

PROPOSED CIVIL WORKS AT NGONG 66/11KV SUBSTATION					
Item	Description	Unit	Qty	Rate	Amount (Kshs)
ELEMENT No.1					
PRELIMINARIES AND ENABLING WORKS					
A	Allow for temporary site office with notice-board, shelves, store for materials and tools storage and changing room for operatives and able to accommodate 7 people, furniture and meeting accessories including refreshments etc. during meetings	ITEM	1		
B	Allow for all necessary statutory approvals for the works by relevant County Authorities, replication of drawings to required formats by county government, endorsement by relevant professional persons and submit a set of approved drawings to client before commencement of the works.	ITEM	1		
C	Allow for registration of site/project and staff (foreman, Masons, Capenters, etc) with National Construction Authority (NCA).	ITEM	1		
D	Allow for a qualified person conversant with Kenya Power safety regulations with capacity to receive safety electrical permits and to double up as 'Safety Officer' for the entire contract period	ITEM	1		
E	Allow for security and insurance for the proposed works	ITEM	1		
F	Allow for temporary sign post for the proposed works.	ITEM	1		
G	Allow for temporary metered electricity supply for the works (if Lv supply within site) or a Generator for fabrication works.	ITEM	1		
H	Allow for clean water on site for the construction works.	ITEM	1		
I	Allow for making good after works completion all disturbed areas including any KPLC facility on site that the contractor may use.	ITEM	1		
ELEMENT No.2					
A	SWITCH YARD REHABILITATION				
1	Remove part of the 1" ballast spread on switchyard as directed and soil heaps on switch yard and cart away.	ITEM	1		
2	Level ground by filling or cutting to make up levels and compact ground using 3ton vibrating roller after removal of ballast and soil heaps resulting to level ground with a gentle slope.	ITEM	1		
3	Prepare and apply Gradiator 4TC or equal and approved insecticide to surfaces of murrum fill and blinding as per Manufacturer's written instructions (to be done by a specialist subcontractor and guarantee given, (a certificate as a proof required by client)	SM	675		
4	Apply suitable weed killer, herbicide to surfaces of blinding as per the Manufacture's written instructions (to be done by a specialist subcontractor and guarantee given, (a certificate as a proof required by client)	SM	675		
TOTAL CARRIED TO SAMMARY PAGE 1					

Item	Description	Unit	Qty	Rate	Amount (Kshs)
5	1000 gauge polythene or other equal and approved mebrane laid on compacted and treated murrum with welted laps of 200mm wide.	SM	675		
6	Supply and spread a uniform layer of 150mm thick 'one inch ' (25mm) ballast in the affected areas of switchyard	SM	675		
ELEMENT No. 3					
FOUNDATION PLINTHS					
1No. typical foundation plinths for 66kv gantry.					
A	Excavations. (All Provisional)				
1	Excavate for 1No. Bus bar structure plinths foundation pits size depths not exceeding 1.5m from final ground level.	CM	15		
2	Ditto exceeding 1.5m but n.e 3.0m.	CM	2		
3	Extra over excavation in rock.	CM	2		
4	Allow for keeping excavated pits water free by pumping, bailing or otherwise.	ITEM	1		
5	Allow for planking and strutting to uphold the foundations.	ITEM	1		
6	Return,fill and ram selected excavated materials around foundations.	CM	9		
7	Removing excess excavated materials from Site and disposing off.	CM	6		
B	Vibrated reinforced concrete class 20/25 1:2:4 as described in;				
1	Compacting bases of pits and blinding with mass concrete mix (1:4:8 - 50 mm thick)	SM	5		
2	Stub columns and foundation bases. Bases (2200x1800x300 thick) and stub columns (1600x1200x1500 high)	CM	6		
C	High yielded steel reinforcement bars including cutting,bending, tying and fixing in place, spacer blocks and tying wires to BS 4449.				
1	Reinforcement bars T12 to bases and stub columns of bus bars.	KG	150		
2	Reinforcement bars T8 in rings.	KG	55		
D	Foundation Bolts, washers & Nuts				
1	Supply and fix 25mm dia. X 600mm long hot dipped galvanized foundation bolts with flat and spring washers, nuts and locknuts to Engineer's details (Sample to be provided and returned after fabrication)	No.	16		
2	Grouting the foundtion bolts in stub columns by setting to precision and securing them in place when pouring concrete.The threaded portion of the bolt to protrude at least 75mm above the finished plinth level and be protected from poured concrete.	No.	16		
E	Formwork				
	TOTAL CARRIED TO SAMMARY PAGE 2				

Item	Description	Unit	Qty	Rate	Amount (Kshs)
1	Steel/ wooden formwork to sides of stub columns and bases to produce a fairly smooth concrete surface finish to stub columns faces. (plastering concrete surfaces will not be allowed))	SM	16		
2	Top surface finish smooth trowelled including 50mm chamfer all round on all plinths.	SM	3		
ELEMENT No. 3A					
20No. typical foundation plinths for 66kv Isolators, Post Insulators, Circuit Breakers, Surge Arresters, Current transformers and Voltage Transformers.As per the general arrangement drawing (GA)					
A Excavations.					
1	Excavate for 20No. structure plinths foundation pits size (2000x1800) depths not exceeding 1.5m from final ground level.	CM	120		
2	Ditto exceeding 1.5m but n.e 3.0m.	CM	30		
3	Extra over excavation in rock.	CM	5		
4	Allow for keeping excavated pits water free by pumping, bailing or otherwise.	ITEM	1		
5	Allow for planking and strutting to uphold the foundations.	ITEM	1		
6	Return,fill and ram selected excavated materials around foundations.	CM	95		
7	Removing excess excavated materials from Site and disposing off.	CM	25		
B Vibrated reinforced concrete class 20/25 1:2:4 as described in;					
1	Compacting bases of pits and blinding with mass concrete mix (1:4:8 - 50 mm thick)	SM	50		
2	Stub columns and foundation bases, (700x700x1500 high) and (1200x1200x300 thick) respectively.	CM	25		
C High yielded steel reinforcement bars including cutting,bending, tying and fixing in place, spacer blocks and tying wires to BS 4449.					
1	Reinforcement bars T12 to bases and stub columns of plinths.	KG	800		
2	Reinforcement bars T8 in rings.	KG	200		
D Foundation Bolts, washers & Nuts					
1	Supply and fix 25mm dia. X 600mm long hot dipped galvanized foundation bolts with flat and spring washers, nuts and locknuts to Engineer's details (Sample to be provided and returned after fabrication)	No.	80		
2	Grouting the foundtion bolts in stub columns by setting to precision and securing them in place when pouring concrete.The threaded portion of the bolt to protrude at least 75mm above the finished plinth level and be protected from poured concrete.	No.	80		
E Formwork					
TOTAL CARRIED TO SAMMARY PAGE 3					

Item	Description	Unit	Qty	Rate	Amount (Kshs)
1	Steel/ wooden formwork to sides of stub columns and bases to produce a fairly smooth concrete surface finish to stub columns faces. (plastering concrete surfaces will not be allowed))	SM	130		
2	Top surface finish smooth trowelled including 50mm chamfer all round on all plinths.	SM	11		
ELEMENT No. 4					
A	<i>Trench (600x600mm deep) length 30metres at various locations (All Provisional)</i>				
1	Excavate for cable trench 1.2m wide from reduced level not exceeding 0.7 metres deep.	CM	27		
2	Load, cart away excavated materials and dispose at areas designated by local authority.	CM	20		
3	Backfill and ram selected excavated materials around trench walls.	CM	7		
4	50mm plain concrete(1:4:8) blinding on cable trench base	SM	30		
B	<i>Vibrated reinforced concrete class 20/25 1:2:4 as described in;</i>				
1	In 150mm thick trench base with slight slope.	CM	5		
2	In 150mm thick trench walls with fairly smooth face finish.	CM	6		
3	Provide and put in place (900x300x75mm) thick precast concrete trench covers reinforced with Y8 bars spaced at 100mm both ways with fairly smooth face finish on both sides, including angle iron size (25x25x3mm thick) galvanized protection cage all round the slab edges.	No.	31		
C	<i>High yielded steel reinforcement bars including cutting, tying, bending and fixing in place, spacer blocks and tying wires to BS 4449.</i>				
1	Y 8 in cable trench @ 200 c/c both ways	KG	300		
D	<i>Form work to</i>				
1	To sides of trench walls.	SM	90		
E	<i>Cable Ducts</i>				
1	Provide and put in place 150mm diameter heavy duty pvc cable ducts at various points surrounded 150mm mass concrete (1:2:4)	LM	50		
2	Provide and fix as necessary 150mm diameter PVC bends	No.	10		
F	<i>Ladder Cable Tray</i>				
1	Fabricate and fix in cable trench galvanized ladder cable tray 580mm wide and its rungs spaced at 300mm c/c , supported at intervals of 1500mm, and supported 150mm above trench bed.Main frame made out of (50x50x4mm thick) angle irons, Rungs made out of (50x4mm thick) flat bars and reinforced at intervals of 3000mm.	LM	30		
TOTAL CARRIED TO SAMMARY PAGE 4					

Item	Description	Unit	Qty	Rate	Amount (Kshs)
ELEMENT No. 5					
<u>GALVANIZED STEEL STRUCTURE FOR 66KV LINE TERMINATION-SUPPLY AND INSTALL</u>					
1	Design to match the existing structures on site, shop fabricate, transport to site, erect the gantry structure and hoist the girder and fix it in position. These structures to be HOT dip galvanized to 120 microns as follows				
A	66kv line gantry structure	PC	1		
B	66kv line girder structure	PC	1		
ELEMENT No. 6					
A	Storm Water Drain				
1	Excavate on site drain trench not exceeding 1.5m deep including plunking and strutting, disposal of spoil to receive drainage channels and forming sloping sides in well compacted murrum bed.	LM	25		
2	Lay (300x450)mm precast concrete invert block drains to suitable fall with grooved edges and tongued laid on 75mm weak concrete bed.	LM	25		
3	Lay on sides of sloped trench (600x225x50mm) precast concrete slabs jointed in 1:3 mortar	SM	35		
4	Stone pitching in 1:3 mortar at various locations as directed by client	SM	25		
TOTAL CARRIED TO SAMMARY PAGE 5					
TOTAL FROM PAGE 1					
TOTAL FROM PAGE 2					
TOTAL FROM PAGE 3					
TOTAL FROM PAGE 4					
TOTAL FROM PAGE 5					
SUB TOTAL					
NCA FEE (0.5% of Project Cost)					
TOTAL					
16%VAT					
GRAND TOTAL					
AMOUNT IN WORDS					
COMPANY STAMP					
SIGN:					
NAME & ADDRESS:					
CONTRACT PERIOD:					