geotesting®
STUDII GEOTEHNICE ŞI GEOFIZICE

Profilul ~~Forajului~~ / ~~Santului~~ Nr. S4-FP-23
Borehole / ~~Pit~~ Profile

REZULTATELE ANALIZELOR DE LABORATOR
LABORATORY TEST RESULTS

LUCRAREA / DESIGN: Studiu geotehnic pentru revizuirea Studiului de fezabilitate Autostrada Sibiu-Pitesti - Sectiunea 4 (Valeni-Curtea de Arges)

AMPLASAMENT / LOCATION: Autostrada Sibiu-Pitesti
X : 464713.30 Y: 411611.24

DATA / DATE: 29.08.2016

Cota fata de / Level vs: 0.00 Foraj / Bore-hole (pit)

Adancimea apei subterane / Underground water depth (m): 3.10

Stratificatie / Stratification

Adancime / Depth (m)	Grosimea stratului / Stratum thickness (m)	Denumirea stratului (conform Stas 1243-88 si SR EN ISO 14688/2-2005) / Stratum description
0.10	0.10	Pamant vegetal.
1.70	1.60	Nisip cafeniu.
3.00	1.30	Pietris cu nisip galbui si rar bolovanis.
10.50	7.50	Argila prafoasa, marnoasa, cafenie, plastic vartoasa.
15.00	4.50	Nisip argilos, galbui - cenusiu, indesat.
		Argila prafoasa, cafenie, tare.

Probe: Borcan / Jar; Stut / Tube; Carota / Core

Compozitie granulometrica (d. in mm) SR EN ISO 14688/2-2005 / Particle size distribution; Limitele Atterberg / Atterberg's limits

Nr. proba / Sample no.	Adancimea / Depth (m)	Argila / Clay <0.002	Praf / Silt 0.063	Nisip fin / Fine sand 0.2	Nisip mediu / Medium sand 0.63	Nisip mare / Coarse sand 2	Pietris mic / Small gravel 6.3	Pietris mediu / Medium gravel 20	Pietris mare / Coarse gravel 63	Bolovanis / Cobbles 200	Un=d60/d10	W_L	W_P	I_P	w %	I_C
1 (Stut)	4.0-4.40	32	67	1								55.6	17.4	38.2	18.0 / 19.7 / 17.4	0.98
2 (Stut)	8.0-8.22	30	68	2								54.3	17.3	37.0	17.3 / 21.7 / 10.2	0.88
3 (Stut)	12-12.30	6	14	18	43	18	1				>15				17.0	
4 (Stut)	16-16.24	37	62	1								69.1	22.3	46.9	20.7 / 21.8 / 20.8	>1

Physical properties, Contractilitatea / Shrinkage-swelling, Compresibilitatea / Compressibility

Nr. proba	γ (kN/m³)	γ_d (kN/m³)	n %	e	Sr	U_L	Pu (kPa)	$M_{200-300}$ (kPa)	ε_{200} %	a_v (1/kPa)	Im %
1	21.6 / 21.8	18.1 / 18.5	33.63 / 31.84	0.51 / 0.47	1.00 / 1.00	156.7	255	20456.3 / 7142.9	1.98 / -0.80	0.00007 / 0.00021	-1.87
2	21.3 / 19.8	18.2 / 17.9	31.74 / 32.30	0.49 / 0.48	0.90 / 0.57			13333.3	2.90	0.00011	
4	21.3 / 21.3	17.6 / 17.7	35.06 / 35.12	0.53 / 0.54	1.00 / 1.00			15384.6	2.30	0.00010	

Rezistenta la forfecare / Shear strength (Effective stress σ/τ)

Nr. proba	1	2	3	Φ (°)	c (kPa)	Felul determinarii / Type of test
2	150 / 86.3	250 / 103.7	350 / 146.5	16°45'	36.9	FCU i.
4	300 / 110.0	400 / 131.4	500 / 146.9	10°26'	55.6	FCU i.

Continutul in CaCO3 / Penetrarea dinamica standard (SPT)

Adancime (m)	CaCO3 %	SPT N/30 cm
2.00		31/43/R
~4.4 (proba 1)	5.87	
6.00		44/R
10.00		R
14.00		R

Forajul continua

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Profilul ~~Forajului~~ ~~Santului~~ Nr. S4-FP-23
~~Borehole~~ ~~Pit~~ Profile continuare

REZULTATELE ANALIZELOR DE LABORATOR
LABORATORY TEST RESULTS

LUCRAREA DESIGN Studiu geotehnic pentru revizuirea Studiului de fezabilitate Autostrada Sibiu-Pitesti - Sectiunea 4 (Valeni-Curtea de Arges)

AMPLASAMENT LOCATION Autostrada Sibiu-Pitesti
X : 464713.30 Y: 411611.24

DATA DATE 29.08.2016

Cota fata de: 16.0 Foraj

Level vs: 16.0 Bore-hole (plt)

Borcan / Stut / Carota / Jar / Tube / Core

Nr.	Adancimea	Grosimea stratului	Adancimea apei subterane	Stratificatia	Formatiunea geologica	DENUMIREA STRATULUI (conform Stas 1243-88 si SR EN ISO 14688/2-2005) / STRATUM DESCRIPTION (according to Stas 1243-88 and SR EN ISO 14688/2-2005)
	m	m				
5	20-20.25	19.90	4.90			Argila prafoasa, cafenie, tare.
6	24-24.22	20.00	1.10			Praf argilos nisipos, cenusiu - galbui, plastic vartos.
7	28-28.25					Nisip cenusiu - galbui, indesat.

Compozitie granulometrica (d. in mm) SR EN ISO 14688/2-2005 / Particle size distribution SR EN ISO 14688/2-2005

Nr.	Adancimea	Argila <0.002	Praf 0.063	Nisip fin 0.2	Nisip mediu 0.63	Nisip mare 2	Pietris mic 6.3	Pietris mediu 20	Pietris mare 63	Bolovanis 200	Coeficientul de neuniformitate $U_n = d_{60}/d_{10}$ / Non-uniformity coefficient	Limitele Atterberg / Atterberg's limits: Limita de curgere W_L / Liquid limit	Limita de plasticitate W_P / Plastic limit	Indicele de plasticitate I_P / Plasticity index	Umiditatea w % / Water content	Indicele de consistenta I_C / Consistency index	Densitatea scheletului mineral ρ_s / Skeletal mineral density	Greutatea volumica γ kN/m³ / Unit weight	Greutatea volumica in stare uscata γ_d kN/m³ / Unit dry weight	Porozitatea n % / Porosity	Indicele porilor e / Voids ratio	Gradul de umiditate Sr / Degree of saturation
5	20-20.25	11	52	16	8	13					>15	33.1	12.9	12.9	13.5	0.97						
6	24-24.22	10	24	52	13	1					<6				18.8							
7	28-28.25	9	36	48	7						<6				21.0							
															12.3			22.3	19.8	27.1	0.37	0.90

Contractilitatea / Shrinkage-swelling

Nr.	Adancimea	Umflarea libera U_L / Unconfined swelling	Succiunea 15 bari w_{15} / Suction 15 bars	Contractia volumica C_v / Volume shrinkage	Tulb. / Netulb.	Limita de contractie w_s / Shrinkage limit	Presiunea de umflare Pu kPa / Swelling pressure
5	20-20.25						
6	24-24.22						
7	28-28.25						

Compresibilitatea / Compressibility

Nr.	Adancimea	Modulul de deformatie edometrica $M_{200-300}$ kPa / Oedometer deformation modulus	Tasare specifica la 200 kPa / Specific settlement at 200 kPa	Coef. compresibilitate volumica m_v / Coefficient of volume change	Coeficientul de compresibilitate $a_{v\ 200-300}$ 1/kPa / Coefficient of compressibility	Sensibilitatea la umezire im 300 % / Susceptibility to wetting	Efort σ kPa / Stress	Indice de recompresiune RSC / Recompression index	Coeficientul de consolidare c_v cm²/sec / Coefficient of consolidation
5	20-20.25								
6	24-24.22	16199.4	3.08		0.00009				
7	28-28.25								

Rezistenta la forfecare / Shear strength

Nr.	Adancimea	Efort σ/τ / Effective stress σ/τ: 1	2	3	Unghiul de frecare int. Φ ° / Angle of int. friction	Coeziunea c kPa / Cohesion
5	20-20.25					
6	24-24.22					
7	28-28.25					

Nr.	Adancimea	Felul determinarii / Type of test	Rezistenta la compresiune ou deformatio laterala libera p_c kPa / Unconfined compressive strength	Coeficient de permeabilitate k m/s / Permeability coefficient	Continutul in CaCO3 % / CaCO3 content	Penetrarea dinamica standard N/10 cm / Standard penetration test
5	20-20.25					18.00 R
6	24-24.22					22.00 R
7	28-28.25					26.00 R

Forajul continua

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Profilul ~~Forajului~~ / ~~Santului~~ / ~~Borehole~~ / ~~Pit~~ Profile Nr. S4-FP-23 continuare

REZULTATELE ANALIZELOR DE LABORATOR
LABORATORY TEST RESULTS

LUCRAREA / DESIGN: Studiu geotehnic pentru revizuirea Studiului de fezabilitate Autostrada Sibiu-Pitesti - Sectiunea 4 (Valeni-Curtea de Arges)

AMPLASAMENT / LOCATION: Autostrada Sibiu-Pitesti
X : 464713.30 Y: 411611.24

DATA / DATE: 29.06.2016

Cota fata de: 32.0 Foraj	Grosimea stratului	Adancimea apei subterane	Stratificatia	Formatiunea geologica	DENUMIREA STRATULUI (conform Stas 1243-88 si SR EN ISO 14688/2-2005)	Numarul probelor	Adancimea	Compozitie granulometrica (d. in mm) SR EN ISO 14688/2-2005: Argila <0.002	Praf 0.063	Nisip fin 0.2	Nisip mediu 0.63	Nisip mare 2	Pietris mic 6.3	Pietris mediu 20	Pietris mare 63	Bolovanis 200	Coeficientul de neuniformitate	Limita de curgere	Limita de plasticitate	Indicele de plasticitate	Umiditatea	Indicele de consistenta	Densitatea scheletului mineral	Greutatea volumica	Greutatea volumica in stare uscata	Porozitatea	Indicele porilor	Gradul de umiditate	Contractilitatea: Umflarea libera	Sucsiunea 15 bari	Contractia volumica Tulb.	Contractia volumica Netulb.	Limita de contractie	Presiunea de umflare	Compresibilitatea: Modulul de deformatie edometrica	Tasare specifica la 200 kPa	Coef. compresibilitate volumica	Coeficientul de compresibilitate	Sensibilitatea la umezire	Efort	Indice de recompresiune	Coeficientul de consolidare	Rezistenta la forfecare: Efort σ/τ 1	2	3	Unghiul de frecare int.	Coeziunea	Felul determinarii	Rezistenta la compresiune cu deformatie laterala libera	Coeficient de permeabilitate	Continutul in materii organice	Penetrarea dinamica standard
	m	m					m	<0.002	0.063	0.2	0.63	2	6.3	20	63	200	$U_n = d_{60}/d_{10}$	W_L	W_P	I_P	w %	I_C	ρ_s	kN/m³ γ	kN/m³ γ_d	n %	e	Sr	U_L	w_{15}	C_v		w_s	Pu kPa	$M_{200-300}$ kPa	ε_{200} %	m_v X_d 1/kPa	$a_{v\ 200-300}$ 1/kPa	Im %	σ kPa	RGC	c cm²/sec	1	2	3	Φ °	c kPa		p_c kPa	K m/s	%	N 30 cm
Level vs: 32.0 Bore-hole (pit)	Stratum thickness	Underground water depth	Stratification	Geological formation	STRATUM DESCRIPTION (according to Stas 1243-88 and SR EN ISO 14688/2-2005)	Number and type of samples	Depth	Particle size distribution SR EN ISO 14688/2-2005: Clay	Silt	Fine sand	Medium sand	Coarse sand	Small gravel	Medium gravel	Coarse gravel	Cobbles	Non-uniformity coefficient	Atterberg's limits: Liquid limit	Plastic limit	Plasticity index	Water content	Consistency index	Skeletal mineral density	Unit weight	Unit dry weight	Porosity	Void ratio	Degree of saturation	Shrinkage-swelling: Unconfined swelling	Suction 15 bars	Volume shrinkage Dist.	Volume shrinkage Undist.	Shrinkage limit	Swelling pressure	Compressibility: Oedometer deformation modulus	Specific settlement at 200 kPa	Coefficient of volume change	Coefficient of compressibility	Susceptibility to wetting	Stress	Recompression index	Coefficient of consolidation	Shear strength: Effective stress σ/τ 1	2	3	Angle of int. friction	Cohesion	Type of test	Unconfined compressive strength	Permeability coefficient	Organic matter content	Standard penetration test
32.20 – 12.20	20.00				Nisip prafuit - galbui, indesat.																																													
12.20 – 2.80	9.40				Argila prafoasa nisipoasa, cafenie, plastic consistenta.	8	32.75-33	21	44	18	10	7						34.3	13.2	21.2	20.1 19.8 19.7	0.69		21.3 21.1	17.7 17.7	34.87 35.1	0.54 0.54	1.00 0.99								6639.4	4.78		0.00023					400 130.6	500 166.3	600 186.8	15°41'	20.8	FCU				
35.00 – 2.80																																															

Nota:
FCU L = Forfecare consolidata necrenata inundata

Intocmit: ing. V. Marin

Verificat: ing. A. Diaconu