	PROPOSED CIVIL WORKS AT VOI 132/33 KV SUBSTATION				
ITEM	BILL OF QUANTITIES  DESCRIPTION	UNIT	QTY	RATE	AMOUNT
II LIVE	DESCRIPTION	OIVII	GH	KAIE	AMOUNT
	SECTION. 1				
	<u>Preliminaries</u>				
Α	Allow for a temporary site office ,notice board, shelves and ,	ITEM			
	store for materials and tools storage. To accomodate 7 people				
	and all furniture and meeting accesories				
В	Allow for clean water for the works	ITEM	1		
С	Allow for all the necessary statutory approvals for the worksby	ITEM	1		
	relevant county authorities ;Replication of drawings to			1 1	
	required formats by county government;Endorsement by			1 1	
	relevant proffesional persons; and submit a set of approved				
	drawings before commencement ,including site registration.				
		ITELA			
С	Allow for temporary sign post for the proposed works	ITEM			
D	Allow for security and insurance for the proposed works	ITEM	1		
E	Allow for supply of power connection for use for the works.	ITEM	1		
L	Allow for supply of power confrection for use for the works.	115741	1		
F	Allow for a qualified personel conservant with Kenya Power	ITEM	1		
	safety regulations for the entire contract period;with capacity			1 1	
	to receive safety permits and double up a ssafety officer	1			
G	Allow for prompt communication and updates facilitation to	ITEM	1		
	client supervision team including communication and project				
	data storage, 2 no.laptops, 2 no.hard drives,airtime etc				
H	Allow for demolition of existing control room and cart away	ITEM	1		
	Allow for removal of existing fence and gates and handover	ITEM	1		
	to client for disposal		<u> </u>		
	TOTAL THIS PAGE				



ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	SECTION, 2				
	SWITCHYARD REHABILITATION & REINSTATEMENT				
1	Switch yard 4000 SM				
Α	Clear working area of all the site of existing ballast and rubbles	ITEM	1		
В	Scoop loose top soil by cutting average 400mm deep to recieve imported fill	SM	4,000		
С	Provide average 300 mm thick selected well compacted imported murram fill, compacted in layers of 150mm thick using a plate compactor to achieve slope	СМ	1,000		
D	Prepare and apply Gradiator 4TC or equal and approved insecticide to surfaces of blinding as per Manufacturer's written instructions	SM	40,000		
Е	Apply suitable weed killer, herbicide to surfaces of blinding as per the Manufacture's written instructions	SM	4,000		
F	1000 gauge polythene or other equal and approved membrane laid on compacted and treated quarry dust with welted laps of 200mm wide.	SM	3,500		
G	Supply and spread uniformly 150mm thick 'one inch' (1") ballast in switch yard to match existing-re use existing ballast wher not sufficent top up with new supply	SM	3,500		
Н	precast concrete chanel 200mm high at the ballast perimeter to prevent ballast spill over as restraint	LM	600		
I	allow for making good all plinths with worn out edges and apply cement slurry with brush to look good	ITEM	1		
3	Cable ducts				
A	Supply and install 150mm diameter medium gauge PVC pipes as ducts, with and including 150mm thick concrete class 20 surround and murrum compaction underlying pipe bases as per as per engineer's detailed drawing-in all locations; include curring and reinstatement of existing bitumen road	LM	160		
_					
		-			
	TOTAL THIS PAGE				



ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	CFOTION 4				
-	SECTION. 4			+	
	DRAINAGE WORKS			1	
Α	PERIMETER OPEN DRAIN			-	
				†	
	Excavate on site drain trench not exceeding 1.5m deep including plucking and struting, dispoasl of soil to receive drainage channels and forming sloping sides in well compacted murram bed. (hydraulic depth 1 m ,Trapezoidal area 0.9sm)	LM	200		
	Lay (600mm) dia precast concrete invert block drains to a suitable fall with grooved edge and tounged joints filled with cement/sand mortar (1:3) and laid on 50mm thick plain concrete bed 100mm	LM	200		
	Supply and lay on sides of sloped trench (75x230mm wide) precast concrete slabs jointed in 1:3 cement sand mortar, including proper joint treatment with waterproof Mortar	SM	600		
	Extra over for allowing inlet openings from collection chambers 150mm with PVC pipe;all including surface treatment and joint sealant max 40 inlet ponts	ITEM	1		
В	MAN HOLES			_	
	Drop Manholes 600 x 600 x avrg 450mm deep (Internal) comprising: 1000 x1000 x 150 mm thick mass concrete Class 20 base: 150mm Solid concrete block walls: 150mm Thick VRC Class 20 top slab/or cover; with heavy duty meshed/grilled manhole cover: 12mm internal render to base and walls: including step irons: all necessary excavation, disposal and formwork, with outlet PVC pipes as per type A or B across the sitchyard terminating to the open drain max 10 no chambers;		1		
_					
				i i	
				<del>                                     </del>	
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ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
114141	STORM INTERCEPTER CHANEL	OIAII	Stil	IVALE	MICOIN



			7		
	TWIN DCC about 1 (00mm doon 350mm wide :000mm thick	LM	8		
	TWIN RCC chanel 600mm deep 250mm wide ;200mm thick walls with 12mm steel bars at 150mm spacing with 8mm	LIVI	°		
	binders at 150mm ;overlying a concrete base 150mm thick				
	with smooth finishes;groove 50mmwith angle edge nosing with grating heavy duty made of 25mm twisted bar on a 50x50				
	angle franming perfectly fitting the groove				
	150mm Thick P.V.C HD Stormwater drainage pipe : including	LM	100	- 1	
	excavation not exceeding 500mm deep (average 4500mm)				
	and backfilling to approval. Starting and termnating at		1		
	manhole chambers to all switchyard manhole drain pits				
E	SOAKPIT-DIAMETER 1200mm	- +			
a	Excavation and cart away 0-3m	LM	3		
b	Excavation and cart away 3-6m	LM	3		
С	Excavation and cart away 6-9m	LM	3		
<u>d</u>	Excavation and cart away 9-12m	LM	3		
e	Excavation and cart away 12-17m	LM	5		
	Allow for construction of masonary blocks minimum 1.2m top	ITEM	1		
	depth and covering with RCC slab 150mm thick with 12 mm		- 1		
	steel at 150mm spacing including all provisions for concrete				
	steel and builders work				
	Connection and termination of all incomming strom water	ITEM	1		
	with ogees and drain pipes	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
	REHABILITATION WORKS		-	-	
	Rehabilitate existing trenches by hacking all edges ,making	LM	250		
	150x300mm grooves at 500m spacing, and casting lean			- 1	
	concrete in 1/2" Inch conccrete class 20 and raise level by		1	- 1	
	average 300mm;including all formwork and steel anchoring		1		
		-	-	$\rightarrow$	
	Rehabilitate existing Transformer fouindation and oil	ITEM			
	containment and this to include 600mm deep 150mm RCC				
	wall at the perimeter not exeeding 50lm with 10mm steel at				
	200c/c including concrete floor 150mm with NIRU finish all				
	excavations,formwork and building works; with main block				
	extension to 5m x3.5m for new TX( INCLUDING ALL CONCRETE				
	UPGRADE WORKS)				
			+		
	TOTAL THIS PAGE				



ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	CARLE TRENCH			-	
	Trench 600mm wide x600mm deep-length260 Metre various			-	
	locations				
	BULK excavation for trench 1.8m wide from reduced level not	СМ	600		
Α	exceeding 1.2 m deep.	0,,,	000		
	oxeduring hiz mi doop!				
	Load, cart away from site excavated materials and dispose at	СМ	500		
В	areas designated by local authority.				
	Fill in and ram selected backfill materials around trench.	СМ	100		
С					
	Trench bed				
D	50mm plain concrete(1 4:8) blinding on cable trench bed	SM	260		
D	1.5m wide				
	Vibrated reinforced concrete class				
	20/20 1:2:4/20 as described in:				
E	In 150mm thick trench base with smooth steel finish	СМ	40		
F	In 150mm thick vertical walls	CM	50		
	fairface form work to				
G	Sides of trench wall	SM	650		
	Steel reinforcement bars including tying bending spacer				
	blocks tying wires and fixing high tensile bars to BS 4461				
_	V. Omene in a global transla	VC	2.000	-	
	Y 8mm in cable trench	KG	2,800		
_	Precast concrete trench covers (external cable trenches)	-			
	recas concrete nench covers (external cable nenches)				
	Provide and put in place (1000x300x75mm) thick precast	NO	900		
	concrete trench covers reinfoced Y8 bars spaced at 100mm			(	
K	both ways with handles for lifting; with all edges protected with				
	angle section 25x25mmx3mm				
	Ditto for existing trenches	ITEM	- 1		
	Demolish and cart away existing damaged covers	ITEM	1		
	Cable trays				
	Fabricate and fix cable trays,in 50x50x6mm thick RHS frame	LM	300		
	WITH 50x50x4mm RHS ties at 300mm c/c welded in themain				
	frame and raised 200mm above the cable trench floor with				
	sime size supports, ALL steel work PAINTED to clients approval				
	with 2 coats and undercoat primer				
	· ·				
	Allow for grooves 300x300mmx600mm deep at 800mm	ITEM	1		
L	spacing besides the cable trench edge A MAX OF 15				
	TOTAL THIS PAGE				



ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	ELEMENT NO.3		- :==		
	OIL sump chamber 6m x 5m x 3m deep; perimeter 200mm thick block walling; internal plaster complete with niru finish; with ring beam at every 2m interval 250x200mm with 4 nos.12mm bars and 8mm shear links at 200mm spacing; cover slab with manhole opening 150mm reinforced with 8mm steel bothways at 150mm spacing; heavy duty steel cover; including pvc pipe 4"connecting with the main transformer pit not exceeding 6m awayin two compartments	ITEM			
	Allow for connection to soak pit	ITEM	1		
	ROAD REHABILITATION				
	ACCESS ROAD				
A	Paving blocks (Access road)  Excavate for 5m wide access road depth not exceeding 750mm and cart away the spoil	СМ	800		
В	Average 300mm thick selected well compacted hardcore fill, compacted in layers of 150mm thick using 10 tonne vibrating roller to receive paving blocks	СМ	800		
С	300mm approved compacted murram fill in 150mm layers	СМ	350		
D	50mm thick approved and well compacted quarry dust blinding on hardcore	SM	1,100	T T	
E	Heavy duty industrial concrete paving blocks size (210x105x80mm) minimum strength 49N/mm square laid to slope on quarry dust and compacted	SM	1,100		
F	125 x 250mm splayed kerb to BS 340 including 125 x 100mm channel: on and including concrete Class "E" foundation and 100mm haunching to back of kerb including all necessary excavation, formwork and disposal	LM	500		
G	Ditto but curved	М	70		
3	Painting				
A	Prepare and apply approved gloss paint to kerbline; 125mm girth; colour to engineer's approval	LM	570		
	TOTAL THIS PAGE				



ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	GATE				
	Fabricate and fix a primary substation gate as per DRAWING the consisting of 75x50x8mm mainframes and 50x50x3m intermidiate members and bracings with small wicket openable door 1m wide with closing latches 14 gauge plate; ;including gate columns ,fastening,assembly and all works 6mx2.0m	NO	1		
	Extra over for painting with cooperate colours and logo	ITEM	1		
	Rehabilitate existing gate by checking all connections, bushes and priming with 3 coarts of paint and hand over to client for re use	ITEM	1		
	ELEMENT NO.4 CONTROL BUILDING				
	Substructure	014			
а	Excavate oversite vegetable soil average depth 150mm and cart awawy	SM	170		
b	Excavate for foundation trench 1m wide commencing at reduced level and not exceeding 1.5m deep.	СМ	100		
С	Diffo exceeding 1.5m but n.e 3m.	СМ	100	-	
d	Excavations for column base size	CM	40		
е	Diffo exceeding 1.5m but n.e 3m.	СМ	40		
f	Extra over excavation for excavating in hard rock.	СМ	5		
h	Allow for keeping all excavations water free by pumping, bailing or otherwise.	ITEM	1		
i	Fill in and ram selected imported materials around foudations and column bases.	СМ	335		
j	Load, cart away from site surplus excavated materials and dispose at areas designated by local authority.	СМ	80		
k	300mm thick bed of selected hard-core well-compacted in layers n.e. 150mm thick blinded with fine material	СМ	50		
	50mm thick to receive damp proof membrane (m.s)				
T	150mm thick approved murram blinding well compacted,	SM	160		
	watered and rolled to satisfaction				
m	Gradiator 4TC or equal and approved insecticide	SM	160	1	
	treatment to hardcore blinded surface and around entire				
	building				
	TOTAL THIS PAGE				



ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
		1 1			
n	1000 gauge polythene or other equal and approved	SM	160	-	
	mebrane as damp proof laid on blinded hardcore.(m.s)	10,11	100	1 -	
	with welted laps of 200mm wide.	_		1 -	
	Will Welled laps of 2001 iii) wide.				
0	50mm thick plain concrete(1:4:8) blinding under strip	SM	148		
	and columns foundations.				
	Vibrated reinforced concrete class 20/25 1:2:4/25 as described in:	-		-	
		CM	15	1	
р	Strip foundation (600x250)mm	СМ	13		
a	Column bases size (1250x1250x250)mm	СМ	10		
9					
r	Columns size (250X250)mm	СМ	9		
	- 1 - 1 - 1	011	-		
_	plinth beam 300 x 200	СМ	5		
+	150mm thick concrete slab on damp proof	СМ	25		
	membrane (m.s)				
	Steel reinforcement bars including tying bending				
	spacer blocks tving wires and fixing high tensile				
	bars to BS 4461 to strips.columns and bases	1,0	0.400	-	
U	Y8-16mm	KG	2600	-	
.y.	Steel wire fabric mesh reinforcement to B.S.4483 Ref	SM	160	1	
	BRC No A142 in concrete bed (M.S) including 200mm	10111	100	1	
	laps, all necessary tying wire and supporting as	1		1	
	required.				
	Sawn formworks to				
_					
aa	Sides of column size 250 x 250 mm	SM	50	-	
b	Sides of floor slab 150-200mm girth.	LM	55	1	
	31dC3 01 11001 31dD 130-20011111 girii).	FIA,	- 55		
	Sides of plinth beam 300x200	SM	36		
	Foundation walling		0		
CC	225mm thick approved natural stone walling bedded	SM	245		
	and jointed in mortar (1:3) UP TO 1m above ground				
		$\rightarrow$			
		_			
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ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	ELEMENT NO.6				
	SUPERSTRUCTURE				
1	Walling				
а	Pluvex No.1 or other equal and approved bituminous	LM	110		
	damp proof course to B.S. 743, 225mm wide under				
	walling (m.s) including for 200mm long laps				
	(measured net no allowance included for the laps)				
b	225mm thick approved smooth hand dressed natural	SM	480		
	stone walling in cement mortar (1:4) including for	5141	400	1	
	hoop iron in every alternate course.			+	
	noop from in every differnate coolse.	+		-	
_	DDB 4DDC all allowable of sylectronic trace and system in the	+-+		+	
	PRIMING all elevated substructure masonary surfaces with				
	black bituminous paint 3 coats				
	Wilesand and and an analysis and analysis and an analysis and	-		1	
	Vibrated reinforced concrete class			-	
	20/25 1:2:4/25 as described in:			-	
С	In columns size 250x250mm	СМ	6		
d	In ring beam and upstand size 450-600x200mm	CM	22		
е	In 150mm thick suspended slab	cm	25		
f	In 100mm thick canopies over all openings and hood	cm	2		
g	In lintols 300x200mm	СМ	2		
				1	
	Steel reinforcement bars including tving bending			1 1	
	spacer blocks tying wires and fixing high tensile			_	
	bars to BS 4461 in upstands ringbeam and slab, canopies	_			
	Sala to sa From in obstatical image and and stab, canobies				
Î	Y 8mm-16MM	KG	5170		
	Sawn form work to				
р	Sides and soffits of ring beam	SM	280		
r	Sides of columns	SM	90		
S	Soffits of suspended slab	SM	160		
ţ	canopies and the like	SM	12		
		1		1	
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ITEM		UNIT	QTY	RATE	AMOUNT
	ELEMENT NO. 7				
	ROOF CONSTRUCTION AND COVERING				
1	The following in 7 no trusses spanning 11.00m and				
1	hoisted 4m high above finished floor level				
a	100x50x6mm rolled steel RHS in rafters	LM	160	-	
b	Ditto 50x50mm in struts	LM	180		
С	Supply and fix in concrete ring beam 28no.	ITEM	1	-	
	16mm bolts	(LE)A			
d	(200x200x6mm thick M.S plate cleats with 2no, holes welded to truss.	NO	14		
е	Supply and erect MS purlin cleats welded to truss at 1800 cc	NO	14		
f	Supply and erect 150x51x2mm Z purlins bolted to	LM	170		
	rafters primed with one coat of red oxide	+ +		-	
g	Gauge 26 pre-painted IT 5 roof covering sheet including for 2no. side corrugations and 300mm long end laps	SM	196		
h	Ditto for side cladding AND UNDERSIDE AND GABLES GIRTH not less than 2m with 600mm eaves	SM	150		
i	26gauge matching ridge cap	LM	35		
i	50x50x6mm RHS fascia support	LM	78		
k	50x50x6mm angle iron fascia support	LM	150		
	Supply and fix cleats welded to fascia support	NO	_ 33		
m	26 gauge 100x100mm corner edging	LM	112		
n	14 gauge galvanised M.s in gutters	lm	54		
0	Extra over for stopped ends	NO	4		
р	Ditto for 100mm outlet	NO	6		
q	50x50mm thick timber bearers	LM	65		
r	100x50mm thick timber cornice	LM	65		
_	TOTAL THIS PAGE	+			



ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	Down pipes				
S	100mm down pipes 24 gauge secured to wall with	LM	48		
	brackets at 900mm c/c				
t	E.O for swan neck	NO	12		
	L.O 101 SWAIT FIECK	NO	12		
U	Prepare surfaces , prime and apply two coats of first	ITEM			
	quality aluminium panit to all rainwater goods	1			
	ELEMENT NO.8	+ +		-	
1	Windows	1		1 -	
	Composite purpose made powder coated alluminium	1		1 -	
	windows off whiefe grey	1 1			
	to client's approval.	1 1		1	
-	ALLUMINIUM SLIDING size (1200 x 1500mm) high	NO	10	1	
а	overall	NO	10		
	7.07.00				
	Window size (AFO v (OOrgan) binds	NO	,		
С	Window size (450 x 600mm) high	NO	6	-	
	overall-top hung				
	Doors	+			
	Purpose made steel casement double leaf door divided	1 1			
	into equal leafs made out of 75x50mm frame with four	1		1	
	permanent louvred ventillation made from (25x3mm)	-		1	
	flat bars whole door hinged to and including	-		1	
		-		_	
	(100x100x6mm) angle line built to wall	-		-	
	with bracketsin sizes				
_	NOTE: All external doors to be as per provided drawing SK No. 06249 Sheet 1-all steel galvanized to 85 micron			-	
	ardwing Sk No. 06247 Sheer 1-dil sheer galvanized to 65 micron				
h	Door size (1800x3000mm) double leaf	NO	2		
Î	Door size (1000x2500mm) single leaf leaf	NO .	2		
,	alluminium intenal doorsDoor size (900x2500mm)single leaf	NO	6		
1	with fan light		0		
	*				
V	Allow for priming all metal and flash doors surfaces and	SM	173		
Υ	apply two coats of 1st quality paint to all doors	OIA1	1/3	<del>                                     </del>	
		-		_	
	and frames	1		_	
	FINISHES	-			
1	Floor finishes				
a	25mm thick cement sand screed prepared to receive granolithic paving	SM	120		
b	Ditto for ceramic tiles	SM	58		
<u> </u>	Director cerditing lifes	2141	30		
С	terazo paving to wood floated floor screed including	SM	150		
	all the necessary strips				
d	100mm skirting ditto	LM	90		
_	TOTAL THIS BACE	-			
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ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
е	12mm thick internal quality lime plaster finished smooth with steel trowel to all walls and suspended slab	SM	920		
f	External plaster with 12mm render including profile pointing on stone jopint	SM	250		
g	Prepare surface and apply undercoat and 3 coats of 1st quality silk vinyl emulsion paint to plastered walls internally	SM	1300		
	and externally.				
h	12mm plaster to window and door head, cill and jambs	LM	88		
	200-300mm girth				
	Prepare surface, apply undercoat and 2 coats of 1st quality silk vinyl emulsion paint to plastered surfaces 200-300mm girth	LM	1300		
k	200X250mm wall tiles bedded in cement grout pointed in	SM	65		
	colour cement to match colour of tiles				
į	Ditto 300x300mm floor tiles	SM	69		
2	Kitchen	++			
а	100mm thick 1:2:4 concrete in kitchen work top	SM	6		
b	Y 10 reinforcement bars at 200 C/C	KG	230		
С	150mm block wall	SM	23		
d	12mm 1:3 cement sand plaster	SM	69		
е	Single drain single bowl stainless sink	NO	1		
f	Bricon or approved kitchen mixer	NO	1		
g	400mm wide 25mm thick block vineered offwhite cream	LM	35		
	board shelves fixed with brackets to wall				
h	Ditto in locable cupboards including hinges, fasteners and lockscolour scheme subject to eng approval to blend with off white grey terazzo	LM	35		
	600x600mm PCC paving slabs along control room perimeter and spalash aprons and all other areas stipulated by eng ,including bedding and jointing with 1:3 mortar	SM	100		
	TOTAL THIS PAGE	<del>   </del>		_	



ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	ELEMENT NO.10				
	DRAINAGE AND PLUMBING WORKS				
1	Plumbing works				
а	Twyfords Hindustan vitreous china wash hand basin size	NO	2	1	
	500x400mm fixed on semi-concealed brackets	1			
	Def No. 1000 complete with ONE Amore and 10mm	luo I		1	
b	Ref. No. 1200 complete with 2No. Approved 12mm, chrome plated taps	NO	2	1	
С	150x150mm semi- recessed "Twyfords" white toilet roll	NO	2	+	
	holder	INO		1	
	nodel	1 1			
d	White Twyfords classic WC suite comprising	NO	2	1	
	pan, heavy duty plastic seat and cover, ceramic cistern,				
	flush pipe and trap.				
е	Supplly and fix compact auto dryer satin chrome	NO	2		
	2.2KW				
-		1.10			
f	12mm gate valve as per peglar	NO	12		
g	Ditto 15mm	-	9	-	
9	Dino 13ttiti	1	7	1	
h	15mm class B pipes including all necessary fittings	LM	200		
	including all the necessaary excavations and		200		
	chasing in wall				
i	12mm class B pipes including all necessary fittings	LM	210		
	including all the necessaary excavations and				
	chasing in wall				
j	allow for repair to good condition the entry chanel at gate	ITEM			
				+	
	1200x800mm resin stone shower tray 40mm CP unslotted	NO			
	waste and trap.				
	100mm CP metal shower head , 15mm CP angled shower arm	NO			
	,15mm riser pipe,exposed shower mixer valve.				
	Semi-countertop wash basins with tap hole and chain stay	NO			
	32mm chrome plated bottle trap waste etc.				
	1800 x 500mm single drain double bowl sink c/w 1No. 15mm	NO			
	dia. CP mixer pillar tap with swivel spout, 2No. 40mm waste			1 1	
	Vitreous china semi-recessed toilet roll holder	NO			
	1000x600x6mm thick plate glass mirror with bevelled edges.	PC			
	3.233 Hillion William Odd Odd Odd Odd Odd Odd Odd Odd Odd Od				
	Soap dish.	NO			
	Towel rail.	NO			
	TOTAL THE BACE	-			
	TOTAL THIS PAGE				



ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	SOAKPIT			+	
	Excavate soakpit 1800mm dia to seepage depth min 15m, equip and construct protective wall and cover including all builders work, concrete and steel work-TYP	ITEM			
	SEPTIC TANK				
	Septic tank 3.6m x 2.1m x 3m deep; perimeter 200mm thick block walling; internal plaster complete with niru finish; with ring beam at every 2m interval 250x200mm with 4 nos.12mm bars and 8mm shear links at 200mm spacing; cover slab with manhole opening 150mm reinforced with 8mm steel bothways at 150mm spacing; heavy duty steel cover; including pvc pipe 4"connecting with the sewerage and foul drainage-in two compartments				
	WATER SUPPLY SYSTEM				
	Connect piped water using 1"G.I.class B pipe to the substation by liaising with the relevant water body, including excavation of water pipe water trench, backfilling, all connections and accessories.	ITEM			
	Supply and install 6000 litres an approved plastic water tank, approved 3/4" watertap and concrete platform including all nacessary required fittings and connections-GROUND MOUNTED -extra over to include roof water harvesting system with gutters ,PVC downpipes and BENDS				
	supplty and install 2000lt rectangular tank on top of control building including all float valves, connectoions and maintainance access provision on facia cladding; connect to piped mains and sanitary units	ITEM			
	1922				
A	ELECTRICAL INSTALLATIONS WORKS  Electrical builders work to power supply points and distribution board  lighting ponts; sockets; incuding chasing and making good all works as described	ITEM	1	45,000	
В		ITEM		65,000	
	Supply and install 110volts DC distribution board with technical specifications as attached in the technical spec document	ITEM	1		
				$\bot$	
	TOTAL THIS PAGE			1 1	



ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	SUBSTATION LIGHTING			_	
С	Supply 240 watt AC (LIGHT DEPENDENT TYPE) bucky head floodlight with energy saver 100 watts sodium metal halide lamps to be hoisted on mast supplied by kplc including all connections	ITEM	4		
	supply and fix emergency chargeable lights in the control room to client approval.	NO	2		
	ELEMENT NO. 7- SMOKE DETECTORS				
	Allow for Hardwired Smoke detectors installations; including a battery back up, to be carried out by a nominated subcontractor-menvier OR approved type	Item			
-	Allow for general attendance on specialist contractor	ltem	1		
	Builder's work in connection with Smoke detector installations;	Item	1	_	
	cut away for and attend in all trades on the sub-contractor installing the following points in a mainly concealed system; including chases, holes and recess notching in timber etc; and making good all finishes for cut in boxes, electrical wiring, mounting brackets, smoke detector feeds, fire alarm points etc				
	ELEMENT NO. 8 - AIR CONDITIONING				
	Air conditioning				
	Supply and fix air conditioners complete with all fixing accesories to				
	controll room temperartures from approved suppliers				
	24000 BTU	3		_	
	ELEMENT NO. 9 - FIRE EXTINGUISHERS	-			
	Supply and fix controlled discharge 9 litre carbon dioxide gas fire extinguisher manufactured to BS EN 3-9*2006, Bs 7863*2009, BS 5306-	No	6		
	4:2001 and the cylinder manufactured to BS 5045 complete with the following:				
	Charge and fixing bracket, Pictorial instructions, Colour code, Servicable on site, discharge horn and hose, Brass hot stamping, Operating valve, Local Fire Brigade approval				
	Ditta but DDV sounder fire entire mishers	No			
_	Ditto but DRY powder fire extinguishers Ditto fire blanket 6' x 4' container	No	2	-	
	Total this page	no	2		
	allow for fume extractor with opening diameter not les sthan 500x500mm including supply of extractor and fix in battery	no	1		
	room				
				<del>                                     </del>	
	TOTAL THIS PAGE	-		-	



ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	FI FRAFRIT NO S			1	
_	ELEMENT NO.5  CABLE TRENCH	1			
1	Trench (600x600mm deep) length approx.	+			
-	60metres-internal	_		1	
a	Excavate for trench 1,2m wide from reduced level not	СМ	90		
<u> </u>	exceeding 1.5m	1	70	1	
	oxecoung von	1 1		1	
b	Load, cart away from site excavated materials and	CM	90		
	dispose at areas designated by local authority.				
С	Fill in and ram selected imported materials around	CM	46		
	trench.				
2	trench walls				
а	50mm plain concrete(1:4:8) blinding on cable trench	SM	72		
	foundation 1,2m wide				
	Vibrated reinforced concrete class	-		_	
	20/20 1:2:4 as described in:	0.4		-	
b	In 150mm thick trench base	CM	9	-	
	la 150 anna de la crada imina a cualla	CM	1.4		
С	In 150mm thick retaining walls	СМ	14		
	Steel form work to	1			
d	Sides of trench wall	SM	190		
u	Sides of fielder wall	5/41	170		
	150mm blockwallas pernanent formwork on outer trench wall	SM	80		
	Steel reinforcement bars including tying bending				
	spacer blocks tvina wires and fixina high tensile				
	bars to BS 4461				
С	Y 8mm in cable trench	KG	1550		
	50x50x4mm m/s angles embedded on concrete trench edges	lm	130		
	600x600mmx5mm thick chequered plate trench covers				
a	reinforced with 40x40mmx3mm thick SHS all round	NO	100		
Ч	primed and apply 3 coats of first quality gloss paint.	1	100		
	principality and apply a position of mor downly grow points				
	Cable trays				
r	Alluminium perforated cable trays 600mm x40mm complete	LM	60		
	with all bends, angle turn cleats and screws				
					<u></u>
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	TOTAL THIS PAGE				



ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	PERIMETER WALLING -300LM	+		-	
	(Substructures)	+		<del></del>	
	Excavate for foundation trench 600mm wide commencing	CM	250	+	-
L	Executate for too idealist iterior boothin wide continenating	0,44	200		
	at reduced level and not exceeding 1.5m deep.	+		1 1	
				1 1	
М	extra Excavations for widening column bases size (1.0x1.0)m	СМ	70	†	
N	Ditto exceeding 1.5m but n.e 3.0m	CM	23		
		1		1	
	Extra over for excavation in all classes of rock at any	-	^	-	
	depth.	CM	3	1	
Р	Load, cart away from site surplus excavated materials and	СМ	97	-	
Г	Load, can away from sile sorpios excavaled materials and	CM	7/		
	dispose at areas designated by local authority.			-	
	aspese at areas assignated by local admonty.	1		1	
Q	Fill in and ram selected imported materials around	СМ	173	•	
	foundation and columns.			1	
R	Provide all the necessary planking and strutting to	ITEM			
	uphold sides of trenches				
S	Allow for keeping all excavations water free by pumping,	ITEM			
	bailing or otherwise.	-		-	
T	50mm thick (1:4:8) mass concrete blinding to walling and	SM	240	1 1	
	column bases	-		-	
	Vibrated reinforced concrete class	-		1	
U	20/25 1:2:4/25 as described in:	CM	180	-	
U	Foundation strip size (200x600)mm	CM	100	1	
V	Column bases (1000x1000x300)mm	СМ	31		
	October 5 days (1000x1000x000)Hill	1	01	1 1	
W	Columns (200x300)mm	СМ	25		
Χ	Plinth beam 300x200mm	CM	20		
				1 3	
	Sawn/Steel form work to				
Α	Vertical sides of column	SM	400		
В	Vertical sides of ground beam	SM	180		
	Steel reinforcement bars including tying bending	-		1	
_	spacer blocks tying wires and fixing high tensile	-			
	bars to BS 4461	IVO.	1500	1	
С	Y 8-16MM	KG	6500	+	
	225mm thick natural stone substructure walling in coment	++		+	
	225mm thick natural stone substructure walling in cement				
	sand mortar (1:3) including and reinforced with 20 SWG hoop iron in every two alternating course.				
F	225mm thick natural stone wall	SM	450	1	
Ġ	25mm thick cement/sand (1:4) rendering on plinth area	SM	120	†	
	finished smooth to receive bituminous paint-400mm high				
	TOTAL THIS PAGE				



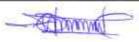
ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
Н	Allow for and create 100mm diameter weep holes at	No.	100		25
	ground level every3.0m centers on masonry/concrete wall				
	and prevent ingress using wire mesh grouted in cement				
	sand mortar.				
2	Superstructure-Walling	1	***		
1		SM	750		
	approved concrete blocks	++		+	
		$\vdash$			
	hoop-iron in every alternate courses. Internally plastered and				
	external horizontal joints keyed in cement/sand mortar				
	(1:3)				
J	350mm wide pre-cast concrete coping twice weathered	LM	300		
	and twice throated fixed to wall.				
- 16	(Annual Paris	1	22		
K	(800x550)mm square concrete coping weathered and	No.	33	1	
	Inrodied on all sides fixed to double columns.	1		+	
	(550x450)mm square concrete coping weathered on all	No.	69		
	columns.				
М	extra over for key pointing externally	SM	750		
Ν	allow for internal plaster whole wall	SM	750		
3	Expansion Joint				
N	40mm thick construction joint in flex cell or equal and	SM	32		
	approved expansion joint and (25x25)mm expedite sealer				
4	Razor Wire	134	300	-	
		LIVI	300		
0	Coil size-450mm diameter, Blade profile-ripper razor wire,			1	
<u> </u>				+	
	wall with galvanised steel plates at 1 m centers.				
				1	
		-		750 333 69 750 750	
		every3.0m centers on masonty/concrete wall ingress using wire mesh grouted in cement  e-Walling machine-out or fair faced dressed natural or increte blocks in cement/sand (1:4) mortar including 20G every alternate courses. Internally plastered and internate pre-cast concrete coping twice weathered in sides fixed to wall.  square concrete coping weathered and ill sides fixed to double columns.  square concrete coping weathered on all is square concrete coping weathered and is square concrete coping weathered on all is square concrete coping weathered and in square concrete coping weathered in square concrete cop			
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ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
2	SWITCH YARD PLINTHES 33KV FEEDER BAYS  Switchgear Foundation plinthes for the following 33kv KPLC steel Structures, to +150mm on new proposed feeder bay re arrangement consisting of ,12no.33kvA/B switches, 6Nos.CBs plinthes, 18nos.33kvCTs, 3nos. 33kvVTS & 7nos. 3no. terminal post insulator-2 leged; 5nos.auto reclosers, 5 no take off poles, as per the General arrangement drawing(GA) and all to structural engineers detailsTotal 74 no.plinths				
F	Excavate foundation pits commencing from reduced level but not exceeding 1.5 m deep	СМ	170		
G	Ditto but not exceeding 3.0metres	СМ	170		
K	Backfill and ram selected excavated material around founds	СМ	_ 190		
Н	Cart away surplus excavated materials from Site to municipal council desiganated damping site.	СМ	90		
	Disposal of water and Strutting	ITEM	1		
J	Blinding mix (1:4:8 - 50 mm)	SM	77		
К	Class 25(20) in foundations Bases	СМ	34		
L	Class 25(20) in stub col bases with face finishes	СМ	70		
М	steel 8 to 12mm to bases and column	KG	5000		
N	Shuttering to columns stubs	SM	340		
0	Edges; 75 to 300 mm to plinths	LM	310		
Р	grouting bolts /inserts and the like by holding in position when pouring concrete not exceeding 600mm long-bolts supplied by client	NO	296		
Q	13mm thick plaster (1:3mix) to top surface of foundations with smooth finish trowelled	SM	95		
R	Attendance for KPLC staff to do earthing before all blinding including security for all copper strip edges	ITEM	1		
A	supply and install 32mm heavy duty PVC flexible conduit fastened on switchgear plinth reinforcement to lengths not exceeding 5.0metres in every plinth and to flush with finished plith level for earthing conductor.	ITEM	1		
	TOTAL THIS PAGE				



ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
2	SWITCH YARD PLINTHES 132 KV & LILO SWITCHGEAR				
	700x700mm				
	Switchgear Foundation plinthes for the following 132kv steel				
	strujctures, to +150mm on new proposed LILO re arrangement				
	consisting of ,5no.132kv ISOLATOR, 4Nos.CBs plinthes,				
	12nos.132kvCTs, 6nos. 132kvVTS & , 3no. STAND ALONE post insulator-1 leged ; 6nos.CVTs, 3 no SDs, as per the General				
	arrangement drawing(GA) and all to structural engineers				
	details,-Total 70 no plinths				
F	Excavate foundation pits commencing from reduced level	СМ	165		
_	but not exceeding 1.5 m deep	614	1.45		
G	Ditto but not exceeding 3.0metres	СМ	165		
K	Backfill and ram selected excavated material around founds	CM	61		
Н	Cart away surplus excavated materials from Site to municipal council desiganated damping site.	СМ	104		
	Disposal of water and Strutting	ITEM	1		
J	Blinding mix (1:4:8 - 50 mm)	SM	77		
K	Class 25(20) in foundations Bases	СМ	34	_	
	Class 25(20) in stub col bases with face finishes		70		
		CM			
М	steel 8 to 12mm to bases and column	KG	5000		
N N	Shuttering to columns stubs	SM	340		
0	Edges; 75 to 300 mm to plinths	LM	310		
Р	grouting bolts /inserts and the like by holding in position when	NO	280		
	pouring concrete not exceeding 600mm long-bolts supplied by client				
Q	13mm thick plaster (1:3mix) to top surface of foundations with smooth finish trowelled	SM	90		
R	Attendance for KPLC staff to do earthing before all blinding	ITEM	1		
	including security for all copper strip edges				
A	rupply and install 22mm begrey duty PVC flevible conduit	ITEAA	1		
_ ^	supply and install 32mm heavy duty PVC flexible conduit fastened on switchgear plinth reinforcement to lengths not	ITEM	ı		
	exceeding 5.0metres in every plinth and to flush with finished				
	plith level for earthing conductor.				
				-	
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ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
2	SWITCH YARD PLINTHES 132 KV & LILO SWITCHGEAR GANTRIES			-	
2	1.5X 2.0M				
	Switchgear Foundation plinthes for the following 132kv gantry				
	steel structures, to +150mm on new proposed LILO re				
	arrangement consisting of ,1no.132kv TERMINAL GANTRY,				
	2Nos. 132 KV TENSION LINE GANTRY, 2nos.132kv BUSBAR				
	ASSEMBLY, General arrangement drawing(GA) and all to structural engineers detailsTotal 10 no.plinths				
	land of the state				
F	Excavate foundation pits commencing from reduced level	СМ	80		
	but not exceeding 1.5 m deep	CM	90	-	
G	Ditto but not exceeding 3.0metres	СМ	80		
K	Backfill and ram selected excavated material around founds	CM	105		
Н	Cart away surplus excavated materials from Site to municipal	СМ	55		
	council desiganated damping site.  Disposal of water and Strutting	ITEM	1		
J	Blinding mix (1:4:8 - 50 mm)	SM	50		
K	Class 25(20) in foundations Bases	СМ	5		
L	Class 25(20) in stub col bases with face finishes	СМ	50		
М	steel 8 to 16mm to bases and column	KG	3000		
Ν	Shuttering to columns stubs	SM	110		
0	Edges; 75 to 300 mm to plinths	LM	100		
Р	grouting bolts /inserts and the like by holding in position when pouring concrete not exceeding 600mm long-bolts supplied by client	NO	80		
Q	13mm thick plaster (1:3mix) to top surface of foundations with smooth finish trowelled	SM	60		
R	Attendance for KPLC staff to do earthing before all blinding including security for all copper strip edges	ITEM	1		
^	supply and install 32mm heavy duty PVC flexible conduit	ITEM	1		
A	fastened on switchgear plinth reinforcement to lengths not exceeding 5.0metres in every plinth and to flush with finished plith level for earthing conductor.	11 [10]	,		
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ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
4	23 MVA TRANSFORMER PLINTH				
E	Excavate pit foundations not exceeding 1.5 metres deep from	СМ	70	-	
_	reduced levels	0,141	70		
F	Return fill and ram suitable excavated material to the sides of	СМ	15		
	the plinths				
G	Cart away from site surplus excavated materials	СМ	39		
	Division and a state of the sta	C) 4	50	-	
_H	Plain concrete 50mmm thick blinding 1:4:8 to footing	SM	50	_	
	Vibrated Reinforced Concrete Class 25/20 mm Aggregate in:-				
	Base	CM	16		
	DEDEGLUS	011	10	-	
J	PEDESTALS	CM	10	1	
K	COVER SLAB-300mm thick	СМ	9		
	COVERSEAD GOORINI ANICK	CIVI			
	High Tensile Steel Reinforcement Bars; Cold Worked to BS 4461				
	(Provisional)				
L	8 mm-16MM diameter	KG	1800		
	Fairface Formwork to:-			-	
N	Sides of base 225-300mm wide	LM	28		
- 11	Sides of base 225 booking wide		20		
0	Ditto slab	LM	17		
Р	Vertical sides of footing	SM	51		
	Hardcore filling				
Α	Approved hardcore filling compacted to Engineer's approval	СМ	36		
, ,	AND MARRUUM layer 300mm	<u> </u>	00		
		_		1	
В	Blind surface of hardcore with lean concrete	SM	18		
С	1000 gauge polythene sheet laid over hardcore	SM	24		
	Total this page and Carried to Summary Page				
	SUMP RCC WALLING			-	
D	Mass insitu concrete (1:4:8) in:- Strip footing	SM	28	-	
D	Vibrated Reinforced Concrete Class 25/20 mm Agaregate in:-	2141	20		
	Vibrated Reminorced Concrete Class 25/25 Thirt Addregate III.				
	Base	СМ	_ 6		
E	Walling finished fair face	CM	6		
	Formwork				
<u>F</u>	Vertical sides of base	SM	50	-	
G	Vertical sides of walling	LM	56		
	High Tensile Steel Reinforcement Bars; Cold Worked to BS 4461 (Provisional)				
Н	8-12 mm diameter	KG	1000		
	TOTAL THIS PAGE				



ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
-8 -84		-8			
J	allow for transformer pit grating made of 50x50x6mm angle	ITEM	2	1	
	iron fixed on pedestal and wall of sump to suport grating				
	including grating with 20mm gaps on a mainframe of				
	50x50x6mm ms angles and similar size welded at 20mm				
	centres including all painting ,steel work and fixing to client	l (i			
	approval				
K	OiL sump chamber2m x 5m x 2m deep, perimeter 200mm	ITEM	1		
	thick block walling, internal plaster complete with niru finish,	11 [14]	'		
	with ring beam at every 2m interval 250x200mm with 4				
	nos.12mm bars and 8mm shear links at 200mm spacing; cover				
	slab with manhole opening 150mm reinforced with 8mm steel				
	bothways at 150mm spacing; heavy duty steel cover;				
	including pvc pipe 4"connecting with the main transformer pit				
	not exceeding 6m awayin two compartments and connect				
	to soakpit	110			
-	Provide galvanized 125 x 75mm U Channels welded to	NO	2		
	triangular shape (1.5x1.2x1.9metres); placed in reinforced concrete size, 1.0x1.0metres), with approx. of the tip exposed				
	above the concrete, including 50mm diameter hole drilled on				
	exposed section.				
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