


LESSOS 220KV

Item	Description	Unit	Qty	Rate	Amount (Kshs)
ELEMENT No.1 KIBOS BAY 220KV INCOMMER					
SWITCH - GEAR FOUNDATION PLINTHS(Substructure Works - All provisional) 220 KV SWITCHGEAR PLINTHS					
The following in 12 No. CT/CVT/SD/PI Foundation type F1, 12No. Isolator Foundation Type F2,3Nos. CB Foundation Type F3 and 2No Foundation Type F4 GANTRY					
A	Clear site of all existing ballast and set aside the ballast for re-use as shall be necessary	SM	400		
B	Excavate foundation pits commencing from ground level and not exceeding 1.5m deep	CM	250		
C	Ditto Exceeding 1.5m but not exceeding 3.0m	CM	100		
D	Extra -Over for excavating in all classes of rock	CM	4		
E	Allow for all necessary plunking and strutting	ITEM	1		
F	Allow for disposal of general water by pumping, bailing or otherwise	ITEM	1		
G	Return, Ram and Fill Selected Excavated materials around the foundations	CM	50		
H	Load and Cart-Away surplus excavated materials from site to County Government Approved dumping site	CM	300		
I	Level and Compact bases of pits to receive blinding.	SM	125		
<u>Blinding(Plain Concrete Class 15)</u>					
J	75mm thick (1:4:8) Concrete blinding to pit bottoms	SM	125		
<u>Vibrated Reinforced Concrete Class 25/20 mm Aggregates In:</u>					
K	200mm Thick base	CM	30		
L	Stub columns	CM	51		
<u>High yielded steel reinforcement bars including cutting,bending, tying and fixing in place, spacer blocks and tying wires to BS 4449.</u>					
M	D8-16mm	KG	7000		
<u>Fair - Face FormWork to:</u>					
O	To vertical sides of bases -(150-225mm)	LM	300		
P	To vertical sides of stub-Columns	SM	125		
G	Plinth top surface finish smooth trowelled including 50mm chamfer all round on all plinths.	SM	60		
H	Supply and fix all galvanized steel bolts min M24X650mm long Including poring anchoring holding in position and allowing for all bolts nuts washers and bottom plates.	No.	128		
I	Supply and fix earthing material To include 65No. Earth Rods 120mm sq Copper (Soft drawwn) -Min 500m,connectors clamps and lugs including bolts and nuts to conect strips connect to existing Grid .Allow for earth pits and measurements on innitial and final resistivity less than 0.05ohms.,And all other associated accesories .(furnish drawing to client for approval)	ITEM	1		
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Item	Description	Unit	Qty	Rate	Amount (Kshs)
	CABLE TRENCHES				
6	Trench (600x600mm deep) length approx. 40M (To connect Kibos bay Equipmentn to Existing trenches)				
A	Excavate for cable trench 1.2m wide from ground level not exceeding 1.0m metres deep.	CM	50		
B	Load and cart- away excess excavated materials from site to County Government Approved dumping site	CM	40		
C	Backfill and ram selected excavated materials around trench walls.	CM	10		
D	50mm plain concrete(1:4:8) blinding on cable trench base	SM	40		
E	Allow for all necessary plunking and stritting	ITEM	1		
F	Allow for disposal of general water by pumping. Bailing or otherwise.	ITEM	1		
G	Vibrated reinforced concrete class 20/25 1:2:4 as described in;				
H	150mm thick trench base.	CM	8		
I	150mm thick trench walls with fairly smooth face finish.	CM	9		
J	Allow for connecting the new cable trenches to the old trenches including hacking and cutting old reinforced concrete works to merge with the new ones	ITEM	1		
K	Provide and put in place (900x400x50mm) thick precast concrete trench covers reinforced with Y8 bars spaced at 100mm both ways with fair face finish on both sides, inside a 50x50 angle framing including priming and corrosion protective coat	No.	105		
L	Supply and fix galvanized perforated steel cable trays cable trays from 30mm thick 50 mm400mm wide in two layer including mounting on the trench and all joints and bends.	M	40		
	High yielded steel reinforcement bars including cutting, tying, bending and fixing in place, spacer blocks and tying wires to BS 4449.				
M	D 8 in cable trench @ 200mm C/C Both ways	KG	400		
	Fair Face - Form work to:				
N	Vertical sides of trench walls.(Internally and Externally)	SM	110		
P	Vertical side of trench base-(75-150mm)	LM	80		
Q	Allow screeding/sloping and water drainage including all outlet pipes at cable trench ends	ITEM	1		
1	<u>Switch yard 400SM</u>				
A	Clear working area of all the site of existing Vegetation	ITEM	1		
B	Scoop loose top soil by cutting average 150mm deep to recieve imported fill	SM	400		
C	Provide average 100 mm thick selected well compacted imported murrum fill, compacted in layers of 150mm thick using a plate compactor to achieve slope	CM	50		
D	Prepare and apply Gradiator 4TC or equal and approved insecticide and Herbicide to surfaces of blinding as per Manufacturer's written instructions and issue warranty	SM	400		
F	1000 gauge polythene or other equal and approved membrane laid on compacted and treated quarry dust with weltd laps of 200mm wide.	SM	400		
G	Supply and spread uniformly 150mm thick 'one inch' (1") ballast in switch yard to match existing-re use existing ballast wher not sufficient top up with new supply	SM	400		
H	precast concrete chanel 200mm high at the ballast perimeter to prevent ballast spill over as restraint	LM	60		
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 instruction to all marked locations to recieve control cables and direct them to cable trench include and NOT limited to PVC bend,Tee,straight pece not exceeding 3m to each equipment	LM	40		
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Item	Description	Unit	Qty	Rate	Amount (Kshs)
J	2.4m high x10A gauge chainlink fence, complete with 4mm diameter 5 strands of galvanized plain wire pass through 3.0m high 150x150X Y cranked reinforced concrete posts placed at 3.0m centers, 12 gauge barbed wire on 450mm Y cranks, including, excavation and erection works, 1:3:6 mix mass concrete surround at 600mm deep.	LM	80		
K	Allow for 600mm masonry wall above ground including all builders works and plaster finishes with 2 coats of black bituminous paint	LM	80		
L	Cart Away existing fence portion to allow new bay protrusion	ITEM	1		
ELEMENT No.2 75MVA TRANSFORMER EQUIPMENT BAY					
220 KV SWITCHGEAR PLINTHS					
The following in 18Nos. Foundation type F1, 12 No. Foundation Type F2, 9Nos. Foundation Type F3 Total 39 Nos.					
A	Clear site of all existing ballast and set aside the ballast for re-use as shall be necessary	SM	400		
B	Excavate foundation pits commencing from ground level and not exceeding 1.5m deep	CM	120		
C	Ditto Exceeding 1.5m but not exceeding 3.0m	CM	40		
D	Extra -Over for excavating in all classes of rock	CM	4		
E	Allow for all necessary plunking and strutting	ITEM	1		
F	Allow for disposal of general water by pumping, bailing or otherwise	ITEM	1		
G	Return, Ram and Fill Selected Excavated materials around the foundations	CM	44		
H	Load and Cart-Away surplus excavated materials from site to County Government Approved dumping site	CM	100		
I	Level and Compact bases of pits to receive blinding.	SM	95		
<u>Blinding(Plain Concrete Class 15)</u>					
J	75mm thick (1:4:8) Concrete blinding to pit bottoms	SM	110		
<u>Vibrated Reinforced Concrete Class 25/20 mm Aggregates In:</u>					
K	200mm Thick base	CM	26		
L	Stub columns	CM	45		
<u>High yielded steel reinforcement bars including cutting,bending, tying and fixing in place, spacer blocks and tying wires to BS 4449.</u>					
M	D8-16mm	KG	7200		
<u>Fair - Face FormWork to:</u>					
O	To vertical sides of bases -(150-225mm)	LM	270		
P	To vertical sides of stub-Columns	SM	170		
G	Plinth top surface finish smooth trowelled including 50mm chamfer all round on all plinths.	SM	54		
H	Supply and fix all galvanized steel bolts min M24X650mm long Including poring anchoring holding in position and allowing for all bolts nuts washers and bottom plates.	No.	156		
I	Supply and fix earthing material To include 90No. Earth Rods, 120mm sq Copper (Soft drawwn) -Min 800m,connectors clamps and lugs including bolts and nuts to conect mat connect to existing Grid .Allow for earth pits and measurements on innitial and final resistivity less than 0.05ohms.,And all other associated accesories .(furnish drawing to client for approval)	ITEM	1		
					
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Item	Description	Unit	Qty	Rate	Amount (Kshs)
	CABLE TRENCHES				
6	Trench (600x600mm deep) length approx. 120M (To connect Kibos bay Equipments to Existing trenches)				
A	Excavate for cable trench 1.2m wide from ground level not exceeding 1.0m metres deep.	CM	150		
B	Load and cart- away excess excavated materials from site to County Government Approved dumping site	CM	120		
C	Backfill and ram selected excavated materials around trench walls.	CM	30		
D	50mm plain concrete(1:4:8) blinding on cable trench base	SM	120		
E	Allow for all necessary plunking and stritting	ITEM	1		
F	Allow for disposal of general water by pumping. Bailing or otherwise.	ITEM	1		
G	Vibrated reinforced concrete class 20/25 1:2:4 as described in;				
H	150mm thick trench base.	CM	25		
I	150mm thick trench walls with fairly smooth face finish.	CM	30		
J	Allow for connecting the new cable trenches to the old trenches including hacking and cutting old reinforced concrete works to merge with the new ones	ITEM	1		
K	Provide and put in place (900x400x50mm) thick precast concrete trench covers reinforced with Y8 bars spaced at 100mm both ways with fair face finish on both sides, inside a 50x50 angle framing including priming and corrosion protective coat	No.	330		
L	Supply and fix galvanized perforated steel cable trays cable trays from 30mm thick 50 mm400mm wide in two layer including mounting on the trench and all joints and bends.	M	120		
	High yielded steel reinforcement bars including cutting, tying, bending and fixing in place, spacer blocks and tying wires to BS 4449.				
M	D 8 in cable trench @ 200mm C/C Both ways	KG	1500		
	Fair Face - Form work to:				
N	Vertical sides of trench walls.(Internally and Externally)	SM	350		
P	Vertical side of trench base-(75-150mm)	LM	260		
Q	Allow screeding/sloping and water drainage including all outlet pipes at cable trench ends	ITEM	1		
1	Switch yard 400SM				
A	Clear working area of all the site of existing Vegetation	ITEM	1		
B	Scoop loose top soil by cutting average 150mm deep to receive imported fill	SM	600		
C	Provide average 100 mm thick selected well compacted imported murrum fill, compacted in layers of 150mm thick using a plate compactor to achieve slope	CM	100		
D	Prepare and apply Gradiator 4TC or equal and approved insecticide and Herbicide to surfaces of blinding as per Manufacturer's written instructions and issue warranty	SM	600		
F	1000 gauge polythene or other equal and approved membrane laid on compacted and treated quarry dust with weltd laps of 200mm wide.	SM	600		
G	Supply and spread uniformly 150mm thick 'one inch' (1") ballast in switch yard to match existing-re use existing ballast wher not sufficient top up with new supply	SM	600		
H	precast concrete chanel 200mm high at the ballast perimeter to prevent ballast spill over as restraint	LM	100		
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 instruction to all marked locations to receive control cables and direct them to cable trench include and NOT limited to PVC bend,Tee,straight pece not exceeding 3m to each equipment	LM	60		
	Allow extra over for inclined trench to TX platform level including all support,slope protection and working on steep areas/concrete anchoring/drilling and the like	LM	60		
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Item	Description	Unit	Qty	Rate	Amount (Kshs)
ELEMENT No.3 132 132KV SIDE & KABARNET BAY					
132KV SWITCHGEAR PLINTHS					
The following in 18No. Foundation type F1, 42 No. Foundation Type F2,6Nos. Foundation Type F3 ; 1Nos. Foundation Type F4 Total 6Nos PI -F1-73 Nos.					
A	Clear site of all existing ballast and set aside the ballast for re-use as shall be necessary	SM	500		
B	Excavate foundation pits commencing from ground level and not exceeding 1.5m deep	CM	350		
C	Ditto Exceeding 1.5m but not exceeding 3.0m	CM	160		
D	Extra -Over for excavating in all classes of rock	CM	6		
E	Allow for all necessary plunking and strutting	ITEM	1		
F	Allow for disposal of general water by pumping, bailing or otherwise	ITEM	1		
G	Return, Ram and Fill Selected Excavated materials around the foundations	CM	40		
H	Load and Cart-Away surplus excavated materials from site to County Government Approved dumping site	CM	320		
I	Level and Compact bases of pits to receive blinding.	SM	280		
<u>Blinding(Plain Concrete Class 15)</u>					
J	75mm thick (1:4:8) Concrete blinding to pit bottoms	SM	280		
<u>Vibrated Reinforced Concrete Class 25/20 mm Aggregates In:</u>					
K	200mm Thick base	CM	60		
L	Stub columns	CM	135		
<u>High yieled steel reinforcement bars including cutting,bending, tying and fixing in place, spacer blocks and tying wires to BS 4449.</u>					
M	D8-16mm	KG	15000		
<u>Fair - Face FormWork to:</u>					
O	To vertical sides of bases -(150-225mm)	LM	560		
P	To vertical sides of stub-Columns	SM	350		
G	Plinth top surface finish smooth trowelled including 50mm chamfer all round on all plinths.	SM	120		
H	Supply and fix all galvanized steel bolts min M24X650mm long Including poring anchoring holding in position and allowing for all bolts nuts washers and bottom plates.	No.	328		
I	Supply and fix earthing material To include 150No. Earth Rods, 120mm sq Copper (Soft drawwn) -Min 750m,connectors clamps and lugs including bolts and nuts to conect mat connect to existing Grid .Allow for earth pits and measurements on innitial and final resistivity less than 0.05ohms.,And all other associated accesories ,(furnish drawing to client for approval)	ITEM	1		
J	Allow facilitation for Kplc PM,PE & Project Supervisor on communications and data-provisional Sum 750,000 for both electronic and Print for use through entire project period	Lot	1		
TOTAL TO SUMMARY PAGE					

	'SUPPLY ONLY' Fabricate Steel Structures As per drawing including all connections nuts plates washers ,bolts including transport and delivery to site in well coded manner handed over to client for erection to match bolt assembly in foundations .with galvanizing minimum 95 microns AS follows-;				
A	CT Structure-190 Kgs.	PCS	6		
B	CVT Structure-190 Kgs.	PCS	6		
C	Post Insulator-stands alone Structure-266 Kgs.	PCS	6		
D	Surge Diverter Structure-266 Kgs.	PCS	6		
E	Incoming Gantry (2 vertical Gantries and Horizontal Boom)-3.0Tonnes	PCS	1		
F	Horizontal 'Boom' (For TX Gantries existing)-1.3 Tonnes-	PCS	1		
G	Post Insulator Structure(For cable support)-266 Kgs.	PCS	3		
F	Allow for grouting after KPLC Erection of structures	ITEM	1		
G	Allow for 2 Nos. Galvanizing/coating thickness measurement equipment	Nos	2		
	ELEMENT No. 5 132 KV STEEL GALVANIZED STRUCTURES				
	SUPPLY ONLY'Fabricate Steel Structures As per drawing including all connections nuts plates washers ,bolts including transport and delivery to site in well coded manner handed over to client for erection to match bolt assembly in foundations .with galvanizing minimum 95 microns AS follows-;				
A	CT Structure 150x150x6mm-160Kgs.	PCS	9		
B	CVT Structure 150x150x6mm-160 Kgs.	PCS	9		
C	Post Insulator Structure 150x150x6mm-200Kgs.	PCS	6		
D	Surge Diverter Structure 150x150x6mm-160Kgs.	PCS	3		
E	Half Take off Gantry (1 vertical Gantry and 1Horizontal Boom)-2.0Tonnes	PCS	2		
F	Allow for grouting after KPLC Erection of structures	ITEM	1		
G	Allow For Assembly hoisting and erection of ALL gantries ,Girders and Booms on Finished foundation plinths	Tons	7		
	ELEMENT No. 6 75MVA TX WORKS				
A	Allow for surface preparation and Removal of all reactor rails and steel embedments,	ITEM	1		
B	General excavation 0-2m-100CUBIC	CM	60		
C	Breaking any existing concrete ,Stubs,Trenches	CM	4		
D	Blinding concrete 1:3:6 100mm thick to Rail base area	SM	50		
E	BASE concrete Class 30 to footings 600mm deep	CM	30		
F	Concrete Class 30 to Rail upstand beam 1200x600	CM	15		
G	Steel -Ribbed 8-25mm To base and beam and wall	Kg	7000		
H	Allow for Rail INSERT plates 12mm thick 300x300 Including anchors and	PC	54		
I	Supply & Fix Rail to match EXISTING	LM	30		
J	Allow for Fair face finish to all concrete works	ITEM	1		
K	Formwork all bases beams and upstands AND walls	SM	220		
L	Allow Concrete class 25 to perimeter sump wall 150mm thick	CM	10		
M	Fill Transformer PIT with porous Rock 30-50mm	CM	70		
N	Allow for factory inspection For all steel Structures during fabrication,galvanizing and delivery including all facilitation for 6no.(CIT members ,PE,PM)	ITEM	1		
O	Slope Protection Disturbance to Allow New Foundations including breaking compacted fill and restabilizing slope	ITEM	1		
	TOTAL TO SUMMARY PAGE				
Item	Description	Unit	Qty	Rate	Amount (Kshs)

