DATA 2 : GEOTECHNICAL SURVEY RESULTS

THE STUDY ON STORM WATER DRAINAGE PLAN FOR THE COLOMBO METROPOLITAN REGION IN THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA

FINAL REPORT

VOLUME V : DATA BOOK

DATA 2 : GEOTECHNICAL SURVEY RESULTS

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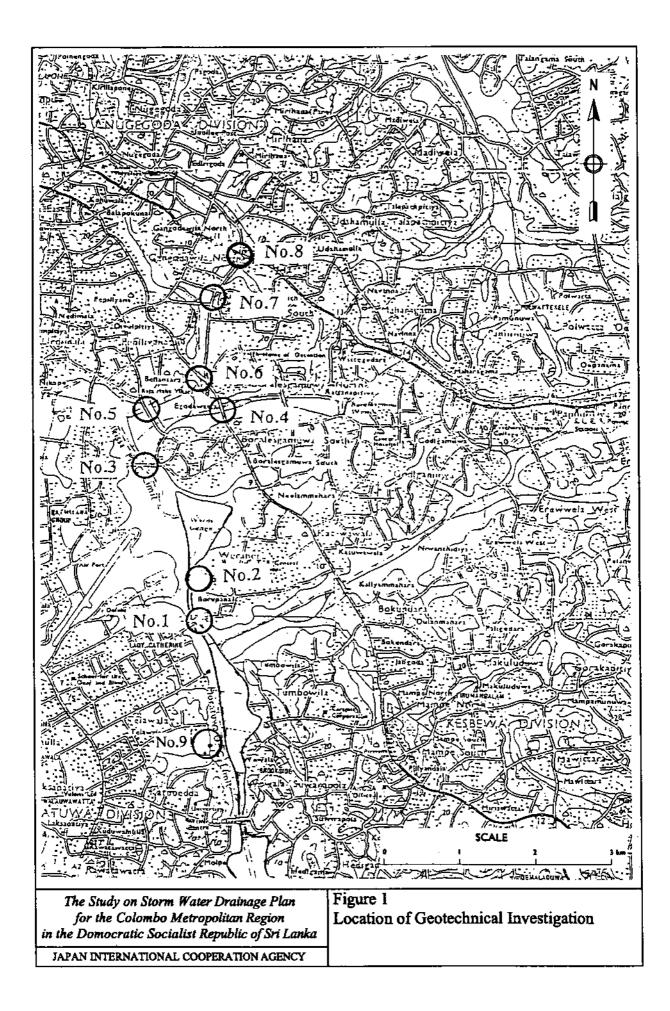
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1. Location of Geotechnical Investigation

The locations of geotechnical investigation are tabulated below.

Site No.	Location
1	Borupana Bridge
2	Field near Weras Ganga in Borupana
3	Attidiya Irrigation Department Office
4	Horana Road Culvert of Depawa Ela
5	Dehiwala Road Bridge of Rattan apitiya Ela
6	Horana Road Bridge of Rattanapitiya Ela
7	Old Kesbewa Road Culvert of Delkanda Ela
8	High Level Road Bridge of Delkanda Ela
9	Field near Weras Ganga in Telawala

The location map is shown in Figure 1.



2. Work Quantities

Executed work quantities are tabulated below.

Executed Geotechni	cal Investig	ation
Work Item	Unit	Executed Quantities
1. Core Boring	m	76.8
Site No.1	m	6.5
Site No.2	m	9.3
Site No.3	m	9.45
Site No.4	m	4.15
Site No.5	m	10.45
Site No.6	m	7.7
Site no.7	m	8.5
Site No.8	m	8.6
Site No.9	m	12.15
2. Standard Penetration Test	time	77
3. Laboratory Test		
3.1 Moisture Content	samples	9
3.2 LL/ PL/ PI	samples	9
3.3 Specific Gravity	samples	9
3.4 Particle Size Distribution	samples	9
3.5 Unconfined Compression	samples	4
3.6 Consolidation	samples	3

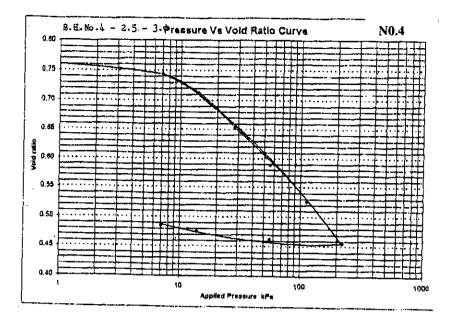
Executed Geotechnical Investigation

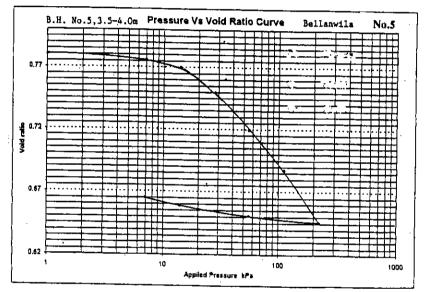
The results of laboratory test are shown in Table 1 and Figure 2.

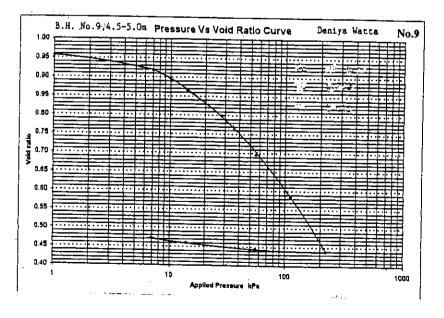
The final report is kept by SLLRDC.

вн	Location	Deplh	M.C	Specific			Pa	rticle Siz	e Anal	γsis				lenburg		1	confined			_				Soil
NO.		(m)		Gravity				rcentage	e (Sive	Sizes in	mm)			mils (%	<u>)</u>		ression				nsolida		<u> </u>	Description
					>4.75	4.75- 2.36	2.36- 1.18	1.18- 0.600				<0.075	u	PL	PI	U.C. Strength (KN/m³)		(g/cm³)	P, (Kpa)	C.	C,	<u>C.</u> 1+eo	<u>C</u> , 1+eo	
1.	Borupana Bridge	4.00- 4.45	18	2.47	0	0	1.8	6.9	11	13.7	5.1	61.5	52	19	33	-	-	-	-	-	-	-	-	Soft sandy clay. Organic ordour observed. Colour:Dark grey. Max. particlesize: Medium sand.
2.	Kahalaga- Hawalta River Bank	3.50- 4.00	38	2.60	0.3	1.5	85	9.6	4.6	10.5	7.8	57.2	48	30	18	20	08	1.309	-	-		-	-	Plastic sandy clay. Max. particle size:Caorse sand. Colour:Grey. (Completely weathered rock)
	Allidiya Bridge	5.00- 5.45	15	2.50	1.4	1.8	2.5	6.0	13.0	22.8	15.8	36.7	·38	26	12	-	-	-	-		-	-	-	Silly clayey sand. Max. particle size: Medium Sand, Colour : Grey,
4.	Depawa Culvert	2.50- 3.00	27	2.41	0	0.5	1.5	86	14.3	17.2	9.6	48.4	52	22	30	36	09	1.486	21.0			0.119 lached		Soft plastic clay with sand. Max, particle size : Medium sand. Colour': Greyish brown.
5.	Bellanwila Bridge	3,50- 4,00	38	2.54	0	0	2.0	4,4	8.8	15.0	5.2	64.6	53	20	33	35	11	1.475	27			0.058 tached		Plastic clay. Colour : Grey.
	1. 10.00	3.00- 3.45	37	2.47	0	1.3	8.4	12.2	9.1	5.6	1.3	62.1	59	21	38	-	-	-	-		-	-	-	Highly plastic clay with sand. Max, particle size : Medium Sand Colour : Light Grey.
7.	10101111111	2.00- 2.45	24	2.42	1.6	0	0.6	2.8	3.3	82	6.1	77.4	55	18	37	-	-	-	•	-	-	-	-	Soft plastic day with sand. Max, particle size : Coarse sand. Colour : Lighl Grey.
	High Level Road Bridge	2.00- 2.95	30	2.43	2.8	20	4.3	8.9	15.7	21.2	11.1	34.)	52	20	32	· -	-	-	-		-	-	-	Soft plastic clay with sand. Max. particle : Coarse sand. Colour : Yellowish brown.
9.	Deniyawalla River Bank	4.50- 5.00	45	2.40	0	1.8	0.6	3.5	5.4	9.3	3.9	75.5	49	20	29	17	06	1.123	31		•	0.179 tached		Sandy plastic clay, Max. Particle size : Medium Sand. Colour : Grey motilled yellowish brow

Table 1 Results of Laboratory Test









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Attachment -1

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GROUP ENGINEERING LAB	DRA	TO	RIES	LT	D		•		BOR	E HOL	E NO	. 1		
ILEAD OFFICE 16 J, ANDERSON ROAD, CO LABORATORY 1954, WARADAMA ROAD, CO	- 	0 6									0F			÷ *
EQUIPMENT & METHODS Water Flush Rotar 75mm casing													Color Regio	
CARRHED OUT FOR M/s, Nippon Koei	Co,Lt	d	·		GROUND LEVI					296 1	DAT	É (2	29.7.0	02
SOIL CLASSIFICATION / VISUAL DESCRIPTION AND IDENTIFICATION	GROUP STABOL	CINEDEN	DEPTH &	REDUCED	SAMPLE PENETRATION		IPLE,	TEST	· 'N' V	ALUÉS				FIELD RECORDS
Lateritic clayey sand with gravel. Colour: Reddish Brown (Fill)	SC	10 1 10 10 10 10 10 10 10 10 10 10 10 10	(0.60)		· · ·				, ,			. .		GWL at 0.15m depth
· · · ·		1, x , x', 1, x , x',	-1.		1.00-1.45	D	1	S	- ۱ ק	30	ຕກ່			1 1-30 cm
		יאן יואן ואן און און און		· ·	2.00-2.45	D	2	S]]-45cm
Highly organic clay. Colour: Black	он	1 = [,] ,] = [,]						9	٥ ١ -	فه ا	Сила			, , , , , , , , , , , , , , , , , , ,
			-3		3.00-3.45	D	3	S	0 1-	- 30	Cm			1. 1-30cm
Soft sandy clay.		X	4		4.00-4:45	a	4	S N=6	•					2 2 2 2 2
Colcur: Dark grey. Organic ordour observed	СН		(1.00)					s				ł		7
Silty clayey sand. Colour: Dark Grey	sc		- 5 (1.00		5.00-5.45	ת - 	5	N-28						8 9 · 11
Silty send. Colour: Dark Grey.	 		6		6.00-6.40	D	6	s			\\ b	NY	50	8 5 5 50-5cm
Mottled White.Parent Rock Fabric Present.(Completely Weathered Rock) Rock Borehole Terminated at 6.50m	SM		* (0.50		6.50	WS	7	s			0	14 Y	\$a	50-No Penetration
depth. SPT : WHERE FULL OUM PENETRATION HAS NOT BEEN ACHIEVE, THE NUMBER OF BLOWS FOR THE OUDTED PENETRATION IS GIVEN (NOT N-VALUE)	N D	D(D DUL	K 8AM) SAMPL Ple	 		c c	ATER CORE B	ECOVE	ERY (I)			<u> </u>	LOGGED BY
DEPTINS : ALL DEPTINS & REDUCED LEVELS IN METRES. THICKNESSES GIVEN IN BRACKETS IN DEPTH COLUMN WATER - WATER LEVEL OBSERVATIONS DURING BORING ARE GIVEN AS WATER LEVEL		P15 CO 5 ST	TON (P RE 5A)	PENET	IUI OR NGTH TO SCALE RATION TEST		л п	оск а	UALITY	r DESI	GNATK	0N (RC	וג סס	ANNEXTURE NO

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GROUP ENGINEERING LAB	ORA	TO	AIES	S LT	D		•		BOF	IE HO	LE NO	. 2		
NEAD DEFICE No 3, ANDERSON ROAD, CO LADORATORY 996A WARADANA ROAD, CO	ក្រែមក	a n								ET 1		2		, ·
EQUIPMENT & METHODS Water Flush Rotary			<u> </u>		PROJECT - S	torm	Wate	r Dra:	l. Inage	Plä	for	the	Color	
75mm casing	<i>D</i> [1] .	L .					lahat	agaha	vatte		Metro	polit	an Re	egion.
CARRIED OUT FOR M/s, Nippon Koei G	o,Ltd	· · · · ·			GROUND LEVE	ÈL :	+3:.5	30 MSI		· _				
· · · · · · · · · · · · · · · · · · ·		COORDINATES	s 480),485	N	403,	285	DAT E	re / 3	0.7.0)2			
SOIL CLASSIFICATION / VISUAL		· .	E SS	8	SAMPLE				DIST	HIDUT	ION O	F	<u> </u>	
DESCRIPTION AND IDENTIFICATION .	GROUP SYMBOL	LEGEND	DEPTH & THICKNESS	REDUCED	PENETRATION		PLE NO	TEST		ALUE				FIELD RECORDS
	0 0								2	0	40	60 <u>,</u> 6	<u></u>	
Soft organic clay. Colour: Blackish Brown	ЮН		(1.50)											GWL at 0.15m dep
			- 1.		1.00-1.45	D	1	^{si} s (þ					SPT tube dropped freely
Soft organic clay with a tráce of silt. Colour: Blackish Brown	он		- 2 . (1.50)		2.00-2.45	D	2	s C		•				do
			- 3		3.00-3.45 3.50-4.00	ס. מט	3	s N-8	0					4 . 2 2
Plastic sendy clay.			-4		4.00-4.45	D	5	S N=4	••••				• •	2 2 1 1
Plastic sandy clay. Colour: Grey. (Completely weathered rock)	Сн		(4.50)		5.00-5.45	D	6	S N=6	Ð					2 2 2 2
			6		6.00-6.45	D	7	S N=6	6					2 1 1 4
· · · · · · · · · · · · · · · · · · ·			.7							•			۰	
WHERE FULL COM FENETRATION HAS NOT BEEN ACHIEVE, THE NUMBER OF BLOWS FOR THE QUOTED PENETRATION IS GIVEN INOT N-VALUE	D B	DULK	URBED	SAMPLI LE	I		c c	ATER S	COVE	NY (2)	<u></u>	<u></u>	L	LOGGED BY
DEPTHS ALL DEPTHS & REDUCED LEVELS IN METRES. THICKNESSES GIVEN IN BRACKETS IN DEPTH COLUMN WATER WATER LEVEL OBSERVATIONS DURING BORING ARE GIVEN AS WATER LEVEL	WS S V	COR Stai	ON (P) E SAMI	TUBE II PLE LEI PENETI	U) OR NGTH TO SCALE NATION TEST		9 RC	аск оч	ALITY	DÉSK	NATIO	N (ROC	5 1)	ANNEXTURE

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GROUP ENGINEERING LABC	RATOF	RES LT	D		BORE HOLE NO + 2	, .
HEAD OFFICE No 3, ANDERSON ROAD, CON LADORATORY 996 A MARADANA ROAD, COL	LONDO 5, OKBO 10.	SRI, LANKA			SHEET 2 OF 2	
EQUIPMENT & METHODS Water Flush Rotary	Drill			torm Water Dra	inage Plan for the Co Metropolitan Regio watta. River Bank	olombo on
75mm casing		- · · · ·			watta. River Bank	
CARRIED OUT FOR M/s, Nippon Koei Co	o,Ltd.		GROUND LEVE		DATE 30.	.7.02
			SAMPLE		DISTRIBUTION OF	
SOIL CLASSIFICATION / VISUAL DESCRIPTION AND IDENTIFICATION	GROUP SYMBOL	DEPTH & THICKNESS REDUCED LEVEL	PENETBATION	SAMPLE TYPE NO TEST	N' VALUÈS	FIELD RECORDS
Same as above	CH		7.00-7.45	D 8 S N=B		3 2 3 3
Silt with a trace of clay Perent rock fabric present. Colour: Blackish (weathered rock) Rock Borehole Terminated at 9.30m depth	лания 	- 8, (1.80) - 9 +	9.30	D 9 S _{N=3}		3 4 9 10 12 50-No
SPT I WHERE FULL 0.3m PENETRATION HAS NOT BEEN ACHIEVE, THE NUMBER OF BLOWS FOR THE OUTED PENETRAT IS GIVEN (NOT N-VALUE) DEPTHS ALL DEPTHS & REDUCED LEVELS IN METRES. THICKNESSES GIVEN IN BRACKETS IN DEPTH COLUMN WATER WATER LEVEL OBSERVATIONS DURING BORMO ARE GIVEN AS WATER LEVEL	с у в ма з		LE	C COR	ER BAMPLE E RECOVERY (1) K QUALITY DESIGNATION (R)	CO 21

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IEAD OFFICE Ho 3, ARDENSON ROAD, COL	: 0 M B I	p 5,	S R I L	. K H K K					SHEET	1 OF	2		
ABOHATORY 996A WARADAWA ROAD COL GUIPMENT 6 METHODS Water Flush Rotary					PROJECT -	Stro	om Wat	ter Dr	ainage	Plan	for the Metrop	Colc	mbo an Region
75mm casing	•									1. a. 2.	·		
CARRIED OUT FOR M/s, Nippon Koei Co	,Ltd.				GROUND LEVE						ATE : 31.	7.02	
	1		्रता		COORDINATES			N 	402,4	87 E			<u> </u>
SOL CLASSIFICATION / VISUAL	ទី ខ្លី	LEGEND	DEPTH & THICKNESS	REDUCED LEVEL		SAN			N' VA		<u></u>		FIELD
DESCRIPTION AND IDENTIFICATION	SYLBOL	<u>я</u>	1 EF	Ц Ц Ц Ц Ц	PENETRATION	TYPE		TEST	20	40	60 . 80	<u>,</u>	RECORD
Sandy plastic clay	CH:,		(1.00)		0.00	Ð	1	-					•.
Lateritic clayey sandy gravel. Colour: Brown (Fill)	GS		-1. (0.50)		1.00-1.45	D	2	S N=3	P				2 1. 1 1
		x	-2		2.00-2.45.	D	3	SS	p .	80 cn			GWL at:1.50m depth 1 1-30cm
Highly organic'tlay. Gulour: Brown	ા ને		- - - -		3.00-3.45	D	4	S	0 1-3	به او در میں حاق اور اور			1 1-30cm
		× × ×	4.		4.00-4.45 %	ם	5	s	• •	30 cr			1 1-30cm
Silty clayey sand Colour: Grey	SC,		* (1.0	ά	5.00-5.45	D	6	S N=3	8				1 1 1 1 .
Silty coarse to fine sand. Colour: Grey	SM			¢0	6.00-6.45		7	S N-4	4				7 9 10 25
			2 2 7									.	
SPT I WHERE FULL OOM FENETRATION HAS HOT BEEN ACHIEVE. THE NUMBER OF BLOWS FOR THE OUOTED PENETRATIC IS QIVEN INOT N-VALUE!	N	ia a	.*) E/TEST Ю'ГОАФВ JLK SA	D SAM	PLE .		w		BAMPLI		·		LOGGED
DEPTHS ALL DEPTHS & REDUCED LEVELS IN METRES. THICKNESSES GIVEN IN BRACKETS IN DEPTH COLUMN	1	WS , W PI	ASHED	SAMPI. P) TUB	E E IUI OR LENGTH TO SCAL	.E	R				ATION IRC	(I OC	ANNEXTU

							•	-	BORE HO				, •
IEAD OFFICE No 3, ANDERSON LACORATONY 996 A, KARADANA EQUIPMENT & METHODS Water F1: 75mm casi	ish Rotary Dri	•				Stro			SHEET ainage P Bridge.	lan fo	2 r the (Metropo	Colom	abo an Region
	oon Koei Co,L	ud.	. <u></u>								E ; 31	.7.02	2
SOIL CLASSIFICATION / VISUAL DESCRIPTION AND IDENTIFICATION	GROUP	FCEND	DEPTH: 4 THICKNESS	REDUCED	SAMPLE PENETRATION	SAN	PLE		DISTRIGU 'N' VALUE				FIELD RECORDS
					7.00-7.45	TYPE D	NO 8	S	20	40 6 1	<u>0 80.</u>		10
Silty clayey sand. Colour: Grey		C/ M	(1.00)					N=41				:	9 12 20 9
Coarse to fine sand with inclusion of peat. 'Colour: Dark Grey.	they SF		2]_ 8 (1.00)	>	8.00-8.45	D	9	S N-46		B			9 16 21
Coarse to fine sand. Colour: Grey.	SI		9	 	9.00-9.45	י D	10	S N=66			0		12 20 26 20
Borchole Terminated at depth	9.45m].										
													·
												.	
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										.			
			-										
												•	
SPT ' WHERE FULL O.3M PENET NOT BEEN ACHEVE. THE BLOWS FOR THE OUOTE IS QIVEN (NOT N-VALUE)	NUMBER OF D PENETRATION	D 0 0 8	DETUREST	LD SAMP MPLE			W C	CORE F	BAMPLE RECOVERY		04 500		SCALE
DEPTHS ALL DEPTHS & REDUCED METRES. THICKNESSES C BRACKETS IN DEPTH CC WATER LEVEL OBSERVA BORING ARE GIVEN AS	IVEN IN LUMN TIONS DURING	S		P) TUBE Ample L 10 Pene		LE	R ROCK QUALITY DESIGNATION IROD 23						ANNEXTUR

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GROU	P ENGINEERING LABO	DRA	TO	RIES	LT	D		•		BORE HO	LE NO	: 4		
HEAD OF LADORAT	FICE No 3, ANDERSON ROAD, CO ORY 996A MARADANA ROAD, COI	LOND LOND	05, 010.	S IC E I	. A N K A					SHEET 1	OF ;	1		
	& METHODS Water Flush Rotary					PROJECT :	Stro	m Wat	er Dr	ainage Pi	lan fo	or the an Regi	Color	nbo
	75mm casing					LOCATION :			Culy	erț		m veg.	LOII	
CARRIED	UT FOR M/s, Nippon Koei Co	,Ltd.	•			GROUND LEVI				403,445		E:01.	.8,02	
· · · · · · · · · · · · · · · · · · ·			[S		COORDINATE: SAMPLE				DISTRIBUT			r	
	SSIFICATION / VISUAL	GROUP STABCL	ÉGEND	DEPTH & THICKNESS	REDUCED LEVEL	PENETRATION	SAM	PLE		'N VALUE				FIELD RECORDS
		S S	Ľ¥ ™	19 1	REL	0.00-0.45	D		TEST	20	<u>40 e</u>	50 <u>. 80</u>		
Hard	plastic clay with sand.					0.00 0.45			N=26					10 11 1
	r: 'Brown (Fill)'	CH		(1.00)				•		++-				10 5 -
								,					.	GWL at 0.70m
									e		.	.		depth 2
	· · · · · · · · · · · · · · · · · · ·			-1 1		1.00-1.45	D	2	3 N=4	¢ :			ł	2
														i
							Ì							
							.					ļ.		
				-2		2.00-2.45	Ð	3	S N=11					1
	plastic clay with send.	ļ		-					[14=11			1		5 5
COTO	úr: greyish Brown	Сн		(3.00)		2.50-3.00	עט	-4			.			
						2.50-3.00	1.00	4	-					Ø
		ļ		-								}		UD
			1	-3		3.00-3.45	ש ^י	5	S N=12					1 1/2
		} ·				¦.		ł	ļ					5 6
				1. T.			ļ					.	}	
									Ì		\backslash			
Coar	Se to The Sand with a trace					4.00	WS	6	S		\mathbf{M}	·)		50-No
Colo Rock	se to line sand with a trace ur:Grey: of silt.	SW	<u>//</u>								V	14 > B	•	Penetration
	•			•									•	
Bore	shole Terminated at 4.15m													
dept			ļ											-
		ł		\mathbf{F}										
	•				ļ		:	ļ						
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		_											_	
SPT (WHERE FULL 0.3M PENETRATION HAS HOT BEEN ACHIEVE. THE NUMBER OF			e/Test IBTURDEI		LE		w	WATER	DAMPLE				LOGGED BY
	BLOWS FOR THE QUOTED PENETRATIC IS GIVEN INOT N-VALUE)	N	0 Dt	ULK SAN	IPLE			c	CORE F	AECOVERY				SCALE
DEPTHS	ALL DEPTHS & REDUCED LEVELS IN METRES. THICKNESSES GIVEN IN		Pt		"I TUPE	(U) OR	_ `	(i (NOCK (DUALITY DE	SIGNAT	ION IROI	(ג ס	
WATER	BRACKETS IN DEPTH COLUMN WATER LEVEL OBSERVATIONS DURING		S 5	TAHDAR	O PENE	ENGTH TO SCAL TRATION TEST								ANNEXTURE NO
naign '	BORING ARE GIVEN AS WATER LEVEL		¥ ¥	ANE TE	57									ļ

IEAD OFFICE No 3, ANDERSON ROAD, CO LADORATORY 996 A NARADAHA ROAD, COI	LOND . ONDC	05,) 10.	SKI t	: * * * * *					SHEET]	0F	. 2		
EQUIPMENT & METHODS Water Flush Rotary 1 75mm casing	Drill							er Dra .a B	inage Pl Metro ridge	lan fo polit	or the tian F	e Colo legion	mbo
CARRIED OUT FOR M/s, Nippon Koei Co	,Ltd.				GROUND LEVE	482	,721		402,49:	2 E		2.8.02	-
SOIL CLASSIFICATION / VISUAL DESCRIPTION AND IDENTIFICATION	GROUP SYMBOL	LEGEND	DEPTH & THICKNESS	REDUCED LEVEL	SAMPLE PENETRATION	SAM	PLE	TEST	DISTRIBU			80.	FIELD RECORDS
Filled with Rubble.		0000000	1(0.60)										GWL
ا و د دور در می ورد اور ا		C X - X	- 3.		1.00-1.45	G	1.	S N=3	Ģ				at 0.6Cm 1 depth. 1 1 1
Soft organic clay. Colour: Black	ОН	× ×	(1.40) - 2		2.00-2.45	D	2	S N=5	φ				1 2 2
			-		3.00-3.45	D	3	S N=3					2
Plastic clay. Colour: Grey	СН		1.1.00	»	3.50 - 4.00	- - - - - - - - - - - - - - - - - - -	. 4	-					
Sandy clay. Mag. at stail Colour: Grey				5)	\$.00-4.45		5	S S					3 2 2 2 10
Organic plastic clay with inclusions of sand. Colour: Black Mottled Grey.	ОН	12-1-1-2)=24(5-1-4) 2-1-1-2-1-2-1-2-1-2-1-2-1-2-1-2-1-2	1.0 	(α				N=2					10 8 6
Sandy plastic clay Colour: Dark Grey.	 C:			Ω)	6.00-6.45		ie A	N=	7 Q. ' V ,. ,. ,.				2 2 3
SPT SWHERE FULL 0.3m PENETRATION HAS NOT BEEN ACHIEVE. THE NUKBER OF BLOWS FOR THE OUDTED PENETRAT IS GIVEN (NOT N-VALUE) DEPTHS ALL DEPTHS & REDUCED LEVELS IN		D 10 9 0 WS W	ULK SA	UD SAN		*	W C R	CORE	A BAMPLE RECOVER			IROD 2	LOGGED E

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GROUP ENGINEERING LAB									BORE HOLE	NO : 5		, .
IEAD OFFICE No 3, ANDERSON ROAD, CI LADORATORY 996A WARADAWA ROAD, CO	O L O X D O L O X D O	05,S	RIL	A H K A					SHEET 2 O	F 2		
EOUPMENT & METHODS Water Flush Rotar 75mm casing	y Dril:	1			PROJECT (om Wa lanwi		ainage Pla Metro Bridge	n for the politian R		
CARRIED OUT FOR M/s, Nicopn Koei	Co,Ltd	ı. [.]			GROUND LEVE	í.		•		DATE : 2.8	. 02	
	· · · · ·				COORDINATES		•					
SOIL CLASSIFICATION / VISUAL	ಕ್ಷಿದ್ದ	LEGEND	THICKNESS	REDUCED	SAMPLE		STS APLE	1	DISTRIBUTION	N, OF		FIELD
DESCRIPTION AND IDENTIFICATION .	GROUP		말표	RED	PENETRATION	TYPE		TEST	20 40	60 80.		RECORDS
		1. <u>-</u>			7.00-7.45	D	8	S N=9				3
Plastic clay with sand. Colour: Grey	Сн				•		1 .					3 3.
Colour: Grey			(1.00)]		* <u>} </u>			
	1										h	
······································			8		8.00-8.45	D	9.	S N=33	(P		1	1-
											1	0
							· ·					
Silty fine sand parent rock fabric		\mathcal{A}										
present. Colour: Blackish grey.		1			9.00-9:45	p	10	s			1	0
(Weathered rock)	.SM,		·		9.00 9.40	ľ	10	N=42			1	5
												,
·						ļ		ŀ				
			•			}						
Coarse Sand		N	10		10.00-10.45	מ [11	S N=55		9		15 · 17
	·											12 25
Borehole Terminated at 10.45m depth.			-									
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SPT ' WHERE FULL O.3m PENETRATION HAS NOT REEN ACHIEVE, THE NUMBER OF BLOWS FOR THE QUOTED PENETRATIK			EST KU JABILU		.E [.]		W	WATER	BAMPLE			LOGGED BY
IS GIVEN (NOT N-VALUE)	1 9	D. BULK					C	CORE R	ECOVENY (1)		,	SCALE
DEPTHS ALL DEPTHS & REDUCED LEVELS IN METRES. THICKNESSES GIVEN IN BRACKETS IN DEPTH COLUMN	5	PISTO COAC	DN (P) E Sami	TURE PLE LE	U) OR ENGTH TO SCALE	2	n 1	nuuk O	VALITY DESIGI	ATION HOD	1.1	
WATER : WATER LEVEL OBSERVATIONS DURING BORING ARE GIVEN AS WATER LEVEL	1.		E TEST		FATION TEST							•

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Attachment -9

GROUP ENGINEERING LAB	DRA	TO	RIES	LT	D			·	BOR	E HOL	E NO	6		
HEAO OFFICE № 3, ANDERSON ROAD, CO LADORATORY 996 A NARADAHA ROAD, CO	LOND LOND	05, 210.	S R I I	L A N X A				1	SHEE	т 1	OF	2		
EQUIPMENT & METHODS Water Flush Rotary 75mm casing	Dril	<u>1</u> .			PROJECT +	Stroo Horar	Wati Ma. Ros	er Dra ad., Ra	inage ttan	e Pla apiti	n for ya	r the Metro Bridg	Colo polit	mbo ian Region
CARRIED OUT FOR M/s, Nippon Koei C	o,Ltd	• •			GROUND LEVE	i.	+1,59	4 MSL			DAT	E; Q		
SOIL CLASSIFICATION / VISUAL DESCRIPTION AND IDENTIFICATION	CROUP SYLEDOL	EGEND	DEPTH &	REDUCED	SAMPLE PENETRATION	& TES	PLE	TEST	· 'N' V	RIGUTIC				FELD RECORDS
Lateritic clayey sand with gravel. Colour: Yellowish Brown (Fill)	SC		(1.00)	<u>- 4</u>	0.00	В			2		<u>0</u> e		0.	•
Very soft plastic clay.organic ordour observed. Colour: Dark grey.	Сн		-1\. (1.00)		1.00-1.45	D	2	S	0					1-45 <u>cm</u> GWL at 1.0m.depth
Silty clayey sand Colour: Grey.	SC/ SM		-2:		2.00-2.45	D	3	S N=4	0					
Highly plastic clay, with send. Colour: Light grey.	СН			Y	4.00-4.45	D		S N=3 S N=3	0					111
			<u>1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.</u>	-	5.00-5.45	D	6	S N-10						2 4 3 3
Silty clayey sand. 'Colour: Grey (Completely weathered rock)	SC, SM		141,200 2.00 7)	6.00-6.45	D	7	S N=11	0					4 3 3 5
SPT I WHERE FULL 0.3M FENETRATION MAS NOT BEEN ACHIEVE. THE NUMBER OF BLOWS FOR THE OUTED PENETRATIO IS GIVEN INOT N-VALUE; DEPTHS A ALL DEPTHS & REDUCED LEVELS IN METRES. THICKNESSES GIVEN IN BRACKETS IN DEPTH COLUMN WATER WATER LEVEL OBSERIVATIONS DURING BORING ARE GIVEN AS WATER LEVEL	N I	D DHE D DU YS WA Phe CC S ST		D SAMP PLE Sample Tube Mple L D PENE	•	E	c d	ATIEN	ECOVE	ERY (%)		ON IRC	-1	LOGGED BY

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GROUP ENGINEERING LABO				BORE HOLE NO : 6	, ·
NEAD OFFICE Ho 3, ANDERSON ROAD, CO LADORATORY 996A MARADAMA ROAD, COL	LONDO 5, SR1 LANKA Ovor IO.			SHEET 2 OF 2	
EQUIPMENT & METHODS Water Flush Rotary 75mm casing	Drill	PROJECT : Strom LOCATION : Horana		inage Plan for the Colom Metropoliti tanapitiya Bridge	bo an Region
CARRIED OUT FOR M/s, Nippon Koei Co		GROUND LEVEL		DATE 03.8.02	· · · •
		COOHDINATES		·	
SOIL CLASSIFICATION / VISUAL	LE SES	5AMPLE & TEST		DISTRIBUTION OF	FIELD
DESCRIPTION AND IDENTIFICATION	GROUP SYMBOL LEGEND DEFTH & THICKNESS REDUCED LEVEL	PENETRATION	NO TEST	20 40 60 80	RECORDS
. Weethered rock	(0.70)	7.00-7.45 D	8 S N=16		5 4 4 6
Rock		17.70 WS	9 -	derm de	50-No Penetration
Borehole Terminated at 7.70m depth					
•					
	-				
					•
· · ·					
SPT : WHERE FULL OUT PENETRATION HAS NOT BEEN ACHIEVE, THE NUMBER OF	SAMPLE/TEST KEY		W WATER	BAMPLE	LOGGED BY
BLOWS FOR THE OUOTED PENETRATIO IS GIVEN (NOT N-VALUE) DEPTHS - ALL DEPTHS & REDUCED LEVELS IN	B BULK SAMPLE WS WASHED SAMPLE PISTON IPI TUSE	I	C CORE F	RECOVERY (I) DUALITY DESIGNATION (ROD 1)	SCALE
METRES, THICKNESSES GIVEN IN BRACKETS IN DEPTH COLUMN WATER WATER LEVEL OBSERVATIONS DURING BORING ARE GIVEN AS WATER LEVEL		ENGTH TO SCALE			ANNEXTURE N

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GROUP ENGINEERING LABO	RATO	DRIES L	TD	· · · ·	BORE HOLE	NO : 7	
NEAD OFFICE No 3, ANDERSON ROAD, CON LADORATONY 906A MARADANA ROAD, COL	ะอมด์อ 5 ยมเรือ 10.	i, SRI UANI	(K		SHEET 1 O	F 2	, *
EGUIPMENT & METHODS Water Flush Rotary 75mm casing	Drill	· · · · ·	PROJECT :	Strom Water Old Kesbewa	Drainage Plan Road Met Bridge	for the Colo politian Re	mbo gion
CARRIED OUT FOR M/s, Nippon Koei Co	,Ltd.		GROUND LEVE	L #2.328 M	SL	DATE - 5-8.02	
			COORDINATES		403,165 E		_
SOIL CLASSIFICATION / VISUAL DESCRIPTION AND IDENTIFICATION	SYLBOL	DEPTH & THICKNES: REDUCED	SAMPLE	SAMPLE	DISTRIBUTION	· · ·	FIELD RECORDS
Road Construction.		201 201 201 201 201 201 201 201 201 201	<u> </u>		20 40	<u> </u>	·
Soft plastic clay with sand. Colour: Light Brown Colour Light Grey	요 미만하고 한테이트에 한국과 가슴에 이 한 번째 한 김 동네.		1.00-1.45 2.00-2.45 3.00-3.45	s	-3		2 1 2 2 GWL at 1.50m depth 1 1 1 1 2 2
Silty clayey sand. Colour: grey,	SS SS	<u>1977-1977-1977-1977-1977</u> 8 8	4.00-4.45		-10		2 3 4 8
Silty sand. Colour: Grey	SM.	(1.00)	5.00-5.45		i=30		-8 10 12
Medium to fine sand. Colour: Grey.	SP	6 (2.00)	6.00-6.45		S V=8		10 2 2
SPT ' WHERE FULL 0.3m PENETRATION HAS HOT BEEN ACHEVE, THE NUMBER OF BLOWS FOR THE OUOTED PENETRATION IS GIVEN (NOT N-VALUE) DEPTHS ALL DEPTHS & REDUCED LEVELS IN METRES, THICKNESSES GIVEN IN BRACKETS IN DEPTH COLUMN	D 9.1 W5			C CO R ROC	TUR BAMPLE RE RECOVERY III CK OUALITY DESIGN	NATION (ROD 1)	SCALE
WATER - WATER LEVEL OBSERVATIONS DURING BORING ARE GIVEN AS WATER LEVEL		VANE TEST					

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LABONATORY 996 A	ANDERSON ROAD, C Naraoana road, Ci	O C O X B O O C O X B O	10. 10.	LANKA					SHEET	2 OF	2		
EQUIPMENT & METHODS	Water Flush Rotar 75mm casing	y Drill			PROJECT +				ainage F ad Bri		or the politi		
CARRIED OUT FOR	M/s, Nippon Koei	Co,Ltd.	· ·		GROUND LEVE			,		DĄ	τ <u>έ</u> , 5.	8.02	
SOIL CLASSIFICATION		GROUP	LEGEND DEPTH &	REDUCED LEVEL	SAMPLE	SAN	<u>ለዋLE</u>		DIST'RIG		40		FIELD
		<u>55</u>		<u>F</u>	7.00-7.45	WS	NO' . 7.	TEST	20	40	00000) <u> </u>	SPT not done due to boiling
Same as above		SP								\mathbb{N}			of send.
			6		8.00-8.45	ם	8	- S			N > 50		'16
Silty clayey s Colour: Grey. (Cômpletely we	_	SC/ SM	(0.50 (1.1)	ŋ	-						ya i a		22 50-No Penetratio:
'Rock	•		****	. 	3.50	'WS	9	S		. 0	N>S	۰ ا	50-No Penetratio
Borehole Termi depth	nated at 8.50m .												
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HOT BEEN BLOWS FO	L 0.3m PENETRATION HAS ACHIGYG, THE NUMBER OF A THE OUOTED PENETRA NOT N-VALUE)		9 DULK S	IBD SAM Ample			c	CORE	BAMPLE				SCALE
METRES. TI BRACKETS	IS & REDUCED LEVELS IN HICKNESSES GIVEN IN IN DEPTH COLUMN		CORE	(P) TUBI SAMPLE	E E (U) OR LENGTH TO SCAL ETRATION TEST	.ε	ัก	RÓCK	OUALITY (DESIGNA	TION ING	U U	ANNEXTURE
	VEL OBSERVATIONS DURIN TE GIVER AS WATER LEVE	αį	Y YANE I										· ·

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GROUP ENGINEERING LABO	DRAT	TOR	IES	LT	D				BORE HOLI	E NO I	8	
IIEAO OFFICE № 3, ANDENSON ROAD, CO LADONATORY 996A, MARAGANA ROAD, CO	со и в о со и в о) 5, 9 10.	SRI 1	. A N X A					SHEET 1	OF	2	
ECUIPMENT & METHODS Water Flush Rotary 75mm casing					PROJECT :	Str Hig	om W h Le	ater vel R	Drainage P oad Bridg	lan for Metropo	r the Co olitian	lombo Region
CARRIED OUT FOR M/s, Nippon Koel C	o,Ltd.	÷			QROUND LEVE	íL : +	4.15	D MSL			4.8.02	
		T	S S		COORDINATES				DISTRIBUTIO			
SOIL CLASSIFICATION / VISUAL DESCRIPTION AND IDENTIFICATION	Shubot	EGEND	DEPTH &	REDUCED LEVEL	PENETRATION	SAM			'N' YALUES			FIELD RECORDS
	55	<u>لان</u>		LE V		TYPE	NO	TEST	20 4	0 60	. 80.	
				·			•				Ì	1.
Lateritic clayey sand with gravel.	ļ.							}				į
Colour: Reddish Brown (Fill)	sc	<u>e</u> (+;)	(1.50)									\
												, , I
	ŀ	÷	-1.		1.00	BS	1	-				
												GWL
											{	at 1.20m depth
			,					ł		1		
Soft plastic clay with sand.	Ì		-2		2.00-2.45	n.	2	s			•	2 2 2
Colour: Yellowish Brown	Сн		(1.50)			-		N=5-				2
· · ·					•	·						
		<u>:</u> _:		ŀ								
		· L	•					c		.		9 5
Medium to fine sand with a trace		 *	-3		3.00-3.45	D	3	N=13	Ð			3
of silt. Colour: Light Brown	SP		(0.50)	1							}	5
· · · · · · · · · · · · · · · · · · ·		117. 12					ļ	}		:		
]] }		Ì	
Silty send.			-4		4.00-4.45	D	4	8. N=9	e			4 4 3
Silty send. Colour: Grey	SM	*	(1.50			ĺ	ļ	1 1 - 2 1,5				3'
			ſ	.		1						
	ļ.					· ·	ľ					
			ł							Į		4
	4		-5		5.00-5.45	D	5	N=6	de l			2
Sandy silty clay.			:			ŀ						2
Colour: Greenish Grey.Parent rock fabric present.	CL/		(1.α						[[§]]			
(Completely weathered rock)					1	ĺ					1	
· · · ·	·),,,,,,,,,,,,,,,,,			6.00-6.45	D	6	S			-	3
Silty clayey sand with gravel.		10.X						N-18	' .]			7
Colour: Greenish grey Mottled	SC/		2.00									
White.	SM		.)*•• !]	1								
		94									•	
SPT & WHERE FULL 0.3m PENETRATION HAS	\$A	MPLE/	<u>ң 7</u> терт і		<u> </u>	- <u> </u> -			b			LOGGED BY
NOT BEEN ACHIEVE, THE NUMBER OF GLOWS FOR THE OUDTED PENETRATIC	D N	Dial	VABRO	S SAMP					SAMPLE			
IS GIVEN INOT N-VALUE) DEPTHS : ALL DEPTHS & REDUCED LEVELS IN	8	BULI S WAS	K SAM Bhed 1						RECOVERY (1) OUALITY DESI		(rod)	SCALE
METRES. THICKNESSES GIVEN IN BRACKETS IN DEPTH COLUMN		PIST	ION (P	1 TUBE	UI OR ENGTH TO SCALE	<u>.</u>			• /			ANNEXTURE N
WATER WATER LEVEL OBSERVATIONS, DURING BORING ARE GIVEN AS WATER LEVEL	s v		NDARI		TRATION TEST							•

Attachment -14 GROUP ENGINEERING LABORATORIES LTD BORE HOLE NO 1 8 HEAD OFFICE Ho 3, ANDERSON ROAD, COLONDO 5, SRI LANKA LABORATORY 996A NARADANA ROAD, COLONBO 10. SHEET 2 OF 2 PROJECT : Strom Water Drainage Plan for the Colombo Water Flush Rotary Drill EQUIPMENT & METHODS Metropolitian Region Bridge 75mm casing High Level Road LOCATION : GROUND LEVEL CARRIED OUT FOR M/s, Nippon Koei Co,Ltd. DATE - 4.8.02 COORDINATES SAMPLE & TESTS DISTRIBUTION, OF SOIL CLASSIFICATION / VISUAL THICKNES! DEPTH & REDUCED GROUP EGEND 'N' VALUES SAMPLE FIELD EVEL DESCRIPTION AND IDENTIFICATION PENETRATION RECORDS TYPE NO TEST 40 60 80 20 7.00-7.45 D 7 Б ź **x=22** 5 SC/ SM 7 Same as above lio ч ×. 7 17 |S |N=88 8 8.00-8.45 Ď 8 'n 21 Weathered mock (060) 50 WS S 8.60 9 50-No C Penetration Rock <u>> 5</u>9 Borehole Terminated at 8.60m depth SPT 1 WHERE FULL 0.3m PENETRATION HAS SAMPLE/TEST KEY LOGGED BY NOT BEEN ACHIEVE, THE NUMBER OF BLOWS FOR THE QUOTED PENETRATION IS GIVEN (NOT N-VALUE) D DISTURBED SAMPLE W WATER SAMPLE R BULK SAMPLE С CORE RECOVERY (1) 5CALE WASHED SAMPLE PISTON (P) TUBE (U) OR CORE SAMPLE LENGTH TO SCALE ALL DEPTHS & REDUCED LEVELS IN ¥۶ ROCK QUALITY DESIGNATION (ROD I) DEPTHS I B METRES, THICKNESSES GIVEN IN BRACKETS IN DEPTH COLUMN ANNEXTURE NO STANDARD PENETRATION TEST S WATER LEVEL OBSERVATIONS, DURING BORING ARE GIVEN AS WATER LEVEL WATER ۷ VANE TEST .

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GROUP ENGINEERING LABO	RAT	ORIES	LT	D		BORE HOL	ENO 1 9.	, .
NEAD OFFICE No 3, ANDERSON ROAD, COL LAUDRATORY 996A WARADAHA ROAD, COL	LONDO ONBO 10	5, SRI (A N K A			 SHEET I	OF 2	
EQUIPMENT & METHODS Water Flush Rotary 75mm casing						Drainage P1 Metr River Ban	an for the Colo opolitian Regio	mbo n
CARRIED OUT FOR M/s, Nippon Koei Co	"Læd.	÷			L +0.467_M	ISL.	DATE : 5.8.02	
	<u>t</u> .				478,284 N	403,597	E,	
SOIL CLASSIFICATION / VISUAL	SNABOL	ECEND DEPTH &	REDUCED	SAMPLE	SAMPLE	DISTRIBUT		FIELD
DESCRIPTION AND IDENTIFICATION	<u>3 8</u>	DEPTH		PENETRATION	TYPE NO TI	20 20 A	<u>10 60 80.</u>	1
Lateritic Fill		0 0 0 0						GWL. at 0.30m depth
		0 		1.00–1.45	D 1	3 67		SCT Note drapped freely
Soft organic clay	i -	#2 #2 #2		2.00-2.45	D 2	5. 6 .		do
Colour: Black., Inclusion of Medium	OH -			3.00-3.45	D 3	s p 1- as		1-45cm
to fine sand				4.00-4;45 °.	D 4 1	-3		1
Sandy plastic clay.				450-5.00	UD2 5	-		2
Colour: Grey Mottled Yellowish Brown.	СН	-5 (2.0	0)	5.00 5.45	5 D 6	5		2 2 2 1 1
		6		6.00 - 6.4	45 D 7	S N-14.		6 5 4
Silty sand with a trace of clay. Colour: Grey Parent rock fabric present. (Completely weathered rock)	SM							5
SPT & WHERE FULL 0.3M PENETRATION HAS HOT BEEN ACHEVE. THE NUMBER OF BLOWS FOR THE OUOTED PENETRATH IS GIVEN (NOT N-VALUE) DEPTHS : ALL DEPTHS & REDUCED LEVELS IN	ON D B	DULK SA	SAN	LE	0 0	ATEN BAMPLE ORE RECOVERY OCK QUALITY DI	(I) ESIGNATION (RGD I)	LOGGED BY
WATER WATER LEVEL OBSERVATIONS DURING BRACKETS IN DEPTH COLUMN WATER WATER LEVEL OBSERVATIONS DURING BORING ARE GIVEN AS WATER LEVEL	. 5	PISTON CORE S	IPI TUE AMPLE AD PEI	NE IU) OR Length to Sca Netration test	LE			ANNEXTURE

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EAD OFFICE Ho 3, AIIDENSON ROAD, CO IDONATORY 996A WARADAHA ROAD, COL	LOND: Oxeo	05, 10.	SRI L	K N K K					SHEET	2 0	=	2	
DUPMENT & METHODS Water Flush Rotary					PROJECT	Stro	n Wat	er Dr	ainage	e Plan	for	the Co	lombo
75mm casing					LOCATION .	Deni	yawat	ta	N Rive:	Metrop r Bank	oliti	ian Reg	ion
ARRIED OUT FOR M/s, Nippon Koei Co		.'			GROUND LEVE	L		• .				6.8.0	
ARRIED OUT FOR M/s, Nippon Koei Co					COORDINATES					I	JÁIE	0.0.0	· -
OIL CLASSIFICATION / VISUAL						SAMPLE & TESTS					N, OF		
ESCRIPTION AND IDENTIFICATION	GROUP	LEGEND DEPTH &	HL N	REDUCED	PENETRATION	SAM	NO	TEST	'N' VALUES				
1	95		<u> </u>	<u> </u>	7.00-7.45	D	, 8	S	Ŷ	<u>40</u>	<u>60</u>	80	12
				•				N=9			ł		2 3 3
•													3.
Colour Yellowish) (3.00)				ŀ						.]
Brown	SM									1			2
Same as above Mottled Grey		• • • • •	8.		8.00-8.45	מן	9	S N-11	 	ł			3
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	1		91		9.00-9.45	ם	10	N=14				, ľ	3
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			3] 				·	.		ŀ		ł	
Silty clay with sand . Sol.	ł			ľ		ļ		ł					
Colour: Yellowish Brown Mottled Grey Parent rock fabric	, ML		2 (2.00	**						.	ľ	ĺ	5.
present. (Completely weathered rock)		13.7	-10	1	10.000-10045	D.	11	S N=19					5
(Completel) weather of four			ž			ŀ.							Ż
	1		÷.	1								:	ļ
			×				ł					.	
· · · ·].							s					7
	1		11		11.00-11.4	5 D	12	N=14	4 1	1 '			5
Silty sand with gravel.	ł	0	j/							N		· ·	5
Parent rock fabric present. Colour: Yellowish Brown Mottled	ı st×		(1 C	o)					1. 1.				
Dark Grey. (Weathered rock)		Ē	0	ł	l.				Ì	$\left[\times \right]$			
		.ø `×	0	Ì		-		, _	ſ		\mathbf{N}		50-No
Silty fine sand (weathered roc	SI SI	1	<u>ka k</u> d.3	.5)	12.00	D		3 S		ĺ		N>S0	Penetr
Rock		14	**H	·		Ï		l	ļ		ļ		
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Borehole Terminated at 12.15m								Ì					
depth	·					1							
	ļ									ŀ	1.		·
SPT WHERE FULL O.3m PENETRATION HAS		SAMP	L	TKEY			l	1	<u></u>				LOGGE
NOT BEEN ACHIEVE, THE NUMBER OF BLOWS FOR THE QUOTED PENETRA			DIO'TURE		NPLE .		W		n 'eam	4	••		
IS GIVEN INOT N-VALUE			BULK S. WASHED		LE		с 'п			VERY U		ION (ROD	SCALE
DEPTHS ALL DEPTHS & REDUCED LEVELS IN METRES. THICKNESSES GIVEN IN			FIST.ON	IP) TUE	E (U) OA LENGTH TO SC	ALE							ANNEX
BRACKETS IN DEPTH COLUMN					NETRATION TEST								