



Embankment on Ringtrac®-Encased Columns

1. General

Project / Object name: _____

Company / Client: _____

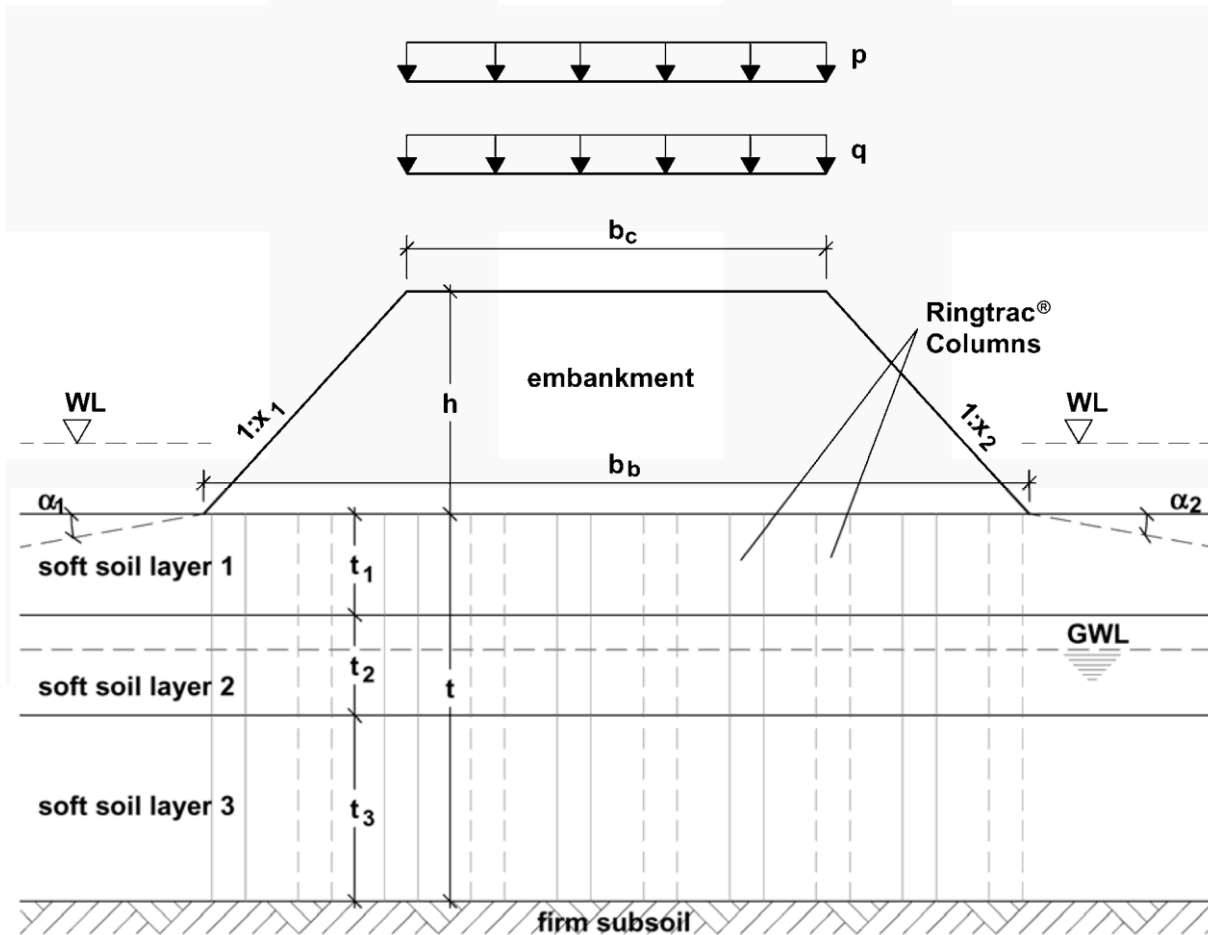
Contact person: _____

Telephone number: _____

Fax number: _____

E-Mail: _____

Internal person in charge: _____



In addition to this questionnaire a representative cross section drawing illustrating soil stratification, geometry, loads and water levels as well as a location plan showing an overview of the entire structure are required.



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2. Geometry, loads and soil parameters

Geometry			
embankment height	h	=	[m]
crest width	b _c	=	[m]
base width	b _b	=	[m]
Length of the embankment	l	=	[m]
slope inclination (left)	1 : x ₁	=	[-]
slope inclination (right)	1 : x ₂	=	[-]
angle of the terrain (left)	α ₁	=	[°] (respectively 1:n)
angle of the terrain (right)	α ₂	=	[°] (respectively 1:n)
total thickness of all soft soil layers	t	=	[m]
thickness of soft soil layer 1	t ₁	=	[m]
thickness of soft soil layer 2	t ₂	=	[m]
thickness of soft soil layer 3	t ₃	=	[m]

Loads			
dead load	p	=	[kN/m ²]
live load	q	=	[kN/m ²]
Soil parameters of the embankment fill			
soil designation			[e.g. sandy gravel]
effective angle of internal friction	φ'	=	[°]
effective cohesion	c'	=	[kN/m ²]
soil unit weight	γ	=	[kN/m ³]

Soil parameters of the columns filling material			
soil designation*			[e.g. sand]
effective angle of internal friction	φ'	=	kN/m ²
effective cohesion	c'	=	kN/m ³
oedometric (constrained) modulus	E _s	=	m
soil unit weight	γ	=	kN/m ²

* additionally a gradation curve should be provided



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Soil parameters of the soft soil layers			
Soft soil layer 1			
soil designation			[e.g. soft clay]
effective angle of internal friction	φ' =		[°]
effective cohesion	c' =		[kN/m ²]
unconsolidated shear strength	s_u =		[kN/m ²]
soil unit weight	γ =		[kN/m ³]
poisson´s ratio	ν =		[-]
oedometric (constrained) modulus $E_{s,ref}$ at a reference normal stress p_{ref}	$E_{s,ref}$ =		[kN/m ²]
	p_{ref} =		[kN/m ²]
Soft soil layer 2			
soil designation			[e.g. soft clay]
effective angle of internal friction	φ' =		[°]
effective cohesion	c' =		[kN/m ²]
unconsolidated shear strength	s_u =		[kN/m ²]
soil unit weight	γ =		[kN/m ³]
poisson´s ratio	ν =		[-]
oedometric (constrained) modulus $E_{s,ref}$ at a reference normal stress p_{ref}	$E_{s,ref}$ =		[kN/m ²]
	p_{ref} =		[kN/m ²]
Soft soil layer 3			
soil designation			[e.g. soft clay]
effective angle of internal friction	φ' =		[°]
effective cohesion	c' =		[kN/m ²]
unconsolidated shear strength	s_u =		[kN/m ²]
soil unit weight	γ =		[kN/m ³]
poisson´s ratio	ν =		[-]
oedometric (constrained) modulus $E_{s,ref}$ at a reference normal stress p_{ref}	$E_{s,ref}$ =		[kN/m ²]
	p_{ref} =		[kN/m ²]

Soil parameters of the firm subsoil			
soil designation			[e.g. soft clay]
effective angle of internal friction	φ' =		[°]
effective cohesion	c' =		[kN/m ²]
oedometric (constrained) modulus	E_s =		[kN/m ²]
soil unit weight	γ =		[kN/m ³]

Water levels			
<input type="checkbox"/> Ground water level (below the base of the embankment)	GWL =		[m]
<input type="checkbox"/> Water level (above the base of the embankment)	max WL =		[m]
	min WL =		[m]



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3. Method of installation and installation equipment (if known or preferred)

<input type="checkbox"/> Replacement method of installation		
drilling rig (producer and type)		
operating weight		[kN]
crowd pull force		[kN]
crowd push force		[kN]
vibrator (producer and type)		
inner diameter of the steel casing (tube)		[mm]
Outer diameter of the steel casing (tube)		[mm]
<input type="checkbox"/> Displacement method of installation		
drilling rig (producer and type)		
operating weight		[kN]
crowd pull force		[kN]
crowd push force		[kN]
vibrator (producer and type)		
inner diameter of the steel casing (tube)		[mm]
outer diameter of the steel casing (tube)		[mm]

4. Additional information (Construction time? Allowable total and post-construction settlements? Preferred column grid (triangular or rectangular) and spacing? Et cetera)

5. Target date of project completion

Date: _____

Signature: _____