



4.5 References

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APPENDIX 1: BORE LOG



Smart Development Engineering (SDE) Limited

126/3, Monipuripara (Gate-1), Airport Road, Tejgaon, Dhaka 1215, Bangladesh
 Telephone: +8801828797778 | Email: info.sdelbd@gmail.com

Soil Lithological Information and SPT Value		Borehole No. 1
Project:	Geotechnical Investigation for Residential Building	
Client:	Forteress Holdings Limited	
Location:	Plot #2731, Road #20/A, Block-M, Bashundhara R/A, Dhaka, Bangladesh	
Coordinates:	Not in this scope	Date of Boring: 2021-09-04 Sheet No. 1
Ground Level (EGL):	Not in this scope	Ground Water Level, d_w (m): 1
Drilling Method:	Rotary Rig, MS Casing, Diamond Cutter	Hammer Type: Donut, Auto-tripped
Borehole Diameter:	115mm	Sampler: Standard

Sample Type & No.	Sample Index	Depth to Sampler Tip (m)	Layer Thickness (m)	Description of Soil Strata Encountered	Lithological Log	Standard Penetration Resistance					SPT Chart	Penetration noted for 1st 150 mm	Penetration noted for last 300 mm
						1st 150 mm	2nd 150 mm	3rd 150 mm	SPT N-Value	N ₆₀			
D-01		1.5	2.1	Gray very loose Silty SAND (NP) [SM]		1		1	1	0.9		150	300
D-02		3.0		Gray very loose Poorly Graded SAND with Silt (NP) [SP-SM]		1	1	1	2	1.9		150	300
D-03		4.5				1	2	1	3	3.2		150	300
D-04		6.0				1	1	3	4	4.8		150	300
D-05		7.5				1		1	1	1.2		150	300
D-06		9.0				1		1	1	1.2		150	300
D-07		10.5	4.5	Gray very soft Lean CLAY [CL]		1	1	1	2	2.5		150	300
D-08		12.0		Gray soft Lean CLAY [CL]		1	1	1	2	2.5		150	300
D-09		13.5	1.5			1	1	2	3	3.8		150	300
D-10		15.0	1.5		Gray very soft Lean CLAY [CL]		1	1	1	2	2.5		150
D-11		16.5	3.0	Gray soft Lean CLAY [CL]		1	1	2	3	3.8		150	300
D-12		18.0		Gray medium stiff Lean CLAY [CL]		1	2	2	4	5.0		150	300
D-13		19.5	3.0			2	3	5	8	10.0		150	300
D-14		21.0				2	2	3	5	6.3		150	300
D-15		22.5	0.9	Gray soft Lean CLAY [CL]		1	2	2	4	5.0		150	300

Disturbed Sample
 Undisturbed Sample
 Clay
 Silt
 Sand
 Rubbish
 Organic & Pit



Smart Development Engineering (SDE) Limited

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 Telephone: +8801828797778 | Email: info.sdelbd@gmail.com

Soil Lithological Information and SPT Value

Borehole No. 1

Project:	Geotechnical Investigation for Residential Building		
Client:	Forteress Holdings Limited		
Location:	Plot #2731, Road #20/A, Block-M, Bashundhara R/A, Dhaka, Bangladesh		
Coordinates:	Not in this scope	Date of Boring:	2021-09-04
Ground Level (EGL):	Not in this scope	Ground Water Level, d_w (m):	1
Drilling Method:	Rotary rig, MS Casing, Diamond Cutter	Hammer Type:	Donut, Auto-tripped
Borehole Diameter:	115mm	Sampler:	Standard

Sample Type & No.	Sample Index	Depth to Sampler Tip (m)	Layer Thickness (m)	Description of Soil Strata Encountered	Lithological Log	Standard Penetration Resistance					Penetration noted for 1st 150 mm	Penetration noted for last 300 mm	
						1st 150 mm	2nd 150 mm	3rd 150 mm	SPT N-Value	N_{60}			SPT Chart
						0 10 20 30 40 50 60 70 80							
D-16		24.0	0.6	Gray medium stiff Lean CLAY [CL]		2	3	3	6	7.5		150	300
D-17		25.5	4.5	Gray stiff Lean CLAY [CL]		4	6	8	14	17.5		150	300
D-18		27.0				5	6	6	12	15.0		150	300
D-19		28.5				4	5	7	12	15.0		150	300
D-20		30.0	5.4	Brown dense Silty SAND [SM]		13	23	26	49	61.3		150	300
D-21		31.5				20	29	21+	50+	62.5+		150	250
D-22		33.0				22	36	14+	50+	62.5+		150	180
D-23		34.5				18	34	16+	50+	62.5+		150	215
D-24		36.0											
D-25		37.5											
D-26		39.0											
D-27		40.5											
D-28		42.0											
D-29		43.5											
D-30		45.0											

Disturbed Sample	Undisturbed Sample	Clay	Silt	Sand	Rubbish	Organic & Pit
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Soil Lithological Information and SPT Value		Borehole No. 2
Project:	Geotechnical Investigation for Residential Building	
Client:	Forteress Holdings Limited	
Location:	Plot #2731, Road #20/A, Block-M, Bashundhara R/A, Dhaka, Bangladesh	
Coordinates:	Not in this scope	Date of Boring: 2021-09-05
Ground Level (EGL):	Not in this scope	Sheet No. 1
Drilling Method:	Rotary rig, MS Casing, Diamond Cutter	Ground Water Level, d_w (m): 1
Borehole Diameter:	115mm	Hammer Type: Donut, Auto-tripped
Sampler:	Standard	

Sample Type & No.	Sample Index	Depth to Sampler Tip (m)	Layer Thickness (m)	Description of Soil Strata Encountered	Lithological Log	Standard Penetration Resistance					Penetration noted for 1st 150 mm	Penetration noted for last 300 mm
						1st 150 mm	2nd 150 mm	3rd 150 mm	SPT N-Value	N_{60}		
D-01		1.5	3.6	Gray very loose Silty SAND (NP) [SM], trace mica		1	1	1	0.9		150	300
D-02		3.0				1	1	2	2.8		150	300
D-03		4.5	1.5	Gray very loose Poorly Graded SAND with Silt (NP) [SP-SM]		1	2	2	4.3		150	300
D-04		6.0	1.5	Gray loose Poorly Graded SAND with Silt (NP) [SP-SM]		2	3	4	7		150	300
D-05		7.5				1	1	1	2.4		150	300
D-06		9.0	4.5	Gray very soft Lean CLAY [CL]		1	1	1	2.4		150	300
D-07		10.5				1		1	1.3		150	300
D-08		12.0	3.0	Gray soft Lean CLAY [CL]		1	1	2	3		150	300
D-09		13.5				1	1	2	3		150	300
D-10		15.0	1.5	Gray very soft Lean CLAY [CL]		1		1	1.3		150	300
D-11		16.5	3.0	Gray medium stiff Lean CLAY [CL]		1	2	3	5		150	300
D-12		18.0				2	2	3	5		150	300
D-13		19.5	1.5	Gray stiff Lean CLAY [CL]		2	4	5	9		150	300
D-14		21.0				1	2	4	6		150	300
D-15		22.5	2.4	Gray medium stiff Lean CLAY [CL]		1	2	3	5		150	300

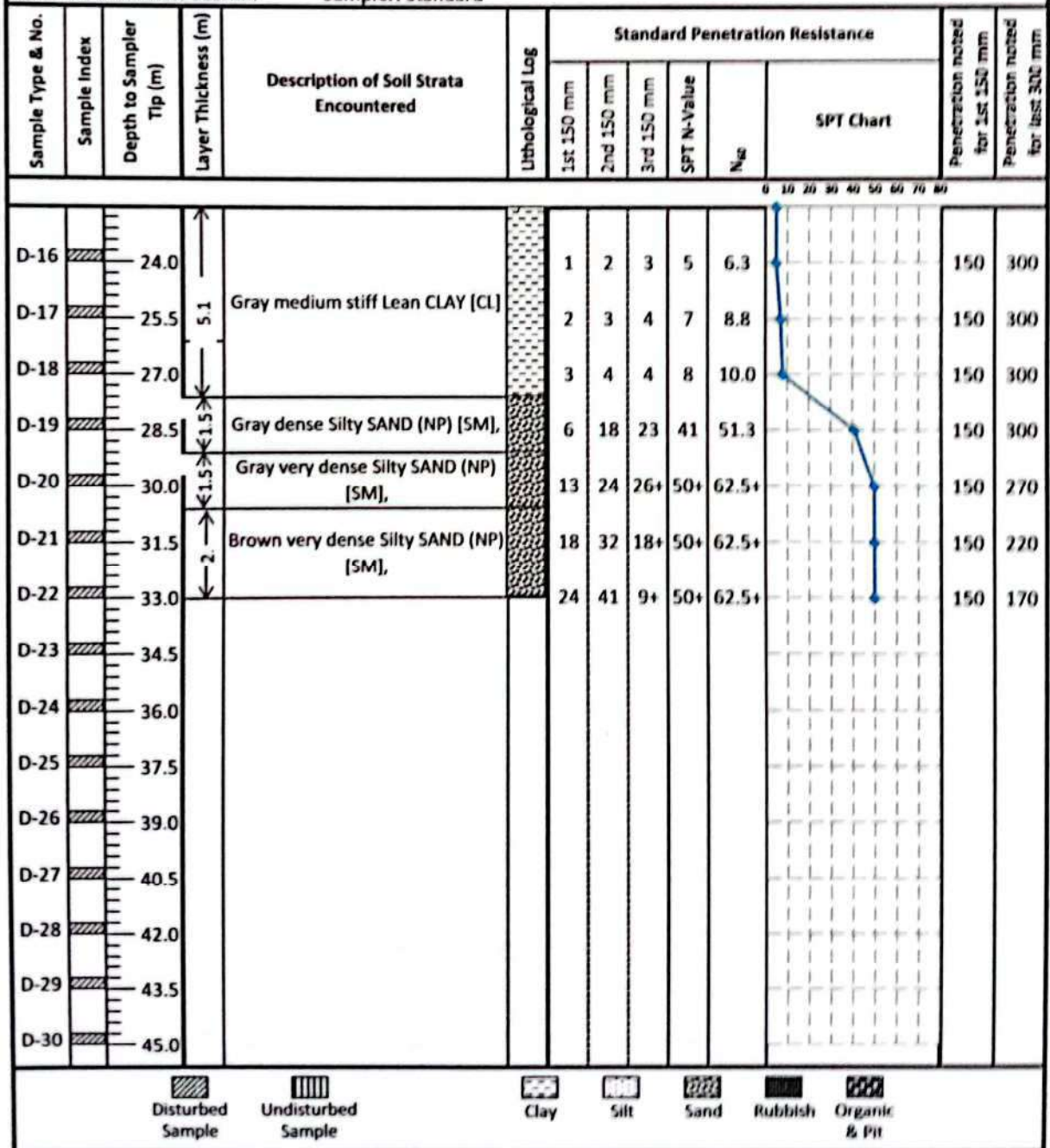
Disturbed Sample
 Undisturbed Sample
 Clay
 Silt
 Sand
 Rubbish
 Organic & Pit



Smart Development Engineering (SDE) Limited

126/3, Monipuripara (Gate-1), Airport Road, Tejgaon, Dhaka 1215, Bangladesh
Telephone: +8801828797778 | Email: info.sdebd@gmail.com

Soil Lithological Information and SPT Value		Borehole No. 2
Project:	Geotechnical Investigation for Residential Building	
Client:	Forteress Holdings Limited	
Location:	Plot #2731, Road #20/A, Block-M, Bashundhara R/A, Dhaka, Bangladesh	
Coordinates:	Not in this scope	Date of Boring: 2021-09-05
Ground Level (EGL):	Not in this scope	Ground Water Level, d_w (m): 1
Drilling Method:	Rotary rig, MS Casing, Diamond Cutter	Hammer Type: Donut, Auto-tripped
Borehole Diameter:	115mm	Sampler: Standard





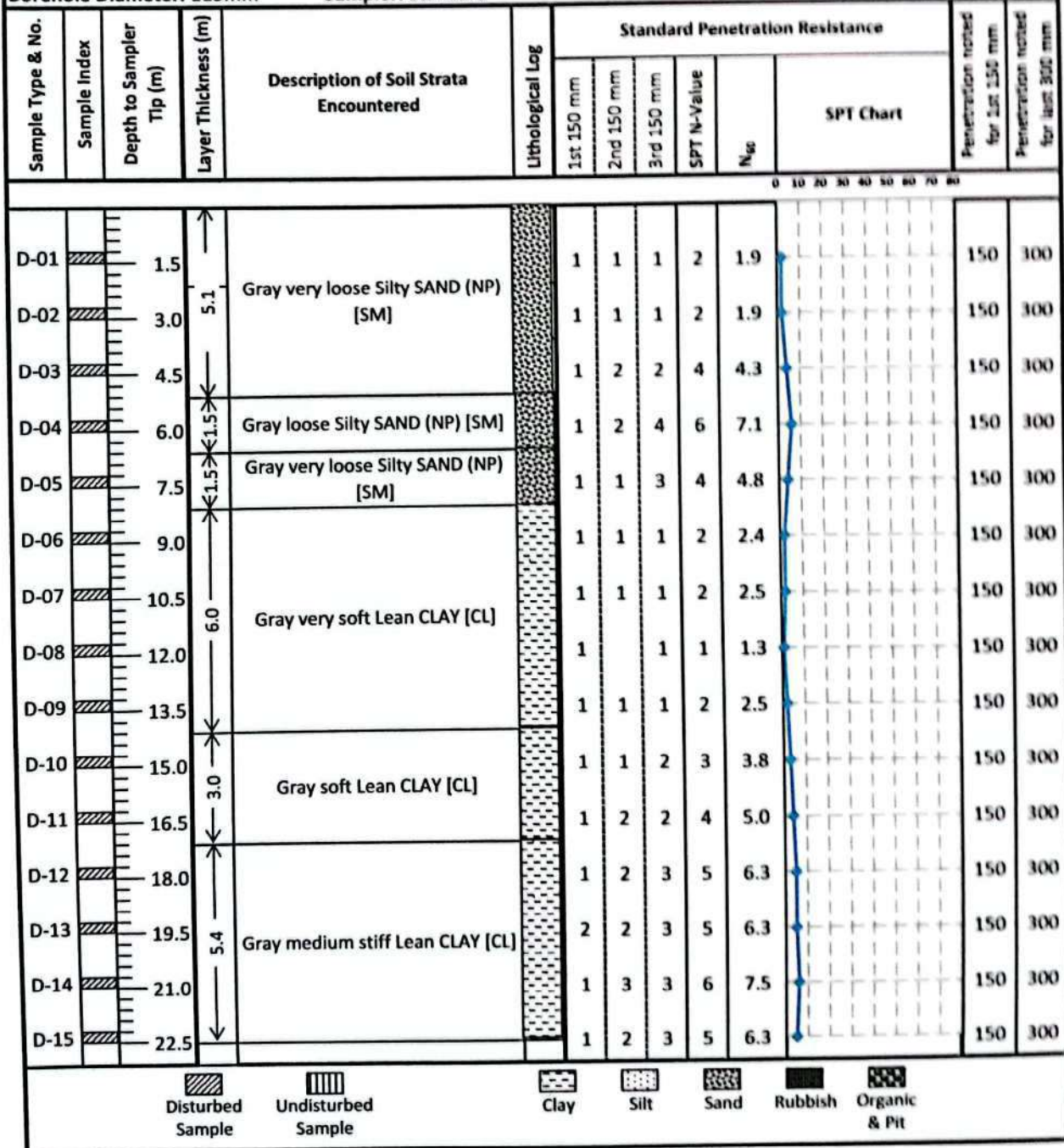
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126/3, Manikpurpara (Gate-1), Airport Road, Tejgaon, Dhaka 1215, Bangladesh
 Telephone: +8801828797778 | Email: info.sde@sde@gmail.com

Soil Lithological Information and SPT Value

Borehole No. **1**

Project:	Geotechnical Investigation for Residential Building		
Client:	Forteress Holdings Limited		
Location:	Plot #2731, Road #20/A, Block-M, Bashundhara R/A, Dhaka, Bangladesh		
Coordinates:	Not in this scope	Date of Boring:	2021-09-06
Ground Level (EGL):	Not in this scope	Ground Water Level, d_w (m):	1
Drilling Method:	Rotary rig, MS Casing, Diamond Cutter		Hammer Type: Donut, Auto-tripped
Borehole Diameter:	115mm	Sampler:	Standard





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Soil Lithological Information and SPT Value					Borehole No. 3								
Project: Geotechnical Investigation for Residential Building													
Client: Forteress Holdings Limited													
Location: Plot #2731, Road #20/A, Block-M, Bashundhara R/A, Dhaka, Bangladesh													
Coordinates: Not in this scope			Date of Boring: 2021-09-06		Sheet No. 2								
Ground Level (EGL): Not in this scope			Ground Water Level, d_w (m): 1										
Drilling Method: Rotary rig, MS Casing, Diamond Cutter					Hammer Type: Donut, Auto-tripped								
Borehole Diameter: 115mm			Sampler: Standard										
Sample Type & No.	Sample Index	Depth to Sampler Tip (m)	Layer Thickness (m)	Description of Soil Strata Encountered	Lithological Log	Standard Penetration Resistance				Penetration noted for 1st 150 mm	Penetration noted for last 300 mm		
						1st 150 mm	2nd 150 mm	3rd 150 mm	SPT N-Value			N_{60}	SPT Chart
0 10 20 30 40 50 60 70 80													
D-16		24.0	0.6	Gray soft Lean CLAY [CL]		1	2	2	4	5.0		150	300
D-17		25.5	1.5	Gray medium stiff Lean CLAY [CL]		2	3	3	6	7.5		150	300
D-18		27.0	3.0	Gray stiff Lean CLAY [CL]		3	4	5	9	11.3		150	300
D-19		28.5				3	4	7	11	13.8		150	300
D-20		30.0				10	14	20	34	42.5		150	300
D-21		31.5	5.4	Gray hard Lean CLAY [CL]		18	26	24+	50+	62.5+		150	270
D-22		33.0				21	31	19+	50+	62.5+		150	240
D-23		34.5				24	33	17+	50+	62.5+		150	230
D-24		36.0											
D-25		37.5											
D-26		39.0											
D-27		40.5											
D-28		42.0											
D-29		43.5											
D-30		45.0											

Disturbed Sample

Undisturbed Sample

Clay

Silt

Sand

Rubbish

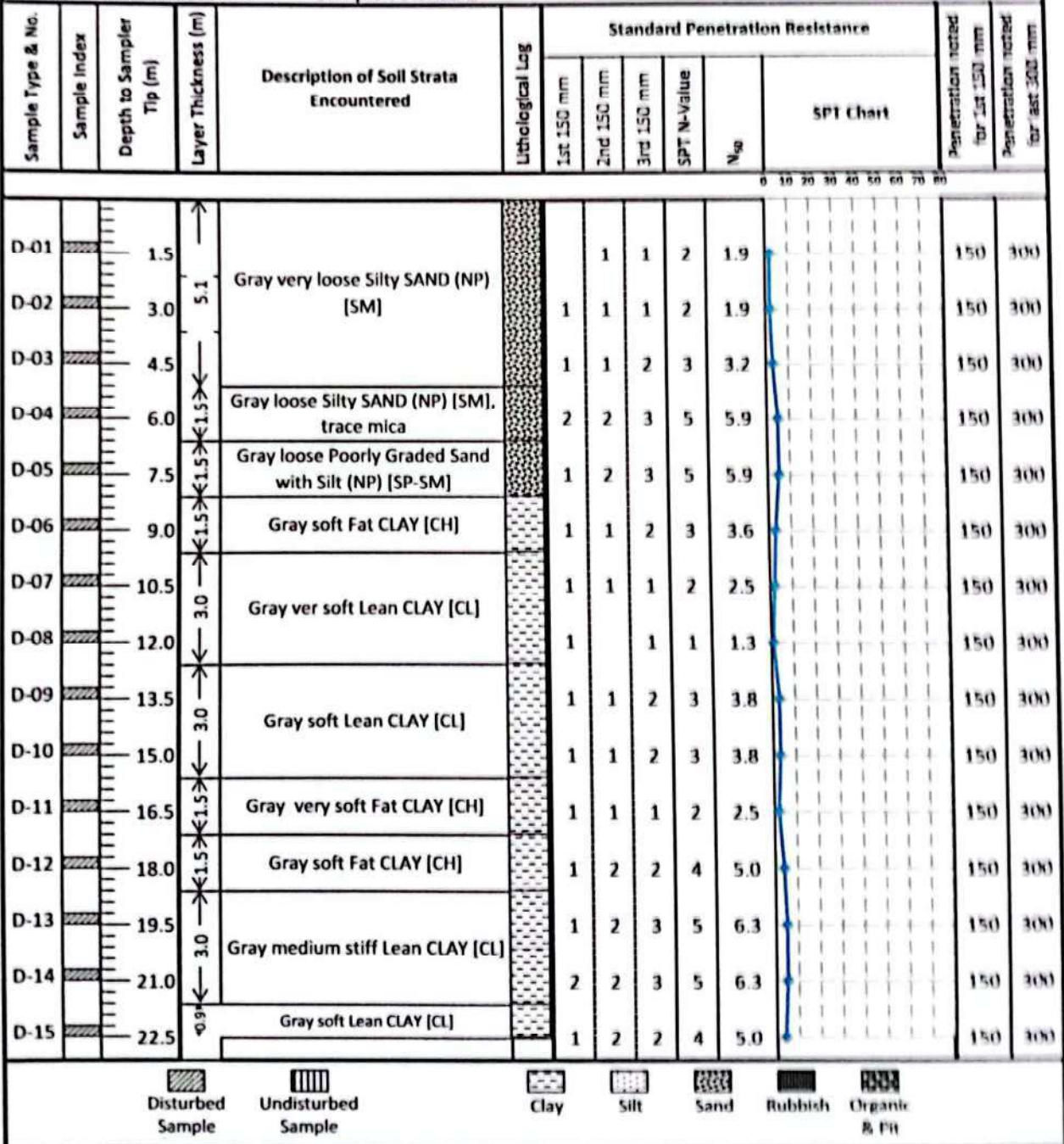
Organic & Pit



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Telephone: +8801828797778 | Email: info.sde@rediffmail.com

Soil Lithological Information and SPT Value		Borehole No. 4
Project:	Geotechnical Investigation for Residential Building	
Client:	Forteress Holdings Limited	
Location:	Plot #2731, Road #20/A, Block-M, Bashundhara R/A, Dhaka, Bangladesh	
Coordinates:	Not in this scope	Date of Boring: 2021-09-07
Ground Level (EGL):	Not in this scope	Ground Water Level, d_w (m): 1.5
Drilling Method:	Rotary rig, MS Casing, Diamond Cutter	Hammer Type: Donut, Auto tripped
Borehole Diameter:	115mm	Sampler: Standard





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Soil Lithological Information and SPT Value		Borehole No. 4
Project:	Geotechnical Investigation for Residential Building	
Client:	Forteress Holdings Limited	
Location:	Plot #2731, Road #20/A, Block-M, Bashundhara R/A, Dhaka, Bangladesh	
Coordinates:	Not in this scope	Date of Boring: 2021-09-07
Ground Level (EGL):	Not in this scope	Ground Water Level, d_w (m): 1.5
Drilling Method:	Rotary rig, MS Casing, Diamond Cutter	Hammer Type: Donut, Auto-tripped
Borehole Diameter:	115mm	Sampler: Standard

Sample Type & No.	Sample Index	Depth to Sampler Tip (m)	Layer Thickness (m)	Description of Soil Strata Encountered	Lithological Log	Standard Penetration Resistance					SPT Chart	Penetration noted for 1st 150 mm	Penetration noted for last 300 mm
						1st 150 mm	2nd 150 mm	3rd 150 mm	SPT N-Value	N ₆₀			
D-16		24.0	2.1	Gray soft Lean CLAY [CL]		1	1	2	3	3.8		150	300
D-17		25.5	3.0	Gray medium stiff Lean CLAY [CL]		1	2	3	5	6.3		150	300
D-18		27.0	1.5	Brown medium dense SILT (NP) [ML]		2	3	4	7	8.8		150	300
D-19		28.5	1.5	Brown medium dense SILT (NP) [ML]		2	13	15	28	35.0		150	300
D-20		30.0	1.5	Brown very dense SILT (NP) [ML]		19	27	23+	50+	62.5+		150	260
D-21		31.5	2.4	Brown very dense Silty SAND (NP) [SM]		22	31	19+	50+	62.5+		150	230
D-22		33.0				28	44	6+	50+	62.5+		150	175
D-23		34.5											
D-24		36.0											
D-25		37.5											
D-26		39.0											
D-27		40.5											
D-28		42.0											
D-29		43.5											
D-30		45.0											





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Soil Lithological Information and SPT Value

Borehole No. **5**

Project: Geotechnical Investigation for Residential Building

Client: Forteress Holdings Limited

Location: Plot #2731, Road #20/A, Block-M, Bashundhara R/A, Dhaka, Bangladesh

Coordinates: Not in this scope

Date of Boring: 2021-09-08

Sheet No. **1**

Ground Level (EGL): Not in this scope

Ground Water Level, d_w (m): **1.5**

Drilling Method: Rotary rig, MS Casing, Diamond Cutter

Hammer Type: Donut, Auto-tripped

Borehole Diameter: 115mm

Sampler: Standard

Sample Type & No.	Sample Index	Depth to Sampler Tip (m)	Layer Thickness (m)	Description of Soil Strata Encountered	Lithological Log	Standard Penetration Resistance					SPT Chart	Penetration noted for 1st 150 mm	Penetration noted for last 300 mm
						1st 150 mm	2nd 150 mm	3rd 150 mm	SPT N-Value	N_{60}			
D-01		1.5	5.1	Gray very loose Silty SAND (NP) [SM]		1	1	1	0.9		150	300	
D-02		3.0				1	1	1	1.9		150	300	
D-03		4.5	1.5	Gray very loose Poorly Graded Sand with Silt (NP) [SP-SM]		1	1	2	3.2		150	300	
D-04		6.0	3.0	Gray very loose Silty SAND (NP) [SM], trace mica		1	1	3	4.8		150	300	
D-05		7.5	3.0			1	2	2	4.8		150	300	
D-06		9.0	3.0	Gray very soft Fat CLAY [CH]		1	1	1	1.2		150	300	
D-07		10.5	3.0			1	1	1	2.5		150	300	
D-08		12.0	1.5	Gray soft Lean CLAY [CL]		1	1	2	3.8		150	300	
D-09		13.5	1.5	Gray very soft Lean CLAY [CL]		1	1	1	2.5		150	300	
D-10		15.0	3.0	Gray soft Lean CLAY [CL]		1	1	3	5.0		150	300	
D-11		16.5	3.0			1	1	2	3.8		150	300	
D-12		18.0	3.0			2	2	3	6.3		150	300	
D-13		19.5	5.4	Gray medium stiff Lean CLAY [CL]		1	2	3	6.3		150	300	
D-14		21.0				2	2	4	7.5		150	300	
D-15		22.5				2	3	4	8.8		150	300	

Disturbed Sample

Undisturbed Sample

Clay

Silt

Sand

Rubbish

Organic & Pit



Smart Development Engineering (SDE) Limited

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 Telephone: +8801828797778 | Email: info.sdebd@gmail.com

Soil Lithological Information and SPT Value

Borehole No. **5**

Project: Geotechnical Investigation for Residential Building

Client: Forteress Holdings Limited

Location: Plot #2731, Road #20/A, Block-M, Bashundhara R/A, Dhaka, Bangladesh

Coordinates: Not in this scope

Date of Boring: 2021-09-08

Sheet No. **2**

Ground Level (EGL): Not in this scope

Ground Water Level, d_w (m): **1.5**

Drilling Method: Rotary rig, MS Casing, Diamond Cutter

Hammer Type: Donut, Auto-tripped

Borehole Diameter: 115mm

Sampler: Standard

Sample Type & No.	Sample Index	Depth to Sampler Tip (m)	Layer Thickness (m)	Description of Soil Strata Encountered	Lithological Log	Standard Penetration Resistance					Penetration noted for 1st 150 mm	Penetration noted for last 300 mm
						1st 150 mm	2nd 150 mm	3rd 150 mm	SPT N-Value	N_{60}		
D-16		24.0	0.6	Gray soft Lean CLAY [CL]		1	1	2	3	3.8	150	300
D-17		25.5	1.5			1	2	2	4	5.0		
D-18		27.0	1.5	Gray medium stiff Lean CLAY [CL]		1	2	3	5	6.3	150	300
D-19		28.5	1.5	Brown dense Silty SAND (NP) [SM]		14	19	22	41	51.3	150	300
D-20		30.0	1.5	Brown very dense SILT (NP) [ML]		15	31	19+	50+	62.5+	150	220
D-21		31.5	1.5			20	29	21+	50+	62.5+	150	250
D-22		33.0	1.5			26	49	-	50+	62.5+	150	150
D-23		34.5										
D-24		36.0										
D-25		37.5										
D-26		39.0										
D-27		40.5										
D-28		42.0										
D-29		43.5										
D-30		45.0										

Disturbed Sample
 Undisturbed Sample
 Clay
 Silt
 Sand
 Rubbish
 Organic & Pit

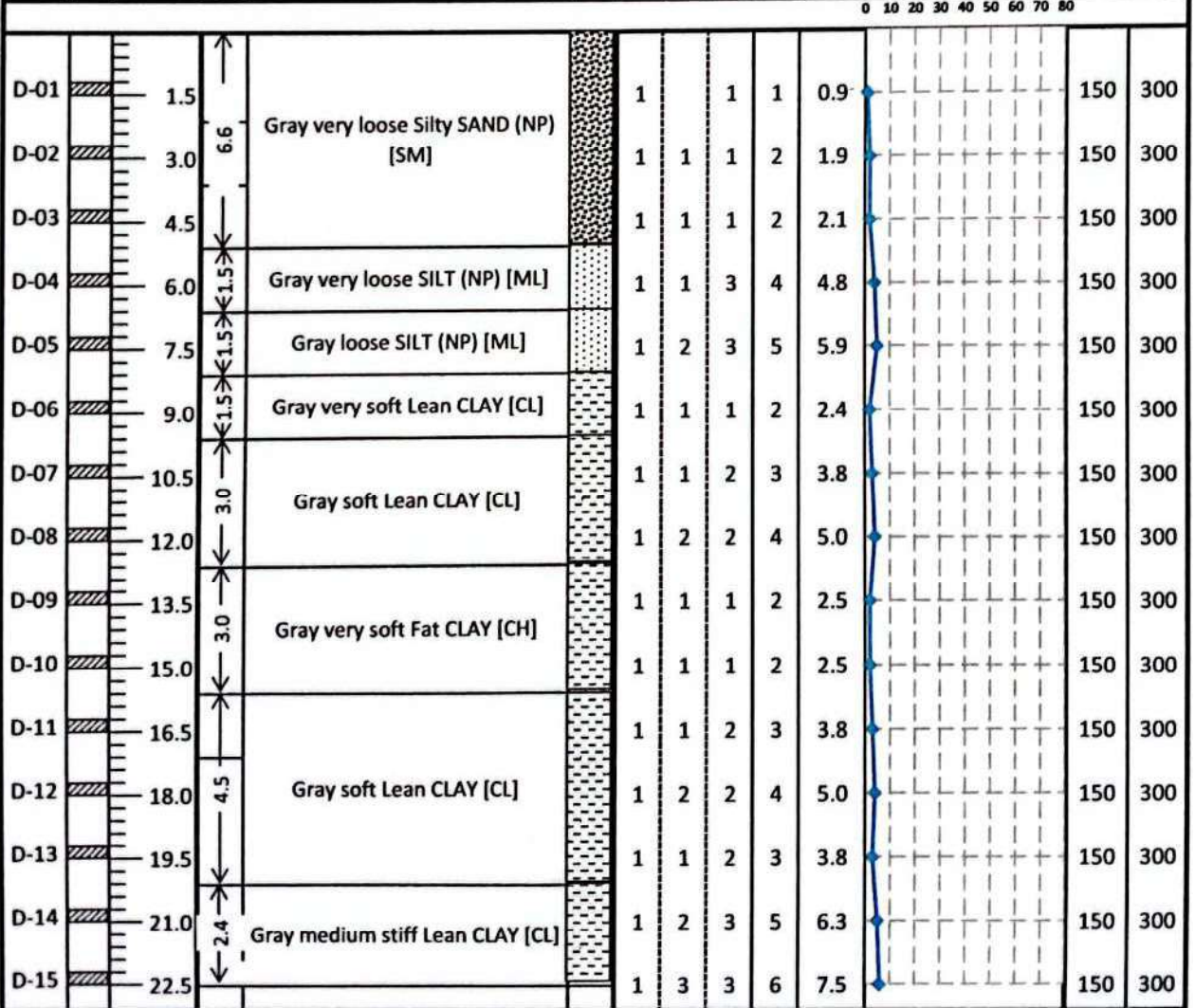


Smart Development Engineering (SDE) Limited

126/3, Monipuripara (Gate-1), Airport Road, Tejgaon, Dhaka 1215, Bangladesh
Telephone: +8801828797778 | Email: info.sdelbd@gmail.com

Soil Lithological Information and SPT Value		Borehole No. 6
Project:	Geotechnical Investigation for Residential Building	
Client:	Forteress Holdings Limited	
Location:	Plot #2731, Road #20/A, Block-M, Bashundhara R/A, Dhaka, Bangladesh	
Coordinates:	Not in this scope	Date of Boring: 2021-09-09
Ground Level (EGL):	Not in this scope	Sheet No. 1
Drilling Method:	Rotary rig, MS Casing, Diamond Cutter	Ground Water Level, d_w (m): 1.5
Borehole Diameter:	115mm	Hammer Type: Donut, Auto-tripped
Sampler:	Standard	

Sample Type & No.	Sample Index	Depth to Sampler Tip (m)	Layer Thickness (m)	Description of Soil Strata Encountered	Lithological Log	Standard Penetration Resistance					Penetration noted for 1st 150 mm	Penetration noted for last 300 mm
						1st 150 mm	2nd 150 mm	3rd 150 mm	SPT N-Value	N_{60}		



Disturbed Sample	Undisturbed Sample	Clay	Silt	Sand	Rubbish	Organic & Pit



APPENDIX 2: LABORATORY TEST RESULTS



APPENDIX 2A: WASH SIEVE AND MOISTURE CONTENT

MOISTURE CONTENT & WASH SIEVE ANALYSIS

Test Result

Project Geotechnical Investigation for Residential Building

Client Fortress Holdings Limited

Location Plot #2731, Road #20/A, Block-M, Bashundhara R/A, Dhaka, Bangladesh

Borehole No. 1

Date 11-Sep-21

Sheet No. 1 of 2

Sample ID	Depth (m)	Can No.	Weight of Can (gm)	Weight of Can + Moist Soil (gm)	Weight of Can + Dry Soil (gm)	Weight of Dry Soil (gm)	Weight of Moisture (gm)	Moisture Content (%)	Weight of + Washed Dry Soil (gm)	Weight of Washed Dry Soil (gm)	Coarse Content (%)	Fines Content (%)
D-01	1.5	601	15.83	135.74	110.00	94.17	25.74	27.3	100.88	85.05	90	10
D-02	3.0	437	14.49	126.44	98.82	84.33	27.62	32.8	92.59	78.10	93	7
D-03	4.5	254	13.29	109.32	88.74	75.45	20.58	27.3	82.54	69.25	92	8
D-04	6.0	574	13.89	133.42	105.96	92.07	27.46	29.8	101.88	87.99	96	4
D-05	7.5	528	11.76	115.73	92.02	80.26	23.71	29.5	84.28	72.52	90	10
D-06	9.0	481	14.44	111.49	81.71	67.27	29.78	44.3	15.06	0.62	1	99
D-07	10.5	582	10.80	127.25	91.19	80.39	36.06	44.9	11.65	0.85	1	99
D-08	12.0	440	13.31	124.76	90.80	77.49	33.96	43.8	13.55	0.24	0	100
D-09	13.5	608	13.42	117.14	86.30	72.88	30.84	42.3	14.07	0.65	1	99
D-10	15.0	129	12.79	115.91	85.08	72.29	30.83	42.6	13.42	0.63	1	99
D-11	16.5	594	13.77	128.68	95.42	81.65	33.26	40.7	14.23	0.46	1	99
D-12	18.0	370	13.15	124.56	91.51	78.36	33.05	42.2	14.01	0.86	1	99
D-13	19.5	450	12.09	123.90	90.02	77.93	33.88	43.5	18.76	6.67	9	91
D-14	21.0	475	12.39	122.81	88.74	76.35	34.07	44.6	14.68	2.29	3	97
D-15	22.5	236	16.86	130.97	95.20	78.34	35.77	45.7	17.36	0.50	1	99
D-16	24.0	424	14.46	106.63	78.78	64.32	27.85	43.3	14.74	0.28	0	100
D-17	25.5	337	13.78	131.24	96.50	82.72	34.74	42.0	13.99	0.21	0	100
D-18	27.0	485	15.20	114.06	84.97	69.77	29.09	41.7	15.84	0.64	1	99
D-19	28.5	235	15.03	131.48	97.85	82.82	33.63	40.6	15.32	0.29	0	100



Smart Development Engineering (SDE) Limited

MOISTURE CONTENT & WASH SIEVE ANALYSIS

Test Result

Project Geotechnical Investigation for Residential Building
Client Fortress Holdings Limited
Location Plot #2731, Road #20/A, Block-M, Bashundhara R/A, Dhaka, Bangladesh

Borehole No. 2
Date 25-Sep-21
Sheet No. 1 of 2

Sample ID	Depth (m)	Can No.	Weight of Can (gm)	Weight of Can + Moist Soil (gm)	Weight of Can + Dry Soil (gm)	Weight of Dry Soil (gm)	Weight of Moisture (gm)	Moisture Content (%)	Weight of Can + Washed Dry Soil (gm)	Weight of Washed Dry Soil (gm)	Coarse Content (%)	Fines Content (%)
D-01	1.5	501	11.49	111.89	93.53	82.04	18.36	22.4	79.82	68.33	83	17
D-02	3.0	314	13.78	118.64	99.26	85.48	19.38	22.7	87.00	73.22	86	14
D-03	4.5	460	14.05	135.66	111.81	97.76	23.85	24.4	102.44	88.39	90	10
D-04	6.0	465	14.54	114.53	95.82	81.28	18.71	23.0	88.23	73.69	91	9
D-05	7.5	450	12.11	116.06	84.51	72.40	31.55	43.6	15.43	3.32	5	95
D-06	9.0	437	14.52	111.47	83.67	69.15	27.80	40.2	15.42	0.90	1	99
D-07	10.5	254	13.31	99.34	74.79	61.48	24.55	39.9	14.09	0.78	1	99
D-08	12.0	481	14.44	122.73	91.28	76.84	31.45	40.9	14.73	0.29	0	100
D-09	13.5	424	14.46	103.48	78.00	63.54	25.48	40.1	14.85	0.39	1	99
D-10	15.0	489	14.26	95.31	72.62	58.36	22.69	38.9	14.88	0.62	1	99
D-11	16.5	165	15.58	92.67	69.07	53.49	23.60	44.1	16.50	0.92	2	98
D-12	18.0	249	13.23	104.08	77.31	64.08	26.77	41.8	14.03	0.80	1	99
D-13	19.5	532	12.73	91.58	67.57	54.84	24.01	43.8	13.34	0.61	1	99
D-14	21.0	475	12.39	116.81	84.44	72.05	32.37	44.9	12.59	0.20	0	100
D-15	22.5	601	15.83	81.80	61.81	45.98	19.99	43.5	16.74	0.91	2	98
D-16	24.0	337	13.87	100.67	75.19	61.32	25.48	41.6	13.93	0.06	0	100
D-17	25.5	379	15.00	113.97	84.75	69.75	29.22	41.9	15.10	0.10	0	100
D-18	27.0	238	12.71	114.21	84.26	71.55	29.95	41.9	13.85	1.14	2	98
D-19	28.5	276	15.28	108.19	91.90	76.62	16.29	21.3	68.39	53.11	69	31

MOISTURE CONTENT & WASH SIEVE ANALYSIS

Test Result

Project Geotechnical Investigation for Residential Building
Client Fortress Holdings Limited
Location Plot #2731, Road #20/A, Block-M, Bashundhara R/A, Dhaka, Bangladesh
Borehole No. 3
Date 20-Sep-21
Sheet No. 1 of 2

Sample ID	Depth (m)	Can No.	Weight of Can (gm)	Weight of Can + Moist Soil (gm)	Weight of Can + Dry Soil (gm)	Weight of Dry Soil (gm)	Weight of Moisture (gm)	Weight of Can + Washed Dry Soil (gm)	Weight of Washed Dry Soil (gm)	Coarse Content (%)	Fines Content (%)
D-01	1.5	424	14.43	125.92	106.70	92.27	19.22	75.20	60.77	66	34
D-02	3.0	481	14.41	107.59	93.36	78.95	14.23	75.19	60.78	77	23
D-03	4.5	254	13.27	103.44	89.98	76.71	13.46	69.18			
D-04	6.0	437	14.49	108.52	94.64	80.15	13.88	74.95	60.46	75	25
D-05	7.5	450	12.09	117.53	97.57	85.48	19.96	83.58	71.49	84	16
D-06	9.0	235	15.03	100.62	66.44	51.41	34.18	30.42	15.39	30	70
D-07	10.5	528	11.78	124.05	90.62	78.84	33.43	12.93	1.15	1	99
D-08	12.0	574	13.90	127.84	95.11	81.21	32.73	14.33	0.43	1	99
D-09	13.5	370	13.15	122.84	91.24	78.09	31.60	13.35	0.20	0	100
D-10	15.0	236	16.86	136.82	101.78	84.92	35.04	17.20	0.34	0	100
D-11	16.5	594	13.74	124.46	89.67	75.93	34.79	14.34	0.60	1	99
D-12	18.0	205	12.75	121.06	87.81	75.06	33.25	13.64	0.89	1	99
D-13	19.5	600	13.15	130.19	96.90	83.75	33.29	14.54	1.39	2	98
D-14	21.0	515	13.36	120.62	87.52	74.26	33.00	14.64	1.28	2	98
D-15	22.5	362	12.17	133.19	96.96	84.79	36.23	13.76	1.59	2	98
D-16	24.0	590	14.29	130.34	98.20	83.91	32.14	17.28	2.99	4	96
D-17	25.5	250	12.99	120.71	87.70	74.71	33.01	13.75	0.76	1	99
D-18	27.0	549	12.06	132.92	95.88	83.82	37.04	12.73	0.67	1	99
D-19	28.5	272	14.19	134.82	101.96	87.77	32.86	15.42	1.23	1	99



Sub-consultant: Smart Development Engineering (SDE) Limited

MOISTURE CONTENT & WASH SIEVE ANALYSIS

Test Result

Project Geotechnical Investigation for Residential Building

Client Fortress Holdings Limited

Location Plot #2731, Road #20/A, Block-M, Bashundhara R/A, Dhaka, Bangladesh

Borehole No. 4

Date 21-Sep-21

Sheet No. 1 of 2

Sample ID	Depth (m)	Can No.	Weight of Can (gm)	Weight of Can + Moist Soil (gm)	Weight of Can + Dry Soil (gm)	Weight of Dry Soil (gm)	Weight of Moisture (gm)	Moisture Content (%)	Weight of + Washed Dry Soil (gm)	Weight of Washed Dry Soil (gm)	Coarse Content (%)	Fines Content (%)
D-01	1.5	238	12.71	118.25	96.17	83.46	22.08	26.5	88.95	76.24	91	9
D-02	3.0	379	15.02	118.59	97.76	82.74	20.83	25.2	88.56	73.54	89	11
D-03	4.5	337	13.79	97.52	80.26	66.47	17.26	26.0	73.03	59.24	89	11
D-04	6.0	601	15.82	123.07	100.02	84.20	23.05	27.4	86.75	70.93	84	16
D-05	7.5	475	12.40	123.33	98.18	85.78	25.15	29.3	91.23	78.83	92	8
D-06	9.0	454	12.96	102.56	72.71	59.75	29.85	50.0	34.93	21.97	37	63
D-07	10.5	489	14.25	150.00	109.98	95.73	40.02	41.8	14.64	0.39	0	100
D-08	12.0	485	15.17	112.35	83.29	68.12	29.06	42.7	17.24	2.07	3	97
D-09	13.5	246	13.70	110.92	82.28	68.58	28.64	41.8	14.19	0.49	1	99
D-10	15.0	518	11.98	137.30	99.50	87.52	37.80	43.2	12.52	0.54	1	99
D-11	16.5	190	10.28	95.79	70.52	60.24	25.27	41.9	11.13	0.85	1	99
D-12	18.0	268	13.83	121.38	90.48	76.65	30.90	40.3	18.00	4.17	5	95
D-13	19.5	610	12.94	128.10	95.98	83.04	32.12	38.7	14.33	1.39	2	98
D-14	21.0	262	12.64	112.76	81.87	69.23	30.89	44.6	12.87	0.23	0	100
D-15	22.5	438	11.19	114.37	83.37	72.18	31.00	42.9	11.45	0.26	0	100
D-16	24.0	399	14.35	121.00	90.00	75.65	31.00	41.0	14.56	0.21	0	100
D-17	25.5	269	12.82	129.90	94.92	82.10	34.98	42.6	12.98	0.16	0	100
D-18	27.0	378	14.04	114.62	84.94	70.90	29.68	41.9	14.16	0.12	0	100
D-19	28.5	237	12.00	93.62	76.33	64.33	17.29	26.9	32.81	20.81	32	68



Smart Development Engineering (SDE) Limited

MOISTURE CONTENT & WASH SIEVE ANALYSIS

Test Result

Project Geotechnical Investigation for Residential Building
Client Fortress Holdings Limited
Location Plot #2731, Road #20/A, Block-M, Bashundhara R/A, Dhaka, Bangladesh

Borehole No. 5
Date 18-Sep-21
Sheet No. 1 of 2

Sample ID	Depth (m)	Can No.	Weight of Can (gm)	Weight of Can + Moist Soil (gm)	Weight of Can + Dry Soil (gm)	Weight of Dry Soil (gm)	Weight of Moisture (gm)	Molsture Content (%)	Weight of Can + Washed Dry Soil (gm)	Weight of Washed Dry Soil (gm)	Coarse Content (%)	Fines Content (%)
D-01	1.5	136	14.93	106.46	89.46	74.53	17.00	22.8	79.54	64.61	87	13
D-02	3.0	582	10.83	97.44	87.63	76.80	9.81	12.8	76.44	65.61	85	15
D-03	4.5	276	15.27	112.80	94.64	79.37	18.16	22.9	86.52	71.25	90	10
D-04	6.0	235	15.05	114.75	95.26	80.21	19.49	24.3	86.61	71.56	89	11
D-05	7.5	450	12.10	122.17	101.52	89.42	20.65	23.1	92.11	80.01	89	11
D-06	9.0	246	13.71	107.63	78.79	65.08	28.84	44.3	19.30	5.59	9	91
D-07	10.5	454	12.95	137.32	98.93	85.98	38.39	44.6	13.59	0.64	1	99
D-08	12.0	485	15.18	91.12	66.73	51.55	24.39	47.3	15.53	0.35	1	99
D-09	13.5	190	10.28	117.52	84.95	74.67	32.57	43.6	10.61	0.33	0	100
D-10	15.0	379	15.01	100.40	75.24	60.23	25.16	41.8	15.66	0.65	1	99
D-11	16.5	268	13.84	110.17	79.31	65.47	30.86	47.1	14.58	0.74	1	99
D-12	18.0	337	13.81	94.55	71.62	57.81	22.93	39.7	14.29	0.48	1	99
D-13	19.5	610	12.94	91.08	68.28	55.34	22.80	41.2	13.58	0.64	1	99
D-14	21.0	518	11.99	83.46	61.25	49.26	22.21	45.1	13.69	1.70	3	97
D-15	22.5	489	14.25	97.58	72.27	58.02	25.31	43.6	17.63	3.38	6	94
D-16	24.0	238	12.72	96.63	71.64	58.92	24.99	42.4	14.90	2.18	4	96
D-17	25.5	475	12.39	101.38	75.55	63.16	25.83	40.9	12.43	0.04	0	100
D-18	27.0	601	15.85	102.60	76.77	60.92	25.83	42.4	15.96	0.11	0	100
D-19	28.5	437	14.53	95.31	88.10	73.57	7.21	9.8	69.13	54.60	74	26

