

**REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF
PUBLIC WORKS AND HIGHWAYS**

**THE DETAILED DESIGN STUDY
FOR
THE PASIG-MARIKINA RIVER
CHANNEL
IMPROVEMENT PROJECT
(PHASE IV)**

**FINAL REPORT
(PRIOR RELEASE VERSION)**

**VOLUME-3
APPENDIX FOR
GEOTECHNICAL INVESTIGATION**

AUGUST 2020

JAPAN INTERNATIONAL COOPERATION AGENCY

**CTI ENGINEERING INTERNATIONAL CO., LTD.
JAPAN WATER AGENCY
NIPPON KOEI CO., LTD.
CTI ENGINEERING CO., LTD.**

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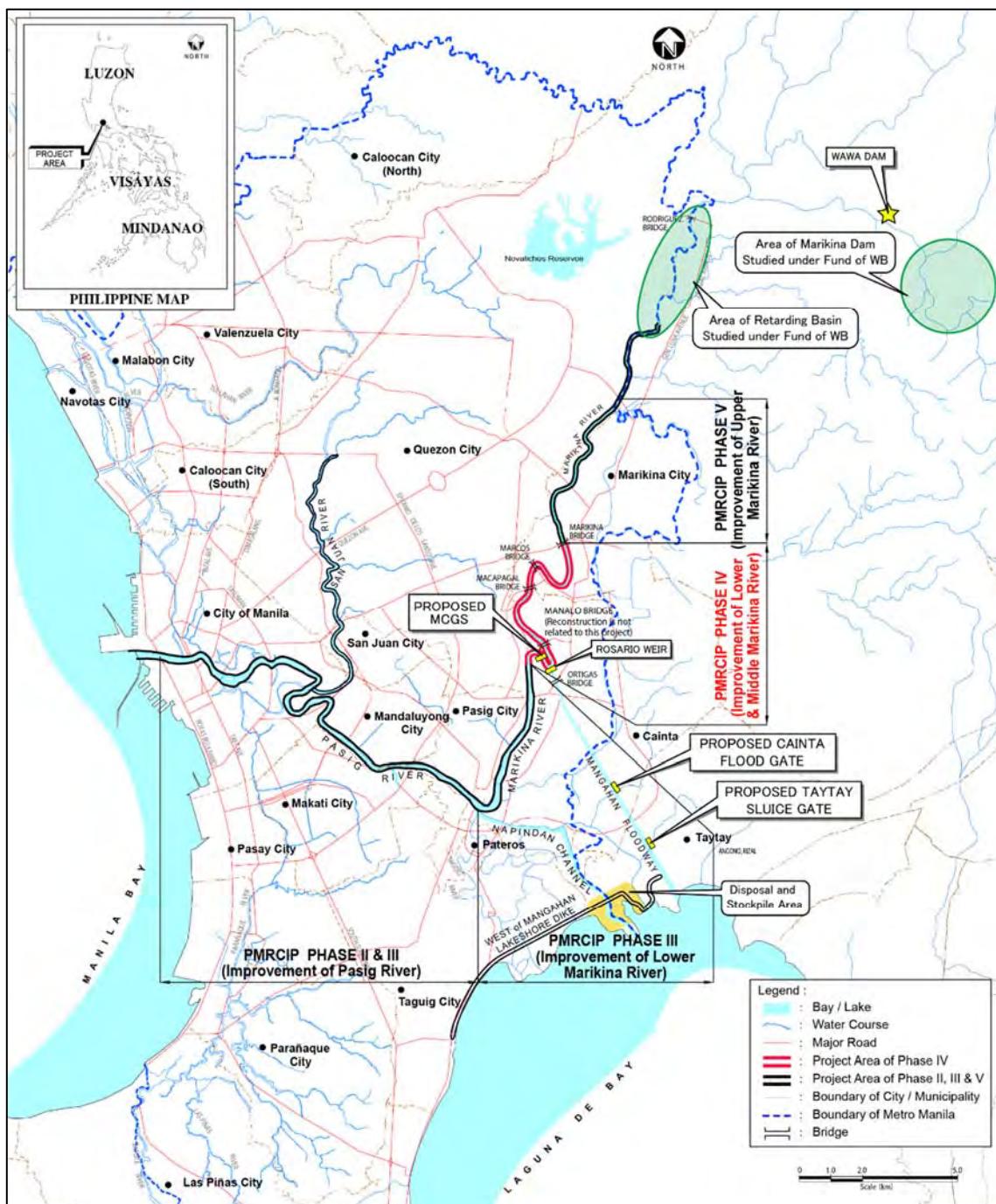
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**COMPOSITION OF FINAL REPORT
(PRIOR RELEASE VERSION)**

VOLUME-1A	:	MAIN REPORT (CHAPTER 1 to 6)
VOLUME-1B	:	MAIN REPORT (CHAPTER 7 / 7.1 to 7.3)
VOLUME-1C	:	MAIN REPORT (CHAPTER 7 / 7.4 to 7.6)
VOLUME-1D	:	MAIN REPORT (CHAPTER 8 to 12)
VOLUME-2	:	APPENDIX
VOLUME-3	:	APPENDIX FOR GEOTECHNICAL INVESTIGATION

EXCHANGE RATES USED IN THE REPORT:
PHP 1.0 = JPY 2.15
US \$1.0 = JPY 108.9 = PHP 50.7
(November 2019)



PROJECT LOCATION MAP

**THE DETAILED DESIGN STUDY
FOR
THE PASIG-MARIKINA RIVER CHANNEL
IMPROVEMENT PROJECT (PHASE IV)**

**FINAL REPORT (PRIOR RELEASE VERSION)
VOL.-3 APPENDIX FOR GEOTECHNICAL INVESTIGATION**

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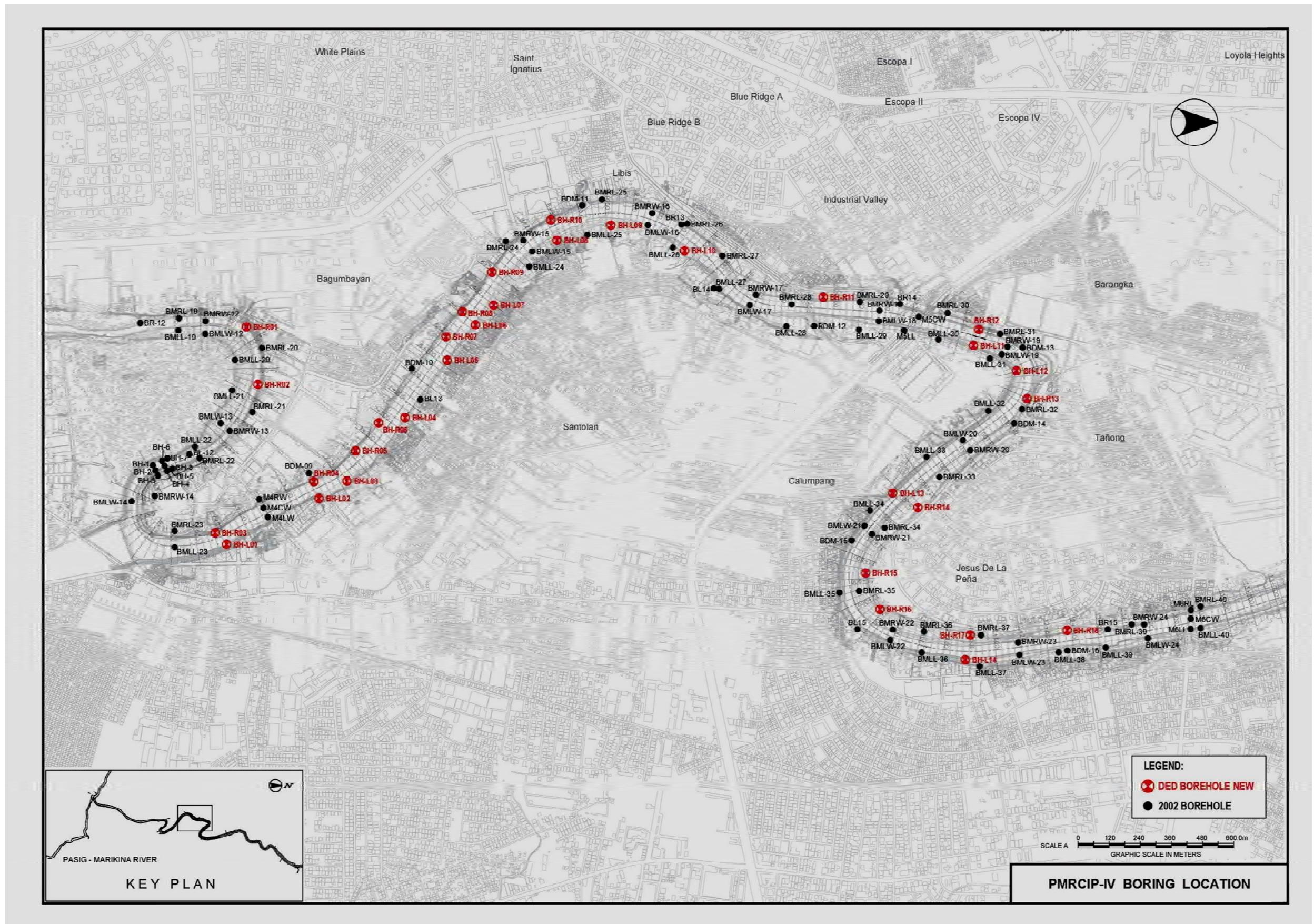


Figure 5-1-1 Location Maps of Boreholes at Marikina River

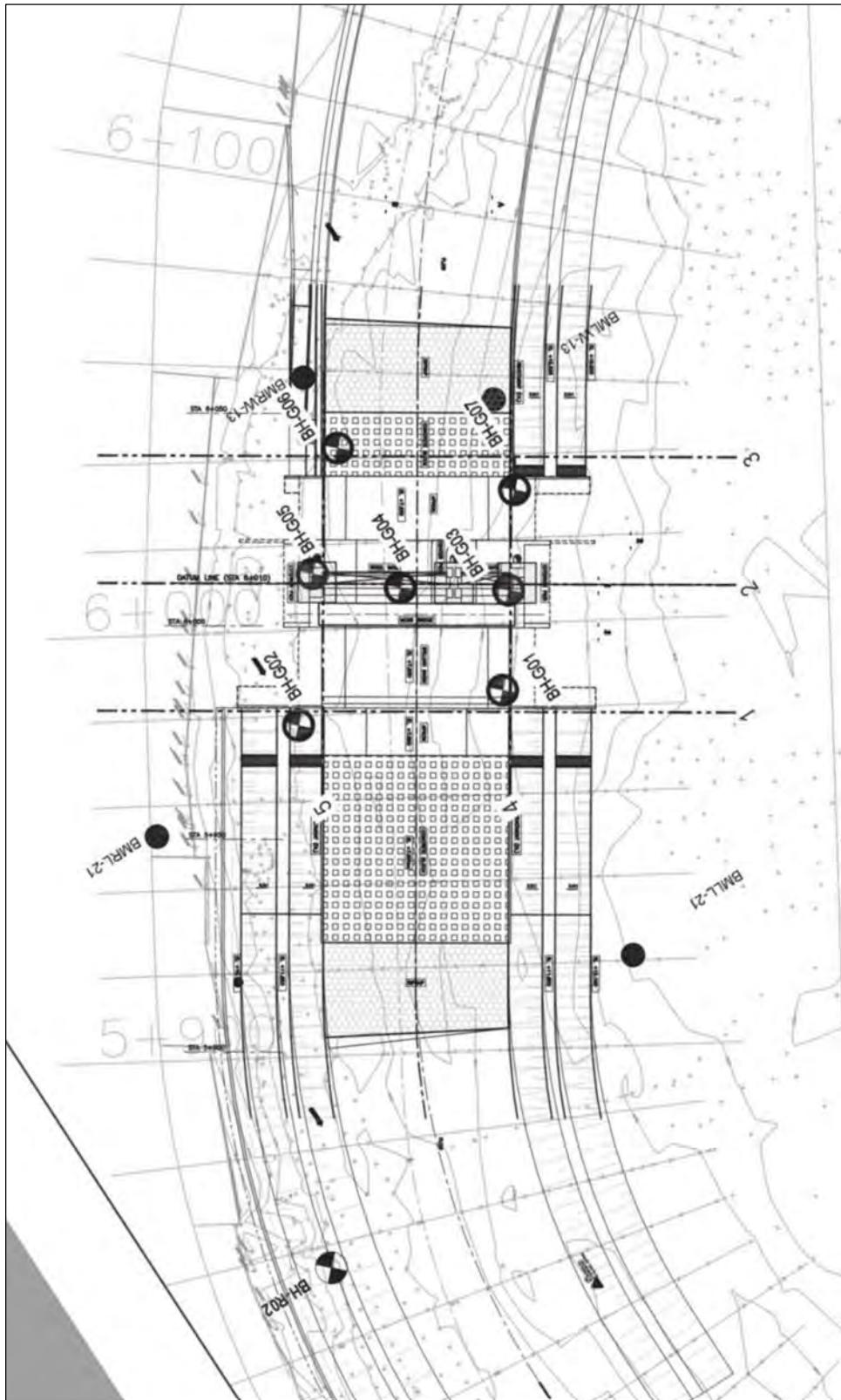


Figure 5-1-2 Location Maps of Boreholes at MCGS Site

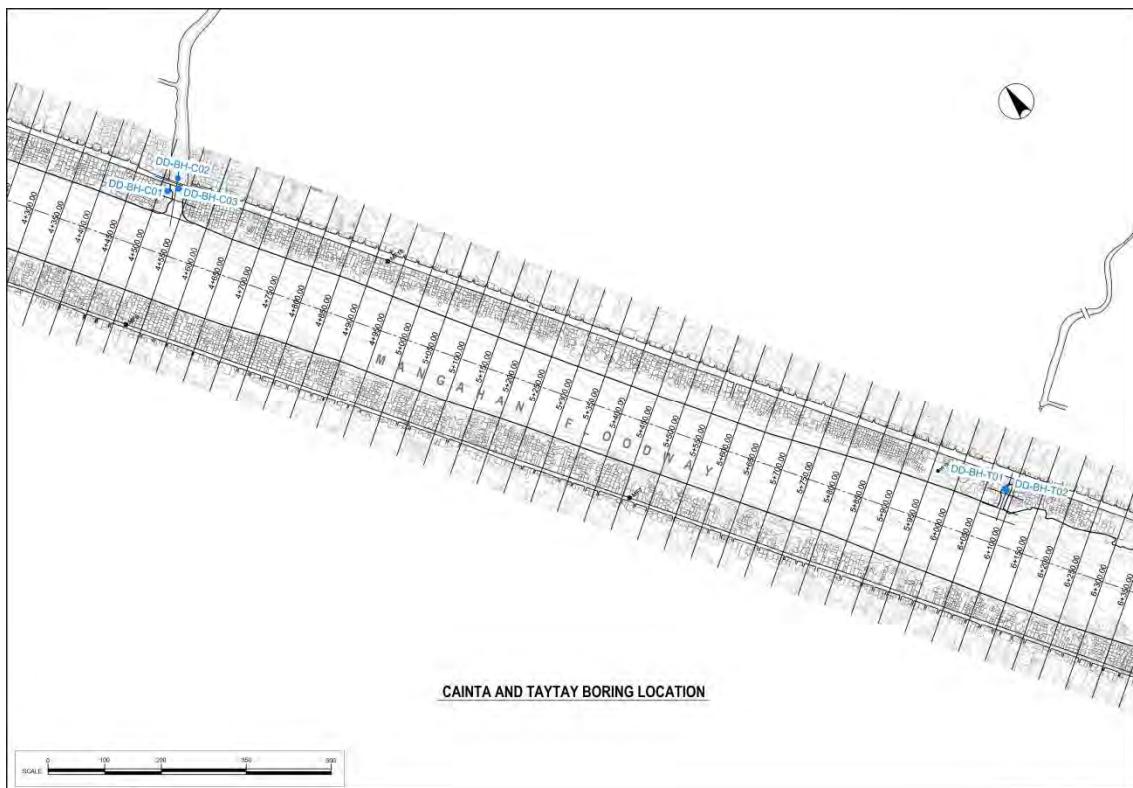


Figure 5-1-3 Location Maps of Boreholes at Cainta / Taytay Site

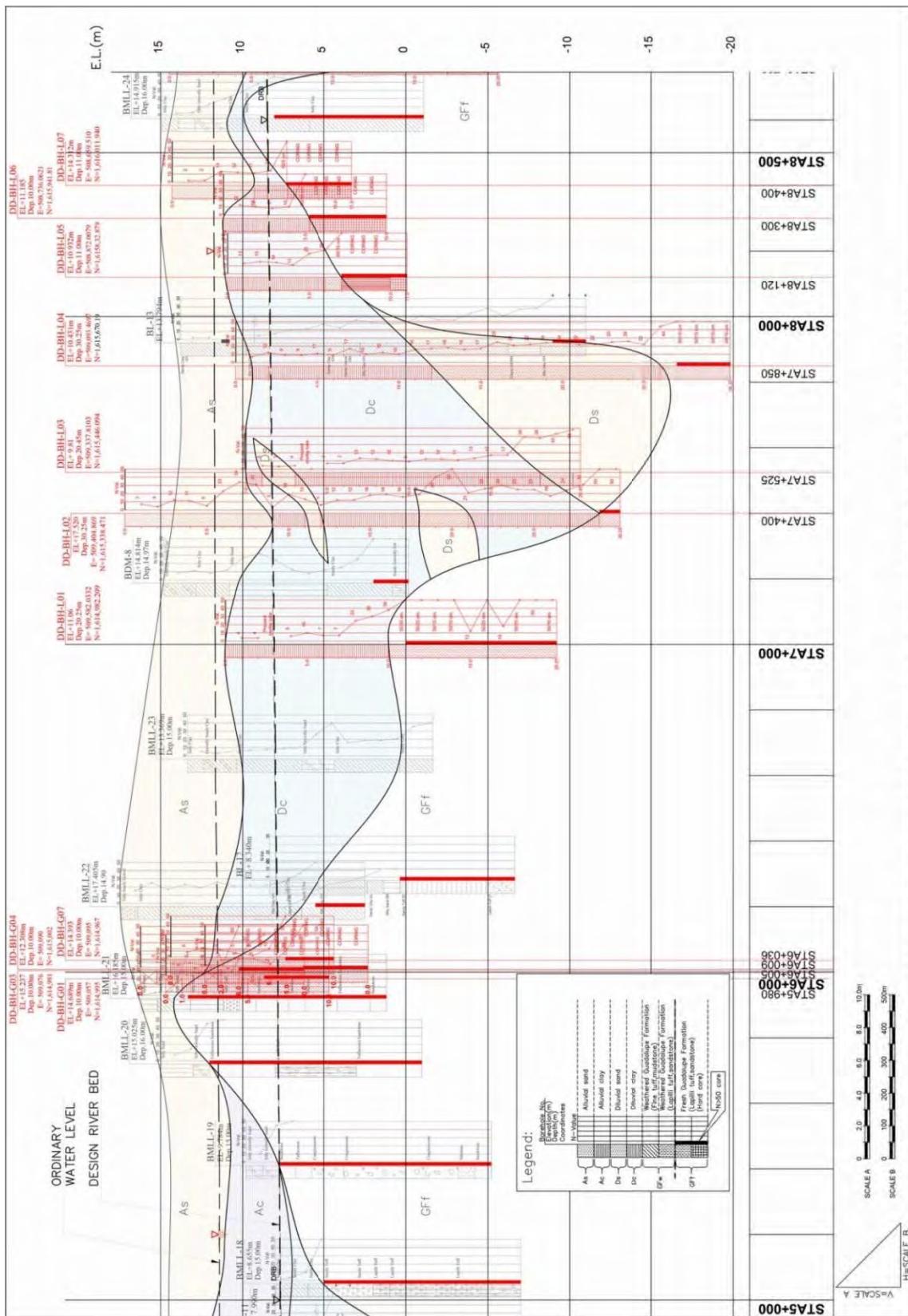


Figure 5-2-1 (1/3) Geological Section of Marikina Left Bank

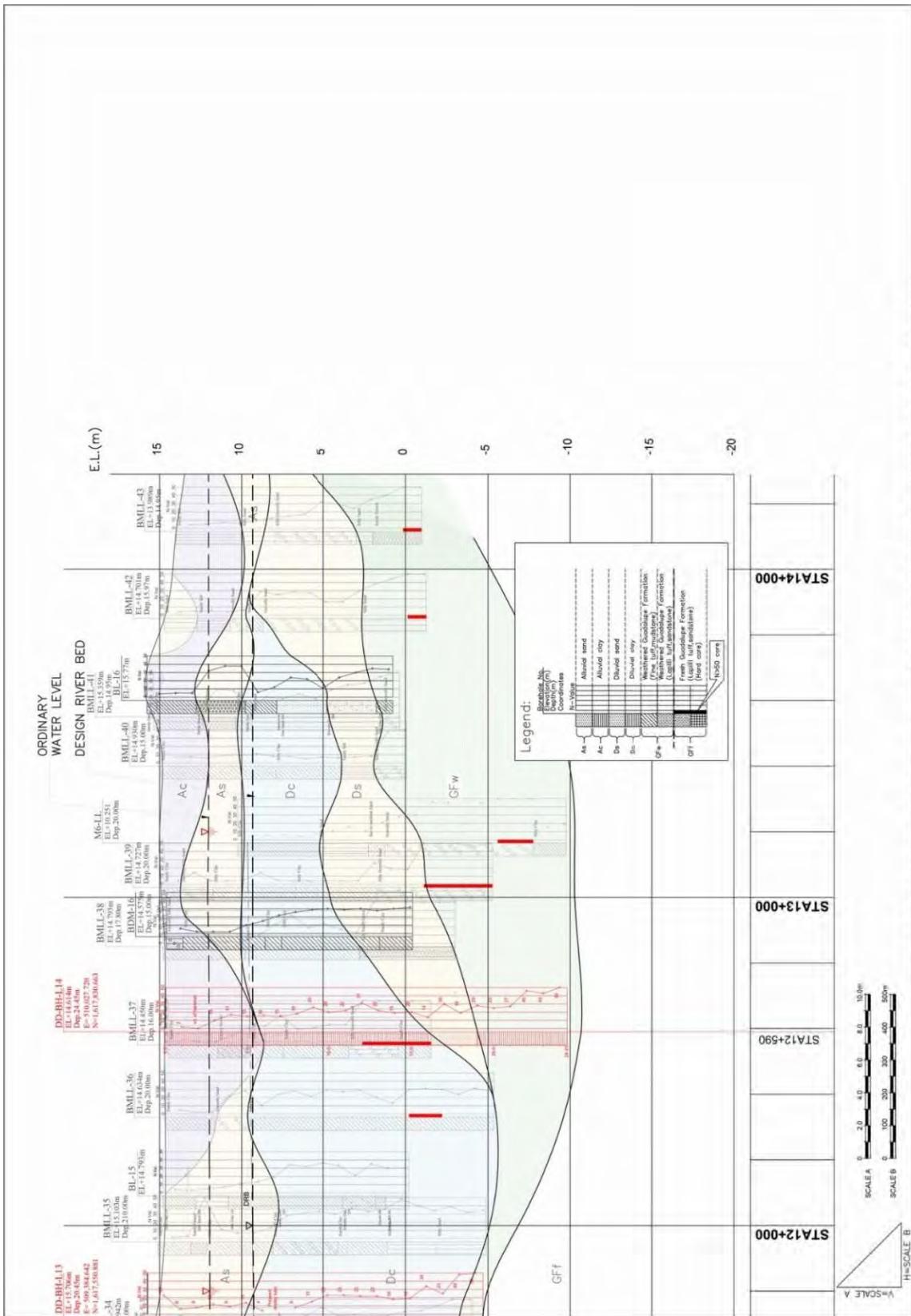


Figure 5-2-1 (3/3) Geological Section of Marikina Left Bank

Figure 5-2-1 (3/3) Geological Section of Marikina Left Bank

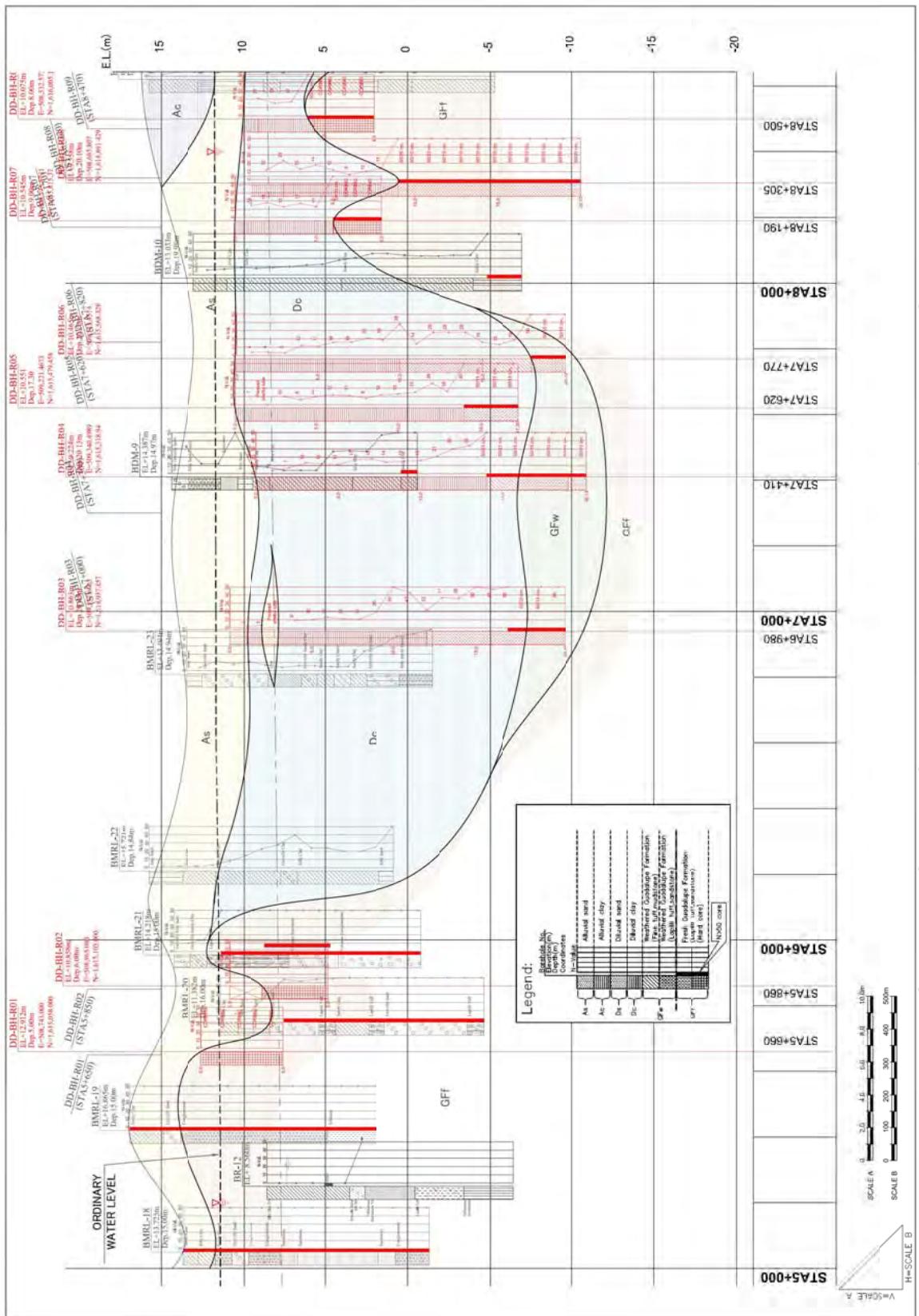


Figure 5-2-2 (1/3) Geological Section of Marikina Right Bank

Figure 5-2-2 (1/3) Geological Section of Marikina Right Bank

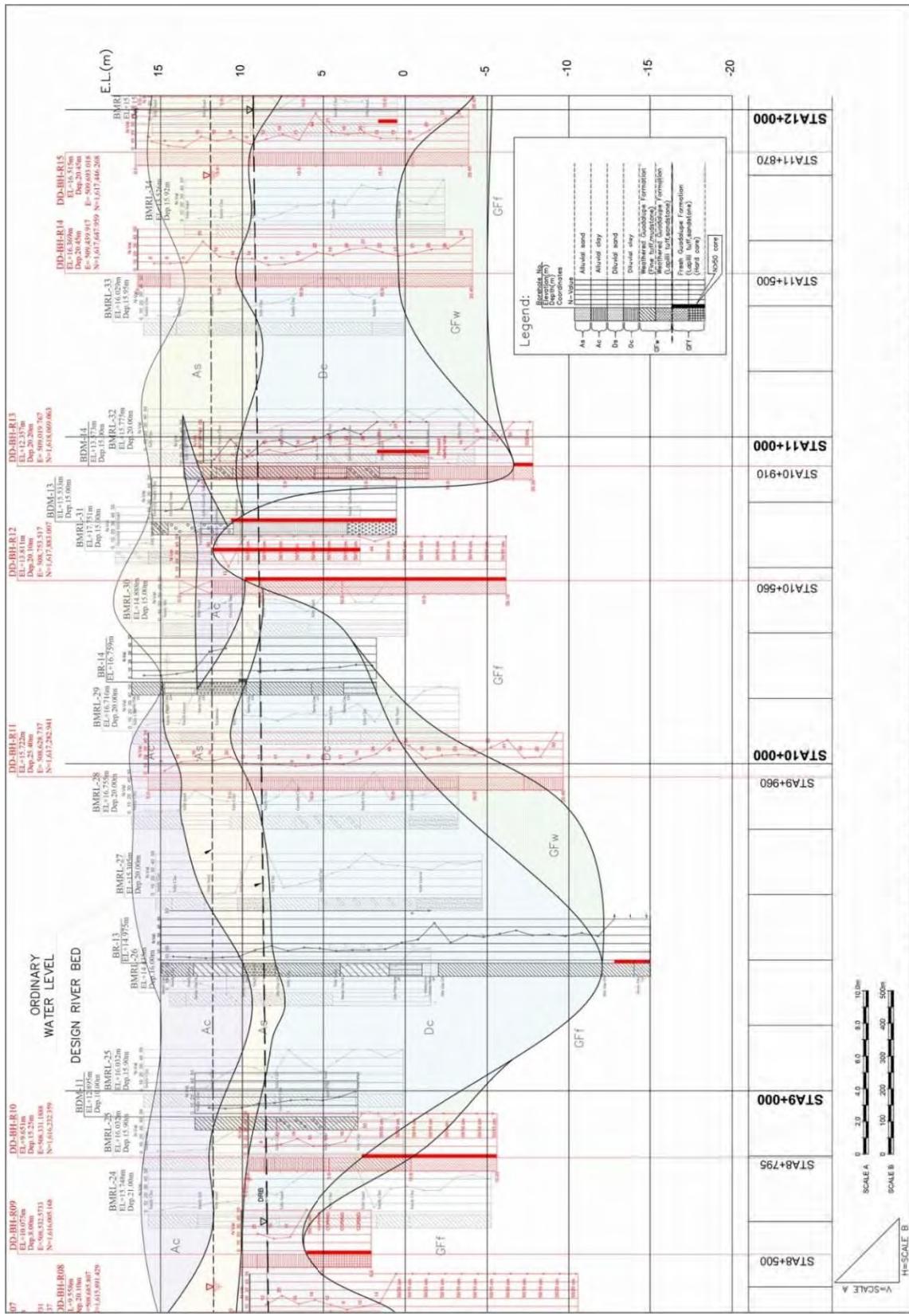


Figure 5-2-2 (2/3) Geological Section of Marikina Right Bank

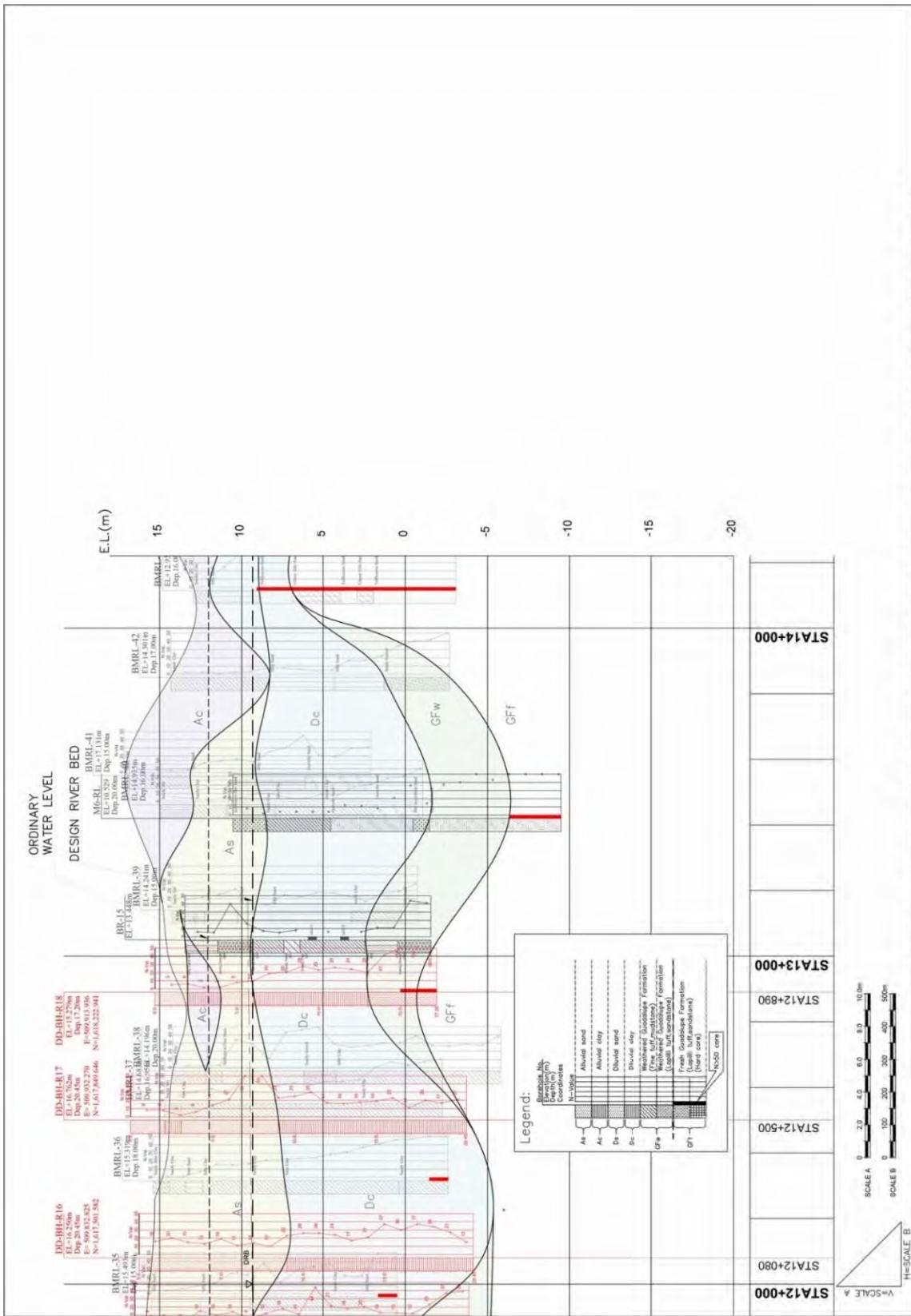


Figure 5-2-2 (3/3) Geological Section of Marikina Right Bank

Geological Section of Marikina River Right Bank STA 12+000 to STA 14+000

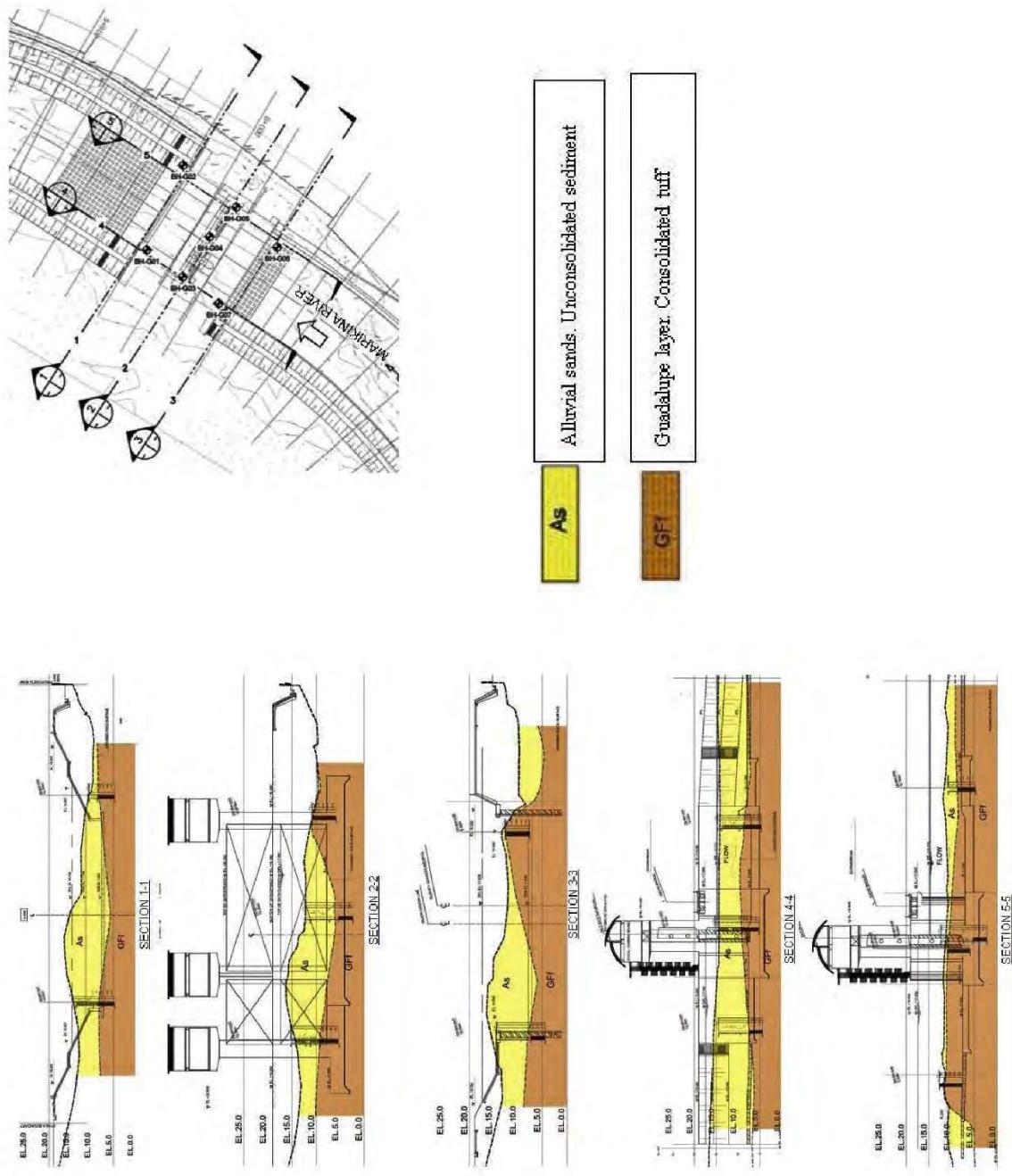
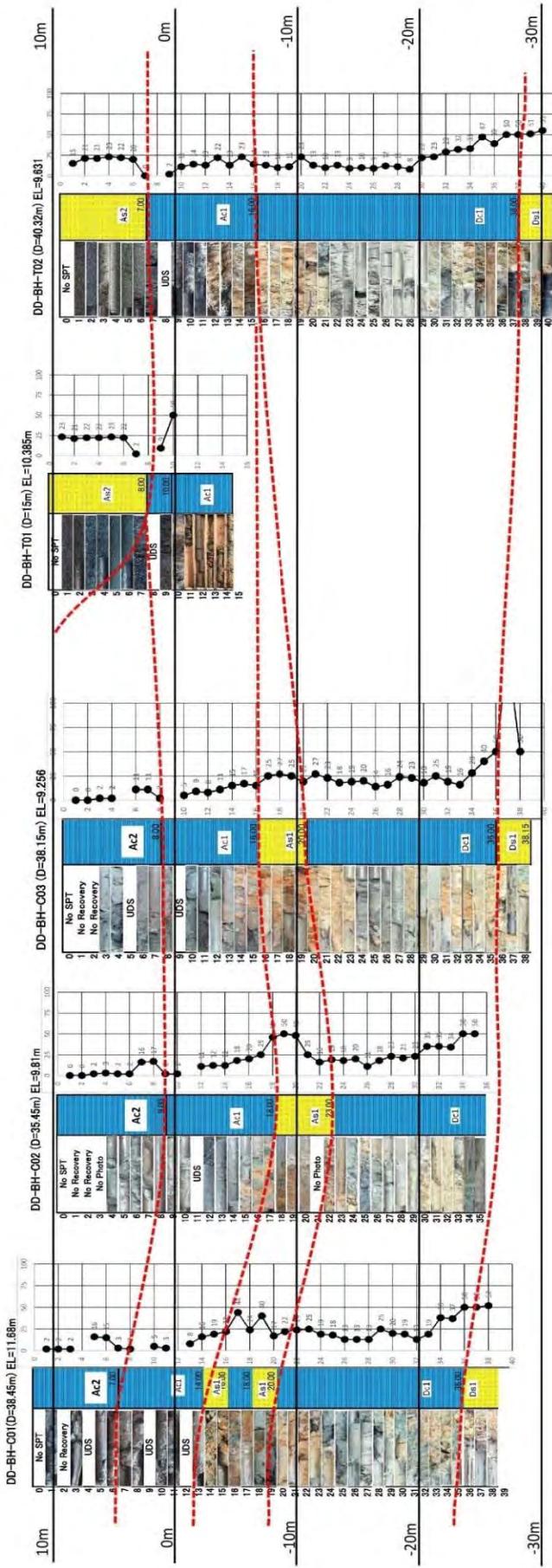


Figure 5-2-3 Geological Section of MCGS Site



Characteristic		
Geology	average N value	Thickness
As2	20	6m
Ac2	6	7m
Ac1	13	10m
As1	29	5m
Dc2	22	16m
Ds1	50	3m

Figure 5-2-4 Geological Section of CAINTA-TAYTAY Site

Boring log with Core box, SPT sample and SPT graph

In order to clarity, the SPT soil sample photo is processed

Legend

Geological Age	Symbol/ colour	MARIKINA/MCGS	Symbol/ colour	CAINTA/TAYTAY
Holocene (Alluvium)	As	Alluvial sand,	As2	Alluvial sand、TAYTAY表層に分布
	Ac	Alluvial clay	As1	Alluvial sand、CAINTAで確認
Quaternary	Ds	Diluvial sand	Ac2	Alluvial clay、CAINTA表層に分布
	Dc	Diluvial clay	Ac1	Alluvial clay、CAINTA、TAYTAYに分布
Pleistocene (Diluvium)	GFW	Weathered Guadalupe Formation (Lapilli tuff, Sand stone)	Ds1	Diluvial sand、CAINTA、TAYTAYで確認
	GFF	Fresh Guadalupe Formation (Lapilli tuff, Sand stone)	Dc1	Diluvial clay、CAINTA、TAYTAYで確認

Figure 5-3-1 (1/103) BORING LOGS (PHASE IV)

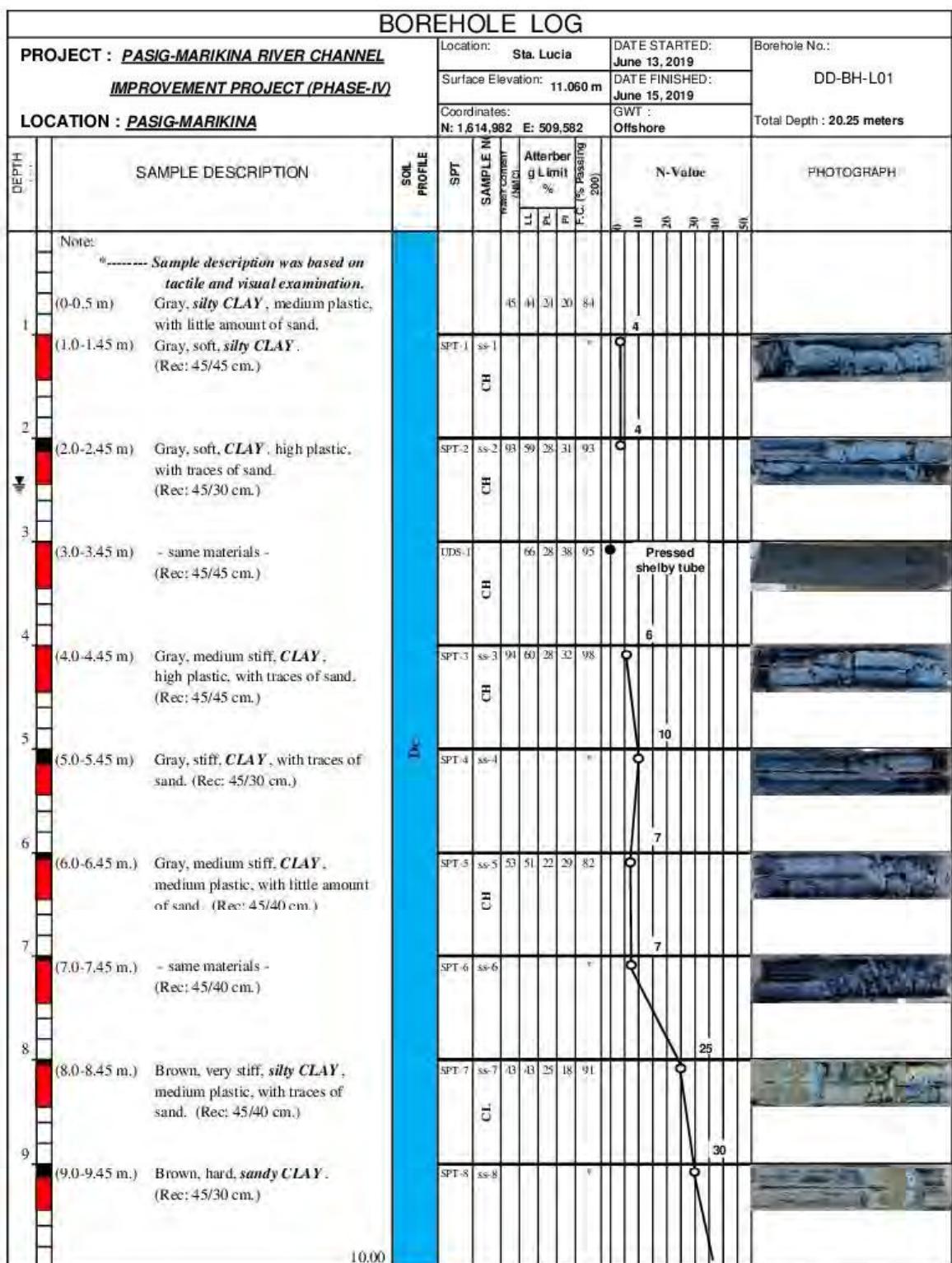


Figure 5-3-1 (2/103) BORING LOGS (PHASE IV)

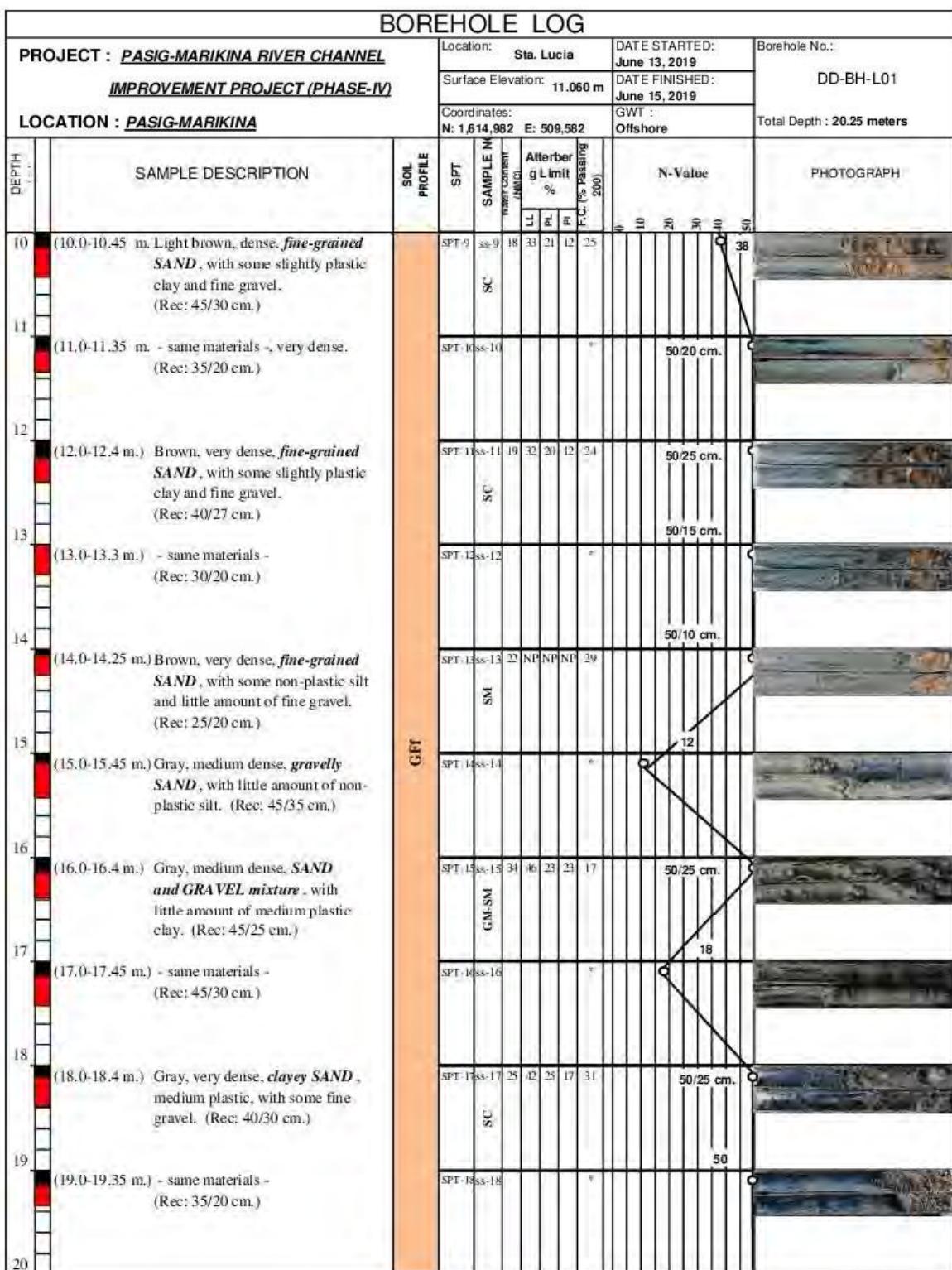


Figure 5-3-1 (3/103) BORING LOGS (PHASE IV)

BOREHOLE LOG																		
PROJECT : PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE-IV) LOCATION : PASIG-MARIKINA			Location: Sta. Lucia			DATE STARTED: June 13, 2019			Borehole No.: DD-BH-L01 Total Depth : 20.25 meters									
			Surface Elevation: 11.060 m			DATE FINISHED: June 15, 2019												
			Coordinates: N: 1,614,982 E: 509,582			GWT : Offshore												
DEPTH		SAMPLE DESCRIPTION	SOIL PROFILE	SPT	SAMPLE N Water content (% MAGIC)	Atterber g Limit %	F.C. (% Passing 200)	N-Value					PHOTOGRAPH					
20		(20.0-20.25 m.) Brown, very dense, <i>fine-grained SAND</i> , with some slightly plastic clay and little amount of fine gravel. (Rec: 25/20 cm.)	GFT	SPT-193a-10	SC	23	35	23	12	26		10	20	30	40	50		
21		<i>End of borehole @ 20.25m depth</i>																
22																		
23																		
24																		
25																		
26																		
27																		
28																		
29																		
30																		

Figure 5-3-1 (4/103) BORING LOGS (PHASE IV)

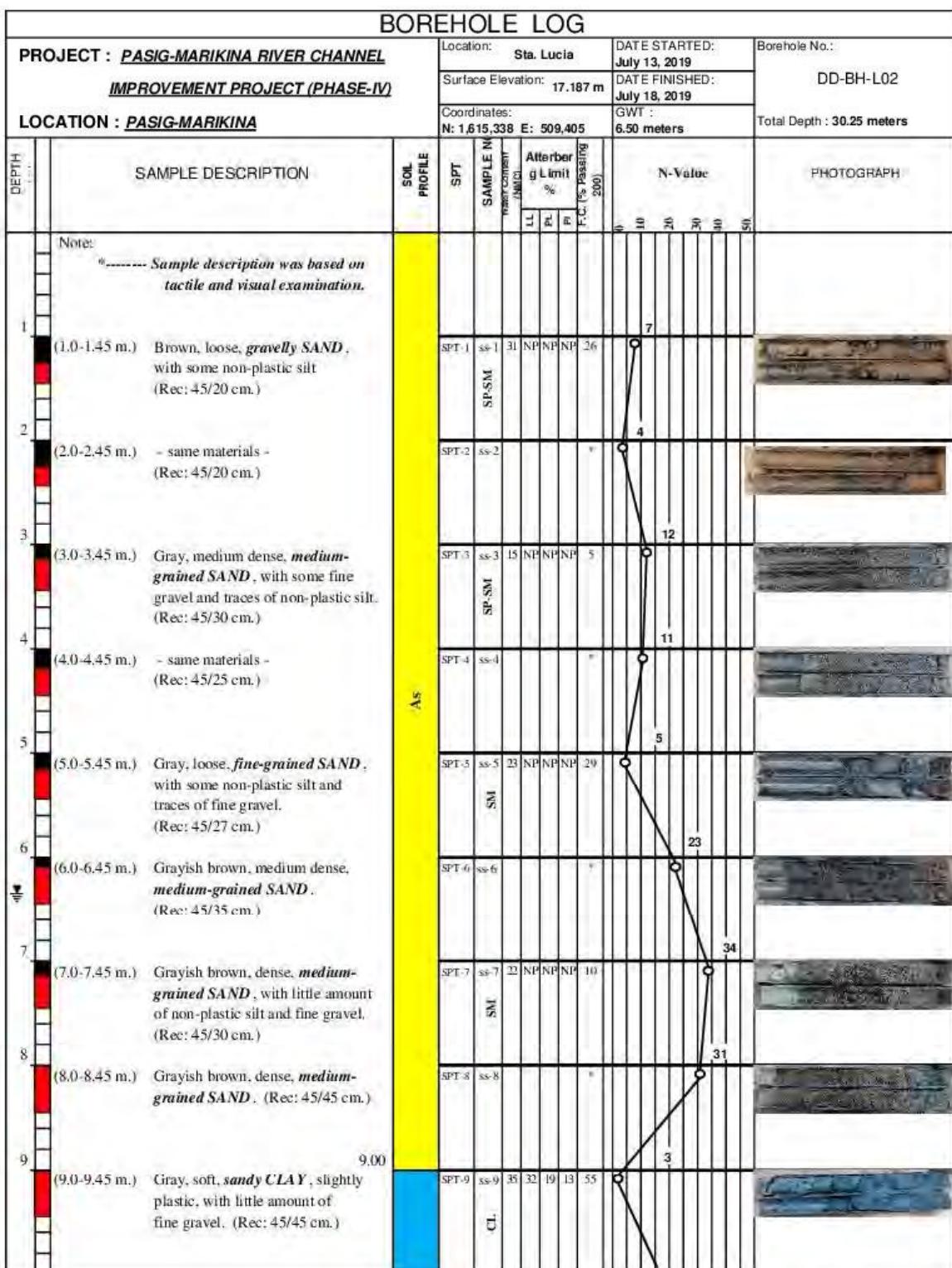


Figure 5-3-1 (5/103) BORING LOGS (PHASE IV)

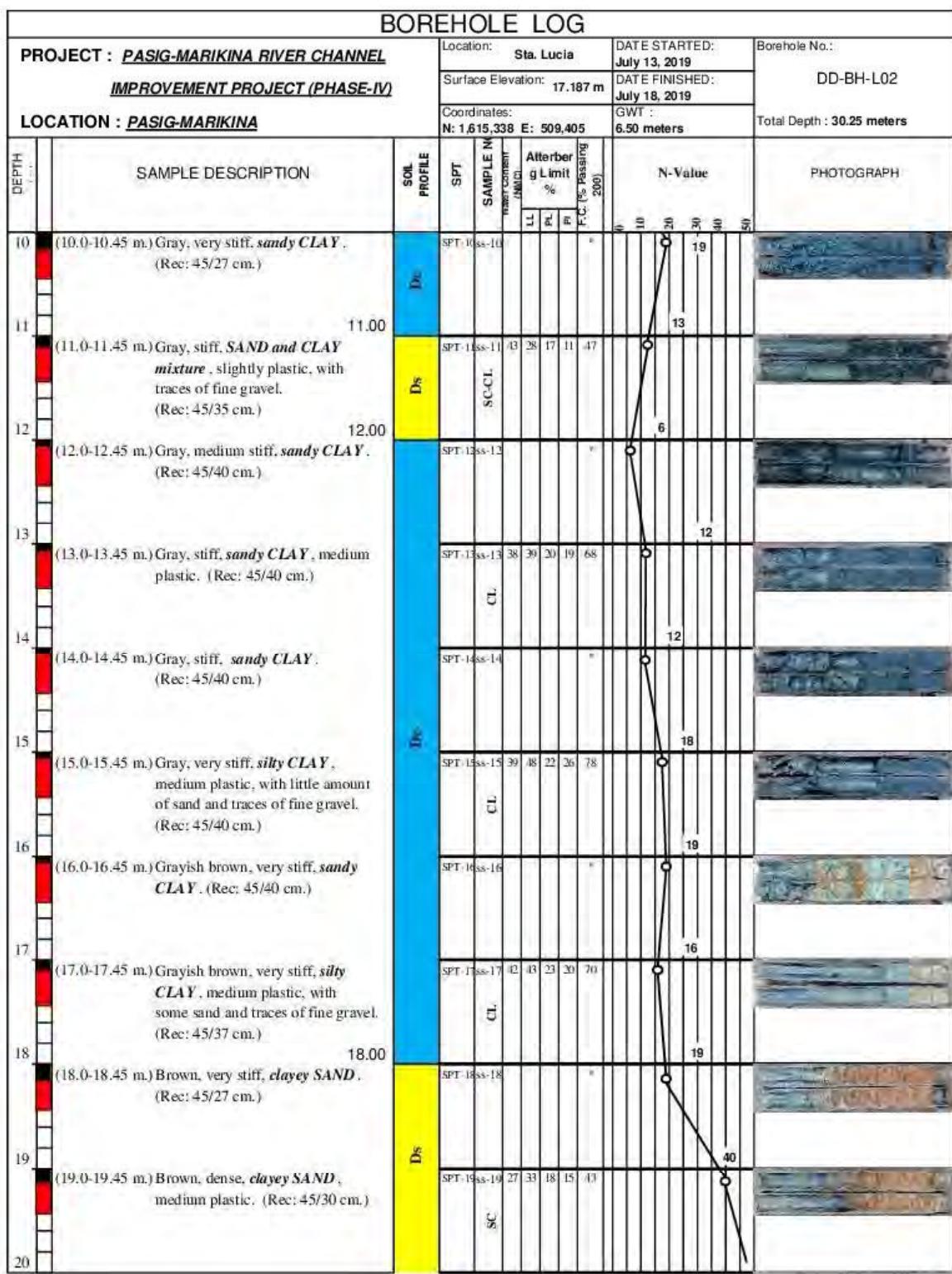


Figure 5-3-1 (6/103) BORING LOGS (PHASE IV)

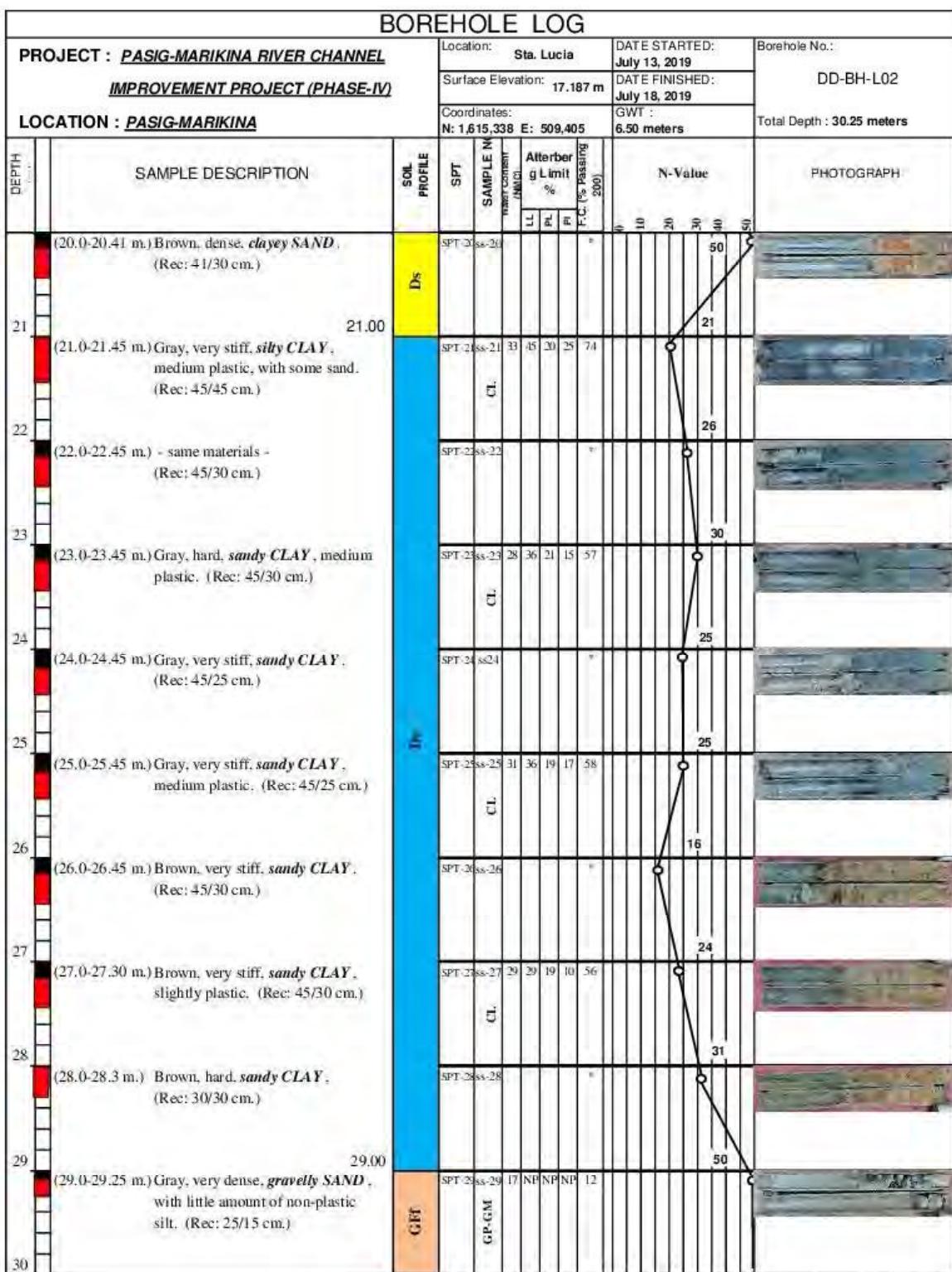


Figure 5-3-1 (7/103) BORING LOGS (PHASE IV)

BOREHOLE LOG										
PROJECT : PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE-IV) LOCATION : PASIG-MARIKINA			Location: Sta. Lucia		DATE STARTED: July 13, 2019		Borehole No.: DD-BH-L02			
			Surface Elevation: 17.187 m		DATE FINISHED: July 18, 2019					
			Coordinates: N: 1,615,338 E: 509,405		GWT : 6.50 meters		Total Depth : 30.25 meters			
DEPTH	SAMPLE DESCRIPTION	SOIL PROFILE	SPT	SAMPLE N Water content (% DWG)	Atterberg g Limit %	F.C. (% Passing 200)	LL	PL	PI	N-Value
30.0	(30.0-30.25 m.) Gray, very dense, gravely SAND , with little amount of non-plastic silt. (Rec: 25/15 cm.)	GFF	SPT = 30 Sia-30			"				50
31	<i>End of borehole @ 30.25m depth</i>									
32										
33										
34										
35										
36										
37										
38										
39										
40										

Figure 5-3-1 (8/103) BORING LOGS (PHASE IV)

BOREHOLE LOG														
PROJECT : PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE-IV) LOCATION : PASIG-MARIKINA			Location: Sta. Lucia			DATE STARTED: June 19, 2019			Borehole No.: DD-BH-L03					
			Surface Elevation: 9.810 m			DATE FINISHED: June 21, 2019								
			Coordinates: N: 1,615,446 E: 509,338			GWT : Offshore								
						Total Depth : 20.45 meters								
DEPTH	SAMPLE DESCRIPTION			SOIL PROFILE	SPT	SAMPLE N INTERCORE (MM/CM)	Atterber g Limit %	N _s Passing 200	N-Value			PHOTOGRAPH		
	<i>*----- Sample description was based on</i>			D _K					0	10	20	30		
1	(0-0.50 m.)	Gray, CLAY , medium plastic, with traces of sand.	1.00			49	51	25	29	97	4	50		
1	(1.0-1.45 m.)	Gray, coarse-grained SAND . (Rec: 45/30 cm.)		D _S	SPT-1	ss-1				○				
2	(2.0-2.45 m.)	Gray, fine-grained SAND , with little amount of non-plastic silt and fine gravel. (Rec: 45/25 cm.)	2.00		SPT-2	ss-2	23	NP	NP	15	3			
3	(3.0-3.45 m.)	Gray, soft, CLAY , high plastic, with some sand. (Rec: 45/25 cm.)	3.00		SPT-3	ss-3				○	4			
4	(4.0-4.45 m.)	Gray, very soft, CLAY , high plastic, with some sand. (Rec: 45/45 cm.)		D _H	TDS-1		58	82	25	57	73	●		
5	(5.0-5.45 m.)	Gray, medium stiff, CLAY , high plastic, with some sand. (Rec: 45/40 cm.)			SPT-4	ss-4				○	7			
6	(6.0-6.45 m.)	Gray, medium stiff, CLAY , medium plastic, with some sand. (Rec: 45/40 cm.)	6.00		SPT-5	ss-5	43	51	23	28	77	○		
7	(7.0-7.45 m.)	Brown, stiff, CLAY , with traces of sand. (Rec: 45/40 cm.)			CH						7			
8	(8.0-8.45 m.)	Brown, stiff, CLAY , high plastic, with traces of sand. (Rec: 45/35 cm.)	8.00		SPT-6	ss-6				○	13			
9	(9.0-9.45 m.)	Brownish gray, stiff, silty CLAY , (Rec: 45/37 cm.)			SPT-7	ss-7	55	75	28	47	97	○		
					CH						12			
					SPT-8	ss-8				○	10			

*Pressed
shelby tube*

Figure 5-3-1 (9/103) BORING LOGS (PHASE IV)

BOREHOLE LOG													
PROJECT : PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE-IV)			Location: Sta. Lucia			DATE STARTED: June 19, 2019			Borehole No.: DD-BH-L03				
LOCATION : PASIG-MARIKINA			Surface Elevation: 9.810 m			DATE FINISHED: June 21, 2019							
DEPTH	SAMPLE DESCRIPTION			SOIL PROFILE	SPT	SAMPLE N Water content (%W/MG)	Atterber g Limit %	F.C. (% Passing 200)	N-value	PHOTOGRAPH			
	LL	PL	PI						10 20 30 40 50				
10	(10.0-10.45 m.) Brownish gray, stiff, CLAY , medium plastic, with little amount of sand. (Rec: 45/30 cm.)			SPT-9	ss 9	54	49	23	26	37			
11	(11.0-11.45 m.) Gray, stiff, CLAY , with traces of sand. (Rec: 45/40 cm.)			SPT-10 ss 10									
12	(12.0-12.45 m.) Gray, stiff, CLAY , high plastic, with traces of sand. (Rec: 45/40 cm.)			SPT-11 ss 11	ss 11	58	57	22	35	94			
13	(13.0-13.45 m.) - same materials - (Rec: 45/45 cm.)			SPT-12 ss 12									
14	(14.0-14.45 m.) Gray, stiff, silty CLAY , medium plastic, with traces of sand and fine gravel. (Rec: 45/40 cm.)			SPT-13 ss 13	ss 13	55	48	22	26	88			
15	(15.0-15.45 m.) Gray, very stiff, silty CLAY , with traces of sand and fine gravel. (Rec: 45/40 cm.)			SPT-14 ss 14									
16	(16.0-16.45 m.) Gray, very stiff, silty CLAY , slightly plastic, with little amount of sand. (Rec: 45/35 cm.)			SPT-15 ss 15	ss 15	58	37	22	15	88			
17	(17.0-17.45 m.) Gray, hard, silty CLAY , with little amount of sand. (Rec: 45/30 cm.)			SPT-16 ss 16									
18	(18.0-18.45 m.) Gray, dense, silty SAND , non-plastic. (Rec: 45/28 cm.)			SPT-17 ss 17	ss 17	NP	NP	NP	31				
19	(19.0-19.45 m.) - same materials - (Rec: 45/30 cm.)			SPT-18 ss 18									
20													

Figure 5-3-1 (10/103) BORING LOGS (PHASE IV)

BOREHOLE LOG														
PROJECT : PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE-IV) LOCATION : PASIG-MARIKINA			Location: Sta. Lucia			DATE STARTED: June 19, 2019			Borehole No.: DD-BH-L03 GWTF: Offshore Total Depth : 20.45 meters					
			Surface Elevation: 9.810 m			DATE FINISHED: June 21, 2019								
			Coordinates: N: 1,615,446 E: 509,338			GWTF : Offshore								
DEPTH	SAMPLE DESCRIPTION	SOIL PROFILE	SPT	SAMPLE N	Atterberg Limit %	LL	PL	F.C.	N _s Passing 200	N-Value	PHOTOGRAPH			
20.0	(20.0-20.45 m.) Gray, <i>fine-grained SAND</i> , with some non-plastic silt. (Rec: 45/26 cm.)	D _s	SPT-19 ss 19	SM	NP	NP	NP	29	48	48				
21														
22														
23	<i>End of borehole @ 20.45 m depth</i>													
24														
25														
26														
27														
28														
29														
30														

Figure 5-3-1 (11/103) BORING LOGS (PHASE IV)

BOREHOLE LOG																	
PROJECT : <u>PASIG-MARIKINA RIVER CHANNEL</u> <u>IMPROVEMENT PROJECT (PHASE-IV)</u>		Location: Sta. Lucia		DATE STARTED: June 22, 2019		Borehole No.: DD-BH-L04											
		Surface Elevation: 10.431 m		DATE FINISHED: June 26, 2019													
		Coordinates: N: 1,615,670 E: 509,093		GWT : Offshore												Total Depth : 30.25 meters	
		LOCATION : <u>PASIG-MARIKINA</u>															
DEPTH	SAMPLE DESCRIPTION		SOIL PROFILE		SPT	SAMPLE N.	Water content	Atterberg g Limit %	F.C. (% passing 200)	N-value						PHOTOGRAPH	
	<i>----- Sample description was based on tactile and visual examination. Brown, SAND and CLAY mixture, slightly plastic.</i>		As		SPT-1	ss-1	SC-CL	59	30	20	10	46	7	10	20	30	50
1 (0-0.50 m.)	Brown, medium stiff, CLAY , high plastic, with traces of sand. (Rec: 45/20 cm.)		1.00		SPT-1	ss-1	CH	57	62	22	40	96	7	10	20	30	50
2 (2.0-2.45 m.)	Brown, stiff, CLAY , with traces of sand. (Rec: 45/20 cm.)				SPT-2	ss-2							12	10	20	30	50
3 (3.0-3.45 m.)	Gray, stiff, CLAY , high plastic, with traces of sand. (Rec: 45/30 cm.)				SPT-3	ss-3	CH	52	64	27	37	95	9	10	20	30	50
4 (4.0-4.45 m.)	- same materials - (Rec: 45/25 cm.)				SPT-4	ss-4							9	10	20	30	50
5 (5.0-5.45 m.)	Gray, stiff, silty CLAY , medium plastic, with some sand and traces of fine gravel. (Rec: 45/27 cm.)				SPT-5	ss-5	CL	48	41	22	19	74	11	10	20	30	50
6 (6.0-6.45 m.)	- same materials - (Rec: 45/35 cm.)				SPT-6	ss-6							9	10	20	30	50
7 (7.0-7.45 m.)	Brown, very stiff, sandy CLAY , medium plastic, with traces of fine gravel. (Rec: 45/30 cm.)				SPT-7	ss-7	CL	38	35	22	13	67	17	10	20	30	50
8 (8.0-8.45 m.)	Gray, sandy CLAY . (Rec: 45/45 cm.)				SPT-8	ss-8							10	10	20	30	50
9 (9.0-9.45 m.)	Gray, medium plastic, silty CLAY , medium plastic, with traces of sand and fine gravel. (Rec: 45/45 cm.)				SPT-9	ss-9	CL	49	43	21	22	88	12	10	20	30	50

Figure 5-3-1 (12/103) BORING LOGS (PHASE IV)

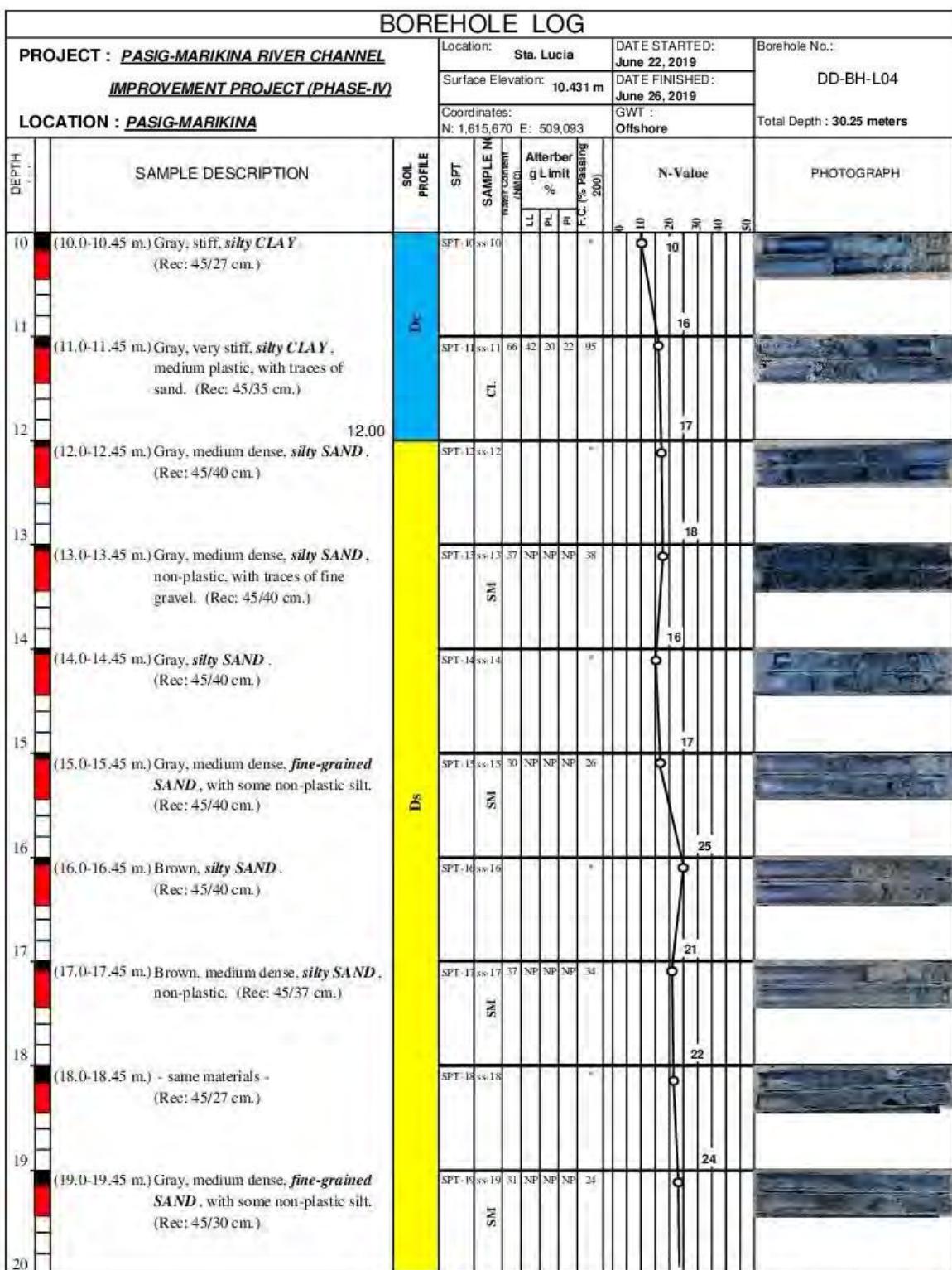


Figure 5-3-1 (13/103) BORING LOGS (PHASE IV)

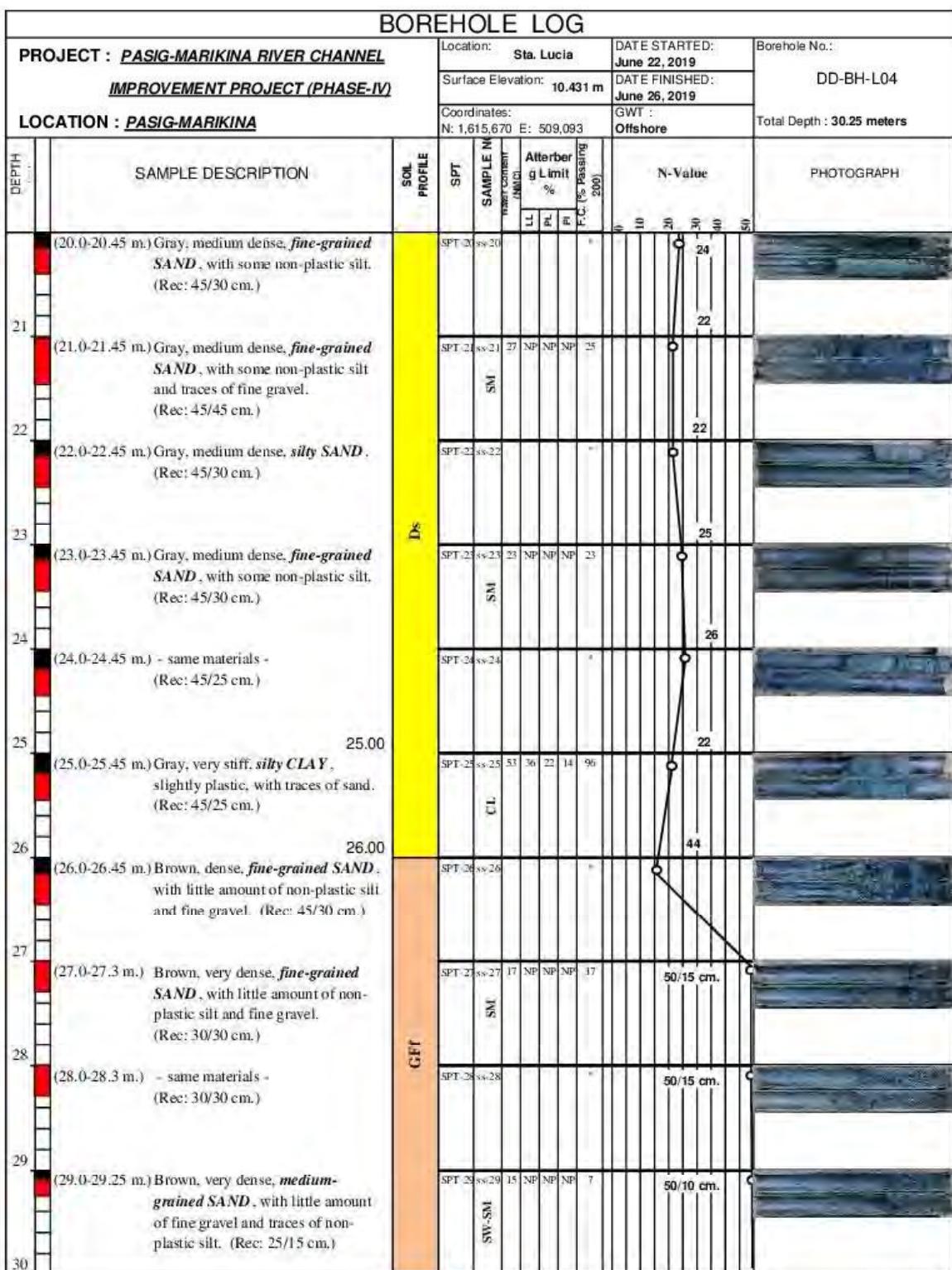


Figure 5-3-1 (14/103) BORING LOGS (PHASE IV)

BOREHOLE LOG														
PROJECT : PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE-IV) LOCATION : PASIG-MARIKINA			Location: Sta. Lucia			DATE STARTED: June 22, 2019			Borehole No.: DD-BH-L04 GWTF : Offshore Total Depth : 30.25 meters					
			Surface Elevation: 10.431 m			DATE FINISHED: June 26, 2019								
			Coordinates: N: 1,615,670 E: 509,093			GWTF : Offshore								
DEPTH	SAMPLE DESCRIPTION			SOIL PROFILE	SPT	SAMPLE N Water Content (%WAVC)	Atterber g Limit %	F.C. (% Passing 200)	N-Value					
31	(30.0-30.25 m.) Brown, very dense, medium-grained SAND , with little amount of fine gravel and traces of non-plastic silt. (Rec: 25/1.5 cm.)			GFF	SPT - 30 ss= 50				0	10	20			
32	<i>End of borehole @ 30.25m depth</i>								50/10 cm.	30	40			
33										50	60			
34											70			
35											80			
36											90			
37											100			
38											110			
39											120			
40											130			

Figure 5-3-1 (15/103) BORING LOGS (PHASE IV)

BOREHOLE LOG												
PROJECT : PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE-IV)			Location: Calumpang Surface Elevation: 10.932 m Coordinates: N: 1,615,833 E: 508,872			DATE STARTED: July 3, 2019 DATE FINISHED: July 4, 2019 GWT : Offshore			Borehole No.: DD-BH-L05 Total Depth : 11.00 meters			
DEPTH	SAMPLE DESCRIPTION			SOIL PROFILE			N-value			PHOTOGRAPH		
				SPT	SAMPLE N	Water content (%)	Atterberg's Limit (%)	F.C. (% passing 200)		10	20	30
			Note: ----- Sample description was based on tactile and visual examination.		CL		LL	PL		10	20	30
1	(0-0.50 m.)	Grayish brown, silty CLAY, medium plastic.				42	47	20	27	94		
1	(1.0-1.45 m.)	Grayish brown, stiff, CLAY, high plastic, with traces of sand. (Rec: 45/30 cm.)		SPT-1	ss-1	39	62	29	33	96	13	
2	(2.0-2.45 m.)	-same materials- (Rec: 45/30 cm.)		SPT-2	ss-2	49	54	28	26	96	15	
3	(3.0-3.45 m.)	Grayish brown, stiff, CLAY, medium plastic, with traces of sand. (Rec: 45/35 cm.)		SPT-3	ss-3	43	53	25	28	96	14	
4	(4.0-4.45 m.)	Grayish brown, stiff, CLAY, high plastic, with traces of sand. (Rec: 45/35 cm.)		SPT-4	ss-4	44	66	29	37	93	11	
5	(5.0-5.45 m.)	Gray, very stiff, sandy CLAY, high plastic, with traces of fine gravel. (Rec: 45/35 cm.)		SPT-5	ss-5	46	58	25	33	62	25	
6	(6.0-6.45 m.)	Gray, very stiff, fine-grained SAND, with some clay. (Rec: 45/20 cm.)		SPT-6	ss-6	53	15	15	15		29	
7	(7.0-7.3 m.)	Gray, very dense, clayey SAND, medium plastic. (Rec: 30/25 cm.)	7.00	SPT-7	ss-7	50	42	25	17	24	60/15 cm.	
	(7.30-8.0 m.)	Gray, moderately weathered, fine-grained SANDSTONE, moderately cemented. (Rec: 70/70/55 cm.)		cs-1	SC						CORING	
8	(8.0-9.0 m.)	Gray, moderately weathered, fine-grained SANDSTONE, moderately cemented. (Rec: 100/87/87 cm.)		cs-2							CORING	
9	(9.0-10.0 m.)	-same materials- (Rec: 100/80/80 cm.)		cs-3							CORING	

Figure 5-3-1 (16/103) BORING LOGS (PHASE IV)

BOREHOLE LOG													
PROJECT : PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE-IV) LOCATION : PASIG-MARIKINA			Location: Calumpang			DATE STARTED: July 3, 2019		Borehole No.: DD-BH-L05 GWTF : Offshore Total Depth : 11.00 meters					
			Surface Elevation: 10.932 m			DATE FINISHED: July 4, 2019							
			Coordinates: N: 1,615,833 E: 508,872			GWTF : Offshore							
DEPTH	SAMPLE DESCRIPTION	SOIL PROFILE	SPT	SAMPLE N Water Content (%W/W)	Atterberg Limit % Pl. (L) F.C. (C) Ps. Passing (200)	LL PL FL FC Ps. Passing (200)	N-Value	PHOTOGRAPH					
10	(10.0-11.0 m.) Gray, moderately weathered, fine-grained SANDSTONE , moderately cemented. (Rec: 100/80/80 cm.)	GFT	CS-4				0 10 20 30 40 50	CORING					
11													
12													
13	<i>End of borehole @ 11.00m depth</i>												
14													
15													
16													
17													
18													
19													
20													

Figure 5-3-1 (17/103) BORING LOGS (PHASE IV)

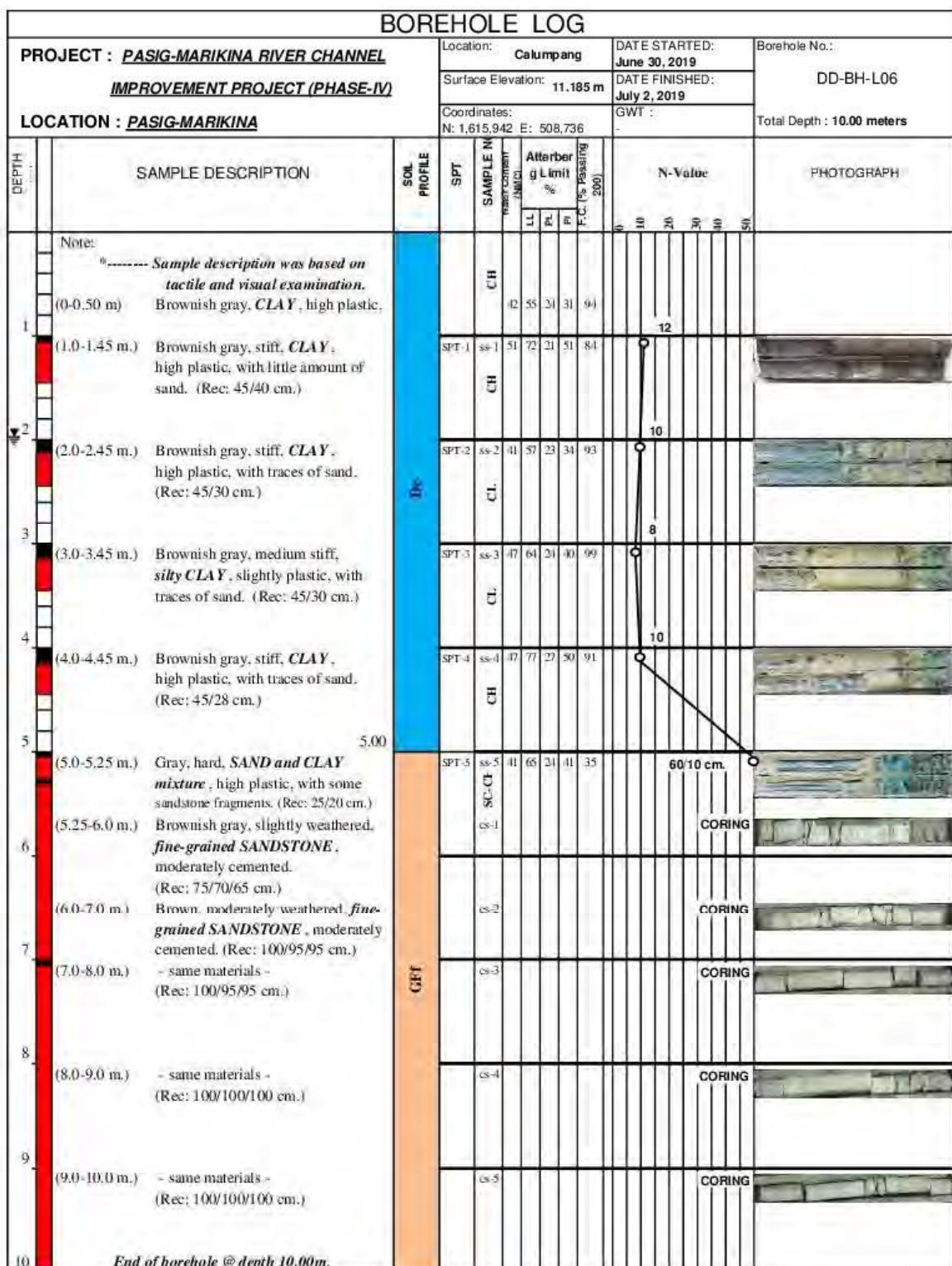


Figure 5-3-1 (18/103) BORING LOGS (PHASE IV)

BOREHOLE LOG																		
PROJECT : PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE-IV) LOCATION : PASIG-MARIKINA			Location: Santolan			DATE STARTED: July 8, 2019			Borehole No.: DD-BH-L07 Total Depth : 11.00 meters									
			Surface Elevation: 14.308 m			DATE FINISHED: July 10, 2019												
			Coordinates: N: 1,616,012 E: 508,660			GWT : 2.70 meters												
DEPTH	SAMPLE DESCRIPTION			SAMPLE PROFILE	SPT	SAMPLE N TEST COMPLIANCE (ANALOG)	Atterber g Limit %	N _s Passing (200)	N-Value				PHOTOGRAPH					
	Note: ----- Sample description was based on tactile and visual examination.								0	10	20	30	50					
1	(1.0-1.45 m) No Recovery, very loose (Rec: 45/0 cm.)			AS	SPT-1	ss-1	-	-	2									
2	(2.0-2.45 m) Gray, soft, SAND and CLAY mixture , slightly plastic, with traces of fine gravel. (Rec: 45/35 cm.)				SPT-2	ss-2	9 29 20 9 .39	2										
3	(3.0-3.45 m) Brown, medium dense, SAND and GRAVEL mixture , with traces of non-plastic silt. (Rec: 45/40 cm.)				SPT-3	ss-3	7 NP NP NP 6		13									
4	(4.0-4.45 m) Brown, medium dense, gravelly SAND , with traces of non-plastic silt. (Rec: 45/30 cm.)				SPT-4	ss-4	9 NP NP NP 6		12									
5	(5.0-5.45 m) Gray, stiff, silty CLAY , medium plastic, with little amount of fine gravel and traces of sand. (Rec: 45/40 cm.)			B	SPT-5	ss-5	33 39 22 17 75	W	11									
6	(6.0-6.45 m) No Recovery (Rec: 45/0 cm.)				SPT-6	ss-6	-	-	14									
7	(7.0-7.05 m) Brown, sand-sized SANDSTONE fragments . (Rec: 5/5 cm.)			GFT	SPT-7	ss-7	-		50/5 cm.									
	(7.05-8.0 m) Gray, moderately weathered, fine-grained SANDSTONE , moderately cemented. (Rec: 95/85/85 cm.)				cs-1	-			CORING									
8	(8.0-9.0 m) - same materials - (Rec: 100/90/90 cm.)				cs-4	-			CORING									
9	(9.0-10.0 m) - same materials - (Rec: 100/80/70 cm.)				cs-5	-			CORING									

Figure 5-3-1 (19/103) BORING LOGS (PHASE IV)

BOREHOLE LOG													
PROJECT : PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE-IV) LOCATION : PASIG-MARIKINA			Location: Santolan		DATE STARTED: July 8, 2019		Borehole No.: DD-BH-L07						
			Surface Elevation: 14.308 m		DATE FINISHED: July 10, 2019								
			Coordinates: N: 1,616,012 E: 508,660		GWT : 2.70 meters								
							Total Depth : 11.00 meters						
DEPTH	SAMPLE DESCRIPTION	SOIL PROFILE	SPT	SAMPLE N Water content (MBC)	Atterber g Limit %	F.C. (% Passing 200)	LL	PL	PI	N-value			
10	(10.0-11.0 m) - same materials - (Rec: 100/85/85 cm.)	GFT	>7							0 10 20 30 40 50			
11										CORING			
12	<i>End of borehole @ 11.00m. depth</i>												
13													
14													
15													
16													
17													
18													
19													
20													

Figure 5-3-1 (20/103) BORING LOGS (PHASE IV)

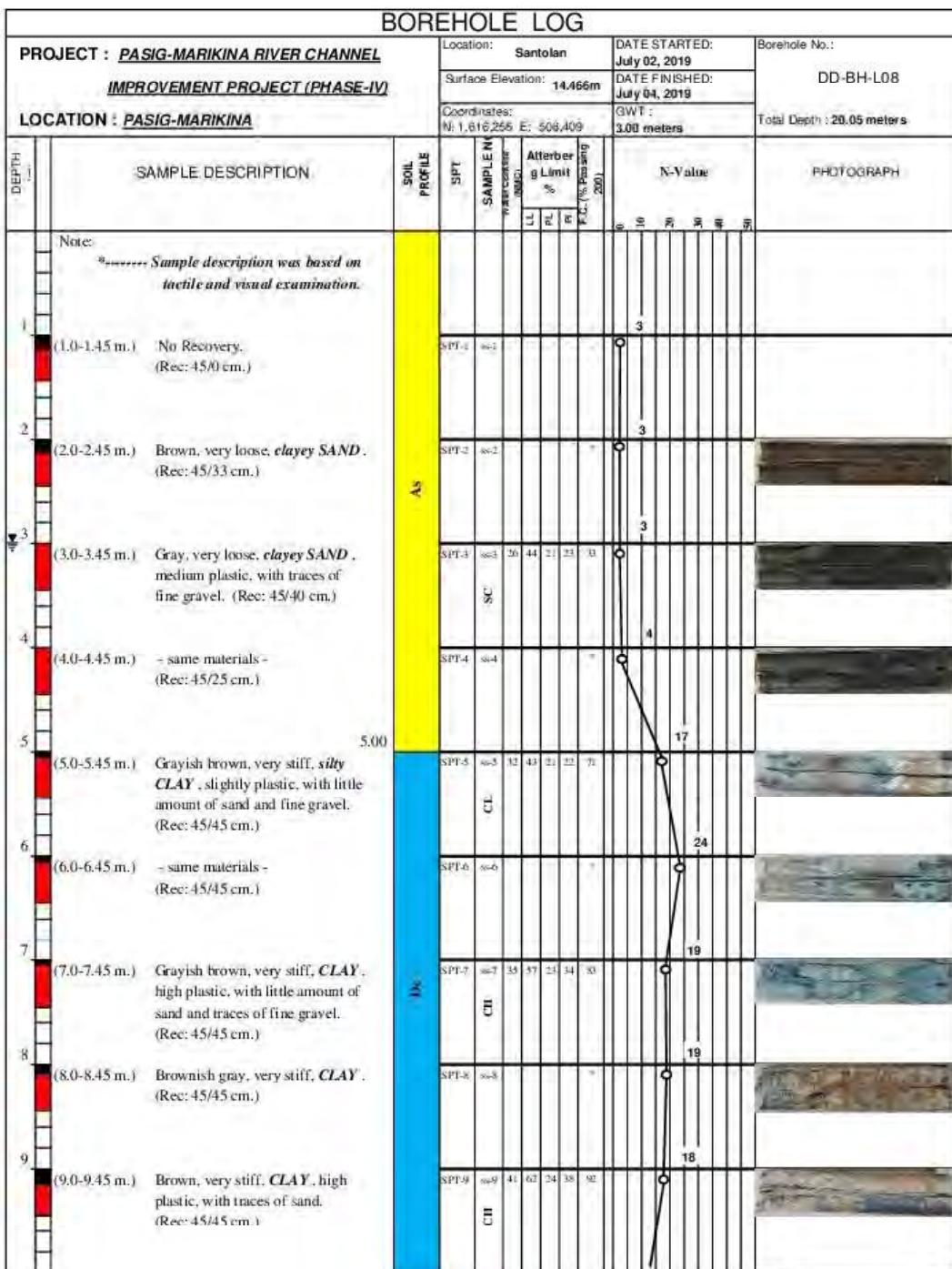


Figure 5-3-1 (21/103) BORING LOGS (PHASE IV)

BOREHOLE LOG										
PROJECT : PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE-IV)			Location: Santolan		DATE STARTED: July 02, 2019		Borehole No.: DD-BH-L08			
LOCATION : PASIG-MARIKINA			Surface Elevation: 14.466m		DATE FINISHED: July 04, 2019					
DEPTH	SAMPLE DESCRIPTION	SOIL PROFILE	SPT	SAMPLE NO.	Atterberg Limit %	GWT :	Total Depth : 20.05 meters			
DEPTH	SAMPLE DESCRIPTION	SOIL PROFILE	SPT	SAMPLE NO.	Atterberg Limit %	GWT :	Total Depth : 20.05 meters			
10	(10.0-10.45 m.) Grayish brown, stiff, silty CLAY . (Rec: 45/45 cm.)		SPT-10 ss-10					16	13	
11	(11.0-11.45 m.) Grayish brown, very stiff, CLAY , high plastic, with traces of sand and fine gravel. (Rec: 45/35 cm.)		SPT-11 ss-11	49	80	30	50	98	15	
12	(12.0-12.45 m.) Brown, very stiff, CLAY , with traces of sand. (Rec: 45/27 cm.)		SPT-12 ss-12						17	
13	(13.0-13.45 m.) Brown, stiff, CLAY , high plastic, with traces of sand and fine gravel. (Rec: 45/30 cm.)		SPT-13 ss-13	36	80	26	54	96	14	
14	(14.0-14.45 m.) Brown, very stiff, CLAY , with traces of sand. (Rec: 45/45 cm.)		SPT-14 ss-14						19	
15	(15.0-15.45 m.) Brown, stiff, CLAY , high plastic, with traces of sand. (Rec: 45/37 cm.)		SPT-15 ss-15	44	77	40	47	92	14	
16	(16.0-16.2 m.) Brown, hard, sandy CLAY . (Rec: 20/20 cm.)		SPT-16 ss-16						50/5 cm.	
17	(17.0-17.15 m.) Grayish brown, hard, SAND and CLAY mixture , with traces of fine gravel. (Rec: 15/15 cm.)		SPT-17 ss-17	54	IS	IS	SI	30	50/15 cm.	
18	(18.0-18.15 m.) - same materials - (Rec: 15/15 cm.)		SPT-18 ss-18						50/15 cm.	
19	(19.0-19.10 m.) Grayish brown, very dense, clayey SAND , with traces of fine gravel. (Rec: 10/10 cm.)	GFT	SPT-19 ss-19	59	IS	IS	SI	31	50/10 cm.	
20										

Figure 5-3-1 (22/103) BORING LOGS (PHASE IV)

BOREHOLE LOG															
PROJECT : PASIG-MARIKINA RIVER CHANNEL <i>IMPROVEMENT PROJECT (PHASE-IV)</i>				Location: Santolan		DATE STARTED: July 02, 2019		Borehole No.: DD-BH-L08 Surface Elevation: 14.466m DATE FINISHED: July 04, 2019 Coordinates: N: 1, 816,255 E: 508,409 GWT : 3.00 meters Total Depth : 20.05 meters							
LOCATION : PASIG-MARIKINA				Surface Elevation: 14.466m		DATE FINISHED: July 04, 2019									
				Coordinates: N: 1, 816,255 E: 508,409		GWT : 3.00 meters									
DEPTH		SAMPLE DESCRIPTION	SOIL PROFILE	SPT	SAMPLE N TEST NUMBER	Atterber g Limit %	N-Value	PHOTOGRAPH							
20		(20.0-20.05 m.) Grayish brown, very dense, dry sand. (Rec: 5/5 cm.)	GFT	SPT-20 (ss-20)	L F E P.C. (% passing 200)	-	-	50/05 cm.							
21															
22		<i>End of borehole @ 20.05m depth</i>													
23															
24															
25															
26															
27															
28															
29															
30															

Figure 5-3-1 (23/103) BORING LOGS (PHASE IV)

BOREHOLE LOG															
PROJECT : PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE-IV)			Location: Calumpang Surface Elevation: 14.539 m Coordinates: N: 1,616,464 E: 508,351			DATE STARTED: June 27, 2019 DATE FINISHED: June 30, 2019 GWT : 3.50 meters			Borehole No.: DD-BH-L09 Total Depth : 30.45 meters						
DEPTH	SAMPLE DESCRIPTION			SAMPLE PROFILE	SPT	SAMPLE N. Water content (W/MC)	Atterberg g Limit %	F.C. (% Passing 200)	N-Value						
							LL	PL	PI	8	10	20	30	40	50
		Note: ----- Sample description was based on tactile and visual examination.								3					
1	(1.0-1.45 m.)	Brown, soft, <i>silty CLAY</i> . (Rec: 45/45 cm.)		Ac	SPT-1	ss-1				3					
2	(2.0-2.45 m.)	Brown, soft, <i>silty CLAY</i> , slightly plastic, with some sand. (Rec: 45/35 cm.)		Ac	SPT-2	ss-2	47	31	18	13	82	3			
3	(3.0-3.45 m.)	Brown, soft, <i>silty CLAY</i> , with traces of fine gravel. (Rec: 45/40 cm.)		Ac	SPT-3	ss-3						4			
4	(4.0-4.45 m.)	Gray, medium stiff, <i>SAND and CLAY mixture</i> , slightly plastic, with little amount of fine gravel. (Rec: 45/35 cm.)	4.00	As	SPT-4	ss-4	32	30	19	11	99	8			
5	(5.0-5.45 m.)	Gray, medium dense, <i>medium-grained SAND</i> , with traces of silt. (Rec: 45/20 cm.)		As	SPT-5	ss-5						11			
6	(6.0-6.45 m.)	Brownish gray, very stiff, <i>silty CLAY</i> , medium plastic, with some sand. (Rec: 45/45 cm.)	6.00	De	SPT-6	ss-6	43	43	20	23	78	16			
7	(7.0-7.45 m.)	Brown, very stiff, <i>clayey SAND</i> . (Rec: 45/37 cm.)		De	SPT-7	ss-7						26			
8	(8.0-8.45 m.)	Brown, very stiff, <i>sandy CLAY</i> , medium plastic. (Rec: 45/40 cm.)		De	SPT-8	ss-8	24	35	17	18	43	27			
9	(9.0-9.45 m.)	Brown, medium dense, <i>clayey SAND</i> . (Rec: 45/45 cm.)		De	SPT-9	ss-9						16			

Figure 5-3-1 (24/103) BORING LOGS (PHASE IV)

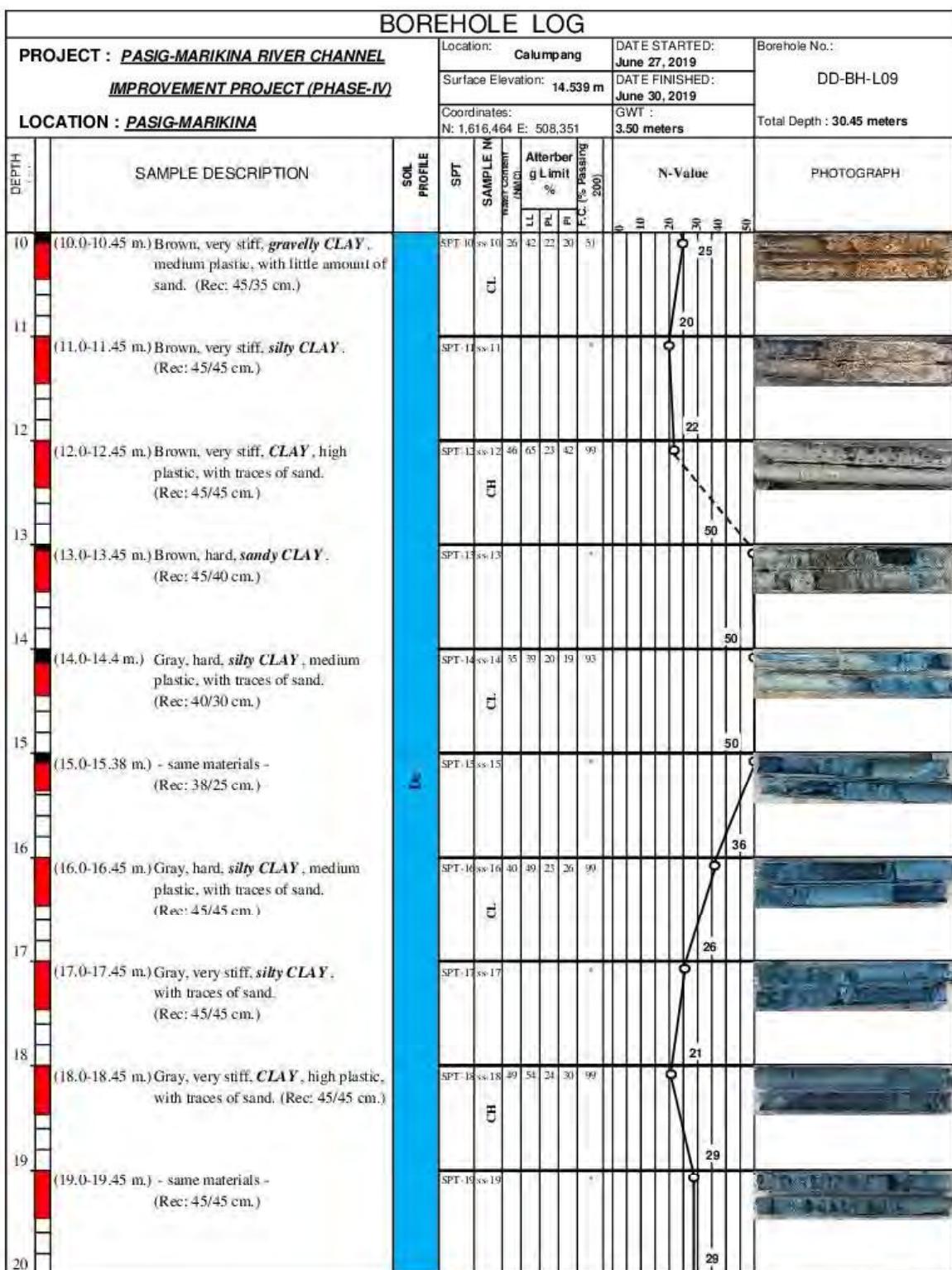


Figure 5-3-1 (25/103) BORING LOGS (PHASE IV)

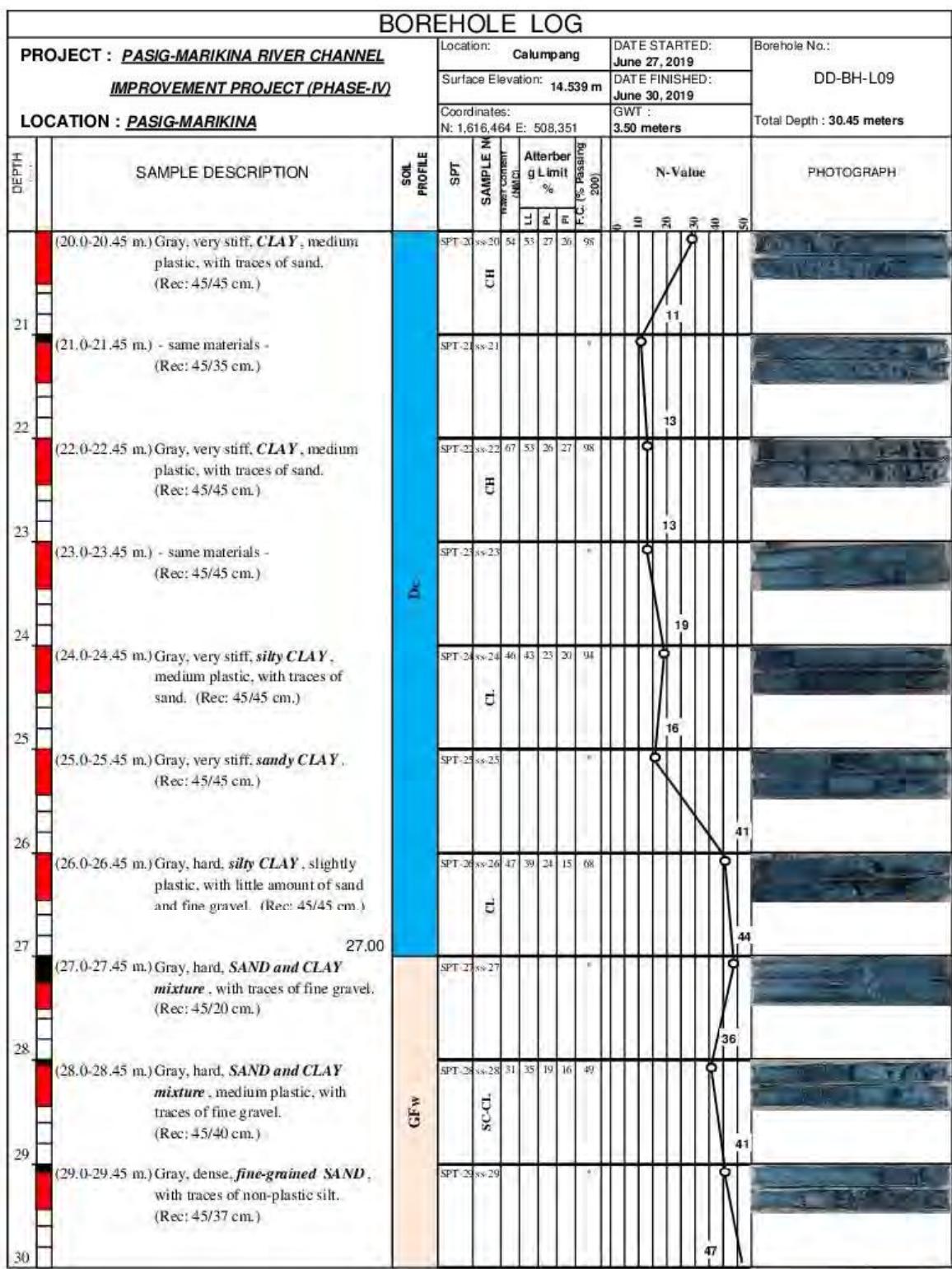


Figure 5-3-1 (26/103) BORING LOGS (PHASE IV)

BOREHOLE LOG														
PROJECT : PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE-IV) LOCATION : PASIG-MARIKINA			Location: Calumpang			DATE STARTED: June 27, 2019			Borehole No.: DD-BH-L09 Total Depth : 30.45 meters					
			Surface Elevation: 14.539 m			DATE FINISHED: June 30, 2019								
			Coordinates: N: 1,616,464 E: 508,351			GWT : 3.50 meters								
DEPTH	SAMPLE DESCRIPTION	SOIL PROFILE	SPT	SAMPLE N	Atterberg Limit %	F.C.	N _s Passing 200	N-Value	PHOTOGRAPH					
30.0	(30.0-30.45 m) Gray, dense, SAND and GRAVEL mixture , with traces of non-plastic silt. (Rec: 45/35 cm.)	Gfw	SPT: 30; Svs: 30	4M-SW	10	NP	NP	9	0	10	20	30		
31									0	10	20	30		
32									0	10	20	30		
33									0	10	20	30		
34									0	10	20	30		
35									0	10	20	30		
36									0	10	20	30		
37									0	10	20	30		
38									0	10	20	30		
39									0	10	20	30		
40									0	10	20	30		

End of borehole @ depth 30.45 m.

Figure 5-3-1 (27/103) BORING LOGS (PHASE IV)

PROJECT : <u>PASIG-MARIKINA RIVER CHANNEL</u> <u>IMPROVEMENT PROJECT (PHASE-IV)</u>		Location: Santolan	DATE STARTED: June 20, 2019	Borehole No.: DD-BH-L10
LOCATION : <u>PASIG-MARIKINA</u>		Surface Elevation: 14.928 m	DATE FINISHED: June 22, 2019	Total Depth : 20.45 meters
DEPTH	SAMPLE DESCRIPTION	SOIL PROFILE	N-Value	PHOTOGRAPH
	Note: ----- Sample description was based on tactile and visual examination.			
1	(1.0-1.45 m.) Brown, soft, sandy CLAY , slightly plastic. (Rec: 45/45 cm.)	AC	3	
2	(2.0-2.45 m.) - same materials - (Rec: 45/32 cm.)	SPT-1 ss-1	27 30 19 11 67	2
3	(3.0-3.45 m.) Brown, soft, SAND and CLAY mixture , slightly plastic. (Rec: 45/30 cm.)	SPT-2 ss-2		3
4	(4.0-4.45 m.) Gray, very soft, silty CLAY . (Rec: 45/25 cm.)	SPT-3 ss-3	25 31 20 11 54	2
5	(5.0-5.45 m.) Gray, very soft, silty CLAY , slightly plastic, with traces of sand. (Rec: 45/45 cm.)	SPT-4 ss-4		Pressed shelby tube
6	(6.0-6.45 m.) - same materials - (Rec: 45/40 cm.)	UDS-1 CL	58 33 23 10 95	5
7	(7.0-7.45 m.) Gray, very soft, silty CLAY , slightly plastic, with traces of sand. (Rec: 45/45 cm.)	SPT-5 ss-5		Pressed shelby tube
8	(8.0-8.45 m.) Brownish gray, stiff, silty CLAY , with little amount of sand. (Rec: 45/30 cm.)	UDS-2 CL	54 41 25 16 92	11
9	(9.0-9.45 m.) Grayish brown, stiff, sandy CLAY , medium plastic. (Rec: 45/15 cm.)	SPT-6 ss-6		14
10.00		SPT-7 CH	66 51 23 28 70	

Figure 5-3-1 (28/103) BORING LOGS (PHASE IV)

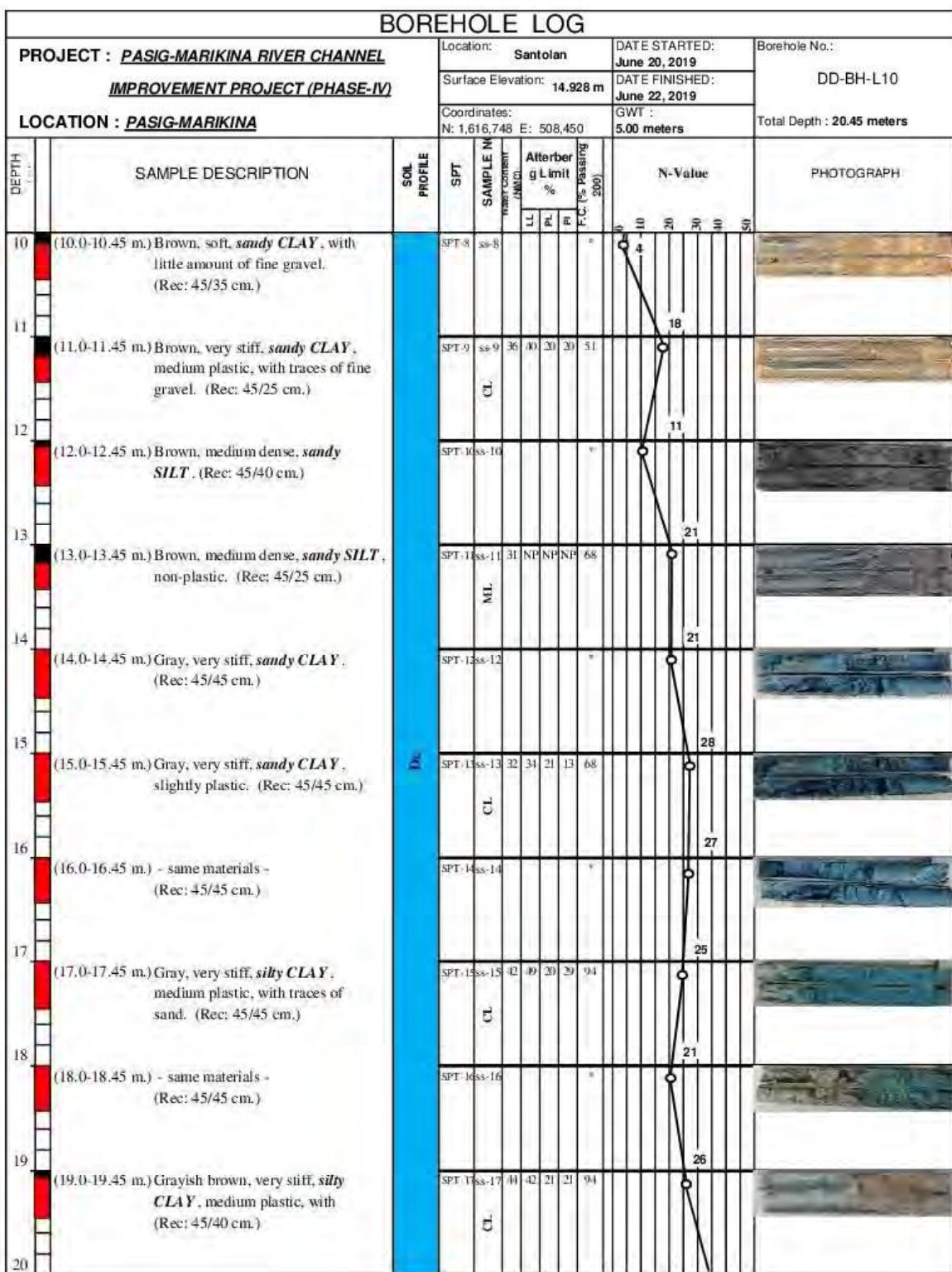


Figure 5-3-1 (29/103) BORING LOGS (PHASE IV)

BOREHOLE LOG										
PROJECT : PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE-IV) LOCATION : PASIG-MARIKINA			Location: Santolan		DATE STARTED: June 20, 2019		Borehole No.: DD-BH-L10			
			Surface Elevation: 14.928 m		DATE FINISHED: June 22, 2019					
			Coordinates:	N: 1,616,748 E: 508,450	GWT :	5.00 meters	Total Depth : 20.45 meters			
DEPTH	SAMPLE DESCRIPTION		SOIL PROFILE	SPT	SAMPLE N Water content (MBC)	Atterber g Limit % (F.C. % Passing 200)	N-Value		PHOTOGRAPH	
20.0	(20.0-20.45 m.) Gray, hard, <i>silty CLAY</i> (Rec: 45/30 cm.)		Dr.	SPT-18aa-18			10	20	30	40
21										
22										
23	<i>End of borehole @ 20.45m depth</i>									
24										
25										
26										
27										
28										
29										
30										

Figure 5-3-1 (30/103) BORING LOGS (PHASE IV)

Figure 5-3-1 (31/103) BORING LOGS (PHASE IV)

BOREHOLE LOG																	
PROJECT : <u>PASIG-MARIKINA RIVER CHANNEL</u> <u>IMPROVEMENT PROJECT (PHASE-IV)</u>		Location: Calumpang				DATE STARTED: May 26, 2019			Borehole No.:								
		Surface Elevation: 13.514m				DATE FINISHED: May 29, 2019			DD-BH-L11								
		Coordinates: N: 1,617,863 E: 508,815				GWT :			Total Depth : 20.0 meters								
		LOCATION : <u>PASIG-MARIKINA</u>															
DEPTH	SAMPLE DESCRIPTION		SOIL PROFILE		SPT	SAMPLE N Water content (% D.M.)	Atterber g Limit %	F.C. (% Passing 200)	N-Value		PHOTOGRAPH						
10	(10.0-10.45 m.) Brown, medium dense, <i>clayey SAND</i> , medium plastic, with traces of fine gravel. (Rec: 45/20 cm.)		GFw	SPT-10 ss-10	15	99	22	17	31	14	50						
11	(11.0-11.15 m.) Brown, hard, <i>SAND and CLAY mixture</i> . (Rec: 15/15 cm.) (11.15-12.0 m.) Brownish gray, highly weathered, <i>fine-grained SANDSTONE</i> , moderately cemented. (Rec: 85/50/30 cm.)			SPT-11 ss-11	44	IS	15	15	40	14	50		CORING				
12	(12.0-13.0 m.) Brown, completely weathered, <i>fine-grained SANDSTONE</i> , weakly cemented. (Rec: 100/70/40 cm.)			cs-1									CORING				
13	(13.0-13.5 m.) Gray, completely weathered, <i>fine-grained SANDSTONE</i> , weakly cemented. (Rec: 50/40/10 cm.)			cs-2									CORING				
14	(13.5-14.0 m.) Gray, <i>GRAVEL</i> . (Rec: 50/10/0 cm.)			cs-3									CORING				
15	(14.0-14.5 m.) Gray, completely weathered, <i>fine-grained SANDSTONE</i> , weakly cemented. (Rec: 50/20/0 cm.)			cs-4									CORING				
16	(14.5-15.0 m.) - same materials - (Rec: 50/20/0 cm.)			cs-5									CORING				
17	(15.0-15.5 m.) Gray, highly weathered, <i>fine-grained SANDSTONE</i> , weakly cemented. (Rec: 50/40/35 cm.)			cs-6									CORING				
18	(15.5-16.0 m.) No Recovery (Rec: 50/0/0 cm.)			cs-7									CORING				
19	(16.0-16.5 m.) Gray, highly weathered, <i>fine-grained SANDSTONE</i> , weakly cemented. (Rec: 50/30/30 cm.)			cs-8									CORING				
20	(16.5-17.0 m.) Gray, highly weathered, <i>fine-grained SANDSTONE</i> , weakly cemented. (Rec: 50/20/0 cm.)			cs-9									CORING				
	(17.0-17.5 m.) - same materials - (Rec: 50/30/20 cm.)			cs-10									CORING				
	(17.5-18.0 m.) - same materials - (Rec: 50/20/0 cm.)			cs-11									CORING				
	(18.0-18.5 m.) - same materials - (Rec: 50/35/0 cm.)			cs-12									CORING				
	(18.5-19.0 m.) - same materials - (Rec: 50/30/0 cm.)			cs-13									CORING				
	(19.0-19.5 m.) Brownish gray, highly weathered, <i>fine-grained SANDSTONE</i> , weakly cemented. (Rec: 50/35/0 cm.)			cs-14									CORING				
	(19.5-20.0 m.) - same materials - (Rec: 50/25/0 cm.)			cs-15									CORING				
				cs-16									CORING				

Figure 5-3-1 (32/103) BORING LOGS (PHASE IV)

BOREHOLE LOG											
PROJECT : <u>PASIG-MARIKINA RIVER CHANNEL</u> <u>IMPROVEMENT PROJECT (PHASE-IV)</u>				Location: Calumpang			DATE STARTED: May 31, 2019		Borehole No.: DD-BH-L12		
LOCATION : <u>PASIG-MARIKINA</u>				Surface Elevation: 14.326 m			DATE FINISHED: June 03, 2019				
DEPTH				Coordinates: N: 1,618,028 E: 508,913			GWT : 3.00 meters		Total Depth : 20.35 meters		
SAMPLE DESCRIPTION				SOIL PROFILE			N-Value		PHOTOGRAPH		
Note: ----- Sample description was based on tactile and visual examination.				As			SPT		N-Value		
(0-1.10 m) Backfill of concrete				As			SPT		N-Value		
1 (2.0-2.45 m) Brown, very loose, fine-grained SAND , with little amount of non-plastic silt. (Rec: 45/45 cm.)				As			SPT		N-Value		
2 (2.0-2.45 m) Brown, loose, fine-grained SAND , with little amount of non-plastic silt and traces of fine gravel. (Rec: 45/45 cm.)				As			SPT		N-Value		
3 (3.0-3.45 m) Brown, loose, fine-grained SAND , with little amount of non-plastic silt and traces of fine gravel. (Rec: 45/45 cm.)				As			SPT		N-Value		
4 (4.0-4.45 m) Brown, coarse-grained SAND . (Rec: 45/20 cm.)				As			SPT		N-Value		
5 (5.0-5.45 m) Brown, medium dense, gravely SAND , with traces of non-plastic silt. (Rec: 45/40 cm.)				As			SPT		N-Value		
6 (6.0-6.45 m) Brown, clayey SAND . (Rec: 45/40 cm.)				Ds			SPT		N-Value		
7 (7.0-7.45 m) No Recovery, medium dense. (Rec: 45/0 cm.)				Ds			SPT		N-Value		
8 (8.0-8.45 m) Brownish gray, medium dense, clayey SAND . (Rec: 45/45 cm.)				Dc			SPT		N-Value		
9 (9.0-9.45 m) Brownish gray, medium dense, clayey SAND , slightly plastic, with little amount of fine gravel. (Rec: 45/40 cm.)				Dc			SPT		N-Value		

Figure 5-3-1 (33/103) BORING LOGS (PHASE IV)

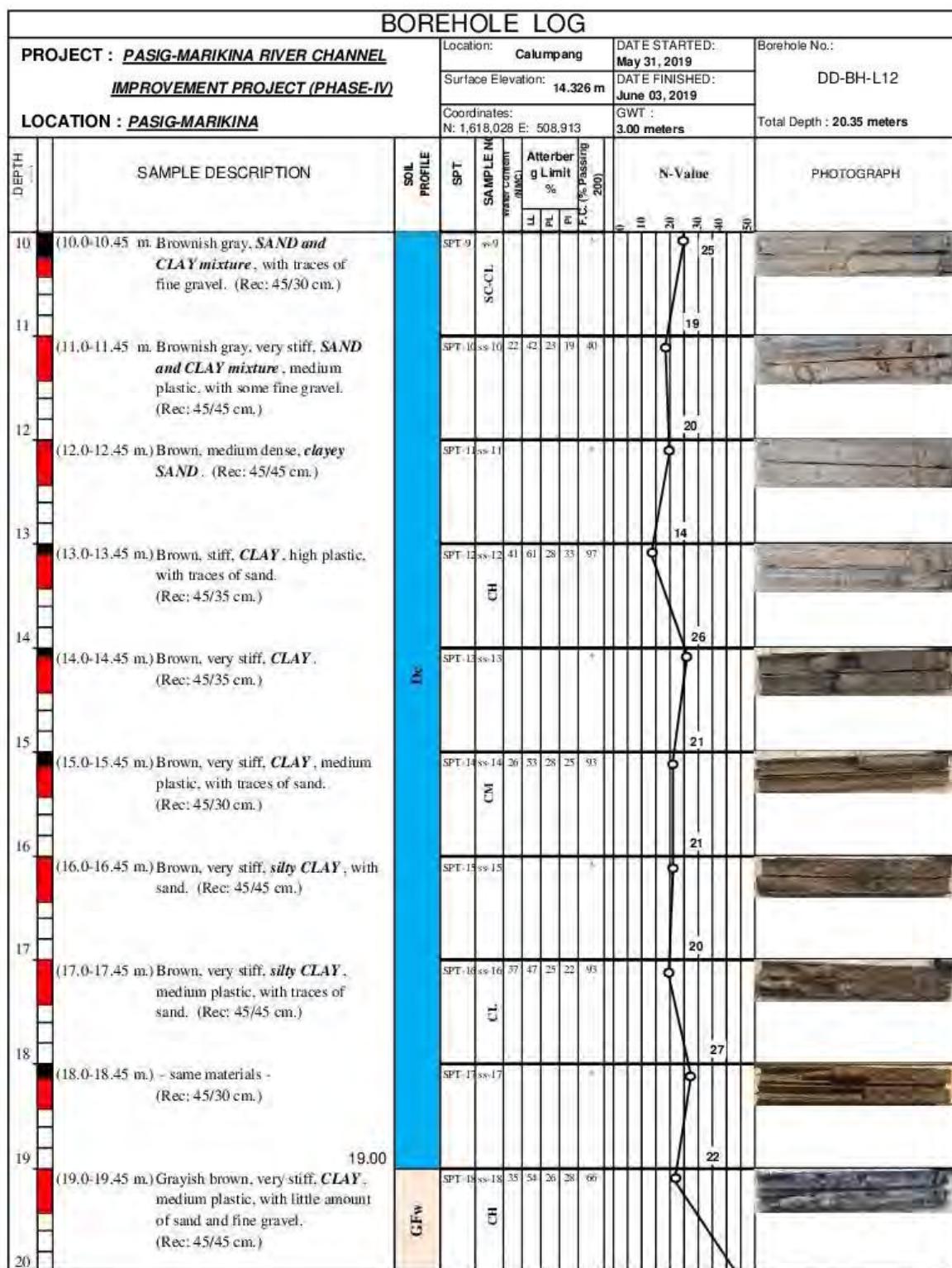


Figure 5-3-1 (34/103) BORING LOGS (PHASE IV)

BOREHOLE LOG													
PROJECT : PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE-IV) LOCATION : PASIG-MARIKINA			Location: Calumpang			DATE STARTED: May 31, 2019		Borehole No.: DD-BH-L12					
			Surface Elevation: 14.326 m			DATE FINISHED: June 03, 2019							
			Coordinates: N: 1,618,028 E: 508,913			GWT : 3.00 meters							
						Total Depth : 20.35 meters							
DEPTH	SAMPLE DESCRIPTION	SOIL PROFILE	SPT	SAMPLE N water content (NWC)	Atterberg Limit % F.C. (% Passing 200)	U	P _L	P _f	N-Value	PHOTOGRAPH			
20.0	(20.0-20.35 m.) Gray, very dense, <i>medium-grained SAND</i> , with some fine gravel. (Rec: 35/30 cm.)	GFW	SPT: 19 ss 19						0 10 20 30 40 50				
21	<i>End of borehole @ 20.35m depth</i>												
22													
23													
24													
25													
26													
27													
28													
29													
30													

Figure 5-3-1 (35/103) BORING LOGS (PHASE IV)

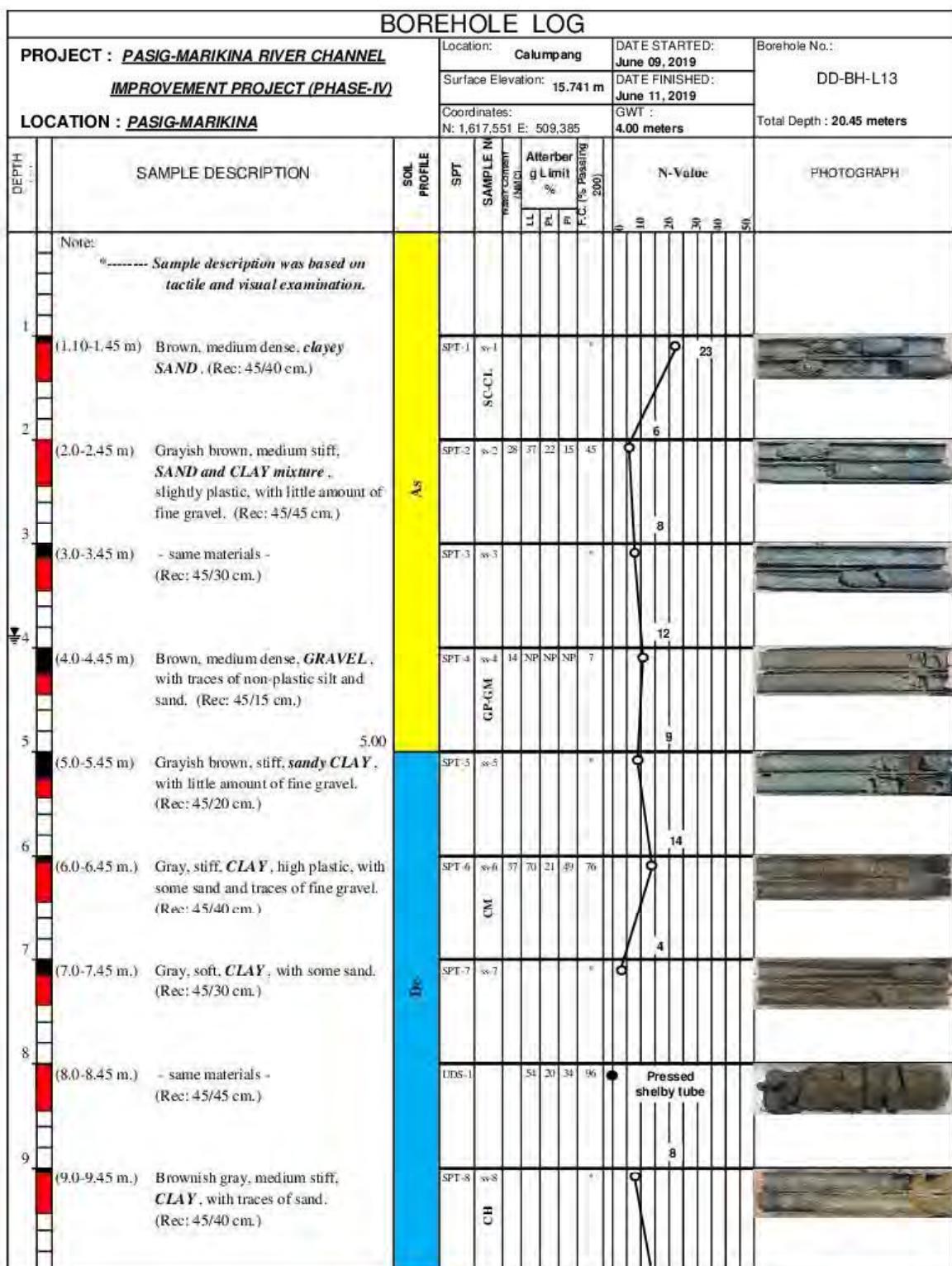


Figure 5-3-1 (36/103) BORING LOGS (PHASE IV)

BOREHOLE LOG																		
PROJECT : PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE-IV) LOCATION : PASIG-MARIKINA			Location: Calumpang			DATE STARTED: June 09, 2019			Borehole No.: DD-BH-L13 Total Depth : 20.45 meters									
			Surface Elevation: 15.741 m			DATE FINISHED: June 11, 2019												
			Coordinates: N: 1,617,551 E: 509,385			GWT : 4.00 meters												
DEPTH	SAMPLE DESCRIPTION			SAMPLE PROFILE	SPT	SAMPLE N Water Content (%WAVIC)	Atterber g Limit %	F.C. % Passing (200)	N-Value				PHOTOGRAPH					
10	(10.0-10.45 m.) Brownish gray, stiff medium, CLAY , with traces of sand. (Rec: 45/45 cm.)			SPT-9	ss 9	30	68	23	45	93	10	20	30	40	50			
11	(11.0-11.45 m.) Brownish gray, very stiff, CLAY , high plastic, with traces of sand. (Rec: 45/45 cm.)			SPT-10 ss 10	CH	30	68	23	45	93	23	23	23	23	23			
12	(12.0-12.45 m.) - same materials - (Rec: 45/45 cm.)			SPT-11 ss 11	CH	34	64	18	46	96	23	23	23	23	23			
13	(13.0-13.45 m.) Brownish gray, very stiff, CLAY , high plastic, with traces of sand. (Rec: 45/30 cm.)			SPT-12 ss 12	CH	30	44	16	28	73	22	22	22	22	22			
14	(14.0-14.45 m.) Brown, very stiff, sandy CLAY . (Rec: 45/45 cm.)			SPT-13 ss 13	CL	39	33	18	15	83	22	22	22	22	22			
15	(15.0-15.45 m.) Brown, very stiff, silty CLAY , medium plastic, with some sand and traces of fine gravel. (Rec: 45/40 cm.)			SPT-14 ss 14	CL	30	44	16	28	73	18	18	18	18	18			
16	(16.0-16.45 m.) - same materials - (Rec: 45/40 cm.)			SPT-15 ss 15	CL	39	33	18	15	83	19	19	19	19	19			
17	(17.0-17.45 m.) Brown, hard, silty CLAY , medium plastic, with little amount of sand. (Rec: 45/45 cm.)			SPT-16 ss 16	CL	30	31	21	10	60	34	34	34	34	34			
18	(18.0-18.45 m.) - same materials -, very stiff. (Rec: 45/45 cm.)			SPT-17 ss 17	CL	30	31	21	10	60	25	25	25	25	25			
19	(19.0-19.45 m.) Gray, hard, sandy CLAY , slightly plastic, with traces of fine gravel. (Rec: 45/30 cm.)			SPT-18 ss 18	GFW	30	31	21	10	60	46	46	46	46	46			
20																		

Figure 5-3-1 (37/103) BORING LOGS (PHASE IV)

BOREHOLE LOG											
PROJECT : PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE-IV) LOCATION : PASIG-MARIKINA			Location: Calumpang			DATE STARTED: June 09, 2019			Borehole No.: DD-BH-L13		
			Surface Elevation: 15.741 m			DATE FINISHED: June 11, 2019					
			Coordinates: N: 1,617,551 E: 509,385			GWT : 4.00 meters			Total Depth : 20.45 meters		
			DEPTH	SAMPLE DESCRIPTION	SOIL PROFILE	SPT	SAMPLE N Water content (% MAGIC)	Atterberg g Limit %	F.C. (% Passing 200)	N-Value	PHOTOGRAPH
20.0	(20.0-20.45 m.) Gray, hard, sandy CLAY , medium plastic. (Rec: 45/30 cm.)	GFW	SPT: 15 (SS 19)	CL	25 35 18 17 60	LL	PL	PI	10 20 30 40 50	50	C
21											
22											
23	<i>End of borehole @ 20.45m depth</i>										
24											
25											
26											
27											
28											
29											
30											

Figure 5-3-1 (38/103) BORING LOGS (PHASE IV)

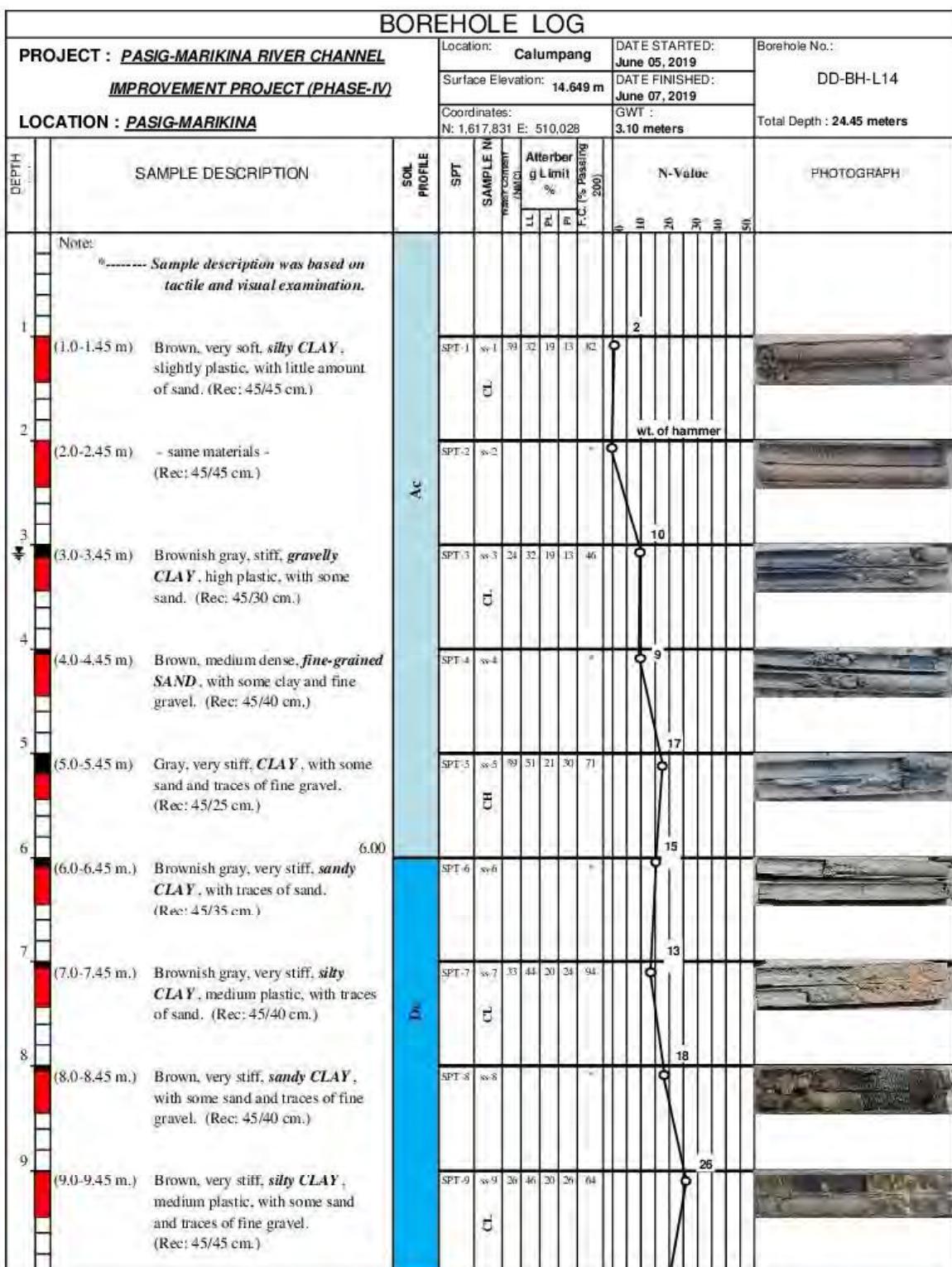


Figure 5-3-1 (39/103) BORING LOGS (PHASE IV)

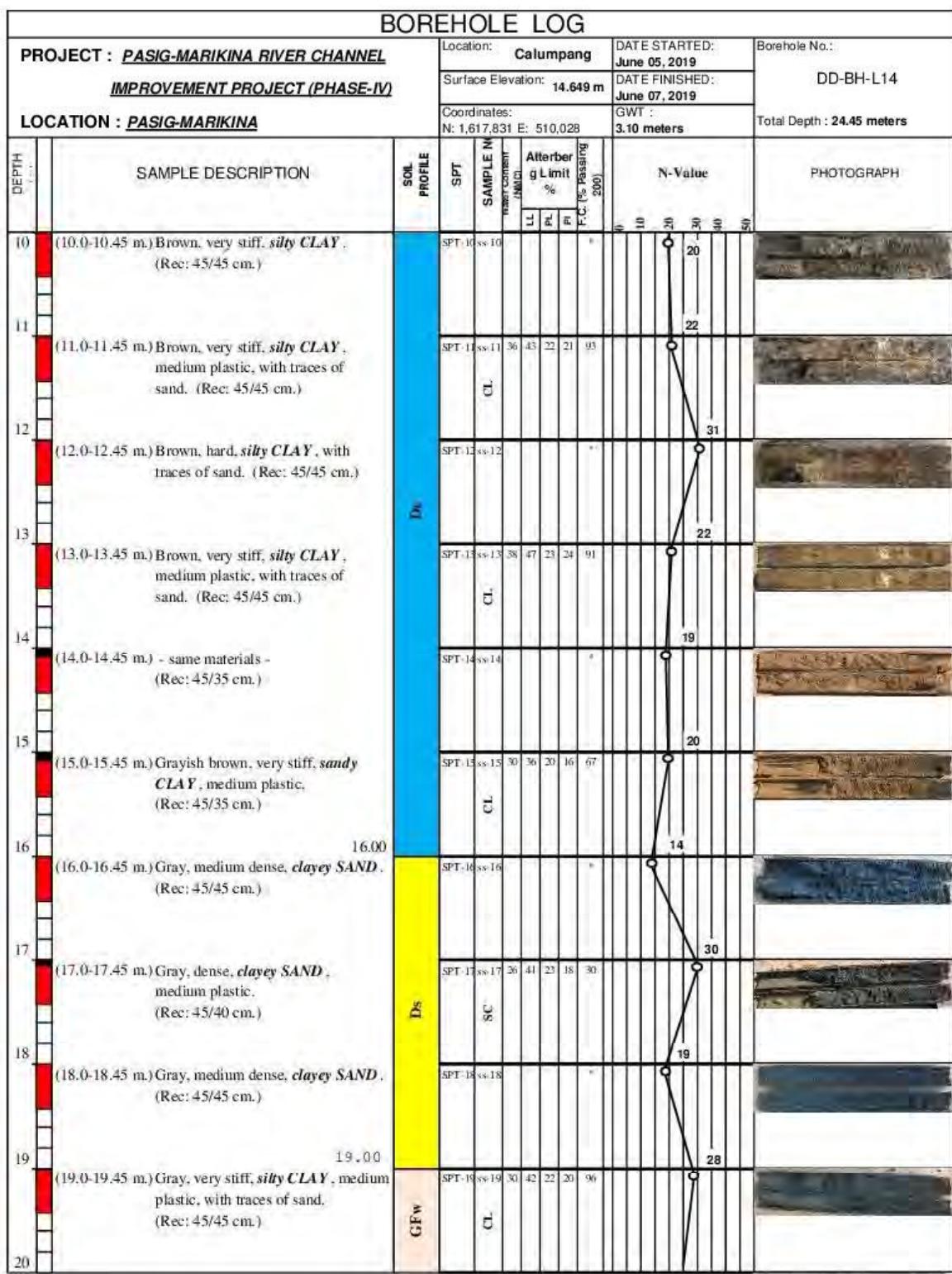


Figure 5-3-1 (40/103) BORING LOGS (PHASE IV)

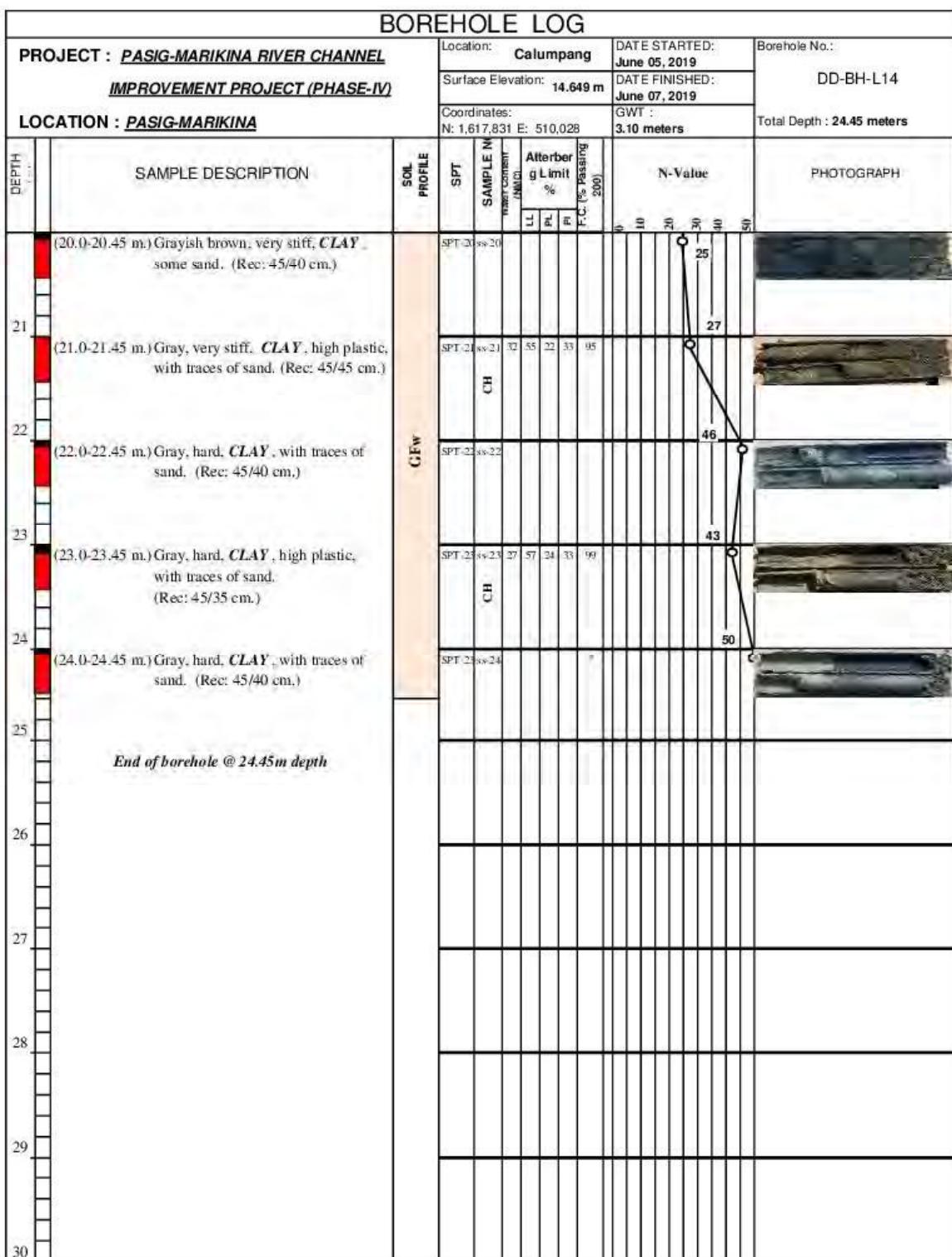


Figure 5-3-1 (41/103) BORING LOGS (PHASE IV)

BOREHOLE LOG										
PROJECT : PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE-IV) LOCATION : PASIG-MARIKINA		Location: MCGS			DATE STARTED: September 13, 2019		Borehole No.: BH-R01			
		Surface Elevation: 12.912 m			DATE FINISHED: September 13, 2019					
		Coordinates: N: 1,615,058 E: 508,743			GWT : Offshore		Total Depth : 5.0 meters			
DEPTH	SAMPLE DESCRIPTION		SOIL PROFILE	SPT	SAMPLE NO. Water content (MAGIC)	Atterberg g Limit % (ASTM D4254-03) F.C. (% Passing 200)	N-Value		PHOTOGRAPH	
1	(0-1.0 m.)	Gray, moderately weathered, fine-grained SANDSTONE , moderately cemented. (Rec: 100/80/60 cm.)	GFT	CD	cs-1	LL PL PI F.C. (% Passing 200)	0 10 20 30 40 50	CORING		MR-35
1	(1.0-2.0 m)	- same materials - (Rec: 100/100/100 cm.)		CD	cs-2			CORING		
2	(2.0-3.0 m)	- same materials - (Rec: 100/100/100 cm.)		CD	cs-3			CORING		
3	(3.0-4.0 m)	- same materials - (Rec: 100/100/100 cm.)		CD	cs-4			CORING		
4	(4.0-5.0 m)	Brownish gray, fine-grained SANDSTONE , well cemented. (Rec: 100/100/100 cm.)		CD	cs-5			CORING		
5	<i>End of borehole @ 5.00m depth</i>									
6										
7										
8										
9										
10										

Figure 5-3-1 (42/103) BORING LOGS (PHASE IV)

BOREHOLE LOG														
PROJECT : PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE-IV) LOCATION : PASIG-MARIKINA			Location: MCGS			DATE STARTED: September 14, 2019			Borehole No.: DD-BH-R02 GWTF: Offshore Total Depth: 6.00 meters					
			Surface Elevation: 10.858 m			DATE FINISHED: September 15, 2019								
			Coordinates: N: 1,615,103 E: 508,965			GWTF: Offshore								
DEPTH	SAMPLE DESCRIPTION	SOIL PROFILE	SPT	SAMPLE N Water content (%W/W)	Atterber g Limit %	N _s Passing 200	N-Value	PHOTOGRAPH						
			LL	PL	PI	F.C.	0 10 20 30 40 50							
1	(1.0-1.45 m) No Recovery (Rec: 45/0 cm.)	As (gravel)	SPT-1	ss-1			2							
2	(2.0-2.0 m) No Penetration (2.0-3.0 m) Gray, GRAVEL to fine-grained SANDSTONE, moderately cemented. (Rec: 100/95/80 cm.)	2.00	SPT-2	ss-2 cs-1			50	CORING						
3	(3.0-4.0 m) Gray, to brown, moderately weathered, fine-grained SANDSTONE, moderately cemented. (Rec: 100/90/50 cm.)		cs-2				CORING							
4	(4.0-5.0 m) Brown to gray, highly weathered, fine-grained SANDSTONE, moderately cemented. (Rec: 100/100/90 cm.)	GFI	cs-3				CORING							
5	(5.0-6.0 m) - same materials - (Rec: 100/90/90 cm.)		cs-4				CORING							
6														
7	<i>End of borehole @ 6.00m depth</i>													
8														
9														

Figure 5-3-1 (43/103) BORING LOGS (PHASE IV)

BOREHOLE LOG																				
PROJECT : PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE-IV) LOCATION : PASIG-MARIKINA			Location: Bagumbayan			DATE STARTED: June 13, 2019			Borehole No.: DD-BH-R03											
			Surface Elevation: 10.862 m			DATE FINISHED: June 15, 2019														
			Coordinates: N: 1,614,938 E: 509,538			GWT : Offshore						Total Depth : 20.45 meters								
DEPTH		SAMPLE DESCRIPTION	SOIL PROFILE	SPT	SAMPLE N.	Water content (%)	Atterberg's Limit (%)	F.C. (% passing 200)	N-value								PHOTOGRAPH			
		----- Sample description was based on tactile and visual examination.							0	10	20	30	40	50						
(0-0.5 m)		Gray, SAND and GRAVEL mixture with traces of non-plastic silt.	As		GM-SC	12	NP	NP	3	2										
1 (1.0-1.45 m)		Gray, soft, silty CLAY. (Rec: 45/40 cm.)	Ds	SPT-1	ss-1				4	5	6	7	8	9	10					
2 (2.0-2.45 m)		Gray, soft, SAND and CLAY mixture, high plastic, with some fine gravel. (Rec: 45/40 cm.)	Ds	SPT-2	ss-2	34	69	29	40	44	3	4	5	6	7					
3 (3.0-3.45 m)		Gray, very soft, CLAY, medium plastic, with traces of sand. (Rec: 45/45 cm.)	Ds	UDS-1	CH	52	28	24	96	●	8	9	10	11	12					
4 (4.0-4.45 m)		Gray, stiff, CLAY, medium plastic, with little amount of sand and fine gravel. (Rec: 45/35 cm.)	Ds	SPT-3	ss-3	61	54	27	27	76	9	10	11	12	13					
5 (5.0-5.45 m)		- same materials - (Rec: 45/40 cm.)	Ds	SPT-4	ss-4						10	11	12	13	14					
6 (6.0-6.45 m.)		Gray, stiff, CLAY, high plastic, with little amount of sand. (Rec: 45/35 cm.)	Ds	SPT-5	ss-5	89	51	20	31	83	11	12	13	14	15					
7 (7.0-7.45 m.)		- same materials - (Rec: 45/45 cm.)	Ds	SPT-6	ss-6						11	12	13	14	15					
8 (8.0-8.45 m.)		Gray, stiff, CLAY, medium plastic, with little amount of sand. (Rec: 45/40 cm.)	Ds	SPT-7	ss-7	47	51	25	26	83	11	12	13	14	15					
9 (9.0-9.45 m.)		- same materials -, very stiff. (Rec: 45/40 cm.)	Ds	SPT-8	ss-8						20									

Figure 5-3-1 (44/103) BORING LOGS (PHASE IV)

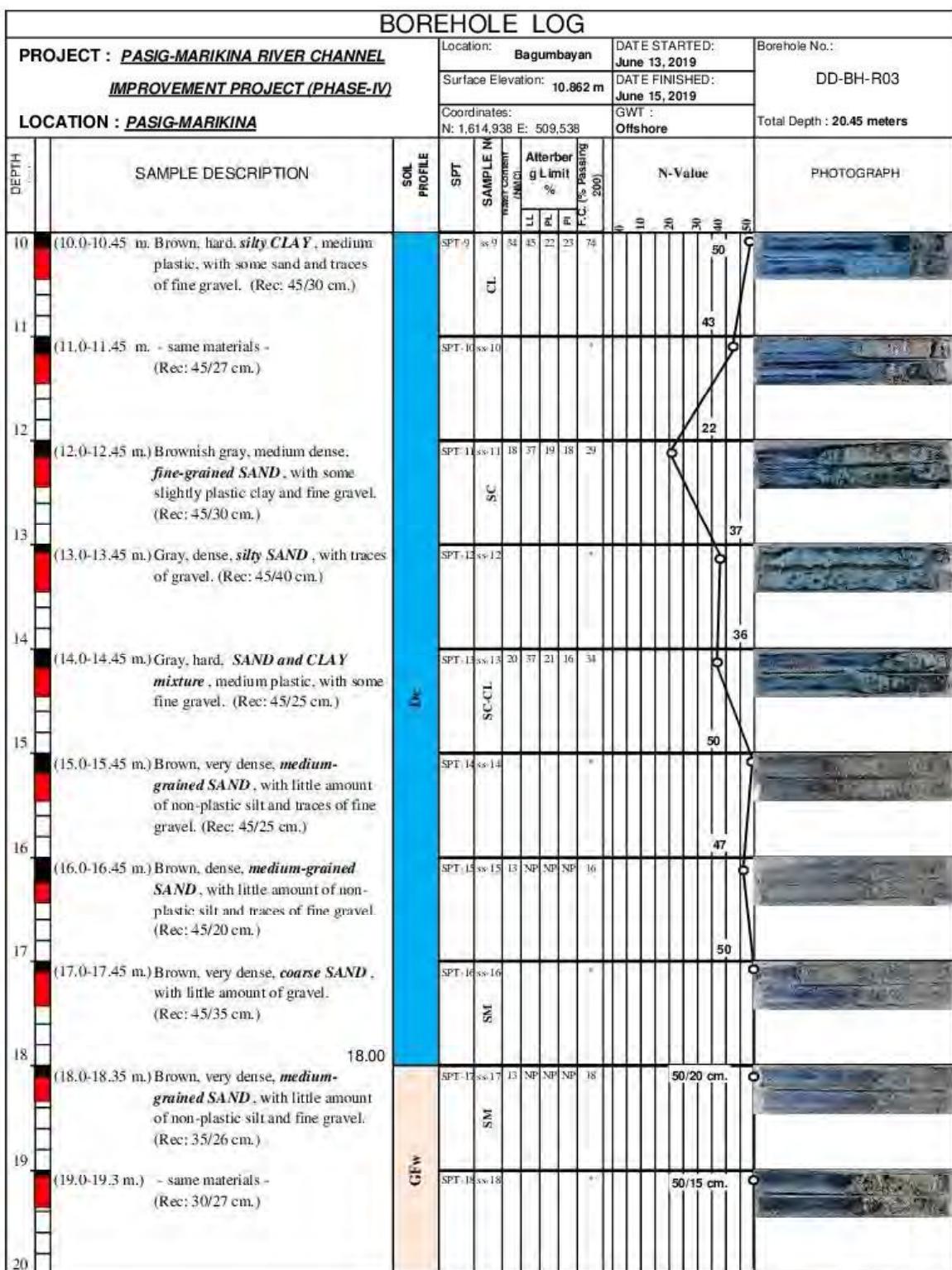


Figure 5-3-1 (45/103) BORING LOGS (PHASE IV)

BOREHOLE LOG												
PROJECT : <u>PASIG-MARIKINA RIVER CHANNEL</u> <u>IMPROVEMENT PROJECT (PHASE-IV)</u>			Location: Bagumbayan Surface Elevation: 10.862 m Coordinates: N: 1,614,938 E: 509,538			DATE STARTED: June 13, 2019 DATE FINISHED: June 15, 2019			Borehole No.: DD-BH-R03			
LOCATION : <u>PASIG-MARIKINA</u>						GWT : Offshore			Total Depth : 20.45 meters			
DEPTH	SAMPLE DESCRIPTION			SOIL PROFILE	SPT	SAMPLE N Water content (ASTM D-425)	Atterber g Limit %	F.C. (% Passing 200)	N-Value			PHOTOGRAPH
	(20.0-20.45 m.) Brown, SAND and GRAVEL mixture , with some non-plastic silt. (Rec: 45/30 cm.)			GFW	SPT-15 ss 19	SM	LL	PL	10	20	30	40
21	<i>End of borehole @ 20.45m depth</i>											
22												
23												
24												
25												
26												
27												
28												
29												
30												

Figure 5-3-1 (46/103) BORING LOGS (PHASE IV)

BOREHOLE LOG														
PROJECT : <u>PASIG-MARIKINA RIVER CHANNEL</u> <u>IMPROVEMENT PROJECT (PHASE-IV)</u>			Location: Bagumbayan			DATE STARTED: June 07, 2019			Borehole No.: DD-BH-R04					
			Surface Elevation: 9.224 m			DATE FINISHED: June 09, 2019								
			Coordinates: N: 1,65,319 E: 509,340			GWT : Offshore							Total Depth : 20.13 meters	
DEPTH	SAMPLE DESCRIPTION			SAMPLE PROFILE	SPT	SAMPLE N TEST COMPLIANT (AMERICAN)	Atterber g Limit %	N _s Passing (200)	N-Value					PHOTOGRAPH
	Note: ----- Sample description was based on tactile and visual examination.								0	10	20	30	40	
1	(0-0.50 m)	Gray, <i>silty CLAY</i> , medium plastic, with traces of sand.			-	CL	58	46	26	20	96			
1	(1.0-1.45 m)	Gray, soft, <i>silty CLAY</i> , medium plastic, with little amount of sand and traces of fine gravel. (Rec: 45/40 cm.)			SPT-1	ss-1	77	87	21	26		4		
2	(2.0-2.45 m)	- same materials -, medium stiff. (Rec: 45/45 cm.)			SPT-2	ss-2						7		
3	(3.0-3.45 m)	Gray, stiff, <i>silty CLAY</i> , medium plastic, with some sand and traces fine gravel. (Rec: 45/40 cm.)			SPT-3	ss-3	32	48	21	27	69		13	
4	(4.0-4.45 m)	Gray, stiff, <i>silty CLAY</i> . (Rec: 45/35 cm.)			SPT-4	ss-4						12		
5	(5.0-5.45 m)	Grayish brown, stiff, <i>CLAY</i> , high plastic, with traces of sand. (Rec: 45/45 cm.)			SPT-5	ss-5	47	66	23	43	96		11	
6	(6.0-6.45 m.)	- same materials -, very stiff. (Rec: 45/20 cm.)			SPT-6	ss-6						17		
7	(7.0-7.45 m.)	Brown, very stiff, <i>CLAY</i> , high plastic, with some sand and traces of fine gravel. (Rec: 45/45 cm.)			SPT-7	ss-7	47	61	24	37		18		
8	(8.0-8.45 m.)	Brown, stiff, <i>CLAY</i> , with some sand. (Rec: 45/25 cm.)			SPT-8	ss-8						14		
9	(9.0-9.45 m.)	Brownish gray, very stiff, <i>CLAY</i> , high plastic, with little amount of sand and traces of fine gravel. (Rec: 45/30 cm.)			SPT-9	ss-9	41	57	22	35	80		15	

Figure 5-3-1 (47/103) BORING LOGS (PHASE IV)

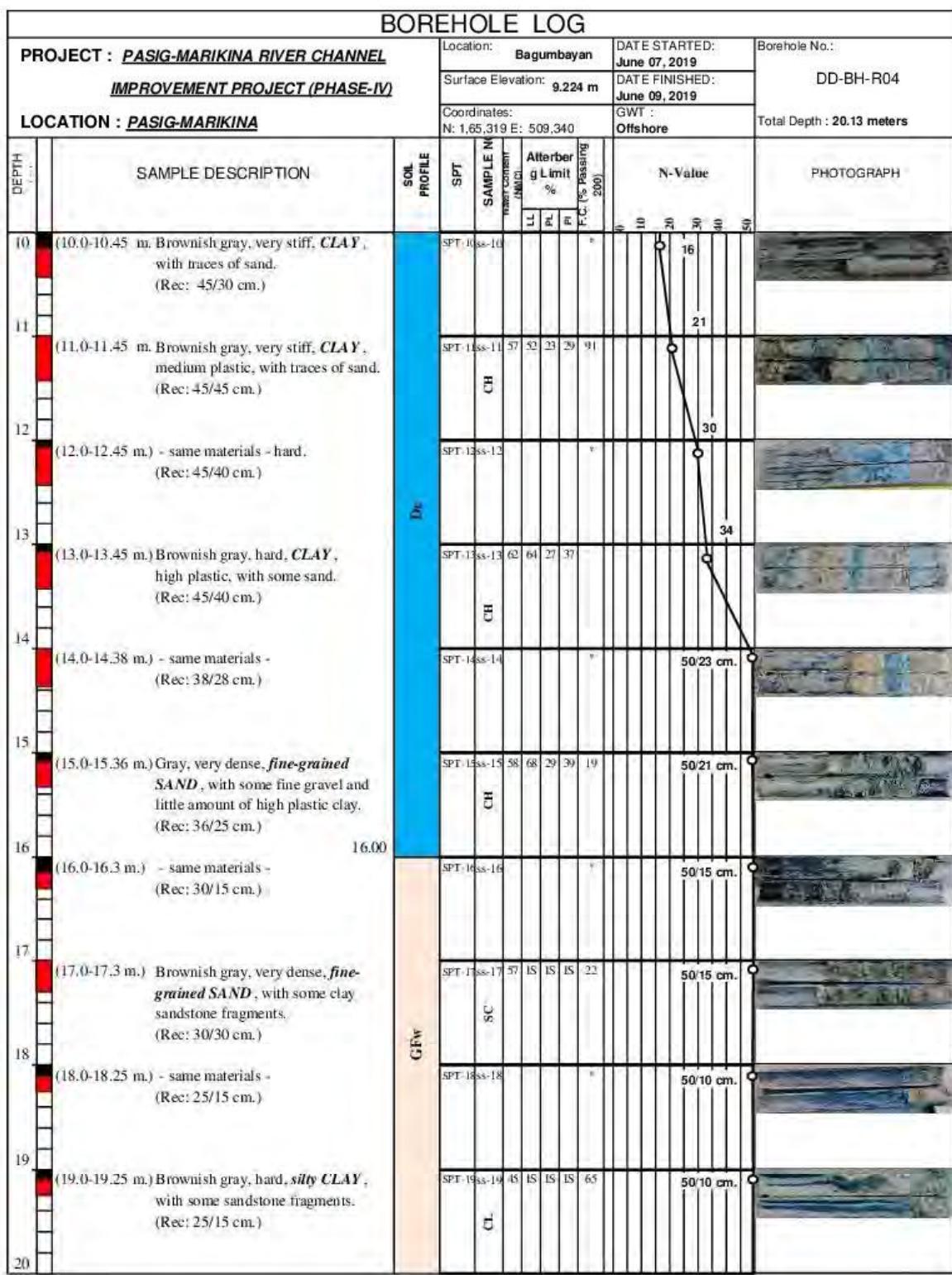


Figure 5-3-1 (48/103) BORING LOGS (PHASE IV)

BOREHOLE LOG														
PROJECT : PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE-IV) LOCATION : PASIG-MARIKINA			Location: Bagumbayan			DATE STARTED: June 07, 2019			Borehole No.: DD-BH-R04 GWTF : Offshore Total Depth : 20.13 meters					
			Surface Elevation: 9.224 m			DATE FINISHED: June 09, 2019								
			Coordinates: N: 1,65,319 E: 509,340			GWTF : Offshore								
DEPTH	SAMPLE DESCRIPTION	SOIL PROFILE	SPT	SAMPLE N Water Content (%W/W)	Atterber g Limit %	F.C. (% Passing 200)	N-Value	PHOTOGRAPH						
21	(20.0-20.13 m.) Brownish gray, hard, <i>silty CLAY</i> , with some sandstone fragments. (Re: 13/8 cm.)	GFW	SPT 20.88-20	LL PL PI F.C.	"	"	0 10 20 30 40 50	50/10 cm.						
22														
23	<i>End of borehole @ 20.13m depth</i>													
24														
25														
26														
27														
28														
29														
30														

Figure 5-3-1 (49/103) BORING LOGS (PHASE IV)

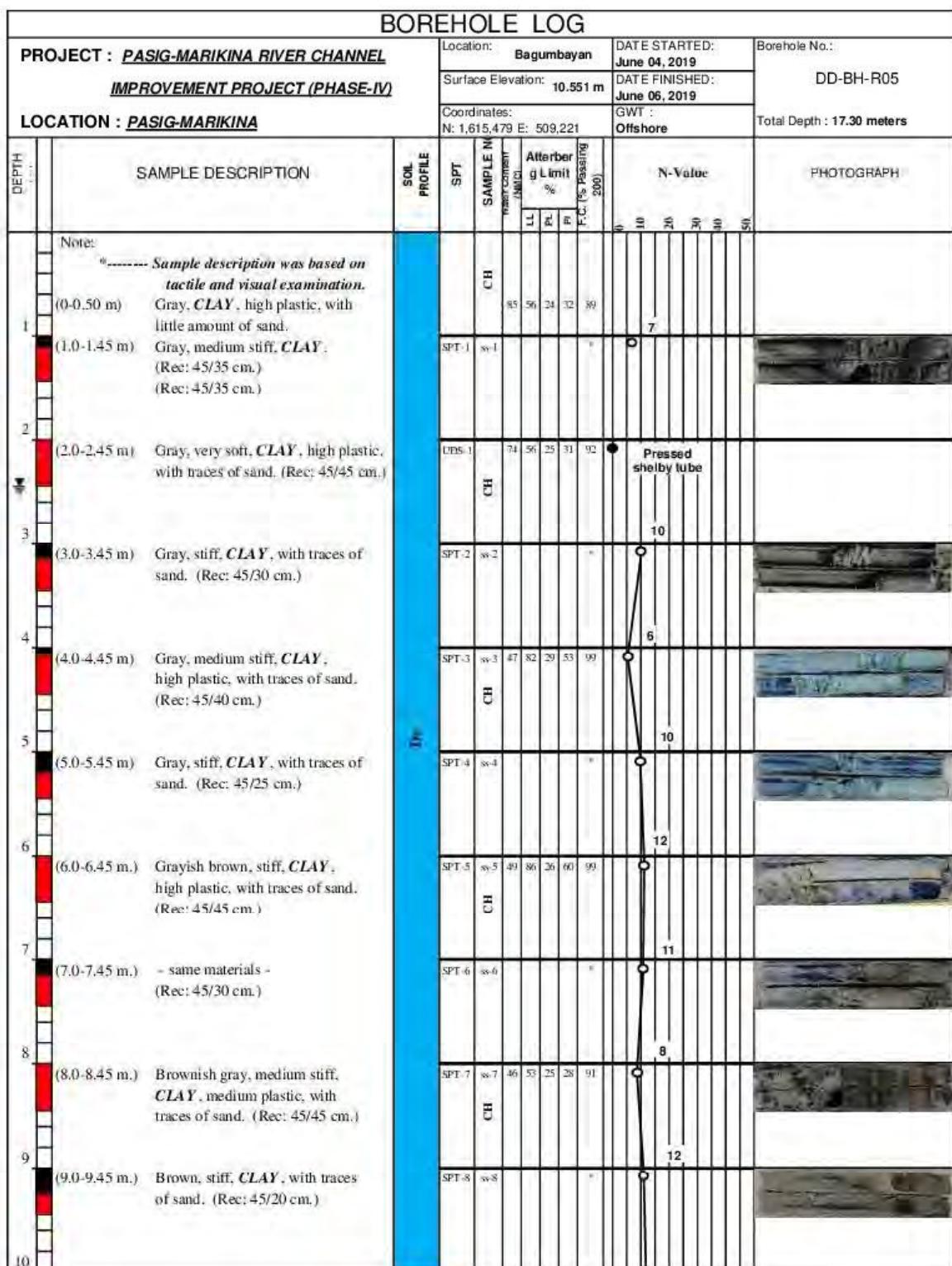


Figure 5-3-1 (50/103) BORING LOGS (PHASE IV)

BOREHOLE LOG														
PROJECT : PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE-IV) LOCATION : PASIG-MARIKINA			Location: Bagumbayan			DATE STARTED: June 04, 2019			Borehole No.: DD-BH-R05 Total Depth : 17.30 meters					
			Surface Elevation: 10.551 m			DATE FINISHED: June 06, 2019								
			Coordinates: N: 1,615,479 E: 509,221			GWT : Offshore								
DEPTH	SAMPLE DESCRIPTION			SOIL PROFILE	SPT	SAMPLE N Water content (approx.)	Atterber g Limit %	F.C. % Passing 200	N-Value			PHOTOGRAPH		
10	(10.0-10.45 m.) Gray, stiff, CLAY , high plastic, with traces of sand and fine gravel. (Rec: 45/45 cm.)			D SPT-9 ss 9 SPT-10 ss 10 SPT-11 ss 11 SPT-12 ss 12 SPT-13 ss 13 SPT-14 ss 14 SPT-15 ss 15 SPT-16 ss 16	SPT-9	ss 9	49	53	23	30	92	0 10 20 30 40 50		
11	(11.0-11.45 m.) Gray, stiff, CLAY , with traces of sand. (Rec: 45/30 cm.)				SPT-10 ss 10					15				
12	(12.0-12.45 m.) Gray, very stiff, silty CLAY , medium plastic, with traces of sand. (Rec: 45/35 cm.)				SPT-11 ss 11	51	45	21	24	93		26		
13	(13.0-13.45 m.) Gray, very, stiff, sandy CLAY , (Rec: 45/45 cm.)				SPT-12 ss 12					16				
14	(14.0-14.45 m.) Gray, very dense, clayey SAND , slightly plastic, with traces of fine gravel. (Rec: 45/25 cm.)				SPT-13 ss 13	35	30	18	12	81		50		
15	(15.0-15.3 m.) - same materials - (Rec: 30/20 cm.)				SPT-14 ss 14					50/15 cm.				
16	(16.0-16.25 m.) Gray, very dense, fine-grained SAND , with some non-plastic silt. (Rec: 25/20 cm.)				SPT-15 ss 15	30	NP	NP	NP	28		50/10 cm.		
17	(17.0-17.3 m.) - same materials - (Rec: 30/20 cm.)				SPT-16 ss 16					50/15 cm.				
18	<i>End of borehole @ 17.30m depth</i>													
19														
20														

Figure 5-3-1 (51/103) BORING LOGS (PHASE IV)

BOREHOLE LOG															
PROJECT : PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE-IV) LOCATION : PASIG-MARIKINA		Location:				DATE STARTED: May 30, 2019			Borehole No.:						
		Surface Elevation: 10.545 m				DATE FINISHED: May 31, 2019			DD-BH-R07						
		Coordinates: N: 1,615,815 E: 508,776				GWT : Offshore			Total Depth : 9.00 meters						
		SAMPLE DESCRIPTION		SOIL PROFILE		SPT	SAMPLE N. Water content (W/MG)	Atterber g Limit %	F.C. (% Passing 200)	N-Value					
DEPTH							LL	PL	PI	0	10	20	30		
1		(0.0-0.50 m.) Brownish gray, <i>silty CLAY</i> , medium plastic, with traces of sand.		Dc	CL	SPT-1	32	42	21	21	07	14	50		
2		(1.0-1.45 m.) Brownish gray, stiff, <i>sandy CLAY</i> , slightly plastic. (Rec: 45/40 cm.)			CH	SPT-2	32	51	23	28	80	18	50		
3		(2.0-2.45 m.) Brown, very stiff, <i>CLAY</i> , medium plastic, with little amount of sand. (Rec: 45/30 cm.)			CH	SPT-3	55	72	23	49	99	13	50		
4		(3.0-3.45 m.) Brown, stiff, <i>CLAY</i> , high plastic, with traces of sand. (Rec: 45/35 cm.)			CH	SPT-4	46	71	31	40	98	17	50		
5		(4.0-4.45 m.) Gray, very stiff, <i>CLAY</i> , high plastic, with traces of sand. (Rec: 45/30 cm.)			CH	SPT-5	61	60	23	37	98	13	50		
6		(5.0-5.45 m.) Brownish gray, stiff, <i>CLAY</i> , high plastic, with traces of sand. (Rec: 45/30 cm.)		GFT		SPT-6						50/10 cm.	50		
7		(6.0-6.1 m.) No Recovery, very dense. (Rec: 10/0 cm.)				cs-1						Coring	50		
8		(6.1-7.0 m.) Gray, moderately weathered, <i>coarse-grained SANDSTONE</i> , moderately cemented. (Rec: 90/50/50 cm.)				cs-2						Coring	50		
9		(7.0-8.0 m.) - same materials - (Rec: 100/85/85 cm.)				cs-3						Coring	50		
10		(8.0-9.0 m.) - same materials - (Rec: 100/100/100 cm.)				<i>End of borehole @ depth 9.00 m.</i>									

Figure 5-3-1 (52/103) BORING LOGS (PHASE IV)

PROJECT : <u>PASIG-MARIKINA RIVER CHANNEL</u> <u>IMPROVEMENT PROJECT (PHASE-IV)</u>		Location: Bagumbayan		DATE STARTED: May 25, 2019		Borehole No.: DD-BH-R08 Total Depth : 20.10 meters			
LOCATION : <u>PASIG-MARIKINA</u>		Surface Elevation: 9.558 m		DATE FINISHED: May 28, 2019					
		Coordinates: N: 1,615,891 E: 508,686		GWT : 0.00 meters					
DEPTH	SAMPLE DESCRIPTION	SOIL PROFILE	SPT	SAMPLE N max comp. (ANALYTIC)	Atterber g Limit %	N-Value	PHOTOGRAPH		
	Note: ----- Sample description was based on tactile and visual examination.								
1 0.0-0.50 m	Brown, silty CLAY , medium plastic.	CL	36	44	23	21	100	12	
1 1.0-1.45 m	Brown, stiff, CLAY , medium plastic, with traces of sand. (Rec: 45/40 cm.)	CH	SPT-1 sw-1	34	51	26	25	98	23
2 2.0-2.45 m	- same materials - , very stiff. (Rec: 45/35 cm.)	CH	SPT-2 sw-2						13
3 3.0-3.45 m	Brown, stiff, CLAY , high plastic, with traces of sand. (Rec: 45/40 cm.)	CH	SPT-3 sw-3	45	67	26	41	96	18
4 4.0-4.45 m	Gray, very stiff, CLAY . (Rec: 45/45 cm.)	CH	SPT-4 sw-4						12
5 5.0-5.45 m	Dark gray, stiff, CLAY , high plastic, with traces of sand. (Rec: 45/45 cm.)	CH	SPT-5 sw-5	77	57	23	34	94	6
6 6.0-6.45 m.	Dark gray, medium stiff, CLAY , with traces of sand. (Rec: 45/30 cm.)	CH	SPT-6 sw-6						10
7 7.0-7.45 m.	Dark gray, stiff, CLAY , high plastic, with little amount of sand. (Rec: 45/40 cm.)	CH	SPT-7 sw-7	66	57	26	31	86	14
8 8.0-8.45 m.	- same materials - (Rec: 45/45 cm.)	CH	SPT-8 sw-8						50/26 cm.
9 9.0-9.41 m.	Gray, hard, SAND and CLAY mixture , medium plastic, with traces of sandstone fragments. (Rec: 41/30 cm.)	SC-CH	SPT-9 sw-9	54	53	24	29	49	

Figure 5-3-1 (53/103) BORING LOGS (PHASE IV)

BOREHOLE LOG										
PROJECT : PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE-IV)			Location: Bagumbayan Surface Elevation: 9.558 m Coordinates: N: 1,615,891 E: 508,686			DATE STARTED: May 25, 2019 DATE FINISHED: May 28, 2019 GWT : 0.00 meters			Borehole No.: DD-BH-R08 Total Depth : 20.10 meters	
DEPTH	SAMPLE DESCRIPTION			SOIL PROFILE			N-Value			PHOTOGRAPH
	SPT	SAMPLE N.	Water Content (%)	Atterberg Limit %	F.C. (% Passing 200)		10	20	30	40
10	(10.0-10.3 m.) Gray, very dense, clayey SAND , (Rec: 30/20 cm.)	SPT-10 ss-10	SM	LL PL FL	"		50/15 cm.	50/20 cm.	50/25 cm.	50/30 cm.
11	(11.0-11.38 m. Gray, very dense, silty SAND , non-plastic. (Rec: 38/25 cm.)	SPT-11 ss-11	SM	NP NP NP	37		50/15 cm.	50/20 cm.	50/25 cm.	50/30 cm.
12	(12.0-12.3 m.) - same materials - (Rec: 30/20 cm.)	SPT-12 ss-12	SM	LL PL FL	"		50/15 cm.	50/20 cm.	50/25 cm.	50/30 cm.
13	(13.0-13.30 m.) Gray, very dense, medium-grained SAND , with little amount of non-plastic silt. (Rec: 30/30 cm.)	SPT-13 ss-13	SM	NP NP NP	17		50/15 cm.	50/20 cm.	50/25 cm.	50/30 cm.
14	(14.0-14.25 m.) - same materials - (Rec: 25/25 cm.)	SPT-14 ss-14	SM	LL PL FL	"		50/10 cm.	50/15 cm.	50/20 cm.	50/25 cm.
15	(15.0-15.15 m.) Gray, very dense, fine-grained SAND , with some non-plastic silt. (Rec: 15/10 cm.)	SPT-15 ss-15	SM	NP NP NP	21		50/15 cm.	50/20 cm.	50/25 cm.	50/30 cm.
16	(16.0-16.35 m.) - same materials - (Rec: 35/25 cm.)	SPT-16 ss-16	SM	LL PL FL	"		50/20 cm.	50/25 cm.	50/30 cm.	50/35 cm.
17	(17.0-17.25 m.) Gray, very dense, fine-grained SAND , with little amount of non-plastic silt and sandstone fragments. (Rec: 25/15 cm.)	SPT-17 ss-17	SM	NP NP NP	15		50/10 cm.	50/15 cm.	50/20 cm.	50/25 cm.
18	(18.0-18.3 m.) - same materials - (Rec: 30/15 cm.)	SPT-18 ss-18	SM	LL PL FL	"		50/15 cm.	50/20 cm.	50/25 cm.	50/30 cm.
19	(19.0-19.35 m.) Gray, very dense, fine-grained SAND , with some non-plastic silt. (Rec: 35/15 cm.)	SPT-19 ss-19	SM	NP NP NP	22		50/20 cm.	50/25 cm.	50/30 cm.	50/35 cm.
20										

Figure 5-3-1 (54/103) BORING LOGS (PHASE IV)

BOREHOLE LOG														
PROJECT : PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE-IV) LOCATION : PASIG-MARIKINA			Location: Bagumbayan			DATE STARTED: May 25, 2019			Borehole No.: DD-BH-R08 Total Depth : 20.10 meters					
			Surface Elevation: 9.558 m			DATE FINISHED: May 28, 2019								
			Coordinates: N: 1,615,891 E: 508,686			GWT : 0.00 meters								
DEPTH	SAMPLE DESCRIPTION	SOIL PROFILE	SPT	SAMPLE N	Atterberg Limit %	N-Value	PHOTOGRAPH							
20.0-20.1 m.	(20.0-20.1 m.) Gray, very dense, medium-grained SAND , (Rec: 10/7 cm.)	GfF	SPT 20 (ss:20)	LL PL PI F.C. Ps (Passing 200)	%	0 10 20 30 40 50	50/20 cm.							
21	(Rec: 10/7 cm.)													
22	<i>End of borehole @ 20.10m depth</i>													
23														
24														
25														
26														
27														
28														
29														
30														

Figure 5-3-1 (55/103) BORING LOGS (PHASE IV)

BOREHOLE LOG												
PROJECT : PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE-IV)			Location: Bagumbayan Surface Elevation: 10.075 m Coordinates: N: 1,616,005 E: 508,533			DATE STARTED: May 23, 2019 DATE FINISHED: May 24, 2019 GWT : Offshore			Borehole No.: DD-BH-R09 Total Depth : 8.00 meters			
DEPTH	SAMPLE DESCRIPTION			SOIL PROFILE			N-value			PHOTOGRAPH		
				SPT	SAMPLE N. Water content (W/MG)	Atterberg g Limit %	F.C. (% Passing 200)	LL	PL	PI		
1	Note: ----- Sample description was based on tactile and visual examination.	(0-0.5 m.)	Grayish brown, CLAY , high plastic.	SPT-1	CH	25	66	24	42	100	21	
1		(1.0-1.45 m)	Grayish brown, very stiff, silty CLAY , medium plastic, with traces of sand and fine gravel. (Rec: 45/45 cm.)	SPT-1	CL	33	44	22	22	90	15	
2		(2.0-2.45 m)	Brownish gray, very stiff, CLAY , high plastic, with traces of sand. (Rec: 45/40 cm.)	SPT-2	CH	30	56	26	30	92	17	
3		(3.0-3.45 m)	Dark brown, very stiff, CLAY , medium plastic, with traces of sand. (Rec: 45/30 cm.)	SPT-3	CH	32	55	26	29	91		
4		(4.0-4.25 m)	Dark brown, very dense, gravely SILT , non-plastic. (Rec: 45/30 cm.)	SPT-4	sw-1	47	NP	NP	NP	41	50/10 cm.	
4		(4.25-5.0 m)	Brown, moderately weathered, fine-grained SANDSTONE , moderately cemented. (Rec: 75/50/50 cm.) - same materials - (Rec: 100/60/60 cm.)	cs-1	ML						CORING	
5		(5.0-6.0 m)	- same materials - (Rec: 100/60/60 cm.)	cs-2							CORING	
6		(6.0-7.5 m.)	Brownish gray, moderately weathered, fine-grained SANDSTONE , moderately cemented. (Rec: 150/125/125 cm.)	cs-3							CORING	
7		(7.5-8.0 m.)	- same materials - (Rec: 50/50/50 cm.)	cs-4							CORING	
8	End of borehole @ 8.0m depth											
9												
10												

Figure 5-3-1 (56/103) BORING LOGS (PHASE IV)

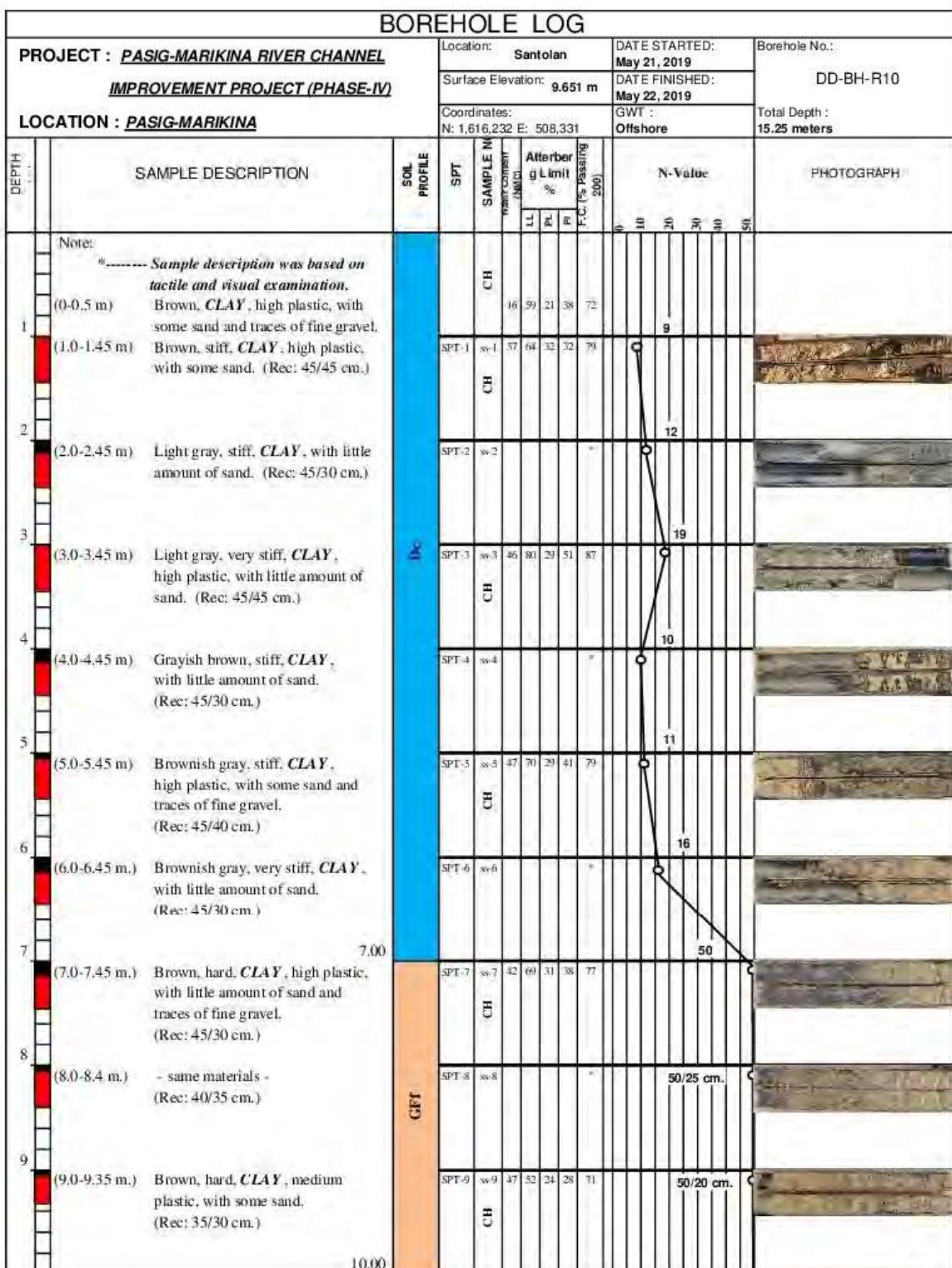


Figure 5-3-1 (57/103) BORING LOGS (PHASE IV)

BOREHOLE LOG												
PROJECT : <u>PASIG-MARIKINA RIVER CHANNEL</u> <u>IMPROVEMENT PROJECT (PHASE-IV)</u>			Location: Santolan Surface Elevation: 9.651 m Coordinates: N: 1,616,232 E: 508,331			DATE STARTED: May 21, 2019 DATE FINISHED: May 22, 2019			Borehole No.: DD-BH-R10 Total Depth : 15.25 meters			
DEPTH	SAMPLE DESCRIPTION			SOIL PROFILE			N-Value			PHOTOGRAPH		
	SPT	SAMPLE N.	Water Content (%)	Atterberg Limit %	F.C. (% Passing 200)		10	20	30	40	50	
10	(10.0-10.3 m.) Brown, very dense, <i>silty SAND</i> , (Rec: 30/30 cm.)	SPT-10 ss-10	NP	NP	NP							
11	(11.0-11.25 m. Dark brown, very dense, <i>silty SAND</i> , non-plastic. (Rec: 25/20 cm.)	SPT-11 ss-11	37	NP	NP	32						
12	(12.0-12.25 m.) - same materials - (Rec: 25/20 cm.)	SPT-12 ss-12	SM	NP	NP							
13	(13.0-13.3 m.) Dark brown, very dense, <i>silty SAND</i> , non-plastic, with traces of fine gravel. (Rec: 30/25 cm.)	SPT-13 ss-13	39	NP	NP	38						
14	(14.0-14.10 m.) - same materials - (Rec: 10/10 cm.)	SPT-14 ss-14	SM	NP	NP							
15	(15.0-15.25 m.) Brown, very dense, <i>silty SAND</i> , non-plastic. (Rec: 25/15 cm.)	SPT-15 ss-15	38	NP	NP	43						
16	<i>End of borehole @ 15.25m depth</i>											
17												
18												
19												
20												

Figure 5-3-1 (58/103) BORING LOGS (PHASE IV)

PROJECT : PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE-IV)				Location: Tanong		DATE STARTED: June 14, 2019		Borehole No.: DD-BH-R11 Total Depth : 25.40 meters	
LOCATION : PASIG-MARIKINA				Surface Elevation: 15.757 m		DATE FINISHED: June 18, 2019			
				Coordinates: N: 1,617,283 E: 508,629		GWT : 5.00 meters			
DEPTH	SAMPLE DESCRIPTION	SOIL PROFILE	SPT	SAMPLE N Material (NAME)	Atterber g Limit %	F.C. (S _s /Passing 200)	N-Value	PHOTOGRAPH	
	Note: ----- Sample description was based on tactile and visual examination.								
1 1 1	(1.0-1.45 m) Brown, very loose, silty SAND . (Rec: 45/45 cm.)	Ac	SPT-1	sw-1			3		
2 2 2	(2.0-2.45 m.) Brown, medium dense, silty SAND , non-plastic, with little amount of fine gravel. (Rec: 45/35 cm.)		SPT-2	sw-2	15	NP	14		
3 3 3	(3.0-3.45 m) Brown, medium dense, medium-grained SAND , with traces of fine gravel. (Rec: 45/20 cm.)		SPT-3	sw-3			16		
4 4 4	(4.0-4.45 m) Gray, medium dense, medium-grained SAND , with little amount fine gravel and traces of non-plastic silt. (Rec: 45/25 cm.)	As	SPT-4	sw-4	18	NP	16		
5 5 5	(5.0-5.45 m) - same materials - (Rec: 45/15 cm.)		SPT-5	sw-5			20		
6 6 6	(6.0-6.45 m) Gray, stiff, CLAY , medium plastic, with little amount of sand and fine gravel. (Rec: 45/20 cm.)		SPT-6	sw-6	32	63	12		
7 7 7	(7.0-7.45 m) - same materials - (Rec: 45/40 cm.)		SPT-7	sw-7			11		
8 8 8	(8.0-8.45 m) Brown, stiff, CLAY , high plastic, with some sand and traces of fine gravel. (Rec: 45/26 cm.)		SPT-8	sw-8	45	51	11		
9 9 9	(9.0-9.45 m) Brown, stiff, CLAY , with traces of sand. (Rec: 45/45 cm.)		SPT-9	sw-9			9		

Figure 5-3-1 (59/103) BORING LOGS (PHASE IV)

Figure 5-3-1 (60/103) BORING LOGS (PHASE IV)

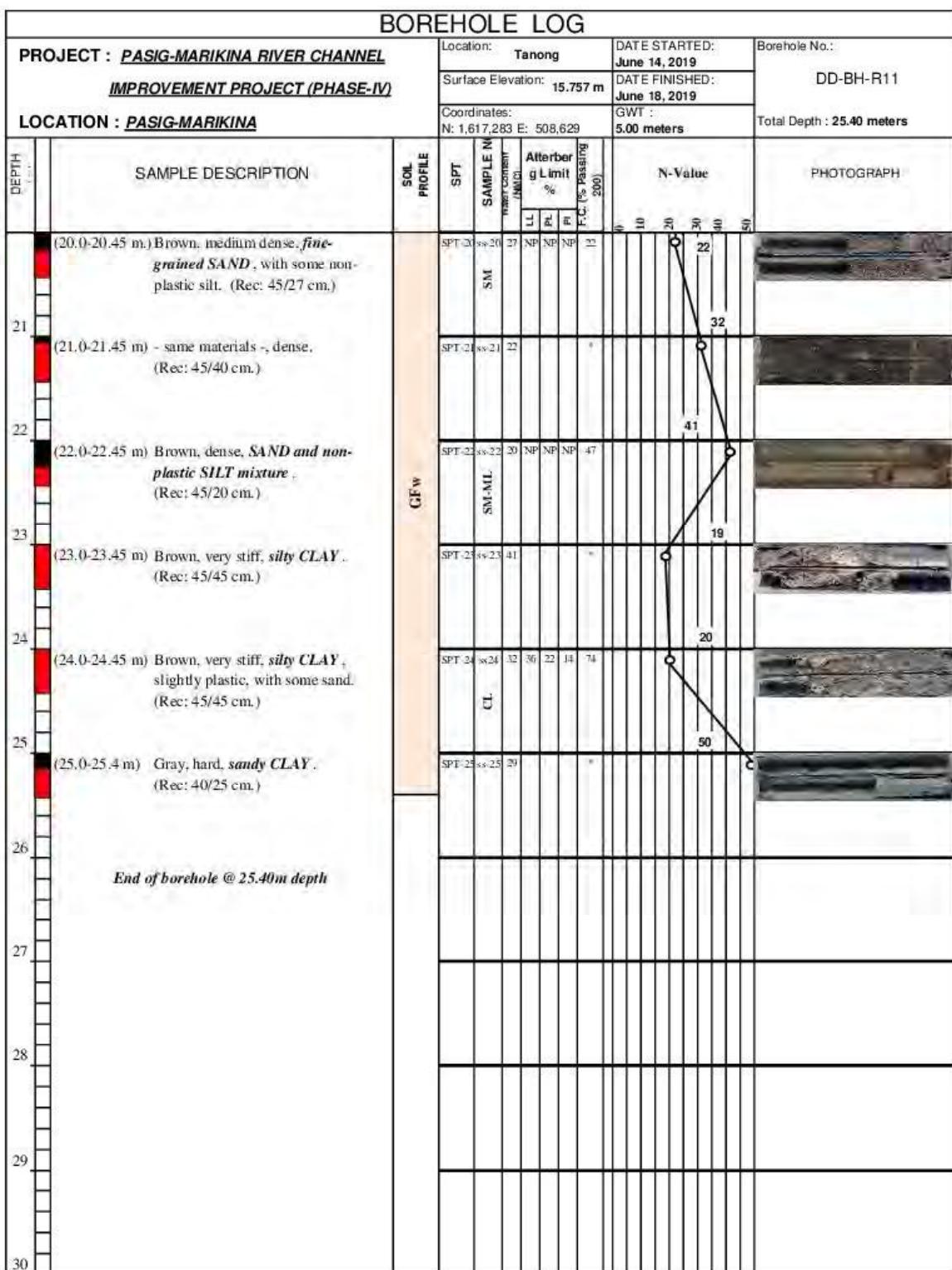


Figure 5-3-1 (61/103) BORING LOGS (PHASE IV)

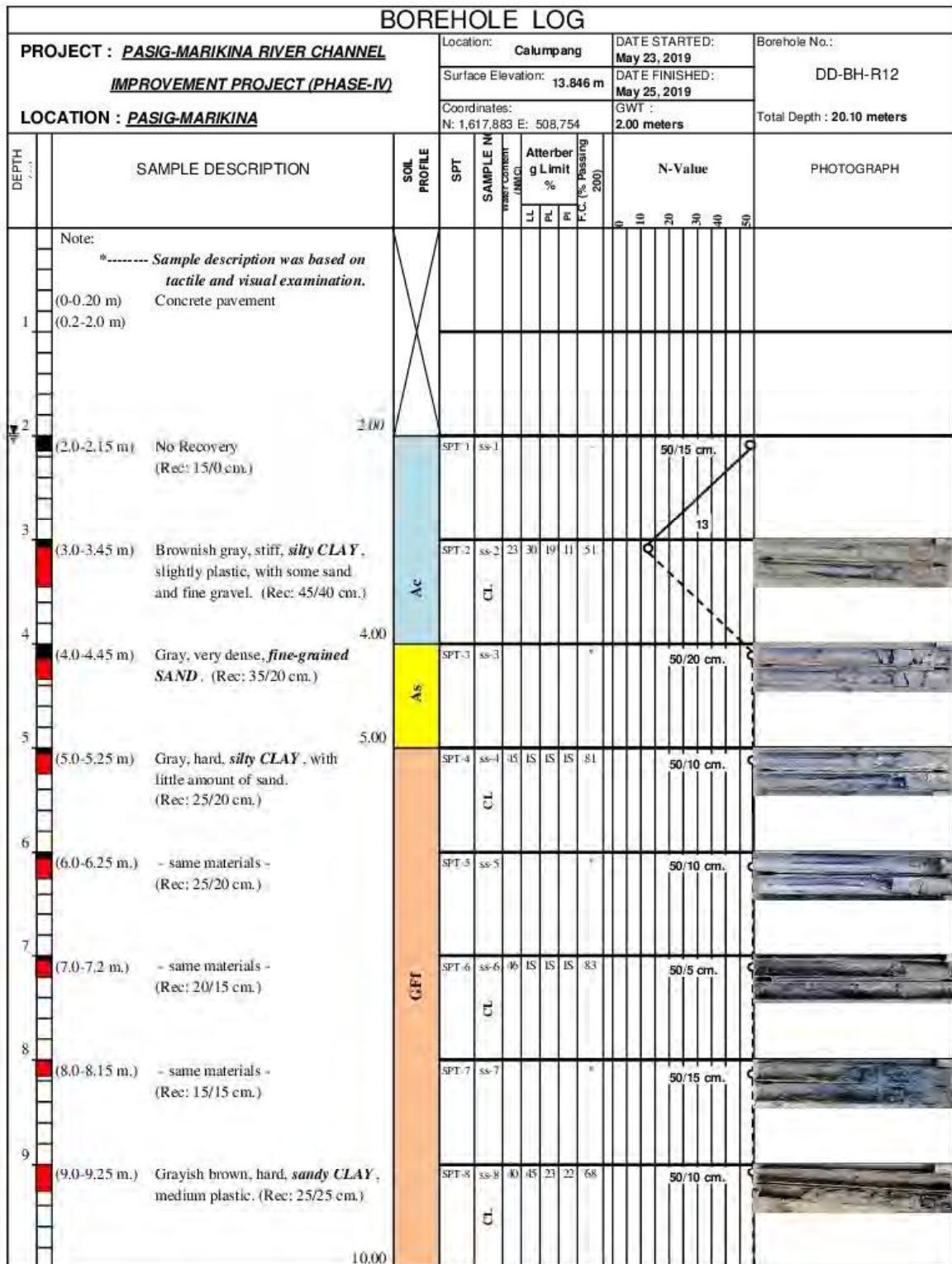


Figure 5-3-1 (62/103) BORING LOGS (PHASE IV)

BOREHOLE LOG													
PROJECT : PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE-IV) LOCATION : PASIG-MARIKINA			Location: Calumpang			DATE STARTED: May 23, 2019			Borehole No.: DD-BH-R12				
			Surface Elevation: 13.846 m			DATE FINISHED: May 25, 2019							
			Coordinates: N: 1,617,883 E: 508,754			GWT : 2.00 meters							Total Depth : 20.10 meters
DEPTH	SAMPLE DESCRIPTION			SOIL PROFILE	SPT	SAMPLE N Water Content (%WAVC)	Atterber g Limit %	F.C. % Passing (200)	N-Value			PHOTOGRAPH	
10	(10.0-10.15 m.) Brownish gray, hard, SAND and CLAY mixture , with traces of fine gravel. (Rec: 15/15 cm.)			SPT-9	ss-9	LL	PL	FL	0	10	20	30	40
11	(11.0-11.15 m.) Brown, hard, SAND and CLAY mixture , medium plastic, with traces of fine gravel. (Rec: 15/15 cm.)			SPT-10ss-10	51	57	25	32	43	50/15 cm.	44	50	
12	(12.0-12.45 m.) Gray, dense, fine to medium SAND . (Rec: 45/45 cm.)			SPT-11ss-11						50/15 cm.			
13	(13.0-13.3 m.) Dark gray, very dense, fine-grained SAND , with little amount of non-plastic and traces of fine gravel. (Rec: 30/25 cm.)			SPT-12ss-12	28	NP	NP	NP	16	50/15 cm.			
14	(14.0-14.3 m.) - same materials - (Rec: 30/20 cm.)			SPT-13ss-13						50/15 cm.			
15	(15.0-15.15 m.) Dark gray, very dense, fine-grained SAND , with some non-plastic silt and traces of fine gravel. (Rec: 15/15 cm.)			SPT-14ss-14	24	NP	NP	NP	27	50/15 cm.			
16	(16.0-16.3 m.) Brown, very dense, silty SAND , with traces of gravel. (Rec: 30/25 cm.)			SPT-15ss-15						50/15 cm.			
17	(17.0-17.1 m.) No Recovery, very dense. (Rec: 10/0 cm.)			SPT-16ss-16						50/10 cm.			
18	(18.0-18.15 m.) Gray, very dense, medium-grained SAND , with traces of non-plastic silt. (Rec: 15/10 cm.)			SPT-17ss-17						50/10 cm.			
19	(19.0-19.1 m.) Brown, very dense, fine-grained SAND , with some non-plastic silt and traces of fine gravel. (Rec: 10/10 cm.)			SPT-18ss-18	24	NP	NP	NP	21	50/10 cm.			
20				GFF									

Figure 5-3-1 (63/103) BORING LOGS (PHASE IV)

BOREHOLE LOG												
PROJECT : PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE-IV) LOCATION : PASIG-MARIKINA			Location: Calumpang		DATE STARTED: May 23, 2019		Borehole No.:					
			Surface Elevation: 13.846 m		DATE FINISHED: May 25, 2019		DD-BH-R12					
			Coordinates: N: 1,617,883 E: 508,754		GWT : 2.00 meters		Total Depth : 20.10 meters					
DEPTH	SAMPLE DESCRIPTION	SOIL PROFILE	SPT	SAMPLE N Water content (%MBC)	Atterber g Limit %	F.C. (% Passing 200)	LL	PL	PI	N-Value	PHOTOGRAPH	
20	(20.0-20.1 m.) Brown, very dense, <i>silty</i> SAND with traces of fine gravel. (Rec: 10/5 cm.)	GFT	SPT-19 ss: 19	SM						50/10 cm.		
21	<i>End of borehole @ 20.10m depth</i>											
22												
23												
24												
25												
26												
27												
28												
29												
30												

Figure 5-3-1 (64/103) BORING LOGS (PHASE IV)

BOREHOLE LOG												
PROJECT : PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE-IV) LOCATION : PASIG-MARIKINA			Location: Jesus dela Peña		DATE STARTED: May 20, 2019		Borehole No.: DD-BH-R13 Total Depth : 20.20 meters					
			Surface Elevation: 12.392 m		DATE FINISHED: May 21, 2019							
			Coordinates: N: 1,618,069 E: 509,020		GWT : 3.6 meters							
DEPTH	SAMPLE DESCRIPTION	SOIL PROFILE	SPT	SAMPLE NUMBER	TEST CONDUCTED	Atterberg's Limit %	N-Value	PHOTOGRAPH				
	Note: ----- Sample description was based on tactile and visual examination.	As	SPT-1	ss-1			2					
1 2.00	(1.0-1.45 m) Brown, very loose, <i>silty SAND</i> . (Rec: 45/30 cm.)	CL	SPT-2	ss-2	30 41 20 21 85		2					
3	(2.0-2.45 m) Brown, soft, <i>CLAY</i> , high plastic, with little amount of sand. (Rec: 45/20 cm.)	CL	SPT-3	ss-3			9					
4	(3.0-3.45 m) Gray, stiff, <i>sandy CLAY</i> . (Rec: 45/40 cm.)	CL	SPT-4	ss-4	32 40 20 20 74		16					
5	(4.0-4.45 m) Brown, very stiff, <i>silty CLAY</i> , medium plastic, with some sand. (Rec: 45/45 cm.)	CL	SPT-5	ss-5			12					
6	(5.0-5.45 m) Brown, stiff, <i>silty CLAY</i> , medium plastic, with some sand. (Rec: 45/45 cm.)	CL	SPT-6	ss-6	32 38 19 19 72		16					
7	(6.0-6.45 m) Brown, very stiff, <i>silty CLAY</i> , medium plastic, with some sand. (Rec: 45/40 cm.)	CL	SPT-7	ss-7			20					
8	(7.0-7.45 m) - same materials - (Rec: 45/45 cm.)	CL	SPT-8	ss-8	35 33 18 15 73		20					
9	(8.0-8.45 m) Brown, very stiff, <i>silty CLAY</i> , slightly plastic, with some sand and traces of fine gravel. (Rec: 45/40 cm.)	CL	SPT-9	ss-9			23					

Figure 5-3-1 (65/103) BORING LOGS (PHASE IV)

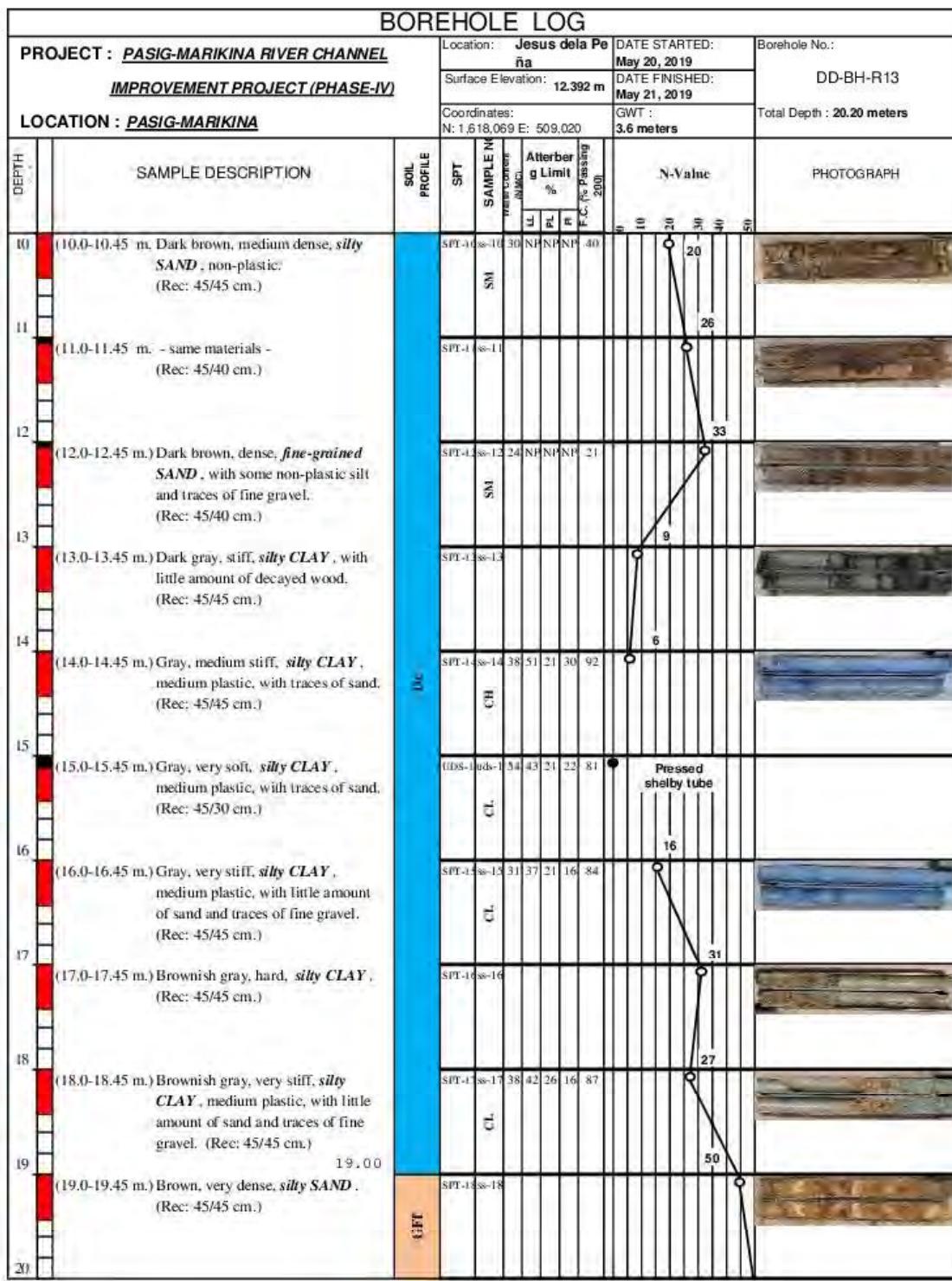


Figure 5-3-1 (66/103) BORING LOGS (PHASE IV)

BOREHOLE LOG											
PROJECT : PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE-IV) LOCATION : PASIG-MARIKINA				Location: Jesus dela Peña		DATE STARTED: May 20, 2019		Borehole No.: DD-BH-R13			
				Surface Elevation: 12.392 m		DATE FINISHED: May 21, 2019					
				Coordinates: N: 1,618,069 E: 509,020		GWT : 3.6 meters					Total Depth : 20.20 meters
DEPTH	SAMPLE DESCRIPTION	SOIL PROFILE	SPT	SAMPLE NO.	TEST CORER NUMBER	Atterberg g Limit %	N-Value	PHOTOGRAPH			
20	(20.0-20.20 m.) Brownish gray, very dense, GRAVEL, with some sand and clay. (Rec: 20/20 cm.)	GFT	SPT: 30 (20-19)	18	IS IS IS	29	10 20 30 40 50	50/5 cm.			
21											
22											
23											
24											
25											
26											
27											
28											
29											
30											

Figure 5-3-1 (67/103) BORING LOGS (PHASE IV)

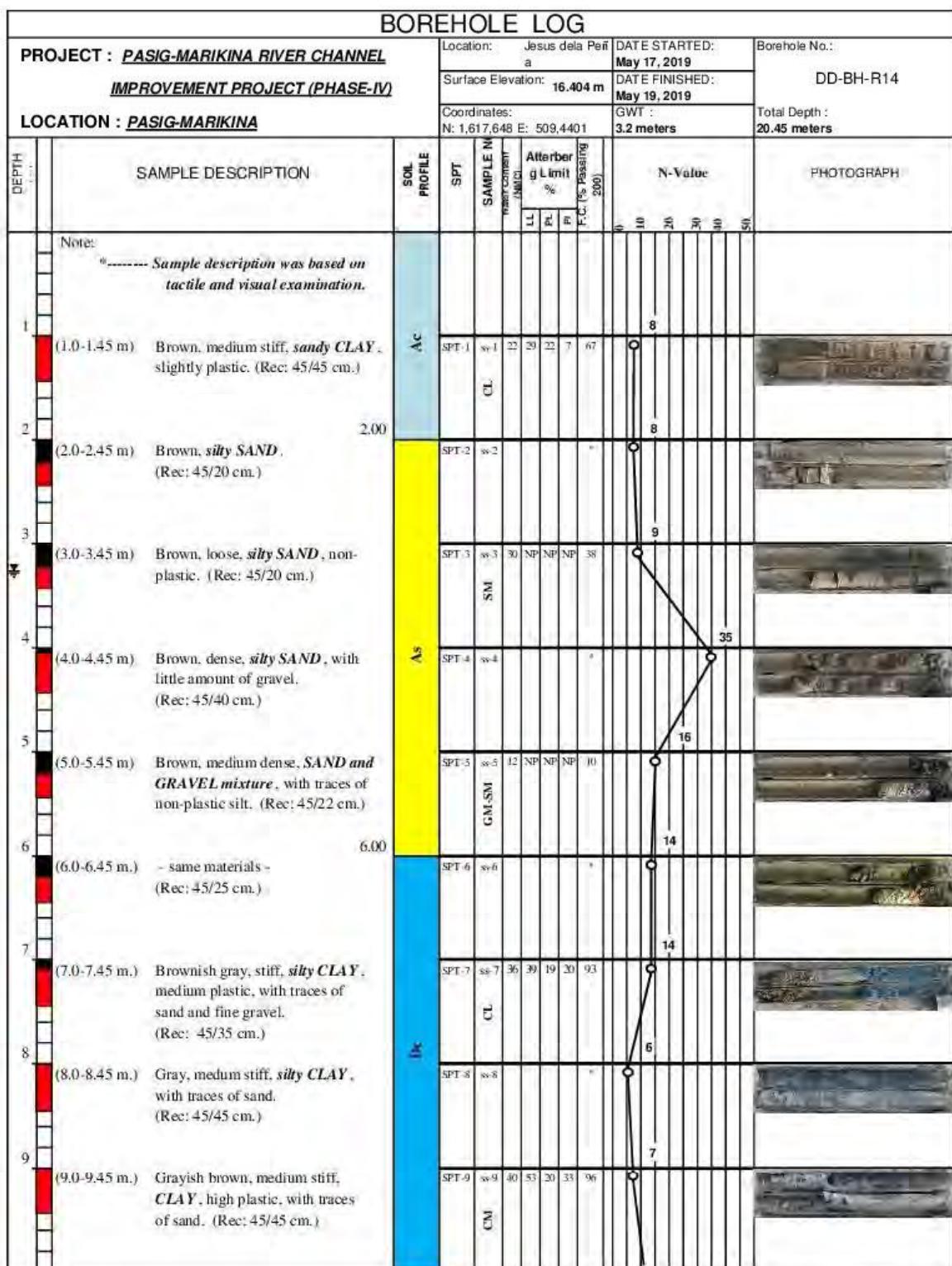


Figure 5-3-1 (68/103) BORING LOGS (PHASE IV)

BOREHOLE LOG																		
PROJECT : PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE-IV) LOCATION : PASIG-MARIKINA			Location: Jesus dela Peñ a			DATE STARTED: May 17, 2019			Borehole No.: DD-BH-R14 Total Depth : 20.45 meters									
			Surface Elevation: 16.404 m			DATE FINISHED: May 19, 2019												
			Coordinates: N: 1,617,648 E: 509,4401			GWT : 3.2 meters												
DEPTH	SAMPLE DESCRIPTION			SOIL PROFILE	SPT	SAMPLE N Water content (%W/W)	Atterber g Limit %	F.C. (% Passing 200)	N-Value				PHOTOGRAPH					
10	(10.0-10.45 m.) Greenish gray, stiff, <i>silty CLAY</i> , with traces of sand. (Rec: 45/40 cm.)			Ia	SPT-10 ss 10				0	10	20	30	40					
11	(11.0-11.45 m.) Brownish gray, very stiff, <i>silty CLAY</i> , medium plastic, with little amount of sand. (Rec: 45/45 cm.)				SPT-11 ss 11	26	36	20	16	86	22							
12	(12.0-12.45 m.) - same materials - (Rec: 45/45 cm.)				SPT-12 ss 12						18							
13	(13.0-13.45 m.) Brownish gray, very stiff, <i>silty CLAY</i> , medium plastic, with traces of sand. (Rec: 45/45 cm.)				SPT-13 ss 13	29	45	20	25	98	25							
14	(14.0-14.45 m.) - same materials - (Rec: 45/45 cm.)				SPT-14 ss 14						27							
15	(15.0-15.45 m.) Brown, very stiff, <i>silty CLAY</i> , medium plastic, with little amount of sand and traces of fine gravel. (Rec: 45/45 cm.)				SPT-15 ss 15	30	39	21	18	80	22							
16	(16.0-16.45 m.) Brown, medium dense, <i>silty SAND</i> . (Rec: 45/45 cm.)				SPT-16 ss 16						17							
17	(17.0-17.45 m.) Brown, medium dense, <i>medium-grained SAND</i> , with traces of non-plastic silt and fine gravel. (Rec: 45/45 cm.)				SPT-17 ss 17	22	NP	NP	NP	6	21							
18	(18.0-18.45 m.) Brown, <i>silty SAND</i> . (Rec: 45/35 cm.)				SPT-18 ss 18						25							
19	(19.0-19.45 m.) Brown, medium dense, <i>clayey SAND</i> , slightly plastic. (Rec: 45/30 cm.)				SPT-19 ss 19	27	29	19	10	88	26							
20																		
GFW																		

Figure 5-3-1 (69/103) BORING LOGS (PHASE IV)

BOREHOLE LOG										
PROJECT : PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE-IV) LOCATION : PASIG-MARIKINA			Location: Jesus dela Peña a		DATE STARTED: May 17, 2019		Borehole No.: DD-BH-R14			
			Surface Elevation: 16.404 m		DATE FINISHED: May 19, 2019					
			Coordinates:	N: 1,617,648 E: 509,4401	GWT :	3.2 meters	Total Depth :	20.45 meters		
DEPTH	SAMPLE DESCRIPTION	SOIL PROFILE	SPT	SAMPLE N Water content (MAGIC)	Atterberg g Limit %	F.C. (% Passing 200)	LL	PL	FI	N-Value
20.0	(20.0-20.45 m.) Brown, dense, <i>silty SAND</i> , with traces of fine gravel. (Rec: 45/25 cm.)	Gfw	SPT 20 vs=20							39
21										
22	<i>End of borehole @ 20.45m depth</i>									
23										
24										
25										
26										
27										
28										
29										
30										

Figure 5-3-1 (70/103) BORING LOGS (PHASE IV)

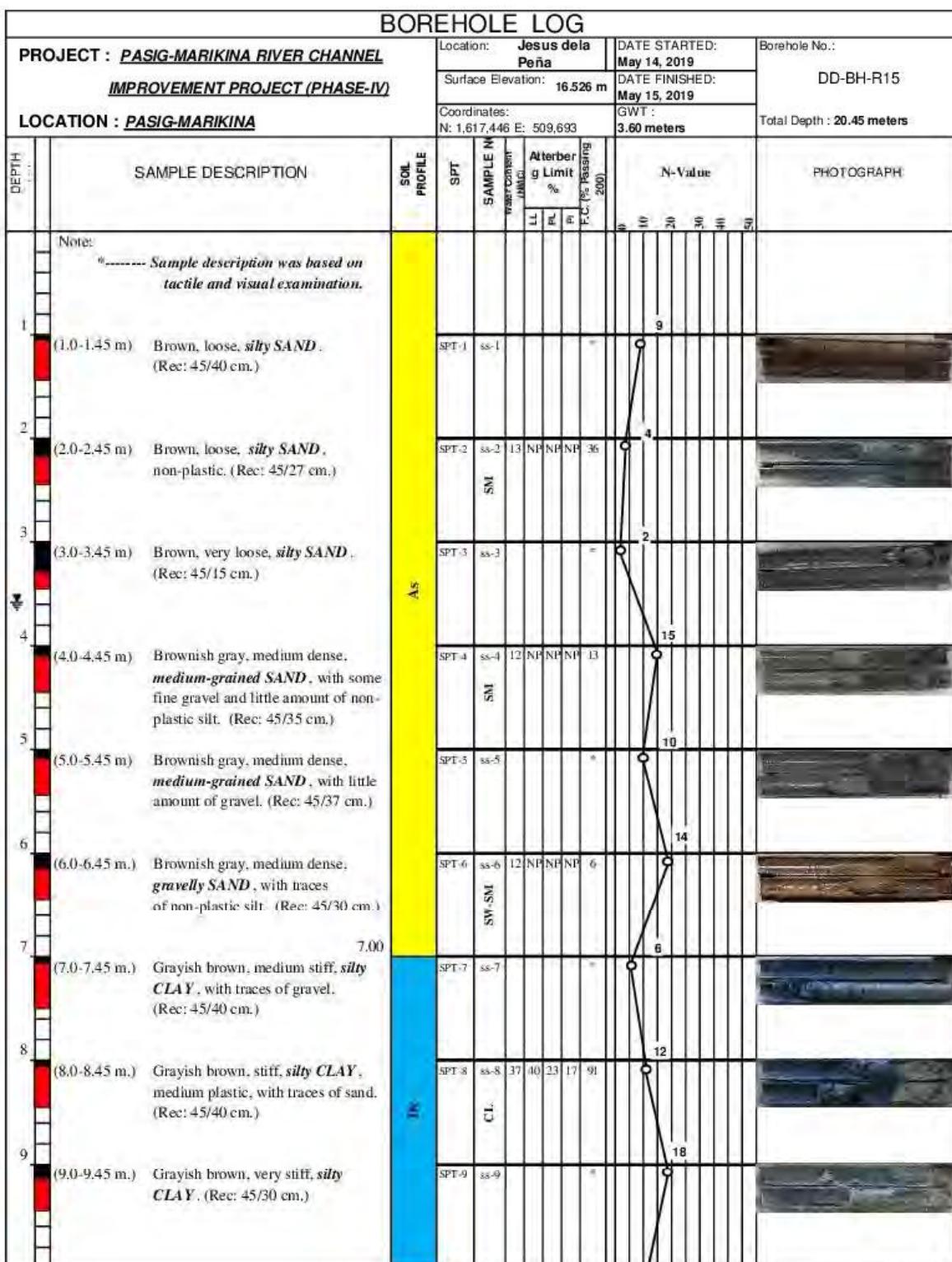


Figure 5-3-1 (71/103) BORING LOGS (PHASE IV)

BOREHOLE LOG																	
PROJECT : <u>PASIG-MARIKINA RIVER CHANNEL</u> <u>IMPROVEMENT PROJECT (PHASE-IV)</u>		Location: <u>Jesus dela Peña</u>				DATE STARTED: <u>May 14, 2019</u>			Borehole No.: DD-BH-R15								
		Surface Elevation: <u>16.526 m</u>				DATE FINISHED: <u>May 15, 2019</u>											
		Coordinates: N: 1,617,446 E: 509,693				GWT : 3.60 meters											
		Total Depth : 20.45 meters															
DEPTH		SAMPLE DESCRIPTION				SOIL PROFILE	SPT	SAMPLE N Water Content (% W/H)	Atterber g Limit % F.C. (% Passing 200)	N-Value						PHOTOGRAPH	
10		(10.0-10.45 m) Grayish brown, stiff, CLAY , high plastic, with traces of sand. (Rec: 45/30 cm.)				CH	SPT-10 ss-10	37 54 20 34 92	11	10	11	12	13	14	15		
11		(11.0-11.45 m) Brownish gray, hard, silty CLAY , with little amount of coarse sand (Rec: 45/40 cm.)				CL	SPT-11 ss-11			11	12	13	14	15	16		
12		(12.0-12.45 m) Brownish gray, very stiff, silty CLAY , medium plastic, with little amount of sand and traces of fine gravel. (Rec: 45/40 cm.)				CL	SPT-12 ss-12	29 42 23 19 76	11	11	12	13	14	15	16		
13		(13.0-13.45 m) Brown, very stiff, silty CLAY . (Rec: 45/45 cm.)				CL	SPT-13 ss-13			11	12	13	14	15	16		
14		(14.0-14.45 m) Brown, very stiff, silty CLAY , medium plastic, with traces of sand. (Rec: 45/40 cm.)				CL	SPT-14 ss-14	38 40 23 17 99	11	11	12	13	14	15	16		
15		(15.0-15.45 m) Brown, stiff, silty CLAY , with traces sand. (Rec: 45/40 cm.)				CL	SPT-15 ss-15			11	12	13	14	15	16		
16		(16.0-16.45 m) - same materials - (Rec: 45/30 cm.)				CH	SPT-16 ss-16	36 54 24 30 96	11	11	12	13	14	15	16		
17		(17.0-17.45 m) Brown, medium dense, fine-grained SAND . (Rec: 45/45 cm.)				CFW	SPT-17 ss-17			11	12	13	14	15	16		
18		(18.0-18.45 m) Brown, medium dense, fine-grained SAND , with little amount of non-plastic silt. (Rec: 45/45 cm.)				SM	SPT-18 ss-18	31 NP NP NP 16	11	12	13	14	15	16	17		
19		(19.0-19.45 m) - same materials - (Rec: 45/30 cm.)				SM	SPT-19 ss-19			11	12	13	14	15	16	17	
20										11	12	13	14	15	16	17	

Figure 5-3-1 (72/103) BORING LOGS (PHASE IV)

BOREHOLE LOG																	
PROJECT : PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE-IV) LOCATION : PASIG-MARIKINA			Location: Jesus dela Peña			DATE STARTED: May 14, 2019		Borehole No.: DD-BH-R15 Total Depth : 20.45 meters									
			Surface Elevation: 16.526 m			DATE FINISHED: May 15, 2019											
			Coordinates: N: 1,617,446 E: 509,693			GWT : 3.60 meters											
DEPTH	SAMPLE DESCRIPTION	SOIL PROFILE	SPT	SAMPLE N WATER Content (INAG)	Atterberg Limit %	F.C. % passing 200	N-Value	PHOTOGRAPH									
21	(20.0-20.45 m.) Brown, medium dense, <i>fine-grained SAND</i> , with some non-plastic silt and traces of fine gravel. (Rec: 4.5/36 cm.)	Gfw	SPT 20 ≈ 20	SM 26	NP NP	38	0 10 20 30 40										
22																	
23																	
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End of borehole @ 20.45m depth

Figure 5-3-1 (73/103) BORING LOGS (PHASE IV)

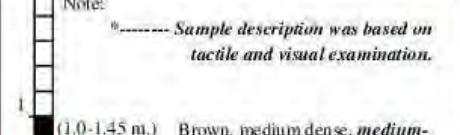
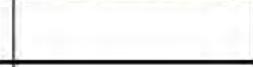
BOREHOLE LOG																
PROJECT : <u>PASIG-MARIKINA RIVER CHANNEL</u>			Location: <u>Jesus dela Peña</u>			DATE STARTED: <u>May 10, 2019</u>			Borehole No.: <u>DD-BH-R16</u>							
IMPROVEMENT PROJECT (PHASE-IV)			Surface Elevation: <u>16.261 m</u>			DATE FINISHED: <u>May 12, 2019</u>										
LOCATION : <u>PASIG-MARIKINA</u>			Coordinates: <u>N: 1,617,502 E: 509,833</u>			GWT : <u>5.50 meters</u>			Total Depth : <u>20.45 meters</u>							
DEPTH	SAMPLE DESCRIPTION			SOIL PROFILE			N-value			PHOTOGRAPH						
	Note: ----- Sample description was based on tactile and visual examination.															
1	(1.0-1.45 m.) Brown, medium dense, medium-grained SAND , with some fine gravel and traces of non-plastic silt. (Rec: 45/20 cm.)			As			SPT									
2	(2.0-2.45 m.) Brown, medium dense, medium-grained SAND , with traces of fine gravel. (Rec: 45/40 cm.)			SPT-1			SAMPLE N SP-SM	Water content (% W/MC)	Atterberg g Limit % (F.C./P.S. passing 200)	LL	PL	PI	F.C.	P.S.	16	
3	(3.0-3.45 m.) Dark gray, medium dense, medium-grained SAND , with little amount of fine gravel and traces of non-plastic silt. (Rec: 45/25 cm.)			SPT-2			SPT-2	ss-2							20	
4	(4.0-4.45 m.) -same materials- (Rec: 45/40 cm.)			SPT-3			SPT-3	ss-3							15	
5	(5.0-5.45 m.) Dark gray, medium dense, medium-grained SAND , with some fine gravel and traces of non-plastic silt. (Rec: 45/45 cm.)			SPT-4			SPT-4	ss-4							13	
6	(6.0-6.45 m.) -same materials- (Rec: 45/30 cm.)			SPT-5			SPT-5	ss-5							19	
7	(7.0-7.45 m.) Dark gray, medium dense, coarse-grained SAND . (Rec: 45/30 cm.)			SPT-6			SPT-6	ss-6							11	
8	(8.0-8.45 m.) -same materials- (Rec: 45/30 cm.)			SPT-7			SPT-7	ss-7							14	
9	(9.0-9.45 m.) Brownish gray, very stiff, CLAY , high plastic, with little amount of sand and traces of fine gravel. (Rec: 45/45 cm.)			SPT-8			SPT-8	ss-8							10	
				SPT-9			SPT-9	ss-9							23	
							CB									

Figure 5-3-1 (74/103) BORING LOGS (PHASE IV)

BOREHOLE LOG															
PROJECT : PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE-IV) LOCATION : PASIG-MARIKINA				Location: Jesus dela Peña			DATE STARTED: May 10, 2019			Borehole No.: DD-BH-R16 Total Depth : 20.45 meters					
				Surface Elevation: 16.261 m			DATE FINISHED: May 12, 2019								
				Coordinates: N: 1,617,502 E: 509,833			GWT : 5.50 meters								
DEPTH	SAMPLE DESCRIPTION				SOIL PROFILE	SPT	SAMPLE N Water content (ANALY)	Atterber g Limit %	F.C. % Passing (200)	N-Value	PHOTOGRAPH				
10	(10.0-10.45 m.) Brown, very stiff, CLAY , (Rec: 45/40 cm.)				SPT-1ss-10					26					
11	(11.0-11.45 m.) Brown, very stiff, CLAY , medium plastic, with traces of sand. (Rec: 45/45 cm.)				SPT-1ss-11	28	50	20	30	97					
12	(12.0-12.45 m.) same materials- (Rec: 45/30 cm.)				SPT-1ss-12					24					
13	(13.0-13.45 m.) Brown, very stiff, silty CLAY , slightly plastic, with traces of sand. (Rec: 45/40 cm.)				SPT-1ss-13	36	29	17	12	90					
14	(14.0-14.45 m.) -same materials- (Rec: 45/40 cm.)				SPT-1ss-14					21					
15	(15.0-15.45 m.) Brown, hard, silty CLAY , medium plastic, with some sand. (Rec: 45/30 cm.)				SPT-1ss-15	33	43	21	22	78					
16	(16.0-16.45 m.) Brown, hard, silty CLAY . (Rec: 45/30 cm.)				SPT-1ss-16					30					
17	(17.0-17.45 m.) Brown, hard, silty CLAY , medium plastic, with traces of sand and fine gravel. (Rec: 45/30 cm.)				SPT-1ss-17	32	39	18	21	93					
18	(18.0-18.45 m.) Brown, hard, silty CLAY . (Rec: 45/30 cm.)				SPT-1ss-18					34					
19	(19.0-19.45 m.) Gray, very stiff, silty CLAY , medium plastic, with traces of sand. (Rec: 45/40 cm.)				SPT-1ss-19	37	43	20	23	91					
20										27					

Figure 5-3-1 (75/103) BORING LOGS (PHASE IV)

BOREHOLE LOG													
PROJECT : PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE-IV) LOCATION : PASIG-MARIKINA		Location: Jesus dela Peña		DATE STARTED: May 10, 2019		Borehole No.: DD-BH-R16							
		Surface Elevation: 16.261 m		DATE FINISHED: May 12, 2019									
		Coordinates: N: 1,617,502 E: 509,833		GWT : 5.50 meters		Total Depth : 20.45 meters							
DEPTH		SAMPLE DESCRIPTION	SOIL PROFILE	SPT	SAMPLE N Water content	Atterberg g Limit %	F.C. (% Passing 200)	LL	PL	PI	N-Value	PHOTOGRAPH	
20.0	20.45	(20.0-20.45 m.) Gray, very stiff, <i>silty CLAY</i> . (Rec: 45/45 cm.)	Exc	SPT-Dia-20	"	"	"	10	15	20	30	40	50
21		<i>End of borehole @ depth 20.45 m.</i>											
22													
23													
24													
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26													
27													
28													
29													
30													

Figure 5-3-1 (76/103) BORING LOGS (PHASE IV)

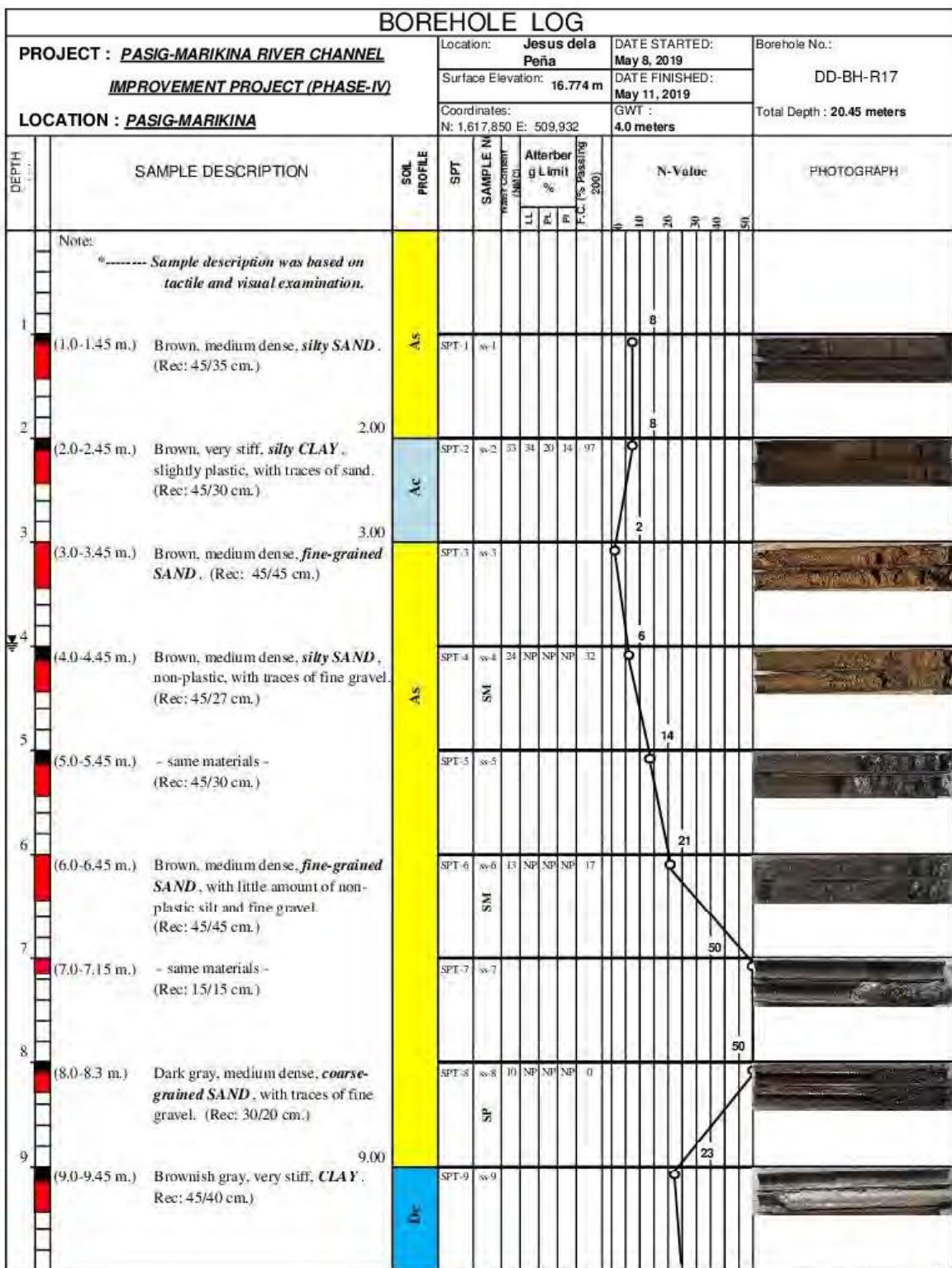


Figure 5-3-1 (77/103) BORING LOGS (PHASE IV)

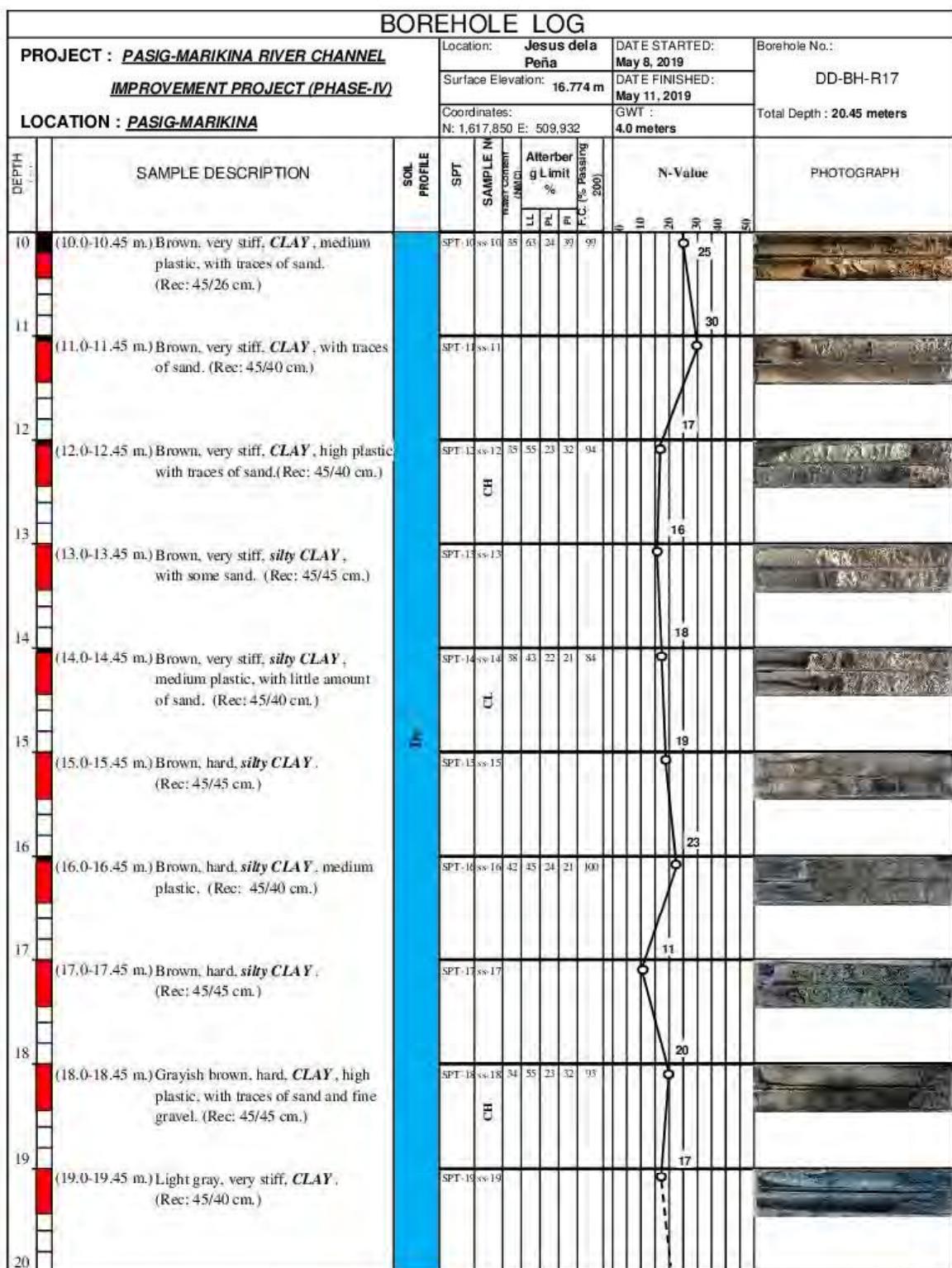


Figure 5-3-1 (78/103) BORING LOGS (PHASE IV)

BOREHOLE LOG															
PROJECT : PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE-IV) LOCATION : PASIG-MARIKINA			Location: Jesus dela Peña			DATE STARTED: May 8, 2019			Borehole No.: DD-BH-R17 Total Depth : 20.45 meters						
			Surface Elevation: 16.774 m			DATE FINISHED: May 11, 2019									
			Coordinates: N: 1,617,850 E: 509,932			GWT : 4.0 meters									
DEPTH	SAMPLE DESCRIPTION	SOIL PROFILE	SPT	SAMPLE N Water content (%WAVC)	Atterberg Limit %	N Passing <th data-cs="6" data-kind="parent">N-Value</th> <th data-kind="ghost"></th> <th data-kind="ghost"></th> <th data-kind="ghost"></th> <th data-kind="ghost"></th> <th data-kind="ghost"></th>	N-Value								
20.0	(20.0-20.45 m.) Light gray, very stiff, CLAY , high plastic, with traces of sand and fine gravel. (Rec: 45/40 cm.)	10c	SPT-20 vs-20	CH	34	69	22	47	95	0	10	20	30	40	50
21										5	10	15	20	21	25
22	<i>End of borehole @ depth 20.45 m.</i>														
23															
24															
25															
26															
27															
28															
29															
30															

Figure 5-3-1 (79/103) BORING LOGS (PHASE IV)

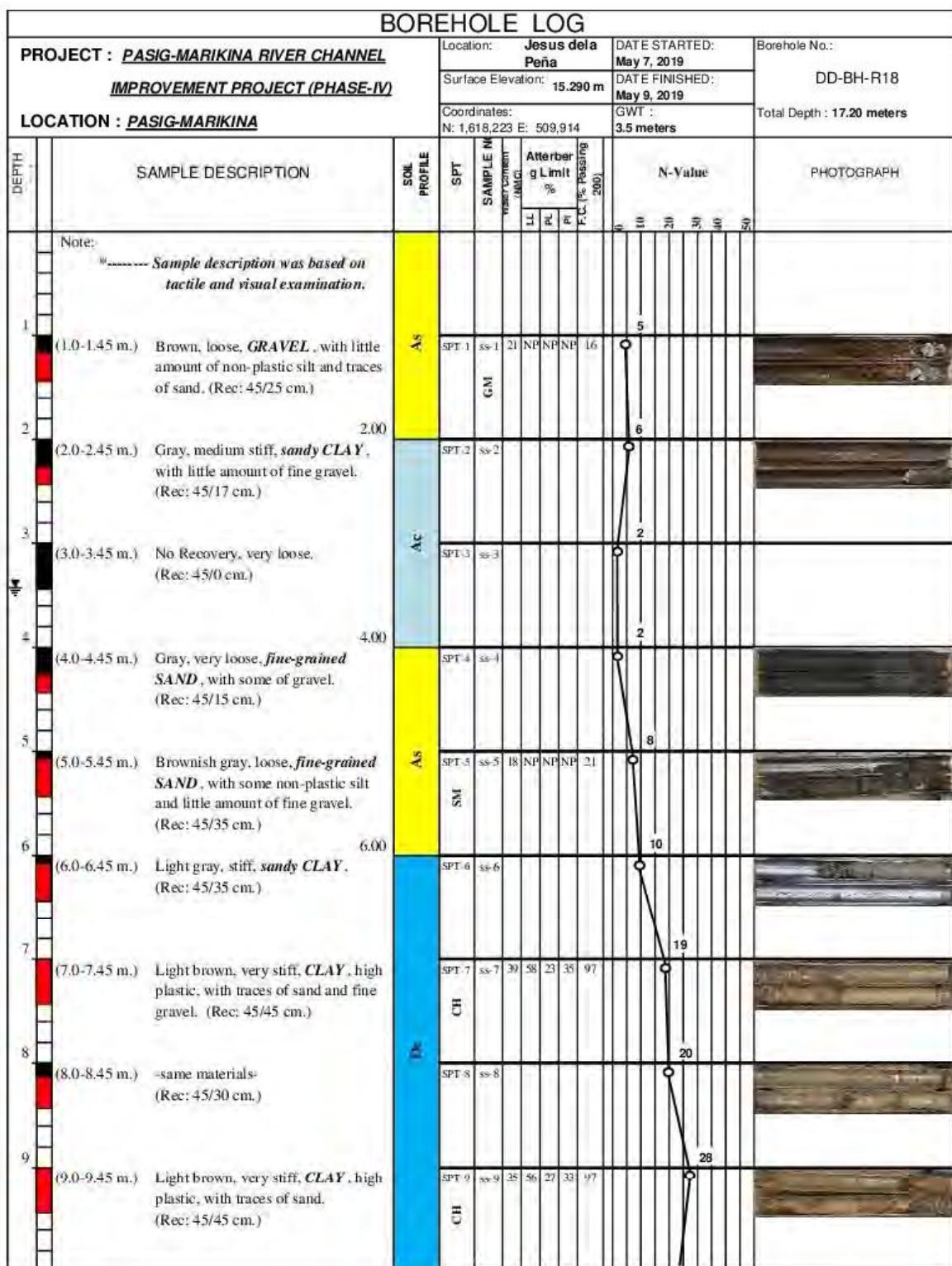


Figure 5-3-1 (80/103) BORING LOGS (PHASE IV)

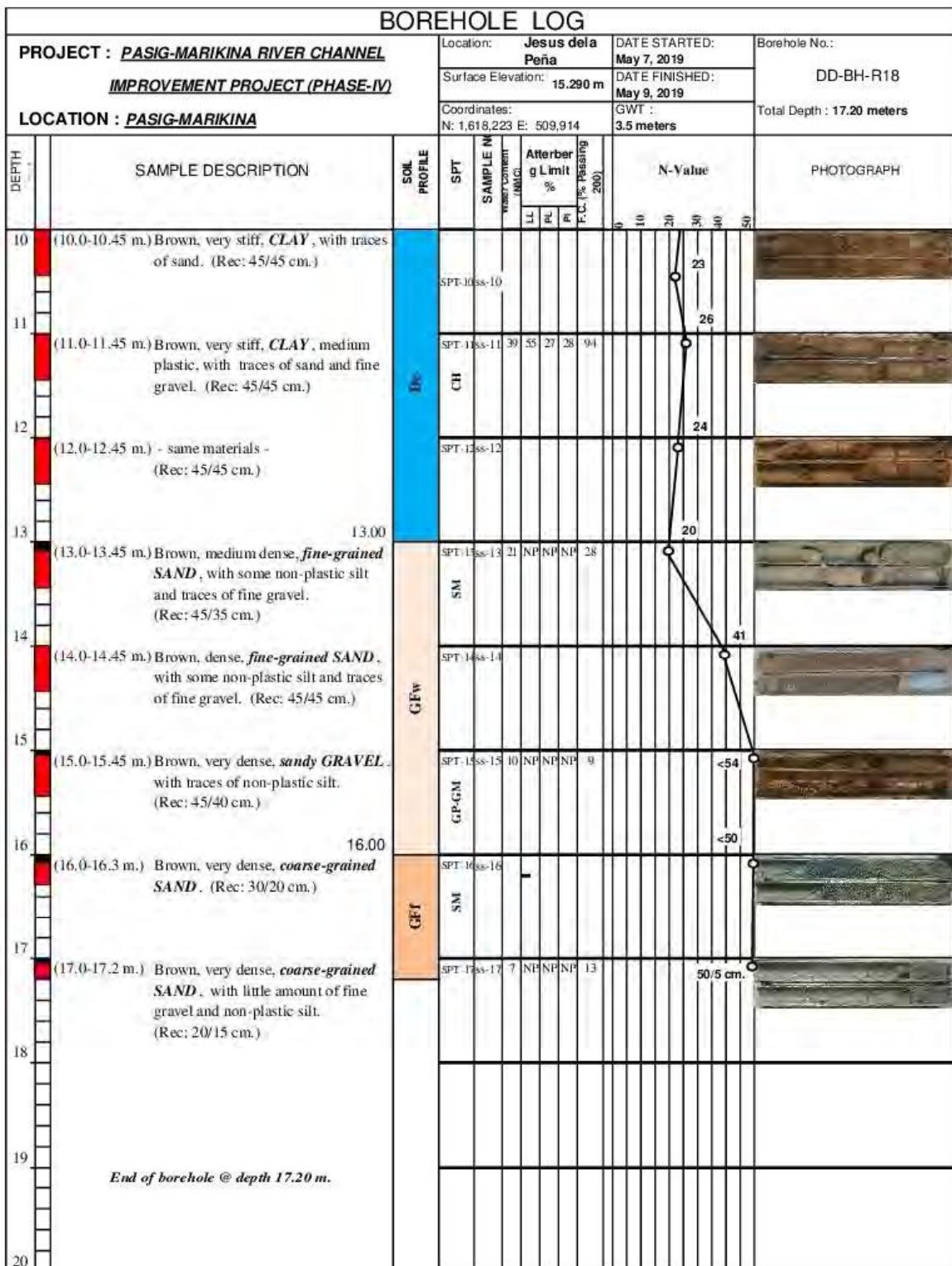


Figure 5-3-1 (81/103) BORING LOGS (PHASE IV)

BOREHOLE LOG														
PROJECT : PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE-IV) LOCATION : PASIG-MARIKINA			Location: MCGS			DATE STARTED: September 7, 2019			Borehole No.: BH-G01					
			Surface Elevation: 14.689 m			DATE FINISHED: September 9, 2019								
			Coordinates: N: 1,614,995 E: 509,057			GWT : 4.20 meters								
			Total Depth : 10.00 meters											
DEPTH	SAMPLE DESCRIPTION			SOIL PROFILE	SPT	SAMPLE NO.	Water Content (%)	Atterberg's Limit (%)	F.C. (% Passing 200)	N-Value				
	Note: ----- Sample description was based on tactile and visual examination.							LL	PL	10	20	30	40	50
1	(1.0-1.45 m)	Brown, loose, silty SAND , non-plastic, with traces of decayed materials. (Rec: 45/30 cm.)			SPT-1	ss-1	21	NP	NP	31	5			
2	(2.0-2.45 m)	Brown, soft, sandy CLAY , slightly plastic, with traces of fine gravel. (Rec: 45/30 cm.)			SPT-2	ss-2	30	28	20	8	59	3		
3	(3.0-3.45 m)	Brown, soft, SAND and CLAY mixture , slightly plastic, with traces of fine gravel. (Rec: 45/30 cm.)			SPT-3	ss-3	33	27	18	9	42	3		
4	(4.0-4.45 m)	Gray, very loose, fine-grained SAND , with traces of fine gravel. (Rec: 45/15 cm.)			SPT-4	ss-4	22	NP	NP	ND	19	4		
5	(5.0-5.45 m)	Gray, dense, fine-grained SAND , with little amount of decayed materials. (Rec: 45/30 cm.)			SPT-5	ss-5	43	NP	NP	NP	21	37		
6	(6.0-6.1 m.)	Gray, very dense, sand-sized SANDSTONE fragments . (Rec: 10/10 cm.)			SPT-6	ss-6	44	NP	NP	NP	20	50		
7	(6.1-7.0 m.)	Gray, highly weathered, fine-grained SANDSTONE , moderately cemented. (Rec: 90/75/60 cm.) - same materials - (Rec: 100/75/60 cm.)			CD	cs-1						CORING		
8	(7.0-8.0 m.)				CD	cs-2						CORING		
9	(8.0-9.0 m.)	Gray, highly weathered, fine-grained SANDSTONE , moderately cemented. (Rec: 100/70/60 cm.) - same materials - (Rec: 100/75/75 cm.)			CD	cs-3						CORING		
10	End of borehole @ 10.00m depth			GFF	CD	cs-4						CORING		

Figure 5-3-1 (82/103) BORING LOGS (PHASE IV)

BOREHOLE LOG														
PROJECT : PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE-IV) LOCATION : PASIG-MARIKINA				Location: MCGS			DATE STARTED: September 17, 2019		Borehole No.: DD-BH-G02 GWTF: Offshore Total Depth: 6.0 meters					
				Surface Elevation: 10.709 m			DATE FINISHED: September 17, 2019							
				Coordinates: N: 1,615,040 E: 509,076			GWTF: Offshore							
DEPTH	SAMPLE DESCRIPTION				SAMPLE PROFILE	SPT	SAMPLE NO.	TEST COMMENT	Atterberg Limit %	N-Value	PHOTOGRAPH			
	Note: ----- Sample description was based on tactile and visual examination.				AS	SPT 1	ss-1		LL PL PI F.C. (% Passing 200)	0 10 20 30 40 50				
1	(1.0-1.45 m)	No Recovery	(Rec: 45/0 cm.)							2				
2	(2.0-2.0 m)	No Penetration		2.00	SS	SPT-2	ss-2			50				
	(2.0-3.0 m)	Gray, GRAVEL to highly weathered, fine-grained SANDSTONE.	weakly cemented.				cs-1			CORING	(DIA)			
3	(3.0-4.0 m)	Gray, highly weathered, fine-grained SANDSTONE, moderately cemented.	(Rec: 100/30/0 cm.)				cs-2			CORING	(WELL)			
4	(4.0-5.0 m)	- same materials -	(Rec: 100/70/60 cm.)		GFI		cs-3			CORING	(WELL)			
5	(5.0-6.0 m)	- same materials -	(Rec: 100/100/90 cm.)				cs-4			CORING				
6														
7	End of borehole @ 6.00m depth													
8														
9														

Figure 5-3-1 (83/103) BORING LOGS (PHASE IV)

BOREHOLE LOG														
PROJECT : PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE-IV) LOCATION : PASIG-MARIKINA			Location: MCGS			DATE STARTED: September 10, 2019			Borehole No.: BH-G03					
			Surface Elevation: 15.237 m			DATE FINISHED: September 11, 2019								
			Coordinates: N: 1,614,981 E: 509,076			GWT : 3.50 m								
			Total Depth : 10.00 meters											
DEPTH	SAMPLE DESCRIPTION	SOIL PROFILE	SPT	SAMPLE NO.	TEST COMMENT	Atterberg g Limit %	F.C. (% passing 200)	N-value	PHOTOGRAPH					
	Note: ----- Sample description was based on tactile and visual examination.	As				LL	PL	10 20 30 40 50						
1	(1.0-1.45 m) Brown, loose, <i>silty SAND</i> , non-plastic, with traces of decayed materials. (Rec: 45/15 cm.)	As	SPT-1	ss-1	24 NP NP NP	38		6						
2	(2.0-2.45 m) - same materials - (Rec: 45/30 cm.)	As	SPT-2	ss-2	27 NP NP NP	37		4						
3	(3.0-3.45 m) Brown, medium stiff, <i>SAND and CLAY mixture</i> , slightly plastic, with traces of fine gravel. (Rec: 45/35 cm.)	Ac	SPT-3	ss-3	27 27 19 8 42			5						
4	(4.0-4.45 m) Brown to gray, very loose, <i>fine-grained SAND</i> , with little amount of non-plastic silt. (Rec: 45/35 cm.)	As	SPT-4	ss-4	28 NP NP ND	19		3						
5	(5.0-5.45 m) Gray, very loose, <i>fine-grained SAND</i> , with some decayed materials and little amount of non-plastic silt. (Rec: 45/35 cm.)	As	SPT-5	ss-5	34 NP NP NP	14		3						
6	(6.0-6.1 m.) Gray, very dense, <i>sand-sized SANDSTONE fragments</i> . (Rec: 10/10 cm.)	GFT	SPT-6	ss-6	14 NP NP NP	13		50		CORING				
7	(6.1-7.0 m.) Gray, highly weathered, <i>fine-grained SANDSTONE</i> , moderate to weakly cemented. (Rec: 90/75/40 cm.)	GFT	CD	cs-1						CORING				
8	(7.0-8.0 m.) Gray, highly weathered, <i>fine-grained SANDSTONE</i> , moderately cemented. (Rec: 100/75/60 cm.)	GFT	CD	cs-2						CORING				
9	(8.0-9.0 m.) Gray, highly weathered, <i>fine-grained SANDSTONE</i> , weakly cemented. (Rec: 100/20/10 cm.)	GFT	CD	cs-3						CORING				
10	(9.0-10.0 m.) Gray, <i>Rock fragment</i> (Rec: 100/15/0 cm.)	GFT	CD	cs-4						CORING				
End of borehole @ 10.0m depth														

Figure 5-3-1 (84/103) BORING LOGS (PHASE IV)

BOREHOLE LOG																		
PROJECT : PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE-IV) LOCATION : PASIG-MARIKINA			Location: MCGS			DATE STARTED: September 14, 2019			Borehole No.: DD-BH-G04									
			Surface Elevation: 12.308 m			DATE FINISHED: September 15, 2019												
			Coordinates: N: 1,615,002 E: 509,090			GWT : 2.0 m							Total Depth : 10.00 meters					
DEPTH	SAMPLE DESCRIPTION			SOIL PROFILE	SPT	SAMPLE NO.	TEST COMMENT	Atterber g Limit %	Ps Passing (200)	N-Value				PHOTOGRAPH				
	Note: ----- Sample description was based on tactile and visual examination.							LL	PL	F.C.	Ps Passing (200)	0	10	20	30	40	50	
1	(1.0-1.45 m) Brown, loose, silty SAND , non-plastic, with traces of fine gravel. (Rec: 45/35 cm.)			As	SPT-1	ss-1	29	NP	NP	NP	36	7						
2	(2.0-2.45 m) Gray, loose, medium-grained SAND , with little amount of non-plastic silt. (Rec: 45/35 cm.)				SPT-2	ss-2	28	NP	NP	NP	17	9						
3	(3.0-3.45 m) Gray, loose, fine-grained SAND , with some non-plastic silt. (Rec: 45/20 cm.)				SPT-3	ss-3	28	NP	NP	NP	24	9						
4	(4.0-4.45 m) Gray, very loose, fine-grained SAND , with little amount of non-plastic. (Rec: 45/45 cm.)				SPT-4	ss-4	32	NP	NP	NP	14	2						
5	(5.0-5.45 m) Gray, medium dense, medium-grained SAND , with little amount of non-plastic silt. (Rec: 45/35 cm.)				SPT-5	ss-5	23	NP	NP	NP	14	20						
6	(6.0-6.45 m) Gray, very dense, medium-grained SAND , with little amount of non-plastic silt. (Rec: 45/45 cm.)				SPT-6	ss-6	50	NP	NP	NP	18	50						
7	(7.0-7.0 m) No Penetration (7.0-8.0 m) Grayish brown, moderately weathered, fine-grained SANDSTONE , moderately cemented. (Rec: 100/95/60 cm.)			GFT	SPT-7	ss-7						50						
8	(8.0-9.0 m.) Grayish brown, moderately weathered, fine-grained SANDSTONE , moderately cemented. (Rec: 100/95/95 cm.)				cs-1							CORING						
9	(9.0-10.0 m.) - same materials - (Rec: 100/95/60 cm.)				cs-2							CORING						
10	End of borehole @ 10.00m depth				cs-3							CORING						

Figure 5-3-1 (85/103) BORING LOGS (PHASE IV)

BOREHOLE LOG											
PROJECT : PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE-IV) LOCATION : PASIG-MARIKINA		Location: MCGS			DATE STARTED: September 18, 2019			Borehole No.: DD-BH-G05			
		Surface Elevation: 10.916 m			DATE FINISHED: September 18, 2019						
		Coordinates: N: 1,615,018 E: 509,104			GWT : Offshore			Total Depth : 5.0 meters			
DEPTH	SAMPLE DESCRIPTION		SOIL PROFILE	SPT	SAMPLE NO.	Water content (W/MC)	Atterberg's Limit %	F.C. (% Passing 200)	N-Value		
					cs-1		LL	PL	10	20	30
1	(0-1.0 m)	Gray, highly weathered, <i>GRAVEL to fine-grained SANDSTONE</i> , moderate to weakly cemented. (Rec: 100/60/20 cm.)	GFT		cs-1				40	50	CORING
1	(1.0-2.0 m)	Brown, moderately weathered, <i>fine-grained SANDSTONE</i> , moderately cemented. (Rec: 100/75/50 cm.)			cs-2						CORING
2	(2.0-3.0 m)	- same materials - (Rec: 100/90/70 cm.)			cs-3						CORING
3	(3.0-4.0 m)	Brown, highly weathered, <i>fine-grained SANDSTONE</i> , moderately cemented. (Rec: 100/75/75 cm.)			cs-4						CORING
4	(4.0-5.0 m)	- same materials - (Rec: 100/75/75 cm.)			cs-5						CORING
5											
6											
7											
8											
9											
<i>End of borehole @ 5.00m depth</i>											

Figure 5-3-1 (86/103) BORING LOGS (PHASE IV)

BOREHOLE LOG													
PROJECT : PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE-IV) LOCATION : PASIG-MARIKINA			Location: MCGS			DATE STARTED: September 18, 2019		Borehole No.: DD-BH-G06 Total Depth : 5.00 meters					
			Surface Elevation: 12.661 m			DATE FINISHED: September 18, 2019							
			Coordinates: N: 1,614,997 E: 509,126			GWT : Offshore							
DEPTH		SAMPLE DESCRIPTION	SOIL PROFILE	SPT	SAMPLE NO.	Water Content (%WAC)	Atterberg Limit %	N _S Passing (200)	N-Value	PHOTOGRAPH			
1		(0-1.0 m) Brown, highly weathered, <i>fine-grained SANDSTONE</i> , moderately cemented. (Rec: 100/100/60 cm.)	GFT	∞ 1	cs-1	LL	PL	PI	F.C.	CORING			
2		(1.0-2.0 m) Gray, moderately weathered, <i>fine-grained SANDSTONE</i> , moderately cemented. (Rec: 100/80/65 cm.)		∞ 2						CORING			
3		(2.0-3.0 m) - same materials - (Rec: 100/80/65 cm.)		cs-3						CORING			
4		(3.0-4.0 m) - same materials - (Rec: 100/80/80 cm.)		cs-4						CORING			
5		(4.0-5.0 m) - same materials - (Rec: 100/80/80 cm.)		cs-5						CORING			
6		<i>End of borehole @ 5.00m depth</i>											
7													
8													
9													

Figure 5-3-1 (87/103) BORING LOGS (PHASE IV)

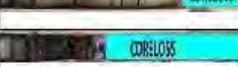
BOREHOLE LOG															
PROJECT : PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE-IV) LOCATION : PASIG-MARIKINA		Location: MCGS			DATE STARTED: September 12, 2019			Borehole No.: BH-G07							
		Surface Elevation: 14.393 m			DATE FINISHED: September 13, 2019										
		Coordinates: N: 1,614,967 E: 509,095			GWT : 3.50 meters			Total Depth : 10.00 meters							
DEPTH		SAMPLE DESCRIPTION			SOIL PROFILE	SPT	SAMPLE NO.	TEST COMMENT	Atterberg g Limit %	F.C. (% passing 200)	N-Value			PHOTOGRAPH	
		Note: ----- Sample description was based on tactile and visual examination.			AS				LL	PL	FI				
1	(1.0-1.45 m)	Brown, loose, clayey SAND , slightly plastic. (Rec: 45/37 cm.)				SPT-1	ss-1	38	27	17	10	62	6		
2	(2.0-2.45 m)	Brown, medium dense, fine-grained SAND , with some non-plastic silt. (Rec: 45/20 cm.)				SPT-2	ss-2	31	NP	NP	NP	26	11		
3	(3.0-3.45 m)	Grayish brown, loose, clayey SAND , slightly plastic, with traces of fine gravel. (Rec: 45/20 cm.)				SPT-3	ss-3	30	27	18	9	42	9		
4	(4.0-4.45 m)	Grayish brown, loose, fine-grained SAND , with some slightly plastic clay and little amount of fine gravel. (Rec: 45/25 cm.)				SPT-4	ss-4	26	26	18	8	27	5		
5	(5.0-5.45 m)	Gray, very loose, medium-grained SAND , with little amount of non-plastic silt. (Rec: 45/20 cm.)				SPT-5	ss-5	27	NP	NP	NP	14	2		
6	(6.0-6.45 m.)	Gray, loose, medium-grained SAND , with some non-plastic silt. (Rec: 45/17 cm.)			GFT	SPT-6	ss-6	26	NP	NP	NP	24	10		
7	(7.0-7.3 m.)	Gray, very dense, medium-grained SAND . (Rec: 30/30 cm.)				SPT-7	ss-7	34	NP	NP	NP	14	50		
	(7.3-8.0 m.)	Brownish gray, highly weathered, GRAVEL to fine-grained SANDSTONE , moderately cemented. (Rec: 70/70/70 cm.)				CD	ss-1						CORING		
8	(8.0-9.0 m.)	Brownish gray, highly weathered, fine-grained SANDSTONE to GRAVEL , weakly cemented. (Rec: 100/35/10 cm.)				CD	ss-2						CORING		
9	(9.0-10.0 m.)	Brownish gray, moderately weathered, GRAVEL to fine-grained SANDSTONE , moderately cemented. (Rec: 100/90/80 cm.)				CD	ss-3						CORING		
10	End of borehole @ 10.00m depth														

Figure 5-3-1 (88/103) BORING LOGS (PHASE IV)

BOREHOLE LOG														
PROJECT : <u>PASIG-MARIKINA RIVER CHANNEL</u> <u>IMPROVEMENT PROJECT (PHASE-IV)</u>			Location: Cainta			DATE STARTED: August 20, 2019			Borehole No.: DD-BH-C01					
			Surface Elevation: 11.680 m			DATE FINISHED: August 24, 2019								
			Coordinates: N: 1,610,733 E: 511,713			GWT : Offshore								
DEPTH	SAMPLE DESCRIPTION			SOIL PROFILE	SPT	SAMPLE N Recovery (%)	Atterber g Limit %	N _s Passing (200)	N-Value					
	Note: ----- Sample description was based on tactile and visual examination.								0	10	20	30		
1	(1.0-1.45 m) Gray, sandy CLAY . (Rec: 45/40 cm.)				SPT-1	ss-1			2					
2	(2.0-2.45 m) No Recovery (Rec: 45/0 cm.)				SPT-2	ss-2			2					
3	(3.0-3.45 m) Gray, CLAY . (Rec: 45/45 cm.)				SPT-3	ss-3			2					
4	(4.0-4.45 m) No Recovery (Rec: 45/0 cm.)				UNIS-1				●	Pressed shelby tube				
5	(5.0-5.45 m) Gray, silty CLAY . (Rec: 45/40 cm.)				SPT-4	ss-4			16					
6	(6.0-6.45 m) Gray, stiff, silty CLAY , slightly plastic, with little amount of sand. (Rec: 45/45 cm.)				SPT-5	ss-5	41	36	23	13	85	15		
7	(7.0-7.45 m) Gray, soft, CLAY , with some shell fragments. (Rec: 45/35 cm.)				SPT-6	ss-6			●					
8	(8.0-8.45 m) Gray, soft, CLAY , high plastic, with little amount of sand and traces of shell fragments. (Rec: 45/45 cm.)				SPT-7	ss-7	76	68	22	16	80	3		
9	(9.0-9.45 m) Gray, very soft, CLAY , high plastic, with traces of sand and shell fragments. (Rec: 45/45 cm.)				UNIS-2		66	68	25	13	86	●		
										Pressed shelby tube				

Figure 5-3-1 (89/103) BORING LOGS (PHASE IV)

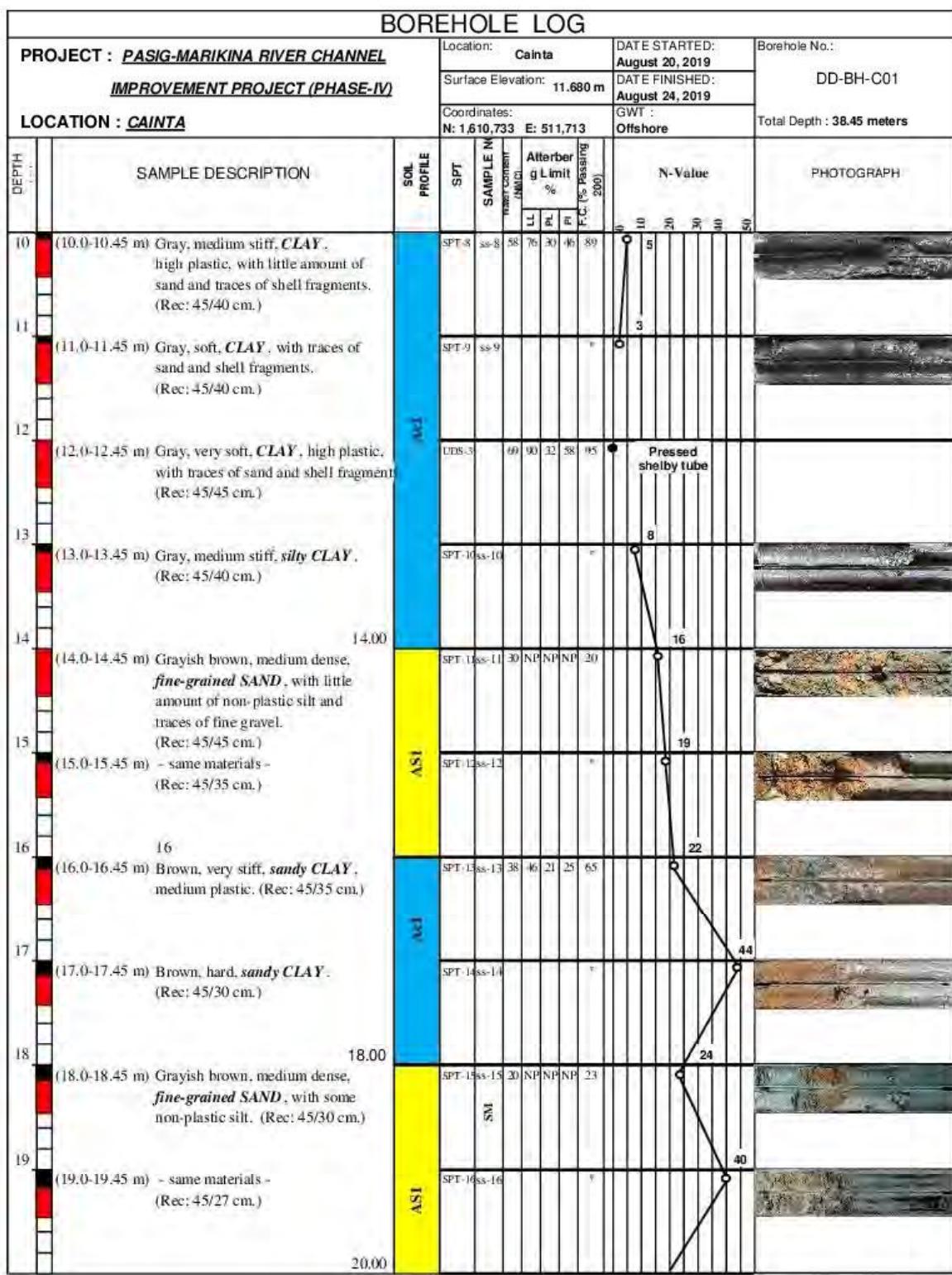


Figure 5-3-1 (90/103) BORING LOGS (PHASE IV)

BOREHOLE LOG															
PROJECT : PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE-IV) LOCATION : CAINTA				Location: Cainta			DATE STARTED: August 20, 2019			Borehole No.: DD-BH-C01					
				Surface Elevation: 11.680 m			DATE FINISHED: August 24, 2019								
				Coordinates: N: 1,610,733 E: 511,713			GWT : Offshore			Total Depth : 38.45 meters					
DEPTH	SAMPLE DESCRIPTION			SOIL PROFILE	SPT	SAMPLE N Water Content (ANALY)	Atterber g Limit %	N _s Passing (200)	N-Value	PHOTOGRAPH					
20	(20.0-20.45 m) Brown, very stiff, CLAY , high plastic, with traces of sand. (Rec: 45/40 cm.)			SPT-17ss-17	38	72	26	96	98	0	10	20	30	40	50
21	(21.0-21.45 m) - same materials - (Rec: 45/30 cm.)			SPT-18ss-18						0	10	20	30	40	50
22	(22.0-22.45 m) Brown, very stiff, CLAY , high plastic, with some fine gravel and little amount of sand. (Rec: 45/40 cm.)			SPT-19ss-19	28	69	24	45	59	0	10	20	30	40	50
23	(23.0-23.45 m) - same materials - (Rec: 45/45 cm.)			SPT-20ss-20						0	10	20	30	40	50
24	(24.0-24.45 m) Gray, very stiff, CLAY , high plastic, with traces of sand and shell fragments. (Rec: 45/30 cm.)			SPT-21ss-21	56	70	25	45	94	0	10	20	30	40	50
25	(25.0-25.45 m) - same materials - (Rec: 45/45 cm.)			SPT-22ss-22						0	10	20	30	40	50
26	(26.0-26.45 m) Gray, stiff, CLAY , high plastic, with traces of sand and shell fragments. (Rec: 45/35 cm.)			SPT-23ss-23	69	72	28	41	92	0	10	20	30	40	50
27	(27.0-27.45 m) - same materials - (Rec: 45/45 cm.)			SPT-24ss-24						0	10	20	30	40	50
28	(28.0-28.45 m) Gray, stiff, CLAY , high plastic, with traces of sand and shell fragments. (Rec: 45/35 cm.)			SPT-25ss-25	44	81	26	35	94	0	10	20	30	40	50
29	(29.0-29.45 m) Grayish brown, very stiff, CLAY . (Rec: 45/45 cm.)			SPT-26ss-26						0	10	20	30	40	50

Figure 5-3-1 (91/103) BORING LOGS (PHASE IV)

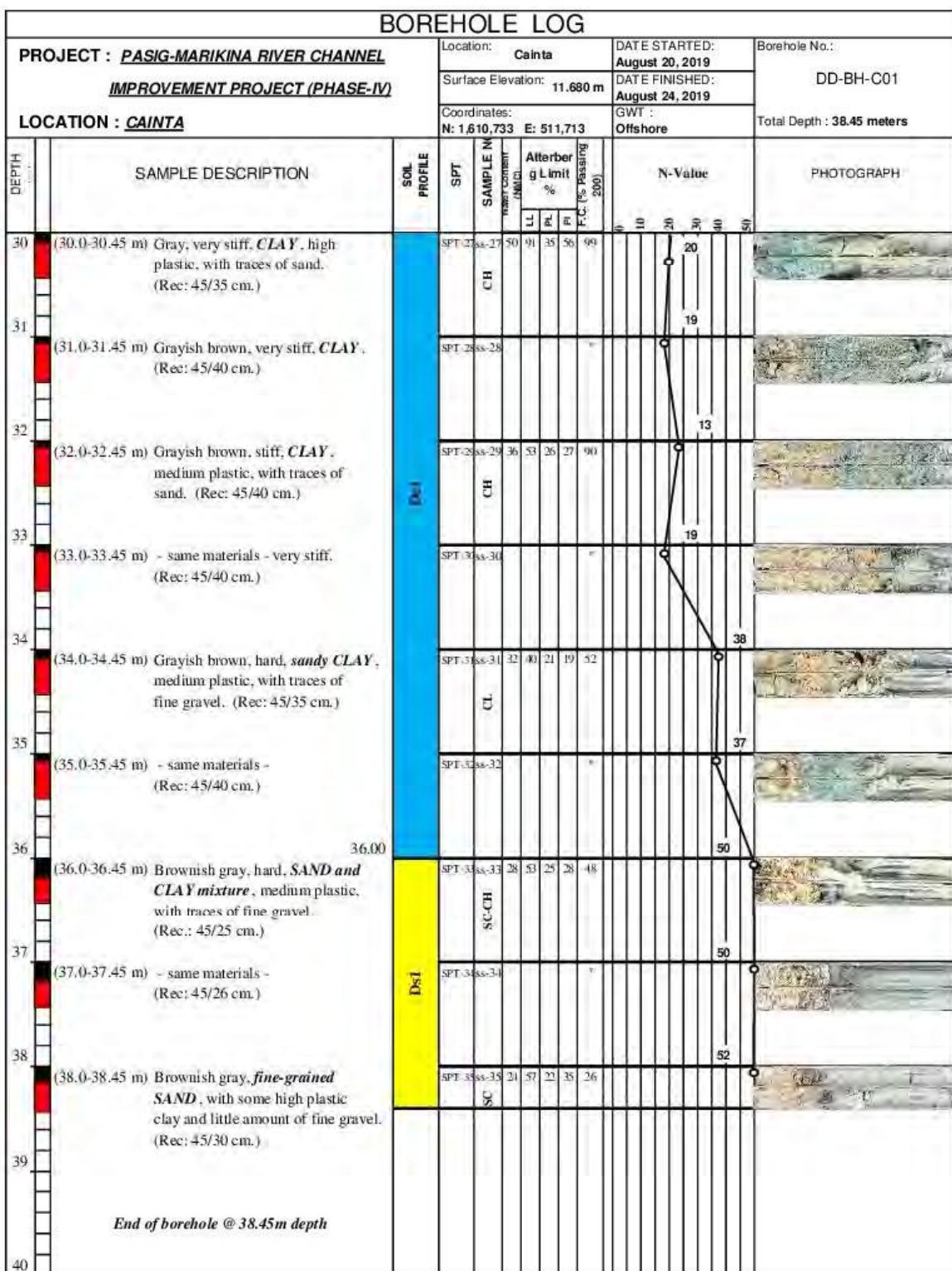


Figure 5-3-1 (92/103) BORING LOGS (PHASE IV)

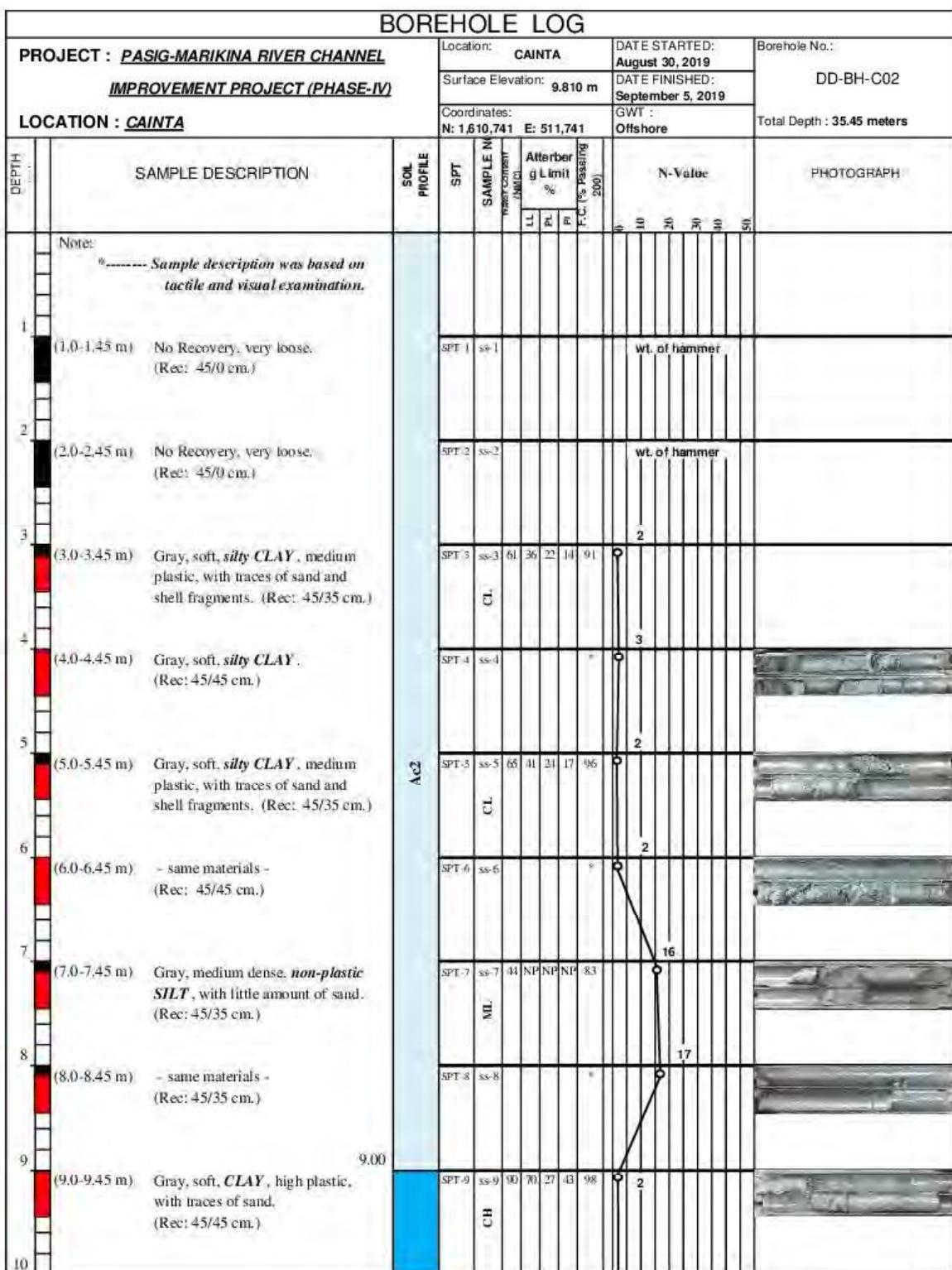


Figure 5-3-1 (93/103) BORING LOGS (PHASE IV)

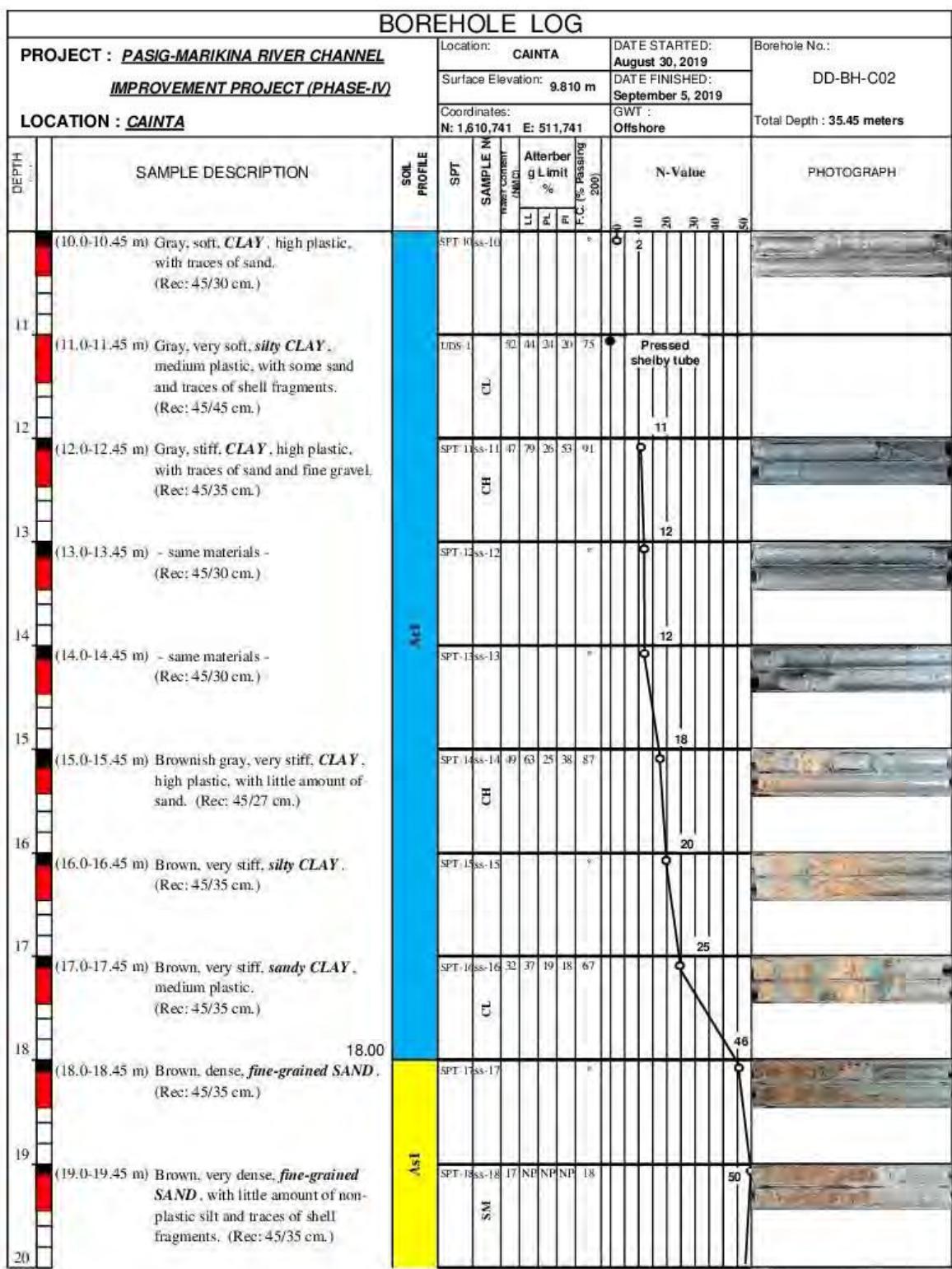


Figure 5-3-1 (94/103) BORING LOGS (PHASE IV)

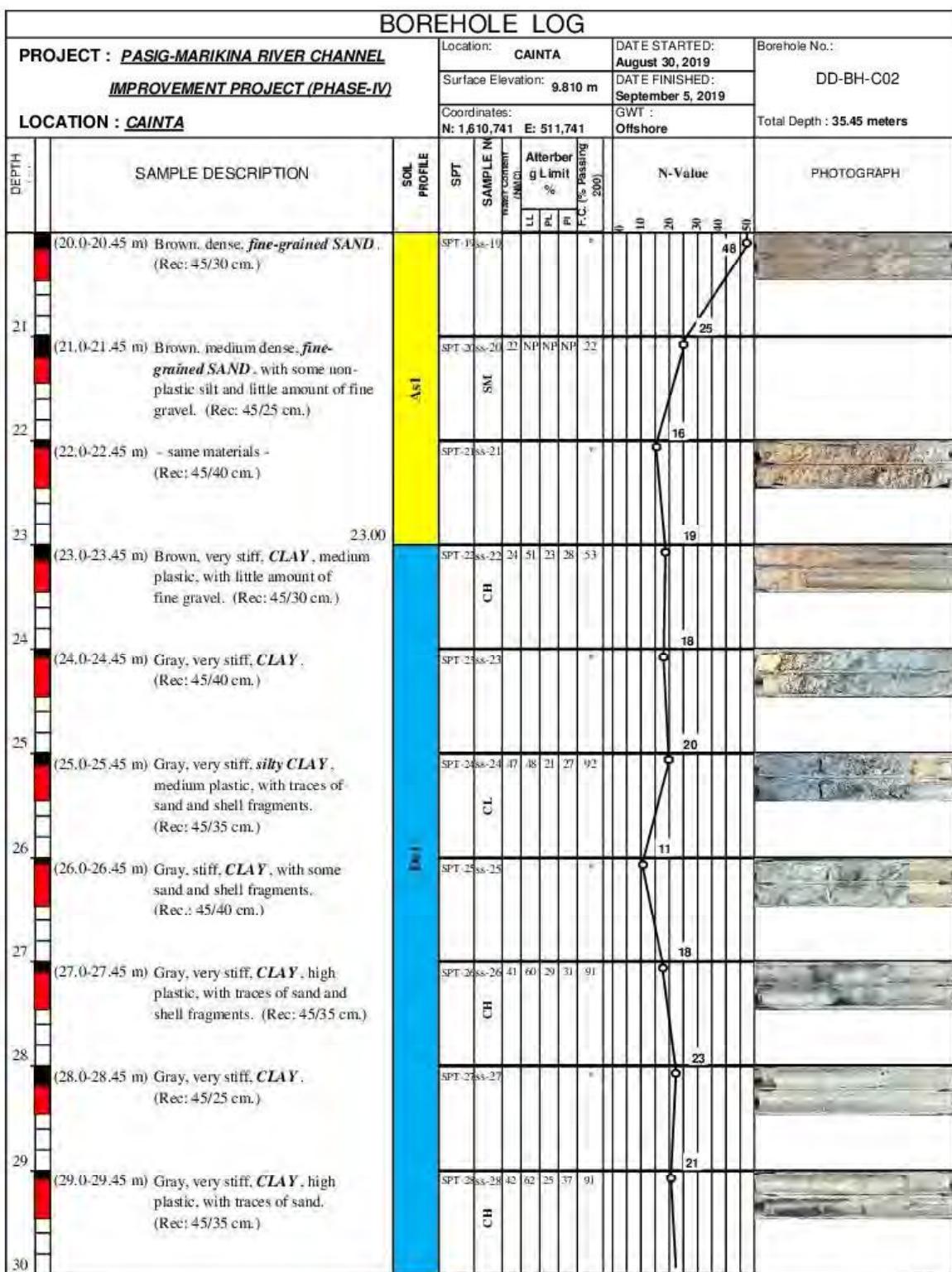


Figure 5-3-1 (95/103) BORING LOGS (PHASE IV)

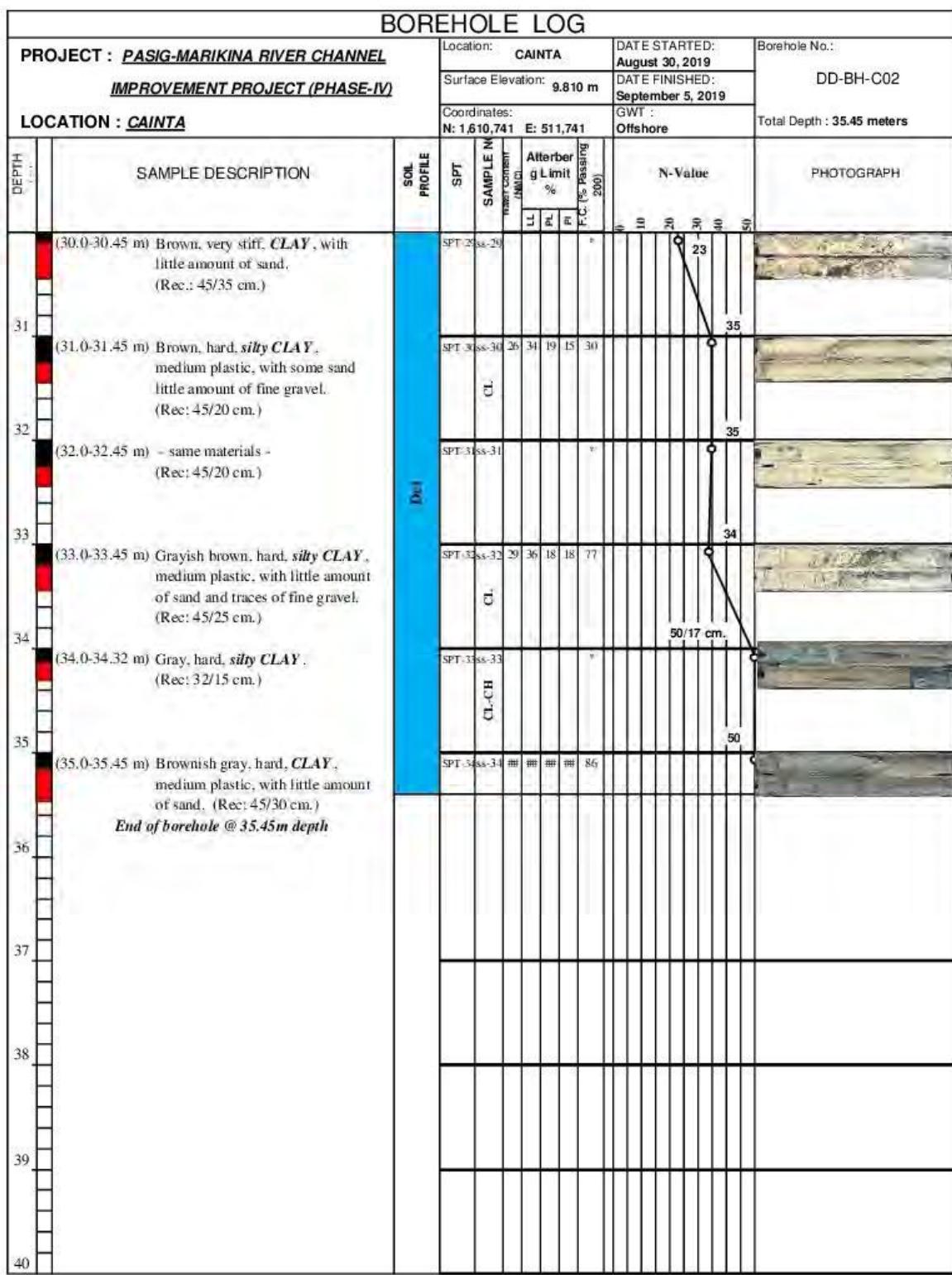


Figure 5-3-1 (96/103) BORING LOGS (PHASE IV)

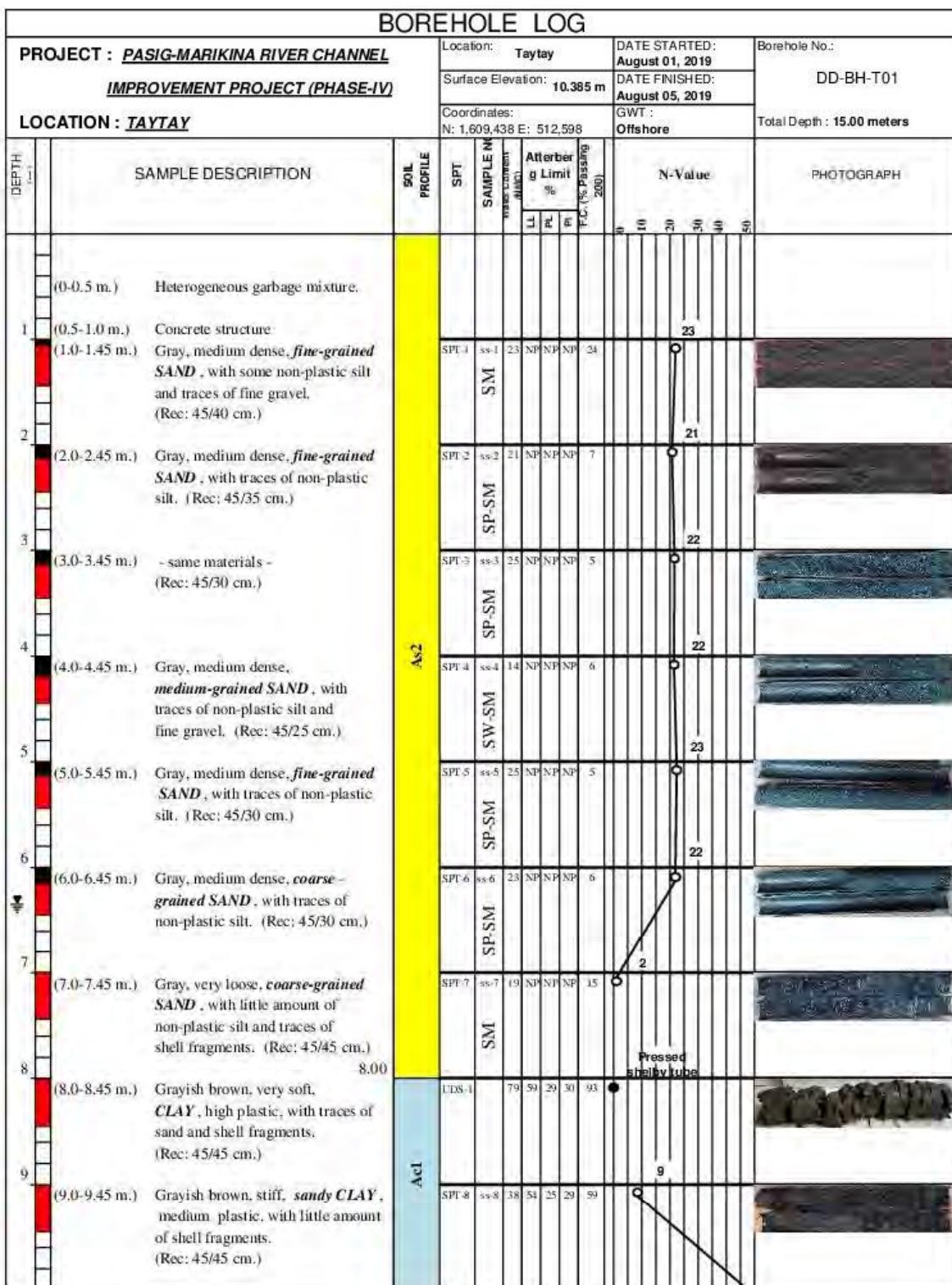


Figure 5-3-1 (97/103) BORING LOGS (PHASE IV)

BOREHOLE LOG																
PROJECT : PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE-IV) LOCATION : TAYTAY			Location: Taytay			DATE STARTED: August 01, 2019			Borehole No.: DD-BH-T01							
			Surface Elevation: 10.385 m			DATE FINISHED: August 05, 2019										
			Coordinates: N: 1,609,438 E: 512,598			GWT : Offshore										
			Total Depth : 15.00 meters													
DEPTH	SAMPLE DESCRIPTION	SOL. PROFILE	SPT	SAMPLE N _w water content dilute	Atterber g Limit %	% Passing 200	N-Value	PHOTOGRAPH								
10	(10.0-10.45 m.) Grayish brown, hard, CLAY , medium plastic; with some sand. (Rec: 45/40 cm.)	Acl	SPF:9	45-9	54	52	24	28	79	4	10	20	30	40	50	
11	(10.45-11.0 m.) Gray, highly weathered fine-grained SANDSTONE , moderately cemented. (Rec: 55/45/20 cm.)		CD	cs-1						CORING						
12	(11.0-12.0 m.) - same materials - (Rec: 100/100/100 cm.)		CD	cs-2						CORING						
13	(12.0-13.0 m.) Brownish gray, highly weathered SILTSTONE , weakly cemented, (Rec: 100/50/25 cm.)		CD	cs-3						CORING						
14	(13.0-14.0 m.) - same materials - (Rec: 100/55/30 cm.)		CD	cs-4						CORING						
15	(14.0-15.0 m.) Brownish gray, highly weathered, fine-grained SANDSTONE to SILTSTONE , moderate to weakly cemented. (Rec: 100/100/70 cm.)		CD	cs-5						CORING						
16	<i>End of borehole @ 15.0m depth</i>															
17																
18																
19																
20																

Figure 5-3-1 (98/103) BORING LOGS (PHASE IV)

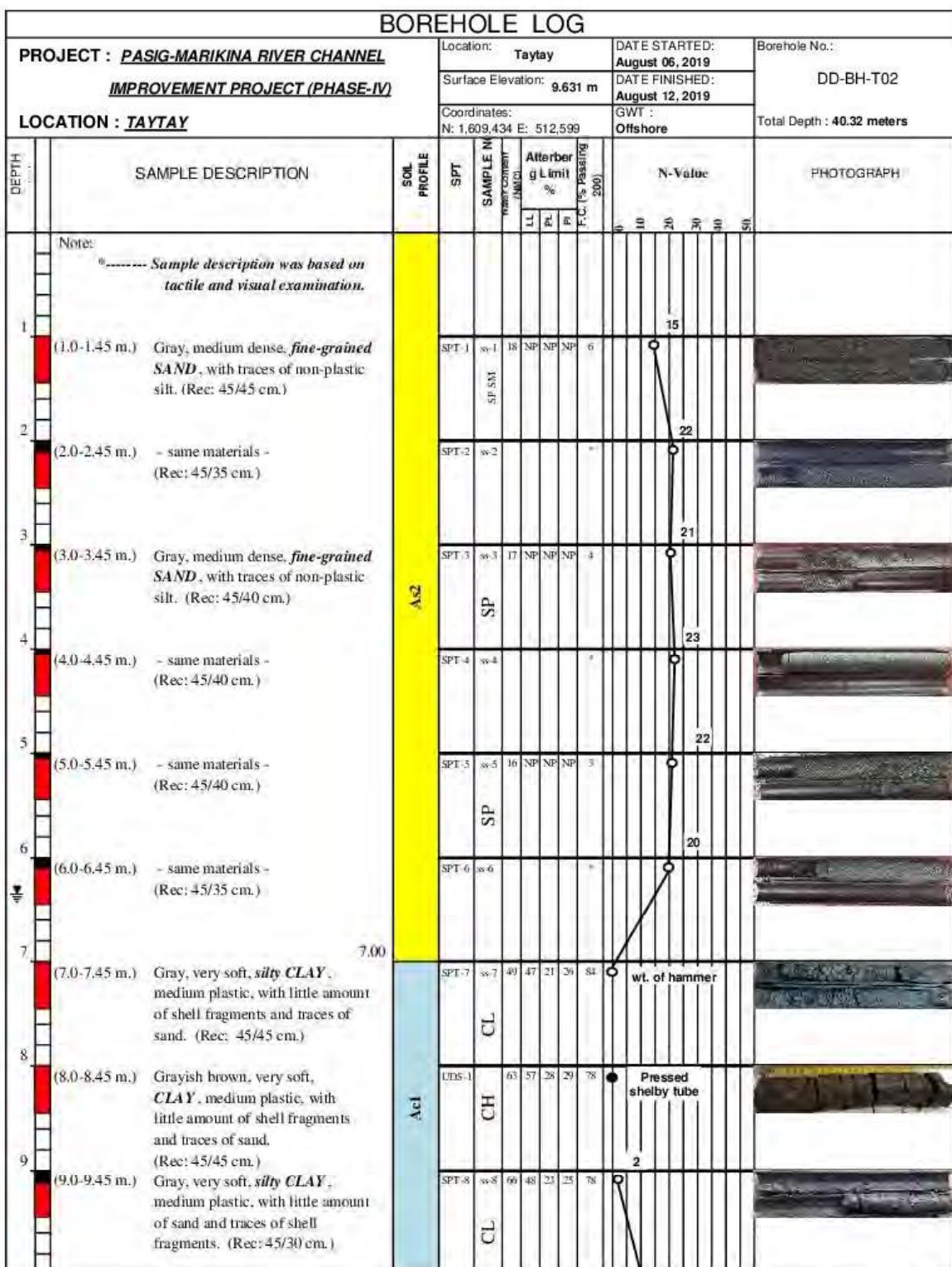


Figure 5-3-1 (99/103) BORING LOGS (PHASE IV)

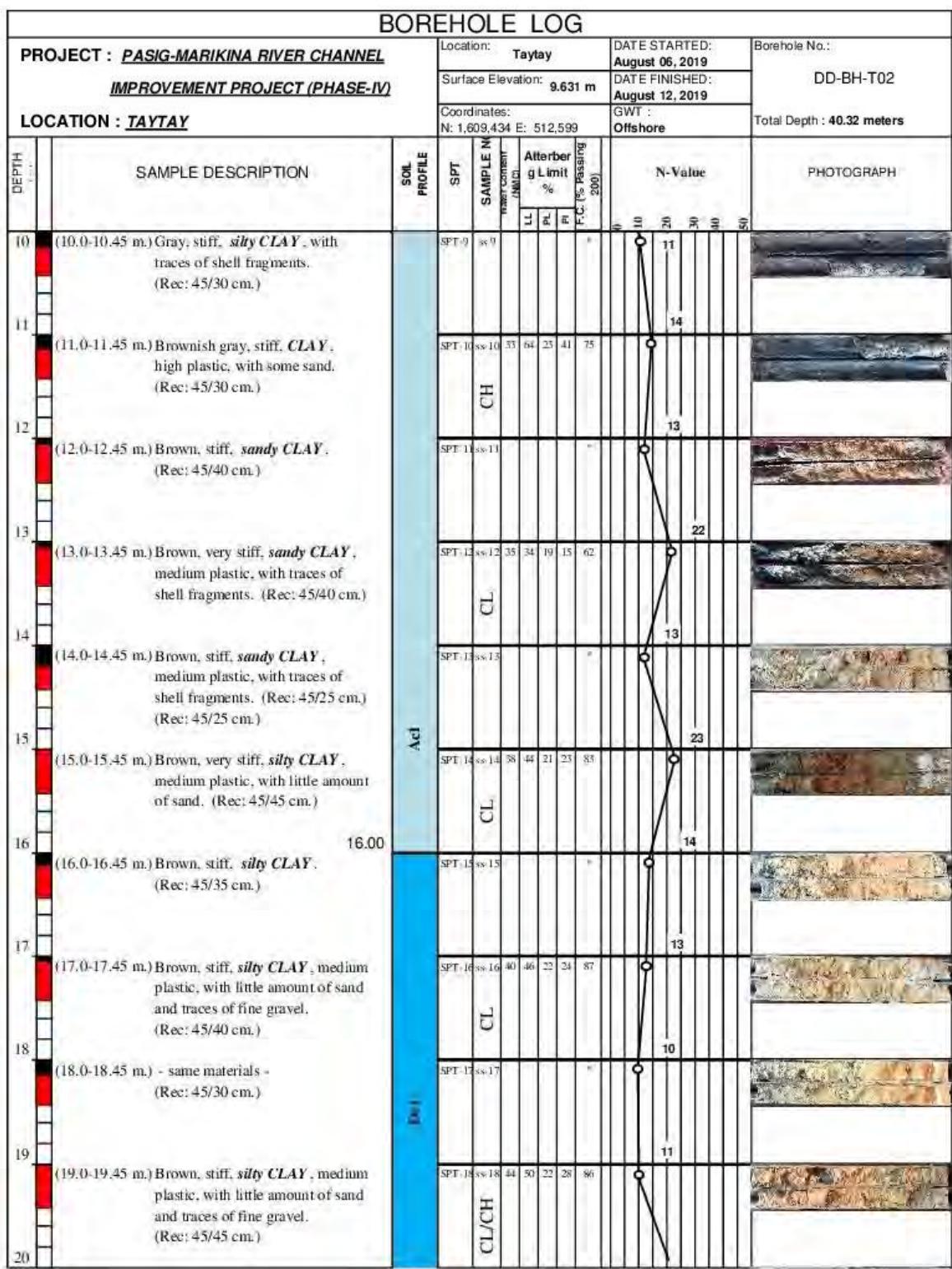


Figure 5-3-1 (100/103) BORING LOGS (PHASE IV)

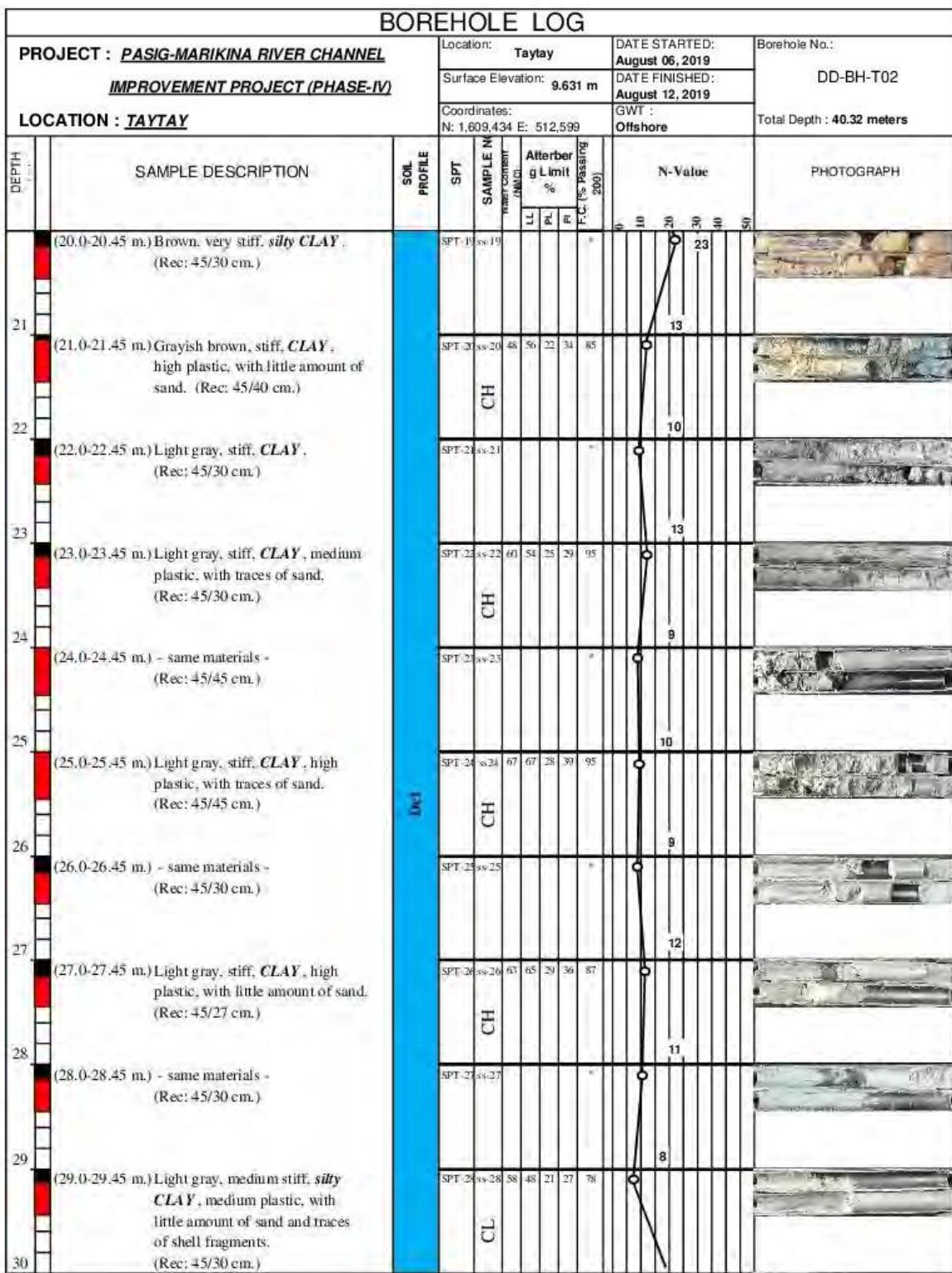


Figure 5-3-1 (101/103) BORING LOGS (PHASE IV)

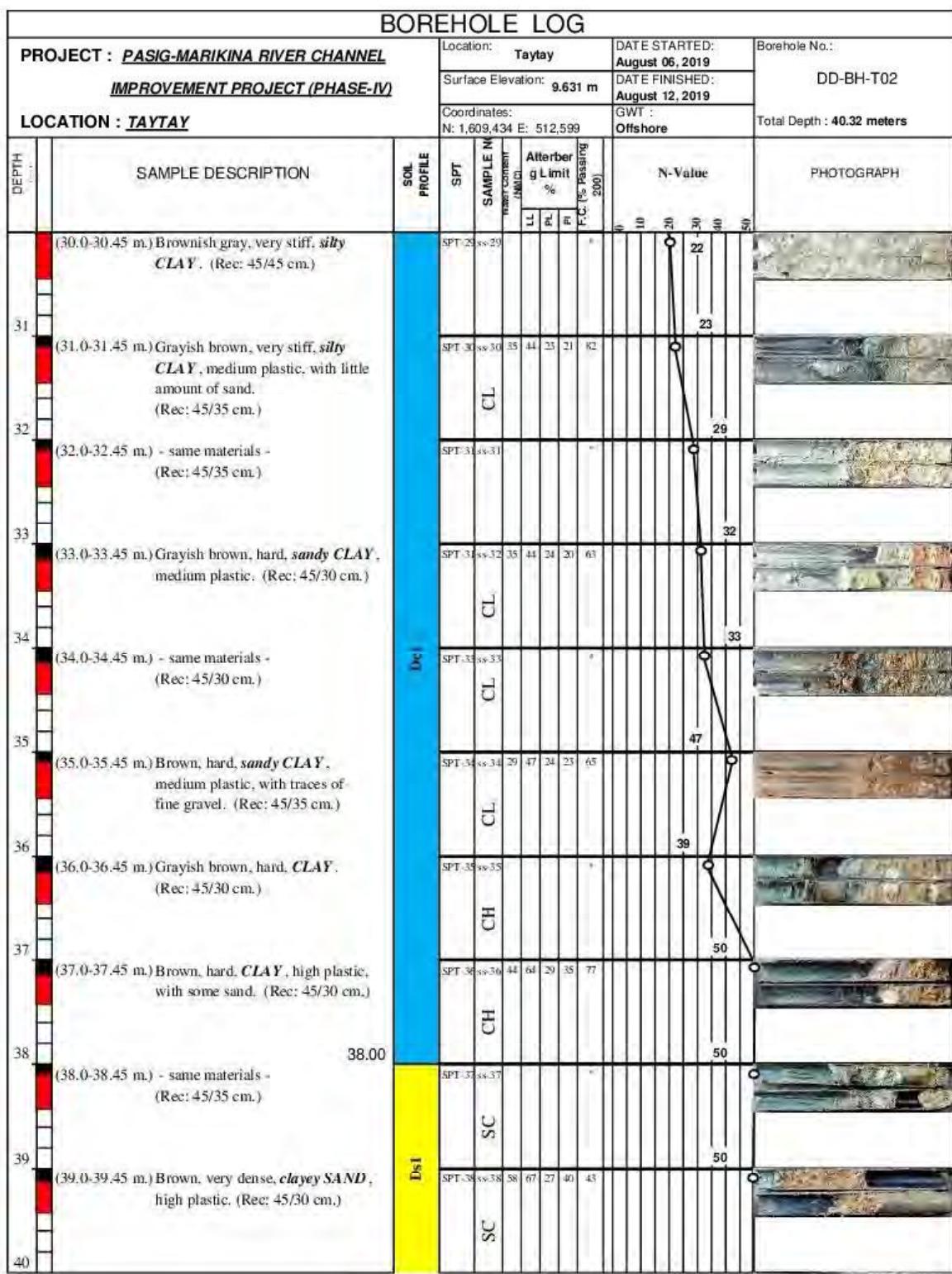


Figure 5-3-1 (102/103) BORING LOGS (PHASE IV)

BOREHOLE LOG										
PROJECT : PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE-IV) LOCATION : TAYTAY			Location: Taytay			DATE STARTED: August 06, 2019		Borehole No.: DD-BH-T02		
			Surface Elevation: 9.631 m			DATE FINISHED: August 12, 2019				
			Coordinates: N: 1,609,434 E: 512,599			GWT : Offshore		Total Depth : 40.32 meters		
DEPTH	SAMPLE DESCRIPTION	SOIL PROFILE	SPT	SAMPLE N	Atterberg Limit %	N-Value	PHOTOGRAPH			
			SPT = 35 ss=39		LL	0 10 20 30 40 50				
40.0	(40.0-40.32 m.) Brown, hard, CLAY , with some sand. (Rec: 32/27 cm.)				PL					
41	<i>End of borehole @ 40.32m depth</i>									
42										
43										
44										
45										
46										
47										
48										
49										
50										

Figure 5-3-1 (103/103) BORING LOGS (PHASE IV)

Boring log with Core box, SPT sample and SPT graph

In order to clarity, the SPT soil sample photo is processed

Legend

Geological Age		Symbol/colour	MARIKINA/MCGS	Symbol/colour	CAINTA/TAYTAY
Quaternary	Holocene (Alluvium)	As	Alluvial sand,	As2	Alluvial sand、TAYTAY表層に分布
		Ac	Alluvial clay	As1	Alluvial sand、CAINTAで確認
	Pleistocene (Diluvium)	Ds	Diluvial sand	Ac2	Alluvial clay、CAINTA表層に分布
		Dc	Diluvial clay	Ac1	Alluvial clay、CAINTA、TAYTAYに分布
		GFW	Weathered Guadalupe Formation (Lapilli tuff, Sand stone)	Ds1	Diluvial sand、CAINTA、TAYTAYで確認
		GFF	Fresh Guadalupe Formation (Lapilli tuff, Sand stone)	Dc1	Diluvial clay、CAINTA、TAYTAYで確認

Figure 5-3-2 (1/17) BORING LOGS (PHASE IV) with Core Photos

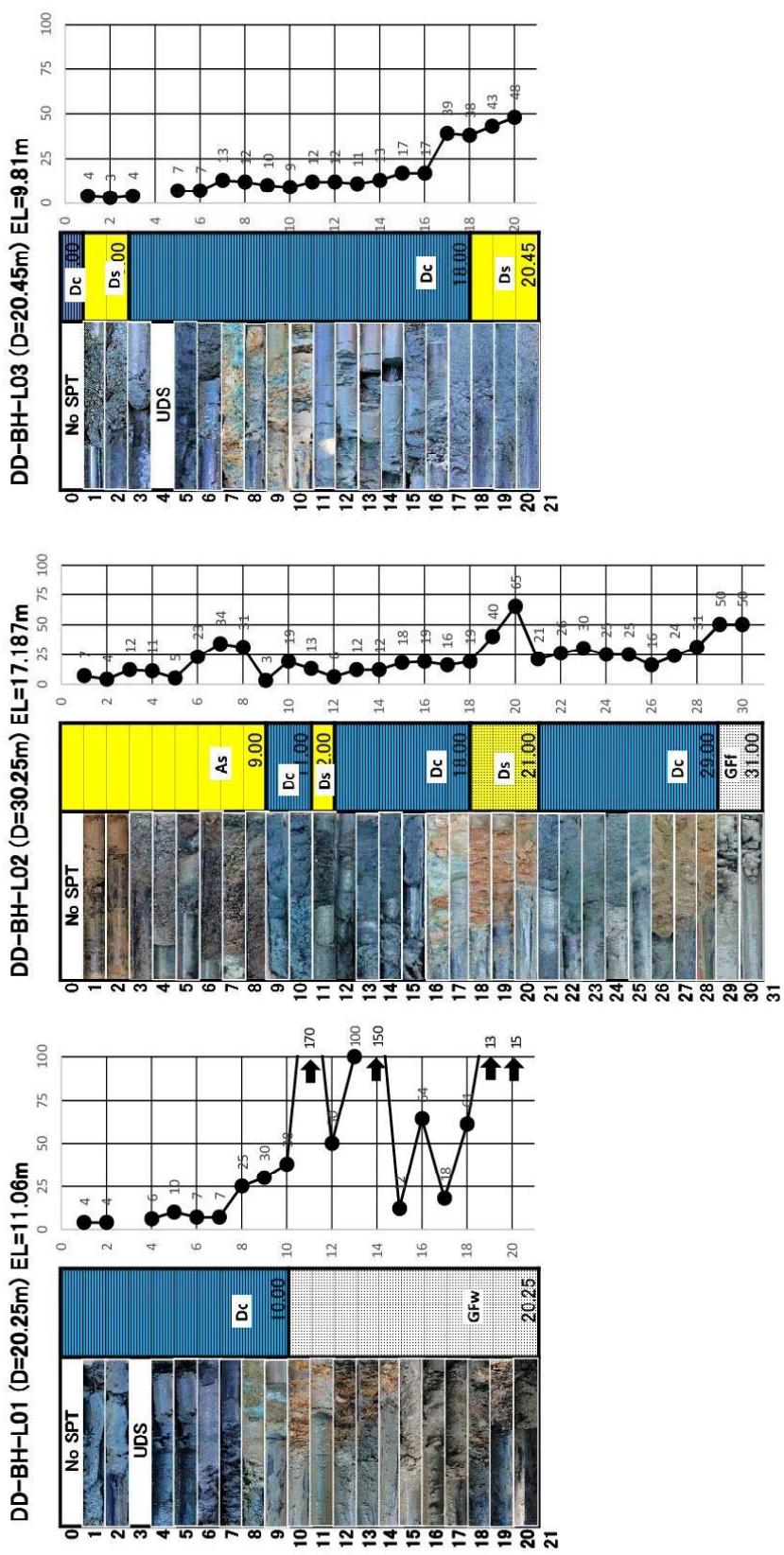


Figure 5-3-2 (2/17) BORING LOGS (PHASE IV) with Core Photos

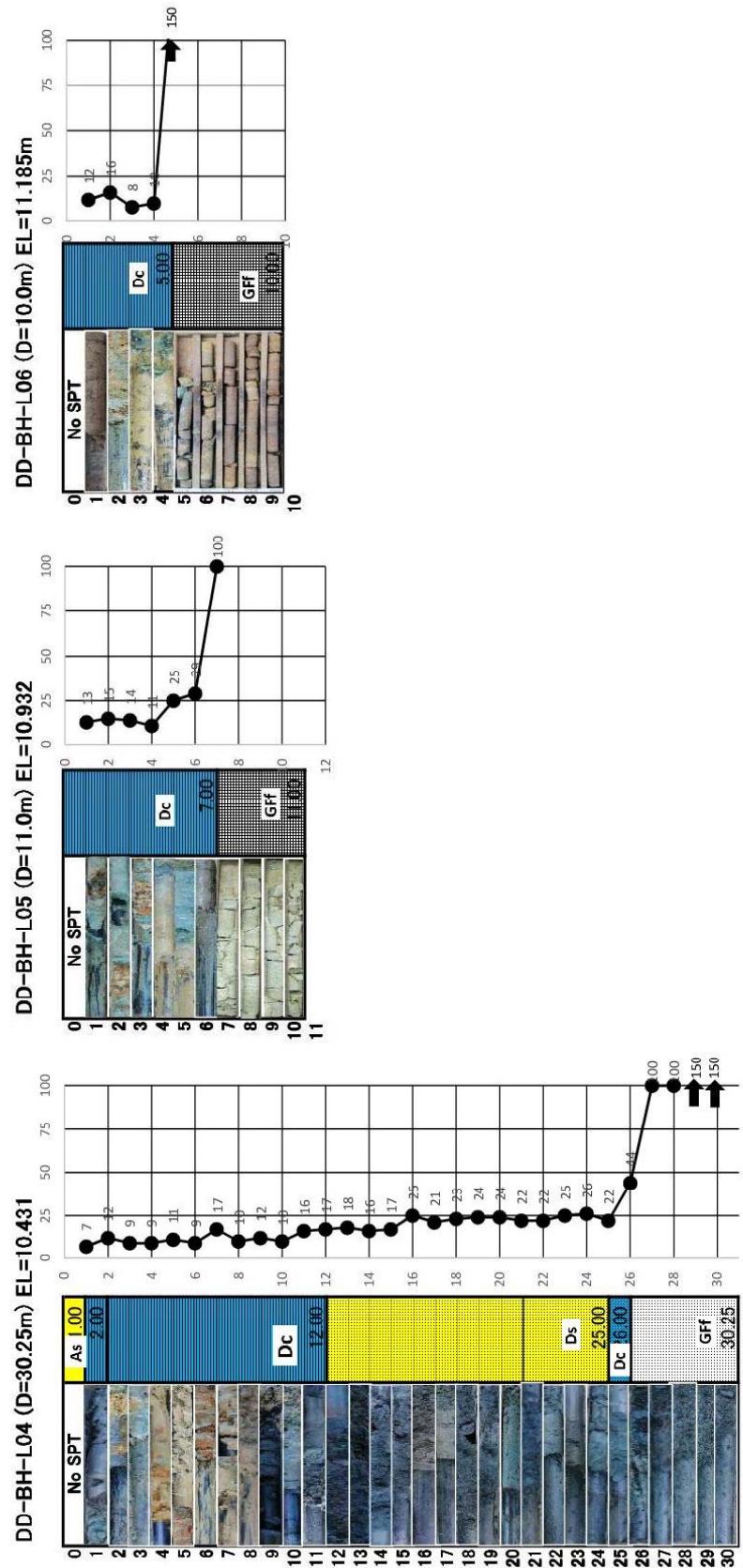


Figure 5-3-2 (3/17) BORING LOGS (PHASE IV) with Core Photos

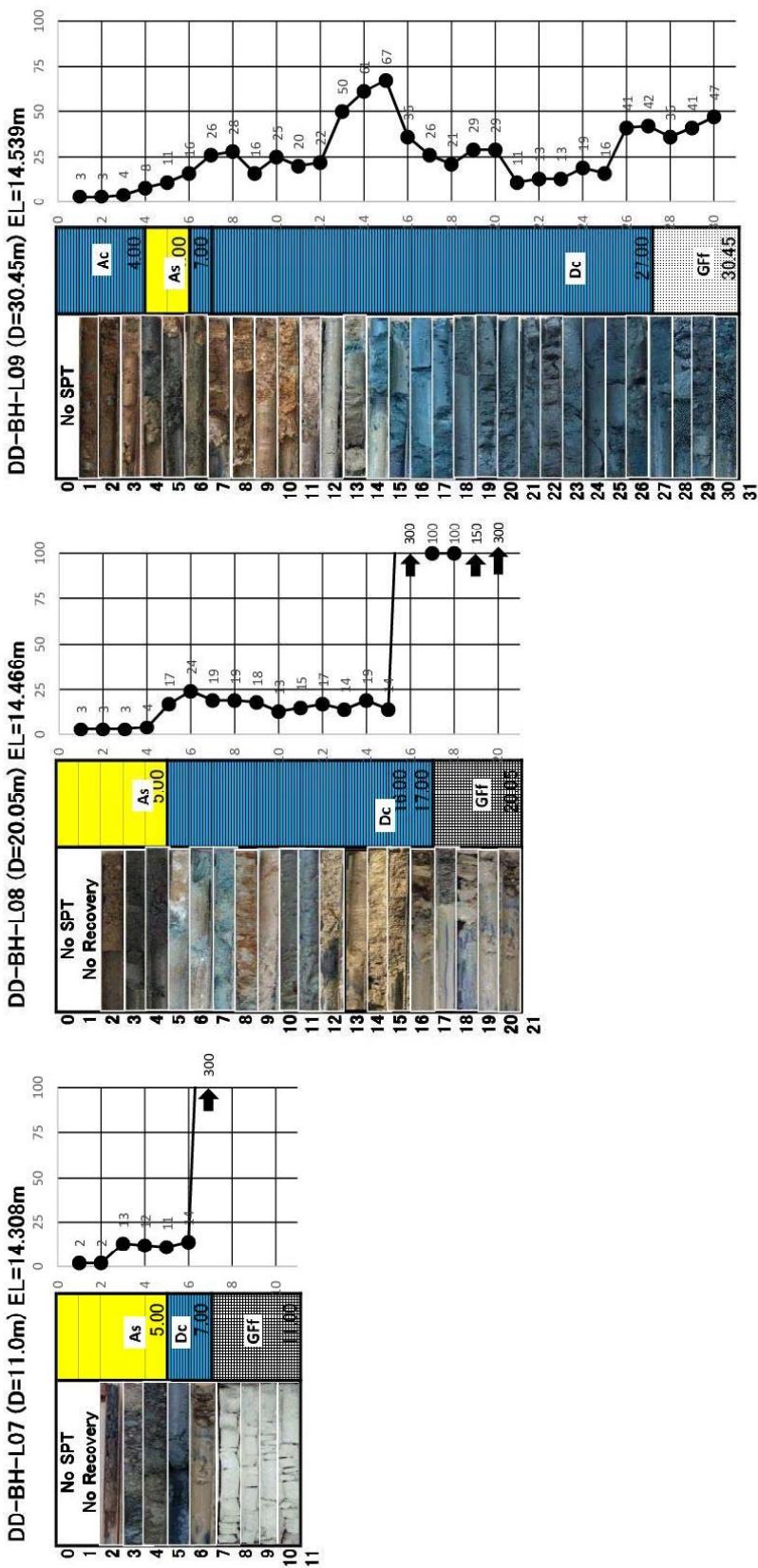


Figure 5-3-2 (4/17) BORING LOGS (PHASE IV) with Core Photos

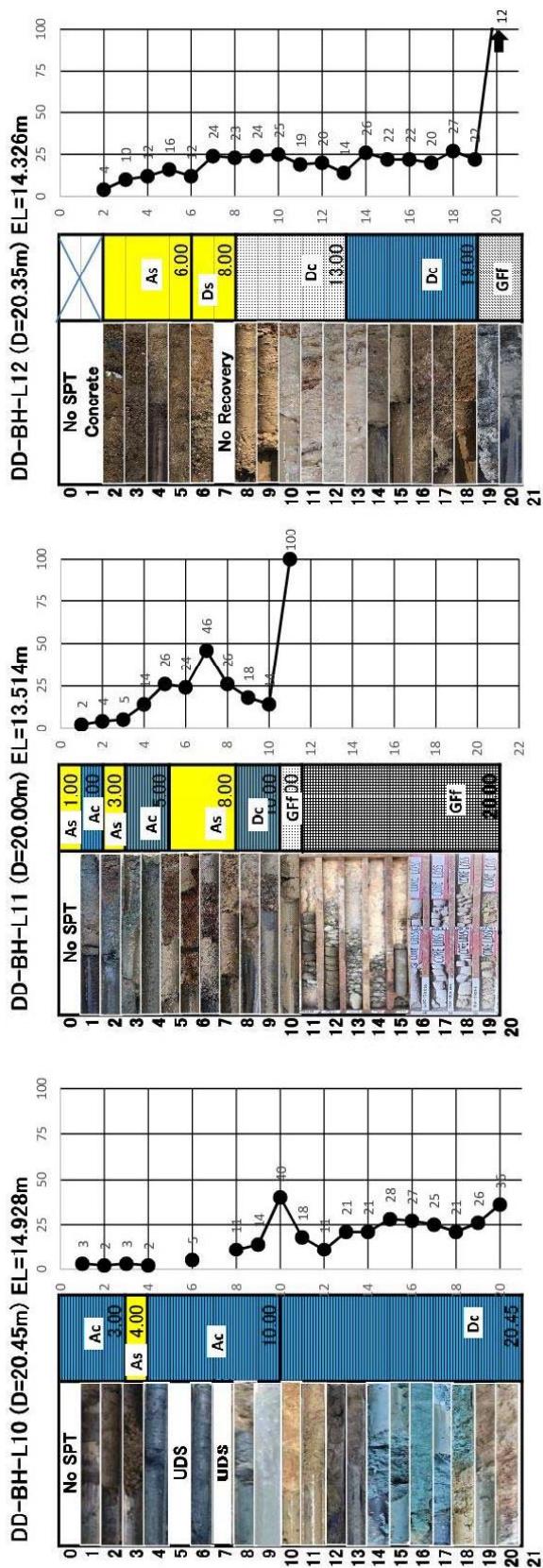


Figure 5-3-2 (5/17) BORING LOGS (PHASE IV) with Core Photos

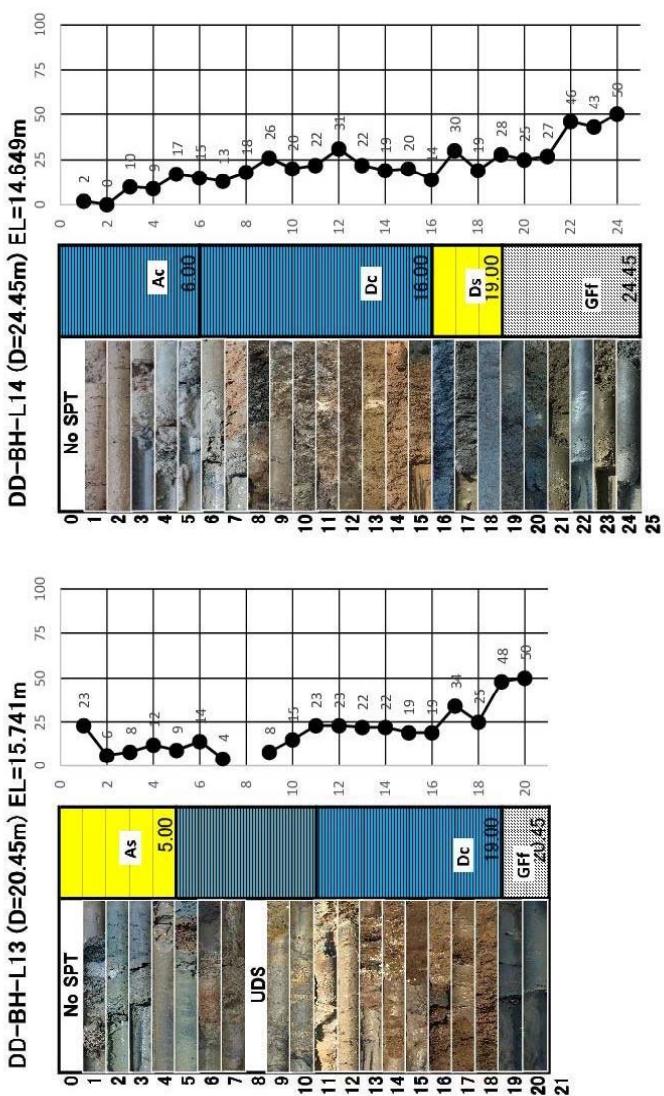


Figure 5-3-2 (6/17) BORING LOGS (PHASE IV) with Core Photos

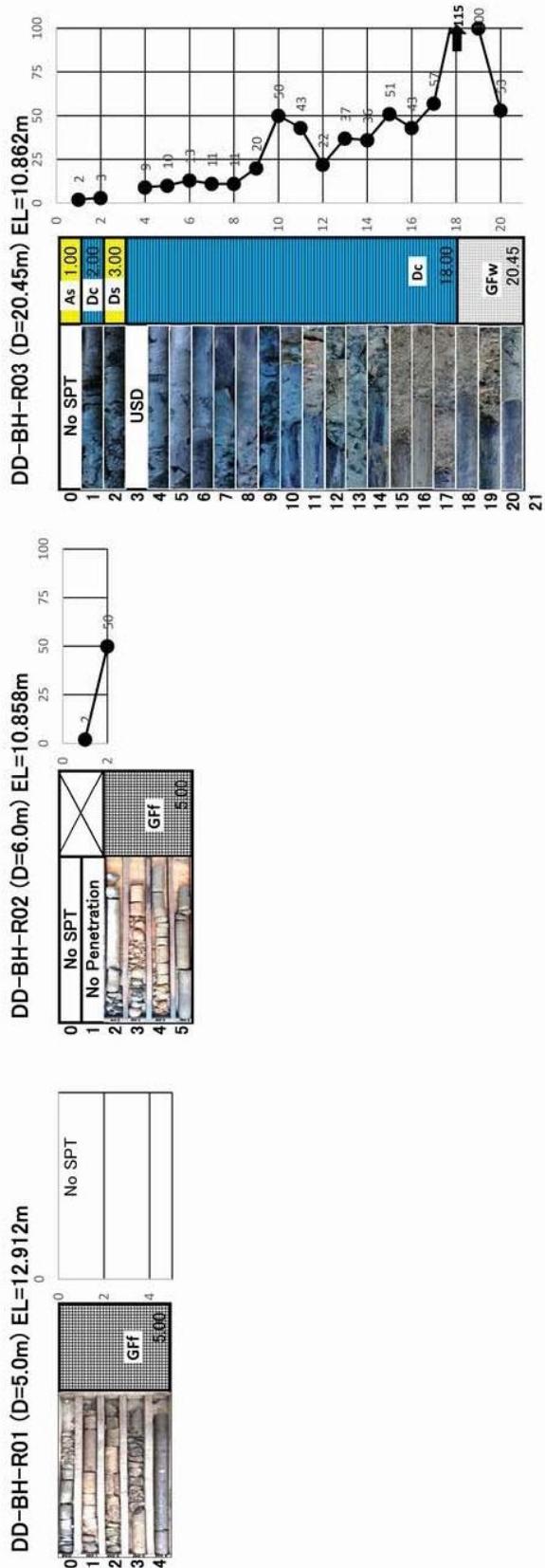


Figure 5-3-2 (7/17) BORING LOGS (PHASE IV) with Core Photos

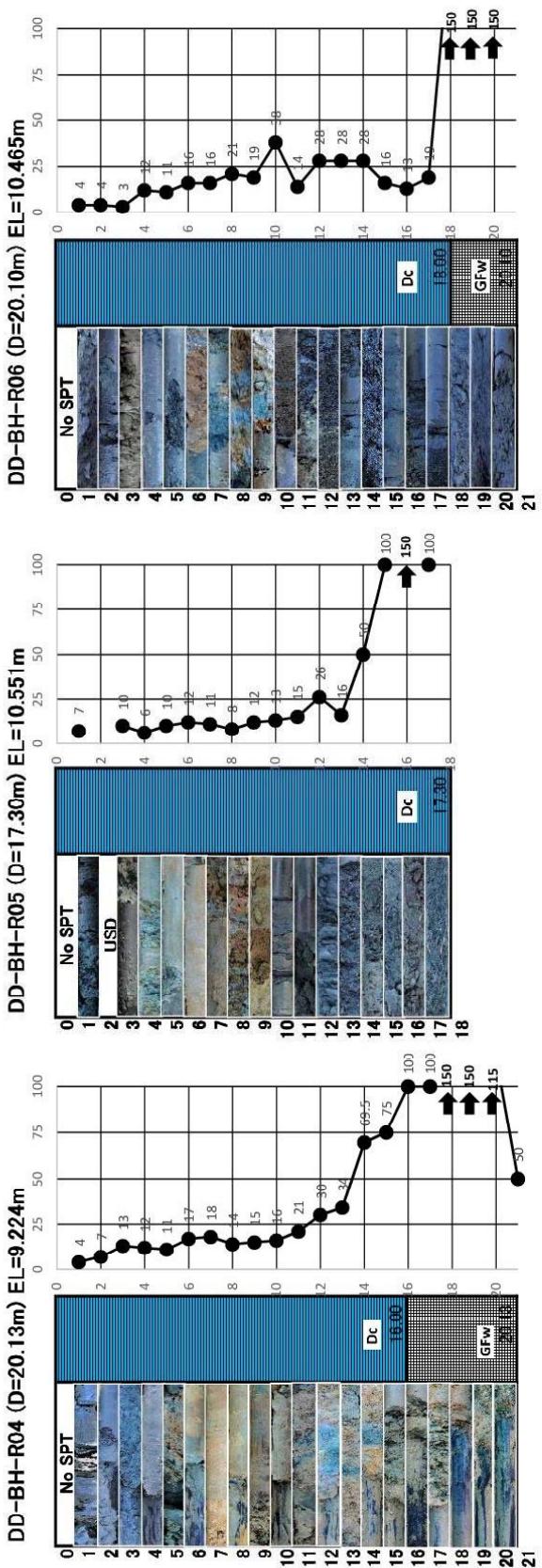


Figure 5-3-2 (8/17) BORING LOGS (PHASE IV) with Core Photos

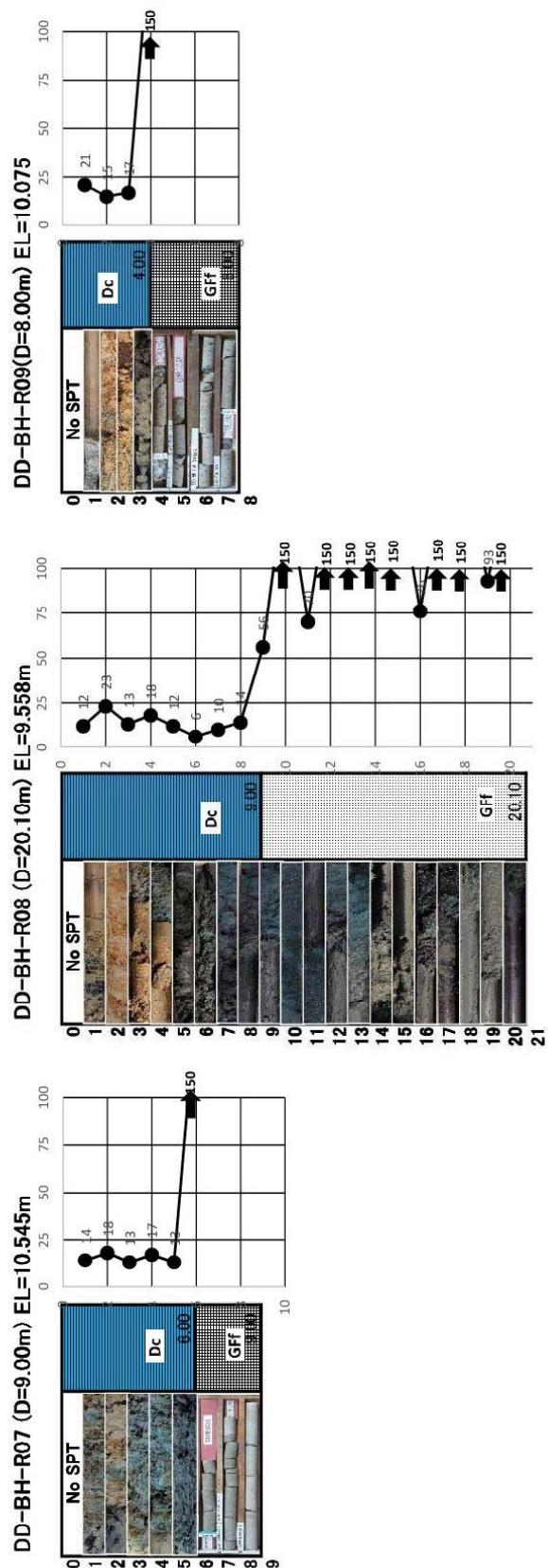


Figure 5-3-2 (9/17) BORING LOGS (PHASE IV) with Core Photos

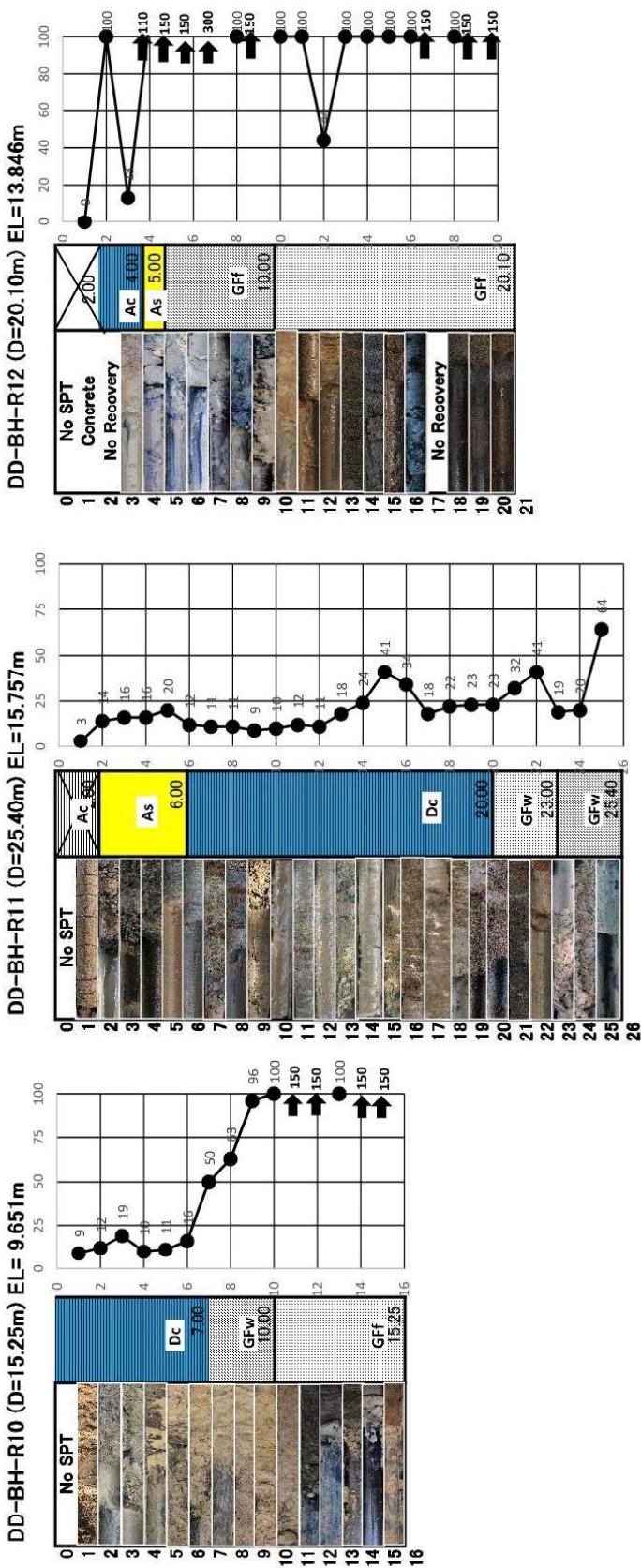


Figure 5-3-2 (10/17) BORING LOGS (PHASE IV) with Core Photos

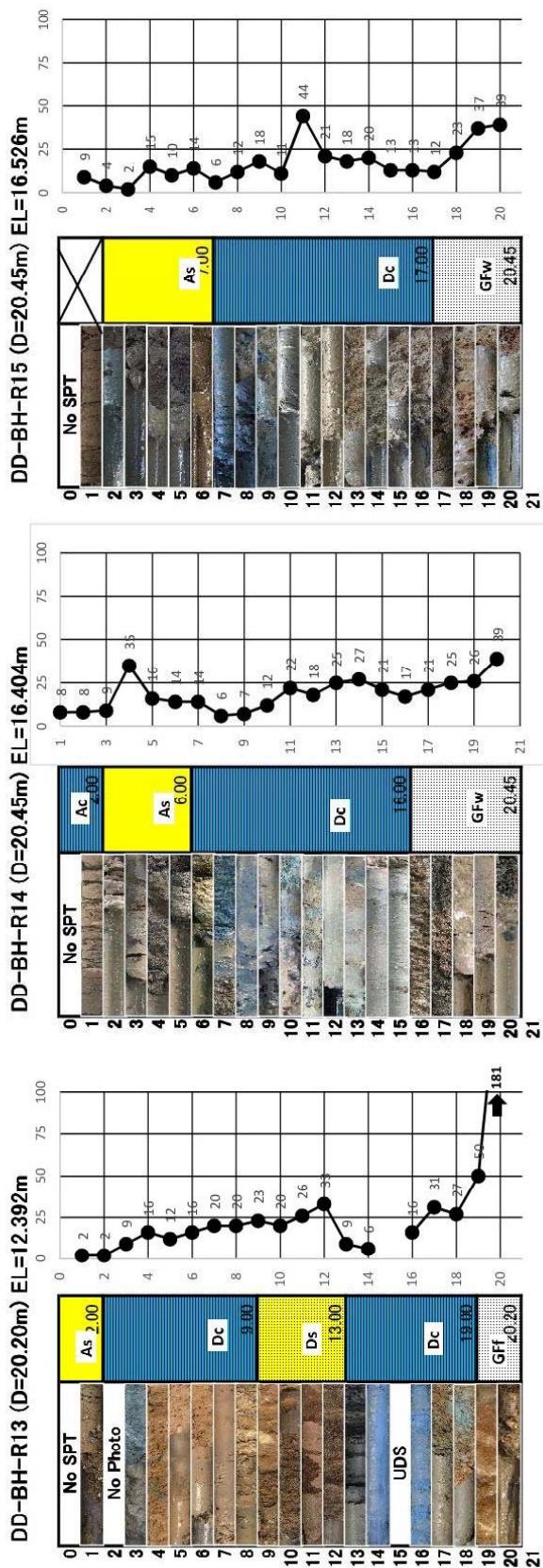


Figure 5-3-2 (11/17) BORING LOGS (PHASE IV) with Core Photos

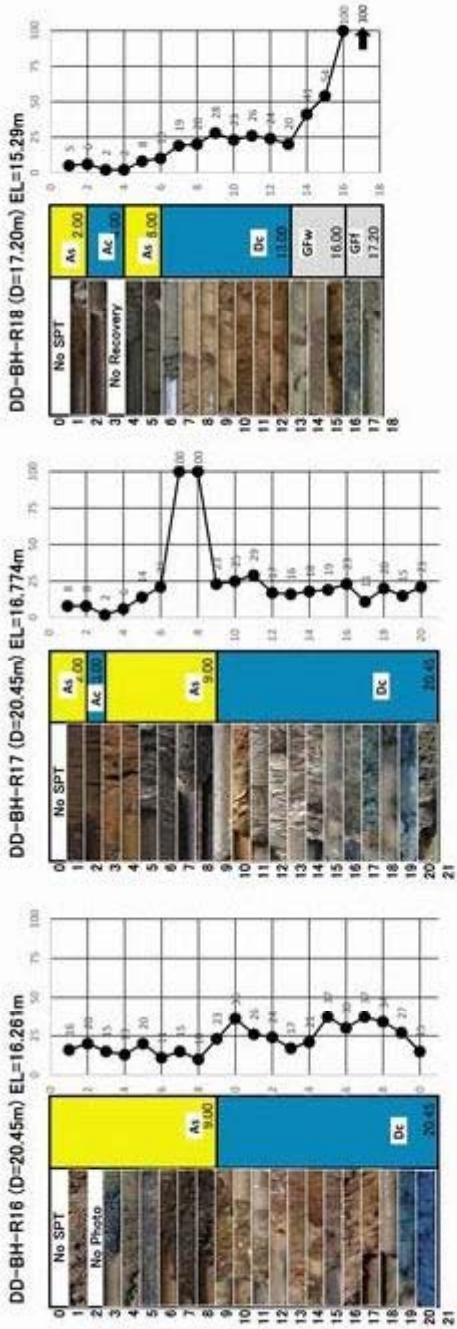


Figure 5-3-2 (12/17) BORING LOGS (PHASE IV) with Core Photos

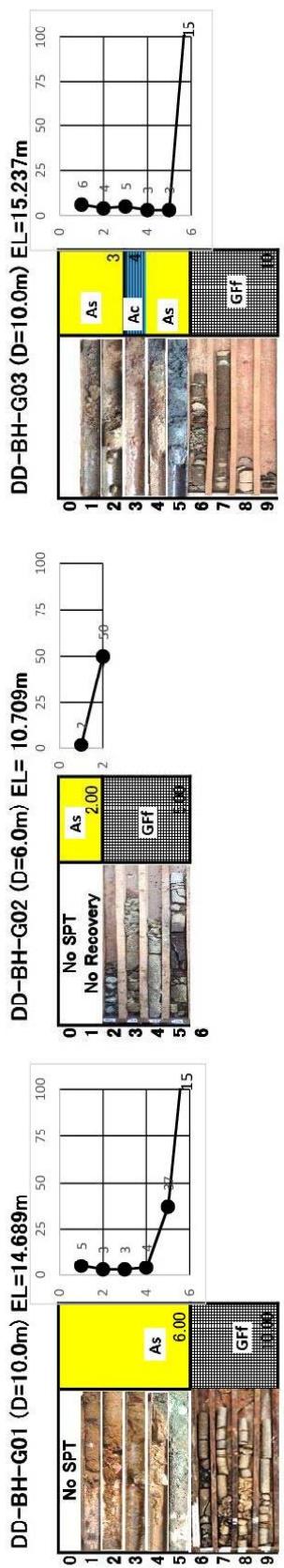


Figure 5-3-2 (13/17) BORING LOGS (PHASE IV) with Core Photos

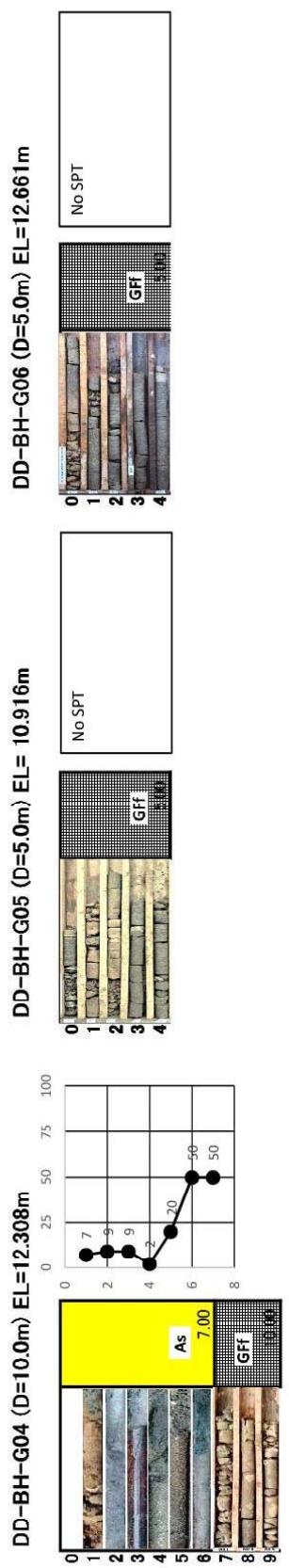


Figure 5-3-2 (14/17) BORING LOGS (PHASE IV) with Core Photos

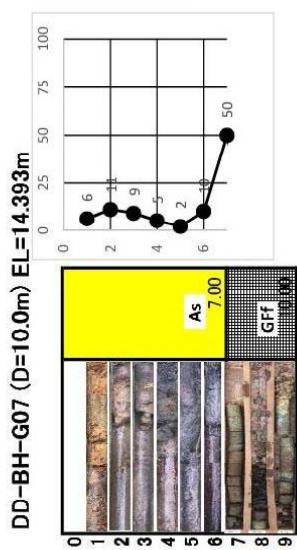


Figure 5-3-2 (15/17) BORING LOGS (PHASE IV) with Core Photos

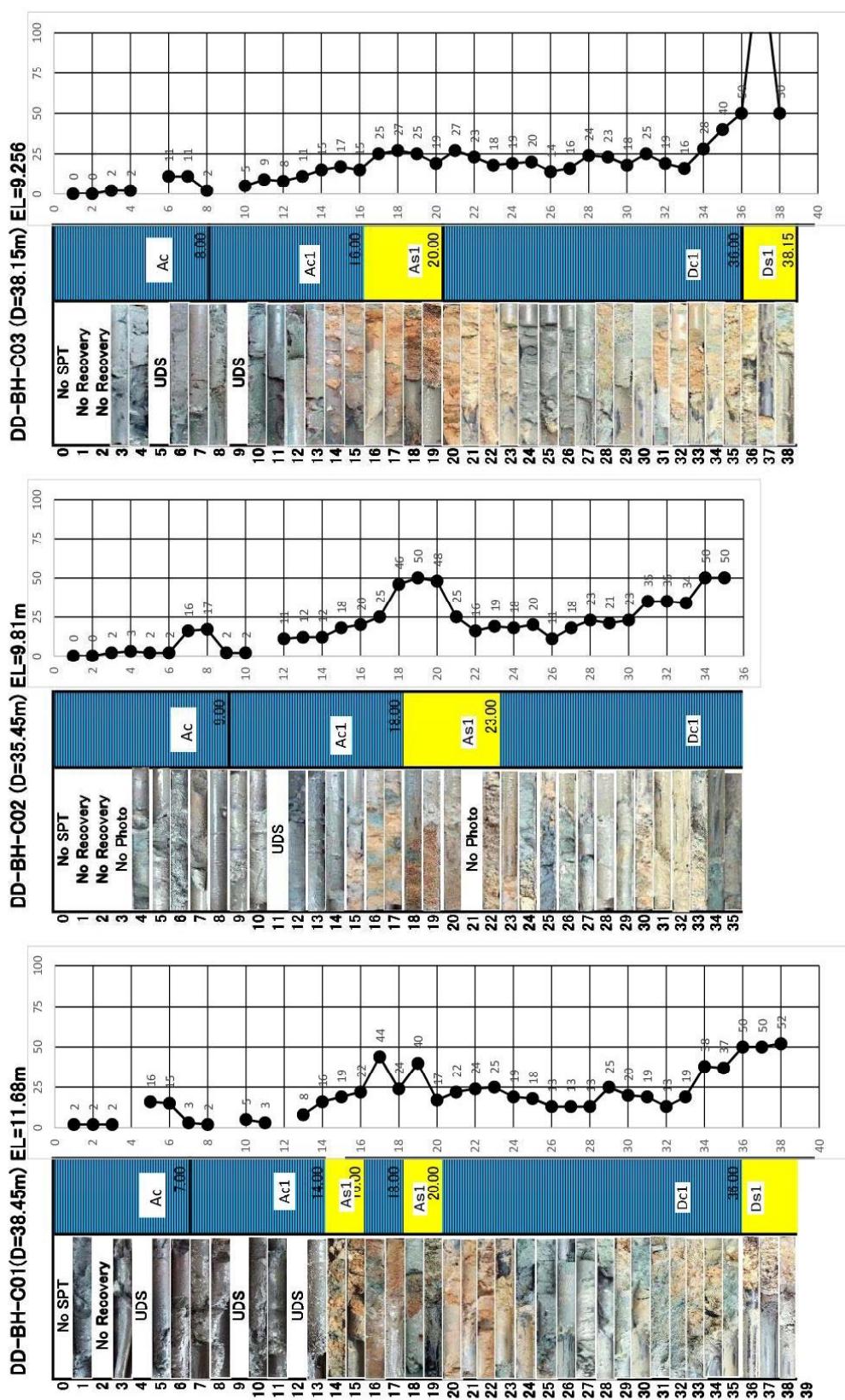


Figure 5-3-2 (16/17) BORING LOGS (PHASE IV) with Core Photos

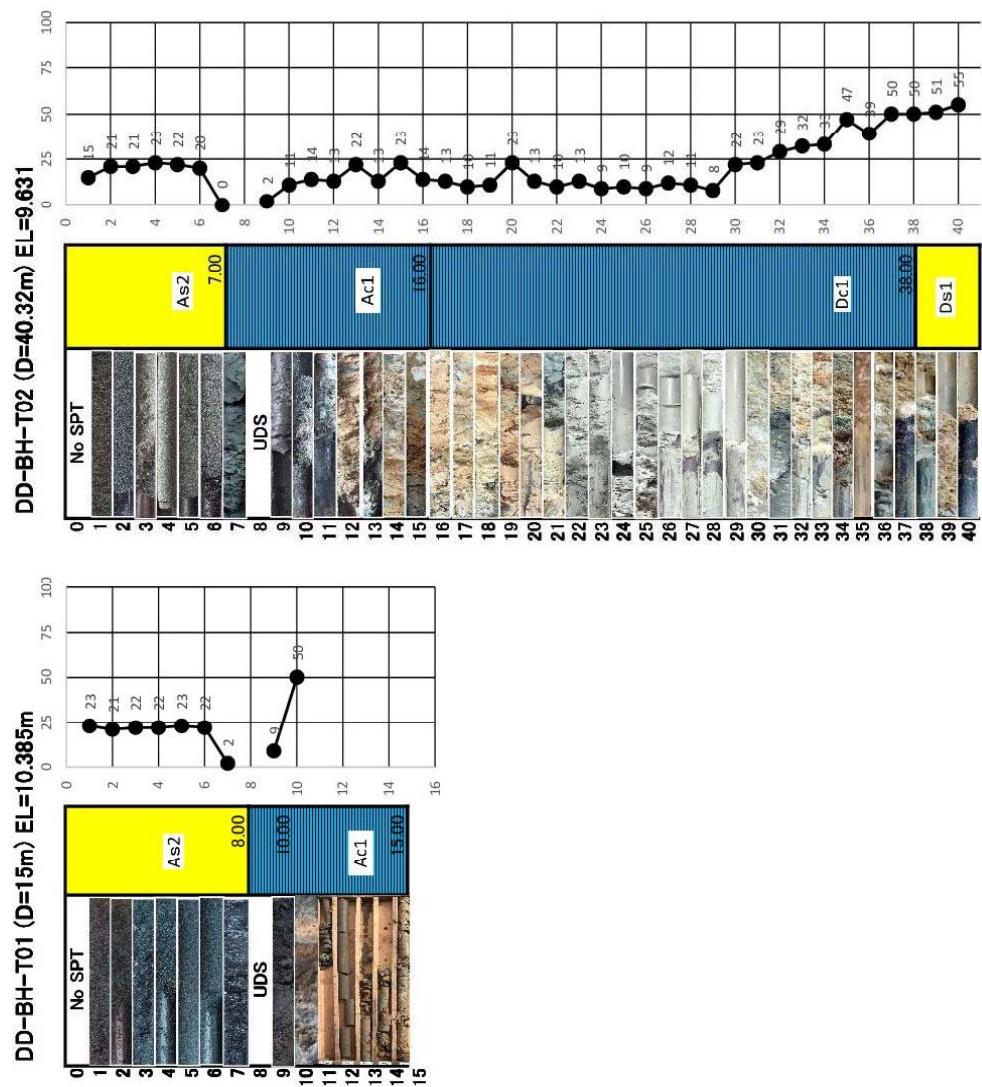


Figure 5-3-2 (17/17) BORING LOGS (PHASE IV) with Core Photos

