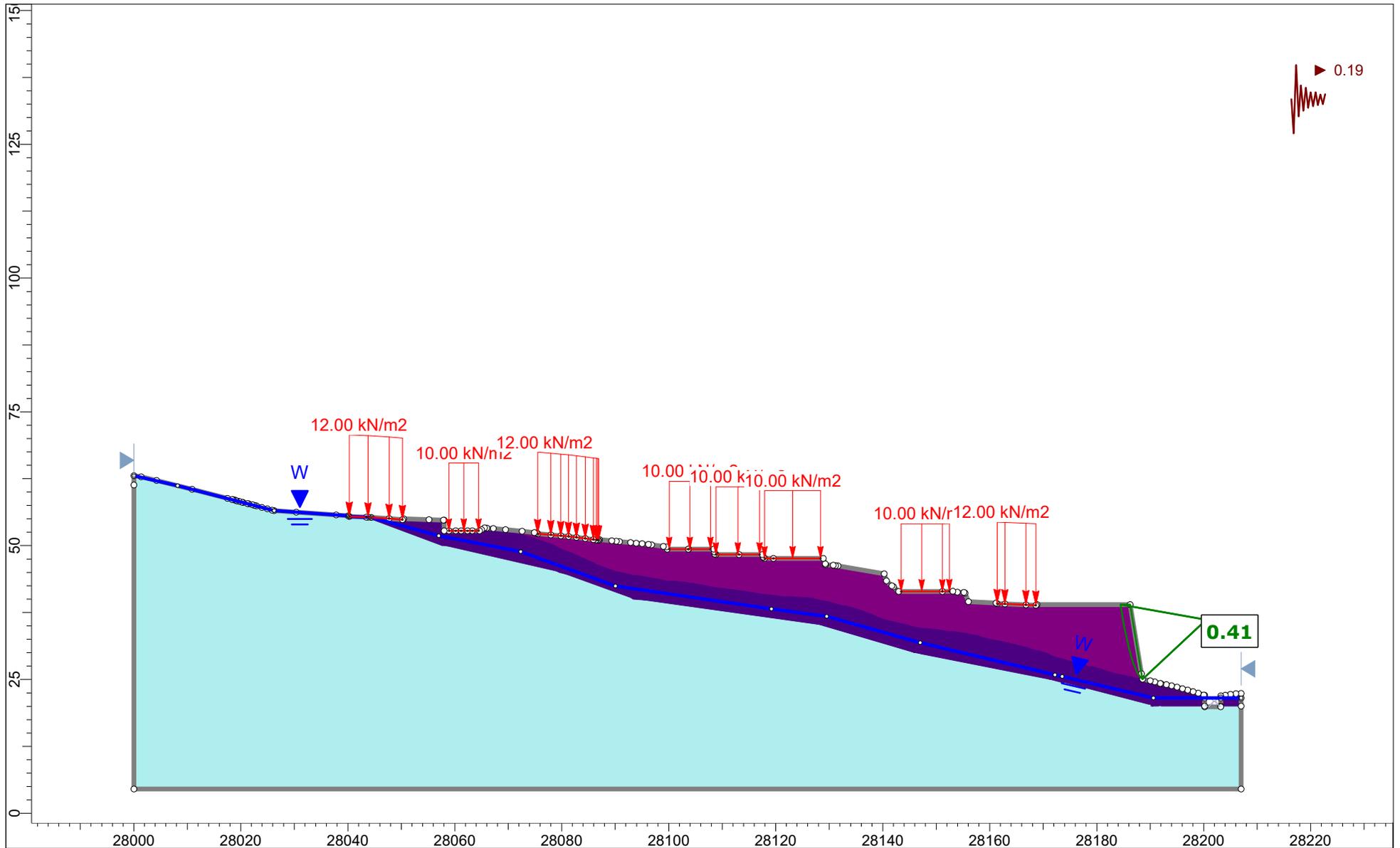
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	<i>Group</i> Section AB - erosion & remedials	<i>Scenario</i> Extreme (50% fill saturation)
	<i>Drawn By</i> RS	<i>Company</i> Riley Consultants Ltd
	<i>Date</i> 10/12/2024	<i>File Name</i> Section AB.slm



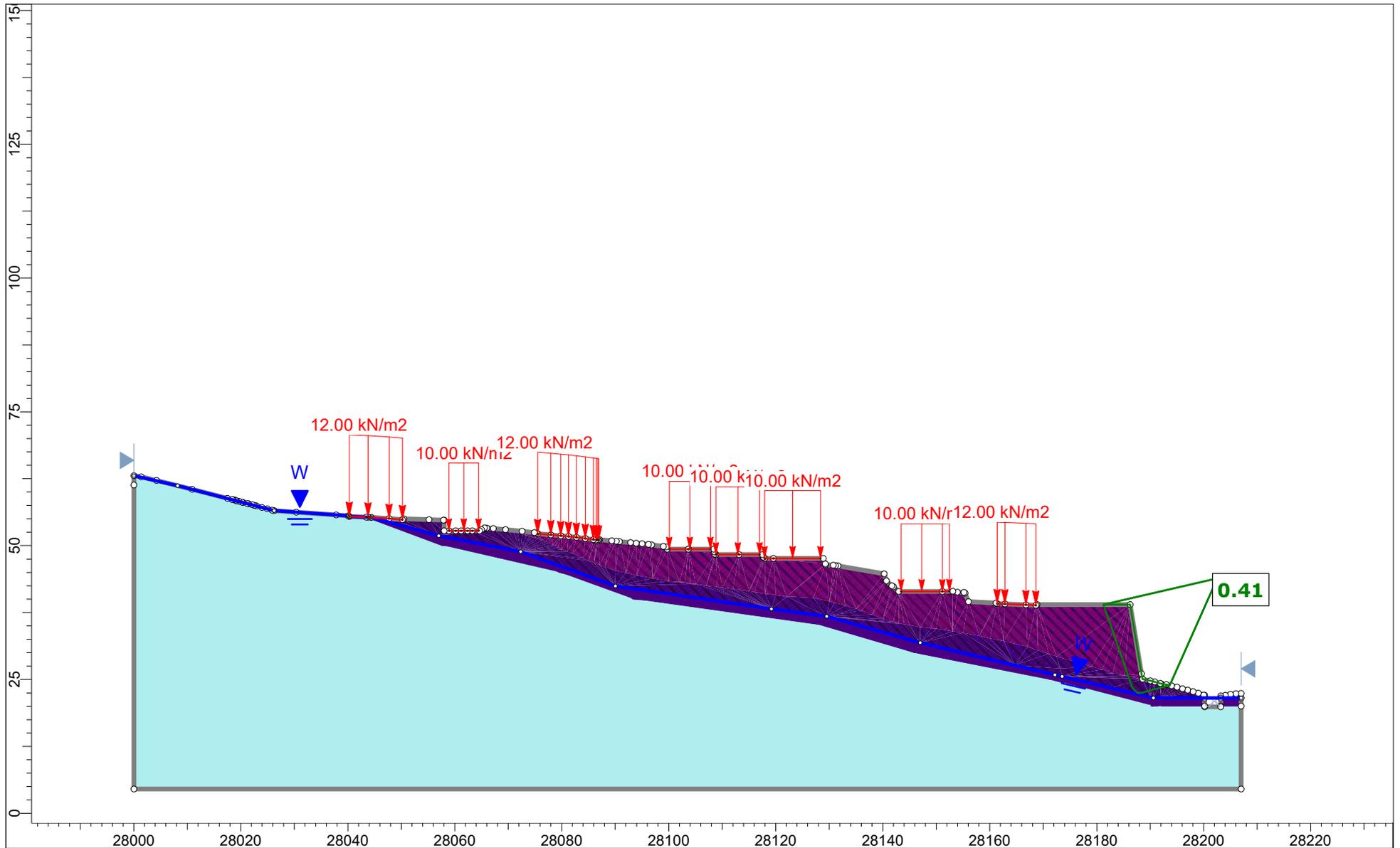
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	Group	Section AB - Proposed GL	Scenario	Normal (Measured GW)
	Drawn By	RS	Company	Riley Consultants Ltd
	Date	10/12/2024	File Name	Section AB.slm



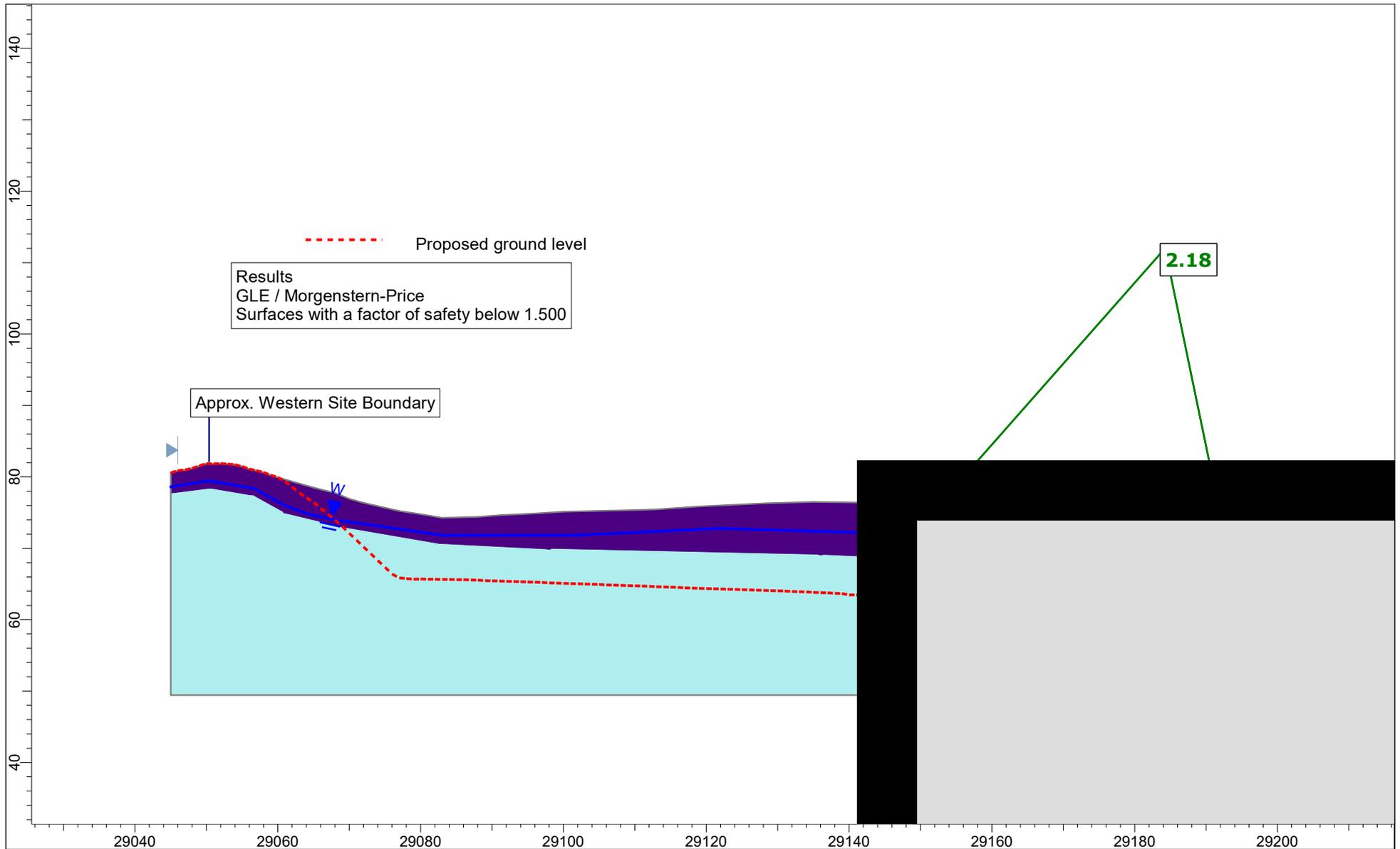
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	Scenario			Extreme (Worst Credible GW)		
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	Company			Riley Consultants Ltd		
Date			10/12/2024			
File Name			Section AB.slm			



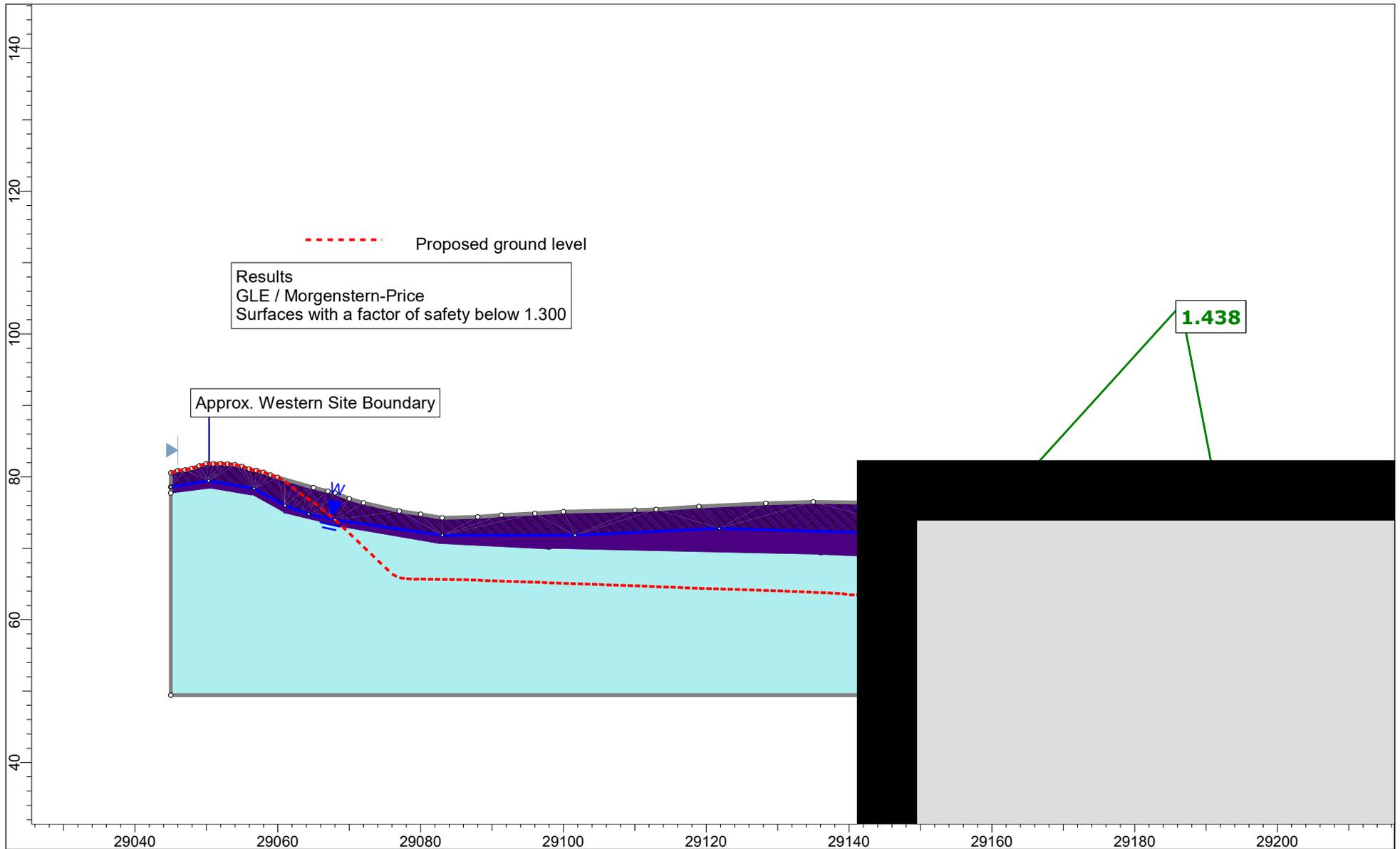
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<i>Group</i>	Section AB - Proposed GL	<i>Scenario</i>	Seismic (0.19g)
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<i>Date</i>	10/12/2024	<i>File Name</i>	Section AB.slm



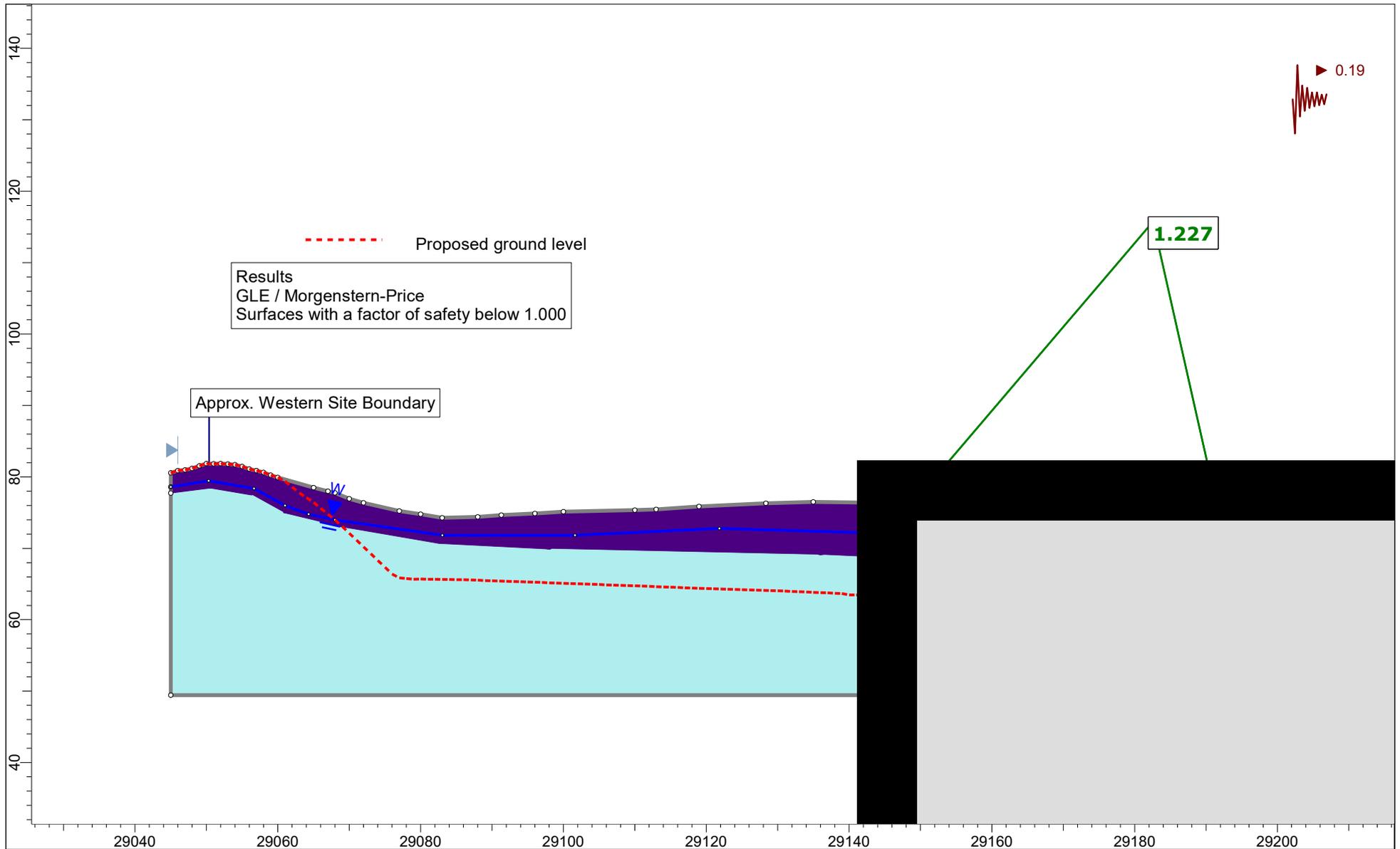
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	<i>Group</i> Section AB - Proposed GL	<i>Scenario</i> Extreme (50% fill saturation)
	<i>Drawn By</i> RS	<i>Company</i> Riley Consultants Ltd
	<i>Date</i> 10/12/2024	<i>File Name</i> Section AB.slm



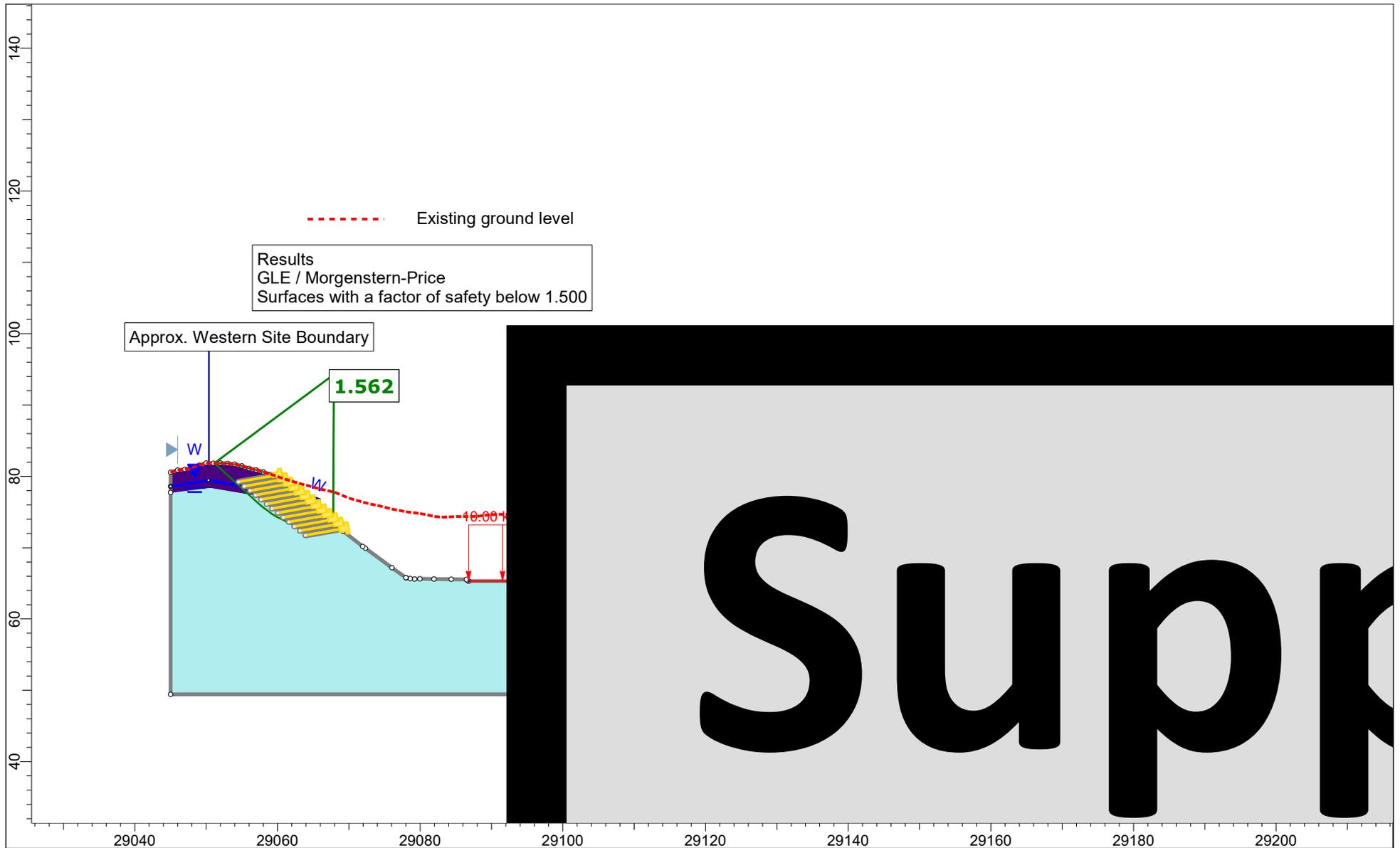
	<i>Project</i> 240065 - Russell Road, Wainui - Stage 2	
	<i>Group</i> Section AC - Existing GL	<i>Scenario</i> Normal (Measured GW)
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	<i>Date</i> 10/12/2024	<i>File Name</i> Section AC.slm



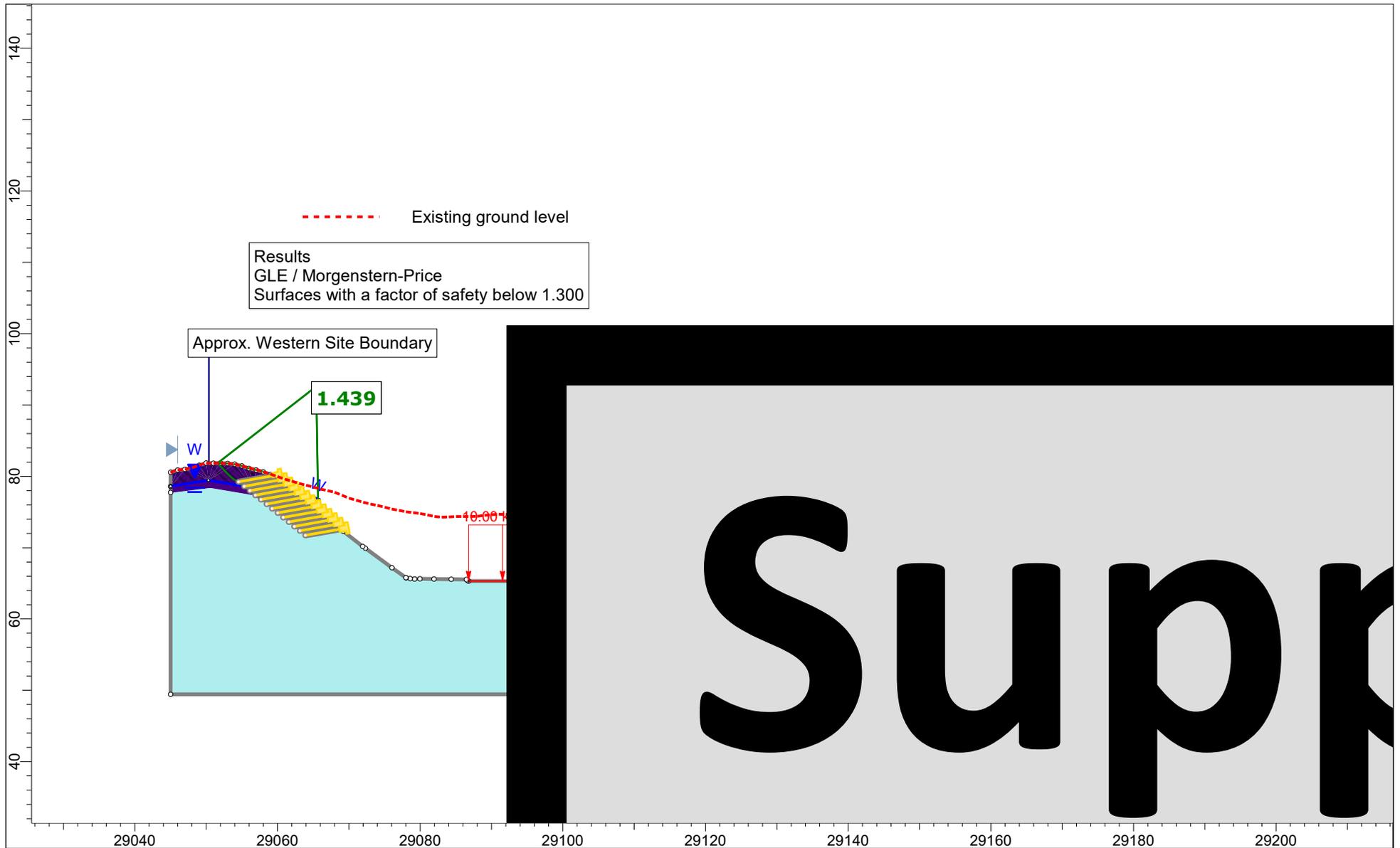
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	Drawn By		RS		Company		Riley Consultants Ltd
	Date		10/12/2024		File Name		Section AC.slmd



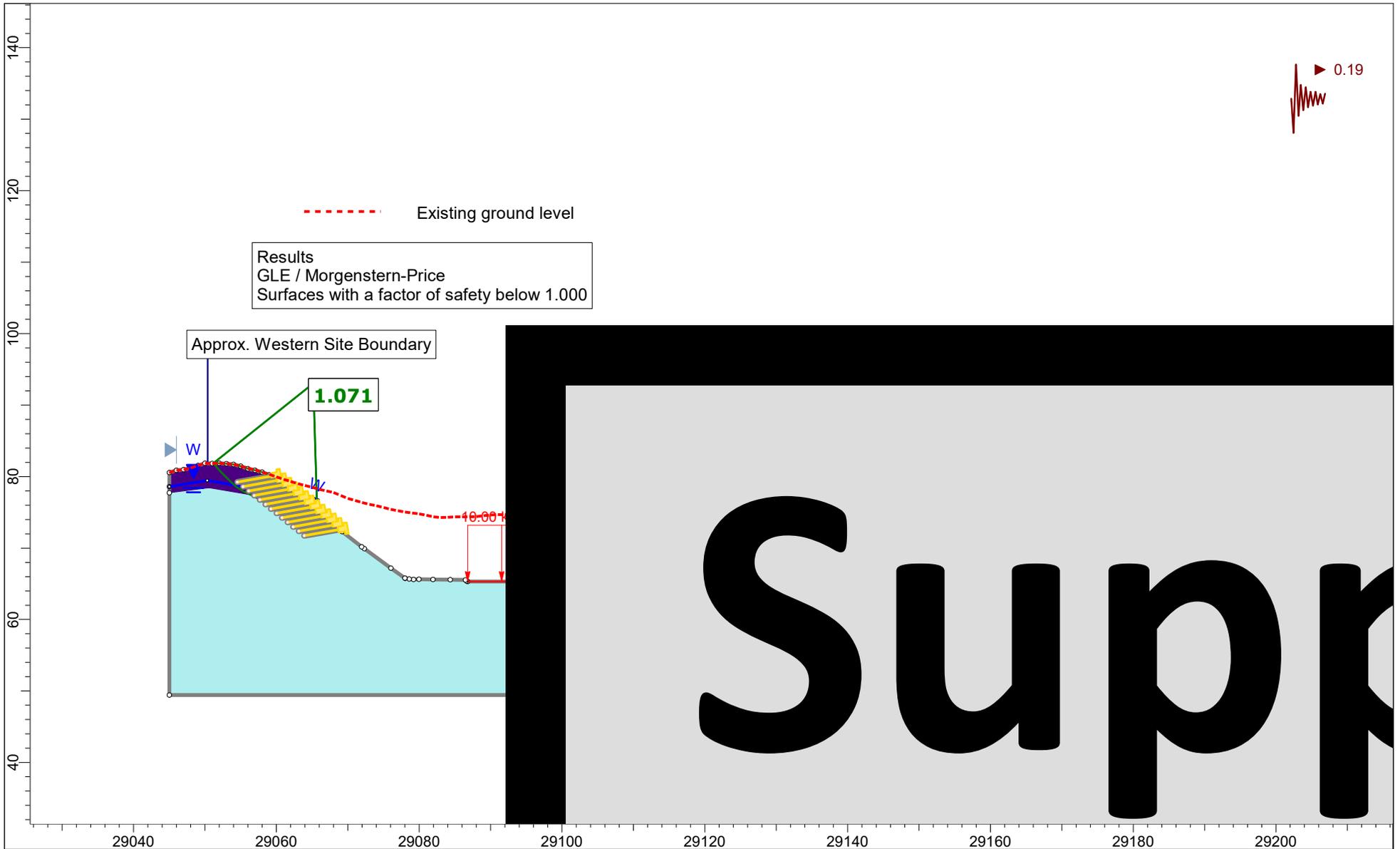
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	<i>Group</i> Section AC - Existing GL	<i>Scenario</i> Seismic (0.19g)	
	<i>Drawn By</i> RS	<i>Company</i> Riley Consultants Ltd	
	<i>Date</i> 10/12/2024	<i>File Name</i> Section AC.slmd	



	Project		240065 - Russell Road, Wainui - Stage 2	
	Group	Section AC - Proposed GL, Remedials, Loads	Scenario	Normal (Measured GW)
	Drawn By	RS	Company	Riley Consultants Ltd
	Date	10/12/2024	File Name	Section AC.sld



	<i>Project</i> 240065 - Russell Road, Wainui - Stage 2	
	<i>Group</i> Section AC - Proposed GL, Remedials, Loads	<i>Scenario</i> Extreme (Worst Credible GW)
	<i>Drawn By</i> RS	<i>Company</i> Riley Consultants Ltd
	<i>Date</i> 10/12/2024	<i>File Name</i> Section AC.slm



Results  
GLE / Morgenstern-Price  
Surfaces with a factor of safety below 1.000

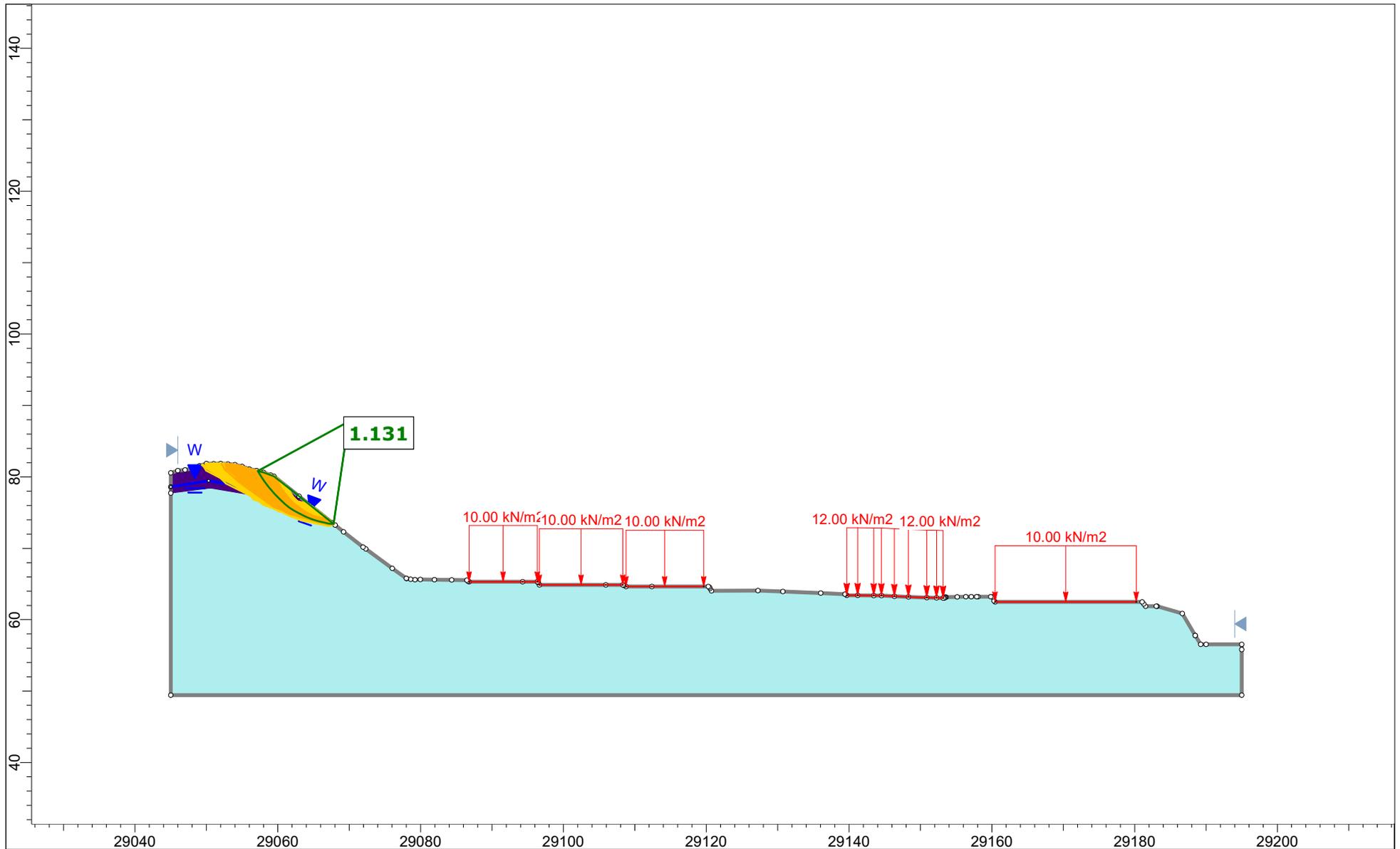
Approx. Western Site Boundary

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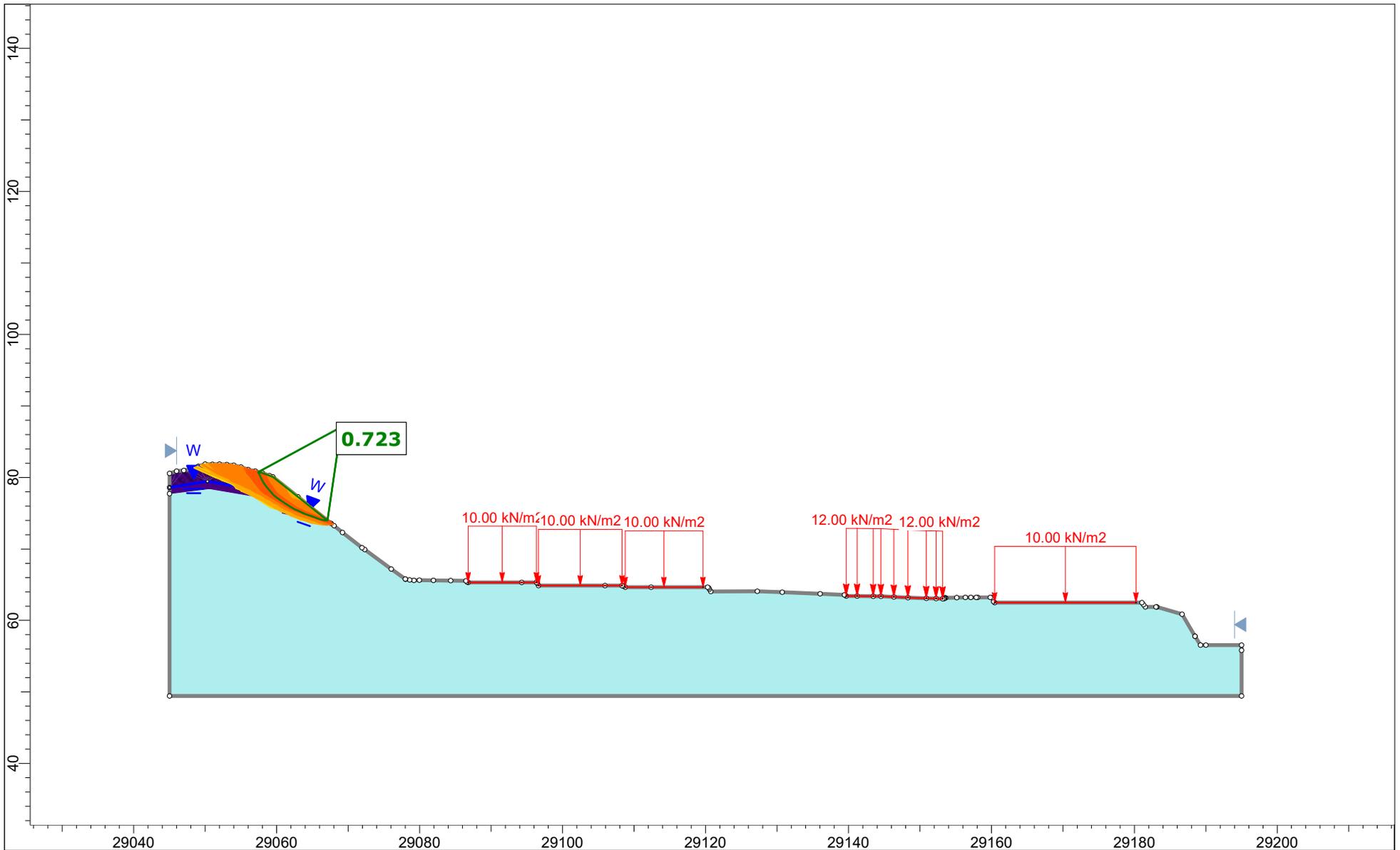
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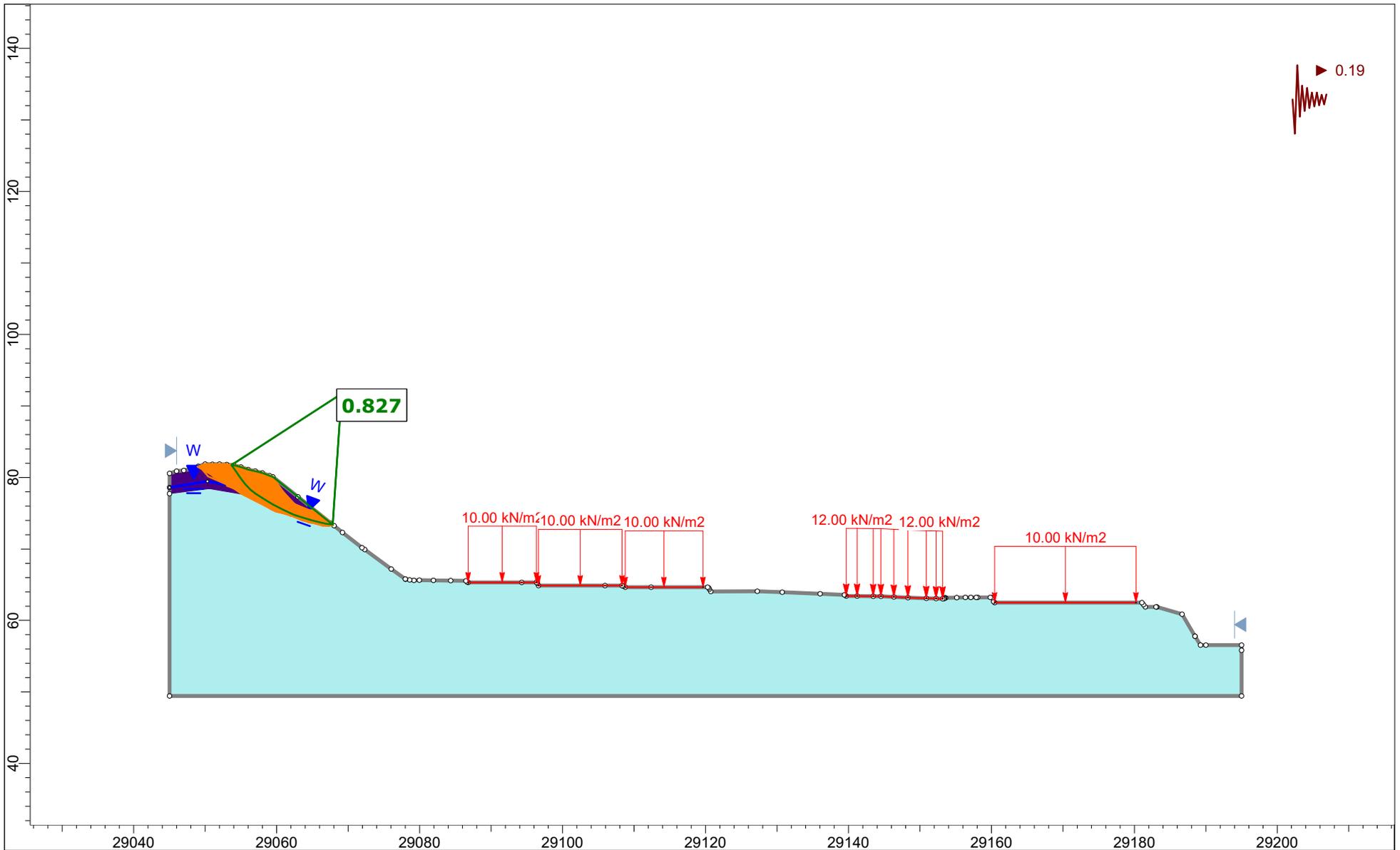
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Group	Section AC - Proposed GL, Remedials, Loads	Scenario	Seismic (0.19g)
Drawn By	RS	Company	Riley Consultants Ltd
Date	10/12/2024	File Name	Section AC.slm



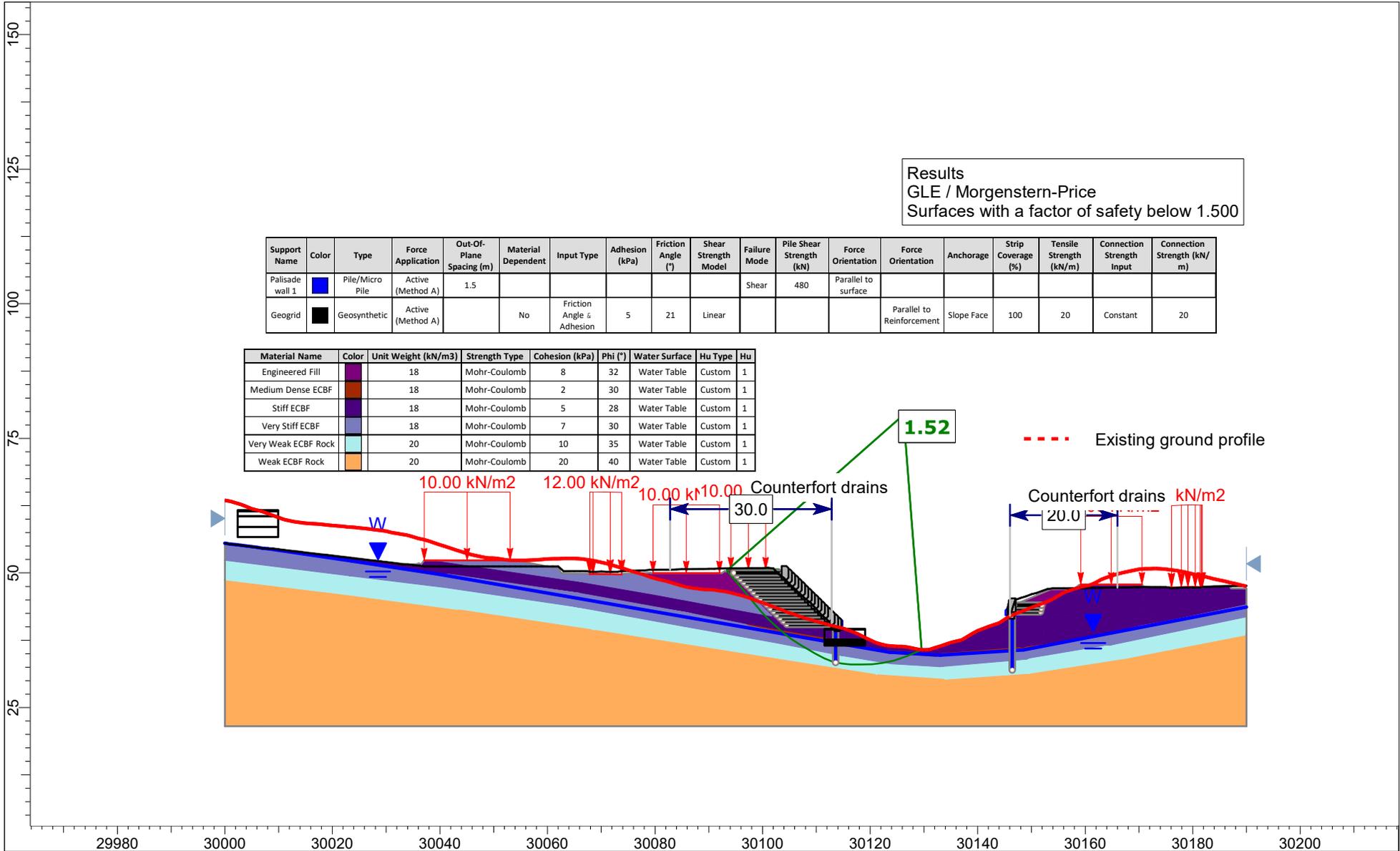
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	Group		Section AC - Proposed GL	Scenario	Normal (Measured GW)
	Drawn By		RS	Company	Riley Consultants Ltd
	Date		10/12/2024	File Name	Section AC.slm



	<i>Project</i> 240065 - Russell Road, Wainui - Stage 2	
	<i>Group</i> Section AC - Proposed GL	<i>Scenario</i> Extreme (Worst Credible GW)
	<i>Drawn By</i> RS	<i>Company</i> Riley Consultants Ltd
	<i>Date</i> 10/12/2024	<i>File Name</i> Section AC.sldm



	Project			240065 - Russell Road, Wainui - Stage 2		
	Group			Section AC - Proposed GL		
	Scenario			Seismic (0.19g)		
	Drawn By			RS		
Company			Riley Consultants Ltd			
Date			10/12/2024			
File Name			Section AC.slm			

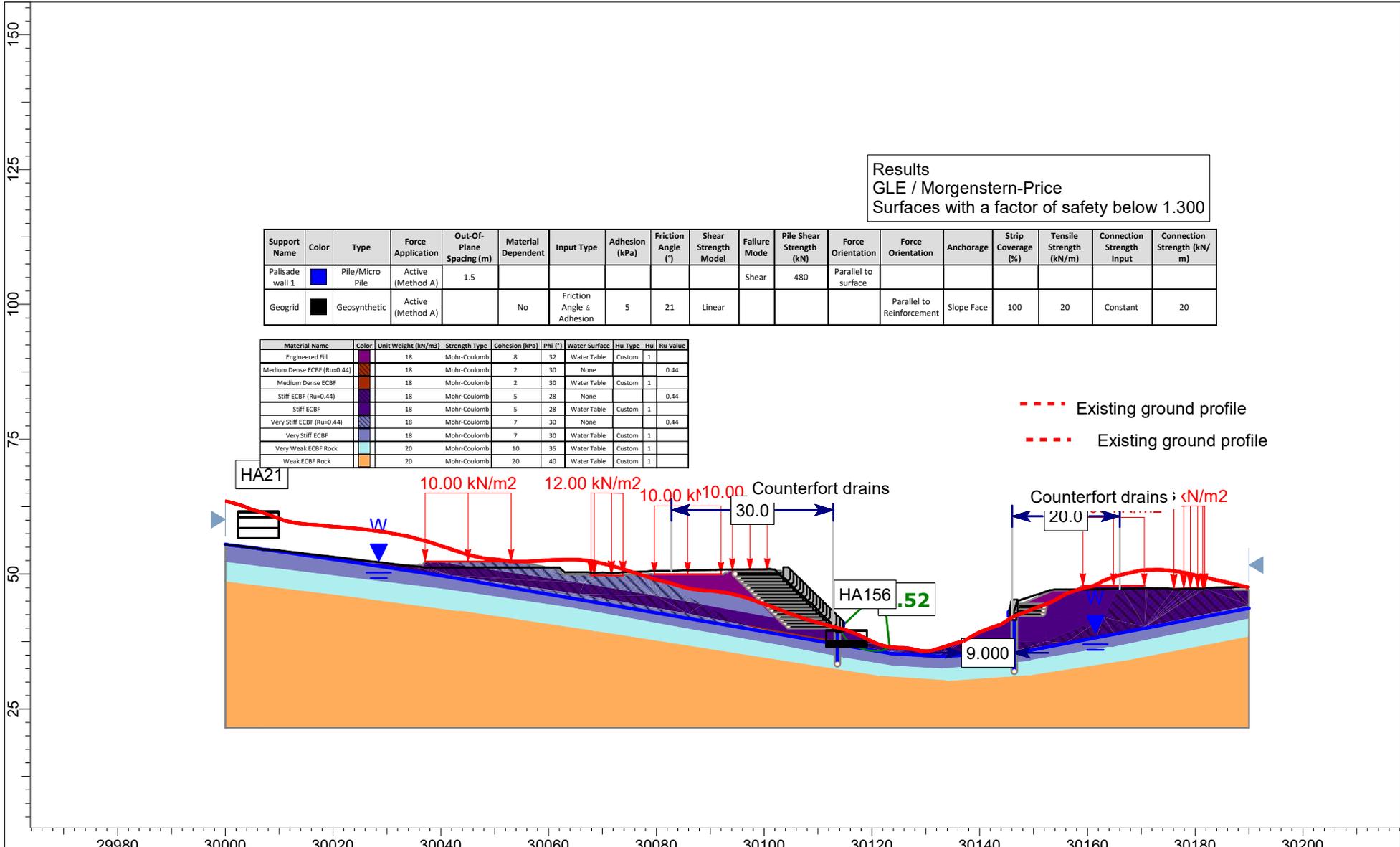


Results  
GLE / Morgenstern-Price  
Surfaces with a factor of safety below 1.500

Support Name	Color	Type	Force Application	Out-Of-Plane Spacing (m)	Material Dependent	Input Type	Adhesion (kPa)	Friction Angle (°)	Shear Strength Model	Failure Mode	Pile Shear Strength (kN)	Force Orientation	Force Orientation	Anchorage	Strip Coverage (%)	Tensile Strength (kN/m)	Connection Strength Input	Connection Strength (kN/m)
Palisade wall 1	Blue	Pile/Micro Pile	Active (Method A)	1.5						Shear	480	Parallel to surface						
Geogrid	Black	Geosynthetic	Active (Method A)		No	Friction Angle & Adhesion	5	21	Linear			Parallel to Reinforcement	Slope Face	100	20	Constant	20	

Material Name	Color	Unit Weight (kN/m3)	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu
Engineered Fill	Brown	18	Mohr-Coulomb	8	32	Water Table	Custom	1
Medium Dense ECBF	Purple	18	Mohr-Coulomb	2	30	Water Table	Custom	1
Stiff ECBF	Dark Blue	18	Mohr-Coulomb	5	28	Water Table	Custom	1
Very Stiff ECBF	Light Blue	18	Mohr-Coulomb	7	30	Water Table	Custom	1
Very Weak ECBF Rock	Light Blue	20	Mohr-Coulomb	10	35	Water Table	Custom	1
Weak ECBF Rock	Orange	20	Mohr-Coulomb	20	40	Water Table	Custom	1

	Project		240065 - Russell Road, Wainui - Stage 2		
	Group		Section AD Proposed GL, Remedials, Loads (L-R)	Scenario	Normal (Measured GW)
	Drawn By		RS	Company	Riley Consultants Ltd
	Date		10/12/2024	File Name	Section AD.slm



Results  
GLE / Morgenstern-Price  
Surfaces with a factor of safety below 1.300

Support Name	Color	Type	Force Application	Out-Of-Plane Spacing (m)	Material Dependent	Input Type	Adhesion (kPa)	Friction Angle (°)	Shear Strength Model	Failure Mode	Pile Shear Strength (kN)	Force Orientation	Force Orientation	Anchorage	Strip Coverage (%)	Tensile Strength (kN/m)	Connection Strength Input	Connection Strength (kN/m)
Palisade wall 1	Blue	Pile/Micro Pile	Active (Method A)	1.5						Shear	480	Parallel to surface						
Geogrid	Black	Geosynthetic	Active (Method A)		No	Friction Angle & Adhesion	5	21	Linear			Parallel to Reinforcement	Slope Face	100	20	Constant	20	

Material Name	Color	Unit Weight (kN/m <sup>3</sup> )	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu	Ru Value
Engineered Fill	Light Blue	18	Mohr-Coulomb	8	32	Water Table	Custom	1	
Medium Dense ECFB (Ru=0.44)	Light Blue	18	Mohr-Coulomb	2	30	None	Custom	1	0.44
Medium Dense ECFB	Light Blue	18	Mohr-Coulomb	2	30	Water Table	Custom	1	
Stiff ECFB (Ru=0.44)	Light Blue	18	Mohr-Coulomb	5	28	None	Custom	1	0.44
Stiff ECFB	Light Blue	18	Mohr-Coulomb	5	28	Water Table	Custom	1	
Very Stiff ECFB (Ru=0.44)	Light Blue	18	Mohr-Coulomb	7	30	None	Custom	1	0.44
Very Stiff ECFB	Light Blue	18	Mohr-Coulomb	7	30	Water Table	Custom	1	
Very Weak ECFB Rock	Light Blue	20	Mohr-Coulomb	10	35	Water Table	Custom	1	
Weak ECFB Rock	Light Blue	20	Mohr-Coulomb	20	40	Water Table	Custom	1	

--- Existing ground profile  
--- Existing ground profile



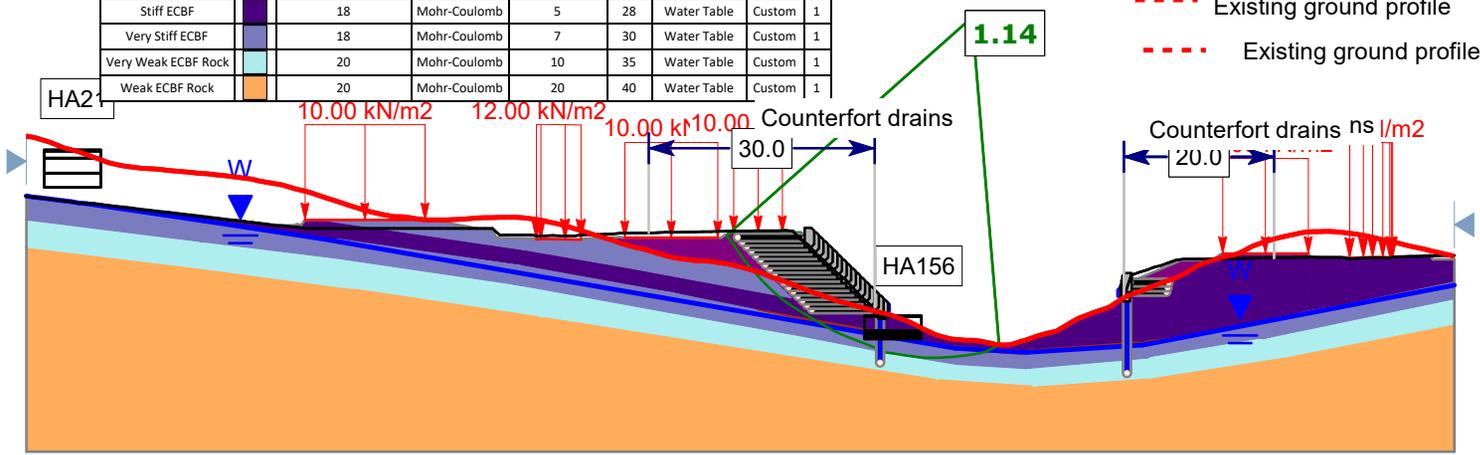
Project		240065 - Russell Road, Wainui - Stage 2	
Group	Section AD Proposed GL, Remedials, Loads (L-R)	Scenario	Extreme (Worst Credible GW)
Drawn By	RS	Company	Riley Consultants Ltd
Date	10/12/2024	File Name	Section AD.sldm



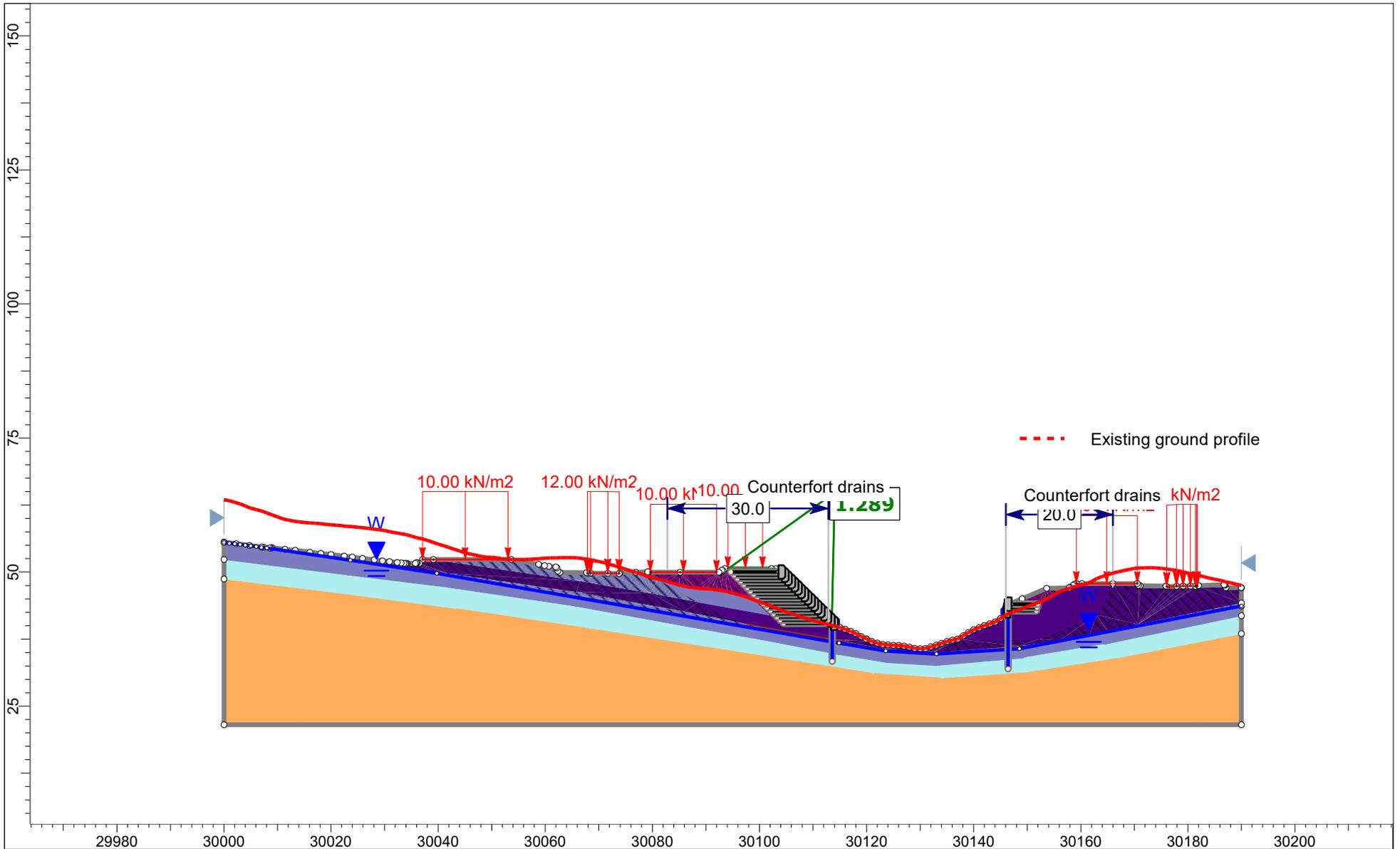
Results  
GLE / Morgenstern-Price  
Surfaces with a factor of safety below 1.000

Support Name	Color	Type	Force Application	Out-Of-Plane Spacing (m)	Material Dependent	Input Type	Adhesion (kPa)	Friction Angle (°)	Shear Strength Model	Failure Mode	Pile Shear Strength (kN)	Force Orientation	Force Orientation	Anchorage	Strip Coverage (%)	Tensile Strength (kN/m)	Connection Strength Input	Connection Strength (kN/m)
Palisade wall 1	Blue	Pile/Micro Pile	Active (Method A)	1.5						Shear	480	Parallel to surface						
Geogrid	Black	Geosynthetic	Active (Method A)		No	Friction Angle & Adhesion	5	21	Linear			Parallel to Reinforcement	Slope Face	100	20	Constant	20	

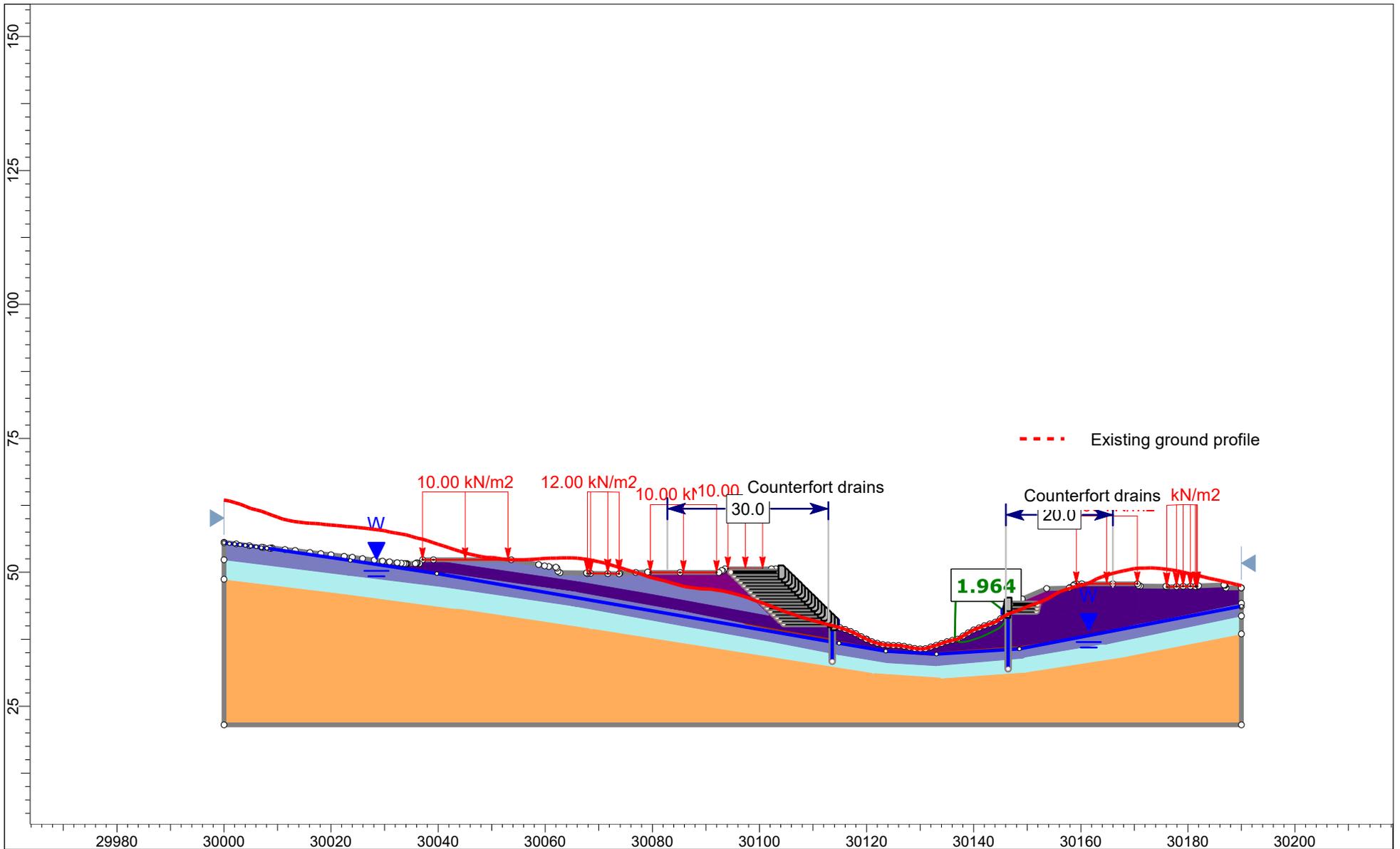
Material Name	Color	Unit Weight (kN/m <sup>3</sup> )	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu
Engineered Fill	Light Blue	18	Mohr-Coulomb	8	32	Water Table	Custom	1
Medium Dense ECBF	Dark Blue	18	Mohr-Coulomb	2	30	Water Table	Custom	1
Stiff ECBF	Medium Blue	18	Mohr-Coulomb	5	28	Water Table	Custom	1
Very Stiff ECBF	Light Blue	18	Mohr-Coulomb	7	30	Water Table	Custom	1
Very Weak ECBF Rock	Light Blue	20	Mohr-Coulomb	10	35	Water Table	Custom	1
Weak ECBF Rock	Light Blue	20	Mohr-Coulomb	20	40	Water Table	Custom	1



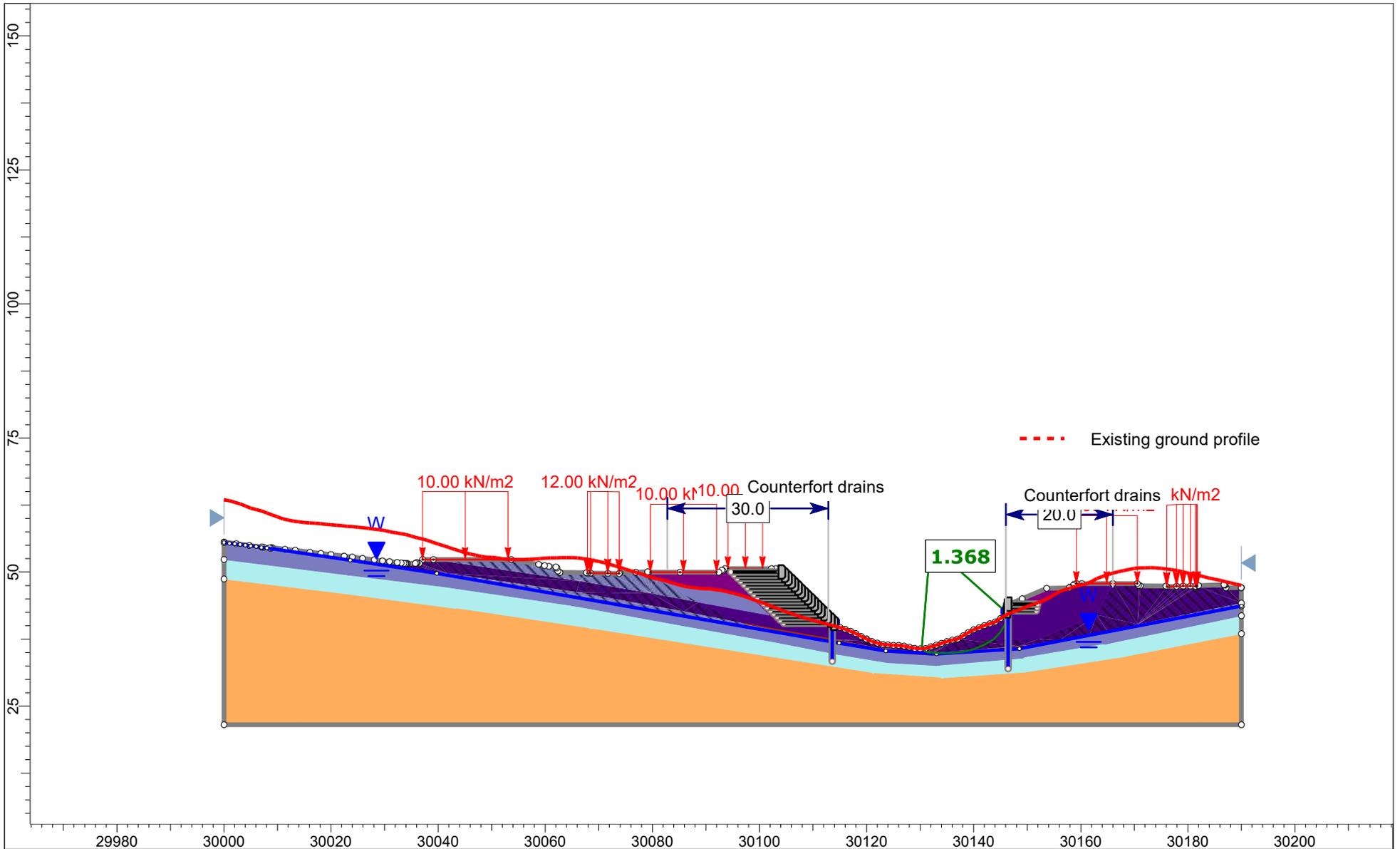
Project	240065 - Russell Road, Wainui - Stage 2		
Group	Section AD Proposed GL, Remedials, Loads (L-R)	Scenario	Seismic (0.19g)
Drawn By	RS	Company	Riley Consultants Ltd
Date	10/12/2024	File Name	Section AD.slm



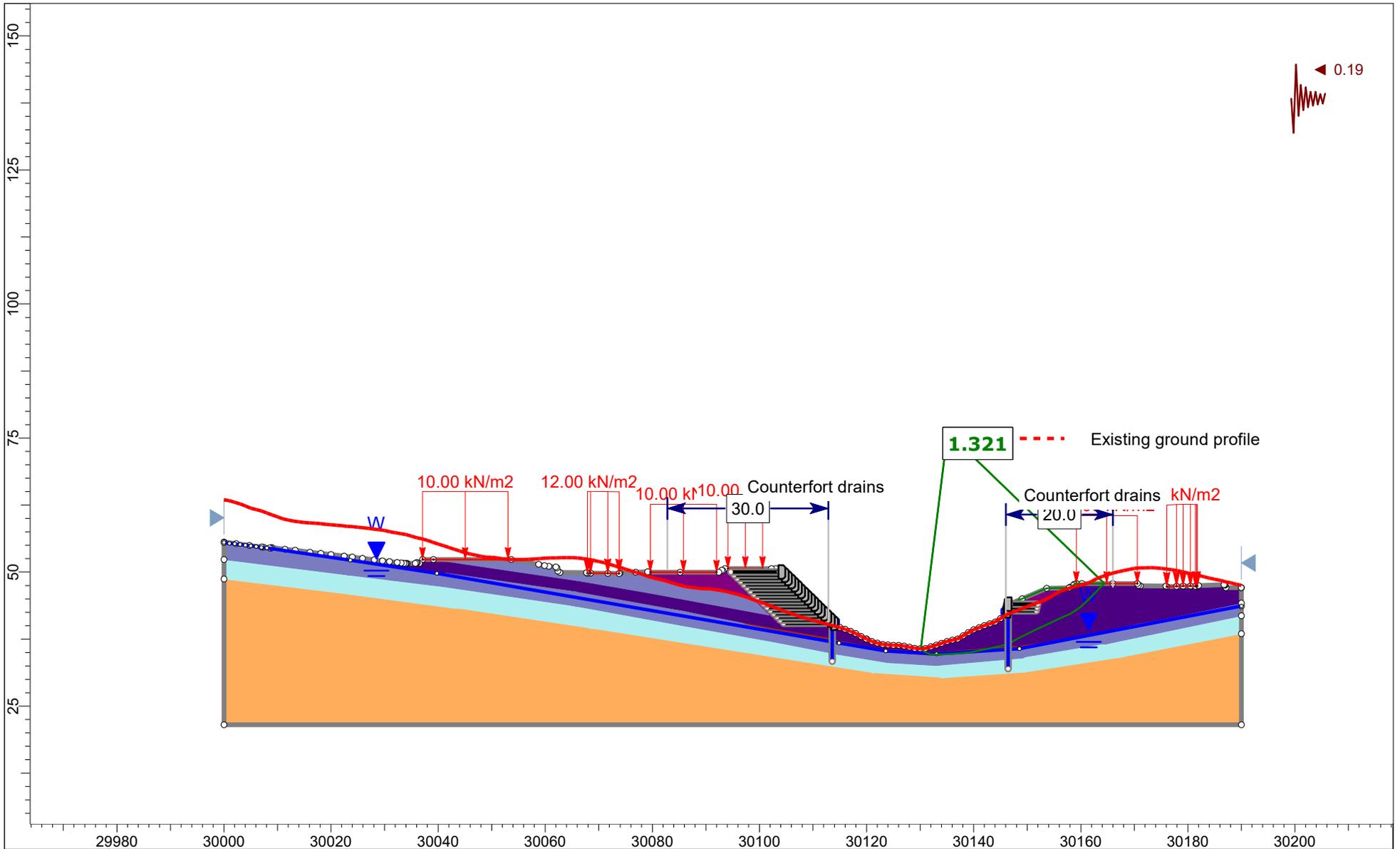
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	<b>Group</b> Section AD Proposed GL, Remedials, Loads (L-R)	<b>Scenario</b> Extreme (50% saturation)
	<b>Drawn By</b> RS	<b>Company</b> Riley Consultants Ltd
	<b>Date</b> 10/12/2024	<b>File Name</b> Section AD.slm



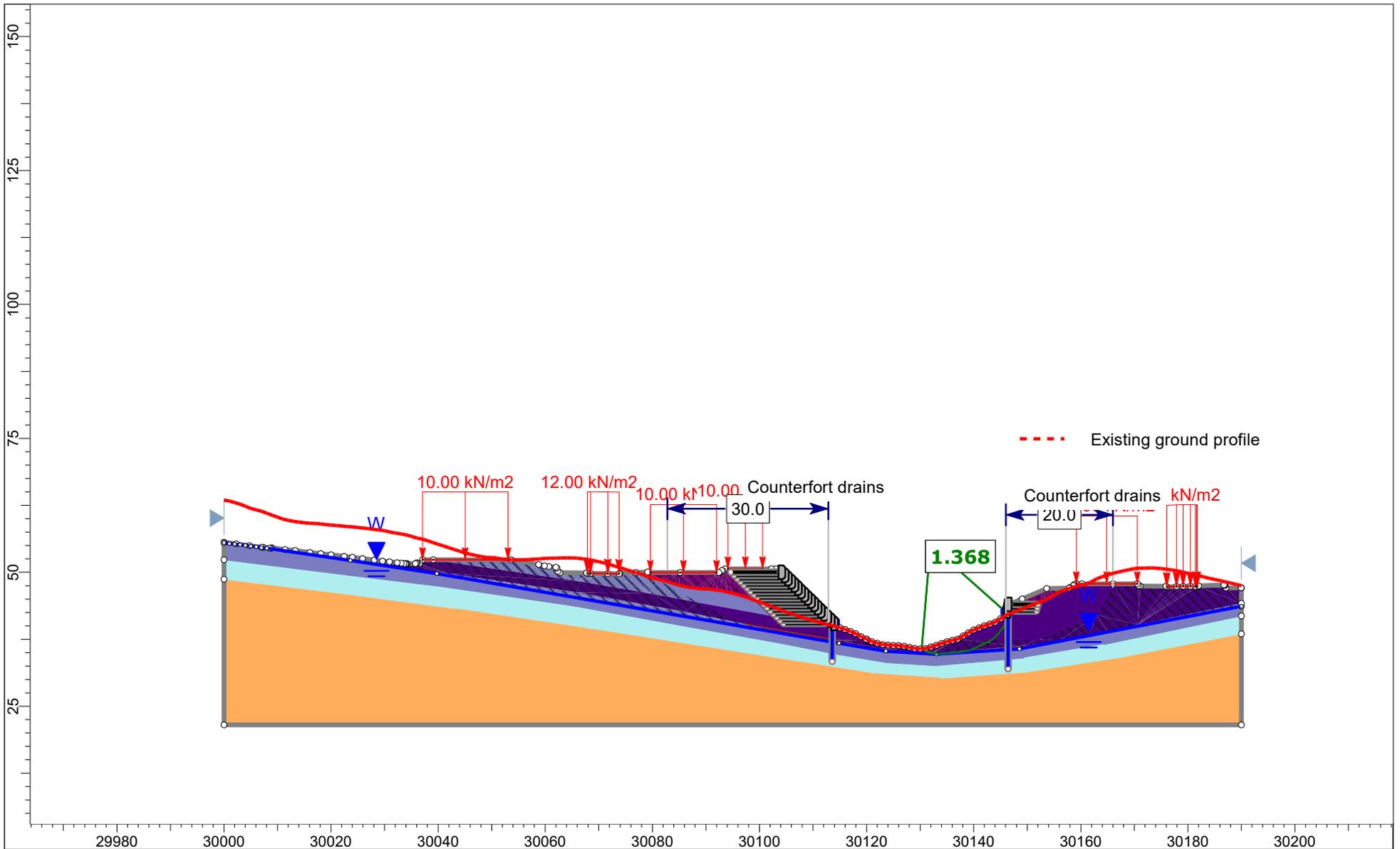
	Project		240065 - Russell Road, Wainui - Stage 2	
	Group	Section AD Proposed GL, Remedials, Loads (R-L)	Scenario	Normal (Measured GW)
	Drawn By	RS	Company	Riley Consultants Ltd
	Date	10/12/2024	File Name	Section AD.slm



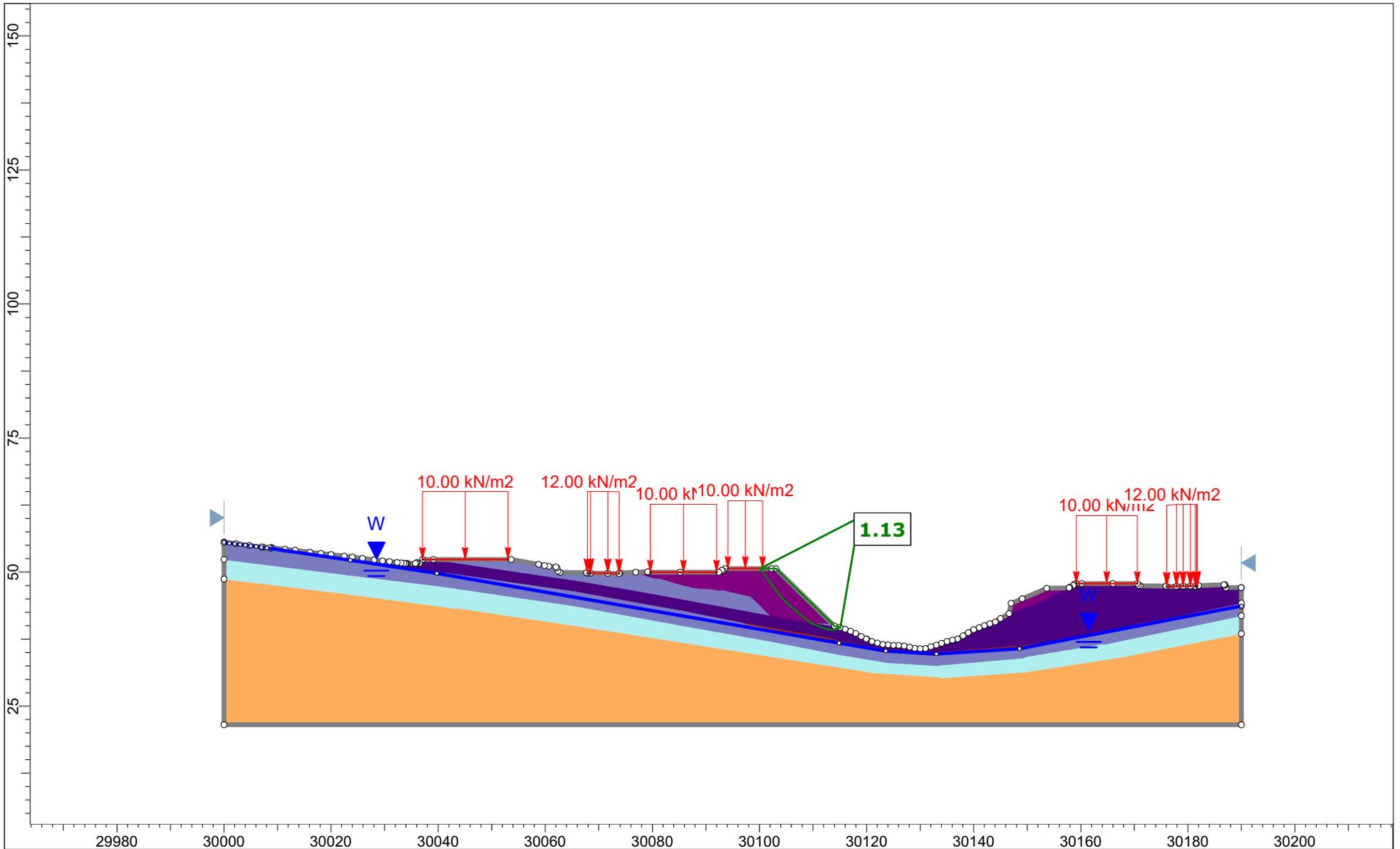
	<b>Project</b> 240065 - Russell Road, Wainui - Stage 2	
	<b>Group</b> Section AD Proposed GL, Remedials, Loads (R-L)	<b>Scenario</b> Extreme (Worst Credible GW)
	<b>Drawn By</b> RS	<b>Company</b> Riley Consultants Ltd
	<b>Date</b> 10/12/2024	<b>File Name</b> Section AD.slm



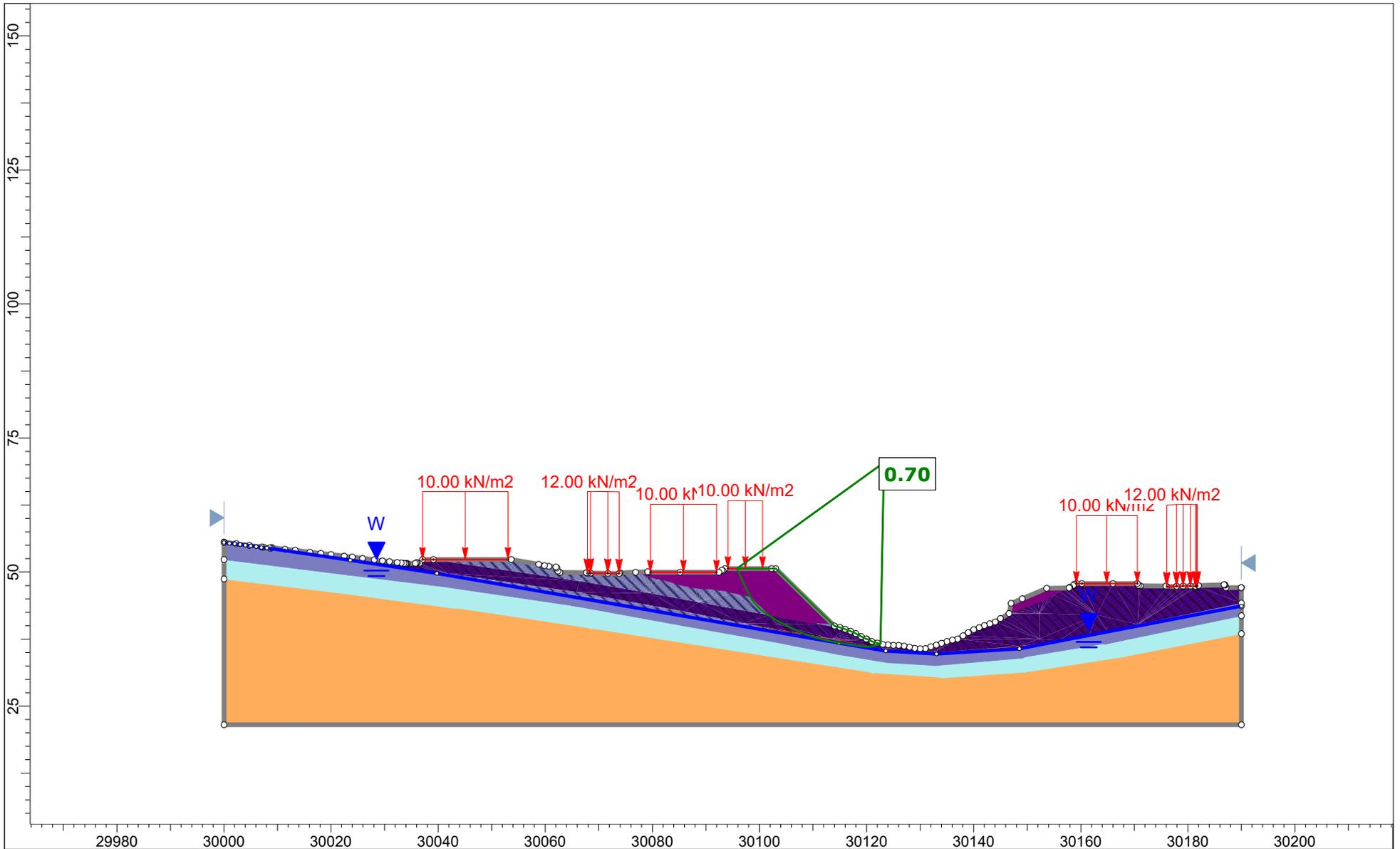
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	<i>Group</i> Section AD Proposed GL, Remedials, Loads (R-L)	<i>Scenario</i> Seismic (0.19g)
	<i>Drawn By</i> RS	<i>Company</i> Riley Consultants Ltd
	<i>Date</i> 10/12/2024	<i>File Name</i> Section AD.slmd



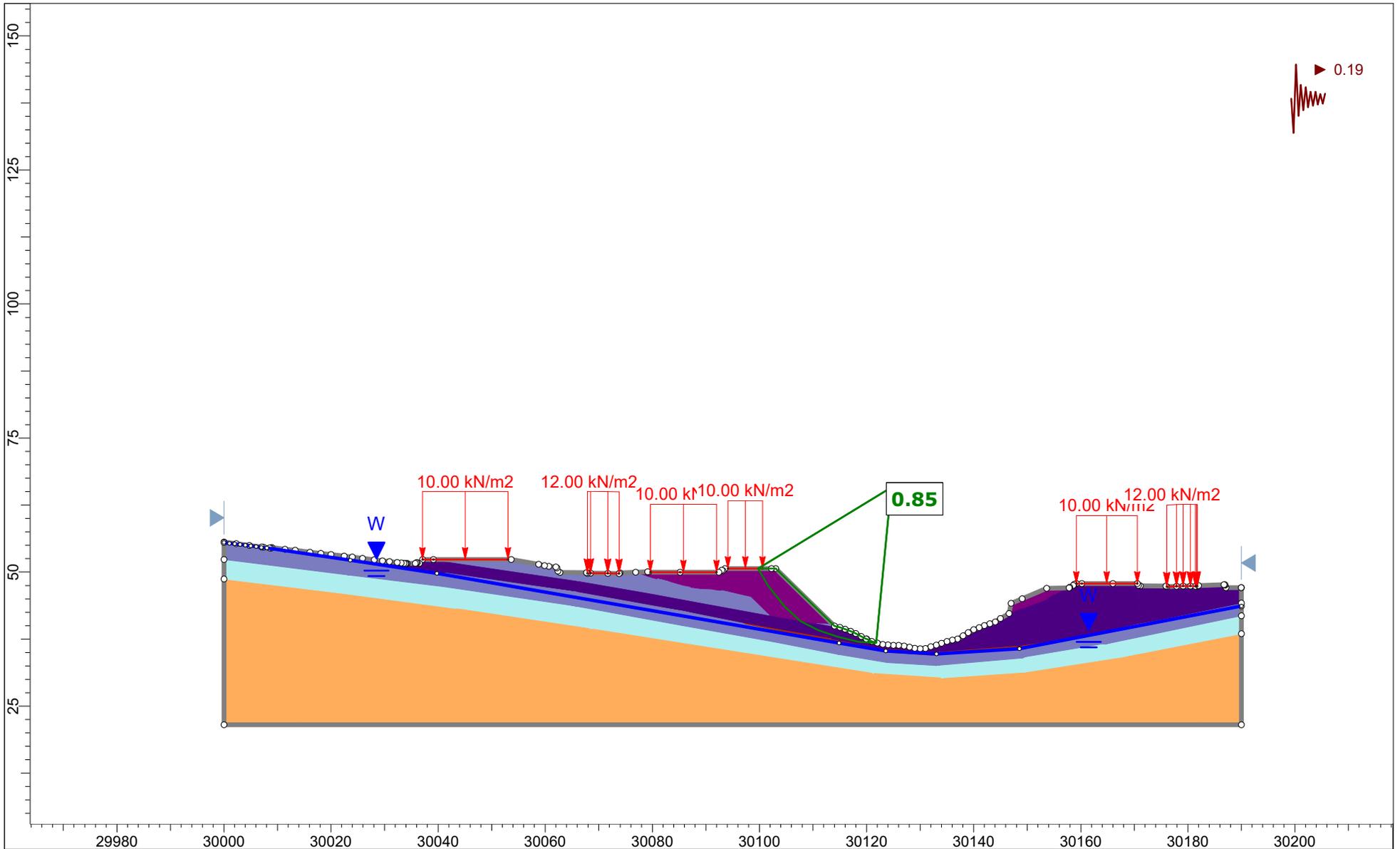
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	Group	Section AD Proposed GL, Remedials, Loads (R-L)	Scenario	Extreme (50% saturation)
	Drawn By	RS	Company	Riley Consultants Ltd
	Date	10/12/2024	File Name	Section AD.slmd



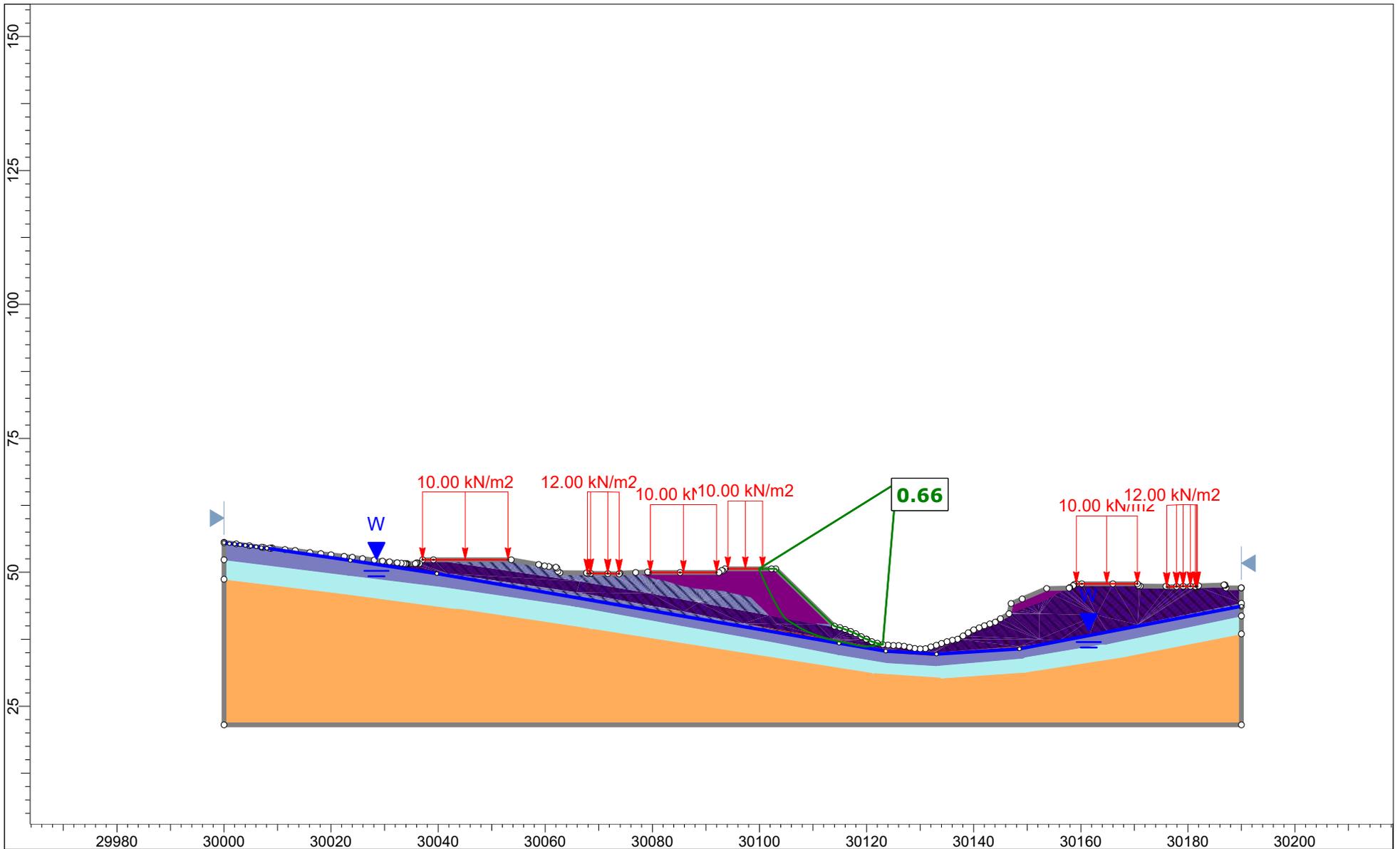
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	<b>Group</b> Section AD Proposed GL (L-R)	<b>Scenario</b> Normal (Measured GW)
	<b>Drawn By</b> RS	<b>Company</b> Riley Consultants Ltd
	<b>Date</b> 10/12/2024	<b>File Name</b> Section AD.slm



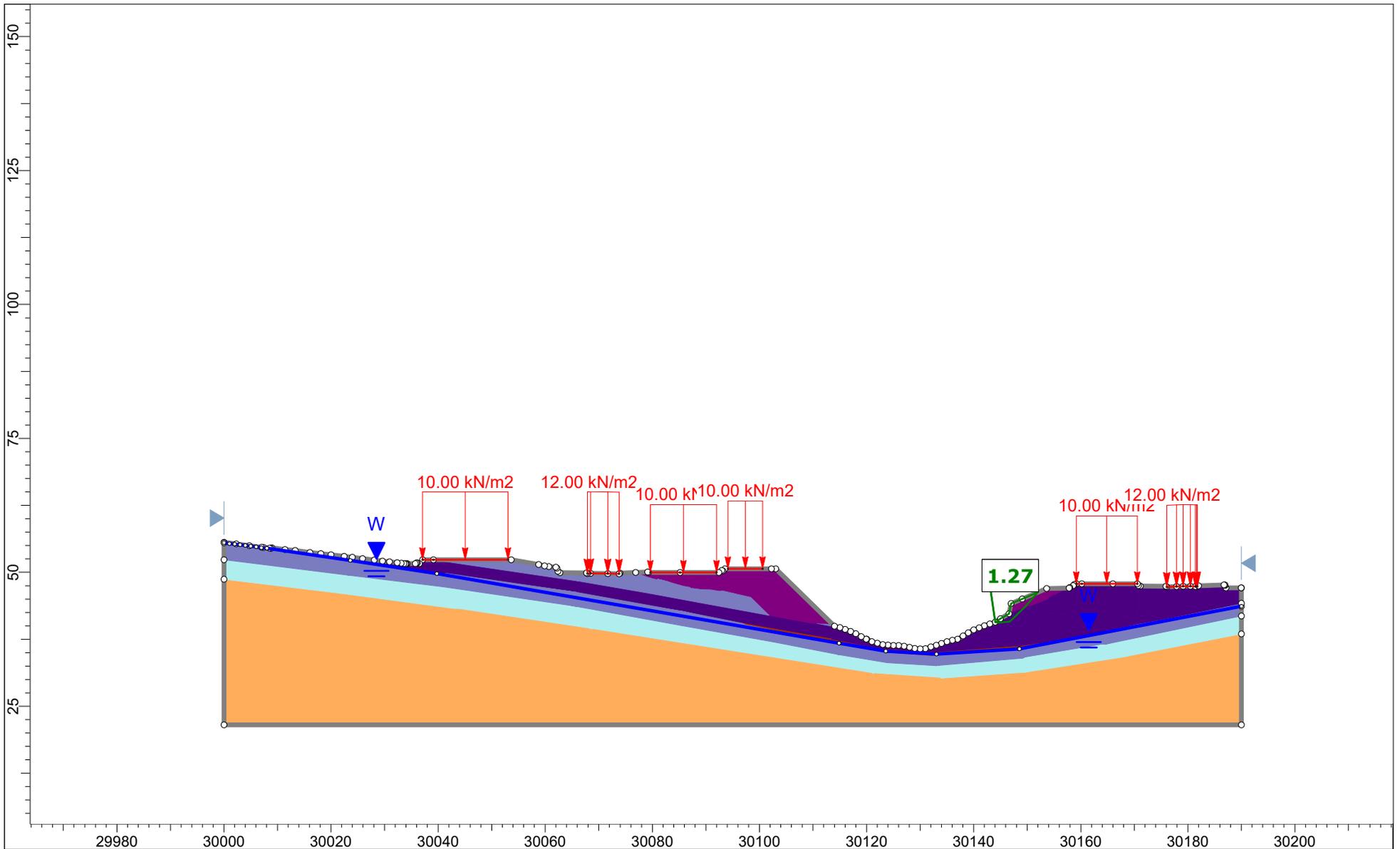
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	<i>Group</i> Section AD Proposed GL (L-R)	<i>Scenario</i> Extreme (Worst Credible GW)
	<i>Drawn By</i> RS	<i>Company</i> Riley Consultants Ltd
	<i>Date</i> 10/12/2024	<i>File Name</i> Section AD.slm



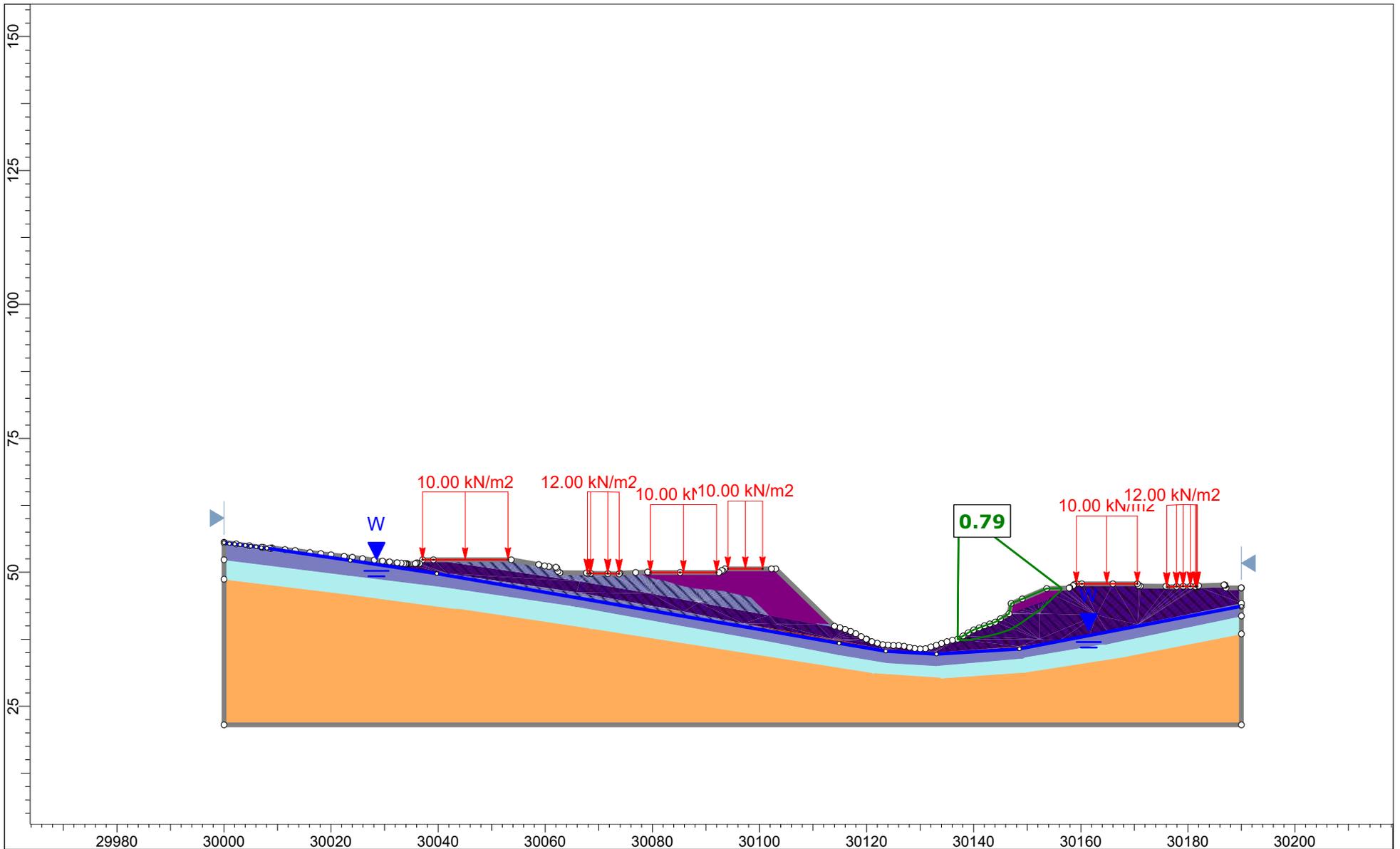
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	<b>Group</b> Section AD Proposed GL (L-R)	<b>Scenario</b> Seismic (0.19g)
	<b>Drawn By</b> RS	<b>Company</b> Riley Consultants Ltd
	<b>Date</b> 10/12/2024	<b>File Name</b> Section AD.slmd



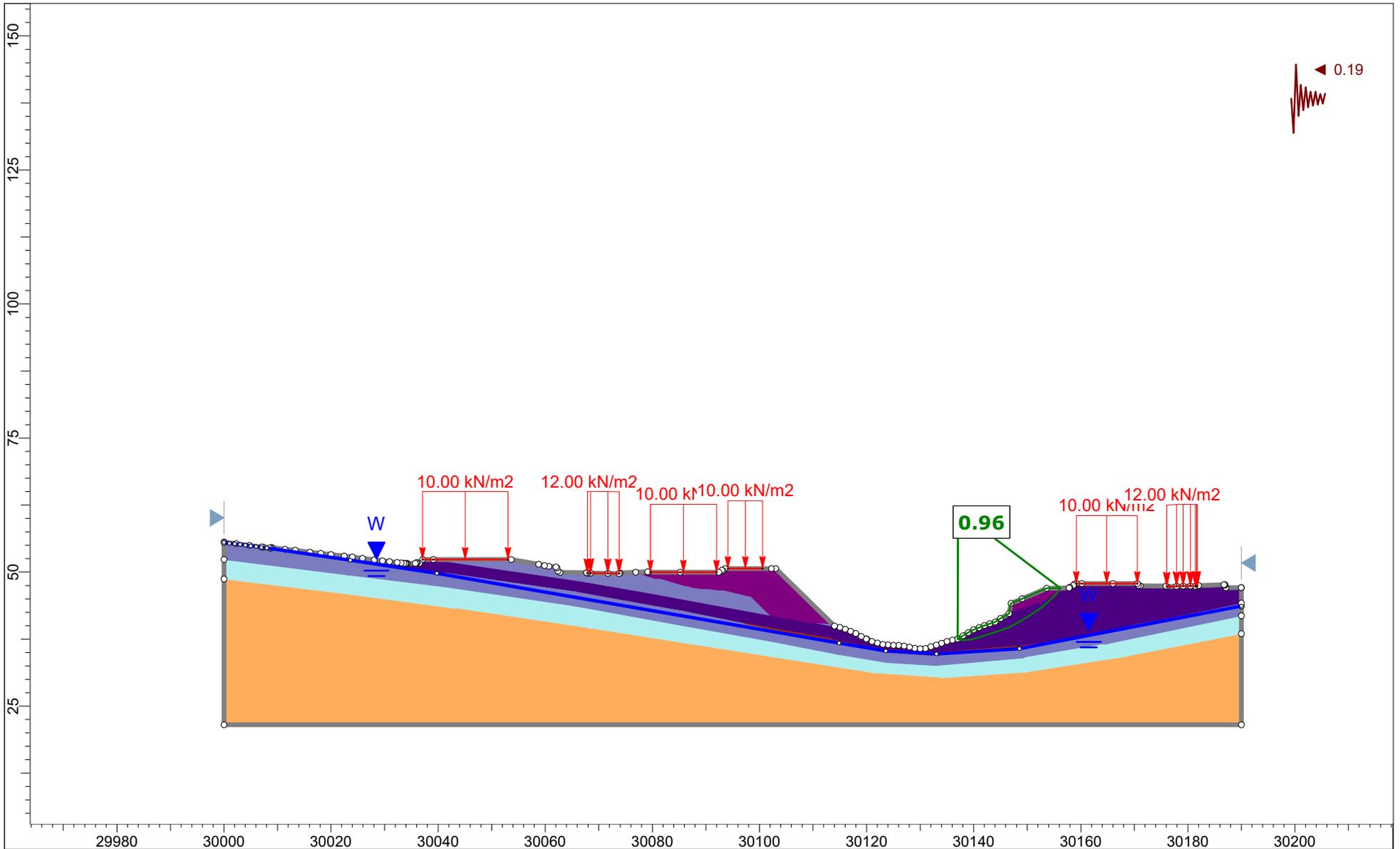
	<i>Project</i> 240065 - Russell Road, Wainui - Stage 2	
	<i>Group</i> Section AD Proposed GL (L-R)	<i>Scenario</i> Extreme (50% saturation)
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	<i>Date</i> 10/12/2024	<i>File Name</i> Section AD.slmd



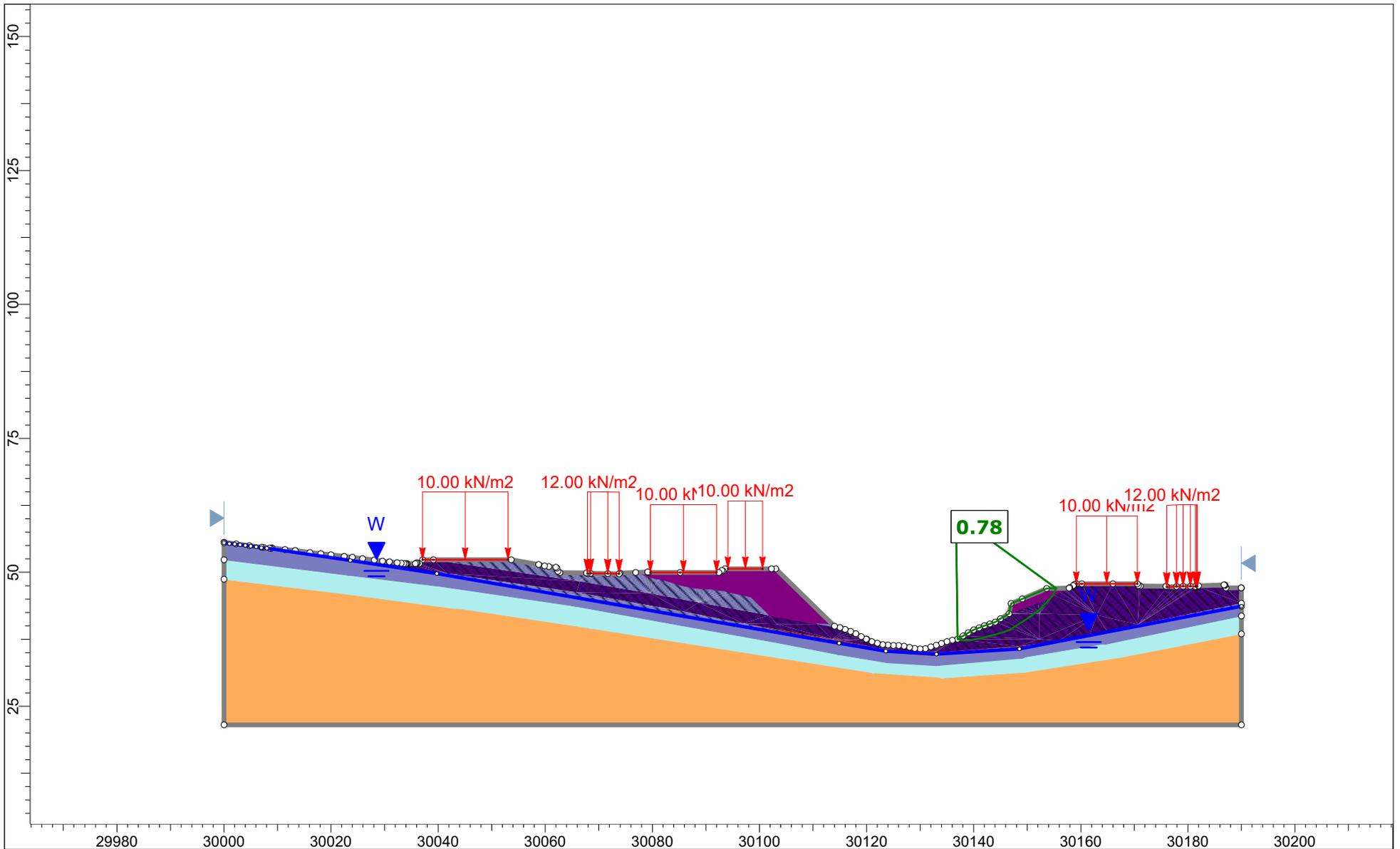
	<b>Project</b> 240065 - Russell Road, Wainui - Stage 2	
	<b>Group</b> Section AD Proposed GL (R-L)	<b>Scenario</b> Normal (Measured GW)
	<b>Drawn By</b> RS	<b>Company</b> Riley Consultants Ltd
	<b>Date</b> 10/12/2024	<b>File Name</b> Section AD.slm



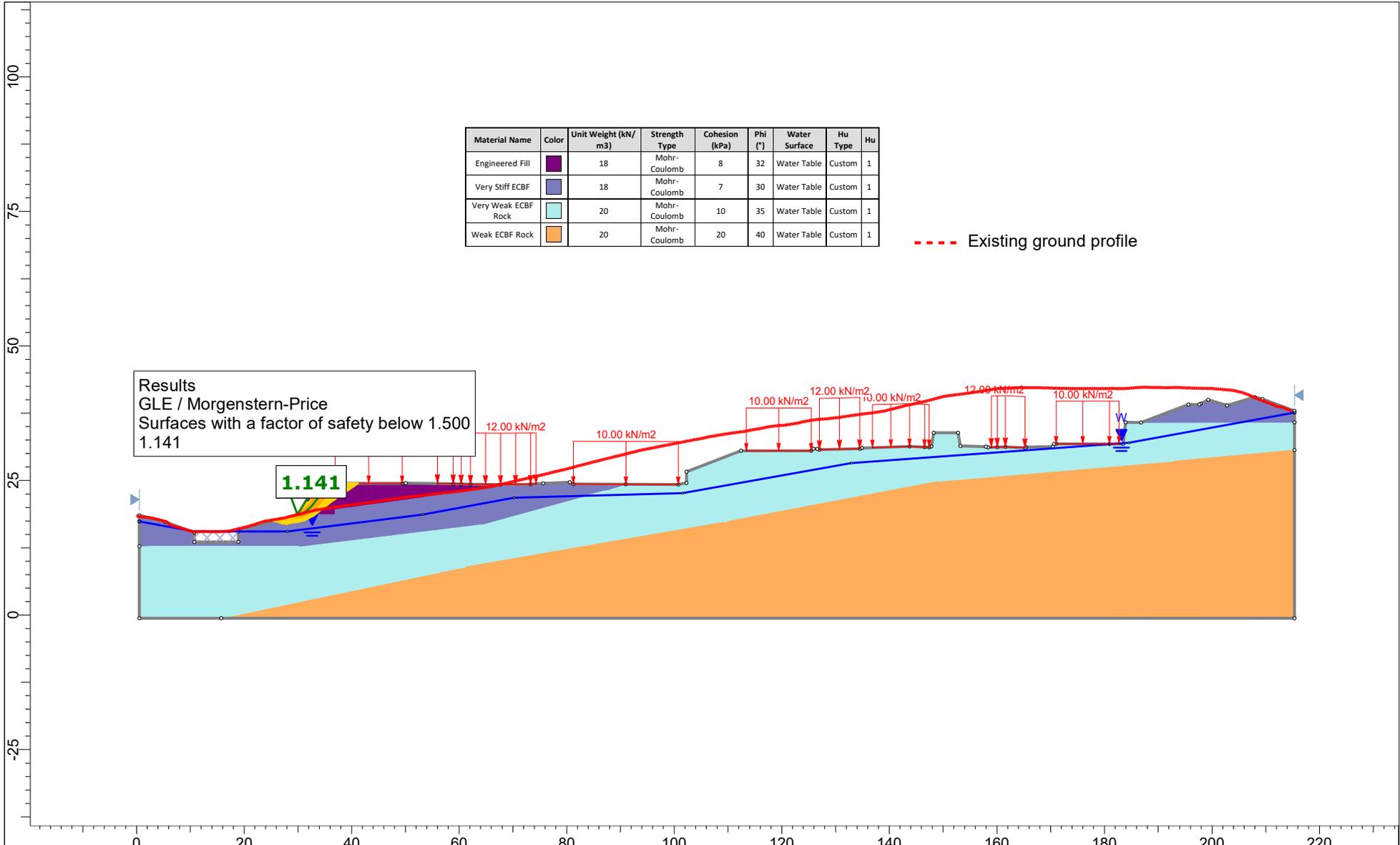
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	<b>Group</b> Section AD Proposed GL (R-L)	<b>Scenario</b> Extreme (Worst Credible GW)
	<b>Drawn By</b> RS	<b>Company</b> Riley Consultants Ltd
	<b>Date</b> 10/12/2024	<b>File Name</b> Section AD.slmd



	<b>Project</b> 240065 - Russell Road, Wainui - Stage 2	
	<b>Group</b> Section AD Proposed GL (R-L)	<b>Scenario</b> Seismic (0.19g)
	<b>Drawn By</b> RS	<b>Company</b> Riley Consultants Ltd
	<b>Date</b> 10/12/2024	<b>File Name</b> Section AD.slmd



	<b>Project</b> 240065 - Russell Road, Wainui - Stage 2	
	<b>Group</b> Section AD Proposed GL (R-L)	<b>Scenario</b> Extreme (50% saturation)
	<b>Drawn By</b> RS	<b>Company</b> Riley Consultants Ltd
	<b>Date</b> 10/12/2024	<b>File Name</b> Section AD.slmd



Material Name	Color	Unit Weight (kN/m <sup>3</sup> )	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu
Engineered Fill	■	18	Mohr-Coulomb	8	32	Water Table	Custom	1
Very Stiff ECBF	■	18	Mohr-Coulomb	7	30	Water Table	Custom	1
Very Weak ECBF Rock	■	20	Mohr-Coulomb	10	35	Water Table	Custom	1
Weak ECBF Rock	■	20	Mohr-Coulomb	20	40	Water Table	Custom	1

--- Existing ground profile

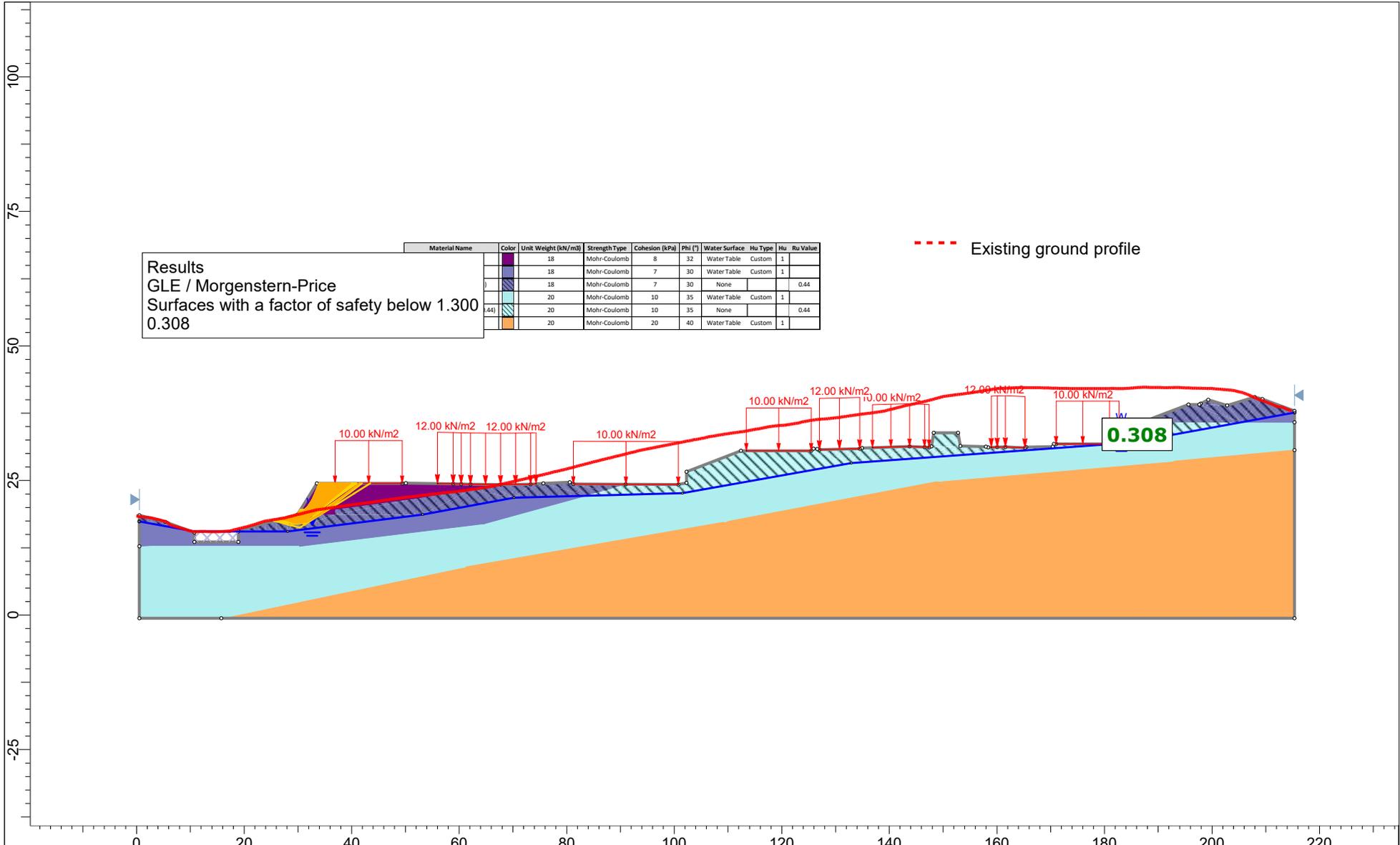
Results  
GLE / Morgenstern-Price  
Surfaces with a factor of safety below 1.500  
1.141

1.141



SLIDEINTERPRET 9.028

Project	240065 - Russell Road, Wainui		
Group	Proposed GL - Section AE	Scenario	Normal GW
Drawn By	RS	Company	Riley Consultants Ltd
Date	3/11/2025	File Name	Section AE (AB).sldm



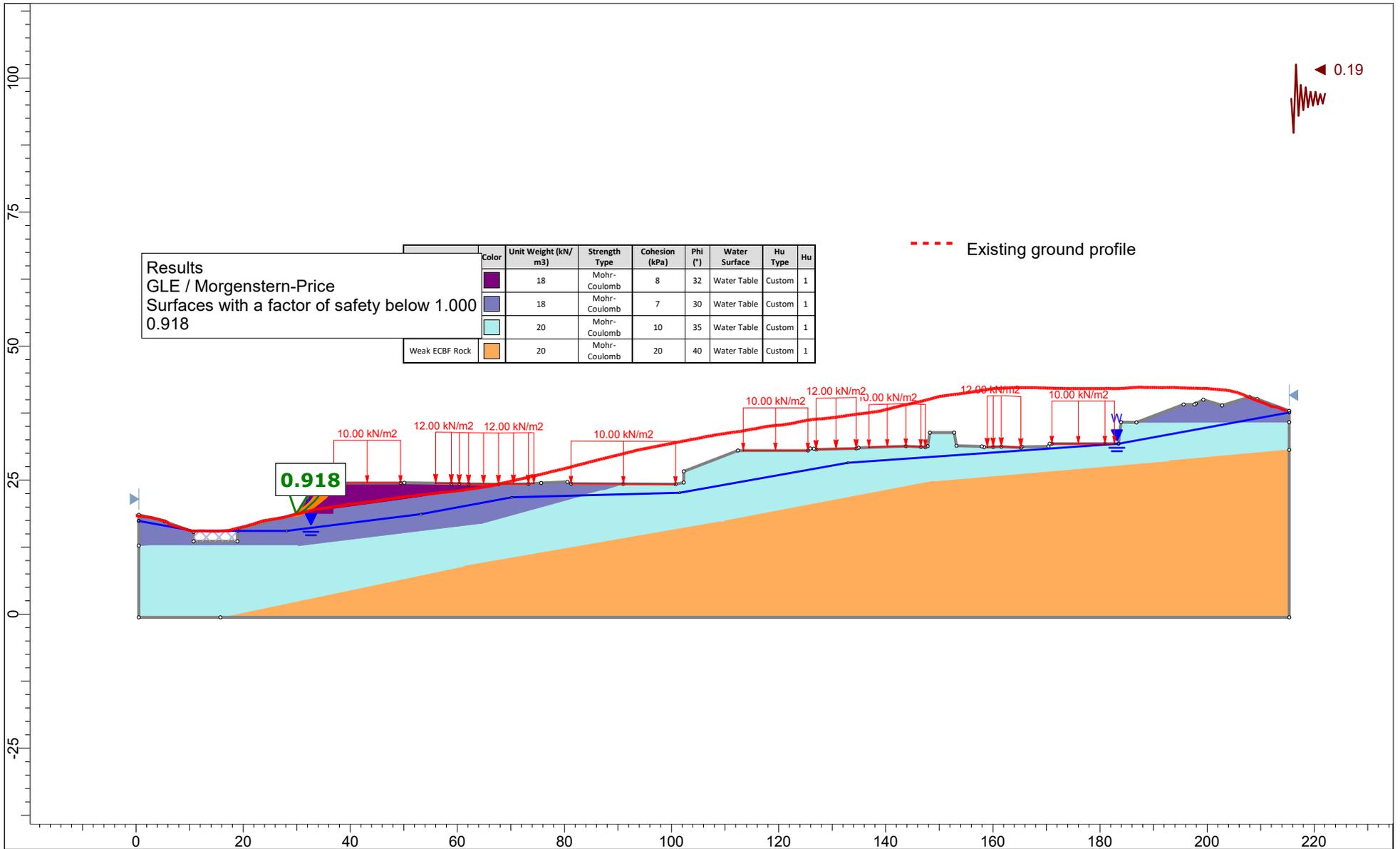
Results  
GLE / Morgenstern-Price  
Surfaces with a factor of safety below 1.300  
0.308

Material Name	Color	Unit Weight (kN/m³)	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu	Ru Value
		18	Mohr-Coulomb	8	32	Water Table	Custom	1	
		18	Mohr-Coulomb	7	30	Water Table	Custom	1	
		18	Mohr-Coulomb	7	30	None			0.44
		20	Mohr-Coulomb	10	35	Water Table	Custom	1	
		20	Mohr-Coulomb	10	35	None			0.44
		20	Mohr-Coulomb	20	40	Water Table	Custom	1	

--- Existing ground profile



Project	240065 - Russell Road, Wainui		
Group	Proposed GL - Section AE	Scenario	Worst credible GW
Drawn By	RS	Company	Riley Consultants Ltd
Date	3/11/2025	File Name	Section AE (AB).slmd



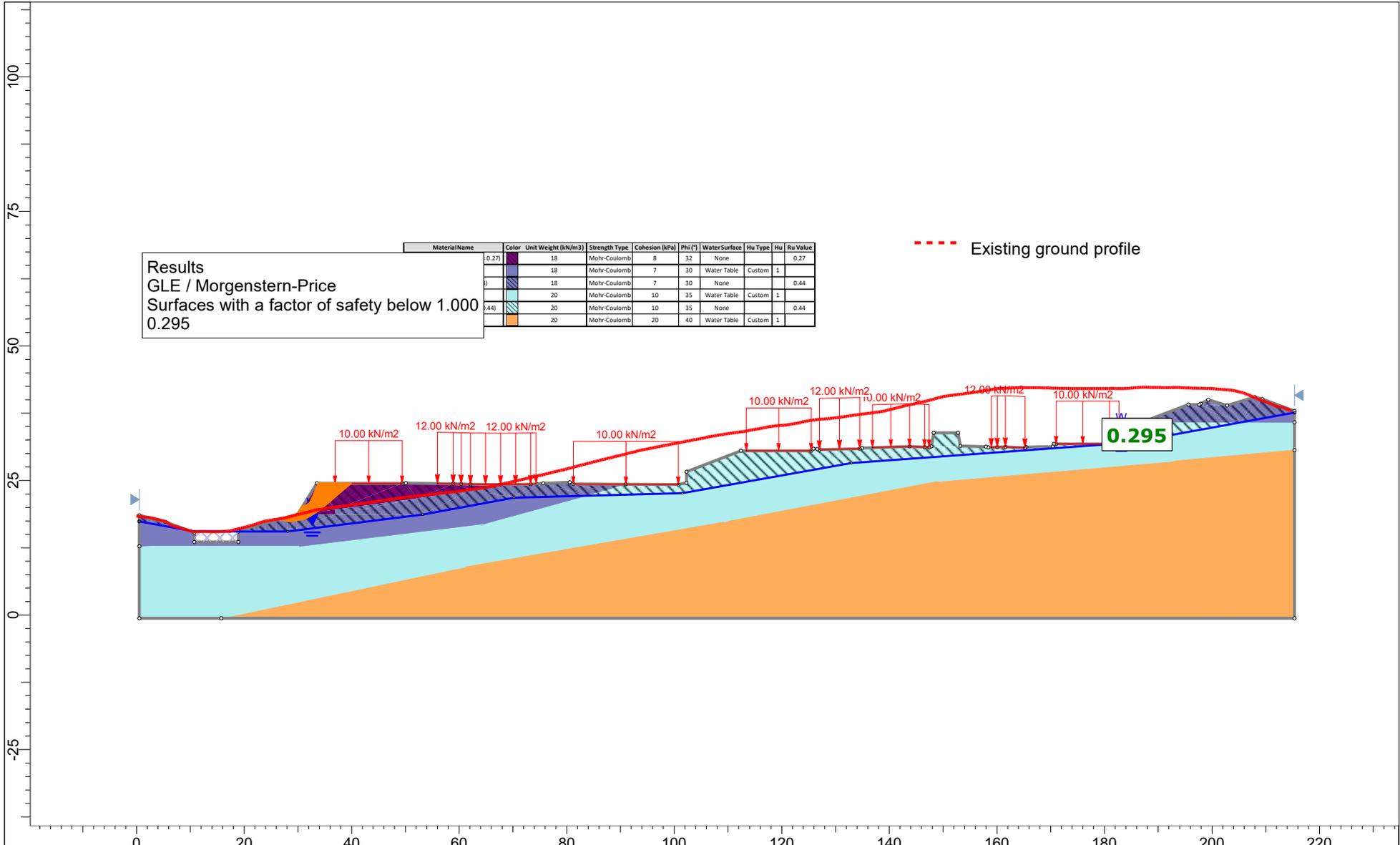
Results  
GLE / Morgenstern-Price  
Surfaces with a factor of safety below 1.000  
0.918

Color	Unit Weight (kN/m <sup>3</sup> )	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu
Dark Purple	18	Mohr-Coulomb	8	32	Water Table	Custom	1
Blue	18	Mohr-Coulomb	7	30	Water Table	Custom	1
Cyan	20	Mohr-Coulomb	10	35	Water Table	Custom	1
Orange	20	Mohr-Coulomb	20	40	Water Table	Custom	1

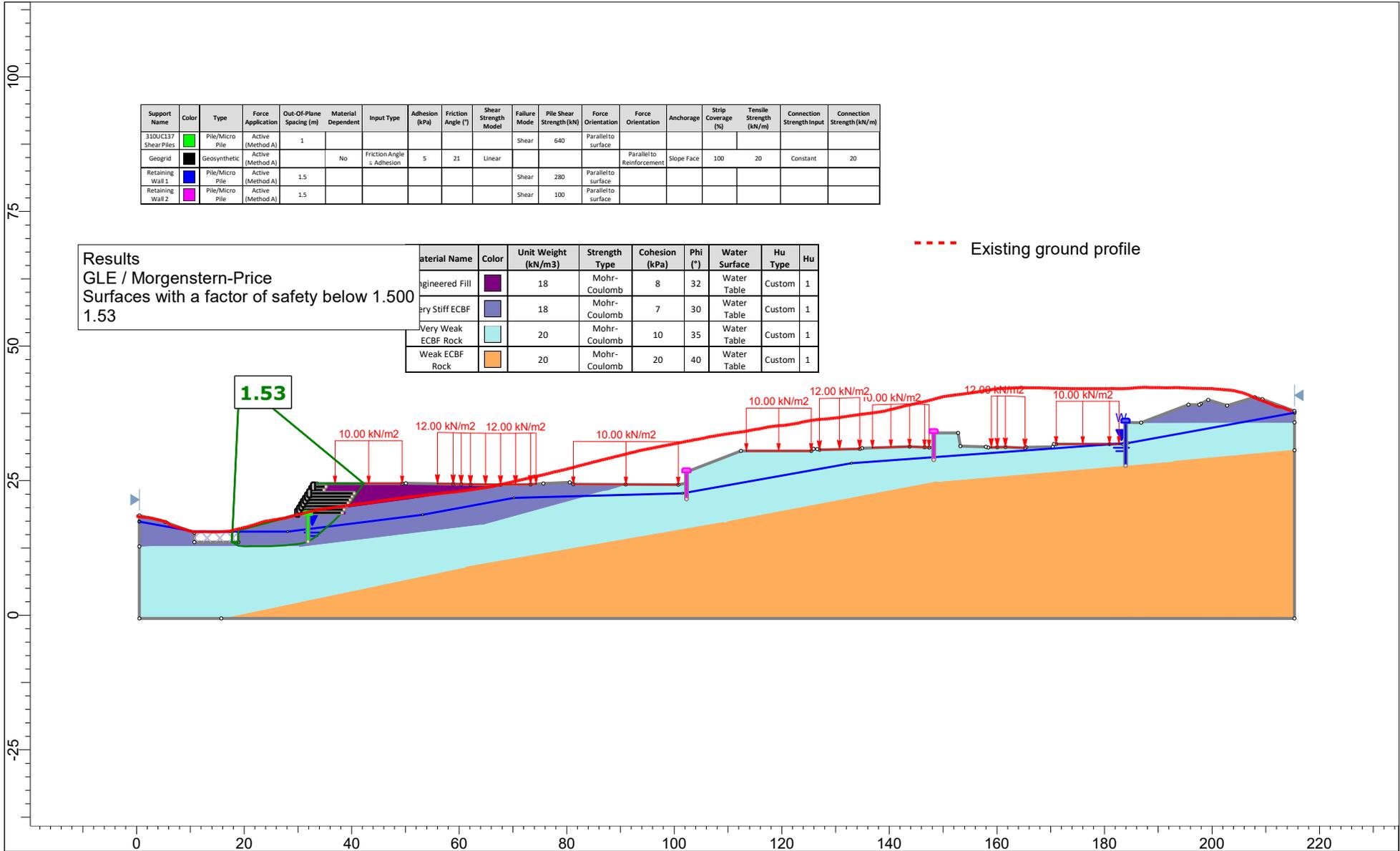
--- Existing ground profile



Project	240065 - Russell Road, Wainui		
Group	Proposed GL - Section AE	Scenario	Seismic (0.19g)
Drawn By	RS	Company	Riley Consultants Ltd
Date	3/11/2025	File Name	Section AE (AB).sldm



Project	240065 - Russell Road, Wainui		
Group	Proposed GL - Section AE	Scenario	50% fill saturation
Drawn By	RS	Company	Riley Consultants Ltd
Date	3/11/2025	File Name	Section AE (AB).slmd



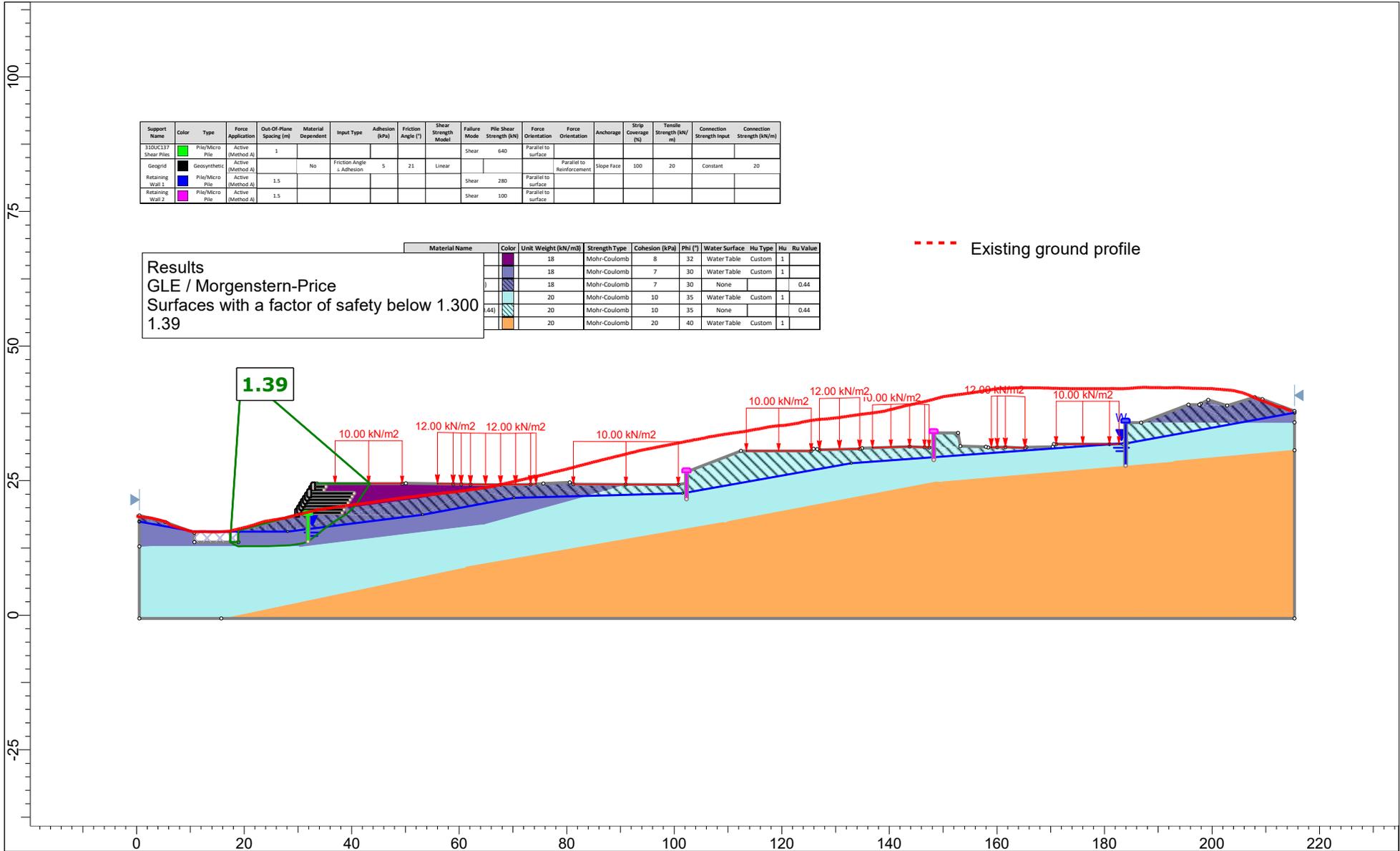
Support Name	Color	Type	Force Application	Out-Of-Plane Spacing (m)	Material Dependent	Input Type	Adhesion (kPa)	Friction Angle (°)	Shear Strength Model	Failure Mode	Pile Shear Strength (kN)	Force Orientation	Force Orientation	Anchorage	Strip Coverage (%)	Tensile Strength (kN/m)	Connection Strength Input	Connection Strength (kN/m)
310UC137 Shear Piles	Green	Pile/Micro Pile	Active (Method A)	1						Shear	640	Parallel to surface						
Geogrid	Black	Geosynthetic	Active (Method A)		No	Friction Angle & Adhesion	5	21	Linear			Parallel to Reinforcement	Slope Face	100	20	Constant	20	
Retaining Wall 1	Blue	Pile/Micro Pile	Active (Method A)	1.5						Shear	280	Parallel to surface						
Retaining Wall 2	Pink	Pile/Micro Pile	Active (Method A)	1.5						Shear	100	Parallel to surface						

Results  
GLE / Morgenstern-Price  
Surfaces with a factor of safety below 1.500  
1.53

Material Name	Color	Unit Weight (kN/m <sup>3</sup> )	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu	Hu
Engineered Fill	Purple	18	Mohr-Coulomb	8	32	Water Table	Custom	1
Very Stiff ECBF	Blue	18	Mohr-Coulomb	7	30	Water Table	Custom	1
Very Weak ECBF Rock	Light Blue	20	Mohr-Coulomb	10	35	Water Table	Custom	1
Weak ECBF Rock	Orange	20	Mohr-Coulomb	20	40	Water Table	Custom	1

--- Existing ground profile

	Project		240065 - Russell Road, Wainui	
	Group	Proposed GL - Section AE - Remedials & erosion	Scenario	Normal GW
	Drawn By	RS	Company	Riley Consultants Ltd
	Date	3/11/2025	File Name	Section AE (AB).sldm



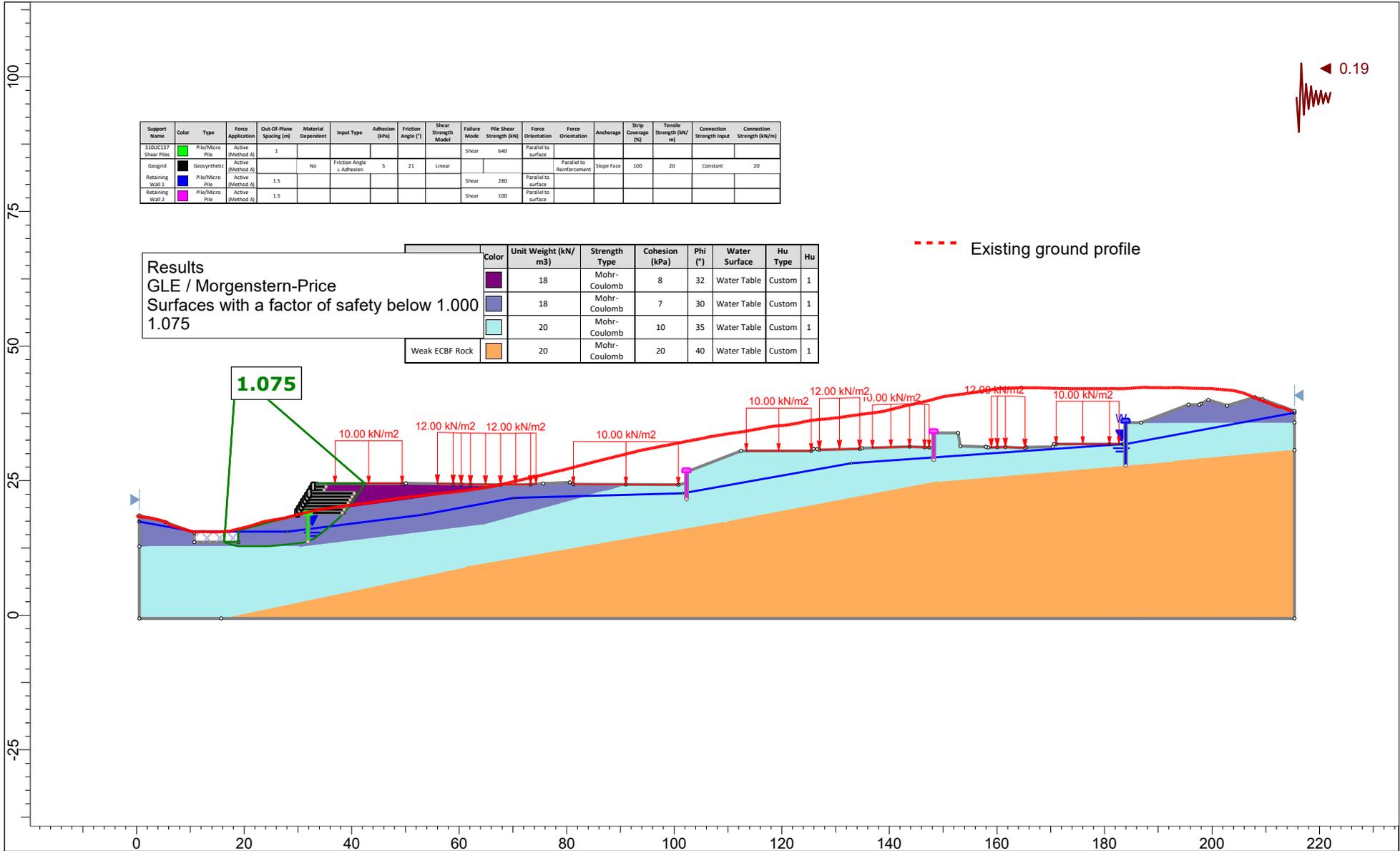
Support Name	Color	Type	Force Application	Out-Of-Plane Spacing (m)	Material Dependent	Input Type	Adhesion (kPa)	Friction Angle (°)	Shear Strength Model	Failure Mode	Pile Shear Strength (kN)	Force Orientation	Force Orientation	Anchorage	Strip Coverage (%)	Tensile Strength (kN/m)	Connection Strength Input	Connection Strength (kN/m)
310UC117 Shear Piles	Green	Pile/Micro Pile	Active (Method A)	1						Shear	640	Parallel to surface	Parallel to Reinforcement	Slope Face	100	20	Constant	20
Geogrid	Black	Geosynthetic	Active (Method A)		No	Friction Angle & Adhesion	5	21	Linear									
Retaining Wall 1	Blue	Pile/Micro Pile	Active (Method A)	1.5						Shear	280	Parallel to surface						
Retaining Wall 2	Purple	Pile/Micro Pile	Active (Method A)	1.5						Shear	100	Parallel to surface						

**Results**  
GLE / Morgenstern-Price  
Surfaces with a factor of safety below 1.300  
1.39

Material Name	Color	Unit Weight (kN/m3)	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu	Ru Value
	Orange	18	Mohr-Coulomb	8	32	Water Table	Custom	1	
	Light Blue	18	Mohr-Coulomb	7	30	Water Table	Custom	1	
	Dark Blue	18	Mohr-Coulomb	7	30	None			0.44
	Purple	20	Mohr-Coulomb	10	35	Water Table	Custom	1	
	Blue	20	Mohr-Coulomb	10	35	None			0.44
	Orange	20	Mohr-Coulomb	20	40	Water Table	Custom	1	

--- Existing ground profile

	Project		240065 - Russell Road, Wainui	
	Group	Proposed GL - Section AE - Remedials & erosion	Scenario	Worst credible GW
	Drawn By	RS	Company	Riley Consultants Ltd
	Date	3/11/2025	File Name	Section AE (AB).sldm



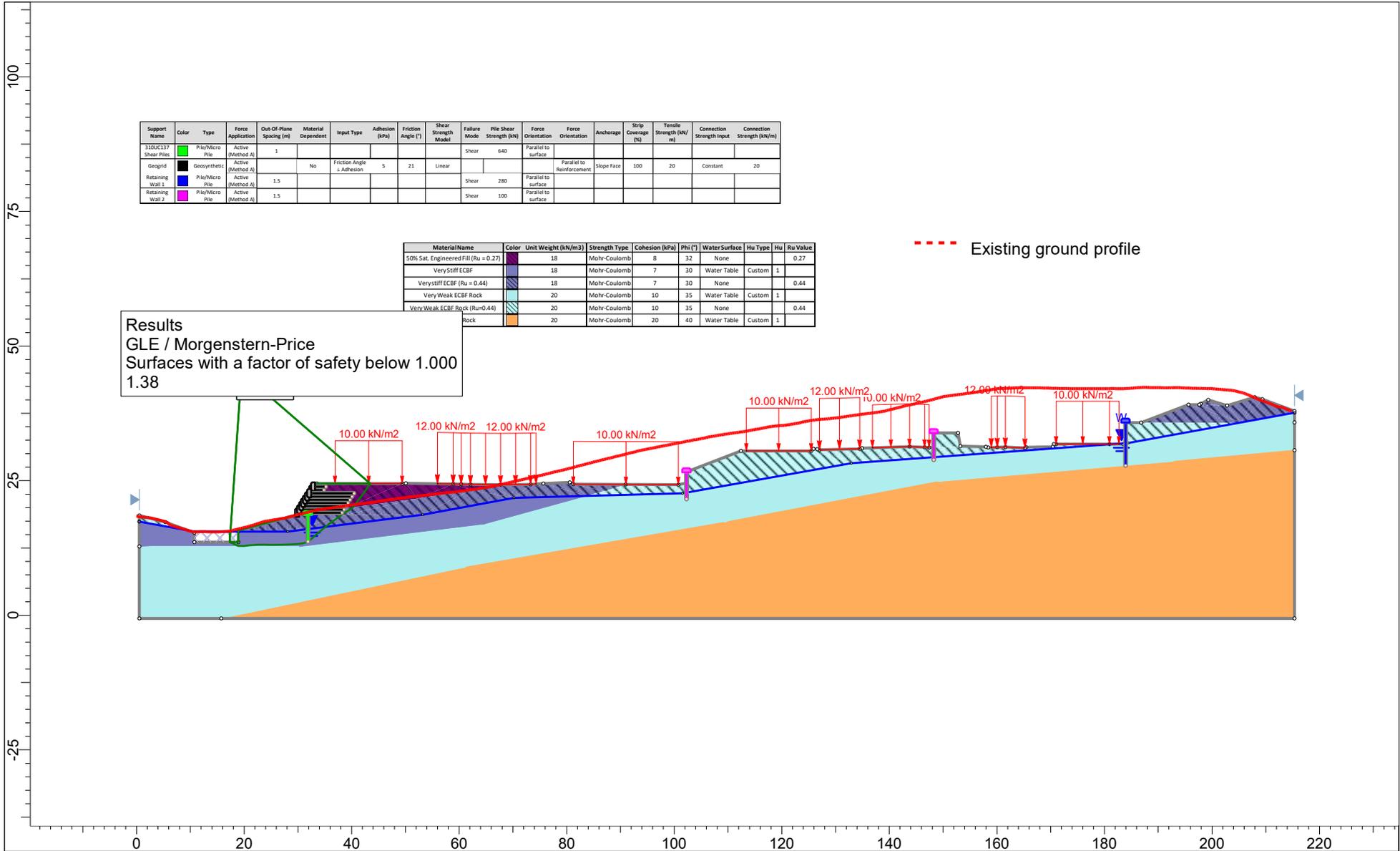
Support Name	Color	Type	Force Application	Out-Of-Plane Spacing (m)	Material Dependent	Input Type	Adhesion (kPa)	Friction Angle (°)	Shear Strength Model	Failure Mode	Pile Shear Strength (kN)	Force Orientation	Force Orientation	Anchorage	Strip Coverage (%)	Tensile Strength (kN/m)	Connection Strength Input	Connection Strength (kN/m)
310UC17 Shear Piles	Green	Pile/Micro Pile	Active (Method A)	1	No	Friction Angle & Adhesion	5	21	Linear	Shear	640	Parallel to surface	Parallel to Reinforcement	Slope Face	100	20	Constant	20
Geogrid Retaining Wall 1	Black	Geosynthetic	Active (Method A)	1.5	No	Friction Angle & Adhesion				Shear	280	Parallel to surface	Parallel to Reinforcement					
Retaining Wall 2	Purple	Pile/Micro Pile	Active (Method A)	1.5	No	Friction Angle & Adhesion				Shear	100	Parallel to surface	Parallel to Reinforcement					

**Results**  
GLE / Morgenstern-Price  
Surfaces with a factor of safety below 1.000  
1.075

Color	Unit Weight (kN/m3)	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu
Purple	18	Mohr-Coulomb	8	32	Water Table	Custom	1
Blue	18	Mohr-Coulomb	7	30	Water Table	Custom	1
Cyan	20	Mohr-Coulomb	10	35	Water Table	Custom	1
Orange	20	Mohr-Coulomb	20	40	Water Table	Custom	1



Project		240065 - Russell Road, Wainui	
Group	Proposed GL - Section AE - Remedials & erosion	Scenario	Seismic (0.19g)
Drawn By	RS	Company	Riley Consultants Ltd
Date	3/11/2025	File Name	Section AE (AB).sldm



Support Name	Color	Type	Force Application	Out-Of-Plane Spacing (m)	Material Dependent	Input Type	Adhesion (kPa)	Friction Angle (°)	Shear Strength Model	Failure Mode	Pile Shear Strength (kN)	Force Orientation	Force Orientation	Anchorage	Strip Coverage (%)	Tensile Strength (kN/m)	Connection Strength Input	Connection Strength (kN/m)
310UC117 Shear Piles	Green	Pile/Micro Pile	Active (Method A)	1						Shear	640	Parallel to surface	Parallel to Reinforcement	Slope Face	100	20	Constant	20
Geogrid	Black	Geosynthetic	Active (Method A)		No	Friction Angle & Adhesion	5	21	Linear									
Retaining Wall 1	Blue	Pile/Micro Pile	Active (Method A)	1.5						Shear	280	Parallel to surface	Parallel to surface					
Retaining Wall 2	Purple	Pile/Micro Pile	Active (Method A)	1.5						Shear	100	Parallel to surface	Parallel to surface					

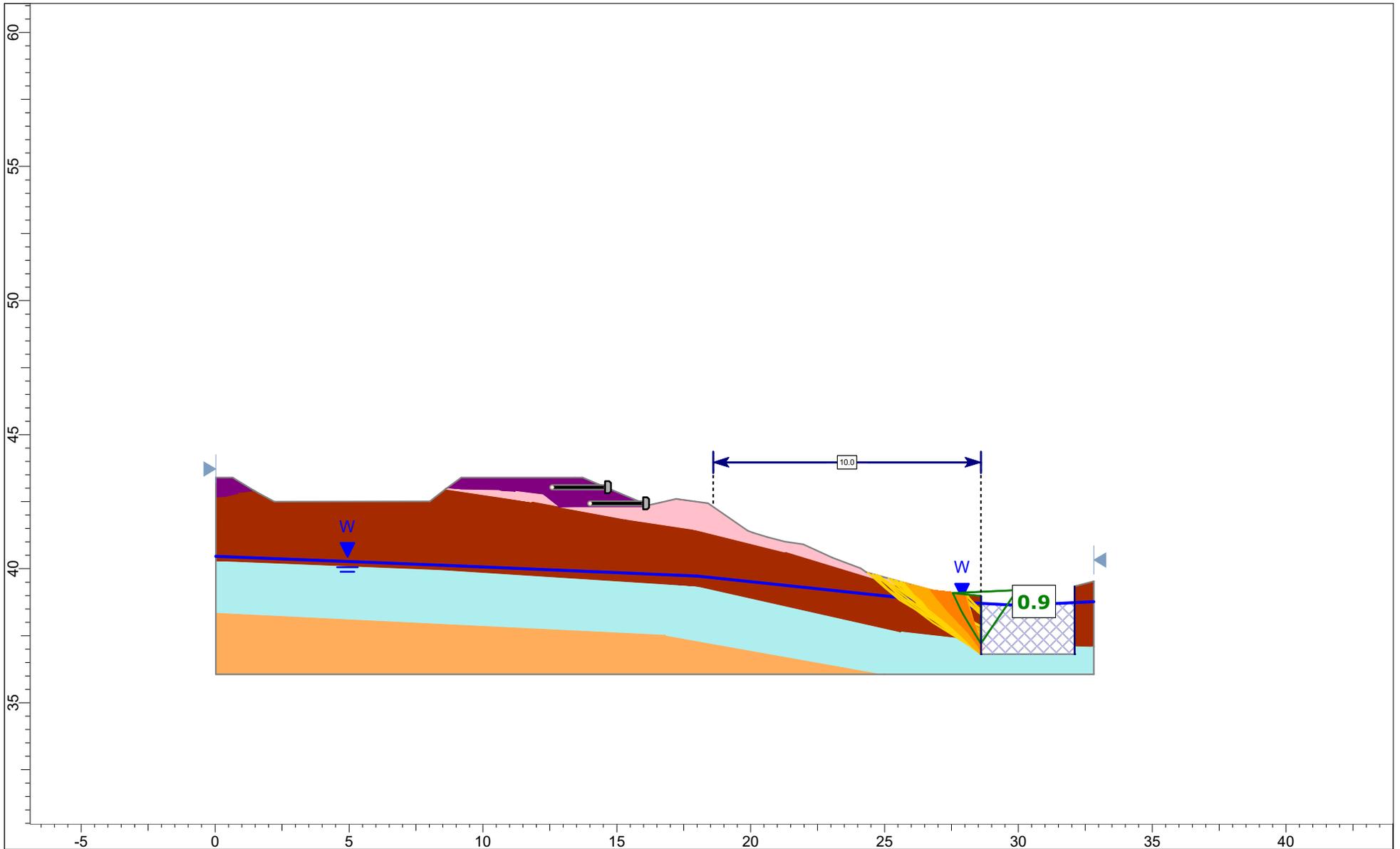
Material Name	Color	Unit Weight (kN/m3)	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu	Ru Value
50% Sat. Engineered Fill (Ru = 0.27)	Dark Purple	18	Mohr-Coulomb	8	32	None			0.27
Very Stiff ECFB	Blue	18	Mohr-Coulomb	7	30	Water Table	Custom	1	
Very Stiff ECFB (Ru = 0.44)	Light Blue	18	Mohr-Coulomb	7	30	None			0.44
Very Weak ECFB Rock	Light Green	20	Mohr-Coulomb	10	35	Water Table	Custom	1	
Very Weak ECFB Rock (Ru=0.44)	Light Green	20	Mohr-Coulomb	10	35	None			0.44
Rock	Orange	20	Mohr-Coulomb	20	40	Water Table	Custom	1	

**Results**  
GLE / Morgenstern-Price  
Surfaces with a factor of safety below 1.000  
1.38

--- Existing ground profile

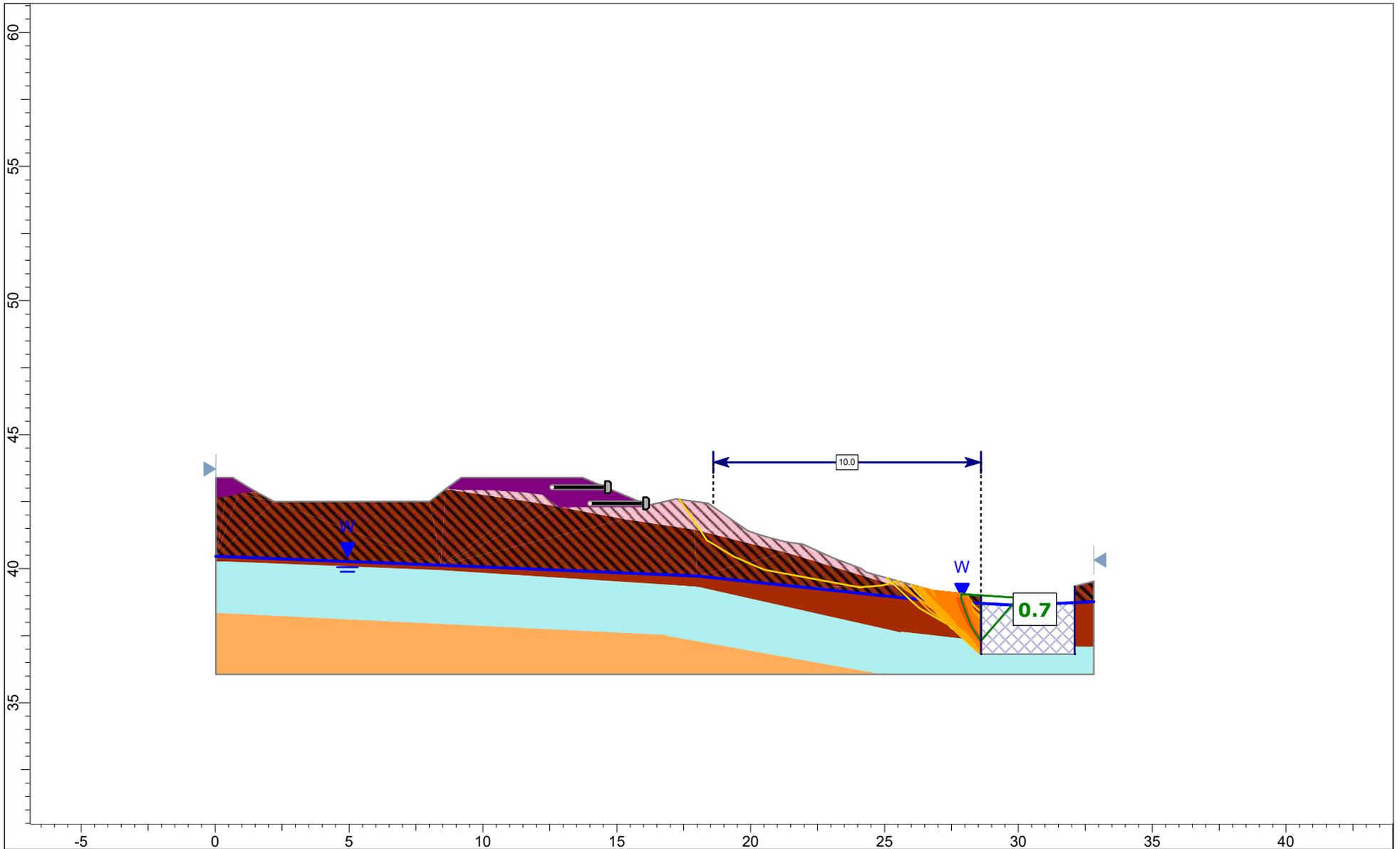


Project		240065 - Russell Road, Wainui	
Group	Proposed GL - Section AE - Remedials & erosion	Scenario	50% fill saturation
Drawn By	RS	Company	Riley Consultants Ltd
Date	3/11/2025	File Name	Section AE (AB).sldm

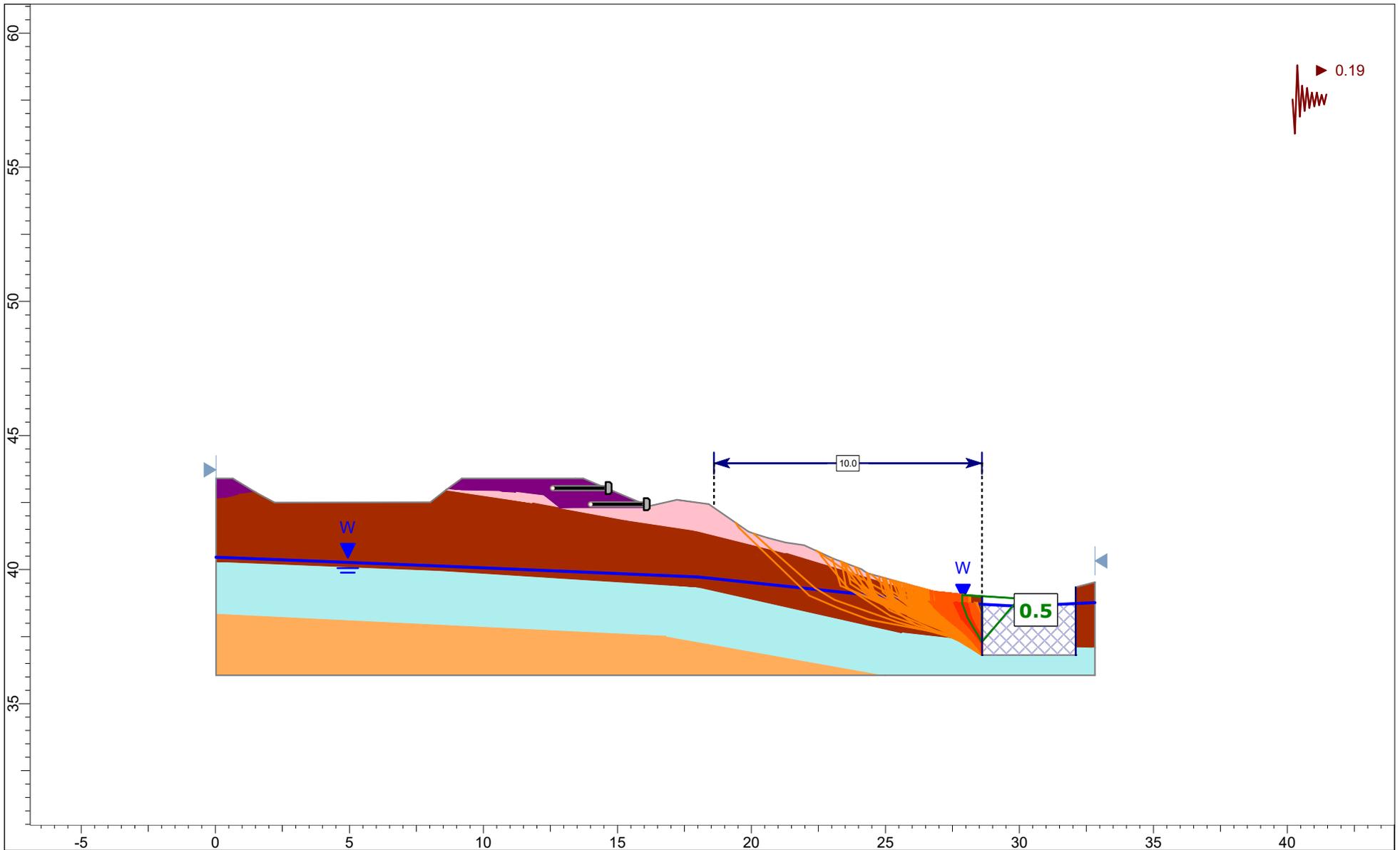


SLIDEINTERPRET 9.028

<i>Project</i>		Slide2 - An Interactive Slope Stability Program	
<i>Group</i>	Erosion & Proposed Remedials - Section AF	<i>Scenario</i>	Normal GW
<i>Drawn By</i>		<i>Company</i>	
<i>Date</i>	4/11/2025, 10:02:12 am	<i>File Name</i>	Section AF 2.0.slmd

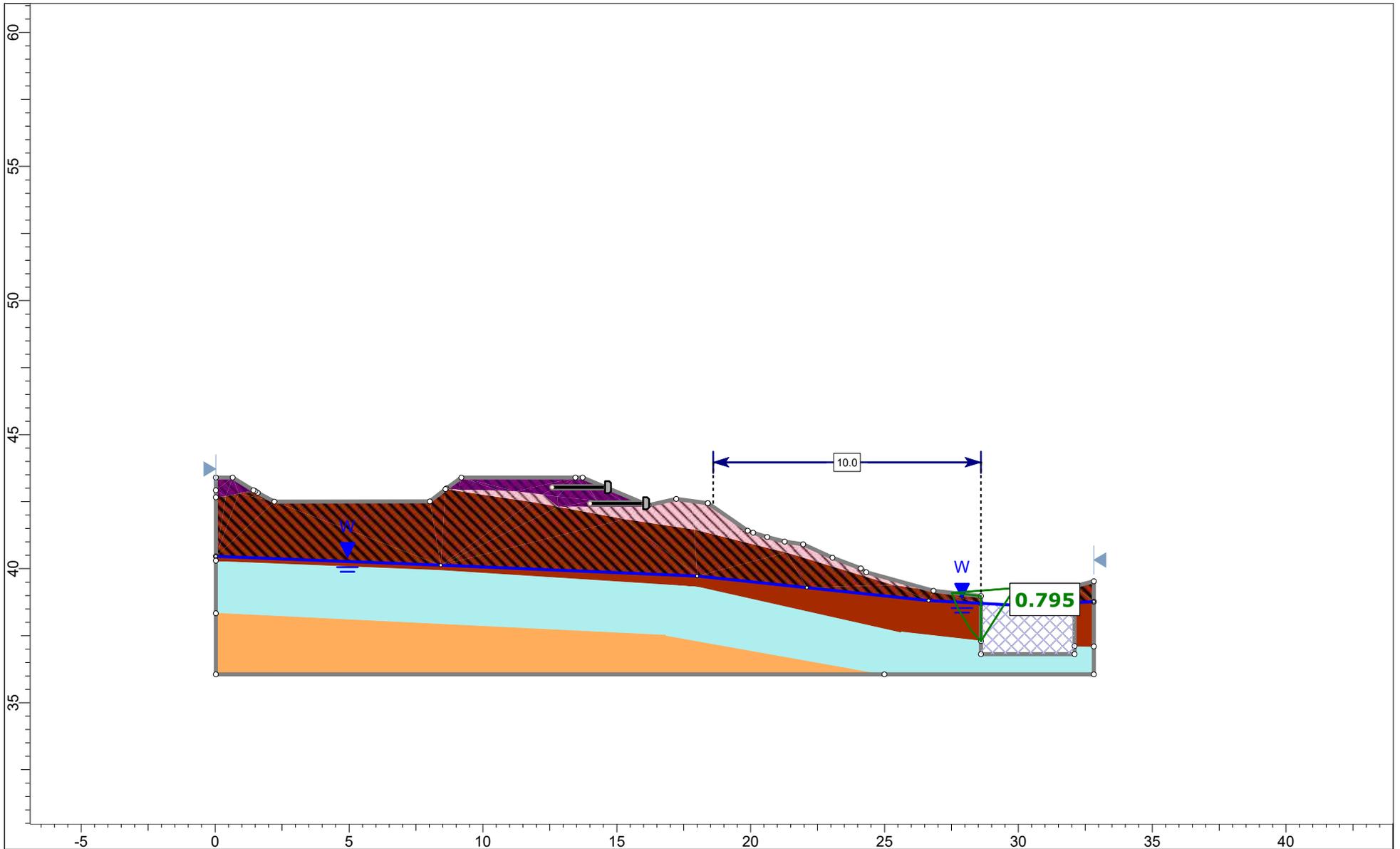


	<i>Project</i> Slide2 - An Interactive Slope Stability Program		
	<i>Group</i> Erosion & Proposed Remedials - Section AF	<i>Scenario</i> Worst Credible GW	
	<i>Drawn By</i>	<i>Company</i>	
	<i>Date</i> 4/11/2025, 10:02:12 am	<i>File Name</i> Section AF 2.0.slmd	



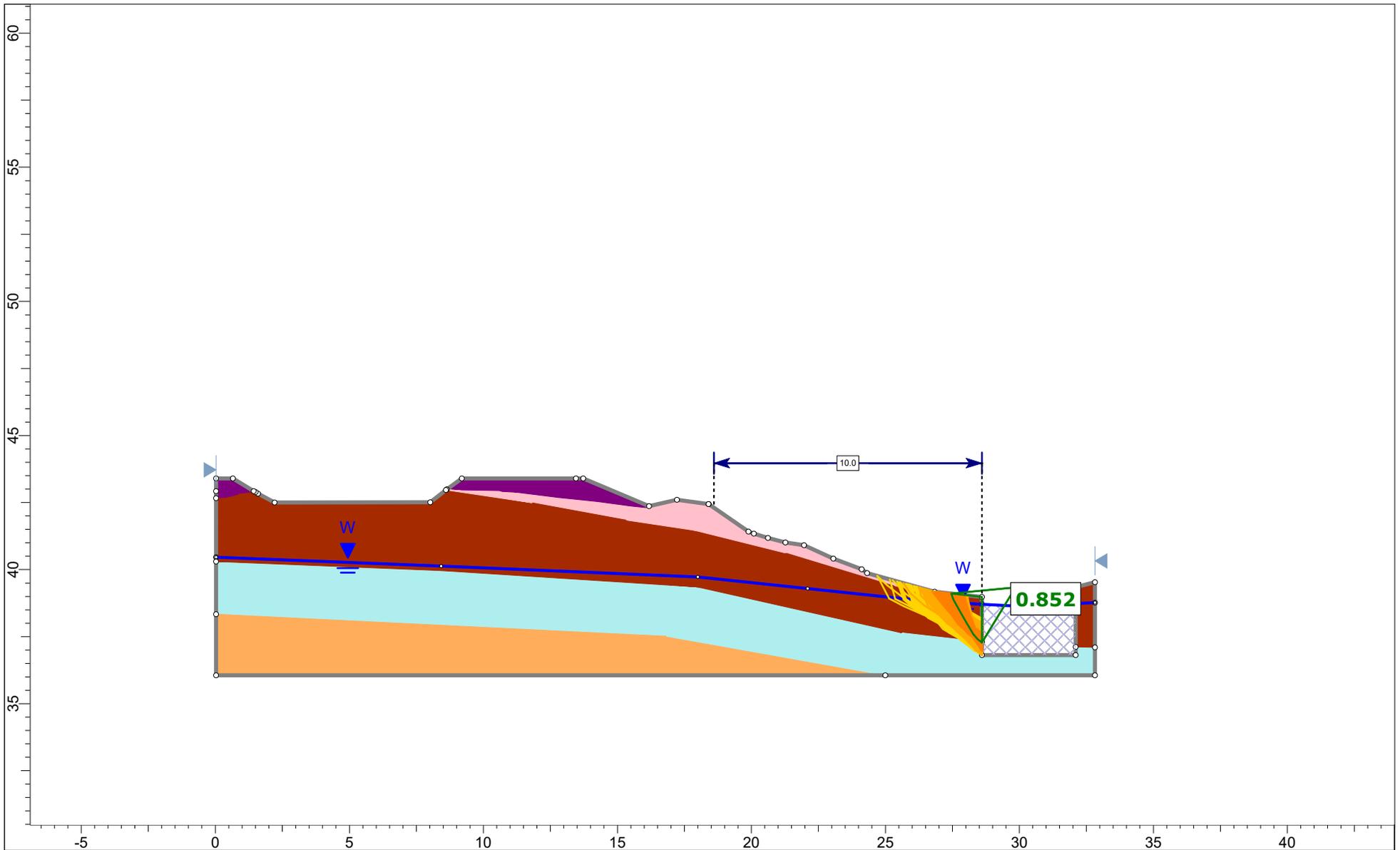
SLIDEINTERPRET 9.028

<i>Project</i>		Slide2 - An Interactive Slope Stability Program	
<i>Group</i>	Erosion & Proposed Remedials - Section AF	<i>Scenario</i>	Seismic (0.19g)
<i>Drawn By</i>		<i>Company</i>	
<i>Date</i>	4/11/2025, 10:02:12 am	<i>File Name</i>	Section AF 2.0.slmd



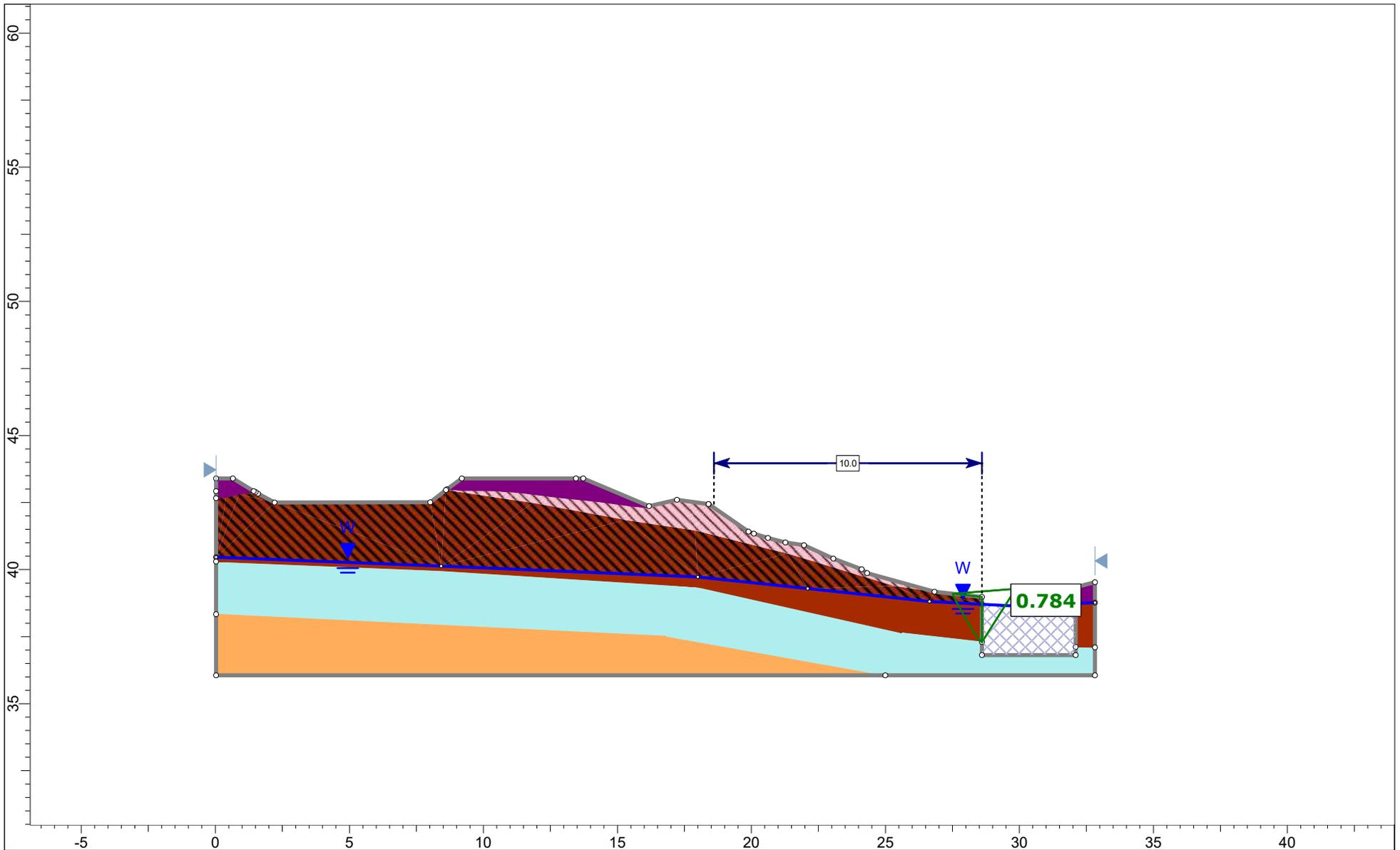
SLIDEINTERPRET 9.028

<i>Project</i>		Slide2 - An Interactive Slope Stability Program	
<i>Group</i>	Erosion & Proposed Remedials - Section AF	<i>Scenario</i>	Worst Credible GW (50% fill saturation)
<i>Drawn By</i>		<i>Company</i>	
<i>Date</i>	4/11/2025, 10:02:12 am	<i>File Name</i>	Section AF 2.0.slmd



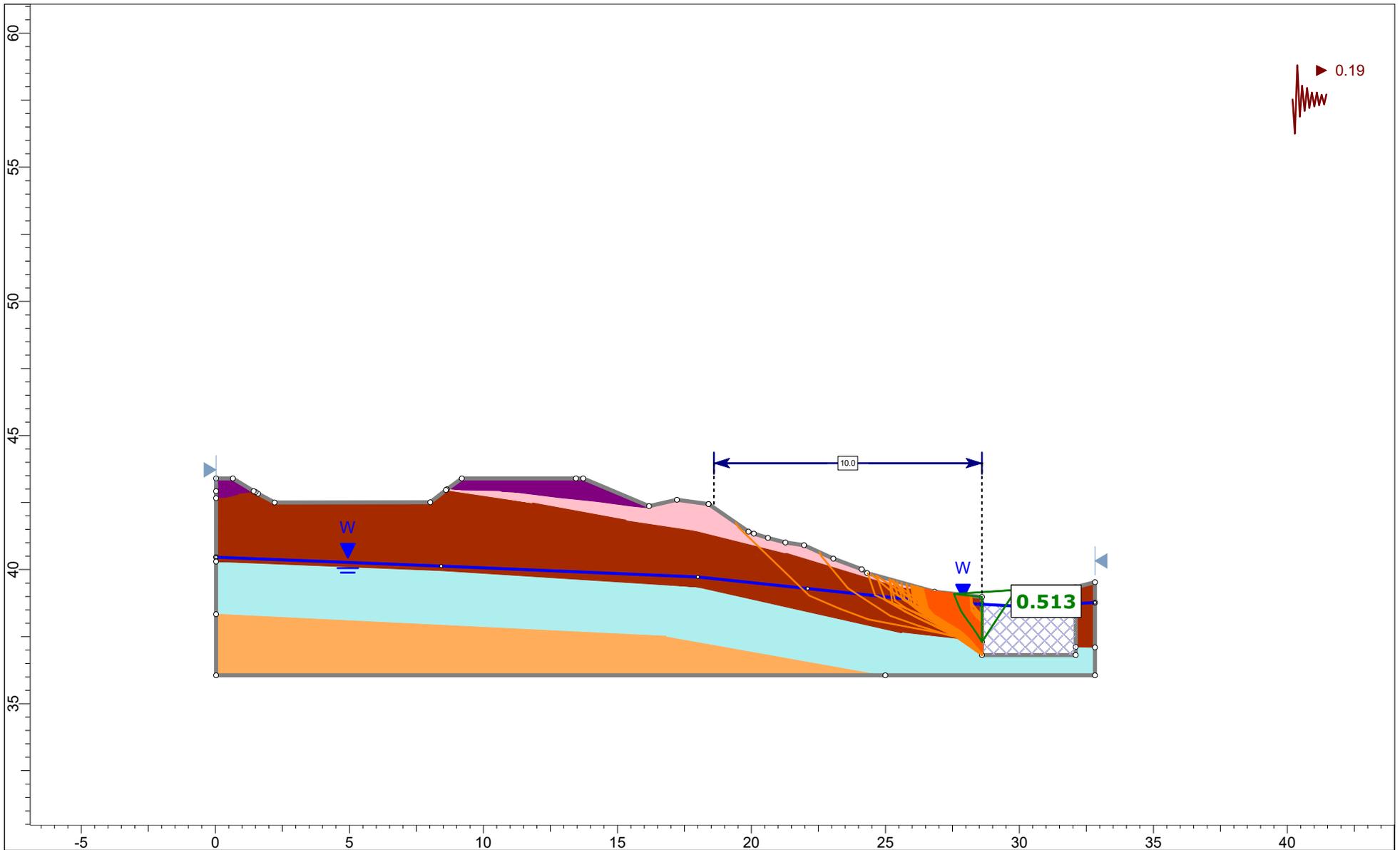
SLIDEINTERPRET 9.028

<i>Project</i>	Slide2 - An Interactive Slope Stability Program	
<i>Group</i>	Proposed GL - Section AF	<i>Scenario</i> Normal GW
<i>Drawn By</i>		<i>Company</i>
<i>Date</i>	4/11/2025, 10:02:12 am	<i>File Name</i> Section AF 2.0.slmd



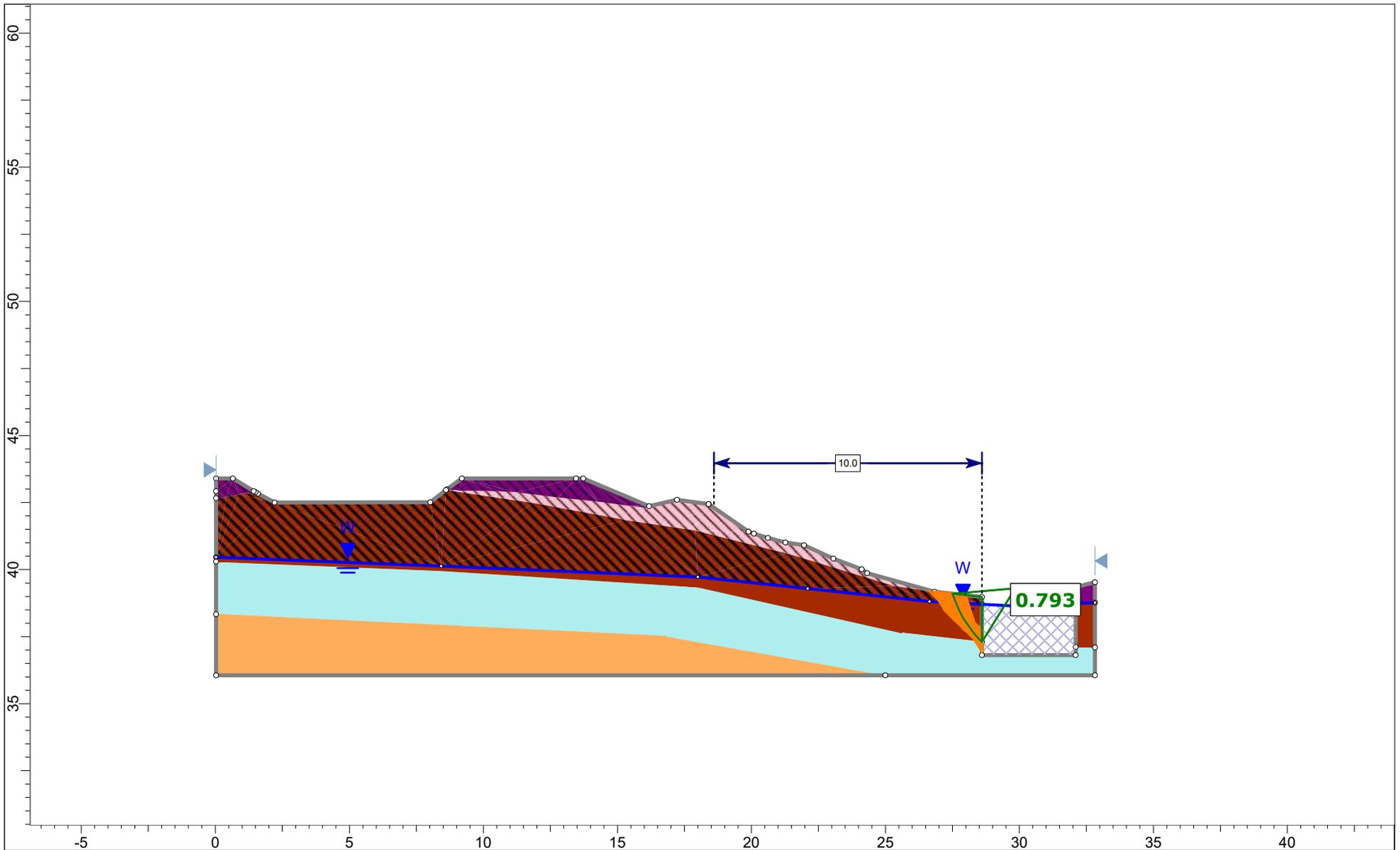
SLIDEINTERPRET 9.028

Project				Slide2 - An Interactive Slope Stability Program			
Group		Proposed GL - Section AF		Scenario		Worst Credible GW	
Drawn By				Company			
Date		4/11/2025, 10:02:12 am		File Name		Section AF 2.0.slmd	



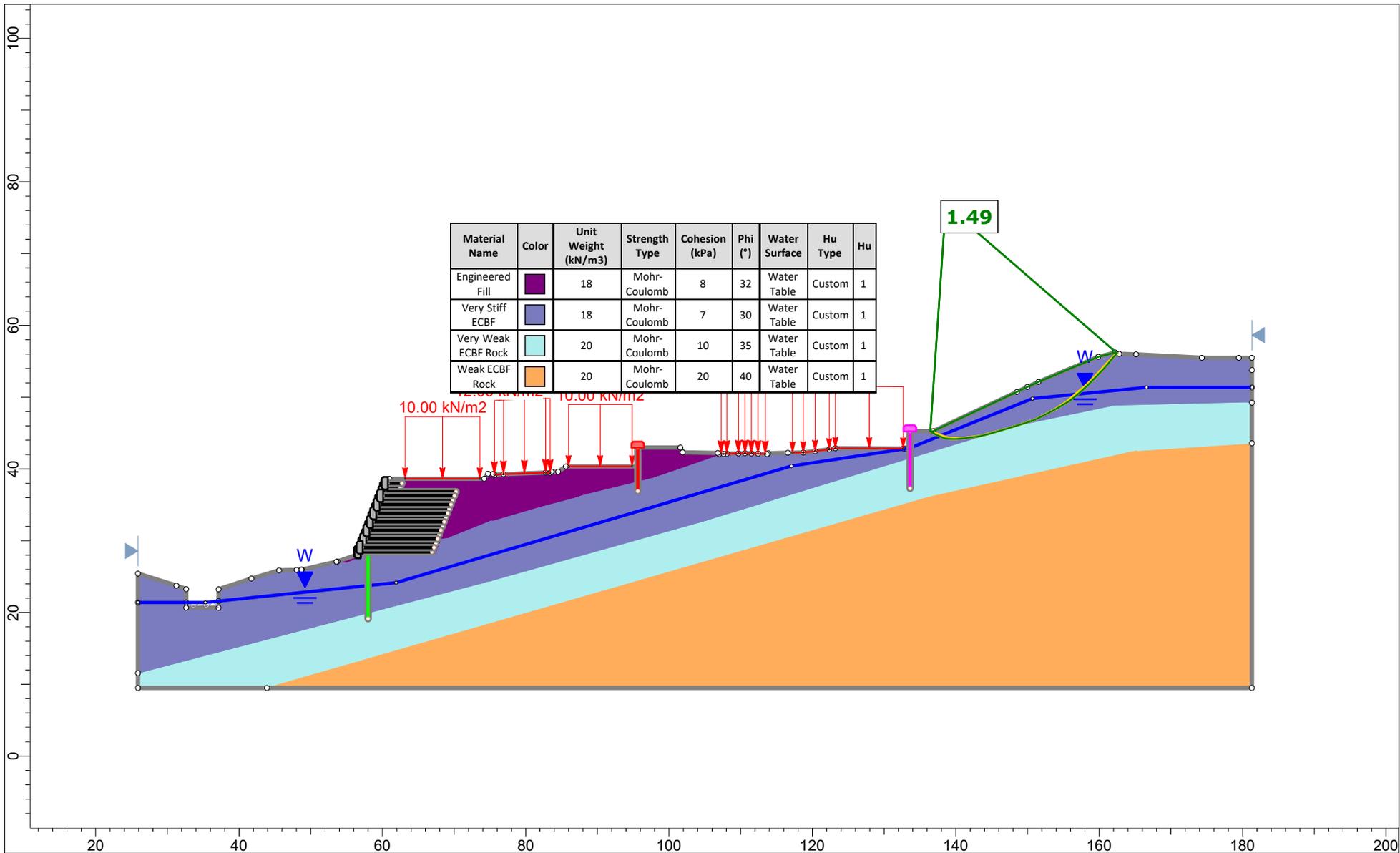
SLIDEINTERPRET 9.028

Project				Slide2 - An Interactive Slope Stability Program			
Group		Proposed GL - Section AF		Scenario		Seismic (0.19g)	
Drawn By				Company			
Date		4/11/2025, 10:02:12 am		File Name		Section AF 2.0.slmd	

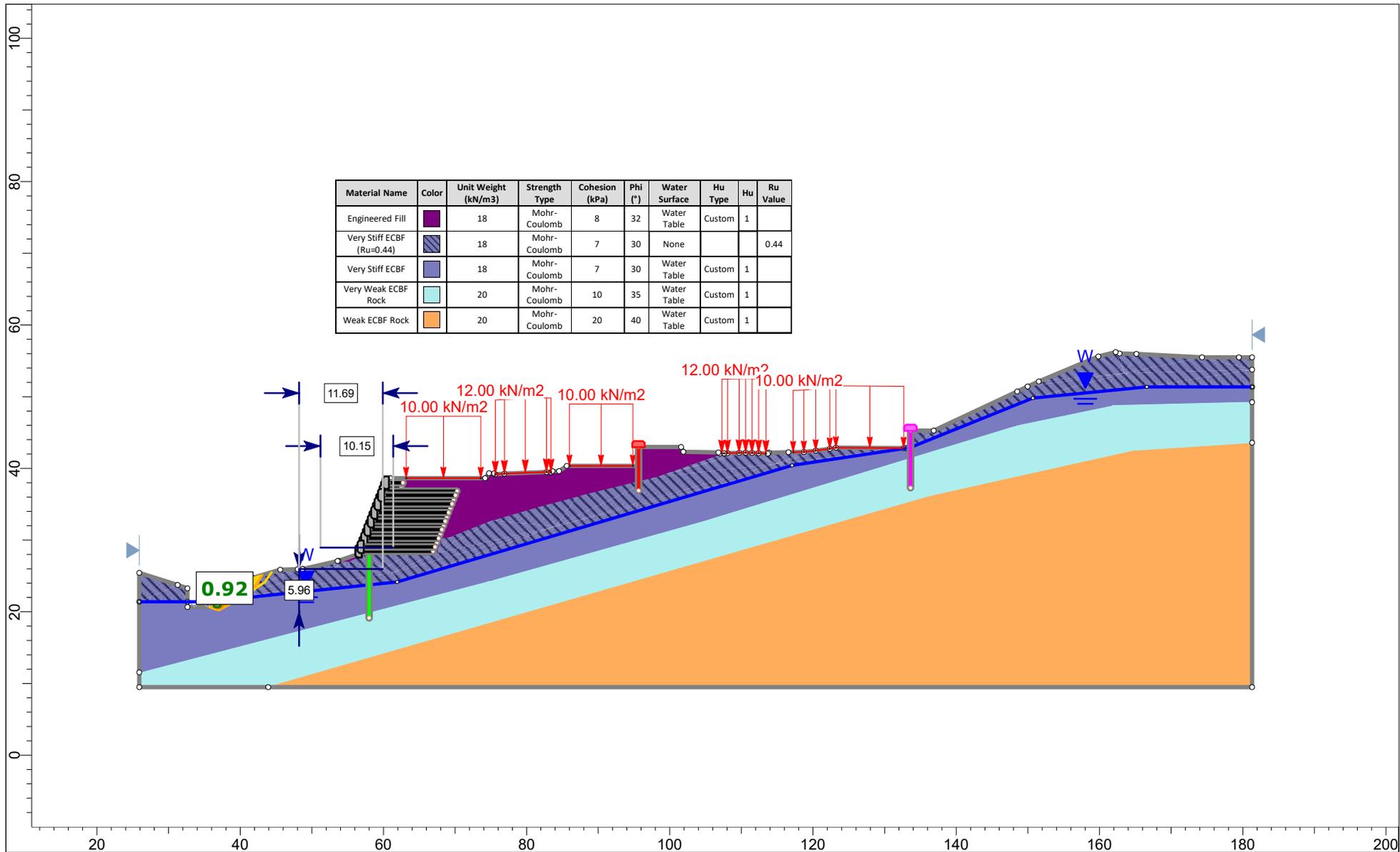


SLIDEINTERPRET 9.028

<i>Project</i>	Slide2 - An Interactive Slope Stability Program	
<i>Group</i>	Proposed GL - Section AF	<i>Scenario</i> Worst Credible GW (50% fill saturation)
<i>Drawn By</i>		<i>Company</i>
<i>Date</i>	4/11/2025, 10:02:12 am	<i>File Name</i> Section AF 2.0.slmd

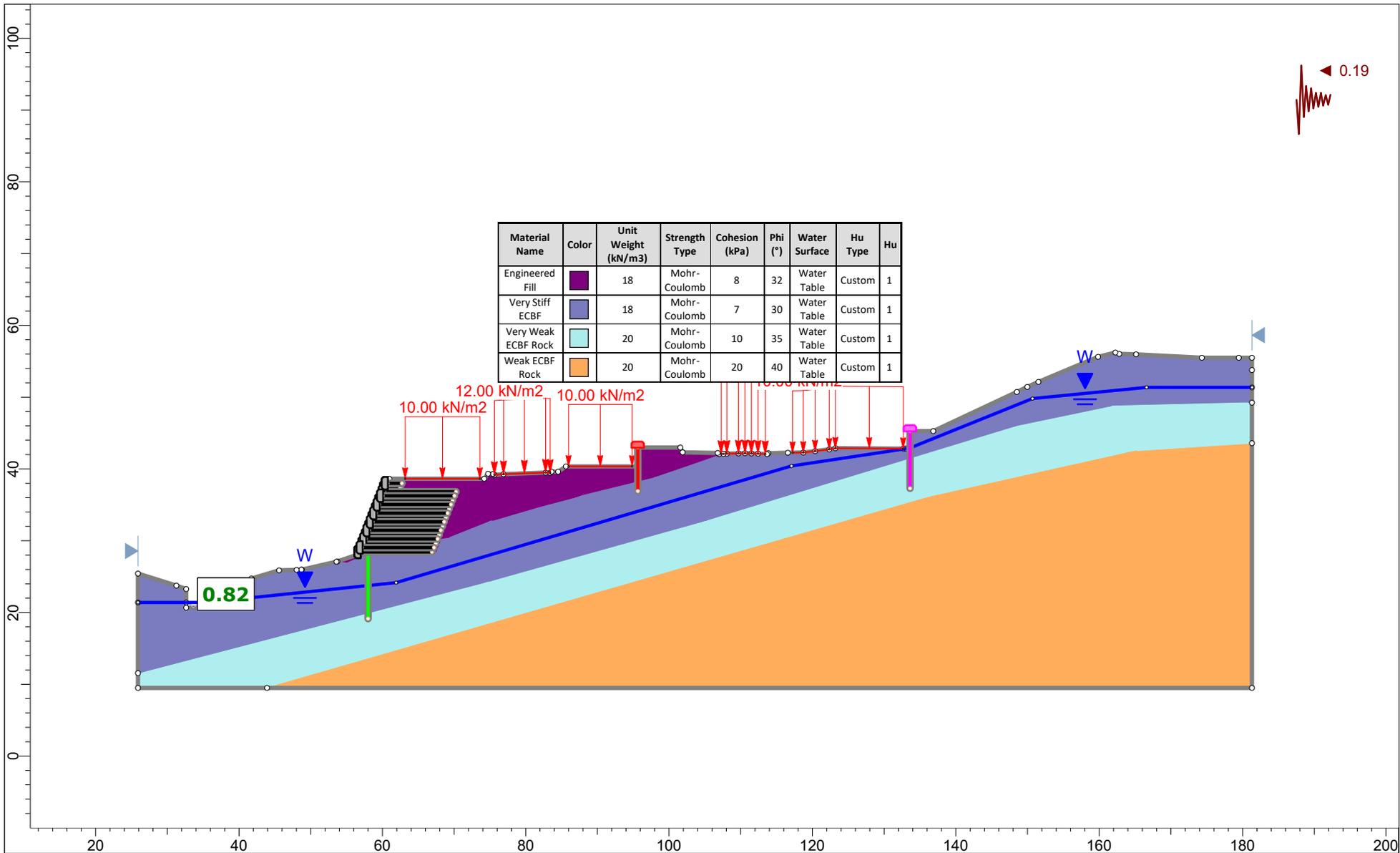


	Project		240065 - Russell Road, Wainui - Stage 1	
	Group		Section AG - design, erosion	Scenario
	Drawn By		RS	Company
	Date		12/12/2024, 8:28:52 am	File Name
				Normal
				Riley Consultants Ltd
				Section AG.slmd



Material Name	Color	Unit Weight (kN/m <sup>3</sup> )	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu	Ru Value
Engineered Fill	■	18	Mohr-Coulomb	8	32	Water Table	Custom	1	
Very Stiff ECBF (Ru=0.44)	■	18	Mohr-Coulomb	7	30	None			0.44
Very Stiff ECBF	■	18	Mohr-Coulomb	7	30	Water Table	Custom	1	
Very Weak ECBF Rock	■	20	Mohr-Coulomb	10	35	Water Table	Custom	1	
Weak ECBF Rock	■	20	Mohr-Coulomb	20	40	Water Table	Custom	1	

	Project		240065 - Russell Road, Wainui - Stage 1	
	Group	Section AG - design, erosion	Scenario	Worst Credible GW
	Drawn By	RS	Company	Riley Consultants Ltd
	Date	12/12/2024, 8:28:52 am	File Name	Section AG.slm

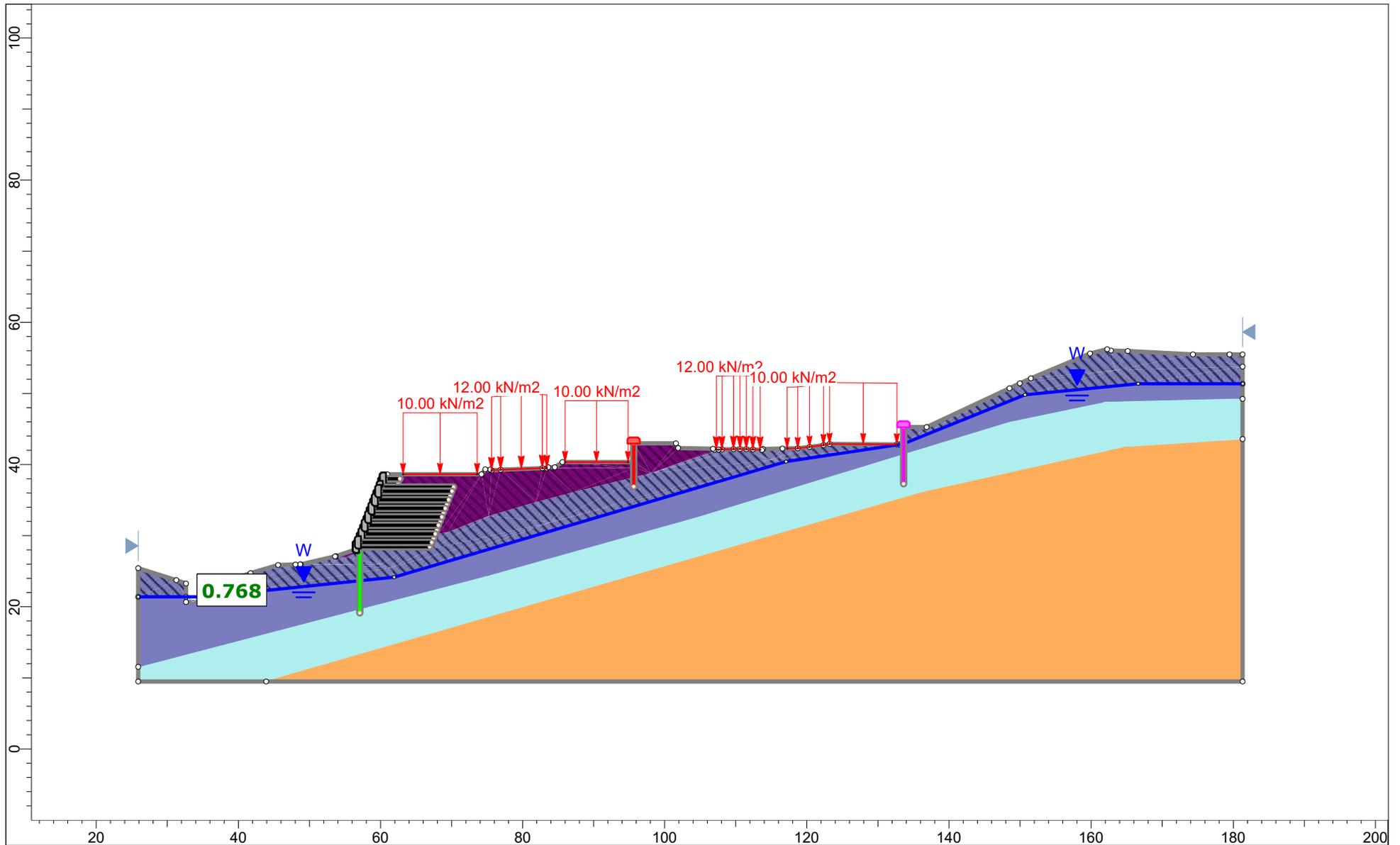


Material Name	Color	Unit Weight (kN/m <sup>3</sup> )	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu
Engineered Fill	Dark Purple	18	Mohr-Coulomb	8	32	Water Table	Custom	1
Very Stiff ECBF	Medium Purple	18	Mohr-Coulomb	7	30	Water Table	Custom	1
Very Weak ECBF Rock	Light Blue	20	Mohr-Coulomb	10	35	Water Table	Custom	1
Weak ECBF Rock	Orange	20	Mohr-Coulomb	20	40	Water Table	Custom	1



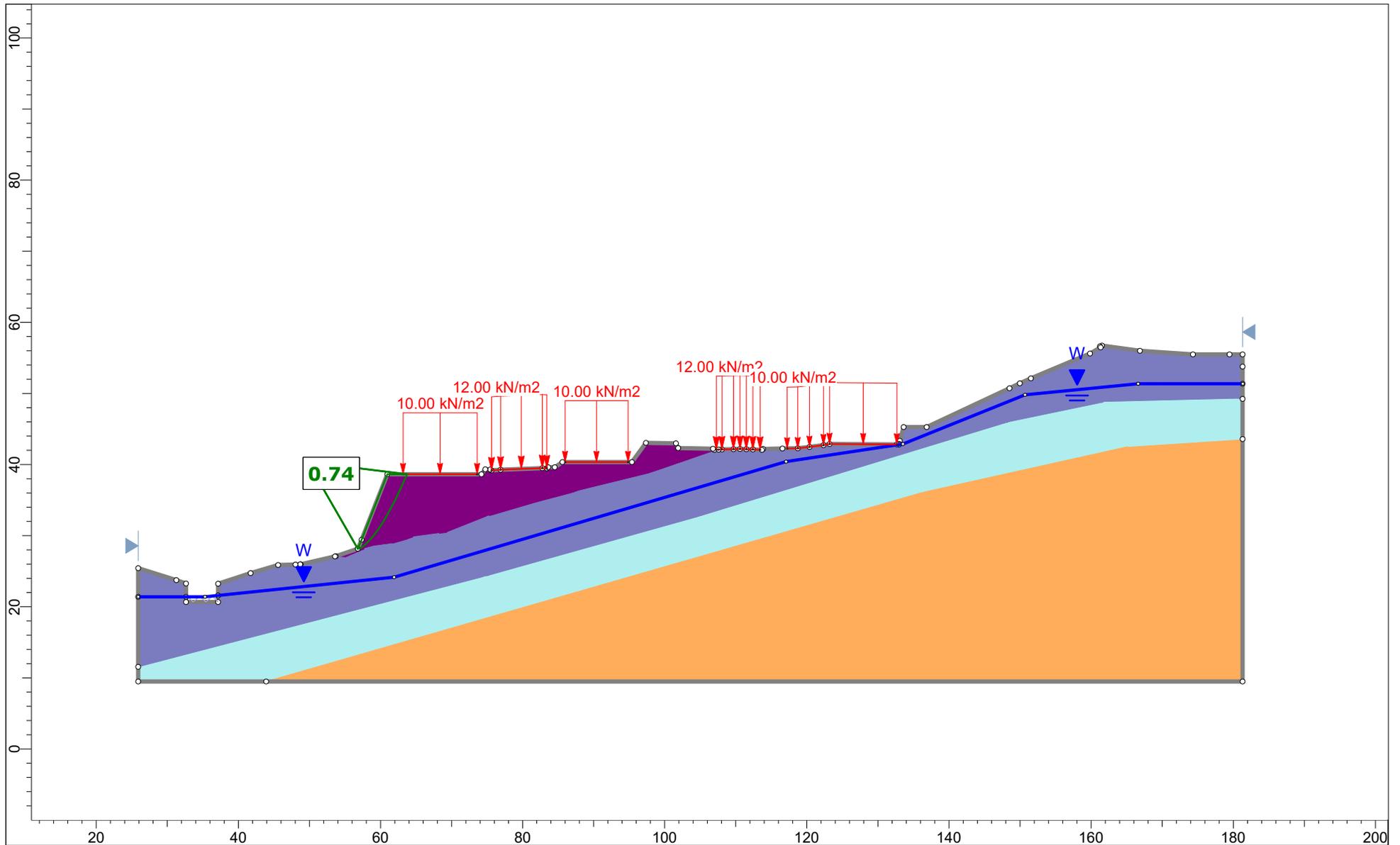
SLIDEINTERPRET 9.028

Project		240065 - Russell Road, Wainui - Stage 1	
Group	Section AG - design, erosion	Scenario	Seismic (0.19g)
Drawn By	RS	Company	Riley Consultants Ltd
Date	12/12/2024, 8:28:52 am	File Name	Section AG.slmd



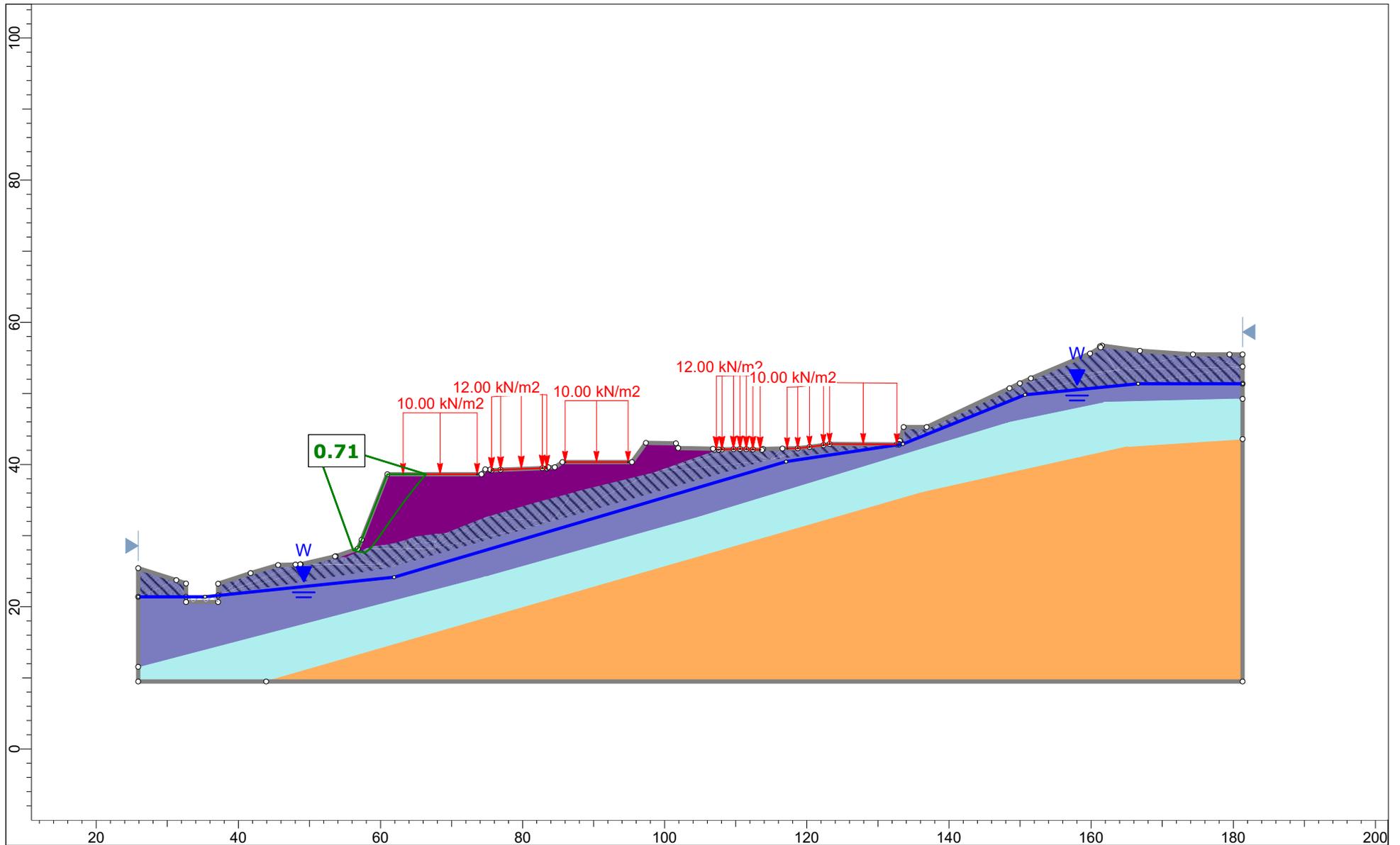
SLIDEINTERPRET 9.028

Project	240065 - Russell Road, Wainui - Stage 1		
Group	Section AG - design, erosion	Scenario	50% fill saturation
Drawn By	RS	Company	Riley Consultants Ltd
Date	12/12/2024, 8:28:52 am	File Name	Section AG.slmd



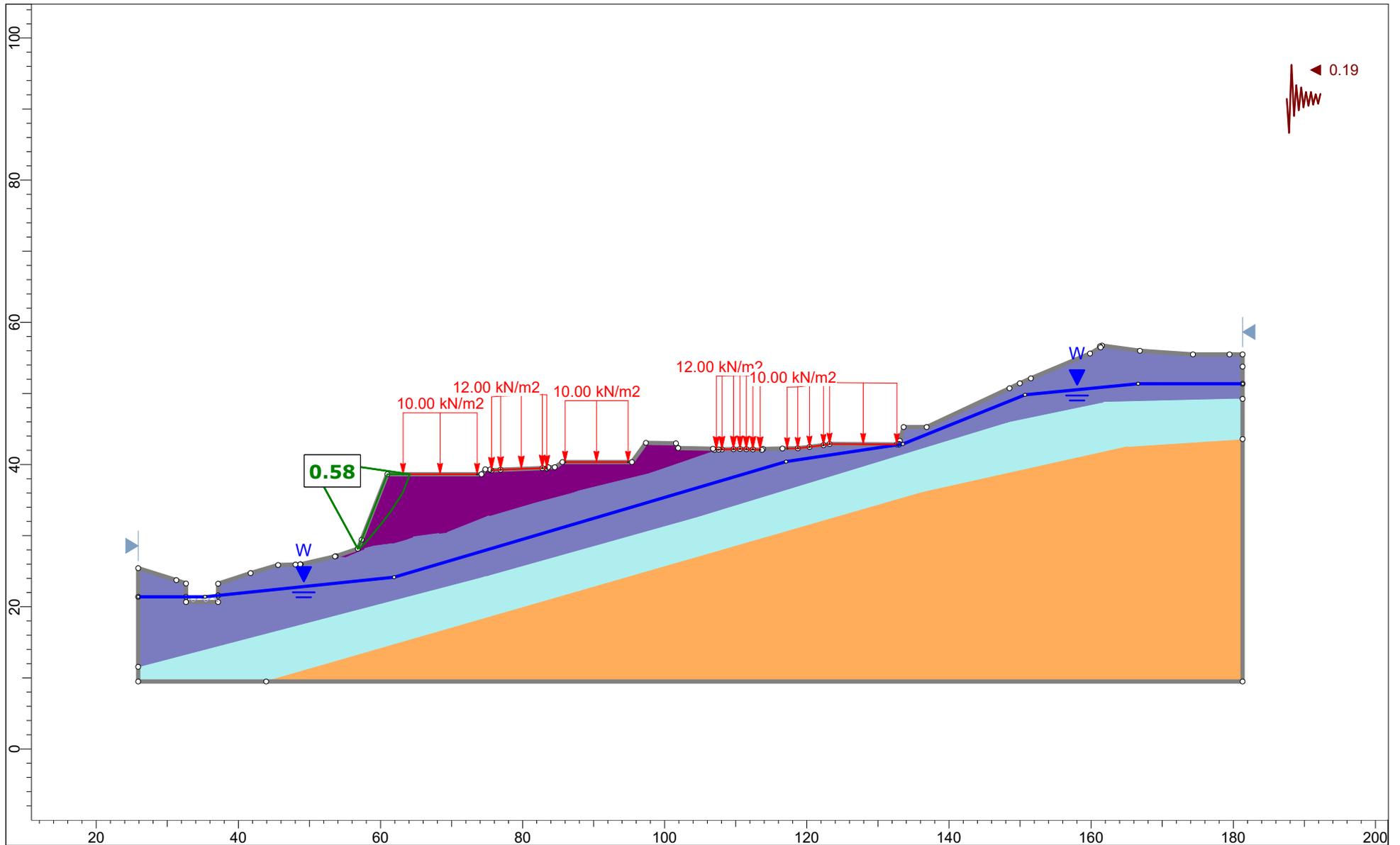
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Project	240065 - Russell Road, Wainui - Stage 1		
Group	Section AG - Proposed GL	Scenario	Normal
Drawn By	RS	Company	Riley Consultants Ltd
Date	12/12/2024, 8:28:52 am	File Name	Section AG.slmd

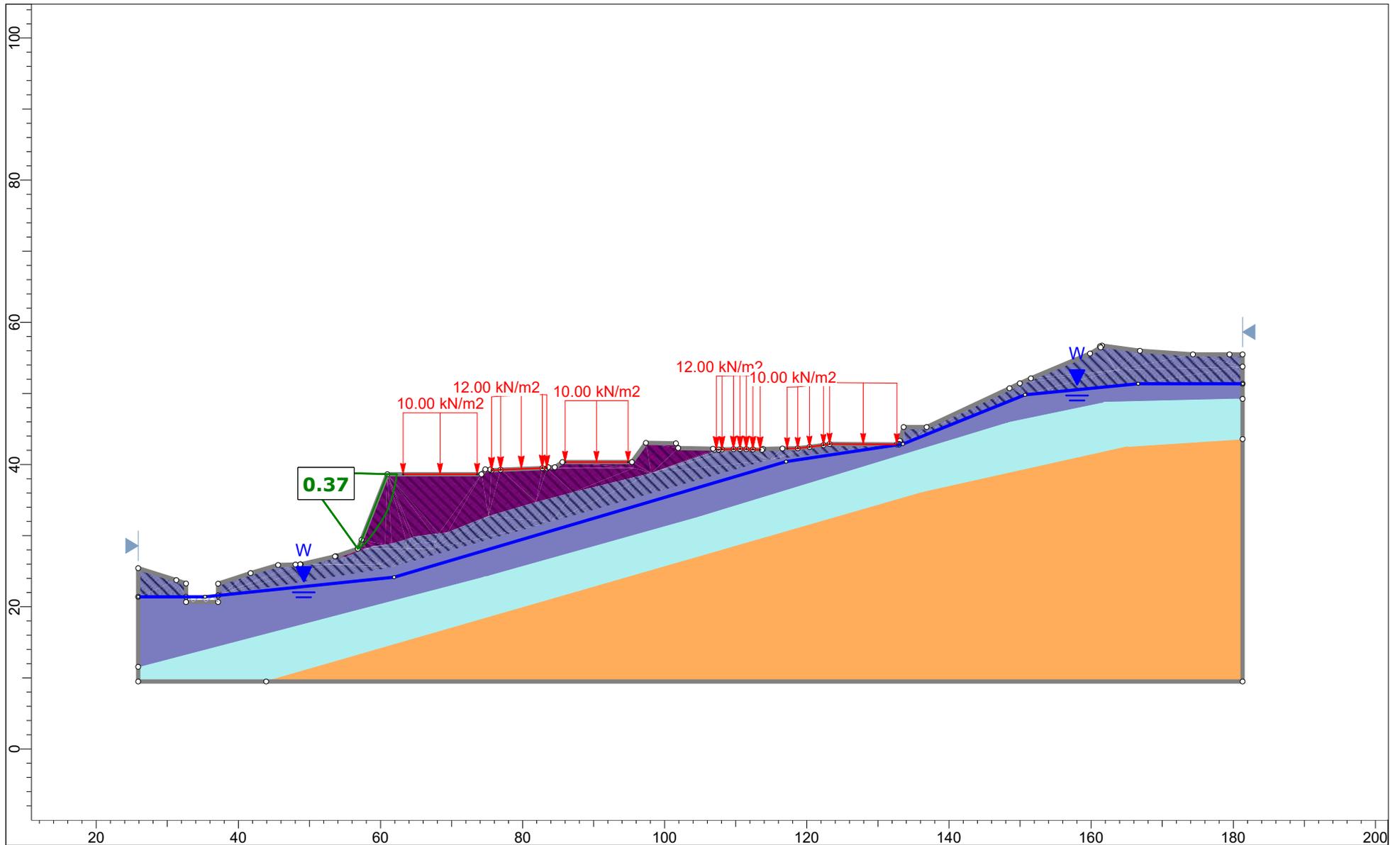


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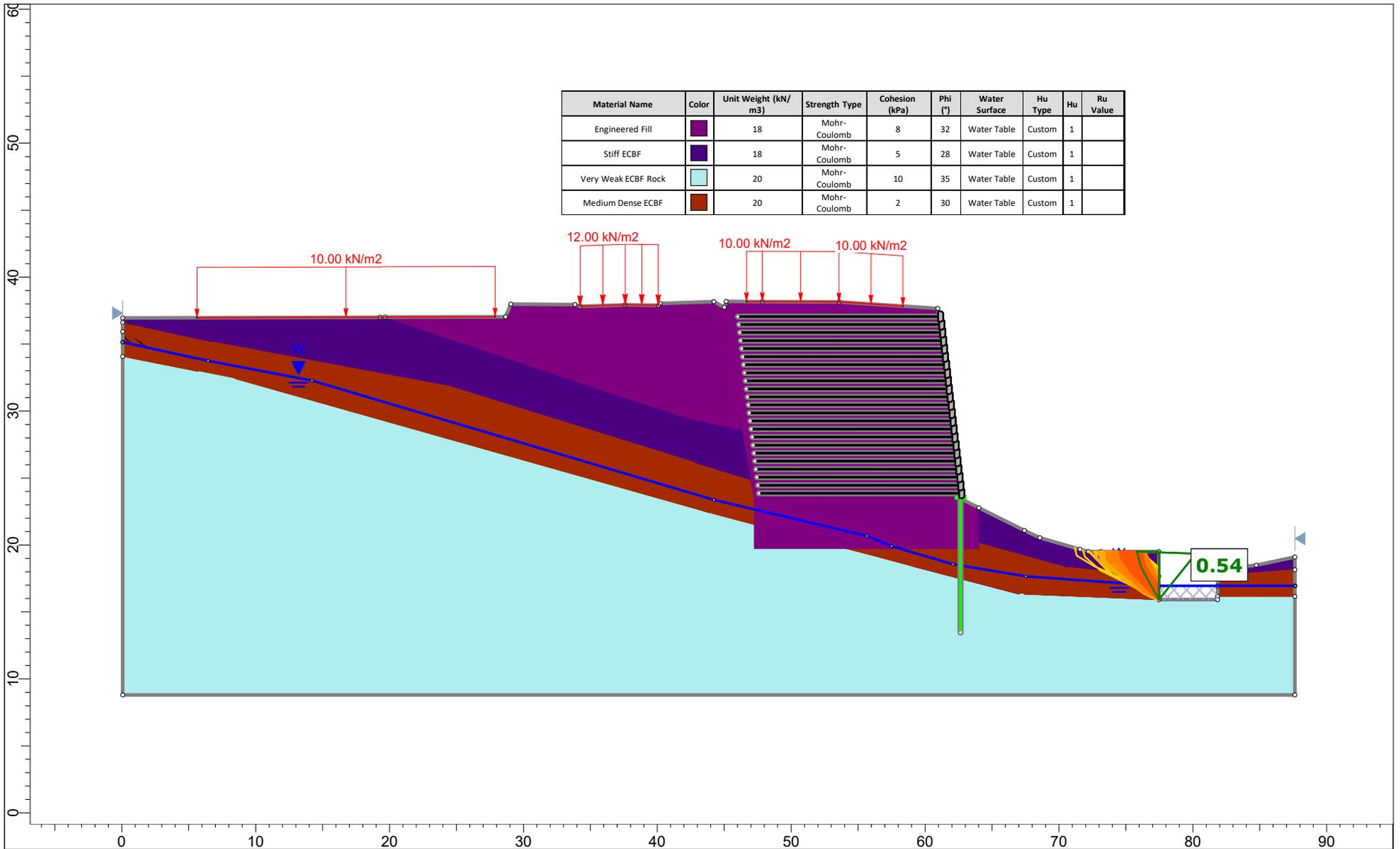
Project	240065 - Russell Road, Wainui - Stage 1		
Group	Section AG - Proposed GL	Scenario	Worst Credible GW
Drawn By	RS	Company	Riley Consultants Ltd
Date	12/12/2024, 8:28:52 am	File Name	Section AG.slmd



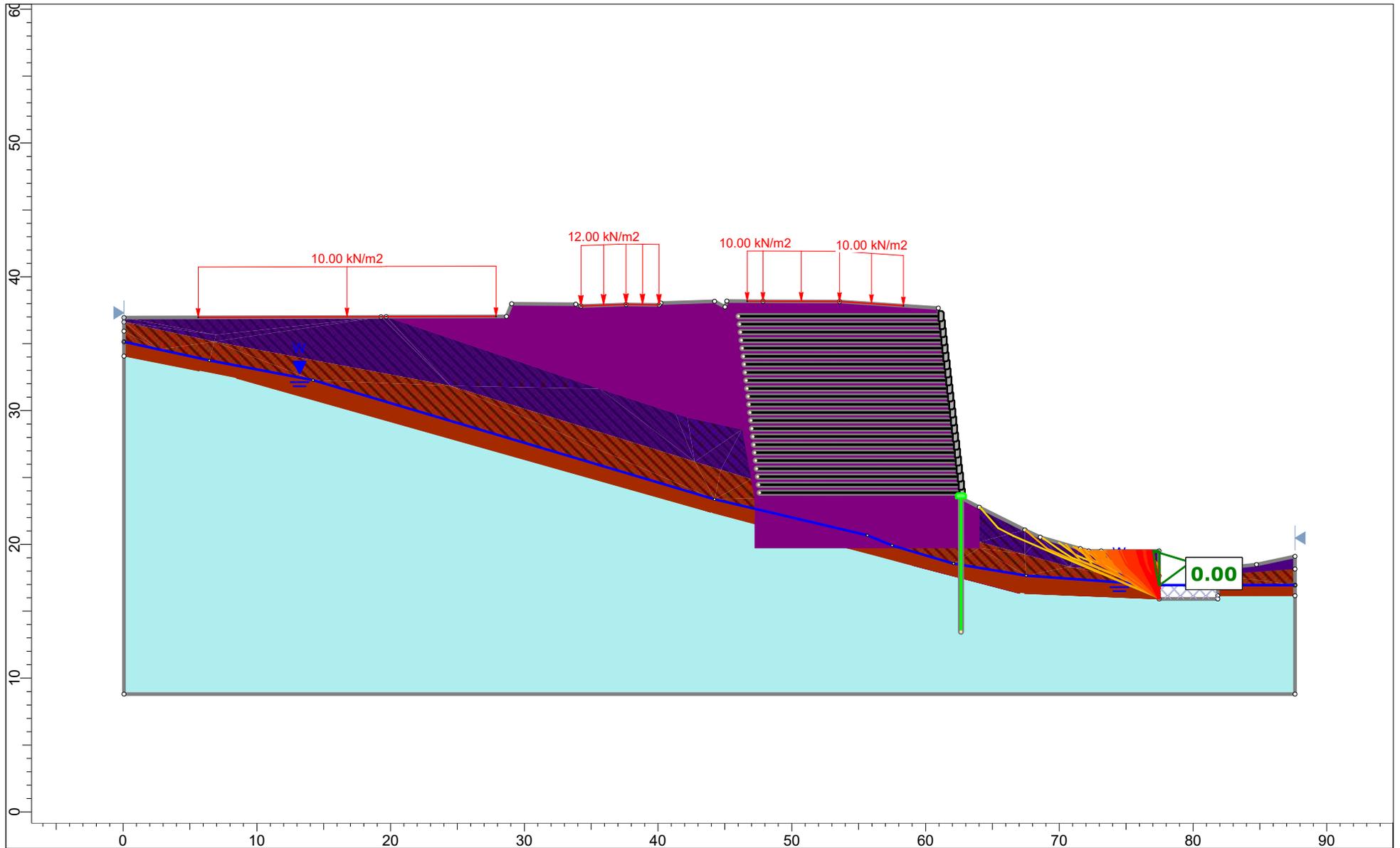
	Project		
	240065 - Russell Road, Wainui - Stage 1		
	Group	Section AG - Proposed GL	Scenario
	Drawn By	RS	Company
Date	12/12/2024, 8:28:52 am	File Name	Section AG.slmd



	<i>Project</i> 240065 - Russell Road, Wainui - Stage 1	
	<i>Group</i> Section AG - Proposed GL	<i>Scenario</i> 50% fill saturation
	<i>Drawn By</i> RS	<i>Company</i> Riley Consultants Ltd
	<i>Date</i> 12/12/2024, 8:28:52 am	<i>File Name</i> Section AG.slmd

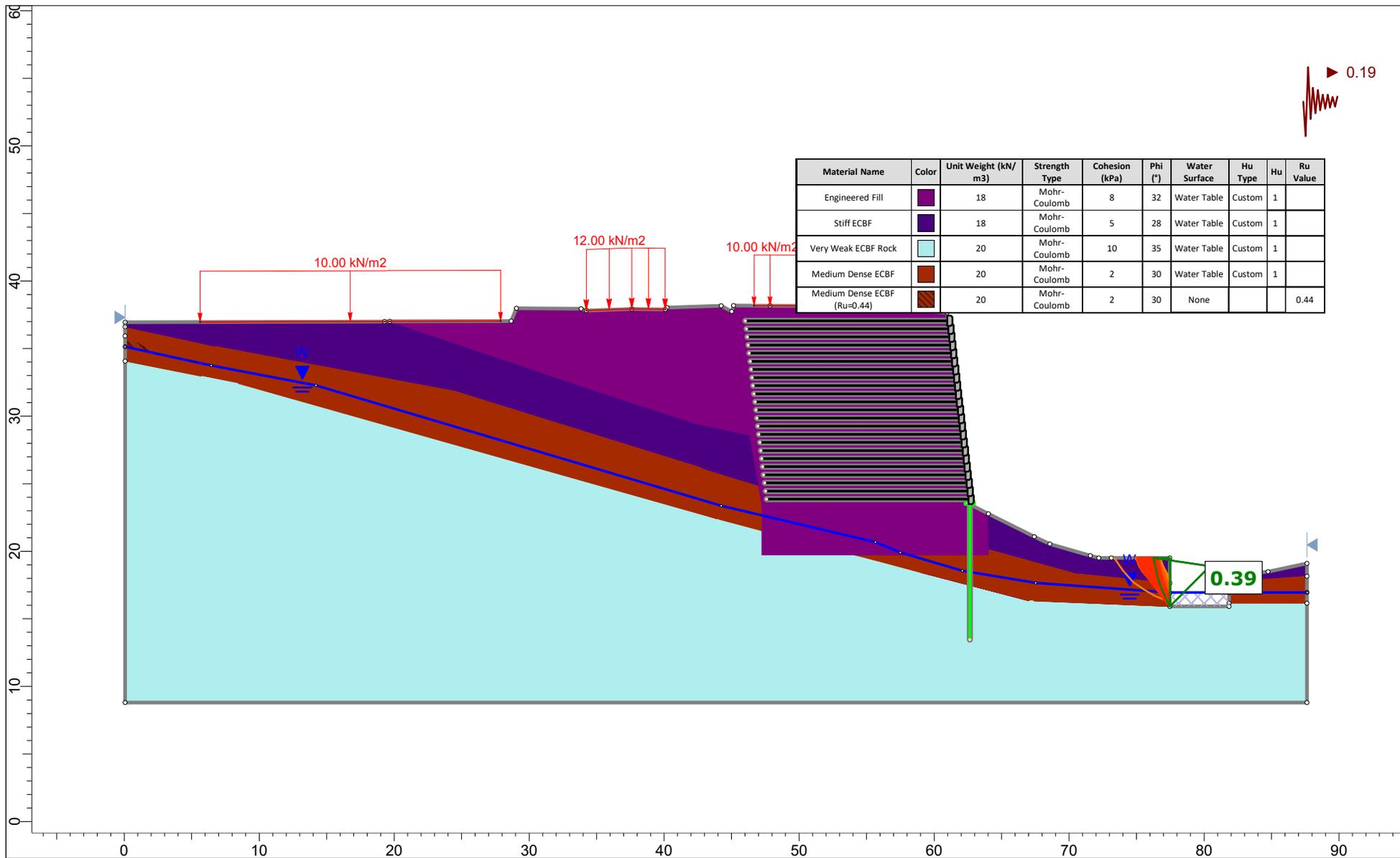


	Project		240065 - Russell Road, Wainui - Stage 2	
	Group	Section AH - design, erosion offset and remedials	Scenario	Normal
	Drawn By	RS	Company	Riley Consultants Ltd
	Date	10/12/2024	File Name	Section AH.slm



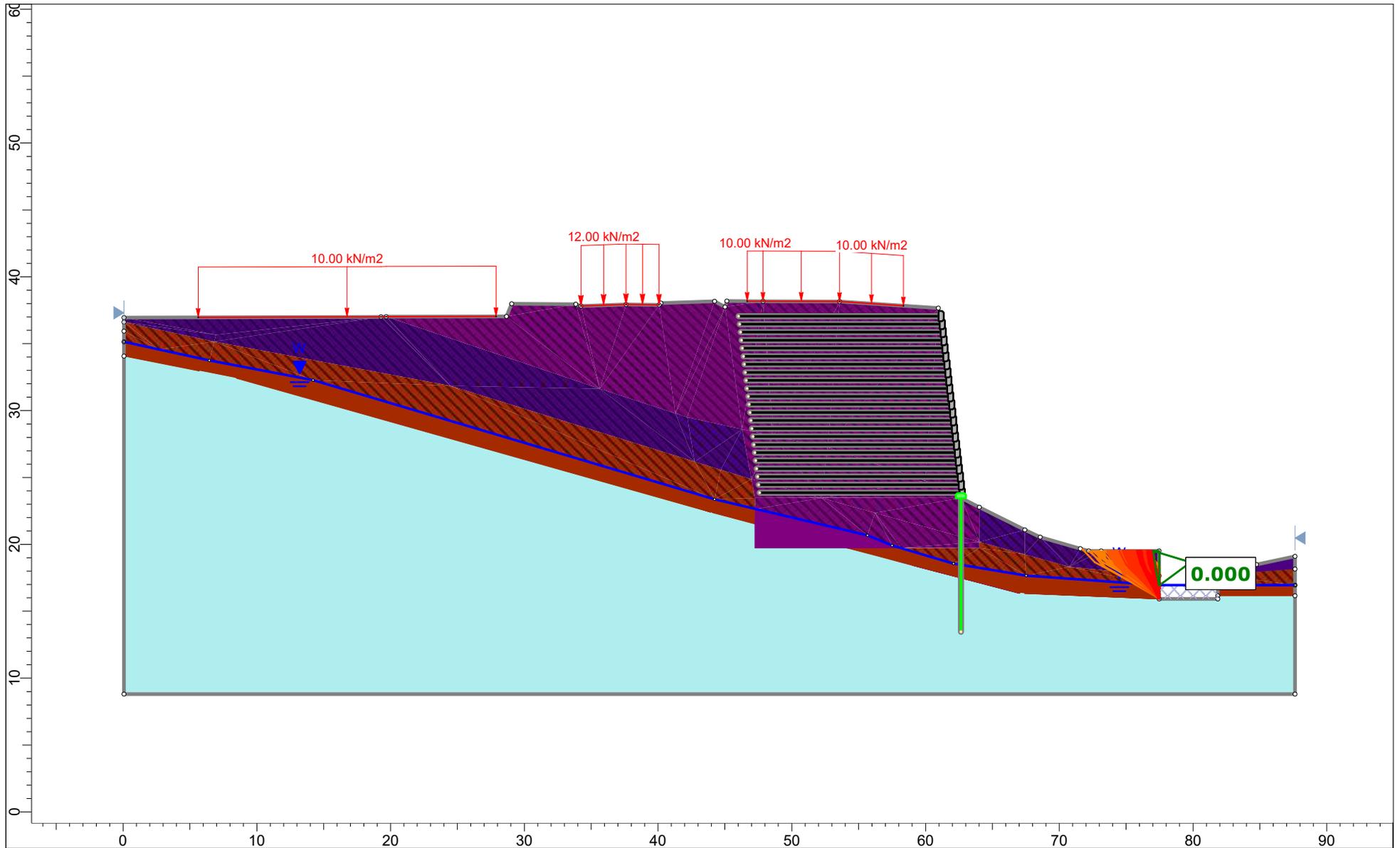
SLIDEINTERPRET 9.028

<i>Project</i>		240065 - Russell Road, Wainui - Stage 2	
<i>Group</i>	Section AH - design, erosion offset and remedials	<i>Scenario</i>	Worst Credible GW
<i>Drawn By</i>	RS	<i>Company</i>	Riley Consultants Ltd
<i>Date</i>	10/12/2024	<i>File Name</i>	Section AH.slm

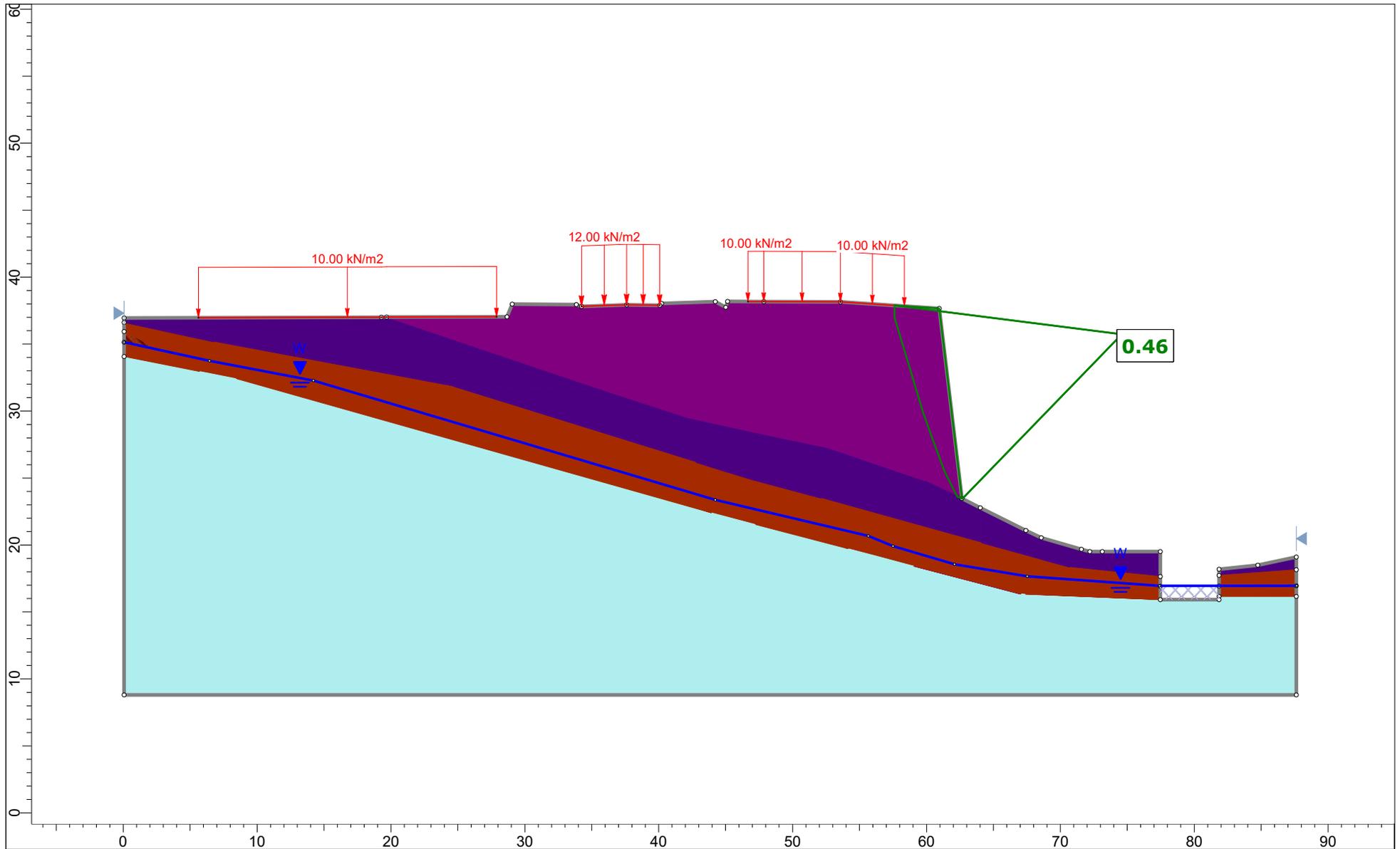


Material Name	Color	Unit Weight (kN/m <sup>3</sup> )	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu	Ru Value
Engineered Fill	Light Purple	18	Mohr-Coulomb	8	32	Water Table	Custom	1	
Stiff ECBF	Dark Purple	18	Mohr-Coulomb	5	28	Water Table	Custom	1	
Very Weak ECBF Rock	Light Blue	20	Mohr-Coulomb	10	35	Water Table	Custom	1	
Medium Dense ECBF	Brown	20	Mohr-Coulomb	2	30	Water Table	Custom	1	
Medium Dense ECBF (Ru=0.44)	Dark Brown	20	Mohr-Coulomb	2	30	None			0.44

	Project		240065 - Russell Road, Wainui - Stage 2	
	Group	Section AH - design, erosion offset and remedials	Scenario	Seismic (0.19g)
	Drawn By	RS	Company	Riley Consultants Ltd
	Date	10/12/2024	File Name	Section AH.sldm

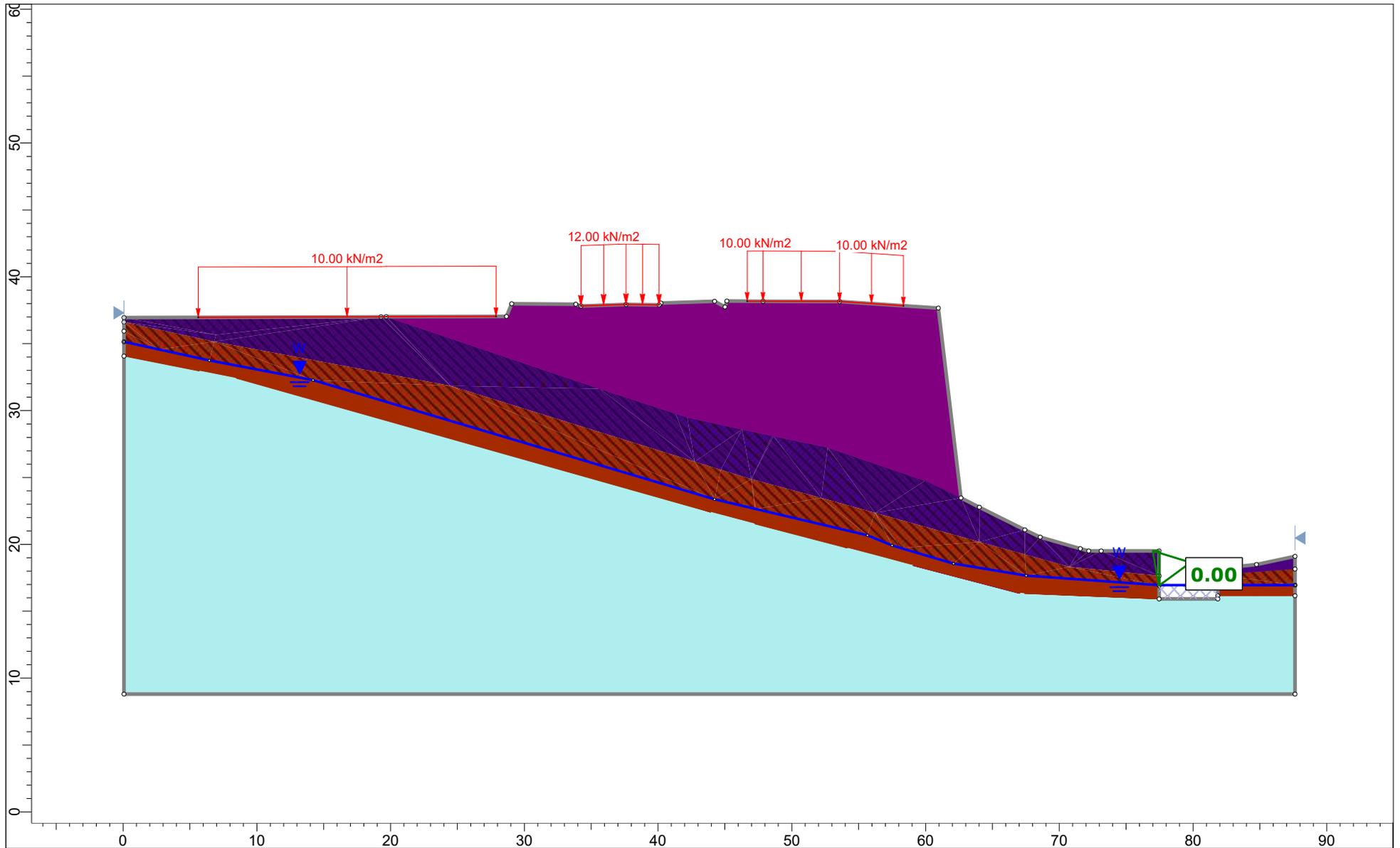


	<i>Project</i> 240065 - Russell Road, Wainui - Stage 2	
	<i>Group</i> Section AH - design, erosion offset and remedials	<i>Scenario</i> Worst Credible GW (50% fill saturation)
	<i>Drawn By</i> RS	<i>Company</i> Riley Consultants Ltd
	<i>Date</i> 10/12/2024	<i>File Name</i> Section AH.slm



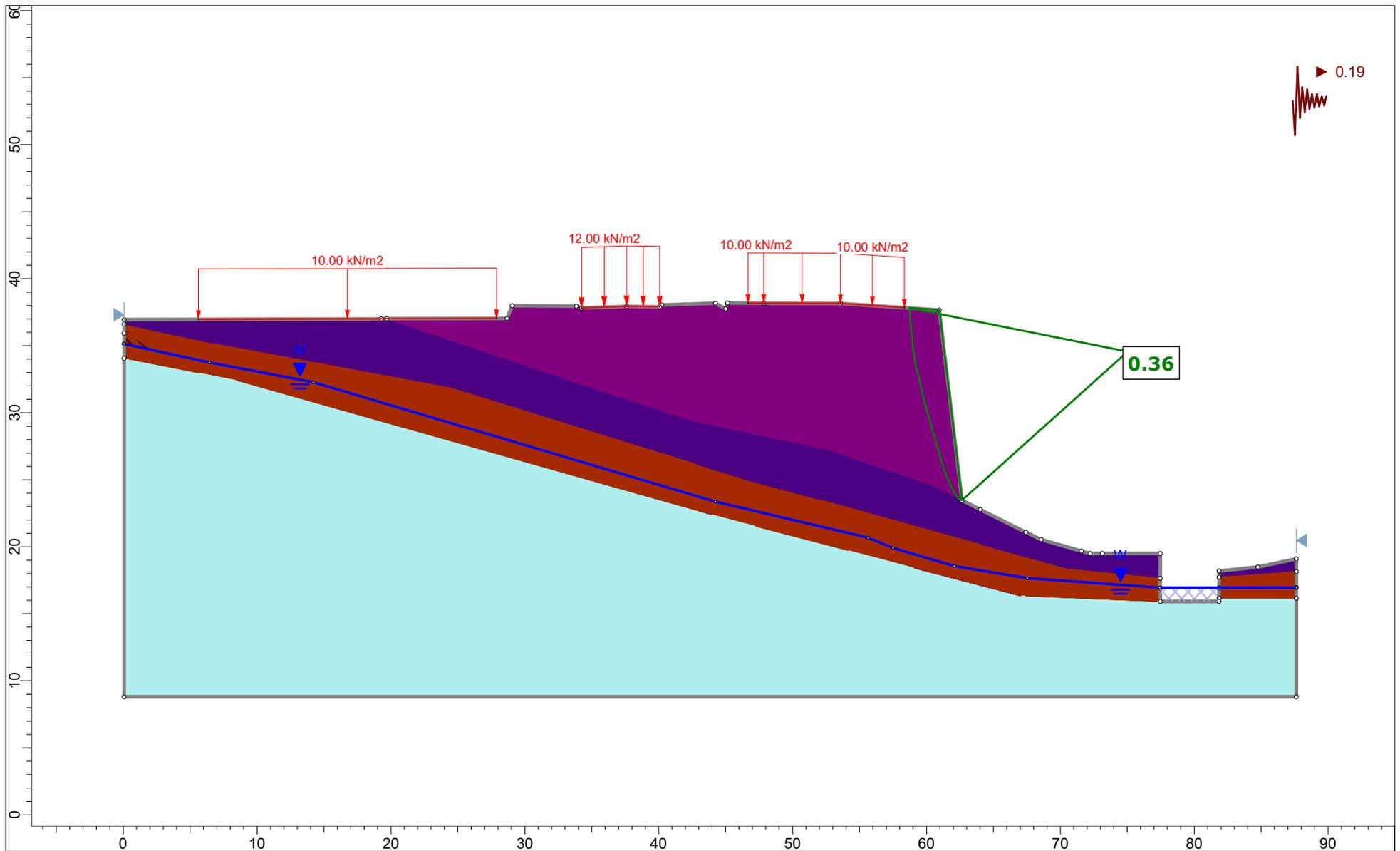
SLIDEINTERPRET 9.028

Project	240065 - Russell Road, Wainui - Stage 2		
Group	Section AH - Proposed GL	Scenario	Normal
Drawn By	RS	Company	Riley Consultants Ltd
Date	10/12/2024	File Name	Section AH.slmd

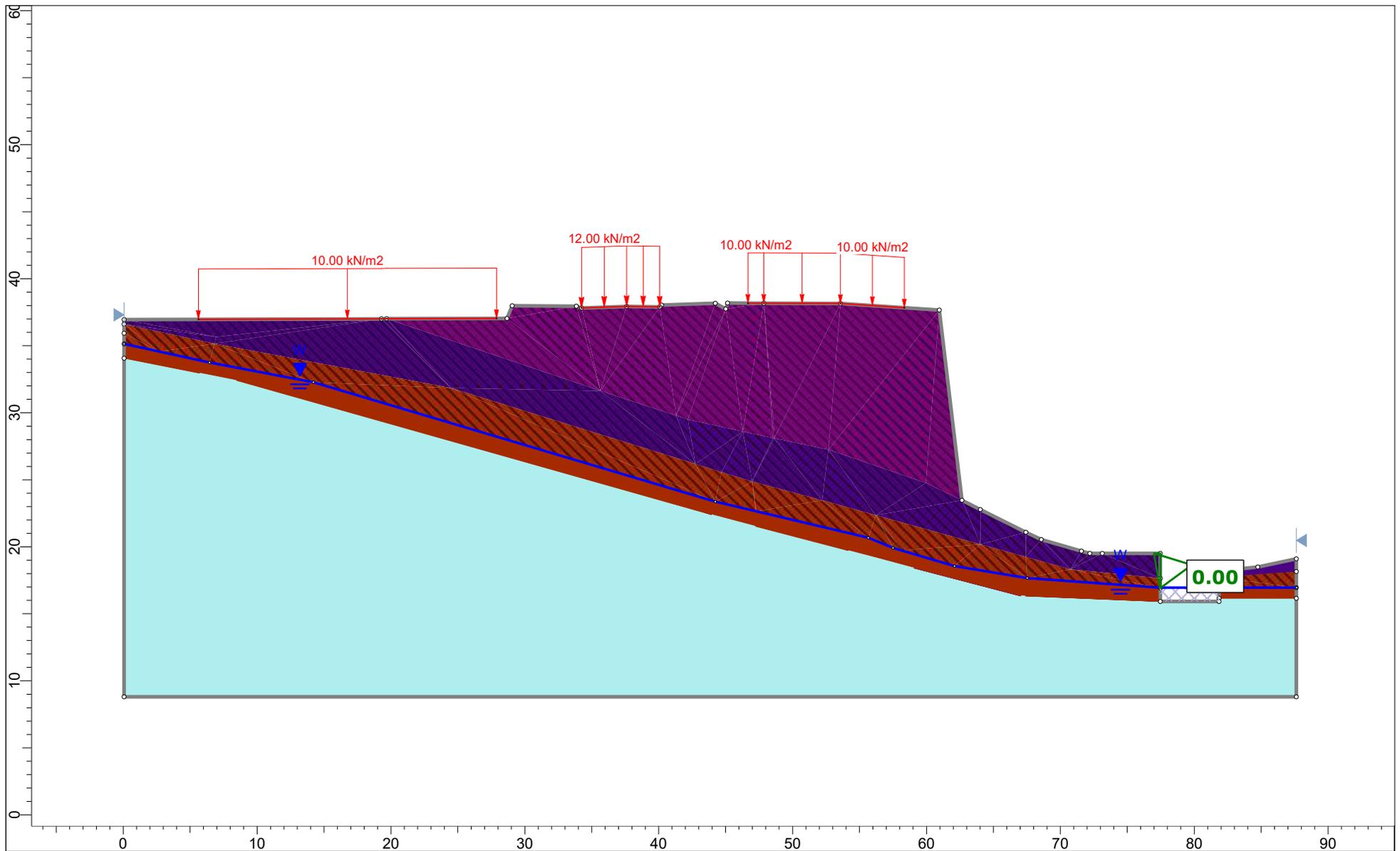


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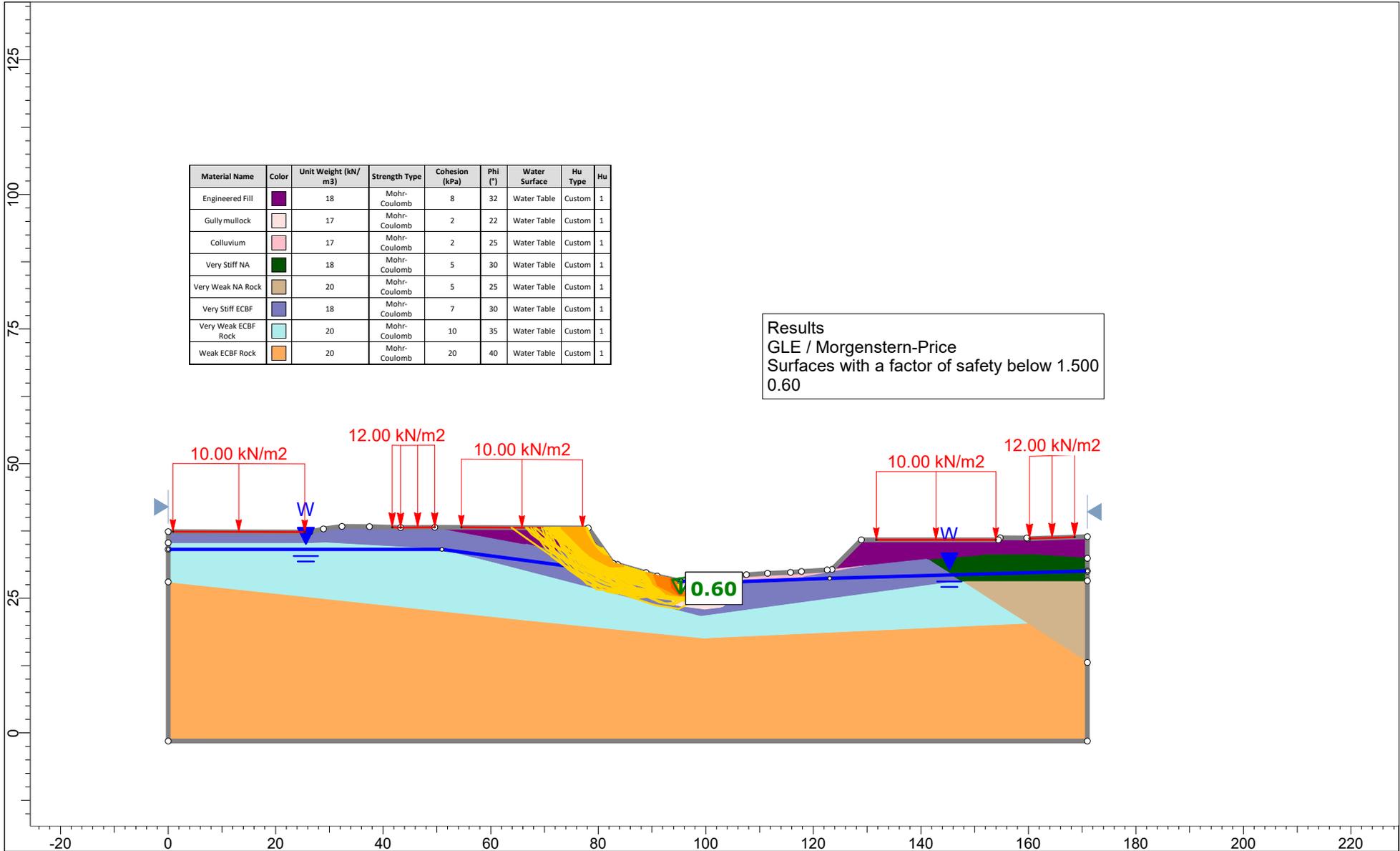
Project	240065 - Russell Road, Wainui - Stage 2		
Group	Section AH - Proposed GL	Scenario	Worst Credible GW
Drawn By	RS	Company	Riley Consultants Ltd
Date	10/12/2024	File Name	Section AH.slm



	<i>Project</i> 240065 - Russell Road, Wainui - Stage 2		
	<i>Group</i> Section AH - Proposed GL	<i>Scenario</i> Seismic (0.19g)	
	<i>Drawn By</i> RS	<i>Company</i> Riley Consultants Ltd	
	<i>Date</i> 10/12/2024	<i>File Name</i> Section AH.slm	



	<i>Project</i> 240065 - Russell Road, Wainui - Stage 2	
	<i>Group</i> Section AH - Proposed GL	<i>Scenario</i> Worst Credible GW (50% fill saturation)
	<i>Drawn By</i> RS	<i>Company</i> Riley Consultants Ltd
	<i>Date</i> 10/12/2024	<i>File Name</i> Section AH.slm

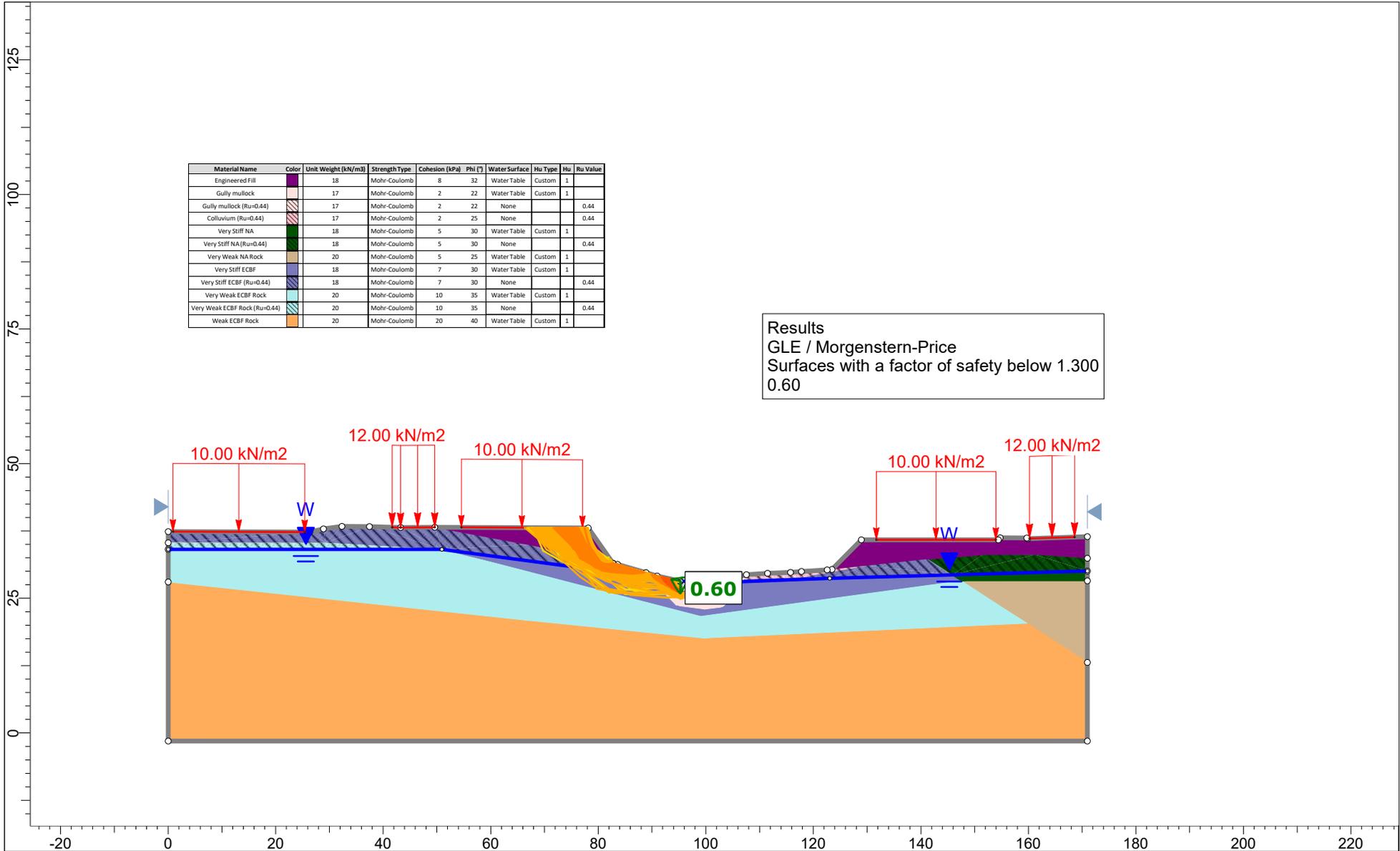


Material Name	Color	Unit Weight (kN/m <sup>3</sup> )	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu
Engineered Fill	Dark Purple	18	Mohr-Coulomb	8	32	Water Table	Custom	1
Gully mullock	Light Grey	17	Mohr-Coulomb	2	22	Water Table	Custom	1
Colluvium	Pink	17	Mohr-Coulomb	2	25	Water Table	Custom	1
Very Stiff NA	Dark Green	18	Mohr-Coulomb	5	30	Water Table	Custom	1
Very Weak NA Rock	Light Brown	20	Mohr-Coulomb	5	25	Water Table	Custom	1
Very Stiff ECBF	Blue	18	Mohr-Coulomb	7	30	Water Table	Custom	1
Very Weak ECBF Rock	Light Blue	20	Mohr-Coulomb	10	35	Water Table	Custom	1
Weak ECBF Rock	Orange	20	Mohr-Coulomb	20	40	Water Table	Custom	1

Results  
GLE / Morgenstern-Price  
Surfaces with a factor of safety below 1.500  
0.60



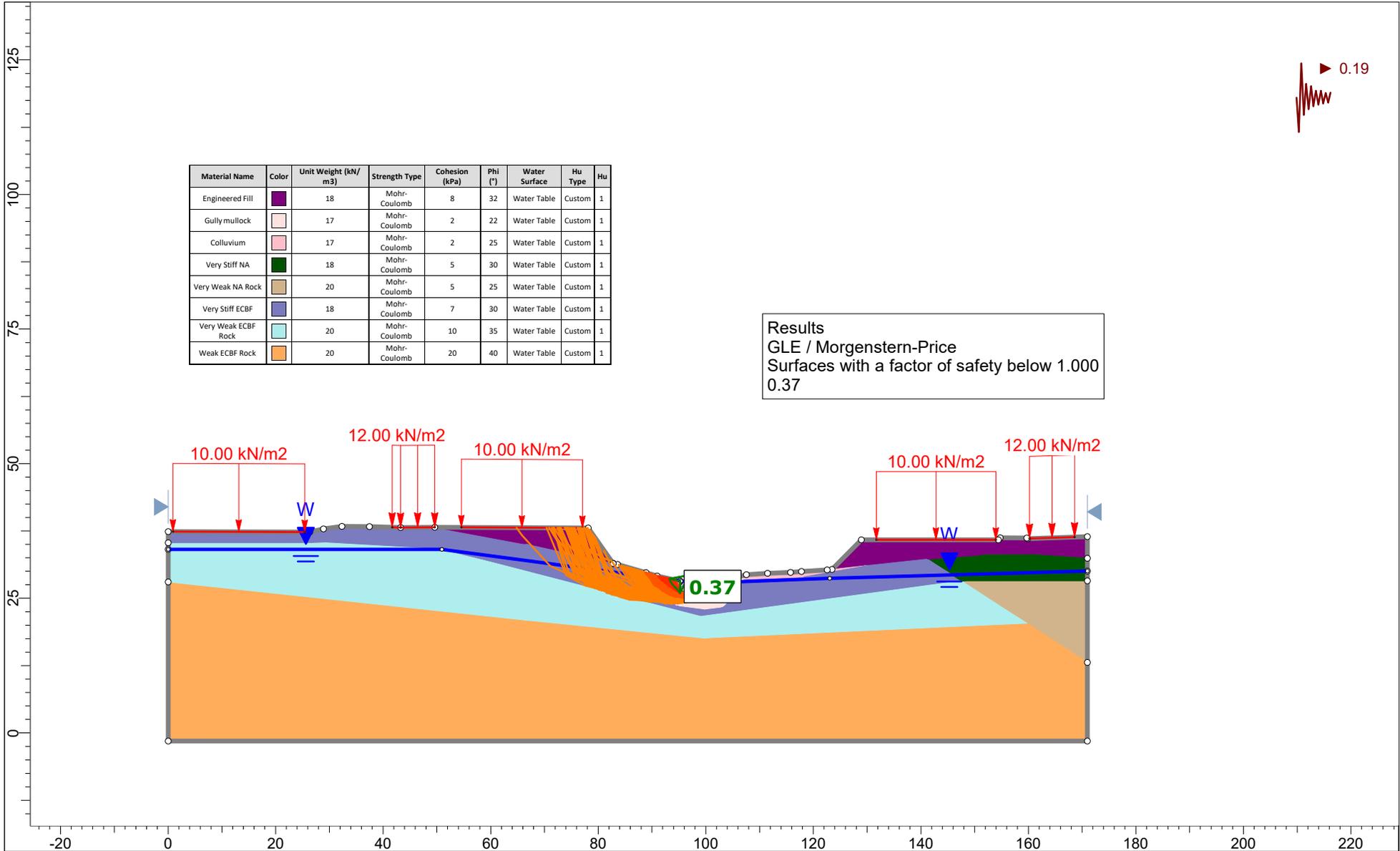
Project	240065 - Russell Road, Wainui - Stage 1		
Group	Proposed GL Section AI (L-R)	Scenario	Normal (Measured GW)
Drawn By	ADT	Company	Riley Consultants Ltd
Date	16/12/2025	File Name	Section AI (AB).slmd



Material Name	Color	Unit Weight (kN/m3)	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu	Ru Value
Engineered Fill		18	Mohr-Coulomb	8	32	Water Table	Custom	1	
Gully mullock		17	Mohr-Coulomb	2	22	Water Table	Custom	1	
Gully mullock (Ru=0.44)		17	Mohr-Coulomb	2	22	None			0.44
Colluvium (Ru=0.44)		17	Mohr-Coulomb	2	25	None			0.44
Very Stiff NA		18	Mohr-Coulomb	5	30	Water Table	Custom	1	
Very Stiff NA (Ru=0.44)		18	Mohr-Coulomb	5	30	None			0.44
Very Weak NA Rock		20	Mohr-Coulomb	5	25	Water Table	Custom	1	
Very Stiff ECFB		18	Mohr-Coulomb	7	30	Water Table	Custom	1	
Very Stiff ECFB (Ru=0.44)		18	Mohr-Coulomb	7	30	None			0.44
Very Weak ECFB Rock		20	Mohr-Coulomb	10	35	Water Table	Custom	1	
Very Weak ECFB Rock (Ru=0.44)		20	Mohr-Coulomb	10	35	None			0.44
Weak ECFB Rock		20	Mohr-Coulomb	20	40	Water Table	Custom	1	

Results  
GLE / Morgenstern-Price  
Surfaces with a factor of safety below 1.300  
0.60

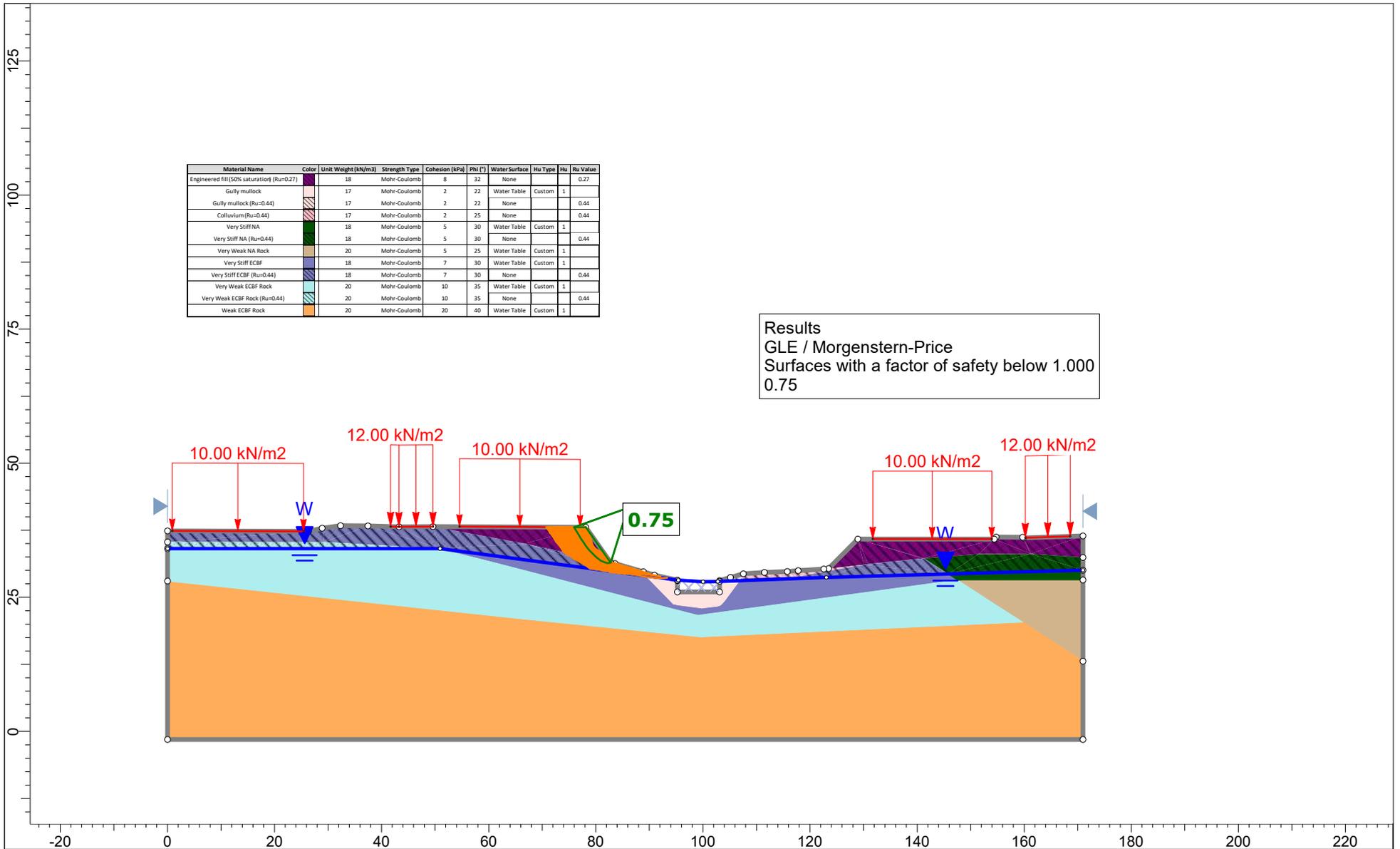
	Project		240065 - Russell Road, Wainui - Stage 1	
	Group		Proposed GL Section AI (L-R)	Scenario Extreme (Worst Credible GW)
	Drawn By		ADT	Company Riley Consultants Ltd
	Date		16/12/2025	File Name Section AI (AB).slmd



Material Name	Color	Unit Weight (kN/m <sup>3</sup> )	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu
Engineered Fill	■	18	Mohr-Coulomb	8	32	Water Table	Custom	1
Gully mullock	■	17	Mohr-Coulomb	2	22	Water Table	Custom	1
Colluvium	■	17	Mohr-Coulomb	2	25	Water Table	Custom	1
Very Stiff NA	■	18	Mohr-Coulomb	5	30	Water Table	Custom	1
Very Weak NA Rock	■	20	Mohr-Coulomb	5	25	Water Table	Custom	1
Very Stiff ECBF	■	18	Mohr-Coulomb	7	30	Water Table	Custom	1
Very Weak ECBF Rock	■	20	Mohr-Coulomb	10	35	Water Table	Custom	1
Weak ECBF Rock	■	20	Mohr-Coulomb	20	40	Water Table	Custom	1

Results  
GLE / Morgenstern-Price  
Surfaces with a factor of safety below 1.000  
0.37

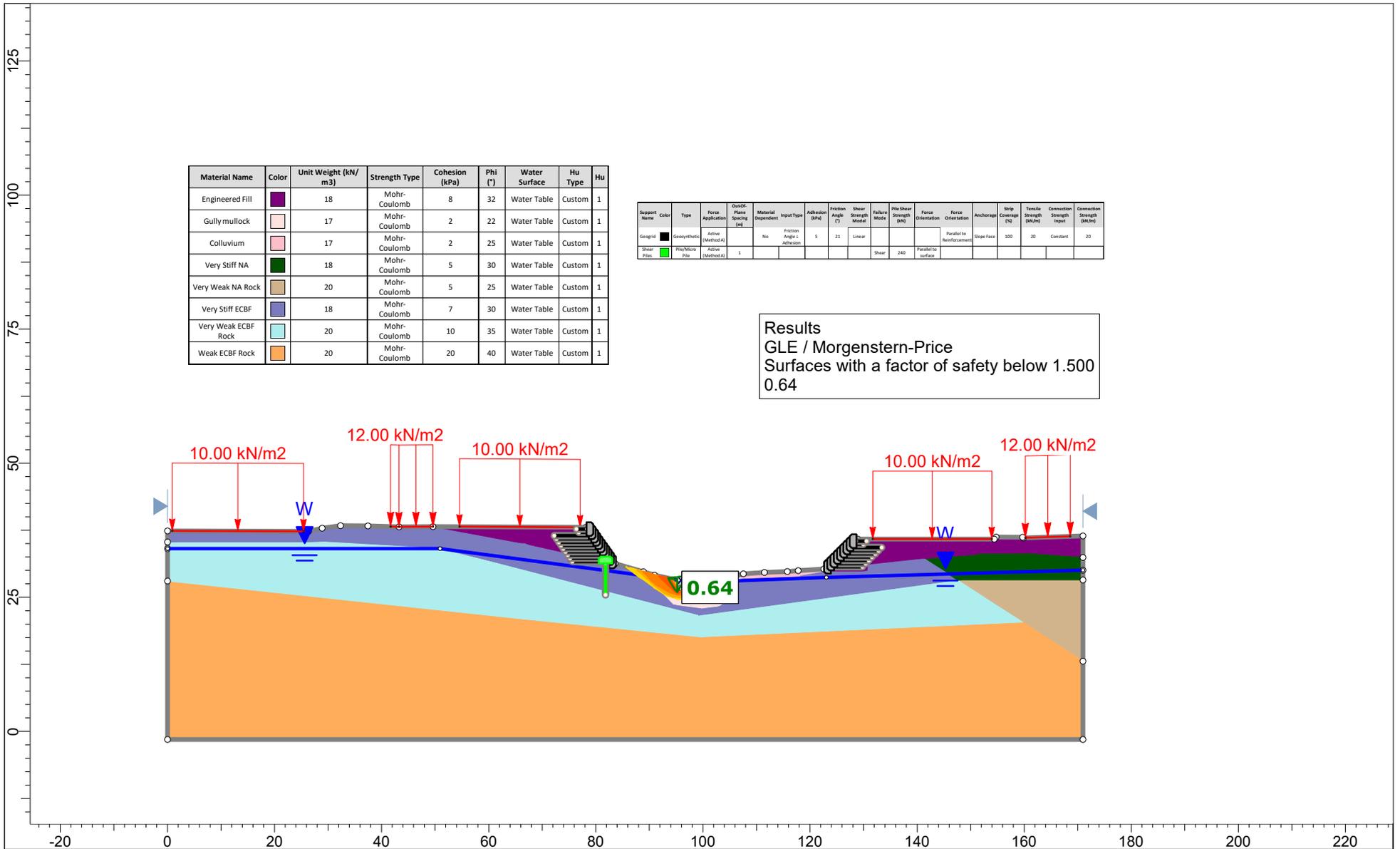
	Project		240065 - Russell Road, Wainui - Stage 1	
	Group		Proposed GL Section AI (L-R)	Scenario
	Drawn By		ADT	Company
	Date		16/12/2025	File Name
			Seismic (0.19g)	Riley Consultants Ltd
			Section AI (AB).slmd	



Material Name	Color	Unit Weight (kN/m3)	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu Value	Ru Value
Engineered fill (50% saturation) (Ru=0.27)		18	Mohr-Coulomb	8	32	None			0.27
Gully mullock		17	Mohr-Coulomb	2	22	Water Table	Custom	1	
Gully mullock (Ru=0.44)		17	Mohr-Coulomb	2	22	None			0.44
Colluvium (Ru=0.44)		17	Mohr-Coulomb	2	25	None			0.44
Very Stiff NA		18	Mohr-Coulomb	5	30	Water Table	Custom	1	
Very Stiff NA (Ru=0.44)		18	Mohr-Coulomb	5	30	None			0.44
Very Weak NA Rock		20	Mohr-Coulomb	5	25	Water Table	Custom	1	
Very Stiff ECBF		18	Mohr-Coulomb	7	30	Water Table	Custom	1	
Very Stiff ECBF (Ru=0.44)		18	Mohr-Coulomb	7	30	None			0.44
Very Weak ECBF Rock		20	Mohr-Coulomb	10	35	Water Table	Custom	1	
Very Weak ECBF Rock (Ru=0.44)		20	Mohr-Coulomb	10	35	None			0.44
Weak ECBF Rock		20	Mohr-Coulomb	20	40	Water Table	Custom	1	

Results  
GLE / Morgenstern-Price  
Surfaces with a factor of safety below 1.000  
0.75

	Project		240065 - Russell Road, Wainui - Stage 1	
	Group	Proposed GL Section AI (L-R)	Scenario	Extreme (50% saturated fill)
	Drawn By	ADT	Company	Riley Consultants Ltd
	Date	16/12/2025	File Name	Section AI (AB).slmd

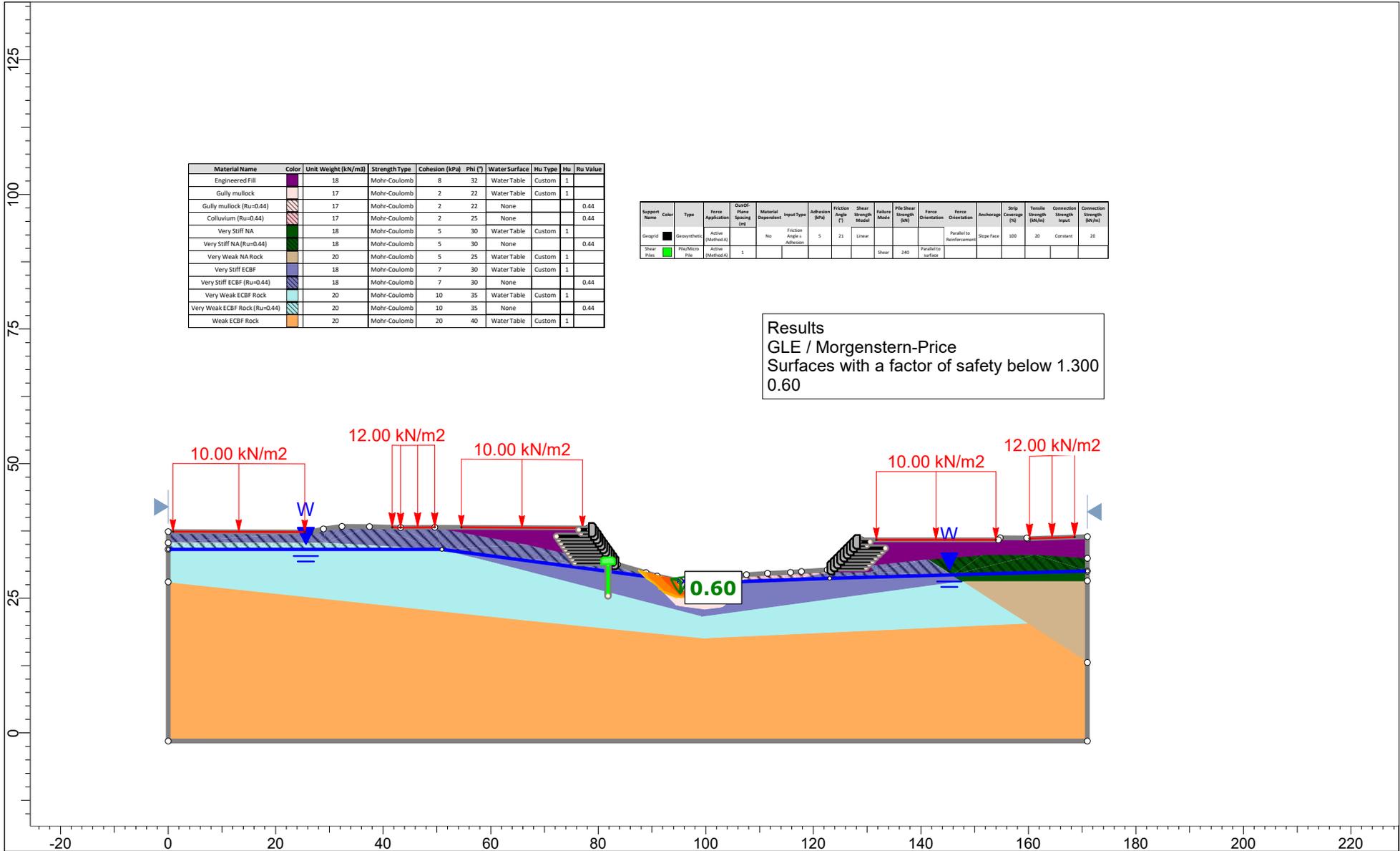


Material Name	Color	Unit Weight (kN/m <sup>3</sup> )	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu
Engineered Fill	Dark Purple	18	Mohr-Coulomb	8	32	Water Table	Custom	1
Gully mullock	Light Pink	17	Mohr-Coulomb	2	22	Water Table	Custom	1
Colluvium	Pink	17	Mohr-Coulomb	2	25	Water Table	Custom	1
Very Stiff NA	Green	18	Mohr-Coulomb	5	30	Water Table	Custom	1
Very Weak NA Rock	Brown	20	Mohr-Coulomb	5	25	Water Table	Custom	1
Very Stiff ECBF	Purple	18	Mohr-Coulomb	7	30	Water Table	Custom	1
Very Weak ECBF Rock	Light Blue	20	Mohr-Coulomb	10	35	Water Table	Custom	1
Weak ECBF Rock	Orange	20	Mohr-Coulomb	20	40	Water Table	Custom	1

Support Name	Color	Type	Force Application	Plane Straining	Material Dependent	Input Type	Adhesion (kPa)	Friction Angle (°)	Shear Strength Model	Failure Mode	Pile Shear Strength (kN)	Force Orientation	Force Orientation	Anchorage	Strip Capacity (%)	Tensile Strength (kN/m)	Connection Strength Input	Connection Strength (kN/m)
Geogrid	Black	Geosynthetic	Active (Method A)	Yes	No	Friction Angle + Adhesion	5	21	Linear			Parallel to Reinforcement			100	20	Constant	20
Shear Piles	Green	Pile/Micro Pile	Active (Method A)	Yes					Shear	240		Parallel to surface						

Results  
GLE / Morgenstern-Price  
Surfaces with a factor of safety below 1.500  
0.64

	Project		240065 - Russell Road, Wainui - Stage 1	
	Group	Proposed GL Section AI (L-R) - Erosion & Remedial	Scenario	Normal (Measured GW)
	Drawn By	ADT	Company	Riley Consultants Ltd
	Date	16/12/2025	File Name	Section AI (AB).slmd



Material Name	Color	Unit Weight (kN/m3)	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu Value
Engineered Fill		18	Mohr-Coulomb	8	32	Water Table	Custom	1
Gully mullock		17	Mohr-Coulomb	2	22	Water Table	Custom	1
Gully mullock (Ru=0.44)		17	Mohr-Coulomb	2	22	None		0.44
Colluvium (Ru=0.44)		17	Mohr-Coulomb	2	25	None		0.44
Very Stiff NA		18	Mohr-Coulomb	5	30	Water Table	Custom	1
Very Stiff NA (Ru=0.44)		18	Mohr-Coulomb	5	30	None		0.44
Very Weak NA Rock		20	Mohr-Coulomb	5	25	Water Table	Custom	1
Very Stiff ECFB		18	Mohr-Coulomb	7	30	Water Table	Custom	1
Very Stiff ECFB (Ru=0.44)		18	Mohr-Coulomb	7	30	None		0.44
Very Weak ECFB Rock		20	Mohr-Coulomb	10	35	Water Table	Custom	1
Very Weak ECFB Rock (Ru=0.44)		20	Mohr-Coulomb	10	35	None		0.44
Weak ECFB Rock		20	Mohr-Coulomb	20	40	Water Table	Custom	1

Support Name	Color	Type	Force Application	Plane Spacing (m)	Material Dependent	Input Type	Adhesion (kPa)	Fraction Angle (°)	Shear Strength Model	Failure Mode	Pile Shear Strength (kN)	Force Orientation	Force Orientation	Anchorage	Strip Capacity (%)	Tensile Strength (kN/m)	Connection Strength Input	Connection Strength (kN/m)
Geogrid		Geosynthetic	Active (Method A)		No	Fraction Angle + Adhesion	5	21	Linear			Parallel to reinforcement			100	20	Constant	20
Shear Pile		Pile/Micro Pile	Active (Method A)	1					Shear	240		Parallel to surface						

Results  
GLE / Morgenstern-Price  
Surfaces with a factor of safety below 1.300  
0.60



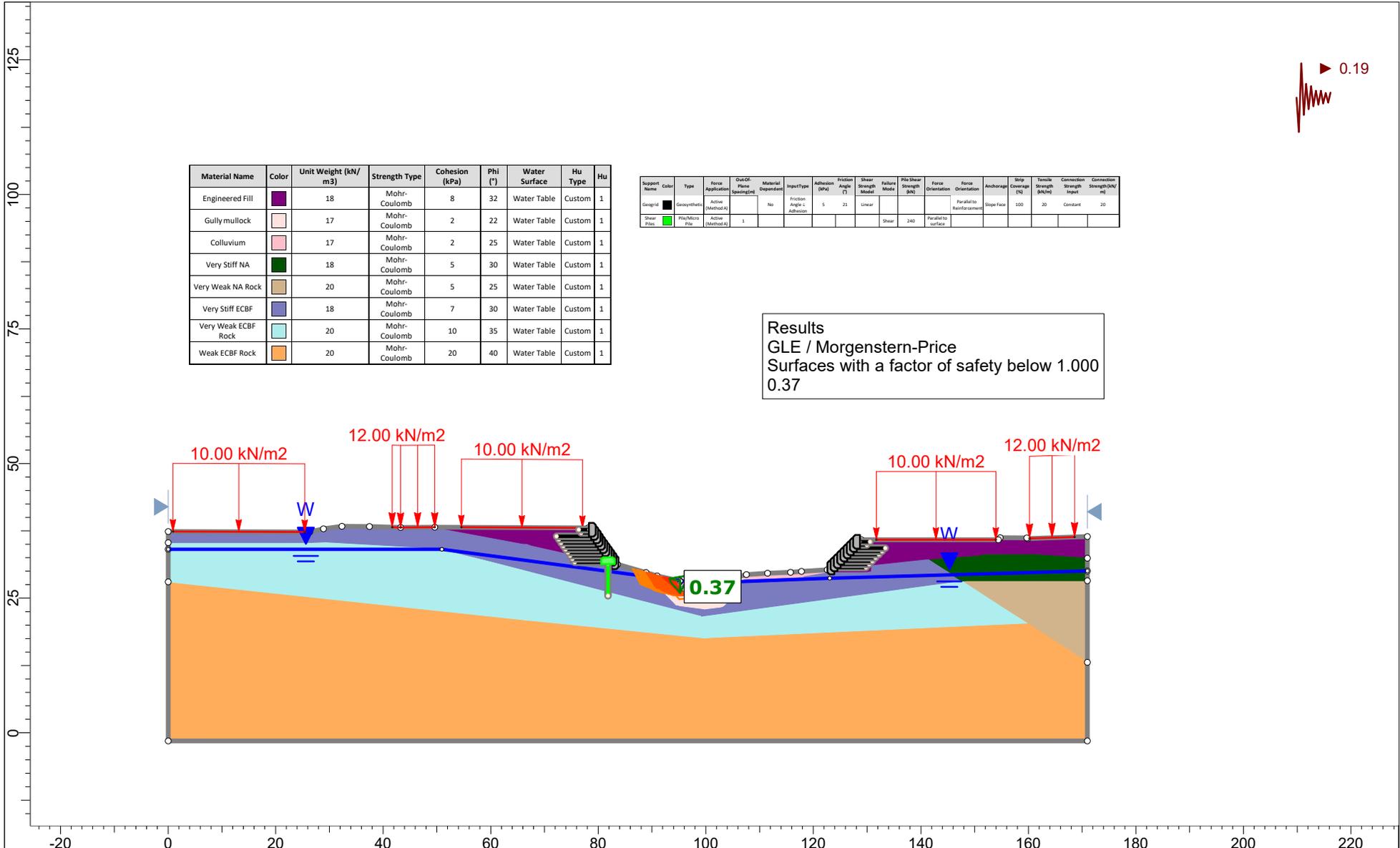
Project		240065 - Russell Road, Wainui - Stage 1	
Group	Proposed GL Section AI (L-R) - Erosion & Remedial	Scenario	Extreme (Worst Credible GW)
Drawn By	ADT	Company	Riley Consultants Ltd
Date	16/12/2025	File Name	Section AI (AB).slmd



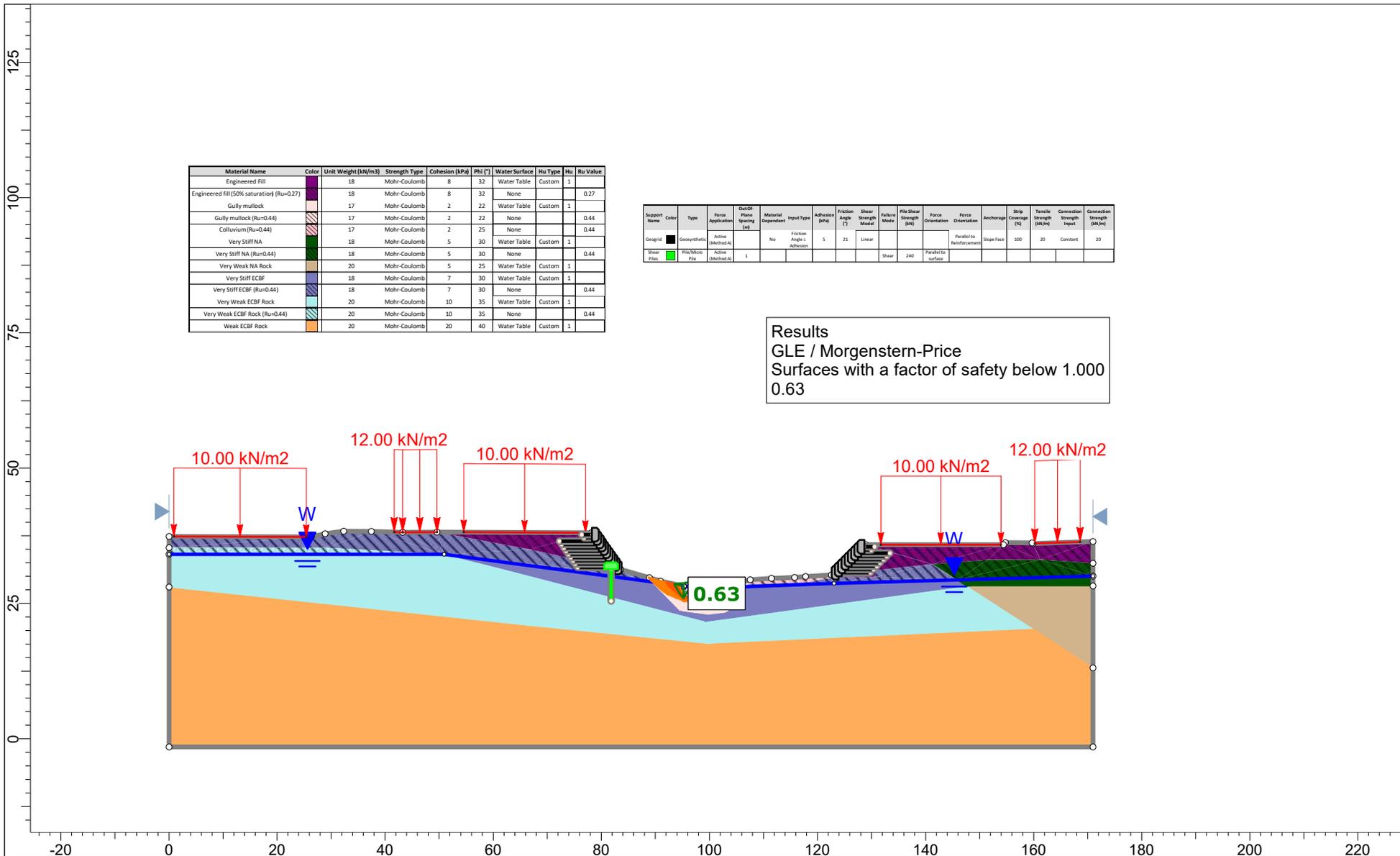
Material Name	Color	Unit Weight (kN/m <sup>3</sup> )	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu
Engineered Fill	Dark Purple	18	Mohr-Coulomb	8	32	Water Table	Custom	1
Gully mullock	Light Grey	17	Mohr-Coulomb	2	22	Water Table	Custom	1
Colluvium	Pink	17	Mohr-Coulomb	2	25	Water Table	Custom	1
Very Stiff NA	Dark Green	18	Mohr-Coulomb	5	30	Water Table	Custom	1
Very Weak NA Rock	Light Brown	20	Mohr-Coulomb	5	25	Water Table	Custom	1
Very Stiff ECBF	Blue	18	Mohr-Coulomb	7	30	Water Table	Custom	1
Very Weak ECBF Rock	Light Blue	20	Mohr-Coulomb	10	35	Water Table	Custom	1
Weak ECBF Rock	Orange	20	Mohr-Coulomb	20	40	Water Table	Custom	1

Support Name	Color	Type	Force Application	Out-Of-Plane Springs	Material Dependent	Input Type	Adhesion (kPa)	Friction Angle (°)	Shear Strength Model	Failure Mode	Pile Shear Strength (kN)	Force Orientation	Force Orientation	Anchorage	Slip Coverage (%)	Tensile Strength (kN/m)	Connection Strength (kN)	Connection Strength (kN/m)
Geogrid	Black	Geosynthetic	Active (Method A)	No	No	Friction Angle + Adhesion	5	21	Linear			Parallel to Reinforcement		Slope Face	100	20	Constant	20
Shear Piles	Green	Pile/Sheet Pile	Active (Method A)	1					Shear	240		Parallel to surface						

**Results**  
GLE / Morgenstern-Price  
Surfaces with a factor of safety below 1.000  
0.37



	Project		240065 - Russell Road, Wainui - Stage 1	
	Group	Proposed GL Section AI (L-R) - Erosion & Remedial	Scenario	Seismic (0.19g)
	Drawn By	ADT	Company	Riley Consultants Ltd
	Date	16/12/2025	File Name	Section AI (AB).slmd



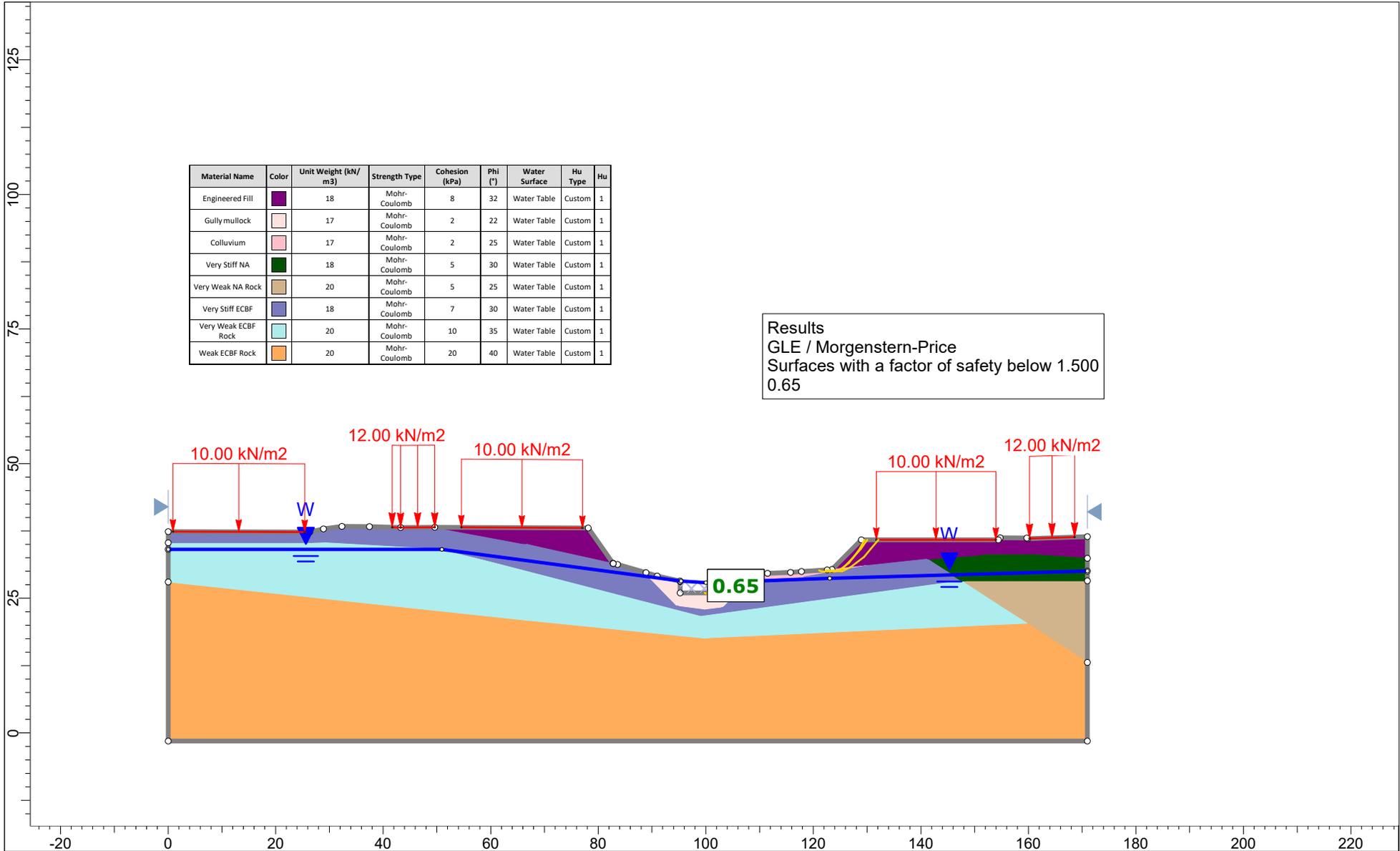
Material Name	Color	Unit Weight (kN/m <sup>3</sup> )	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu Value
Engineered Fill		18	Mohr-Coulomb	8	32	Water Table	Custom	1
Engineered fill (50% saturation) (Ru=0.27)		18	Mohr-Coulomb	8	32	None		0.27
Gully mullock		17	Mohr-Coulomb	2	22	Water Table	Custom	1
Gully mullock (Ru=0.44)		17	Mohr-Coulomb	2	22	None		0.44
Calluvium (Ru=0.44)		17	Mohr-Coulomb	2	25	None		0.44
Very Stiff NA		18	Mohr-Coulomb	5	30	Water Table	Custom	1
Very Stiff NA (Ru=0.44)		18	Mohr-Coulomb	5	30	None		0.44
Very Weak NA Rock		20	Mohr-Coulomb	5	25	Water Table	Custom	1
Very Stiff ECFB		18	Mohr-Coulomb	7	30	Water Table	Custom	1
Very Stiff ECFB (Ru=0.44)		18	Mohr-Coulomb	7	30	None		0.44
Very Weak ECFB Rock		20	Mohr-Coulomb	10	35	Water Table	Custom	1
Very Weak ECFB Rock (Ru=0.44)		20	Mohr-Coulomb	10	35	None		0.44
Weak ECFB Rock		20	Mohr-Coulomb	20	40	Water Table	Custom	1

Support Name	Color	Type	Force Application	Plane Spacing (m)	Material Dependent	Input Type	Adhesion (kPa)	Friction Angle (°)	Shear Strength Model	Failure Mode	Pile Shear Strength (kN)	Force Orientation	Force Orientation	Anchorage	Strip Capacity (%)	Tensile Strength (kN/m)	Connection Strength Input	Connection Strength (kN/m)
Geogrid		Geosynthetic	Active (Method A)		No	Friction Angle + Adhesion	5	21	Linear			Parallel to Reinforcement		Slope Face	100	20	Constant	20
Shear Piles		Pile/Micro Pile	Active (Method A)	1					Shear	240		Parallel to surface						

Results  
GLE / Morgenstern-Price  
Surfaces with a factor of safety below 1.000  
0.63



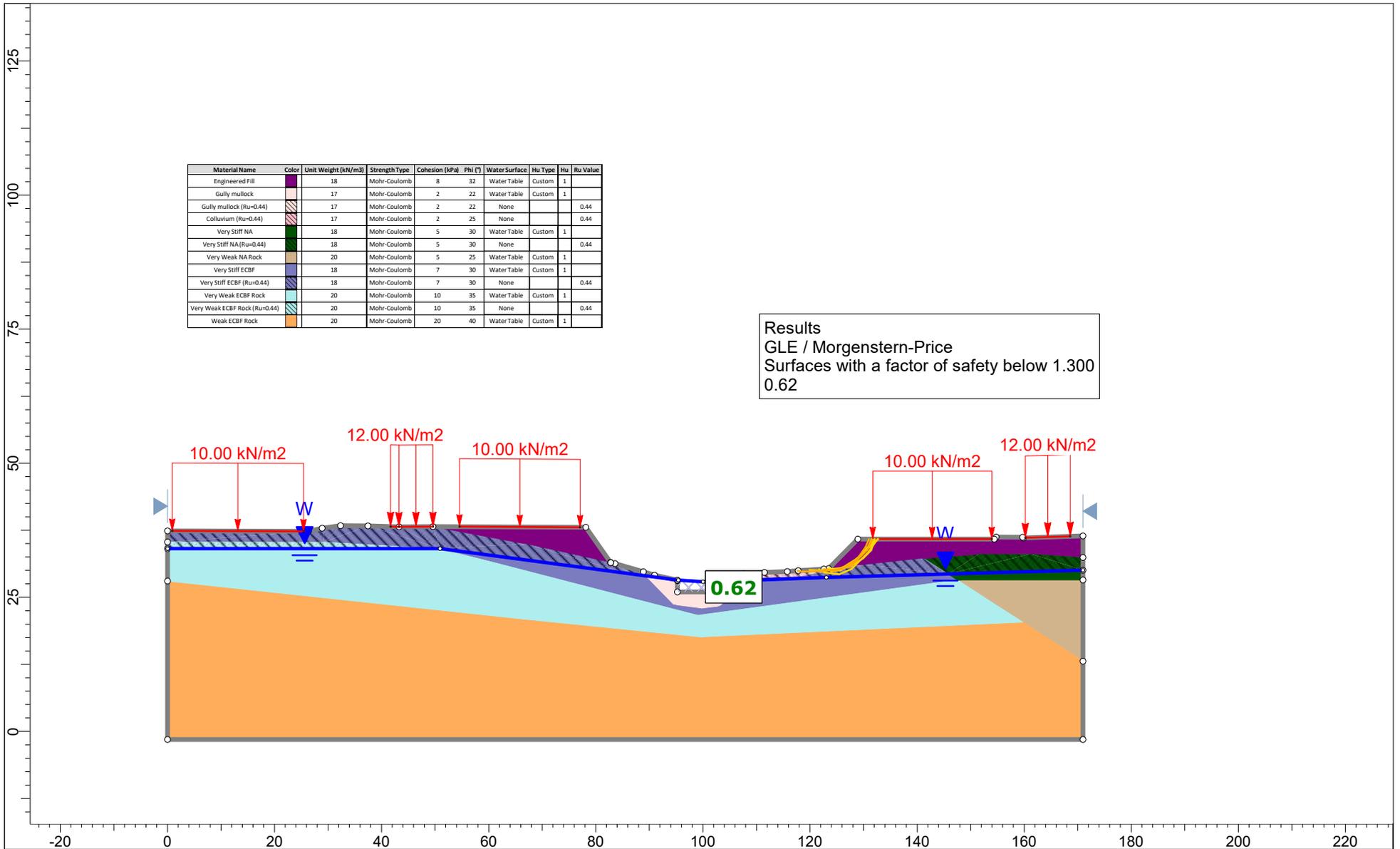
Project	240065 - Russell Road, Wainui - Stage 1		
Group	Proposed GL Section AI (L-R) - Erosion & Remedial	Scenario	Extreme (50% saturated fill)
Drawn By	ADT	Company	Riley Consultants Ltd
Date	16/12/2025	File Name	Section AI (AB).slmd



Material Name	Color	Unit Weight (kN/m <sup>3</sup> )	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu
Engineered Fill	■	18	Mohr-Coulomb	8	32	Water Table	Custom	1
Gully mullock	■	17	Mohr-Coulomb	2	22	Water Table	Custom	1
Colluvium	■	17	Mohr-Coulomb	2	25	Water Table	Custom	1
Very Stiff NA	■	18	Mohr-Coulomb	5	30	Water Table	Custom	1
Very Weak NA Rock	■	20	Mohr-Coulomb	5	25	Water Table	Custom	1
Very Stiff ECBF	■	18	Mohr-Coulomb	7	30	Water Table	Custom	1
Very Weak ECBF Rock	■	20	Mohr-Coulomb	10	35	Water Table	Custom	1
Weak ECBF Rock	■	20	Mohr-Coulomb	20	40	Water Table	Custom	1

Results  
GLE / Morgenstern-Price  
Surfaces with a factor of safety below 1.500  
0.65

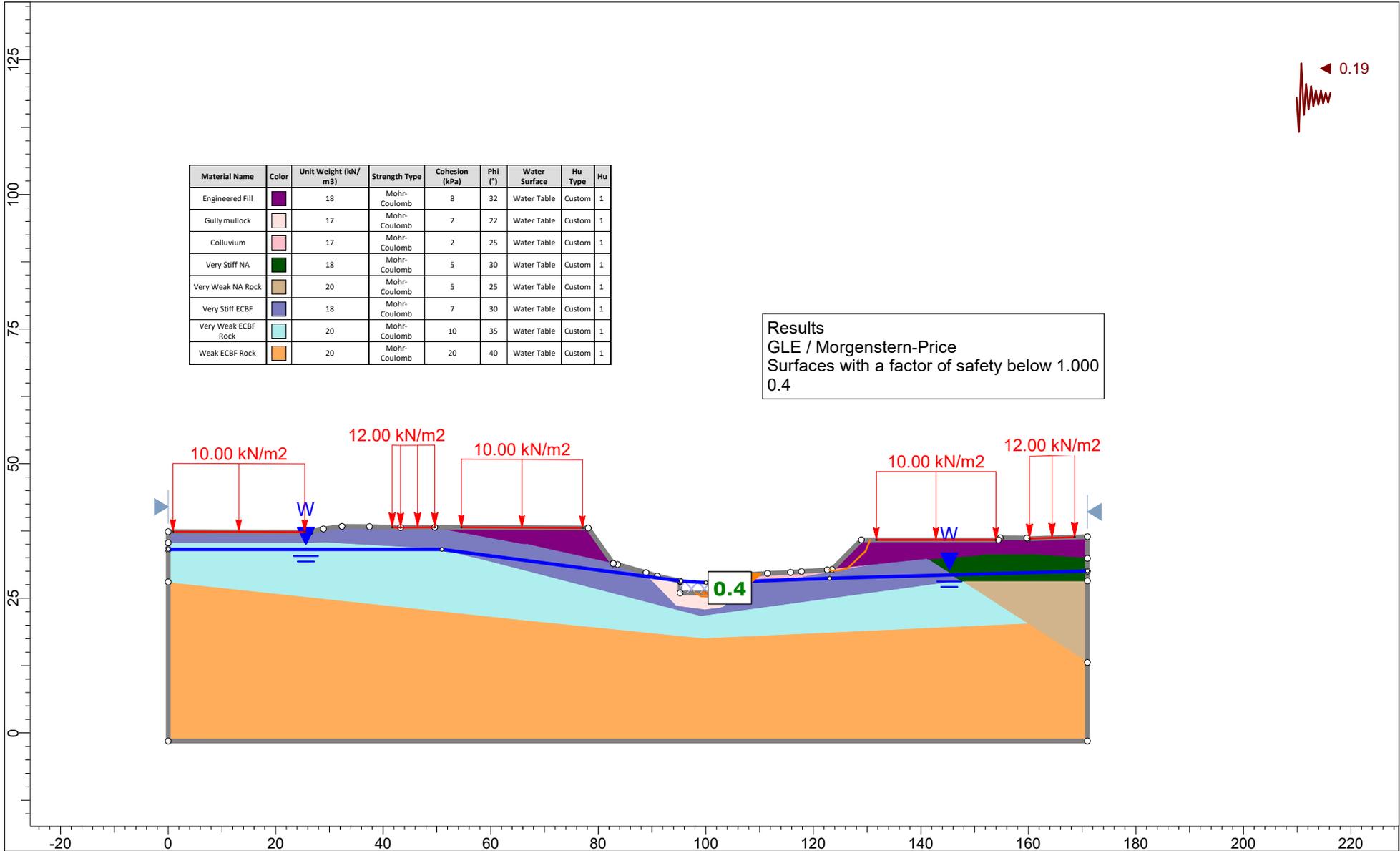
	Project		240065 - Russell Road, Wainui - Stage 1	
	Group		Proposed GL Section AI (R-L)	Scenario
	Drawn By		ADT	Company
	Date		16/12/2025	File Name
			Normal (Measured GW)	Riley Consultants Ltd
			Section AI (AB).slmd	



Material Name	Color	Unit Weight (kN/m3)	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu	Ru Value
Engineered Fill		18	Mohr-Coulomb	8	32	Water Table	Custom	1	
Gully mullock		17	Mohr-Coulomb	2	22	Water Table	Custom	1	
Gully mullock (Ru=0.44)		17	Mohr-Coulomb	2	22	None			0.44
Colluvium (Ru=0.44)		17	Mohr-Coulomb	2	25	None			0.44
Very Stiff NA		18	Mohr-Coulomb	5	30	Water Table	Custom	1	
Very Stiff NA (Ru=0.44)		18	Mohr-Coulomb	5	30	None			0.44
Very Weak NA Rock		20	Mohr-Coulomb	5	25	Water Table	Custom	1	
Very Stiff ECFB		18	Mohr-Coulomb	7	30	Water Table	Custom	1	
Very Stiff ECFB (Ru=0.44)		18	Mohr-Coulomb	7	30	None			0.44
Very Weak ECFB Rock		20	Mohr-Coulomb	10	35	Water Table	Custom	1	
Very Weak ECFB Rock (Ru=0.44)		20	Mohr-Coulomb	10	35	None			0.44
Weak ECFB Rock		20	Mohr-Coulomb	20	40	Water Table	Custom	1	

Results  
GLE / Morgenstern-Price  
Surfaces with a factor of safety below 1.300  
0.62

	Project		240065 - Russell Road, Wainui - Stage 1	
	Group		Proposed GL Section AI (R-L)	Scenario
	Drawn By		ADT	Company
	Date		16/12/2025	File Name
			Extreme (Worst Credible GW)	Riley Consultants Ltd
			Section AI (AB).slmd	

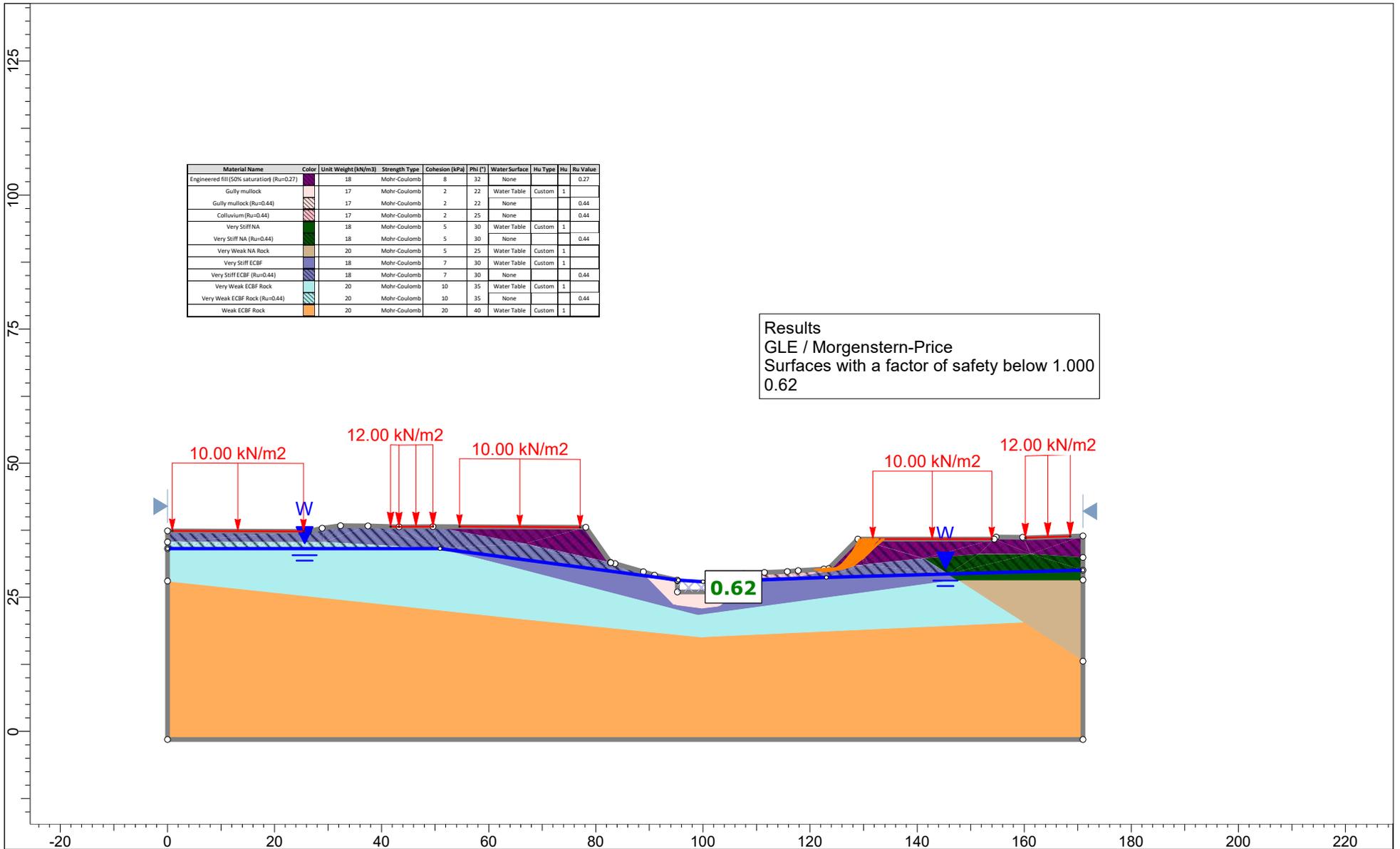


Material Name	Color	Unit Weight (kN/m <sup>3</sup> )	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu
Engineered Fill	Dark Purple	18	Mohr-Coulomb	8	32	Water Table	Custom	1
Gully mullock	Light Grey	17	Mohr-Coulomb	2	22	Water Table	Custom	1
Colluvium	Pink	17	Mohr-Coulomb	2	25	Water Table	Custom	1
Very Stiff NA	Dark Green	18	Mohr-Coulomb	5	30	Water Table	Custom	1
Very Weak NA Rock	Light Brown	20	Mohr-Coulomb	5	25	Water Table	Custom	1
Very Stiff ECBF	Blue	18	Mohr-Coulomb	7	30	Water Table	Custom	1
Very Weak ECBF Rock	Light Blue	20	Mohr-Coulomb	10	35	Water Table	Custom	1
Weak ECBF Rock	Orange	20	Mohr-Coulomb	20	40	Water Table	Custom	1

Results  
GLE / Morgenstern-Price  
Surfaces with a factor of safety below 1.000  
0.4



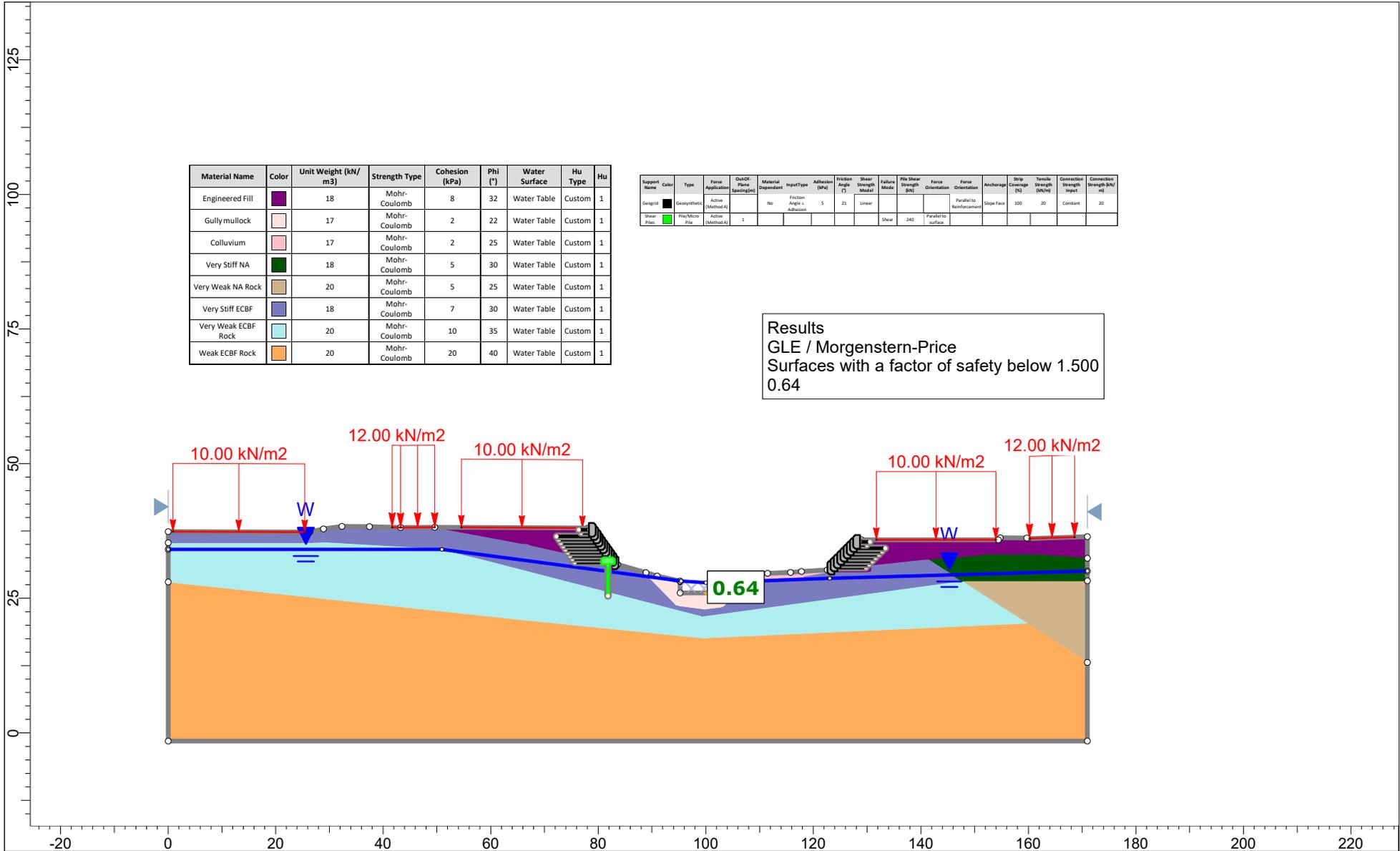
Project	240065 - Russell Road, Wainui - Stage 1		
Group	Proposed GL Section AI (R-L)	Scenario	Seismic (0.19g)
Drawn By	ADT	Company	Riley Consultants Ltd
Date	16/12/2025	File Name	Section AI (AB).slmd



Material Name	Color	Unit Weight (kN/m3)	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu Value
Engineered fill (50% saturation) (Ru=0.27)		18	Mohr-Coulomb	8	32	None		0.27
Gully mullock		17	Mohr-Coulomb	2	22	Water Table	Custom	1
Gully mullock (Ru=0.44)		17	Mohr-Coulomb	2	22	None		0.44
Colluvium (Ru=0.44)		17	Mohr-Coulomb	2	25	None		0.44
Very Stiff NA		18	Mohr-Coulomb	5	30	Water Table	Custom	1
Very Stiff NA (Ru=0.44)		18	Mohr-Coulomb	5	30	None		0.44
Very Weak NA Rock		20	Mohr-Coulomb	5	25	Water Table	Custom	1
Very Stiff ECBF		18	Mohr-Coulomb	7	30	Water Table	Custom	1
Very Stiff ECBF (Ru=0.44)		18	Mohr-Coulomb	7	30	None		0.44
Very Weak ECBF Rock		20	Mohr-Coulomb	10	35	Water Table	Custom	1
Very Weak ECBF Rock (Ru=0.44)		20	Mohr-Coulomb	10	35	None		0.44
Weak ECBF Rock		20	Mohr-Coulomb	20	40	Water Table	Custom	1

Results  
GLE / Morgenstern-Price  
Surfaces with a factor of safety below 1.000  
0.62

	Project		240065 - Russell Road, Wainui - Stage 1	
	Group	Proposed GL Section AI (R-L)	Scenario	Extreme (50% saturated fill)
	Drawn By	ADT	Company	Riley Consultants Ltd
	Date	16/12/2025	File Name	Section AI (AB).slmd



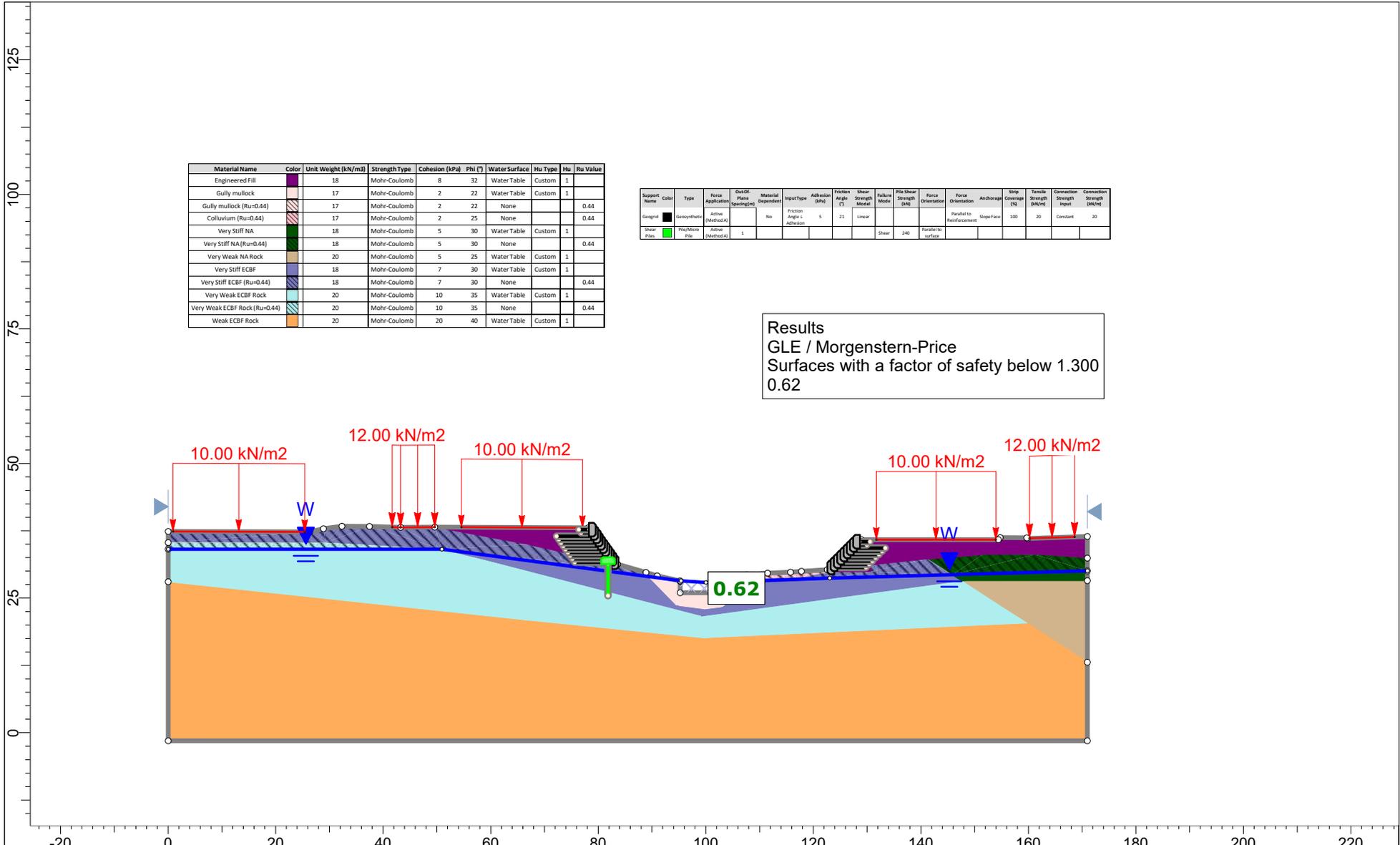
Material Name	Color	Unit Weight (kN/m <sup>3</sup> )	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu
Engineered Fill	Dark Purple	18	Mohr-Coulomb	8	32	Water Table	Custom	1
Gully mullock	Light Grey	17	Mohr-Coulomb	2	22	Water Table	Custom	1
Colluvium	Pink	17	Mohr-Coulomb	2	25	Water Table	Custom	1
Very Stiff NA	Dark Green	18	Mohr-Coulomb	5	30	Water Table	Custom	1
Very Weak NA Rock	Light Brown	20	Mohr-Coulomb	5	25	Water Table	Custom	1
Very Stiff ECBF	Blue	18	Mohr-Coulomb	7	30	Water Table	Custom	1
Very Weak ECBF Rock	Light Blue	20	Mohr-Coulomb	10	35	Water Table	Custom	1
Weak ECBF Rock	Orange	20	Mohr-Coulomb	20	40	Water Table	Custom	1

Support Name	Color	Type	Force Application	Out-Of-Plane Springs	Material Dependent	Input Type	Adhesion (kPa)	Friction Angle (°)	Shear Strength Moduli	Failure Mode	Pile Shear Strength (kN)	Force Orientation	Force Orientation	Anchorage	Strip Coverage (%)	Tensile Strength (kN/m)	Connection Strength Strip	Connection Strength (kN/m)
Geogrid	Black	Geosynthetic	Active (Method A)		No	Friction Angle & Adhesion	5	21	Linear			Parallel to Reinforcement	Slope Face		100	20	Constant	20
Shear Pile	Green	Pile/Micro Pile	Active (Method A)	±						Shear	240	Parallel to surface						

**Results**  
 GLE / Morgenstern-Price  
 Surfaces with a factor of safety below 1.500  
 0.64



Project		240065 - Russell Road, Wainui - Stage 1	
Group	Proposed GL Section AI (R-L) - Erosion & Remedial	Scenario	Normal (Measured GW)
Drawn By	ADT	Company	Riley Consultants Ltd
Date	16/12/2025	File Name	Section AI (AB).slmd



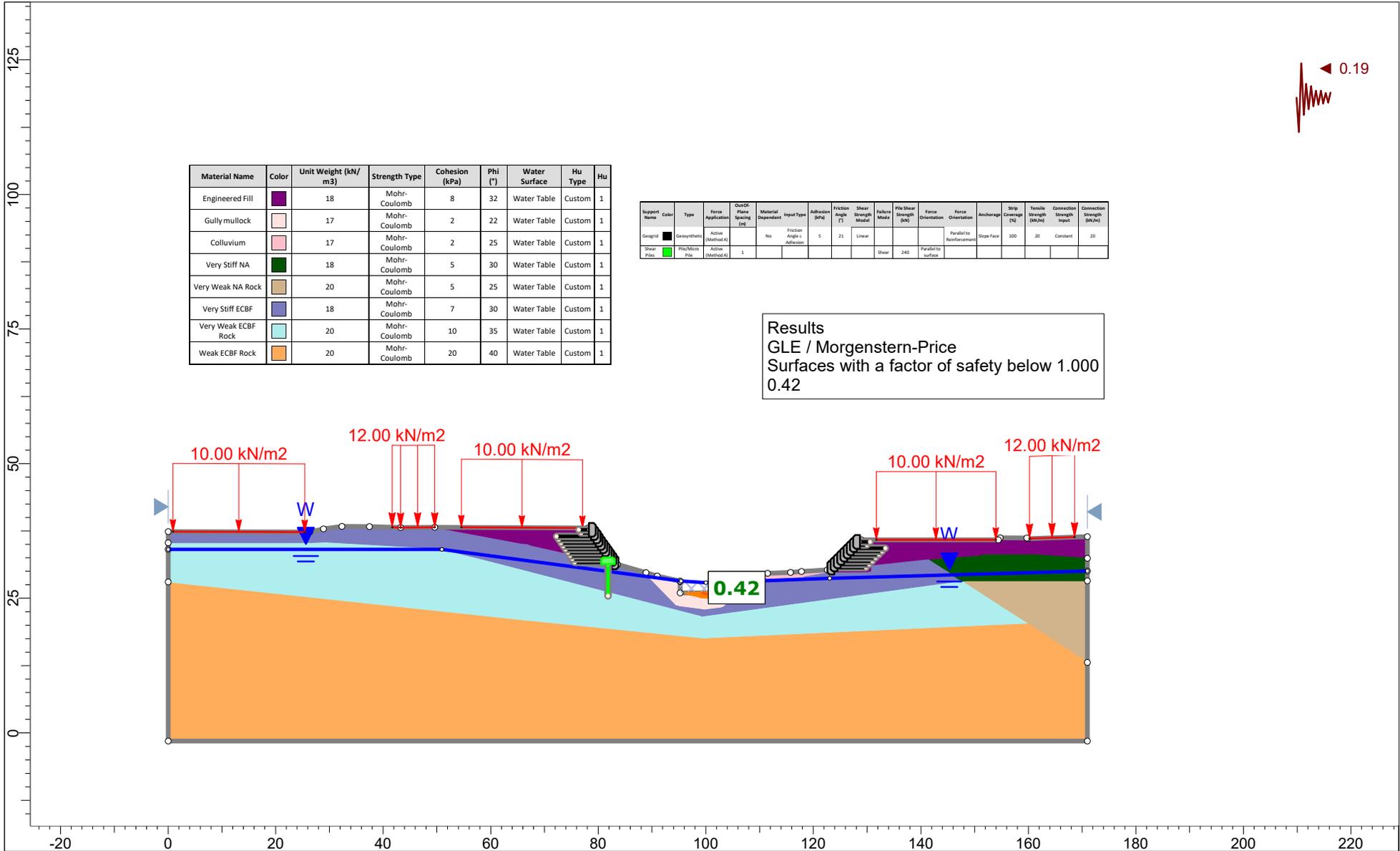
Material Name	Color	Unit Weight (kN/m3)	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu	Ru Value
Engineered Fill		18	Mohr-Coulomb	8	32	Water Table	Custom	1	
Gully mullock		17	Mohr-Coulomb	2	22	Water Table	Custom	1	
Gully mullock (Ru=0.44)		17	Mohr-Coulomb	2	22	None			0.44
Colluvium (Ru=0.44)		17	Mohr-Coulomb	2	25	None			0.44
Very Stiff NA		18	Mohr-Coulomb	5	30	Water Table	Custom	1	
Very Stiff NA (Ru=0.44)		18	Mohr-Coulomb	5	30	None			0.44
Very Weak NA Rock		20	Mohr-Coulomb	5	25	Water Table	Custom	1	
Very Stiff ECBF		18	Mohr-Coulomb	7	30	Water Table	Custom	1	
Very Stiff ECBF (Ru=0.44)		18	Mohr-Coulomb	7	30	None			0.44
Very Weak ECBF Rock		20	Mohr-Coulomb	10	35	Water Table	Custom	1	
Very Weak ECBF Rock (Ru=0.44)		20	Mohr-Coulomb	10	35	None			0.44
Weak ECBF Rock		20	Mohr-Coulomb	20	40	Water Table	Custom	1	

Support Name	Color	Type	Force Application	Out-Of-Plane Spacing	Material Dependent	Input Type	Adhesion (kPa)	Friction Angle (°)	Shear Strength Model	Failure Mode	File Shear Strength (kPa)	Force Orientation	Force Orientation	Anchorage	Strip Coverage (%)	Tensile Strength (kN/m)	Connection Strength Impact	Connection Strength (kN/m)
Geogrid		Geosynthetic	Active (Method A)		No	Friction Angle + Adhesion	5	21	Linear			Parallel to reinforcement	Slope Face		100	20	Constant	20
Shear Pile		Pin/Mini Pile	Passive (Method A)	1					Shear	240		Parallel to surface						

Results  
GLE / Morgenstern-Price  
Surfaces with a factor of safety below 1.300  
0.62



Project		240065 - Russell Road, Wainui - Stage 1	
Group	Proposed GL Section AI (R-L) - Erosion & Remedial	Scenario	Extreme (Worst Credible GW)
Drawn By	ADT	Company	Riley Consultants Ltd
Date	16/12/2025	File Name	Section AI (AB).slmd

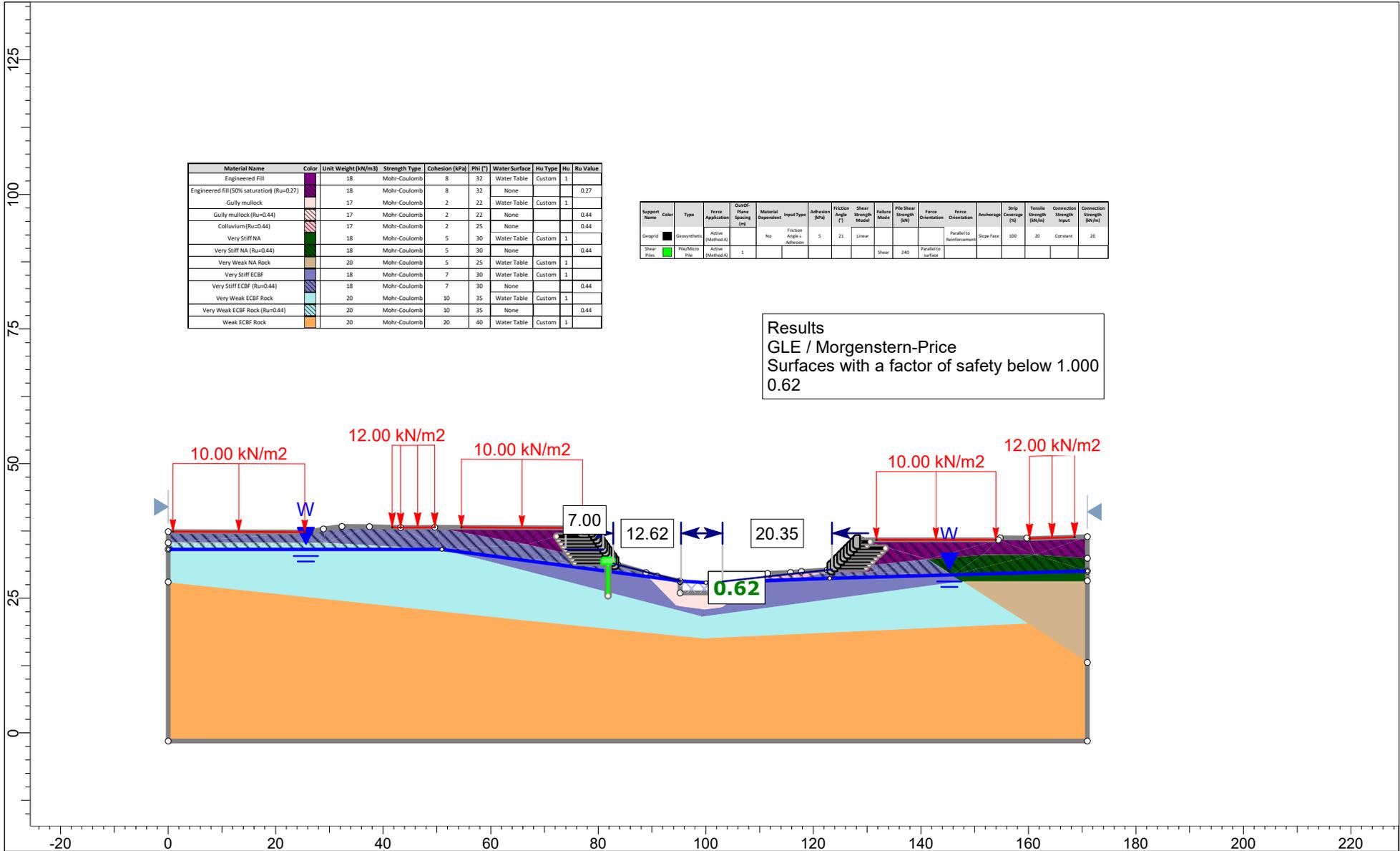


Material Name	Color	Unit Weight (kN/m <sup>3</sup> )	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu
Engineered Fill	Dark Purple	18	Mohr-Coulomb	8	32	Water Table	Custom	1
Gully mullock	Light Pink	17	Mohr-Coulomb	2	22	Water Table	Custom	1
Colluvium	Light Purple	17	Mohr-Coulomb	2	25	Water Table	Custom	1
Very Stiff NA	Dark Green	18	Mohr-Coulomb	5	30	Water Table	Custom	1
Very Weak NA Rock	Light Brown	20	Mohr-Coulomb	5	25	Water Table	Custom	1
Very Stiff ECFB	Dark Blue	18	Mohr-Coulomb	7	30	Water Table	Custom	1
Very Weak ECFB Rock	Light Blue	20	Mohr-Coulomb	10	35	Water Table	Custom	1
Weak ECFB Rock	Orange	20	Mohr-Coulomb	20	40	Water Table	Custom	1

Support Name	Color	Type	Force Application	Plane Strain	Material Dependent	Input Type	Adhesion (kPa)	Friction Angle (°)	Shear Strength Model	Failure Mode	Pile Shear Strength (kN)	Force Orientation	Force Orientation	Anchorage	Strip Contact (%)	Tensile Strength (kN/m)	Connection Strength Input	Connection Strength (kN/m)	
Geogrid	Black	Geosynthetic	Active (Method A)		No	Friction Angle + Adhesion	5	21	Linear			Parallel to Slope Face		100	20	Constant		20	
Shear Piles	Green	Pile/Micro Pile	Active (Method A)	1					Shear	240		Parallel to surface							

Results  
GLE / Morgenstern-Price  
Surfaces with a factor of safety below 1.000  
0.42

	Project		240065 - Russell Road, Wainui - Stage 1	
	Group	Proposed GL Section AI (R-L) - Erosion & Remedial	Scenario	Seismic (0.19g)
	Drawn By	ADT	Company	Riley Consultants Ltd
	Date	16/12/2025	File Name	Section AI (AB).slmd



Material Name	Color	Unit Weight (kN/m3)	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type	Hu Value
Engineered Fill		18	Mohr-Coulomb	8	32	Water Table	Custom	1
Engineered fill (50% saturation) (Ru=0.27)		18	Mohr-Coulomb	8	32	None		0.27
Gully mullock		17	Mohr-Coulomb	2	22	Water Table	Custom	1
Gully mullock (Ru=0.44)		17	Mohr-Coulomb	2	22	None		0.44
Colluvium (Ru=0.44)		17	Mohr-Coulomb	2	25	None		0.44
Very Stiff NA		18	Mohr-Coulomb	5	30	Water Table	Custom	1
Very Stiff NA (Ru=0.44)		18	Mohr-Coulomb	5	30	None		0.44
Very Weak NA Rock		20	Mohr-Coulomb	5	25	Water Table	Custom	1
Very Stiff ECBF		18	Mohr-Coulomb	7	30	Water Table	Custom	1
Very Stiff ECBF (Ru=0.44)		18	Mohr-Coulomb	7	30	None		0.44
Very Weak ECBF Rock		20	Mohr-Coulomb	10	35	Water Table	Custom	1
Very Weak ECBF Rock (Ru=0.44)		20	Mohr-Coulomb	10	35	None		0.44
Weak ECBF Rock		20	Mohr-Coulomb	20	40	Water Table	Custom	1

Support Name	Color	Type	Force Application	Plane Spacing (mm)	Material Dependent	Input Type	Adhesion (kPa)	Friction Angle (°)	Shear Strength Model	Failure Mode	Pile Shear Strength (kN)	Force Orientation	Force Orientation	Anchorage	Strip Capacity (%)	Tensile Strength (kN/m)	Connection Strength Input	Connection Strength (kN/m)
Geogrid		Geosynthetic	Active (Method A)		No	Friction Angle + Adhesion	5	21	Linear			Parallel to Reinforcement		Slope Face	100	20	Constant	20
Shear Piles		Pile/Micro Pile	Active (Method A)	1					Shear	240		Parallel to surface						

Results  
GLE / Morgenstern-Price  
Surfaces with a factor of safety below 1.000  
0.62

	Project	240065 - Russell Road, Wainui - Stage 1		
	Group	Proposed GL Section AI (R-L) - Erosion & Remedial	Scenario	Extreme (50% saturated fill)
	Drawn By	ADT	Company	Riley Consultants Ltd
	Date	16/12/2025	File Name	Section AI (AB).slmd



Slope Stability Summary of Results

Project: 240065 Vineway Russell Road  
 Prepared by: LKB  
 Checked by: JLB

Key:

Analysis not required

Note: Values are the calculated minimum FoS for each cross-section. Surfaces have been filtered for each scenario up to the target FoS.

Scenario

Section	Current GL			Proposed GL				Proposed GL with Remedials			
	Long Term	Elevated	Seismic	Long Term	Elevated	Seismic	50% Fill Saturation	Long Term	Elevated	Seismic	50% Fill Saturation
A	1.29	0.91	0.68	1.06	<1	<1	<1	1.29	<1	<1	<1
B	1.35	1.07	<1	<1	<1	<1	<1	1.01	<1	<1	<1
C				1.33	<1	1.05	<1	1.84	1.44	1.4	1.39
D	2.23	1.4	1.31	1.51	1.1	1.15	1.07	>2	1.47	1.36	1.25
E (L-R)				<1	<1	<1	<1	<1	<1	<1	<1
E (R-L)				1.54	1	1.01	<1	1.69	1.44	1.12	1.23
F				1.3	1	<1	<1	1.33	1.18	1	1.18
G				>2	>2	>2	>2				
H	2.5	1.81	1.44	1.07	<1	<1	<1	1.61	1.49	1.13	1.35
I	1.34	1.24	0.65	1.37	1.23	<1	1.22	1.61	1.35	<1	1.35
J (L-R)				<1	<1	<1	<1	1.79	1.79	1.43	1.49
J (R-L)				<1	<1	<1	<1	1.87	1.89	1.48	1.48
K				<1	<1	<1	<1	<1	<1	<1	<1
L				1.37	<1	1.15	<1	1.15	<1	<1	<1
M	1.47	0.98	1.04	1.18	<1	<1	<1	1.54	<1	<1	<1
N				<1	<1	<1	<1	1.91	1.34	1.25	1.34
O				<1	<1	<1	<1	>2	1.3	1.53	1.34
P				1.26	<1	<1	<1	1.53	1.3	1	1.26
AE				1.14	<1	<1	<1	1.53	1.39	1.08	1.37
AG				<1	<1	<1	<1	1.5	<1	<1	<1
Q				1.15	<1	<1	<1	1.89	1.4	1.3	1.1
R	1.66	1.01	1.13	<1	<1	<1	<1	<1	<1	<1	<1
S				1.3	1	0.74	0.87	1.55	1.48	1.04	1.11
T	1.62	1.24	0.96	1.54	1.04	1.04	1	2.07	1.45	1.17	1.43
U				1.31	<1	<1	<1	1.75	1.42	1.31	1.32
V (L-R)	1.52	1	0.99	<1	<1	<1	<1	1.14	<1	<1	<1
V (R-L)	1.52	0.99	1.01	>2	>2	>2	>2	1.6	<1	1.6	<1
W				1.13	<1	<1	<1	1.83	1.33	1.26	1
X	1.82	1.06	1.19	<1	<1	<1	<1	1.54	1.39	1.1	1.21
Y	2.31	1.39	1.35	<1	<1	<1	<1	1.47	1.11	1.22	1.11
Z				<1	<1	<1	-	<1	<1	<1	-
AA				<1	<1	<1	<1	<1	<1	<1	<1
AB	1.79	1.07	1.03	<1	<1	<1	<1	1.5	1	1.16	1

Stage 1

Stage 2

<b>AC</b>	2.18	1.44	1.23	1.13	<1	<1	-	1.56	1.43	1	-
<b>AD (L-R)</b>				1.13	<1	<1	<1	1.53	1.52	1.14	1.25
<b>AD (R-L)</b>				1.28	<1	1.23	<1	1.97	1.37	1.32	1.37
<b>AF</b>				<1	<1	<1	<1	<1	<1	<1	<1
<b>AH</b>				<1	<1	<1	<1	<1	<1	<1	<1
<b>AI (L-R)</b>				<1	<1	<1	<1	<1	<1	<1	<1
<b>AI (R-L)</b>				<1	<1	<1	<1	<1	<1	<1	<1

Note: All results from models with remedials meet the FoS requirements for areas within and directly under development areas  
Results given above under the required FoS are outside the development area