6.3.2 Boring Logs

ţ.	KS	BKS Global Mozambique Lda				ВС	RII	NG	LO	G							REHO	LE	BH1	
=		Soil Test for Ile-Cuamba Bridges	Coord	inates:	S:		200000	17.110111		-	3	01005.2	97	Water	r Level			-5.1	20	m
		S-Abutment of Bridge 1, Mutabasse			ation, m					331.			m					4/5/2		
		Secretaria de Cara de Sola de Cara de	100000000000000000000000000000000000000											10000	-		-		7-19-5	-:
LIEN	11:	Chodai & EJEC	Max.U	nlling L	Depth:					9.4	0		_ m	Finish	ning L	ate:		5/5/2	011:	= 1
	GRAPHIC LOG	SOIL DESCRIPTION	SAMPLING METHOD	SAMPLE NO.	RECOVERY (cm)		To Ur Wei	nit ight		000000000000000000000000000000000000000	\vdash	Natural Water Content	T Diguid Limit		Specif Gravit			Blov	SPT w Count low/ft)	t
		0.0-3.0 m, CH, sandy CLAY, 48% fine-medium subangular				1.0	5 1.	8 2.0	0	30	60	90	120	2,4	2.6	2.8	1	0 20	30	40
-		sand with random fine-coarse subangular gravel of 3 cm	WO	_								_	-		_	+	-		+	+
1 -	<u> </u>	max sized, high plasticity, medium stiff-stiff, traces of decomposed muscovite, reddish brown, <u>Backfill</u>	WO								-	_	-		+	+		\vdash	-	-
-	/	**************************************	SS	1	25						_	_	-		+	+	14		+	+
2	1		WO				_			21		_	-		-		. 3	1	00	+
-			SS	2	25			•	.9	•		_	-		4	2.7			20	1
3	SIDE STORES	0.000 011 11 01110 000	wo							7						-				
		3.0-6.0 m, SM, silty SAND, 28% silt, fine-medium subangular sand, medium-dense, some traces of	SS	3	32					•						2.7		•	20	_
4		decomposed muscovite, reddish brown, Backfill	wo	_									_		_	_			1	-
			SS	4	31														1	34
5	/		wo																1	
- 1			SS	5	30														4 35	
6			WO							11									-	1
- 1	/	6.0-6.4 m, SM, silty SAND, Granitic Residual Soil	SS	6	15					•					- 1	2.7		П		
,]		6.4-7.0 m, granitic GNEISS, fine grained, moderatly weathered, hard, pale whitish-greenish gray,			65															
٠]		Rock Basement	C1	46	- 00															
. 1	70.00	7.0-8.9 m, expected shear zone within granitic GNEISS basement			0															
8	7.0-0.3	Dasement			1 0															
. 1		8.9-9.4 m, granitic GNEISS, coarse grained, fresh, very hard, traces of continuous layering of pale	C2	15	7022											Т		П	T	
9		gray quartz vein, greenish gray, Rock Basement	C3	87	60													П		
1		End of Borehole @ 9.4 m																		
- 1		Coring: 2 nd Col = %Recovery, 3 ^{nt} Col = %RQD											+		\top	+		\Box	+	
1		Security Control of the Assessment Control of the C											\top					\Box	\pm	+
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B	KS	BKS Global Mozambique Lda				BC	RII	NG	LO	G						S	HEET		1 ()F	1
RO.	ECT:	Soil Test for Ile-Cuamba Bridges	Coord	inates:	S:	82	090	19.09	15	E:		300960	.382	Wate	er Lev	el:		-1.6	40		m
oc.	ATION:	N-Abutment of Bridge 1, Mutabasse	Groun	d Eleva	ation, n	n-MSL				328.	647		m	Start	ing D	ate:		3/5/2	011	_	
JEN	IT:			rilling (60		m	1				3/5/2	011		
					100								-518		1334						
	100		m	Q	IY (cm)		To			20344030	Plastic Limit	Natural Water Content	Liquid Limit		Spec	cific			SPT v Cour	nt	
	GRAPHIC LOG	SOIL DESCRIPTION	SAMPLING	SAMPLENO	RECOVERY (cm)		(Ton		0	30	-	(%)	-		Grav	vity 2.8		(Bi	iow/ft)		
		0.0-2.3m, SM, silty SAND, 21% silt with random fine subangular gravel of 2 cm max sized, fine-medium	wo																		
	,	subangular sand, traces of decomposed muscovite & layering, medium-very dense, striped color of yellowish	WO									Н	_			_	1		_	1	
	/	brown-brown-pale grayish white, Granitic Residual Soil	SS	1	38			•	2.0	• 1	5		-			• 2.6	-	H	21	_	_
			WO		30		_			_			-		-	-	-	\vdash	-	\rightarrow	
		2.3-5.0 m, expected shear zone within granitic GNEISS	SS	2	30		-	-	-			Н	+			+	+	Н	+	+	\dashv
		basement	C1	Loss			-	-				Н	+			-	+	\vdash	+	+	-
	2.3-5.0		C2	Loss												\top	\top	\Box		†	
			C3	Loss								П						П		T	
			C4	Loss	39																
		5.0-7.6 m, granitic GNEISS, coarse grained, highly weathered on top 20 cm then fresh throughly & very hard,																Ш		4	
		5.0-7.6 m, granitic GNEISS, coarse grained, highly weathered on top 20 cm then fresh throughly & very hard, traces of continuous layering, greenish gray, <u>Rock</u> <u>Basement</u>	C4	93	89																
			C5	92	43		_					Н	-		_	+	+	\vdash	+	+	-
	*********	End of Borehole @ 7.6 m			_		-	-	-	-	-	Н	+			+	+	\vdash	+	+	-
-		Coring: 2 nd Col = %Recovery, 3 rd Col = %RQD					-					H	+			+	+	\forall	+	+	\dashv
		51 0.00														+	+	\Box	+	+	\exists
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1																					
		Loss																			
- 1		Lab, WO - Wash , SS-Split Spoon , C - Coring																			

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LSI	<u>S</u>	BKS Global Mozambique Lda				ВС	ORIN	IG L	-00	G —							SHE	ET		1 OF	1
PROJE	CT:	Soil Test for Ite-Cuamba Bridges	Coord	inates:	S	_ 8:	20899	5.987	<u> </u>	E:_	3	00999.	983	Wat	er Le	vel:			-0.6	0	m
OCAT	TION:	N(R)-Riverside of Bridge 1, Mutabasse	Groun	d Eleva	ation, n	n-MSI				324.4	39		_ m	Star	ting (Date:			6/5/20	011	-3:
LIENT	1	Chodai & EJEC	Max.E	rilling (Depth:		-			4.4	0		_ m	Finis	shing	Dat	0:	_	6/5/20	011	-
(m)	5010	anu prospinziou	57	NO.	RY (cm)		Tot			Annal of Incide	disting current	Natural Water Content	Liquid Limit		Spe	cific				SPT Count	
DEPTH (m.)	GRAPHIC LOG	SOIL DESCRIPTION	SAMPLING	SAMPLENO	RECOVERY (cm)	1.	(Ton/	m ³)		30		(%)	-	,	Gra		8	14	(Bi	ow/ft)	40
	./	0.0-1.4 m, SW-SM, SAND with silt & gravel, 27% fine subangular gravel of 2 cm max sized, 10% silt, fine-	wo																		
1	/.	medium subangular sand, well graded, very dense, brown- greenish gray, River Sand	WO	0,				-	4			4	+			•			_	+	
. 8		1.4-3.0 m, expected shear zone within granitic GNEISS	SS	1	25	-		+	-	•	13	-	+		H	·	-			+	+1
1	1.4-3.0	basement	C1	Loss						1											
1		3.0-4.4 m, granitic GNEISS, coarse grained, moderate- highly weathered on top 40 cm & fresh throughly, hard-	C2	Loss				1	1												
1		very hard, traces of discontinuous layering of pink quartz vein, pale pinkish-greenish gray, <u>Rock Basement</u>	CI	0	. 96			H	-	4	4	-		F							
ť	, cert	End of Borehole @ 4.4 m																			
1		Coring: 2 nd Col = %Recovery, 3 nd Col = %RQD																			
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1		Loss																			
1		Lab, WO - Wash , SS-Split Spoon , C - Coring																			

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L	_	BKS Global Mozambique Lda				ВС	rkil	NG	LU	3						- 1	SHE	-1	-	I OF	1
ROJ	ECT:	Soil Test for Ile-Cuamba Bridges	Coord	inates:	S:	82	20899	91.84	6	E:	3	00972	127	Wate	er Lev	vel:			-1.20	6	m
OCA	TION:	N(L)-Riverside of Bridge 1, Mutabasse	Groun	d Eleva	ation, m	n-MSL		_		326.	231		m	Start	ting E	Date:		1	/5/201	11	8
LIEN	T:	Chodai & EJEC	Max.D	rilling (Depth:					4.4	0		m	Finis	hing	Date	D: _	2	2/5/201	11	0
	100			6	(cm)		To			1000000	Plastic Limit	Natural Water Content	id Limit		Spe	cific				PT Count	
DEFINITION	GRAPHC	SOIL DESCRIPTION	SAMPLING	SAMPLENO	RECOVERY (cm)		(Ton			30		(%)	T 120	,	Gra			10	(Blo		10
		0.0-1.4 m, SM, silty SAND, 30% silt, fine-medium subangular sand, very dense, dark brown, <i>River Sand</i>	WO																		
1 -			WO	100								-	+					-	+	+	
		1.4-4.4 m, granitic GNEISS, coarse grained, slightly weathered-fresh, hard, not obvious traces of discontinuous layering, pale greenish gray. <u>Rock Basement</u>	SS C1	100	92			2.0		• 1	,					• 2	<i>t</i> :			F	
	▦		C2	100	81													1		+	
1			C3	100	01																
+	₩		C4	100	53		-		-	Н	-	-	+			-	\dashv	-	+	+	-
1		End of Borehole @ 4.4 m																			
1		Coring: 2 nd Col = %Recovery, 3 nd Col = %RQD																			
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E	r	BKS Global Mozambique Lda				R/)BII	NG	10	G							OREI	HOLE	-	BH1-	
	~	BR3 Global Mozallibique Eda					<i>-</i>	•		_							, LL		•	-	-
ROJ	ECT:	Soil Test for Ile-Cuamba Bridges	Coord	inates:	S	_ 8	2089	60.86	6	E:		00983	798	Wate	r Lev	el:	_		1.65		m
OCA	ATION:	S(L)-Riverside of Bridge 1, Mutabasse	Groun	d Eleva	ation, n	n-MSI		_		324.	700		m	Start	ing D	ate:	_	29/	6/201	1	
JEN	IT:	Chodai & EJEC	Max.D	rilling (Depth:					4.8	85		_ m	Finis	hing	Date:	_	1/7	/2011	6	
_															7.27						
DELL'IN LIE J	GRAPHIC LOG	SOIL DESCRIPTION	SAMPLING METHOD	SAMPLE NO.	RECOVERY (cm)		We	nit ight n'm³)			Plastic Limit	Natural Water Cortent	Liquid Limit		Spe				SPT low Co (Blow)	ount	
		0.0.2.0 m CM alls CAND 40% alls for madium				1.	6 1.	8 2	0	30) 6	90	120	2,	4 24	2.8	1	10	20 :	30 4	10
		0.0-2.0 m, SM, silty SAND, 16% silt, fine-medium- subangular sand with some little coarse, very loose, light	WO														1				
1		brown, River Sand	WO	194		\vdash					8		+		-	• 2.7	١.		-		
-			SS	1		-							-		-	-	-	-	+	Н	-
1		2.0-3.0 m, SW-SM, SAND with silt-silty SAND, 10% silt,	WO	2			_		-		8	-	+		-	• 26	+	8	+		-
+		fine-medium subangular sand, loose, well graded, dark- yellowish gray, <u>River Sand</u>	WO			-			-			-	+		\dashv	+	+	+	1		
+	3.0-3.4	3.0-4.8 m, granitic GNEISS, medium grained, fresh, very	***			-							-		\dashv	+	+	+	+		
1		hard, comprise quartz mostly, traces of discontinuous layering and some quartz vein, grayish-brownish white-	C1	56	50	\vdash							+			+	+	+	+		
		pale gray, Rock Basement											+			+	+	+			
. 1			C283	100	60												1				
		End of Borehole @ 4.85 m														\top	1	1	T		
1		Coring: 2 nd Col = %Recovery, 3 rd Col = %RQD																			
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B	K	BKS Global Mozambique Lda				В	ORII	٧G	LO	G							SHE	ET		1	OF	1
RO.	JECT:	Soil Test for Ile-Cuamba Bridges	Coord	inates:	s	. 8	2368	37.29	90	E:	3(00055.	639	Wate	er Lev	el:			-1.	90		m
.oc	ATION:	S-Abutment of Bridge 2, Muliquela	Groun	d Elev							924			Start	ing D	ate:			30/4/	2011		
LIEN	NT:	Chodai & EJEC	Max.E	rilling l	Depth:					9.1	80		_ m	Finis	hing	Date	o:		1/5/2	2011	_	
						_							-315		1237		_	_				Ц
	227				2		То	tal			Œ	Vator	Œ							SPT		
Ê	GRAPHIC LOG		0	9	RECOVERY (cm)		U	nit		1 8	Plastic Limit	Natural Water Content	Liquid Limit		Spec	cific			Blo	w Cou	unt	
DEPTH (III)	APHIC	SOIL DESCRIPTION	SAMPLING METHOD	SAMPLEND	COVE			ght		8	\vdash	•	⊣		Gran	vity			(B	Blow/ft	1)	
5	6		S. M.	8	S.	١,	(Tor		0			90	120	١.,							0 40	
		0.0-2.0 m, CL, CLAY with gravel, 10% fine subangular gravel of 2 mm max sized & 20% coarse subangular gravel	WO			1					Ĭ	1			4 2.6	- 64			0 20			٦
1 -		of 3 cm max sized, medium plasticity, medium stiff, light reddish brown, <u>Backfill</u>	WO						;													
	0	reddistrations, <u>percent</u>	SS	1	23						Ш	_	1					• 5				4
2 -	200000000000000000000000000000000000000	2.0-3.0 m, SM, silty SAND, 22% silt, fine-medium	WO			H		_	2.0	16	Н	-	+			•	7	• 5			_	4
		subangular sand, loose, dark greenish gray, <u>Granitic</u> <u>Residual Soil</u>	SS	2	20	-	Н				Н	+	+					H	Н	\vdash	+	\dashv
3 -		3.0-5.0 m, CH, sandy CLAY, 39% fine-medium subangular	SS	3	45				1.9		96		+			2.6		1	6		+	\dashv
	7	sand, high plasticity, medium stiff, with some wood remnant, grayish green, Granitic Residual Soil	wo								\Box											7
4	/		SS	4	26														1	18		
5 -			wo																1			
		5.0-6.8 m, SM, silty SAND, 33% silt, fine-medium subangular sand, very dense, stripes of brown & gray,	SS	5	30	-					Н	-	+							21		4
6 -		Granitic Residual Soil	WO	6	28	H		•	.9	26	H	+	+	Н	-		2.7				-	1
			WO	0	28	H					H		+			-					+	-
		6.8-9.8 m, granitic GNEISS, coarse grained, fresh, hard- very hard, traces of continuous layering, pale-dark greenish gray, <u>Rock Basement</u>	C1	100	68																	
a 1		grown gray i the same and the s	CZ	100	44	F															Ħ	7
			СЗ	100	70																	4
0 -	111111111	End of Borehole @ 9.8 m				t					Н											\exists
		Coring: 2 nd Col = %Recovery, 3 nd Col = %RQD																				
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		Loss																				
		Lab, WO - Wash , SS-Split Spoon , C - Coring																				

	V	DVS Clobal Manambiana I da				P/	יים	NC.		c							BORE		ВН	
LS	<u> </u>	BKS Global Mozambique Lda				BC	DRII	NG	LO	G							SHEET		1 0	1
ROJ	JECT:	Soil Test for Ile-Cuamba Bridges	Coord	inates:	S:	8	2369	52.01	6	E:		00023	648	Wate	er Lev	vel:	_	-1	.50	_ m
OCA	ATION:	N-Abutment of Bridge 2, Muliquela	Groun	d Elev	ation, n	n-MSI	L;			410.	623		m	Start	ing E	ate:	-	29/4	/2011	
JEN	IT:	Chodal & EJEC	Max.D	rilling (Depth:					6.	10		m	Finis	hing	Date		30/4	/2011	_
_					_	_				_							_			
	GRAPHIC LOG	SOIL DESCRIPTION	SAMPLING METHOD	SAMPLE NO.	RECOVERY (cm)		To Ur We	nit			Plastic Limit	Natural Water Content	Liquid Limit		Spe				SPT ow Coun Blow/ft)	t
	GRA		SAM	SAM	REC	١,	(Tor		0			(%)	120	١,	4.34	5 2.8		10	20 30	40
		0.0-2.9 m, SM, silty SAND, 34% silt & clay, fine-medium subangular sand, slight-non plasticity, medium dense,	WO			A							170		7.2	- 4.0				7
1		greenish brown, Granitic Residual Soil	WO						_											
	/		SS	1	40	_		2.1	٠	•	6					• 2	.7	• 13	2	
			WO															1		
			SS	2	40								-				_	•	17	-
		2.0.6.1 m avanitis CMEICC source avaiged slightly.	WO										_				_	-		
		2.9-6.1 m, granitic GNEISS, coarse grained, slightly-moderately weathered on top 30 cm with brownish white them fresh throughtly, very hard, traces of continuous layering, pale-dark greenish gray. <u>Rock Basement</u>	C1	83	61	_						-			-	-				+
		layering, pale-dark greenish gray, <u>Rock Basement</u>			95															
			23	94	33															
				-	90													1		
,	#####		C3	92													_			
		End of Borehole @ 6.1 m				L			Щ				-				_	+	1	+
4		Coring: 2 nd Col = %Recovery, 3 nd Col = %RQD				-							-			-	-	+	-	+
4			_	-		-			_		_		-		_	-	-	+	-	+
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1		Loss				-		-							-	-	+	+		+
- 4		Lab, WO - Wash , SS-Split Spoon , C - Coring			_	-			-	-	-		-		_	-	-	-	-	-

	_					-				_								EHO	E	BH2	_
L	7	BKS Global Mozambique Lda				ВС	KII	NG	LO	G							SHE	EI		1 OF	1
RO.	JECT:	Soil Test for Ile-Cuamba Bridges	Coord	inates:	S:	82	3692	24.45	6	E:	3	100034	.812	Wat	er Le	vel:			-0.6	50	m
oc.	ATION:	N-Riverside of Bridge 2, Muliquela	Groun	d Elev	ation, n	n-MSL				407.	996		m	Star	ting E	Date:		2	8/4/2	2011	-
IEI	NT:	Chodai & EJEC	Max.D	rilling (Depth:						70		m	Finis	shing	Date	e:	2	9/4/2	2011	
					100								-518		100						
					5		To	tal			Œ	Water *	픨						3	SPT	
ì	5010	SOIL DESCRIPTION	9.	9	RECOVERY (cm)		Ur			18	Plastic Limit	Natural Water Content	Liquid		Spe					v Count	
DEPTH (m.)	GRAPHIC	SOIL DESCRIPTION	SAMPLING METHOD	SAMPLENO	COVE		Wei			8	\vdash	•	⊣ ¯		Gra	ivity			(Bi	iow/ft)	
5	6		SA	S.	8		(Ton	i/m") 3 2.0		30		(%)	120	١,	4 2				20	30	40
	,	0.0-1.7 m, SM, silty SAND, 28% silt & clay, fine sand, slight plasticity, very loose, brown, River Sand	wo			A.0		-			- 0	1	10	Г	7 2	2					
1	/	presently, rely roose, provin, rever come	wo																		
		4.7.4.7 m. genetic CNEICS general availant alighth.	SS	1	40			2.0	•	•	24					• 2.6	-	0	-		
2 .		1.7-4.7 m, granitic GNEISS, coarse grained, slightly weathered on top 50 cm & fresh throughly, hard-very hard,		1921	64		-	-				-	-	-				-	-		
		with white quartz veins @ 1.7-3.2 & 3.7-4.7 m, traces of discontinuous layering, pale-dark greenish gray, <u>Rock</u>	C1	89				-	-	Н	-	-	+		Н	-	Н	-	+	+	\vdash
3		Basement	C2	100	100		-						+				Н		+	+	
					400																
4			C3	95	100																
		End of Borehole @ 4.7 m																		_	
		Coring: 2 nd Col = %Recovery, 3 nd Col = %RQD	_				-		_				-						-	-	
		,						-	-		-	-	+	\vdash		-	Н	-	-	+	
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_		Lab, WO - Wash , SS-Split Spoon , C - Coring																			

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ţ.	K	BKS Global Mozambique Lda				BC	RIN	NG	LO	G						SHE	ET		1 OF	1
PRO	JECT:	Soil Test for Ile-Cuamba Bridges	Coord	inates:	S:	82	25173	38.59	2	E:	2	99492.	231	Water L	evel:			-3.90)	m
LOC	ATION:	S-Abutment of Bridge 3, Matacasse	Groun	d Elev	ation, n	n-MSL				498.	608		_ m	Starting	Date			10/5/20)11	-0:
LIE	NT:	Chodai & EJEC	Max.D	rilling l	Depth:					16.	50		_ m	Finishin	g Da	te:		12/5/20)11	
				_	_					_							_			
	-				2		To	tal			THE STATE OF	Water	Œ					S	PT	
É	007.0	SOIL DESCRIPTION	90	9	RY (c		Ur			1 8	lastic Limi	Natural Wat Content	Uquid Limi		pecific				Count	
DEPTH (m.)	GRAPHIC LOG	SOIL DESCRIPTION	SAMPLING	SAMPLEND	RECOVERY (cm)		Wei			8	\vdash	•	\dashv	G	ravity			(Blo	w/ft)	ļ
۵	0		82	9	20	1.0	(Ton		n n	30		(%)	120	24	2.6 2	R	10	20	30	40
		0.0-4.0 m, MH, sandy SILT, 48% fine-medium subangular sand, slight plasticity, loose-medium dense, light reddish	WO																Ĩ	
1		brown, Backfill	WO																	
			SS	1	35							-	+		+	H		1	23	
2	/		WO	2	25		-	-		23		-	+			2.7		18	В	
			WO		20				-		\exists	\pm	+		+			4	+	\vdash
3			SS	3	22										+		\$ 5			
4			wo								44									
		4.0-5.0 m, ML-CH, sandy SILT-silty CLAY, 31-45% fine sand, medium-high plasticity, very loose, dark brownish	SS	4	45		- 1	1.8			•					2.7	2			
5		gray, River Sitt & Clay 5.0-13.5 m, SM, silty SAND, 20-30% silt, fine-coarse,	UD	1	50				_		-	+	+		+	H		• 13	+	
		subangular sand, comprises mostly quartz & feldspar, lose on the first meter, medium dense to 11 m then	SS WO	5	20		-	-	-			+	+	-	+	H	1	-	+	\vdash
6		dense, traces of rock texture, layering, decomposed muscovite & feldspar, light yellowish brown with some	SS	6	17							+	+		+	H	4	-	+	Н
0		white & greenish gray, Granitic Residual Soil	wo		- 57/					20			+		+	t	1	_	+	Н
7	1 /		SS	7	23			•	.9	•					•	27		12		
8	/		wo															1		1
	1		SS	8	23								-		-	1		1	23	\sqcup
9			WO		18						-	+	+		+	H	H	• 16	+	Н
	1		SS	9	18						-	+	+		+	\vdash	-	+	+	
10			SS	10	18							+						• 16		Н
	1 /		wo																1	
11	/		SS	11	20														Ì	35
12			WO		10000					17		_	-					_	-	
	1		SS	12	32			• 1.4	_	•	-	-	+		+	2.7		+	1	
13	1		SS	13	3				-			+	+		+	H		+	+	-
		13.5-16.5 m, granitic GNEISS, coarse grained, moderately										\forall	+		+	H		\pm	+	
14		weathered on top 1.7 m with brittle and whitish brown then fresh with hard and greenish gray throughly, with pink	C1	100	56													T		
15		minerals, traces of discontinuous layering, pale-dark greenish gray, Rock Basement	C2	50	27								_					4		
	4												-		+	H		+	-	
16			СЗ	100	100		-	-			-	-	+	-	+	\vdash		+	+	H
	311111111	End of Borehole @ 16.5 m										+	+		+	H		\pm	+	\vdash
	1	Coring: 2 nd Col = %Recovery, 3 nd Col = %RQD							ĺ									\top		
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		Lab, WO - Wash , SS-Split Spoon , C - Coring																		

	V	DVC Clobal Max				PC	ייפו	WC	10	c							REHO	LE	BH	
L	<u> </u>	BKS Global Mozambique Lda				ВС	ORII	NG	LO	G						SH	EET		1 0	F 1
PRO	JECT:	Soil Test for Ile-Cuamba Bridges	Coord	inates:	S:	82	2517	63.53	34	E:	- 2	299462	2.557	Water	Level:		_	-4	10	_ m
LOC	ATION:	N-Abutment of Bridge 3, Matacasse	Groun	d Elev	ation, n	n-MSL				498	804		m	Startin	g Date);	_	7/5/2	2011	-9,5
LIE	NT:	Chodai & EJEC	Max.D	rilling l	Depth:					16.	60		m	Finishi	ng Da	ite:		9/5/2	2011	
					_	_				_							_			
					2		To	tal			Œ	Water	THE CHI						SPT	
Ê	507 0	SOIL DESCRIPTION	90	9	RECOVERY (cm)			nit			astic Limit	Natural Water Content	1 Pinhol I		pecific				w Coun	t
DEPTH (m.)	GRAPHIC	SOIL DESCRIPTION	SAMPLING	SAMPLENO	COVE			ight		3	-	•	⊸ ¯	30	Gravity			(E	Blow/ft)	
ä	8		SA	S.	8			v/m³)				(%)			12040-12			u cree	20 20 00	7000
_		0.0-4.0 m, ML, sandy SILT, 33% fine-coarse subangular	WO			1.0	0 1.	8 2		30		0 90	120	2.4	2.6	2.8	10	- 2	0 30	40
1		sand, medium dense, light reddish brown, <u>Backfill</u>	wo																	
			SS	1	30														• 22	
2	. /		WO					• 1	0		26				-					1
			SS	2	30		_		.9	Ŀ	26	H	-		┈.	2.7		1	18	+
3			wo	3	29		_	-			H	H	+		+	+		. 1		+
58			wo		- 20						H	\vdash			+	+	1			1
4	/	4.0-5.0 m, ML-CH, sandy SILT-silty CLAY, <50% fine sand, medium-high plasticity, very loose, dark brownish gray,	SS	4	32							П			\top		-(2			+
5		River Silt & Clay	wo																	
		5.0-6.0 m, SM, silty SAND, 15% silt, fine-coarse subangular sand, medium dense, brownish gray, <u>Granitic</u>	SS	5	10												1	• 13		
6		Residual Soil 6.0-8.0 m, SM, silty SAND, 37% silt, fine-medium	WO					_	L				1		١.		1			1
		subangular sand, traces of rock texture, shinny	SS	6	25		•	1.7	L	-	•	0	_		٠.	2.7	2	Ш		+
7	/	decomposed muscovite & feldspar, very. Loose, pale whitish gray, Granitic Residual Soll	wo	7	10			_		-	H	H	-		+	+	1	,		+
	/	1985/1986/1986/1986/1986/1986/1986/1986/1986	wo	-	10							H			+	+		1		+
8		8.0-10.0 m, SM, silty SAND, 20% silt, fine-coarse,	SS	8	8							\Box			+	+			• 22	+
		subangular sand, medium dense, yellowish brown, Granitic Residual Soil	wo						П		Г	П			Т	Т	П	П		т
9			SS	9	15					•	18				•	27			• 22	
10			WO																	
33		10.0-13.6 m, SM, silty SAND, 20% silt, fine-coarse subangular sand, traces of rock texture, shinny	SS	10	30						L	Ш			_	-	Ш	•	16	_
11		decomposed muscovite & feldspar, medium dense-dense, dark yellowish brown-dark yellowish gray, <u>Granitic</u>	WO				_			L		H	-		+	+				41
		Residual Soil	ss	11	32							H	+		+	+				4
12			SS	12	35										+	+			-24	
13			wo						П		П	П					П			
13	10000000		SS	13	22					•	18				•	27				
14		13.6-16.6 m, granitic GNEISS, coarse grained, slightly weathered-fresh, very hard, greenish gray, <u>Rock Basement</u>	C1	100	100															
												Н	_		+	-	\vdash			-
15			C2	93	83		_	-	H	H	H	H	-		+	+			-	+
				-								Н			+	+				+
16			C3	53	100						Н	H			+	+				
		End of Borehole @ 16.6 m																		
		Coring: 2 nd Col = %Recovery, 3 nd Col = %RQD																		
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		Loss																		
		Lab, WO - Wash , SS-Split Spoon , C - Coring																		

RKK	BKS Global Mozambique Lda				ВС	RIN	IG L	.OG	;						BORE		-	BH4 OF	
		Coord	unter			21.000				20700	0.012	IA/a	ter Le			100		. 93.9	-
	Soil Test for Ile-Cuamba Bridges S-Abutment of Bridge 4, Lua	Groun									0.913	7	rting (-		4/201		m
JENT:	Chodai & EJEC	Max.D			1-MSL			-	5.00			1	ishing t			11000	4/201		- 1
	Citoda a ESEC	max.U	many c	repuii.		-			3.00			100	Silling	Dair	-	201	41201	-	
GRAPHC LOG	SOIL DESCRIPTION	SAMPLING METHOD	SAMPLE NO.	RECOVERY (cm)		Tot Un Wei	it ght		Plastic Limit	Natural Water	$\overline{}$			ecific			SP1 low Ci (Blow	ount	
1000000	0.0-1.5 m, SP-SM, SAND with silt&gravet, 10% silt, 20%	wo	0 0		1.3	1.4	1.6	+	30	60 9	120	+	2.4.2	6 2.8	8	10	20	30	40
1/	angular gravel of schist, fine-medium subangular sand, traces of shinny decomposed muscovite, medium dense,	wo						1				†					†	\top	+
/ •	dark brown, Crust with Schist Residual Soil	SS	1	24				1	• 14						2.8		• 18	-	
	1.5-5.0 m, granitic GNEISS, coarse grained, moderately weathered on top 0.5 m then fresh throughly, very hard,	wo																	
-	with trace of discontinuous layering, greenish gray-dark gray. Rock Basement	C1	100	85				1								1	ŧ	F	
-			100	100		-	-	+	+	Н		+			-	-	+	+	H
		C2	100	100				1				F	F				F	F	F
4111111	End of Borehole @ 5.0 m							+	+								+	+	t
1	Coring: 2 nd Col = %Recovery, 3 nd Col = %RQD																		
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]	Loss																		
	Lab, WO - Wash , SS-Split Spoon , C - Coring																		

																	BOR		LE		4-2
Ħ	S	BKS Global Mozambique Lda				BC	DRII	NG	LO	G							SHE	ET		1 0	F 1
BO I	FCT.	Soil Test for Ile-Cuamba Bridges	Coord	inates:		R	2527/	67 RR	n:	E	207	034.21	14	Wate	r Lov	inl-			-31	00	m
		N-Abutment of Bridge 4, Lua		d Elev				07.00		509.5				Start				2		2011	
LIEN		Chodai & EJEC		rilling (6.70	100			Finis					5/4/2		-0.0
LIEN		Criodal & EJEC	WillX.	mang t	Depth.					0.7	,		·m	rinis	ning	Date		-	30/4/1	.011	=
DEPTH (m.)	GRAPHC LOG	SOIL DESCRIPTION	SAMPLING	SAMPLE NO.	RECOVERY (cm)		To Ur Wei	nit ight		District Lines	-	Content	Liquid Limit		Spe				Blov	SPT v Coun	
ă	Ö		8 2	93	. W	1.	(Ton		6	30	60		20	2	4 2.6	5 21	8	10	20	30	40
		0.0-3.0 m, SM, silty SAND, <50% silt with little clay, fine sand, slight-low plasticity, loose, light reddish brown,	WO								T	1									
,]		Backfill	WO																		
. 1	/		SS	1	30													• 6			
2			WO			_					_							Ш			_
-			SS	2	28	-			_		+	+	-		-		-	1		+	+
3		3.0-3.7 m SM silty SAND 19% silt fine-medium	WO							• 12	+	+					2.7		1	22	+
+		3.0-3.7 m, SM, silty SAND, 19% silt, fine-medium subangular sand with little coarse, clean, medium dense, light brown with some gray. Piver Sand	SS WO	3	30	-			-	1	-	+	-			•			-[-22	-
4		light brown with some gray, <u>River Sand</u> 3.7-6.7 m, granitic GNEISS, coarse grained, fresh, very	WU	_		-	Н		-		+	+	-		-	-		-		+	+
5		hard, with trace of discontinuous layering, greenish gray, Rock Basement	C1	100	70																-
+	₩			100	93	-			-	\vdash	+	+	-		-	-		-	-	+	+
6			C2	100	100																
,]	 			1002	100																
1		End of Borehole @ 6.7 m									+	4								4	-
4		Coring: 2 nd Col = %Recovery, 3 nd Col = %RQD		_	_	-	ш		_	Н	+	+	-		-	_	\Box	-	_	-	+
-				_		-			_		+	-	-		_	_	-	-	-	-	+
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+			_	-		-	Н		-	H	+	+	\vdash		\dashv	-	\vdash	-	\dashv	+	-
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Ulaine.															во	REHOL	E I	BH4-	3
B	KS	BKS Global Mozambique Lda				BC	RIN	G LC	G						SHI	EET	1	OF	1
RO.	JECT:	Soil Test for Ile-Cuamba Bridges	Coord	inates:	S:	_ 82	52708	299	_ E:	2	97055.4	165	Water	Level	:		-0.50		m
oc.	ATION:	S-Riverside of Bridge 4, Lua	Groun	d Eleva	ation, n	n-MSL	_		506.	166		_ m	Startin	ng Dat	e:	2	8/4/201	1	e I
JEN	IT:	Chodai & EJEC	Max.D	rilling (Depth:		_		4.3	30		_ m	Finish	ing D	rate:	2	7/4/201	1	
							7.1.1				J	350					SPT	_	-
	90				(cm)		Total			Plastic Limit	Natural Wat Content	Liquid Limit	١,	Specif	ic		SP I		
DEPTH (III.)	GRAPHIC LOG	SOIL DESCRIPTION	UNG	SAMPLEND	VERY		Weigh			- Plast	N Site	Class		Gravit		"	(Blow		
5	GRAP		SAMPLING	SAMP	RECOVERY (cm)		(Ton/m	3)			(%)	٦,							
	/	0.0-1.3 m, SM, silty SAND, 35% silt, fine sand with little medium & coarse, slight plasticity, very dense, dark	wo			1	1.4	1.6	30	60	90	120	2.4	2.6	2.8	10	20 :	30 4	0
1 -		brownish gray, River Sand	WO	95			_	+		• 37	-	+			2.6		-		
		1.3-4.3 m, granitic GNEISS, coarse grained, slightly	SS	1	30		+	+		31	+	+		-	2.6		+	\vdash	-
		weathered on top 30 cm & fresh throughly, hard-very hard, with pink quartz vein @ 2.0-2.2 & 3.0-3.4 m, traces of discontinuous layering, pale-dark greenish gray, <u>Rock</u>	C1	100	61														
3 -		Basement	C2	100	100		+	+	H		+	-	H	+	+		+		_
			C3	100	100										İ				
-	***********	End of Borehole @ 4.3 m		-			+	+		Н	-	+		+	+		+		-
		Coring: 2 nd Col = %Recovery, 3 rd Col = %RQD					+	+			+	+		+	+	H	+		
							T					T							
							4	+			-	+		+	+		_		
			_	-	_		+	+			+	+		+	+		+		-
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		Loss Lab, WO - Wash, SS-Split Spoon, C - Coring					-	+	1		-	+		-	-		_		-

	-									_								EHO	LE	-	H5-1	_
<u>}</u>	K	BKS Global Mozambique Lda				BC	RII	٧G	LO	G						S	HE	ET		1	OF	2
PRO	JECT:	Soil Test for IIe-Cuamba Bridges	Coord	inates:	S	. 82	656	11.36	59	E:	2 8	295199	.796	Water	r Lev	el:			-4.	.40		m
LOC	ATION:	S-Abutment of Bridge 5, Ualasse	Groun	d Elev	ation, n	n-MSL				569	957		m	Starti	ng D	ate:		. 3	18/4/	2011		
CLIE		Chodai & EJEC	Max.D	rilling (Depth:					26	50		m	Finish	ning	Date:		22/	4823	3/6/20	11	
				- 70									====		1.5		-				_	
DEPTH(m.)	901 04	SOIL DESCRIPTION	DNG 00	ENO.	RECOVERY (cm)		To Ur Wei	nit			Plastic Limit	Natural Water Content	Liquid Limit	1	Spec				Blo	SPT w Cou	unt	
DEPT	GRAPHIC		SAMPUNG	SAMPLENO	RECO		(Ton		0	30	+	(%) 0 90	120			2.8	8	10				
		0.0-7.0 m, SM, silty SAND, 43% silt, fine-medium subangular sand with some coarse & little fine gravel of 0.5	WO																			Ξ
1		cm max sized, slight plasticity, loose-medium dense, light reddish brown, Backfill	WO									Ш					4					
		redust brown, <u>parchim</u>	SS	1	24							Ш					_	2			_	
2			WO														4	1				
			SS	2	29		-1	9 •		•	19	Ш			_	• 2.7		1	8		_	
3			WO					2.0			25	Ш	+		4	• 27				\square	4	_
	/		SS	3	20		_	* 10	-		60	Н	-		4	-4/	1	T			-	_
4	/		WO		- 20		-	_		-		H	+		+	-	\dashv	• 6			+	-
			SS	4	20		-		-	-	-	H	-		+	-	\dashv	1			\rightarrow	_
5	ł		-	5	20		-						-		-	+	-	• 4		\vdash	+	_
			SS WO	- 5	20		-	_	H		H	\vdash	+		-	+	\dashv	+		\vdash	+	-
6	ł		SS	6	45		-	-	-		H		-		-	+	-	• 3			\pm	-
			WO	0	40		-		-				+		-	+	-	1 3			+	-
7	/	7.0-8.0 m, SM, silty SAND, 19% silt, fine-medium,	SS	7/1	30		-	2.1		• 1	3	\vdash	+		-	• 2.6	1	• 5	\vdash	\vdash	+	-
	1/	subangular sand, clean, loose, blackish brown, River Sand	SS	7/2	33								_		-			4 4			\pm	-
8	7	8.0-9.0 m, SM, silty SAND, <50% sil, fine sand, slight	SS	8	23							\vdash	_		\rightarrow	+	+	+		\Box	\pm	-
	/	plasticity, loose, pale greenish gray, Granitic Residual Soil	wo								Н		+			+	7	1				-
9		9.0-11.0 m, SM, silty SAND, 30% silt, fine-coarse	SS	9	43		1.5	•			7	\Box			٦,	2.6	1		٠,	5	\neg	_
	1	subangular sand with little fine gravel of 3 mm max sized, medium dense, whitish gray, <u>Granitic Residual Soil</u>	wo												\neg		\exists				\neg	_
10			SS	10	20							\Box			\neg	\top	7		• 1	5	\neg	_
	Y		wo												\neg	7	1		1	П	\neg	ī
11	1		SS	11/1	32												7		>	19	\Box	
12		11.5-17.0 m, SM, silty SAND, 35% silt, fine-medium sand with little coarse, loose-medium dense, traces of shinny	SS	11/2	25													•	10			
12		decomposed muscovite with layering texture of schist, light	SS	12	34	1	7 •				• 34					• 2.7	Z		7	16		
13		brown, Granitic Residual Soil	WO																			
10			SS	13	35														+ 1	4		
14	1		WO														4		1			
-			SS	14	34												4		•	16	_	
15	[WO												_		4		1		_	
			SS	15	38							ш			_	4	4		•	17	_	
16			WO	-						_		\square	-		4	-	_		1	65	\rightarrow	_
			SS	16	26		-	-		-		H	-		-	+	-			N	\rightarrow	_
17	20000000 20000000	17.0-20.0 m, SM, silty SAND, 14% silt, fine-coarse	wo	17	30		-			• 1	2	H	+		-	• 2.7	1		-		X	
		subangular sand of quartz & decomposed feldspar with some fine subangular-subround quartz gravel of 1 cm max	WO	11	30		-					H			+	T'	-			\vdash	-/	H
18		sized, dense, pale brown with white mottle, Granitic	SS	18	25				-			H	+		+	+	+			H	· 31	5
	/	Residual Soil	WO	10	20		-	-		-		\vdash	+		+	+	\dashv			\vdash	1	-
19			SS	19	23										+		1			,	31	-
			wo									1					1			1	\dashv	-
20		20.0-24.0 m, SM, silty SAND, 39% silt, fine-medium	SS	20	32							\Box			\forall	\top	1			4 25	5	-
01	1	subangular sand, loose-medium dense, traces of shinny decomposed muscovite with layering texture of schist,	wo		-							\Box			\forall		1			H	\dashv	-
21	1	light brown, Granitic Residual Soil	SS	21	45		1.8	•		•	24	П				• 2.7				1	28	
000	1 /		wo														1					
22	Y		SS	22	30							П					1			П	1	88
22			WO														1				V	
23			SS	23	38																•	4
24		24.0-26.5 m, SW-SM, SAND, 12-25% sill, fine-coarse subangular sand with some fine quartz gravel of 1 cm max	wo																			1
-	/	sized, well graded, very dense, pale-light brown, <u>Granitic</u> Residual Soil	SS	24	20					•						• 2.6						
25	/	Nogodia 301	WO		100						0.5											
			SS	25	35					•	26	Ш				• 2	1				\Box	
			wo																		\perp	

B	KS	BKS Global Mozambique Lda				во	RIN	IG LO	og						BOR	ING N	_	BH5- OF	$\overline{}$
	ATION:	Soil Test for lie-Cuamba Bridges S-Abutment of Bridge 5, Ualasse Chodal & EJEC	Groun		ation (m				569			9.796 m m	 ing D	Date:		18	-4.40 8/4/20 823/6/		m
DEPTH(m.)	GRAPHIC LOG	SOIL DESCRIPTION	SAMPLING	SAMPLE NO.	RECOVERY (cm)		Orga Cont (%	ent)		Plastic Limit	Natural Water	Triding riwit	Spe Gra	ivity		10	SP Blow ((Blow	Count v/ft)	40
26		24.0-26.5 m, SW-SM, SAND, 12-25% silt, fine-coarse subangular sand with some fine quartz gravel of 1 cm max sized, well graded, very dense, pale-light brown, <u>Granitic</u> <u>Residual Soil</u> End of Borehole @ 26.5 m	SS WO SS	25	35 30				E	19			3 2		2.7	Ĭ			
		Coring: 2 nd Col = %Recovery, 3 nd Col = %RQD																	
																2 /			
												+					+		
												+							
												+							
									F			+					+		
												+							
																	-		
1																			
		Loss Lab, WO - Wash out, SS-Split Spoon Sampling					+		-										

															REHO	_	-	15-2
K	S	BKS Global Mozambique Lda				ВО	RING	LOG	3					SH	EET		1 (OF 1
PROJ	ECT:	Soil Test for Ile-Cuamba Bridges	Coord	inates:	S	82	65639.98	6	E:	295	184.438	Water	Level:			-5.0	00	m
LOCA	TION:	S-Abutment of Bridge 5, Ualasse	Groun	d Elev	ation, n	n-MSL		4	569.	917	m	Startin	g Date	r.		18/6/2	011	
CLIEN		Chodai & EJEC	Max.D	rilling (Depth:				23.	0.00	m	Na Carricologia	na Di	ite:		21/6/2		
					10						503		5.0					= 1
							Total	П	1	il ator	9				Τ	5	SPT	
-	100		000	6	(cm)		Unit			astic Limit	Content Uquid Limit	s	pecific			Blow	v Cour	nt
DEPTH (m.)	E S	SOIL DESCRIPTION	SUNG	SAMPLE NO	RECOVERY		Weight			Ples	8 3		Gravity			(Bi	low/ft)	
DEPT	GRAPHIC		SAMPLING	SAME	RECO		(Ton/m³)	П		(:	6)							
	1-7.1					1,5	1.8 2.0	0	30	60	90 120	2,4	2.6	2.8	Ļ	0 20	30	40
-		0.0-7.0 m, SM, silty SAND, 49% silt, fine-medium sand with some coarse, loose-medium dense, reddish brown, <u>Backfill</u>	WO										1		_			
1 -			WO					4		4			+	H	-		-	-
-			SS	1	30			-		-	-		+	\perp	-	• 13	+	-
2 -			WO				_	-	Н	-	-		+	₽	+	11	-	-
-			SS	2	30		-	-		-	-		+	+	-	† 14	4	-
3 -			WO					\dashv		21	-		١.	2.7	-	10	+	-
-			SS	3	20		-	-		17			- 1	1	1	-	-	+
4		1	wo	4	15			+	Н	+			+	+	14	6	+	+
+			wo	4	10			-		+			+	+	++	\vdash	+	+
5 -			SS	5	33		-	+	Н	+	++		+	+	1	7	+	-
-			WO	0	33			-		+			+	+	H	\Box	+	+
6 -			SS	6	30		-	+		26	++			2 7	١.	7	-	+
-			WO	0	30			\dashv			-		+	-	1/		+	
7	/	7.0-8.0 m, ML, sandy SILT, 45% fine-medium sand,	SS	7	25		-	+		21	-	+		2.7	√ 2	\vdash	+	-
1		medium plasticity, very loose, brown, River Silt	wo	10.4	20		-	+		-	-		+	-	+		+	-
8	7	8.0-9.0 m, SM-SC, silty clayey SAND, 40% silt & clay, low	SS	8	30		-	١,	• •	7	++		• :	2.6	• 3	\vdash	+	+
- 1		plasticity, fine-medium subangular sand, very loose, greenish brown-brownish gray, <u>Granitic Residual Soil</u>	wo					\pm					+	+	+		\pm	
9	×	9.0-11.5 m, SW-SM, SAND with silt, 9-13% silt, 6-18% fine	SS	9	30		_	-	• 11				•	27	+	\rightarrow	9 26	
1	٠,	subangular gravel of 2 cm max sized, fine-coarse subangular sand, medium dense-dense, well graded, pale	wo					\dashv		+			+		+	1	+	-
10 -	/°	yellowish gray, Granitic Residual Soil	SS	10	15			٠,	9				•	27		9 10	5	
1	0		wo		-		-	\dashv					+		+	11	\pm	
11	/	11.5-12.0 m, SM, silty SAND, non plasticity, medium	SS	11	10	\Box		\neg		\pm			$^{+}$	†	+	4 12	\pm	
1	/	dense, traces of shinny decomposed muscovite brown, Granitic Residual Soil	wo					\exists					$^{+}$	$^{+}$	+	M		
12		12.0-17.5 m, SM, silty SAND, 27-38% silt, fine-coarse	SS	12	32				•	20			•	27		1	20	
. 1		subangular sand, medium dense, traces of rock texture, decomposed feldspar, with condense muscovite strip,	wo					\neg						Т			\top	
13		grayish white-yellowish & light brown, <u>Granitic Residual</u> Soll	SS	13	23											1	18	
1			wo													1		
14			SS	14	12				П					Т	Т	Π,	23	
15	/		wo														V	
10			SS	15	30												1	30
16			wo															
			SS	16	45				•	26			•	2.6		*	21	
17			WO														V	
		77.5.00.0	SS	17	30			_								\perp	1	32
18		17.5-20.0 m, SM, silty SAND, 19% silt, fine-medium sand, dense, traces of rock texture & shinny decomposed	WO			Ш		4				\perp	1	L	_	ш	_	
	2	muscovite, grayish brown-brown, Granitic Residual Soil	SS	18	34			4	•	20				2.7	1		'	34
19			WO				_	-		-	-		-	-	-	\vdash	4	- 22
			SS	19	32		-	-	-	-			+	+	-	\vdash		33
20		20.0-22.0 m, SM, silty SAND, 21% silt, random fine	WO	200	20		-	-	Н	-			+	+	+	H	+	1
-	/	subangular quartz gravel of 1 cm max sized @ top 3 cm,	SS	20	33	\vdash		-	\square				+	+	+	\vdash	+	-
21 -	1	fine-medium subangular sand, very dense, traces of rock texture, decomposed feldspar & shinny muscovite, light	WO	21	21		-	+		7	-		٠.	2.7	+	\vdash	+	+
-		grayish brown, Granitic Residual Soil	WO	21	21		-	-		-			-	-	+	\vdash	+	+
22	ПППП	22.0-23.0 m, granitic GNEISS, coarse grained, highly	ss	22	7		-	+		-			+		+	\vdash	+	+
+		weathered, very brittle, traces of continuous quartz vein & muscovite stripe, greenish gray, Rock Basement	C-1	16	0		-	+	+	+			+	+	+	\vdash	+	+
23	#####	End of Borehole @ 23.0 m		10	0			-					+	+	+	\vdash	+	
+		Coring: 2 rd Col = %Recovery, 3 rd Col = %RQD						-	Н	-			+	+	+	\vdash	+	
-								-		+	+++	++	+	+	+	\forall	+	+
1				-				+		+			+	+	+	\vdash	+	+
1		Loss		_				-					+		+	\vdash	+	+
- 4		Lab, WO - Wash , SS-Split Spoon , C - Coring						-		-	-		_		+	\vdash	+	-

B	KS	BKS Global Mozambique Lda				во	RING	LO	G							BOF	REHO	LE	_	H6-1 OF	-
RO.	JECT:	Soil Test for Ite-Cuamba Bridges	Coordi	inates:	S:	82	89211.2	58	E:	2	79135	.313	Wate	r Lev	vel:		_	-4.	.50		m
OC/	ATION:	S-Abutment of Bridge 3, Licungo	Groun	d Eleva	ation, n	n-MSL	_		625.	273		m	Starti	ng E	ate:		- 0	20/5/	2011	_	
LIEN	NT:	Chodai & EJEC	Max.D	rilling (Depth:		_		17.	00		m	Finish	ning	Dat	0:	- 3	22/5/	2011	_	
																	_				
DEPTH(m.)	GRAPHIC LOG	SOIL DESCRIPTION	UNG	SAMPLE NO.	RECOVERY (cm)		Total Unit Weight			-Plastic Limit	Natural Water Content	Liquid Limit	1	Spe				Blo	SPT w Co Blow/f	unt	
DEPT	GRAP		SAMPLING METHOD	SAMP	RECO		(Ton/m ³)		30		(%)	120	2.	1 2/	5 2	R	,	0 2	0 30	0 40	
		0.0-5.0 m, SM, silty SAND, 42% silt, fine sand with little medium, very loose-loose, dark brown, <u>Backfill</u>	WO																		
.]		medium, very roose-roose, dank brown, <u>backing</u>	WO	-						-											
1 -			SS	1	18												1				
			wo																		П
2 -			SS	2	20												• 5				
. 1			wo																		П
3 -			SS	3	25												• 5				
			wo					П													
4 -			SS	4	25						• 72			•	.5		• 2				
_ 1			wo																		
5 -	/	5.0-7.0 m, SC, clayey SAND, 30% clay, fine-coarse subangular sand, low plasticity, very loose, dark blackish	SS	5	10											- 2	0				
	/	brown, River Sand-Clay Mixture	wo																		
6 -		5.0-7.0 m, SP, SAND, ooarse subangular sand, very loose,	SS	6	10												2				\neg
. 1		poorly graded, dark brown, River Sand	wo																		\neg
7 -		7.0-11.0 m, SW-SP, SAND & SAND with gravel interbeded,	SS	7	10				• 1	3					•	2.7	• 5				\neg
- 1		medium-coarse subangular sand with 9-18% fine sand & 4- 48% fine subangular quartz gravel of 1 cm max sized,	wo																		
8 -	٥	poorly-well graded, loose, brown-dark brown-greenish gray, <i>River Sand</i>	SS	8	10				•						• 2	6	•	6			\neg
		gray. <u>Niver Sainu</u>	wo				_					+					1				\exists
9 -			SS	9	15		_		•	7		+			•	2.7	1	10			\exists
-			wo									-							1		
10 -	۰ .		SS	10	15		-		• 8						•	2.7				>	39
-	0	49	wo	10			-													/	\dashv
11 -	(*************************************	11.0-14.0 m, SM, silty SAND, 19-24% silt, fine-medium	SS	11	33		-			22	-	+				2.7			1	27	\dashv
-		subangular sand, medium-very dense, traces of rock texture, grayish brown-grayish green-yellowish brown,	WO		~		-				-	+			-				1		
12 -	/	Granitic Residual Soil	SS	12	7		-					-			-					5	-
-		1000 - 10	WO	12	-6.		-								-					1	\exists
13 -			SS	13	5		-	\vdash	•	0	-	+			٠.	2.7					\rightarrow
-			WO	1.0	0		-	-				-			_					+	-
14 -	*******	14.0-17.0 m, granitic GNEISS, coarse grained, fresh, hard,	****				-					-								+	-
-		jointed, traces of pink guartz vein & continuous layering,	C1	50	0		-	H			-	-		-	=			\vdash		+	-
15 -		greenish gray, Rock Basement		_			-	H				-		-	-					+	\dashv
-			C2	36	0		-					-		-	-					+	-
16 -			02	30			-					+			-					-	-
-			C3	33	12		-	-				+			-				\vdash	-	\dashv
17 -		End of Borehole @ 17.0 m		33			-				-	+								+	\dashv
-		Coring: 2 nd Col = %Recovery, 3 rd Col = %RQD					-	H				-		-	-					+	\dashv
-		Cornig. 2 Col = /akecovery, 3 Col = /akeco					-	\vdash		-	-	-		-	-					+	-
-			_	_			-	H			-	+	\vdash	-	_					-	-
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	1	Loss																			
1					_																

R	K	BKS Global Mozambique Lda				ВО	RIN	G L	OG						SHEE			BH6-2	
-	_	5705 Stobal mozaliibique Eua				50		J L							J. HE			-	-
ROJ	IECT:		Coord	inates:	S	82	89224	292	_ E	_	27909	4.467	Water	Level:			-4.80		m
OCA	ATION:			d Elev	ation, n	n-MSL	_		62	6.00	0	m	Startin	ng Date:		1	7/5/201	11	æ
LIEN	IT:		Max.D	rilling (Depth:		_		1	9.10		m	Finish	ing Dat	te:	2	0/5/201	11	6
_					_				_		-9.51				_	_			_
	(2)				Ú.		Tota			THE ST	Natural Water Content	蜀					SP		
É	507 0	SOIL DESCRIPTION	SNO.	9	ERY (c		Unit			fastic Limit	Control	phon		Specific	8		Blow C		
DEPTH (m.)	SRAPHC		SAMPLING METHOD	SAMPLE NO	RECOVERY (cm)		Weig			Ť	•	\dashv		Gravity			(Blov	witt)	
۵	ō		8 2	ò	22		(Ton/n			30	(%) 60 90	120	2.4	2.6 2	8	10	20	30 4	10
		0.0-5.0 m, SM, silty SAND, 36% silt, fine sand with little medium, very loose-loose, dark brown, dry or above	WO																
1		groundwater level, Backfill	WO																
			SS	1	30					L				_		• 5			
2 -	- 7		WO				4	-	1	1				_			_		-
-			SS	2	30		-	+	+	+			-	+	H	• 3	-	-	
3 -		·	WO	3	35		+	+	+	١.	45			• 2.5	H	• 5	-	-	-
-			WO	3	.30		+	+	+	+				7 2.0	\vdash	H	+		
4 -			SS	4	31		+	+	+	+				+	\forall	• 5	+	\forall	
. 1			wo							T								\Box	
5		5.0-8.0 m, SM, silty SAND, 22% silt, fine sand with little medium, very loose, blackish brown, submerge under	SS	5	45					T					1	0	T		
6		groundwater table, River Sand	WO																
,	/		SS	6	45										•	0			
7			WO							L									
			SS	7	45		4	-	+		49			• 2.5		2	_	\perp	
8 -		8.0-9.0.0 m, SP, SAND with gravel, <50% fine gravel of 0.5	WO		10		+	+	+	+	+	-		+	Н	1	-	+	
-		cm max sized, coarse subangular sand, loose, poorly graded, dark brownish gray, River Sand	SS	8	10		+	+	+	+	+	-		-	\vdash	1	+	+	\vdash
9 -		9.0-11.0, SW, SAND with silt, 10% silt with very random of	SS	9	12		-	+	+	t				+	\forall	-	11	+	
1	/	coarse subround gravel of 3 cm max sized, fine-coarse subangular sand, clean, well graded, medium dense,	wo				-	+	+	t				+	\Box		1		
0 -	/	yellowish gray, Rver Sand	SS	10	22		\forall		•	10				•	2.7		19		
. 1	a		WO	-					T	T					П		/		
1		11.0-16.0 m, SM, silty SAND, 23% silt, fine-medium sand, traces of decomposed feldspar & shinny muscovite,	SS	11	27											•	11		
2 -		medium dense-dense, yellowish gray-pale & dark brown, Granitic Residual Soil	WO												Ш				
		STREAM TAGSTANDE SOIL	SS	12	22		-		-	+				-			13		
3 -			WO				+	+	+	+	+	_	-	+	Н	-	-	27	
-			SS WO	13	27		+	+	+	+	+	-		+	Н	-	-1/	-	
4 -			SS	14	24	H	+	+	+	+	+	-		+	\vdash	+	1/2	4	\vdash
-			wo	-			\pm	+	+	$^{+}$				-	\forall	-	-		
5 -			SS	15	26		\forall		١.	19					• 2.9		-		1
16		45-35-36 St. Marketon VIII ar 36 St. 2007	wo				T	T		T					П	T			
10		16.0-19.1 m, granitic GNEISS, coarse grained, moderately weathered on top 10 cm then fresh throughly, very hard,	Cl	30	54														
7		traces of quartz vein & continuous layering, greenish gray,								I									
-		Rock Basement End of Borehole @ 19.1 m Coring: 2 nd Col = %Recovery, 3 nd Col = %RQD	C2	93	86			-	1	1		-		-			+		
8 -							-	+	+	+	+			-	\vdash	-	+	+	
-			C3	100	72		+	+	+	+	+	-		+	\vdash	-	-	+	
9 -	*********						+	+	+	+					\Box		+		
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-				-			+	+	+	+	\vdash			+	\vdash	+	+	+	Н
1		Loss					+		+	t	+			+	\Box	+	+	+	
- 1		Lab, WO - Wash , SS-Split Spoon , C - Coring					+		+	+	+						+	+	

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k	KS	BKS Global Mozambique Lda				BC	RIN	G LC	OG						SH	EET	1	OF	1
ROJ	IECT:	Soil Test for Ile-Cuamba Bridges	Coord	inates:	S:	82	95440	.976	_ E:	_ 2	72177	.866	Water	Level			-1.55		m
OCA	TION:	S-Abutment of Bridge 7, Nivaco	Groun	d Elev	ation, n	n-MSL			699	.740		m	Startin	ng Date	0:		15/5/201	11	
JEN	IT:	Chodai & EJEC	Max.D	rilling l	Depth:		_		8.	80		m	Finish	ing D	ate:		16/5/201	11	
_												-2.5		7.22		_			
					2		Tota	15		THE STATE OF	Water	Œ					SP	т	
ê	007.0	SOIL DESCRIPTION	9.	9	RY (cm)		Unit			lastic Limi	Natural Wat Content	Uquid Limi	1	Specifi			Blow 0		
DEPTH (m.)	GRAPHIC LOG	SOIL DESCRIPTION	SAMPLING	SAMPLEND	RECOVERY		Weigi		1	-	•	\dashv	3	Gravity	1		(Blov	v/ft)	
5	6		SA	S.	a.		(Tonin				(%)	120		**		Ι.	0 20	**	
		1.0-2.0 m, SM, silty SAND, 20% silt & clay & 10% fine subangular gravel of 0.5 cm max sized, low plasticity, very	wo			1	1,4	1.0	3	- 6	90	1/0	1	2.6	7.8	Т	0 20	1	40
,]		loose, reddish brown, Backfill	WO																
			SS	1	7											• 2			
2 -		2.0-4.0 m, SM, silty SAND, 49% silt, fine sand, slight	WO				+	+	\vdash			_		-	+	-		-	
-	/	plasticity, very loose, dark blackish gray, River Sand	SS	2	45		+	+	+	Н	-	+		+	+	0	-	+	H
3 -			SS	3	35		+	+	+	• 37		+		• 2	.6	0		+	-
			wo	-			\pm		+									+	
4 -		4.0-5.0 m, SW, SAND, fine-medium subangular sand with very little coarse & silt, loose, clean, well graded, dark	SS	4	30		T		•	18					2.7	1		T	
5		grayish brown, River Sand	wo																
-		5.0-5.8 m, SM, silty SAND, 15% silt, fine-medium subangular sand with little coarse, medium dense, clean,	SS	5	24		_	1		В				•	27		• 15	-	
6 -		grayish green, Granitic Residual Soil 5.8-8.8 m, granitic GNEISS, coarse grained, moderately	WO				_	-	-			_		-	+	_			
	0.0-0.0	weathered on top 2 m with pale grayish white then slightly	C1	30	0		+	+	+			-		+	+	-		+	
7 -		weathered-fresh throughly with greenish gray, brittle-hard, jointed & iron oxide coated with some black shear plane at			-		-	+	+		-	+		+	+	-		+	
-	7.4-7.8	the bottom. Rock Basement	C2	15	10		+	+	+			+		+	+	+		+	-
8 -			C3	62			\pm	+	+					+	$^{+}$	+		+	
. 1			C4	72	0		\top		†	П				\top	T	T			
9		End of Borehole @ 8.8 m																	
		Coring: 2 nd Col = %Recovery, 3 nd Col = %RQD																	
							4	_	╀	Ш				4	+	1		_	
-			_	_	-		+	+	\vdash		-	-		+	+	-		+	
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ţ.	K	BKS Global Mozambique Lda				ВС	RII	NG	LO	G						SHE	REHOL		BH7- OF	
						_			_	_	_		_			_		_	_	_
		Soil Test for Ile-Cuamba Bridges		inates:				57.01				2154.9		Water				-0.70		m
		N-Abutment of Bridge 7, Nivaco	1000000		ation, n	n-MSL		_	_	700.2	284		_ m	Startin	g Date:			3/5/201		8
LIE	NT:	Chodai & EJEC	Max.D	rilling l	Depth:					12.6	60		_ m	Finish	ing Dat	0:	1	4/5/201	1	9
()	907			Q	Y (cm)		To				rastic Limit	Natural Water Content	Liquid Limit		Specific			SP1 Blow C		
DEPTH(m.)	GRAPHIC LOG	SOIL DESCRIPTION	SAMPLING	SAMPLENO	RECOVERY (cm)	1.3	(Tor		3	30	-	%)	-H		Gravity	.8	10	(Blow		90
		0.0-4.0 m, SC, clayey SAND, 21% silt & clay, fine-medium sand, high plasticity, very loose, dark brownish gray, <u>River</u>	WO				- 4									- 1		2.50		
1		Sand & Clay	WO																	
	1		SS	1	45										\perp	-	0	_		
2	/		WO							30	_									
			SS	2	40				_	-	_	-	-		• 2.6		• 2	_	1	
3			wo							_	_		-		-			_		
	-		SS	3	40				_	_	_	_	-		-	\vdash	2	_	\perp	
4		4.0-5.0 m, SM, silty SAND, 18% silt, fine-medium	WO				_		\dashv	20	-	-	+		• :	7.7	• 4	+	\vdash	-
	1/	subangular sand, very loose, clean, dark blackish gray,	SS	4	19				-	-	+	-	+		+-	100		-	-	
5	-	River Sand 5.0-6.0 m, CL, sandy CLAY,49% fine-coarse sand with very	WO		15		-		\dashv	-	+	+	+		-			+	\vdash	
	-/	little fine gravel, high plasticity, medium stiff, dark greenish	SS	5	45		_		\dashv	-	-	+	+		2.6		• 6	-	-	
6		gray, <u>Alluvial Clay</u> 6.0-9.6 m, SM, silty SAND, 20-24% silt, fine-medium sand	WO		40		_		\dashv	18	-	+	+	\vdash	٠.	2.8		-		-
	-	with little coarse & fune gravel, very dense, with random	SS	6	15				\dashv		-	+	+		+			+	\vdash	
7	-	loose rock @ 7 m, yellowish brown, Granitic Residual Soil	WO						\dashv	-	+	-	+		-			-	-	
	0	1	C1				_		-	-	-	-	-		+			+	-	
8	1/		WO						\dashv	15	-	-	+		• 2	6	-	-	\vdash	
	-		SS	8	22		_		-	-	-	-	-		-		-	+	-	
9			WO				_		\dashv	-	-	-	+		+	Н	-	•42		
		9.6-12.6 m, granitic GNEISS, coarse grained, slightly	SS	9	10				-	-	+	+	+		+		-	+		_
10	9.6-10.5	weathered-fresh, brittle-hard, jointed, greenish gray, Rock Basement	C1	100	56							+			İ			#	F	
11			CZ	100	100															
	12.3-12.6			100	100															
	1	End of Borehole @ 12.6 m							_		_		_							
		Coring: 2 nd Col = %Recovery, 3 nd Col = %RQD																		
	1																			
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	1								_		_	_	-		_			-		
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	1	Loss	_	-			_		_		-	-	-		-	\vdash		-	-	
	1	Lab, WO - Wash , SS-Split Spoon , C - Coring	1	1	1				- 1		- 1						1			

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S	S	BKS Global Mozambique Lda				ВС	DRII	NG	LO	G							SHEE	т	1	OF	1
ROJ	ECT:	Soil Test for Ile-Cuamba Bridges	Coord	inates:	S:	_ 8	30820	02.32	2	E:	2	59777.	728	Wate	r Leve	el:	_		-2.60		m
OCA	TION:	S-Abutment of Bridge 8, Matsitse	Groun	d Elev	ation, n	n-MSI				719.	700		_ m	Starti	ing Da	ate:	-	26	3/5/201	11	
IEN	T:	Chodai & EJEC	Max.D	rilling l	Depth:					12.	90		_ m	Finish	hing	Date		26/5&	27-28/6	/2011	
_				_	_	_				_							_				
					2		To	tal			THE STATE OF	Water	Ē						SP	Т	
ì	5070	SOIL DESCRIPTION	9.	9	RY (cr		Ur			8	astic Limi	Natural Wats Content	Photo		Spec				Blow 0		
DEPTH (M.)	GRAPHIC	SOIL DESCRIPTION	SAMPLING	SAMPLEND	RECOVERY (cm)		Wei			8	<u>-</u>	•	\dashv		Grav	ity			(Blov	v/ft)	
5	9		SA	S.	. S	١,	(Ton		0	30		(%)	120	١.					20	30 4	10
		0.0-3.0 m, CL-SC, sandy CLAY-clayey SAND, 37-50% clay, low plasticity, medium dense, blackish brown-brown,	wo			A.	0 1.	0 2			60	90	120		4 2.6	-		10	20	1	
		Alluvial Clay & Sand	wo							21											
	/		SS	1	20					-						• 2	7		16		
2 -			WO		50000				2.0	19			1		_		_	_/			
			SS	2	27	-	_	_	2.0			+	+		-	• 2	.7	1	11	-	-
3		3.0-4.0 m, SM, silty SAND wt gravel, 15% silt & 17% fine	WO	3	33		_			8		+	-		+	• 2	7	+	+		_
	•	subangular gravel, fine-coarse subangular sand, very dense, light brown, Granitic Residual Soil	wo		- 50							-	+		+		+	+	+		
4 -		4.0-7.0 m, SM, silty SAND, 21% silt, fine-coarse subangular sand with little fine gravel, dense-very dense,	SS	4	-11																
5 -	/	traces of decomposed shinny muscovite & feldspar, light	wo							11											
٠]		brown-brown, Granitic Residual Soil	SS	5	25					•						• 2	.7				•
6 -			WO										1				4				
			SS	6	9	_			Ш			_	+		_	_	4	4	_		_
7 -	BEEFE	7.0-7.5 m, granitic GNEISS-SCHIST basement?	WO	-								-	+		-	-	\dashv	+	-	-	
-		7.5-12.9 m, granitic GNEISS-SCHIST, medium-coarse	SS	7	Loss	\vdash	-	-			-	+	+		-	-	+	+	+	+	-
в -		grained, moderately -highly weathered, brittle-hard, jointed & broken into pieces with iron oxide coated, traces of	C1&2	50	10	\vdash	Н	-			-	+	+		+	+	+	+	+	+	-
. 1	8.1-8.9	continuous muscovite layering, brownish white-gray with brown-dark grayish brown for muscovite layer, Rock															\dashv	+			
,		Basement			11						П		+		\exists		\exists				
. 1	9.4-10.1		C3	53	_												\neg				
0					0																
1 -					15												_				
			C4	80								_	+		-	_	4		-	-	
2 -				_	33	-	_	_	H			-	+		+	-	\dashv	+	+	-	-
-	▦		C5	89		-						+			+		+	+	+		
3 -	********	End of Borehole @ 12.9 m				\vdash						+	+		\pm	\exists	\pm	+	+		
1		Coring: 2 nd Col = %Recovery, 3 nd Col = %RQD										\top			\neg	\exists	\neg				
1																					
]																	\perp				
				-											_		4				
-						-					-	-	-	-	-	-	-	_	-	-	
-						-						-		-		-	+	-	-	-	
+						-						-	-		-		+	-	+	+	-
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		Loss	1			1					- 1			4	- 1	- 11	- 1			1	

																OREH	L	ВН8	
LIK	<u>S</u>	BKS Global Mozambique Lda				ВС	RINC	S LC	G						SI	HEET		1 OF	1
ROJEC	T:	Soil Test for Ile-Cuamba Bridges	Coord	inates:	S:	83	08227.	682	E:	2	59773.	500	Wate	r Leve	t:		-1.6	30	m
OCATIO	ON:	N-Abutment of Bridge 8, Matsitse	Groun	d Elev	ation, n				721.			m	Start	ing Da	te:		27/5/2		-
LIENT:		Chodai & EJEC	Max.D	rilling l	Depth:					00		m	Finis	hing [Date:	2	7/5&25-2	7/6/2011	
												-375				-			
	90				cm)		Total			stic Limit	Natural Water Content	Till Till						SPT	
DEPTH(m.)	10 100	SOIL DESCRIPTION	SNG O	N N	RECOVERY (cm)		Unit		1 3	Plastic	Spring	Liquid		Speci				v Count low/ft)	
E E	GRAPHIC	0.0000000000000000000000000000000000000	SAMPLING METHOD	SAMPLE NO	800		Weigh (Ton/m		1	1	•	\dashv		Gravi	Ŋ		(Di	OW/II)	
٠	0		65.25	oř.	22	l	1.4		30		(%)	120	,	4 2.6	2.0		10 20	30	40
		0.0-2.0 m, SC, clayey SAND, 45% clay, fine-medium subangular sand with very random fine angular quartz	WO														11	1	
. 1	/	gravel of 1 cm max sized, low-medium plasticity, medium	wo						15										
1 1/		dense, grayish brown, Alluvial Clay & Sand	SS	1	30				•	•					• 27		• 18		
2			WO						8										
200	0	2.0-3.0 m, SM, silty SAND wt gravel, 15% silt, 15% fine subangular gravel, fine-medium sand, very dense,	SS	2	25				•						• 2.7				
3		yellowish brown, Granitic Residual Soil	WO						16										
	/	3.0-5.0 m, SM, silty SAND, 21-28% silt, fine-medium sand, very dense, traced of granitic rock texture & decomposed	SS	3	33				•						• 2.7				
4		feldspar to be slit, ligh-yellowisht brown, <u>Granitic Residual</u> Soil	WO				_	4	17		- 1	+		4	+	+	\perp	-	
-		Service.	SS	4	40			-	•		- 1	-		4	• 2.7	1	-		
5		5.0-8.0 m, Granitic Residual Soil	wo	_			-	+				+		-	+	+		+	
-6		5.0-6.0 III, Graniuc Nesidual Sui	SS	5	Loss		-	+	Н		-	+		+	+	+	-	+	
6 -		,	WO	-			-	-			-	+		-	+	+	-	-	-
			SS	6	Loss		+	+	Н			+		+	+	+	+	+	
7 -		,	WO	-			-	+			-	+	Н	-	+	+	-	-	-
-		8.0-9.0 m, SM, silty SAND, 30% silt, fine subangular sand,	SS	7	Loss		+	+			-	+	Н	+	+	+	+	-	-
8	/	very dense, traces of rock texture, greenish gray & light brown, Granitic Residual Soil	SS	8	10		+	+			-	+		+	+	+	+	-	
100/		8 5-11 0 m. granitic GNEISS coarse grained moderately -	C1	40	0		+	+				+		+	+	+	-	-	
9 -	-	highly weathered, partly washable into sand for muscovite- rich layers with very brittle, all others brittle-hard but	0,	40	-		+	+			-	+		+	+	+	+	_	+
188		broken into pieces with iron oxide coated, traces of	C2	10	0		-	+	Н		_	+	Н	+	+	+	+	+	-
10	₩	continuous layering, whitish gray-grayish brown, Rock Basement					+	+						+	+	+		-	
-			C3	10	0		-	1				+		+		+		+	
11		End of Borehole @ 11.0 m									-			\pm		+		\pm	
1		Coring: 2 nd Col = %Recovery, 3 nd Col = %RQD						\perp								\top			
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*	S	BKS Global Mozambique Lda				ВС	RIN	G LC	OG							SHEE	Т	1	OF	1
ROJ	ECT:	Soil Test for Ile-Cuamba Bridges	Coord	inates:	S:	83	08760).314	_ E:	_ 2	259944	.034	Wate	r Lew	el:	_	114	1.70		m
LOCA	TION:	S-Abutment of Bridge 9, Namisagua	Grour	d Eleva	ation, m	n-MSL	_		707	.500		m	Starti	ing Da	ate:	_	23/	5/201	1	98
LIEN	T:	Chodai & EJEC	Max.E	rilling (Depth:		_		8.	02		m	Finish	hing	Date		24/	5/201	1	8
						_						- 2.5		1.50						
	ø				(hu		Tota			Œ.	Natural Water Content	舊						SPT		
DEPTH(m.)	507 0	SOIL DESCRIPTION	90	9	ERY (Uni			fastic Limit	Confe	Liquid Limit		Spec				low Co		
EPTH	GRAPHIC		SAMPLING METHOD	SAMPLENO	RECOVERY (cm)		Weig (Ton/r		1	-	(%)	\dashv		Grav	sty			(Blow	/ft)	
	0		05≥	60	œ		1.4		3		0 90	120	2.0	4 2.6	2.8		10	20 3	30 4	0
		0.0-2.5 m, SM, silty SAND, 13-39% silt, fine-coarse subangular sand with random fine subangular gravel of 2	WO																	
1 -	/	cm max sized, silght plasticity, traces of decomposed shinny muscovite & felspar, yellowish brown-brown,	WO				4	-	• 1		Н	-		_	• 2		4.	15	Н	
-		Granitic Residual Soil	SS	1	15		-	+	1.			-		-	-	+	-1	1	Н	-
2			WO	2	34		+	+	١.	22	H	-		+	• 2	,	+	1	.3	
1		2.5-5.0 m, SW, SAND, fine-medium subangular sand, very	30	-			+	+	Ť	-	Н	+		\pm	-	+	+	+		-
3 -		dense, well graded, traces of decomposed shinny muscovite, brown, Granitic Residual Soil	C1	Loss					+							_				
,]			55	3	15				• 1	b					•	.7				
4			SS	4	7:															
5 -		5.0-7.0 m, SM, silty SAND, 16% silt, fine-coarse	C2	Loss			4	_	1					_		4		+	Н	
-		subangular sand with little fine gravel, very dense,	SS	5	Loss		4	+	+		Н	-		-	-	+	-	+	Н	_
6 -	/	yellowish brown, Granitic Residual Soil	WO	6	20		-	+	• 1	-	Н	+		-	• 2	5:	-	+	Н	٠
1			WO	0	20	Н	+		+		Н			+	-	+	-	+	Н	-
7		7.0-8.0 m, granitic GNEISS basement	SS	7	Loss		\neg	+	+					\forall				$^{+}$	Н	7
8			C3	Loss					T							\exists				
° Į		End of Borehole @ 8.0 m																		
- 1		Coring: 2 nd Col = %Recovery, 3 rd Col = %RQD		_			4	_	1		Ш			4		4	_	1	Ш	
4				_			-	-	+		Н	-		-	4	-	-	+	Н	_
- 1							-	-	+					-		+	+	+	Н	-
1				-			-	+	+			+		_		+	+	+		
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		Loss						- 1				11								

																	BOR	EHOLE		ВН9-2	2
Ħ	<u>S</u>	BKS Global Mozambique Lda				BC	RII	NG	LO	G							SHE	ET	1	OF	1
BO 15	CT.	Call Total for the Coumba Delifera	Canad	in oton	0.		20079	ee aa	10	-		ennen	071			and i			2 40		
ROJE		Soil Test for Ile-Cuamba Bridges N-Abutment of Bridge 9, Namisagua		inates:		1,00000		58.29	13			59950		1	er Les		. 1		2.40		m
				d Elev		n-MSI					515		_ m						5/201		8
IENT	;	Chodai & EJEC	Max.D	rilling (Depth:					13.	.02		m	Finis	hing	Date	θ;	26/	5/201	1	8
	GRAPHIC LOG	SOIL DESCRIPTION	SAMPLING	SAMPLE NO.	RECOVERY (om)		To Ur Wei	nit ight		Total Constitution Co.	Plastic Limit	Natural Water Content	Liquid Limit		Spe				SP1 low C	ount	
ě	0		82	45	æ	1.0		8 2.6	06	30			120	2	4 2/	5 2.1	8	10	20	30 4	10
		0.0-3.0 m, SM, silty SAND, 28% silt, 13% coarse sand & fine gravel of 3 mm max sized, fine-medium subangular	wo																		
		sand, loose-medium dense, dark reddish brown, River Sand	WO						Ш				4				\Box		-	Ш	
-	%		SS	1	35	-	_		_	_		-	-			_	\vdash	1	16		_
1			WO	-	OF.	\vdash	_	2.1		• 1	5	-	+			• 2	7	• 9	+	Н	-
-			SS	2	25		-					-	+			-		- 11	-	Н	-
1	./	3.0-4.0 m, SW-SM, SAND with silts, 8% silt, 7% fine gravel	SS	3	25		-			• 1	3		+			•	2.8	9	+	Н	-
1	/	of 2-3 mm sized, fine-coarse subangular sand, well graded, loose, brown, <i>River Sand</i>	wo																1		
ť		4.0-5.6 m, SM, silty SAND, 28% silt, 11% coarse sand-fine subangular gravel of 3 cm max sized, fine-medium	SS	4	26					• 1	3					•	2.8				40
1	/6	subangular sand, medium dense-dense, gray-brown,	wo																	1	
1		Granitic Residual Soil	SS	5	9														•		
1		5.6-13.0 m, granitic GNEISS, coarse grained, moderately weathered, hard-very hard, broken into pieces with iron	C1	40	0																1
		oxide coated generally, traces of quartz dyke on top first meter, partly washable into silt & sand, pale brownish	C2	0	0																
		white-pale greenish gray, Rock Basement																			
4	▦		SS	7	16					L	H	-					\vdash		+	Н	_
#			C3	8	0	\vdash	-				H		+	Н			\vdash		+	Н	-
Ŧ			0.1	0	0		_				Н		+			_	\vdash		+	Н	-
Ŧ			C4 SS	9	16		-		-	-	Н		+			-	\vdash	-	+		-
İ			C5	0	0						7		-			٠.	2.8	-	+	Н	-
1			SS	10	12					• 9						• 2.	7		+		-
1			C6	0	0														+		
1			SS	11	2																7
. 1			C7	0	0														Т		
			SS	12	0																
3			C8	0	0														1		
		End of Borehole @ 13.0 m	SS	13	0														_		
1		Coring: 2 nd Col = %Recovery, 3 rd Col = %RQD		_					Ц			_	_					_	+	Ш	
+				-			_	_	H			-	-			_	-	-	+	Н	-
+			_				-				H		+			-	-		+	Н	-
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		Loss																			
		Lab, WO - Wash , SS-Split Spoon , C - Coring																			

															BORE	HOLE	В	H10-	1
Ħ	3	BKS Global Mozambique Lda				BC	RIN	IG L	OG						SHEE	Т	1	OF	1
ROJ	ECT:	Soil Test for Ile-Cuamba Bridges	Coordi	inates:	S:	_ 83	31993	8.254	_ E	_ 2	46684	.877	Water	Level:		-3	.85		m
OCA	TION:	S-Abutment of Bridge 10, Nuhusse	Groun	d Eleva	ation, n	n-MSL			601	.323		m	Startin	g Date		29/5	/2011	_	94
LIEN	T:	Chodai & EJEC	Max.D	rilling (Depth:				14	.00		m	Finish	ing Da	te:	30/5	/2011	_	
					p.		Tot	al	Τ	ju.j	Water	imi					SPT		
DEPTH (m.)	GRAPHIC LOG	SOIL DESCRIPTION	SAMPLING METHOD	SAMPLE NO.	RECOVERY (cm)		Un Weig (Ton)	ght		Plastic Limi	Natural Wat Content	Liquid Limi		Specific Gravity			ow Cor Blow/f		
		0.0-3.0 m, CL, sandy CLAY, 44% fine-medium sand, low	wo			1.	2 1.4	1,6	-	0 6	90	120	2,4	26 2	.8	10	20 30	4	0
. 1		plasticity, very stiff, dark brown, Natural Crust	wo				\exists		t	П				†	\Box		П		
1]	1		SS	1	40											•	16		
2	/		WO						15						Ш				
			SS	2	40					1				• 2/	5	_ +	18		_
3	S0(6)3(U7/3)	3.0-8.0 m, SP-SM, SAND with silt, 11% silt, fine-medium	WO				_		+			+		-	\Box		• 22		
- 1		subangular sand with little coarse, clean, poorly graded, medium-very dense, traces of rock texture, brown-yellowish	ss	3	24		-	-	+		-	+		+	\vdash	-	F		\exists
4		brown-greenish gray, Granitic Residual Soil	SS	4	25		\dashv	+	13		\vdash	+			2.7	_	22		\dashv
1			wo						+										
5	/		SS	5	22														1
6			WO																
۰]			SS	6	18														1
7			wo																
1			SS	7	10			_	+					_	Н				
8	0000000	8.0-14.0 m, granitic GNEISS, coarse grained, highly	wo	_	_		_	-	+		-	+		+	\vdash	-		_	4
,		weathered, hard, broken into pieces with iron oxide coated generally, traces of continuous layering, whitish brown-white, <u>Rock Basement</u>	C1	10	0									+					
_1			C2	10	0		\dashv		+		+			+	\forall	+	Н		-
10			C4	10	0				ļ					ļ	H				
11			C4	10	0				+					+					
12			C5	20	0									+					
13			C6	40	0		-	+	+		\vdash	+		+	\vdash	+	Н	-	-
-			C7	40	0		-	-	+		-	+		+	\vdash	-	Н		-
14		End of Borehole @ 14.0 m	2000	40	-		\dashv	+	+	Н	-	+		+	+	-	Н		\dashv
1		Coring: 2 nd Col = %Recovery, 3 rd Col = %RQD							+					+	\forall	-			
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2	K	BKS Global Mozambique Lda				Br	DRII	vic.	10	G							BORE	HOLE		BH10 OF	
	<u>S</u>	BODAI MOZAMDIQUE LOA				В(JKII.	10		<u>.</u>							onEE	-	1	OF	1
ROJ	ECT:	Soil Test for Ile-Cuamba Bridges	Coord	inates:	S:	8	31996	67.22	1	E:	2	46640.	890	Wate	er Le	vel:		33	-0.70		m
		N-Abutment of Bridge 10, Nuhusse			ation, n					601.8				Start	ting E	Date:			/5/201		2.5
IEN	T:	Chodai & EJEC	Max.D	rilling l	Depth:					4.3	30		m	Finis	shing	Date	6	31	/5/201	1	
	3			25	20								-33		155						10
THE CONTROL OF THE CO	GRAPHIC LOG	SOIL DESCRIPTION	SAMPLING	SAMPLE NO.	RECOVERY (cm)		To Ur Wei	nit ight			-	Natural Water Content	Liquid Limit		Spe				SP Blow C	Count	
	17.1		05≥	60	œ	1.	2 1		6	30			120	2	4 2	6 2.5		10	20	30	40
		0.0-1.3 m, ML, SILT, non plasticity, medium dense, dark brown, <u>Natural Crust</u>	WO																		
1		19 21	WO			_			_;			4	-				4	-	+	-	
4		1.3-4.3 m, granitic GNEISS, coarse grained, moderately- highly weathered, hard, broken into pieces with iron oxide	SS	1	Loss				_		-	-	-				-	+	+	-	
1		coated generally, traces of some joints, continuous layering & pink quartz vein, brownish white-white, lowest 3	C1	10	0	-	Н		-		\rightarrow	-	+	-	H		\dashv	-	+	+	
1	1.3-2.9	cm is dark greenish gray rock, Rock Basement	C2	0	0	-	Н		-		+	+	+		Н		+	+	+	+	
1			СЗ	20	0												\dashv			+	
1	▦		C4	0	0												\exists				-
1				0	0.																
1		End of Borehole @ 4.3 m															4		_		
1		Coring: 2 nd Col = %Recovery, 3 nd Col = %RQD				_						-	-				4	1	+	-	
1		,	_	_	_	_			_		-	-	-			-	\dashv	-	+	+	
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		Loss	1	1	1	1				1111				1			- 1				

	T	DVC Clobal Marambigue I de				PC	DIMO	10	G							REHO		BH10	_
LS.	ಽ	BKS Global Mozambique Lda				BC	RING	LC)G						SHI	EET	1	OF	1
ROJE	CT:	Soil Test for Ile-Cuamba Bridges	Coord	inates:	S:	83	19948.2	254	E:	2	46667.4	78	Wate	r Leve	t		-1.20		m
OCAT	TION:	S-Riverside of Bridge 10, Nuhusse	Groun	d Eleva	ation, n	-MSL	_		597.	488		_ m	Starti	ing Da	te:	2	29/5/20	11	8
LIENT	T:	Chodai & EJEC	Max.D	rilling (Depth:		_		5.5	50		_ m	Finish	hing [Date:	_ 2	29/5/20	11	
_					_	_			_		-0.57					_			
	(2)				Our Our		Total			Œ.	Natural Water Content						SF		
Ê	GRAPHIC LOG	SOIL DESCRIPTION	90	9	RECOVERY (cm)		Unit			astic Limi	Conte	Uquid Limit	1	Specif			Blow (
DEPTH (m.)	WPH	SOIL DESCRIPTION	SAMPLING METHOD	SAMPLENO	00 VE		Weight		8	<u>-</u>	•	\dashv		Gravit	ty		(Blov	w/ft)	
ă	9		SA ME	8	. W		(Ton/m ²		30		(%)	120		4 2.6	2.0	10	20	20	10
		0.0-1.0 m, SM, silty SAND, silght plasticity, very dense, blackish brown, River Sand	WO					1.0			90	120		4 26	7.0		- 20	1	-0
,]			wo							-									
	ø	1.0-4.0 m, SM, silty SAND with gravel, 16-19% silt, 15-19% fine subangular gravel of 2-3 mm with random 1 cm max	SS	1	40				• 6					•	27				_
2 -		sized of brown quartz, fine-coarse subangular sand, very dense, traces of rock texture, yellowish-light brown &	WO				_					-		_	_		_	_	
	/	greenish gray, Granitic Residual Soil	SS	2	10			-			-	+		-	+		-	+	
3	<i>,</i> •		WO	Street, Street	- 10		-	+	• 10			+		١.	2.6		-	+	
-			SS	3	13		-	+				+		-			-	+	
4		4.0-5.5 m, QUARTZ dyke within granitic GNEISS basement	SS	4	2		-	+			-	+		+	+		-	+	
-			wo	-	-		+					+		+				+	
5 -			SS	5	Loss		_	+				+		+	+			+	-
Ī		End of Borehole @ 5.5 m					_	\top				†		\top					
1		Coring: 2 nd Col = %Recovery, 3 rd Col = %RQD						\top				\top						\top	
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B	KS	BKS Global Mozambique Lda				ВС	ORIN	NG L	.og						SHE	EHOLE	-	H11-1 OF	1
	~_	2.10 Stopen more ambidue rea					- 1 411			30					31,16	et/e		555	
PRO.	JECT:	Soil Test for Ile-Cuamba Bridges	Coord	inates:	S:	_ 83	32225	57.471		E:	242682	.659	Wate	r Level		174	5.60		m
LOC	ATION:	S-Abutment of Bridge 11, Lurio	Groun	d Elev	ation, n	n-MSL			58	82.70	0	m	Starti	ng Dat	e:	6/4	5/2011		
CLIEN	NT:	Chodai & EJEC	Max.D	rilling (Depth:					15.50		m	Finish	ning D	vate:	7/4	5/2011		
				25	700							-513		15540					
TH(m.)	GRAPHIC LOG	SOIL DESCRIPTION	SAMPLING	SAMPLE NO.	RECOVERY (cm)		Tol Ur Wei	nit		Plastic Limit	Natural Water Content	Liquid Limit		Specif Gravit		100	SPT low Co (Blow/	unt	
DEPTH	88		SAM	SAM	REC		(Ton	/m ³)		-	(%)								
	50000000	0.0-5.0 m, SM, silty SAND, 32% silt, fine subangular sand	wo			1.3	2 1.4	1.6	+	30	60 90	120	2.	4 2.6	2.8	10	20 3	0 40	_
	-	with little medium, medium dense, brown, River Sand	wo	-				-	+	+	+	+		+	+		+	-	_
1 -	1		SS	1	45				+	+	+	+		+	+	,	15		-
	1		wo		1.0			_	\pm	+	+			\pm		-1	T	\vdash	
2 .	1		SS	2	45					+	+					₩,	1		_
			wo						1		П					1	T	T	
3 -	1	1	SS	3	-27				•	7		Ī		•	2.6	1	14		
4			wo																
			SS	4	30											1	16		
5 -			WO													/			
		5.0-6.0 m, SP-SM, SAND with silt, 8% silt, fine-medium subangular sand, poorly graded, loose, brown, <u>River Sand</u>	SS	5	22				1	16	\perp			• 2.	5	-8			
6 -		COTO - CRICAL CAND at accord 449/ for accordance	WO						١.		\perp	_		-	1		1	07	
		6.0-7.0 m, SP-SM, SAND wt gravel, 41% fine-coarse gravel of 1.0-3.5 sized, fine-coarse subang sand, poor graded,	SS	6	22			4	-[\perp	_		_	• 2.8		Ţ	27	_
7 -		medium dense, brown, River Sand & Gravel 7.0-12.0 m, SM, silty SAND, 43% silt, fine sand, medium	WO					-	+	+	\Box	4		-	+		1	e	_
		dense-dense, pale reddish brown-greenish gray, Granitic	SS	7	26			-	+	+	\vdash	-		-	+	-	1	D	_
8 -	1	Residual Soil	WO		25			-	+	+	+	+		+	+	-	-	35	_
	1		wo	8	25			-	+	+	+	+		+	+		1	4	-
9 -	1 /		SS	9	22			-	+	+	+	+		+	+		20		-
	1/		wo	-	- 6-6			-	+	+	+	+		+	+		+	-	_
10 -	ľ		SS	10	20				1	• 17	+			٠,	2.7		19		-
			WO						+	+	\Box			+			1		
11 -	1		SS	11	10				\pm	†	\Box			\top				31	
			WO								\Box							1	
12 -		12.0-14.0 m, SM, silty SAND, 19% silt, fin-medium subangular sand, dense, greenish gray-greenish brown,	SS	12	15					12	П				• 2.7			7	. 4
13		Granitic Residual Soil	WO																
13			SS	13	10													30	
14 -	/		WO																1
	ľ	14.0-15.5 m, SM, silty SAND, 30% silt, fine subangular sand, very dense, light brown, <i>Granitic Residual Soll</i>	SS	14	4				4	\perp	ш			_					
15		0.0000000000000000000000000000000000000	WO						+	+	\perp	_		4					
		End of Borehole @ 15.5 m	SS	15	4			4	+	+	\vdash	-		-	-		-		_
	-	Coring: 2 nd Col = %Recovery, 3 rd Col = %RQD		-	-			-	+	+	+	-		-	+		-	-	_
	1	Coning: 2 Col = %Recovery, 3 Col = %RQD		-				+	+	+	+	+		+	+		+	-	_
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	1	Loss		1	1	1				- 11	1 1		1						

		1												BORE	HOLE	В	H11-	2
	<u>S</u>	BKS Global Mozambique Lda				BC	RING	LC	G					SHEE	т	1	OF	1
PROJE	CT:	Soil Test for Ile-Cuamba Bridges	Coord	inates:	S:	83	22307.4	151	E:_	24260	5.931	Water	Level:	_	114	2.00		m
LOCAT	TION:	N-Abutment of Bridge 11, Lurio	Groun	d Eleva	ation, m	n-MSL	_		580.2	00	m	Starting	g Date:	_	2/	6/2011	2	
LIENT	Γ:	Chodai & EJEC	Max.D	rilling (Depth:		_		10.5	0	m	Finishi	ng Dat	e: _	3/	6/2011		
_														$\overline{}$				
	90				(cm)		Total		3	Natural Wats Content	Uquid Limit		nacific			SPT low Co		
É E	01 0	SOIL DESCRIPTION	SNIG	N N	ÆRY (Weight		100	Natura Cont	Char		pecific Bravity			(Blow/		
DEPTH (m.)	GRAPHIC LOG	000000000000000000000000000000000000000	SAMPLING	SAMPLE NO	RECOVERY (cm)		(Ton/m ³			(%)	_		, and			(DIOIII)	,	
		0.0-3.0 m, CL, sandy CLAY, 18% fine sand, medium			-	1.7	1,4	1.6	30	60 9	120	2,4	26 2	8	10	20 3	0 4	0
- 1		Alluvial Clay	wo	_			-	-		+			+	\vdash	+	+	Н	_
1	_/	partition City	SS	1	45		+	+		+	-		+	+	• 5	+	Н	
	/		wo					†					+	Ħ		T	Н	
2			SS	2	45				1				• 2.5		• 6			
3			WO						23						V			
		3.0-4.0 m, SM, silty SAND, 43% silt, fine subangular sand, loose, gray-yellowish brown, River Sand	SS	3	45		_	1	•	-	_		• 2.6		8	-		
4		4.0-5.0 m, SM, silty SAND, 17% silt, fine-coarse	wo	4	35		+	+	14	+				2.7	1	14	Н	-
1		subangular sand with some fine gravel, medium dense, yellowish brown, <i>River Sand</i>	WO	-	- 55			+					+		-	V	\vdash	
5		5.0-7.0 m, SM, silty SAND, 17-26% silt, fine-medium subangular sand, slight plasticity, medium-very dense,	SS	5	32			+	16				• 2.6		+	1	5	
6	/	traces of rock texture, pale brownish gray-grayish green-	wo															
٠]		light brown, Granitic Residual Soil	SS	6	18									П				2
7		7.0-10.5 m, SM, silty SAND, 17% silt, fine-medium sand,	WO											Н	1	1	1	
-		traces of shinny decomposed muscovite, dense-very dense, brownish black, Granitic Residual Soil	SS	7	28		-	+	H	+	_		+	+	+	+	1	-
8 -		Gense, Drownish Diack, Granuc Residual Son	SS	8	27		+	+	H	+	-		+	\forall	+	+	Н	1
- 1	/		wo							+				\Box	+			
9	*		SS	9	40													
10			WO						25									
1		End of Borehole @ 10.5 m	SS	10	33		-		•	_				2.7	4	-	Ш	'
+		Coring: 2 nd Col = %Recovery, 3 nd Col = %RQD		_			-	+	H	-			+	\vdash	+	+		-
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+		Loss					+	+		+			+	+	+	+	H	-
- 1		Lab, WO - Wash , SS-Split Spoon , C - Coring	—	-	-	-	-	-	1	_	-	-	_	\rightarrow	-	_	\vdash	_

M	S	BKS Global Mozambique Lda				ВС	ORIN	IG I	LOG	3					BORE			111-3 OF 1	\dashv
PROJI	ECT:	Soil Test for Ile-Cuamba Bridges	Coord	inates:	S:	. 8	32226	2.929	9	E:	2426	74.280	Water L	evel:		-4	.50	n	n
		S-Intermediate of Bridge 11, Lurio			ation, n					582.3		m	Starting	Date:		5/6/	2011		
LIEN		Chodai & EJEC	Max.D				-			15.0	1000	m			-	-111	2011		
, _ , _ , ,		Onodai di ESEO	linax.0	illing t	Jopun.		-			10.0	_		I mann	y Dan		0.0	2011	_	
DEPTH(m.)	GRAPHIC LOG	SOIL DESCRIPTION	SAMPLING	SAMPLE NO.	RECOVERY (cm)		Tot Un Weig	it ght		Plastic Limit	- 2	$\overline{}$		ecific avity			SPT ow Cou Blow/ft		
8	Ö		9.2	99	2	١.,	(Ton/				(%	90 120	9000		.			40	
		0.0-4.0 m, SM, silty SAND, 15-30% silt, fine subangular	wo			1.	0 1.0	20	\top	30	60	90 1/0	149	6 2		10.7	20 30	90	٦
- 1		sand, loose, brown, River Sand	wo							T						-	\Box		1
1 1			SS	1	42			\forall	1	+					١,	. 5	\Box	\pm	1
1			wo		-				1	+	+					1	\Box	+	╡
2 -	- 7		SS	2	35	-	-	+	+	+	-					9	\vdash	-	\dashv
+			-	-	30	-	\vdash	-	+	-	+				-	1	\vdash	+	-
3			WO			-	\vdash	-	+	+	-				-	10	\vdash	+	\dashv
-			SS	3	25	-		-	-	-	-		-	-	-	1.0	-	+	\dashv
4 -		4.0-5.0 m, SP-SM, SAND with silt, 10% silt, fine-coarse	wo			\vdash	_	4	- 5	9	-	-		-	2.8	1	20	- 1	4
1		subangular sand of quartz mostly, poorly graded, medium	SS	4	20	_					_				2.8	1	20	-	_
5		dense, brown, River Sand	WO						4							/			
_]		5.0-11.0 m, SC, clayey SAND, 44-46% silt & clay, fine sand, slight plasticity, medium dense, greenish gray-	SS	5	16								9			12			
. 1		greenish brown, Granitic Residual Soil	WO							20									
6		Control of the Contro	SS	6	30			2.1		10				• 2.6		• 1:	1		П
- 1			wo													1	П	-	7
7			SS	7	45				\pm		+						20	+	7
- 1			wo	_				+	+		_				-	+ /		-	H
8			SS	8	45	-	\vdash	+	+	+	+	++			+	14	16	+	-
- 1			WO	0	40	-		+	+	-	+		-		-	1	0	+	-
9 -			-					-	+	-	+	-	-		-	+1	+	+	-
-			SS	9	45	_		-	4	-	-		-		-	- 13	21	+	4
10			WO						4	20	_					1	\sqcup	\perp	
			SS	10	45			2.1		•				• 2.6	5		20		
11			WO		111111111111111111111111111111111111111					13						1			
		11.0-14.0 m, SM, silty SAND, 15% silt, fine-medium sand with little coarse, traces of shinny decomposed muscovite	SS	11	40					•				• 2	6		1	31	
]		& rock texture, dense-very dense, greenish gray-light	WO					П	Т									1	Ī
12	/	brown, Granitic Residual Soil	SS	12	20														1
- 1	/		wo						\neg								П		٦
13			SS	13	5				1								П		7
- 1			wo					\forall	\pm		_					+	\Box	+	┪
14	2000000	14.0-15.0 m, granitic GNEISS basement	SS	14	Loss	-	\vdash	+	+	+	+					+	\vdash	+	4
-			C1	Loss	LU33	\vdash		+	+	-	+	-			-	-	-	+	-
15		End of Borehole @ 15.0 m				-	\vdash	+	+	-	-	-		-	-	+	\vdash	+	4
-		579		15	Loss			-	-	-	-					3		+	4
4		Coring: 2 nd Col = %Recovery, 3 nd Col = %RQD	_	_	_	_		-	-	-	-				_	_	\vdash	-	4
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- 1		Loss		-		-		-	+	-	+	-			-	+	\vdash	-	\dashv
		Lab, WO - Wash , SS-Split Spoon , C - Coring	1	1	1	1		-	- 1		- 1							-	- 1

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BK	5	BKS Global Mozambique Lda				ВС	RIN	G LC	OG					11	SHE	ET	1	OF	1
PROJECT	т:	Soil Test for Ile-Cuamba Bridges	Coord	inates:	S:	83	2230	1.993	_ E:_	24	2614.310	ÿ.	Water Le	vel:			-1.40		m
LOCATIO	N:	N-Intermediate of Bridge 11, Lurio	Groun	d Eleva	ation, m	n-MSL	_		579.	800		m	Starting (Date:		_	1/6/201	1	-8
LIENT:		Chodai & EJEC	Max.D	rilling (Depth:		-		10.	50		m	Finishing	Date	к ,		2/6/201	1	
	90				(cm)		Tota			astic Limit	il Water lent	Tumi	6	-16-			SP		
DEPTH(m.)	GRAPHIC LOG	SOIL DESCRIPTION	SAMPLING	SAMPLENO	RECOVERY (Uni Weig (Ton/r	ht n³)		\vdash	Content	Pingul	Spe Gra	wity			Blow C		
		0.0-3.0 m, CL, sandy CLAY, 31% fine sand with little medium, medium plasticity, medium stiff, dark grayish	WO			1.6	1.8	2.0	30	60	90 120	_	2,4 2.	5 2.8	3	- 1	0 20	30 4	40
,]		brown, Alluvial Clay	WO				\Box												
	1		SS	1	45		4	4		4						• 5			
2 -			WO		1000		-	+	-3	-		_			_	1		-	
-			SS	2	45		+	+	17	-	-	-	2.5 •		-	• 5		+	-
3	****	3.0-4.0 m, ML, sandy SILT, 46% fine-medium subangular	SS	3	30		+	+	17	-				27 •	-	1	8	+	-
1		sand, loose, yellowish-grayish brown, River Silt	WO	3	.30		+	+		+		_		-	-			+	
4		4.0-5.0 m, SM, silty SAND, 15% silt, fine-medium sand,	SS	4	40		\forall		16		\top			2	9 •		20	1	
. 1		medium dense, brown-grayish green, <u>Granitic Residual</u> <u>Soil</u>	wo														1		
5	/	5.0-6.0 m, SM, silty SAND with clay, 20% silt, 10% clay, randomgravel, fine-coarse subangular sand, medium	SS	5	40													28	
6		dense, yellowish-grayish brown, Granitic Residual Soil	WO						12.									1	1
		6.0-7.0 m, SM, silty SAND, 27% silt, random coarse gravel, fine-medium subangular sand, very dense, yellowish	SS	6	36				•				2.6	•					1
7		brown-greenish gray, Granitic Residual Soil 7.0-10.5 m, CL, sandy CLAY, 49% fine subangular sand,	WO				_	1		4		_			_			\perp	
		traces of shinny decomposed muscovite, medium	SS	7	33		+	+		+	-	_			-	_		+	-
8	1	plasticity, hard, brownish black, Granitic Residual Soil	SS	8	27		2	1 •	18	-	-	_	2.6		-			+	-
1	/		wo		-		+								-				
9			SS	9	10		_			\forall								+	
			wo									_							
10			SS	10	7														
		End of Borehole @ 10.5 m																	
1		Coring: 2 nd Col = %Recovery, 3 nd Col = %RQD					4											1	
-							4	-	-	-	-	_				_		1	-
-									-	-				-		-	-	-	
1							-	-	+	-				-				+	
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1															-			+	8
1							+				\top								
1																			
1		Loss																	
1		Lab, WO - Wash , SS-Split Spoon , C - Coring																	

-	_									_							OREH	OLE	-	111-5	\dashv
LSK	<u>S</u>	BKS Global Mozambique Lda				В	DRII	NG	LO	G						SH	HEET		1	OF 1	1
PROJE	ст:	Soil Test for Ile-Cuamba Bridges	Coord	inates:	S:	. 8	3222	71.11	5	E:	24	2661.	712	Water	r Level		_	-3	3.60	n	n
LOCAT	ION:	S-Riverside of Bridge 11, Lurio	Groun	d Eleva	ation, n	n-MS	L:	_		581.	100		_ m	Starti	ng Dat	e:	_	3/6/	2011		
LIENT	:	Chodai & EJEC	Max.D	rilling (Depth:					13.	50		_ m	Finish	ning D	ate:	_	4/6/	2011		
					_	_				_					7,270		_				
	(2)				(F			tal			Timit	Water	ij						SPT		
Ê	0010	SOIL DESCRIPTION	g o	2	RECOVERY (cm)			nit		8	testic Limit	Natural Wats Content	phon		Specif				ow Cou		
DEPTH(m.)	SRAPHIC	SOIL BLOOM! HOW	SAMPLING	SAMPLE NO	80			ight		8	\vdash	•	\dashv		Gravit	y		(1	Blow/ft)	
۵	ō		8 2	9	20	1		n/m³) 8 2.6	0	30		%)	120	2.4	2.6	2.8		10 2	20 30	40	
3		0.0-2.0 m, ML, SILT, slight plasticity, loose, dark grayish brown, <i>River Silt</i>	WO									1	1								
1		5151111, <u>1-0-10-0011</u>	WO																		
. 18			SS	1	33											1	1	6		1	
2		2.0.2.0 CM alls CAND 20% alls for and leave	WO							16			1				1	1			
		2.0-3.0 m, SM, silty SAND, 32% silt, fine sand, loose, brown, <u>River Sand</u>	SS	2	33	-		-	_	•	-	-	+		- '	2.7	1	4	\vdash	-	_
3 -	,	3.0-4.0 m, SM, silty SAND with clay, 40% silt, 10% clay.	WO		- 00	-					-	-	+		-	+	2	-		-	_
- 1	/	fine sand, very loose, brown, River Sand	SS WO	3	33	-			-		-	+	+		-	+	-1	-		-	-
4		4.0-5.0 m, SM, silty SAND, 25% silt, fine-medium	SS	4	26				-	14	-	+	+		+	• 2.7	+	12	2	-	-
-		subangular sand, medium dense, dark yellowish brown. River Sand	WO	-	20	-					-	-	+		-		+	1		-	-
5	0000000	5.0-9.0 m, CL, sandy CLAY, 23-48% fine sand with little	SS	5	34					25	-	+	+			.6	+	10	\vdash	-	-
1		medium, low plasticity, stiff, greenish gray-greenish brown- brown, Granitic Residual Soil	WO									+	+				+	1	+	+	-
6			SS	6	45	\vdash					\forall		+		+	+	+	1	17		i
- 1	1		wo		-							-	+		+		+	1			-
7	-		SS	7	45						\forall		+		\pm	$^{+}$		4,	4		7
. 1			wo														†	1			
8			SS	8	45			• 2	.0		-				• 2	.6			17		
, 1			WO							9	П		Т		T	Т	Т	Т		1	31
9		9.0-13.0 m, SP-SM, silty SAND with silt, 11% silt, 28% fine subangular gravel of 1 cm max sized, fine-coarse	SS	9	9					•					•	27					
10		subangular sand, traces rock texture, very dense, pale	WO																		
"]	•	brown, <u>Granitic Residual Soil</u>	SS	10	6																1
11	/		WO																		
			SS	11	5								1			1		╄	\perp		_
12			WO			_			_		_	-	+		4	+	-	\vdash		-	4
- 18	•		SS	12	4	-					-	-	+		-	+	+	-	\vdash	-	4
13		13.0-13.5 m, granitic GNEISS basement	WO			⊢			_		-	+	+	\vdash	+	+	+	+	\vdash	-	4
-	6	End of Borehole @ 13.5 m	SS	13	Loss	-			-		-	+	+		+	+	+	+	\vdash	-	4
-		Coring: 2 nd Col = %Recovery, 3 nd Col = %RQD		-					-			+	+		+	+	+	\vdash	\vdash	-	-
+		coming. 2 con - savecovery, 3 con - savecovery		-	-	\vdash			-		+	+	+		+	+	+	+		-	-
1				-		-			-		-	+	+		+	+	+	+	+	+	+
1						\vdash			-		-	+	+		+	+	+	-		-	-
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+				_		-		-			-	+			-	+	+	+	\vdash	-	-
-		Loss				-			-	\vdash	+	-	+		+	+	+	-	\vdash	-	4
		Lab, WO - Wash , SS-Split Spoon , C - Coring								\perp	_						丄	\perp	ш	_	

										_								ЕНО	LE	-	11-6	
1	<u>S</u>	BKS Global Mozambique Lda				во	RIN	١G	LO	G							SHE	ET		1 0	F 1	
PROJ	ECT:	Soil Test for Ile-Cuamba Bridges	Coord	inates:	S:	83	2229	90.53	1	E:	2	42631	.906	Wate	r Lev	el:			-1.0	00	m	,
LOCA	TION:	N-Riverside of Bridge 11, Lurio	Groun	d Elev	ation, m	-MSL				578.	700		m	Start	ing D	ate:			31/5/2	2011		1
LIEN	T:	Chodai & EJEC	Max.D	rilling l	Depth:					11.	00		m	Finis	hing	Date	ĸ.		1/6/2	011	_	1
	-			25	20								-58		1.50							
DEPTH (m.)	GRAPHIC LOG	SOIL DESCRIPTION	SAMPLING	SAMPLE NO.	RECOVERY (cm)		Tol Ur Wei	iit		Name Control	Plastic Limit	Natural Water Content	Liquid Limit		Spec				Blov	SPT w Coun low/ft)	it	
à	SRA		SAM	SAM	REC		(Ton	/m ³)				(%)										1
-		0.0-1.0 m, CH, CLAY, high plasticity, medium stiff, dark	wo			1.2	1.4	1.6	3	- 30	60	90	120	2	4 26	2.5	3	10	20	30	40	┥
1		grayish brown, Alluvial Clay	wo																	\pm	+	1
1	7	1.0-2.0 m, SC, clayey SAND, 44% silt & clay, fine	SS	1	45					, 3						2.6		• 5		\pm	+	1
1	/	subangular sand, loose, yellowish brown, River Sand	wo																\exists	\pm	+	1
2		2.0-3.0 m, ML, sandy SILT, 15% silt, high plasticity, soft,	SS/UD	2/1	45/60			1.8	•	,	40				٠.	2.5		• 3			\pm	1
- 1	/	dark greenish gray, River Silt	wo							15		П							\exists	\pm	Ť	1
3 #	/	3.0-4.0 m, SW-SM, SAND with silt, 13% silt, fine-medium	SS	3	27					•						٠	2.8	4				1
. 1	/	subangular sand, loose, well graded, yellowish brown, River Sand	wo							13									1			1
4		4.0-8.2 m, SM, silty SAND, 15-23% silt with random fine- coarse subangular pink quartz gravel of 3 cm max sized,	SS	4	25					•						٠	2.8			27		1
. 1		fine-medium subangular sand with little coarse, medium-	wo							10											1	
5		very dense, yellowish brown-greenish brown-greenish gray, Granitic Residual Soil	SS	5	13					•						• 2	.7					1
. 1	/		wo																			1
6			SS	6	7																Т	1
. 1			wo	-														- 4				1
7			SS	7	10																	1
. 1			wo																			1
1	8.2-8.5	8.2-11.0 m, granitic GNEISS, coarse grained, moderately-	C1	43	Loss																\top	1
- 45		nighty weathered, hard, broken into pieces with iron oxide	C2	10	0															1	T	
0 -	8.9-9.5		C3	10	Loss															+	1	
-			C4	57	Loss		-		-				+	Н	\dashv	-	-	-	-	+	+	1
11		End of Borehole @ 11.0 m		31	LUSS				-			-	-		-	-	-		-	-	+-	1
+		Coring: 2 nd Col = %Recovery, 3 nd Col = %RQD		_					-			+	+		\rightarrow		-			-	+	1
1				_																\rightarrow	+	1
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1				_		\vdash						\vdash			\exists				\dashv	+	+	1
+		Loss											+				-			+	+	1
1		Lab, WO - Wash , SS-Split Spoon , C - Coring	—						-			-			-		-		-	-	+	4

																REHOLE		112-	\rightarrow
k	KS	BKS Global Mozambique Lda				во	RIN	G L	OG						SHE	ET	1	OF	1
ROJ	JECT:	Soil Test for Ile-Cuamba Bridges	Coord	inates:	S:	83	27687	.029	_ E:	_ 2	244541.	111	Water	Level	:		-3.60		m
.oca	ATION:	S-Abutment of Bridge 12, Muassi	Groun	d Elev	ation, n	n-MSL			581	.052		m	Startin	ng Dat	e:	9/	6/2011		
LIEN	IT:	Chodai & EJEC	Max.E	rilling (Depth:					00		m	Finish	ing D	vate:	10	/6/2011		
												-373				00			
	-				_		Total	ı;	Τ	¥	ater	EM.					SPT		
2	100		m	Q	RECOVERY (cm)		Unit			Plastic Limit	Natural Water Content	Liquid Li		Specifi	ic	В	Blow Cou	int	
DEPTH (m.)	GRAPHIC	SOIL DESCRIPTION	SAMPLING METHOD	SAMPLE NO.	OVER		Weigh	nt		Pla	ž°	٦ ع	- 3	Gravit	y		(Blow/ft)	
DEP	GRA		SAM	SAM	REC		(Ton/m	13)			(%)								
-	80000000	0.0-1.5 m, SM, silty SAND, 30% silt, very fine sand, loose,	wo			1.2	1.4	1.6	3	0 6	90	120	2,4	2.6	2.8	10	20 30	40	_
-		blackish brown, Crust	wo				+	+	+			+		+	+		+	\pm	
1 -			SS	1	35		+	+	+			+			+	• 9	+	\pm	
		1.5-4.3 m, SM, silty SAND, 20% silt, random fine	wo				\pm	\pm	†			\top		\pm				\exists	
2 -		subangular gravel of 1 cm max sized, fine-medium subangular sand, traces of rock texture & decomposed	SS	2	38		1	\top									22	\neg	
3 -		felspar into sand, medium-very dense, yellowish gray-pale grayish brown, <u>Granitic Residual Soil</u>	wo															1	
			SS	3	26				• 1	9				•	2.7				7
4 -			WO																
		4 3.9.0 m. granitic GNEISS coarea grained meda-station	SS	4	10			-	-								\perp	4	_
5 -		4.3-9.0 m, granitic GNEISS, coarse grained, moderately- highly weathered, hard, brownish white with some	C1	50	0		-	+	-			-		-	-		+	4	
		dissipated gray minerals, Rock Basement	C2	10	0		+	+	+			+		+	+		+	+	-
6 -			C3	17	33	Н	+	+	١.	29	\vdash	+		+	• 2.8		++	-	-
			SS	6	-33	Н	+	+	+	-		+		+	1.0		+	+	\dashv
7 -			SS	7	2	\vdash	+	+	+		\vdash	+		+	+		+	+	4
			wo	<u> </u>	-		+	+	+			+					+	\pm	
8 -			SS	8	Loss		\pm		+			†					+	\exists	_
			C4	Loss			\top	т	†	П		Т						\neg	
9 -		End of Borehole @ 9.0 m																	
		Coring: 2 nd Col = %Recovery, 3 rd Col = %RQD																	
							_		╙								\perp		
					_		-	-	1			-		4	-		\perp	_	4
			_				+	+	+		-	+		+	+		+	+	4
-						-	-	-	+-	-	-	-			-	-	++	+	
-						-	-	+	+-	-			-		-		+-+	+	
-								-	+-		-			-	-		+	-	
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-							-	-	+	-		+	-	-	-	-	++	-	
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-						-		+	+	-	-		-		-	-		+	
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-								_	-		1	-		_	-	1	+	4	
-							_	+	+	-	-	+-		-	-	-	+	4	
-								-	+-		-			-	-	-		4	
-			-		-		-	+	+		-	+		-	-		+	+	
				_			-	+	+	H	+	+		+	+	-	++	+	-
				-			+	+	+	Н		+		+		+	+	+	\dashv
-		Loss					+	+	+					+			++	+	-
- 4		Lab, WO - Wash, SS-Split Spoon, C - Coring					+		1					_			+	\rightarrow	\dashv

												T				REHOL		3H12-2	\rightarrow
LSK	3	BKS Global Mozambique Lda				BC	PRIN	G LC)G					1	SHE	ET	1	OF	1
ROJE	CT:	Soil Test for IIe-Cuamba Bridges	Coord	inates:	S:	83	327708	.648	_ E:_	24	44556.816	v	Vater Le	wel:			-0.90		m
OCATI	ION:	N-Abutment of Bridge 12, Muassi	Groun	d Elev	ation, m	n-MSL			581.3	356		n S	Starting I	Date:		8	/6/2011	<u></u>	
IENT:		Chodai & EJEC	Max.D	rilling (Depth:		_			0		n F	inishing	Dat	e:	9	/6/2011		
				25	270						93		155						
	39						Tota	E .		Į.	Water						SPT	r)	
2	LOG		(2)	9	RECOVERY (cm)		Unit		1	stic Limi	Natural Wats Content Linuid Limit		Spe	ecific		- 1	Blow Co	ount	
	GRAPHIC	SOIL DESCRIPTION	SAMPLING METHOD	SAMPLENO	OVER		Weigl	ht	1	<u>-</u>	20 3		Gra	avity			(Blow	/ft)	
3	GR		SAM	SAN	REC		(Ton/n			٠ (%)								
88	55555	0.0-2.5 m, SM, silty SAND, 26% silt with random fine subangular quartz gravel of 1.5 cm max sized, fine-coarse	WO			1.3	2 1.4	1.6	30	- 60	90 120	+	2,4 2	6 2	8	10	20	30 40	Н
10		subangular sand of decomposed feldspar mostly, very	wo							T		1						Ħ	╛
1		dense, traces of rock texture, pale grayish-whitish brown, Granitic Residual Soil	SS	1	40														+
K			WO																
100			SS	2	26				• 12					• 2	6				_†
#		2.5-5.2 m, granitic GNEISS, coarse grained, moderately- highly weathered, hard, broken into pieces generally.	C1	33	0		_		\square	4	-	4	-				-		4
-		traces of continuous layering, pale brownish white, Rock Basement	C2	Loss	22		-	-	\vdash	-	-	+	+	-			-	H	-
#	▦		C3 SS	36 4	22		+	+	• 12	+		+	-	• 2	7	-	-	Н	4
#			C4	Loss			+	+				+	_					\vdash	\exists
Ħ		5.2-6.0 m, granitic GNEISS, coars grained, moderately-	SS	5	10							+					+	\Box	+
#	₩	highly weathered, brittle-hard, broken into pieces with iron oxide coated, washable partly into sand, greenish gray,	C5	32	0							Ť						П	
#	₩	Rock Basement	SS	6	5		\Box					T						П	1
			C6	Loss															
1		End of Borehole @ 6.7 m						1				4						ш	_
1		Coring: 2 nd Col = %Recovery, 3 nd Col = %RQD		_			-	+	\vdash	4	-	4	-	-		-	-	Н	4
+						-	-	+		+	-	+	-				+	H	-
1			_	-		-	+	+	\vdash	+		+	+			-	+	H	\dashv
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1		Loss		_			+	+		1	++	+	-			-	-	\forall	\dashv
4		Lab, WO - Wash , SS-Split Spoon , C - Coring					-			-	-	+	_				_	\vdash	\dashv

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K	S	BKS Global Mozambique Lda				BC	PRII	NG	LO	G							SHEE	Т		1 OF	1	
PROJ	ECT:	Soil Test for Ile-Cuamba Bridges	Coord	inates:	S:	83	3595	28.49	1	E:	2	35113.	340	Wate	er Lev	el:			-1.8	30	m	
OCA	TION:	S-Abutment of Bridge 13, Namutimbua	Groun	d Elev	ation, n	n-MSL				562.7	700		m	Start	ting D	ate:	_	- 13	16/6/2	2011		
LIEN	T:	Chodai & EJEC	Max.D	rilling l	Depth:					8.3	0		m	Finis	hing	Date	6	61	16/6/2	2011	_	
				75	700								-373		1.55							
							То	tal		1	¥	/ater	THE CHI						- 1	SPT		1
ê	100		m	Q	RECOVERY (cm)		U	nit			lastic Limit	Natural Water Content	Uquid L		Spe	cific			Blov	v Count		1
DEPTH (m.)	GRAPHIC	SOIL DESCRIPTION	SAMPLING	SAMPLENO	OVER		We	ight		3	Ē_	ž°.	٦ ³		Gra	vity			(Bi	iow/ft)		1
B	58		SAM	SAN	REC		(Tor	v/m³)				%)										
\dashv		0.0-1.0 m, CH, silty CLAY, 10% silt, medium-high plasticity,	wo			1.2	2 1.	4 1.6	-	30	60	90	120	2	4 26	2.8	+	10	20	30	40	+
1	/	very soft, grayish brown, River Clay	wo									_				_	\pm			_		1
1		1.0-5.0 m, SM, silty SAND, 10-20% silt, very fine-fine-	SS	1	41							\top	\top			\neg		2		+	\top	1
2		medium subangular sand, very loose-loose, dark grayish brown, <i>River Sand</i>	wo																			1
[SS	2	25												•	3				
3	/	1.0-5.0 m, SM, silty SAND, 24-28% silt, fine subangular sand with little medium, very loose-loose, dark grayish	WO																			
1	/	brown, River Sand	SS	3	25					• 1		_				• 27	7	1				4
4			WO		700		_		\dashv	• 2	0	-	+				-	-		-	-	4
-			SS	4	35		-		\dashv	-	0	+	-	-		• 2.6	-	-	13	1	-	1
5		5.0-5.3, SP, poorly graded SAND, Residual Soil	SS	5	19				\dashv	• 14	-	+	+			• 2	.7	-	-	+	1	1
1		5.3-8.3 m, granitic GNEISS, medium-coarse grained, slight	C1	40							\forall		+							+	+	1
6		weathered-fresh, hard, pale gray. Rock Basement			82				\exists			\top					†		\exists	+		1
ା 1		6.3-7.8 m, expected shear zone within granitic GNEISS	C2	60																		1
7	6.3-7.8				0]
8 -			C5	50	10							- 1					4					1
1		7.8-8.3m, high weather, brittle, jointed, brownish white End of Borehole @ 8.3 m							_			-	1			_	4		_	_	-	4
- 1		Coring: 2 nd Col = %Recovery, 3 rd Col = %RQD					_		_		-	-	+			-	+	-	-	+	-	4
1		Coring: 2 Col = %Recovery, 3 Col = %RQD		-					-	-	+	+	+		-	+	+	-	-	-	+	1
4									\dashv		-	+	+			-	+	-	-	+	+	1
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- 4		Loss Lab, WO - Wash , SS-Split Spoon , C - Coring		-		\vdash			-		+	-	+		\vdash	-	+	-	\rightarrow	-	+	1

BKS Global Mozambique Lda			BORING LOG											BOREHOLE BH13-2										
BKS		BKS Global Mozambique Lda				G L	SHEET 1 OF 1																	
LOCATION: N-Abutment of Bridge 13, Namutimbua		Coord	inates:	S:	83	59569	.077	_ E	_ 2	235112	2.158	Wate	r Leve	sl:		-1	.50) m						
		N-Abutment of Bridge 13, Namutimbua	Groun	d Elev	ation, m	n-MSL:	-		564	1.300		m	Start	ing Da	ite:	_	11/6	/2011						
		Chodai & EJEC		x.Drilling Depth:			_		10	0.00		m	Finishing Date:			_	15/6	2011	_					
	_				_	_			_							_				4				
	m				8		Tota	ı		THE STREET	Natural Water Content	Œ						SPT						
	GRAPHIC LOG	SOIL DESCRIPTION	90	9	RECOVERY (cm)		Unit			lastic Limit	Corte	Liquid Limit		Speci				w Cour						
The last of the la	ZAPHIC	SOIL DESCRIPTION	SAMPLING METHOD	SAMPLE NO	COVE		Weigl			1	•	\dashv		Gravi	ity		(8	Blow/ft)						
5 3	6		SA	8	32		(Ton/n				(%) 0 90	120	١,	4 2.6		Ι.	10 2	0 30	40					
		0.0-3.0 m, SW-SM, SAND with silt, 7% silt, fine-coarse subangular sand, very loose, well graded, dark yellowish	WO			1.0	1.0	-	T			170		7.20		T		Ĭ	70	1				
		brown, River Sand	WO]				
			SS	1	10		4	-	+					4	+	1			1	4				
1			WO				4	+		0	Н	_		-	• 27	1	8		+	4				
-			SS	2	10		+	+	+	\vdash	Н	+		+	-	+	1	-	+	1				
		3.0-5.0 m, SM, silty SAND, 18-20% silt, fine-coarse	SS	3	26		+	• 2.0		12	Н	+			2.6	+	1	17	+	1				
1	1	subangular sand with some fine gravel, medium-very dense, traces of rock texture, brown-grayish & greenish	wo				\forall		+	+	Н			\forall	+			1	1	1				
1/		brown, Granitic Residual Soil	SS	4	33				•	14					• 2.7					4				
			wo																	1				
	Ш	brown, Granitic Residual Soil 5.0-10.0 m, granitic GNEISS, coarse grained, fresh, hard- very hard, traces of continuous layering, pale-dark greenish gray, Rock Basement	C1	100	100		4	4	1		Ш			4	4	_				4				
. ##		greenish gray, Rock Basement	C2	100			4	+	+	-	Н	_		-	+	+	-		+	4				
-				2	100	\vdash	+	+	+	\vdash	Н			+	+	+			+	-				
-	▦		C3	100		H	+	+	+	+	H	-		+	+	+	\vdash	\vdash	+	+				
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'	▦		C4	60	100					Т	П			T		T			T	1				
, 🏢					100]				
1	▦		C5	94	100				1		Ш			4	1	1			1	1				
。	Щ	End of Borehole @ 10.0 m					_	-	1		Н			_	+	1	-		1	4				
-		Coring: 2 nd Col = %Recovery, 3 rd Col = %RQD		_		H	+	+	+	\vdash	Н	-		+	+	+	-	-	+	1				
1		coming a con-parently, o con-parent		-		H	+	+	+	+	H	-		+	+	+	-		+	1				
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Live and															BOREHOLE BH13-3						
PROJECT: Soil Test for Ile-Cuamba Bridges LOCATION: N-Riverside of Bridge 13, Namutimbua CLIENT: Chodai & EJEC		BKS Global Mozambique Lda	BORING LOG												SHEET 1 OF					1	
		Soil Test for IIe-Cuamba Bridges	Coordinates: S: 8359554.176 E: 235112.592								92	Water	Level:			-1.70	- 0	m			
		N-Riverside of Bridge 13, Namutimbua	Ground Elevation, n											Startin	ng Date	0	. 1	1/6/201	1		
		Chodai & EJEC	Max.D	rilling l		Ziver I						Finishing Date:			15/6/2011						
				25	70								73		1500						
					_		Tot	al	П	-		ater	Cmit					SPT	r		
ê	100		m	Q	(cm)		Un	it			Palsic Limi	Natural Wats Content	Liquid Li		Specific			Blow Co	ount		
DEPTH (m.)	GRAPHIC	SOIL DESCRIPTION	SAMPLING	SAMPLEND	RECOVERY		Wei	ght		i		ž	73	- 9	Gravity			(Blow	/ft)		
DEF	88		SAM	SAN	REC		(Ton	/m ³)			(%)									
_	05505555	0.0-2.0 m, SM, silty SAND, 30% silt, fine-very fine sand,	wo			1.2	1.4	1,6	\dashv	30	60	90	20	2,4	2.6 2	.8	10	20 :	30 4	0	
	/	very loose, dark brownish gray, River Sand	wo								+		+					_			
1 -	/		SS	1	30			\forall	1		\top	+	\vdash			П	• 2	+	\Box		
_ 1			wo					П		26	T		T			П		\top	П		
2 -	/6/	2.0-3.0 m, SC-CL, clayey SAND wt gravel-sandy CLAY, 19- 68% silt&clay, nil-28% gravel, fine-coarse sand. med-high	SS/UD	2/1	30/50					•	•				• 2.5		• 4				
3 -	//	plastic, loose, brownish gray, River Sand&Clay	wo							18											
		3.0-4.0 m, SM, silty SAND, 30% silt, fine sand with some medium, very loose, dark brownish gray. River Sand	SS	3	33				_	•					• 2	6	• 7				
4 -	<i></i>	4.0-4.8 m, ML, sandy SILT, 41% fine sand with little	WO				4	_	4	11	4	_	-					_		_	
-	1	medium, very dense, traces of rock texture, greenish gray	SS	4	27		-		-	-	+	-	+		•	4/		-	Н		
5 -		brown, <u>Granitic Residual Soil</u> 4.8-9.8 m, granitic GNEISS, coarse grained, moderately	WO C1	42			\dashv	+	\dashv	-	+	+	+		+			+	Н		
-		weathered, brittle, in brown & broken into pieces @ top 1st meter then fresh throughly, hard-very hard, jointed with	C2	12	0	-	+	-	\dashv	-	+	-	+		+	\vdash		+	Н	-	
6 -	▦	iron oxide coated, traces of continuous layering, greenish	C3	60			+	+	+	-	+	+	+		+	\vdash		+	Н	-	
	▦	gray, Rock Basement	C4	100	76		\dashv		+		+	-	+		+			+	Н	-	
7			C5	100			\dashv		1		\pm		+					+	\Box	-	
					74				1		\top										
3			C6	80							T										
			C7	100	30																
	▦		C8	100	100																
0 -				100	100				4		1	_						_			
3		End of Borehole @ 9.8 m					_		4		4	_	-		_			\perp			
-		Coring: 2 nd Col = %Recovery, 3 nd Col = %RQD	_	_			-		-	-	+	-	-		+			-	Н	_	
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1		Lab, WO - Wash , SS-Split Spoon , C - Coring																			