

**NƯỚC CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
BỘ GIAO THÔNG VẬN TẢI**

**NGHIÊN CỨU THIẾT KẾ CHI TIẾT
VỀ
DỰ ÁN XÂY DỰNG HẠ TẦNG
CẢNG LẠCH HUYỆN**

**BÁO CÁO CUỐI KỲ
HỢP PHẦN CẢNG**

PHỤ LỤC

THÁNG 3 NĂM 2013

Cơ quan Hợp tác Quốc tế Nhật Bản (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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Phụ lục 21-2	Dự thảo đề xuất Chương trình phục hồi thu nhập

Phụ lục 2-1

Kết quả khảo sát địa chất

Phụ lục 2-1

1) Bản đồ vị trí lỗ khoan

- a) Bãi tôn tạo (Khu vực bến, Khu vực đường dẫn) và Khu quản lý hành chính cảng
- b) Khu vực kè ngoài B, Khu vực đê chắn cát, Khu vực luồng tàu và vũng quay tàu

2) Mặt cắt địa chất

- a) Bãi tôn tạo (Khu vực bến, Khu vực đường dẫn) và Khu quản lý hành chính cảng
- b) Khu vực kè ngoài B
- c) Khu vực đê chắn cát
- d) Khu vực luồng tàu và vũng quay tàu

3) Mặt cắt địa chất theo lỗ khoan

- a) Bãi tôn tạo (Khu vực bến, Khu vực đường dẫn) và Khu quản lý hành chính cảng
- b) Khu vực kè ngoài B
- c) Khu vực đê chắn cát
- d) Khu vực luồng tàu và vũng quay tàu

4) Bảng kết quả thí nghiệm phân tích đất và Biểu đồ tính chất cơ lý của đất theo độ sâu

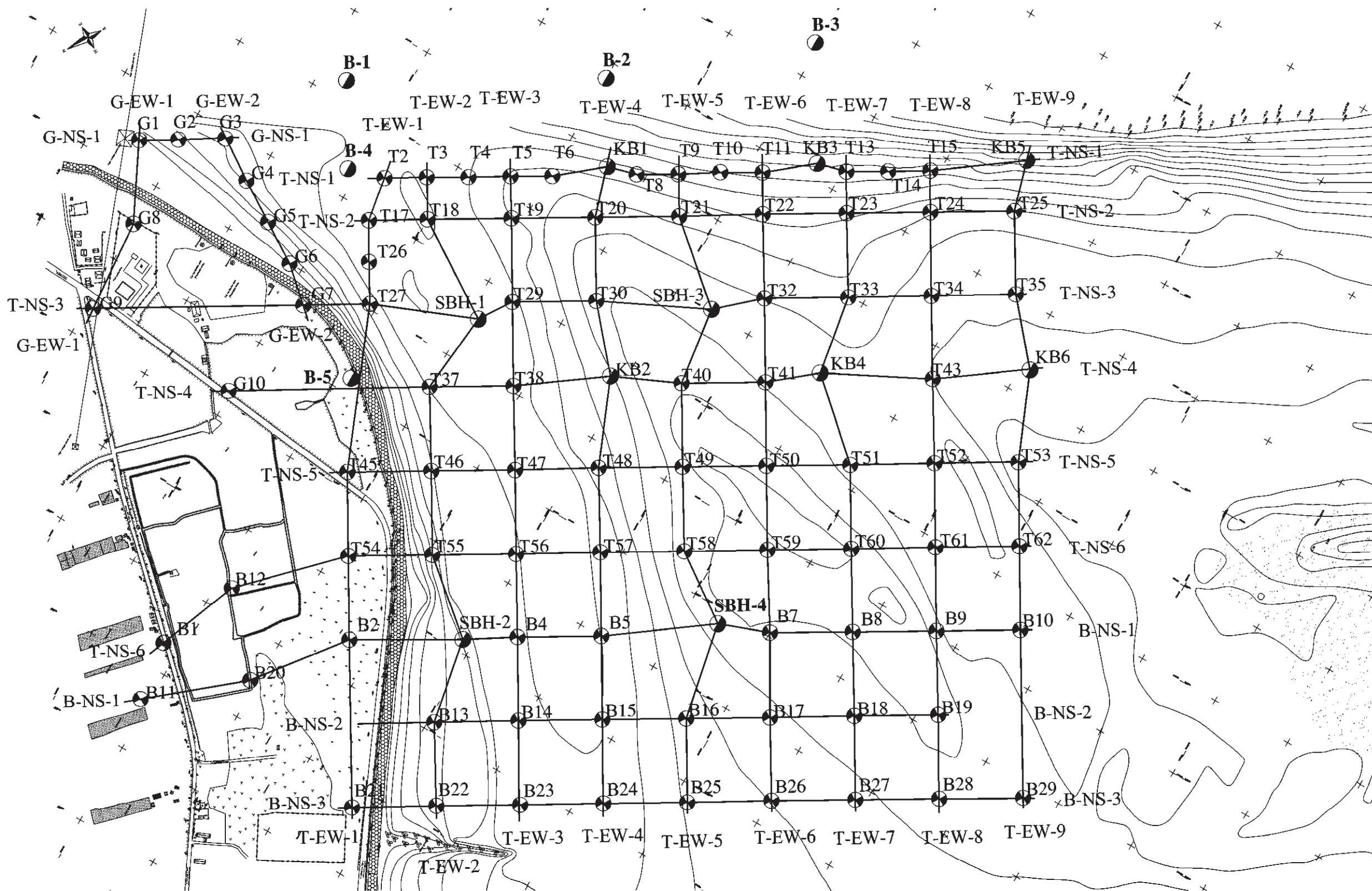
- a) Bãi tôn tạo (Khu vực bến, Khu vực đường dẫn) và Khu quản lý hành chính cảng
- b) Khu vực kè ngoài B
- c) Khu vực đê chắn cát
- d) Khu vực luồng tàu và vũng quay tàu

5) Kết quả thí nghiệm phân tích cát sử dụng làm vật liệu tôn tạo

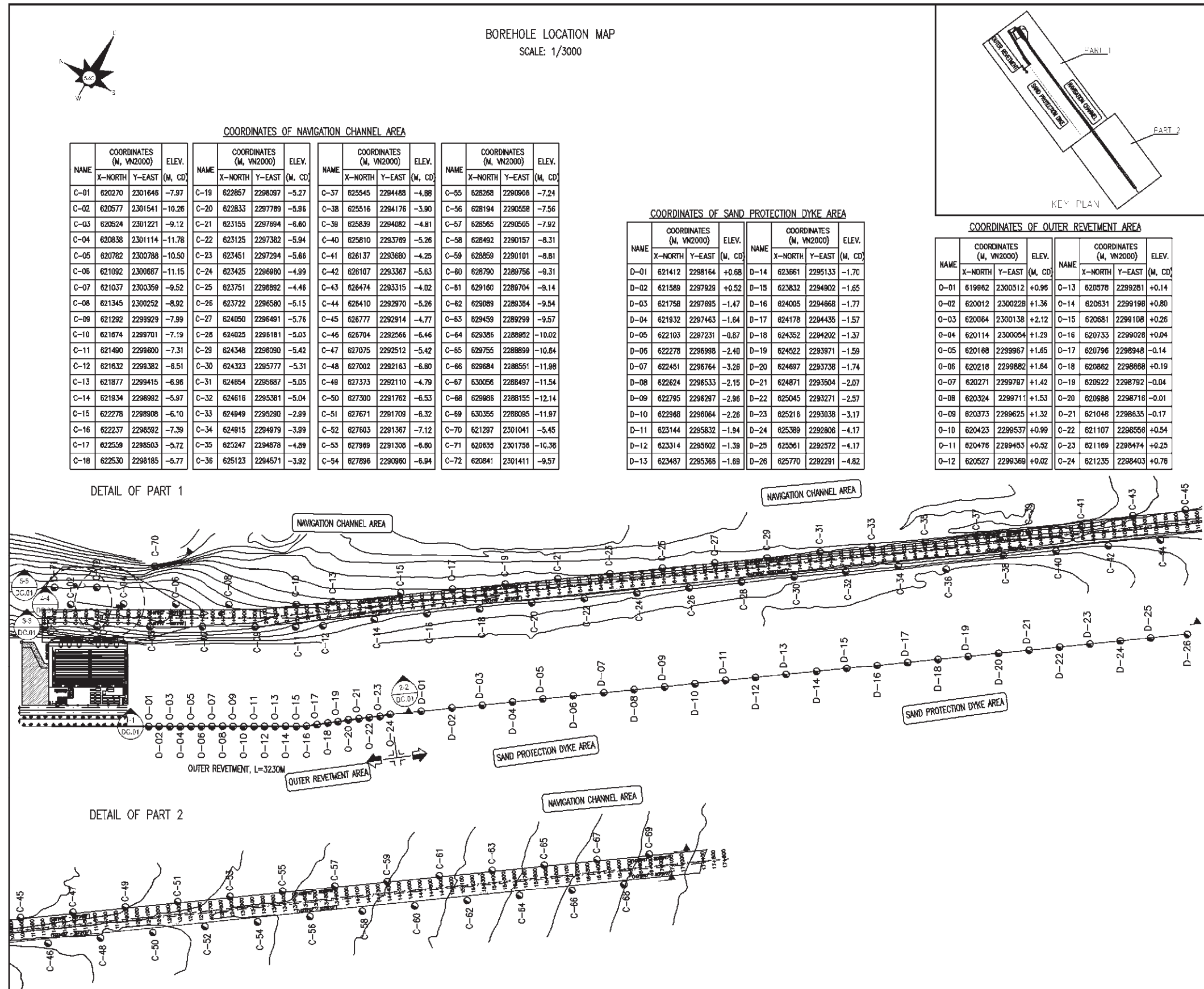
6) Kết quả thí nghiệm đất trộn xi măng

1) Bản đồ vị trí lỗ khoan

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



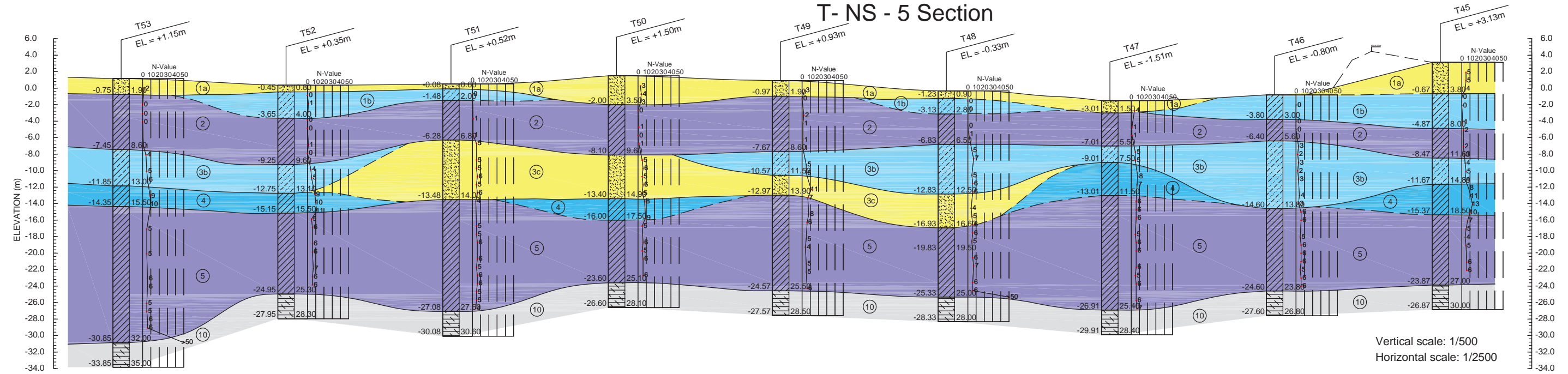
Boring Location Map for b) Outer Revetment B Area, Sand Protection Dyke Area, Navigation Channel and Turning Basin Area



2) Mặt cắt địa chất

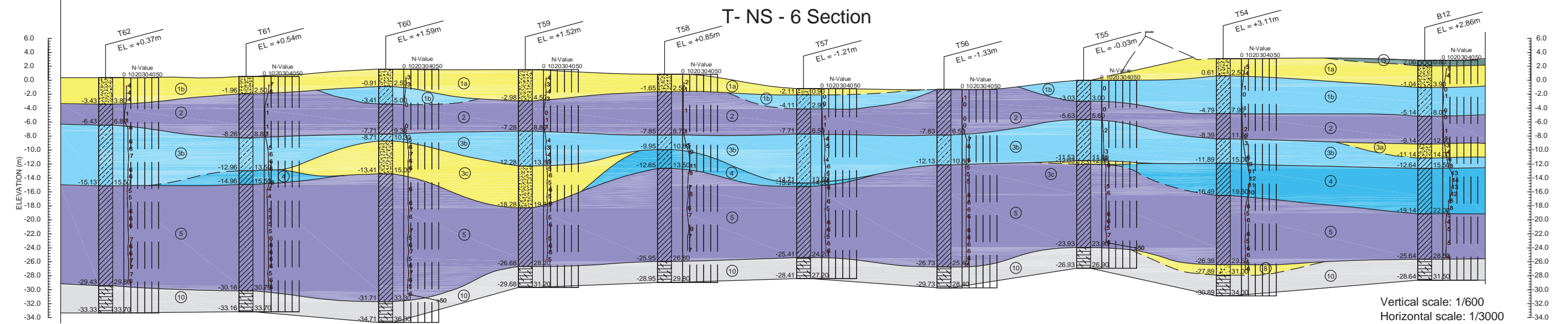
a) Bãi tôn tạo (Khu vực bến, Khu vực đường dẫn) và Khu quản lý hành chính cảng

T- NS - 5 Section



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

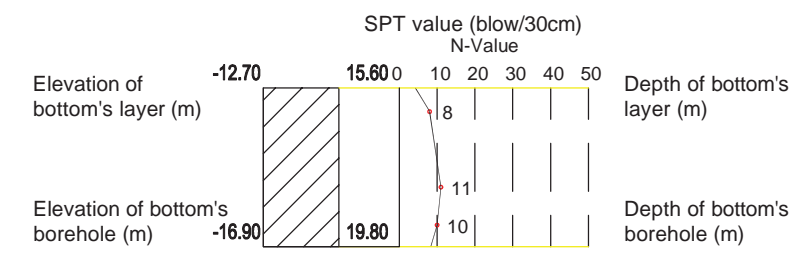
T- NS - 6 Section



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

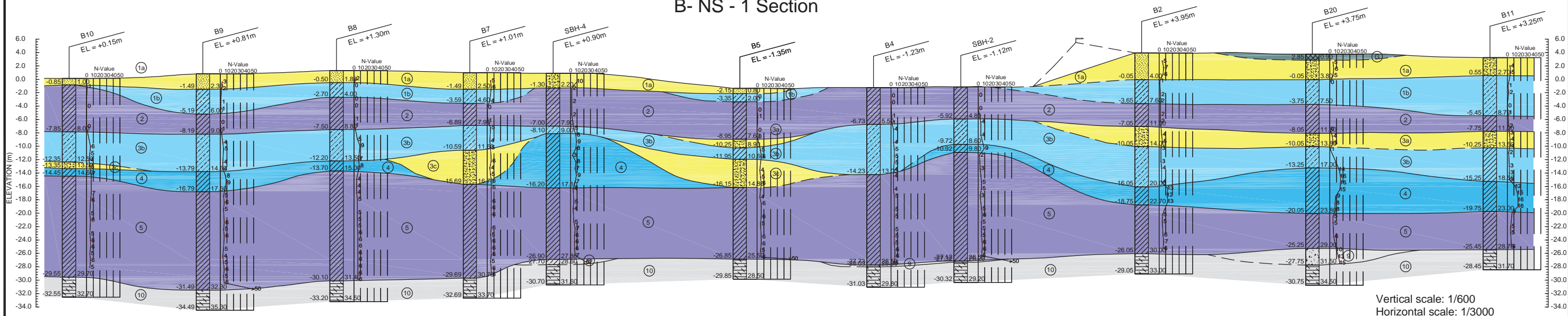
LEGEND:

- 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



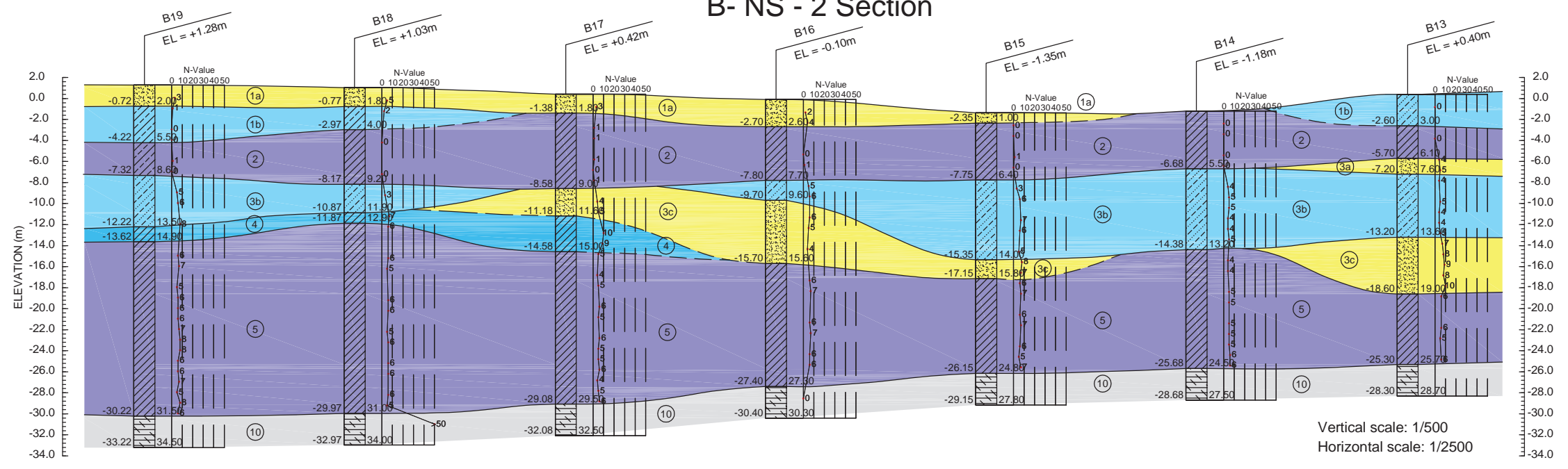
PROJECT NAME	OWNER	CONSULTANTS	PREPARED BY	CHECKED BY	APPROVED BY	DRAWING TITLE	PACKAGE
THE DETAILED DESIGN STUDY FOR LACH HUYEN PORT INFRASTRUCTURE CONSTRUCTION PROJECT IN VIET NAM	SOCIALIST REPUBLIC OF VIETNAM MINISTRY OF TRANSPORT (M.O.T) MARITIME PROJECT MANAGEMENT UNIT NO.2	ORIENTAL CONSULTANTS CO.,LTD. NIPPON KOEI CO.,LTD. PADECO CO.,LTD. JAPAN BRIDGE & STRUCTURE INSTITUTE, INC.	NAME			SOIL PROFILE BY SECTION (T-NS-5, T-NS-6)	DWG No. II.8
			SIGNATURE				
			DATE				

B- NS - 1 Section



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	99.64	62.30	139.62	99.98	65.19	135.33	127.81	132.77	

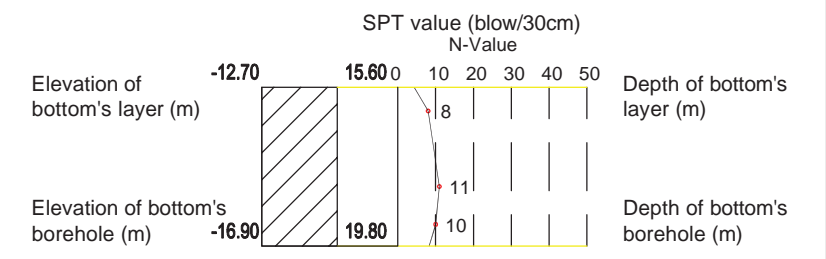
B- NS - 2 Section



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=619786	X=2300921, Y=619715	X=2301007, Y=619664	X=2301093, Y=619612
Distance (m):	99.98	100.50	99.98	99.98	99.98	100.50	

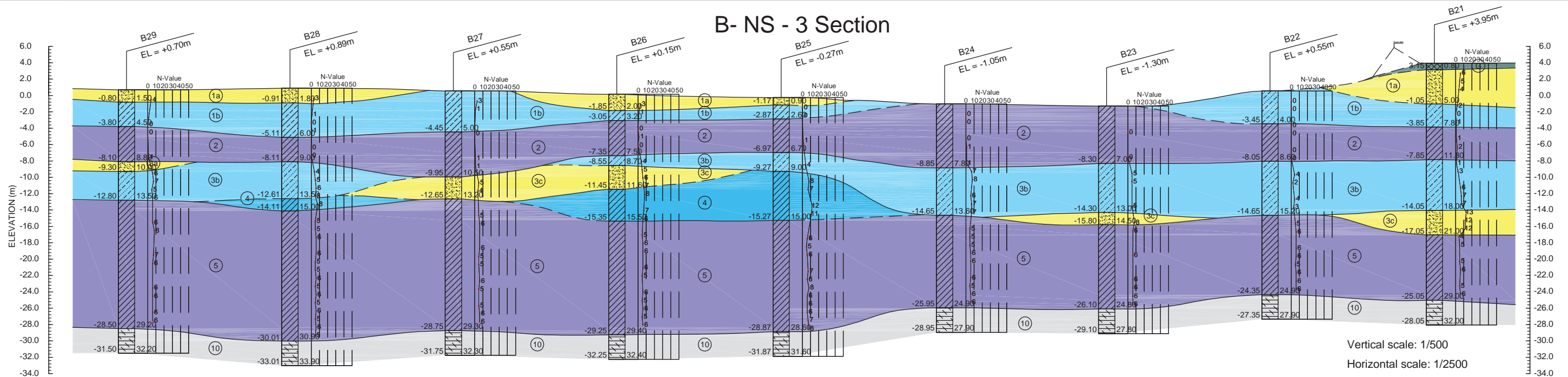
LEGEND:

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- 9-10 Defined geological boundary
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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 (B-NS-1, B-NS-2)	DWG No. II.9

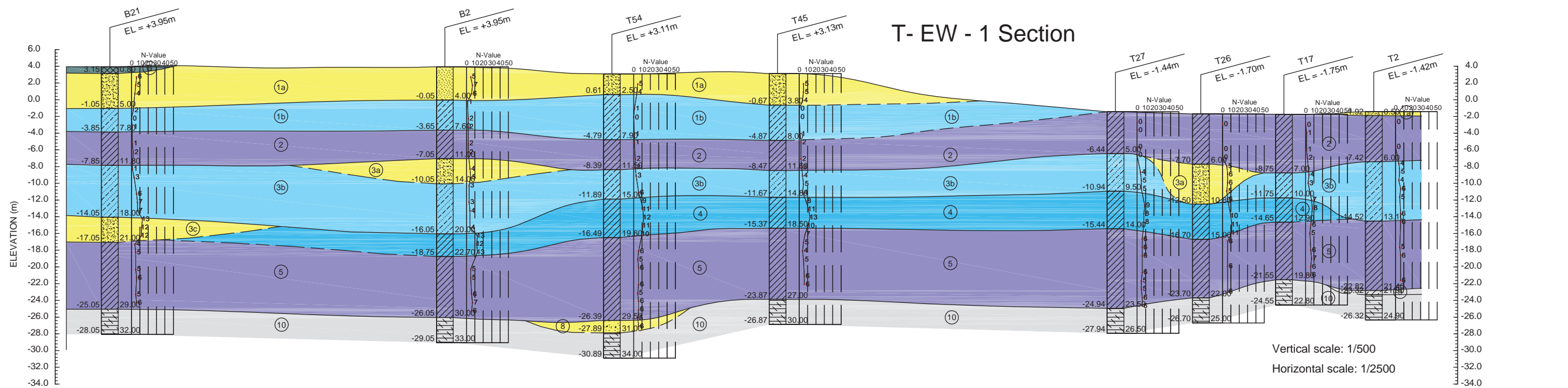
B- NS - 3 Section



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

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	99.98	100.50	99.98	99.13	99.98	100.50

T- EW - 1 Section

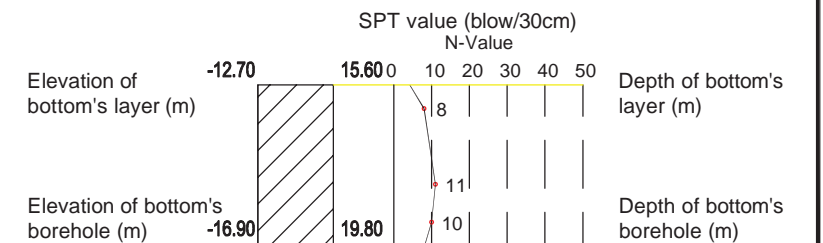


Vertical scale: 1/500
Horizontal scale: 1/2500

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	51.11	49.74	53.76

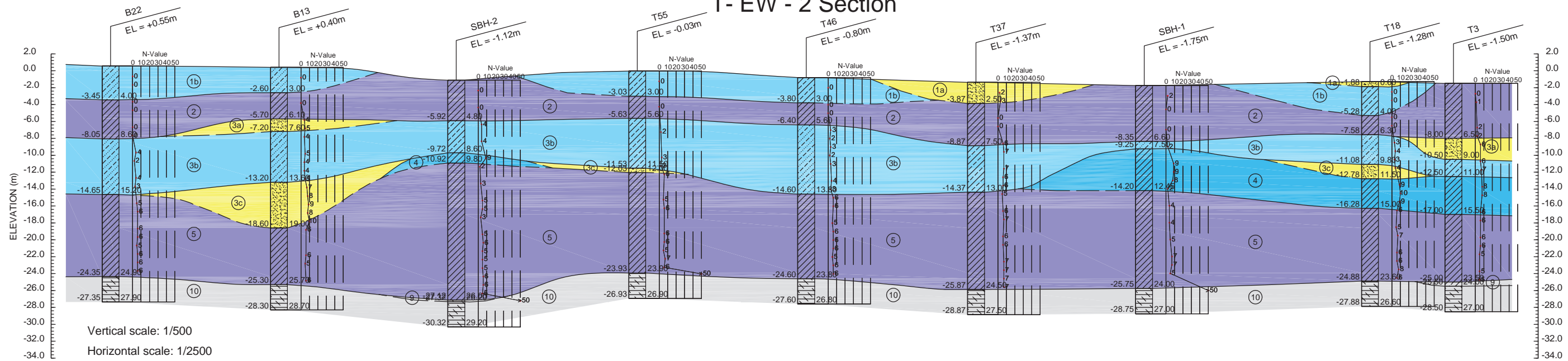
LEGEND:

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- 3c Yellowish grey, Sand (SP/ SP-SC)
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- 10a Defined geological boundary
- 10b Undefined geological boundary



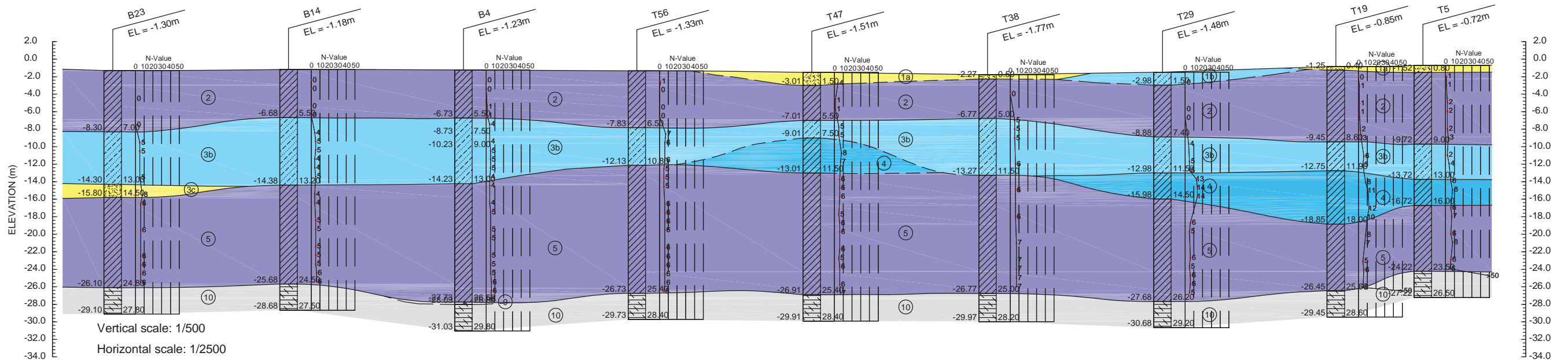
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THE DETAILED DESIGN STUDY FOR LACH HUYEN PORT INFRASTRUCTURE CONSTRUCTION PROJECT IN VIET NAM	SOCIALIST REPUBLIC OF VIETNAM MINISTRY OF TRANSPORT (M.O.T) MARITIME PROJECT MANAGEMENT UNIT NO.2	ORIENTAL CONSULTANTS CO.,LTD. NIPPON KOEI CO.,LTD. PADECO CO.,LTD. JAPAN BRIDGE & STRUCTURE INSTITUTE, INC.	NAME			SOIL PROFILE BY SECTION (B-NS-3, T-EW-1)	DWG No. II.10
			SIGNATURE				
			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

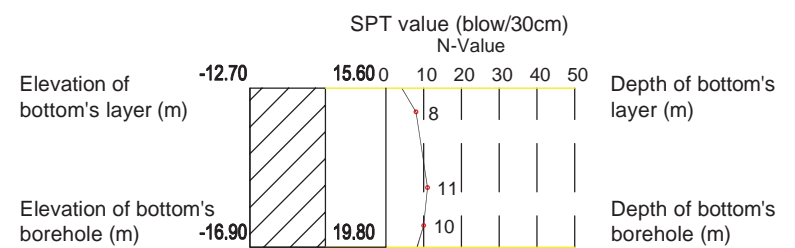
T- EW - 3 Section



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

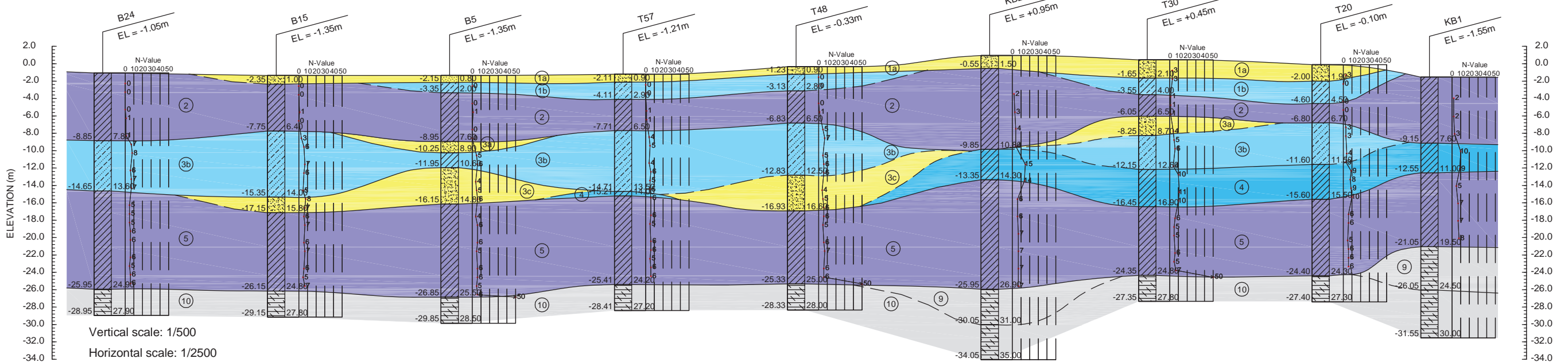
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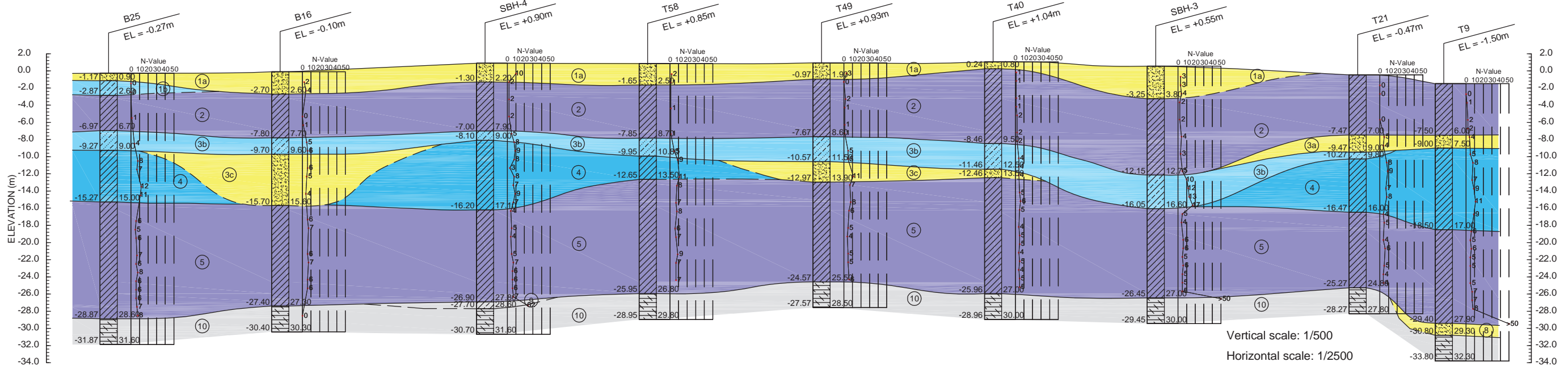
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			SIGNATURE				II.11
			DATE				

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		99.64		111.62	

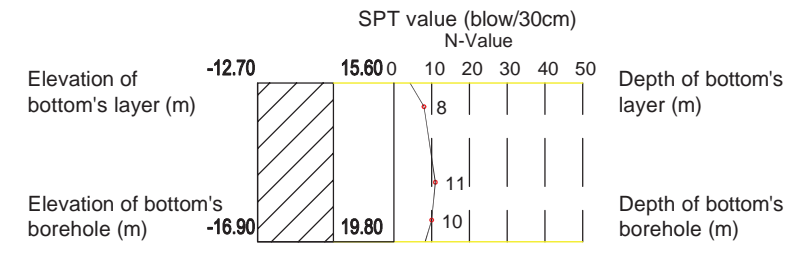
T- EW - 5 Section



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	

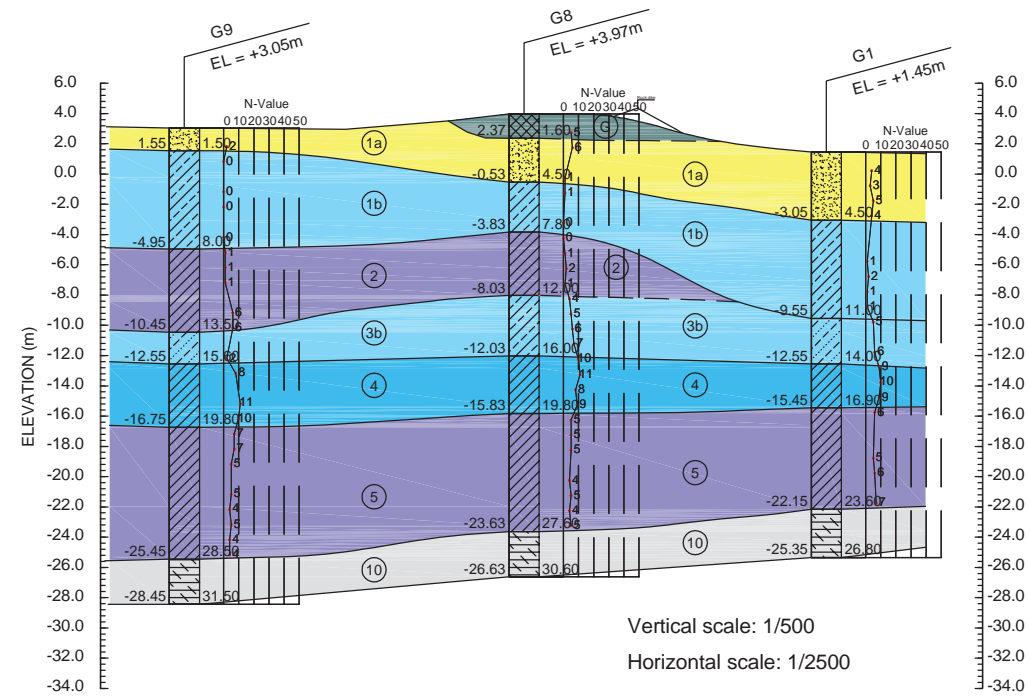
LEGEND:

- (1a) Grey, light grey, poorly graded Sand (SP)
- (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) Defined geological boundary
- (10) Undefined geological boundary



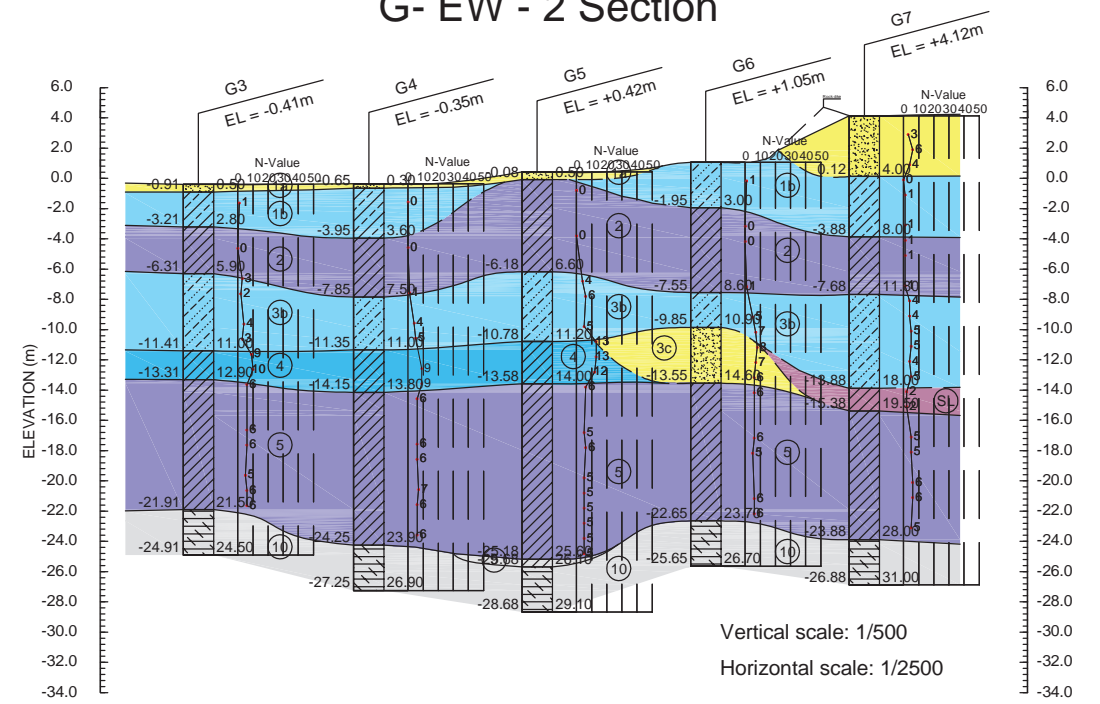
PROJECT NAME	OWNER	CONSULTANTS	PREPARED BY	CHECKED BY	APPROVED BY	DRAWING TITLE	PACKAGE
THE DETAILED DESIGN STUDY FOR LACH HUYEN PORT INFRASTRUCTURE CONSTRUCTION PROJECT IN VIET NAM	SOCIALIST REPUBLIC OF VIETNAM MINISTRY OF TRANSPORT (M.O.T) MARITIME PROJECT MANAGEMENT UNIT NO.2	ORIENTAL CONSULTANTS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

G- EW - 1 Section



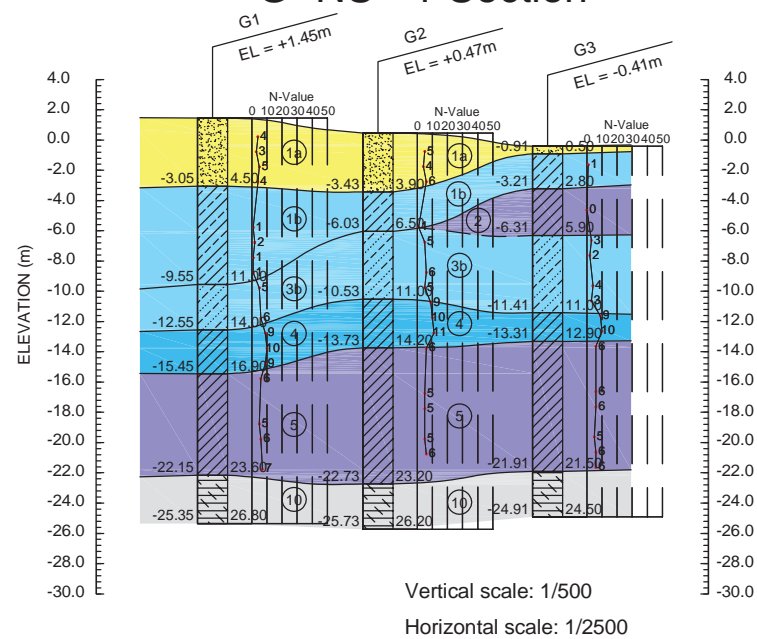
Borehole:	G9	G8	G1
Elevation (m):	3.05	3.97	1.45
Co-ordinate:	X=2301692, Y=619836	X=2301701, Y=619948	X=2301752, Y=620034
Distance (m):		112.36	99.98

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

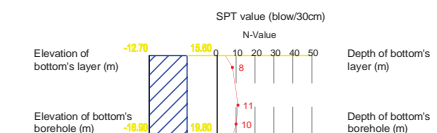
G- NS - 1 Section



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

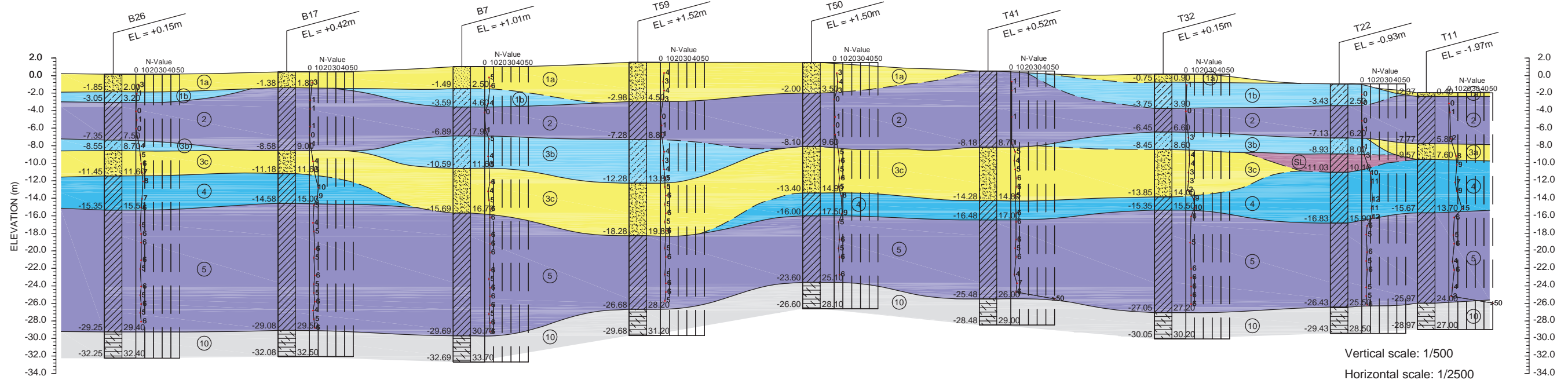
LEGEND:

- 1a Grey, light grey, poorly graded Sand (SP)
 - 1b Grey, Sandy Clay (SC)
 - 2 Brownish grey, yellowish grey, Fat Clay with sand (CH)
 - 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 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 (maybe modify, depend on testing results)
 - - - Undefined geological boundary (maybe modify, depend on testing results)



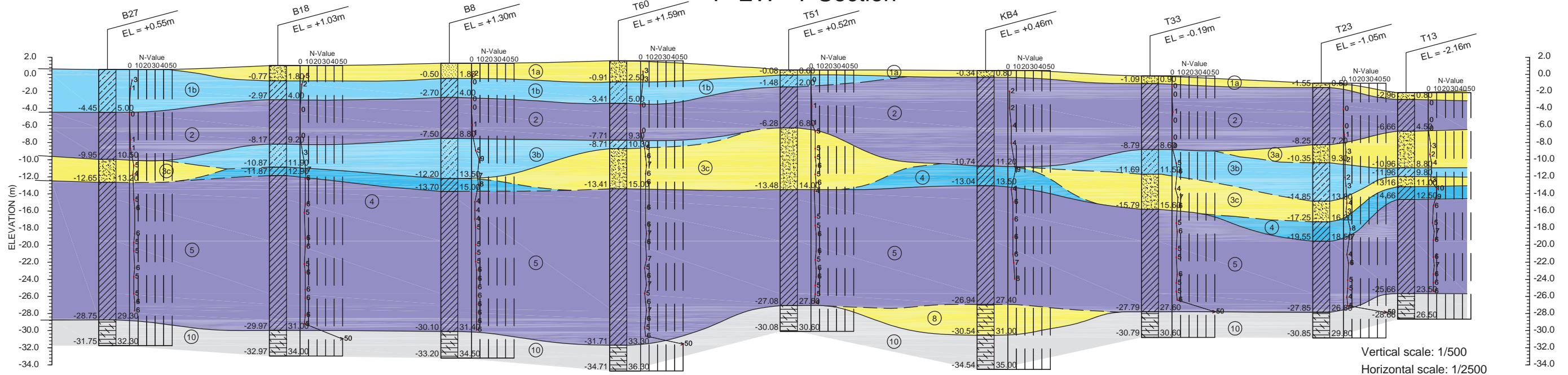
PROJECT NAME	OWNER	CONSULTANTS	PREPARED BY	CHECKED BY	APPROVED BY	DRAWING TITLE	PACKAGE
THE DETAILED DESIGN STUDY FOR LACH HUYEN PORT INFRASTRUCTURE CONSTRUCTION PROJECT IN VIET NAM	SOCIALIST REPUBLIC OF VIETNAM MINISTRY OF TRANSPORT (M.O.T) MARITIME PROJECT MANAGEMENT UNIT NO.2	ORIENTAL CONSULTANTS 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. II.5
			SIGNATURE				
			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=2300852, Y=619989	X=2300903, 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	99.13	100.85	99.98	100.50	49.74

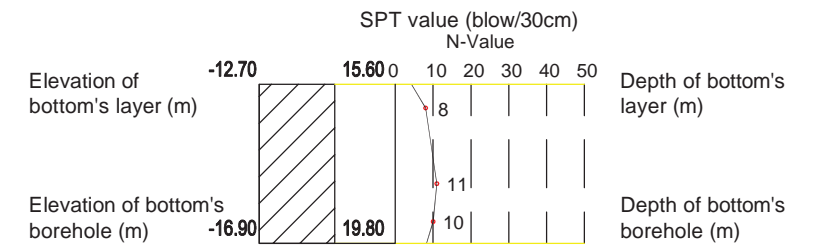
T- EW - 7 Section



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	115.43	96.34	100.50	49.74

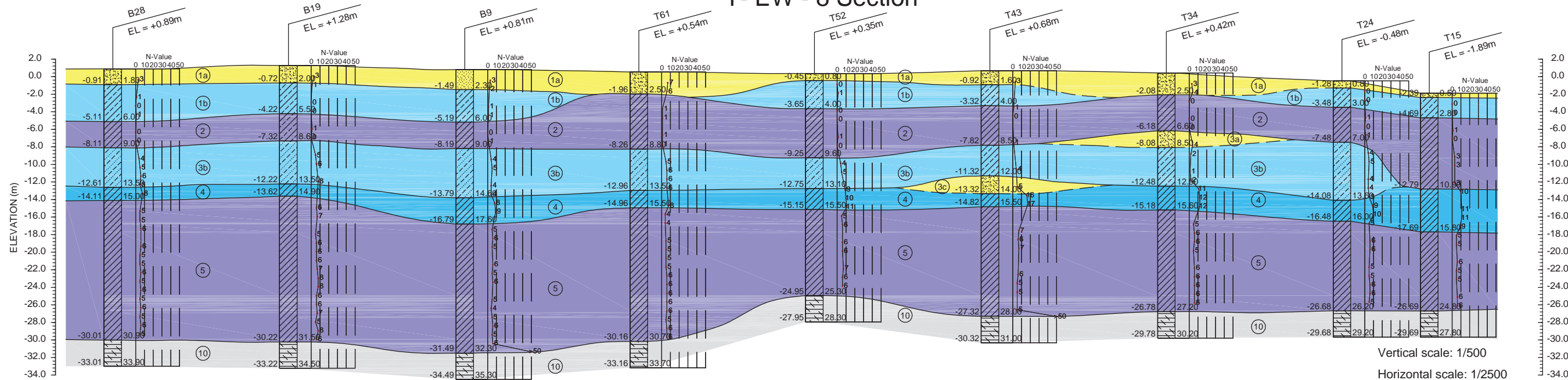
LEGEND:

- | | | | |
|--|---|--|---|
| 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 |
| | | Undefined geological boundary | |



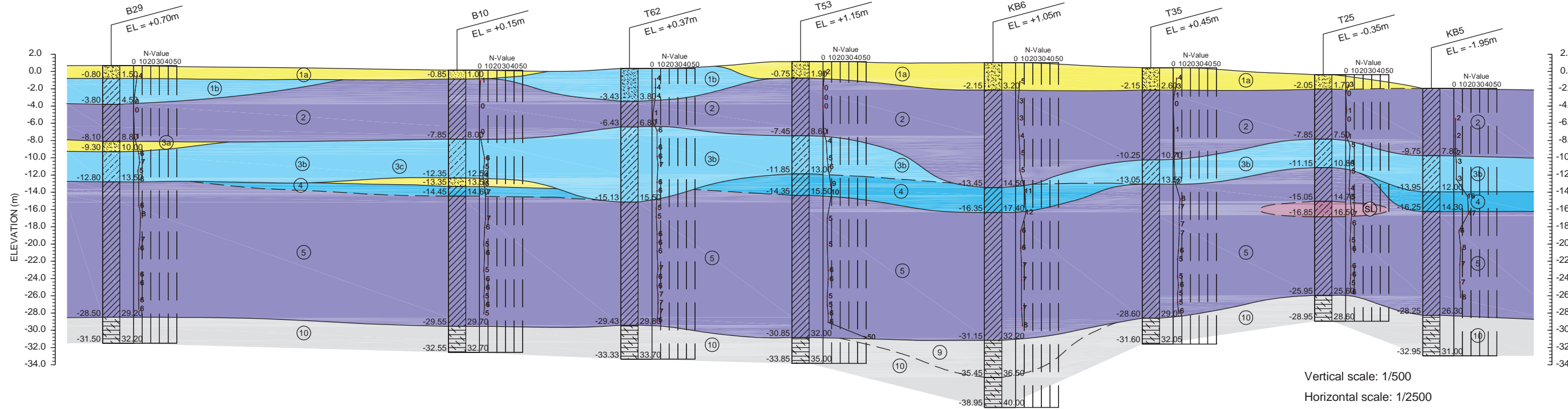
PROJECT NAME	OWNER	CONSULTANTS	PREPARED BY	CHECKED BY	APPROVED BY	DRAWING TITLE	PACKAGE
THE DETAILED DESIGN STUDY FOR LACH HUYEN PORT INFRASTRUCTURE CONSTRUCTION PROJECT IN VIET NAM	SOCIALIST REPUBLIC OF VIETNAM MINISTRY OF TRANSPORT (M.O.T) MARITIME PROJECT MANAGEMENT UNIT NO.2	ORIENTAL CONSULTANTS 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. II.13
			SIGNATURE				
			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	99.98	49.74

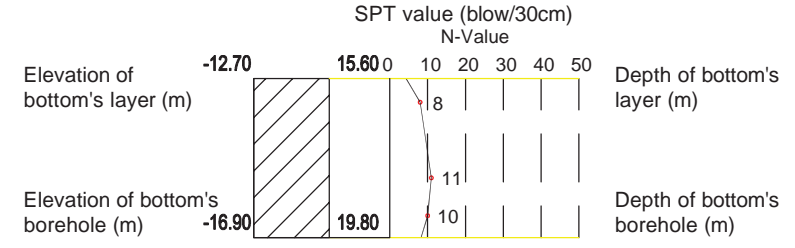
T- EW - 9 Section



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

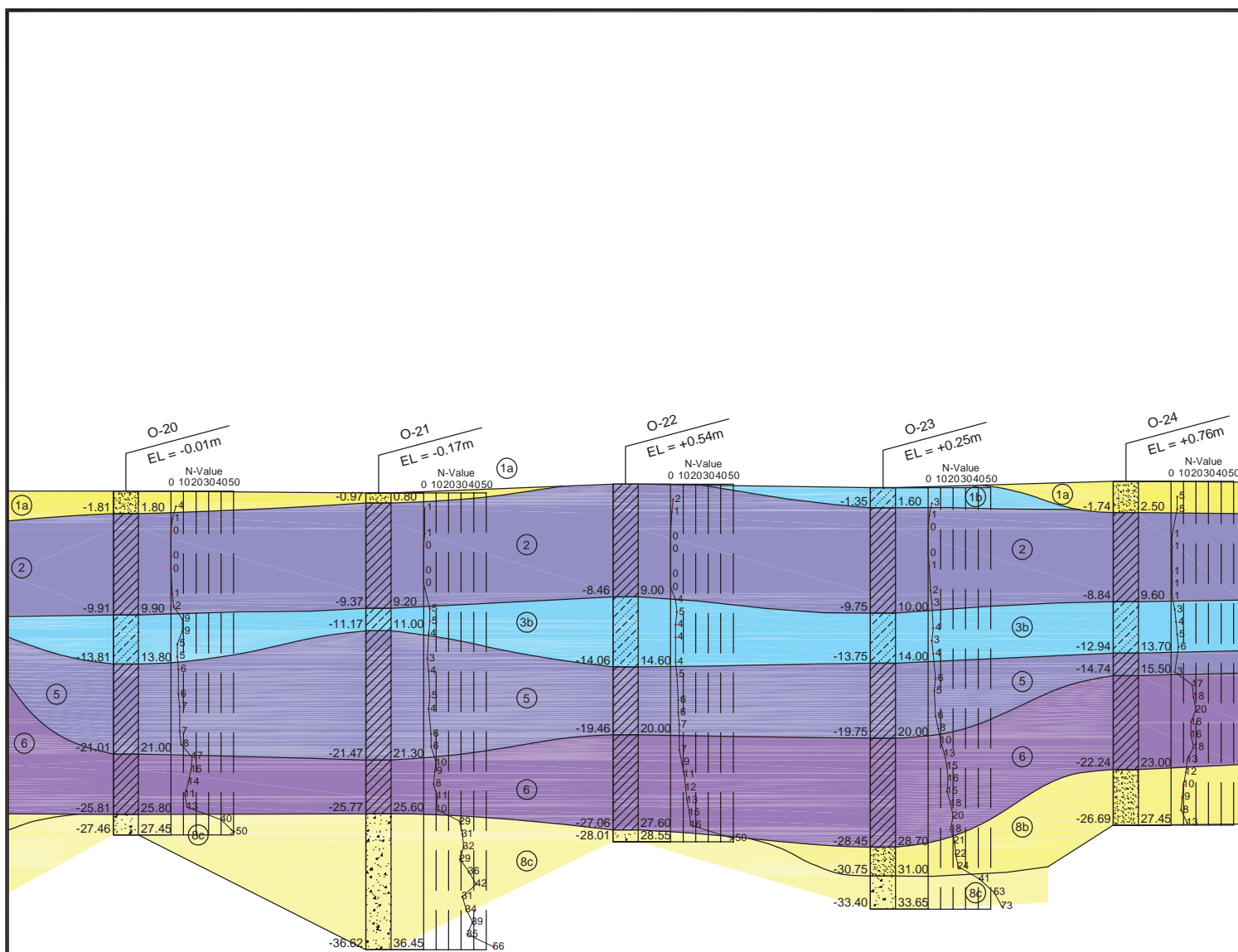
LEGEND:

- ① Grey, light grey, poorly graded Sand (SP)
- ② Brownish grey, yellowish grey, Fat Clay with sand (CH)
- ③a Light grey, greenish grey, Sand (SC)
- ④ Reddish brown, yellowish brown, Sandy Lean Clay (CL)
- ⑤ Grey, yellowish light grey, Fat Clay with Sand (CH)
- ⑥a Yellowish grey, light grey, poorly graded Sand (SP)
- ③b Yellowish grey, Sand/ Clayey Sand (SC)
- ⑦ Moderately weathered, reddish brown Silt/ Claystone
- ⑧ Completely weathered sandstone: Hard, reddish brown, sandy CLAY with fragment
- ⑨ Hard, reddish brown, sandy CLAY with fragment
- ⑩ Undefined geological boundary

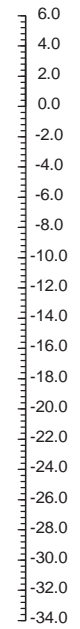


PROJECT NAME	OWNER	CONSULTANTS	PREPARED BY	CHECKED BY	APPROVED BY	DRAWING TITLE	PACKAGE
THE DETAILED DESIGN STUDY FOR LACH HUYEN PORT INFRASTRUCTURE CONSTRUCTION PROJECT IN VIET NAM	SOCIALIST REPUBLIC OF VIETNAM MINISTRY OF TRANSPORT (M.O.T) MARITIME PROJECT MANAGEMENT UNIT NO.2	ORIENTAL CONSULTANTS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

b) Khu vực kè ngoài B

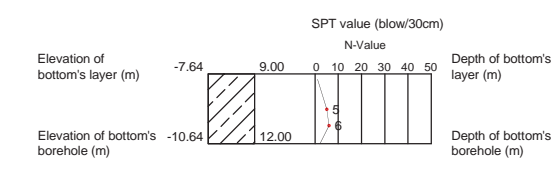


O-20	O-21	O-22	O-23	O-24
-0.01	-0.17	0.54	0.25	0.76
X=620988, Y=2298716	X=621048, Y=2298635	X=621107, Y=2298556	X=621169, Y=2298474	X=621235, Y=2298403
100.80	98.60	102.80	96.94	



LEGEND:

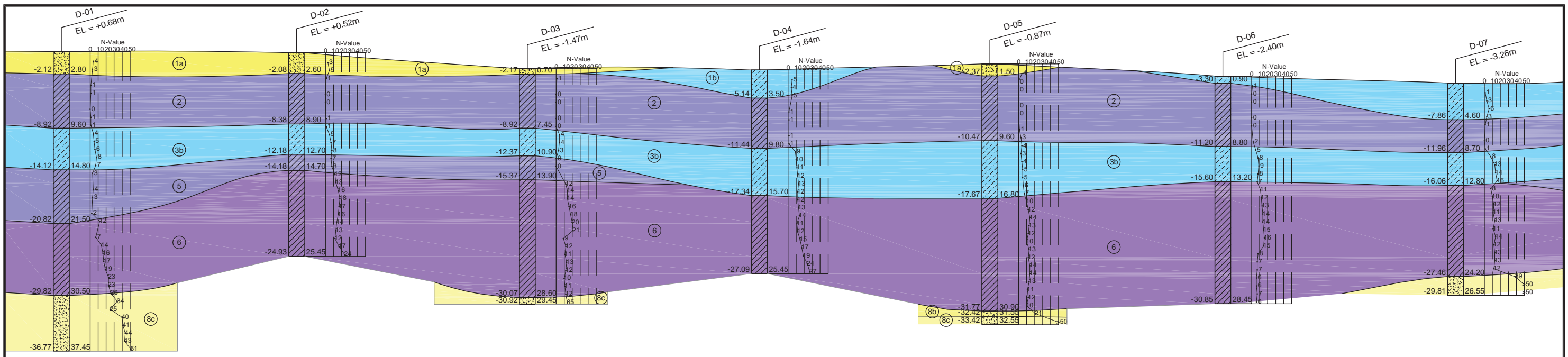
- 1a Grey, light grey, poorly graded Sand (SP)
 - 1b Grey, Sandy Clay (SC)
 - 2 Brownish grey, yellowish grey, Fat Clay with sand (CH)
 - 3a Light grey, greenish grey, Sand (SC)
 - 3b Yellowish grey, Sandy clay/ Clayey Sand (SC)
 - 3c Yellowish grey, Sand (SP/ SP-SC)
 - 4 Reddish brown, yellowish brown, 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



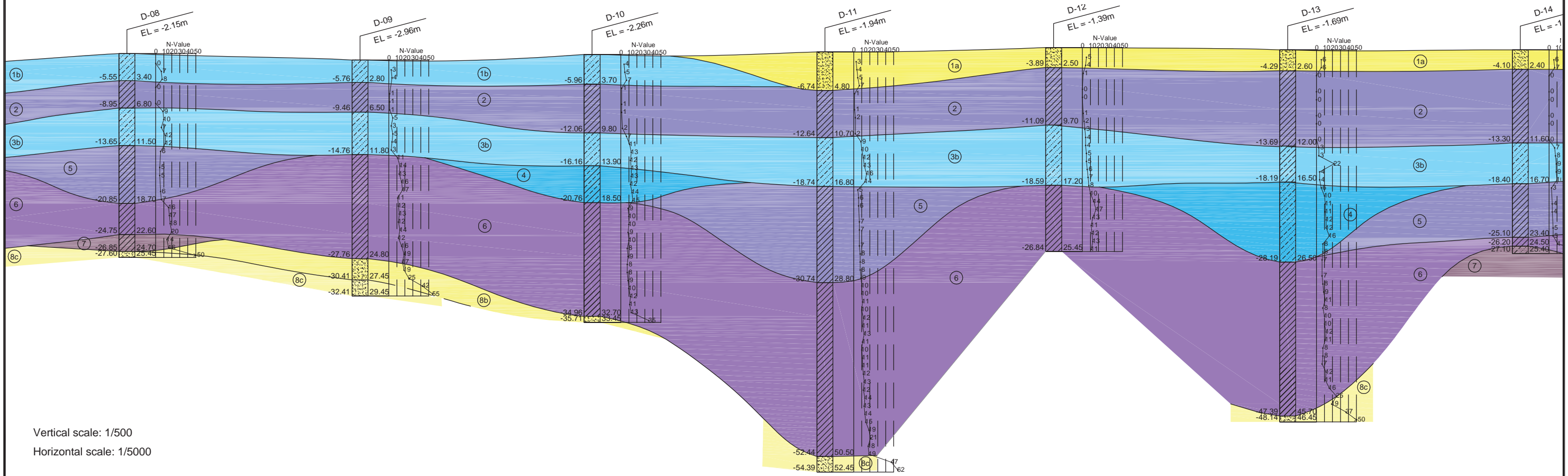
Vertical scale: 1/500
Horizontal scale: 1/2500

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				

c) Khu vực đê chắn cát



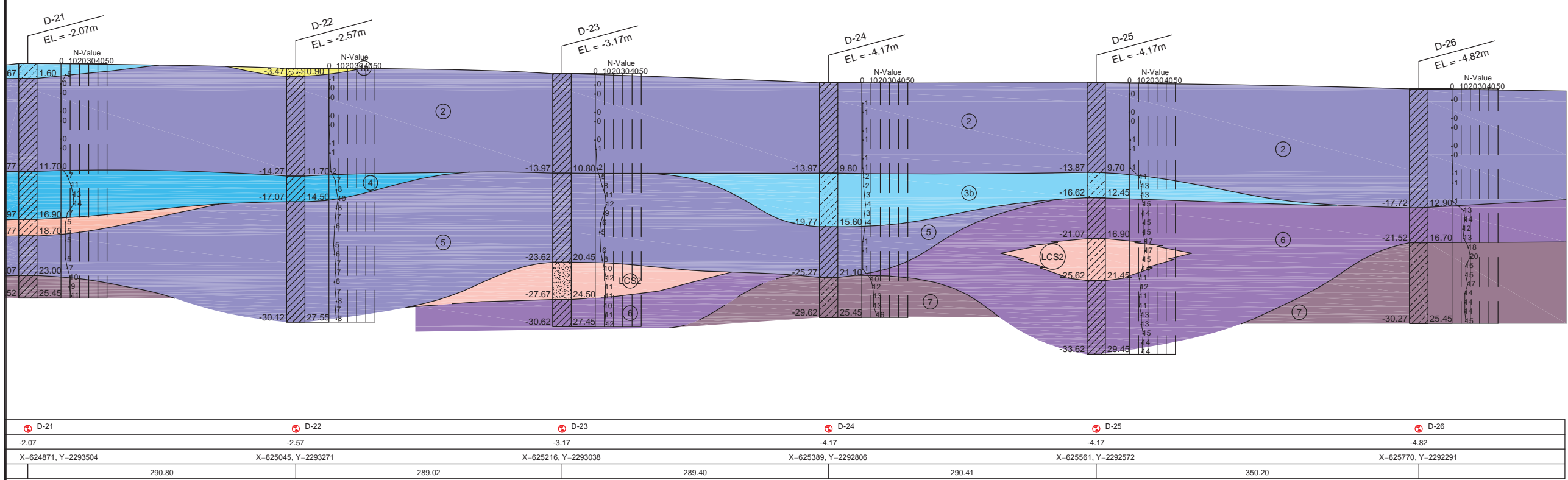
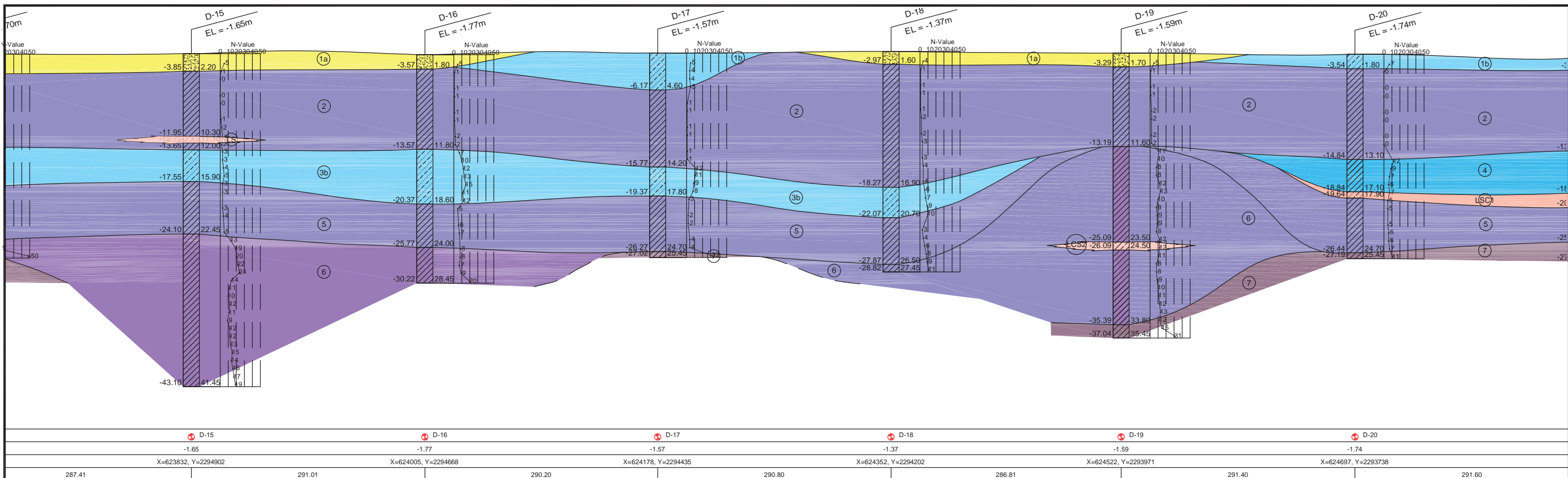
Borehole:	D-01	D-02	D-03	D-04	D-05	D-06	D-07
Elevation (m):	0.68	0.52	-1.47	-1.64	-0.87	-2.40	-3.26
Co-ordinate:	X=621412, Y=2298164	X=621589, Y=2297929	X=621758, Y=2297695	X=621932, Y=2297463	X=622103, Y=2297231	X=622278, Y=2296998	X=622451, Y=2296764
Distance (m):	294.20	288.65	290.00	288.21	291.40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



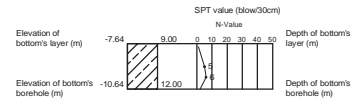
Vertical scale: 1/500
Horizontal scale: 1/5000

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.
			SIGNATURE				V.1
			DATE				



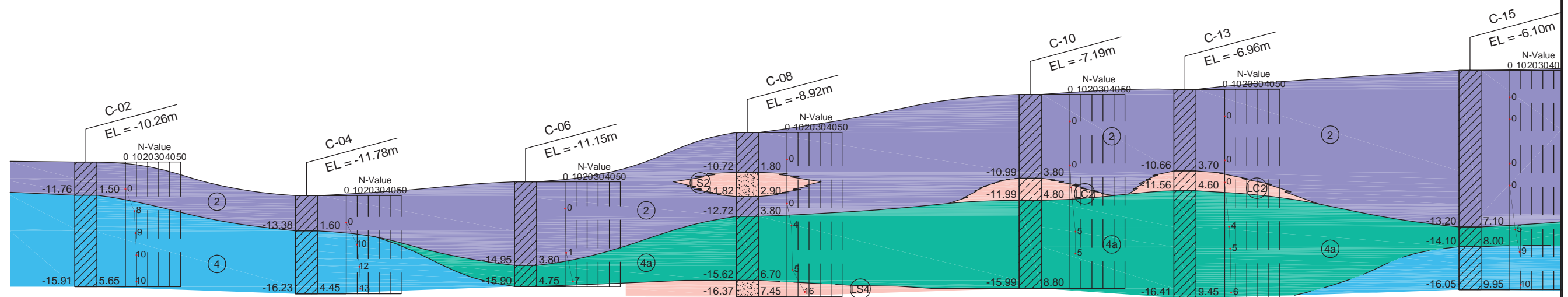
- LEGEND:**
- Dark grey, light grey, poorly graded Sand (SP-SM)
 - Dark grey, silty, clayey sand (SM/SC-SM)
 - Dark grey, yellowish grey, Fat Clay with sand (CF)
 - Dark grey, yellowish grey and bluish grey, silty, clayey sand (SM/SC-SM)
 - Reddish and yellowish brown, bluish grey, lean clay (CL)
 - Yellowish grey, bluish grey, clayey sand (SC/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



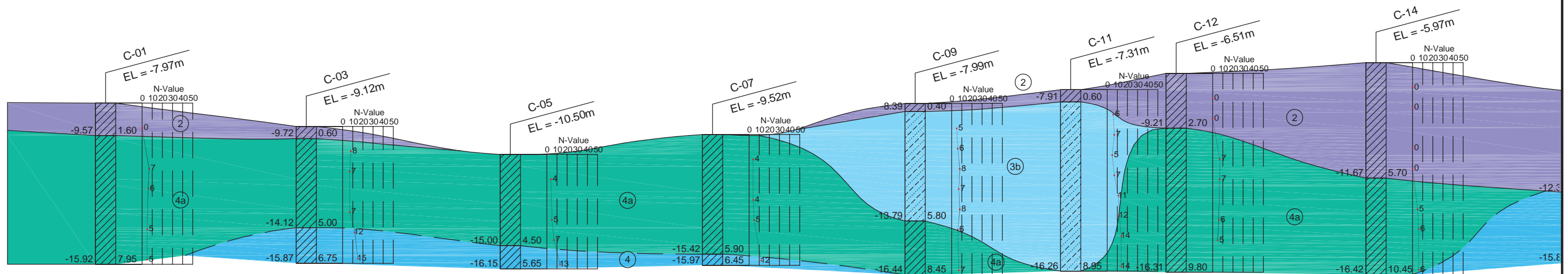
Vertical scale: 1/500
Horizontal scale: 1/5000

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 (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.
			SIGNATURE				V.2
			DATE				

d) Khu vực luồng tàu và vũng quay tàu



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	

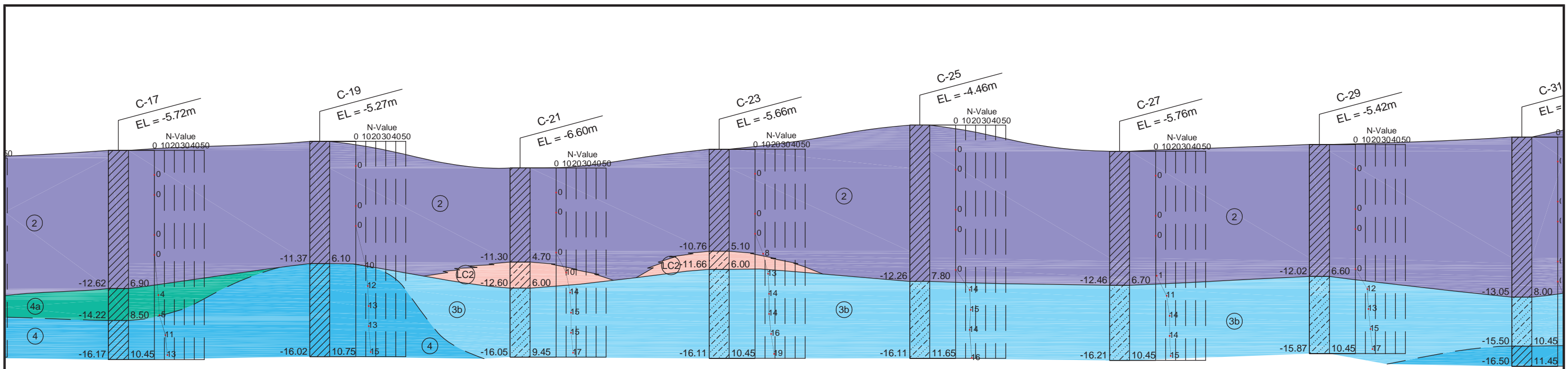


Borehole:	C-01	C-03	C-05	C-07	C-09	C-11	C-12	C-14
Elevation (m):	-7.97	-9.12	-10.50	-9.52	-7.99	-7.31	-6.51	-5.97
Co-ordinate:	X=2301646, Y=620270	X=2301221, Y=620524	X=2300788, Y=620782	X=2300359, Y=621037	X=2299929, Y=621292	X=2299600, Y=621490	X=2299382, Y=621632	X=2298992, Y=621934
Distance (m):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

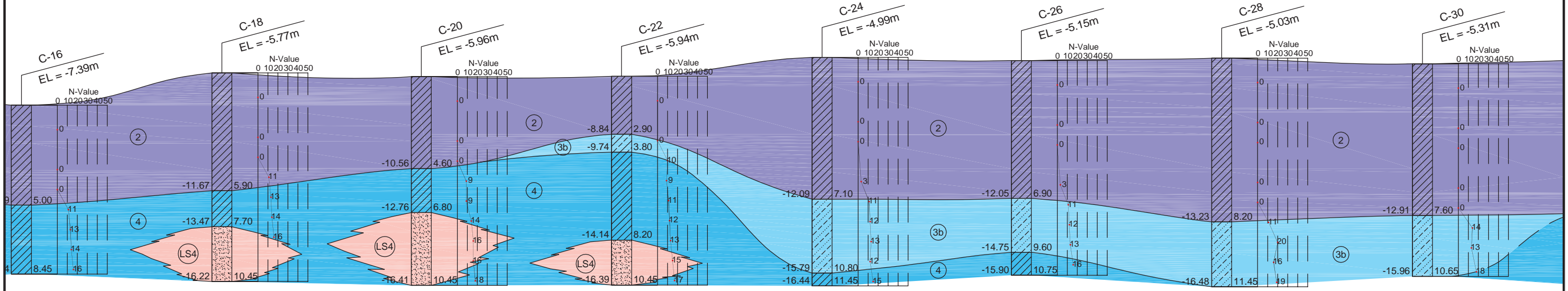
Vertical scale: 1/200

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				



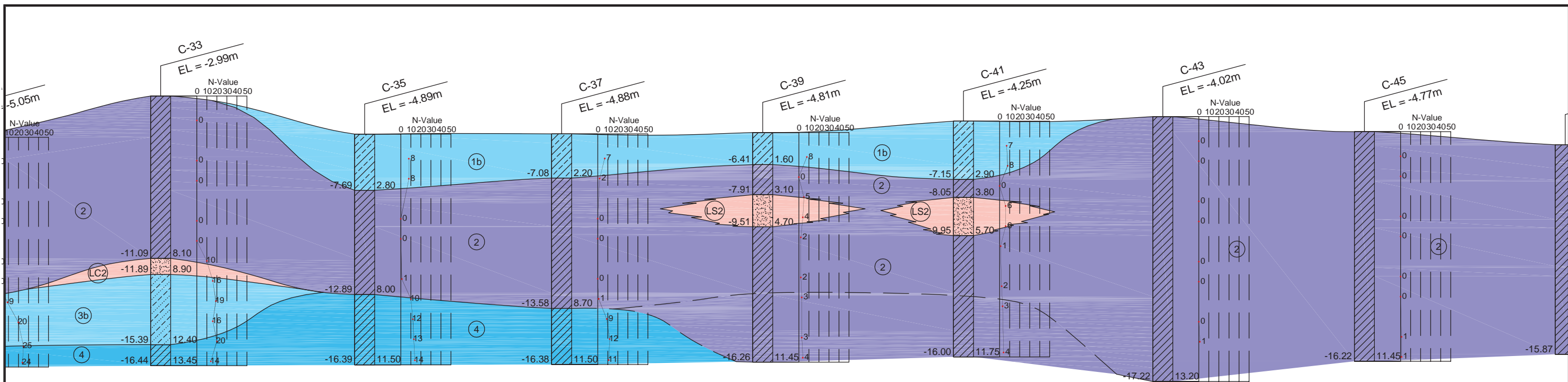
C-17	C-19	C-21	C-23	C-25	C-27	C-29	C-31
-5.72	-5.27	-6.60	-5.66	-4.46	-5.76	-5.42	-5.05
X=2298503, Y=622559	X=2298097, Y=622857	X=2297694, Y=623155	X=2297294, Y=623451	X=2296892, Y=623751	X=2296491, Y=624050	X=2296090, Y=624348	X=2295687, Y=624654
492.94	503.63	501.21	497.61	501.60	500.20	499.60	506.01



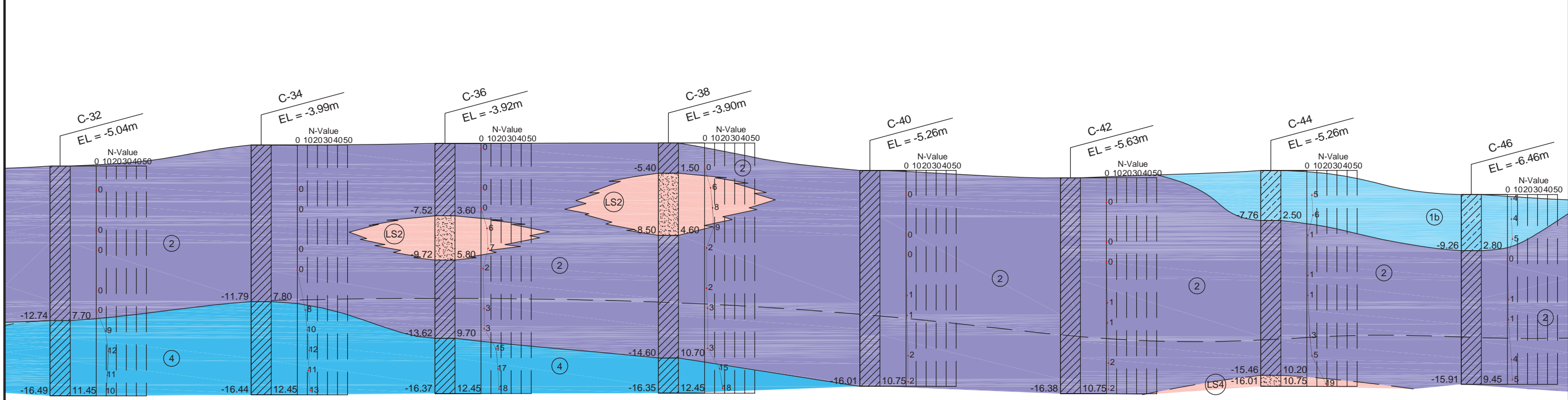
C-16	C-18	C-20	C-22	C-24	C-26	C-28	C-30
-7.39	-5.77	-5.96	-5.94	-4.99	-5.15	-5.03	-5.31
X=2298185, Y=622530	X=2297789, Y=622833	X=2297382, Y=623125	X=2296980, Y=623425	X=2296580, Y=623722	X=2296181, Y=624025	X=2295777, Y=624323	
501.50	498.62	500.91	501.60	498.21	501.01	502.02	492.61

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				



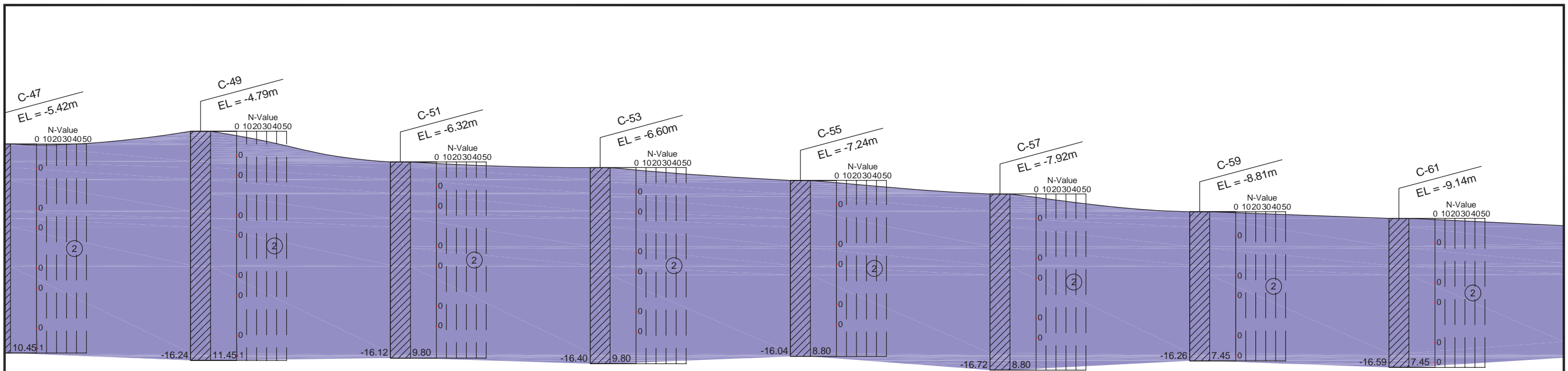
C-33	C-35	C-37	C-39	C-41	C-43	C-45
-2.99	-4.89	-4.88	-4.81	-4.25	-4.02	-4.77
X=2295290, Y=624949	X=2294878, Y=625247	X=2294488, Y=625545	X=2294082, Y=625839	X=2293680, Y=626137	X=2293315, Y=626474	X=2292914, Y=626777
494.60	508.48	490.82	501.27	500.41	496.78	502.60



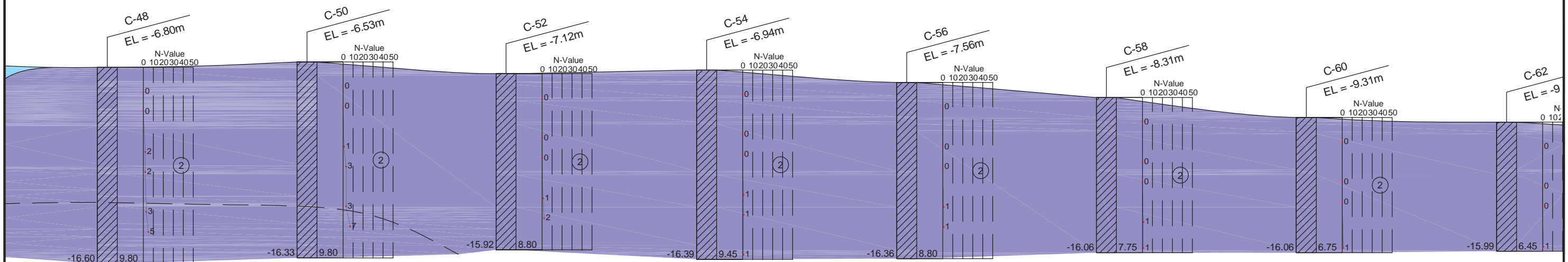
C-32	C-34	C-36	C-38	C-40	C-42	C-44	C-46
-5.04	-3.99	-3.92	-3.90	-5.26	-5.63	-5.26	-6.46
X=2295381, Y=624616	X=2294979, Y=624915	X=2294571, Y=625123	X=2294176, Y=625516	X=2293769, Y=625810	X=2293367, Y=626107	X=2292970, Y=626410	X=2292566, Y=626704
501.00	457.96	557.20	502.08	499.81	499.42	499.65	500.00

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.3
			DATE				



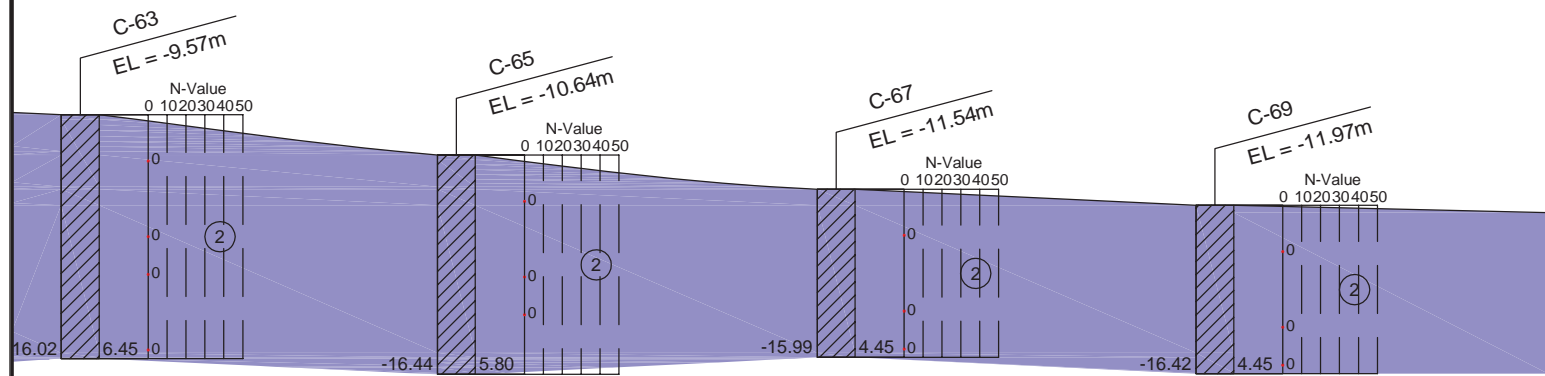
C-47	C-49	C-51	C-53	C-55	C-57	C-59	C-61
-5.42	-4.79	-6.32	-6.60	-7.24	-7.92	-8.81	-9.14
X=229110, Y=627373	X=2291709, Y=627671	X=2291308, Y=627969	X=2290906, Y=628268	X=2290505, Y=628565	X=2290101, Y=628859	X=2289704, Y=629160	
500.41	499.60	499.60	501.00	499.01	499.65	498.21	503.41



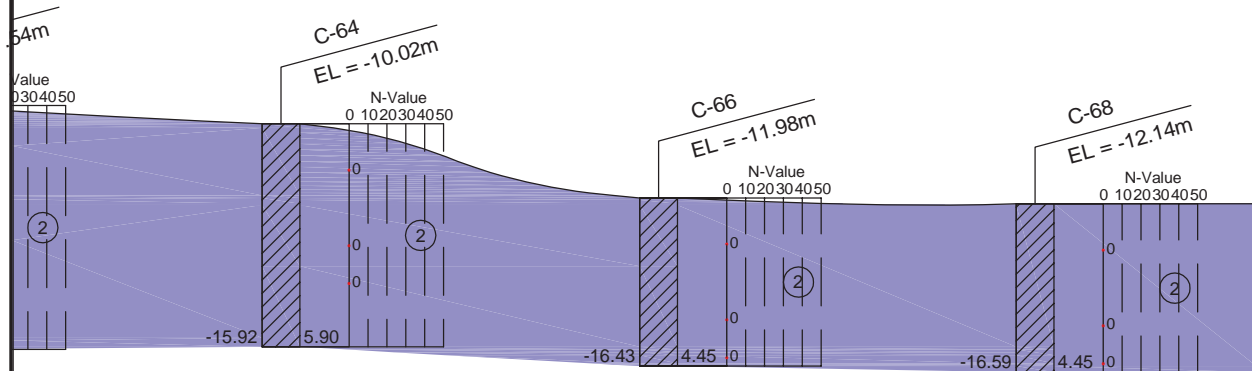
C-48	C-50	C-52	C-54	C-56	C-58	C-60	C-62
-6.80	-6.53	-7.12	-6.94	-7.56	-8.31	-9.31	-9.54
X=2292163, Y=627002	X=2291762, Y=627300	X=2291367, Y=627603	X=2290960, Y=627896	X=2290558, Y=628194	X=2290157, Y=628492	X=2289756, Y=628790	X=2289354, Y=629089
499.60	497.83	501.50	500.41	499.60	499.60	501.00	

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

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

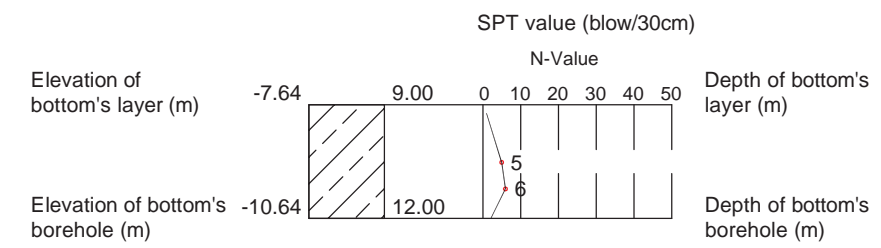


C-64	C-66	C-68
-10.02	-11.98	-12.14
X=2288952, Y=629386	X=2288551, Y=629684	X=2288155, Y=629986
499.81	499.60	498.02

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) Mặt cắt địa chất theo lỗ khoan

a) Bãi tôn tạo (Khu vực bến, Khu vực đường dẫn) và Khu quản lý hành chính cảng

BOREHOLE LOG

I ach huyen port infrastr uct ure const r uct ion pr oject

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		D9 9.00 - 9.70
2	-4.35	9.00	3.00	▨	Very soft, grey, Fat Clay (CH)	10.0	0	0	1	1		D10 10.00 - 10.45
						11.0	0	1	1	2		D11 11.00 - 11.45
3a	-7.35	12.00	2.00	•	Loose, yellowish grey, light grey, Sand (SP)	12.0	2	2	3	5		D12 12.00 - 12.45
						13.0	2	2	3	5		D13 13.00 - 13.45
3b	-9.35	14.00	2.70	▨	Very soft, yellowish grey, grey, Lean Clay (CL)	15.0	1	1	1	2		D14 14.00 - 14.80
						16.0	1	1	2	3		D15 15.00 - 15.45
	-12.05	16.70										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)
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BOREHOLE LOG

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

BOREHOLE: B1

Co-ord (m): N = 2301420

Sheet: 2 / 2

E = 619533

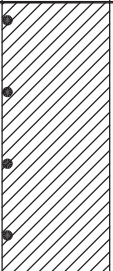
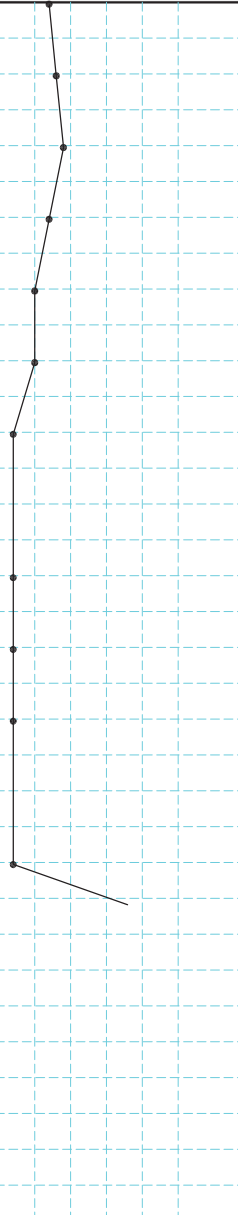
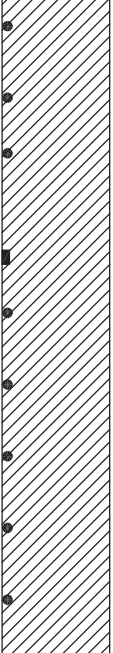
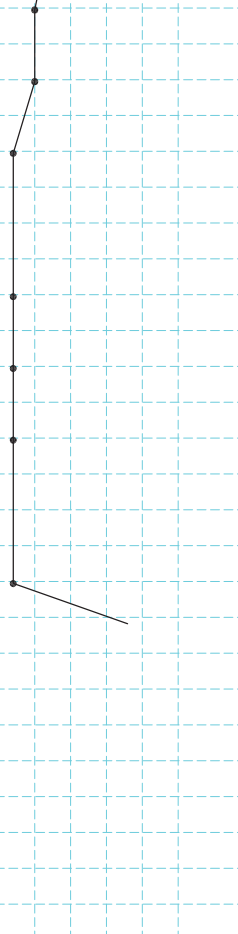
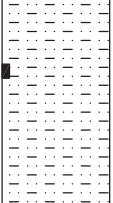
Location: Ground

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		10	20	30	40	50		>50
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
						22.0	4	5	6	11							D22 22.00 - 22.45
						23.0	1	2	2	4							D23 23.00 - 23.45
5	-25.35	30.00	9.20		Firm, grey, Fat Clay (CH)	25.0	1	2	2	4							U24 24.00 - 24.90
						26.0	1	2	3	5							D25 25.00 - 25.45
						27.0	1	2	3	5							D26 26.00 - 26.45
						28.0	2	2	3	5							D27 27.00 - 27.45
						29.0	2	2	3	5							D28 28.00 - 28.70
						29.0	2	2	3	5							D29 29.00 - 29.45
10	-28.35	33.00	3.00		Hard, reddish brown, silt/claystone TCR =40%, RQD = 20%	31.00									R30 31.00 - 31.20		

Legend

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



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BOREHOLE LOG

I ach huyen port infrastr uct ure const ruct ion 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			4.00	•••••	Blackish grey, poorly graded sand with shell (SP)	1.0	1	2	3	5	D1 1.00 - 1.45	
	-0.05	4.00		•••••		2.0	2	3	4	7	D2 2.00 - 2.45	
				•••••		3.0	2	3	3	6	D3 3.00 - 3.45	
1b			3.60	▨▨▨▨▨	Very soft, brownish grey, Lean Clay (CL)	4.0	0	0	1	1	D4 4.00 - 4.45	
	-3.65	7.60		▨▨▨▨▨		6.0	0	1	1	2	U5 5.00 - 5.90	
				▨▨▨▨▨		7.0	0	1	1	2	D6 6.00 - 6.45	
2			3.40	▨▨▨▨▨	Very soft, Brownish grey, grey, Fat Clay (CH)	9.0	0	1	1	2	U8 8.00 - 8.80	
	-8.05	12.00		▨▨▨▨▨		10.0	0	1	1	2	D9 9.00 - 9.45	
				▨▨▨▨▨		12.0	2	2	2	4	U10 10.00 - 10.45	
3a			2.00	•••••	Plastic, Grey, clayey sand (SC)	12.0	2	2	3	5	U11 11.00 - 11.60	
	-10.05	14.00		•••••		13.0	2	2	3	5	D12 12.00 - 12.45	
				▨▨▨▨▨		14.0	1	1	2	3	D13 13.00 - 13.45	
3b			6.00	▨▨▨▨▨	Very soft, Yellowish grey, Lean Clay (CL)	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 infrastr uct ur e const r uct ion pr oject

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 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	-16.05	20.00	2.70	▨	Very soft, Yellowish grey, Lean Clay (CL)	17.0	1	2	2	4								D17 17.00 - 17.45
					Very stiff, yellowish grey, light grey, sandy Lean Clay (CL)	19.0	1	2	2	4								D18 18.00 - 18.80
					Very stiff, yellowish grey, light grey, Fat Clay (CH)	21.0	4	6	6	12								D19 19.00 - 19.45
					Very stiff, yellowish grey, light grey, Fat Clay (CH)	22.0	5	6	7	13								D20 20.00 - 20.45
5	-18.75	22.70	7.30	▨	Firm, grey, Fat Clay (CH)	21.0	4	6	6	12								D21 21.00 - 21.45
					Firm, grey, Fat Clay (CH)	22.0	5	6	7	13								D22 22.00 - 22.45
					Firm, grey, Fat Clay (CH)	24.0	2	2	3	5								U23 23.00 - 23.90
					Firm, grey, Fat Clay (CH)	24.0	2	2	3	5								D24 24.00 - 24.45
					Firm, grey, Fat Clay (CH)	25.0	2	2	3	5								D25 25.00 - 25.45
					Firm, grey, Fat Clay (CH)	27.0	2	3	3	6								U26 26.00 - 26.90
					Firm, grey, Fat Clay (CH)	27.0	2	3	3	6	D27 27.00 - 27.45							
10	-26.05	30.00	3.00	▨	Hard, reddish brown, silt/claystone TCR =40%, RQD = 20%	28.0	2	3	4	7	D28 28.00 - 28.45							
					Hard, reddish brown, silt/claystone TCR =40%, RQD = 20%	29.0	2	3	3	6	D29 29.45 - 29.45							
					Hard, reddish brown, silt/claystone TCR =40%, RQD = 20%	30.80						R30 30.80 - 31.00						

Legend

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



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BOREHOLE LOG

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

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 10 20 30 40 50 >50
							N ₀	N ₁	N ₂			
2	-6.73	5.50	5.50	[Diagonal lines symbol]	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	0	0	0	0/45	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	-14.23	13.00	7.50	[Diagonal lines symbol]	Plastic, yellowish grey, reddish brown, clayey sand (SC)	6.0	1	2	2	4/30	D6 6.00 - 6.45	
						7.0	1	2	2	4/30	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	7.50	[Diagonal lines symbol]	Firm, grey, Fat Clay (CH)	13.0	1	2	2	4/30	D13 13.00 - 13.45	
						14.0	1	2	2	4/30	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

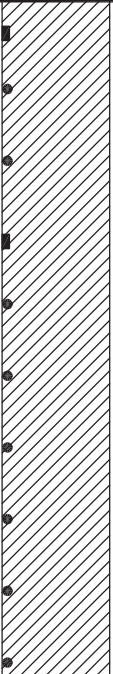

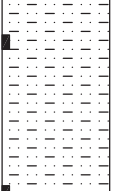
Location: Offshore

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
												D18 18.00 - 18.45
						19.0	2	2	3	5/30		D19 19.00 - 19.45
												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
25.0	2	3	3	6/30		D25 25.00 - 25.45						
26.0	2	2	3	5/30		D26 26.00 - 26.45						
9	-27.73 -28.03	26.50 26.80	0.30		Completely weathered claystone							
10			3.00		Hard, reddish brown, silt/claystone TCR = 50%, RQD = 30%							R27 27.50 - 27.70
												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 infrastr uct ur e const r uct ion pr oject

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 D3 3.00 - 3.45	
						4.0	0	0	1	1/55	D4 4.00 - 4.45	
						6.0	0	0	0	0/40	U5 5.00 - 5.90 D6 6.00 - 6.45	
						7.0	0	0	0	0/35	D7 7.00 - 7.45	
						8.0	1	2	3	5/30	U8 8.00 - 8.90 D9 9.00 - 9.45	
3a	-10.25	8.90	1.30		Yellowish grey, poorly graded sand (SP)	9.0	1	2	3	5/30	D10 10.00 - 10.45	
3b	-11.95	10.60	1.70		Firm, reddish brown, yellowish brown, Fat Clay (CH)	10.0	2	2	4	6/30	U11 11.00 - 11.90 D12 12.00 - 12.45	
3c	-16.15	14.80	4.20		Yellowish grey, poorly graded sand (SP)	12.0	1	2	2	4/30	D13 13.00 - 13.45	
						13.0	2	3	3	6/30	D14 14.00 - 14.45	
						14.0	2	2	4	6/30	U15 15.00 - 15.70 D16 16.00 - 16.45	
					Firm, grey, Fat Clay (CH)	16.0	1	2	2	4/30		

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 infrastr uct ure const r uct ion pr oject

BOREHOLE: B5

Co-ord (m): N = 2300972

Sheet: 2 / 2

E = 619801

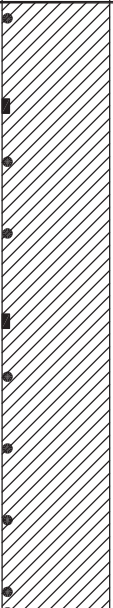
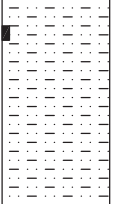
Location: Offshore

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 D19 19.00 - 19.45					
						20.0	1	2	3	5/30		D20 20.00 - 20.45					
						22.0	2	3	3	6/30		U21 21.00 - 21.90 D22 22.00 - 22.45					
						23.0	2	2	4	6/30		D23 23.00 - 23.45					
						24.0	1	2	3	5/30		D24 24.00 - 24.45					
						25.0	1	2	4	6/30		D25 25.00 - 25.45					
						25.5	50.2cm					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 infrastr uct ure const r uct ion pr oject

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		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	-1.49	2.50	2.10	▨	Plastic, Brownish grey, clayey sand (SC)	4.0	1	2	2	4		U3 3.00 - 3.90
						4.60						D4 4.00 - 4.45
2	-3.59	4.60	3.30	▨	Very soft, Brownish grey, Lean Clay (CL)	5.0	0	0	0	0		D5 5.00 - 5.45
						7.0	0	0	1	1		U6 6.00 - 6.90
3b	-6.89	7.90	3.70	▨	Plastic, Yellowish grey, reddish brown, clayey sand (SC)	8.0	2	2	3	5		D7 7.00 - 7.45
						10.0	1	2	2	4		U9 9.00 - 9.80
3c	-10.59	11.60	3.70	•	Yellowish grey, poorly graded sand with clay (SP-SC)	10.0	1	2	2	4		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
						14.0	1	2	2	4		D13 13.00 - 13.45
	-15.69	16.70		•		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 infrastr uct ure const r uct ion pr oject

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 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			14.00		Firm, grey, Fat Clay (CH)	17.0	2	3	3	6								D17 17.00 - 17.45
						19.0	1	3	3	6								D19 19.00 - 19.45
						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								D23 23.00 - 23.45
						24.0	2	2	3	5								D24 24.00 - 24.45
						25.0	2	2	4	6								D25 25.00 - 25.45
						26.0	1	3	3	6								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
10	-29.69	30.70	3.00		Moderately weathered reddish brown, silt/claystone TCR = 30%, RQD = 10%	29.0	1	2	4	6	D29 29.00 - 29.45							
						30.0	1	2	4	6	D30 30.00 - 30.45							
											R31 31.00 - 31.15							
											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)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastr uct ure const r uct ion pr oject

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 10 20 30 40 50 >50
							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	-2.70	4.00	2.20	■	Very soft, Brownish grey, Clayey Sand (SC)	2.0	0	0	0	0/55	D2 2.00 - 2.45	
			4.00	■		4.0	0	0	0	0/40	U3 3.00 - 3.90	
2	-7.50	8.80	4.80	■	Very soft, Brownish grey, Fat Clay (CH)	5.0	0	0	0	0/35	D4 4.00 - 4.45	
			6.00	■		6.0	0	0	0	0/35	D5 5.00 - 5.45	
			7.00	■		7.0	0	0	1	1/50	U6 6.00 - 6.90	
			8.00	■		8.0	0	0	1	1/45	D7 7.00 - 7.45	
3b	-12.20	13.50	8.80	■	Plastic, yellowish grey, clayey sand (SC)	9.00	2	2	3	5/30	D8 8.00 - 8.45	
			10.00	■		10.0	2	2	3	5/30	U9 9.00 - 9.90	
			11.00	■		11.0	3	4	5	9/30	D10 10.00 - 10.45	
			12.00	■		12.0	3	4	3	7/30	U12 12.00 - 12.00	
4	-13.70	15.00	13.50	■	Firm to stiff, greenish grey, yellowish grey, Sandy Clay (CL)	13.0	3	4	3	7/30	D11 11.00 - 11.45	
			14.00	■		14.0	3	3	5	8/30	D13 13.00 - 13.45	
			15.00	■	Firm, grey, Fat Clay (CH)	15.0	2	2	2	4/30	U15 15.00 - 15.90	
			16.00	■		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 infrastr uct ur e const r uct ion pr oject

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 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	-30.10	31.40	16.40		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
						21.0	2	2	3	5/30								U20 20.00 - 20.90
						22.0	2	2	3	5/30								D21 21.00 - 21.45
						23.0	2	2	3	5/30								D22 22.00 - 22.45
						24.0	2	3	3	6/30								D23 23.00 - 23.45
						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								D26 26.00 - 26.45
						28.0	2	3	3	6/30								D27 27.00 - 27.45
10	-33.20	34.50	3.00		Moderately weathered reddish brown, silt/claystone TCR = 70%, RQD = 60%	29.0	2	3	3	6/30								D28 28.00 - 28.45
						30.0	2	3	3	6/30								D29 29.00 - 29.45
						31.0	2	3	3	6/25								D30 30.00 - 30.45
																		D31 31.00 - 31.45
																		R32 33.50 - 33.70
												R33 34.30 - 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 infrastr uct ur e const r uct ion pr oject

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		Plastic, Brownish grey, clayey sand (SC)	1.0	1	1	2	3/30	D1 1.00 - 1.45	
		2.30	2.30			2.0	1	2	0	2/35	D2 2.00 - 2.45	
1b	-4.19	2.70	2.70		Very soft, Brownish grey, sandy Lean Clay (CL)	4.0	0	0	1	1/35	U3 3.00 - 3.90	
		5.00	5.00			5.0	0	0	1	1/40	D4 4.00 - 4.45	
2	-8.19	4.00	4.00		Very soft, Brownish grey, Fat Clay (CH)	7.0	0	0	0	0/35	D5 5.00 - 5.45	
		9.00	9.00			8.0	0	0	1	1/40	U6 6.00 - 6.80	
3b	-13.79	5.60	5.60		Plastic, Yellowish grey, light grey, reddish brown, clayey sand (SC)	10.0	2	2	2	4/30	D7 7.00 - 7.45	
		14.60	14.60			11.0	2	2	3	5/35	D8 8.00 - 8.45	
4		3.00	3.00		Firm to stiff, Yellowish grey, brownish grey, Fat Clay (CH)	13.0	2	2	2	4/30	U9 9.00 - 9.80	
						14.0	2	2	2	4/30	D10 10.00 - 10.45	
						15.0	3	4	4	8/30	D11 11.00 - 11.45	
						16.0	4	4	5	9/30	U12 12.00 - 12.50	
										D13 13.00 - 13.45		
										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 infrastr uct ure const r uct ion pr oject

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
	-16.79	17.60		▬								U17 17.00 - 17.60					
5			14.70	▬	Firm, grey, Fat Clay (CH)	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			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			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 R34 35.00 - 35.20			
	-34.49	35.30		▬													

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 infrastr uct ure const r uct ion pr oject

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 10 20 30 40 50 >50
							N ₀	N ₁	N ₂			
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 infrastr uct ure const r uct ion pr oject

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 10 20 30 40 50 >50
							N ₀	N ₁	N ₂			
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	●	U15 19.00 - 19.80 D16 20.00 - 20.45
						21.0	2	3	3	6/35	●	D17 21.00 - 21.45
						23.0	2	2	3	5/30	●	U18 22.00 - 22.80 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 infrastr uct ure const r uct ion pr oject

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	
						5.0	0	1	1	2	D4 4.00 - 4.45	
						6.0	0	1	1	2	D5 5.00 - 5.45	
						7.0	0	0	0	0	D6 6.00 - 6.90	
						8.0	0	0	1	1	D7 7.00 - 7.45	
2	-7.75	11.00	2.30		Very soft, Grey, brownish grey, Lean Clay (CL)	9.0	0	0	0	0	U9 9.00 - 9.80	
						10.0	0	1	1	2	D10 10.00 - 10.45	
3a	-10.25	13.50	2.50		Yellowish grey, poorly graded sand with clay (SP-SC)	11.0	1	1	2	3	D11 11.00 - 11.45	
						12.0	1	2	2	4	D12 12.00 - 12.45	
3b			5.00		Soft, Yellowish grey, Fat Clay (CH)	13.0	2	2	2	4	D13 13.00 - 13.45	
						14.0	0	1	1	2	D14 14.00 - 14.45	
						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 infrastr uct ur e const r uct ion pr oject

BOREHOLE: B11

Co-ord (m): N = 2301410

Sheet: 2 / 2

E = 619461

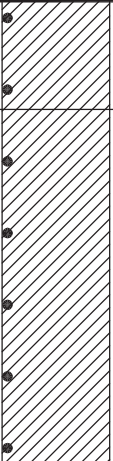
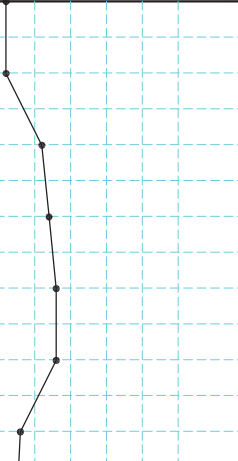
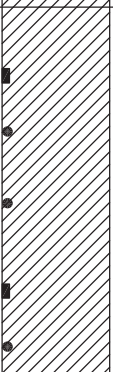
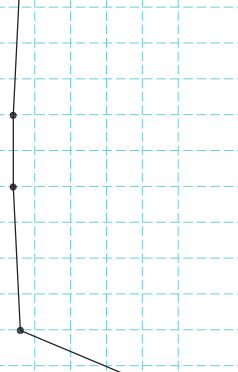
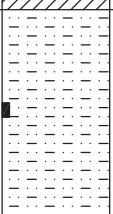
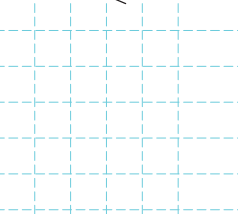
Location: Offshore

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					
						18.0	1	1	2	3		D18					
						19.0	4	5	7	12		D19					
						20.0	6	7	8	15		D20					
						21.0	7	7	9	16		D21					
						22.0	7	8	8	16		D22					
						23.0	2	3	4	7		D23					
						23.50	2	3	4	7		D23					
5	-20.25	23.50	5.20		Firm, grey, Fat Clay (CH)	25.0	1	2	3	5		U24					
						26.0	2	2	3	5		D26					
						27.0	2	2	3	5		D26					
						27.50	2	2	3	5		D26					
						28.0	2	3	3	6		D28					
						28.70	2	3	3	6		D28					
10	-25.45	28.70	3.00		Moderately weathered reddish brown, silt/claystone TCR = 50%, RQD = 10%	30.0						R29					
						31.70							R29				

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 inf r ast r uct ur e const r uct ion pr oject

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 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			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
2	-5.14	8.00	4.00	■	Very soft, Brownish grey, Fat Clay (CH)	8.0	0	0	0	0		D6 6.00 - 6.90
						11.0	0	0	1	1		D7 7.00 - 7.45
3a	-9.14	12.00	2.00	●	Yellowish grey, poorly graded sand with clay (SC)	10.0	0	0	1	1		D8 8.00 - 8.45
						13.0	2	2	2	4		U9 9.00 - 9.80
3b	-11.14	14.00	1.50	■	Firm, Yellowish grey, sandy Lean Clay (CL)	12.0	1	1	2	3		D10 10.00 - 10.45
						14.0	2	3	3	6		D11 11.00 - 11.45
4	-12.64	15.50	6.50	■	Stiff, Yellowish grey, reddish brown, Fat Clay (CH)	15.0	3	4	4	8		D12 12.00 - 12.45
						16.0	5	6	7	13		D13 13.00 - 13.45
						14.0	2	3	3	6		D14 14.00 - 14.45
						15.0	3	4	4	8		D15 15.00 - 15.45
						16.0	5	6	7	13		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 infrastr uct ure const r uct ion pr oject

BOREHOLE: B12

Co-ord (m): N = 2301382

Sheet: 2 / 2

E = 619630

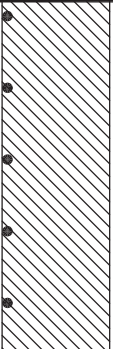
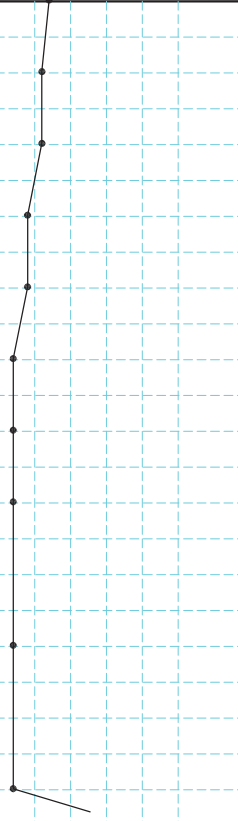
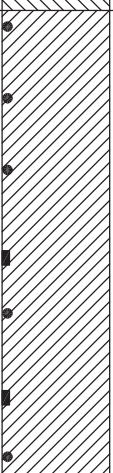
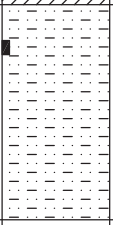
Location: Ground

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			6.50		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	-19.14	22.00	6.50		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	-25.64	28.50	3.00		Moderately weathered brownish grey, sandstone TCR = 60%, RQD = 40%					R29 29.00 - 29.20		
	-28.64	31.50										

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 infrastr uct ure const ruct ion 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 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	-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	-5.70	6.10	3.10		Very soft, Brownish grey, Fat Clay (CH)	4.0	0	0	0	0	U2 2.00 - 2.90		
3b	-13.20	13.60	7.50		Firm, yellowish grey, light grey, sandy Lean Clay (CL)	6.0	1	2	2	4	4	D3 4.00 - 4.45	
						5.00 - 5.80	7.0	2	2	3	5	5	U4 5.00 - 5.80
						6.00 - 6.45	8.0	2	2	2	4	4	D5 6.00 - 6.45
						7.00 - 7.45	9.0	2	2	3	5	5	D6 7.00 - 7.45
						8.00 - 8.45	10.0	2	2	3	5	5	D7 8.00 - 8.45
						9.00 - 9.80	11.0	2	2	2	4	4	U8 9.00 - 9.80
						10.00 - 10.45	12.0	2	2	2	4	4	D9 10.00 - 10.45
						11.00 - 11.45	13.0	2	2	3	5	5	D10 11.00 - 11.45
12.00 - 12.45	14.0	3	3	4	7	7	D11 12.00 - 12.45						
3c			5.40		Yellowish grey, poorly graded sand with clay (SP-SC)	13.00 - 13.45	14.0	3	4	4	7	D12 13.00 - 13.45	
						14.00 - 14.45	15.0	3	4	4	8	8	D13 14.00 - 14.45
						15.00 - 15.45	16.0	4	5	4	9	D14 15.00 - 15.45	
						16.00 - 16.45						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 infrastr uct ure const ruct ion project

BOREHOLE: B13

Co-ord (m): N = 2301093

Sheet: 2 / 2

E = 619612

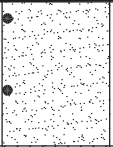
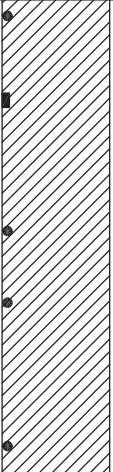
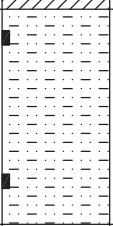
Location: Offshore

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 of the sample (m)	
						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	10	D16 17.00 - 17.45
		18.0				4	5	5	10	20	D17 18.00 - 18.45	
5	-25.30	25.70	6.70		Firm, grey, Fat Clay (CH)	19.0	2	3	3	6	30	D18 19.00 - 19.45
		22.0				2	3	3	6	40	U19 20.00 - 20.80	
		23.0				2	2	3	5	50	D20 22.00 - 22.45	
		25.0				2	2	3	5	>50	D21 23.00 - 23.45	
10	-28.30	28.70	3.00		Moderately weathered, reddish brown, greenish grey, silt/claystone TCR = 50%, RQD = 30%	25.0	3	3	3	6	D22 25.00 - 25.45	
											R23 26.00 - 26.20	
												R24 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

I ach huyen port infrastr uct ure const ruct ion 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 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			
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						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					●	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
5	-15.68	14.50		▨	Firm, grey, Fat Clay (CH)	13.0					●	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
											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 10 20 30 40 50 >50
							N ₀	N ₁	N ₂			
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	3.00		Moderately weathered reddish brown, silt/claystone TCR = 60%, RQD = 35%		
10	-28.68	27.50								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

I ach huyen port infr astructure construction project

BOREHOLE: B15

Co-ord (m): N = 2300921

Sheet: 1 / 2

E = 619715


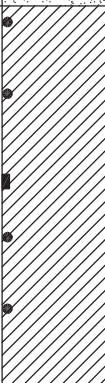

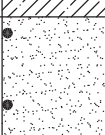

Location: Offshore




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 10 20 30 40 50 >50
							N ₀	N ₁	N ₂			
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	-7.75	6.40	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	D4 4.00 - 4.45	
						5.0	0	0	0	0/30	D5 5.00 - 5.45	
						7.0	1	1	2	3/30	D7 7.00 - 7.45	
						8.0	2	2	4	6/30	D8 8.00 - 8.45	
3b	-15.35	14.00	7.60		Loose, reddish brown, yellowish brown, clayey sand (SC)	10.0	1	3	4	7/30	D10 10.00 - 10.45	
						11.0	2	3	3	6/30	D11 11.00 - 11.45	
						13.0	1	2	3	5/30	D13 13.00 - 13.45	
						14.0	2	3	5	8/30	D14 14.00 - 14.45	
3c	-17.15	15.80	1.80		Loose, reddish brown, yellowish brown, sand (SC)	15.0	3	3	4	7/30	D15 15.00 - 15.45	
					Firm, grey, Fat Clay (CH)	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

I ach huyen port infrastr uct ure const r uct ion pr oject

BOREHOLE: B15

Co-ord (m): N = 2300921

Sheet: 2/2

E = 619715

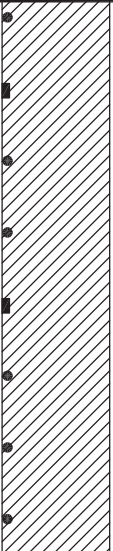
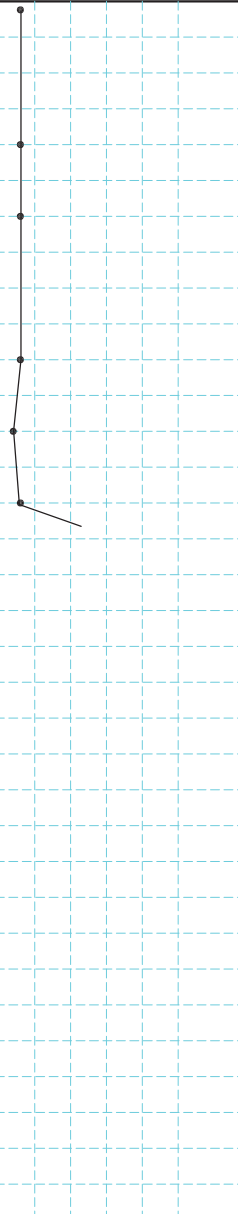
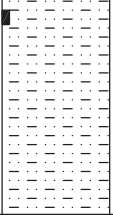
Location: Offshore

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													
							N ₀	N ₁	N ₂		10	20	30	40	50	>50								
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						
						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 infrastr uct ur e const r uct ion pr oject

BOREHOLE: B16

Co-ord (m): N = 2300835

Sheet: 1 / 2

E = 619766

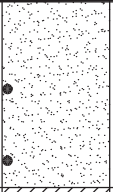
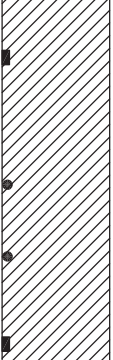
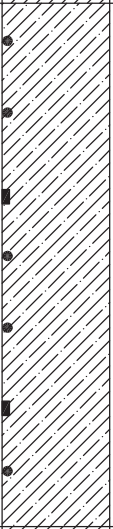
Location: Offshore

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			2.60		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	-2.70	2.60			Very soft, Brownish grey, Fat Clay (CH)	3.0					●	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
						7.70						U6 7.00 - 7.90	
3b	-7.80	7.70			Plastic, Yellowish grey, brownish grey, clayey sand (SC)	8.0	1	2	3	5	●	D7 8.00 - 8.45	
						9.0	2	2	4	6		●	D8 9.00 - 9.45
						11.0	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		●	D13 14.00 - 14.45
	-15.10	15.00								●	U9 10.00 - 10.80		
											U12 13.00 - 13.70		
											D12 12.00 - 12.45		
											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

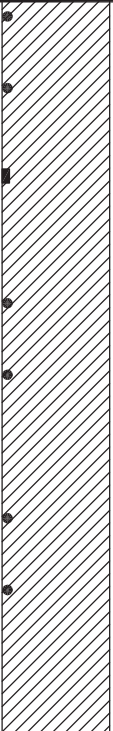
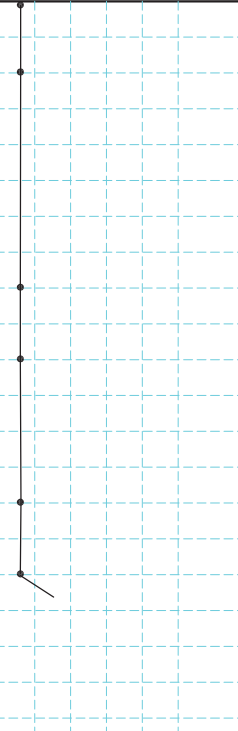
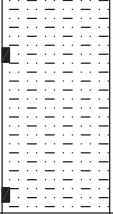
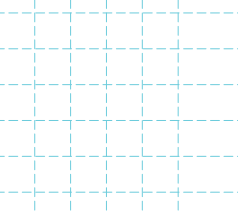
Location: Offshore

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 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			12.30		Firm, grey, Fat Clay (CH)	17.0	1	3	3	6								D15 17.00 - 17.45
						18.0	2	3	4	7								D16 18.00 - 18.45
						21.0	2	2	4	6								U17 19.00 - 19.90
						22.0	1	3	4	7								D18 21.00 - 21.45
						24.0	2	3	3	6								D19 22.00 - 22.45
						25.0	2	2	4	6								D20 24.00 - 24.45
10	-27.40	27.30	3.00		Moderately weathered reddish brown, greenish brown, silt/claystone TCR = 40%, RQD = 20%	28.00	2	3	3	6								R22 28.00 - 28.20
	-30.40	30.30				30.00	2	2	4	6								R23 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 infrastr uct ure const ruct ion 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 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	-1.38	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	D3 3.00 - 3.45	
				4.0		0	0	1	1	D4 4.00 - 4.45		
				6.0		0	0	1	1	D6 6.00 - 6.45		
				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	0	0	D9 9.00 - 9.45		
				10.0		2	2	2	4	D10 10.00 - 10.45		
3c	-11.18	11.60	2.60	●	Loose, yellowish grey, poorly graded Sand with Clay (SP - SC)	11.0	2	2	3	5	D11 11.00 - 11.45	
4	-14.58	15.00	3.40	■	Firm to stiff, brownish grey, yellowish grey, Fat Clay (CH)	13.0	4	5	5	10	D13 13.00 - 13.45	
				14.0		4	4	5	9	D14 14.00 - 14.45		
				15.0		2	2	3	5	D15 15.00 - 15.45		
				■		16.0				5	D16 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 infrastr uct ure const r uct ion pr oject

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					
	-32.08	32.50										R31 32.00 - 32.10					

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 uct ur e const r uct ion pr oject

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	D4 5.00 - 5.45
				•		8.0	0	0	0	0	0	D6 8.00 - 8.45
				•		10.0	1	1	2	3	3	D8 10.00 - 10.45
3b	-10.87	11.90	2.70	•	Plastic, Reddish brown, yellowish grey, clayey sand (SC)	12.0	2	3	4	7	D10 12.00 - 12.45	
4	-12.47	13.50	1.60	•	Firm, grey, yellowish brown, Fat Clay (CH)	13.0	2	3	3	6	D11 13.00 - 13.45	
5				•	Firm, grey, Fat Clay (CH)	16.0	3	3	3	6	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 infrastr uct ure const r uct ion pr oject

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 of the sample (m)			
						Depth (m)	Blows/15cm			N	N: Blows/30 cm				
							N ₀	N ₁	N ₂						
5			17.50	▨	Firm, grey, Fat Clay (CH)	17.0	2	2	3	5		D14 17.00 - 17.45			
															U15 18.00 - 18.90
						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	
	-29.97	31.00		▨		31.0	50/2				D24 31.00 - 31.02				
10			3.00	▨	Moderately weathered reddish brown, silt/claystone TCR = 40%, RQD = 20%						R25 32.00 - 32.10				
	-32.97	34.00		▨							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 infrastr uct ur e const r uct ion pr oject

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 10 20 30 40 50 >50
							N ₀	N ₁	N ₂			
1a	-0.72	2.00	2.00	●	Grey, yellowish grey, poorly graded sand with shell (SP)	1.0	1	1	2	3/30	D1 1.00 - 1.45	
1b	-4.22	5.50	3.50	▨	Very soft, Grey, clayey sand (SC)	2.00	0	0	1	1/50	D2 2.00 - 2.45	
						4.00	0	0	0	0/40	U3 3.00 - 3.90	
						5.00	0	0	0	0/35	D4 4.00 - 4.45	
						5.50	0	0	0	0/35	D5 5.00 - 5.45	
2	-7.32	8.60	3.10	▨	Very soft, Grey, brownish grey Fat Clay (CH)	7.00	0	0	1	1/55	U6 6.00 - 6.90	
						8.00	0	0	0	0/40	D7 7.00 - 7.45	
3b	-12.22	13.50	4.90	▨	Soft, yellowish grey, light grey, sandy lean clay (CL)	10.00	2	2	3	5/30	U9 9.00 - 9.80	
						11.00	1	3	3	6/30	D10 10.00 - 10.45	
						13.00	2	4	4	8/30	D11 11.00 - 11.45	
4	-13.62	14.90	1.40	▨	Stiff, brownish grey, grey, Fat Clay (CH)	13.00	2	4	4	8/30	D12 12.00 - 12.90	
				▨	Firm, grey, Fat Clay (CH)	16.00	2	3	3	6/30	D13 13.00 - 13.45	
				▨							U14 15.00 - 15.80	
				▨							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 infrastr uct ur e const r uct ion pr oject

BOREHOLE: B19

Co-ord (m): N = 2300577

Sheet: 2 / 2

E = 619920

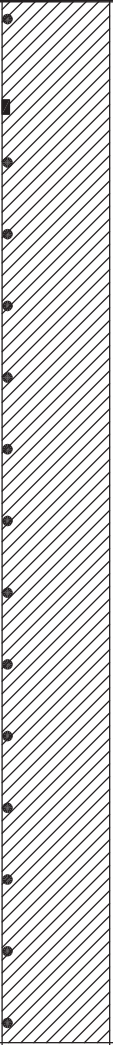
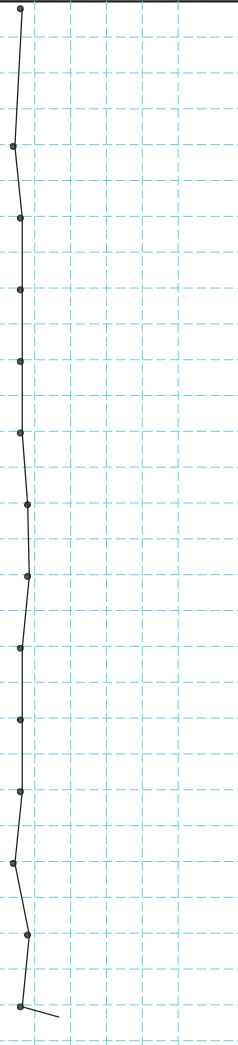
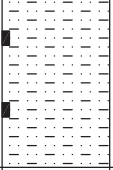
Location: Offshore

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 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			16.60		Firm, grey, Fat Clay (CH)	17.0	3	3	4	7/30								D16 17.00 - 17.45
						19.0	1	2	3	5/30								D17 18.00 - 18.90
						20.0	2	3	3	6/30								D18 19.00 - 19.45
						21.0	2	2	4	6/30								D19 20.00 - 20.45
						22.0	2	3	3	6/30								D20 21.00 - 21.45
						23.0	2	3	4	7/30								D21 22.00 - 22.45
						24.0	1	3	5	8/30								D22 23.00 - 23.45
						25.0	3	3	5	8/30								D23 24.00 - 24.45
						26.0	1	2	4	6/30								D24 25.00 - 25.45
						27.0	2	3	3	6/30								D25 26.00 - 26.45
						28.0	2	3	4	7/30								D26 27.00 - 27.45
						29.0	2	2	3	5/30								D27 28.00 - 28.45
						30.0	3	3	5	8/30								D28 29.00 - 29.45
						31.0	1	3	3	6/30								D29 30.00 - 30.45
						10	-30.22	31.50	3.00									Moderately weathered reddish brown, silt/claystone TCR = 40%, RQD = 20%
					R31 32.00 - 32.10													
					R32 33.00 - 33.10													

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 uct ure const r uct ion pr oject

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		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	-0.05	3.80	3.70	■	Very soft, brownish grey, sandy Lean Clay (CL)	5.0					U5 5.00 - 5.80	
						7.50					U6 7.00 - 7.80	
2	-3.75	7.50	4.30	■	Very soft, Brownish grey, Fat Clay (CH)	9.0					U7 9.00 - 9.90	
						11.0	0	0	0	0	D8 11.00 - 11.45	
3a	-8.05	11.80	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	-10.05	13.80	2.90	■	Firm, yellowish grey, reddish brown, Fat Clay (CH)	14.0	0	0	1	1	D11 14.00 - 14.45	
						16.70					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 infrastr uct ure const r uct ion pr oject

BOREHOLE: B20

Co-ord (m): N = 2301308

Sheet: 2 / 2

E = 619546


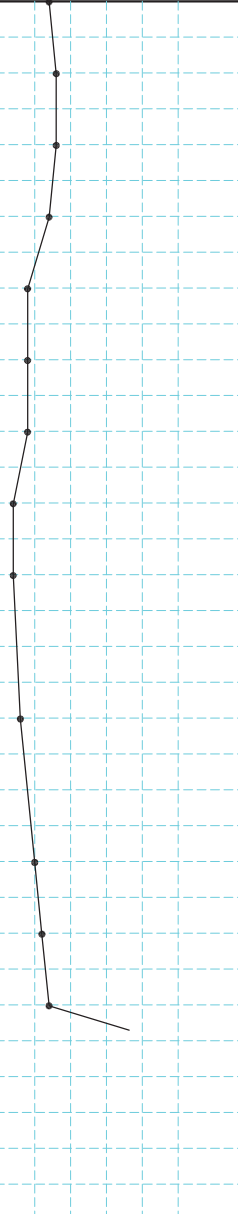



Location: Ground

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		23.80	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
5	-20.05	23.80	5.20		Firm, grey, Fat Clay (CH)	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	U22 26.00 - 26.90 D23 27.00 - 27.45	
8	-25.25	29.00	2.50		Midium dense, light grey, Poorly grade Sand (SP)	29.0	4	5	5	10	U24 28.00 - 28.80 D25 29.00 - 29.45	
						30.0	6	6	7	13	D26 30.00 - 30.45	
						31.0	9	7	8	15	D27 31.00 - 31.45	
10	-27.75	31.50	3.00		Moderately weathered reddish brown, greenish grey, sandstone TCR = 30%, RQD = 10%						R28 32.00 - 32.10	
	-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 infrastr uct ur e const r uct ion pr oject

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)	12.0	1	0	0	0	●	D12 12.00 - 12.45
						13.0	0	1	2	3		D13 13.00 - 13.45
						14.0						U14 14.00 - 14.70
						15.0	2	3	3	6		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 infrastr uct ur e const r uct ion pr oject

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		10	20	30	40	50	>50		
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							
						24.0	2	2	3	5	D24 24.00 - 24.45							
						25.0	2	3	3	6	D25 25.00 - 25.45							
						27.0	2	2	3	5	U26 26.00 - 26.90							
						27.0	2	2	3	5	D27 27.00 - 27.45							
						28.0	1	3	3	6	D28 28.00 - 28.45							
10	-25.05	29.00	3.00	▨	Moderately weathered reddish brown, greenish grey, sandstone TCR = 70%, RQD = 50%									R29 30.00 - 30.20				
	-28.05	32.00																

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 infrastr uct ur e const r uct ion pr oject

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 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		4.00	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	
2	-3.45	4.00	4.60	▨	very soft, Brownish grey, Fat Clay (CH)	5.0	0	0	0	0	D4 4.00 - 4.45	
						6.0	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	
						8.60	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	
						14.0	1	1	2	3	U12 12.00 - 12.90	
						15.20	2	2	2	4	D13 13.00 - 13.45	
						16.0	1	1	2	3	D14 14.00 - 14.45	
5	-14.65	15.20	9.70	▨	Firm, grey, Fat Clay (CH)	16.0	2	2	3	5	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)
278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816

BOREHOLE LOG

I ach huyen port infrastr uct ure const r uct ion pr oject

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 10 20 30 40 50 >50
							N ₀	N ₁	N ₂			
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 infrastr uct ure const r uct ion pr oject

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 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					
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												U5 7.00 - 7.80
						12.0	2	2	3	5/30												D6 8.00 - 8.45
3c	-13.80	12.50	2.00	▨	Firm, yellowish grey, light grey, sandy Lean Clay (CL)	14.0	3	3	5	8/30										D7 9.00 - 9.45		
						15.0	2	3	3	6/30												U8 10.00 - 10.90
						15.80																
5	-15.80	14.50	10.30	▨	Plastic, yellowish grey, light grey, Clayey Sand (SP - SC)	15.0	3	3	5	8/30										U10 13.00 - 13.80		
						15.50	2	3	3	6/30												D11 14.00 - 14.45
						16.00																
					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 infrastr uct ur e const r uct ion pr oject

BOREHOLE: **B23**

Co-ord (m): N = 2300955

Sheet: 2 / 2

E = 619578

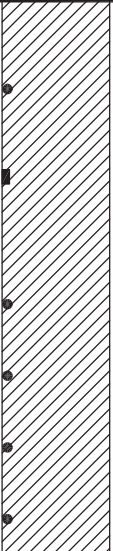
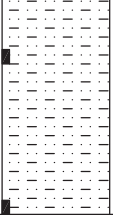
Location: Offshore

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 10 20 30 40 50 >50
							N ₀	N ₁	N ₂			
5	-26.10	24.80	10.30		Firm, grey, Fat Clay (CH)	18.0	2	3	3	6/30	•	D14 18.00 - 18.45
						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	-29.10	27.80	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 infrastr uct ure const r uct ion pr oject

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 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								
2			7.80	▨	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																		U3 3.00 - 3.90	
						4.0	0	0	0	0														D4 4.00 - 4.45	
						5.0	0	0	1	1														D5 5.00 - 5.45	
						6.0																			U6 6.00 - 6.90
						7.0	0	0	1	1															D7 7.00 - 7.45
3b	-8.85	7.80	5.80	▨	Plastic, Yellowish grey, clayey sand (SC)	8.0	2	3	4	7											D8 8.00 - 8.45				
						9.0	3	4	4	8													D9 9.00 - 9.45		
						10.0																		U10 10.00 - 10.70	
						11.0	2	3	3	6														D11 11.00 - 11.45	
						12.0	3	3	4	7															D12 12.00 - 12.45
						13.0	3	3	4	7															D13 13.00 - 13.45
	-14.65	13.60		▨	Firm, grey, Fat Clay (CH)	15.0	2	2	3	5											U14 14.00 - 14.90				
						15.0																		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

I ach huyen port infrastr uct ure const ruct ion 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									
							N ₀	N ₁	N ₂		10	20	30	40	50	>50				
5	-25.95	24.90	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	●									U20 20.00 - 20.90
						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	-28.95	27.90	3.00		Moderately weathered reddish brown, silt/sandstone TCR = 60%, RQD = 40%									
																		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 infrastr uct ur e const ruct ion 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 10 20 30 40 50 >50
							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	
					Firm, grey, Fat Clay (CH)	15.00					D9 11.00 - 11.45	
											U10 12.00 - 12.60	
											D11 13.00 - 13.45	
											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 infrastr uct ure const r uct ion pr oject

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
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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 infrastr uct ure const r uct ion pr oject

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			2.00	●	Light grey, poorly graded sand (SP)	1.0	1	1	2	3/30	D1 1.00 - 1.45	
	-1.85	2.00				2.0	0	0	1	1/35	D2 2.00 - 2.45	
1b			1.20	▨	Very soft, Brownish grey, clayey sand (SC)						U3 3.00 - 3.90	
	-3.05	3.20				4.0	0	0	0	0/35	D4 4.00 - 4.45	
2			4.30	●	Very soft, Brownish grey, Fat Clay (CH)	5.0	0	0	1	1/40	D5 5.00 - 5.45	
	-7.35	7.50				6.0	0	0	0	0/32	D6 6.00 - 6.45	
			1.20	▨	Plastic, Yellowish grey, clayey sand (SC)						U7 7.00 - 7.90	
3b			8.70	●		8.0	2	2	2	4/30	D8 8.00 - 8.45	
	-8.55	8.70				9.0	2	2	3	5/30	D9 9.00 - 9.45	
3c			2.90	●	Yellowish grey, clayey sand with clay (SP-SC)	10.0	2	3	3	6/32	D10 10.00 - 10.45	
	-11.45	11.60				11.0	2	3	4	7/30	D11 11.00 - 11.45	
			3.90	▨	Firm to stiff, Yellowish grey, Fat Clay (CH)	12.0	2	4	4	8/30	D12 12.00 - 12.45	
4						14.0	2	3	4	7/30	D14 14.00 - 14.45	
	-15.35	15.50				15.0	3	3	3	6/30	D15 15.00 - 15.45	
					Firm, grey, Fat Clay (CH)						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

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 10 20 30 40 50 >50
							N ₀	N ₁	N ₂			
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
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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 infrastr uct ure const ruct ion 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 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			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
						5.0	0	0	0	0/30							U3 3.00 - 3.90
2	-4.45	5.00	5.00		Very soft, grey, Fat Clay (CH)	8.0	0	0	1	1/30							D4 5.00 - 5.45
						9.0	0	0	1	1/30							U5 7.00 - 7.80
						10.0	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)	11.0	2	2	3	5/30							D7 9.00 - 9.45
						12.0	2	2	2	4/32							U8 10.00 - 10.80
						13.20	2	2	2	4/32							D9 11.00 - 11.45
5	-12.65	13.20			Firm, grey, Fat Clay (CH)	15.0	2	2	3	5/30							D10 12.00 - 12.45
						16.0	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 infrastr uct ure const r uct ion pr oject

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 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			16.10	▨	Firm, grey, Fat Clay (CH)	19.0	2	3	3	6/32	•	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
						23.0	2	3	3	6/30	•	D19 23.00 - 23.45
						24.0	2	3	2	5/30	•	D20 24.00 - 24.45
						26.0	2	2	3	5/30	•	U21 25.00 - 25.90
						26.0	2	2	3	5/30	•	D22 26.00 - 26.45
						27.0	2	3	3	6/30	•	D23 27.00 - 27.45
28.0	2	3	3	6/32	•	D24 28.00 - 28.45						
10	-28.75	29.30	3.00	▨	Moderately weathered reddish brown, silt/claystone TCR = 40%, RQD = 30%							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 infrastr uct ur e const r uct ion pr oject

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		U2 2.00 - 2.80
						4.0	0	0	0	0		D3 3.00 - 3.45
						5.0	0	0	1	1		D4 4.00 - 4.45
						6.0	0	0	0	0		D5 5.00 - 5.45
2	-8.11	9.00	3.00	█	Very soft, Grey, Fat Clay (CH)	7.0	0	0	0	0		U6 6.00 - 6.90
						8.0	0	0	0	0		D7 7.00 - 7.45
3b	-12.61	13.50	4.50	█	Plastic, yellowish grey, clayey sand (SC)	9.0	0	0	0	0		U9 9.00 - 9.80
						10.0	2	2	2	4		D10 10.00 - 10.45
						11.0	2	2	3	5		D11 11.00 - 11.45
						12.0	2	3	3	6		D12 12.00 - 12.45
4	-14.11	15.00	1.50	█	Stiff, Yellowish brown, Fat Clay (CH)	13.0	2	2	3	5		D13 13.00 - 13.45
						14.0	3	4	4	8		D14 14.00 - 14.45
5				█	Firm, grey, Fat Clay (CH)	16.0	2	2	3	5		U15 15.00 - 15.50
				█								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 infrastr uct ure const r uct ion pr oject

BOREHOLE: B28

Co-ord (m): N = 2300526

Sheet: 2 / 2

E = 619834

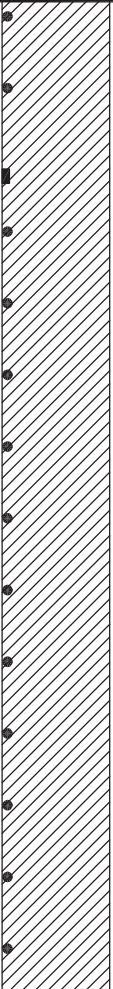
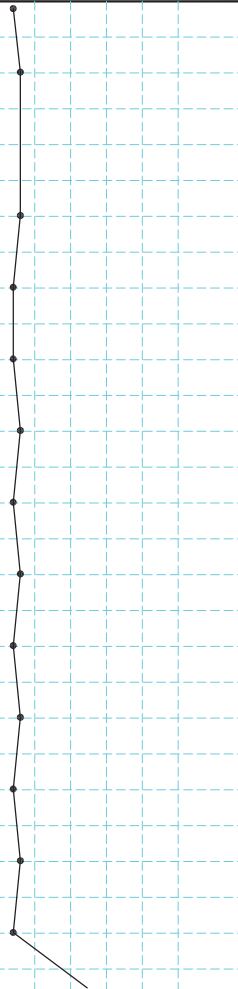
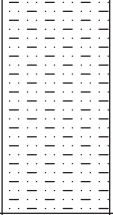
Location: Offshore

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								U19 19.00 - 19.90
						21.0	2	2	3	5								D20 20.00 - 20.45
						22.0	2	3	2	5								D21 21.00 - 21.45
						23.0	2	3	3	6								D22 22.00 - 22.45
						24.0	2	2	3	5								D23 23.00 - 23.45
						25.0	2	3	3	6								D24 24.00 - 24.45
						26.0	2	3	2	5								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	2	3	5								D29 29.00 - 29.45
														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 infrastr uct ure const r uct ion pr oject

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 10 20 30 40 50 >50
							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	U2 2.00 - 2.90	
2	-8.10	8.80	4.30	█	Very soft, grey, Fat Clay (CH)	5.0	0	0	0	0/40	D3 4.00 - 4.45	
						8.0	0	0	1	1/55	D4 5.00 - 5.45	
3a	-9.30	10.00	1.20	█	Grey, poorly graded sand with shell (SP)	8.0	0	0	1	1/55	U5 6.00 - 6.90	
3b	-12.80	13.50	3.50	█	Firm, yellowish grey, light grey, sandy Lean Clay (CL)	10.0	1	3	3	6/30	U7 9.00 - 9.90	
						11.0	2	3	4	7/30	D8 10.00 - 10.45	
						12.0	2	2	3	5/30	D9 11.00 - 11.45	
						13.0	2	3	3	6/30	D10 12.00 - 12.45	
				█	Firm, grey, Fat Clay (CH)	13.0	2	3	3	6/30	D11 13.00 - 13.45	
				█		16.0	1	3	3	6/30	U12 14.00 - 14.90	
				█							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 infrastr uct ur e const r uct ion pr oject

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
						21.0	1	3	3	6/30	●	D17 21.00 - 21.45
						24.0	2	2	4	6/30	●	U18 22.00 - 22.90
						24.0	2	2	4	6/30	●	D19 24.00 - 24.45
						25.0	3	3	3	6/30	●	D20 25.00 - 25.45
						27.0	2	2	4	6/30	●	D21 27.00 - 27.45
						28.0	1	3	3	6/30	●	D22 28.00 - 28.45
						10	-28.50	29.20	3.00	▨	Moderately weathered reddish brown, silt/claystone TCR = 40%, RQD = 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 infrastr uct ure const ruct ion 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 10 20 30 40 50 >50
							N ₀	N ₁	N ₂			
1a		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	-3.05	4.50		▨▨▨▨▨	Plastic, Blackish grey, clayey sand (SC)	5.0						U5 5.00 - 5.90
						7.0	0	0	1	1		D6 7.00 - 7.45
						8.0	0	1	1	2		D7 8.00 - 8.45
						9.0	0	0	1	1		D8 9.00 - 9.45
						10.0	0	0	1	1		D9 10.00 - 10.45
3b	-9.55	11.00	3.00	▨▨▨▨▨	Firm, yellowish grey, reddish brown, sandy Lean Clay (CL)	11.0	2	2	3	5		D10 11.00 - 11.45
						13.0	1	3	3	6		D12 13.00 - 13.45
4	-12.55	14.00	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
	-15.45	16.90				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 infrastr uct ure const r uct ion pr oject

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 10 20 30 40 50 >50
							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	●	D18 20.00 - 20.45
						21.0	3	3	3	6	●	D19 21.00 - 21.45
						23.0	2	3	4	7	●	D20 23.00 - 23.45
10	-22.35	23.80	3.00		Moderately weathered, reddish brown, silt/claystone TCR = 50%, RQD = 20%						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 infrastr uct ure const ruct ion 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 10 20 30 40 50 >50
							N ₀	N ₁	N ₂			
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)	6.0	0	0	1	1		U4 4.00 - 4.80
						7.0	2	2	3	5		D5 6.00 - 6.45
3b	-10.53	11.00	3.20		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 infrastr uct ure const r uct ion pr oject

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 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 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 infrastr uct ur e const r uct ion pr oject

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 10 20 30 40 50 >50
							N ₀	N ₁	N ₂			
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			3.10		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			5.10		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			1.90		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			8.60		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 infrastr uct ure const r uct ion pr oject

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
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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

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 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	-0.65	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
						12.0	3	5	4	9		D10 12.00 - 12.45
5	-14.15	13.80	10.10		Firm, grey, Fat Clay (CH)	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 10 20 30 40 50 >50
							N ₀	N ₁	N ₂			
5	-24.25	23.90	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	-27.25	26.90	3.00		Moderately weathered, reddish brown, greenish grey, silt/claystone TCR = 50%, RQD = 30%					●	R19 24.00 - 24.20	
											●	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 inf r ast r uct ur e const r uct ion pr oject

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	
	-6.18	6.60				7.0	2	2	2	4	U4 6.00 - 6.80	
3b			4.60		Plastic, light grey, yellowish grey, Clayey Sand (SC)	8.0	2	3	3	6	D6 8.00 - 8.45	
						10.0	2	2	3	5	U7 9.00 - 9.80	
	-10.78	11.20				11.0	2	6	7	13	D8 10.00 - 10.45	
4			2.80		Stiff, grey, Yellowish brown, Fat Clay (CH)	12.0	6	6	7	13	D9 11.00 - 11.45	
						13.0	5	6	6	12	D10 12.00 - 12.45	
	-13.58	14.00				14.0	3	3	3	6	D11 13.00 - 13.45	
5			11.60		Firm, grey, Fat Clay (CH)						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 infrastr uct ure const r uct ion pr oject

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								
							N ₀	N ₁	N ₂		10	20	30	40	50	>50			
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%														
	-28.68	29.10																	
Legend <ul style="list-style-type: none"> 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 uct ur e const r uct ion pr oject

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 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	-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	-7.55	8.60	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
						6.0	0	0	0	0	0	D5 6.00 - 6.80
3b	-9.85	10.90	2.30		Plastic, Yellowish grey, Clayey Sand (SC)	8.0	0	0	1	1	D6 8.00 - 8.45	
3c	-13.55	14.60	3.70		Yellowish grey, poorly graded sand with clay (SP-SC)	10.0	2	2	3	5	5	D7 9.00 - 9.80
						11.0	3	3	4	7	7	D8 10.00 - 10.45
						12.0	3	4	4	8	8	D9 11.00 - 11.45
						13.0	2	3	4	7	7	D10 12.00 - 12.45
5			9.10		Firm, grey, Fat Clay (CH)	13.0	1	3	3	6	6	D11 13.00 - 13.45
						14.0	2	3	3	6	6	D12 14.00 - 14.45
						15.0	2	3	3	6	D13 15.00 - 15.45	
						16.0					D14 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 inf r ast r uct ur e const r uct ion pr oject

BOREHOLE: G6

Co-ord (m): N = 2301516

Sheet: 2 / 2

E = 620000

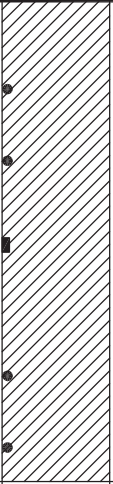
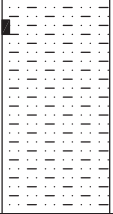
Location: Offshore

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	-22.65	23.70	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
	-25.65	26.70	3.00		Moderately, reddish brown, silt/claystone TCR = 40%, RQD = 20%							D19 23.00 - 23.45
												R20 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

I ach huyen port infrastr uct ur e const ruct ion 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	
						6.0	0	0	1	1	U6 6.00 - 6.90	
						7.0	0	0	1	1	D7 7.00 - 7.45	
						8.0	0	0	1	1	D8 8.00 - 8.45	
2	-7.68	11.80	3.80		Very soft, Brownish grey, Fat Clay (CH)	9.0	0	0	1	1	D9 9.00 - 9.45	
						10.0	0	0	1	1	U10 10.00 - 10.80	
						11.0	0	0	1	1	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 infrastr uct ur e const r uct ion pr oject

BOREHOLE: **G7**

Co-ord (m): N = 2301477

Sheet: 2/2

E = 619965

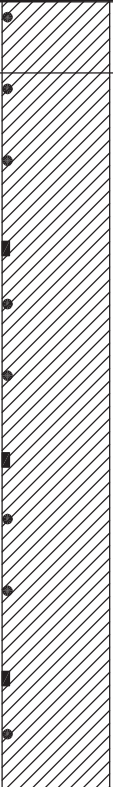
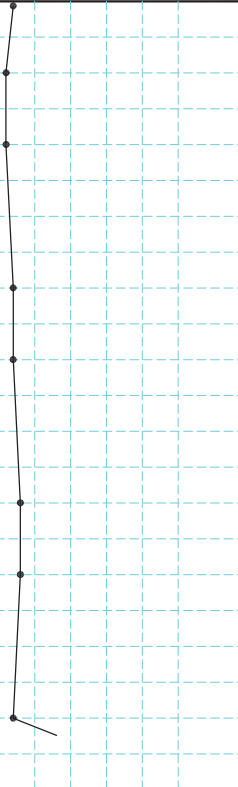
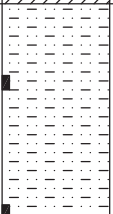
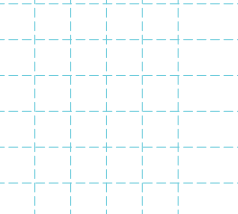
Location: Ground

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						
10	-23.88	28.00	3.00		Hard, reddish brown, greenish grey, silt/claystone TCR = 40%, RQD = 20%	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						
						27.0	2	3	2	5								D27 27.00 - 27.45						
						28.0												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 infrastr uct ur e const r uct ion pr oject

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								
							N ₀	N ₁	N ₂		10	20	30	40	50	>50			
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
						4.00	0	0	1	1								D4 4.00 - 4.45	
1b	-0.53	4.50	3.30		Very soft, Blackish grey, sandy Lean Clay (CL)	5.00	0	0	1	1								D5 5.00 - 5.45	
						6.00													U6 6.00 - 6.70
						7.00	0	0	0	0								D7 7.00 - 7.45	
2	-3.83	7.80	4.20		Very soft, Brownish grey, Fat Clay (CH)	8.00	0	0	0	0								D8 8.00 - 8.45	
						9.00	0	0	1	1								D9 9.00 - 9.45	
						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	
3b	-8.03	12.00	4.00		Firm, Yellowish grey, light grey, sandy Lean Clay (CL)	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	
						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
						24.00	1	2	2	4							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%	28.00					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 infrastr uct ure const r uct ion pr oject

BOREHOLE: 09

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							
							N ₀	N ₁	N ₂		10	20	30	40	50	>50		
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	D2 2.00 - 2.45											
	4.00	0	0	0	0	U3 3.00 - 3.80												
	5.00	0	0	0	0	D4 4.00 - 4.45												
	7.00	0	0	0	0	D5 5.00 - 5.45												
	8.00	0	0	0	0	U6 6.00 - 6.60												
	10.00	0	0	0	0	D7 7.00 - 7.45												
2	-4.95	8.00	5.50		Very soft, grey, Fat Clay (CH)	8.00	0	0	1	1								D8 8.00 - 8.45
	9.00	0				0	1	1	D9 9.00 - 9.45									
	10.00	0	0		1	1	D10 10.00 - 10.45											
	12.00	3	3		3	6	U11 No Recovery											
3b	-10.45	13.50	2.10		Very soft, grey, Fat Clay (CH)	12.00	3	3	3	6								D12 12.00 - 12.45
	13.00	2				3	3	6	D13 13.00 - 13.45									
	-12.55	15.60			Very soft, Brownish grey, yellowish grey, Lean Clay (CL)	15.00	1	1	1	2								U14 14.00 - 14.80
	16.00	3				4	4	8	D15 15.00 - 15.45									
						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 infrastr uct ure const r uct ion pr oject

BOREHOLE: 09

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							
							N ₀	N ₁	N ₂		10	20	30	40	50	>50		
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
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													
23.00	2	2	3	5	D22 22.00 - 22.45													
24.00	1	2	3	5	D23 23.00 - 23.70													
25.00	1	2	2	4	D24 24.00 - 24.45													
26.00	2	3	2	5	D25 25.00 - 25.45													
27.00	1	2	2	4	D26 26.00 - 26.45													
28.00	1	2	2	4	D27 27.00 - 27.45													
5	-25.45	28.50	8.70	▨	Firm, grey, Fat Clay (CH)	28.00	1	2	2	4	D28 28.00 - 28.45							
						29.00	1	2	2	4	R29 29.00 - 29.10							
10	-28.45	31.50	3.00	▨	Hard, reddish brown, silt/claystone TCR = 40%, RQD = 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: G10

Co-ord (m): N = 2301503

Sheet: 1 / 2

E = 619832


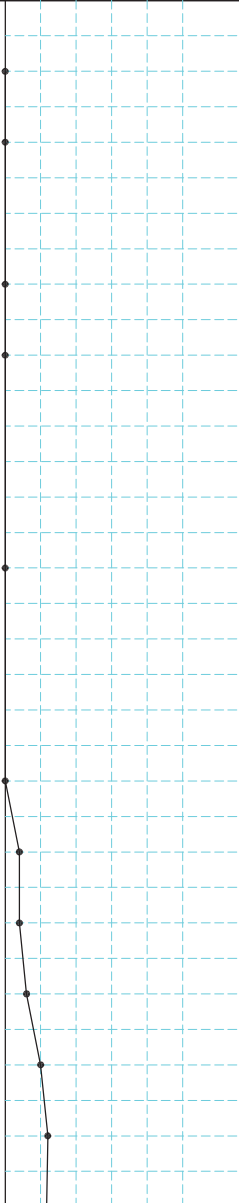


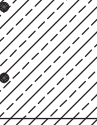

Location: Ground

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			
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		D4 4.00 - 4.45
						5.0	0	0	0	0		D5 5.00 - 5.45
						8.0	0	0	0	0		D7 8.00 - 8.45
						11.0	0	0	1	1		D9 11.00 - 11.45
						16.0	4	6	7	13		D14 16.00 - 16.45
2	-5.27	8.50	3.10		Very soft, Brownish grey, Fat Clay (CH)	12.0	1	2	2	4	D10 12.00 - 12.45	
3a	-8.37	11.60	1.40		Yellowish grey, poorly graded sand with clay (SP-SC)	13.0	2	2	3	5	D11 13.00 - 13.45	
3b	-9.77	13.00	1.80		Firm, Yellowish grey, light grey, Lean Clay with sand (CL)	14.0	2	3	3	6	D12 14.00 - 14.45	
4	-11.57	14.80	3.20		Stiff, yellowish brown, Fat Clay (CH)	15.0	4	5	6	11	D13 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

I ach huyen port infrastr uct ure const r uct ion pr oject

BOREHOLE: G10

Co-ord (m): N = 2301503

Sheet: 2 / 2

E = 619832

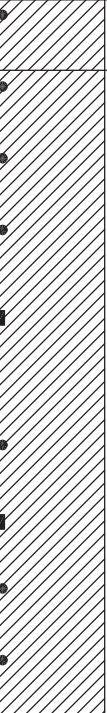
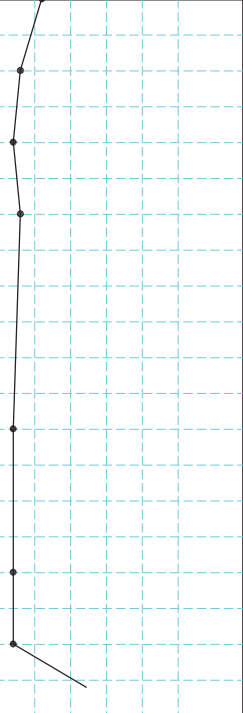
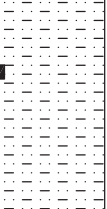
Location: Ground

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		Firm, grey, Fat Clay (CH)	17.0	4	6	6	12		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
						23.0	1	2	3	5		D20 23.00 - 23.45
						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		Moderately weathered, reddish brown, greenish grey, silt/claystone TCR = 50%, RQD = 30%						R24 28.00 - 28.10	
	-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

I ach 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 (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂		10 20 30 40 50 >50	
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			7.10		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
						13.0	2	3	3	6		D11 13.00 - 13.45
5			8.30		Firm, grey, Fat Clay (CH)	14.0						U12 14.00 - 14.80
						16.0	2	2	3	5		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: 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 (m)	Blows/15cm			N	N: Blows/30 cm	Depth of the sample (m)
							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							U17 21.00 - 21.50
10	-23.32	21.90	3.00		Moderately weathered, reddish brown, silt/claystone TCR = 40%, RQD = 20%							R18 23.00 - 23.20
	-26.32	24.90										

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: 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 (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂		10	
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
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	
4	-17.00	15.50	4.50		Firm to stiff, Yellowish grey, light grey, Fat Clay (CH)	15.0	2	3	3	6/34		U13 14.00 - 14.50 D14 15.00 - 15.45
16.0						2	3	3	6/32		D15 16.00 - 16.45	
5					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: 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 (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂		10	
5			8.00		Firm, Grey, Fat Clay (CH)							
						18.0	2	3	3	6/32	•	U16 17.10 - 18.00
						19.0	2	3	3	6/30	•	D17 18.00 - 18.45
						20.0	2	2	3	5/30	•	D18 19.00 - 19.45
						22.0	2	2	3	5/34	•	D19 20.00 - 20.45
23.0	2	2	3	5/31	•	U20 21.10 - 22.00						
9	-25.00	23.50	0.50		Completely weathered sandstone: Hard, reddish brown, sandy clay with fragment							
10	-25.50	24.00	3.00		Moderately weathered, reddish brown, sandstone TCR = 40%, RQD = 0%							
	-28.50	27.00										D21 22.00 - 22.45
												D22 23.00 - 23.45
												R23 24.00 - 24.20
												R24 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

I ach 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 (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂		10	
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	-6.83	5.50	4.00		Very soft, Brownish grey, Fat Clay (CH)	4.0	0	0	0	0		U2 2.00 - 2.90
3b	-8.03	6.70	1.20		Plastic, Grey, clayey sand with shell (SC)	6.0	1	2	2	4		D3 4.00 - 4.45
3c	-11.33	10.00	3.30		Yellowish grey, poorly graded sand with clay (SP-SC)	7.0	2	2	2	4		U4 5.00 - 5.90
						8.0	2	2	3	5		D5 6.00 - 6.45
						9.0	1	2	2	4		D6 7.00 - 7.45
4	-15.23	13.90	3.90		Stiff, Yellowish grey, light grey, Fat Clay (CH)	11.0	4	5	6	11		D7 8.00 - 8.45
						12.0	5	6	6	12		D8 9.00 - 9.45
						13.0	3	4	6	10		U9 10.00 - 10.60
5			10.00		Firm, grey, Fat Clay (CH)	14.0	1	2	4	6		D10 11.00 - 11.45
												D11 12.00 - 12.45
												D12 13.00 - 13.45
												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: 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 (m)	Blows/15cm			N	N: Blows/30 cm	Depth of the sample (m)
							N ₀	N ₁	N ₂			
5			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	-25.23	23.90	3.00		Hard, reddish brown, greenish grey, sandstone TCR = 30%, RQD = 10%							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 infrastructure construction project

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 (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					
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		
						4.0														D4 4.00 - 4.45	
						5.0	0	1	1	2/35										D5 5.00 - 5.45	
						6.0															U6 6.00 - 6.60
						7.0	1	1	1	2/39											D7 7.00 - 7.45
						8.0	1	1	2	3/32											D8 8.00 - 8.45
3b	-9.72	9.00	2.50		Soft to firm, reddish brown, yellowish brown, Lean Clay (CL)	10.0	0	1	1	2/30							U9 9.00 - 9.95				
						11.0	1	2	2	4/33								D10 10.00 - 10.45			
3c	-12.22	11.50	1.50		Plastic, light grey, greenish grey, clayey sand	11.0											D11 11.00 - 11.45				
						13.0	1	2	4	6/30								U12 12.00 - 12.85			
4	-13.72	13.00	3.00		Firm to stiff, yellowish grey, yellowish brown, Lean Clay (CL)	13.0											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					
						16.0										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: T5

Co-ord (m): N = 2301339

Sheet: 2 / 2

E = 620221

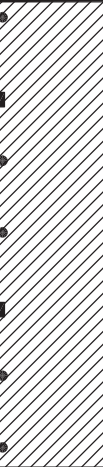
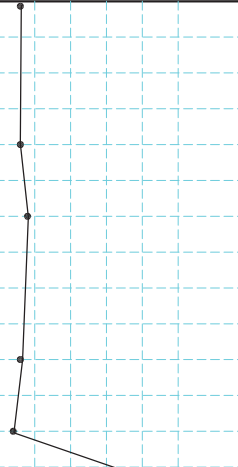
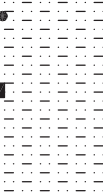
Location: Offshore

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 (m)	Blows/15cm			N	N: Blows/30 cm	Depth of the sample (m)			
							N ₀	N ₁	N ₂				10	20	30
5	-24.22	23.50	7.50		Firm, to stiff, grey, Fat Clay (CH)	17.0	2	3	4	7/30		D17			
						17.00 - 17.45								U18	
						18.00 - 18.75								D19	
						19.00 - 19.45								D20	
						20.00 - 20.45								U21	
						21.00 - 21.60								D22	
22.00 - 22.45								D23							
23.00 - 23.45								D24							
24.00 - 24.03								R25							
10	-27.22	26.50	3.00		Hard, reddish brown, sandstone TCR = 70%, RQD = 50%	24.0	50			50/3					

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: 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 (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂		10 20 30 40 50 >50	
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
4	-15.95	15.30	3.80	■	Stiff to very stiff, Yellowish grey, fat clay with sand (CH)	13.0	6	6	7	13		U7 9.00 - 9.80
						14.0	6	7	7	14		D8 10.00 - 10.45
5			9.30	■	Firm, grey, Fat Clay (CH)						D9 11.00 - 11.45	
											U10 12.00 - 12.40	
											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

I ach 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 (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			9.30	▨	Firm, grey, Fat Clay (CH)	17.0	2	2	3	5								D14
						18.0	2	3	3	6								D15
						21.0	2	3	3	6								D17
						22.0	2	3	3	6								D18
						23.0	2	2	3	5								D19
						24.0	2	3	3	6								D20
						24.00 - 24.45	R21											
25.00 - 25.20	R22																	
10	-28.25	27.60	3.00	▨	Moderately wethered, reddish brown, silt/claystone TCR = 60% , RQD = 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: 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 (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂		10	
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		U5 6.00 - 6.80
						8.0	3	3	4	7		D5 7.00 - 7.45
						10.0	3	4	4	8		D6 8.00 - 8.45
						11.0	3	3	4	7		U7 9.00 - 9.80
						13.0	6	6	7	13		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	D9 11.00 - 11.45	
5					Firm, grey, Fat Clay (CH)	14.0	6	7	7	14	U10 12.00 - 12.60	
											D11 13.00 - 13.45	
											U13 15.00 - 15.80	
											D12 14.00 - 14.45	

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: 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 (m)	Blows/15cm			N		N: Blows/30 cm	Depth of the sample (m)	
							N ₀	N ₁	N ₂		10			20
5			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
														20.00 - 20.80
10	-26.00	24.90	3.00		Moderately wethered, reddish brown silt/claystone TCR = 60% , RQD = 40%	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							
	-29.00	27.90												
											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 infrastructure construction project

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 (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	
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							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
4			9.50	▨	Firm to stiff, yellowish grey, Sandy Fat Clay (CH)	9.0	3	3	5	8/30							D8 8.00 - 8.45
						11.0	3	3	4	7/30							D9 9.00 - 9.45
						12.0	3	4	5	9/30							U10 10.40 - 11.00
						13.5	5	5	6	11/31							D11 11.00 - 11.45
						15.0	4	4	5	9/30							D12 12.00 - 12.45
																	U13 13.00 - 13.50
																	D14 13.50 - 13.95
																	D15 15.00 - 15.45
																	U16 16.30 - 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

I ach 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 10 20 30 40 50 >50
							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
						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
9	-29.40	27.90	1.40		Completely weathered sandstone: Hard, reddish brown, sandy clay with fragment	29.0	10	10/0	R29 30.00 - 30.10			
10	-30.80	29.30	3.00		Moderately wethered, reddish brown silt/claystone				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

I ach 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 (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	
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	-7.21	5.40	2.40		Very soft, grey, Fat Clay (CH)	3.0	0	0	0	0							U2 2.00 - 2.90 D3 3.00 - 3.45 D4 4.00 - 4.45
3a	-8.71	6.90	1.50		Yellowish grey, poorly graded sand with clay (SP-SC)	6.0	1	2	2	4							U5 5.00 - 5.90 D6 6.00 - 6.45
4	-14.81	13.00	6.10		Stiff, Yellowish grey, reddish brown, Fat Clay (CH)	7.0	2	4	5	9							D7 7.00 - 7.45 D8 8.00 - 8.45 D9 9.00 - 9.45
5		13.10	13.10		Firm, grey, Fat Clay (CH)	10.0	2	5	6	11							D10 10.00 - 10.45 D11 11.00 - 11.45 D12 12.00 - 12.45
						13.0	2	3	3	6							D13 13.00 - 13.45 U14 14.00 - 14.90 D15 15.00 - 15.45
						15.0	1	3	4	7							D16 16.00 - 16.45
						16.0	2	3	3	6							

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: 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 (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									
5			13.10		Firm, grey, Fat Clay (CH)	17.0	3	3	3	6							D17	
						18.0	2	2	3	5							D18	
						20.0	1	3	4	7							U19	
						21.0	2	3	3	6							D20	
						22.0	3	3	3	6							D21	
						23.0	3	3	3	6							D22	
						24.0	2	2	3	5							D23	
						25.0	1	2	4	6							D24	
9	-27.91	26.10	0.50		Completely weathered sandstone: Hard, reddish brown, sandy clay with fragment												D25	
10	-28.41	26.60	2.50		Hard, reddish brown, greenish grey, silt/limestone TCR = 60%, RQD = 30%												R26	
																	R27	
	-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

I ach 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 (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				
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									U3	3.00 - 3.90
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)	7.0	3	3	5	8/30								D6	7.00 - 7.45	
						8.0	1	4	5	9/31									D7	8.00 - 8.45
						10.0	1	3	4	7/30									U8	9.00 - 9.90
						11.0	3	3	6	9/30									D9	10.00 - 10.45
						13.0	4	6	9	15/30									D10	11.00 - 11.45
						15.0	4	6	9	15/30									U11	12.00 - 12.50
5				•	Firm, blueish grey, Fat Clay (CH)	14.0	2	2	4	6/34								D12	13.00 - 13.45	
						14.0	2	2	4	6/34									D13	14.00 - 14.45
						16.0	2	2	3	5/33									U14	15.00 - 15.85
																	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 infrastr uct ure const r uct ion pr oject

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 (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			
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
						20.0	2	2	4	6/30		D18 19.00 - 19.45
						22.0	1	2	2	4/30		D19 20.00 - 20.45
						23.0	0	1	2	3/33		U20 21.00 - 21.90
						24.0	50					50/3
10	-25.97	24.00	3.00		Hard, reddish brown, greenish grey, silt/laystone TCR = 80%, RQD = 60%	24.0						D22 23.00 - 23.45
										D23 24.00 - 24.03		
										R24 25.00 - 25.15		
		-28.97	27.00							R25 26.00 - 26.15		

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

I ach huyen port infrastructure 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 (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	
1a	-2.96	0.80	0.80	•••••	Grey, light grey, poorly graded sand	1.0	0	0	0	0							D1 1.00 - 1.45
2	-6.66	4.50	3.70	/ / / / /	Very soft, Brownish grey, Fat Clay (CH)	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							D7 7.00 - 7.45
3b	-11.96	9.80	1.00	/ / / / /	Firm, Grey, bluish grey, Lean Clay (CL)	8.00										U9 9.00 - 9.50	
3c	-13.16	11.00	1.20	•••••	Plastic, yellowish grey, clayey sand (SC)	10.0	1	1	2	3						D10 10.00 - 10.45	
4	-14.66	12.50	1.50	/ / / / /	Stiff, Yellowish grey, Fat Clay (CH)	11.0	3	4	6	10							D11 11.00 - 11.45
						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
																	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: 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 (m)	Blows/15cm			N		N: Blows/30 cm	Depth of the sample (m)
							N ₀	N ₁	N ₂		10		
5	-25.66	23.50	11.00		Firm, grey, Fat Clay (CH)	17.0	2	2	4	6		D17	
						17.00 - 17.45		U18					
						19.0	3	3	3	6		D19	18.00 - 18.90
						19.00 - 19.45		D20					
						20.0	2	3	4	7		D21	20.00 - 20.45
						20.00 - 20.45		D21					
10	-28.66	26.50	3.00		Hard, reddish brown, greenish grey, silt/claystone TCR = 60%, RQD =30%	21.0	3	3	3	6	D22	21.00 - 21.45	
						21.00 - 21.45		D22					
						22.0	2	2	4	6	D23	22.00 - 22.45	
						22.00 - 22.45		D23					
						23.0	1	3	3	6	D24	23.00 - 23.45	
						23.00 - 23.45		R24	24.00 - 24.10				
24.00 - 24.10		R25	26.00 - 26.10										
26.00 - 26.10		R25											

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: 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 (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			
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		
						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		
4	-13.77	11.60	2.30		Very stiff, grey, yellowish 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		
5	-16.07	13.90			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: T14

Co-ord (m): N = 2300953

Sheet: 2 / 2

E = 620452

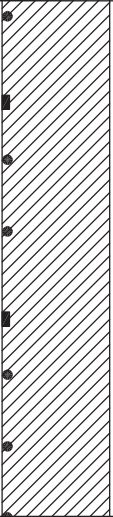
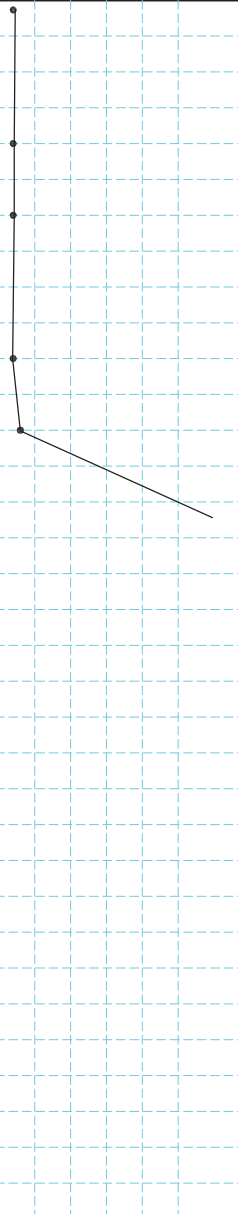
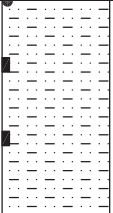
Location: Offshore

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 (m)	Blows/15cm			N		N: Blows/30 cm	Depth of the sample (m)
							N ₀	N ₁	N ₂		10		
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
10	-26.37	24.20	3.00		Hard, reddish brown, greenish grey, silt/claystone TCR = 90%, RQD = 70%						D23	23.00 - 23.45	
												D24	24.20 - 24.23
	-29.37	27.20									R25	25.00 - 25.20	
											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 infrastructure construction project

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 10 20 30 40 50 >50
							N ₀	N ₁	N ₂			
1a	-2.39	0.50	0.50	█	Grey, light grey, poorly graded sand							
1b			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			2.80	▨	Very soft, Brownish grey, Fat Clay (CH)	4.0	0	0	1	1		U3 3.00 - 3.80
						4.20	0	0	0	0		D4 4.00 - 4.45
						5.0	0	0	0	0		D5 5.00 - 5.45
						7.0	1	1	2	3		U6 6.00 - 6.80
3b			7.00	▨	Soft, Yellowish grey, brownish grey, Lean Clay (CL)	8.0	1	1	2	3		D7 7.00 - 7.45
						8.0	1	1	2	3		D8 8.00 - 8.45
						10.0	1	1	2	3		U9 9.00 - 9.80
						10.0	1	1	2	3		D10 10.00 - 10.45
4			10.90	▨	Stiff, Yellowish grey, light grey, Fat Clay (CH)	11.0	4	5	5	10		D11 11.00 - 11.45
						13.0	5	5	6	11		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

I ach huyen port infrastructure construction project

BOREHOLE: T15

Co-ord (m): N = 2300910

Sheet: 2 / 2

E = 620478

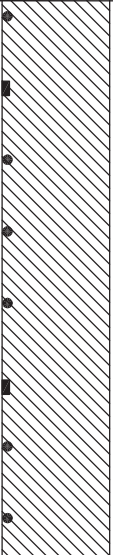
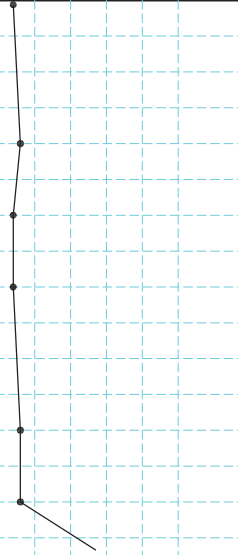
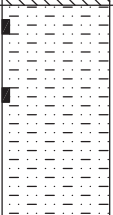
Location: Offshore

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 10 20 30 40 50 >50
							N ₀	N ₁	N ₂			
5			9.00		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		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 - 22.80
						23.0	2	3	3	6		D23 23.00 - 23.45
						24.0	2	3	3	6		D24 24.00 - 24.45
						24.0	2	3	3	6		R25 25.00 - 25.20
10	-26.69	24.80	3.00		Moderately weathered, reddish brown, silt/claystone TCR = 90%, RQD = 70%					R26 26.00 - 26.10		
	-29.69	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: 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 (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂		10	
2			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	-8.75	7.00	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	-11.75	10.00	2.90	▨	Firm to stiff, yellowish grey, light grey, Fat Clay (CH)	12.00	2	3	3	6/32		D13 12.00 - 12.45
						13.0	2	3	2	5/34		D14 13.00 - 13.45
						14.0	2	3	3	6/36		D16 14.00 - 14.45
						16.0	2	3	3	6/36		D16 16.00 - 16.45
5	-14.65	12.90	6.90	▨	Firm, grey, Fat Clay (CH)						U12 12.00 - 12.80	
												U15 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: 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			
				▨	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		▨								

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: 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 10 20 30 40 50 >50
							N ₀	N ₁	N ₂			
1a	-1.88	0.60	0.60		Light grey, poorly graded sand							
1b			3.40		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
						4.0	0	0	0	0		U3 3.00 - 3.90
2			2.30		Very soft, Brownish grey, sandy Lean Clay (CL)	5.0	0	0	0	0		D4 4.00 - 4.45
						5.0	0	0	0	0		D5 5.00 - 5.45
3b			3.50		Plastic, Yellowish grey, clayey sand (SC)	7.0	1	1	2	3		U6 6.00 - 6.90
						8.0	2	2	2	4		D7 7.00 - 7.45
						9.0	1	1	2	3		D8 8.00 - 8.45
3c			1.70		Yellowish grey, poorly graded sand with clay (SP-SC)	10.0	1	2	2	4		D9 9.00 - 9.45
						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
5			8.60		Firm, grey, Fat Clay (CH)	14.0	3	4	5	9		D14 14.00 - 14.45
						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

I ach huyen port infrastructure construction project

BOREHOLE: T18

Co-ord (m): N = 2301400

Sheet: 2 / 2

E = 620128

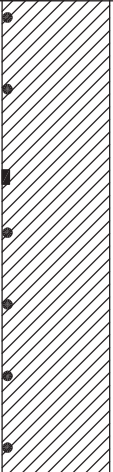
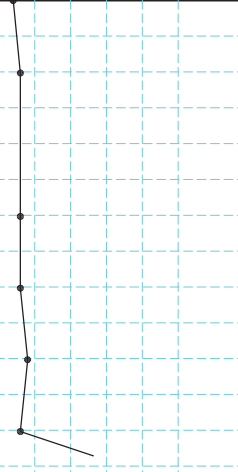
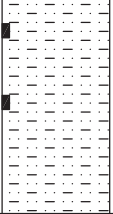
Location: Offshore

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 (m)	Blows/15cm			N		N: Blows/30 cm	Depth of the sample (m)	
							N ₀	N ₁	N ₂		10			20
5			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								
						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														
	-24.88	23.60			Moderately weathered, reddish brown, silt/claystone TCR=50%, RQD=20%						R24			
											24.00 - 24.10			
10			3.00								R25			
											25.00 - 25.10			
	-27.88	26.60												

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: 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 (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂		10	
1a	-1.25	0.40	0.40		Light grey, poorly graded sand	1.0	0	0	0	0/45	D1 1.00 - 1.45	
1b			8.20		Very soft to soft, grey, brownish grey, Lean Clay with sand (CL)	2.0	0	0	1	1/43	D2 2.00 - 2.45	
						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	0	0	1	1/41	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	
4			6.10		Firm to stiff, yellowish grey, light grey, Sandy Lean Clay (CL)	11.0	2	2	3	5/32	D11 11.00 - 11.45	
						13.0	3	3	5	8/30	D13 13.00 - 13.45	
	-12.75	11.90				14.0	3	5	6	11/30	D14 14.00 - 14.45	
						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

I ach 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 (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
5			7.60		Firm to stiff, grey, Fat Clay (CH)	19.0	2	3	5	8/30		U18 18.00 - 18.90
						19.0						D19 19.00 - 19.45
						20.0	1	3	4	7/30		D20 20.00 - 20.45
						22.0	2	2	3	5/30		U21 21.00 - 21.50
						22.0						D22 22.00 - 22.45
					Firm to stiff, grey, Fat Clay (CH)	23.0	2	2	4	6/33		D23 23.00 - 23.45
						23.0						U24 24.00 - 24.90
						25.0	1	2	3	5/31		D25 25.00 - 25.45
						25.6	50		50/2		D26 25.60 - 26.62	
10	-29.45	28.60	3.00		Hard, light grey, sandstone TCR = 50%, RQD = 30%						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

I ach 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 (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂		10	
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	D4	3.00 - 3.90
				/ / / / /		5.0	0	0	0	0	D5	4.00 - 4.45
3b	-11.60	11.50	4.80	/ / / / /	Plastic Yellowish grey, clayey sand (SC)	7.0	1	1	2	3	D7	5.00 - 5.45
				/ / / / /		8.0	0	1	2	3	D8	6.00 - 6.90
				/ / / / /		10.0	2	2	2	4	D10	7.00 - 7.45
				/ / / / /		11.0	1	1	2	3	D11	8.00 - 8.45
4	-15.60	15.50	4.00	/ / / / /	Stiff, Yellowish grey, Fat Clay (CH)	12.0	1	4	5	9	D12	9.00 - 9.90
				/ / / / /		13.0	3	3	5	8	D13	10.00 - 10.45
				/ / / / /		14.0	3	4	5	9	D14	11.00 - 11.45
				/ / / / /		15.0	2	5	5	10	D15	12.00 - 12.45
				/ / / / /							U16	13.00 - 13.45
				/ / / / /								14.00 - 14.45
				/ / / / /								15.00 - 15.45
				/ / / / /								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: T20

Co-ord (m): N = 2301228

Sheet: 2 / 2

E = 620230

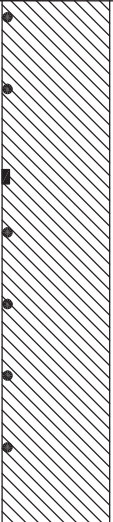
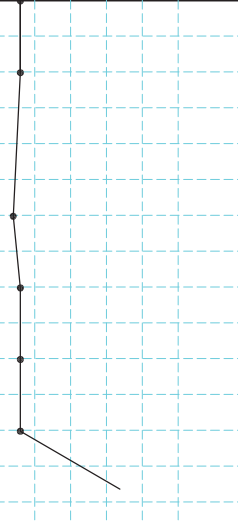
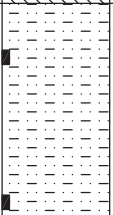
Location: Offshore

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 (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂		10	
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						
						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

I ach 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 (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂		10	
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
						7.00	2	2	3	5/30		D6 7.00 - 7.45
						8.00	1	2	2	4/30		D7 8.00 - 8.45
3a	-7.47	7.00	2.00		Loose, yellowish grey, Poorly graded Sand with clay (SP)	8.00	1	2	2	4/30		D7 8.00 - 8.45
3b	-9.47	9.00	3.00		Firm, yellowish grey, sandy Lean Clay (CL)	10.00	2	3	5	8/30		D9 10.00 - 10.45
4			4.00		Stiff, yellowish grey, Fat Clay (CH)	11.00	3	4	5	9/30		D10 11.00 - 11.45
						13.00	2	3	4	7/30		D12 13.00 - 13.45
						14.00	1	4	4	8/30		D13 14.00 - 14.45
						16.00	1	2	2	4/30		D15 16.00 - 16.45
	-16.47	16.00			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: T21

Co-ord (m): N = 2301142

Sheet: 2 / 2

E = 620281

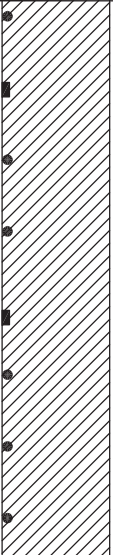
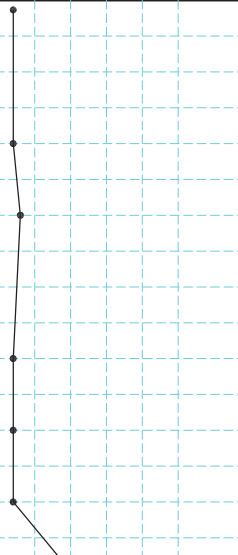
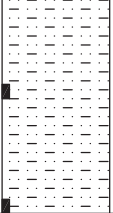
Location: Offshore

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 (m)	Blows/15cm			N		N: Blows/30 cm	Depth of the sample (m)	
							N ₀	N ₁	N ₂		10			20
5			8.80		Firm, grey, Fat Clay (CH)	17.0	2	2	3	5/30		D16		
													17.00 - 17.45	
														U17
														18.00 - 18.50
						19.0	1	2	2	4/30			D18	
														19.00 - 19.45
						20.0	1	2	4	6/30			D19	
														20.00 - 20.45
								U20						
								21.00 - 21.85						
								D21						
								22.00 - 22.45						
								D22						
								23.00 - 23.45						
								D23						
								24.00 - 24.45						
	-25.27	24.80												
10			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 (m)	Blows/15cm			N		N: Blows/30 cm	Depth of the sample (m)
							N ₀	N ₁	N ₂		10		
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	D4	4.00 - 4.45	
							5.0	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	D7	7.00 - 7.45	
							8.0	1	1	2	3	D8	8.00 - 8.45
4	-16.83	15.90	7.90		Stiff, Yellowish grey, light grey, Fat Clay (CH)	10.0	2	5	5	10	D10	10.00 - 10.45	
							11.0	4	5	6	11	D11	11.00 - 11.45
							13.0	5	6	6	12	D13	13.00 - 13.45
							14.0	4	5	6	11	D14	14.00 - 14.45
							15.0	4	6	6	12	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

I ach huyen port infrastructure construction project

BOREHOLE: T22

Co-ord (m): N = 2301057

Sheet: 2 / 2

E = 620333

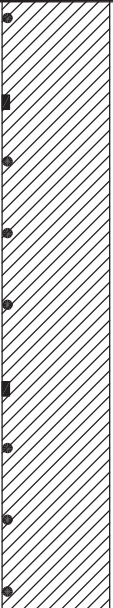
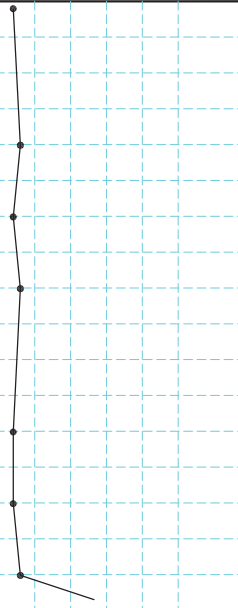
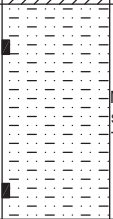
Location: Offshore

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 (m)	Blows/15cm			N		N: Blows/30 cm	Depth of the sample (m)		
							N ₀	N ₁	N ₂		10			20	30
5	-26.43	25.50	9.60		Firm, grey, Fat Clay (CH)	17.0	2	2	3	5		D17			
														17.00 - 17.45	
															U18
															18.00 - 18.80
						19.0	2	3	3	6					D19
															19.00 - 19.45
						20.0	2	2	3	5					D20
															20.00 - 20.45
						21.0	2	3	3	6					D21
															21.00 - 21.45
									U22						
									22.00 - 22.80						
									D23						
									23.00 - 23.45						
									D24						
									24.00 - 24.45						
									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

I ach 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 (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			
1a	-1.55	0.50	0.50		Light grey, poorly graded sand														
1b			6.70		Very soft, brownish grey, Lean Clay (CL)	2.8	0	0	0	0/55								U1	0.80 - 1.40
						4.8	0	0	0	0/50								D3	4.80 - 5.25
						5.8	0	0	1	1/40								D4	5.80 - 6.25
						7.8	1	1	2	3/30								D6	7.80 - 8.25
3a	-8.25	7.20	2.10		Loose, yellowish grey, Poorly graded Sand with clay (SP)	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							D12	13.80 - 14.25	
3c	-14.85	13.80	2.40		Loose, reddish brown, sand (SP-SC)	14.8	1	1	2	3/30						D13	14.80 - 15.25		
4	-17.25	16.20			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

I ach 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 (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																																												
4	-19.55	18.50	2.30	▨	Stiff, light grey, yellowish grey, Fat Clay (CH)	16.8	2	3	5	8/30	●						D15																																											
						17.8	1	3	4	7/30							●						D16																																					
5	-27.85	26.80	8.30	▨	Firm, grey, Fat Clay (CH)	19.8	1	2	2	4/30	●												U17																																					
						20.8	2	2	4	6/30							●						D18																																					
						22.8	1	2	3	5/30													●						18.80 - 19.40																															
						23.8	2	2	3	5/30																			●						19.80 - 20.25																									
						24.8	1	2	2	4/30																									●						D19																			
						25.8	2	2	3	5/30																															●						20.80 - 21.25													
26.8	50/3cm	●						U20																																																				
10	-30.85							29.80	3.00	▨	Hard, reddish brown, greenish grey, silt/claystone	●						21.80 - 22.60																																										
																		D21																																										
																														22.80 - 23.25																														
																																															D22													
																																																						23.80 - 24.25						
																																																												D23

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 (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂		10 20 30 40 50 >50	
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	3.00	2.20	▨	Very soft, Grey, brownish grey, Lean Clay (CL)	2.0	0	0	0	0	D2 2.00 - 2.45	
2	-7.40	7.00	4.00	▩	Very soft, Brownish grey, Fat Clay (CH)	4.0	0	0	1	1		U3 3.00 - 3.80
						5.0	0	0	0	0		D4 4.00 - 4.45
3b	-14.00	13.60	6.60	▨	Plastic, Yellowish grey, clayey sand (SC)	6.0	0	0	1	1		D5 5.00 - 5.45
						8.0	2	2	2	4		D6 6.00 - 6.56
						9.0	2	2	3	5		U7 7.00 - 7.70
						8.0	2	2	2	4		D8 8.00 - 8.45
4	-16.40	16.00	2.40	▩	Stiff, Yellowish grey, Fat Clay (CH)	9.0	2	2	3	5		D9 9.00 - 9.45
						11.0	2	2	2	4		U10 10.00 - 10.70
						12.0	2	2	2	4		D11 11.00 - 11.45
						12.0	2	2	2	4		D12 12.00 - 12.45
						13.0	1	2	3	5		D13 13.00 - 13.45
						14.0	4	5	4	9		D14 14.00 - 14.45
						15.0	4	5	5	10		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

I ach 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 (m)	Blows/15cm			N	N: Blows/30 cm	Depth of the sample (m)
							N ₀	N ₁	N ₂			
5			10.20		Firm, grey, Fat Clay (CH)	18.0	2	2	4	6		U17 17.00 - 17.80
						19.0	2	3	3	6		D18 18.00 - 18.45
						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	3	3	6		D24 24.00 - 24.45
						25.0	2	2	3	5		D25 25.00 - 25.45
						10	-26.60	26.20	3.00			Moderately weathered, reddish brown, silt/claystone TCR = 60%, RQD = 40%
					R27 28.00 - 28.20							

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: 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 (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂		10	
1a	-2.05	1.70	1.70	•	Loose, grey, light grey, poorly graded sand (SP)	1.0	1	1	2	3/35	D1	
2	-7.85	7.50	5.80	▨	Very soft, grey, brownish grey, Fat Clay (CH)	2.0	0	0	0	0/50	D2	
						4.0	0	0	1	1/50	D4	
						5.0	0	0	0	0/45	D5	
						7.0	0	0	1	1/30	D7	
						8.0	1	2	3	5/30	D8	
3b	-11.15	10.80	3.30	▨	Firm, yellowish grey, Lean Clay (CL)	10.0	1	2	2	4/30	D10	
						11.0	2	2	3	5/30	D11	
						13.0	2	2	2	4/30	D13	
5			14.80	▨	Firm, grey, Fat Clay (CH)	14.0	1	2	3	5/30	D14	
						15.0					U15	
						16.0	3	3	4	7/30	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: 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 (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	-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
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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: 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 (m)	Blows/15cm			N		N: Blows/30 cm	Depth of the sample (m)			
							N ₀	N ₁	N ₂		10			20	30	40
2			6.00		Very soft, Brownish grey, Fat Clay (CH)	1.0	0	0	0	0		D1 1.00 - 1.45				
3c	-7.70	6.00	4.80		Yellowish grey, poorly graded sand with clay (SP-SC)	6.0	2	2	3	5		D5 6.00 - 6.45				
						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				
4	-12.50	10.80	4.20		Stiff, Brownish grey, reddish brown,, Fat Clay (CH)	12.0	4	5	5	10		D11 12.00 - 12.45				
						13.0	5	5	6	11		D12 13.00 - 13.45				
						14.0	5	5	6	11		D13 14.00 - 14.45				
						15.0	2	3	3	6		D14 15.00 - 15.45				
5			7.00		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: T26

Co-ord (m): N = 2301435

Sheet: 2 / 2

E = 620049

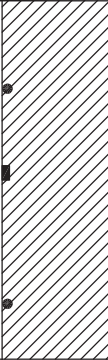
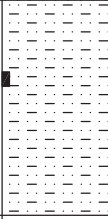
Location: Offshore

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 (m)	Blows/15cm			N	N: Blows/30 cm	Depth of the sample (m)
							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

I ach 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 (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂		10	
2	-6.44	5.00	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
						3.0						U3 3.00 - 3.90
						4.0	0	0	0	0/30		D4 4.00 - 4.45
						5.0	0	0	0	0/30		D5 5.00 - 5.45
3b	-10.94	9.50	4.50		Very soft, grey, Lean Clay (CL)	6.0						U6 6.00 - 6.90
						7.0	2	2	2	4/30		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
						10.0						U10 10.00 - 10.80
4	-15.44	14.00	4.50		Firm, yellowish grey, clayey sand (SC)	11.0	3	4	5	9/35		D11 11.00 - 11.45
						12.0	3	4	4	8/30		D12 12.00 - 12.45
						13.0	3	4	4	8/30		D13 13.00 - 13.45
						14.0						U14 14.00 - 14.60
5					Firm, light grey, yellowish brown, Sandy Lean Clay (CL)	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

I ach 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 (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂		10	
5			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
						20.0	2	2	3	5/27		D19 19.00 - 19.45
						21.0	2	2	3	5/30		D20 20.00 - 20.45
						22.0	2	3	3	6/30		D21 21.00 - 21.45
						23.0	2	3	3	6/30		D22 22.00 - 22.45
						23.0	2	3	3	6/30		D23 23.00 - 23.45
10	-24.94	23.50	3.00		Hard, reddish brown, silt/claystone TCR = 70%, RQD = 50%						R24 25.00 - 25.20	
	-27.94	26.50									R25 26.30 - 26.50	

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 10 20 30 40 50 >50
							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	-8.88	7.40	5.90	▬	Very soft, Brownish grey, Fat Clay (CH)	4.0	0	0	0	0	D3 4.00 - 4.45	
			5.00	0		0	0	0	0	D4 5.00 - 5.45		
3b	-12.98	11.50	7.40	▬	Firm, yellowish grey, Lean Clay with sand (CL)	8.0	2	2	2	4	D6 8.00 - 8.45	
			4.10	▬		10.0	2	2	3	5	D8 10.00 - 10.45	
			11.50	▬		11.0	1	2	3	5	D9 11.00 - 11.45	
4	-15.98	14.50	3.00	▬	Stiff to very stiff, Yellowish grey, Fat Clay (CH)	12.0	6	6	7	13	D10 12.00 - 12.45	
			14.50	▬		13.0	6	7	7	14	D11 13.00 - 13.45	
5			11.70	▬	Firm, grey, Fat Clay (CH)	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

I ach 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 (m)	Blows/15cm			N		N: Blows/30 cm	Depth of the sample (m)	
							N ₀	N ₁	N ₂		10			20
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								
													U16	
						19.00 - 19.80								
						21.0	2	3	3	6		D17		
						21.00 - 21.45								
	-27.68	26.20										R22		
10			3.00		Moderately weathered, reddish brown, silt/claystone TCR = 60%, RQD = 30%							26.50 - 26.70		
												R23		
	-30.68	29.20										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

I ach 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 (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂		10	
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)							D5 5.00 - 5.45
	-6.05	6.50										D6 6.00 - 6.45
3a			2.20	•	Loose, yellowish grey, Poorly graded Sand (SP)							U7 7.00 - 7.70
	-8.25	8.70										D8 8.00 - 8.45
				•	Firm, yellowish grey, Fat Clay (CH)	9.0	2	3	2	5/32	•	D9 9.00 - 9.45
3b			3.90	▨	Low - plastic, grey, light grey, Clayey Sand (SC)							D10 10.00 - 10.45
	-12.15	12.60										U11 11.00 - 11.90
				•	Firm, yellowish grey, brownish grey, Fat Clay (CH)	12.0	2	2	2	4/30	•	D12 12.00 - 12.45
				•	Stiff, brownish grey, greenish grey, yellowish grey, Fat Clay (CH)	13.0	4	5	5	10/30	•	D13 13.00 - 13.45
4			4.30	▨								U14 14.00 - 14.50
				•		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

I ach 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 (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂		10 20 30 40 50 >50	
5	-16.45	16.90	7.90		Firm, grey, Fat Clay (CH)	18.0	2	3	3	6/32	U17 17.00 - 17.90	
				19.0		2	3	2	5/34	D18 18.00 - 18.45		
				20.0		2	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	3	5/30	U21 21.00 - 21.90		
				24.0		2	3	4	7/30	D22 22.00 - 22.45		
				25.0		50	50/2			D23 23.00 - 23.45		
10	-24.35	24.80	3.00		Moderately weathered, reddish brown, silt/claystone TCR = 90%, RQD = 80%					D24 24.00 - 24.45		
	-27.35	27.80								D25 25.00 - 25.02		
										R26 26.00 - 26.20		
										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 infrastructure construction project

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 (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂		10	
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 9.00 - 9.45
						11.0	1	1	2	3		D9 11.00 - 11.45
						12.0	1	1	2	3		D10 12.00 - 12.45
						13.0	0	1	1	2		D11 13.00 - 13.45
						14.0	3	4	5	9		D12 14.00 - 14.45
4	-15.35	15.50	1.50	/ / / / /	Firm to stiff, Yellowish grey, Fat Clay (CH)	15.0	4	5	5	10		D13 15.00 - 15.45
5			11.70	/ / / / /	Firm, grey, Fat Clay (CH)	16.0	1	3	3	6		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: 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 (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂		10 20 30 40 50 >50	
5	-27.05	27.20	11.70		Firm, grey, Fat Clay (CH)	19.0	2	2	3	5		U15 17.00 - 17.90
												D16 19.00 - 19.45
												U17 20.00 - 20.90
						22.0	3	3	3	6		D18 22.00 - 22.45
						23.0	2	2	4	6		D19 23.00 - 23.45
						24.0	1	3	3	6		D20 24.00 - 24.45
						25.0	2	3	3	6		D21 25.00 - 25.45
						26.0	3	3	3	6		D22 26.00 - 26.45
10	-30.05	30.20	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 infrastructure construction project

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 (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			
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		
				3.0		0	0	0	0									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
				3b		-8.79	8.60	2.90		Firm, yellowish brown, reddish brown, grey, sandy clay (CH)	10.0	2	2	3	5				
3c			4.10		Loose, yellowish grey, Poorly graded Sand (SP)	11.0	1	2	4	6							D10 10.00 - 10.45		
				13.0		1	2	2	4								U12 12.00 - 12.50		
				14.0		2	3	4	7									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

I ach huyen port infrastructure construction project

BOREHOLE: T33

Co-ord (m): N = 2300919

Sheet: 2 / 2

E = 620298

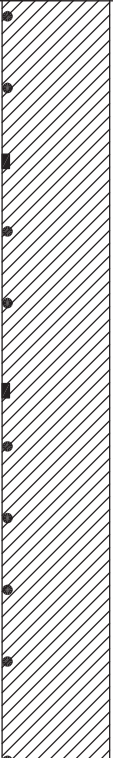
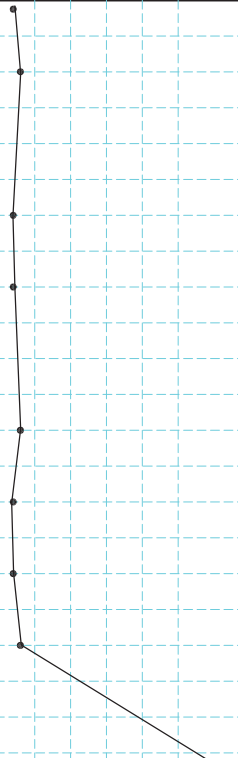
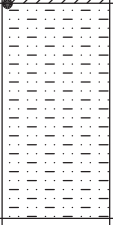
Location: Offshore

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 10 20 30 40 50 >50
							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
						23.0	2	2	4	6		D21 21.00 - 21.45
						24.0	2	2	3	5		U22 22.00 - 22.90
						25.0	2	2	3	5		D23 23.00 - 23.45
						26.0	2	2	3	5		D24 24.00 - 24.45
						27.6	1	2	4	6		D25 25.00 - 25.45
						27.6	50	2cm		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				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 infrastructure construction project

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 (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂		10	
1a			2.50		Grey, poorly graded sand (SP)	1.0	1	1	2	3		D1 1.00 - 1.45
	-2.08	2.50				2.0	1	2	2	4		D2 2.00 - 2.45
2			4.10		Very soft, Brownish grey, Fat Clay (CH)	3.0	0	0	0	0		D3 3.00 - 3.45
	-6.18	6.60				5.0	0	0	0	0		U4 4.00 - 4.90
						6.0	0	0	0	0		D5 5.00 - 5.45
						6.0	0	0	0	0		D6 6.00 - 6.45
3a			1.90		Plastic, yellowish grey, clayey sand (SC)							U7 Tut mau
	-8.08	8.50				8.0	1	2	2	4		D8 8.00 - 8.45
						9.0	1	1	1	2		D9 9.00 - 9.45
3b			4.40		Soft, Yellowish grey, brownish grey, sandy Lean Clay (CL)							U10 10.00 - 10.90
	-12.48	12.90				11.0	0	0	1	1		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			2.70		Stiff, Yellowish brown, Fat Clay (CH)							U14 14.00 - 14.45
	-15.18	15.60				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

I ach huyen port infrastructure construction project

BOREHOLE: T34

Co-ord (m): N = 2300834

Sheet: 2 / 2

E = 620349

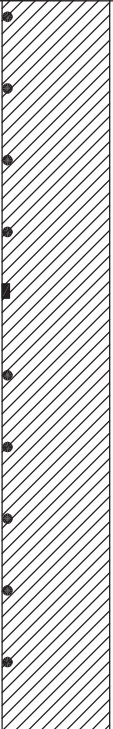
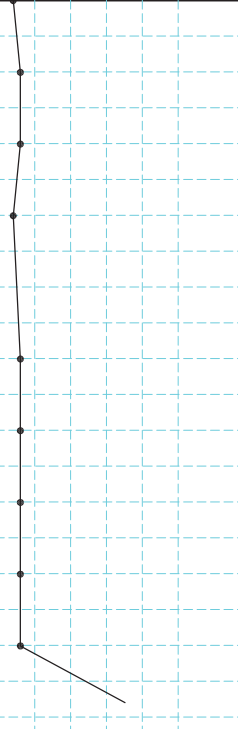
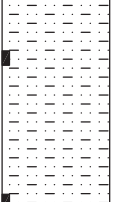
Location: Offshore

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 (m)	Blows/15cm			N		N: Blows/30 cm	Depth of the sample (m)	
							N ₀	N ₁	N ₂		10			20
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								
						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														
25.0	1	3	3	6	D25									
25.00 - 25.45														
26.0	2	3	3	6	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

I ach huyen port infrastructure construction project

BOREHOLE: T35

Co-ord (m): N = 2300748

Sheet: 1 / 2

E = 620400

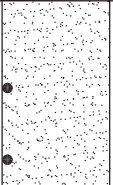
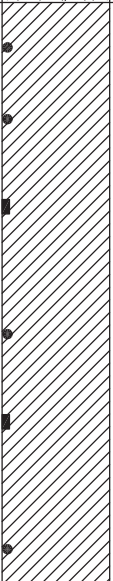
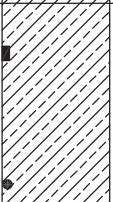
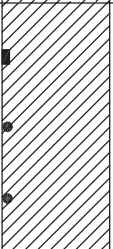
Location: Offshore

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 (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂		10 20 30 40 50 >50	
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
						11.00 - 11.80	U9					
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

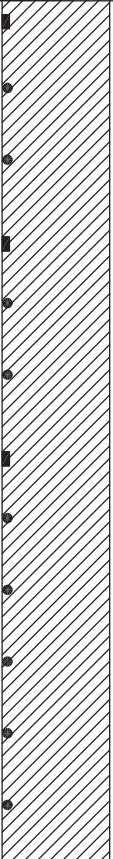
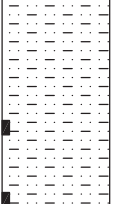
Location: Offshore

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 (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			15.55		Firm, grey, Fat Clay (CH)	18.0	3	3	4	7/30							U14 17.00 - 17.60
						19.0	2	3	4	7/32							D15 18.00 - 18.45
						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							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
						27.0	1	2	3	5/30							D24 27.00 - 27.45
						28.0	1	3	3	6/30							D25 28.00 - 28.45
						10	-28.60	29.05	3.00		Moderately weathered, reddish brown, silt/sandstone TCR = 80%, RQD = 70%						
	-31.60	32.05													R27 31.80 - 32.00		

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: T37

Co-ord (m): N = 2301298

Sheet: 1 / 2

E = 619956

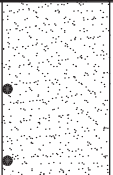
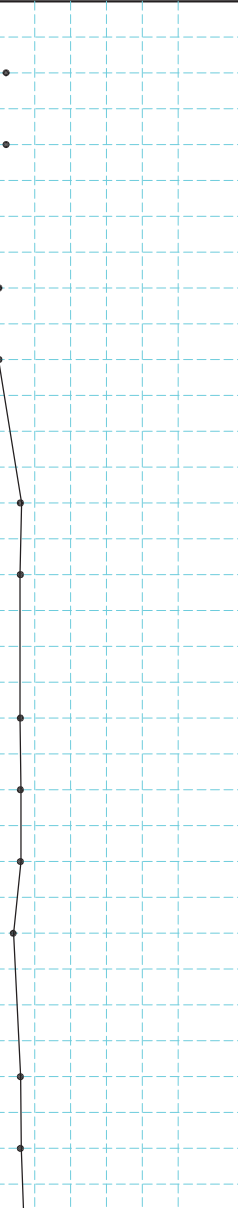
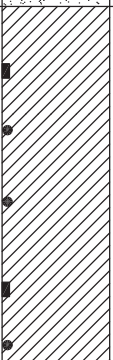
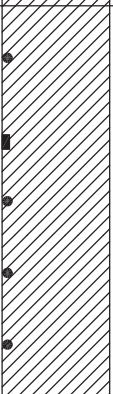
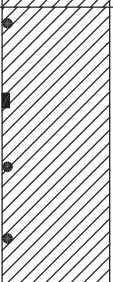
Location: Offshore

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 (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		
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)	4.0	0	0	0	0/45							U3	3.00 - 3.80
						5.0	0	0	0	0/40							D4	4.00 - 4.45
						7.0	2	3	3	6/30							U6	6.00 - 6.90
																	D7	7.00 - 7.45
3b	-14.37	13.00	5.50		Firm, light grey, yellowish grey, Sandy Lean Clay (CL)	8.0	3	3	4	7/30							D8	8.00 - 8.45
						10.0	3	3	4	7/30							U9	9.00 - 9.80
						11.0	3	3	3	6/30							D10	10.00 - 10.45
						12.0	2	3	3	6/30							D11	11.00 - 11.45
5					Firm, Yellowish grey, fat clay (CH)	13.0	2	2	3	5/30							D12	12.00 - 12.45
						15.0	3	3	3	6/27							U14	14.00 - 14.60
						16.0	3	3	4	7/30							D13	13.00 - 13.45
																	D15	15.00 - 15.45
					Firm, Grey, Fat Clay (CH)					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: 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 (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			11.50		Firm, Grey, Fat Clay (CH)		18.0	3	3	3	6/30							U17 17.00 - 17.90		
																			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		
																				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	-25.87	24.50	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

I ach 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 (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	
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
																	U3 3.00 - 3.90
3b			6.50		Firm, yellowish grey, light grey, Lean Clay with sand (CL)	5.0	2	2	3	5/32							D4 5.00 - 5.45
						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)	11.50										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

I ach 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 (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

I ach 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 (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			
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	
						3.0												U3	3.00 - 3.90
						4.0	0	0	1	1/44								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
						7.0												U7	7.00 - 7.90
3b	-8.46	9.50	3.00	█	Soft, grey, clayey sand	8.0	0	1	1	2/36						D8	8.00 - 8.45		
						9.0	0	1	1	2/31						D9	9.00 - 9.45		
						10.0											U10	10.00 - 10.90	
3c	-11.46	12.50	1.00	█	Firm, yellowish grey, Sandy Lean Clay (CL)	11.0	2	2	2	4/31						D11	11.00 - 11.45		
						12.0	1	2	2	4/30							D12	12.00 - 12.45	
5	-12.46	13.50	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)	14.0										U14	14.00 - 14.90		
						15.0	2	2	3	5/36							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

I ach 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 (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			13.50		Firm, grey, bluish grey, Fat Clay (CH)	17.0	2	2	3	5/33							D17							
																							17.00 - 17.45	
																								U18
																								18.00 - 18.80
						19.0	2	2	2	4/35														D19
																								19.00 - 19.45
						20.0	2	2	3	5/31														D20
																								20.00 - 20.45
						21.0	1	2	3	5/30														D21
																								21.00 - 21.45
22.0	1	2	2	4/30								D22												
												22.00 - 22.45												
23.0	2	2	3	5/32								D23												
												23.00 - 23.45												
24.0	2	2	2	4/31								D24												
												24.00 - 24.45												
25.0	2	2	3	5/30								D25												
												25.00 - 25.45												
26.0	2	2	3	5/34								D26												
												26.00 - 26.45												
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
- 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: T41

Co-ord (m): N = 2300954

Sheet: 1 / 2

E = 620161

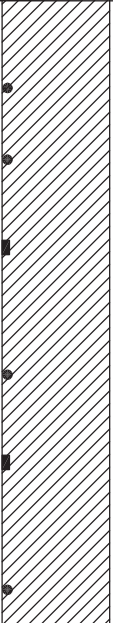
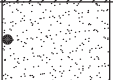
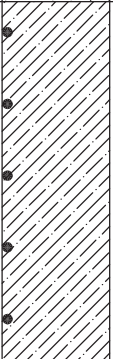
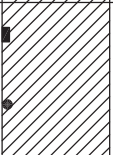
Location: Offshore

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 (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂		10	
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
						3.00 - 3.90						U3
						5.0	0	0	1	1/55		D4 5.00 - 5.45
						6.00 - 6.90						U5
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	

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: T41

Co-ord (m): N = 2300954

Sheet: 2 / 2

E = 620161

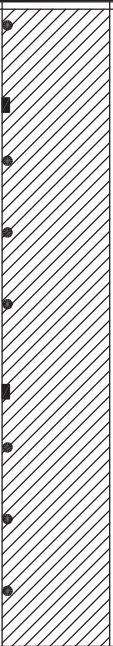
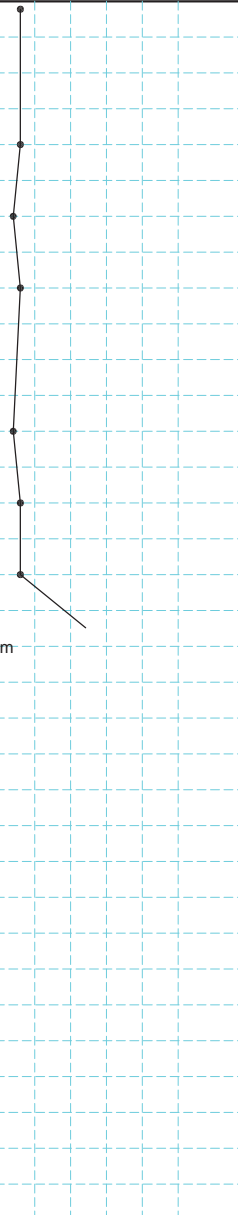
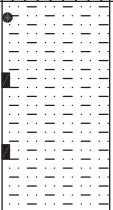
Location: Offshore

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 (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂		10 20 30 40 50 >50	
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	D16 18.00 - 18.90			
	20.0	2				2	3	5/30	D17 19.00 - 19.45			
	21.0	2				2	4	6/30	D18 20.00 - 20.45			
	23.0	2				2	2	4/30	D19 21.00 - 21.45			
	24.0	3				3	4	7/30	U20 22.00 - 22.90			
	25.0	2				3	3	6/30	D21 23.00 - 23.45			
	26.0							50/2cm	D22 24.00 - 24.45			
									D23 25.00 - 25.45			
									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
- 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: 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 (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂		10	
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)	4.0	0	0	1	1/40	•	U2 2.00 - 2.80
2			4.50	▨	Very soft, brownish grey, Fat Clay (CH)	5.0	0	0	0	0/35	•	D3 4.00 - 4.45
						8.0	0	0	1	1/30	•	D4 5.00 - 5.45
3b			3.50	▨	Firm, brown, reddish brown, Sandy Lean Clay (CL)	8.0	0	0	1	1/30	•	U5 6.00 - 6.90
						11.0	2	2	2	4/30	•	D6 8.00 - 8.45
3c			2.00	•	Loose, yellowish grey, light grey, Poorly graded Sand (SP)	11.0	2	2	2	4/30	•	U7 9.00 - 9.90
						13.0	2	2	3	5/30	•	D8 11.00 - 11.45
4			1.50	▨	Very stiff, yellowish grey, grey, Fat Clay (CH)	13.0	2	2	3	5/30	•	U9 12.00 - 12.90
						14.0	7	8	8	16/30	•	D9 12.00 - 12.90
				▨	Firm, grey, Fat Clay (CH)	14.0	7	8	8	16/30	•	D10 13.00 - 13.45
				▨	Firm, grey, Fat Clay (CH)	15.0	6	8	9	17/30	•	D11 14.00 - 14.45
				▨	Firm, grey, Fat Clay (CH)	15.0	6	8	9	17/30	•	D12 15.00 - 15.45
				▨	Firm, grey, Fat Clay (CH)	16.0					•	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

I ach 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 (m)	Blows/15cm			N		N: Blows/30 cm	Depth of the sample (m)				
							N ₀	N ₁	N ₂		10			20	30	40	50
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					
						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					
						27.0	2	2	3	5/30		D22 27.00 - 27.45					
						28.0	50/1cm					D23 28.00 - 28.01					
						10	-27.32	28.00	3.00	■	Moderately weathered, reddish brown, silt/claystone TCR = 70%, RQD = 40%						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 infrastructure construction project

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 (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂		10	
1a			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
1b	-0.67	3.80	4.20		Very soft, brownish grey, Lean Clay (CL)	4.0	0	0	0	0/30		D4 4.00 - 4.45
						5.0	0	0	0	0/30		D5 5.00 - 5.45
						7.0	0	0	1	1/30		U6 6.00 - 6.90 D7 7.00 - 7.45
2	-4.87	8.00	3.60		Very soft, grey, brownish grey, Fat Clay (CH)	8.0	0	1	1	2/30		D8 8.00 - 8.45
						10.0	0	1	1	2/30		U9 9.00 - 9.70 D10 10.00 - 10.45
						11.0	0	1	2	3/30		D11 11.00 - 11.45
3b	-8.47	11.60	3.20		Plastic, yellowish grey, clayey sand (SC)	12.0	1	2	2	4/30		D12 12.00 - 12.45
						13.0	1	2	3	5/30		D13 13.00 - 13.45
						14.0	1	2	2	4/30		D14 14.00 - 14.45
4	-11.67	14.80	4.80		Stiff, light grey, yellowish grey, Fat Clay (CH)	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

I ach 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 (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
5	-15.37	18.50	8.50		Stiff, light grey, yellowish grey, Fat Clay (CH)	17.0	4	6	7	13/30		D17
						18.0	4	5	5	10/30		D18
						19.0	2	3	4	7/30		D19
						20.0	2	3	2	5/30		D20
						21.0	1	2	2	4/30		D21
						22.0	1	2	3	5/30		D22
						24.0	2	3	3	6/30		D24
						25.0	2	3	3	6/30		D25
						26.0	2	3	3	6/30		U26
						27.0	2	3	3	6/30		R27
10	-23.87	27.00	3.00		Hard, reddish brown, silt/claystone TCR = 60%, RQD = 40%	27.00					U23	
						27.00						27.00 - 27.10
	-26.87	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

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 (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂		10	
1b			3.00	UD	Very soft, Grey, brownish grey, Lean Clay (CL)	1.0	0	0	0	0		D1 1.00 - 1.45
	-3.80	3.00		UD			0	0	0	0		U2 2.00 - 2.90
2			3.00	UD	Very soft, Brownish grey, Fat Clay (CH)	3.0	0	0	0	0		D3 3.00 - 3.45
				UD			0	0	0	0		U4 4.00 - 4.45
	-6.80	6.00		UD			0	0	0	0		U5 5.00 - 5.90
				UD			1	1	2	3		D6 6.00 - 6.45
				UD			1	1	1	2		D7 7.00 - 7.45
				UD			2	1	2	3		D8 8.00 - 8.45
				UD			1	1	1	2		D9 9.00 - 9.45
3b			7.80	UD	Plastic, Yellowish grey, light grey, clayey sand (SC)	10.0	1	1	2	3		D10 10.00 - 10.45
				UD			1	1	1	2		U11 11.00 - 11.90
				UD			1	2	2	4		D12 12.00 - 12.45
				UD			1	1	2	3		D13 13.00 - 13.45
	-14.60	13.80		UD	Firm, Grey, sandy Lean Clay (CL)	14.0	3	3	3	6		D14 14.00 - 14.45
				UD			2	3	3	6		D15 15.00 - 15.45
5			10.00	UD	Firm, grey, Fat Clay (CH)	15.0	2	3	3	6		D16 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: T46

Co-ord (m): N = 2301246

Sheet: 2 / 2

E = 619870

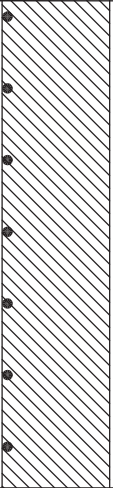
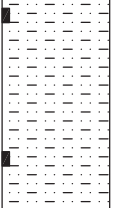
Location: Offshore

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 (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			10.00		Firm, grey, Fat Clay (CH)	17.0	3	2	3	5								D17
						18.0	3	3	3	6								D18
						19.0	1	2	4	6								D19
						20.0	2	2	4	6								D20
						21.0	2	2	3	5								D21
						22.0	3	3	3	6								D22
						23.0	2	3	3	6								D23
	-24.60	23.80			Moderately weathered, reddish brown, silt/claystone TCR = 60%, RQD = 35%										R24			
10	-27.60	26.80	3.00												R25			

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: 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 (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂		10	
1a	-3.01	1.50	1.50		Plastic, blackish grey, clayey sand with shell	1.0	1	2	2	4		D1 1.00 - 1.45
1b	-7.01	4.00	4.00		Soft, brownish grey, grey, Lean Clay (CL)	3.0	0	0	1	1		U2 2.00 - 2.80
					Soft, yellowish grey, grey, Lean Clay with sand (CL)	4.0	0	0	1	1		D3 3.00 - 3.45
3b	-9.01	7.50	2.00		Plastic, yellowish grey, clayey sand	6.0	1	2	3	5		D4 4.00 - 4.45
						7.0	1	2	3	5		U5 5.00 - 5.80
4	-13.01	11.50	4.00		Firm, yellowish grey, light grey, Fat Clay (CH)	9.0	3	3	5	8		D6 6.00 - 6.45
						10.0	3	3	4	7		D7 7.00 - 7.45
5			13.90		Firm, grey, Fat Clay (CH)	12.0	2	3	3	6		U8 8.00 - 8.50
						13.0	2	3	3	6		D9 9.00 - 9.45
						14.0	2	3	3	6		D10 10.00 - 10.45
						15.0	2	3	3	6		U11 11.00 - 11.90
						16.0	2	2	3	5		D12 12.00 - 12.45
						17.0	2	3	3	6		D13 13.00 - 13.45
											D14 14.00 - 14.45	
											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

I ach huyen port infrastructure construction project

BOREHOLE: T47

Co-ord (m): N = 2301160

Sheet: 2 / 2

E = 619921


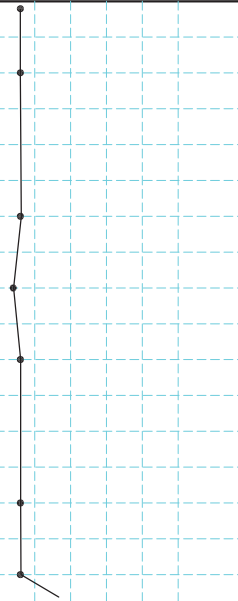
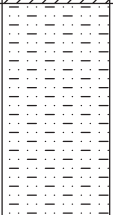
Location: Offshore

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 (m)	Blows/15cm			N	N: Blows/30 cm	Depth of the sample (m)
							N ₀	N ₁	N ₂			
5			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
												U19 19.00 - 19.80
						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
												U23 23.00 - 23.90
						24.0	2	3	3	6		D24 24.00 - 24.45
						25.0	2	2	5	7		D25 25.00 - 25.45
10	-26.91	25.40	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

I ach 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 10 20 30 40 50 >50	
							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	
						5.0	0	0	1	1		D5 5.00 - 5.45	
3b	-12.83	12.50	6.00	▨	Plastic, Yellowish grey, light grey, clayey sand (SC)	7.0	2	2	3	5		U6 6.00 - 6.90	
						8.0	3	3	4	7		D7 7.00 - 7.45	
						9.0							D8 8.00 - 8.45
						10.0	1	2	3	5		U9 9.00 - 9.90	
						11.0	2	3	3	6		D10 10.00 - 10.45	
						11.0	2	3	3	6		D11 11.00 - 11.45	
3c	-16.93	16.60	4.10	▒	Yellowish grey, poorly graded sand with clay (SP-SC)	12.0	1	3	3	6		D12 12.00 - 12.45	
						14.0	1	2	2	4		U13 Tut mau	
						15.0	1	2	3	5		D14 14.00 - 14.45	
						16.0	2	3	3	6		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: 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 (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂		10 20 30 40 50 >50	
4			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	-19.83	19.50	5.50	▨	Firm, grey, Fat Clay (CH)	20.0	2	2	4	6	●	U19 19.00 - 19.80
						21.0	1	3	4	7		D21 21.00 - 21.45
						23.0	2	3	3	6		U22 22.00 - 22.80
						24.0	1	3	3	6		D24 24.00 - 24.45
						25.0	50/2					D25 25.00 - 25.02
10	-25.33	25.00	3.00	▨	Hard, reddish brown, silt/claystone TCR = 40%, RQD = 10%						R26 26.00 - 26.10	
	-28.33	28.00									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

I ach 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 (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂		10 20 30 40 50 >50	
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	
3b	-10.57	11.50	2.90	▨▨▨▨▨	Firm, yellowish grey, Lean Clay with sand (CL)	10.0	2	2	3	5/30	D10 10.00 - 10.45	
						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	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	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: T49

Co-ord (m): N = 2300989

Sheet: 2 / 2

E = 620024

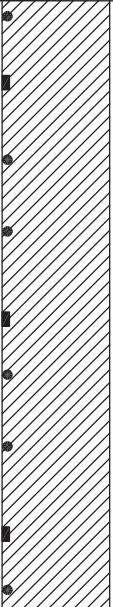
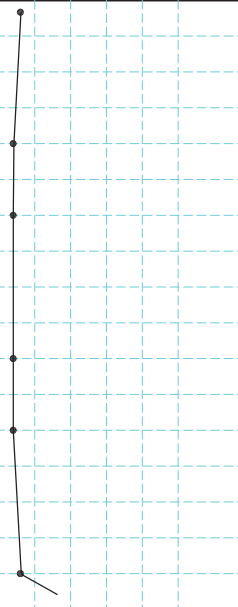
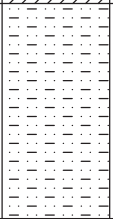
Location: Offshore

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 (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	-24.57	25.50	11.60		Firm, grey, Fat Clay (CH)	17.0	2	3	3	6/30							D17						
																						17.00 - 17.45	
																							U18
																							18.00 - 18.30
						19.0	1	2	3	5/30													D19
																							19.00 - 19.45
						20.0	1	2	2	4/30													D20
																							20.00 - 20.45
												U21											
												21.00 - 21.90											
												D22											
												22.00 - 22.45											
												D23											
												23.00 - 23.45											
												U24											
												24.00 - 24.90											
												D25											
												25.00 - 25.45											
10	-27.57	28.50	3.00		Hard, reddish brown, silt/claystone TCR = 50%, 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 infrastructure construction project

BOREHOLE: T50

Co-ord (m): N = 2300903

Sheet: 1 / 2

E = 620074

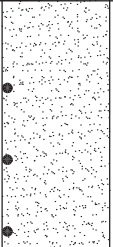
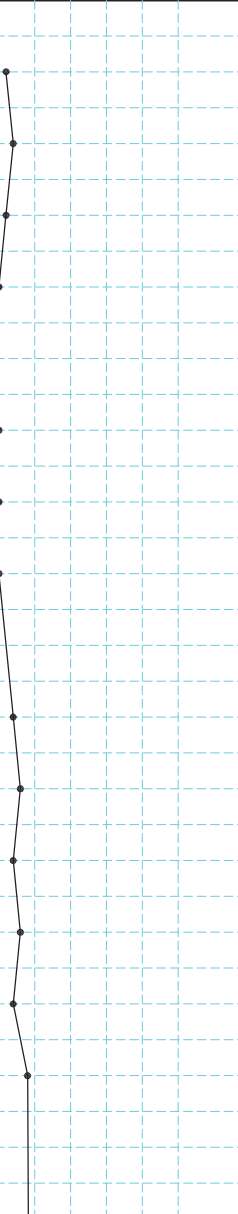
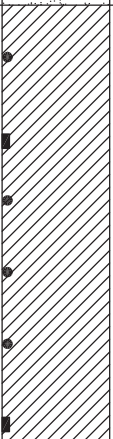
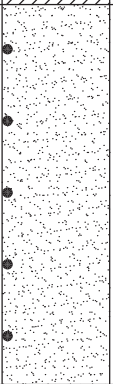
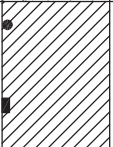
Location: Offshore

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 (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	
1a	-2.00	3.50	3.50		Grey, brownish grey, Poorly graded sand (SP)	1.0	1	1	2	3							D1
						2.0	1	2	2	4							D2
						3.0	1	1	2	3							D3
2	-8.10	9.60	6.10		very soft, Brownish grey, Fat Clay (CH)	4.0	0	0	0	0							D4
						6.0	0	0	1	1							D6
						7.0	0	0	0	0							D7
						8.0	0	0	1	1							D8
						9.00 - 9.70	U9										
3c	-13.40	14.90	5.30		Yellowish grey, poorly graded sand with clay (SP-SC)	10.0	2	2	3	5							D10
						11.0	2	3	3	6							D11
						12.0	2	2	3	5							D12
						13.0	2	3	3	6							D13
						14.0	2	2	3	5							D14
4			2.60		Firm to stiff, Brownish grey, reddish brown, light grey, Fat Clay (CH)	15.0	3	4	4	8							D15
						16.00 - 16.70	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

I ach huyen port infrastructure construction project

BOREHOLE: T50

Co-ord (m): N = 2300903

Sheet: 2 / 2

E = 620074

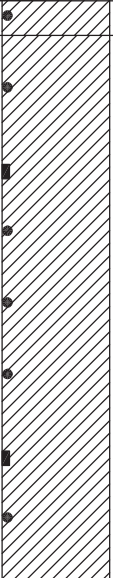
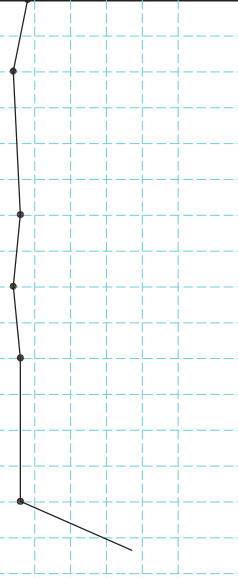
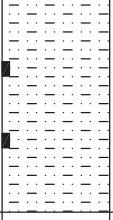
Location: Offshore

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 (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
5	-16.00	17.50	7.60		Firm, grey, Fat Clay (CH)	17.0	3	4	5	9		D17
						17.00 - 17.45						
						18.0	2	2	3	5		D18
						18.00 - 18.45						
						20.0	2	3	3	6		U19
						19.00 - 19.80						
						20.0	2	3	3	6		D20
20.00 - 20.45												
21.0	2	3	2	5	D21							
21.00 - 21.45												
22.0	2	3	3	6	D22							
22.00 - 22.45												
24.0	3	3	3	6	D24							
24.00 - 24.45												
10	-23.60	25.10	3.00		Hard, reddish brown, silt/claystone TCR = 40%, RQD = 20%						R25	
											26.00 - 26.20	
	-26.60	28.10									R26	
											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 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 (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂		10 20 30 40 50 >50	
1a	-0.08	0.60	0.60		Grey, light grey, poorly graded sand							
1b			1.40		Very soft, grey, Lean Clay with sand (CL)	1.0	0	0	0	0/32	D1 1.00 - 1.45	
	-1.48	2.00									U2 2.00 - 2.90	
2			4.80		Soft, grey, Fat Clay (CH)	4.0	0	0	1	1/45	D3 4.00 - 4.45	
											U4 5.00 - 5.90	
						6.0	0	0	1	1/50	D5 6.00 - 6.45	
	-6.28	6.80				7.0	2	2	3	5/30	D6 7.00 - 7.45	
											U7 8.00 - 8.90	
						9.0	2	2	3	5/35	D8 9.00 - 9.45	
3c			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	
	-13.48	14.00				14.0	2	2	2	4/30	D13 14.00 - 14.45	
5			13.60		Firm, grey, Fat Clay (CH)						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: 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 (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			13.60		Firm, grey, Fat Clay (CH)	17.0	2	2	3	5/35							D15
						18.0	2	3	2	5/40							D16
						19.0	2	3	3	6/37							D17
						21.0	1	2	4	6/30							D19
						22.0	2	3	2	5/30							D20
						23.0	2	3	3	6/33							D21
						24.0	3	3	3	6/30							D22
						25.0	2	2	3	5/30							D23
						26.0	2	2	3	5/33							D24
						27.0	2	2	2	4/35							D25
10			3.00		Moderately weathered, reddish brown, silt/claystone TCR = 60%, RQD = 40%									R26			
														R27			

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: 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 10 20 30 40 50 >50
							N ₀	N ₁	N ₂			
1a	-0.45	0.80	0.80	█	Light grey, poorly graded sand (SP)	1.0	0	0	0	0	D1 1.00 - 1.45	
1b			3.20	█	Very soft, Grey, brownish grey, sandy Lean Clay (CL)	2.0	0	0	1	1	D2 2.00 - 2.45	
						4.00	0	0	0	0	D3 3.00 - 3.90	
2			5.00	█	Very soft, Brownish grey, Lean Clay (CL)	4.00	0	0	0	0	D4 4.00 - 4.45	
						5.00	0	0	0	0	D5 5.00 - 5.45	
			8.65	█		7.00	0	0	1	1	D6 6.00 - 6.90	
						8.00	0	0	0	0	D7 7.00 - 7.45	
3b			4.10	█	Firm, yellowish grey, reddish brown, sandy Lean Clay (CL)	9.00	0	0	0	0	D8 8.00 - 8.45	
						10.00	1	2	2	4	D9 9.00 - 9.90	
			12.75	█		10.00	1	2	2	4	D10 10.00 - 10.45	
						11.00	2	2	3	5	D11 11.00 - 11.45	
4			2.40	█	Stiff, Yellowish grey, light grey, Fat Clay (CH)	13.00	4	4	5	9	D12 12.00 - 12.90	
						14.00	3	5	5	10	D13 13.00 - 13.45	
			15.15	█	Firm, grey, Fat Clay (CH)	14.00	3	5	5	10	D14 14.00 - 14.45	
						15.00	2	5	6	11	D15 15.00 - 15.45	
				█		16.00	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

I ach huyen port infrastructure construction project

BOREHOLE: T52

Co-ord (m): N = 2300731

Sheet: 2 / 2

E = 620177

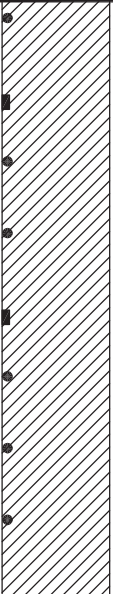
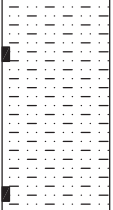
Location: Offshore

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 (m)	Blows/15cm			N	N: Blows/30 cm	Depth of the sample (m)				
							N ₀	N ₁	N ₂							
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	•	U18 18.00 - 18.80				
						20.0	2	2	4	6	•	D19 19.00 - 19.45				
						22.0	3	3	4	7	•	D20 20.00 - 20.45				
						23.0	1	3	3	6	•	U21 21.00 - 21.80				
						24.0	2	3	3	6	•	D22 22.00 - 22.45				
10	-24.95	25.30	3.00		Moderately weathered, reddish brown, sandstone TCR = 60%, RQD = 30%						R25 26.00 - 26.20					
	-27.95	28.30										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

I ach 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 (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂		10	
1a			1.90	•	Very loose, grey, Poorly graded Sand with shell (SP)	1.0	1	1	1	2		D1 1.00 - 1.45
1b	-0.75	1.90	1.10	■	Very soft, brownish grey, grey, Lean Clay (CL)							U2 2.00 - 2.90
2	-1.85	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
						8.0	0	0	1	1		D6 8.00 - 8.45
						9.0	1	2	2	4		D7 9.00 - 9.45
3b	-7.45	8.60	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
4	-11.85	13.00	2.50	■	Stiff, rednish brown, light grey, Lean Clay (CL)	14.0	2	4	5	9		U11 13.00 - 13.70
						14.0	2	4	5	9		D12 14.00 - 14.45
	-14.35	15.50		■	Firm, grey, Fat Clay (CH)	15.0	3	4	6	10		D13 15.00 - 15.45
				■								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

I ach 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 (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂		10	
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
10	-30.85	32.00	3.00		Moderately weathered, reddish brown, silt/sandstone TCR = 70%, RQD = 50%	32.0	50/1cm				D25 32.00 - 32.01	
										R26 32.60 - 32.80		
										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

I ach 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 10 20 30 40 50 >50
							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 D4 4.00 - 4.45	
						5.0	0	0	0	0	D5 5.00 - 5.45	
						7.0	0	0	1	1	U6 6.00 - 6.80 D7 7.00 - 7.45	
						8.0	0	0	1	1	D8 8.00 - 8.45	
2	-8.66	11.50	3.60		Soft, brownish grey, Fat Clay (CH)	10.0	0	1	1	2	U9 9.00 - 9.80 D10 10.00 - 10.45	
						11.0	0	1	1	2	D11 11.00 - 11.45	
						12.0	1	1	2	3	D12 12.00 - 12.45	
3b		15.00	3.50		Low-Plastic, yellowish grey, light grey, clayey sand	14.0	2	3	3	6	U13 13.00 - 13.50 D14 14.00 - 14.45	
						15.0	3	4	5	9	D15 15.00 - 15.45	
4			4.60		Stiff, yellowish grey, light grey, Sandy Lean Clay (CL)	16.0	4	5	6	11	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

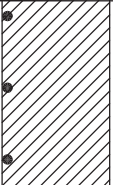
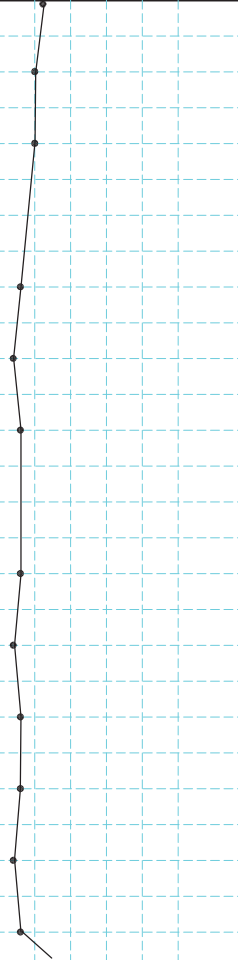
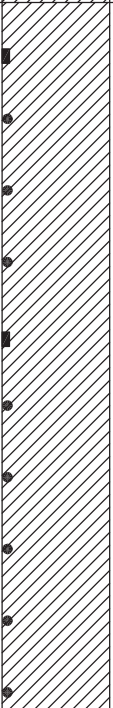
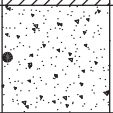
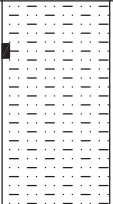
Location: Ground

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
						20.0											U20 20.00 - 20.70
5	-26.66	29.50	9.90		Firm, grey, Fat Clay (CH)	21.0	2	3	3	6	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					U24 24.00 - 24.60						
						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						
8	-28.16	31.00	1.50		Loose, light grey, grey, sand with gravel.												
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 infrastructure construction project

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 (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂		10	
1b			3.00		Very soft, Grey, brownish grey, Lean Clay (CL)	1.0	0	0	0	0		D1 1.00 - 1.45
	-3.03	3.00										U2 2.00 - 2.90
2			2.60		Very soft, Brownish grey, Fat Clay (CH)	4.0	0	0	0	0		D3 4.00 - 4.45
	-5.63	5.60										U4 5.00 - 5.90
3b			5.90		Soft to firm, Bluish grey, yellowish grey, sandy Fat Clay (CH)	7.0	1	1	1	2		D5 7.00 - 7.45
												U6 8.00 - 8.90
						10.0	1	1	2	3		D7 10.00 - 10.45
						11.0	0	1	1	2		D8 11.00 - 11.45
3c	-11.53	11.50	0.50		Loose, yellowish grey, Sand (SP)	12.0	1	3	3	6		D9 12.00 - 12.45
	-12.03	12.00										U10 13.00 - 13.90
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

I ach huyen port infrastructure construction project

BOREHOLE: T55

Co-ord (m): N = 2301195

Sheet: 2 / 2

E = 619784

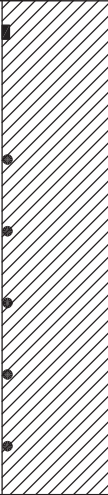
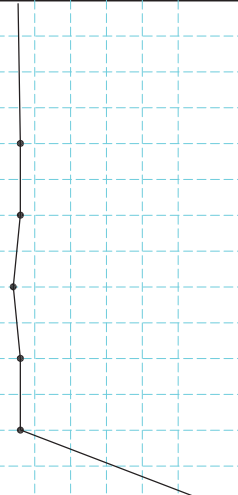
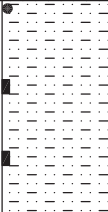
Location: Offshore

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 (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂		10	
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
						24.0	50/2cm					D19 24.00 - 24.02
10	-26.93	26.90	3.00		Moderately weathered, reddish brown, greenish grey, silt/claystone TCR =80%, RQD = 60%						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

I ach 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 (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		
2			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		D4 4.00 - 4.45	
						5.0	0	0	0	0		D5 5.00 - 5.45	
						6.50	-7.83	6.50					U6 6.00 - 6.80
						3b			4.30	▨	Plastic, yellowish grey, Clayey Sand (SC)	7.0	2
8.0	2	3	3	6								D8 8.00 - 8.45	
10.0	2	3	3	6								D10 10.00 - 10.45	
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	
5			14.60	▨	Firm, grey, Fat Clay (CH)	15.0	2	3	3	6		D15 15.00 - 15.45	
						16.0	2	3	3	6		D16 16.00 - 16.45	
												U14 14.00 - 14.90	
												U9 9.00 - 9.90	

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: 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 (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂			
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
												U19 19.00 - 19.90
						20.0	2	3	3	6		D20 20.00 - 20.45
						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%					R26 26.80 - 27.00		
	-29.73	28.40								R27 28.20 - 28.40		

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

I ach 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 10 20 30 40 50 >50
							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 D4 4.00 - 4.45
						5.0	0	0	1	1		D5 5.00 - 5.45
3b	-14.71	13.50	7.50		Plastic, Yellowish grey, clayey sand (SC)	7.0	1	2	2	4		U6 6.00 - 6.80 D7 7.00 - 7.45
						8.0	2	2	3	5		D8 8.00 - 8.45
						10.0	2	2	2	4		U9 9.00 - 9.60 D10 10.00 - 10.45
						11.0	2	3	3	6		D11 11.00 - 11.45
						12.0	1	2	3	5		D12 12.00 - 12.45
						13.0	2	2	3	5		D13 13.00 - 13.45
4	-15.21	14.00	0.50		Stiff, yellowish brown, Fat Clay (CH)	14.0	1	3	3	6	D14 14.00 - 14.45	
5			10.20		Firm, grey, Fat Clay (CH)	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

I ach 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 (m)	Blows/15cm			N	N: Blows/30 cm	Depth of the sample (m)
							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
						19.0	1	3	3	6		U18 18.00 - 18.80
						20.0	2	2	4	6		D19 19.00 - 19.45
						21.0	2	2	3	5		D20 20.00 - 20.45
						22.0	3	3	3	6		D21 21.00 - 21.45
						23.0	2	2	4	6		D22 22.00 - 22.45
10	-25.41	24.20	3.00		Moderately weathered, reddish brown, silt/claystone TCR = 30%, RQD = 10%						R24 25.00 - 25.10	
	-28.41	27.20									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

I ach 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 (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂		10	
1a			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	
2	-1.65	2.50	6.20		Soft, brownish grey, Fat Clay (CH)	5.0	0	0	1	1/35		U3 3.00 - 3.90
						8.0	0	0	1	1/30		D4 5.00 - 5.45
						8.70	0	0	1	1/30		U5 6.00 - 6.90
3b			2.10		Loose, yellowish grey, Poorly graded Sand (SP)	10.0	2	2	3	5/30		D6 8.00 - 8.45
			10.0			2	2	3	5/30		U7 9.00 - 9.50	
4	-9.95	10.80	2.70		Stiff, yellowish grey, Lean Clay (CL) Yellowish grey, light grey, Clayey Sand (SC)	11.0	3	4	5	9/30		D8 10.00 - 10.45
			13.0			4	5	6	11/30		D9 11.00 - 11.45	
5	-12.65	13.50			Firm, grey, Fat Clay (CH)	13.0	4	5	6	11/30		U10 12.00 - 12.40
						14.0	3	4	4	8/30		D11 13.00 - 13.45
						16.0	3	3	4	7/30		D12 14.00 - 14.45
											U13 15.00 - 15.90	
											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: 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 (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								
5	-25.95	26.80	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
						-28.95	29.80	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
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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: 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 (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂		10	
1a	-2.98	4.50	4.50		Grey, poorly graded sand with clay (SP-SC)	1.0	1	2	2	4		D1
						2.0	1	1	2	3		D2
						3.0	1	2	2	4		D3
						4.0	1	2	1	3		D4
2	-7.28	8.80	4.30		Very soft, Brownish grey, Grey, Fat Clay (CH)	6.0	0	0	0	0		U5
						7.0	0	0	1	1		D7
						8.0	0	0	1	1		D8
						10.0	1	2	2	4		U9
3b	-12.28	13.80	5.00		Plastic, Yellowish grey, light grey, clayey sand (SC)	11.0	1	1	2	3		D10
						12.0	2	2	2	4		D11
						13.0	2	2	3	5		D12
						14.0	2	2	3	5		D13
3c	-15.38	16.90	3.10		Yellowish grey, reddish brown, poorly graded sand with clay (SP-SC)	15.0	2	3	3	6		D14
						16.0	2	3	2	5		D15

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: 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		D17 17.00 - 17.45
						18.0	2	3	2	5		D18 18.00 - 18.45
						19.0	2	3	3	6		D19 19.00 - 19.45
5	-26.68	28.20	8.40		Firm, grey, Fat Clay (CH)	21.0	2	2	3	5	U20 20.00 - 20.80	
						22.0	2	3	3	6	D21 21.00 - 21.45	
						24.0	2	2	3	5	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	
						27.0	2	2	3	5	D26 26.00 - 26.45	
10	-29.68	31.20	3.00		Moderately weathered, reddish brown, silt/claystone TCR = 40%, RQD = 20%	27.0	2	2	3	5	D27 27.00 - 27.45	
											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 10 20 30 40 50 >50
							N ₀	N ₁	N ₂			
1a			2.50	•	Very loose, grey, Poorly graded Sand (SP)	1.0	1	1	2	3	D1 1.00 - 1.45	
	-0.91	2.50		•		2.0	1	1	2	3	D2 2.00 - 2.45	
1b			2.50	■	Very soft, grey, Sandy Lean Clay (CL)						U3 3.00 - 3.90	
	-3.41	5.00		■		5.0	0	0	0	0	D4 5.00 - 5.45	
2			4.30	■	Very soft, brownish grey, grey, Fat Clay (CH)						U5 6.00 - 6.90	
	-7.71	9.30		■		8.0	0	0	1	1	D6 8.00 - 8.45	
3b			1.00	■	Firm, grey, Sandy Lean Clay (CL)						U7 9.00 - 9.90	
	-8.71	10.30		■		10.0	2	2	3	5	D8 10.00 - 10.45	
3c			4.70	•	Loose, yellowish grey, Poorly graded Sand (SP)						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	
				•		14.0	3	3	3	6	D12 14.00 - 14.45	
5				■	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: T60

Co-ord (m): N = 2300766

Sheet: 2 / 3

E = 620040

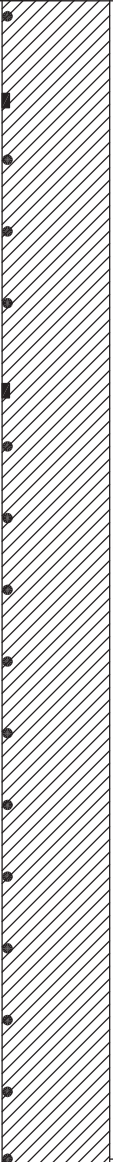
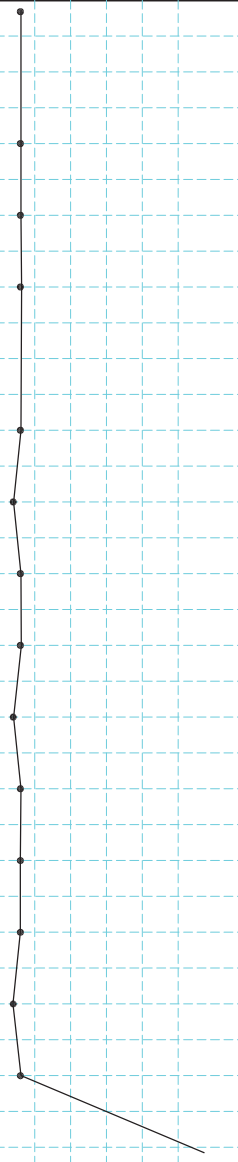
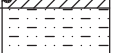
Location: Offshore

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 (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂		10	
5			18.30		Firm, grey, Fat Clay (CH)	17.0	2	3	3	6		D14
												17.00 - 17.45
												U15
												18.00 - 18.80
												D16
												19.00 - 19.45
												D17
												20.00 - 20.45
												D18
												21.00 - 21.45
												U19
												22.00 - 22.90
												D20
												23.00 - 23.45
												D21
					24.00 - 24.45							
					D22							
					25.00 - 25.45							
					D23							
					26.00 - 26.45							
					D24							
					27.00 - 27.45							
					D25							
					28.00 - 28.45							
					D26							
					29.00 - 29.45							
					D27							
					30.00 - 30.45							
					D28							
					31.00 - 31.45							
					D29							
					32.00 - 32.45							
					D30							
					33.00 - 33.32							
10	-31.71	33.30			Moderately weathered, reddish brown, silt/claystone TCR = 70%, RQD = 40%	33.0	2	3	50		D30	

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 inf r ast r uct ur e const r uct ion pr oject

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 <ul style="list-style-type: none"> ■ UD: Undisturbed sample ● D, S: Disturbed and SPT sample ■ R: Rock sample 	<p style="font-size: small; margin: 0;"> PORT AND WATERWAY ENGINEERING CONSULTANT JSC (TEDI PORT) 278 TON DUC THANG - HANOI TEL: 04-38513626 FAX: 04-38517816 </p>
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BOREHOLE LOG

I ach huyen port infrastructure construction project

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 10 20 30 40 50 >50
							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	-8.26	8.80	6.30	▨	Very soft, Brownish grey, Fat Clay (CH)	2.0	2	3	3	6	D2 2.00 - 2.45	
						4.0	0	0	1	1	U3 3.00 - 3.80	
						5.0	0	0	1	1	D4 4.00 - 4.45	
						7.0	0	0	1	1	D5 5.00 - 5.45	
						8.0	0	0	1	1	D6 6.00 - 6.90	
3b	-12.96	13.50	4.70	▨	Firm, Yellowish grey, light grey, sandy Lean Clay (CL)	8.0	0	0	1	1	D7 7.00 - 7.45	
						10.0	2	2	3	5	D8 8.00 - 8.45	
						11.0	2	3	3	6	U9 9.00 - 9.90	
						12.0	2	3	3	6	D10 10.00 - 10.45	
4	-14.96	15.50	2.00	▨	Firm to stiff, Yellowish grey, light grey, Fat Clay (CH)	11.0	2	3	3	6	D11 11.00 - 11.45	
						12.0	2	3	3	6	D12 12.00 - 12.45	
						13.0	2	3	3	6	D13 13.00 - 13.45	
					Firm, grey, Fat Clay (CH)	15.0	3	4	4	8	U14 14.00 - 14.50	
						16.0	1	2	2	4	D15 15.00 - 15.45	
											D16 16.00 - 16.45	

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

I ach huyen port infrastructure construction project

BOREHOLE: T61

Co-ord (m): N = 2300680

Sheet: 2 / 2

E = 620091


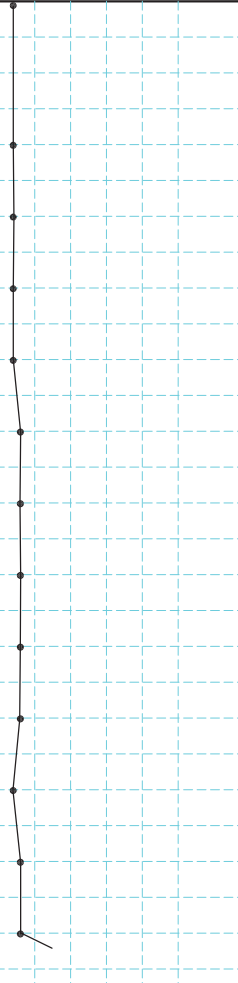

Location: Offshore

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 (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂		10	
5			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							
	-30.16	30.70				D30	30.00 - 30.45					
9			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

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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: 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 (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂		10	
1b			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	-3.43	3.80		▨	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 6.00 - 6.45
						7.0	2	3	3	6/30		D7 7.00 - 7.45
3b	-6.43	6.80		▨	Firm, yellowish grey, Sandy Lean Clay (CL)	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
						12.0	2	3	3	6/30		D11 11.00 - 11.45
						13.0	2	3	3	6/30		U12 12.00 - 12.90
						14.0	2	3	3	6/30		D13 13.00 - 13.45
						15.0	2	3	3	6/30		D14 14.00 - 14.45
						16.0	2	2	3	5/30		U15 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: 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

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 (m)	Blows/15cm			N		N: Blows/30 cm
							N ₀	N ₁	N ₂		10	
5			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 D19 19.00 - 19.45
						20.0	2	3	3	6/30	●	D20 20.00 - 20.45
						21.0	2	3	3	6/30	●	D21 21.00 - 21.45
						23.0	2	3	4	7/32	●	U22 22.00 - 22.90 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	4	7/32	●	D26 26.00 - 26.45
						27.0	2	3	4	7/30	●	D27 27.00 - 27.45
						28.0	2	3	4	7/30	●	D28 28.00 - 28.45
						29.0	2	3	3	6/30	●	D29 29.00 - 29.45
10	-29.43	29.80	3.00		Moderately weathered, reddish brown, silt/sandstone TCR = 70%, RQD = 40%							
	-32.43	32.80										

Legend

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



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