

**SOCIALIST REPUBLIC OF VIET NAM
MINISTRY OF TRANSPORT**

**THE DETAILED DESIGN STUDY
OF LACH HUYEN PORT
INFRASTRUCTURE CONSTRUCTION
PROJECT**

**FINAL REPORT
ON PORT PORTION OF THE PROJECT**

APPENDIX

March 2013

Japan International Cooperation Agency (JICA)

ORIENTAL CONSULTANTS CO., LTD. (OC)

NIPPON KOEI CO., LTD. (NK)

PADECO CO., LTD. (PADECO)

JAPAN BRIDGE & STRUCTURE INSTITUTE, INC. (JBSI)

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Appendix 2-1

Soil Investigation Results

Appendix 2-1

1) Boring Location Map

- a) Reclamation Area (Terminal Area, Access Road Area) and Public Facility Area
- b) Outer Revetment B Area, Sand Protection Dyke Area, Navigation Channel and Turning Basin Area

2) Soil Profiles

- a) Reclamation Area (Terminal Area, Access Road Area) and Public Facility Area
- b) Outer Revetment B Area
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3) Borelogs

- a) Reclamation Area (Terminal Area, Access Road Area) and Public Facility Area
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4) Soil Test Result Tables and Graphs for Soil Properties with Depth

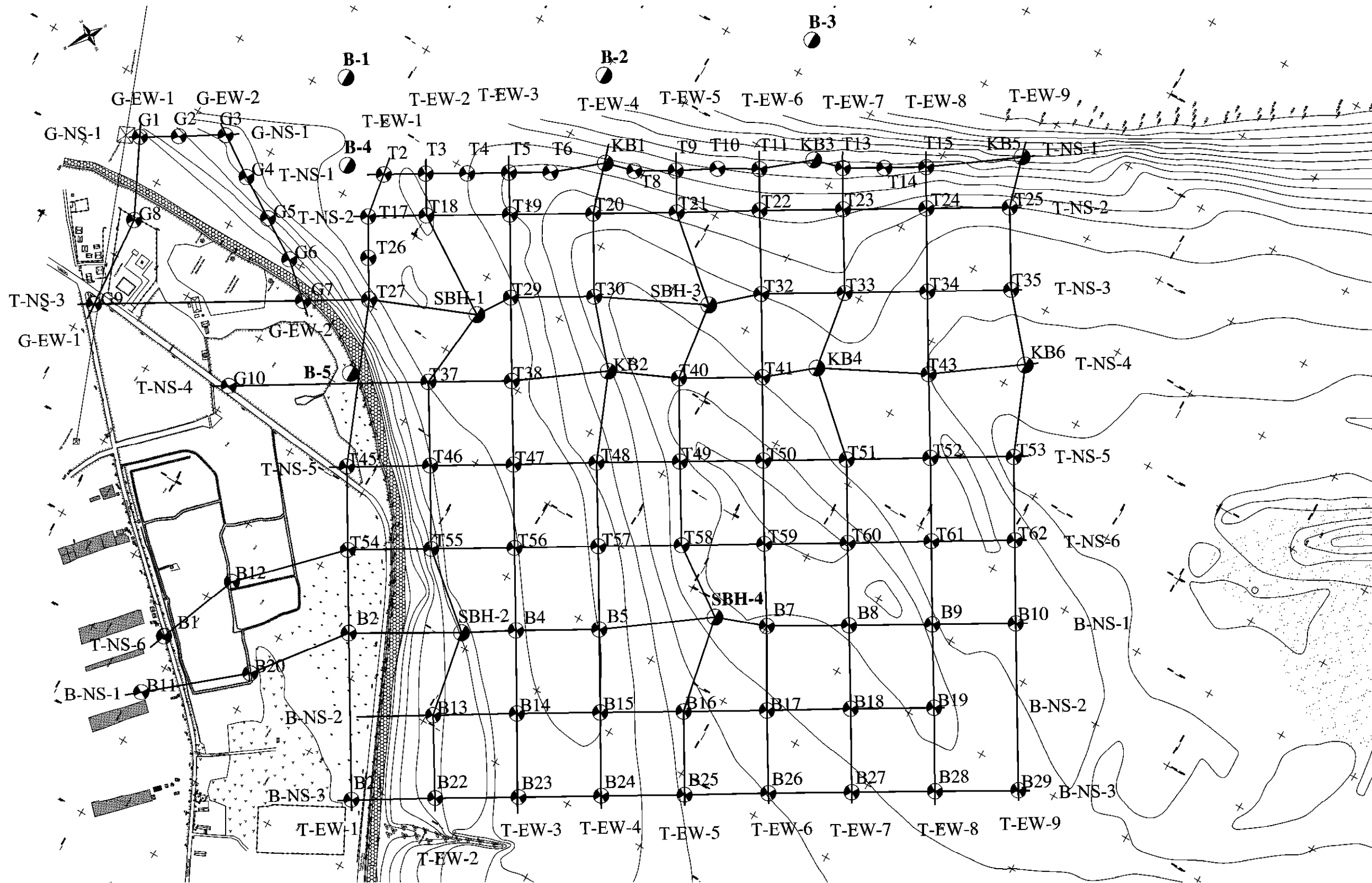
- a) Reclamation Area (Terminal Area, Access Road Area) and Public Facility Area
- b) Outer Revetment B Area
- c) Sand Protection Dyke Area
- d) Navigation Channel and Turning Basin Area

5) Material Test Result for Reclamation Sand

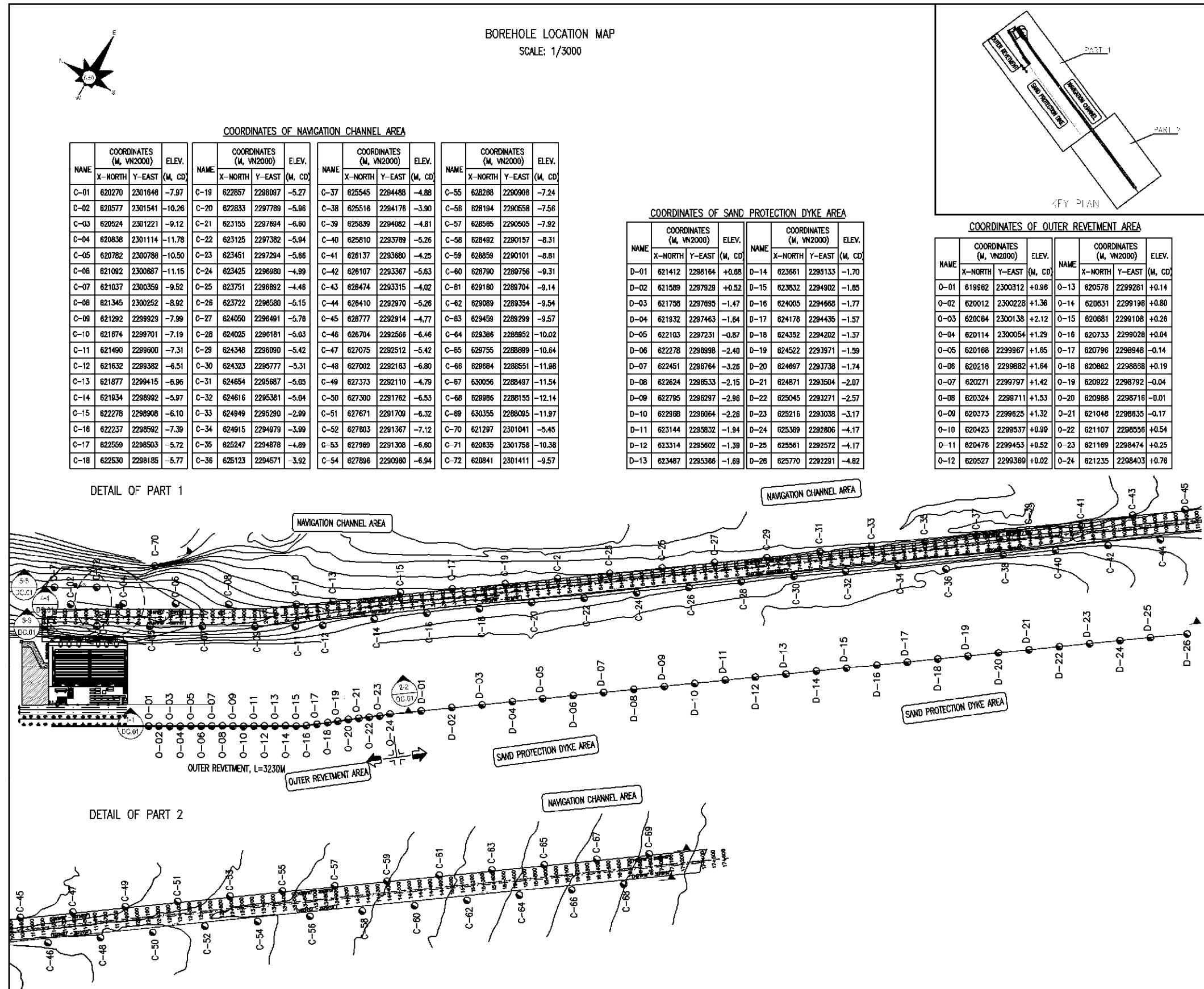
6) Soil and Cement Mixing Test Result

1) Boring Location Map

Boring Location Map for a) Reclamation Area (Terminal Area and Access Road Area) and Public Facility Area



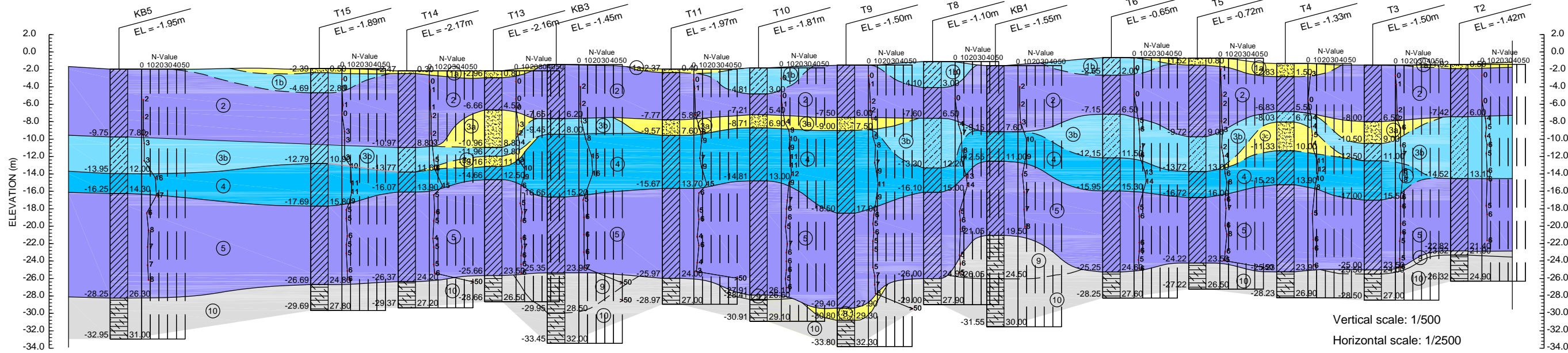
Boring Location Map for b) Outer Revetment B Area, Sand Protection Dyke Area, Navigation Channel and Turning Basin Area



2) Soil Profiles

a) Reclamation Area (Terminal Area, Access Road Area) and Public Facility Area

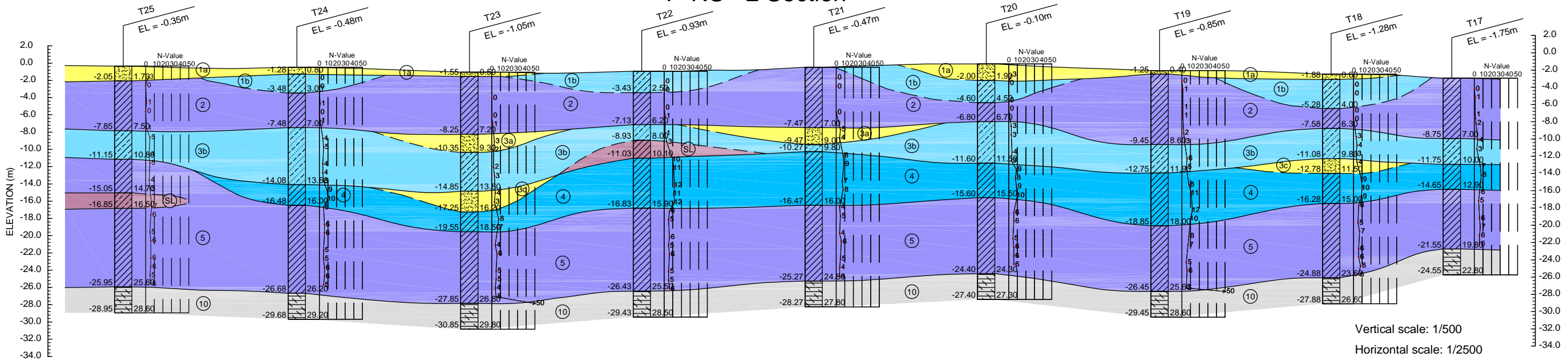
T- NS - 1 Section



Vertical scale: 1/500
Horizontal scale: 1/2500

Borehole:	KB5	T15	T14	T13	KB3	T11	T10	T9	T8	KB1	T6	T5	T4	T3	T2
Elevation (m):	-1.95	-1.89	-2.17	-2.16	-1.45	-1.97	-1.81	-1.50	-1.10	-1.55	-0.65	-0.72	-1.33	-1.50	-1.42
Co-ordinate:	X=2300817, Y=620546	X=2300910, Y=620478	X=2300953, Y=620452	X=2300966, Y=620427	X=2301031, Y=620418	X=2301082, Y=620376	X=2301125, Y=620350	X=2301168, Y=620324	X=2301211, Y=620299	X=2301246, Y=620290	X=2301297, Y=620247	X=2301339, Y=620221	X=2301383, Y=620196	X=2301426, Y=620170	X=2301469, Y=620145
Distance (m):		115.21	50.25	49.74	36.14	66.07	50.25	50.25	49.74	36.14	66.71	49.40	50.61	50.25	49.74

T- NS - 2 Section

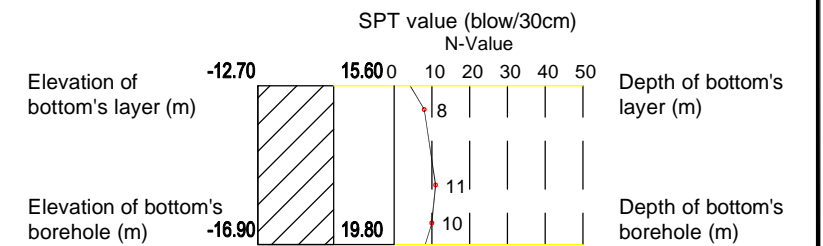


Vertical scale: 1/500
Horizontal scale: 1/2500

Borehole:	T25	T24	T23	T22	T21	T20	T19	T18	T17
Elevation (m):	-0.35	-0.48	-1.05	-0.93	-0.47	-0.10	-0.85	-1.28	-1.75
Co-ordinate:	X=2300799, Y=620486	X=2300885, Y=620435	X=2300971, Y=620384	X=2301057, Y=620333	X=2301142, Y=620281	X=2301228, Y=620230	X=2301314, Y=620178	X=2301400, Y=620128	X=2301460, Y=620092
Distance (m):		99.98	99.98	99.98	99.64	99.98	100.50	99.48	69.97

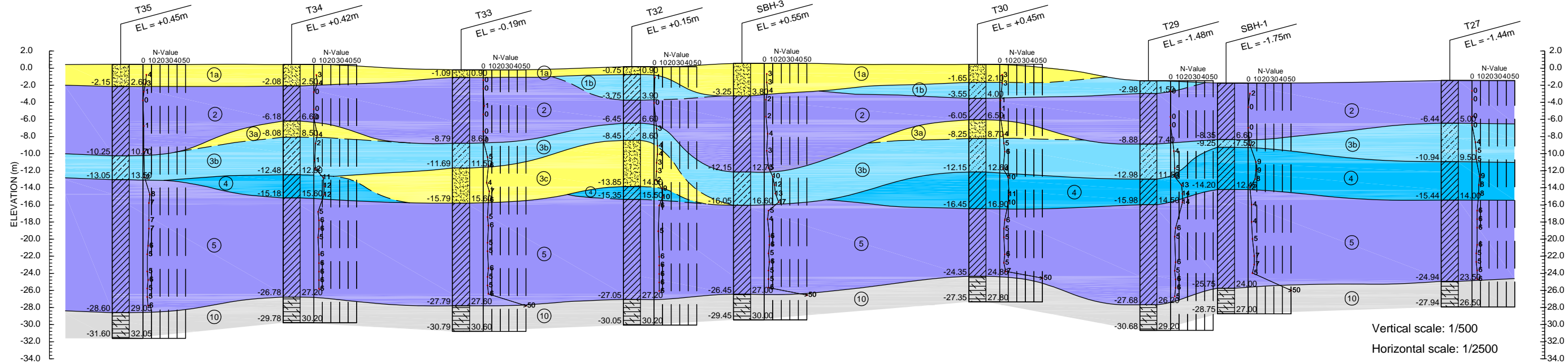
LEGEND:

- 1a Grey, light grey, poorly graded Sand (SP)
- 3a Light grey, greenish grey, Sand (SC)
- 4 Reddish brown, yellowish brown, Sandy Lean Clay (CL)
- 9 Completely weathered sandstone: Hard, reddish brown, sandy CLAY with fragment
- 1b Grey, Sandy Clay (SC)
- 3b Yellowish grey, Sand/ Clayey Sand (SC)
- 5 Grey, yellowish light grey, Fat Clay with Sand (CH)
- 10 Moderately weathered, reddish brown Silt/ Claystone
- 2 Brownish grey, yellowish grey, Fat Clay with sand (CH)
- 3c Yellowish grey, Sand (SP/ SP-SC)
- 8a Yellowish grey, light grey, poorly graded Sand (SP)
- 10 Defined geological boundary
- 10 Undefined geological boundary



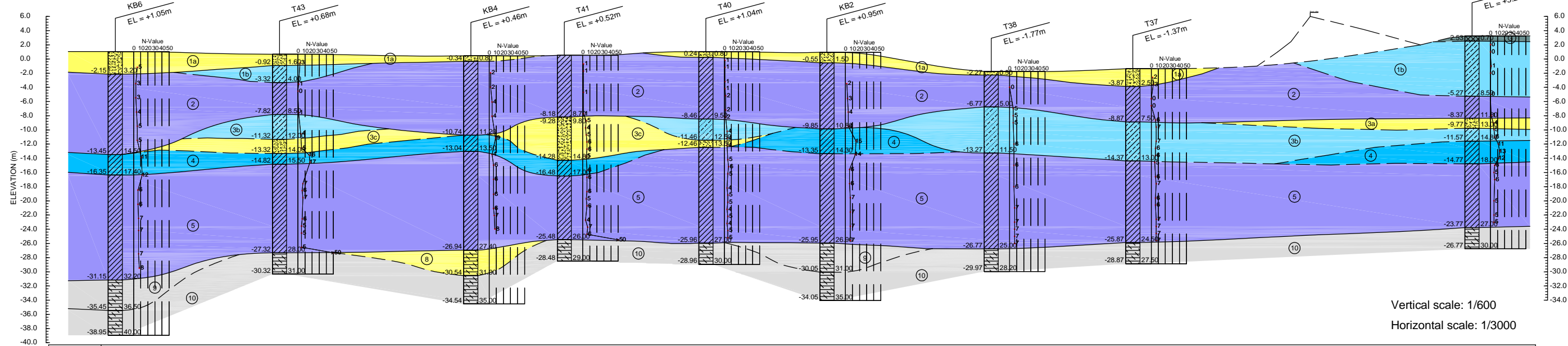
PROJECT NAME	OWNER	CONSULTANTS	PREPARED BY	CHECKED BY	APPROVED BY	DRAWING TITLE	PACKAGE
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			SIGNATURE				
			DATE				

T- NS - 3 Section



Borehole:	T35	T34	T33	T32	SBH-3	T30	T29	SBH-1	T27
Elevation (m):	0.45	0.42	-0.19	0.15	0.55	0.45	-1.48	-1.75	-1.44
Co-ordinate:	X=2300748, Y=620400	X=2300834, Y=620349	X=2300919, Y=620298	X=2301005, Y=620247	X=2301053, Y=620204	X=2301177, Y=620144	X=2301263, Y=620093	X=2301288, Y=620055	X=2301409, Y=620005
Distance (m):		99.98	99.13	99.98	64.44	137.75	99.98	45.49	130.92

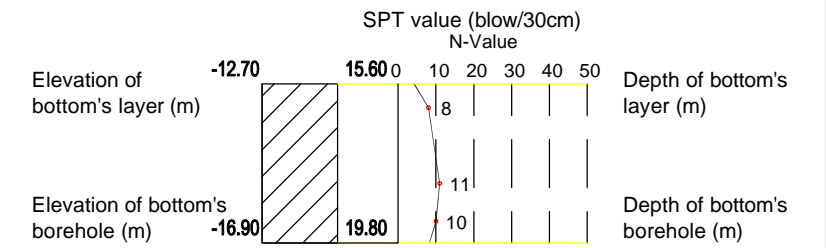
T- NS - 4 Section



Borehole:	KB6	T43	KB4	T41	T40	KB2	T38	T37	G10
Elevation (m):	1.05	0.68	0.46	0.52	1.04	0.95	-1.77	-1.37	3.23
Co-ordinate:	X=2300688, Y=620331	X=2300782, Y=620263	X=2300903, Y=620203	X=2300954, Y=620161	X=2301040, Y=620110	X=2301118, Y=620075	X=2301212, Y=620007	X=2301298, Y=619956	X=2301503, Y=619832
Distance (m):		116.02	135.06	66.07	99.98	85.49	116.02	99.98	239.59

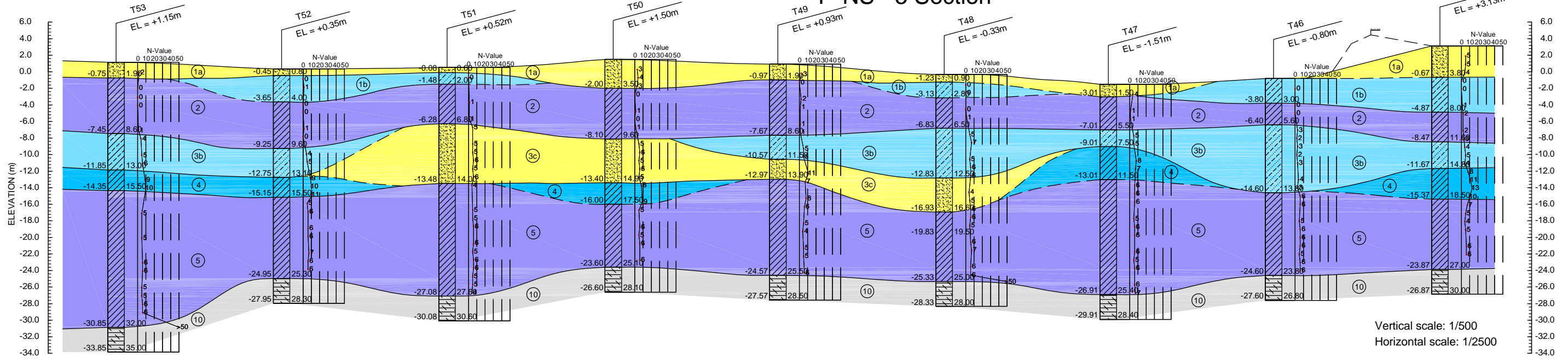
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			SIGNATURE				
			DATE				

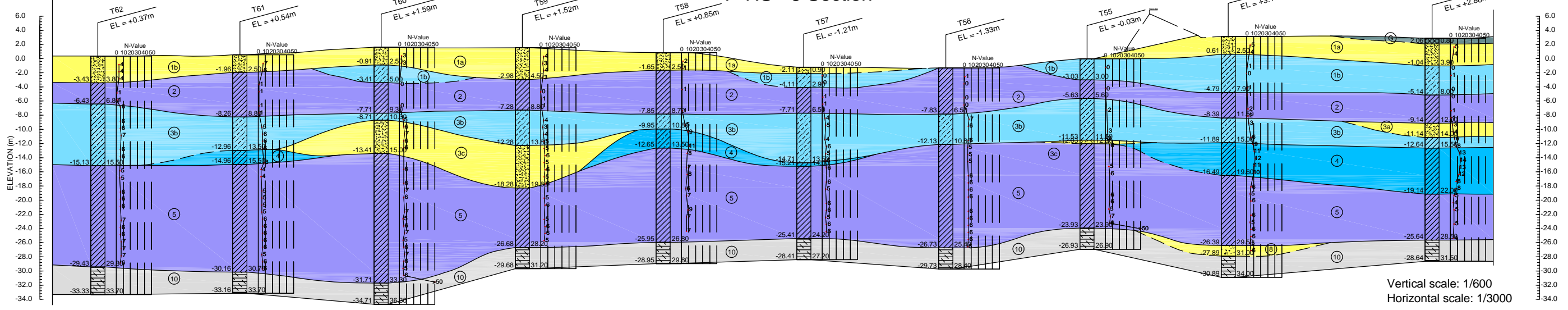
T- NS - 5 Section



Vertical scale: 1/500
Horizontal scale: 1/2500

Borehole:	T53	T52	T51	T50	T49	T48	T47	T46	T45
Elevation (m):	1.15	0.35	0.52	1.50	0.93	-0.33	-1.51	-0.80	3.13
Co-ordinate:	X=2300645, Y=620228	X=2300731, Y=620177	X=2300817, Y=620126	X=2300903, Y=620074	X=2300989, Y=620024	X=2301075, Y=619972	X=2301160, Y=619921	X=2301246, Y=619870	X=2301332, Y=619818
Distance (m):		99.98	99.98	100.50	99.48	100.50	99.13	99.98	100.50

T- NS - 6 Section

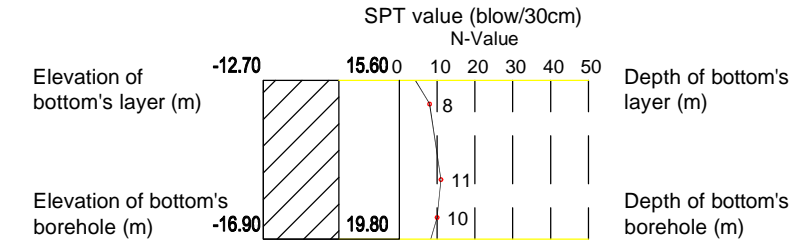


Vertical scale: 1/600
Horizontal scale: 1/3000

Borehole:	T62	T61	T60	T59	T58	T57	T56	T55	T54	B12
Elevation (m):	0.37	0.54	1.59	1.52	0.85	-1.21	-1.33	-0.03	3.11	2.86
Co-ordinate:	X=2300594, Y=620143	X=2300680, Y=620091	X=2300766, Y=620040	X=2300852, Y=619989	X=2300937, Y=619937	X=2301023, Y=619887	X=2301109, Y=619835	X=2301195, Y=619784	X=2301281, Y=619733	X=2301367, Y=619680
Distance (m):		100.50	99.98	99.98	99.64	99.48	100.50	99.98	99.98	144.26

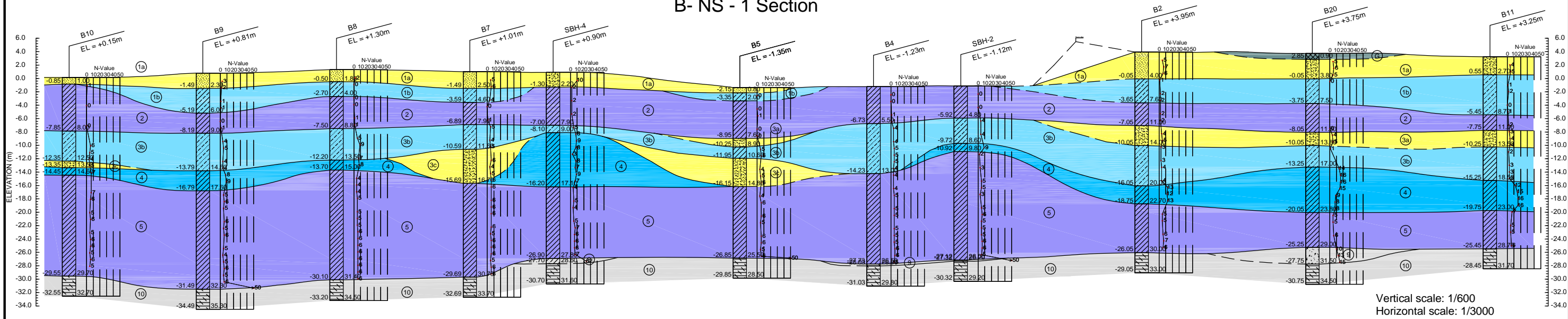
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			DATE				

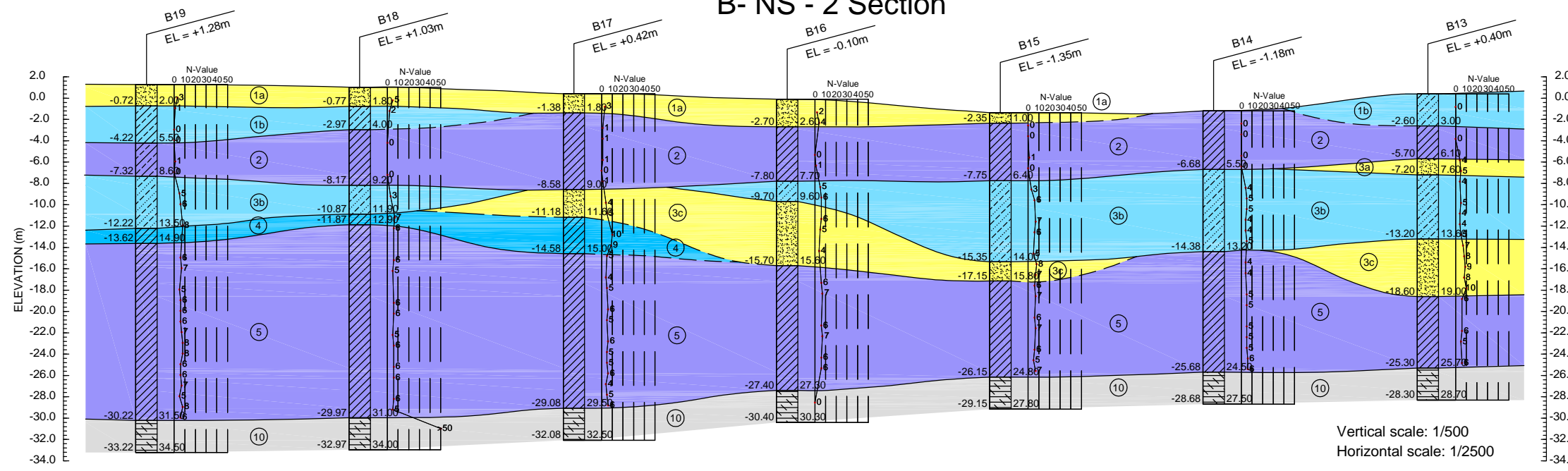
B- NS - 1 Section



Vertical scale: 1/600
Horizontal scale: 1/3000

Borehole:	B10	B9	B8	B7	SBH-4	B5	B4	SBH-2	B2	B20	B11
Elevation (m):	0.15	0.81	1.30	1.01	0.90	-1.35	-1.23	-1.12	3.95	3.75	3.25
Co-ordinate:	X=2300543, Y=620057	X=2300629, Y=620006	X=2300715, Y=619955	X=2300800, Y=619903	X=2300859, Y=619883	X=2300972, Y=619801	X=2301058, Y=619750	X=2301113, Y=619715	X=2301230, Y=619647	X=2301308, Y=619546	X=2301410, Y=619461
Distance (m):		99.98		99.98		99.98		99.98		127.61	132.77

B- NS - 2 Section

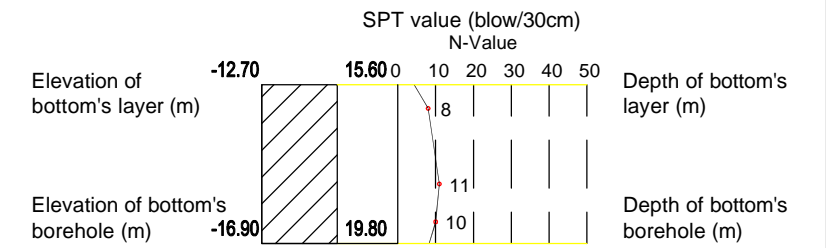


Vertical scale: 1/500
Horizontal scale: 1/2500

Borehole:	B19	B18	B17	B16	B15	B14	B13
Elevation (m):	1.28	1.03	0.42	-0.10	-1.35	-1.18	0.40
Co-ordinate:	X=2300577, Y=619920	X=2300663, Y=619869	X=2300749, Y=619817	X=2300835, Y=619766	X=2300921, Y=619715	X=2301007, Y=619664	X=2301093, Y=619612
Distance (m):		99.98		100.50		99.98	100.50

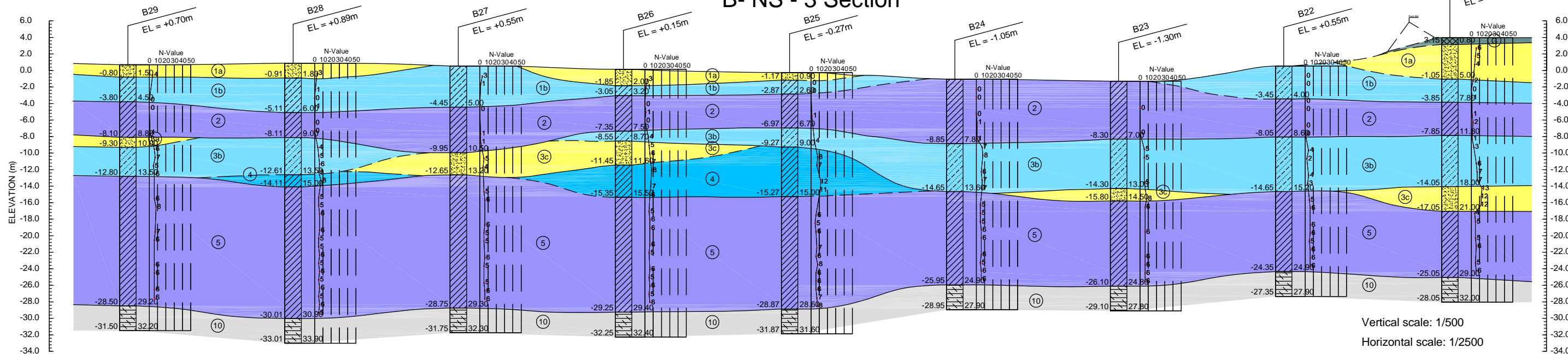
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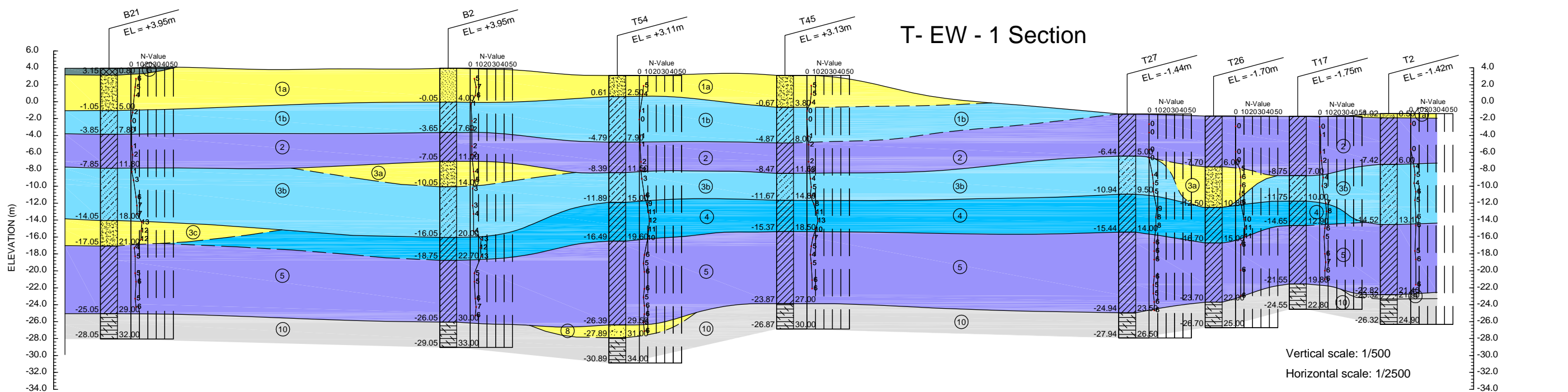
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			SIGNATURE				
			DATE				

B- NS - 3 Section



Borehole:	B29	B28	B27	B26	B25	B24	B23	B22	B21
Elevation (m):	0.70	0.89	0.55	0.15	-0.27	-1.05	-1.30	0.55	3.95
Co-ordinate:	X=2300440, Y=619885	X=2300526, Y=619834	X=2300612, Y=619783	X=2300698, Y=619732	X=2300784, Y=619680	X=2300870, Y=619629	X=2300955, Y=619578	X=2301041, Y=619527	X=2301127, Y=619475
Distance (m):		99.98		99.98		100.50		99.98	

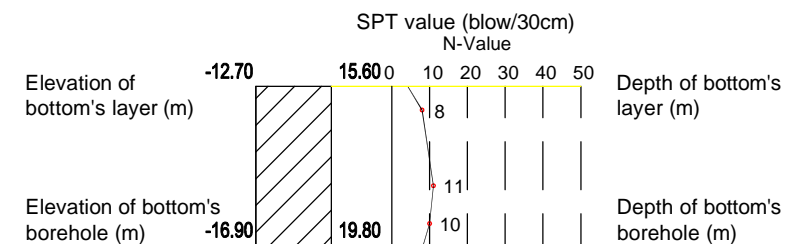
T- EW - 1 Section



Borehole:	B21	B2	T54	T45	T27	T26	T17	T2
Elevation (m):	3.95	3.95	3.11	3.13	-1.44	-1.70	-1.75	-1.42
Co-ordinate:	X=2301127, Y=619475	X=2301230, Y=619647	X=2301281, Y=619733	X=2301332, Y=619818	X=2301409, Y=620005	X=2301435, Y=620049	X=2301460, Y=620092	X=2301469, Y=620145
Distance (m):		200.48		99.98		99.13		202.23

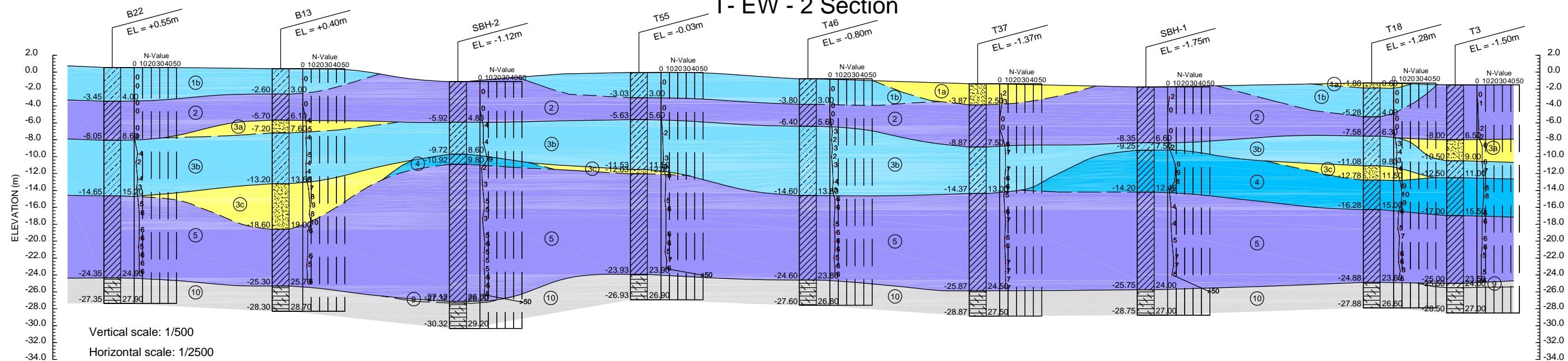
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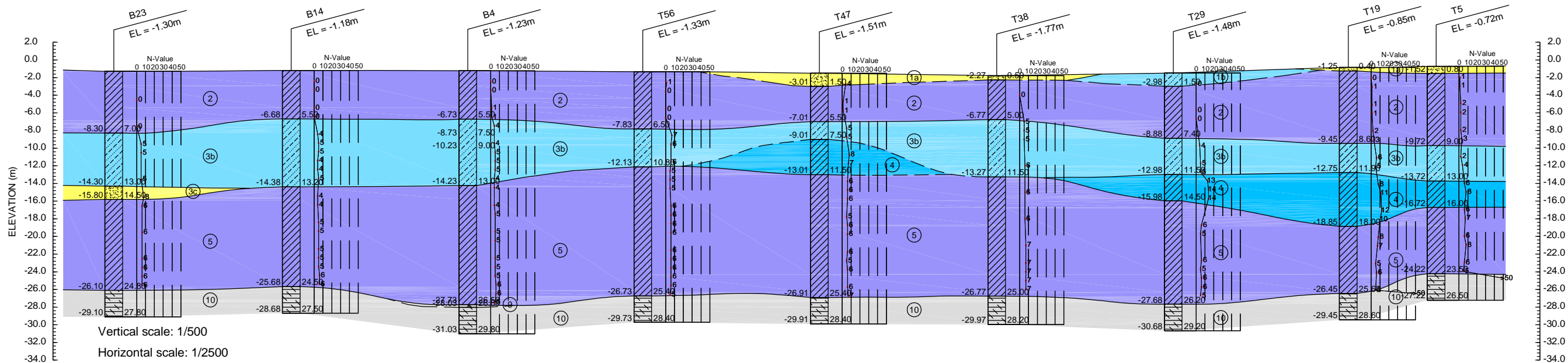
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			SIGNATURE				II.10
			DATE				

T- EW - 2 Section



Borehole:	B22	B13	SBH-2	T55	T46	T37	SBH-1	T18	T3
Elevation (m):	0.55	0.40	-1.12	-0.03	-0.80	-1.37	-1.75	-1.28	-1.50
Co-ordinate:	X=2301041, Y=619527	X=2301093, Y=619612	X=2301113, Y=619715	X=2301195, Y=619784	X=2301246, Y=619870	X=2301298, Y=619956	X=2301288, Y=620055	X=2301400, Y=620128	X=2301426, Y=620170
Distance (m):		99.64	104.92	107.17	99.98	100.50	99.50	133.69	49.40

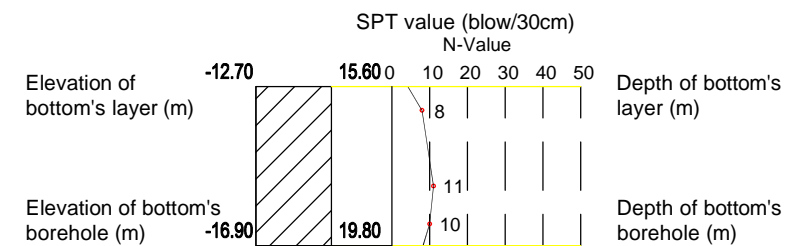
T- EW - 3 Section



Borehole:	B23	B14	B4	T56	T47	T38	T29	T19	T5
Elevation (m):	-1.30	-1.18	-1.23	-1.33	-1.51	-1.77	-1.48	-0.85	-0.72
Co-ordinate:	X=2300955, Y=619578	X=2301007, Y=619664	X=2301058, Y=619750	X=2301109, Y=619835	X=2301160, Y=619921	X=2301212, Y=620007	X=2301263, Y=620093	X=2301314, Y=620178	X=2301339, Y=620221
Distance (m):		100.50	99.98	99.13	99.98	100.50	99.98	99.13	49.74

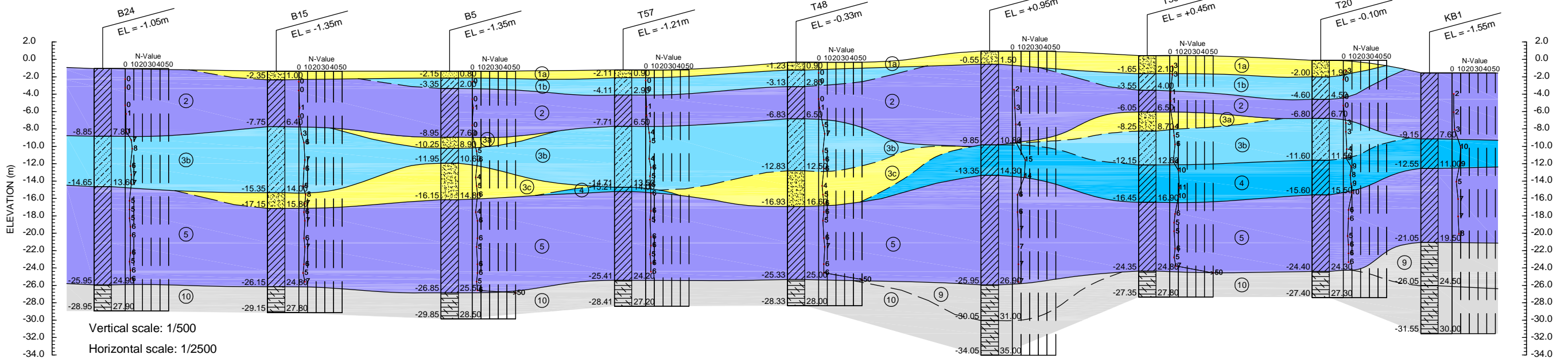
LEGEND:

- 1a Grey, light grey, poorly graded Sand (SP)
- 3a Light grey, greenish grey, Sand (SC)
- 4 Reddish brown, yellowish brown, Sandy Lean Clay (CL)
- 9 Completely weathered sandstone: Hard, reddish brown, sandy CLAY with fragment
- 1b Grey, Sandy Clay (SC)
- 3b Yellowish grey, Sand/Clayey Sand (SC)
- 5 Grey, yellowish light grey, Fat Clay with Sand (CH)
- 10 Moderately weathered, reddish brown Silt/Claystone
- 2 Brownish grey, yellowish grey, Fat Clay with sand (CH)
- 3c Yellowish grey, Sand (SP/ SP-SC)
- 8a Yellowish grey, light grey, poorly graded Sand (SP)
- Defined geological boundary (solid line)
- Undefined geological boundary (dashed line)



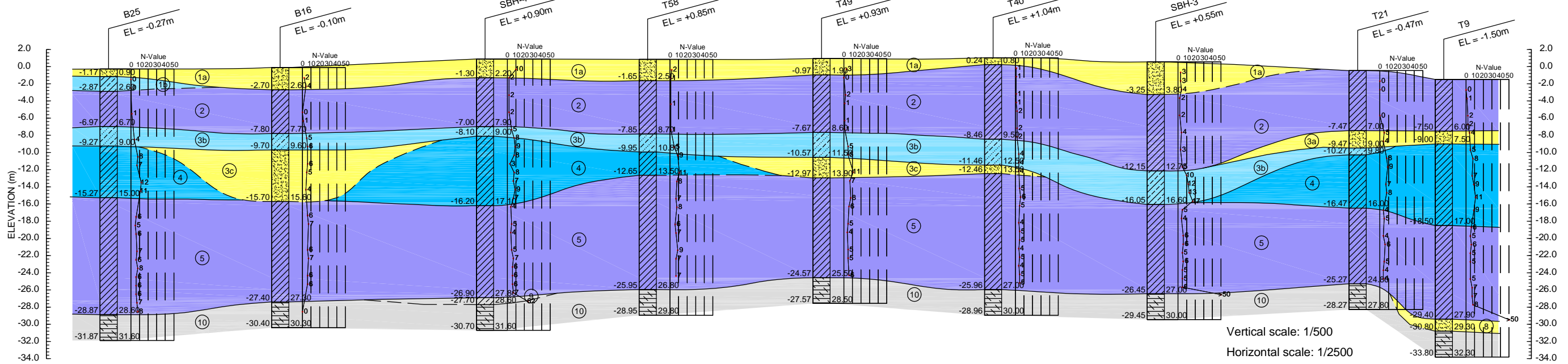
PROJECT NAME	OWNER	CONSULTANTS	PREPARED BY	CHECKED BY	APPROVED BY	DRAWING TITLE	PACKAGE
THE DETAILED DESIGN STUDY FOR LACH HUYEN PORT INFRASTRUCTURE CONSTRUCTION PROJECT IN VIET NAM	SOCIALIST REPUBLIC OF VIETNAM MINISTRY OF TRANSPORT (M.O.T) MARITIME PROJECT MANAGEMENT UNIT NO.2	ORIENTAL CONSULTANTS CO.,LTD. NIPPON KOEI CO.,LTD. PADECO CO.,LTD. JAPAN BRIDGE & STRUCTURE INSTITUTE, INC.	NAME			SOIL PROFILE BY SECTION (T-EW-2, T-EW-3)	DWG No. II.11
			SIGNATURE				
			DATE				

T- EW - 4 Section



Borehole:	B24	B15	B5	T57	T48	KB2	T30	T20	KB1
Elevation (m):	-1.05	-1.35	-1.35	-1.21	-0.33	0.95	0.45	-0.10	-1.55
Co-ordinate:	X=2300870, Y=619629	X=2300921, Y=619715	X=2300972, Y=619801	X=2301023, Y=619887	X=2301075, Y=619972	X=2301118, Y=620075	X=2301177, Y=620144	X=2301228, Y=620230	X=2301246, Y=620290
Distance (m):		99.98	99.98	99.98	99.64	111.62	90.79	99.98	62.64

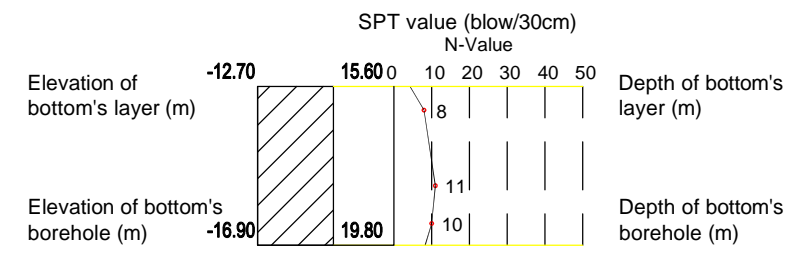
T- EW - 5 Section



Borehole:	B25	B16	SBH-4	T58	T49	T40	SBH-3	T21	T9
Elevation (m):	-0.27	-0.10	0.90	0.85	0.93	1.04	0.55	-0.47	-1.50
Co-ordinate:	X=2300784, Y=619680	X=2300835, Y=619766	X=2300859, Y=619883	X=2300937, Y=619937	X=2300989, Y=620024	X=2301040, Y=620110	X=2301053, Y=620204	X=2301142, Y=620281	X=2301168, Y=620324
Distance (m):		99.98	119.44	94.87	101.36	99.98	94.89	117.69	50.25

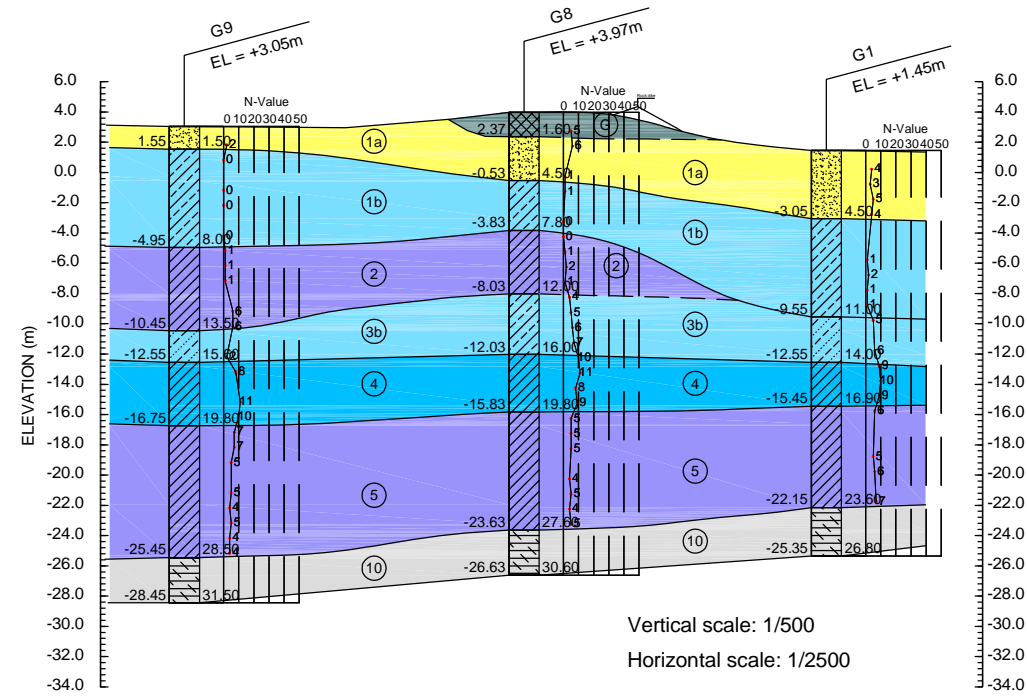
LEGEND:

- 1a Grey, light grey, poorly graded Sand (SP)
- 1b Grey, Sandy Clay (SC)
- 2 Brownish grey, yellowish grey, Fat Clay with sand (CH)
- 3a Light grey, greenish grey, Sand (SC)
- 3b Yellowish grey, Sand/ Clayey Sand (SC)
- 3c Yellowish grey, Sand (SP/ SP-SC)
- 4 Reddish brown, yellowish brown, Sandy Lean Clay (CL)
- 5 Grey, yellowish light grey, Fat Clay with Sand (CH)
- 8a Yellowish grey, light grey, poorly graded Sand (SP)
- 9 Completely weathered sandstone: Hard, reddish brown, sandy CLAY with fragment
- 10 Moderately weathered, reddish brown Silt/ Claystone
- 9-10 Defined geological boundary
- 9-10 Undefined geological boundary



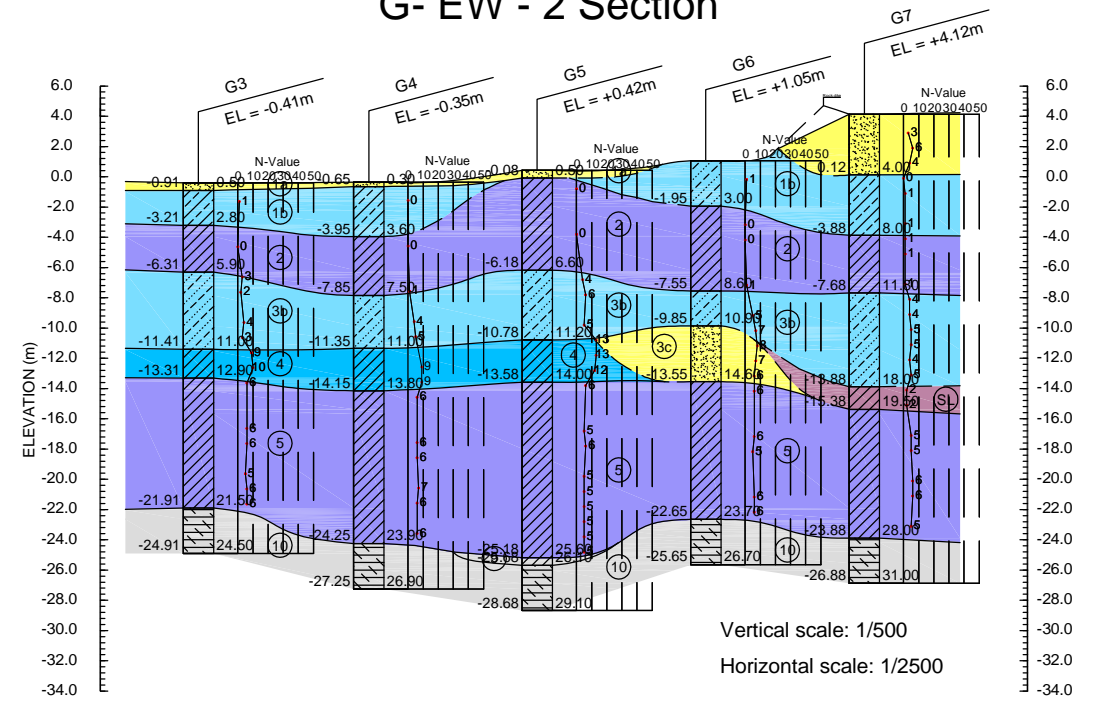
PROJECT NAME	OWNER	CONSULTANTS	PREPARED BY	CHECKED BY	APPROVED BY	DRAWING TITLE	PACKAGE
THE DETAILED DESIGN STUDY FOR LACH HUYEN PORT INFRASTRUCTURE CONSTRUCTION PROJECT IN VIET NAM	SOCIALIST REPUBLIC OF VIETNAM MINISTRY OF TRANSPORT (M.O.T) MARITIME PROJECT MANAGEMENT UNIT NO.2	ORIENTAL CONSULTANTS CO.,LTD. NIPPON KOEI CO.,LTD. PADECO CO.,LTD. JAPAN BRIDGE & STRUCTURE INSTITUTE, INC.	NAME SIGNATURE DATE			SOIL PROFILE BY SECTION (T-EW-4, T-EW-5)	DWG No. II.12

G- EW - 1 Section



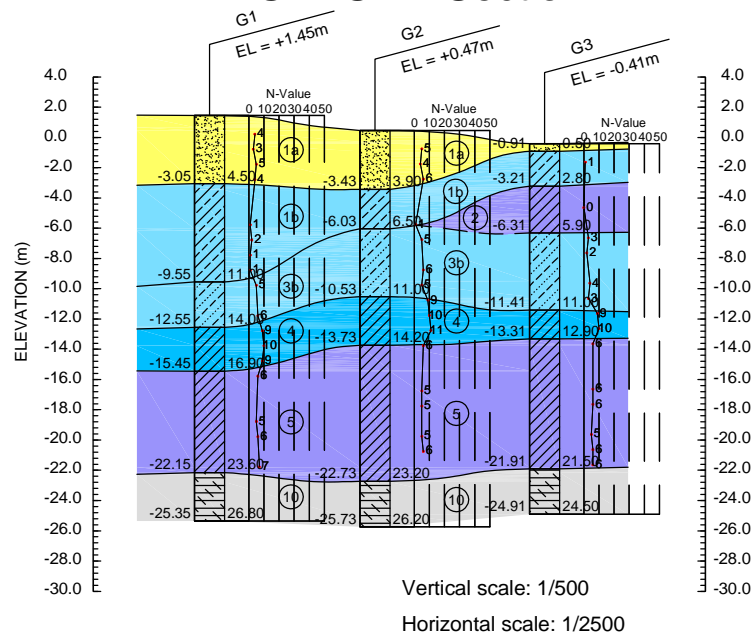
Borehole:	G9	G8	G1
Elevation (m):	3.05	3.97	1.45
Co-ordinate:	X=2301692, Y=619836	X=2301701, Y=619948	X=2301752, Y=620034
Distance (m):		112.36	99.98

G- EW - 2 Section



Borehole:	G3	G4	G5	G6	G7
Elevation (m):	-0.41	-0.35	0.42	1.05	4.12
Co-ordinate:	X=2301657, Y=620091	X=2301610, Y=620060	X=2301563, Y=620030	X=2301516, Y=620000	X=2301477, Y=619965
Distance (m):		56.30	55.76	55.76	52.40

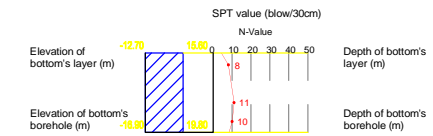
G- NS - 1 Section



Borehole:	G1	G2	G3
Elevation (m):	1.45	0.47	-0.41
Co-ordinate:	X=2301752, Y=620034	X=2301705, Y=620062	X=2301657, Y=620091
Distance (m):		54.71	56.08

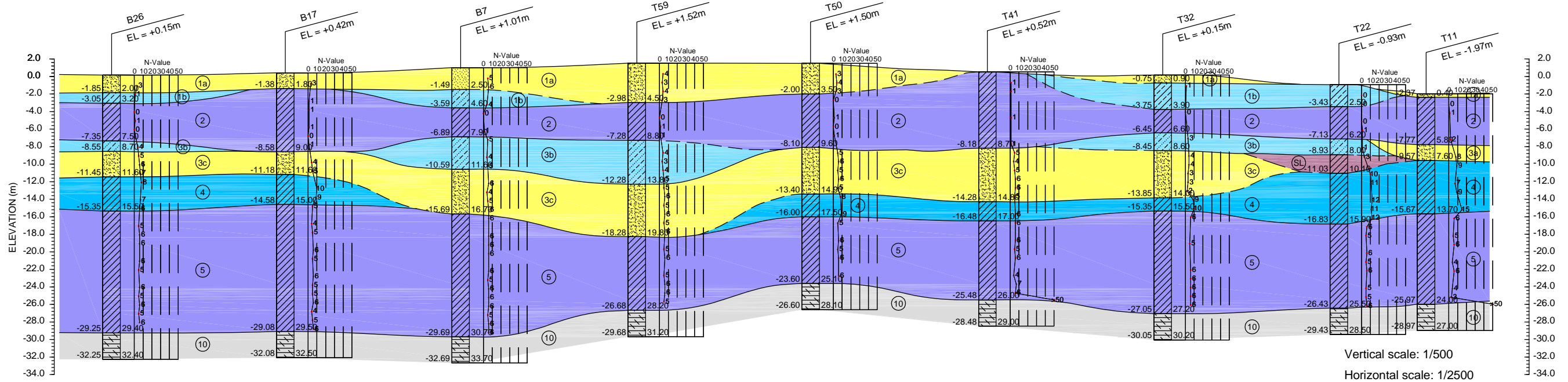
LEGEND:

- 1a Grey, light grey, poorly graded Sand (SP)
 - 1b Grey, Sandy Clay (SC)
 - 2 Brownish grey, yellowish grey, Fat Clay with sand (CH)
 - 3b Light grey, greenish grey, Sand (SC)
 - 3c Yellowish grey, Sandy clay/ Clayey Sand (SC)
 - 4c Yellowish grey, Sand (SP/ SP-SC)
 - 4 Reddish brown, yellowish brown, Sandy Lean Clay (CL)
 - 5 Grey, yellowish light grey, Fat Clay with Sand (CH)
 - 6 Yellowish grey, light grey, poorly graded Sand (SP)
 - 9 Completely weathered sandstone: Hard, reddish brown, sandy CLAY with fragment
 - 10 Moderately weathered, reddish brown Silty Claystone
- - - Defined geological boundary (maybe modify, depend on testing results)
 - - - Undefined geological boundary (maybe modify, depend on testing results)



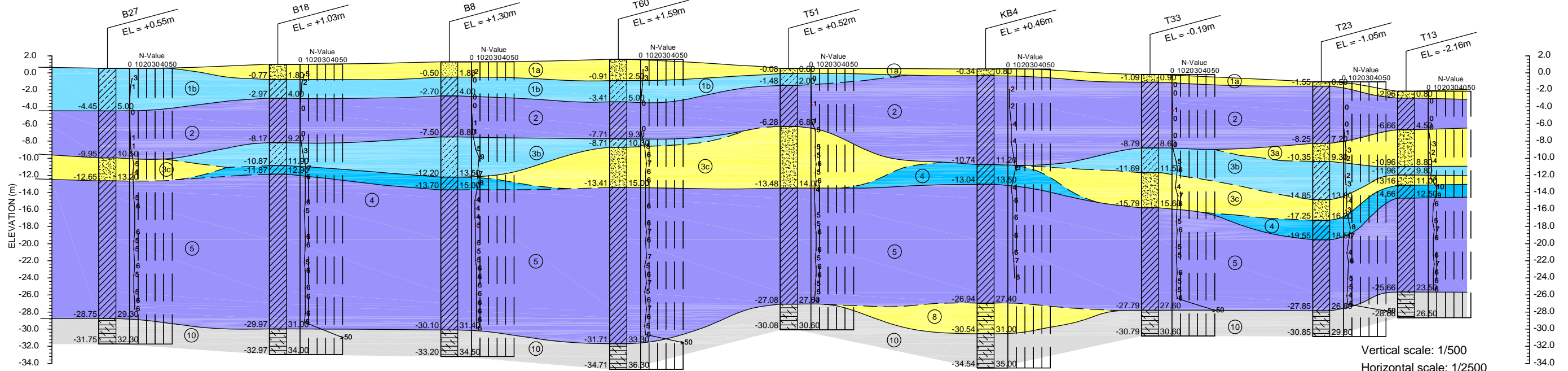
PROJECT NAME	OWNER	CONSULTANTS	PREPARED BY	CHECKED BY	APPROVED BY	DRAWING TITLE	PACKAGE
THE DETAILED DESIGN STUDY FOR LACH HUYEN PORT INFRASTRUCTURE CONSTRUCTION PROJECT IN VIET NAM	SOCIALIST REPUBLIC OF VIETNAM MINISTRY OF TRANSPORT (M.O.T) MARITIME PROJECT MANAGEMENT UNIT NO.2	ORIENTAL CONSULTANTS CO.,LTD. NIPPON KOEI CO.,LTD. PADECO CO.,LTD. JAPAN BRIDGE & STRUCTURE INSTITUTE, INC.	NAME			SOIL PROFILE BY SECTION (G-EW-1, G-EW-2, G-NS-1)	DWG No.
			SIGNATURE				II.5
			DATE				

T- EW - 6 Section



Borehole:	B26	B17	B7	T59	T50	T41	T32	T22	T11
Elevation (m):	0.15	0.42	1.01	1.52	1.50	0.52	0.15	-0.93	-1.97
Co-ordinate:	X=2300698, Y=619732	X=2300749, Y=619817	X=2300800, Y=619903	X=2300954, Y=619989	X=2300904, Y=620074	X=2300954, Y=620161	X=2301005, Y=620247	X=2301057, Y=620333	X=2301082, Y=620376
Distance (m):		99.13		99.98		100.50		100.85	

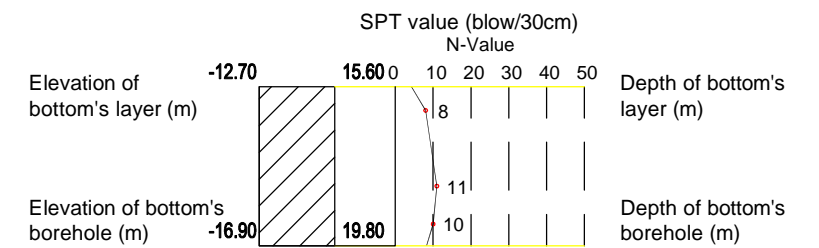
T- EW - 7 Section



Borehole:	B27	B18	B8	T60	T51	KB4	T33	T23	T13
Elevation (m):	0.55	1.03	1.30	1.59	0.52	0.46	-0.19	-1.05	-2.16
Co-ordinate:	X=2300612, Y=619783	X=2300663, Y=619869	X=2300715, Y=619955	X=2300766, Y=620040	X=2300817, Y=620126	X=2300903, Y=620203	X=2300919, Y=620298	X=2300971, Y=620384	X=2300996, Y=620427
Distance (m):		99.98		100.50		99.13		99.98	

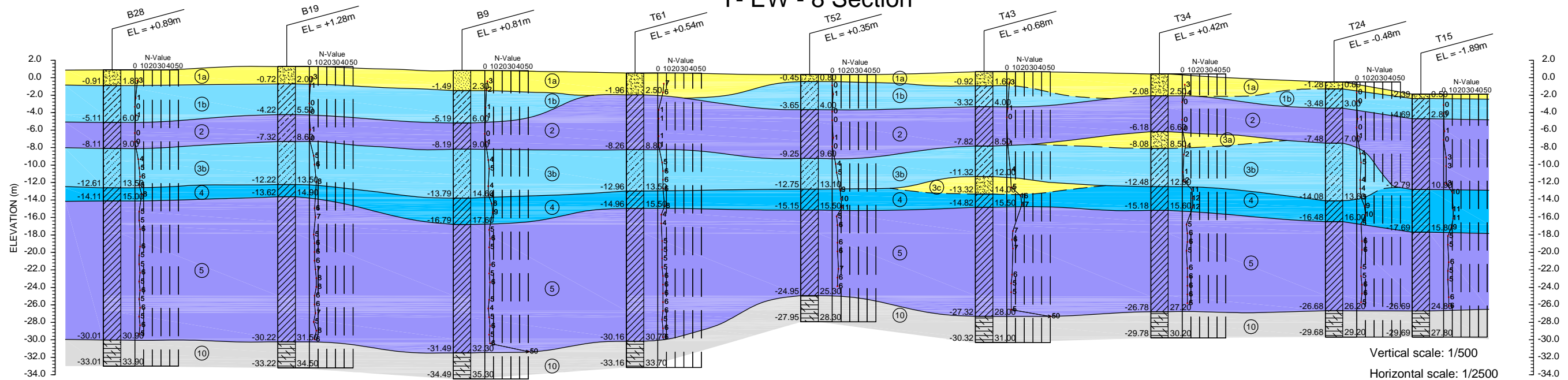
LEGEND:

- (1a) Grey, light grey, poorly graded Sand (SP)
- (1b) Grey, Sandy Clay (SC)
- (2) Brownish grey, yellowish grey, Fat Clay with sand (CH)
- (3a) Light grey, greenish grey, Sand (SC)
- (3b) Yellowish grey, Sand/ Clayey Sand (SC)
- (3c) Yellowish grey, Sand (SP/ SP-SC)
- (4) Reddish brown, yellowish brown, Sandy Lean Clay (CL)
- (5) Grey, yellowish light grey, Fat Clay with Sand (CH)
- (8a) Yellowish grey, light grey, poorly graded Sand (SP)
- (9) Completely weathered sandstone: Hard, reddish brown, sandy CLAY with fragment
- (10) Moderately weathered, reddish brown Silt/ Claystone
- Defined geological boundary
- - - Undefined geological boundary



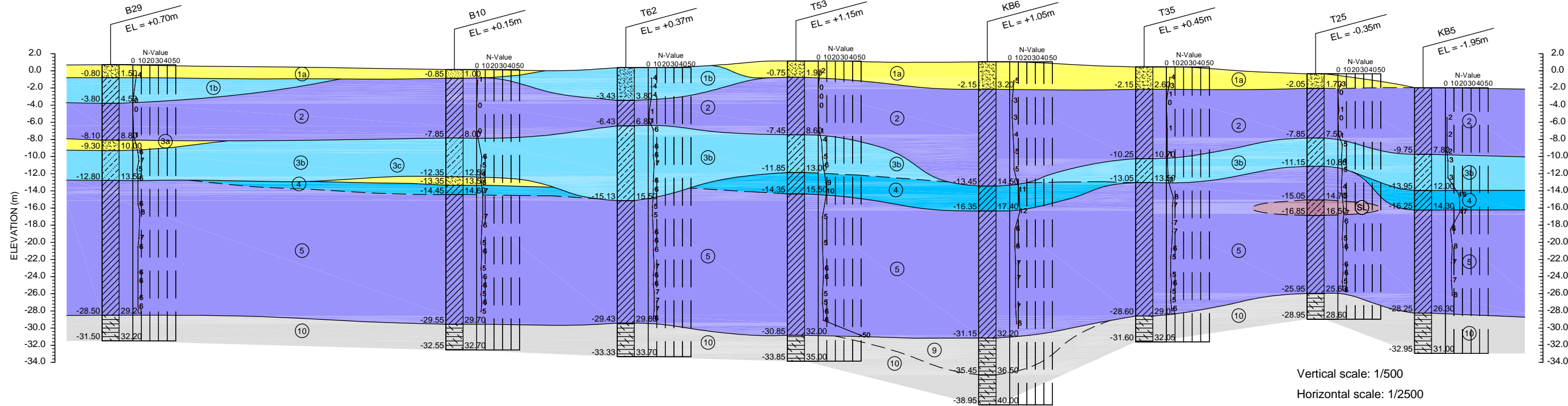
PROJECT NAME	OWNER	CONSULTANTS	PREPARED BY	CHECKED BY	APPROVED BY	DRAWING TITLE	PACKAGE
THE DETAILED DESIGN STUDY FOR LACH HUYEN PORT INFRASTRUCTURE CONSTRUCTION PROJECT IN VIET NAM	SOCIALIST REPUBLIC OF VIETNAM MINISTRY OF TRANSPORT (M.O.T) MARITIME PROJECT MANAGEMENT UNIT NO.2	ORIENTAL CONSULTANTS CO.,LTD. NIPPON KOEI CO.,LTD. PADECO CO.,LTD. JAPAN BRIDGE & STRUCTURE INSTITUTE, INC.	NAME			SOIL PROFILE BY SECTION (T-EW-6, T-EW-7)	DWG No.
			SIGNATURE				II.13
			DATE				

T- EW - 8 Section



Borehole:	B28	B19	B9	T61	T52	T43	T34	T24	T15
Elevation (m):	0.89	1.28	0.81	0.54	0.35	0.68	0.42	-0.48	-1.89
Co-ordinate:	X=2300526, Y=619834	X=2300577, Y=619920	X=2300629, Y=620006	X=2300680, Y=620091	X=2300731, Y=620177	X=2300782, Y=620263	X=2300834, Y=620349	X=2300885, Y=620435	X=2300910, Y=620478
Distance (m):		99.98	100.50	99.13	99.98	100.50	99.98	49.74	

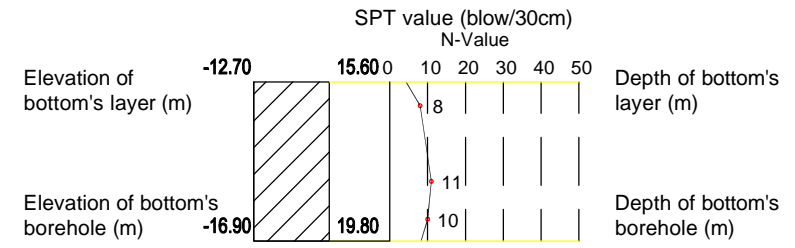
I- EW - 9 Section



Borehole:	B29	B10	T62	T53	KB6	T35	T25	KB5
Elevation (m):	0.70	0.15	0.37	1.15	1.05	0.45	-0.35	-1.95
Co-ordinate:	X=2300440, Y=619885	X=2300543, Y=620057	X=2300594, Y=620143	X=2300645, Y=620228	X=2300688, Y=620331	X=2300748, Y=620400	X=2300799, Y=620486	X=2300817, Y=620546
Distance (m):		200.48	99.98	99.13	111.62	91.44	99.98	62.64

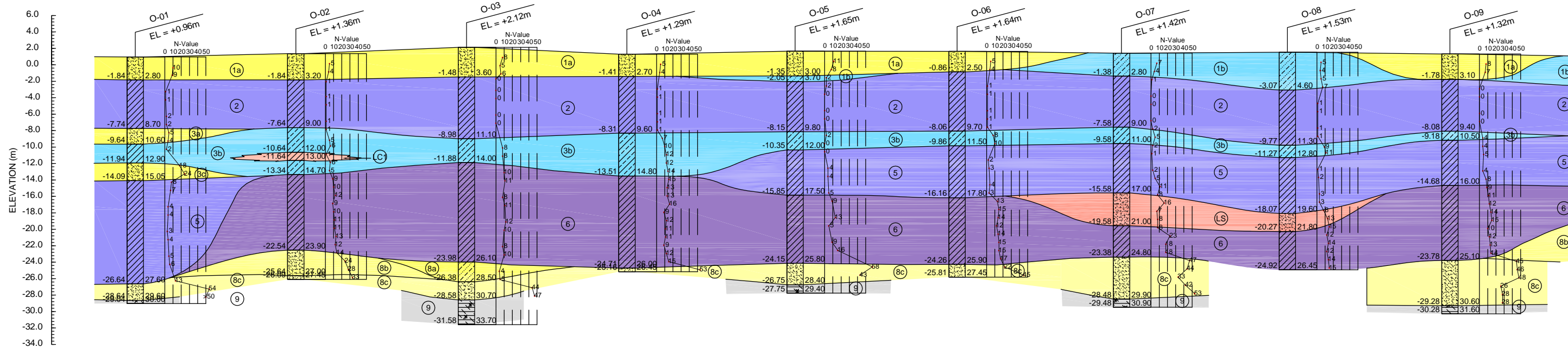
LEGEND:

- 1a Grey, light grey, poorly graded Sand (SP)
- 1b Grey, Sandy Clay (SC)
- 2 Brownish grey, yellowish grey, Fat Clay with sand (CH)
- 3a Light grey, greenish grey, Sand (SC)
- 3b Yellowish grey, Sand/ Clayey Sand (SC)
- 3c Yellowish grey, Sand (SP/ SP-SC)
- 4 Reddish brown, yellowish brown, Sandy Lean Clay (CL)
- 5 Grey, yellowish light grey, Fat Clay with Sand (CH)
- 8a Yellowish grey, light grey, poorly graded Sand (SP)
- 9 Completely weathered sandstone: Hard, reddish brown, sandy CLAY with fragment
- 10 Moderately weathered, reddish brown Silt/ Claystone
- Defined geological boundary
- Undefined geological boundary

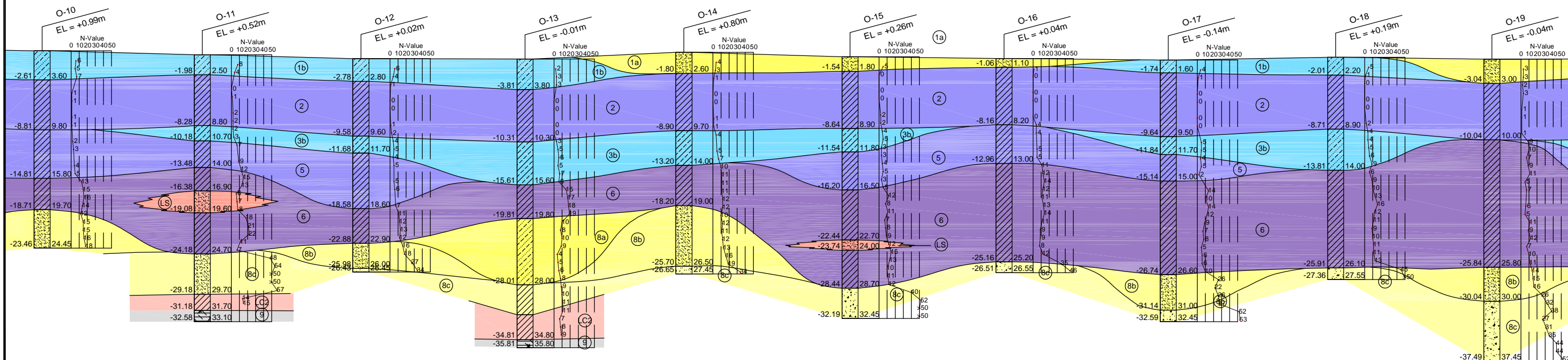


PROJECT NAME	OWNER	CONSULTANTS	PREPARED BY	CHECKED BY	APPROVED BY	DRAWING TITLE	PACKAGE
THE DETAILED DESIGN STUDY FOR LACH HUYEN PORT INFRASTRUCTURE CONSTRUCTION PROJECT IN VIET NAM	SOCIALIST REPUBLIC OF VIETNAM MINISTRY OF TRANSPORT (M.O.T) MARITIME PROJECT MANAGEMENT UNIT NO.2	ORIENTAL CONSULTANTS CO.,LTD. NIPPON KOEI CO.,LTD. PADECO CO.,LTD. JAPAN BRIDGE & STRUCTURE INSTITUTE, INC.	NAME			SOIL PROFILE BY SECTION (T-EW-8, T-EW-9)	DWG No. II.14
			SIGNATURE				
			DATE				

b) Outer Revetment B Area



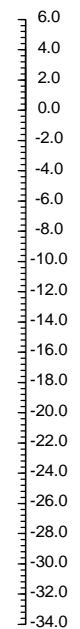
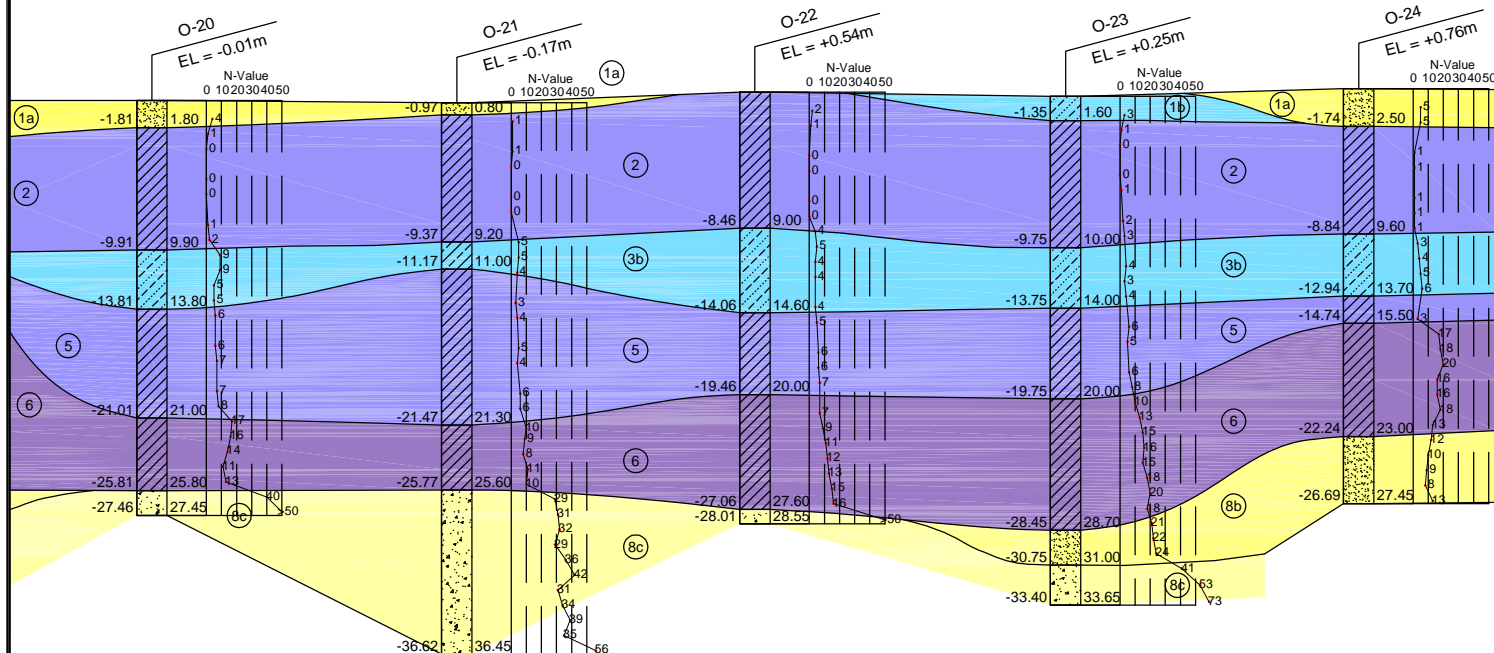
Borehole:	O-01	O-02	O-03	O-04	O-05	O-06	O-07	O-08	O-09	
Elevation (m):	0.96	1.36	2.12	1.29	1.65	1.64	1.42	1.53	1.32	
Co-ordinate:	X=619962, Y=2300312	X=620012, Y=2300228	X=620064, Y=2300138	X=620114, Y=2300054	X=620168, Y=2299967	X=620218, Y=2299882	X=620271, Y=2299797	X=620324, Y=2299711	X=620373, Y=2299625	
Distance (m):		97.75	103.94	97.75	102.40	98.62	100.17	101.02	98.98	101.21



Borehole:	O-10	O-11	O-12	O-13	O-14	O-15	O-16	O-17	O-18	O-19	
Elevation (m):	0.99	0.52	0.02	-0.01	0.80	0.26	0.04	-0.14	0.19	-0.04	
Co-ordinate:	X=620423, Y=2299537	X=620476, Y=2299453	X=620527, Y=2299369	X=620578, Y=2299281	X=620631, Y=2299198	X=620681, Y=2299108	X=620733, Y=2299028	X=620796, Y=2298948	X=620862, Y=2298868	X=620922, Y=2298792	
Distance (m):		99.32	98.27	101.71	98.48	102.96	95.41	101.83	103.71	96.83	100.66

Vertical scale: 1/500
Horizontal scale: 1/2500

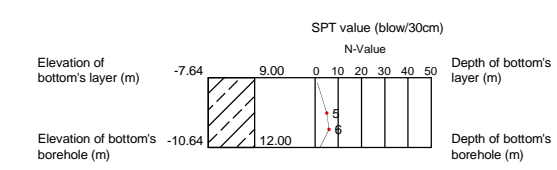
PROJECT NAME	OWNER	CONSULTANTS	PREPARED BY	CHECKED BY	APPROVED BY	DRAWING TITLE	PACKAGE
THE DETAILED DESIGN STUDY FOR LACH HUYEN PORT INFRASTRUCTURE CONSTRUCTION PROJECT IN VIET NAM	SOCIALIST REPUBLIC OF VIETNAM MINISTRY OF TRANSPORT (M.O.T) MARITIME PROJECT MANAGEMENT UNIT NO.2	ORIENTAL CONSULTANTS CO.,LTD. NIPPON KOEI CO.,LTD. PADECO CO.,LTD. JAPAN BRIDGE & STRUCTURE INSTITUTE, INC.	NAME			SOIL PROFILE BY SECTION (OUTER REVETMENT)	DWG No. III.1
			SIGNATURE				
			DATE				



LEGEND:

- 1a Grey, light grey, poorly graded Sand (SP)
 - 1b Grey, Sandy Clay (SC)
 - 2 Brownish grey, yellowish grey, Fat Clay with sand (CH)
 - 3a Light grey, greenish grey, Sand (SC)
 - 3b Yellowish grey, Sandy clay/ Clayey Sand (SC)
 - 3c Yellowish grey, Sand (SP/ SP-SC)
 - 4 Reddish brown, yellowish brown, Sandy Lean Clay (CL)
 - 5 Grey, yellowish light grey, Fat Clay with Sand (CH)
 - 6 Grey, yellowish grey, bluish grey, light grey, Clay with Sand (CL)
 - 8a Dark grey, Yellowish grey, light grey, silty sand (SM)
 - 8b Yellowish grey, light grey, Silty, clayey Sand (SC-SM)
 - 8c Yellowish grey, light grey, Silty, clayey Sand (SM/ SC-SM)
 - 9 Completely weathered sandstone: Hard, reddish brown, sandy CLAY with fragment
 - 10 Moderately weathered, reddish brown Silt/ Claystone
- Defined geological boundary
 Undefined geological boundary

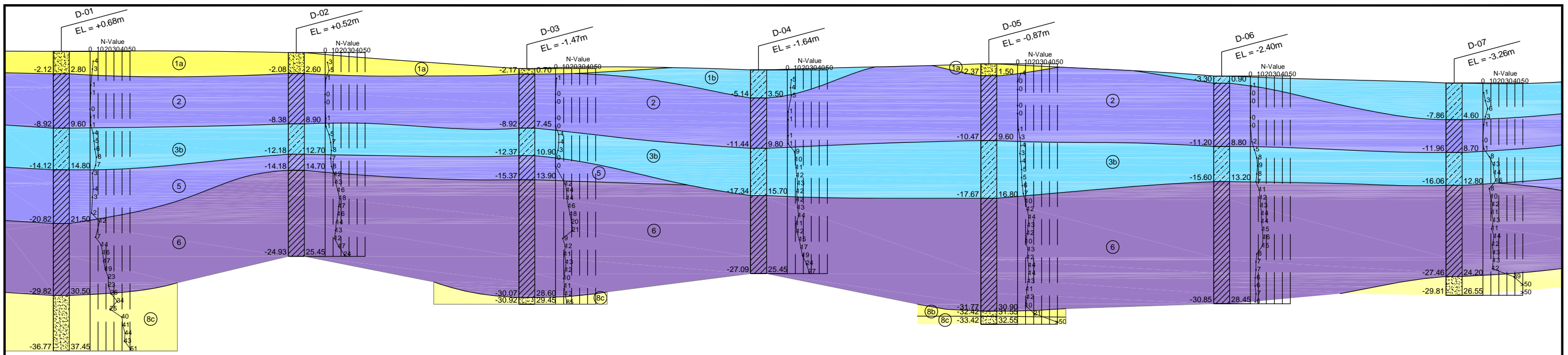
Section	O-20	O-21	O-22	O-23	O-24
Elevation (m)	-0.01	-0.17	0.54	0.25	0.76
X-Coordinate	X=620988, Y=2298716	X=621048, Y=2298635	X=621107, Y=2298556	X=621169, Y=2298474	X=621235, Y=2298403
Interval (m)	100.80	98.60	102.80	96.94	



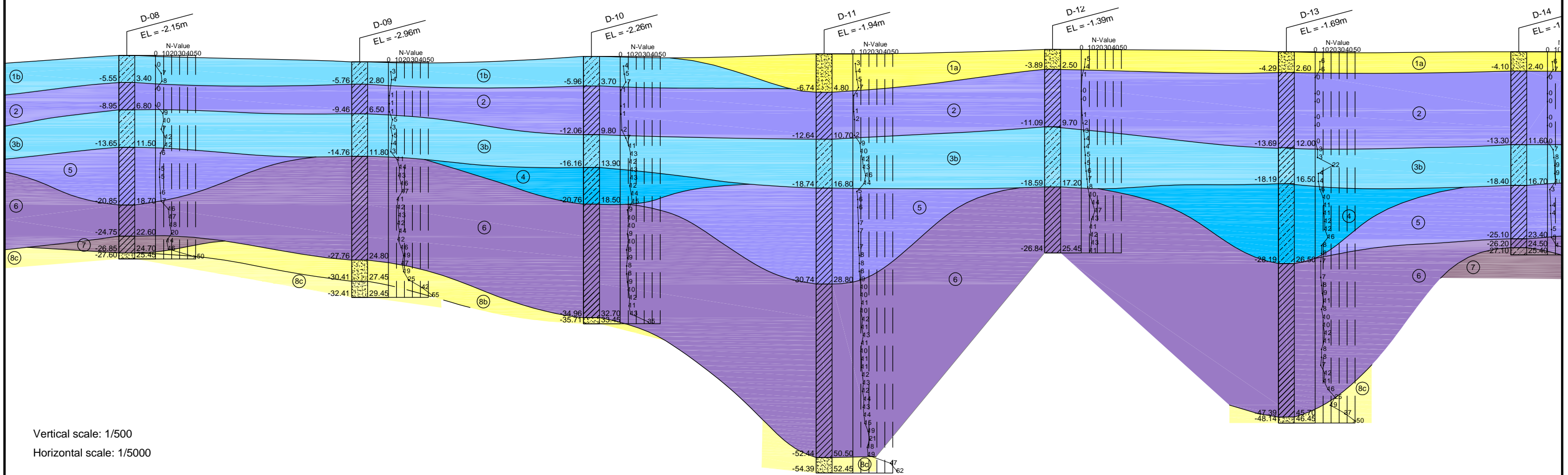
Vertical scale: 1/500
Horizontal scale: 1/2500

PROJECT NAME	OWNER	CONSULTANTS	APPROVED BY			DRAWING TITLE	PACKAGE
			NAME	CHECKED BY	APPROVED BY		
			SIGNATURE				
THE DETAILED DESIGN STUDY FOR LACH HUYEN PORT INFRASTRUCTURE CONSTRUCTION PROJECT IN VIET NAM	SOCIALIST REPUBLIC OF VIETNAM MINISTRY OF TRANSPORT (M.O.T) MARITIME PROJECT MANAGEMENT UNIT NO.2	ORIENTAL CONSULTANTS CO.,LTD. NIPPON KOEI CO.,LTD. PADECO CO.,LTD. JAPAN BRIDGE & STRUCTURE INSTITUTE, INC.	NAME			SOIL PROFILE BY SECTION (OUTER REVETMENT)	DWG No. III.1
			SIGNATURE				
			DATE				

c) Sand Protection Dyke Area



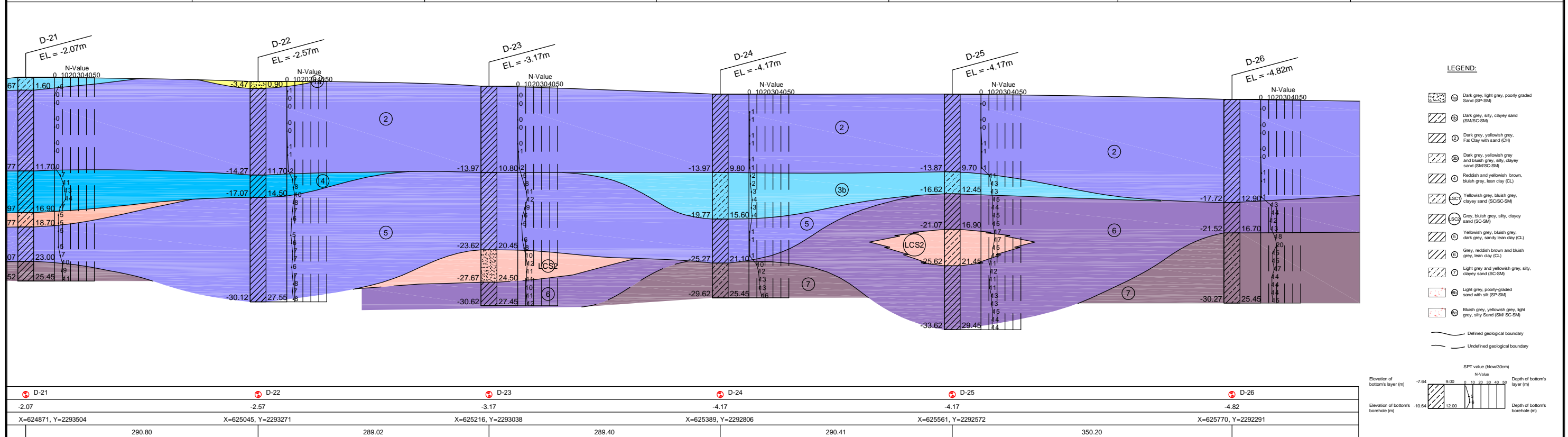
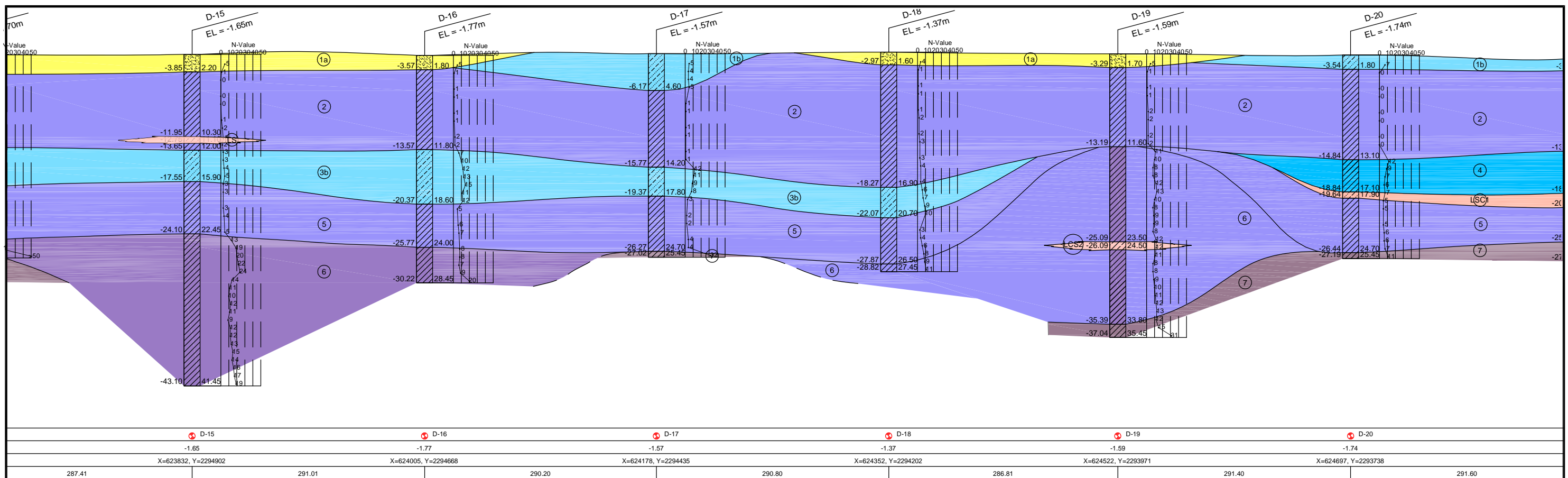
Borehole:	D-01	D-02	D-03	D-04	D-05	D-06	D-07
Elevation (m):	0.68	0.52	-1.47	-1.64	-0.87	-2.40	-3.26
Co-ordinate:	X=621412, Y=2298164	X=621589, Y=2297929	X=621758, Y=2297695	X=621932, Y=2297463	X=622103, Y=2297231	X=622278, Y=2296998	X=622451, Y=2296764
Distance (m):	294.20	288.65	290.00	288.21	291.40	291.01	



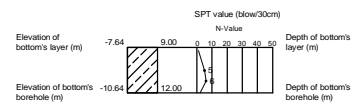
Vertical scale: 1/500
Horizontal scale: 1/5000

Borehole:	D-08	D-09	D-10	D-11	D-12	D-13	D-14
Elevation (m):	-2.15	-2.96	-2.26	-1.94	-1.39	-1.69	-1.70
Co-ordinate:	X=622624, Y=2296533	X=622795, Y=2296297	X=622968, Y=2296064	X=623144, Y=2295832	X=623314, Y=2295602	X=623487, Y=2295366	X=623661, Y=2295133
Distance (m):	288.60	291.44	290.20	291.20	286.01	292.62	290.80

PROJECT NAME	OWNER	CONSULTANTS	PREPARED BY	CHECKED BY	APPROVED BY	DRAWING TITLE	PACKAGE
THE DETAILED DESIGN STUDY FOR LACH HUYEN PORT INFRASTRUCTURE CONSTRUCTION PROJECT IN VIET NAM	SOCIALIST REPUBLIC OF VIETNAM MINISTRY OF TRANSPORT (M.O.T) MARITIME PROJECT MANAGEMENT UNIT NO.2	ORIENTAL CONSULTANTS CO.,LTD. NIPPON KOEI CO.,LTD. PADECO CO.,LTD. JAPAN BRIDGE & STRUCTURE INSTITUTE, INC.	NAME			SOIL PROFILE BY SECTION (SAND PROTECTION DYKE)	DWG No. V.1
			SIGNATURE				
			DATE				



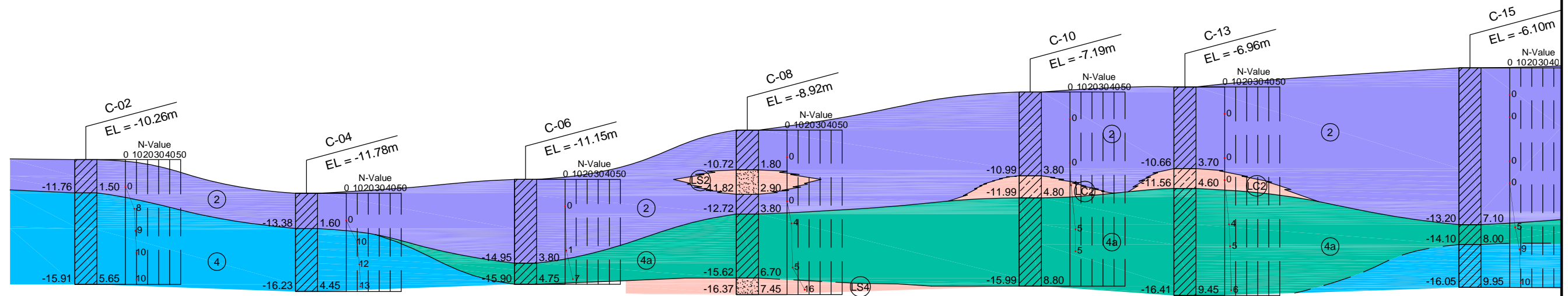
- LEGEND:**
- Dark grey, light grey, poorly graded Sand (SP-SM)
 - Dark grey, silty, clayey sand (SM-SC-SM)
 - Dark grey, yellowish grey, Fat Clay with sand (CF)
 - Dark grey, yellowish grey and bluish grey, silty, clayey sand (SM-SC-SM)
 - Reddish and yellowish brown, bluish grey, lean clay (CL)
 - Yellowish grey, bluish grey, clayey sand (SC-SM)
 - Grey, bluish grey, silty, clayey sand (SC-SM)
 - Yellowish grey, bluish grey, dark grey, sandy lean clay (CL)
 - Grey, reddish brown and bluish grey, lean clay (CL)
 - Light grey and yellowish grey, silty, clayey sand (SC-SM)
 - Light grey, poorly-graded sand with silt (SP-SM)
 - Bluish grey, yellowish grey, light grey, silty Sand (SM-SC-SM)
- Defined geological boundary
 Undefined geological boundary



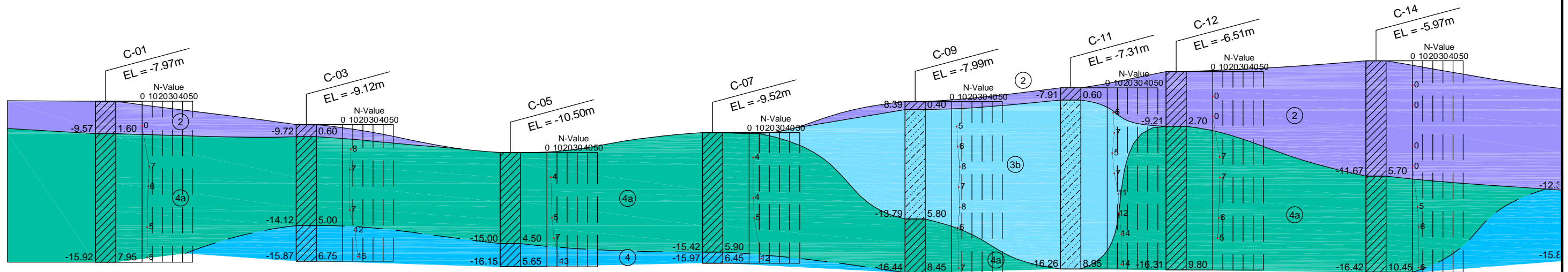
Vertical scale: 1/500
 Horizontal scale: 1/5000

PROJECT NAME	OWNER	CONSULTANTS	PREPARED BY	CHECKED BY	APPROVED BY	DRAWING TITLE	PACKAGE
THE DETAILED DESIGN STUDY FOR LACH HUYEN PORT INFRASTRUCTURE CONSTRUCTION PROJECT IN VIET NAM	SOCIALIST REPUBLIC OF VIETNAM MINISTRY OF TRANSPORT MARITIME PROJECT MANAGEMENT UNIT NO.2	ORIENTAL CONSULTANTS CO.,LTD. NIPPON KOEI CO.,LTD. PADECO CO.,LTD. JAPAN BRIDGE & STRUCTURE INSTITUTE, INC.	NAME			SOIL PROFILE BY SECTION (SAND PROTECTION DYKE)	DWG No. V.2
			SIGNATURE				
			DATE				

d) Navigation Channel and Turning Basin Area



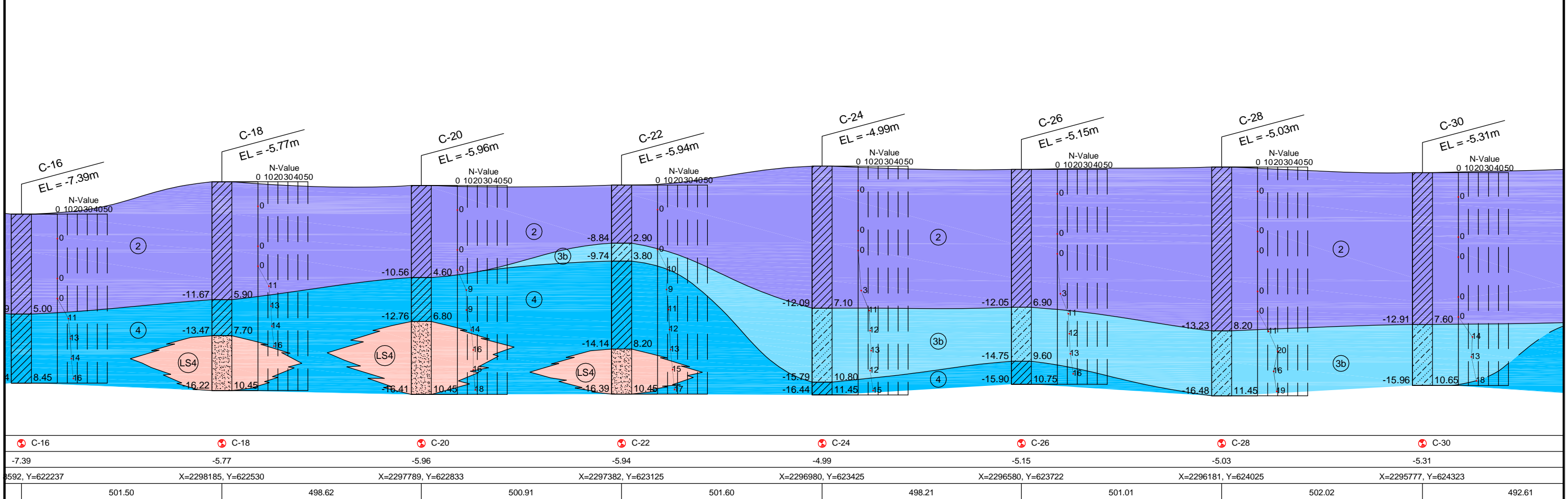
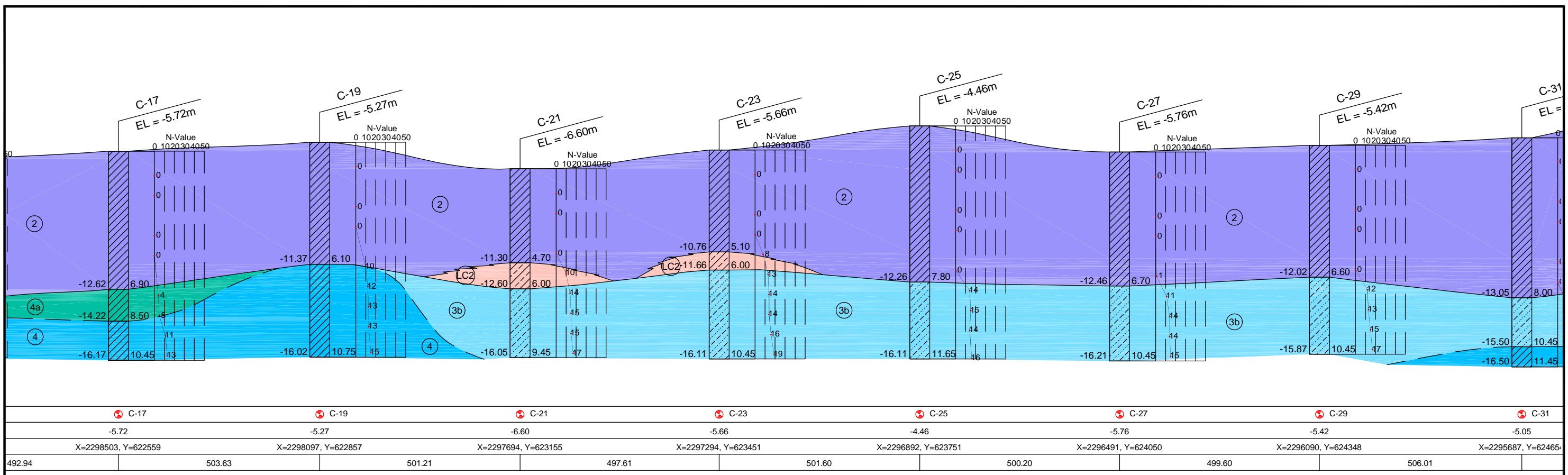
Borehole:	C-02	C-04	C-06	C-08	C-10	C-13	C-15
Elevation (m):	-10.26	-11.78	-11.15	-8.92	-7.19	-6.96	-6.10
Co-ordinate:	X=2301541, Y=620577	X=2301114, Y=620838	X=2300687, Y=621092	X=2300252, Y=621345	X=2299701, Y=621674	X=2299415, Y=621877	X=2298908, Y=622278
Distance (m):	500.45	496.83	503.22	641.75	350.72	646.41	



Borehole:	C-01	C-03	C-05	C-07	C-09	C-11	C-12	C-14
Elevation (m):	-7.97	-9.12	-10.50	-9.52	-7.99	-7.31	-6.51	-5.97
Co-ordinate:	X=2301646, Y=620270	X=2301221, Y=620524	X=2300788, Y=620782	X=2300359, Y=621037	X=2299929, Y=621292	X=2299600, Y=621490	X=2299382, Y=621632	X=2298992, Y=621934
Distance (m):	495.12	504.04	499.07	499.92	383.99	260.17	493.26	501.81

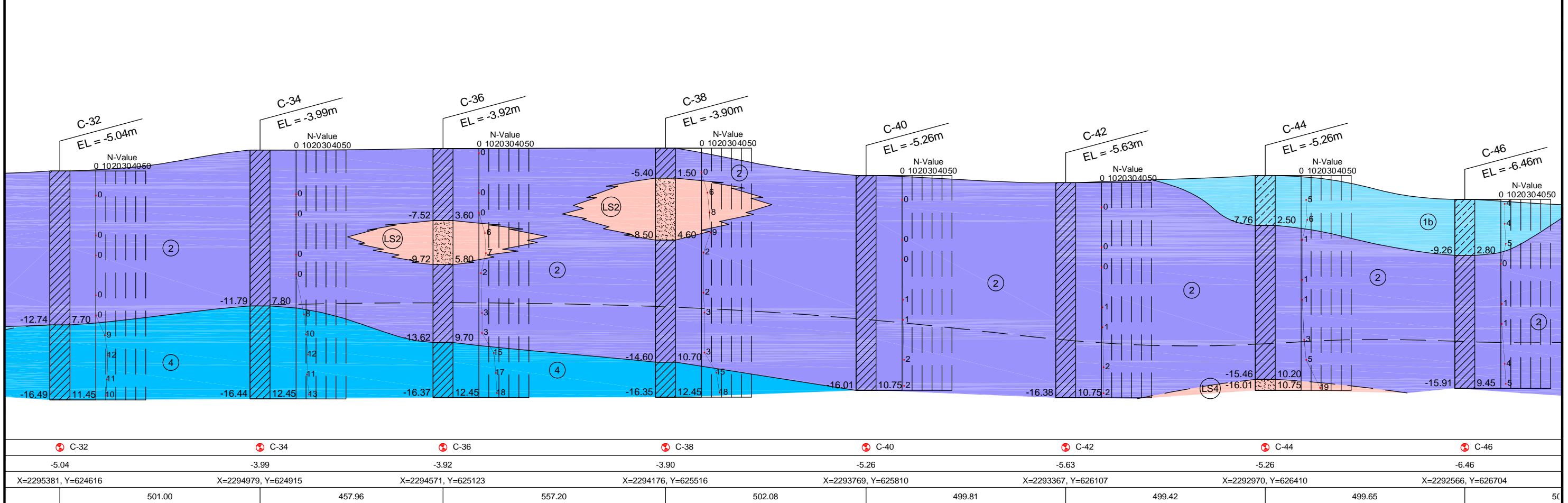
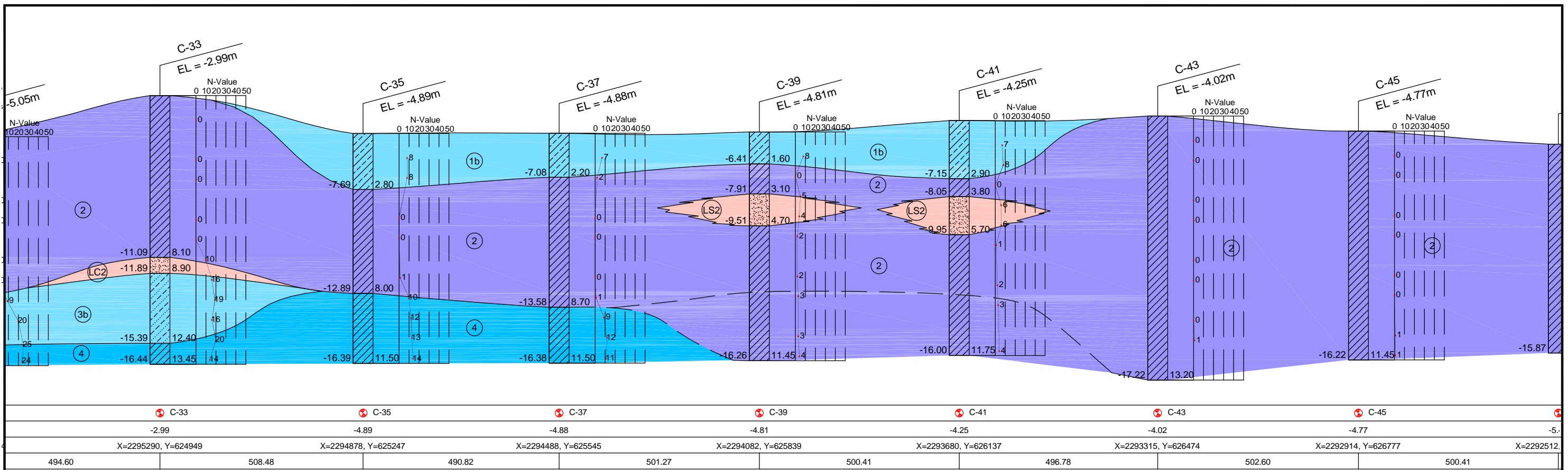
Vertical scale: 1/200
Horizontal scale: 1/10000

PROJECT NAME	OWNER	CONSULTANTS	PREPARED BY	CHECKED BY	APPROVED BY	DRAWING TITLE	PACKAGE
THE DETAILED DESIGN STUDY FOR LACH HUYEN PORT INFRASTRUCTURE CONSTRUCTION PROJECT IN VIET NAM	SOCIALIST REPUBLIC OF VIETNAM MINISTRY OF TRANSPORT (M.O.T) MARITIME PROJECT MANAGEMENT UNIT NO.2	ORIENTAL CONSULTANTS CO.,LTD. NIPPON KOEI CO.,LTD. PADECO CO.,LTD. JAPAN BRIDGE & STRUCTURE INSTITUTE, INC.	NAME			SOIL PROFILE BY SECTION (NAVIGATION CHANNEL)	DWG No.
			SIGNATURE				IV.1
			DATE				



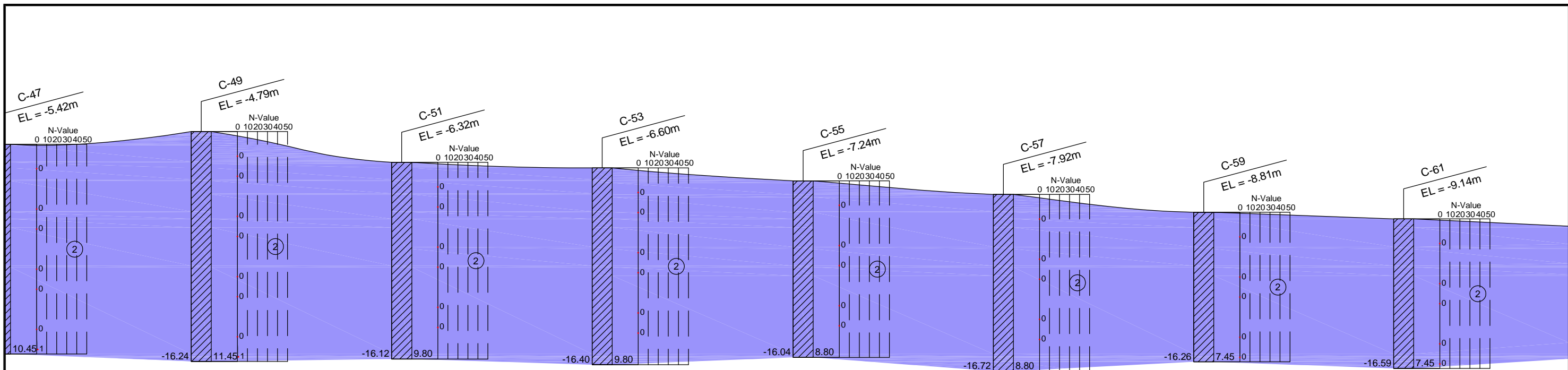
Vertical scale: 1/200
Horizontal scale: 1/10000

PROJECT NAME	OWNER	CONSULTANTS	PREPARED BY	CHECKED BY	APPROVED BY	DRAWING TITLE	PACKAGE
THE DETAILED DESIGN STUDY FOR LACH HUYEN PORT INFRASTRUCTURE CONSTRUCTION PROJECT IN VIET NAM	SOCIALIST REPUBLIC OF VIETNAM MINISTRY OF TRANSPORT (M.O.T) MARITIME PROJECT MANAGEMENT UNIT NO.2	ORIENTAL CONSULTANTS CO.,LTD. NIPPON KOEI CO.,LTD. PADECO CO.,LTD. JAPAN BRIDGE & STRUCTURE INSTITUTE, INC.	NAME			SOIL PROFILE BY SECTION (NAVIGATION CHANNEL)	DWG No.
			SIGNATURE				IV.2
			DATE				

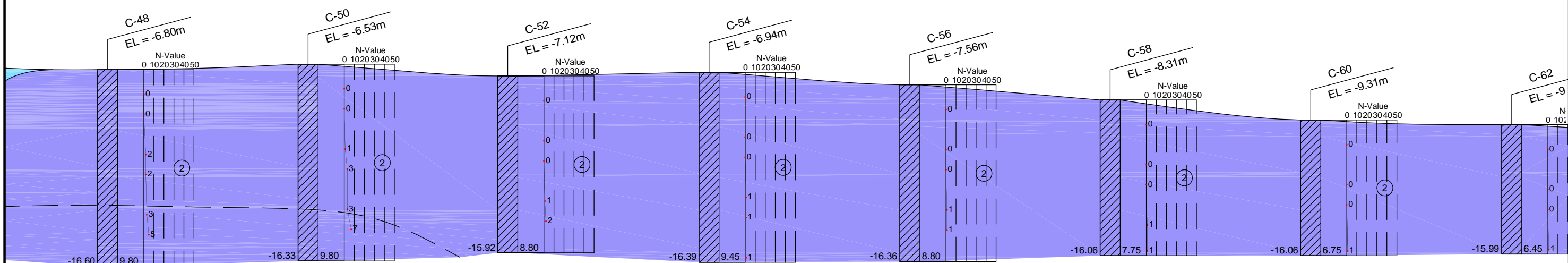


Vertical scale: 1/200
Horizontal scale: 1/10000

PROJECT NAME	OWNER	CONSULTANTS	PREPARED BY	CHECKED BY	APPROVED BY	DRAWING TITLE	PACKAGE
THE DETAILED DESIGN STUDY FOR LACH HUYEN PORT INFRASTRUCTURE CONSTRUCTION PROJECT IN VIET NAM	SOCIALIST REPUBLIC OF VIETNAM MINISTRY OF TRANSPORT (M.O.T) MARITIME PROJECT MANAGEMENT UNIT NO.2	ORIENTAL CONSULTANTS CO.,LTD. NIPPON KOEI CO.,LTD. PADECO CO.,LTD. JAPAN BRIDGE & STRUCTURE INSTITUTE, INC.	NAME			SOIL PROFILE BY SECTION (NAVIGATION CHANNEL)	DWG No.
			SIGNATURE				IV.3
			DATE				



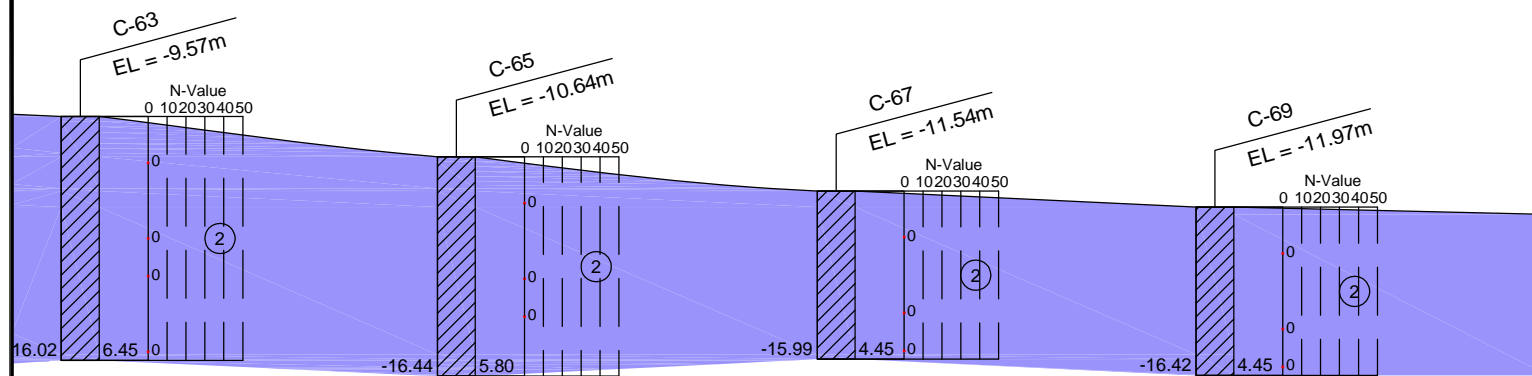
C-47	C-49	C-51	C-53	C-55	C-57	C-59	C-61
-4.79	-6.32	-6.60	-7.24	-7.92	-8.81	-9.14	
X=2292110, Y=627373	X=2291709, Y=627671	X=2291308, Y=627969	X=2290906, Y=628268	X=2290505, Y=628565	X=2290101, Y=628859	X=2289704, Y=629160	
500.41	499.60	499.60	501.00	499.01	499.65	498.21	503.41



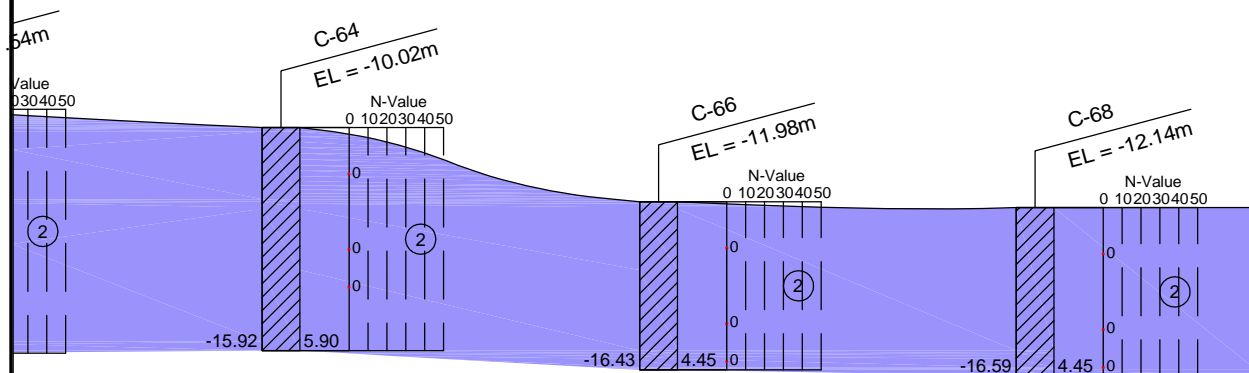
C-48	C-50	C-52	C-54	C-56	C-58	C-60	C-62
-6.80	-6.53	-7.12	-6.94	-7.56	-8.31	-9.31	-9.54
X=2292163, Y=627002	X=2291762, Y=627300	X=2291367, Y=627603	X=2290960, Y=627896	X=2290558, Y=628194	X=2290157, Y=628492	X=2289756, Y=628790	X=2289354, Y=629089
499.60	497.83	501.50	500.41	499.60	499.60	501.00	

Vertical scale: 1/200
Horizontal scale: 1/10000

PROJECT NAME	OWNER	CONSULTANTS	PREPARED BY	CHECKED BY	APPROVED BY	DRAWING TITLE	PACKAGE
THE DETAILED DESIGN STUDY FOR LACH HUYEN PORT INFRASTRUCTURE CONSTRUCTION PROJECT IN VIET NAM	SOCIALIST REPUBLIC OF VIETNAM MINISTRY OF TRANSPORT (M.O.T) MARITIME PROJECT MANAGEMENT UNIT NO.2	ORIENTAL CONSULTANTS CO.,LTD. NIPPON KOEI CO.,LTD. PADECO CO.,LTD. JAPAN BRIDGE & STRUCTURE INSTITUTE, INC.	NAME			SOIL PROFILE BY SECTION (NAVIGATION CHANNEL)	DWG No.
			SIGNATURE				IV.4
			DATE				










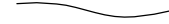
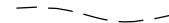
C-63	C-65	C-67	C-69
-9.57	-10.64	-11.54	-11.97
X=2289299, Y=629459	X=2288899, Y=629755	X=2288497, Y=630056	X=2288095, Y=630355
497.61	502.20	501.00	

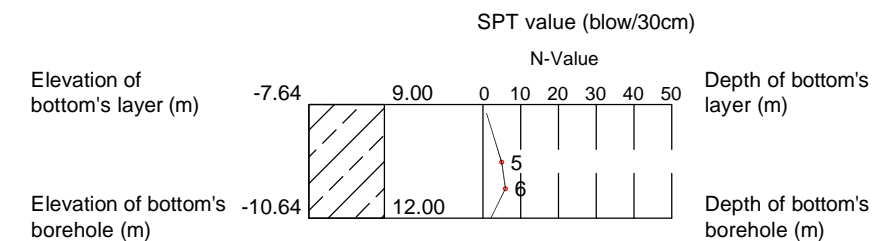


C-64	C-66	C-68
-10.02	-11.98	-12.14
X=2288952, Y=629386	X=2288551, Y=629684	X=2288155, Y=629986
499.81	499.60	498.02

LEGEND:

-  1b Dark grey, silty, clayey sand (SC-SM)
-  2 Fat Clay with sand (CH)
-  LC2 Dark grey, sandy lean clay (CL)
-  LS2 Dark grey, bluish grey, silty, clayey sand with trace of shell (SC-SM)
-  3b Yellowish grey, silty, clayey sand (SC-SM)
-  4a Bluish and yellowish grey, lean clay (CL)
-  4 Reddish brown, yellowish brown, Lean Clay (CL)
-  LS4 Grey, light grey, silty, clayey sand (SC-SM)

-  Defined geological boundary
-  Undefined geological boundary



Vertical scale: 1/200
Horizontal scale: 1/10000

PROJECT NAME	OWNER	CONSULTANTS	PREPARED BY	CHECKED BY	APPROVED BY	DRAWING TITLE	PACKAGE
THE DETAILED DESIGN STUDY FOR LACH HUYEN PORT INFRASTRUCTURE CONSTRUCTION PROJECT IN VIET NAM	SOCIALIST REPUBLIC OF VIETNAM MINISTRY OF TRANSPORT (M.O.T) MARITIME PROJECT MANAGEMENT UNIT NO.2	ORIENTAL CONSULTANTS CO.,LTD. NIPPON KOEI CO.,LTD. PADECO CO.,LTD. JAPAN BRIDGE & STRUCTURE INSTITUTE, INC.	NAME			SOIL PROFILE BY SECTION (NAVIGATION CHANNEL)	DWG No.
			SIGNATURE				IV.5
			DATE				

3) Borelogs

a) Reclamation Area (Terminal Area, Access Road Area) and Public Facility Area

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: B1

Co-ord (m): N = 2301420

Sheet: 1 / 2

E = 619533

Location: Ground

Ground elevation (m): 4.65

Date commenced: 21/5/2011


Depth (m): 33.0

Date completed: 23/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm 10 20 30 40 50 >50
							N ₀	N ₁	N ₂			
1a			4.70	•	Loose, brownish grey, Poorly graded Sand (SP)	1.0	2	2	3	5		D1 1.00 - 1.45
						2.0	2	3	4	7		D2 2.00 - 2.45
						3.0	2	3	3	6		D3 3.00 - 3.45
						4.0	2	2	3	5		D4 4.00 - 4.45
1b	-0.05	4.70		▨	Very soft, grey, brownish grey, Lean Clay (CL)	5.0	2	1	1	2		D5 5.00 - 5.45
						7.0	0	0	0	0		D7 7.00 - 7.45
						8.0	0	0	1	1		D8 8.00 - 8.45
						9.0	0	0	1	1		D10 10.00 - 10.45
2	-4.35	9.00	3.00	▨	Very soft, grey, Fat Clay (CH)	10.0	0	0	1	1		D11 11.00 - 11.45
						11.0	0	1	1	2		D12 12.00 - 12.45
3a	-7.35	12.00	2.00	•	Loose, yellowish grey, light grey, Sand (SP)	12.0	2	2	3	5		D13 13.00 - 13.45
						13.0	2	2	3	5		D14 14.00 - 14.80
3b	-9.35	14.00	2.70	▨	Very soft, yellowish grey, grey, Lean Clay (CL)	15.0	1	1	1	2		D15 15.00 - 15.45
						16.0	1	1	2	3		D16 16.00 - 16.45
	-12.05	16.70										

Legend

- ▨ UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- ▨ R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: B1

Co-ord (m): N = 2301420

Sheet: 2 / 2

E = 619533

Location: Ground

Ground elevation (m): 4.65

Date commenced: 21/5/2011

Depth (m): 33.0

Date completed: 23/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)				
						Depth (m)	Blows/15cm			N		N: Blows/30 cm			
							N ₀	N ₁	N ₂						
4	-16.15	20.80	4.1	▨	Stiff, light grey, yellowish grey, brownish grey, reddish brown, sandy Lean Clay (CL)	17.0	5	7	8	15	●	D17 17.00 - 17.45			
						18.0	6	8	8	16		D18 18.00 - 18.45			
						19.0	7	9	10	19		D19 19.00 - 19.45			
						20.0	6	7	8	15		D20 20.00 - 20.45			
						21.0	4	4	6	10		D21 21.00 - 21.45			
5	-25.35	30.00	9.20	▨	Firm, grey, Fat Clay (CH)	22.0	4	5	6	11	●	D22 22.00 - 22.45			
						23.0	1	2	2	4		D23 23.00 - 23.45			
						25.0	1	2	2	4		D25 25.00 - 25.45			
						26.0	1	2	3	5		D26 26.00 - 26.45			
						27.0	2	2	3	5		D27 27.00 - 27.45			
10	-28.35	33.00	3.00	▨	Hard, reddish brown, silt/claystone TCR =40%, RQD = 20%	29.0	2	2	3	5	●	D29 29.00 - 29.45			

Legend

- ▨ UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- ▨ R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: B2

Co-ord (m): N = 2301230

Sheet: 1 / 2

E = 619647

Location: Ground

Ground elevation (m): 3.95

Date commenced: 17/5/2011

Depth (m): 33,0

Date completed: 18/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm 10 20 30 40 50 >50
							N ₀	N ₁	N ₂			
1a	-0.05	4.00	4.00		Blackish grey, poorly graded sand with shell (SP)	1.0	1	2	3	5	D1	1.00 - 1.45
						2.0	2	3	4	7	D2	2.00 - 2.45
						3.0	2	3	3	6	D3	3.00 - 3.45
						4.0	0	0	1	1	D4	4.00 - 4.45
1b	-3.65	7.60	3.60		Very soft, brownish grey, Lean Clay (CL)	6.0	0	1	1	2	U5	5.00 - 5.90
						7.0	0	1	1	2	D6	6.00 - 6.45
						7.0	0	1	1	2	D7	7.00 - 7.45
2	-8.05	12.00	3.40		Very soft, Brownish grey, grey, Fat Clay (CH)	9.0	0	1	1	2	U8	8.00 - 8.80
						10.0	0	1	1	2	D9	9.00 - 9.45
3a	-10.05	14.00	2.00		Plastic, Grey, clayey sand (SC)	12.0	2	2	2	4	D10	10.00 - 10.45
						13.0	2	2	3	5	D11	11.00 - 11.60
3b			6.00		Very soft, Yellowish grey, Lean Clay (CL)	12.0	2	2	2	4	D12	12.00 - 12.45
						13.0	2	2	3	5	D13	13.00 - 13.45
						14.0	1	1	2	3	D14	14.00 - 14.45
						16.0	1	1	2	3	U15	15.00 - 15.90
											D16	16.00 - 16.45

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
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BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: B2

Co-ord (m): N = 2301260

Sheet: 2 / 2

E = 619647

Location: Ground

Ground elevation (m): 3.95

Date commenced: 17/5/2011

Depth (m): 33.0

Date completed: 18/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test				SPT chart							Sample No.	
						Depth (m)	Blows/15cm			N	N: Blows/30 cm	10	20	30	40	50	>50	Depth of the sample (m)
							N ₀	N ₁	N ₂									
				●		17.0	1	2	2	4								D17 17.00 - 17.45
				●	Very soft, Yellowish grey, Lean Clay (CL)													U18 18.00 - 18.80
				●		19.0	1	2	2	4								D19 19.00 - 19.45
	-16.05	20.00		●	Very stiff, yellowish grey, light grey, sandy Lean Clay (CL)													D20 20.00 - 20.45
4			2.70	●		21.0	4	6	6	12								D21 21.00 - 21.45
				●	Very stiff, yellowish grey, light grey, Fat Clay (CH)													D22 22.00 - 22.45
	-18.75	22.70		●		22.0	5	6	7	13								D23 23.00 - 23.90
				●		24.0	2	2	3	5								D24 24.00 - 24.45
				●		25.0	2	2	3	5								D25 25.00 - 25.45
5			7.30	●	Firm, grey, Fat Clay (CH)													U26 26.00 - 26.90
				●		27.0	2	3	3	6								D27 27.00 - 27.45
				●		28.0	2	3	4	7								D28 28.00 - 28.45
				●		29.0	2	3	3	6								D29 29.45 - 29.45
	-26.05	30.00		■														R30 30.80 - 31.00
10			3.00	■	Hard, reddish brown, silt/claystone TCR =40%, RQD = 20%													
	-29.05	33.00																

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
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BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: B4

Co-ord (m): N = 2301058

Sheet: 1 / 2

E = 619750

Location: Offshore

Ground elevation (m): -1.23

Date commenced: 14/05/2011

Depth (m): 29.8m

Date completed: 15/05/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
2			5.50	▨	Very soft, Brownish grey, Fat Clay (CH)	1.0	0	0	0	0/45		D1 1.00 - 1.45
						2.0	0	0	0	0/45		D2 2.00 - 2.45
						3.0						U3 3.00 - 3.80
						4.0	0	0	1	1/30		D4 4.00 - 4.45
						5.0	0	0	1	1/30		D5 5.00 - 5.45
3b	-6.73	5.50		▨	Plastic, yellowish grey, reddish brown, clayey sand (SC)	6.0	1	2	2	4/30		D6 6.00 - 6.45
						7.0						U7 7.00 - 7.80
						8.0	1	2	2	4/30		D8 8.00 - 8.45
						9.0	2	2	3	5/30		D9 9.00 - 9.45
						10.0	2	2	3	5/30		D10 10.00 - 10.45
						11.0	2	2	3	5/30		D11 11.00 - 11.45
						12.0	1	2	2	4/30		D12 12.00 - 12.45
5	-14.23	13.00		▨	Firm, grey, Fat Clay (CH)	13.0	1	2	2	4/30		D13 13.00 - 13.45
						14.0						U14 14.00 - 14.90
						15.0	1	2	2	4/30		D15 15.00 - 15.45
						16.0	2	2	3	5/30		D16 16.00 - 16.45

Legend

- ▨ UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: B4

Co-ord (m): N = 2301058

Sheet: 2 / 2

E = 619750

Location: Offshore

Ground elevation (m): -1.23

Date commenced: 14/05/2011

Depth (m): 29.8

Date completed: 15/05/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm 10 20 30 40 50 >50
							N ₀	N ₁	N ₂			
5			13.50		Firm, grey, Fat Clay (CH)	18.0	2	2	3	5/30	•	U17 17.00 - 17.90
						18.0	2	2	3	5/30	•	D18 18.00 - 18.45
						19.0	2	2	3	5/30	•	D19 19.00 - 19.45
						21.0	1	2	3	5/32	•	U20 20.00 - 20.70
						21.0	1	2	3	5/32	•	D21 21.00 - 21.45
						22.0	2	2	3	5/30	•	D22 22.00 - 22.45
						23.0	2	2	3	5/30	•	D23 23.00 - 23.45
						24.0	2	3	3	6/30	•	D24 24.00 - 24.45
9	-27.73	26.50	0.30		Completely weathered claystone	25.0	2	3	6/30	•	D25 25.00 - 25.45	
	-28.03	26.80				26.0	2	2	3	5/30	•	D26 26.00 - 26.45
10			3.00		Hard, reddish brown, silt/claystone TCR = 50%, RQD = 30%						R27 27.50 - 27.70	
	-31.03	29.80									R28 29.60 - 29.80	

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: B5

Co-ord (m): N = 2300972

Sheet: 1 / 2

E = 619801

Location: Offshore

Ground elevation (m): -1.35

Date commenced: 27/04/2011

Depth (m): 28.5m

Date completed: 28/04/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm 10 20 30 40 50 >50
							N ₀	N ₁	N ₂			
1a	-2.15	0.80	0.80	█	Light grey, poorly graded sand (SP)							
1b	-3.35	2.00	1.20	█	Very soft, grey, Lean Clay (CL)	1.0	0	0	0	0/50	D1 1.00 - 1.45	
2	-8.95	7.60	5.60	█	Very soft, grey, Fat Clay (CH)	3.0	0	0	0	0/35	U2 2.00 - 2.90	
						4.0	0	0	1	1/55	D3 3.00 - 3.45	
						6.0	0	0	0	0/40	D4 4.00 - 4.45	
						7.0	0	0	0	0/35	U5 5.00 - 5.90	
						7.0	0	0	0	0/35	D6 6.00 - 6.45	
3a	-10.25	8.90	1.30	█	Yellowish grey, poorly graded sand (SP)					D7 7.00 - 7.45		
3b	-11.95	10.60	1.70	█	Firm, reddish brown, yellowish brown, Fat Clay (CH)	9.0	1	2	3	5/30	U8 8.00 - 8.90	
3c	-16.15	14.80	4.20	█	Yellowish grey, poorly graded sand (SP)	10.0	2	2	4	6/30	D9 9.00 - 9.45	
						12.0	1	2	2	4/30	D10 10.00 - 10.45	
						13.0	2	3	3	6/30	U11 11.00 - 11.90	
						14.0	2	2	4	6/30	D12 12.00 - 12.45	
				█	Firm, grey, Fat Clay (CH)	14.0	2	2	4	6/30	D13 13.00 - 13.45	
				█	Firm, grey, Fat Clay (CH)	16.0	1	2	2	4/30	D14 14.00 - 14.45	
				█	Firm, grey, Fat Clay (CH)	16.0	1	2	2	4/30	U15 15.00 - 15.70	
				█	Firm, grey, Fat Clay (CH)	16.0	1	2	2	4/30	D16 16.00 - 16.45	

Legend

- █ UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- █ R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: B5

Co-ord (m): N = 2300972

Sheet: 2 / 2

E = 619801

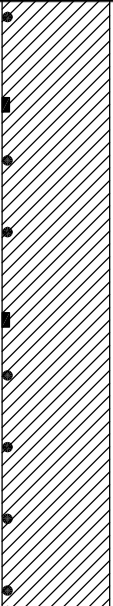
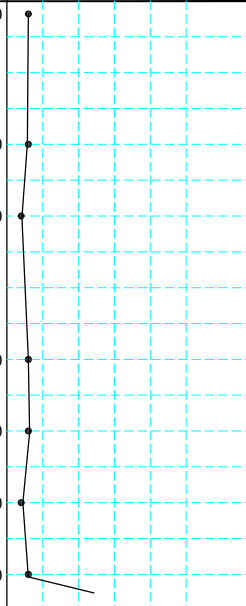
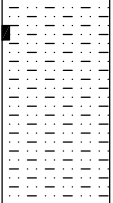
Location: Offshore

Ground elevation (m): -1.35

Date commenced: 27/04/2011

Depth (m): 28.5m

Date completed: 28/04/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm 10 20 30 40 50 >50
							N ₀	N ₁	N ₂			
5	-26.85	25.50	10.70		Firm, grey, Fat Clay (CH)	17.0	2	3	3	6/30		D17 17.00 - 17.45
						19.0	2	2	4	6/30		U18 18.00 - 18.90
						20.0	1	2	3	5/30		D19 19.00 - 19.45
						22.0	2	3	3	6/30		D20 20.00 - 20.45
						23.0	2	2	4	6/30		U21 21.00 - 21.90
						24.0	1	2	3	5/30		D22 22.00 - 22.45
						25.0	1	2	4	6/30		D23 23.00 - 23.45
						25.5	50	2	cm			D24 24.00 - 24.45
												D25 25.00 - 25.45
												D26 25.50 - 25.52
10	-29.85	28.50	3.00		Hard, reddish brown, silt/claystone TCR = 50%, RQD = 30%					R27 26.00 - 26.10		

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: B7

Co-ord (m): N = 2300800

Sheet: 1 / 2

E = 619903

Location: Offshore

Ground elevation (m): 1.01

Date commenced: 19/5/2011

Depth (m): 33.7

Date completed: 20/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm 10 20 30 40 50 >50
							N ₀	N ₁	N ₂			
1a	-1.49	2.50	2.50	•	Light grey, poorly graded sand (SP)	1.0	1	2	3	5	D1 1.00 - 1.45	
						2.0	2	2	2	4	D2 2.00 - 2.45	
1b	-3.59	4.60	2.10	▨	Plastic, Brownish grey, clayey sand (SC)	4.0	1	2	2	4	U3 3.00 - 3.90 D4 4.00 - 4.45	
						5.0	0	0	0	0	D5 5.00 - 5.45	
2	-6.89	7.90	3.30	▨	Very soft, Brownish grey, Lean Clay (CL)	7.0	0	0	1	1	U6 6.00 - 6.90 D7 7.00 - 7.45	
						8.0	2	2	3	5	D8 8.00 - 8.45	
3b	-10.59	11.60	3.70	▨	Plastic, Yellowish grey, reddish brown, clayey sand (SC)	10.0	1	2	2	4	U9 9.00 - 9.80 D10 10.45 - 10.45	
						11.0	2	2	3	5	D11 11.00 - 11.45	
						13.0	1	3	3	6	U12 Tut mau D13 13.00 - 13.45	
3c	-15.69	16.70	3.70	•	Yellowish grey, poorly graded sand with clay (SP-SC)	14.0	1	2	2	4	D14 14.00 - 14.45	
						15.0	2	2	3	5	D15 15.00 - 15.45	
						16.0	1	2	4	6	D16 16.00 - 16.45	

Legend

- ▨ UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- ▨ R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: B7

Co-ord (m): N = 2300800

Sheet: 2 / 2

E = 619903

Location: Offshore

Ground elevation (m): 1.01

Date commenced: 19/5/2011

Depth (m): 33.7

Date completed: 20/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No.	
						Depth (m)	Blows/15cm			N	N: Blows/30 cm	Depth of the sample (m)
							N ₀	N ₁	N ₂			
5			14.00		Firm, grey, Fat Clay (CH)	17.0	2	3	3	6		D17 17.00 - 17.45
						19.0	1	3	3	6	U18 18.00 - 18.90	
						20.0	2	2	3	5	D20 20.00 - 20.45	
						21.0	1	2	4	6	D21 21.00 - 21.45	
						23.0	1	3	3	6	U22 22.00 - 22.90	
						24.0	2	2	3	5	D23 23.00 - 23.45	
						25.0	2	2	4	6	D24 24.00 - 24.45	
						26.0	1	3	3	6	D25 25.00 - 25.45	
						27.0	2	3	3	6	D26 26.00 - 26.45	
						28.0	2	2	3	5	D27 27.00 - 27.45	
						29.0	1	2	4	6	D28 28.00 - 28.45	
						30.0	1	2	4	6	D29 29.00 - 29.45	
												D30 30.00 - 30.45
												R31 31.00 - 31.15
						10	-29.69	30.70	3.00		Moderately weathered reddish brown, silt/claystone TCR = 30%, RQD = 10%	

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: B8

Co-ord (m): N = 2300715

Sheet: 1 / 2

E = 619955

Location: Offshore

Ground elevation (m): 1.30

Date commenced: 04/05/2011

Depth (m): 34.5

Date completed: 05/05/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
1a	-0.50	1.80	1.80		Yellowish grey, light grey, poorly graded sand with clay (SP - SC)	1.0	1	1	1	2/30	D1 1.00 - 1.45	
1b		2.20	4.00		Very soft, Brownish grey, Clayey Sand (SC)	2.0	0	0	0	0/55	D2 2.00 - 2.45	
						4.0	0	0	0	0/40	D4 4.00 - 4.45	
2		4.80	8.80		Very soft, Brownish grey, Fat Clay (CH)	5.0	0	0	0	0/35	D5 5.00 - 5.45	
						7.0	0	0	1	1/50	D7 7.00 - 7.45	
3b		4.70	12.20		Plastic, yellowish grey, clayey sand (SC)	8.0	0	0	1	1/45	D8 8.00 - 8.45	
						10.0	2	2	3	5/30	D10 10.00 - 10.45	
4		1.50	15.00		Firm to stiff, greenish grey, yellowish grey, Sandy Clay (CL)	11.0	3	4	5	9/30	D11 11.00 - 11.45	
						13.0	3	4	3	7/30	D13 13.00 - 13.45	
					Firm, grey, Fat Clay (CH)	14.0	3	3	5	8/30	D14 14.00 - 14.45	
						16.0	2	2	2	4/30	D16 16.00 - 16.45	

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: B8

Co-ord (m): N = 2300715

Sheet: 2 / 2

E = 619955

Location: Offshore

Ground elevation (m): 1.30

Date commenced: 04/05/2011

Depth (m): 34.5

Date completed: 05/05/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart							Sample No.		
						Depth (m)	Blows/15cm			N	N: Blows/30 cm							Depth of the sample (m)
							N ₀	N ₁	N ₂		10	20	30	40	50	>50		
5	-30.10	31.40	16.40	[Diagonal Hatching]	Firm, grey, Fat Clay (CH)	17.0	2	2	2	4/30								D17
						17.00 - 17.45												
						18.0	2	2	2	4/30								D18
						18.00 - 18.45												
						19.0	2	2	3	5/30								D19
						19.00 - 19.45												
						20.00 - 20.90												
						21.0	2	2	3	5/30								D21
						21.00 - 21.45												
						22.0	2	2	3	5/30								D22
						22.00 - 22.45												
23.0	2	2	3	5/30	D23													
23.00 - 23.45																		
24.0	2	3	3	6/30	D24													
24.00 - 24.45																		
25.0	2	3	3	6/30	D25													
25.00 - 25.45																		
26.0	2	3	3	6/30	D26													
26.00 - 26.45																		
27.0	2	3	3	6/30	D27													
27.00 - 27.45																		
28.0	2	3	3	6/30	D28													
28.00 - 28.45																		
29.0	2	3	3	6/30	D29													
29.00 - 29.45																		
30.0	2	3	3	6/30	D30													
30.00 - 30.45																		
31.0	2	3	3	6/25	D31													
31.00 - 31.45																		
10	-33.20	34.50	3.00	[Dotted Hatching]	Moderately weathered reddish brown, silt/claystone TCR = 70%, RQD = 60%													

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: B9

Co-ord (m): N = 2300629

Sheet: 1 / 2

E = 620006

Location: Offshore

Ground elevation (m): 0.81

Date commenced: 13/05/2011

Depth (m): 35.3m

Date completed: 14/05/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm 10 20 30 40 50 >50
							N ₀	N ₁	N ₂			
1a	-1.49	2.30	2.30	[Dotted pattern]	Plastic, Brownish grey, clayey sand (SC)	1.0	1	1	2	3/30	D1 1.00 - 1.45	
		2.0	1			2	0	2/35	D2 2.00 - 2.45			
1b	-4.19	2.70	2.70	[Diagonal lines /]	Very soft, Brownish grey, sandy Lean Clay (CL)	4.0	0	0	1	1/35	U3 3.00 - 3.90 D4 4.00 - 4.45	
		5.0	0			0	1	1/40	D5 5.00 - 5.45			
2	-8.19	4.00	4.00	[Diagonal lines /]	Very soft, Brownish grey, Fat Clay (CH)	7.0	0	0	0	0/35	U6 6.00 - 6.80 D7 7.00 - 7.45	
		8.0	0			0	1	1/40	D8 8.00 - 8.45			
3b	-13.79	9.00	9.00	[Diagonal lines /]	Plastic, Yellowish grey, light grey, reddish brown, clayey sand (SC)	10.0	2	2	2	4/30	U9 9.00 - 9.80 D10 10.00 - 10.45	
		11.0	2			2	3	5/35	D11 11.00 - 11.45			
		13.0	2			2	2	4/30	D13 13.00 - 13.45			
		14.0	2			2	2	4/30	D14 14.00 - 14.45			
4		14.60	14.60	[Diagonal lines /]	Firm to stiff, Yellowish grey, brownish grey, Fat Clay (CH)	15.0	3	4	4	8/30	D15 15.00 - 15.45	
		16.0	4			4	5	9/30	D16 16.00 - 16.45			

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: B9

Co-ord (m): N = 2300629

Sheet: 2 / 2

E = 620006

Location: Offshore

Ground elevation (m): 0.81

Date commenced: 13/05/2011

Depth (m): 35.3m

Date completed: 14/05/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart							Sample No. Depth of the sample (m)				
						Depth (m)	Blows/15cm			N	N: Blows/30 cm									
							N ₀	N ₁	N ₂		10	20	30	40	50		>50			
5	-16.79	17.60	14.70		Firm, grey, Fat Clay (CH)	18.0	2	2	3	5/30									U17 17.00 - 17.60	
	18.0	2				2	3	5/30												D18 18.00 - 18.45
	19.0	2				3	3	6/30												D19 19.00 - 19.45
	20.0	2				2	3	5/30												D20 20.00 - 20.45
	22.0	2				3	3	6/30												U21 21.00 - 21.80
	22.0	2				3	3	6/30												D22 22.00 - 22.45
	23.0	2				2	3	5/30												D23 23.00 - 23.45
	24.0	2				3	3	6/30												D24 24.00 - 24.45
	26.0	2				2	3	5/30												U25 25.00 - 25.70
	26.0	2				2	3	5/30												D26 26.00 - 26.45
	27.0	2				2	2	4/30												D27 27.00 - 27.45
	28.0	2				2	3	5/30												D28 28.00 - 28.45
	29.0	2				3	3	6/30												D29 29.00 - 29.45
30.0	2	3	2	5/30												D30 30.00 - 30.45				
31.0	2	3	3	6/30												D31 31.00 - 31.45				
32.0	2	2	50/1	52												D32 32.00 - 32.31				
10	-31.49	32.30	3.00		Moderately weathered reddish brown, silt/claystone TCR = 70%, RQD = 60%												R33 33.00 - 33.20			
	-34.49	35.30															R34 35.00 - 35.20			

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: B10

Co-ord (m): N = 2300543

Sheet: 1 / 2

E = 620057

Location: Offshore

Ground elevation (m): 0.15

Date commenced: 30/04/2011

Depth (m): 32.7

Date completed: 01/05/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)		
						Depth (m)	Blows/15cm			N		N: Blows/30 cm	
							N ₀	N ₁	N ₂			10	20 30 40 50 >50
1a	-0.85	1.00	1.00	•	Light grey, poorly graded sand (SP)	1.0	0	0	1	1/50	D1 1.00 - 1.45		
2			7.00	•	Very soft, grey, Fat Clay (CH)	4.0	0	0	0	0/38	D3 4.00 - 4.45		
						7.0	0	0	0	0/30	D5 7.00 - 7.45		
						8.00	0	0	0	0/30	D6 8.00 - 8.90		
3b			4.50	•	Stiff, reddish brown, yellowish grey, sandy Lean Clay (CL)	10.0	2	3	3	6/32	D7 10.00 - 10.45		
						11.0	2	2	3	5/30	D8 11.00 - 11.45		
						12.0	2	2	2	4/30	D9 12.00 - 12.45		
3c	-12.35	12.50	1.00	•	Yellowish grey, sand	13.0	2	2	3	5/35	D10 13.00 - 13.45		
4	-13.35	13.50	1.10	•	Firm, reddish brown, yellowish grey, Fat Clay (CH)	14.0	3	4	3	7/30	D11 14.00 - 14.45		
5	-14.45	14.60		•	Firm, grey, Fat Clay (CH)						U12 15.00 - 15.80		

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: B10

Co-ord (m): N = 2300543

Sheet: 2 / 2

E = 620057

Location: Offshore

Ground elevation (m): 0.15

Date commenced: 30/04/2011

Depth (m): 32.7

Date completed: 01/04/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart							Sample No. Depth of the sample (m)				
						Depth (m)	Blows/15cm			N	N: Blows/30 cm									
							N ₀	N ₁	N ₂		10	20	30	40	50		>50			
5			15.10		Firm, grey, Fat Clay (CH)	17.0	3	3	4	7/30								D13 17.00 - 17.45		
						18.0	2	3	3	6/32								D14 18.00 - 18.45		
						20.0	2	2	3	5/30								D16 20.00 - 20.45		
						21.0	2	3	3	6/35								D17 21.00 - 21.45		
						23.0	2	2	3	5/30								D19 23.00 - 23.45		
						24.0	2	3	3	6/30								D20 24.00 - 24.45		
						25.0	3	3	3	6/32								D21 25.00 - 25.45		
						26.0	2	3	2	5/30								D22 26.00 - 26.45		
						27.0	2	3	3	6/30								D23 27.00 - 27.45		
						28.0	2	2	3	5/30								D24 28.00 - 28.45		
10	-29.55	29.70	3.00		Moderately weathered reddish brown, silt/claystone TCR = 70%, RQD = 60%															
	-32.55	32.70																		

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: B11

Co-ord (m): N = 2301410

Sheet: 1 / 2

E = 619461

Location: Offshore

Ground elevation (m): 3.25

Date commenced: 24/5/2011

Depth (m): 31.7

Date completed: 25/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm 10 20 30 40 50 >50
							N ₀	N ₁	N ₂			
1a	0.55	2.70	2.70		Blackish grey, yellowish grey, poorly graded sand with clay (SP)	1.0	1	2	2	4	D1 1.00 - 1.45	
						2.0	2	2	3	5	D2 2.00 - 2.45	
1b	-5.45	8.70	6.00		Plastic, Grey, brownish grey, clayey sand (SC)	4.0	0	0	1	1	U3 3.00 - 3.90 D4 4.00 - 4.45	
						5.0	0	1	1	2	D5 5.00 - 5.45	
						7.0	0	0	0	0	D7 7.00 - 7.45	
						8.0	0	0	1	1	D8 8.00 - 8.45	
						10.0	0	1	1	2	U6 6.00 - 6.90 D10 10.00 - 10.45	
2	-7.75	11.00	2.30		Very soft, Grey, brownish grey, Lean Clay (CL)	11.0	1	1	2	3	D11 11.00 - 11.45	
12.0						1	2	2	4	D12 12.00 - 12.45		
3a	-10.25	13.50	2.50		Yellowish grey, poorly graded sand with clay (SP-SC)	13.0	2	2	2	4	D13 13.00 - 13.45	
14.0						0	1	1	2	D14 14.00 - 14.45		
3b			5.00		Soft, Yellowish grey, Fat Clay (CH)	16.0	1	1	2	3	U15 15.00 - 15.80 D16 16.00 - 16.45	

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: B11

Co-ord (m): N = 2301410

Sheet: 2 / 2

E = 619461

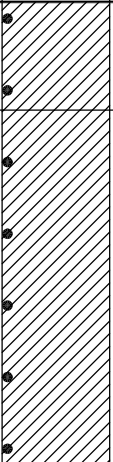
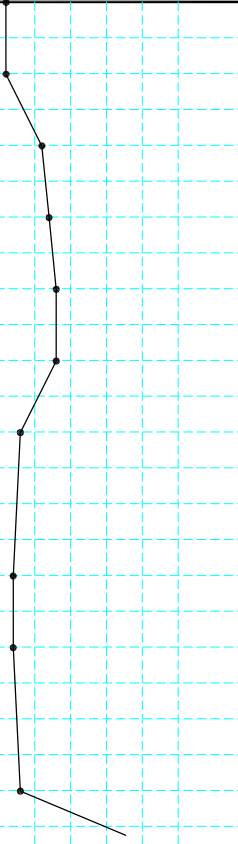
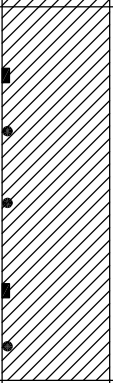
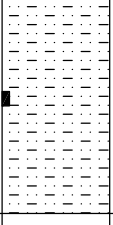
Location: Offshore

Ground elevation (m): 3.25




Date commenced: 24/5/2011

Depth (m): 31.7

Date completed: 25/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test				SPT chart							Sample No. Depth of the sample (m)		
						Depth (m)	Blows/15cm			N	N: Blows/30 cm								
							N ₀	N ₁	N ₂			10	20	30	40	50		>50	
4	-15.25	18.50	4.00		Stiff, Yellowish grey, reddish brown, Fat Clay (CH)	17.0	1	1	2	3									D17 17.00 - 17.45
						18.0	1	1	2	3		D18 18.00 - 18.45							
						19.0	4	5	7	12		D19 19.00 - 19.45							
						20.0	6	7	8	15		D20 20.00 - 20.45							
						21.0	7	7	9	16		D21 21.00 - 21.45							
						22.0	7	8	8	16		D22 22.00 - 22.45							
						23.0	2	3	4	7		D23 23.00 - 23.45							
5	-20.25	23.50	5.20		Firm, grey, Fat Clay (CH)	25.0	1	2	3	5	U24 24.00 - 24.90								D25 25.00 - 25.45
						26.0	2	2	3	5	D26 26.00 - 26.45								
						27.0					U27 27.00 - 27.90								
						28.0	2	3	3	6	D28 28.00 - 28.45								
10	-25.45	28.70	3.00		Moderately weathered reddish brown, silt/claystone TCR = 50%, RQD = 10%													R29 30.00 - 30.20	
	-28.45	31.70																	

Legend

-  UD: Undisturbed sample
-  D, S: Disturbed and SPT sample
-  R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: B12

Co-ord (m): N = 2301382

Sheet: 1 / 2

E = 619630

Location: Ground

Ground elevation (m): 2.86

Date commenced: 29/5/2011

Depth (m): 31.5

Date completed: 30/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No.	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂		10	
1a			3.90	●	Blackish grey, yellowish grey, poorly graded sand with clay (SP-SC)	1.0	1	2	3	5		D1 1.00 - 1.45
						2.0	2	2	2	4		D2 2.00 - 2.45
1b	-1.04	3.90		■	Very soft, brownish grey, sandy Lean Clay (CL)	4.0	0	0	0	0		U3 3.00 - 3.80
						5.0	0	0	1	1		D4 4.00 - 4.45
						7.0	0	0	0	0		D5 5.00 - 5.45
						8.0	0	0	0	0		D6 6.00 - 6.90
2	-5.14	8.00	4.00	■	Very soft, Brownish grey, Fat Clay (CH)	8.0	0	0	0	0		D7 7.00 - 7.45
						10.0	0	0	1	1		D8 8.00 - 8.45
						11.0	0	0	1	1		U9 9.00 - 9.80
3a	-9.14	12.00	2.00	●	Yellowish grey, poorly graded sand with clay (SC)	12.0	1	1	2	3		D10 10.00 - 10.45
3b	-11.14	14.00	1.50	■	Firm, Yellowish grey, sandy Lean Clay (CL)	13.0	2	2	2	4		D11 11.00 - 11.45
						14.0	2	3	3	6		D12 12.00 - 12.45
4	-12.64	15.50	6.50	■	Stiff, Yellowish grey, reddish brown, Fat Clay (CH)	15.0	3	4	4	8		D13 13.00 - 13.45
						16.0	5	6	7	13		D14 14.00 - 14.45
												D15 15.00 - 15.45
												D16 16.00 - 16.45

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: B12

Co-ord (m): N = 2301382

Sheet: 2 / 2

E = 619630

Location: Ground

Ground elevation (m): 2.86

Date commenced: 29/5/2011

Depth (m): 31.5

Date completed: 30/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
4	-19.14	22.00	6.50	[Diagonal Hatching]	Stiff, Yellowish grey, reddish brown, Fat Clay (CH)	17.0	5	7	7	14	●	D17 17.00 - 17.45
						18.0	5	6	7	13	●	D18 18.00 - 18.45
						19.0	4	6	6	12	●	D19 19.00 - 19.45
						20.0	3	4	4	8	●	D20 20.00 - 20.45
						21.0	4	4	4	8	●	D21 21.00 - 21.45
5	-25.64	28.50	6.50	[Diagonal Hatching]	Firm, grey, Fat Clay (CH)	22.0	2	2	3	5	●	D22 22.00 - 22.45
						23.0	1	2	2	4	●	D23 23.00 - 23.45
						24.0	2	2	3	5	●	D24 24.00 - 24.45
						26.0	2	2	3	5	●	U25 25.00 - 25.90 D26 26.00 - 26.45
						28.0	1	2	2	4	●	U27 27.00 - 27.80 D28 28.00 - 28.45
10	-28.64	31.50	3.00	[Dotted Pattern]	Moderately weathered brownish grey, sandstone TCR = 60%, RQD = 40%						R29 29.00 - 29.20	

Legend

- UD: Undisturbed sample
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PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: B13

Co-ord (m): N = 2301093

Sheet: 1 / 2

E = 619612

Location: Offshore

Ground elevation (m): 0.40

Date commenced: 2/6/2011

Depth (m): 28.7

Date completed: 3/6/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No.		
						Depth (m)	Blows/15cm			N		N: Blows/30 cm	
							N ₀	N ₁	N ₂		10	20 30 40 50 >50	
1b	-2.60	3.00	3.00		Very soft, Brownish grey, Lean Clay with sand (CL)	1.0	0	0	0	0	D1 1.00 - 1.45		
2		3.00	3.10		Very soft, Brownish grey, Fat Clay (CH)	4.0	0	0	0	0	U2 2.00 - 2.90		
3b	-5.70	6.10	7.50		Firm, yellowish grey, light grey, sandy Lean Clay (CL)	6.0	1	2	2	4	D3 4.00 - 4.45		
		7.0				2	2	3	5	U4 5.00 - 5.80			
		8.0				2	2	2	4	D5 6.00 - 6.45			
		7.0				2	2	2	4	D6 7.00 - 7.45			
		8.0				2	2	2	4	D7 8.00 - 8.45			
		10.0				2	2	3	5	U8 9.00 - 9.80			
		11.0				2	2	2	4	D9 10.00 - 10.45			
3c	-13.20	13.60	5.40		Yellowish grey, poorly graded sand with clay (SP-SC)	11.0	2	2	2	4	D10 11.00 - 11.45		
		12.0				2	2	2	4	D11 12.00 - 12.45			
		13.0				2	2	3	5	D12 13.00 - 13.45			
		14.0				3	3	4	7	D13 14.00 - 14.45			
		15.0				3	4	4	8	D14 15.00 - 15.45			
16.0	4	5	4	9	D15 16.00 - 16.45								

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: B13

Co-ord (m): N = 2301093

Sheet: 2 / 2

E = 619612

Location: Offshore

Ground elevation (m): 0.40

Date commenced: 2/6/2011

Depth (m): 28.7

Date completed: 3/6/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No.	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
3c	-18.60	19.00	5.40		Yellowish grey, poorly graded sand with clay (SP-SC)	17.0	4	4	4	8		D16
						18.0	4	5	5	10		D17
5	-25.30	25.70	6.70		Firm, grey, Fat Clay (CH)	19.0	2	3	3	6		D18
						22.0	2	3	3	6		D20
						23.0	2	2	3	5		D21
						25.0	3	3	3	6		D22
10	-28.30	28.70	3.00		Moderately weathered, reddish brown, greenish grey, silt/claystone TCR = 50%, RQD = 30%						R23	
											R24	

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: B14

Co-ord (m): N = 2301007

Sheet: 1 / 2

E = 619664

Location: Offshore

Ground elevation (m): -1.18

Date commenced: 13/5/2011

Depth (m): 27.5

Date completed: 13/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No.	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂		10 20 30 40 50 >50	
2	-6.68	5.50	5.50	▨	Very soft, Brownish grey, Fat Clay (CH)	1.0	0	0	0	0	●	D1 1.00 - 1.45
						2.0	0	0	0	0		D2 2.00 - 2.45
						3.0	0	0	0	0		U3 3.00 - 3.80
						4.0	0	0	0	0		D4 4.00 - 4.45
						5.0	0	0	0	0		D5 5.00 - 5.45
3b	-15.68	14.50	7.00	▨	Plastic, Yellowish grey, clayey sand (SC)	6.0	1	2	2	4	●	U6 6.00 - 6.90
						7.0	1	2	2	4		D7 7.00 - 7.45
						8.0	1	2	3	5		D8 8.00 - 8.45
						9.0	2	2	3	5		D9 9.00 - 9.45
						10.0	1	2	2	4		D10 10.00 - 10.45
						11.0	1	2	2	4		D11 11.00 - 11.45
						12.0	2	2	3	5		D12 12.00 - 12.45
						13.0	1	2	2	4		U13 13.00 - 13.80
						14.0	1	2	2	4		D14 14.00 - 14.45
						15.0	1	2	2	4		D15 15.00 - 15.45
5					Firm, grey, Fat Clay (CH)	16.0	1	2	2	4	U16 16.00 - 16.90	

Legend

- ▨ UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: B14

Co-ord (m): N = 2301007

Sheet: 2 / 2

E = 619664

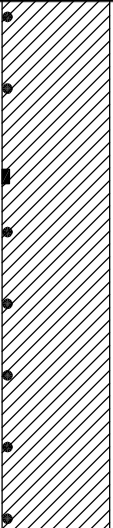
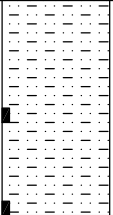
Location: Offshore

Ground elevation (m): -1.18

Date commenced: 13/5/2011

Depth (m): 27.5

Date completed: 13/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart							Sample No. Depth of the sample (m)		
						Depth (m)	Blows/15cm			N	N: Blows/30 cm							
							N ₀	N ₁	N ₂		10	20	30	40	50		>50	
5			10.00		Firm, grey, Fat Clay (CH)	17.0	2	2	3	5								D17 17.00 - 17.45
						18.0	2	2	3	5								D18 18.00 - 18.45
						20.0	2	2	3	5								U19 19.00 - 19.90 D20 20.00 - 20.45
						21.0	2	2	3	5								D21 21.00 - 21.45
						22.0	2	2	3	5								D22 22.00 - 22.45
						23.0	2	3	3	6								D23 23.00 - 23.45
						24.0	2	3	3	6								D24 24.00 - 24.45
						-25.68	24.50											
10			3.00		Moderately weathered reddish brown, silt/claystone TCR = 60%, RQD = 35%												R25 26.00 - 26.20	
																	R26 27.30 - 27.50	
	-28.68	27.50																

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: B15

Co-ord (m): N = 2300921

Sheet: 1 / 2

E = 619715

Location: Offshore

Ground elevation (m): -1.35

Date commenced: 2/5/2011

Depth (m): 27.8

Date completed: 3/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart						Sample No. Depth of the sample (m)												
						Depth (m)	Blows/15cm			N	N: Blows/30 cm																
							N ₀	N ₁	N ₂		10	20	30	40		50	>50										
1a	-2.35	1.00	1.00		Light grey, poorly graded sand (SP)	1.0	0	0	0	0/50													D1 1.00 - 1.45				
2			5.40		Very soft, grey, bluish grey, Fat Clay (CH)	2.0	0	0	0	0/40														D2 2.00 - 2.45			
						4.0	0	0	1	1/45																U3 3.00 - 3.90 D4 4.00 - 4.45	
						5.0	0	0	0	0/30																	D5 5.00 - 5.45
						7.0	1	1	2	3/30																	U6 6.00 - 6.90 D7 7.00 - 7.45
						8.0	2	2	4	6/30																	D8 8.00 - 8.45
3b			7.60		Loose, reddish brown, yellowish brown, clayey sand (SC)	10.0	1	3	4	7/30														U9 9.00 - 9.90 D10 10.00 - 10.45			
						11.0	2	3	3	6/30																D11 11.00 - 11.45	
						13.0	1	2	3	5/30																	U12 12.00 - 12.50 D13 13.00 - 13.45
						14.0	2	3	5	8/30																	D14 14.00 - 14.45
						15.0	3	3	4	7/30																	
3c	-17.15	15.80	1.80		Loose, reddish brown, yellowish brown, sand (SC)	16.0	2	3	3	6/30												D16 16.00 - 16.45					
					Firm, grey, Fat Clay (CH)																						

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: B15

Co-ord (m): N = 2300921

Sheet: 2 / 2

E = 619715

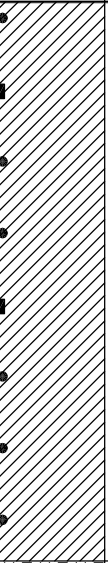
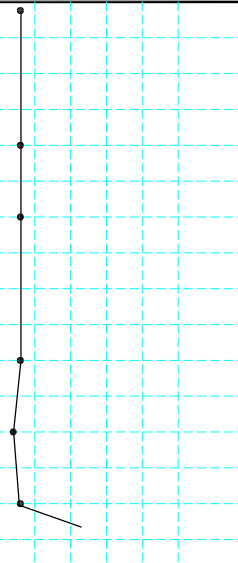
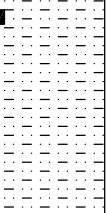
Location: Offshore

Ground elevation (m): -1.35

Date commenced: 2/5/2011

Depth (m): 27.8

Date completed: 3/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm 10 20 30 40 50 >50
							N ₀	N ₁	N ₂			
5	-26.15	24.80	9.00		Firm, grey, Fat Clay (CH)	17.0	3	3	4	7/30		D17 17.00 - 17.45
												U18 18.00 - 18.50
						19.0	1	3	3	6/30		D19 19.00 - 19.45
						20.0	2	3	4	7/30		D20 20.00 - 20.45
												U21 21.00 - 21.50
						22.0	2	3	3	6/30		D22 22.00 - 22.45
						23.0	1	2	3	5/30		D23 23.00 - 23.45
						24.0	2	3	4	7/30		D24 24.00 - 24.45
10	-29.15	27.80	3.00		Moderately weathered reddish brown, silt/claystone TCR = 40%, RQD = 20%					R25 25.00 - 25.10		

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: B16

Co-ord (m): N = 2300835

Sheet: 1 / 2

E = 619766

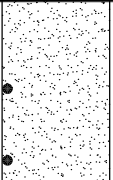
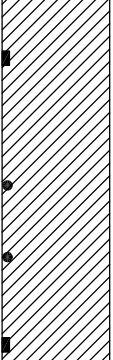
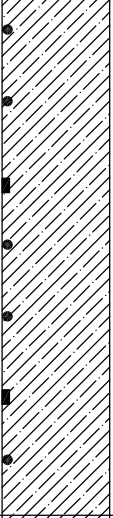
Location: Offshore

Ground elevation (m): -0.10




Date commenced: 13/5/2011

Depth (m): 30.3

Date completed: 14/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
1a	-2.70	2.60	2.60		Light grey, poorly graded sand (SP)	1.0	1	1	1	2	D1 1.00 - 1.45	
						2.0	1	2	2	4	D2 2.00 - 2.45	
2	-7.80	7.70	5.10		Very soft, Brownish grey, Fat Clay (CH)	3.00				0	U3 3.00 - 3.90	
						5.0	0	0	0	0	D4 5.00 - 5.45	
						6.0	0	0	1	1	D5 6.00 - 6.45	
						7.00	1	2	3	5	U6 7.00 - 7.90	
3b	-15.10	15.00	7.30		Plastic, Yellowish grey, brownish grey, clayey sand (SC)	8.00	2	2	4	6	D7 8.00 - 8.45	
						9.0	2	2	4	6	D8 9.00 - 9.45	
						11.0	2	3	3	6	U9 10.00 - 10.80	
						11.00	2	3	3	6	D10 11.00 - 11.45	
						12.0	1	2	3	5	D11 12.00 - 12.45	
						14.0	1	2	2	4	U12 13.00 - 13.70	
											D13 14.00 - 14.45	
											U14 15.00 - 15.90	

Legend

-  UD: Undisturbed sample
-  D, S: Disturbed and SPT sample
-  R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: B16

Co-ord (m): N = 2300835

Sheet: 2 / 2

E = 619766

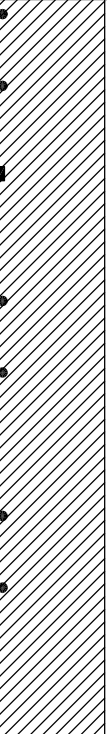
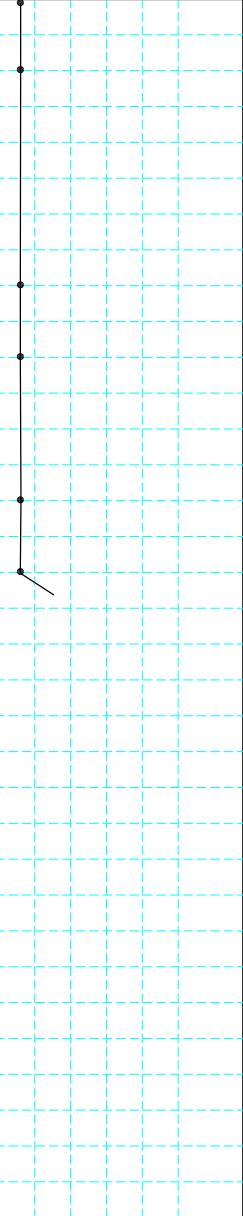
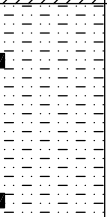
Location: Offshore

Ground elevation (m): -0.10

Date commenced: 13/5/2011

Depth (m): 30.3

Date completed: 14/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart						Sample No.		
						Depth (m)	Blows/15cm			N	N: Blows/30 cm						Depth of the sample (m)
							N ₀	N ₁	N ₂		10	20	30	40	50	>50	
5			12.30		Firm, grey, Fat Clay (CH)	17.0	1	3	3	6							D15
						18.0	2	3	4	7							D16
						21.0	2	2	4	6							D18
						22.0	1	3	4	7							D19
						24.0	2	3	3	6							D20
						25.0	2	2	4	6							D21
						27.30											
10	-30.40	30.30	3.00		Moderately weathered reddish brown, greenish brown, silt/claystone TCR = 40%, RQD = 20%												R22
																	30.00 - 30.10

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: B17

Co-ord (m): N = 2300749

Sheet: 1 / 1

E = 619817

Location: Offshore

Ground elevation (m): 0.42

Date commenced: 3/5/2011

Depth (m): 32.5

Date completed: 4/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No.		
						Depth (m)	Blows/15cm			N		N: Blows/30 cm	Depth of the sample (m)
							N ₀	N ₁	N ₂		10		
1a	-1.38	1.80	1.80	●	Plastic grey, clayey sand with shell (SC)	1.0	1	1	2	3		D1 1.00 - 1.45	
2	-8.58	9.00	7.20	■	Very soft, Brownish grey, Fat Clay (CH)	3.0	0	0	1	1			U2 2.00 - 2.40
						4.0	0	0	1	1			D3 3.00 - 3.45
						6.0	0	0	1	1			D4 4.00 - 4.45
						7.0	0	0	0	0			D7 7.00 - 7.45
						8.0	0	0	1	1			D8 8.00 - 8.45
3c	-11.18	11.60	2.60	●	Loose, yellowish grey, poorly graded Sand with Clay (SP - SC)	10.0	2	2	2	4		U9 9.00 - 9.45	
4	-14.58	15.00	3.40	■	Firm to stiff, brownish grey, yellowish grey, Fat Clay (CH)	11.0	2	2	3	5			D10 10.00 - 10.45
						13.0	4	5	5	10			D11 11.00 - 11.45
						14.0	4	4	5	9			U12 12.00 - 12.50
						15.0	2	2	3	5		D13 13.00 - 13.45	
												D14 14.00 - 14.45	
												D15 15.00 - 15.45	
												U16 16.00 - 16.90	

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: B17

Co-ord (m): N = 2300749

Sheet: 2/1

E = 619817

Location: Offshore

Ground elevation (m): 0.42

Date commenced: 3/5/2011

Depth (m): 32.5

Date completed: 4/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart						Sample No. Depth of the sample (m)								
						Depth (m)	Blows/15cm			N	N: Blows/30 cm												
							N ₀	N ₁	N ₂		10	20	30	40		50	>50						
5			14.50		Firm, grey, Fat Clay (CH)	17.0	2	2	2	4								D17 17.00 - 17.45					
						18.0	2	3	2	5									D18 18.00 - 18.45				
						20.0	2	3	3	6									U19 19.00 - 19.90 D20 20.00 - 20.45				
						21.0	2	2	3	5									D21 21.00 - 21.45				
						23.0	2	3	3	6									U22 22.00 - 22.90 D23 23.00 - 23.45				
						24.0	2	2	3	5									D24 24.00 - 24.45				
						25.0	2	3	2	5									D25 25.00 - 25.45				
						26.0	1	3	3	6									D26 26.00 - 26.45				
						27.0	2	2	2	4									D27 27.00 - 27.45				
						28.0	2	2	3	5									D28 28.00 - 28.45				
						29.0	2	3	3	6									D29 29.00 - 29.45				
						10	-29.08	29.50	3.00		Moderately weathered reddish brown, greenish brown, silt/claystone TCR = 40%, RQD = 20%												R30 30.00 - 30.10

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: B18

Co-ord (m): N = 2300663

Sheet: 1 / 2

E = 619869

Location: Offshore

Ground elevation (m): 1.03

Date commenced: 18/5/2011

Depth (m): 34.0

Date completed: 19/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm 10 20 30 40 50 >50
							N ₀	N ₁	N ₂			
1a	-0.77	1.80	1.80		Light grey, poorly graded sand (SP)	1.0	1	2	3	5	D1 1.00 - 1.45	
1b	-1.97	3.00	1.20		Very soft, grey, clayey sand (SC)	2.0	0	0	1	1	D2 2.00 - 2.45	
2	-8.17	9.20	6.20		Very soft, Brownish grey, Fat Clay (CH)	5.0	0	0	0	0	0	U3 3.00 - 3.60
						8.0	0	0	0	0	0	D4 5.00 - 5.45
						10.0	1	1	2	3	3	U5 6.00 - 6.90
3b	-10.87	11.90	2.70		Plastic, Reddish brown, yellowish grey, clayey sand (SC)	8.0	0	0	0	0	D6 8.00 - 8.45	
4	-12.47	13.50	1.60		Firm, grey, yellowish brown, Fat Clay (CH)	10.0	1	1	2	3	3	U7 9.00 - 9.90
						12.0	2	3	4	7	7	D8 10.00 - 10.45
5					Firm, grey, Fat Clay (CH)	11.0	2	3	4	7	7	U9 11.00 - 11.80
						13.0	2	3	3	6	6	D10 12.00 - 12.45
						16.0	3	3	3	6	D11 13.00 - 13.45	
											U12 14.00 - 14.80	
											D13 16.00 - 16.45	

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample

PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: B18

Co-ord (m): N = 2300663

Sheet: 2 / 2

E = 619869

Location: Offshore

Ground elevation (m): 1.03

Date commenced: 18/5/2011

Depth (m): 34,0

Date completed: 19/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart						Sample No.			
						Depth (m)	Blows/15cm			N	N: Blows/30 cm						Depth of the sample (m)	
							N ₀	N ₁	N ₂		10	20	30	40	50	>50		
5			17.50		Firm, grey, Fat Clay (CH)	17.0	2	2	3	5							D14 17.00 - 17.45	
						20.0	1	3	3	6							D16 20.00 - 20.45	
						21.0	2	3	3	6							D17 21.00 - 21.45	
						23.0	1	2	3	5							D18 23.00 - 23.45	
						24.0	1	3	3	6							D19 24.00 - 24.45	
						26.0	1	3	3	6							D20 26.00 - 26.45	
						27.0	3	3	3	6							D21 27.00 - 27.45	
						29.0	2	2	4	6							D22 29.00 - 29.45	
						30.0	1	2	3	5							D23 30.00 - 30.45	
						31.0	50/2											D24 31.00 - 31.02
						10	-29.97	31.00	3.00		Moderately weathered reddish brown, silt/claystone TCR = 40%, RQD = 20%							
												R26 33.80 - 34.00						

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: B19

Co-ord (m): N = 2300577

Sheet: 1 / 2

E = 619920

Location: Offshore

Ground elevation (m): 1.28

Date commenced: 7/5/2011

Depth (m): 34.5

Date completed: 8/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
1a	-0.72	2.00	2.00	[Dotted pattern]	Grey, yellowish grey, poorly graded sand with shell (SP)	1.0	1	1	2	3/30	D1 1.00 - 1.45	
		2.00	0			0	1	1/50	D2 2.00 - 2.45			
1b	-4.22	3.50	3.50	[Diagonal lines]	Very soft, Grey, clayey sand (SC)	4.0	0	0	0	0/40	U3 3.00 - 3.90 D4 4.00 - 4.45	
		5.0	0			0	0	0/35	D5 5.00 - 5.45			
		5.50	0			0	0	0/35	U6 6.00 - 6.90 D7 7.00 - 7.45			
2	-7.32	8.60	3.10	[Diagonal lines]	Very soft, Grey, brownish grey Fat Clay (CH)	7.0	0	0	1	1/55	D8 8.00 - 8.45	
		8.60	0			0	0	0/40	U9 9.00 - 9.80 D10 10.00 - 10.45			
3b	-12.22	10.0	4.90	[Diagonal lines]	Soft, yellowish grey, light grey, sandy lean clay (CL)	10.0	2	2	3	5/30	D11 11.00 - 11.45	
		11.0	1			3	3	6/30	U12 12.00 - 12.90 D13 13.00 - 13.45			
		13.0	2			4	4	8/30	U14 15.00 - 15.80 D15 16.00 - 16.45			
4	-13.62	14.90	1.40	[Diagonal lines]	Stiff, brownish grey, grey, Fat Clay (CH)	14.90	2	3	3	6/30		
		16.0	2			3	3	6/30				

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: B19

Co-ord (m): N = 2300577

Sheet: 2 / 2

E = 619920

Location: Offshore

Ground elevation (m): 1.28

Date commenced: 7/5/2011

Depth (m): 34.5

Date completed: 8/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart							Sample No.		
						Depth (m)	Blows/15cm			N	N: Blows/30 cm							Depth of the sample (m)
							N ₀	N ₁	N ₂		10	20	30	40	50	>50		
5			16.60		Firm, grey, Fat Clay (CH)	17.0	3	3	4	7/30								D16 17.00 - 17.45
						19.0	1	2	3	5/30								U17 18.00 - 18.90 D18 19.00 - 19.45
						20.0	2	3	3	6/30								D19 20.00 - 20.45
						21.0	2	2	4	6/30								D20 21.00 - 21.45
						22.0	2	3	3	6/30								D21 22.00 - 22.45
						23.0	2	3	4	7/30								D22 23.00 - 23.45
						24.0	1	3	5	8/30								D23 24.00 - 24.45
						25.0	3	3	5	8/30								D24 25.00 - 25.45
						26.0	1	2	4	6/30								D25 26.00 - 26.45
						27.0	2	3	3	6/30								D26 27.00 - 27.45
						28.0	2	3	4	7/30								D27 28.00 - 28.45
						29.0	2	2	3	5/30								D28 29.00 - 29.45
						30.0	3	3	5	8/30								D29 30.00 - 30.45
						31.0	1	3	3	6/30								D30 31.00 - 31.45
						10	-30.22	31.50	3.00		Moderately weathered reddish brown, silt/claystone TCR = 40%, RQD = 20%							
	-33.22	34.50																

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: B20

Co-ord (m): N = 2301308

Sheet: 1 / 2

E = 619546

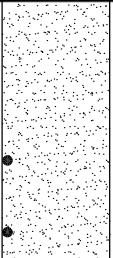
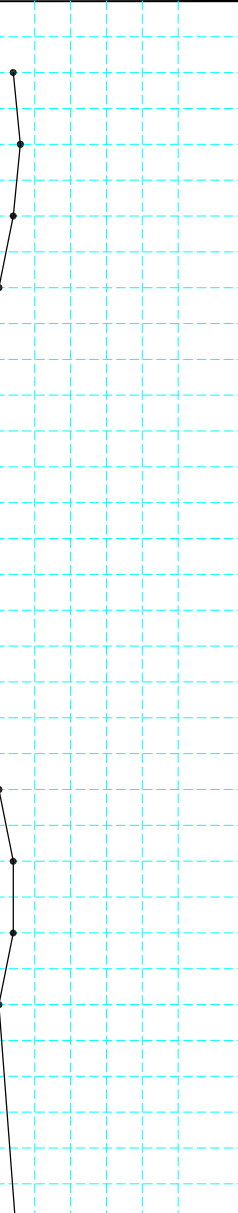
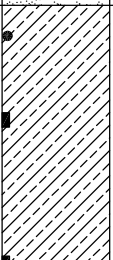
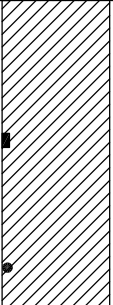
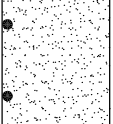
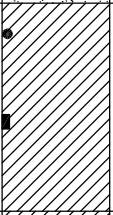
Location: Offshore

Ground elevation (m): 3.75

Date commenced: 26/5/2011

Depth (m): 34.5

Date completed: 27/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm 10 20 30 40 50 >50
							N ₀	N ₁	N ₂			
1a	-0.05	3.80	3.80		Grey, poorly graded sand (SP)	1.0	1	2	3	5		D1 1.00 - 1.45
						2.0	2	2	4	6		D2 2.00 - 2.45
						3.0	2	2	3	5		D3 3.00 - 3.45
						4.0	0	0	0	0		D4 4.00 - 4.45
1b	-3.75	7.50	3.70		Very soft, brownish grey, sandy Lean Clay (CL)	4.0	0	0	0	0	U5 5.00 - 5.80	
						7.50	0	0	0	0	U6 7.00 - 7.80	
2	-8.05	11.80	4.30		Very soft, Brownish grey, Fat Clay (CH)	11.0	0	0	0	0	U7 9.00 - 9.90	
						11.80	0	0	0	0	D8 11.00 - 11.45	
3a	-10.05	13.80	2.00		Yellowish grey, light grey, poorly graded sand with clay (SP-SC)	12.0	1	2	2	4	D9 12.00 - 12.45	
						13.0	2	2	3	5	D10 13.00 - 13.45	
4	-12.95	16.70	2.90		Firm, yellowish grey, reddish brown, Fat Clay (CH)	14.0	0	0	1	1	D11 14.00 - 14.45	
						16.70	0	0	0	0	U12 15.00 - 15.90	

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: B20

Co-ord (m): N = 2301308

Sheet: 2 / 2

E = 619546

Location: Ground

Ground elevation (m): 3.75

Date commenced: 26/5/2011

Depth (m): 34.5

Date completed: 27/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
4			7.10	▨	Firm to stiff, Yellowish brown, Fat Clay (CH)	17.0	5	7	7	14	●	D13 17.00 - 17.45
						18.0	6	8	8	16		D14 18.00 - 18.45
						19.0	6	8	8	16		D15 19.00 - 19.45
						20.0	6	7	8	15		D16 20.00 - 20.45
						21.0	4	4	5	9		D17 21.00 - 21.45
						22.0	4	4	4	8		D18 22.00 - 22.45
						23.0	3	4	4	8		D19 23.00 - 23.45
						24.0	2	2	3	5		D20 24.00 - 24.45
						25.0	2	2	3	5		D21 25.00 - 25.45
						27.0	2	3	3	6		D23 27.00 - 27.45
5	-20.05	23.80	5.20	▨	Firm, grey, Fat Clay (CH)	29.0	4	5	5	10	D25 29.00 - 29.45	
						30.0	6	6	7	13	D26 30.00 - 30.45	
8	-25.25	29.00	2.50	●	Midium dense, light grey, Poorly grade Sand (SP)	31.0	9	7	8	15	D27 31.00 - 31.45	
						32.0					R28 32.00 - 32.10	
10	-27.75	31.50	3.00	▨	Moderately weathered reddish brown, greenish grey, sandstone TCR = 30%, RQD = 10%							
	-30.75	34.50										

Legend

- ▨ UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- ▨ R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: B21

Co-ord (m): N = 2301127

Sheet: 1 / 2

E = 619475

Location: Ground

Ground elevation (m): 3.95

Date commenced: 19/5/2011

Depth (m): 32.0

Date completed: 20/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
1a			5.00	█	Grey, poorly graded sand with clay (SP - SC)	1.0	2	3	3	6		D1 1.00 - 1.45
						2.0	2	2	3	5		D2 2.00 - 2.45
						3.0	2	2	2	4		D3 3.00 - 3.45
						4.0						U4 4.00 - 4.80
1b	-1.05	5.00	2.80	▨	Very soft, brownish grey, sandy lean Clay (CL)	5.0	0	1	1	2		D5 5.00 - 5.45
						6.0	0	0	0	0		D6 6.00 - 6.45
						7.0	0	0	1	1		D7 7.00 - 7.45
2	-3.85	7.80	4.00	▨	Very soft, brownish grey, Fat Clay (CH)	9.0	0	0	1	1		U8 8.00 - 8.80
						10.0	0	1	1	2		D9 9.00 - 9.45
						11.0						U11 11.00 - 11.60
						12.0	1	0	0	0		D10 10.00 - 10.45
3b	-7.85	11.80	6.20	▨	Plastic, yellowish grey, grey, clayey sand (SC)	13.0	0	1	2	3		D12 12.00 - 12.45
						14.0						U14 14.00 - 14.70
						15.0	2	3	3	6		D13 13.00 - 13.45
						16.0	2	3	4	7		D15 15.00 - 15.45
					Firm, Yellowish grey, light grey, lean clay with sand (CL)	16.0	2	3	4	7		D16 16.00 - 16.45

Legend

- █ UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- ▨ R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: B21

Co-ord (m): N = 2301127

Sheet: 2 / 2

E = 619475

Location: Ground

Ground elevation (m): 3.95

Date commenced: 19/5/2011

Depth (m): 32.0

Date completed: 20/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)		
						Depth (m)	Blows/15cm			N		N: Blows/30 cm	
							N ₀	N ₁	N ₂				
4	-14.05	18.00	3.00	▨	Dense, grey, yellowish grey, Clayey Sand (SC)	17.0	2	3	4	7	●	D17 17.00 - 17.45	
						18.0	5	6	7	13		D18 18.00 - 18.45	
						19.0	5	6	6	12		D19 19.00 - 19.45	
						20.0	5	6	6	12		D20 20.00 - 20.45	
	5	-17.05	21.00	8.00	▨	Firm, grey, Fat Clay (CH)	21.0	1	2	2	4	●	D21 21.00 - 21.45
							22.0	1	2	3	5		D22 22.00 - 22.45
							24.0	2	2	3	5		U23 23.00 - 23.90
							25.0	2	3	3	6		D24 24.00 - 24.45
10	-25.05	29.00	3.00	▨	Moderately weathered reddish brown, greenish grey, sandstone TCR = 70%, RQD = 50%	25.0	2	3	3	6	●	D25 25.00 - 25.45	
						27.0	2	2	3	5		U26 26.00 - 26.90	
						28.0	1	3	3	6		D27 27.00 - 27.45	
						28.0	1	3	3	6		D28 28.00 - 28.45	
	-28.05	32.00										R29 30.00 - 30.20	

Legend

- ▨ UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- ▨ R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: B22

Co-ord (m): N = 2301041

Sheet: 1 / 2

E = 619527

Location: Offshore

Ground elevation (m): 0.55

Date commenced: 2/6/2011

Depth (m): 27.9

Date completed: 3/6/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No.	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂		10	
1b			4.00	▨	very soft, Brownish grey, Lean Clay with sand (CL)	1.0	0	0	0	0	●	D1 1.00 - 1.45
						2.0	0	0	0	0		D2 2.00 - 2.45
						4.0	0	0	0	0		U3 3.00 - 3.90
						4.00	0	0	0	0		D4 4.00 - 4.45
2	-3.45	4.00	4.60	▨	very soft, Brownish grey, Fat Clay (CH)	5.0	0	0	0	0	●	D5 5.00 - 5.45
						7.0	0	0	0	0		U6 6.00 - 6.90
						8.0	0	0	0	0		D7 7.00 - 7.45
						8.00	0	0	0	0		D8 8.00 - 8.45
3b	-8.05	8.60	6.60	▨	Plastic, Yellowish grey, clayey sand (SC)	10.0	1	2	2	4	●	U9 9.00 - 9.90
						11.0	1	1	1	2		D10 10.00 - 10.45
						13.0	2	2	2	4		D11 11.00 - 11.45
						13.00	2	2	2	4		U12 12.00 - 12.90
5	-14.65	15.20	9.70	▨	Firm, grey, Fat Clay (CH)	14.0	1	1	2	3	●	D13 13.00 - 13.45
						14.00	1	1	2	3		D14 14.00 - 14.45
						16.0	2	2	3	5		U15 15.00 - 15.90
						16.00	2	2	3	5		D16 16.00 - 16.45

Legend

- ▨ UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- ▨ R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: B22

Co-ord (m): N = 2301041

Sheet: 2 / 2

E = 619527

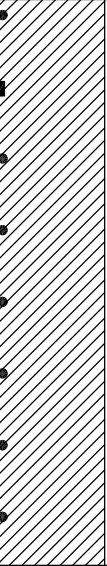
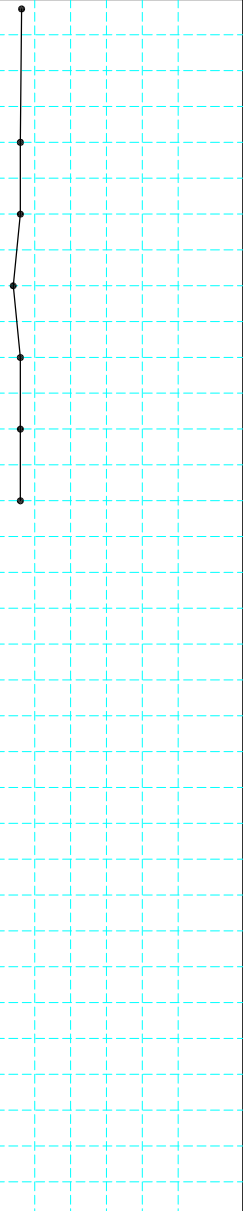
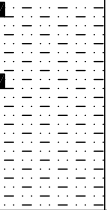
Location: Offshore

Ground elevation (m): 0.55




Date commenced: 2/6/2011

Depth (m): 27.9

Date completed: 3/6/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart							Sample No. Depth of the sample (m)		
						Depth (m)	Blows/15cm			N	N: Blows/30 cm							
							N ₀	N ₁	N ₂		10	20	30	40	50		>50	
5	-24.35	24.90	9.70		Firm, grey, Fat Clay (CH)	17.0	1	3	3	6								D17 17.00 - 17.45
						19.0	3	3	3	6								U18 18.00 - 18.50
						20.0	2	3	3	6								D20 20.00 - 20.45
						21.0	2	2	3	5								D21 21.00 - 21.45
						22.0	2	3	3	6								D22 22.00 - 22.45
						23.0	3	3	3	6								D23 23.00 - 23.45
						24.0	1	2	4	6								D24 24.00 - 24.45
						10	-27.35	27.90	3.00									Moderately weathered reddish brown, greenish grey, silt/sandstone TCR = 60%, RQD = 30%
																R26 26.00 - 26.20		

Legend

-  UD: Undisturbed sample
-  D, S: Disturbed and SPT sample
-  R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: B23

Co-ord (m): N = 2300955

Sheet: 1 / 2

E = 619578

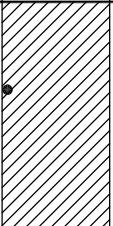
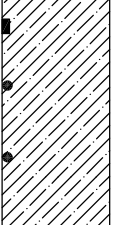
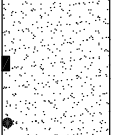

Location: Offshore

Ground elevation (m): -1.30

Date commenced: 04/05/2011

Depth (m): 27.8

Date completed: 05/05/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No.	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂		10	
2			7.00		Very soft, grey, Lean Clay (CL)	3.0	0	0	0	0/45		D1 1.00 - 1.45
						6.0	0	0	0	0/45		D2 3.00 - 3.45
						7.00						
3b	-8.30	7.00	5.50		Plastic, yellowish grey, Clayey Sand (SC)	8.0	2	2	3	5/30		D4 6.00 - 6.45
						9.0	2	2	3	5/30		D6 8.00 - 8.45
						12.0	2	2	3	5/30		D7 9.00 - 9.45
3c	-13.80	12.50	2.00		Firm, yellowish grey, light grey, sandy Lean Clay (CL)	12.0	2	2	3	5/30		U5 7.00 - 7.80
						14.0	3	3	5	8/30		D9 12.00 - 12.45
						15.0	2	3	3	6/30		U10 13.00 - 13.80
5	-15.80	14.50	10.30		Plastic, yellowish grey, light grey, Clayey Sand (SP - SC)	14.0	3	3	5	8/30		D11 14.00 - 14.45
						15.0	2	3	3	6/30		D12 15.00 - 15.45
					Firm, grey, Fat Clay (CH)						U13 16.00 - 16.90	

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: B23

Co-ord (m): N = 2300955

Sheet: 2 / 2

E = 619578

Location: Offshore

Ground elevation (m): -1.30

Date commenced: 04/05/2011

Depth (m): 27.8

Date completed: 05/05/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)			
						Depth (m)	Blows/15cm			N		N: Blows/30 cm		
							N ₀	N ₁	N ₂					
5			10.30		Firm, grey, Fat Clay (CH)	18.0	2	3	3	6/30	•	D14 18.00 - 18.45		
													•	U15 19.00 - 19.90
						21.0	2	3	3	6/30	•	D16 21.00 - 21.45		
						22.0	2	3	3	6/30	•	D17 22.00 - 22.45		
						23.0	2	3	3	6/30	•	D18 23.00 - 23.45		
						24.0	2	3	3	6/30	•	D19 24.00 - 24.45		
10	-26.10	24.80	3.00		Moderately weathered reddish brown, silt/sandstone TCR = 40%, RQD = 20%						•	R20 25.50 - 25.70		
	-29.10	27.80										•	R21 27.60 - 27.80	

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: B24

Co-ord (m): N = 2300870

Sheet: 1 / 2

E = 619629

Location: Offshore

Ground elevation (m): -1.05

Date commenced: 06/05/2011

Depth (m): 27.9m

Date completed: 07/05/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No.						
						Depth (m)	Blows/15cm			N		N: Blows/30 cm	Depth of the sample (m)				
							N ₀	N ₁	N ₂		10			20	30	40	50
2			7.80		Very soft, Brownish grey, Fat Clay (CH)	1.0	0	0	0	0		D1					
						2.0	0	0	0	0		D2					
						4.0	0	0	0	0		D4					
						5.0	0	0	1	1		D5					
						7.0	0	0	1	1		D7					
						8.0	2	3	4	7		D8					
						9.0	3	4	4	8		D9					
3b	-8.85	7.80	5.80		Plastic, Yellowish grey, clayey sand (SC)	11.0	2	3	3	6		D11					
						12.0	3	3	4	7		D12					
						13.0	3	3	4	7		D13					
						15.0	2	2	3	5		D15					
						16.0	2	2	3	5		D16					

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: B24

Co-ord (m): N = 2300870

Sheet: 2 / 2

E = 619629

Location: Offshore

Ground elevation (m): -1.05

Date commenced: 06/05/2011

Depth (m): 27.9m

Date completed: 07/05/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm 10 20 30 40 50 >50
							N ₀	N ₁	N ₂			
5			11.30		Firm, grey, Fat Clay (CH)	17.0	2	2	3	5		D17 17.00 - 17.45
						18.0	2	3	3	6		D18 18.00 - 18.45
						19.0	2	3	3	6		D19 19.00 - 19.45
						21.0	2	3	3	6		D21 21.00 - 21.45
						22.0	2	2	3	5		D22 22.00 - 22.45
						23.0	2	3	3	6		D23 23.00 - 23.45
						24.0	2	3	3	6		D24 24.00 - 24.45
						10	-25.95	24.90	3.00			Moderately weathered reddish brown, silt/sandstone TCR = 60%, RQD = 40%
	-28.95	27.90								R26 27.70 - 27.90		

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: B25

Co-ord (m): N = 2300784

Sheet: 1 / 2

E = 619680

Location: Offshore

Ground elevation (m): -0.27

Date commenced: 04/05/2011

Depth (m): 31.6

Date completed: 06/05/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
1a	-1.17	0.90	0.90		Light grey, poorly graded sand (SP)	1.0	0	0	0	0/50	D1 1.00 - 1.45	
1b	-2.87	2.60	1.70		Very soft, grey, sandy Lean Clay (CL)	2.0	0	0	0	0/45	D2 2.00 - 2.45	
2	-6.97	6.70	4.10		Very soft, grey, brownish grey, Fat Clay (CH)	5.0	0	0	1	1/50	U3 3.00 - 3.90	
3b	-9.27	9.00	2.30		Firm, yellowish grey, light grey, sandy Lean Clay (CL)	8.0	1	2	2	4/30	D4 5.00 - 5.45	
4	-15.27	15.00	6.00		Stiff, yellowish grey, Fat Clay with Sand (CH)	10.0	2	3	5	8/30	U5 6.00 - 6.70	
						11.0	1	3	4	7/30	D6 8.00 - 8.45	
						13.0	3	5	7	12/30	U7 9.00 - 9.80	
						14.0	4	5	6	11/30	D8 10.00 - 10.45	
											D9 11.00 - 11.45	
											U10 12.00 - 12.60	
											D11 13.00 - 13.45	
											D12 14.00 - 14.45	
					Firm, grey, Fat Clay (CH)						U13 15.00 - 15.90	

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: B25

Co-ord (m): N = 2300784

Sheet: 2 / 2

E = 619680

Location: Offshore

Ground elevation (m): -0.27

Date commenced: 04/05/2011

Depth (m): 31.6m

Date completed: 06/05/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm 10 20 30 40 50 >50
							N ₀	N ₁	N ₂			
5			13.60		Firm, grey, Fat Clay (CH)	17.0	2	3	3	6/30		D14 17.00 - 17.45
						18.0	1	2	3	5/30		D15 18.00 - 18.45
						19.0	2	2	4	6/30		D16 19.00 - 19.45
						20.0						U17 20.00 - 20.60
						21.0	3	3	4	7/30		D18 21.00 - 21.45
						22.0	2	3	3	6/30		D19 22.00 - 22.45
						23.0	3	3	5	8/30		D20 23.00 - 23.45
						24.0	2	3	3	6/30		D21 24.00 - 24.45
						25.0	2	2	4	6/30		D22 25.00 - 25.45
						26.0	3	3	3	6/30		D23 26.00 - 26.45
27.0	1	3	4	7/30	D24 27.00 - 27.45							
28.0	2	4	4	8/30	D25 28.00 - 28.45							
10	-28.87	28.60	3.00		Moderately weathered reddish brown, silt/claystone TCR = 50%, RQD = 30%					R26 29.00 - 29.10		
	-31.87	31.60								R27 31.00 - 31.20		

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: B26

Co-ord (m): N = 2300698

Sheet: 1 / 2

E = 619732

Location: Offshore

Ground elevation (m): 0.15

Date commenced: 06/05/2011

Depth (m): 32.4m

Date completed: 07/05/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm 10 20 30 40 50 >50
							N ₀	N ₁	N ₂			
1a	-1.85	2.00	2.00	•	Light grey, poorly graded sand (SP)	1.0	1	1	2	3/30	D1 1.00 - 1.45	
1b	-3.05	3.20	1.20	•	Very soft, Brownish grey, clayey sand (SC)	2.0	0	0	1	1/35	D2 2.00 - 2.45	
2	-7.35	7.50	4.30	•	Very soft, Brownish grey, Fat Clay (CH)	4.0	0	0	0	0/35	D4 4.00 - 4.45	
						5.0	0	0	1	1/40	D5 5.00 - 5.45	
						6.0	0	0	0	0/32	D6 6.00 - 6.45	
						7.50	0	0	0	0/32	D7 7.00 - 7.90	
3b	-8.55	8.70	1.20	•	Plastic, Yellowish grey, clayey sand (SC)	8.0	2	2	2	4/30	D8 8.00 - 8.45	
3c	-11.45	11.60	2.90	•	Yellowish grey, clayey sand with clay (SP-SC)	9.0	2	2	3	5/30	D9 9.00 - 9.45	
						10.0	2	3	3	6/32	D10 10.00 - 10.45	
						11.0	2	3	4	7/30	D11 11.00 - 11.45	
						12.0	2	4	4	8/30	D12 12.00 - 12.45	
4	-15.35	15.50	3.90	•	Firm to stiff, Yellowish grey, Fat Clay (CH)	14.0	2	3	4	7/30	D14 14.00 - 14.45	
						15.0	3	3	3	6/30	D15 15.00 - 15.45	
											U16 16.00 - 16.70	
				•	Firm, grey, Fat Clay (CH)							

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: B26

Co-ord (m): N = 2300698

Sheet: 2 / 2

E = 619732

Location: Offshore

Ground elevation (m): 0.15

Date commenced: 06/05/2011

Depth (m): 32.4m

Date completed: 07/05/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart							Sample No. Depth of the sample (m)			
						Depth (m)	Blows/15cm			N	N: Blows/30 cm								
							N ₀	N ₁	N ₂		10	20	30	40	50		>50		
5			13.90		Firm, grey, Fat Clay (CH)	17.0	2	2	3	5/30								D17 17.00 - 17.45	
						18.0	2	3	3	6/30								D18 18.00 - 18.45	
						19.0	2	2	4	6/32								D19 19.00 - 19.45	
						20.0													U20 20.00 - 20.80
						21.0	2	3	3	6/30									D21 21.00 - 21.45
						22.0	2	2	3	5/30									D22 22.00 - 22.45
						23.0													U23 23.00 - 23.90
						24.0	2	3	3	6/32									D24 24.00 - 24.45
						25.0	2	2	3	5/30									D25 25.00 - 25.45
						26.0	2	3	3	6/30									D26 26.00 - 26.45
27.0	2	2	3	5/30									D27 27.00 - 27.45						
28.0	2	3	3	6/30									D28 28.00 - 28.45						
10	-29.25	29.40	3.00		Moderately weathered reddish brown, silt/claystone TCR = 50%, RQD = 30%											R29 30.00 - 30.20			
	-32.25	32.40															R30 32.20 - 32.40		

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: B27

Co-ord (m): N = 2300612

Sheet: 1 / 2

E = 619783

Location: Offshore

Ground elevation (m): 0.55

Date commenced: 04/05/2011

Depth (m): 32.3m

Date completed: 05/05/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No.	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂		10	
1b			5.00		Very soft, Brownish grey, Lean Clay with Sand (CL)	1.0	1	1	2	3/30		D1 1.00 - 1.45
						2.0	1	0	0	0/35		D2 2.00 - 2.45
						5.00	0	0	0	0/30		U3 3.00 - 3.90
2	-4.45	5.00	5.00		Very soft, grey, Fat Clay (CH)	5.00	0	0	0	0/30		D4 5.00 - 5.45
						8.00	0	0	1	1/30		U5 7.00 - 7.80
						9.00	0	0	1	1/30		D6 8.00 - 8.45
3c	-9.45	10.00	3.20		Loose, yellowish grey, poorly graded sand with clay (SP - SC)	11.00	2	2	3	5/30		D7 9.00 - 9.45
						12.00	2	2	2	4/32		U8 10.00 - 10.80
						13.20						D9 11.00 - 11.45
5	-12.65	13.20			Firm, grey, Fat Clay (CH)	15.00	2	2	3	5/30		D10 12.00 - 12.45
						16.00	2	3	3	6/32		U11 13.00 - 13.80
												D12 15.00 - 15.45
											D13 16.00 - 16.45	

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: B27

Co-ord (m): N = 2300612

Sheet: 2 / 2

E = 619783

Location: Offshore

Ground elevation (m): 0.55

Date commenced: 04/05/2011

Depth (m): 32.3m

Date completed: 05/05/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No.	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂		10	
5	-28.75	29.30	16.10		Firm, grey, Fat Clay (CH)							U14 17.00 - 17.90
						19.0	2	3	3	6/32	•	D15 19.00 - 19.45
						20.0	2	2	3	5/30	•	D16 20.00 - 20.45
						21.0	2	2	3	5/30	•	D17 21.00 - 21.45
						23.0	2	3	3	6/30	•	U18 22.00 - 22.90
						24.0	2	3	2	5/30	•	D19 23.00 - 23.45
						26.0	2	2	3	5/30	•	D20 24.00 - 24.45
						27.0	2	3	3	6/30	•	U21 25.00 - 25.90
						28.0	2	3	3	6/32	•	D22 26.00 - 26.45
10	-31.75	32.30	3.00		Moderately weathered reddish brown, silt/claystone TCR = 40%, RQD = 30%							D24 28.00 - 28.45
												R25 30.00 - 30.20
												R26 32.00 - 32.20

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: B28

Co-ord (m): N = 2300526

Sheet: 1 / 2

E = 619834

Location: Offshore

Ground elevation (m): 0.89

Date commenced: 17/5/2011

Depth (m): 33.9

Date completed: 18/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm 10 20 30 40 50 >50
							N ₀	N ₁	N ₂			
1a	-0.91	1.80	1.80	█	Light grey, poorly graded sand (SP)	1.0	1	1	2	3	D1 1.00 - 1.45	
1b	-5.11	6.00	4.20	█	Very soft, Brownish grey, Lean Clay with sand (CL)	3.0	0	0	1	1	D3 3.00 - 3.45	
			4.00	█		4.0	0	0	0	0	D4 4.00 - 4.45	
			5.00	█		5.0	0	0	1	1	D5 5.00 - 5.45	
2	-8.11	9.00	3.00	█	Very soft, Grey, Fat Clay (CH)	7.0	0	0	0	0	D7 7.00 - 7.45	
			8.00	█		8.0	0	0	0	0	D8 8.00 - 8.45	
3b	-12.61	13.50	4.50	█	Plastic, yellowish grey, clayey sand (SC)	10.0	2	2	2	4	D10 10.00 - 10.45	
			11.00	█		11.0	2	2	3	5	D11 11.00 - 11.45	
			12.00	█		12.0	2	3	3	6	D12 12.00 - 12.45	
			13.00	█		13.0	2	2	3	5	D13 13.00 - 13.45	
4	-14.11	15.00	1.50	█	Stiff, Yellowish brown, Fat Clay (CH)	14.0	3	4	4	8	D14 14.00 - 14.45	
5				█	Firm, grey, Fat Clay (CH)	16.0	2	2	3	5	D16 16.00 - 16.45	

Legend

- █ UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- █ R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: B28

Co-ord (m): N = 2300526

Sheet: 2 / 2

E = 619834

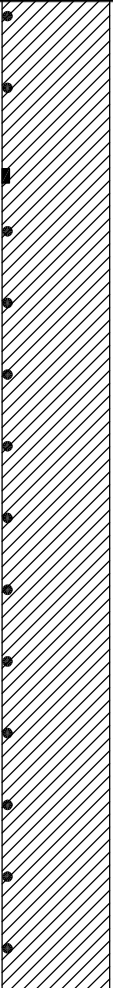
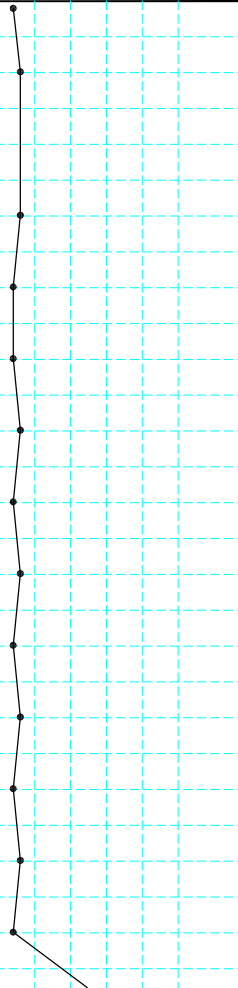
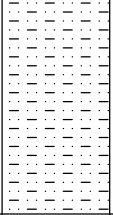
Location: Offshore

Ground elevation (m): 0.89

Date commenced: 17/5/2011

Depth (m): 33.9

Date completed: 18/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test				SPT chart							Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N	N: Blows/30 cm							
							N ₀	N ₁	N ₂		10	20	30	40	50	>50		
5			15.90		Firm, grey, Fat Clay (CH)	17.0	2	2	3	5								D17 17.00 - 17.45
						18.0	2	3	3	6								D18 18.00 - 18.45
						20.0	2	3	3	6								D20 20.00 - 20.45
						21.0	2	2	3	5								D21 21.00 - 21.45
						22.0	2	3	2	5								D22 22.00 - 22.45
						23.0	2	3	3	6								D23 23.00 - 23.45
						24.0	2	2	3	5								D24 24.00 - 24.45
						25.0	2	3	3	6								D25 25.00 - 25.45
						26.0	2	3	2	5								D26 26.00 - 26.45
						27.0	2	3	3	6								D27 27.00 - 27.45
						28.0	2	2	3	5								D28 28.00 - 28.45
						29.0	2	3	3	6								D29 29.00 - 29.45
						30.0	2	2	3	5								D30 30.00 - 30.45
10	-30.01	30.90	3.00		Moderately weathered reddish brown, silt/claystone TCR = 40%, RQD = 30%													
	-33.01	33.90																

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: B29

Co-ord (m): N = 2300440

Sheet: 1 / 2

E = 619885

Location: Offshore

Ground elevation (m): 0.70

Date commenced: 05/05/2011

Depth (m): 32.2m

Date completed: 06/05/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
1a	-0.80	1.50	1.50	█	Grey, yellowish grey, poorly graded sand (SP)	1.0	1	2	2	4/30	D1 1.00 - 1.45	
1b	-3.80	4.50	3.00	▨	Very soft, grey, sandy Lean Clay (CL)	4.0	0	0	0	0/50	D3 4.00 - 4.45	
2	-8.10	8.80	4.30	▨	Very soft, grey, Fat Clay (CH)	5.0	0	0	0	0/40	D4 5.00 - 5.45	
			8.30	█		8.0	0	0	1	1/55	D6 8.00 - 8.45	
3a	-9.30	10.00	1.20	█	Grey, poorly graded sand with shell (SP)	10.0	1	3	3	6/30	D8 10.00 - 10.45	
3b	-12.80	13.50	11.00	▨	Firm, yellowish grey, light grey, sandy Lean Clay (CL)	11.0	2	3	4	7/30	D9 11.00 - 11.45	
			12.00	█		12.0	2	2	3	5/30	D10 12.00 - 12.45	
			13.00	█		13.0	2	3	3	6/30	D11 13.00 - 13.45	
				▨	Firm, grey, Fat Clay (CH)	16.0	1	3	3	6/30	D13 16.00 - 16.45	

Legend

- █ UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- ▨ R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: B29

Co-ord (m): N = 2300440

Sheet: 2 / 2

E = 619885

Location: Offshore

Ground elevation (m): 0.70

Date commenced: 05/05/2011

Depth (m): 32.2m

Date completed: 06/05/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm 10 20 30 40 50 >50
							N ₀	N ₁	N ₂			
5			15.70		Firm, grey, Fat Clay (CH)	17.0	2	4	4	8/30	●	D14 17.00 - 17.45
						20.0	3	3	4	7/30	●	U15 18.00 - 18.90
						21.0	1	3	3	6/30	●	D16 20.00 - 20.45
						24.0	2	2	4	6/30	●	D17 21.00 - 21.45
						25.0	3	3	3	6/30	●	U18 22.00 - 22.90
						27.0	2	2	4	6/30	●	D19 24.00 - 24.45
						28.0	1	3	3	6/30	●	D20 25.00 - 25.45
10	-28.50	29.20	3.00		Moderately weathered reddish brown, silt/claystone TCR = 40%, RQD = 30%							R23 30.00 - 30.10
	-31.50	32.20										

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: G1

Co-ord (m): N = 2301745

Sheet: 1 / 2

E = 620038

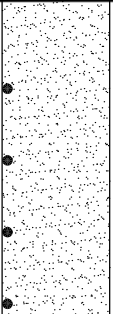
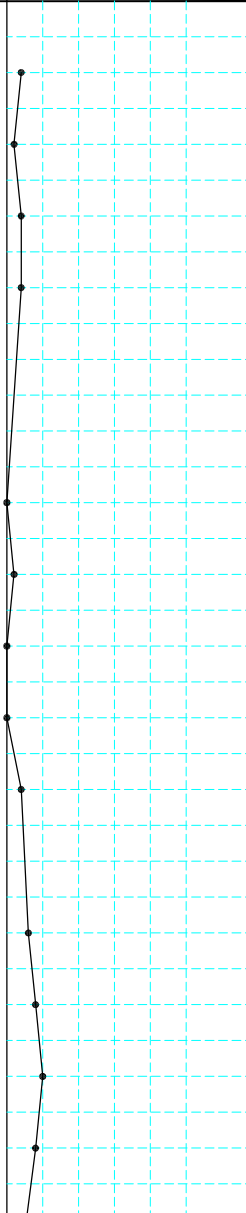
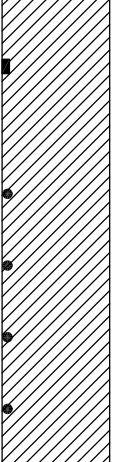
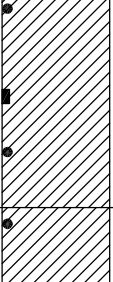
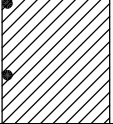
Location: Offshore

Ground elevation (m): 1.45




Date commenced: 30/5/2011

Depth (m): 26.8

Date completed: 30/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)						
						Depth (m)	Blows/15cm			N		N: Blows/30 cm					
							N ₀	N ₁	N ₂			10	20	30	40	50	>50
1a	-3.05	4.50	4.50		Loose, blackish grey, poorly graded sand with clay (SP - SC)	1.0	1	2	2	4							D1 1.00 - 1.45
						2.0	1	1	2	3							D2 2.00 - 2.45
						3.0	1	2	3	5							D3 3.00 - 3.45
						4.0	2	2	2	4							D4 4.00 - 4.45
1b	-9.55	11.00	6.50		Plastic, Blackish grey, clayey sand (SC)	7.0	0	0	1	1							U5 5.00 - 5.90
						8.0	0	1	1	2							D6 7.00 - 7.45
						9.0	0	0	1	1							D7 8.00 - 8.45
						10.0	0	0	1	1							D8 9.00 - 9.45
						11.0	2	2	3	5							D9 10.00 - 10.45
						11.0	2	2	3	5							D10 11.00 - 11.45
3b	-12.55	14.00	3.00		Firm, yellowish grey, reddish brown, sandy Lean Clay (CL)	13.0	1	3	3	6							U11 12.00 - 12.90
						13.0	1	3	3	6							D12 13.00 - 13.45
4	-15.45	16.90	2.90		Stiff, brownish yellow, Lean Clay (CL)	14.0	3	4	5	9							D13 14.00 - 14.45
						15.0	4	5	5	10							D14 15.00 - 15.45
						16.0	2	4	5	9							D15 16.00 - 16.45

Legend

-  UD: Undisturbed sample
-  D, S: Disturbed and SPT sample
-  R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: G1

Co-ord (m): N = 2301745

Sheet: 2 / 2

E = 620038

Location: Offshore

Ground elevation (m): 1.45

Date commenced: 30/5/2011

Depth (m): 26.8

Date completed: 30/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
5			6.90		Firm, grey, Fat Clay (CH)	17.0	2	3	3	6	●	D16 17.00 - 17.45
						20.0	1	2	3	5	●	U17 18.00 - 18.90
						21.0	3	3	3	6	●	D18 20.00 - 20.45
						23.0	2	3	4	7	●	D19 21.00 - 21.45
10	-22.35	23.80	3.00		Moderately weathered, reddish brown, silt/claystone TCR = 50%, RQD = 20%						D20 23.00 - 23.45	
	-25.35	26.80									R21 24.00 - 24.10	

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: G2

Co-ord (m): N = 2301705

Sheet: 1 / 2

E = 620062

Location: Offshore

Ground elevation (m): 0.47

Date commenced: 30/5/2011

Depth (m): 26.3

Date completed: 30/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)						
						Depth (m)	Blows/15cm			N		N: Blows/30 cm					
							N ₀	N ₁	N ₂			10	20	30	40	50	>50
1a	-3.43	3.90	3.90		Grey, poorly graded sand with shell (SP)	1.0	2	2	3	5							D1 1.00 - 1.45
						2.0	2	2	2	4							D2 2.00 - 2.45
						3.0	2	3	3	6							D3 3.00 - 3.45
1b	-6.03	6.50	2.60		Very soft, grey, sandy lean clay (CL)	4.0											U4 4.00 - 4.80
						6.0	0	0	1	1							D5 6.00 - 6.45
3b	-10.53	11.00	9.00		Plastic Yellowish grey, light grey, clayey sand (SC)	7.0	2	2	3	5							D6 7.00 - 7.45
						9.0	2	3	3	6							U7 8.00 - 8.70
						10.0	2	2	3	5							D8 9.00 - 9.45
						11.0	4	4	5	9							D9 10.00 - 10.45
4	-13.73	14.20	3.20		Firm, Brownish grey, reddish brown, fat clay (CH)	12.0	4	5	5	10							D10 11.00 - 11.45
						13.0	4	5	6	11							D11 12.00 - 12.45
						14.0	2	3	3	6							D12 13.00 - 13.45
5			9.00		Firm, grey, Fat Clay (CH)												D13 14.00 - 14.45
																	U14 15.00 - 15.80

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: G2

Co-ord (m): N = 2301705

Sheet: 2 / 2

E = 620062

Location: Offshore

Ground elevation (m): 0.47

Date commenced: 30/5/2011

Depth (m): 26.2

Date completed: 30/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm 10 20 30 40 50 >50
							N ₀	N ₁	N ₂			
5	-22.73	23.20	9.00		Firm, grey, clay (CH)	17.0	2	2	3	5	•	D15 17.00 - 17.45
						18.0	2	2	3	5	•	D16 18.00 - 18.45
						21.0	2	2	3	5	•	U17 19.00 - 19.80
						22.0	2	3	3	6	•	D18 21.00 - 21.45
						22.0	2	3	3	6	•	D19 22.00 - 22.45
10	-25.73	26.20	3.00		Moderately weathered, reddish brown, silt/claystone TCR = 50%, RQD = 30%						R20 24.00 - 24.10	
	-25.73	26.20									R21 26.00 - 26.20	

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: G3

Co-ord (m): N = 2301657

Sheet: 1 / 2

E = 620091

Location: Offshore

Ground elevation (m): -0.41

Date commenced: 29/5/2011

Depth (m): 24.5

Date completed: 29/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart						Sample No. Depth of the sample (m)			
						Depth (m)	Blows/15cm			N	N: Blows/30 cm							
							N ₀	N ₁	N ₂		10	20	30	40		50	>50	
1a	-0.91	0.50	0.50		Grey, poorly graded sand (SP)													
1b			2.30		Very soft, Grey, Clayey Sand (SC)	1.0	0	0	1	1							D1 1.00 - 1.45	
																		U2 2.00 - 2.60
2	-3.21	2.80			Very soft, Brownish grey, sandy Lean Clay (CL)	4.0	0	0	0	0							D3 4.00 - 4.45	
																		U4 5.00 - 5.90
3b	-6.31	5.90			Plastic, Yellowish grey, Clayey Sand (SC)	6.0	1	1	2	3							D5 6.00 - 6.45	
						7.0	1	1	1	2							D6 7.00 - 7.45	
						9.0	1	2	2	4								U7 8.00 - 8.90
						10.0	1	1	2	3								D9 10.00 - 10.45
4	-11.41	11.00			Stiff, Yellowish brown, Fat Clay (CH)	11.0	3	4	5	9							D10 11.00 - 11.45	
						12.0	2	4	6	10								D11 12.00 - 12.45
5	-13.31	12.90			Firm, grey, Fat Clay (CH)	13.0	3	3	3	6							D12 13.00 - 13.45	
						16.0	2	3	3	6								U13 14.00 - 14.90
																	D14 16.00 - 16.45	

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: G3

Co-ord (m): N = 2301657

Sheet: 2 / 2

E = 620091

Location: Offshore

Ground elevation (m): -0.41

Date commenced: 29/5/2011

Depth (m): 24.5

Date completed: 29/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm 10 20 30 40 50 >50
							N ₀	N ₁	N ₂			
5	-21.91	21.50	8.60		Firm, grey, Fat Clay (CH)	17.0	2	2	4	6	●	D15 17.00 - 17.45
						19.0	1	2	3	5	●	D16 19.00 - 19.45
						20.0	3	3	3	6	●	D17 20.00 - 20.45
						21.0	1	3	3	6	●	D18 21.00 - 21.45
10	-24.91	24.50	3.00		Moderately weathered, reddish brown, silt/claystone TCR = 30%, RQD = 10%						R19 22.00 - 22.20	

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: G4

Co-ord (m): N = 2301610

Sheet: 1 / 2

E = 620060

Location: Offshore

Ground elevation (m): -0.35

Date commenced: 28/5/2011

Depth (m): 26.9

Date completed: 28/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No.			
						Depth (m)	Blows/15cm			N		N: Blows/30 cm	Depth of the sample (m)	
							N ₀	N ₁	N ₂		10			20
1a	-0.65	0.30	0.30		Grey, poorly graded sand (SP)									
1b			3.30		Very soft, grey, sandy Lean Clay (CL)	1.0	0	0	0	0		D1 1.00 - 1.45		
														U2 2.00 - 2.90
2	-3.95	3.60	3.90		Very soft, Brownish grey, Fat Clay (CH)	4.0	0	0	0	0		D3 4.00 - 4.45		
														U4 5.00 - 5.90
3b	-7.85	7.50	3.50		Plastic, Yellowish grey, Clayey Sand (SC)	7.0	0	0	1	1		D5 7.00 - 7.45		
														U6 8.00 - 8.90
						9.0	2	2	2	4		D7 9.00 - 9.45		
4	-11.35	11.00	2.80		Stiff, Yellowish brown, Fat Clay (CH)	10.0	1	2	3	5		D8 10.00 - 10.45		
														U9 11.00 - 11.80
5	-14.15	13.80	10.10		Firm, grey, Fat Clay (CH)	12.0	3	5	4	9		D10 12.00 - 12.45		
														U11 13.00 - 13.45
						13.0	2	4	5	9		D11 13.00 - 13.45		
						14.0	3	3	3	6		D12 14.00 - 14.45		
												U13 15.00 - 15.90		

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: G4

Co-ord (m): N = 2301610

Sheet: 2 / 2

E = 620060

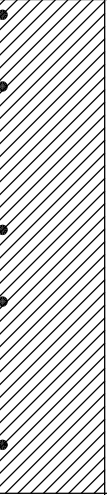
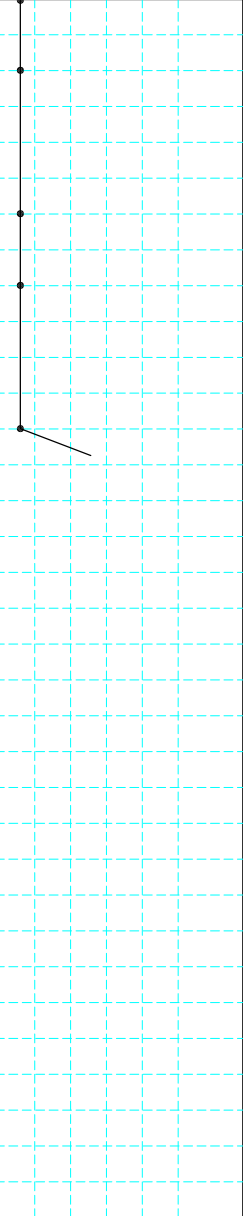
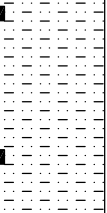
Location: Offshore

Ground elevation (m): -0.35

Date commenced: 28/5/2011

Depth (m): 26.9

Date completed: 28/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test				SPT chart						Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N	N: Blows/30 cm						
							N ₀	N ₁	N ₂		10	20	30	40	50		>50
5			10.10		Firm, grey, Fat Clay (CH)	17.0	2	3	3	6							D14 17.00 - 17.45
						18.0	2	2	4	6							D15 18.00 - 18.45
						20.0	1	3	4	7							D16 20.00 - 20.45
						21.0	1	3	3	6							D17 21.00 - 21.45
						23.0	2	3	3	6							D18 23.00 - 23.45
10	-24.25	23.90	3.00		Moderately weathered, reddish brown, greenish grey, silt/claystone TCR = 50%, RQD = 30%									R19 24.00 - 24.20			
	-27.25	26.90												R20 26.00 - 26.20			

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: G5

Co-ord (m): N = 2301563

Sheet: 1 / 2

E = 620030

Location: Offshore

Ground elevation (m): 0.42

Date commenced: 29/5/2011

Depth (m): 29.1

Date completed: 29/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm 10 20 30 40 50 >50
							N ₀	N ₁	N ₂			
1	-0.08	0.50	0.50	▒	Grey, poorly graded sand (SP)	1.0	0	0	0	0	D1 1.00 - 1.45	
2			6.10	▨	Very soft, Brownish grey, Fat Clay (CH)	4.0	0	0	0	0	D3 4.00 - 4.45	
						6.60	2	2	2	4	D5 6.00 - 6.80	
3b	-6.18	6.60	4.60	▨	Plastic, light grey, yellowish grey, Clayey Sand (SC)	7.0	2	2	2	4	D6 7.00 - 7.45	
						8.0	2	3	3	6	D7 8.00 - 8.45	
						10.0	2	2	3	5	D8 9.00 - 9.80	
4	-10.78	11.20	2.80	▨	Stiff, grey, Yellowish brown, Fat Clay (CH)	11.0	2	6	7	13	D9 11.00 - 11.45	
						12.0	6	6	7	13	D10 12.00 - 12.45	
						13.0	5	6	6	12	D11 13.00 - 13.45	
5	-13.58	14.00	11.60	▨	Firm, grey, Fat Clay (CH)	14.0	3	3	3	6	D12 14.00 - 14.45	
											U13 15.00 - 15.80	

Legend

- ▒ UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- ▨ R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: G5

Co-ord (m): N = 2301563

Sheet: 2 / 2

E = 620030


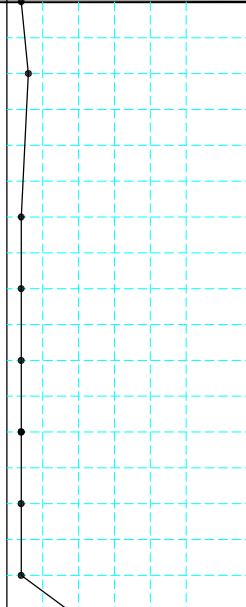

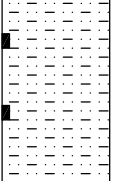
Location: Offshore

Ground elevation (m): 0.42




Date commenced: 29/5/2011

Depth (m): 29.1

Date completed: 29/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm 10 20 30 40 50 >50
							N ₀	N ₁	N ₂			
5			11.60		Firm, grey, Fat Clay (CH)	17.0	2	2	3	5		D14 17.00 - 17.45
						18.0	2	3	3	6		D15 18.00 - 18.45
						20.0	2	2	3	5		D16 20.00 - 20.45
						21.0	2	2	3	5		D17 21.00 - 21.45
						22.0	2	2	3	5		D18 22.00 - 22.45
						23.0	2	2	3	5		D19 23.00 - 23.45
						24.0	2	2	3	5		D20 24.00 - 24.45
						25.0	2	3	2	5		D21 25.00 - 25.45
9	-25.18	25.60	0.50		Moderately weathered, clay stone: Hard, reddish brown, Clay							
10	-25.68	26.10	3.00		Moderately weathered, reddish brown, greenish grey, silt/claystone TCR = 60%, RQD = 30%						R22 27.00 - 27.20	
											R23 28.00 - 28.20	
	-28.68	29.10										

Legend

-  UD: Undisturbed sample
-  D, S: Disturbed and SPT sample
-  R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: G6

Co-ord (m): N = 2301516

Sheet: 1 / 2

E = 620000

Location: Offshore

Ground elevation (m): 1.05

Date commenced: 31/5/2011

Depth (m): 26.7

Date completed: 1/6/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No.	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂		10	
1b	-1.95	3.00	3.00		Very soft, Grey, sandy Lean Clay (CL)	1.0	0	0	1	1	D1 1.00 - 1.45	
2		3.00	5.60		Very soft, Brownish grey, Fat Clay (CH)	4.0	0	0	0	0	D3 4.00 - 4.45	
						5.0	0	0	0	0	D4 5.00 - 5.45	
3b	-7.55	8.60	2.30		Plastic, Yellowish grey, Clayey Sand (SC)	8.0	0	0	1	1	D6 8.00 - 8.45	
						10.0	2	2	3	5	U7 9.00 - 9.80	
3c	-9.85	10.90	3.70		Yellowish grey, poorly graded sand with clay (SP-SC)	10.0	2	2	3	5	D8 10.00 - 10.45	
						11.0	3	3	4	7	D9 11.00 - 11.45	
						12.0	3	4	4	8	D10 12.00 - 12.45	
						13.0	2	3	4	7	D11 13.00 - 13.45	
5	-13.55	14.60	9.10		Firm, grey, Fat Clay (CH)	14.0	1	3	3	6	D12 14.00 - 14.45	
						15.0	2	3	3	6	D13 15.00 - 15.45	
											U14 16.00 - 16.80	

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: G6

Co-ord (m): N = 2301516

Sheet: 2 / 2

E = 620000

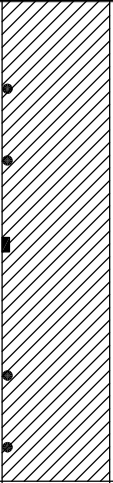
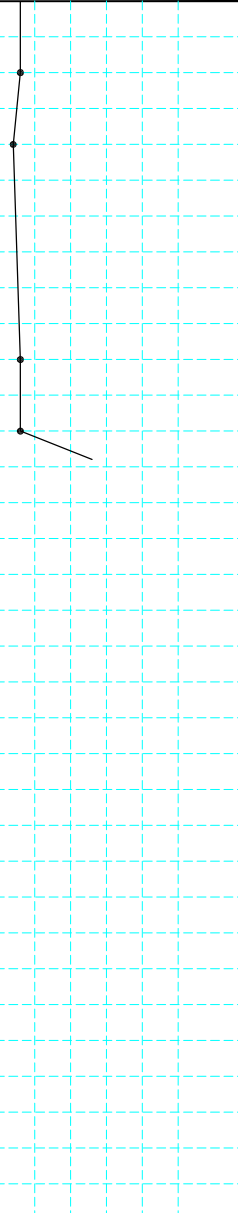
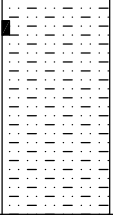
Location: Offshore

Ground elevation (m): 1.05

Date commenced: 31/5/2011

Depth (m): 26.7

Date completed: 1/6/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm 10 20 30 40 50 >50
							N ₀	N ₁	N ₂			
5			9.10		Firm, grey, Fat Clay (CH)	18.0	2	3	3	6		D15 18.00 - 18.45
						19.0	2	2	3	5		D16 19.00 - 19.45
						22.0	3	3	3	6		U17 20.00 - 20.80
						23.0	2	2	4	6		D18 22.00 - 22.45
10	-22.65	23.70	3.00		Moderately, reddish brown, silt/claystone TCR = 40%, RQD = 20%					R20 24.00 - 24.20		
	-25.65	26.70										

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: G7

Co-ord (m): N = 2301477

Sheet: 1 / 2

E = 619965

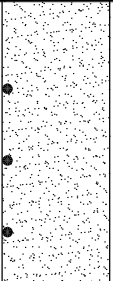

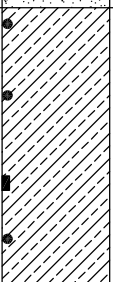

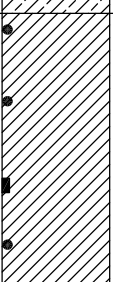

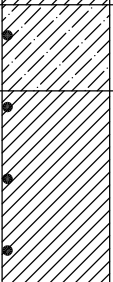

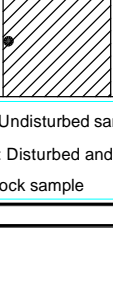

Location: Ground

Ground elevation (m): 4.12

Date commenced: 11/5/2011

Depth (m): 31.0

Date completed: 12/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm 10 20 30 40 50 >50
							N ₀	N ₁	N ₂			
1a	0.12	4.00	2.50		Grey, poorly graded sand (SP-SC)	1.0	1	1	2	3		D1 1.00 - 1.45
						2.0	2	3	3	6		D2 2.00 - 2.45
						3.0	3	2	2	4		D3 3.00 - 3.45
						4.0	0	0	0	0		D4 4.00 - 4.45
1b	-3.88	8.00	4.00		Very soft, Brownish grey, Lean Clay with sand (CL)	5.0	0	0	1	1		D5 5.00 - 5.45
						7.0	0	0	1	1		D7 7.00 - 7.45
						8.0	0	0	1	1		D8 8.00 - 8.45
						9.0	0	0	1	1		D9 9.00 - 9.45
2	-7.68	11.80	3.80		Very soft, Brownish grey, Fat Clay (CH)	11.0	0	0	1	1		U10 10.00 - 10.80
						12.0	2	2	2	4		D11 11.00 - 11.45
3b	-8.88	13.00	1.20		Plastic, Yellowish grey, Clayey Sand (SC)	12.0	2	2	2	4		D12 12.00 - 12.45
						13.0	1	2	2	4		D13 13.00 - 13.45
4			5.00		Firm, Yellowish grey, Fat Clay (CH)	14.0	2	2	3	5		D14 14.00 - 14.45
						15.0	2	2	3	5		D15 15.00 - 15.45
						16.0	1	2	2	4		D16 16.00 - 16.45

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: G7

Co-ord (m): N = 2301477

Sheet: 2/2

E = 619965

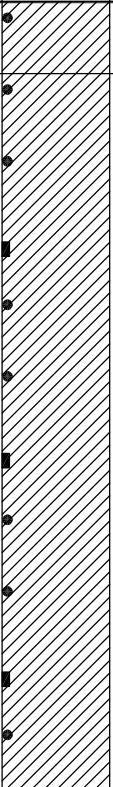
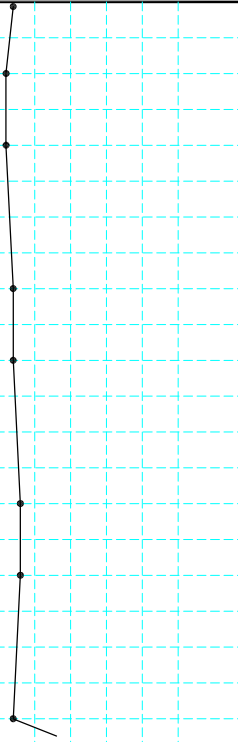
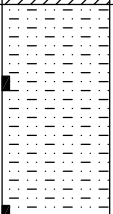
Location: Ground

Ground elevation (m): 4.12




Date commenced: 11/5/2011

Depth (m): 31.0

Date completed: 12/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test				SPT chart							Sample No. Depth of the sample (m)		
						Depth (m)	Blows/15cm			N	N: Blows/30 cm								
							N ₀	N ₁	N ₂			10	20	30	40	50		>50	
5	-13.88	18.00	10.00		Firm, grey, Fat Clay (CH)	17.0	2	2	3	5								D17 17.00 - 17.45	
						18.0	0	1	1	2								D18 18.00 - 18.45	
						19.0	0	1	1	2								D19 19.00 - 19.45	
						20.0												U20 20.00 - 20.90	
						21.0	2	2	3	5								D21 21.00 - 21.45	
						22.0	2	2	3	5								D22 22.00 - 22.45	
						23.0												U23 23.00 - 23.80	
						24.0	2	3	3	6								D24 24.00 - 24.45	
						25.0	2	3	3	6								D25 25.00 - 25.45	
						26.0												U26 26.00 - 26.90	
10	-23.88	28.00	3.00		Hard, reddish brown, greenish grey, silt/claystone TCR = 40%, RQD = 20%	27.0	2	3	2	5	D27 27.00 - 27.45								
											R28 29.00 - 29.20								
	-26.88	31.00									R29 30.80 - 31.00								

Legend

-  UD: Undisturbed sample
-  D_s S: Disturbed and SPT sample
-  R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: G8

Co-ord (m): N = 2301701

Sheet: 1 / 2

E = 619948

Location: Ground

Ground elevation (m): 3.97

Date commenced: 9/5/2011

Depth (m): 30.6

Date completed: 10/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm 10 20 30 40 50 >50
							N ₀	N ₁	N ₂			
1a			4.50		Grey, blackish grey, poorly graded sand, with shell (SP)	1.00	1	2	3	5		D1 1.00 - 1.45
						2.00	3	3	3	6		D2 2.00 - 2.45
						3.00						D3 3.00 - 3.45
1b	-0.53	4.50	3.30		Very soft, Blackish grey, sandy Lean Clay (CL)	4.00	0	0	1	1		D4 4.00 - 4.45
						5.00	0	0	1	1		D5 5.00 - 5.45
						6.00						U6 6.00 - 6.70
2	-3.83	7.80	4.20		Very soft, Brownish grey, Fat Clay (CH)	7.00	0	0	0	0		D7 7.00 - 7.45
						8.00	0	0	0	0		D8 8.00 - 8.45
						9.00	0	0	1	1		D9 9.00 - 9.45
3b	-8.03	12.00	4.00		Firm, Yellowish grey, light grey, sandy Lean Clay (CL)	10.00	0	1	1	2		U10 No recovery
						11.00	0	0	1	1		D11 11.00 - 11.45
						12.00	1	2	2	4		D12 12.00 - 12.45
						13.00	2	2	3	5		U13 13.00 - 13.60
						14.00	2	3	3	6		D14 14.00 - 14.45
						15.00	2	3	4	7		D15 15.00 - 15.45
	-12.03	16.00				16.00	3	5	5	10		D16 16.00 - 16.45

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: G8

Co-ord (m): N = 2301701

Sheet: 2/2

E = 619948

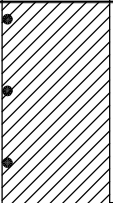
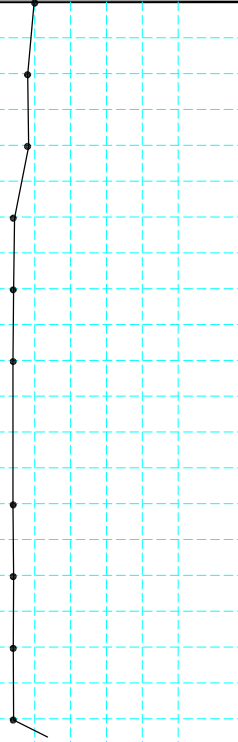
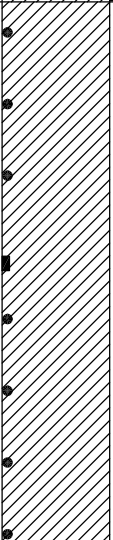
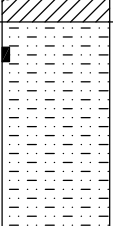
Location: Ground

Ground elevation (m): 3.97




Date commenced: 9/5/2011

Depth (m): 30.6

Date completed: 10/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test				SPT chart						Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N	N: Blows/30 cm						
							N ₀	N ₁	N ₂		10	20	30	40	50		>50
4	-15.83	19.80	3.80		Stiff, yellowish grey, light grey, Fat Clay (CH)	17.00	4	5	6	11							D17 17.00 - 17.45
						18.00	3	4	4	8							D18 18.00 - 18.45
						19.00	4	4	5	9							D19 19.00 - 19.45
						20.00	1	2	3	5							D20 20.00 - 20.45
5	-23.63	27.60	7.80		Firm, grey, Fat Clay (CH)	21.00	1	2	3	5							D21 21.00 - 21.45
						22.00	2	2	3	5							D22 22.00 - 22.45
						23.00											U23 23.00 - 23.90
						24.00	1	2	2	4							D24 24.00 - 24.45
						25.00	2	2	3	5							D25 25.00 - 25.45
						26.00	1	2	2	4							D26 26.00 - 26.45
						27.00	2	2	3	5							D27 27.00 - 27.45
10	-26.63	30.60	3.00		Hard, reddish brown, silt/claystone TCR = 30%, RQD = 10%										R28 28.00 - 28.10		

Legend

-  UD: Undisturbed sample
-  D, S: Disturbed and SPT sample
-  R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: G9

Co-ord (m): N = 2301692

Sheet: 1 / 2

E = 619836

Location: Ground

Ground elevation (m): 3.05

Date commenced: 7/5/2011

Depth (m): 31.5

Date completed: 9/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm 10 20 30 40 50 >50
							N ₀	N ₁	N ₂			
1a	1.55	1.50	1.50	•••••	Yellowish grey, blackish grey, poorly graded sand (SP)	1.00	1	1	1	2	D1 1.00 - 1.45	
1b		2.00	0	0	0	0	2.00	0	0	0	0	D2 2.00 - 2.45
	3.00	0	0	0	0	3.00	0	0	0	0	U3 3.00 - 3.80	
	4.00	0	0	0	0	4.00	0	0	0	0	D4 4.00 - 4.45	
	5.00	0	0	0	0	5.00	0	0	0	0	D5 5.00 - 5.45	
	6.00	0	0	0	0	6.00	0	0	0	0	U6 6.00 - 6.60	
	7.00	0	0	0	0	7.00	0	0	0	0	D7 7.00 - 7.45	
2	-4.95	8.00	0	0	1	1	8.00	0	0	1	1	D8 8.00 - 8.45
		9.00	0	0	1	1	9.00	0	0	1	1	D9 9.00 - 9.45
	10.00	0	0	1	1	10.00	0	0	1	1	D10 10.00 - 10.45	
	12.00	3	3	3	6	12.00	3	3	3	6	U11 No Recovery D12 12.00 - 12.45	
3b	-10.45	13.00	2	3	3	6	13.00	2	3	3	6	D13 13.00 - 13.45
		15.00	1	1	1	2	15.00	1	1	1	2	U14 14.00 - 14.80 D15 15.00 - 15.45
	-12.55	15.60	3	4	4	8	16.00	3	4	4	8	D16 16.00 - 16.45

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: G9

Co-ord (m): N = 2301692

Sheet: 2/2

E = 619836

Location: Ground

Ground elevation (m): 3.05

Date commenced: 7/5/2011

Depth (m): 31.5

Date completed: 9/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm 10 20 30 40 50 >50
							N ₀	N ₁	N ₂			
4	-16.75	19.80	4.20	▨	Stiff, light grey, yellowish grey, brownish grey, Fat Clay (CH)	18.00	4	5	6	11	U17 17.00 - 17.80	
						19.00	3	4	6	10	D18 18.00 - 18.45	
5	-25.45	28.50	8.70	▨	Firm, grey, Fat Clay (CH)	20.00	3	3	4	7	D19 19.00 - 19.45	
						21.00	3	4	3	7	D20 20.00 - 20.45	
						22.00	2	2	3	5	D21 21.00 - 21.45	
						24.00	1	2	3	5	D22 22.00 - 22.45	
						25.00	1	2	2	4	U23 23.00 - 23.70	
						26.00	2	3	2	5	D24 24.00 - 24.45	
						27.00	1	2	2	4	D25 25.00 - 25.45	
						28.00	1	2	2	4	D26 26.00 - 26.45	
10	-28.45	31.50	3.00	▨	Hard, reddish brown, silt/claystone TCR = 40%, RQD = 20%						D27 27.00 - 27.45	
											D28 28.00 - 28.45	
											R29 29.00 - 29.10	

Legend

- ▨ UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- ▨ R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrast ruct ur e const r uct ion pr oject

BOREHOLE: G10

Co-ord (m): N = 2301503

Sheet: 1 / 2

E = 619832

Location: Ground

Ground elevation (m): 3.23

Date commenced: 1/6/2011

Depth (m): 30.0

Date completed: 2/6/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart						Sample No. Depth of the sample (m)		
						Depth (m)	Blows/15cm			N	N: Blows/30 cm						
							N ₀	N ₁	N ₂		10	20	30	40		50	>50
1b			8.50		Very soft, Grey, sandy Lean Clay (CL)	1.0	0	0	0	0							D1 1.00 - 1.45
						2.0	0	0	0	0							D2 2.00 - 2.45
						4.0	0	0	1	1							U3 3.00 - 3.80 D4 4.00 - 4.45
						5.0	0	0	0	0							D5 5.00 - 5.45
						8.0	0	0	0	0							U6 6.00 - 6.80 D7 8.00 - 8.45
2	-5.27	8.50	3.10		Very soft, Brownish grey, Fat Clay (CH)	11.0	0	0	1	1							U8 9.00 - 9.80 D9 11.00 - 11.45
3a	-8.37	11.60	1.40		Yellowish grey, poorly graded sand with clay (SP-SC)	12.0	1	2	2	4							D10 12.00 - 12.45
3b			1.80		Firm, Yellowish grey, light grey, Lean Clay with sand (CL)	13.0	2	2	3	5							D11 13.00 - 13.45
						14.0	2	3	3	6							D12 14.00 - 14.45
4			3.20		Stiff, yellowish brown, Fat Clay (CH)	15.0	4	5	6	11							D13 15.00 - 15.45
						16.0	4	6	7	13							D14 16.00 - 16.45

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: G10

Co-ord (m): N = 2301503

Sheet: 2 / 2

E = 619832

Location: Ground

Ground elevation (m): 3.23

Date commenced: 1/6/2011

Depth (m): 30.0

Date completed: 2/6/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
5	-14.77	18.00	9.00	[Diagonal Hatching]	Firm, grey, Fat Clay (CH)	17.0	4	6	6	12	[SPT Chart Line]	D15 17.00 - 17.45
						18.0	2	3	3	6		D16 18.00 - 18.45
						19.0	2	2	3	5		D17 19.00 - 19.45
						20.0	2	3	3	6		D18 20.00 - 20.45
						21.0						U19 21.00 - 21.90
						23.0	1	2	3	5		D20 23.00 - 23.45
						24.0						U21 24.00 - 24.60
						25.0	2	2	3	5		D22 25.00 - 25.45
						26.0	2	2	3	5		D23 26.00 - 26.45
						10	-23.77	27.00	3.00	[Dotted Hatching]		Moderately weathered, reddish brown, greenish grey, silt/claystone TCR = 50%, RQD = 30%
	-26.77	30.00										

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T2

Co-ord (m): N = 2301469

Sheet: 1 / 2

E = 620145

Location: Offshore

Ground elevation (m): -1.42

Date commenced: 28/5/2011

Depth (m): 24.9

Date completed: 28/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
1a	-1.72	0.30	0.30		Grey, grey, poorly graded sand (SP)							
2			5.70		Very soft, Brownish grey, Fat Clay (CH)	1.0	0	0	0	0		D1 1.00 - 1.45
						4.0	0	0	0	0		U2 2.00 - 2.80
3a	-7.42	6.00	7.10		Yellowish grey, poorly graded sand with clay (SP-SC)	6.0	2	2	2	4		D4 6.00 - 6.45
						7.0	2	2	3	5		D5 7.00 - 7.45
						8.0	2	2	2	4		D6 8.00 - 8.45
						9.0	2	3	3	6		D7 9.00 - 9.45
						10.0	2	2	3	5		D8 10.00 - 10.45
						12.0	3	3	3	6		D10 12.00 - 12.45
5	-14.52	13.10	8.30		Firm, grey, Fat Clay (CH)	13.0	2	3	3	6		D11 13.00 - 13.45
						16.0	2	2	3	5		U12 14.00 - 14.80
												D13 16.00 - 16.45

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T2

Co-ord (m): N = 2301469

Sheet: 2 / 2

E = 620145

Location: Offshore

Ground elevation (m): -1.42

Date commenced: 28/5/2011

Depth (m): 24.9

Date completed: 28/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
5			8.30		Firm, grey, Fat Clay (CH)	17.0	2	3	3	6		D14 17.00 - 17.45
						20.0	3	3	3	6		U15 18.00 - 18.80
9	-22.82	21.40	0.50		Completely weathered Clay stone: Hard, reddish brown, sandy clay with fragment						D16 20.00 - 20.45	
	-23.32	21.90			Moderately weathered, reddish brown, silt/claystone TCR = 40%, RQD = 20%						U17 21.00 - 21.50	
10			3.00								R18 23.00 - 23.20	
	-26.32	24.90									R19 24.00 - 24.20	

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T3

Co-ord (m): N = 2301426

Sheet: 1 / 2

E = 620170

Location: Offshore

Ground elevation (m): -1.50

Date commenced: 16/04/2011

Depth (m): 27.0m

Date completed: 18/01/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
1b	-8.00	6.50	6.50		Very soft, brownish grey, Lean Clay (CL)	1.0	0	0	0	0/44	D1 1.00 - 1.45	
						2.0	0	0	1	1/43	D2 2.00 - 2.45	
						5.0	0	1	1	2/35	D4 5.00 - 5.45	
						6.0	0	1	1	2/34	D5 6.00 - 6.45	
						7.0	2	3	3	6/30	D6 7.00 - 7.45	
3a	-10.50	9.00	2.50		Loose, Yellowish grey, poorly graded Sand (SP)	9.0	2	3	3	6/30	U7 8.40 - 9.00 D8 9.00 - 9.45	
3b	-12.50	11.00	2.00		Firm, Yellowish grey, light grey, sandy Lean Clay (CL)	10.0	2	3	4	7/33	D9 10.00 - 10.45	
4	-17.00	15.50	4.50		Firm to stiff, Yellowish grey, light grey, Fat Clay (CH)	12.0	3	4	4	8/31	U10 11.00 - 11.50 D11 12.00 - 12.45	
						13.0	3	4	4	8/30	D12 13.00 - 13.45	
						15.0	2	3	3	6/34	U13 14.00 - 14.50 D14 15.00 - 15.45	
5					Firm, Grey, Fat Clay (CH)	16.0	2	3	3	6/32	D15 16.00 - 16.45	

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T3

Co-ord (m): N = 2301426

Sheet: 2 / 2

E = 620170

Location: Offshore

Ground elevation (m): -1.50

Date commenced: 16/04/2011

Depth (m): 27.0m

Date completed: 18/04/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
5			8.00		Firm, Grey, Fat Clay (CH)							
						18.0	2	3	3	6/32	•	U16 17.10 - 18.00 D17 18.00 - 18.45
						19.0	2	3	3	6/30	•	D18 19.00 - 19.45
						20.0	2	2	3	5/30	•	D19 20.00 - 20.45
						22.0	2	2	3	5/34	•	U20 21.10 - 22.00 D21 22.00 - 22.45
23.0	2	2	3	5/31	•	D22 23.00 - 23.45						
9	-25.00	23.50	0.50		Completely wethered sandstone: Hard, reddish brown, sandy clay with fragment							R23 24.00 - 24.20
10	-25.50	24.00	3.00		Moderately weathered, reddish brown, sandstone TCR = 40%, RQD = 0%							R24 26.80 - 27.00
	-28.50	27.00										

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T4

Co-ord (m): N = 2301383

Sheet: 1 / 2

E = 620196

Location: Offshore

Ground elevation (m): -1.33

Date commenced: 26/5/2011

Depth (m): 26.9

Date completed: 26/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)		
						Depth (m)	Blows/15cm			N		N: Blows/30 cm	
							N ₀	N ₁	N ₂			10	20 30 40 50 >50
1a	-2.83	1.50	1.50		Grey, poorly graded sand with clay (SM)	1.0	1	1	2	3		D1 1.00 - 1.45	
2		4.00	4.00		Very soft, Brownish grey, Fat Clay (CH)	4.0	0	0	0	0		U2 2.00 - 2.90	
3b	-6.83	5.50	1.20		Plastic, Grey, clayey sand with shell (SC)	6.0	1	2	2	4		D3 4.00 - 4.45	
	-8.03	6.70	1.20		Plastic, Grey, clayey sand with shell (SC)	6.0	1	2	2	4		U4 5.00 - 5.90	
		6.70	1.20		Plastic, Grey, clayey sand with shell (SC)	6.0	1	2	2	4		D5 6.00 - 6.45	
3c		7.0	3.30		Yellowish grey, poorly graded sand with clay (SP-SC)	7.0	2	2	2	4		D6 7.00 - 7.45	
		8.0	3.30		Yellowish grey, poorly graded sand with clay (SP-SC)	8.0	2	2	3	5		D7 8.00 - 8.45	
	-11.33	10.00	3.30		Yellowish grey, poorly graded sand with clay (SP-SC)	9.0	1	2	2	4		D8 9.00 - 9.45	
		10.00	3.90		Stiff, Yellowish grey, light grey, Fat Clay (CH)	11.0	4	5	6	11		U9 10.00 - 10.60	
4		12.0	3.90		Stiff, Yellowish grey, light grey, Fat Clay (CH)	12.0	5	6	6	12		D10 11.00 - 11.45	
		13.0	3.90		Stiff, Yellowish grey, light grey, Fat Clay (CH)	13.0	3	4	6	10		D11 12.00 - 12.45	
	-15.23	13.90	10.00		Firm, grey, Fat Clay (CH)	14.0	1	2	4	6		D12 13.00 - 13.45	
5		14.0	10.00		Firm, grey, Fat Clay (CH)	14.0	1	2	4	6		D13 14.00 - 14.45	
		15.0	10.00		Firm, grey, Fat Clay (CH)	15.0						U14 15.00 - 15.90	

Legend
 UD: Undisturbed sample
 D, S: Disturbed and SPT sample
 R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T4

Co-ord (m): N = 2301383

Sheet: 2 / 2

E = 620196

Location: Offshore

Ground elevation (m): -1.33

Date commenced: 26/5/2011

Depth (m): 26.9

Date completed: 26/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
5	-25.23	23.90	10.00		Firm, grey, Fat Clay (CH)	17.0	2	2	3	5	●	D15 17.00 - 17.45
						20.0	2	3	3	6	●	U16 18.00 - 18.90
						21.0	1	3	3	6	●	D17 20.00 - 20.45
						23.0	1	3	3	6	●	D18 21.00 - 21.45
9	-28.23	26.90	3.00		Hard, reddish brown, greenish grey, sandstone TCR = 30%, RQD = 10%						D19 23.00 - 23.45	
											R20 25.00 - 25.10	
											R21 26.00 - 26.10	

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastr uctur e const r uct ion pr oject

BOREHOLE: T5

Co-ord (m): N = 2301339

Sheet: 1 / 2

E = 620221

Location: Offshore

Ground elevation (m): -0.72

Date commenced: 10/04/2011

Depth (m): 26.5

Date completed: 13/04/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
1a	-1.52	0.80	0.80	█	Grey, light grey, poorly graded sand							
2			8.20	█	Soft, Brownish grey, Fat Clay (CH)	1.0	0	0	1	1/40		D1 1.00 - 1.45
						2.0	0	0	1	1/40		D2 2.00 - 2.45
						4.0	0	1	1	2/37		U3 3.00 - 3.90 D4 4.00 - 4.45
						5.0	0	1	1	2/35		D5 5.00 - 5.45
						7.0	1	1	1	2/39		U6 6.00 - 6.60 D7 7.00 - 7.45
						8.0	1	1	2	3/32		D8 8.00 - 8.45
						10.0	0	1	1	2/30		U9 9.00 - 9.95 D10 10.00 - 10.45
						11.0	1	2	2	4/33		D11 11.00 - 11.45
3b	-12.22	11.50	2.50	█	Soft to firm, reddish brown, yellowish brown, Lean Clay (CL)							
3c	-13.72	13.00	1.50	█	Plastic, light grey, greenish grey, clayey sand							
4			3.00	█	Firm to stiff, yellowish grey, yellowish brown, Lean Clay (CL)	13.0	1	2	4	6/30		U12 12.00 - 12.85 D13 13.00 - 13.45
						14.0	2	3	5	8/30		D14 14.00 - 14.45
5	-16.72	16.00		█	Firm, grey, Fat Clay (CH)							
						16.0	1	3	3	6/30		U15 15.00 - 15.70 D16 16.00 - 16.45

Legend
 █ UD: Undisturbed sample
 ● D, S: Disturbed and SPT sample
 █ R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T5

Co-ord (m): N = 2301339

Sheet: 2 / 2

E = 620221

Location: Offshore

Ground elevation (m): -0.72

Date commenced: 10/04/2011

Depth (m): 26.5m

Date completed: 13/04/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
5	-24.22	23.50	7.50	[Diagonal Hatching]	Firm, to stiff, grey, Fat Clay (CH)	17.0	2	3	4	7/30	●	D17 17.00 - 17.45
						19.0	2	2	4	6/32	●	U18 18.00 - 18.75 D19 19.00 - 19.45
						20.0	1	3	5	8/30	●	D20 20.00 - 20.45
						22.0	2	3	3	6/34	●	U21 21.00 - 21.60 D22 22.00 - 22.45
						23.0	1	2	3	5/32	●	D23 23.00 - 23.45
						24.0	50	50/3	●	D24 24.00 - 24.03		
10	-27.22	26.50	3.00	[Dotted Hatching]	Hard, reddish brown, sandstone TCR = 70%, RQD = 50%						R25 25.00 - 25.10	

Legend

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PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T6

Co-ord (m): N = 2301297

Sheet: 1 / 2

E = 620247

Location: Offshore

Ground elevation (m): -0.65

Date commenced: 26/5/2011

Depth (m): 27.6

Date completed: 26/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
1b	-2.65	2.00	2.00	■	Very soft, Grey, brownish grey, Lean Clay (CL)	1.0	0	0	0	0	D1 1.00 - 1.45	
2	-7.15	6.50	4.50	■	Very soft, Brownish grey, Fat Clay (CH)	4.0	0	0	0	0	U2 2.00 - 2.80	
3b	-12.15	11.50	5.00	■	Plastic, Yellowish grey, reddish brown, clayey sand (SC)	7.0	2	2	3	5		D3 4.00 - 4.45
						8.0	2	3	3	6		U4 6.00 - 6.80
						10.0	3	3	4	7		D5 7.00 - 7.45
						11.0	3	3	3	6		D6 8.00 - 8.45
						13.0	6	6	7	13		U7 9.00 - 9.80
4	-15.95	15.30	3.80	■	Stiff to very stiff, Yellowish grey, fat clay with sand (CH)	13.0	6	6	7	13	D8 10.00 - 10.45	
5			9.30	■	Firm, grey, Fat Clay (CH)	14.0	6	7	7	14		D9 11.00 - 11.45
				■							D11 13.00 - 13.45	
				■							D12 14.00 - 14.45	
				■							U13 15.00 - 15.50	

Legend
 ■ UD: Undisturbed sample
 ● D, S: Disturbed and SPT sample
 ■ R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T6

Co-ord (m): N = 2301297

Sheet: 2 / 2

E = 620247

Location: Offshore

Ground elevation (m): -0.65

Date commenced: 26/5/2011

Depth (m): 27.6

Date completed: 26/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
5			9.30	▨	Firm, grey, Fat Clay (CH)	17.0	2	2	3	5		D14 17.00 - 17.45
						18.0	2	3	3	6		D15 18.00 - 18.45
						21.0	2	3	3	6		D17 21.00 - 21.45
						22.0	2	3	3	6		D18 22.00 - 22.45
						23.0	2	2	3	5		D19 23.00 - 23.45
						24.0	2	3	3	6		D20 24.00 - 24.45
						24.60						
10	-25.25	24.60	3.00	▨	Moderately wethered, reddish brown, silt/claystone TCR = 60% , RQD = 30%						R21 25.00 - 25.20	
	-28.25	27.60									R22 26.00 - 26.20	

Legend

- ▨ UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- ▨ R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T8

Co-ord (m): N = 2301211

Sheet: 1 / 2

E = 620299

Location: Offshore

Ground elevation (m): -1.10

Date commenced: 25/5/2011

Depth (m): 27.9

Date completed: 25/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
1b	-4.10	3.00	3.00		Very soft, Grey, brownish grey, Lean Clay (CL)	1.0	0	0	0	0	D1 1.00 - 1.45	
2	-7.60	6.50	3.50		Very soft, grey, Fat Clay (CH)	4.0	0	0	0	0	U2 2.00 - 2.80	
3b	-13.30	12.20	5.70		Plastic, Yellowish grey, clayey sand (SC)	7.0	2	2	2	4	4	U5 6.00 - 6.80
						8.0	3	3	4	7	7	D6 7.00 - 7.45
						10.0	3	4	4	8	8	U7 9.00 - 9.80
						11.0	3	3	4	7	7	D8 10.00 - 10.45
4	-16.10	15.00	2.80		Stiff to very stiff, Yellowish grey, brownish grey, Fat Clay (CH)	13.0	6	6	7	13	13	D9 11.00 - 11.45
						14.0	6	7	7	14	14	U10 12.00 - 12.60
5					Firm, grey, Fat Clay (CH)						D11 13.00 - 13.45	
											D12 14.00 - 14.45	
											U13 15.00 - 15.80	

Legend
 UD: Undisturbed sample
 D, S: Disturbed and SPT sample
 R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T8

Co-ord (m): N = 2301211

Sheet: 2 / 2

E = 620299

Location: Offshore

Ground elevation (m): -1.10

Date commenced: 25/5/2011

Depth (m): 27.9

Date completed: 25/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
5	-26.00	24.90	9.90		Firm, grey, Fat Clay (CH)	17.0	2	2	3	5		D14 17.00 - 17.45
						18.0	2	2	3	5		D15 18.00 - 18.45
						19.0	2	3	3	6		D16 19.00 - 19.45
						22.0	2	2	3	5		D18 22.00 - 22.45
						23.0	2	3	3	6		D19 23.00 - 23.45
						24.0	2	2	3	5		D20 24.00 - 24.45
10	-29.00	27.90	3.00		Moderately wethered, reddish brown silt/claystone TCR = 60% , RQD = 40%					R21 26.00 - 26.20		
										R22 27.00 - 27.20		

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrast ructur e const ruct ion pr oject

BOREHOLE: T9

Co-ord (m): N = 2301168

Sheet: 1 / 2

E = 620324

Location: Offshore

Ground elevation (m): -1.50

Date commenced: 13/04/2011

Depth (m): 32.3

Date completed: 15/04/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
2			6.00		Very soft to soft, brownish grey, Fat Clay (CH)	1.0	0	0	0	0		D1 1.00 - 1.45
						2.0	0	0	1	1/40		D2 2.00 - 2.45
						4.0	0	1	1	2/35		U3 3.10 - 4.00 D4 4.00 - 4.45
						5.0	1	1	1	2/30		D5 5.00 - 5.45
						6.0	1	2	2	4/30		D6 6.00 - 6.45
3a	-7.50	6.00	1.50		Loose, yellowish grey, sand (SP)	8.0	2	2	3	5/32	D7 7.50 - 8.00 D8 8.00 - 8.45	
4		7.50	9.50		Firm to stiff, yellowish grey, Sandy Fat Clay (CH)	9.0	3	3	5	8/30		D9 9.00 - 9.45
						11.0	3	3	4	7/30		U10 10.40 - 11.00 D11 11.00 - 11.45
						12.0	3	4	5	9/30		D12 12.00 - 12.45
						13.5	5	5	6	11/31		U13 13.00 - 13.50 D14 13.50 - 13.95
						15.0	4	4	5	9/30		D15 15.00 - 15.45
						-18.50	17.00					

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T9

Co-ord (m): N = 2301168

Sheet: 2 / 2

E = 620324

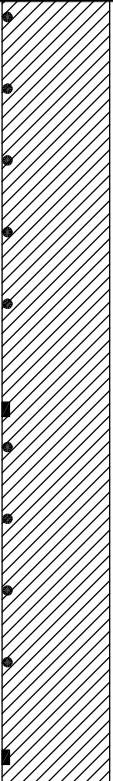
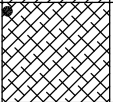
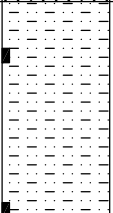
Location: Offshore

Ground elevation (m): -1.50

Date commenced: 13/04/2011

Depth (m): 32.3

Date completed: 15/04/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
5			10.90		Firm to stiff, grey, Fat Clay (CH)	17.0	2	3	3	6/31		D17 17.00 - 17.45
						18.0	2	2	3	5/32		D18 18.00 - 18.45
						19.0	2	2	4	6/30		D19 19.00 - 19.45
						20.0	2	2	3	5/30		D20 20.00 - 20.45
						21.0	2	2	3	5/34		D21 21.00 - 21.45
						23.0	2	2	3	5/30		U22 22.40 - 23.00 D23 23.00 - 23.45
						24.0	2	3	4	7/32		D24 24.00 - 24.45
						25.0	2	3	4	7/30		D25 25.00 - 25.45
9	-29.40	27.90	1.40		Completely weathered sandstone: Hard, reddish brown, sandy clay with fragment	26.0	2	3	5	8/30	D26 26.00 - 26.45	
						28.0	50			50/15		U27 27.30 - 27.80 D28 27.80 - 28.25
10	-30.80	29.30	3.00		Moderately wethered, reddish brown silt/claystone	29.0	10			10/0		
												R29 30.00 - 30.10
	-33.80	32.30									R30 32.10 - 32.30	

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T10

Co-ord (m): N = 2301125

Sheet: 1 / 2

E = 620350

Location: Offshore

Ground elevation (m): -1.81

Date commenced: 24/5/2011

Depth (m): 29.1

Date completed: 25/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)									
						Depth (m)	Blows/15cm			N		N: Blows/30 cm								
							N ₀	N ₁	N ₂			10	20	30	40	50	>50			
1b	-4.81	3.00	3.00		Very soft, Grey, brownish grey, Lean Clay (CL)	1.0	0	0	0	0								D1 1.00 - 1.45		
2		2.40	2.40		Very soft, grey, Fat Clay (CH)	3.0	0	0	0	0								U2 2.00 - 2.90		
3a	-7.21	5.40	1.50		Yellowish grey, poorly graded sand with clay (SP-SC)	4.0	0	0	1	1								D3 3.00 - 3.45		
4	-8.71	6.90	6.90		Stiff, Yellowish grey, reddish brown, Fat Clay (CH)	6.0	1	2	2	4								U5 5.00 - 5.90		
		7.0	2	4		5	9											D6 6.00 - 6.45		
		8.0	1	5		5	10												D7 7.00 - 7.45	
		9.0	4	4		5	9													D8 8.00 - 8.45
		10.0	2	5		6	11													D9 9.00 - 9.45
		11.0	5	5		6	11													D10 10.00 - 10.45
5	-14.81	13.00	13.00		Firm, grey, Fat Clay (CH)	12.0	5	5	7	12									D11 11.00 - 11.45	
		13.0	2	3		3	6												D12 12.00 - 12.45	
		15.0	1	3		4	7												D13 13.00 - 13.45	
		16.0	2	3		3	6													U14 14.00 - 14.90
		16.0	2	3		3	6													D15 15.00 - 15.45
						16.0	2	3	3	6								D16 16.00 - 16.45		

Legend
 UD: Undisturbed sample
 D, S: Disturbed and SPT sample
 R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T10

Co-ord (m): N = 2301125

Sheet: 2 / 2

E = 620350



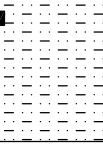
Location: Offshore

Ground elevation (m): -1.81

Date commenced: 24/5/2011

Depth (m): 29.1

Date completed: 25/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
5			13.10		Firm, grey, Fat Clay (CH)	17.0	3	3	3	6		D17 17.00 - 17.45
						18.0	2	2	3	5		D18 18.00 - 18.45
						20.0	1	3	4	7		U19 19.00 - 19.60
						21.0	2	3	3	6		D20 20.00 - 20.45
						22.0	3	3	3	6		D21 21.00 - 21.45
						23.0	3	3	3	6		D22 22.00 - 22.45
						24.0	2	2	3	5		D23 23.00 - 23.45
						25.0	1	2	4	6		D24 24.00 - 24.45
						25.0	1	2	4	6		D25 25.00 - 25.45
9	-27.91	26.10	0.50		Completely weathered sandstone: Hard, reddish brown, sandy clay with fragment						R26 26.20 - 26.40	
10	-28.41	26.60	2.50		Hard, reddish brown, greenish grey, silt/limestone TCR = 60%, RQD = 30%						R27 27.00 - 27.10	
	-30.91	29.10										

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T11

Co-ord (m): N = 2301082

Sheet: 1 / 2

E = 620376

Location: Offshore

Ground elevation (m): -1.97

Date commenced: 16/04/2011

Depth (m): 27.0m

Date completed: 17/04/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
1a	-2.37	0.40	0.40	▒	grey, light grey, poorly graded sand							
2			5.40	▨	Very soft to soft, grey, Fat Clay (CH)	1.0	0	0	0	0/45		D1 1.00 - 1.45
						2.0	0	0	1	1/40		D2 2.00 - 2.45
						5.0	0	1	1	2/38		D4 5.00 - 5.45
						7.0	3	3	5	8/30		D6 7.00 - 7.45
3a	-7.77	5.80	1.80	▒	Loose, yellowish grey, Poorly graded Sand with Clay or Silty Clay (SP)							
4			6.10	▨	Firm, yellowish grey, Fat Clay (CH)	8.0	1	4	5	9/31		D7 8.00 - 8.45
						10.0	1	3	4	7/30		D9 10.00 - 10.45
						11.0	3	3	6	9/30		D10 11.00 - 11.45
						13.0	4	6	9	15/30		D12 13.00 - 13.45
						14.0	2	2	4	6/34		D13 14.00 - 14.45
						16.0	2	2	3	5/33		D15 16.00 - 16.45
5	-15.67	13.70		▨	Firm, blueish grey, Fat Clay (CH)							

Legend
 ■ UD: Undisturbed sample
 ● D, S: Disturbed and SPT sample
 ▨ R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T11

Co-ord (m): N = 2301082

Sheet: 2 / 2

E = 620376

Location: Offshore

Ground elevation (m): -1.97

Date commenced: 16/04/2011

Depth (m): 27m

Date completed: 17/04/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
5			10.30		Firm, blueish grey, Fat Clay (CH)	17.0	1	3	3	6/33		D16 17.00 - 17.45
						19.0	1	2	2	4/35		U17 18.00 - 18.90 D18 19.00 - 19.45
						20.0	2	2	4	6/30		D19 20.00 - 20.45
						22.0	1	2	2	4/30		U20 21.00 - 21.90 D21 22.00 - 22.45
						23.0	0	1	2	3/33		D22 23.00 - 23.45
						24.0	50			50/3		D23 24.00 - 24.03
						10	-25.97	24.00	3.00		Hard, reddish brown, greenish grey, silt/limestone TCR = 80%, RQD = 60%	
	-28.97	27.00										

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastruc ture construction project

BOREHOLE: T13

Co-ord (m): N = 2300996

Sheet: 1 / 2

E = 620427

Location: Offshore

Ground elevation (m): -2.16

Date commenced: 23/5/2011

Depth (m): 26.5

Date completed: 24/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)		
						Depth (m)	Blows/15cm			N		N: Blows/30 cm	
							N ₀	N ₁	N ₂				10 20 30 40 50 >50
1a	-2.96	0.80	0.80		Grey, light grey, poorly graded sand								
2	-6.66	4.50	3.70		Very soft, Brownish grey, Fat Clay (CH)	1.0	0	0	0	0		D1 1.00 - 1.45	
						3.0	0	0	0	0		U2 2.00 - 2.90	
						4.0	0	0	0	0		D3 3.00 - 3.45	
						4.50	0	0	0	0		D4 4.00 - 4.45	
3a	-10.96	8.80	4.30		Yellowish grey, poorly graded sand with clay (SP-SC)	6.0	1	1	2	3		U5 5.00 - 5.90	
						7.0	0	1	1	2		D6 6.00 - 6.45	
						8.0	1	2	2	4		D8 8.00 - 8.45	
						8.80	1	1	2	3		U9 9.00 - 9.50	
3b	-11.96	9.80	1.00		Firm, Grey, bluish grey, Lean Clay (CL)	10.0	1	1	2	3	D10 10.00 - 10.45		
3c	-13.16	11.00	1.20		Plastic, yellowish grey, clayey sand (SC)	11.0	3	4	6	10	D11 11.00 - 11.45		
4	-14.66	12.50	1.50		Stiff, Yellowish grey, Fat Clay (CH)	12.0	3	4	5	9		D12 12.00 - 12.45	
						13.0	2	3	3	6		D13 13.00 - 13.45	
5			11.00		Firm, grey, Fat Clay (CH)	15.0	1	2	3	5		U14 Tut mau	
						16.0	3	3	4	7		D15 15.00 - 15.45	

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T13

Co-ord (m): N = 2300996

Sheet: 2 / 2

E = 620427


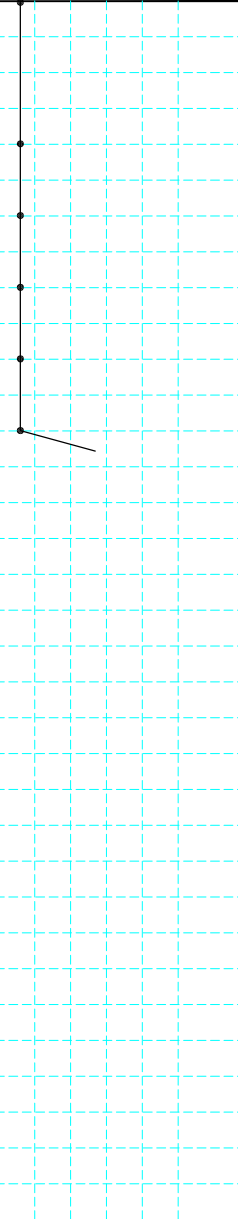
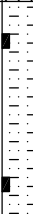
Location: Offshore

Ground elevation (m): -2.16

Date commenced: 23/5/2011

Depth (m): 26.5

Date completed: 24/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
5	-25.66	23.50	11.00		Firm, grey, Fat Clay (CH)	17.0	2	2	4	6		D17 17.00 - 17.45
						19.0	3	3	3	6		D19 19.00 - 19.45
						20.0	2	3	4	7		D20 20.00 - 20.45
						21.0	3	3	3	6		D21 21.00 - 21.45
						22.0	2	2	4	6		D22 22.00 - 22.45
						23.0	1	3	3	6		D23 23.00 - 23.45
						10	-28.66	26.50	3.00			Hard, reddish brown, greenish grey, silt/claystone TCR = 60%, RQD = 30%
										R25 26.00 - 26.10		

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T14

Co-ord (m): N = 2300953

Sheet: 1 / 2

E = 620452

Location: Offshore

Ground elevation (m): -2.17

Date commenced: 18/04/2011

Depth (m): 27.2m

Date completed: 19/04/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
1a	-2.47	0.30	0.30		Grey, light grey, poorly graded sand							
2			8.50		Very soft to soft, brownish grey, Fat Clay (CH)	1.0	0	0	0	0/40		D1 1.00 - 1.45
						2.0	0	0	1	1/40		D2 2.00 - 2.45
						4.0	0	0	1	1/34		U3 3.00 - 3.90 D4 4.00 - 4.45
						5.0	0	1	1	2/30		D5 5.00 - 5.45
						7.0	0	1	1	2/36		U6 6.00 - 6.80 D7 7.00 - 7.45
						8.0	1	1	2	3/32		D8 8.00 - 8.45
3b	-10.97	8.80	2.80		Firm, grey, Sandy Lean Clay (CL)	10.0	1	2	3	5/30	U9 9.00 - 9.70 D10 10.00 - 10.45	
4	-13.77	11.60	2.30		Very stiff, grey, yellowish grey, Fat Clay (CH)	11.0	1	2	4	6/34	D11 11.00 - 11.45	
						13.0	4	7	8	15/30	U12 12.00 - 12.50 D13 13.00 - 13.45	
5	-16.07	13.90			Firm, grey, Fat Clay (CH)	14.0	2	2	3	5/30	D14 14.00 - 14.45	
						16.0	1	2	4	6/31	U15 15.00 - 15.70 D16 16.00 - 16.45	

Legend
 UD: Undisturbed sample
 D, S: Disturbed and SPT sample
 R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T14

Co-ord (m): N = 2300953

Sheet: 2 / 2

E = 620452

Location: Offshore

Ground elevation (m): -2.17

Date commenced: 18/04/2011

Depth (m): 27.2m

Date completed: 19/04/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
5			10.30	▨	Firm, grey, Fat Clay (CH)	17.0	2	2	3	5/37		D17 17.00 - 17.45
						19.0	1	2	2	4/30		U18 18.00 - 18.85
						20.0	2	2	3	5/33		D19 19.00 - 19.45
						22.0	1	2	3	5/30		D20 20.00 - 20.45
						23.0	2	2	4	6/32		U21 21.00 - 21.90
						24.2	50			50/2		D22 22.00 - 22.45
						24.2	50			50/2		D23 23.00 - 23.45
10	-26.37	24.20	3.00	▨	Hard, reddish brown, greenish grey, silt/claystone TCR = 90%, RQD = 70%						D24 24.20 - 24.23	
											R25 25.00 - 25.20	
	-29.37	27.20									R26 26.00 - 26.25	

Legend

- ▨ UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- ▨ R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastr uctur e const r uct ion pr oject

BOREHOLE: T15

Co-ord (m): N = 2300910

Sheet: 1 / 2

E = 620478

Location: Offshore

Ground elevation (m): -1.89

Date commenced: 23/5/2011

Depth (m): 27.8

Date completed: 24/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
1a	-2.39	0.50	0.50		Grey, light grey, poorly graded sand							
1b	-4.69	2.80	2.30		Very soft, Grey, brownish grey, Lean Clay (CL)	1.0	0	0	0	0		D1 1.00 - 1.45
						2.0	0	0	0	0		D2 2.00 - 2.45
2	-8.89	7.00	4.20		Very soft, Brownish grey, Fat Clay (CH)	4.0	0	0	1	1		U3 3.00 - 3.80 D4 4.00 - 4.45
						5.0	0	0	0	0		D5 5.00 - 5.45 U6 6.00 - 6.80
3b	-12.79	10.90	3.90		Soft, Yellowish grey, brownish grey, Lean Clay (CL)	7.0	1	1	2	3		D7 7.00 - 7.45
						8.0	1	1	2	3		D8 8.00 - 8.45 U9 9.00 - 9.80
4	-17.69	15.80	4.90		Stiff, Yellowish grey, light grey, Fat Clay (CH)	10.0	1	1	2	3		D10 10.00 - 10.45
						11.0	4	5	5	10		D11 11.00 - 11.45 U12 12.00 - 12.70
						13.0	5	5	6	11		D13 13.00 - 13.45
						14.0	5	5	6	11		D14 14.00 - 14.45
						15.0	5	5	4	9		D15 15.00 - 15.45
						16.0	2	2	3	5		D16 16.00 - 16.45

Legend
 UD: Undisturbed sample
 D, S: Disturbed and SPT sample
 R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T15

Co-ord (m): N = 2300910

Sheet: 2 / 2

E = 620478

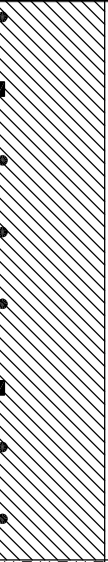
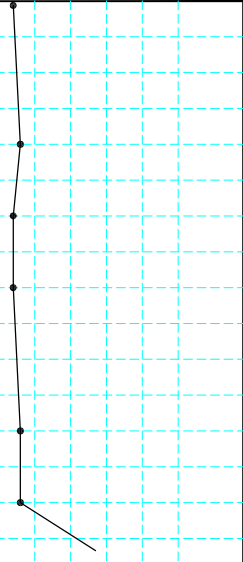
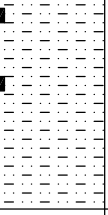
Location: Offshore

Ground elevation (m): -1.89

Date commenced: 23/5/2011

Depth (m): 27.8

Date completed: 24/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
5	-26.69	24.80	9.00		Firm, grey, Fat Clay (CH)	17.0	2	2	3	5		D17 17.00 - 17.45
						18.00	2	3	3	6		U18 18.00 - 18.80
						19.00	2	3	3	6		D19 19.00 - 19.45
						20.00	2	2	3	5		D20 20.00 - 20.45
						21.00	2	2	3	5		D21 21.00 - 21.45
						22.00	2	3	3	6		U22 22.00 - 22.80
						23.00	2	3	3	6		D23 23.00 - 23.45
						24.00	2	3	3	6		D24 24.00 - 24.45
10	-29.69	27.80	3.00		Moderately weathered, reddish brown, silt/claystone TCR = 90%, RQD = 70%	25.00					R25 25.00 - 25.20	
						26.00					R26 26.00 - 26.10	

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T17

Co-ord (m): N = 2301460

Sheet: 1 / 2

E = 620091

Location: Offshore

Ground elevation (m): -1.75

Date commenced: 14/4/2011

Depth (m): 22.8

Date completed: 15/4/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
2	-8.75	7.00	7.00	▨	Soft, grey, Fat Clay (CH)	1.0	0	0	0	0/45	D1	1.00 - 1.45
						2.0	0	0	1	1/45	D2	2.00 - 2.45
						4.0	0	0	1	1/40	D4	4.00 - 4.45
						5.0	0	1	1	2/39	D5	5.00 - 5.45
						7.0	1	2	2	4/34	D7	7.00 - 7.45
						8.0	1	1	2	3/32	D8	8.00 - 8.45
3b	-11.75	10.00	3.00	▨	Soft to firm, yellowish grey, light grey, Sandy Lean Clay (CL)	10.0	2	4	3	7/30	D10	10.00 - 10.45
						11.0	3	4	4	8/30	D11	11.00 - 11.45
4	-14.65	12.90	2.90	▨	Firm to stiff, yellowish grey, light grey, Fat Clay (CH)	12.0	2	3	3	6/32	D12	12.00 - 12.80
						13.0	2	3	2	5/34	D13	13.00 - 13.45
						14.0	2	3	2	5/34	D14	14.00 - 14.45
						16.0	2	3	3	6/36	D16	16.00 - 16.45
5			6.90	▨	Firm, grey, Fat Clay (CH)	15.0					U15	15.00 - 15.90
						16.0						U16

Legend

- ▨ UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T17

Co-ord (m): N = 2301460

Sheet: 2 / 2

E = 620091

Location: Offshore

Ground elevation (m): -1.75

Date commenced: 14/4/2011

Depth (m): 22.8

Date completed: 15/4/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart						Sample No.				
						Depth (m)	Blows/15cm			N	N: Blows/30 cm						Depth of the sample (m)		
							N ₀	N ₁	N ₂		10	20	30	40	50	>50			
				▨	Firm, grey, Fat Clay (CH)	17.0	2	3	4	7/30							●	D17	17.00 - 17.45
				●		18.0	2	3	3	6/33							●	D18	18.00 - 18.45
				●		19.0	3	3	3	6/31							●	D19	19.00 - 19.45
10	-21.55	19.80	3.00	▨	Moderately weathered, reddish brown, silt/claystone TCR = 60%, RQD = 50%												■	R20	21.00 - 21.20
	-24.55	22.80		■														■	R21

Legend

- ▨ UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T18

Co-ord (m): N = 2301400

Sheet: 1 / 2

E = 620128

Location: Offshore

Ground elevation (m): -1.28

Date commenced: 27/5/2011

Depth (m): 26.6

Date completed: 27/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)		
						Depth (m)	Blows/15cm			N		N: Blows/30 cm	
							N ₀	N ₁	N ₂			10	20 30 40 50 >50
1a	-1.88	0.60	0.60		Light grey, poorly graded sand	1.0	0	0	0	0	D1 1.00 - 1.45		
1b			3.40		Very soft, Grey, brownish grey, Lean Clay (CL)	2.0	0	0	0	0		D2 2.00 - 2.45	
						4.0	0	0	0	0		U3 3.00 - 3.90	
						5.28	0	0	0	0		D4 4.00 - 4.45	
2			2.30		Very soft, Brownish grey, sandy Lean Clay (CL)	5.0	0	0	0	0	D5 5.00 - 5.45		
						7.58	0	0	0	0		U6 6.00 - 6.90	
3b			3.50		Plastic, Yellowish grey, clayey sand (SC)	7.0	1	1	2	3		D7 7.00 - 7.45	
						8.0	2	2	2	4		D8 8.00 - 8.45	
						9.0	1	1	2	3		D9 9.00 - 9.45	
3c	-11.08	9.80	1.70		Yellowish grey, poorly graded sand with clay (SP-SC)	10.0	1	2	2	4	D10 10.00 - 10.45		
4			3.50		Stiff, Yellowish grey, light grey, Fat Clay (CH)	12.0	3	4	5	9		U11 11.00 - 11.90	
						13.0	2	5	5	10		D12 12.00 - 12.45	
						14.0	3	4	5	9		D13 13.00 - 13.45	
						15.0	2	3	3	6		D14 14.00 - 14.45	
5	-16.28	15.00	8.60		Firm, grey, Fat Clay (CH)	15.0	2	3	3	6	D15 15.00 - 15.45		
											U16 16.00 - 16.90		

Legend
 UD: Undisturbed sample
 D, S: Disturbed and SPT sample
 R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T18

Co-ord (m): N = 2301400

Sheet: 2 / 2

E = 620128

Location: Offshore

Ground elevation (m): -1.28

Date commenced: 27/5/2011

Depth (m): 26.6

Date completed: 27/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
5	-24.88	23.60	8.60		Firm, grey, Fat Clay (CH)	17.0	1	2	3	5	●	D17 17.00 - 17.45
						18.0	2	3	4	7	●	D18 18.00 - 18.45
						20.0	3	3	3	6	●	U19 19.00 - 19.90 D20 20.00 - 20.45
						21.0	1	3	3	6	●	D21 21.00 - 21.45
						22.0	2	4	4	8	●	D22 22.00 - 22.45
						23.0	3	3	3	6	●	D23 23.00 - 23.45
10	-27.88	26.60	3.00		Moderately weathered, reddish brown, silt/claystone TCR=50%, RQD=20%						R24 24.00 - 24.10 R25 25.00 - 25.10	

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: T19

Co-ord (m): N = 2301314

Sheet: 1 / 2

E = 620178

Location: Offshore

Ground elevation (m): -0.85

Date commenced: 14/04/2011

Depth (m): 28.6m

Date completed: 15/04/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
1a	-1.25	0.40	0.40	▨	Light grey, poorly graded sand							
1b			8.20	▨	Very soft to soft, grey, brownish grey, Lean Clay with sand (CL)	1.0	0	0	0	0/45		D1 1.00 - 1.45
						2.0	0	0	1	1/43		D2 2.00 - 2.45
						3.0						U3 3.00 - 3.60
						4.0	0	0	1	1/38		D4 4.00 - 4.45
						5.0	0	0	1	1/41		D5 5.00 - 5.45
						6.0						D6 6.00 - 6.45
						7.0	1	1	1	2/37		D7 7.00 - 7.45
						8.0	1	2	1	3/35		D8 8.00 - 8.45
3b	-9.45	8.60	3.30	▨	Firm, yellowish grey, light grey, Sandy Lean Clay (CL)	10.0	1	2	4	6/30		D10 10.00 - 10.45
						11.0	2	2	3	5/32		D11 11.00 - 11.45
						12.0						U12 12.00 - 12.60
4	-12.75	11.90	6.10	▨	Firm to stiff, yellowish grey, light grey, Sandy Lean Clay (CL)	13.0	3	3	5	8/30		D13 13.00 - 13.45
						14.0	3	5	6	11/30		D14 14.00 - 14.45
						15.0						U15 15.00 - 15.85
						16.0	4	5	7	12/30		D16 16.00 - 16.45

Legend

- ▨ UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T19

Co-ord (m): N = 2301314

Sheet: 2 / 2

E = 620178

Location: Offshore

Ground elevation (m): -0.85

Date commenced: 14/04/2011

Depth (m): 28.6m

Date completed: 15/04/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
4	-18.85	18.00		▨		17.0	3	4	6	10/32		D17 17.00 - 17.45
						19.0	2	3	5	8/30		U18 18.00 - 18.90
5	-26.45	25.60	7.60	▨	Firm to stiff, grey, Fat Clay (CH)	19.0	2	3	5	8/30		D19 19.00 - 19.45
						20.0	1	3	4	7/30		D20 20.00 - 20.45
						22.0	2	2	3	5/30		D22 22.00 - 22.45
						23.0	2	2	4	6/33		D23 23.00 - 23.45
						25.0	1	2	3	5/31		D25 25.00 - 25.45
10	-29.45	28.60	3.00	▨	Hard, light grey, sandstone TCR = 50%, RQD = 30%	25.6	50		50/2		D26 25.60 - 26.62	
											R27 27.00 - 27.15	

Legend

- ▨ UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- ▨ R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T20

Co-ord (m): N = 2301228

Sheet: 1 / 2

E = 620230

Location: Offshore

Ground elevation (m): -0.10

Date commenced: 25/5/2011

Depth (m): 27.3

Date completed: 25/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
1a	-2.00	1.90	1.90	•	Grey, poorly graded sand (SP)	1.0	1	1	2	3	D1 1.00 - 1.45	
1b	-4.60	4.50	2.60	/	very soft, Grey, brownish grey, Lean Clay (CL)	2.0	0	0	0	0	D2 2.00 - 2.45	
2	-6.80	6.70	2.20	/	very soft, Brownish grey, Fat Clay (CH)	4.0	0	0	0	0	U3 3.00 - 3.90	
				/		5.0	0	0	0	0	D4 4.00 - 4.45	
				/		5.0	0	0	0	0	D5 5.00 - 5.45	
3b	-11.60	11.50	4.80	/	Plastic Yellowish grey, clayey sand (SC)	7.0	1	1	2	3	U6 6.00 - 6.90	
				/		8.0	0	1	2	3	D7 7.00 - 7.45	
				/		8.0	0	1	2	3	D8 8.00 - 8.45	
				/		10.0	2	2	2	4	U9 9.00 - 9.90	
				/		10.0	2	2	2	4	D10 10.00 - 10.45	
				/		11.0	1	1	2	3	D11 11.00 - 11.45	
4	-15.60	15.50	4.00	/	Stiff, Yellowish grey, Fat Clay (CH)	12.0	1	4	5	9	D12 12.00 - 12.45	
				/		13.0	3	3	5	8	D13 13.00 - 13.45	
				/		14.0	3	4	5	9	D14 14.00 - 14.45	
				/		15.0	2	5	5	10	D15 15.00 - 15.45	
				/		16.0					U16 16.00 - 16.90	

Legend
 UD: Undisturbed sample
 D, S: Disturbed and SPT sample
 R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T20

Co-ord (m): N = 2301228

Sheet: 2 / 2

E = 620230

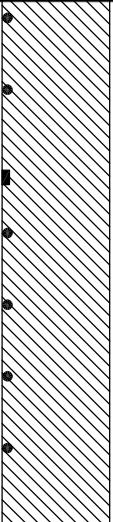
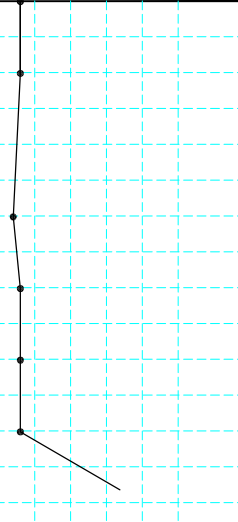
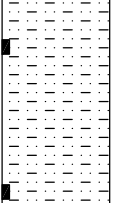
Location: Offshore

Ground elevation (m): -0.10

Date commenced: 25/5/2011

Depth (m): 27.3

Date completed: 25/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
5			8.80		Firm, grey, Fat Clay (CH)	17.0	2	3	3	6		D17 17.00 - 17.45
						18.0	2	2	4	6		D18 18.00 - 18.45
						20.0	1	2	3	5		U19 19.00 - 19.90
						21.0	3	3	3	6		D20 20.00 - 20.45
						21.0	3	3	3	6		D21 21.00 - 21.45
						22.0	2	2	4	6		D22 22.00 - 22.45
						23.0	1	3	3	6		D23 23.00 - 23.45
10	-24.40	24.30	3.00		Hard, reddish brown, greenish grey, silt/claystone TCR = 50%, RQD = 20%						R24 25.00 - 25.10	
	-27.40	27.30									R25 27.00 - 27.15	

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T21

Co-ord (m): N = 2301142

Sheet: 1 / 2

E = 620281

Location: Offshore

Ground elevation (m): -0.47

Date commenced: 19/04/2011

Depth (m): 27.8m

Date completed: 21/04/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
2			7.00		Very soft to soft, grey, brownish grey, Fat Clay (CH)	1.0	0	0	0	0/40		D1 1.00 - 1.45
						2.0	0	0	0	0/46		D2 2.00 - 2.45
						5.0	0	0	0	0/55		D4 5.00 - 5.45
						6.0						U5 6.00 - 6.50
						7.0	2	2	3	5/30		D6 7.00 - 7.45
3a	-7.47	7.00	2.00		Loose, yellowish grey, Poorly graded Sand with clay (SP)	8.0	1	2	2	4/30		D7 8.00 - 8.45
3b	-9.47	9.00	3.00		Firm, yellowish grey, sandy Lean Clay (CL)	10.0	2	3	5	8/30		U8 9.00 - 9.70
4			9.80		Stiff, yellowish grey, Fat Clay (CH)	11.0	3	4	5	9/30		D9 10.00 - 10.45
						13.0	2	3	4	7/30		D10 11.00 - 11.45
						14.0	1	4	4	8/30		U11 12.00 - 12.85
						15.0						D12 13.00 - 13.45
						16.0	1	2	2	4/30		D13 14.00 - 14.45
	-16.47	16.00			Firm, grey, Fat Clay (CH)						U14 15.00 - 15.90	
											D15 16.00 - 16.45	

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T21

Co-ord (m): N = 2301142

Sheet: 2 / 2

E = 620281

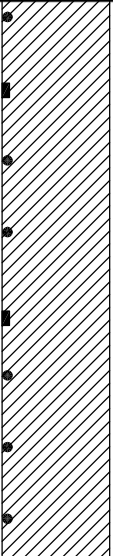
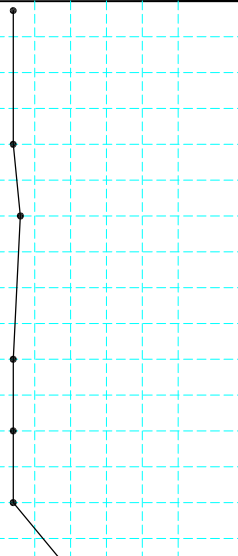
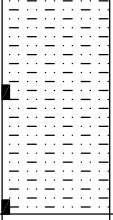
Location: Offshore

Ground elevation (m): -0.47

Date commenced: 19/04/2011

Depth (m): 27.8m

Date completed: 21/04/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)						
						Depth (m)	Blows/15cm			N		N: Blows/30 cm					
							N ₀	N ₁	N ₂								
5	-25.27	24.80	8.80		Firm, grey, Fat Clay (CH)	17.0	2	2	3	5/30		D16 17.00 - 17.45					
						19.0	1	2	2	4/30		D18 19.00 - 19.45					
						20.0	1	2	4	6/30		D19 20.00 - 20.45					
						22.0	1	2	3	5/30		D21 22.00 - 22.45					
						23.0	1	2	2	4/30		D22 23.00 - 23.45					
						24.0	1	1	3	4/30		D23 24.00 - 24.45					
						10	-28.27	27.80	3.00			Hard, reddish brown, greenish grey, silt/claystone					R24 26.00 - 26.20
							-28.27	27.80									R25 27.60 - 27.80

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: T22

Co-ord (m): N = 2301057

Sheet: 1 / 2

E = 620333

Location: Offshore

Ground elevation (m): -0.93

Date commenced: 24/5/2011

Depth (m): 28.5

Date completed: 25/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)						
						Depth (m)	Blows/15cm			N		N: Blows/30 cm					
							N ₀	N ₁	N ₂			10	20	30	40	50	>50
1b	-3.43	2.50	2.50	▨	very soft, Grey, brownish grey, Lean Clay (CL)	1.0	0	0	0	0							D1 1.00 - 1.45
						2.0	0	0	0	0							D2 2.00 - 2.45
2	-7.93	7.00	4.50	▨	very soft, Brownish grey, Fat Clay (CH)	4.0	0	0	0	0							U3 3.00 - 3.90
						5.0	0	0	1	1							D4 4.00 - 4.45
						7.0	0	0	1	1							D5 5.00 - 5.45
3b	-8.93	8.00	1.00	▨	Plastic, grey, clayey sand (SC)	7.0	0	0	1	1							U6 6.00 - 6.90
						8.0	1	1	2	3							D7 7.00 - 7.45
4	-16.83	15.90	7.90	▨	Stiff, Yellowish grey, light grey, Fat Clay (CH)	8.0	1	1	2	3							D8 8.00 - 8.45
						10.0	2	5	5	10							U9 9.00 - 9.80
						11.0	4	5	6	11							D10 10.00 - 10.45
						13.0	5	6	6	12							D11 11.00 - 11.45
						14.0	4	5	6	11							U12 12.00 - 12.70
						15.0	4	6	6	12							D13 13.00 - 13.45
						16.0	2	3	3	6							D14 14.00 - 14.45
						16.0	2	3	3	6							D15 15.00 - 15.45
						16.0	2	3	3	6							D16 16.00 - 16.45

Legend

- ▨ UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T22

Co-ord (m): N = 2301057

Sheet: 2 / 2

E = 620333

Location: Offshore

Ground elevation (m): -0.93

Date commenced: 24/5/2011

Depth (m): 28.5

Date completed: 25/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
5	-26.43	25.50	9.60		Firm, grey, Fat Clay (CH)	17.0	2	2	3	5		D17 17.00 - 17.45
						19.0	2	3	3	6		U18 18.00 - 18.80
						20.0	2	2	3	5		D19 19.00 - 19.45
						21.0	2	3	3	6		D20 20.00 - 20.45
						23.0	2	2	3	5		D21 21.00 - 21.45
						24.0	2	2	3	5		U22 22.00 - 22.80
						25.0	2	2	3	5		D23 23.00 - 23.45
						25.0	2	2	3	5		D24 24.00 - 24.45
						25.0	2	3	3	6		D25 25.00 - 25.45
10	-29.43	28.50	3.00		Moderately weathered, reddish brown silt/claystone TCR=60%, RQD=30%						R26 26.00 - 26.20	
											R27 28.00 - 28.20	

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T23

Co-ord (m): N = 2300971

Sheet: 1 / 2

E = 620384

Location: Offshore

Ground elevation (m): -1.05

Date commenced: 23/04/2011

Depth (m): 29.8m

Date completed: 24/04/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
1a	-1.55	0.50	0.50	█	Light grey, poorly graded sand						U1 0.80 - 1.40	
1b			6.70	▨	Very soft, brownish grey, Lean Clay (CL)	2.8	0	0	0	0/55		D2 2.80 - 3.25
						4.8	0	0	0	0/50		D3 4.80 - 5.25
						5.8	0	0	1	1/40		D4 5.80 - 6.25
						7.2	0	0	0	0/50		U5 6.80 - 7.50
3a			2.10	█	Loose, yellowish grey, Poorly graded Sand with clay (SP)	7.8	1	1	2	3/30		D6 7.80 - 8.25
						8.8	0	1	1	2/30		D7 8.80 - 9.25
3b			4.50	▨	Soft, yellowish grey, Clayey Sand (SC)	10.8	1	1	1	2/30		U8 9.80 - 10.70
						11.8	1	1	2	3/30		D9 10.80 - 11.25
						13.8	1	2	2	4/30		D10 11.80 - 12.25
3c			2.40	█	Soft to firm, yellowish grey, Sandy Lean Clay (CL)	13.8	1	2	2	4/30		U11 12.80 - 13.70
						14.8	1	1	2	3/30		D12 13.80 - 14.25
4	-17.25	16.20		▨	Loose, reddish brown, sand (SP-SC)	14.8	1	1	2	3/30		D13 14.80 - 15.25
				▨	Stiff, yellowish grey, Lean Clay (CL)						U14 15.80 - 16.60	

Legend
 █ UD: Undisturbed sample
 ● D, S: Disturbed and SPT sample
 ▨ R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T23

Co-ord (m): N = 2300971

Sheet: 2 / 2

E = 620384

Location: Offshore

Ground elevation (m): -1.05

Date commenced: 23/04/2011

Depth (m): 29.8m

Date completed: 24/04/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)		
						Depth (m)	Blows/15cm			N		N: Blows/30 cm	
							N ₀	N ₁	N ₂			10	20 30 40 50 >50
4	-19.55	18.50	2.30	▨	Stiff, light grey, yellowish grey, Fat Clay (CH)	16.8	2	3	5	8/30	D15	16.80 - 17.25	
						17.8	1	3	4	7/30	D16	17.80 - 18.25	
5	-27.85	26.80	8.30	▨	Firm, grey, Fat Clay (CH)	19.8	1	2	2	4/30	U17	18.80 - 19.40	
						20.8	2	2	4	6/30	D18	19.80 - 20.25	
						20.8	2	2	4	6/30	D19	20.80 - 21.25	
						22.8	1	2	3	5/30	U20	21.80 - 22.60	
						22.8	1	2	3	5/30	D21	22.80 - 23.25	
						23.8	2	2	3	5/30	D22	23.80 - 24.25	
10	-30.85	29.80	3.00	▨	Hard, reddish brown, greenish grey, silt/claystone	24.8	1	2	2	4/30	D23	24.80 - 25.25	
						25.8	2	2	3	5/30	D24	25.80 - 26.25	
						26.8	50/3cm						

Legend

- ▨ UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- ▨ R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: T24

Co-ord (m): N = 2300885

Sheet: 1 / 2

E = 620435

Location: Offshore

Ground elevation (m): -0.40

Date commenced: 27/5/2011

Depth (m): 29.2

Date completed: 27/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
1a	-1.20	0.80	0.80	█	Grey, poorly graded sand (SP)	1.0	0	0	0	0	D1 1.00 - 1.45	
1b	-3.40	2.20	2.20	▨	Very soft, Grey, brownish grey, Lean Clay (CL)	2.0	0	0	0	0	D2 2.00 - 2.45	
2		3.00		4.00	▨	Very soft, Brownish grey, Fat Clay (CH)	4.0	0	0	1	1	U3 3.00 - 3.80 D4 4.00 - 4.45
3b	-7.40	7.00	6.60		▨		Plastic, Yellowish grey, clayey sand (SC)	5.0	0	0	0	0
		8.00		2	2	2		4	4	U7 7.00 - 7.70 D8 8.00 - 8.45		
4	-14.00	9.00	2.40	▨	Stiff, Yellowish grey, Fat Clay (CH)	9.0	2	2	3	5	D9 9.00 - 9.45	
		11.00		2		2	2	4	4	U10 10.00 - 10.70 D11 11.00 - 11.45		
4	-16.40	13.60	2.40	▨	Stiff, Yellowish grey, Fat Clay (CH)	12.0	2	2	2	4	D12 12.00 - 12.45	
		13.00		1		2	3	5	5	D13 13.00 - 13.45		
4	-16.40	14.00	2.40	▨	Stiff, Yellowish grey, Fat Clay (CH)	14.0	4	5	4	9	D14 14.00 - 14.45	
		15.00		4		5	5	10	10	D15 15.00 - 15.45		
		16.00		▨		16.0	2	2	3	5	D16 16.00 - 16.45	

Legend
 █ UD: Undisturbed sample
 ● D, S: Disturbed and SPT sample
 ▨ R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T24

Co-ord (m): N = 2300885

Sheet: 2 / 2

E = 620435

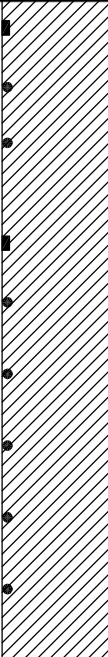
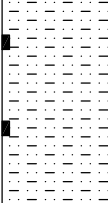
Location: Offshore

Ground elevation (m): -0.40

Date commenced: 27/5/2011

Depth (m): 29.2

Date completed: 27/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
5	-26.60	26.20	10.20		Firm, grey, Fat Clay (CH)	18.0	2	2	4	6	•	U17 17.00 - 17.80
						18.0	2	2	4	6	•	D18 18.00 - 18.45
						19.0	2	3	3	6	•	D19 19.00 - 19.45
						21.0	2	2	3	5	•	U20 20.00 - 20.80
						21.0	2	2	3	5	•	D21 21.00 - 21.45
						22.0	2	3	2	5	•	D22 22.00 - 22.45
						23.0	2	3	3	6	•	D23 23.00 - 23.45
						24.0	2	3	3	6	•	D24 24.00 - 24.45
						25.0	2	2	3	5	•	D25 25.00 - 25.45
						25.0	2	2	3	5	•	D25 25.00 - 25.45
10	-29.60	29.20	3.00		Moderately weathered, reddish brown, silt/claystone TCR = 60%, RQD = 40%							R26 26.80 - 27.00

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T25

Co-ord (m): N = 2300799

Sheet: 1 / 2

E = 620486

Location: Offshore

Ground elevation (m): -0.35

Date commenced: 20/04/2011

Depth (m): 28.6

Date completed: 22/04/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
1a	-2.05	1.70	1.70	•	Loose, grey, light grey, poorly graded sand (SP)	1.0	1	1	2	3/35	D1 1.00 - 1.45	
2	-7.85	7.50	5.80	•	Very soft, grey, brownish grey, Fat Clay (CH)	2.0	0	0	0	0/50	D2 2.00 - 2.45	
						4.0	0	0	1	1/50	D4 4.00 - 4.45	
						5.0	0	0	0	0/45	D5 5.00 - 5.45	
						7.0	0	0	1	1/30	D7 7.00 - 7.45	
						8.0	1	2	3	5/30	D8 8.00 - 8.45	
3b	-11.15	10.80	3.30	•	Firm, yellowish grey, Lean Clay (CL)	10.0	1	2	2	4/30	D10 10.00 - 10.45	
5			14.80	•	Firm, grey, Fat Clay (CH)	11.0	2	2	3	5/30	D11 11.00 - 11.45	
						13.0	2	2	2	4/30	D13 13.00 - 13.45	
						14.0	1	2	3	5/30	D14 14.00 - 14.45	
						16.0	3	3	4	7/30	D16 16.00 - 16.45	

Legend
 UD: Undisturbed sample
 D, S: Disturbed and SPT sample
 R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T25

Co-ord (m): N = 2300799

Sheet: 2 / 2

E = 620486

Location: Offshore

Ground elevation (m): -0.35

Date commenced: 20/04/2011

Depth (m): 28.6m

Date completed: 22/04/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)		
						Depth (m)	Blows/15cm			N		N: Blows/30 cm	
							N ₀	N ₁	N ₂				
5	-25.95	25.60	14.80		Firm, grey, Fat Clay (CH)	17.0	2	3	3	6/30		D17 17.00 - 17.45	
						19.0	2	2	3	5/30		U18 18.00 - 18.80	
						20.0	1	3	3	6/30		D19 19.00 - 19.45	
						22.0	1	3	3	6/30		D20 20.00 - 20.45	
						23.0	2	3	3	6/30		U21 21.00 - 21.80	
						24.0	2	2	3	5/30		D22 22.00 - 22.45	
						25.0	2	3	3	6/30		D23 23.00 - 23.45	
													D24 24.00 - 24.45
													D25 25.00 - 25.45
													R26 26.00 - 26.30
10	-28.95	28.60	3.00		Hard, reddish brown, silt/claystone TCR = 70%, RQD = 50%						R27 27.50 - 27.70		

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T26

Co-ord (m): N = 2301435

Sheet: 1 / 2

E = 620049

Location: Offshore

Ground elevation (m): -1.70

Date commenced: 1/6/2011

Depth (m): 25.0

Date completed: 2/6/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
2			6.00	▨	Very soft, Brownish grey, Fat Clay (CH)	1.0	0	0	0	0		D1 1.00 - 1.45
						2.0						U2 2.00 - 2.80
						4.0	0	0	0	0		D3 4.00 - 4.45
						5.0	0	0	0	0		D4 5.00 - 5.45
						6.0	2	2	3	5		D5 6.00 - 6.45
3c	-7.70	6.00	4.80	▧	Yellowish grey, poorly graded sand with clay (SP-SC)	7.0	2	3	3	6		D6 7.00 - 7.45
						8.0	1	2	4	6		D7 8.00 - 8.45
						9.0	2	2	3	5		D8 9.00 - 9.45
						10.0	2	3	3	6		D9 10.00 - 10.45
						12.0	4	5	5	10		U10 11.00 - 11.60
4	-12.50	10.80	4.20	▨	Stiff, Brownish grey, reddish brown,, Fat Clay (CH)	13.0	5	5	6	11		D11 12.00 - 12.45
						14.0	5	5	6	11		D12 13.00 - 13.45
						15.0	2	3	3	6		D13 14.00 - 14.45
5	-16.70	15.00	7.00	▨	Firm, grey, Fat Clay (CH)	15.0	2	3	3	6		D14 15.00 - 15.45
											U15 16.00 - 16.80	

Legend

- ▨ UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- ▧ R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T26

Co-ord (m): N = 2301435

Sheet: 2 / 2

E = 620049

Location: Offshore

Ground elevation (m): -1.70

Date commenced: 1/6/2011

Depth (m): 25.0

Date completed: 2/6/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
5	-23.70	22.00	7.00		Firm, grey, Fat Clay (CH)	18.0	2	2	4	6	●	D16 18.00 - 18.45
						21.0	3	3	3	6	●	U17 19.00 - 19.80
10	-26.70	25.00	3.00		Moderately weathered, reddish brown, silt/claystone TCR = 50%, RQD = 30%							D18 21.00 - 21.45
												R19 23.00 - 23.20

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T27

Co-ord (m): N = 620005

Sheet: 1 / 2

E = 2301409

Location: Offshore

Ground elevation (m): -1.44

Date commenced: 20/4/2011

Depth (m): 26.5

Date completed: 21/4/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
2			5.00	▨	Very soft, grey, Fat Clay (CH)	1.0	0	0	0	0/30		D1 1.00 - 1.45
						2.0	0	0	0	0/30		D2 2.00 - 2.45
						4.0	0	0	0	0/30		U3 3.00 - 3.90 D4 4.00 - 4.45
						5.0	0	0	0	0/30		D5 5.00 - 5.45
3b	-6.44	5.00	4.50	▨	Very soft, grey, Lean Clay (CL)	7.0	2	2	2	4/30		U6 6.00 - 6.90 D7 7.00 - 7.45
						8.0	2	2	3	5/30		D8 8.00 - 8.45
						9.0	2	2	3	5/30		D9 9.00 - 9.45
						11.0	3	4	5	9/35		U10 10.00 - 10.80 D11 11.00 - 11.45
						12.0	3	4	4	8/30		D12 12.00 - 12.45
4	-10.94	9.50	4.50	▨	Firm, light grey, yellowish brown, sandy Lean Clay (CL)	13.0	3	4	4	8/30		D13 13.00 - 13.45
						15.0	2	3	3	6/30		U14 14.00 - 14.60 D15 15.00 - 15.45
						16.0	2	3	3	6/30		D16 16.00 - 16.45
5	-15.44	14.00		▨	Firm, grey, Fat Clay (CH)	15.0	2	3	3	6/30		D15 15.00 - 15.45
						16.0	2	3	3	6/30		D16 16.00 - 16.45

Legend
 ▨ UD: Undisturbed sample
 ● D, S: Disturbed and SPT sample
 ▨ R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T27

Co-ord (m): N = 620005

Sheet: 2 / 2

E = 2301409

Location: Offshore

Ground elevation (m): -1.44

Date commenced: 20/4/2011

Depth (m): 26.5

Date completed: 21/4/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
5	-24.94	23.50	9.50		Firm, grey, Fat Clay (CH)	17.0	2	3	3	6	●	D17 17.00 - 17.45
						19.0	2	3	3	6/30	●	U18 18.00 - 18.80 D19 19.00 - 19.45
						20.0	2	2	3	5/27	●	D20 20.00 - 20.45
						21.0	2	2	3	5/30	●	D21 21.00 - 21.45
						22.0	2	3	3	6/30	●	D22 22.00 - 22.45
						23.0	2	3	3	6/30	●	D23 23.00 - 23.45
						10	-27.94	26.50	3.00		Hard, reddish brown, silt/claystone TCR = 70%, RQD = 50%	

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: T29

Co-ord (m): N = 2301263

Sheet: 1 / 2

E = 620093

Location: Offshore

Ground elevation (m): -1.48

Date commenced: 27/5/2011

Depth (m): 29.2

Date completed: 27/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
1b	-2.98	1.50	1.50		Very soft, Grey, brownish grey, Lean Clay with sand (CL)	1.0	0	0	0	0	D1 1.00 - 1.45	
2		5.90	5.90		Very soft, Brownish grey, Fat Clay (CH)	4.0	0	0	0	0	D3 4.00 - 4.45	
	-8.88	7.40	7.40			5.0	0	0	0	0	D4 5.00 - 5.45	
3b		4.10	4.10		Firm, yellowish grey, Lean Clay with sand (CL)	8.0	2	2	2	4	D6 8.00 - 8.45	
	-12.98	11.50	11.50			10.0	2	2	3	5	D8 10.00 - 10.45	
4		3.00	3.00		Stiff to very stiff, Yellowish grey, Fat Clay (CH)	11.0	1	2	3	5	D9 11.00 - 11.45	
	-15.98	14.50	14.50			12.0	6	6	7	13	D10 12.00 - 12.45	
5		11.70	11.70		Firm, grey, Fat Clay (CH)	13.0	6	7	7	14	D11 13.00 - 13.45	
						14.0	6	6	8	14	D12 14.00 - 14.45	
											U13 15.00 - 15.50	

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T29

Co-ord (m): N = 2301263

Sheet: 2 / 2

E = 620093

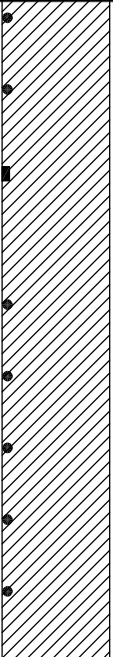
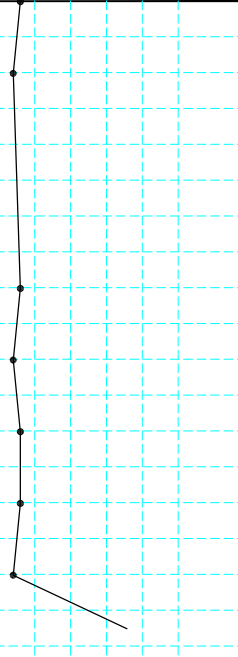
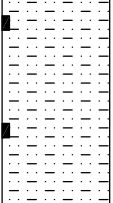
Location: Offshore

Ground elevation (m): -1.48

Date commenced: 27/5/2011

Depth (m): 29.2

Date completed: 27/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
5			11.70		Firm, grey, Fat Clay (CH)	17.0	2	3	3	6		D14 17.00 - 17.45
						18.0	2	2	3	5		D15 18.00 - 18.45
						21.0	2	3	3	6		D17 21.00 - 21.45
						22.0	2	2	3	5		D18 22.00 - 22.45
						23.0	2	3	3	6		D19 23.00 - 23.45
						24.0	2	3	3	6		D20 24.00 - 24.45
						25.0	2	2	3	5		D21 25.00 - 25.45
10	-27.68	26.20	3.00		Moderately weathered, reddish brown, silt/claystone TCR = 60%, RQD = 30%						R22 26.50 - 26.70	
											R23 28.00 - 28.20	
	-30.68	29.20										

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T30

Co-ord (m): N = 2301177

Sheet: 1 / 2

E = 620144

Location: Offshore

Ground elevation (m): 0.45

Date commenced: 16/04/2011

Depth (m): 27.8m

Date completed: 17/04/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)		
						Depth (m)	Blows/15cm			N		N: Blows/30 cm	
							N ₀	N ₁	N ₂			10	20 30 40 50 >50
1a			2.10	•	Very loose, grey, Poorly graded Sand (SP)	1.0	1	1	2	3/30	•	D1 1.00 - 1.45	
	-1.65	2.10				2.0	1	2	1	3/30	•	D2 2.00 - 2.45	
1b			0.90	▨	Very soft, grey, brownish grey, Sandy Lean Clay (CL)							U3 3.00 - 3.90	
	-3.55	3.00										D4 4.00 - 4.45	
2			3.50	▨	Very soft, brownish grey, Fat Clay (CH)	4.0	0	0	1	1/35	•	D5 5.00 - 5.45	
						5.0	0	0	1	1/34	•	D6 6.00 - 6.45	
		-6.05	6.50				6.0	0	0	1	1/39	•	U7 7.00 - 7.70
3a			2.20	•	Loose, yellowish grey, Poorly graded Sand (SP)							D8 8.00 - 8.45	
	-8.25	8.70				8.0	2	2	2	4/30	•	D9 9.00 - 9.45	
3b			3.90	▨	Firm, yellowish grey, Fat Clay (CH)	9.0	2	3	2	5/32	•	D10 10.00 - 10.45	
					Low - plastic, grey, light grey, Clayey Sand (SC)	10.0	3	3	3	6/30	•	U11 11.00 - 11.90	
		-12.15	12.60			12.0	2	2	2	4/30	•	D12 12.00 - 12.45	
4			4.30	▨	Firm, yellowish grey, brownish grey, Fat Clay (CH)							U14 14.00 - 14.50	
					Stiff, brownish grey, greenish grey, yellowish grey, Fat Clay (CH)	13.0	4	5	5	10/30	•	D13 13.00 - 13.45	
						15.0	4	5	6	11/31	•	D15 15.00 - 15.45	
					16.0	3	4	6	10/33	•	D16 16.00 - 16.45		

Legend
 ■ UD: Undisturbed sample
 • D, S: Disturbed and SPT sample
 ▨ R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T30

Co-ord (m): N = 2301177

Sheet: 2 / 2

E = 620144

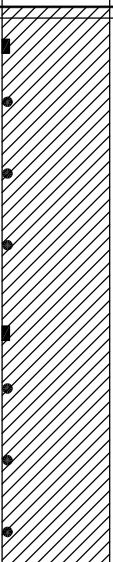
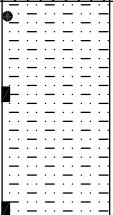
Location: Offshore

Ground elevation (m): 0.45

Date commenced: 16/04/2011

Depth (m): 27.8m

Date completed: 17/04/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
5	-16.45	16.90	7.90		Firm, grey, Fat Clay (CH)	18.0	2	3	3	6/32	U17 17.00 - 17.90	
	18.0	2				3	2	5/34	D18 18.00 - 18.45			
	19.0	2				2	3	5/30	D19 19.00 - 19.45			
	20.0	2				3	3	6/30	D20 20.00 - 20.45			
	22.0	2				2	3	5/30	D21 21.00 - 21.90			
	22.0	2				3	3	6/30	D22 22.00 - 22.45			
	23.0	2				2	3	5/30	D23 23.00 - 23.45			
	24.0	2				3	4	7/30	D24 24.00 - 24.45			
	24.0	2				3	4	7/30	D25 24.00 - 24.45			
	25.0	50				50/2			D26 25.00 - 25.02			
10	-24.35	24.80	3.00		Moderately weathered, reddish brown, silt/claystone TCR = 90%, RQD = 80%					R26 26.00 - 26.20		
	-27.35	27.80								R27 27.60 - 27.80		

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastr uctur e const r uct ion pr oject

BOREHOLE: T32

Co-ord (m): N = 2301005

Sheet: 1 / 2

E = 620247

Location: Offshore

Ground elevation (m): 0.15

Date commenced: 31/5/2011

Depth (m): 30.2

Date completed: 31/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
1a	-0.75	0.90	0.90	●	Light grey, poorly graded sand (SP)	1.0	0	0	1	1	D1 1.00 - 1.45	
1b	-3.75	3.90	3.00	▨	Very soft, grey, Grey, brownish grey, Lean Clay (CL)	4.0	0	0	0	0	U2 2.00 - 2.90	
2	-6.45	6.60	2.70	▨	Very soft, Brownish grey, Fat Clay (CH)	7.0	1	1	2	3	U4 5.00 - 5.90	
3b	-8.45	8.60	2.00	▨	Plastic, Yellowish grey, clayey sand (SC)	9.0	2	2	2	4	D5 7.00 - 7.45	
3c	-13.85	14.00	5.40	●	Yellowish grey, poorly graded sand with clay (SP-SC)	10.0	2	2	2	4	D7 8.00 - 8.90	
						11.0	1	1	2	3	D8 9.00 - 9.45	
						12.0	1	1	2	3	D9 10.00 - 10.45	
						13.0	0	1	1	2	D10 11.00 - 11.45	
4	-15.35	15.50	1.50	▨	Firm to stiff, Yellowish grey, Fat Clay (CH)	14.0	3	4	5	9	D11 12.00 - 12.45	
5			11.70	▨	Firm, grey, Fat Clay (CH)	15.0	4	5	5	10	D12 13.00 - 13.45	
				▨		16.0	1	3	3	6	D13 14.00 - 14.45	
				▨							D14 15.00 - 15.45	
				▨							D14 16.00 - 16.45	

Legend
 ■ UD: Undisturbed sample
 ● D, S: Disturbed and SPT sample
 ▨ R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T32

Co-ord (m): N = 2301005

Sheet: 2 / 2

E = 620247

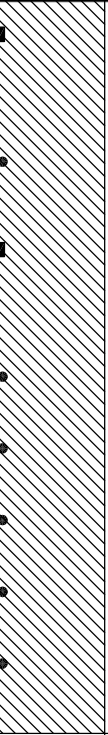
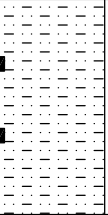
Location: Offshore

Ground elevation (m): 0.15

Date commenced: 31/5/2011

Depth (m): 30.2

Date completed: 31/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
5			11.70		Firm, grey, Fat Clay (CH)							U15 17.00 - 17.90
						19.0	2	2	3	5	•	D16 19.00 - 19.45
						22.0	3	3	3	6	•	U17 20.00 - 20.90
						23.0	2	2	4	6	•	D18 22.00 - 22.45
						24.0	2	2	4	6	•	D19 23.00 - 23.45
						25.0	1	3	3	6	•	D20 24.00 - 24.45
						26.0	2	3	3	6	•	D21 25.00 - 25.45
						26.0	3	3	3	6	•	D22 26.00 - 26.45
10	-27.05	27.20	3.00		Moderately weathered, reddish brown, greenish grey, silt/claystone TCR = 60%, RQD = 30%							R23 28.00 - 28.20
												R24 29.00 - 29.20

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastr uctur e const r uct ion pr oject

BOREHOLE: T33

Co-ord (m): N = 2300919

Sheet: 1 / 2

E = 620298

Location: Offshore

Ground elevation (m): -0.19

Date commenced: 26/04/2011

Depth (m): 30.6m

Date completed: 27/04/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
1a	-1.09	0.90	0.90	█	Light grey, poorly graded sand	1.0	0	0	0	0	D1 1.00 - 1.45	
2			7.70	▨	Very soft, brownish grey, Fat Clay (CH)	2.0	0	0	0	0		D2 2.00 - 2.45
						4.0	0	0	1	1		U3 3.00 - 3.90
						4.0	0	0	1	1		D4 4.00 - 4.45
						5.0	0	0	0	0		D5 5.00 - 5.45
						6.0	0	0	0	0		U6 6.00 - 6.60
						7.0	0	0	0	0		D7 7.00 - 7.45
						8.0	0	0	0	0		D8 8.00 - 8.45
						8.0	0	0	0	0		U9 9.00 - 9.80
3b	-8.79	8.60	2.90	▨	Firm, yellowish brown, reddish brown, grey, sandy clay (CH)	10.0	2	2	3	5	D10 10.00 - 10.45	
3c			4.10	█	Loose, yellowish grey, Poorly graded Sand (SP)	11.0	1	2	4	6		D11 11.00 - 11.45
						13.0	1	2	2	4		U12 12.00 - 12.50
						13.0	1	2	2	4		D13 13.00 - 13.45
						14.0	2	3	4	7		D14 14.00 - 14.45
						15.0	1	3	3	6		D15 15.00 - 15.45
	-15.79	15.60		▨	Firm, grey, Fat Clay (CH)						U16 16.00 - 16.50	

Legend
 █ UD: Undisturbed sample
 ● D, S: Disturbed and SPT sample
 ▨ R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T33

Co-ord (m): N = 2300919

Sheet: 2 / 2

E = 620298

Location: Offshore

Ground elevation (m): -0.19

Date commenced: 26/04/2011

Depth (m): 30.6m

Date completed: 27/04/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
5			12.00		Firm, grey, Fat Clay (CH)	17.0	1	2	3	5		D17 17.00 - 17.45
						18.0	2	2	4	6		D18 18.00 - 18.45
						20.0	2	2	3	5		U19 19.00 - 19.50
						21.0	1	2	3	5		D20 20.00 - 20.45
						21.0	1	2	3	5		D21 21.00 - 21.45
						23.0	2	2	4	6		U22 22.00 - 22.90
						24.0	2	2	3	5		D23 23.00 - 23.45
						24.0	2	2	3	5		D24 24.00 - 24.45
						25.0	2	2	3	5		D25 25.00 - 25.45
						26.0	1	2	4	6		D26 26.00 - 26.45
10	-27.79	27.60	3.00		Moderately weathered, reddish brown, silt/claystone TCR = 60%, RQD = 40%	27.6	50	2cm		D27 27.60 - 27.62		

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastr uctur e const r uct ion pr oject

BOREHOLE: T34

Co-ord (m): N = 2300834

Sheet: 1 / 2

E = 620349

Location: Offshore

Ground elevation (m): 0.42

Date commenced: 21/5/2011

Depth (m): 30.2

Date completed: 22/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
1a	-2.08	2.50	2.50		Grey, poorly graded sand (SP)	1.0	1	1	2	3	D1 1.00 - 1.45	
			2.0	1	2	2	4	D2 2.00 - 2.45				
2	-6.18	6.60	3.0		Very soft, Brownish grey, Fat Clay (CH)	3.0	0	0	0	0	D3 3.00 - 3.45	
			4.10	0		0	0	0	U4 4.00 - 4.90			
			5.0	0		0	0	0	D5 5.00 - 5.45			
			6.0	0		0	0	0	D6 6.00 - 6.45			
3a	-8.08	8.50	1.90		Plastic, yellowish grey, clayey sand (SC)	8.0	1	2	2	4	U7 Tut mau D8 8.00 - 8.45	
9.0			1	1		1	2	D9 9.00 - 9.45				
3b	-12.48	12.90	4.40		Soft, Yellowish grey, brownish grey, sandy Lean Clay (CL)	11.0	0	0	1	1	U10 10.00 - 10.90 D11 11.00 - 11.45	
			12.0	0		1	1	2	D12 12.00 - 12.45			
			13.0	3		5	6	11	D13 13.00 - 13.45			
4	-15.18	15.60	2.70		Stiff, Yellowish brown, Fat Clay (CH)	14.0	5	6	6	12	D14 14.00 - 14.45	
			15.0	4		5	7	12	D15 15.00 - 15.45			
					Firm, grey, Fat Clay (CH)						U16 16.00 - 16.90	

Legend
 UD: Undisturbed sample
 D, S: Disturbed and SPT sample
 R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T34

Co-ord (m): N = 2300834

Sheet: 2 / 2

E = 620349

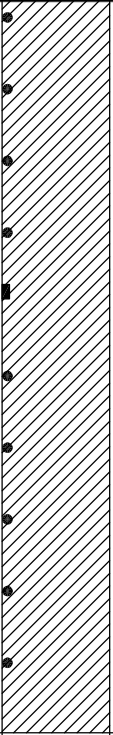
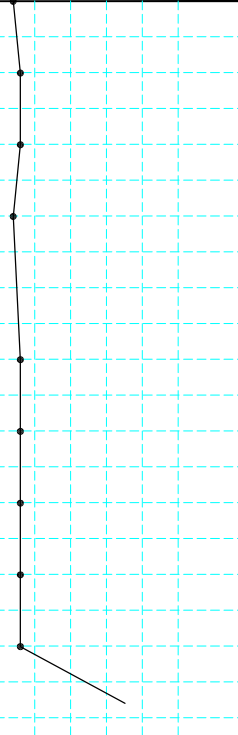
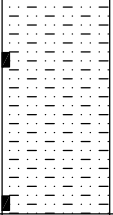
Location: Offshore

Ground elevation (m): 0.42

Date commenced: 21/5/2011

Depth (m): 30.2

Date completed: 22/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
5			11.60		Firm, grey, Fat Clay (CH)	17.0	2	2	3	5		D17 17.00 - 17.45
						18.0	1	3	3	6		D18 18.00 - 18.45
						19.0	2	3	3	6		D19 19.00 - 19.45
						20.0	2	2	3	5		D20 20.00 - 20.45
												U21 Tut mau
						22.0	2	2	4	6		D22 22.00 - 22.45
						23.0	2	2	4	6		D23 23.00 - 23.45
						24.0	1	3	3	6		D24 24.00 - 24.45
					D25 25.00 - 25.45							
					D26 26.00 - 26.45							
9	-26.78	27.20	3.00		Moderately weathered, greenish grey, reddish brown, silt/sandstone TCR = 60%, RQD = 30%						R27 28.00 - 28.10	
	-29.78	30.20										R28 30.00 - 30.10

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T35

Co-ord (m): N = 2300748

Sheet: 1 / 2

E = 620400

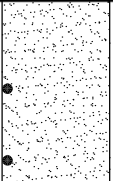
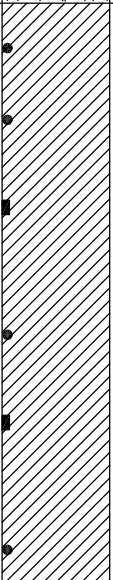
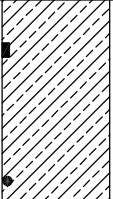
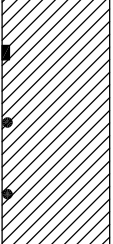
Location: Offshore

Ground elevation (m): 0.45

Date commenced: 25/04/2011

Depth (m): 32.05m

Date completed: 27/04/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
1a	-2.15	2.60	2.60		Very loose, brownish grey, Poorly graded Sand with clay (SP)	1.0	1	2	2	4/35	D1 1.00 - 1.45	
						2.0	1	1	2	3/30	D2 2.00 - 2.45	
2	-10.25	10.70	8.10		Very soft, grey, brownish grey, Fat Clay (CH)	3.0	0	0	1	1/50	D3 3.00 - 3.45	
						4.0	0	0	0	0/40	D4 4.00 - 4.45	
						7.0	0	0	1	1/40	D6 7.00 - 7.45	
						10.0	0	0	1	1/30	D8 10.00 - 10.45	
3b	-13.05	13.50	2.80		Soft, grey, Lean Clay (CL)	13.0	1	1	1	2/40	D10 13.00 - 13.45	
5			15.55		Firm, grey, Fat Clay (CH)	15.0	3	4	4	8/30	D12 15.00 - 15.45	
						16.0	2	3	4	7/30	D13 16.00 - 16.45	

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: T35

Co-ord (m): N = 2300748

Sheet: 2 / 2

E = 620400

Location: Offshore

Ground elevation (m): 0.45

Date commenced: 25/04/2011

Depth (m): 32.05m

Date completed: 27/04/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
5	-28.60	29.05	15.55		Firm, grey, Fat Clay (CH)	18.0	3	3	4	7/30	U14 17.00 - 17.60	
						18.0	3	3	4	7/30	D15 18.00 - 18.45	
						19.0	2	3	4	7/32	D16 19.00 - 19.45	
						21.0	2	3	3	6/30	U17 20.00 - 20.80	
						21.0	2	3	3	6/30	D18 21.00 - 21.45	
						22.0	1	2	3	5/30	D19 22.00 - 22.45	
						24.0	2	2	3	5/30	U20 23.00 - 23.80	
						24.0	2	2	3	5/30	D21 24.00 - 24.45	
						25.0	2	3	3	6/30	D22 25.00 - 25.45	
						26.0	1	2	3	5/30	D23 26.00 - 26.45	
10	-31.60	32.05	3.00		Moderately weathered, reddish brown, silt/sandstone TCR = 80%, RQD = 70%	26.0	1	2	3	5/30	D24 27.00 - 27.45	
						27.0	1	2	3	5/30	D25 28.00 - 28.45	
						28.0	1	3	3	6/30	R26 30.80 - 31.00	
						28.0	1	3	3	6/30	R27 31.80 - 32.00	
						28.0	1	3	3	6/30		

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T37

Co-ord (m): N = 2301298

Sheet: 1 / 2

E = 619956

Location: Offshore

Ground elevation (m): -1.37

Date commenced: 23/04/2011

Depth (m): 27.5m

Date completed: 25/04/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)		
						Depth (m)	Blows/15cm			N		N: Blows/30 cm	
							N ₀	N ₁	N ₂			10	20 30 40 50 >50
1a	-3.87	2.50	2.50		Very loose, grey, blackish grey, Poorly graded Sand (SP)	1.0	1	1	1	2/30	•	D1 1.00 - 1.45	
						2.0	1	1	2	3/30	•	D2 2.00 - 2.45	
2	-8.87	7.50	5.00		Very soft, brownish grey, Lean Clay with sand (CL) Very soft, brownish grey, grey, Fat Clay (CH) Very soft, blackish grey, clay	4.0	0	0	0	0/45	•	U3 3.00 - 3.80 D4 4.00 - 4.45	
						5.0	0	0	0	0/40	•	D5 5.00 - 5.45	
						7.0	2	3	3	6/30	•	U6 6.00 - 6.90 D7 7.00 - 7.45	
						8.0	3	3	4	7/30	•	D8 8.00 - 8.45	
3b	-14.37	13.00	5.50		Firm, light grey, yellowish grey, Sandy Lean Clay (CL) Firm, Yellowish grey, fat clay (CH)	10.0	3	3	4	7/30	•	U9 9.00 - 9.80 D10 10.00 - 10.45	
						11.0	3	3	3	6/30	•	D11 11.00 - 11.45	
						12.0	2	3	3	6/30	•	D12 12.00 - 12.45	
						13.0	2	2	3	5/30	•	D13 13.00 - 13.45	
5					Firm, Grey, Fat Clay (CH)	15.0	3	3	3	6/27	•	U14 14.00 - 14.60 D15 15.00 - 15.45	
						16.0	3	3	4	7/30	•	D16 16.00 - 16.45	

Legend
 UD: Undisturbed sample
 D, S: Disturbed and SPT sample
 R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T37

Co-ord (m): N = 2301298

Sheet: 2 / 2

E = 619956

Location: Offshore

Ground elevation (m): -1.37

Date commenced: 23/04/2011

Depth (m): 27.5m

Date completed: 25/04/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
5	-25.87	24.50	11.50		Firm, Grey, Fat Clay (CH)	18.0	3	3	3	6/30	•	U17 17.00 - 17.90
						18.0	3	3	3	6/30	•	D18 18.00 - 18.45
						19.0	3	3	3	6/30	•	D19 19.00 - 19.45
						21.0	3	3	4	7/30	•	U20 20.00 - 20.70
						21.0	3	3	4	7/30	•	D21 21.00 - 21.45
						22.0	3	3	4	7/30	•	D22 22.00 - 22.45
						23.0	3	3	4	7/30	•	D23 23.00 - 23.45
						24.0	3	3	4	7/30	•	D24 24.00 - 24.45
10	-28.87	27.50	3.00		Moderately weathered, reddish brown, silt/claystone TCR = 40%, RQD = 30%						R25 25.50 - 25.70	
												R26 27.30 - 27.50

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T38

Co-ord (m): N = 2301212

Sheet: 1 / 2

E = 620007

Location: Offshore

Ground elevation (m): -1.77

Date commenced: 26/04/2011

Depth (m): 28.2m

Date completed: 27/04/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
1b	-2.27	0.50	0.50	■	Very soft, brownish grey, grey, Lean Clay with sand (CL)						U1 0.00 - 0.50	
2			4.50	■	Very soft, brownish grey, clay	2.0	0	0	0	0/35		D2 2.00 - 2.45
						3.0						U3 3.00 - 3.90
						5.0	2	2	3	5/32		D4 5.00 - 5.45
3b			6.50	■	Firm, yellowish grey, light grey, Lean Clay with sand (CL)	6.0	2	2	3	5/30		D5 6.00 - 6.45
						7.0	2	2	3	5/30		D6 7.00 - 7.45
						10.0	2	3	3	6/28		D8 10.00 - 10.45
5			13.50	■	Firm, greenish grey, grey, Fat Clay (CH)	11.0						U9 11.00 - 11.90
						13.0	2	3	3	6/30		D10 13.00 - 13.45
						16.0	2	3	3	6/28		D12 16.00 - 16.45

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T38

Co-ord (m): N = 2301212

Sheet: 2 / 2

E = 620007

Location: Offshore

Ground elevation (m): -1.77

Date commenced: 26/04/2011

Depth (m): 28.2m

Date completed: 27/04/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)		
						Depth (m)	Blows/15cm			N		N: Blows/30 cm	
							N ₀	N ₁	N ₂			10	20 30 40 50 >50
5	-26.77	25.00	13.50		Firm, greenish grey, grey, Fat Clay (CH)							U13 17.00 - 17.90	
						19.0	3	3	4	7/30	●	D14 19.00 - 19.45	
						21.0	3	3	4	7/30	●	U15 20.00 - 20.90	
						22.0	3	3	4	7/30	●	D16 21.00 - 21.45	
						23.0	3	3	4	7/30	●	D17 22.00 - 22.45	
						24.0	3	3	4	7/30	●	U18 23.00 - 23.90	
10	-29.97	28.20	3.20		Moderately weathered, reddish brown, silt/sandstone TCR = 60%, RQD = 30%						D19 24.00 - 24.45		

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T40

Co-ord (m): N = 2301040

Sheet: 1 / 2

E = 620110

Location: Offshore

Ground elevation (m): 1.04

Date commenced: 18/04/2011

Depth (m): 30.0m

Date completed: 19/04/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)		
						Depth (m)	Blows/15cm			N		N: Blows/30 cm	
							N ₀	N ₁	N ₂				10
1a	0.24	0.80	0.80		Grey, light grey, Poorly graded Sand (SP)								
2			8.70		Very soft to soft, grey, brownish grey, Fat Clay (CH)	1.0	0	0	1	1/42			D1 1.00 - 1.45
						2.0	0	0	1	1/40			D2 2.00 - 2.45
						4.0	0	0	1	1/44			U3 3.00 - 3.90 D4 4.00 - 4.45
						5.0	0	0	1	1/38			D5 5.00 - 5.45
						6.0	1	1	1	2/37			D6 6.00 - 6.45
						8.0	0	1	1	2/36			U7 7.00 - 7.90 D8 8.00 - 8.45
						9.0	0	1	1	2/31			D9 9.00 - 9.45
						3b	-8.46	9.50	3.00		Firm, yellowish grey, Sandy Lean Clay (CL)	11.0	2
						12.0	1	2	2	4/30		D12 12.00 - 12.45	
3c	-11.46	12.50	1.00		Loose, reddish brown, Poorly graded Sand (SP)	13.0	2	2	2	4/30		D13 13.00 - 13.45	
5					Firm, grey, bluish grey, Fat Clay (CH)	15.0	2	2	3	5/36		U14 14.00 - 14.90 D15 15.00 - 15.45	
						16.0	2	3	3	6/31		D16 16.00 - 16.45	

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T40

Co-ord (m): N = 2301040

Sheet: 2 / 2

E = 620110

Location: Offshore

Ground elevation (m): 1.04

Date commenced: 18/04/2011

Depth (m): 30.0m

Date completed: 19/04/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
5			13.50		Firm, grey, bluish grey, Fat Clay (CH)	17.0	2	2	3	5/33	•	D17 17.00 - 17.45
						19.0	2	2	2	4/35	•	U18 18.00 - 18.80
						20.0	2	2	3	5/31	•	D19 19.00 - 19.45
						21.0	1	2	3	5/30	•	D20 20.00 - 20.45
						22.0	1	2	2	4/30	•	D21 21.00 - 21.45
						23.0	2	2	3	5/32	•	D22 22.00 - 22.45
						24.0	2	2	2	4/31	•	D23 23.00 - 23.45
						25.0	2	2	3	5/30	•	D24 24.00 - 24.45
						26.0	2	2	3	5/34	•	D25 25.00 - 25.45
10	-25.96	27.00	3.00		Moderately weathered, reddish brown, silt/claystone TCR = 60%, RQD = 40%						R27 28.00 - 28.20	
	-28.96	30.00									R28 29.80 - 30.00	

Legend

- UD: Undisturbed sample
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- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T41

Co-ord (m): N = 2300954

Sheet: 1 / 2

E = 620161

Location: Offshore

Ground elevation (m): 0.52

Date commenced: 19/04/2011

Depth (m): 29.0m

Date completed: 21/04/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
2			8.70	▨	Soft, grey, brownish grey, Fat Clay (CH)	1.0	0	0	1	1/40		D1 1.00 - 1.45
						2.0	0	0	1	1/37		D2 2.00 - 2.45
						3.0						U3 3.00 - 3.90
						5.0	0	0	1	1/55		D4 5.00 - 5.45
						6.0						U5 6.00 - 6.90
3a	-8.18	8.70	1.10	▩	Loose, yellowish grey, Poorly graded Sand (SP)	9.0	2	2	3	5/30	D7 9.00 - 9.45	
3b			5.00	▨	Plastic, light grey, sand/clayey sand	10.0	2	2	2	4/30		D8 10.00 - 10.45
						11.0	2	2	3	5/30		D9 11.00 - 11.45
						12.0	2	2	4	6/30		D10 12.00 - 12.45
						13.0	1	3	3	6/30		D11 13.00 - 13.45
						14.0	2	3	2	5/30		D12 14.00 - 14.45
4	-14.28	14.80	2.20	▨	Firm, yellowish grey, Fat Clay (CH)	16.0	2	3	3	6/30	D14 16.00 - 16.45	
											U13 15.00 - 15.50	

Legend

- ▩ UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- ▨ R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T41

Co-ord (m): N = 2300954

Sheet: 2 / 2

E = 620161

Location: Offshore

Ground elevation (m): 0.52

Date commenced: 19/04/2011

Depth (m): 29.0m

Date completed: 21/04/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)						
						Depth (m)	Blows/15cm			N		N: Blows/30 cm					
							N ₀	N ₁	N ₂								
5	-16.48	17.00	9.00		Firm, greenish grey, Fat Clay (CH)	17.0	2	3	3	6/30		D15 17.00 - 17.45					
						19.0	3	3	3	6/30		U16 18.00 - 18.90 D17 19.00 - 19.45					
						20.0	2	2	3	5/30		D18 20.00 - 20.45					
						21.0	2	2	4	6/30		D19 21.00 - 21.45					
						23.0	2	2	2	4/30		U20 22.00 - 22.90 D21 23.00 - 23.45					
						24.0	3	3	4	7/30		D22 24.00 - 24.45					
						25.0	2	3	3	6/30		D23 25.00 - 25.45					
						26.0				50/2cm		D24 26.00 - 26.02					
						10	-25.48	26.00	3.00		Moderately weathered, reddish brown, silt/claystone TCR = 70%, RQD = 40%						R25 27.00 - 27.20
																	R26 28.00 - 28.20
	-28.48	29.00															

Legend

- UD: Undisturbed sample
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PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T43

Co-ord (m): N = 2300782

Sheet: 1 / 2

E = 620263

Location: Offshore

Ground elevation (m): 0.68

Date commenced: 26/04/2011

Depth (m): 31.0m

Date completed: 28/04/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)		
						Depth (m)	Blows/15cm			N		N: Blows/30 cm	
							N ₀	N ₁	N ₂			10	20 30 40 50 >50
1a	-0.92	1.60	1.60	●	Very loose, grey, yellowish grey, Poorly graded Sand (SP)	1.0	1	1	2	3/30	D1 1.00 - 1.45		
1b	-3.32	4.00	2.40	■	Very soft, brownish grey, Lean Clay with sand (CL)						U2 2.00 - 2.80		
2			4.50	■	Very soft, brownish grey, Fat Clay (CH)	4.00	0	0	1	1/40	D3 4.00 - 4.45		
						5.00	0	0	0	0/35	D4 5.00 - 5.45		
3b			8.50	■	Firm, brown, reddish brown, Sandy Lean Clay (CL)	8.00	0	0	1	1/30	D6 8.00 - 8.45		
						11.00	2	2	2	4/30	D8 11.00 - 11.45		
3c	-11.32	12.00	2.00	●	Loose, yellowish grey, light grey, Poorly graded Sand (SP)	13.00	2	2	3	5/30	U9 12.00 - 12.90 D10 13.00 - 13.45		
4			15.50	■	Very stiff, yellowish grey, grey, Fat Clay (CH)	14.00	7	8	8	16/30	D11 14.00 - 14.45		
						15.00	6	8	9	17/30	D12 15.00 - 15.45		
				■	Firm, grey, Fat Clay (CH)						U13 16.00 - 16.50		

Legend
 ■ UD: Undisturbed sample
 ● D, S: Disturbed and SPT sample
 ■ R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T43

Co-ord (m): N = 2300782

Sheet: 2 / 2

E = 620263

Location: Offshore

Ground elevation (m): 0.68

Date commenced: 26/04/2011

Depth (m): 31.0m

Date completed: 28/04/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
5			12.50	●	Firm, grey, Fat Clay (CH)	18.0	2	3	4	7/35		D14 18.00 - 18.45
						19.0	2	3	3	6/30		D15 19.00 - 19.45
						20.0	3	3	4	7/38		D16 20.00 - 20.45
												U17 21.00 - 21.70
						23.0	2	3	3	6		D18 23.00 - 23.45
						24.0	2	2	3	5/30		D19 24.00 - 24.45
						25.0	3	2	3	5/30		D20 25.00 - 25.45
												U21 26.00 - 26.80
						27.0	2	2	3	5/30		D22 27.00 - 27.45
												D23 28.00 - 28.01
10	-27.32	28.00	3.00	■	Moderately weathered, reddish brown, silt/claystone TCR = 70%, RQD = 40%	28.0	50	1	cm		R24 29.00 - 29.20	
											R25 30.80 - 31.00	

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrast ructur e const ruct ion pr oject

BOREHOLE: T45

Co-ord (m): N = 2301332

Sheet: 1 / 2

E = 619818

Location: Ground

Ground elevation (m): 3.13

Date commenced: 14/05/2011

Depth (m): 30.0m

Date completed: 14/05/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
1a	-0.67	3.80	3.80	•	Loose, grey, yellowish grey, Poorly graded Sand (SP)	1.0	2	2	3	5/30	D1	1.00 - 1.45
						2.0	1	2	3	5/30	D2	2.00 - 2.45
						3.0	1	2	2	4/30	D3	3.00 - 3.45
						4.0	0	0	0	0/30	D4	4.00 - 4.45
1b	-4.87	8.00	4.20	/	Very soft, brownish grey, Lean Clay (CL)	5.0	0	0	0	0/30	D5	5.00 - 5.45
						7.0	0	0	1	1/30	U6	6.00 - 6.90
						8.0	0	1	1	2/30	D7	7.00 - 7.45
2	-8.47	11.60	3.60	/	Very soft, grey, brownish grey, Fat Clay (CH)	11.0	0	1	2	3/30	D8	8.00 - 8.45
						10.0	0	1	1	2/30	U9	9.00 - 9.70
						12.0	0	1	2	3/30	D10	10.00 - 10.45
3b	-11.67	14.80	3.20	/	Plastic, yellowish grey, clayey sand (SC)	11.0	0	1	2	3/30	D11	11.00 - 11.45
						13.0	1	2	3	5/30	D12	12.00 - 12.45
						14.0	1	2	2	4/30	D13	13.00 - 13.45
4			4.80	/	Stiff, light grey, yellowish grey, Fat Clay (CH)	14.0	1	2	2	4/30	D14	14.00 - 14.45
						15.0	2	3	5	8/30	D15	15.00 - 15.45
						16.0	4	5	6	11/30	D16	16.00 - 16.45

Legend
 UD: Undisturbed sample
 D, S: Disturbed and SPT sample
 R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T45

Co-ord (m): N = 2301332

Sheet: 2 / 2

E = 619818

Location: Ground

Ground elevation (m): 3.13

Date commenced: 14/05/2011

Depth (m): 30.0m

Date completed: 14/05/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
5	-15.37	18.50	8.50	[Diagonal Hatching]	Stiff, light grey, yellowish grey, Fat Clay (CH)	17.0	4	6	7	13/30	●	D17 17.00 - 17.45
						18.0	4	5	5	10/30	●	D18 18.00 - 18.45
						19.0	2	3	4	7/30	●	D19 19.00 - 19.45
						20.0	2	3	2	5/30	●	D20 20.00 - 20.45
						21.0	1	2	2	4/30	●	D21 21.00 - 21.45
10	-23.87	27.00	3.00	[Dotted Hatching]	Firm, light grey, yellowish grey, Fat Clay (CH)	22.0	1	2	3	5/30	●	D22 22.00 - 22.45
						24.0	2	3	3	6/30	●	U23 23.00 - 23.60
						25.0	2	3	3	6/30	●	D24 24.00 - 24.45
						26.0	2	3	3	6/30	●	D25 25.00 - 25.45
						27.0	2	3	3	6/30	●	U26 26.00 - 26.90
	-26.87	30.00										R27 27.00 - 27.10

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: T46

Co-ord (m): N = 2301246

Sheet: 1 / 2

E = 619870

Location: Offshore

Ground elevation (m): -0.80

Date commenced: 3/6/2011

Depth (m): 26.8

Date completed: 3/6/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
1b	-3.80	3.00	3.00	▨	Very soft, Grey, brownish grey, Lean Clay (CL)	1.0	0	0	0	0	D1 1.00 - 1.45	
		3.00	0			0	0	0	U2 2.00 - 2.90			
2	-6.80	4.00	3.00	▨	Very soft, Brownish grey, Fat Clay (CH)	3.0	0	0	0	0	D3 3.00 - 3.45	
		4.00	0			0	0	0	D4 4.00 - 4.45			
3b	-14.60	6.00	6.00	▨	Plastic, Yellowish grey, light grey, clayey sand (SC)	6.0	1	1	2	3	D6 6.00 - 6.45	
		7.00	1			1	1	2	D7 7.00 - 7.45			
		8.00	2			1	2	3	D8 8.00 - 8.45			
		9.00	1			1	1	2	D9 9.00 - 9.45			
		10.00	1			1	2	3	D10 10.00 - 10.45			
		12.00	1			2	2	4	D12 12.00 - 12.45			
5	-14.60	13.80	13.80	▨	Firm, Grey, sandy Lean Clay (CL)	13.0	1	1	2	3	D13 13.00 - 13.45	
		14.00	3			3	3	6	D14 14.00 - 14.45			
		15.00	2			3	3	6	D15 15.00 - 15.45			
		16.00	10.00		Firm, grey, Fat Clay (CH)						U16 16.00 - 16.90	

Legend

- ▨ UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T46

Co-ord (m): N = 2301246

Sheet: 2 / 2

E = 619870

Location: Offshore

Ground elevation (m): -0.80

Date commenced: 3/6/2011

Depth (m): 26.8

Date completed: 3/6/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
5	-24.60	23.80	10.00		Firm, grey, Fat Clay (CH)	17.0	3	2	3	5	●	D17 17.00 - 17.45
						18.0	3	3	3	6	●	D18 18.00 - 18.45
						19.0	1	2	4	6	●	D19 19.00 - 19.45
						20.0	2	2	4	6	●	D20 20.00 - 20.45
						21.0	2	2	3	5	●	D21 21.00 - 21.45
						22.0	3	3	3	6	●	D22 22.00 - 22.45
						23.0	2	3	3	6	●	D23 23.00 - 23.45
10	-27.60	26.80	3.00		Moderately weathered, reddish brown, silt/claystone TCR = 60%, RQD = 35%						R24 24.00 - 24.20	
											R25 26.00 - 26.20	

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T47

Co-ord (m): N = 2301160

Sheet: 1 / 2

E = 619921

Location: Offshore

Ground elevation (m): -1.51

Date commenced: 30/04/2011

Depth (m): 28.4m

Date completed: 01/05/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
1a	-3.01	1.50	1.50	●	Plastic, blackish grey, clayey sand with shell	1.0	1	2	2	4	10	D1 1.00 - 1.45
1b			4.00	▨	Soft, brownish grey, grey, Lean Clay (CL)	3.0	0	0	1	1	10	U2 2.00 - 2.80
						4.0	0	0	1	1	10	D3 3.00 - 3.45
3b			2.00	▨	Soft, yellowish grey, grey, Lean Clay with sand (CL)	5.50	1	2	3	5	10	D4 4.00 - 4.45
						6.0	1	2	3	5	10	U5 5.00 - 5.80
4			4.00	▨	Plastic, yellowish grey, clayey sand	7.01	1	2	3	5	10	D6 6.00 - 6.45
						7.50	1	2	3	5	10	D7 7.00 - 7.45
5			13.90	▨	Firm, yellowish grey, light grey, Fat Clay (CH)	9.0	3	3	5	8	10	U8 8.00 - 8.50
						9.0	3	3	5	8	10	D9 9.00 - 9.45
						10.0	3	3	4	7	10	D10 10.00 - 10.45
						12.0	2	3	3	6	10	U11 11.00 - 11.90
5			13.90	▨	Firm, grey, Fat Clay (CH)	12.0	2	3	3	6	10	D12 12.00 - 12.45
						13.0	2	3	3	6	10	D13 13.00 - 13.45
						14.0	2	3	3	6	10	D14 14.00 - 14.45
						16.0	2	2	3	5	10	U15 15.00 - 15.70
						16.0	2	2	3	5	10	D16 16.00 - 16.45

Legend
 ■ UD: Undisturbed sample
 ● D, S: Disturbed and SPT sample
 ▨ R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T47

Co-ord (m): N = 2301160

Sheet: 2 / 2

E = 619921

Location: Offshore

Ground elevation (m): -1.51

Date commenced: 30/04/2011

Depth (m): 28.4

Date completed: 01/05/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)					
						Depth (m)	Blows/15cm			N		N: Blows/30 cm				
							N ₀	N ₁	N ₂			10	20	30	40	50
5	-26.91	25.40	13.90		Firm, grey, Fat Clay (CH)	17.0	2	3	3	6						D17 17.00 - 17.45
						18.0	2	3	3	6						D18 18.00 - 18.45
						20.0	2	3	3	6						U19 19.00 - 19.80
						21.0	2	2	3	5						D20 20.00 - 20.45
						22.0	2	3	3	6						D21 21.00 - 21.45
						24.0	2	3	3	6						D22 22.00 - 22.45
						25.0	2	2	5	7						U23 23.00 - 23.90
																D24 24.00 - 24.45
																D25 25.00 - 25.45
10	-29.91	28.40	3.00		Hard, reddish brown, silt/claystone TCR = 60%, RQD = 40%											

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T48

Co-ord (m): N = 2301075

Sheet: 1 / 2

E = 619972

Location: Offshore

Ground elevation (m): -0.33

Date commenced: 14/5/2011

Depth (m): 28.0

Date completed: 15/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
1a	-1.23	0.90	0.90	•••••	Light grey, poorly graded sand (SP)	1.0	0	0	0	0	D1 1.00 - 1.45	
1b	-3.13	2.80	1.90	/ / / / /	Very soft, grey, brownish grey, Lean Clay with sand (CL)	2.0	0	0	0	0	D2 2.00 - 2.45	
2	-6.83	6.50	3.70	/ / / / /	Very soft, Brownish grey, Fat Clay (CH)	4.0	0	0	0	0	U3 3.00 - 3.90	
						5.0	0	0	1	1	D4 4.00 - 4.45	
3b	-12.83	12.50	6.00	/ / / / /	Plastic, Yellowish grey, light grey, clayey sand (SC)	7.0	2	2	3	5	D5 5.00 - 5.45	
						8.0	3	3	4	7	U6 6.00 - 6.90	
						10.0	1	2	3	5	D7 7.00 - 7.45	
						11.0	2	3	3	6	D8 8.00 - 8.45	
3c	-16.93	16.60	4.10	•••••	Yellowish grey, poorly graded sand with clay (SP-SC)	12.0	1	3	3	6	U9 9.00 - 9.90	
						14.0	1	2	2	4	D10 10.00 - 10.45	
						15.0	1	2	3	5	D11 11.00 - 11.45	
						16.0	2	3	3	6	D12 12.00 - 12.45	
											U13 Tut mau	
											D14 14.00 - 14.45	
											D15 15.00 - 15.45	
											D16 16.00 - 16.45	

Legend
 UD: Undisturbed sample
 D, S: Disturbed and SPT sample
 R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T48

Co-ord (m): N = 2301075

Sheet: 2 / 2

E = 619972

Location: Offshore

Ground elevation (m): -0.33

Date commenced: 14/5/2011

Depth (m): 28.0

Date completed: 15/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
4	-19.83	19.50	2.90	▨	Firm, yellowish grey, Reddish brown, sandy Lean Clay (CL)	17.0	2	2	4	6		D17 17.00 - 17.45
						18.0	2	2	3	5		D18 18.00 - 18.45
5	-25.33	25.00	5.50	▨	Firm, grey, Fat Clay (CH)	20.0	2	2	4	6		U19 19.00 - 19.80
						21.0	1	3	4	7		D20 20.00 - 20.45
						23.0	2	3	3	6		D21 21.00 - 21.45
						24.0	1	3	3	6		U22 22.00 - 22.80
						25.0	50/2					D23 23.00 - 23.45
10	-28.33	28.00	3.00	▨	Hard, reddish brown, silt/claystone TCR = 40%, RQD = 10%					D24 24.00 - 24.45		
											D25 25.00 - 25.02	
											R26 26.00 - 26.10	
											R27 27.00 - 27.20	

Legend

- ▨ UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- ▨ R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T49

Co-ord (m): N = 2300989

Sheet: 1 / 2

E = 620024

Location: Offshore

Ground elevation (m): 0.93

Date commenced: 22/04/2011

Depth (m): 28.5m

Date completed: 24/04/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
1a	-0.97	1.90	1.90	●	Very loose, grey, Poorly graded Sand with shell (SP)	1.0	1	1	2	3/30	D1 1.00 - 1.45	
2	-7.67	8.60	6.70	■	Soft, grey, brownish grey, Fat Clay (CH)	2.0	0	0	0	0/45	D2 2.00 - 2.45	
						4.0	1	1	1	2/45	D4 4.00 - 4.45	
						5.0	0	0	1	1/50	D5 5.00 - 5.45	
						7.0	0	0	1	1/45	D7 7.00 - 7.45	
						8.0	0	0	1	1/40	D8 8.00 - 8.45	
						10.0	2	2	3	5/30	D10 10.00 - 10.45	
3b	-10.57	11.50	2.90	■	Firm, yellowish grey, Lean Clay with sand (CL)	11.0	1	2	3	5/30	D11 11.00 - 11.45	
3c	-12.97	13.90	2.40	●	Dense, yellowish grey, Poorly graded Sand with clay (or silty clay) (SP)	13.0	3	5	6	11/30	U12 12.00 - 12.50	
						14.0	3	3	4	7/30	D13 13.00 - 13.45	
5			11.60	■	Firm, grey, Fat Clay (CH)	14.0	3	3	4	7/30	D14 14.00 - 14.45	
						16.0	3	4	4	8/30	U15 15.00 - 15.80	
				■		16.0	3	4	4	8/30	D16 16.00 - 16.45	

Legend
 ■ UD: Undisturbed sample
 ● D, S: Disturbed and SPT sample
 ■ R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T49

Co-ord (m): N = 2300989

Sheet: 2 / 2

E = 620024

Location: Offshore

Ground elevation (m): 0.93

Date commenced: 22/04/2011

Depth (m): 28.5m

Date completed: 24/04/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
5	-24.57	25.50	11.60		Firm, grey, Fat Clay (CH)	17.0	2	3	3	6/30	●	D17 17.00 - 17.45
						19.0	1	2	3	5/30	●	D19 18.00 - 18.30
						20.0	1	2	2	4/30	●	D20 19.00 - 19.45
						22.0	2	2	3	5/30	●	D22 20.00 - 20.45
						23.0	1	2	3	5/30	●	D23 21.00 - 21.90
10	-27.57	28.50	3.00		Hard, reddish brown, silt/claystone TCR = 50%, RQD = 40%	25.0	1	3	3	6/30	●	D24 22.00 - 22.45
						25.0	1	3	3	6/30	●	D25 23.00 - 23.45

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T50

Co-ord (m): N = 2300903

Sheet: 1 / 2

E = 620074

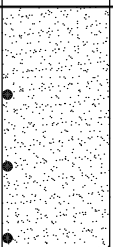
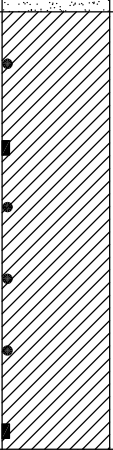
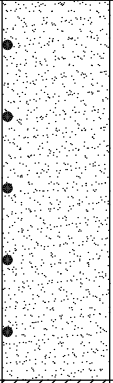
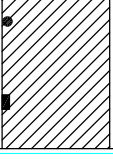
Location: Offshore

Ground elevation (m): 1.20




Date commenced: 19/5/2011

Depth (m): 28.1

Date completed: 20/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
1a	-2.00	3.50	3.50		Grey, brownish grey, Poorly graded sand (SP)	1.0	1	1	2	3		D1 1.00 - 1.45
						2.0	1	2	2	4		D2 2.00 - 2.45
						3.0	1	1	2	3		D3 3.00 - 3.45
2	-8.10	9.60	6.10		very soft, Brownish grey, Fat Clay (CH)	4.0	0	0	0	0		D4 4.00 - 4.45
						6.0	0	0	1	1		U5 5.00 - 5.80
						7.0	0	0	0	0		D6 6.00 - 6.45
						8.0	0	0	1	1		D7 7.00 - 7.45
						8.0	0	0	1	1		D8 8.00 - 8.45
3c	-13.40	14.90	5.30		Yellowish grey, poorly graded sand with clay (SP-SC)	10.0	2	2	3	5		U9 9.00 - 9.70
						11.0	2	3	3	6		D10 10.00 - 10.45
						12.0	2	2	3	5		D11 11.00 - 11.45
						13.0	2	3	3	6		D12 12.00 - 12.45
						14.0	2	2	3	5		D13 13.00 - 13.45
4			2.60		Firm to stiff, Brownish grey, reddish brown, light grey, Fat Clay (CH)	15.0	3	4	4	8	D14 14.00 - 14.45	
											D15 15.00 - 15.45	
											U16 16.00 - 16.70	

Legend

-  UD: Undisturbed sample
-  D, S: Disturbed and SPT sample
-  R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T50

Co-ord (m): N = 2300903

Sheet: 2 / 2

E = 620074

Location: Offshore

Ground elevation (m): 1.20

Date commenced: 19/5/2011

Depth (m): 28.1

Date completed: 20/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)					
						Depth (m)	Blows/15cm			N		N: Blows/30 cm				
							N ₀	N ₁	N ₂			10	20	30	40	50
5	-16.00	17.50	7.60		Firm, grey, Fat Clay (CH)	17.0	3	4	5	9						D17
						18.0	2	2	3	5						D18
						20.0	2	3	3	6						U19
						21.0	2	3	2	5						D21
						22.0	2	3	3	6						D22
10	-23.60	25.10	3.00		Hard, reddish brown, silt/claystone TCR = 40%, RQD = 20%	24.0	3	3	3	6	U23	R25				
						26.00 - 26.20	R26									
						27.00 - 27.20	R26									

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T51

Co-ord (m): N = 2300817

Sheet: 1 / 2

E = 620126

Location: Offshore

Ground elevation (m): 0.52

Date commenced: 21/04/2011

Depth (m): 30.6m

Date completed: 23/04/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
1a	-0.08	0.60	0.60	█	Grey, light grey, poorly graded sand							
1b	-1.48	2.00	1.40	▨	Very soft, grey, Lean Clay with sand (CL)	1.0	0	0	0	0/32	D1 1.00 - 1.45	
2	-6.28	6.80	4.80	▨	Soft, grey, Fat Clay (CH)	4.0	0	0	1	1/45		D3 4.00 - 4.45
						6.0	0	0	1	1/50		U4 5.00 - 5.90 D5 6.00 - 6.45
						7.0	2	2	3	5/30		D6 7.00 - 7.45
						9.0	2	2	3	5/35		U7 8.00 - 8.90 D8 9.00 - 9.45
3c	-13.48	14.00	7.20	█	Yellowish grey, poorly graded sand with clay (or silty clay) (SP-SC)	10.0	2	2	3	5/30		D9 10.00 - 10.45
						11.0	2	3	3	6/34		D10 11.00 - 11.45
						12.0	3	2	3	5/37		D11 12.00 - 12.45
						13.0	2	2	4	6/35		D12 13.00 - 13.45
5			13.60	▨	Firm, grey, Fat Clay (CH)	14.0	2	2	2	4/30	D13 14.00 - 14.45	
											U14 15.00 - 15.90	

Legend
 █ UD: Undisturbed sample
 ● D, S: Disturbed and SPT sample
 ▨ R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T51

Co-ord (m): N = 2300817

Sheet: 2 / 2

E = 620126

Location: Offshore

Ground elevation (m): 0.52

Date commenced: 21/04/2011

Depth (m): 30.6m

Date completed: 23/04/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
5			13.60		Firm, grey, Fat Clay (CH)	17.0	2	2	3	5/35	•	D15 17.00 - 17.45
						18.0	2	3	2	5/40	•	D16 18.00 - 18.45
						19.0	2	3	3	6/37	•	D17 19.00 - 19.45
						21.0	1	2	4	6/30	•	U18 20.00 - 20.80
						22.0	2	3	2	5/30	•	D19 21.00 - 21.45
						23.0	2	3	3	6/33	•	D20 22.00 - 22.45
						24.0	3	3	3	6/30	•	D21 23.00 - 23.45
						25.0	2	2	3	5/30	•	D22 24.00 - 24.45
						26.0	2	2	3	5/33	•	D23 25.00 - 25.45
						27.0	2	2	2	4/35	•	D24 26.00 - 26.45
	-27.08	27.60									D25 27.00 - 27.45	
10			3.00		Moderately weathered, reddish brown, silt/claystone TCR = 60%, RQD = 40%						R26 28.00 - 28.20	
	-30.08	30.60									R27 29.00 - 29.20	

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrast ructur e const ruct ion pr oject

BOREHOLE: T52

Co-ord (m): N = 2300731

Sheet: 1 / 2

E = 620177

Location: Offshore

Ground elevation (m): 0.35

Date commenced: 20/5/2011

Depth (m): 28.3

Date completed: 21/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
1a	-0.45	0.80	0.80	█	Light grey, poorly graded sand (SP)							
1b			3.20	▨	Very soft, Grey, brownish grey, sandy Lean Clay (CL)	1.0	0	0	0	0		D1 1.00 - 1.45
						2.0	0	0	1	1		D2 2.00 - 2.45
2			4.00	▨	Very soft, Brownish grey, Lean Clay (CL)	4.0	0	0	0	0		U3 3.00 - 3.90
						5.0	0	0	0	0		D4 4.00 - 4.45
						7.0	0	0	1	1		U6 6.00 - 6.90
						8.0	0	0	0	0		D7 7.00 - 7.45
3b			9.00	▨	Firm, yellowish grey, reddish brown, sandy Lean Clay (CL)	9.0	0	0	0	0		D8 8.00 - 8.45
						10.0	1	2	2	4		U9 9.00 - 9.90
						11.0	2	2	3	5		D10 10.00 - 10.45
						13.0	4	4	5	9		U12 12.00 - 12.90
4			13.10	▨	Stiff, Yellowish grey, light grey, Fat Clay (CH)	11.0	2	2	3	5		D11 11.00 - 11.45
						13.0	4	4	5	9		D13 13.00 - 13.45
			15.50	▨	Firm, grey, Fat Clay (CH)	14.0	3	5	5	10		D14 14.00 - 14.45
						15.0	2	5	6	11		D15 15.00 - 15.45
						16.0	1	2	3	5		D16 16.00 - 16.45

Legend
 █ UD: Undisturbed sample
 ● D, S: Disturbed and SPT sample
 ▨ R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T52

Co-ord (m): N = 2300731

Sheet: 2 / 2

E = 620177

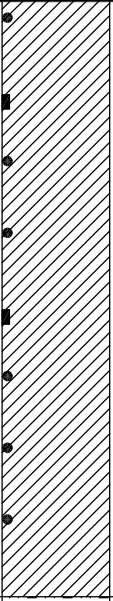
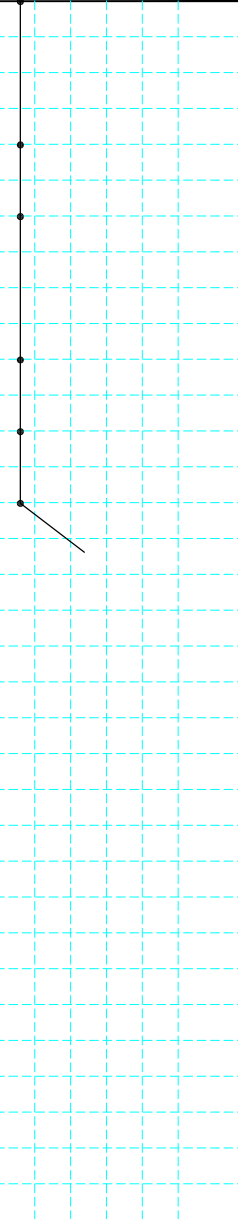
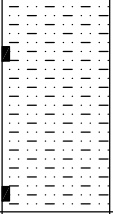
Location: Offshore

Ground elevation (m): 0.35

Date commenced: 20/5/2011

Depth (m): 28.3

Date completed: 21/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)					
						Depth (m)	Blows/15cm			N		N: Blows/30 cm				
							N ₀	N ₁	N ₂			10	20	30	40	50
5			9.80		Firm, grey, Fat Clay (CH)	17.0	2	3	3	6						D17 17.00 - 17.45
						19.0	3	3	3	6						D19 19.00 - 19.45
						20.0	2	2	4	6						D20 20.00 - 20.45
						22.0	3	3	4	7						D22 22.00 - 22.45
						23.0	1	3	3	6						D23 23.00 - 23.45
						24.0	2	3	3	6						D24 24.00 - 24.45
10	-24.95	25.30	3.00		Moderately weathered, reddish brown, sandstone TCR = 60%, RQD = 30%							R25 26.00 - 26.20				
												R26 28.00 - 28.10				

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T53

Co-ord (m): N = 2300645

Sheet: 1 / 2

E = 620228

Location: Offshore

Ground elevation (m): 1.15

Date commenced: 25/04/2011

Depth (m): 35.0m

Date completed: 27/01/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
1a	-0.75	1.90	1.90	•	Very loose, grey, Poorly graded Sand with shell (SP)	1.0	1	1	1	2	D1 1.00 - 1.45	
1b	-1.85	1.90	1.10	■	Very soft, brownish grey, grey, Lean Clay (CL)						U2 2.00 - 2.90	
2		3.00	5.60	■	Very soft, brownish grey, Fat Clay (CH)	4.0	0	0	0	0	0	D3 4.00 - 4.45
						5.0	0	0	0	0	0	D4 5.00 - 5.45
						8.0	0	0	1	1	1	D6 8.00 - 8.45
						9.0	1	2	2	4	4	D7 9.00 - 9.45
3b	-11.85	13.00	4.40	■	Firm, yellowish grey, light grey, Sandy Lean Clay (CL)	11.0	2	2	3	5	U8 10.00 - 10.85	
				■		12.0	1	2	4	6	D9 11.00 - 11.45	
				■		12.0	1	2	4	6	D10 12.00 - 12.45	
				■		14.0	2	4	5	9	U11 13.00 - 13.70	
4	-14.35	15.50	2.50	■	Stiff, rednish brown, light grey, Lean Clay (CL)	14.0	2	4	5	9	D12 14.00 - 14.45	
				■		15.0	3	4	6	10	D13 15.00 - 15.45	
				■	Firm, grey, Fat Clay (CH)						U14 16.00 - 16.90	

Legend
 ■ UD: Undisturbed sample
 • D, S: Disturbed and SPT sample
 ■ R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T53

Co-ord (m): N = 2300645

Sheet: 2 / 2

E = 620228

Location: Offshore

Ground elevation (m): 1.15

Date commenced: 25/04/2011

Depth (m): 35.0m

Date completed: 27/04/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)			
						Depth (m)	Blows/15cm			N		N: Blows/30 cm		
							N ₀	N ₁	N ₂					
5			16.50	▨	Firm, grey, Fat Clay (CH)	18.0	2	2	3	5		D15 18.00 - 18.45		
														U16 19.00 - 19.85
						21.0	1	2	3	5		D17 21.00 - 21.45		
														U18 22.00 - 22.90
						24.0	2	2	4	6		D19 24.00 - 24.45		
						25.0	2	3	3	6		D20 25.00 - 25.45		
						27.0	2	2	3	5		D21 27.00 - 27.45		
						28.0	1	2	3	5		D22 28.00 - 28.45		
						29.0	2	2	4	6		D23 29.00 - 29.45		
						30.0	2	3	3	6		D24 30.00 - 30.45		
	-30.85	32.00		▨		32.0	50/1cm			D25 32.00 - 32.01				
10			3.00	▨	Moderately weathered, reddish brown, silt/sandstone TCR = 70%, RQD = 50%					R26 32.60 - 32.80				
	-33.85	35.00		▨						R27 33.60 - 33.80				

Legend

- ▨ UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- ▨ R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T54

Co-ord (m): N = 2301281

Sheet: 1 / 2

E = 619733

Location: Ground

Ground elevation (m): 2.84

Date commenced: 15/5/2011

Depth (m): 34.0

Date completed: 16/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
1a	0.34	2.50	2.50		Very loose, grey, yellowish grey, Poorly graded Sand with shell (SP)	1.0	1	2	3	5	D1	1.00 - 1.45
						2.0	1	2	2	4	D2	2.00 - 2.45
1b	-5.06	7.90	5.40		Very soft, brownish grey, Sandy Lean Clay (CL)	4.0	0	0	1	1	U3	3.00 - 3.90
						5.0	0	0	0	0	D5	4.00 - 4.45
						7.0	0	0	1	1	U6	6.00 - 6.80
						8.0	0	0	1	1	D7	7.00 - 7.45
2	-8.66	11.50	3.60		Soft, brownish grey, Fat Clay (CH)	10.0	0	1	1	2	D8	8.00 - 8.45
						11.0	0	1	1	2	U9	9.00 - 9.80
3b	-12.16	15.00	3.50		Low-Plastic, yellowish grey, light grey, clayey sand	12.0	1	1	2	3	D10	10.00 - 10.45
						14.0	2	3	3	6	D11	11.00 - 11.45
4			4.60		Firm, yellowish grey, light grey, Sandy Lean Clay (CL)	14.0	2	3	3	6	D12	12.00 - 12.45
						15.0	3	4	5	9	U13	13.00 - 13.50
					Stiff, yellowish grey, light grey, Sandy Lean Clay (CL)	16.0	4	5	6	11	D14	14.00 - 14.45
											D15	15.00 - 15.45
											D16	16.00 - 16.45

Legend
 UD: Undisturbed sample
 D, S: Disturbed and SPT sample
 R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: T54

Co-ord (m): N = 2301281

Sheet: 2 / 2

E = 619733

Location: Ground

Ground elevation (m): 2.84

Date commenced: 15/5/2011

Depth (m): 34.0

Date completed: 16/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart						Sample No. Depth of the sample (m)		
						Depth (m)	Blows/15cm			N	N: Blows/30 cm						
							N ₀	N ₁	N ₂		10	20	30	40		50	>50
4	-16.76	19.60	4.60	▨	Stiff, reddish brown, Fat Clay (CH)	17.0	5	5	7	12							D17 17.00 - 17.45
						18.0	4	5	6	11							D18 18.00 - 18.45
						19.0	4	5	5	10							D19 19.00 - 19.45
						21.0	2	3	3	6							D21 21.00 - 21.45
5	-26.66	29.60	9.90	▨	Firm, grey, Fat Clay (CH)	22.0	2	3	2	5	D22 22.00 - 22.45						
						23.0	2	3	3	6	D23 23.00 - 23.45						
						25.0	2	3	3	6	D25 25.00 - 25.45						
						26.0	2	2	3	5	D26 26.00 - 26.45						
						27.0	3	3	3	6	D27 27.00 - 27.45						
						28.0	2	3	3	6	D28 28.00 - 28.45						
						29.0	2	2	3	5	D29 29.00 - 29.45						
						30.0	2	3	3	6	D30 30.00 - 30.45						
						31.0	2	2	3	5	D29 29.00 - 29.45						
8	-28.16	31.00	1.50	▨	Loose, light grey, grey, sand with gravel.	30.0	2	3	3	6	D30 30.00 - 30.45						
10	-31.16	34.00	3.00	▨	Moderately weathered, reddish brown, greenish grey, silt/sandstone TCR = 40%, RQD = 20%								R31 31.60 - 31.80				

Legend

- ▨ UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- ▨ R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastr uctur e const r uct ion pr oject

BOREHOLE: T55

Co-ord (m): N = 2301195

Sheet: 1 / 2

E = 619784

Location: Offshore

Ground elevation (m): -0.03

Date commenced: 22/5/2011

Depth (m): 26.9

Date completed: 23/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
1b	-3.03	3.00	3.00		Very soft, Grey, brownish grey, Lean Clay (CL)	1.0	0	0	0	0	D1 1.00 - 1.45	
2	-5.63	5.60	2.60		Very soft, Brownish grey, Fat Clay (CH)	4.0	0	0	0	0	D3 4.00 - 4.45	
3b	-11.53	11.50	5.90		Soft to firm, Bluish grey, yellowish grey, sandy Fat Clay (CH)	7.0	1	1	1	2	D5 7.00 - 7.45	
	-12.03	12.00	0.50		Loose, yellowish grey, Sand (SP)	10.0	1	1	2	3	D7 10.00 - 10.45	
3c						11.0	0	1	1	2	D8 11.00 - 11.45	
						12.0	1	3	3	6	D9 12.00 - 12.45	
5			11.9		Firm, grey, Fat Clay (CH)	15.0	2	2	3	5	D11 15.00 - 15.45	
						16.0	1	2	4	6	D12 16.00 - 16.45	

Legend
 UD: Undisturbed sample
 D, S: Disturbed and SPT sample
 R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T55

Co-ord (m): N = 2301195

Sheet: 2 / 2

E = 619784

Location: Offshore

Ground elevation (m): -0.03

Date commenced: 22/5/2011

Depth (m): 26.9

Date completed: 23/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
5	-23.93	23.90	11.90		Firm, grey, Fat Clay (CH)	19.0	2	3	3	6	•	U13 17.00 - 17.90
						20.0	1	3	3	6	•	D14 19.00 - 19.45
						21.0	1	2	3	5	•	D15 20.00 - 20.45
						22.0	2	3	4	7	•	D16 21.00 - 21.45
						23.0	3	3	3	6	•	D17 22.00 - 22.45
						24.0	50/2cm				•	D18 23.00 - 23.45
10	-26.93	26.90	3.00		Moderately weathered, reddish brown, greenish grey, silt/claystone TCR =80%, RQD = 60%							D19 24.00 - 24.02
												R20 25.00 - 25.20
												R21 26.00 - 26.20

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T56

Co-ord (m): N = 2301109

Sheet: 1 / 2

E = 619835

Location: Offshore

Ground elevation (m): -1.33

Date commenced: 02/05/2011

Depth (m): 28.4

Date completed: 03/05/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
2	-7.83	6.50	6.50	▨	Soft, brownish grey, Fat Clay (CH)	1.0	0	0	1	1		D1 1.00 - 1.45
						2.0	0	0	0	0		D2 2.00 - 2.45
						4.0	0	0	0	0		U3 3.00 - 3.90
						4.0	0	0	0	0		D4 4.00 - 4.45
						5.0	0	0	0	0		D5 5.00 - 5.45
						5.0	0	0	0	0		U6 6.00 - 6.80
3b	-12.13	10.80	4.30	▨	Plastic, yellowish grey, Clayey Sand (SC)	7.0	2	3	4	7	D7 7.00 - 7.45	
						8.0	2	3	3	6	D8 8.00 - 8.45	
					Firm, yellowish grey, Sandy Lean Clay (CL)	10.0	2	3	3	6	U9 9.00 - 9.90	
						10.0	2	3	3	6	D10 10.00 - 10.45	
5	-12.13	10.80	14.60	▨	Firm, grey, Fat Clay (CH)	11.0	2	2	3	5	D11 11.00 - 11.45	
						12.0	2	2	3	5	D12 12.00 - 12.45	
						13.0	2	2	3	5	D13 13.00 - 13.45	
						15.0	2	3	3	6	U14 14.00 - 14.90	
						15.0	2	3	3	6	D15 15.00 - 15.45	
						16.0	2	3	3	6	D16 16.00 - 16.45	

Legend

- ▨ UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T56

Co-ord (m): N = 2301109

Sheet: 2 / 2

E = 619835


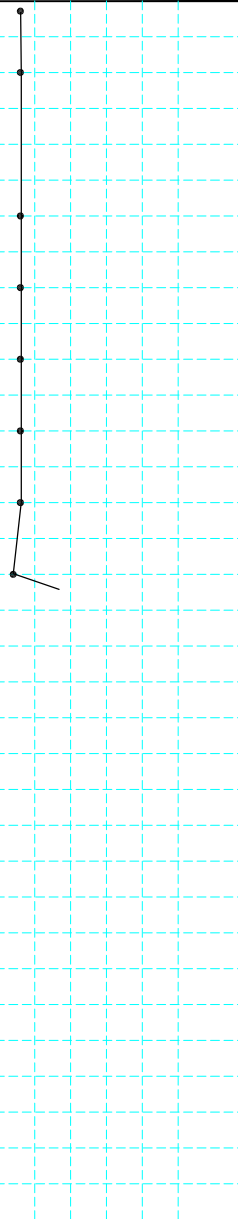
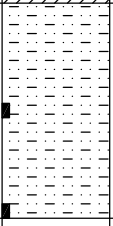
Location: Offshore

Ground elevation (m): -1.33

Date commenced: 02/05/2011

Depth (m): 28.4

Date completed: 03/05/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart						Sample No. Depth of the sample (m)								
						Depth (m)	Blows/15cm			N	N: Blows/30 cm												
							N ₀	N ₁	N ₂		10	20	30	40		50	>50						
5			14.60		Firm, grey, Fat Clay (CH)	17.0	2	3	3	6							D17 17.00 - 17.45						
						18.0	2	3	3	6							D18 18.00 - 18.45						
						20.0	2	3	3	6							U19 19.00 - 19.90						
						21.0	2	3	3	6							D21 21.00 - 21.45						
						22.0	2	3	3	6							D22 22.00 - 22.45						
						23.0	2	3	3	6							D23 23.00 - 23.45						
						24.0	2	3	3	6							D24 24.00 - 24.45						
						25.0	2	3	2	5							D25 25.00 - 25.45						
						10	-26.73	25.40	3.00								Moderately weathered, reddish brown, silt/claystone TCR = 30%, RQD = 15%	26.80	2	3	3	3	R26 26.80 - 27.00
																		28.40	2	3	3	3	R27 28.20 - 28.40

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T57

Co-ord (m): N = 2301023

Sheet: 1 / 2

E = 619887

Location: Offshore

Ground elevation (m): -1.21

Date commenced: 18/5/2011

Depth (m): 27.2

Date completed: 19/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
1a	-2.11	0.90	0.90	█	Grey, poorly graded Sand (SP)	1.0	0	0	0	0	D1 1.00 - 1.45	
1b	-4.11	2.90	2.00	▨	Very soft, Grey, brownish grey, Lean Clay (CL)	2.0	0	0	0	0	D2 2.00 - 2.45	
2	-7.21	6.00	3.10	▩	Very soft, Brownish grey, Grey, Fat Clay (CH)	4.0	0	0	1	1	U3 3.00 - 3.80	
						5.0	0	0	1	1	D4 4.00 - 4.45	
3b	-14.71	13.50	7.50	▨	Plastic, Yellowish grey, clayey sand (SC)	7.0	1	2	2	4	U6 6.00 - 6.80	
						8.0	2	2	3	5	D7 7.00 - 7.45	
						10.0	2	2	2	4	D8 8.00 - 8.45	
						11.0	2	3	3	6	U9 9.00 - 9.60	
						12.0	1	2	3	5	D10 10.00 - 10.45	
						13.0	2	2	3	5	D11 11.00 - 11.45	
4	-15.21	14.00	0.50	▩	Stiff, yellowish brown, Fat Clay (CH)	14.0	1	3	3	6	D12 12.00 - 12.45	
5			10.20	▩	Firm, grey, Fat Clay (CH)	13.0	2	2	3	5	D13 13.00 - 13.45	
						14.0	1	3	3	6	D14 14.00 - 14.45	
						16.0	2	3	3	6	U15 15.00 - 15.80	
											D16 16.00 - 16.45	

Legend
 █ UD: Undisturbed sample
 ● D, S: Disturbed and SPT sample
 ▩ R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T57

Co-ord (m): N = 2301023

Sheet: 2 / 2

E = 619887

Location: Offshore

Ground elevation (m): -1.21

Date commenced: 18/5/2011

Depth (m): 27.2

Date completed: 19/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
5			10.20	▨	Firm, grey, Fat Clay (CH)	17.0	1	2	3	5		D17 17.00 - 17.45
						18.0	1	3	3	6		U18 18.00 - 18.80
						19.0	1	3	3	6		D19 19.00 - 19.45
						20.0	2	2	4	6		D20 20.00 - 20.45
						21.0	2	2	3	5		D21 21.00 - 21.45
						22.0	3	3	3	6		D22 22.00 - 22.45
						23.0	2	2	4	6		D23 23.00 - 23.45
10	-25.41	24.20	3.00	▨	Moderately weathered, reddish brown, silt/claystone TCR = 30%, RQD = 10%						R24 25.00 - 25.10	
											R25 26.00 - 26.10	

Legend

- ▨ UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T58

Co-ord (m): N = 2300937

Sheet: 1 / 2

E = 619937

Location: Offshore

Ground elevation (m): 0.85

Date commenced: 27/04/2011

Depth (m): 29.8m

Date completed: 28/04/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
1a	-1.65	2.50	2.50	•	Brownish grey, poorly graded sand with clay (or silty clay) 9SP-SC)	1.0	1	1	1	2/30	D1 1.00 - 1.45	
				•		2.0	0	0	1	1/30	D2 2.00 - 2.45	
				•							U3 3.00 - 3.90	
2	-7.85	8.70	6.20	•	Soft ,brownish grey, Fat Clay (CH)	5.0	0	0	1	1/35	D4 5.00 - 5.45	
				•							U5 6.00 - 6.90	
				•		8.0	0	0	1	1/30	D6 8.00 - 8.45	
3b	-9.95	10.80	2.10	•	Loose, yellowish grey, Poorly graded Sand (SP)	10.0	2	2	3	5/30	D8 10.00 - 10.45	
				•							U7 9.00 - 9.50	
				•		11.0	3	4	5	9/30	D9 11.00 - 11.45	
4	-12.65	13.50	2.70	•	Stiff, yellowish grey, Lean Clay (CL)	13.0	4	5	6	11/30	D11 13.00 - 13.45	
				•	Yellowish grey, light grey, Clayey Sand (SC)	14.0	3	4	4	8/30	D12 14.00 - 14.45	
				•							U10 12.00 - 12.40	
5				•	Firm, grey, Fat Clay (CH)	16.0	3	3	4	7/30	D14 16.00 - 16.45	
				•							U13 15.00 - 15.90	

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T58

Co-ord (m): N = 2300937

Sheet: 2 / 2

E = 619937

Location: Offshore

Ground elevation (m): 0.85

Date commenced: 27/04/2011

Depth (m): 29.8

Date completed: 28/04/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
5			13.30		Firm, grey, Fat Clay (CH)	17.0	3	4	4	8/30	●	D15 17.00 - 17.45
						19.0	2	4	4	8/30	●	D17 19.00 - 19.45
						20.0	2	3	4	7/30	●	D18 20.00 - 20.45
						22.0	3	4	5	9/30	●	D20 22.00 - 22.45
						23.0	2	3	4	7/30	●	D21 23.00 - 23.45
						25.0	3	3	4	7/30	●	D23 25.00 - 25.45
						-25.95	26.80	3.00		Moderately weathered, reddish brown, silt/claystone TCR = 40%, RQD = 20%	R24 27.00 - 27.10	

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T59

Co-ord (m): N = 2300852

Sheet: 1 / 2

E = 619989

Location: Offshore

Ground elevation (m): 1.52

Date commenced: 19/5/2011

Depth (m): 31.2

Date completed: 20/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
1a	-2.98	4.50	4.50	●	Grey, poorly graded sand with clay (SP-SC)	1.0	1	2	2	4	●	D1 1.00 - 1.45
						2.0	1	1	2	3		D2 2.00 - 2.45
						3.0	1	2	2	4		D3 3.00 - 3.45
						4.0	1	2	1	3		D4 4.00 - 4.45
2	-7.28	8.80	4.30	■	Very soft, Brownish grey, Grey, Fat Clay (CH)	6.0	0	0	0	0	●	U5 5.00 - 5.80
						7.0	0	0	1	1		D6 6.00 - 6.45
						8.0	0	0	1	1		D7 7.00 - 7.45
						8.0	0	0	1	1		D8 8.00 - 8.45
3b	-12.28	13.80	5.00	■	Plastic, Yellowish grey, light grey, clayey sand (SC)	10.0	1	2	2	4	●	U9 9.00 - 9.70
						11.0	1	1	2	3		D10 10.00 - 10.45
						12.0	2	2	2	4		D11 11.00 - 11.45
						13.0	2	2	3	5		D12 12.00 - 12.45
3c	-15.38	16.90	3.10	●	Yellowish grey, reddish brown, poorly graded sand with clay (SP-SC)	14.0	2	2	3	5	●	D13 13.00 - 13.45
						15.0	2	3	3	6		D14 14.00 - 14.45
						16.0	2	3	2	5		D15 15.00 - 15.45
												D16 16.00 - 16.45

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T59

Co-ord (m): N = 2300852

Sheet: 2 / 2

E = 619989

Location: Offshore

Ground elevation (m): 1.52

Date commenced: 19/5/2011

Depth (m): 31.2

Date completed: 20/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
3c	-18.28	19.80	2.90	•••••	Yellowish grey, reddish brown, poorly graded sand with clay (SP-SC)	17.0	2	3	3	6	10	D17 17.00 - 17.45
						18.0	2	3	2	5	20	D18 18.00 - 18.45
						19.0	2	3	3	6	30	D19 19.00 - 19.45
5	-26.68	28.20	8.40	// // //	Firm, grey, Fat Clay (CH)	21.0	2	2	3	5	40	U20 20.00 - 20.80
						22.0	2	3	3	6	50	D21 21.00 - 21.45
						24.0	2	2	3	5	>50	D22 22.00 - 22.45
						25.0	2	3	3	6		U23 23.00 - 23.80
						26.0	2	3	3	6		D24 24.00 - 24.45
						27.0	2	3	3	6		D25 25.00 - 25.45
						26.0	2	3	3	6		D26 26.00 - 26.45
						27.0	2	2	3	5		D27 27.00 - 27.45
10	-29.68	31.20	3.00	•••••	Moderately weathered, reddish brown, silt/claystone TCR = 40%, RQD = 20%							R28 29.00 - 29.20
												R29 31.00 - 31.20

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastructure construction project

BOREHOLE: T60

Co-ord (m): N = 2300766

Sheet: 1 / 3

E = 620040

Location: Offshore

Ground elevation (m): 1.59

Date commenced: 22/04/2011

Depth (m): 36.3m

Date completed: 24/04/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
1a	-0.91	2.50	2.50		Very loose, grey, Poorly graded Sand (SP)	1.0	1	1	2	3		D1 1.00 - 1.45
						2.0	1	1	2	3		D2 2.00 - 2.45
1b	-3.41	5.00	2.50		Very soft, grey, Sandy Lean Clay (CL)						U3 3.00 - 3.90	
2	-7.71	9.30	4.30		Very soft, brownish grey, grey, Fat Clay (CH)	5.0	0	0	0	0		D4 5.00 - 5.45
						8.0	0	0	1	1		D6 8.00 - 8.45
3b	-8.71	10.30	1.00		Firm, grey, Sandy Lean Clay (CL)						U7 9.00 - 9.90	
3c	-13.41	15.00	4.70		Loose, yellowish grey, Poorly graded Sand (SP)	10.0	2	2	3	5		D8 10.00 - 10.45
						11.0	2	3	3	6		D9 11.00 - 11.45
						12.0	3	3	4	7		D10 12.00 - 12.45
						13.0	2	3	3	6		D11 13.00 - 13.45
5					Firm, grey, Fat Clay (CH)	14.0	3	3	3	6		D12 14.00 - 14.45
												U13 15.00 - 15.90

Legend

- UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T60

Co-ord (m): N = 2300766

Sheet: 2 / 3

E = 620040

Location: Offshore

Ground elevation (m): 1.59

Date commenced: 22/04/2011

Depth (m): 36.3m

Date completed: 24/04/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)						
						Depth (m)	Blows/15cm			N		N: Blows/30 cm					
							N ₀	N ₁	N ₂			10	20	30	40	50	>50
5			18.30	▨	Firm, grey, Fat Clay (CH)	17.0	2	3	3	6							D14 17.00 - 17.45
						19.0	3	3	3	6							U15 18.00 - 18.80
						20.0	2	3	4	7							D17 20.00 - 20.45
						21.0	2	3	3	6							D18 21.00 - 21.45
						23.0	2	3	4	7							U19 22.00 - 22.90
						24.0	2	2	3	5							D20 23.00 - 23.45
						25.0	2	3	3	6							D21 24.00 - 24.45
						26.0	2	3	4	7							D22 25.00 - 25.45
						27.0	3	2	3	5							D23 26.00 - 26.45
						28.0	2	3	3	6							D24 27.00 - 27.45
10	-31.71	33.30		▨	Moderately weathered, reddish brown, silt/claystone TCR = 70%, RQD = 40%	29.0	3	3	4	7	D25 28.00 - 28.45						
						30.0	2	3	3	6	D26 29.00 - 29.45						
						31.0	2	2	3	5	D27 30.00 - 30.45						
						32.0	3	3	3	6	D28 31.00 - 31.45						
						33.0	2	3	50		D29 32.00 - 32.45						
											D30 33.00 - 33.32						

Legend

- ▨ UD: Undisturbed sample
- D, S: Disturbed and SPT sample
- R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastruc ture construction project

BOREHOLE: T60

Co-ord (m): N = 2300594

Sheet: 3 / 3

E = 620143

Location: Offshore

Ground elevation (m): 1.59

Date commenced: 22/04/2011

Depth (m): 36.3m

Date completed: 24/04/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart						Sample No.		
						Depth (m)	Blows/15cm			N	N: Blows/30 cm 10 20 30 40 50 >50						Depth of the sample (m)
							N ₀	N ₁	N ₂								
10	-34.71	36.30	3.00	[Symbol: Dotted pattern]	Moderately weathered, reddish brown, silt/claystone TCR = 70%, RQD = 40%												

- Legend**
- UD: Undisturbed sample
 - D, S: Disturbed and SPT sample
 - R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastr uctur e const r uct ion pr oject

BOREHOLE: T61

Co-ord (m): N = 2300680

Sheet: 1 / 2

E = 620091

Location: Offshore

Ground elevation (m): 0.54

Date commenced: 15/5/2011

Depth (m): 33.7

Date completed: 16/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
1a	-1.96	2.50	2.50	•	Blackish grey, poorly graded sand with clay (SP-SC)	1.0	2	3	4	7	D1 1.00 - 1.45	
		2.50		•		2.0	2	3	3	6	D2 2.00 - 2.45	
2	-8.26	8.80	6.30	■	Very soft, Brownish grey, Fat Clay (CH)	4.0	0	0	1	1		U3 3.00 - 3.80
				5.0		0	0	1	1		D4 4.00 - 4.45	
				6.0								D5 5.00 - 5.45
				7.0		0	0	1	1		U6 6.00 - 6.90	
				8.0		0	0	1	1		D7 7.00 - 7.45	
				8.0		0	0	1	1		D8 8.00 - 8.45	
3b	-12.96	13.50	4.70	■	Firm, Yellowish grey, light grey, sandy Lean Clay (CL)	10.0	2	2	3	5		U9 9.00 - 9.90
				11.0		2	3	3	6		D10 10.00 - 10.45	
				12.0		2	3	3	6		D11 11.00 - 11.45	
				13.0		2	3	3	6		D12 12.00 - 12.45	
4	-14.96	15.50	2.00	■	Firm to stiff, Yellowish grey, light grey, Fat Clay (CH)	13.0	2	3	3	6		D13 13.00 - 13.45
				15.0		3	4	4	8		U14 14.00 - 14.50	
				■	Firm, grey, Fat Clay (CH)	16.0	1	2	2	4		D15 15.00 - 15.45
				■								D16 16.00 - 16.45

Legend
 ■ UD: Undisturbed sample
 ● D, S: Disturbed and SPT sample
 ■ R: Rock sample



PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T61

Co-ord (m): N = 2300680

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E = 620091

Location: Offshore

Ground elevation (m): 0.54

Date commenced: 15/5/2011

Depth (m): 33.7

Date completed: 16/5/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)						
						Depth (m)	Blows/15cm			N		N: Blows/30 cm					
							N ₀	N ₁	N ₂			10	20	30	40	50	>50
5	-30.16	30.70	15.20		Firm, grey, Fat Clay (CH)	17.0	1	2	2	4							D17 17.00 - 17.45
						19.0	1	2	3	5							U18 18.00 - 18.90
						20.0	1	2	3	5							D19 19.00 - 19.45
						21.0	2	2	3	5							D20 20.00 - 20.45
						22.0	2	2	3	5							D21 21.00 - 21.45
						23.0	2	3	3	6							D22 22.00 - 22.45
						24.0	2	3	3	6							D23 23.00 - 23.45
						25.0	2	3	3	6							D24 24.00 - 24.45
						26.0	2	3	3	6							D25 25.00 - 25.45
						27.0	2	3	3	6							D26 26.00 - 26.45
						28.0	2	2	3	5							D27 27.00 - 27.45
						29.0	2	3	3	6							D28 28.00 - 28.45
						30.0	2	3	3	6							D29 29.00 - 29.45
						30.0	2	3	3	6							D30 30.00 - 30.45
9	-33.16	33.70	3.00		Hard, reddish brown, sandstone TCR = 70%, RQD = 45%							R31 32.20 - 32.40					
	-33.16	33.70										R32 33.50 - 33.70					

Legend
 UD: Undisturbed sample
 D, S: Disturbed and SPT sample
 R: Rock sample

PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT)
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BOREHOLE LOG

Iach huyen port infrastructure construction project

BOREHOLE: T62

Co-ord (m): N = 2300594

Sheet: 1 / 2

E = 620143

Location: Offshore

Ground elevation (m): 0.37

Date commenced: 29/04/2011

Depth (m): 32.8m

Date completed: 30/04/2011

Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm 10 20 30 40 50 >50
							N ₀	N ₁	N ₂			
1b	-3.43	3.80	3.80	▨	Brownish grey, sandy lean clay (CL)	1.0	1	1	2	3/30	D1	1.00 - 1.45
						2.0	2	2	2	4/30	D2	2.00 - 2.45
						3.0	2	2	2	4/30	D3	3.00 - 3.45
2	-6.43	6.80	3.00	▨	Very soft, brownish grey, grey, Fat Clay (CH)	5.0	0	0	1	1/45	U4	4.00 - 4.70
						6.0	0	0	1	1/40	D6	5.00 - 5.45
						7.0	2	3	3	6/30	D7	6.00 - 6.45
3b	-15.13	15.50	8.70	▨	Plastic, brownish grey, grey, Clayey Sand (SC)	9.0	2	3	3	6/30	U8	8.00 - 8.80
						10.0	2	3	3	6/30	D9	9.00 - 9.45
						11.0	2	3	4	7/30	D10	10.00 - 10.45
						13.0	2	3	3	6/30	D11	11.00 - 11.45
						14.0	2	3	3	6/30	D12	12.00 - 12.90
						15.0	2	3	3	6/30	D13	13.00 - 13.45
					Firm, yellowish grey, Sandy Lean Clay (CL)	16.0	2	2	3	5/30	D14	14.00 - 14.45
					Firm, grey, Fat Clay (CH)					U15	15.00 - 15.80	
										D16	16.00 - 16.45	

Legend

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BOREHOLE: T62

Co-ord (m): N = 2300594

Sheet: 2 / 2

E = 620143

Location: Offshore

Ground elevation (m): 0.37

Date commenced: 29/04/2011

Depth (m): 32.8m

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Layer	Elevation (m)	Depth (m)	Thickness (m)	Lithological Symbol	SOIL AND ROCK DESCRIPTION	SPT test			SPT chart		Sample No. Depth of the sample (m)	
						Depth (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
5	-29.43	29.80	14.30		Firm, grey, Fat Clay (CH)	17.0	2	2	3	5/30		D17 17.00 - 17.45
						19.0	2	3	3	6/30		U18 18.00 - 18.90
						20.0	2	3	3	6/30		D19 19.00 - 19.45
						21.0	2	3	3	6/30		D20 20.00 - 20.45
						23.0	2	3	4	7/32		D21 21.00 - 21.45
						24.0	2	3	3	6/30		U22 22.00 - 22.90
						25.0	2	3	3	6/30		D23 23.00 - 23.45
						26.0	2	3	4	7/32		D24 24.00 - 24.45
						27.0	2	3	4	7/30		D25 25.00 - 25.45
						28.0	2	3	4	7/30		D26 26.00 - 26.45
10	-32.43	32.80	3.00		Moderately weathered, reddish brown, silt/sandstone TCR = 70%, RQD = 40%	29.0	2	3	3	6/30	D27 27.00 - 27.45	
												D28 28.00 - 28.45
											D29 29.00 - 29.45	

Legend

- UD: Undisturbed sample
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