



VYSOKÉ UČENÍ TECHNICKÉ V BRNĚ

BRNO UNIVERSITY OF TECHNOLOGY

FAKULTA STAVEBNÍ

FACULTY OF CIVIL ENGINEERING

ÚSTAV BETONOVÝCH A ZDĚNÝCH KONSTRUKCÍ

INSTITUTE OF CONCRETE AND MASONRY STRUCTURES

BETONOVÉ KONSTRUKCE VYZTUŽENÉ FRP VÝZTUŽÍ

CONCRETE STRUCTURES WITH FRP REINFORCEMENT

P1. POUŽITÉ PODKLADY, STUDIE

BAKALÁŘSKÁ PRÁCE

BACHELOR'S THESIS

AUTOR PRÁCE

AUTHOR

Matej Valent

VEDOUCÍ PRÁCE

SUPERVISOR

Ing. FRANTIŠEK GIRGLE, Ph.D.

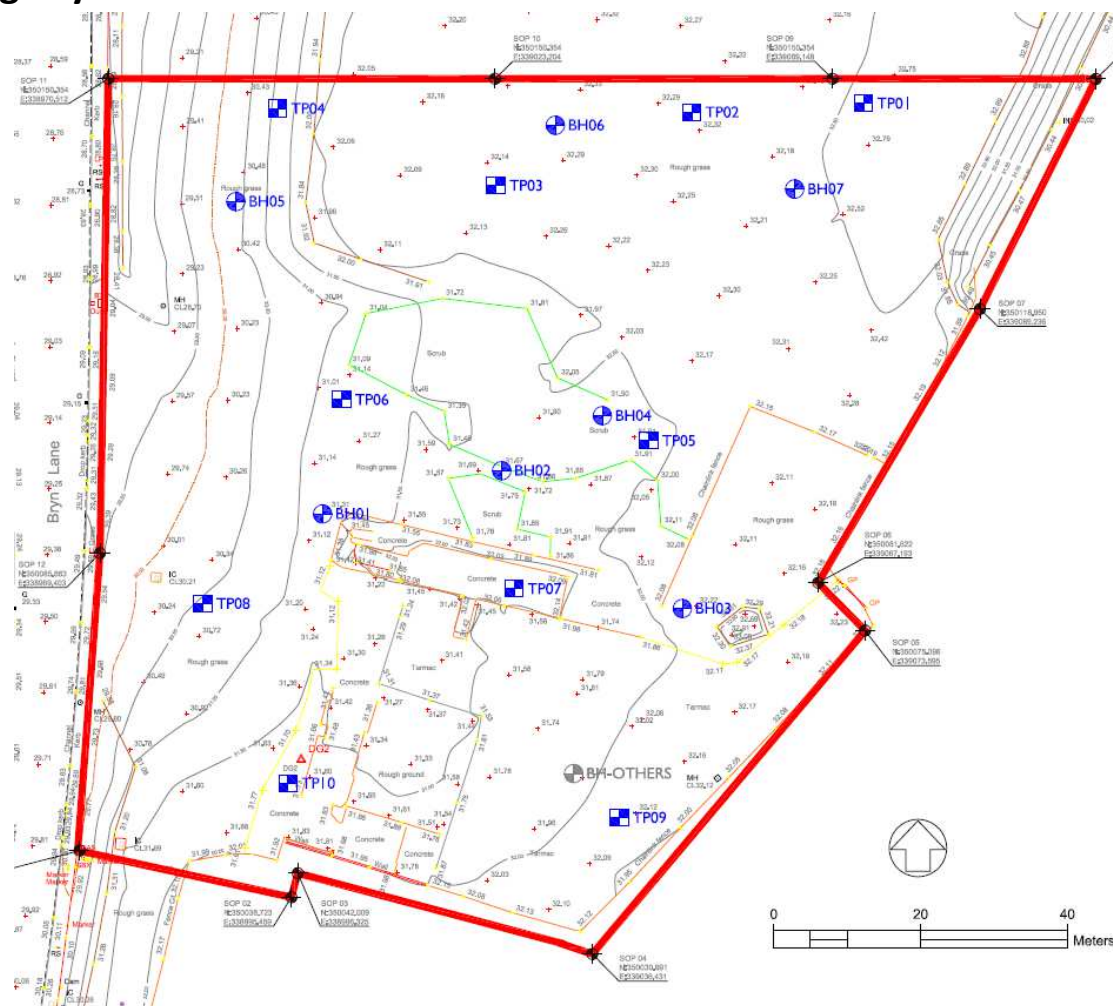
BRNO 2021

OBSAH

1. INŽINIERSKO-GEOLOGICKÝ PRIESKUM	3
1.1. Mapa geologických vrtov.....	3
1.2. Profil vrtu BH02	4
1.3. Vlastnosti a typ zeminy – laboratórne výsledky	6
 2. SITUÁCIA	 7
 3. STAVEBNÝ NÁVRH SEDIMENTAČNEJ NÁDRŽE.....	 8

1. INŽINIERSKO-GEOLOGICKÝ PRIESKUM

1.1. Mapa geologických vrtov



Sedimentačná nádrž je uvažovaná v blízkosti vrtu **BH02** => profil tohto vrtu je použitý vo výpočte.

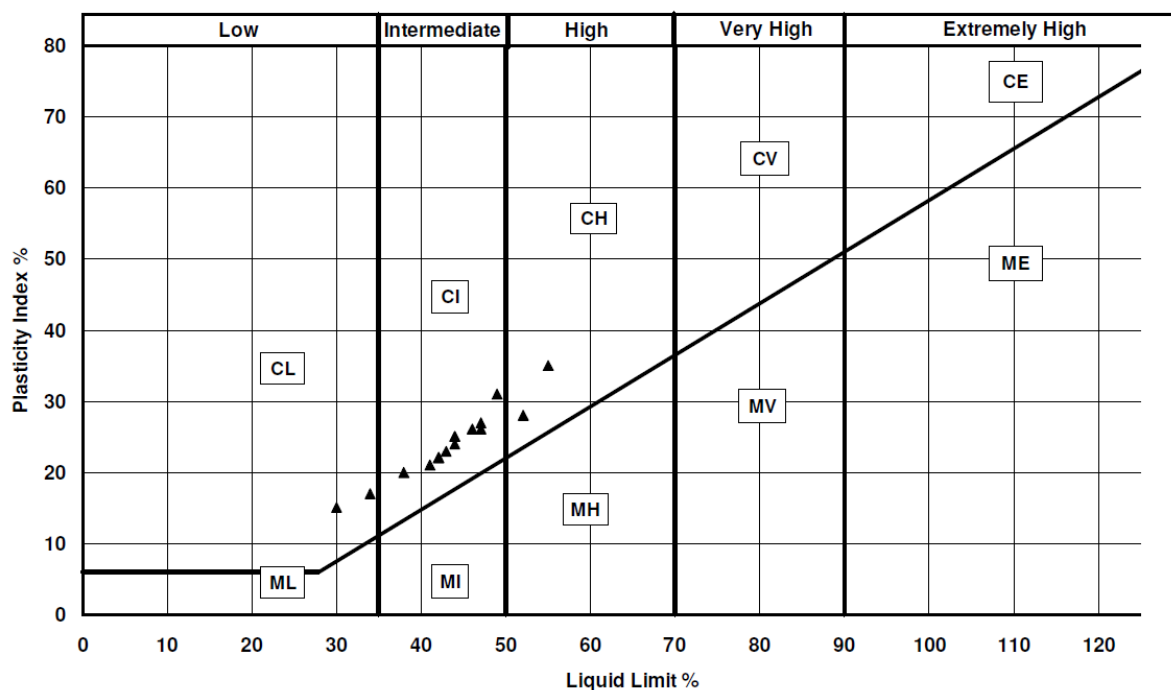
1.2. Profil vrtu BH02

Sampling		Properties			Strata		Scale 1:50	
Depth	Sample Type	Depth Cased & (to Water)	Strength KPa	w %	SPT N	Description	Depth	Level m OD
0.20- 0.50	B					Rough vegetation over MADE GROUND: Dark brown slightly sandy gravelly clay with a low cobble content of brick. Gravel is angular fine to coarse of brick fragments. MADE GROUND: Firm brown slightly gravelly clay. Gravel is angular fine to coarse of sandstone, limestone, brick and occasional coal fragments. Firm to stiff brown occasionally mottled bluish grey slightly gravelly CLAY with medium spaced lenses of brown fine sand. Gravel is subangular fine to coarse of sandstone.	G.L.	31.64
0.25- 0.35	ES						0.50	31.14
0.50- 1.00	B						0.80	30.84
0.50- 0.60	ES							
1.00- 1.10	ES							
1.20- 1.65	B							
1.20- 1.65	UF59	1.20 (DRY)			S16			
1.20- 1.65		1.70 (DRY)						
2.00- 2.50	B							
2.00- 2.45	D			20				
							2.50	29.14
3.00- 3.45	U47	1.70 (DRY)	151	20		Firm to stiff locally fissured brown mottled bluish grey slightly gravelly CLAY with decayed root tracks on fissure surfaces. Gravel is angular to subangular fine to medium of sandstone and occasional coal fragments. At 3.00m, very high strength		
4.00- 4.50	B							
4.00- 4.45	D	1.70 (DRY)			S19			
5.00- 5.45	U47	1.70 (DRY)	202	19		At 5.00m, very high strength		
6.00- 6.10	D			21				
6.50- 7.00	B							
6.50- 6.95	D	1.70 (DRY)			S19			
7.50- 7.60	D							
8.00- 8.45	U44	1.70 (DRY)	108	22			8.00	23.64
8.45- 8.50	D					Firm to stiff fissured brown mottled bluish grey CLAY with decayed root tracks on fissure surfaces. At 8.00m, high strength		
9.00- 9.10	D							
9.50-10.00	B							
9.50- 9.95	D	1.70 (DRY)			S16	Firm laminated brown CLAY with closely to medium spaced lenses of silty sand.	9.50	22.14

Sampling		Properties			Strata	Scale 1:50		
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	SPT N	Description	Depth	Legend
10.50-10.60	D							
11.00-11.45	U47	1.70 (DRY)	121	24		At 11.00m, high strength		
11.45-11.50	D							
12.00-12.10	D						12.00	
12.50-13.00	B							
12.50-12.95	D	1.70 (DRY)			S16	Firm laminated brown CLAY.		19.64
13.50-13.60	D						13.50	
14.00-14.45	U40	1.70 (DRY)	101	24		Firm brown slightly gravelly CLAY. Gravel is subangular to subrounded fine to coarse of sandstone. At 14.00m, high strength		18.14
14.45-14.50	D							
15.00-15.10	D							
15.50-16.00	B							
15.50-15.95	D	1.70 (DRY)			S21			
16.50-16.60	D							
17.00-17.45	U38	1.70 (DRY)					17.00	
17.45-17.50	D					Firm brown CLAY.		14.64
18.00-18.10	D							
18.50-19.00	B							
18.50-18.95	D	1.70 (DRY)			S20			
19.50-19.95	U57	1.70 (DRY)	88	24		At 19.50m, high strength		
						End of Borehole	20.00	11.64

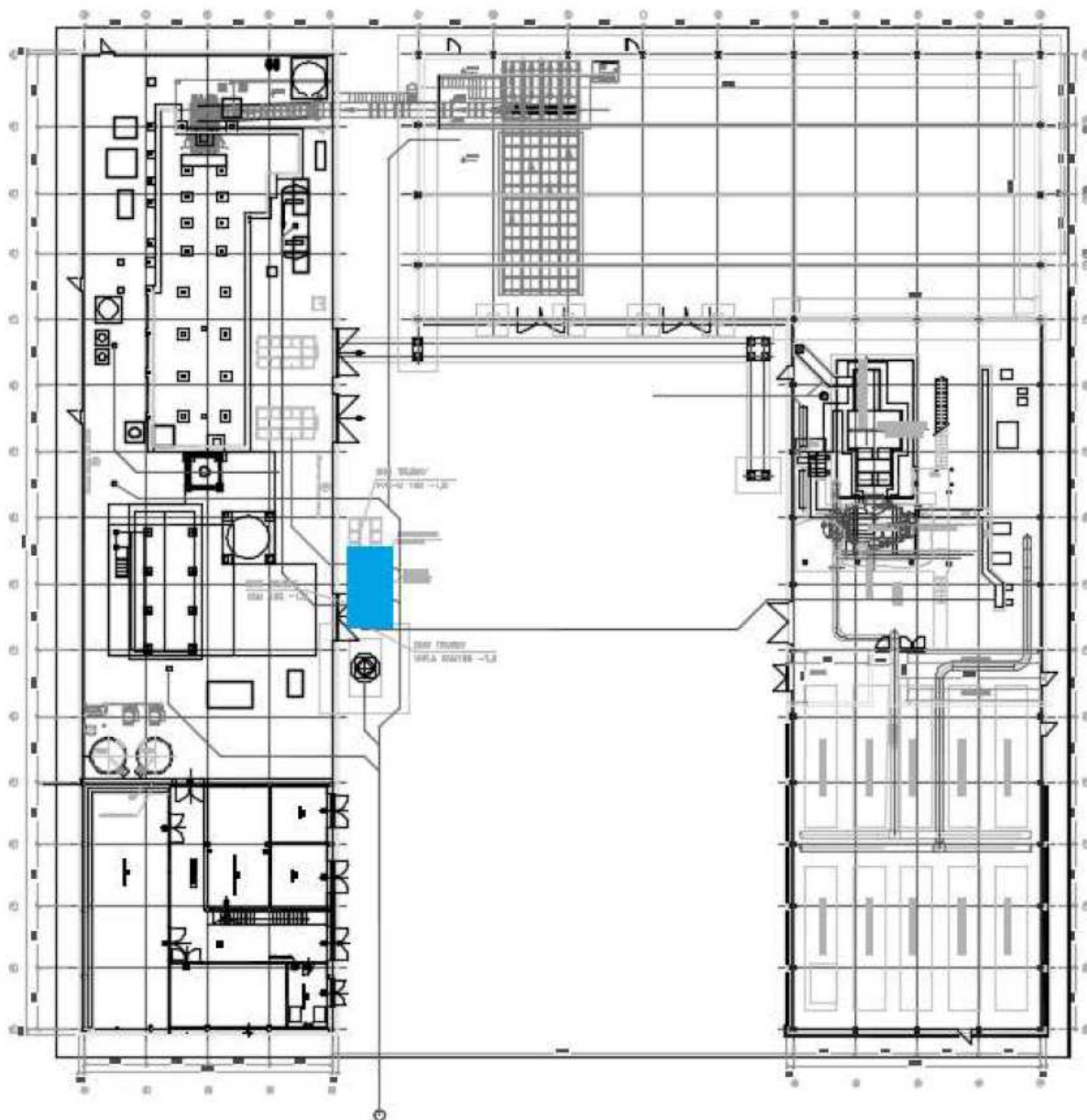
1.3. Vlastnosti a typ zeminy – laboratorné výsledky

Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	Symbol	I_p (>425) %	w_L %	w_p %	w (p_d) %	Test	γ_b (γ_d) Mg/m ³	σ_3 kN/m ²	$\sigma_1 - \sigma_3$ kN/m ²	c_u kN/m ²	c_{Avg} kN/m ²
BH02	2.00- 2.45 (2.00)	D	N62899	Stiff brown slightly gravelly CLAY.	CI	26 (4%)	46	20	19.8						
BH02	3.00- 3.45 (3.00)	U	N62919	Stiff very high strength brown mottled grey slightly gravelly CLAY. PP = 2.0, 2.0					20.4	SS	2.09	60	302	151	151
BH02	5.00- 5.45 (5.00)	U	N62920	Stiff very high strength brown mottled grey slightly gravelly CLAY. PP = 3.5, 3.5					19.5	SS	2.11	100	403	202	202
BH02	6.00- 6.10 (6.00)	D	N62900	Stiff brown slightly sandy slightly gravelly CLAY.	CI	25 (3%)	44	19	20.7						
BH02	8.00- 8.45 (8.00)	U	N62921	Firm to stiff high strength brown mottled grey CLAY with decayed roots. PP = 1.5, 3.25					22.3	SS	2.15	160	216	108	108
BH02	11.00- 11.45 (11.00)	U	N62922	Firm high strength laminated brown CLAY. PP = 2.5, 2.0					23.9	SS	2.12	220	242	121	121
BH02	14.00- 14.45 (14.00)	U	N62923	Firm high strength brown slightly gravelly CLAY. PP = 0.5, 1.0					24.2	SS	2.07	280	201	101	101
BH02	19.50- 19.95 (19.50)	U	N62924	Firm high strength brown CLAY. PP = 2.0, 0.5					24.5	SS	2.07	400	177	88	88

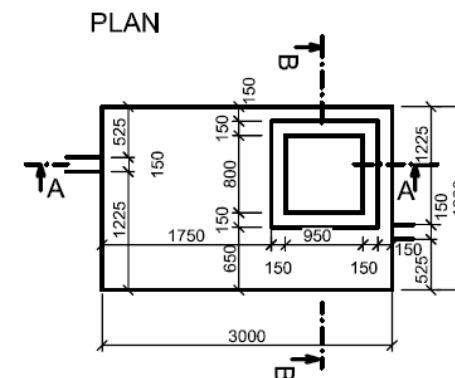
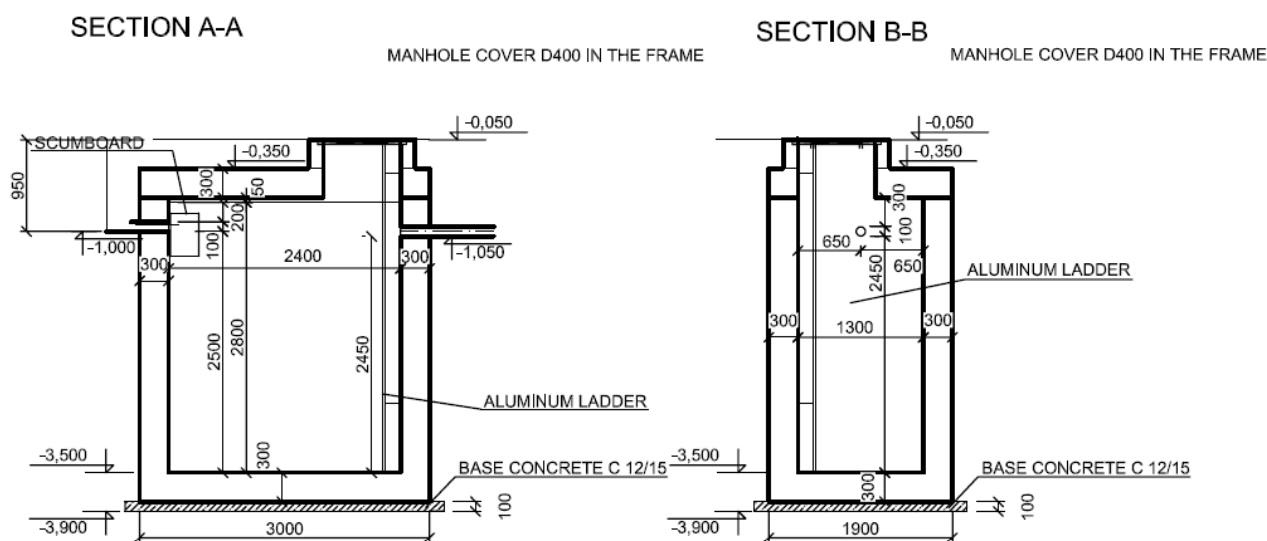


2. SITUÁCIA

Označenie umiestnenia sedimentačnej nádrže v budove.



3. STAVEBNÝ NÁVRH SEDIMENTAČNEJ NÁDRŽE



NOTE

TO EXPECT RECOVERY PREFABRICATE ON CONSTRUCTION A RESERVOIR SEDIMENTATION

IF A MONOLITIC STRUCTURE THE WALLS THICKNESS INCREASES TO 250mm

SCUMBOARD 1:25

