	PROPOSED CIVIL WORKS BALANCE AT RABAI 220/ 132 KV				
	SUBSTATION  BULLOF OVANTURES				
VIDEO 5	BILL OF QUANTITIES				
ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT(Ksh.
	CECTION 1				
	SECTION. 1				
	Preliminaries	TOTAL C			
A	Allow for a temporary site office ,notice board, shelves and , store for materials and tools storage. To accomodate 7 people and all furniture and meeting accesories	ITEM	1		
В	Allow for clean water for the works	ITEM	1		
С	Allow for temporary sign post for the proposed works	ITEM	1		
D	Allow for security and insurance for the proposed works	ITEM	1		
Б.	Allers Consumed to Consumer the Consumer Control	Impo (			
E .	Allow for supply of power connection for use for the works.	ITEM	1		
F	Allow for a qualified personel conservant with Kenya Power safety regulations for the entire contract period	ITEM	1		
G	Allow for prompt communication and updates facilitation to client supervision team	ITEM	1		
Н	Demolition and relocation of road at gantry area and create retaining wall with as per ground profile not exceeding 66 m	ITEM	1		
I	Poplication of drawings acquiring 11 ffi1	TTTP (			
1	Replication of drawings ,acquiring all proffesional authetication and a set to client including statutory county government approval	ITEM	1		
	CECTION 2				
	SECTION. 2				
	SWITCHYARD REHABILITATION & REINSTATEMENT				
1	Switch yard 500 SM				
A	Clear working area of all the site of existing ballast and rubbles	ITEM	1		
	Scoop loose top soil by cutting average 400mm deep to recieve imported fill	SM	500		
В	becop to toose top son by carring average 400mm deep to recieve imported this	SIVI	300		
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	SM	500		
D	Prepare and apply Gradiator 4TC or equal and approved insecticide to surfaces of blinding as per Manufacturer's written instructions	SM	500		
Е	Apply suitable weed killer, herbicide to surfaces of blinding as per the Manufacture's written instructions	SM	500		
F	1000 gauge polythene or other equal and approved membrane laid on compacted and treated quarry dust with welted laps of 200mm wide.	SM	500		
G	Supply and spread uniformly 150mm thick 'one inch' (1") ballast in switch yard to match existing-re use existing ballast where not sufficent top up with new supply	SM	500		
Н	precast concrete channel 200mm high at the ballast perimeter to prevent ballast spill over as restraint	LM	100		
I	allow for making good all station yard affected by new works	ITEM	1		
	Total to this page carried to Summary page				



ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
3	Cable ducts				
	Supply and install 150mm diameter medium gauge PVC pipes as ducts. with and	LM	120		
Α	including 150mm thick concrete class 20 surround and murrum compaction				
A	underlying pipe bases as per as per engineer's approval in all locations;include				
	curring and reinstatement of existing bitumen road				
	CABLE TRENCH				
	Trench 600mm wide x600mm deep-length 380tres various locations				
	Trenen oconim mae kooonim acep lengin soones various iscanons				
Α	BULK excavation for trench 1.8m wide from reduced level not exceeding 1.2 m deep.	CM	560		
В	Load, cart away from site excavated materials and dispose at areas designated by local authority.	СМ	720		
С	Fill in and ram selected backfill materials around trench.	CM	160		
	Trench bed	CIT	100		
D	50mm plain concrete(1:4:8) blinding on cable trench bed 1.5m wide	SM	600		
	Vibrated reinforced concrete class				
r	20/20 1:2:4/20 as described in:	61.4			
E	In 150mm thick trench base with smooth steel finish	CM	64		
F	In 150mm thick vertical walls  fairface form work to	CM	120		
G	Sides of trench wall	SM	1,700		
	Steel reinforcement bars including tying bending spacer blocks tying wires	SIVI	1,700		
	and fixing high tensile bars to BS 4461				
Н	Y 8mm in cable trench	KG	12,000		
I	50x50x4mm angle line embedded in concrete cable trench edges	LM	820		
	Precast concrete trench covers (external cable trenches)				
	Provide and put in place (1000x300x75mm) thick precast concrete trench covers	LM	380		
J	reinfoced Y8 bars spaced at 100mm both ways with handles for lifting; with all edges protected with galvanized angle section 25x25mmx3mm				
	ledges protected with garvanized angle section 25x25mmx5mm				
	Cable trays				
	Fabricate and fix cable trays,in 50x50x6mm thick RHS frame WITH				
	50x50x4mm RHS ties at 200mm c/c welded in the main frame and raised				
	200mm above the cable trench floor with same size supports,ALL steel work				
	galvanized to clients approval in:				
K	Trench 600mm wide	LM	380		
IL	Trenon oconini wide	LIVI	380		
	Transformer gratings				
	supply and fix transformer grating FOR 8x5m plinth; 1m wide in 500mm pieces	NO.	130		
	made of 50x50x6mm angle iron framing with 20mm gaps including perimeter 75x50mm nosing angle attached on the sump pit walls to hold grating ;include				
L	all fabrications priming and the like, and allow for fabricating special gratings at				
	all the corners				
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ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
II DIVI	ELEMENT NO.3	51.11			111100111
	SCREEN WALLS				
	(Substructures)				
A	Allow for the following in Unfinished Screen Walls:				
1	Bulk Excavation commencing from stripped level but n.e 2m deep	СМ	130		
2	Extra-Over for excavating in all form of rock & to expose/demolish any concrete	CM	33		
	surfaces	G.V.			
3	Allow for necessary plunking, strutting and dewatering to foundations	ITEM	1		
4	Allow for leveling, back-fill & carting away surplus excavated material	ITEM	1		
5	Concrete Class 30 to bases	CM	21		
6	Concrete Class 25 to walls and columns	CM	71		
7	Steel Reinforcement from Y8-Y20	V.C	2411		
/	Steel Kennoteenient Hom 16-120	KG	3411		
8	Fair Face Formwork	SM	364		
В	Provision to fix rectangular C-channel on wall tip at both wall sets including supply of structural steel	ITEM	1		
С	provision to fabricate ,supply on site and erect hoorizontal and vertical boom and girder all lattice angular members to match existing formation across screen walls-this to be casted with screen wall	ITEM	1		
D	OIL Interceptor 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	1		-
	ROAD REHABILITATION				
	ACCESS ROAD				
2	Paving blocks (Access road)	0) (	2.100		
4	Excavate for 5m wide access road depth not exceeding 750mm and cart away the spoil	SM	2,100		
3	Average 300mm thick selected well compacted hardcore fill, compacted in layers of 150mm thick using 10 tonne vibrating roller to receive concrete paving blocks	SM	2,100		
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ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
1	300mm approved compacted murram fill in 150mm layers	SM	2,100		
	Demolition and relocation of road at gantry area and create retaining masonary wall with pillars as per ground profile not exceeding 66lm with the following details; Strip Fnd, 600x200mm thick class 20 with 8mm steel at 200 c/c both ways/ Masonry wall200mm thick with pillars 400x400mm at 2.4m centres; wall height average 1.5m all sides plastered with application of black Bituminous	ITEM	1		
	50mm thick approved and well compacted quarry dust blinding on hardcore	SM	2,100		
	Heavy duty industrial concrete paving blocks size (210x105x80mm) minimum	SM	2,100		
	strength 49N/mm square laid to slope on quarry dust and compacted				
	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	810		
	Ditto but curved	M	52		
3	Painting				
	Decrees and apply conveyed above that he bline 100	134	0.00		
	Prepare and apply approved gloss paint to kerbline; 125mm girth; colour to engineer's approval	LM	862		_
4	CHAINKLNK				
A	(2.4m highx10 gauge chainlink) fence complete with 4 strands of 3mm galvanised steel wire passing through holes drilled on overall height of PCC post 2.4m high and crank with 2 strands of 12.5 gauge barbed wire including securing chainlink to wire strands.	LM	400		
В	Fabricate and fix a GRILL at primary substation gate as per the EXISTING	ITEM	1		
	SECTION 4				
	SWITCH YARD PLINTHES				
	220KV SWITCHGEAR				
	Switchgear Foundation plinthes for the following 220kv to +150mm on new proposed bay consisting of typical 1000x1000mm plinths CONSISTING of the following plinths -; 3NO -PI; 10Nos220KV Disconnectors; 1no. Marshalling Kiosk. ,TOTAL PLINTHS 13Nos. Including the balance works for the 220kv CB and Surge Diverters				
A	Excavate foundation pits commencing from reduced level but not exceeding 1.5 m deep	СМ	174		
В	ditto 1.5m But n.e 3.0m deep	CM	59		
	extra over in compacted maruum and all classes of rock	CM	36		
С	Backfill and ram selected excavated material around foundations	CM	16		
D	Cart away surplus excavated materials from Site to municipal council desiganated damping site.	СМ	216		
E	Disposal of water and Strutting	ITEM	1		
F	Level and Compact bases to receive concrete Blinding mix (1:4:8 - 50 mm)	SM	32		
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ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	Vibrated reinforced concrete class				
	20/20 1:2:4/20 as described in;				
G	Class 25(20) in foundation bases	CM	11		
Н	Class 25(20) in stub col bases with fair face finishes	CM	52		
	Steel reinforcement bars including tying bending spacer blocks tying wires and fixing high tensile bars to BS 4461				
I	steel Y8 to Y16mm to bases and stub-column	KG	3457		
	Fairface form work to;				
	ruirjace form work to,				
J	To vertical side of columns stubs	SM	100		
K	To Edges of base ; 75 to 300 mm thick	LM	94		
L	suply and fix and grout bolts /inserts and the like by holding in position when pouring concrete not exceeding 600mm long-bolts all 25mm x 600mm complete wirth 2 washers and 2 nuts and 100x100mm 8mm plate at one end (all galvanized to clients appproval	No.	96		
М	13mm thick plaster (1:3mix) to top surface of foundations with smooth finish trowelled	SM	11		
N	Attendance for KPLC staff to do earthing before all blinding including security for all copper strip edges	ITEM	1		
0	Alow for connection of oilsump to existing separation unit	ITEM	1		
	SECTION 5				
	220 KV STRUCTURES				
	GANTRIES AND GIRDERS				
	GANTRIES AND GIRDERS				
1	Fabricate ,deliver and erect gantry type A not exceeding 22m high consisting of lattice formation with main member legs 85x85mm equal angles;bracings as per drwawing all bolted with 12mm boltts and all galvanized to 85 microns	NO's	2		
2	Fabricate ,deliver and erect gantry type B not exceeding 12m high consisting of lattice formation with main member legs 85x85mm equal angles; bracings as per drwawing all bolted with 12mm boltts and all galvanized to 85 microns	NO's	5		
3	Fabricate ,deliver and erect GUIDER BOOM type 1 not exceeding 14m long consisting of lattice formation with main member legs 50x50x6mm equal angles; bracings as per drwawing all bolted with 12mm bolts and all galvanized to 85 microns	NOs	2		
4	Fabricate ,deliver and erect GUIDER BOOM type 2 not exceeding 12m long consisting of lattice formation with main member legs 50x50x6mm equal angles; bracings as per drwawing all bolted with 12mm boltts and all galvanized to 85 microns	NOs	3		
5	Fabricate ,deliver and erect GUIDER BOOM type 3 not exceeding 16m long consisting of lattice formation with main member legs 50x50x6mm equal angles; bracings as per drwawing all bolted with 12mm boltts and all galvanized to 85 microns	NOs	1		
6	Allow attendance for shutdowns	ITEM	1		
0	1 Particular a 100 Million Particularity and a Control Administration and the Control Adminis	112411			
	ICECTION & DEWATEDING				
1	SECTION 6 - DEWATERING Allow for Dewatering all existing foundation pits	ITEM	1		



ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	OTHER STEEL STRUCTURES				
1	Fabricate ,deliver and erect Steel structure posts for 220kv Disconnector switches and Surge Diverters consiting of 200mm diameterx8mm round hollow sections not exceeding 2.5m long with 450mmx450mmx12mm thick top and 16mm thick bottom base plates with 1no. 40mm diameter hole drilled at the centre of each base plate and welded to the main post to details as per attached drawing all with the top plate with provision of 16mm boltts at top and all galvanized to 85 microns	No.	6		
2	Fabricate ,deliver and erect Steel structure posts for 220kv Surge Diverters consiting of 150x150x8mm square hollow sections not exceeding 2.5m high with 450mmx450mmx 16 and 12mm thick respectively top and bottom base plates with 1no. 40mm diameter hole drilled at the centre of each base plate and welded to the main post to details as per attached drawing all with the top plate with provision of 16mm boltts at top all galvanized to 85 microns	No.	6		
9	Fabricate ,deliver and erect Steel structure posts for for the 132kv side consiting of 150x150x6mm square hollow sections not exceeding 3.0m high with 300mmx300mmx 10mm thick top plate and 450mmx450mmx20mm thick bottom base plate with 1no. 40mm diameter hole drilled at the centre of each base plate and welded to the main post to details as per attached drawing all with the top plate woth provision of 16mm diameter boltts and all galvanized to 85 microns	No.	12		
10	Allow for grouting the 12nos steel structures in item no. 9 above on existing foundadtion pockets to required alignment and levelling	No.	12		
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	SUB-TOTAL			
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	CONTRACT SUM			
	Contract Sum In Words:			
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