

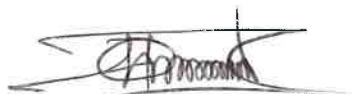
PROPOSED CIVIL WORKS FOR ADDITIONAL 33KV FEED-OUT BAYS AT RANG'ALA 132/33KV SUBSTION

| PROPOSED CIVIL WORKS FOR ADDITIONAL 33KV FEED-OUT BAYS AT RANG'ALA 132/33KV SUBSTATION | | | | | |
|---|---|-------------|------------|-------------|----------------------|
| Item | Description | Unit | Qty | Rate | Amount (Kshs) |
| | ELEMENT No.1 | | | | |
| | PRELIMINARIES AND ENABLING WORKS | | | | |
| A | Allow for a temporary site office ,notice board, shelves and , store for materials and tools storage capable of accomodating 5 people and all furniture and meeting accessories including facilitation for monthly meetings | ITEM | 1 | | |
| B | Allow for clean water for the works | ITEM | 1 | | |
| C | 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 | | |
| D | Allow for security and insurance for the proposed works | ITEM | 1 | | |
| E | Allow for temporary sign post for the proposed works | ITEM | 1 | | |
| F | Allow for temporary supply of power connection for use for the works. | ITEM | 1 | | |
| G | Allow for all the necessary statutory approvals for the works by relevant county departments, replication of drawings to required formats, Endorsement by relevant professional persons; and submit a set of approved drawings before commencement and as built drawings to client on completion,including site and project regitration with NCA. | ITEM | 1 | | |
| H | Facilitation for project execution, communication, data storage and Laptops for 3Nos. Supervsion members | | | | |
| | ELEMENT No.2 | | | | |
| | SWITCH - GEAR FOUNDATION PLINTHS(Substructure Worka -All provisional) | | | | |
| | The following in 4Nos 3- legged 33kv Air-Break Switches, Typical 2Nos. 1-Legged 33kv Circuit- Breaker, 2Nos. 2Legged 33kv Current Transformers, 2legged2Nos.Surge Diverters , 1Legged 5Nos. 33kv BusBars and 2legged 1No. Local Tx support structure.; Total 29 Nos. foundation plinths | | | | |
| A | Clear site of all existing ballast and any underlying membrane, undergrowth etc and set asde the ballast for re-use as shall be necessary | SM | 390 | | |
| B | Excavate foundation pits commencing from ground level and not exceeding 1.5m deep | CM | 320 | | |
| C | Ditto Exceeding 1.5m but not exceeding 3.0m | CM | 155 | | |
| D | Extra -Over for excavating in all classes of rock | CM | 90 | | |
| 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 | 380 | | |
| H | Load and Cart-Away surplus excavated materials from site to County Government Approved damping site | CM | 775 | | |
| I | Level and Compact bases of pits to receive blinding. | SM | 64 | | |
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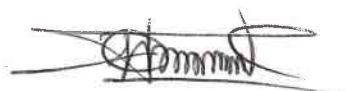
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|------|---|------|------|------|---------------|
| | <u>Blinding(Plain Concrete Class 15)</u> | | | | |
| J | 50mm thick (1:4:8) Concrete blinding to pit bottoms | SM | 64 | | |
| | <u>Vibrated Reinforced Concrete Class 25/20 mm Aggregates In:</u> | | | | |
| K | 200-300mm Thick bases | CM | 23 | | |
| L | Stub columns | CM | 62 | | |
| | | | | | |
| | <u>High yieled steel reinforcement bars including cutting,bending, tying and fixing in place. spacer blocks and tying wires to BS 4449.</u> | | | | |
| M | Y10 | KG | 772 | | |
| N | Y12 | KG | 1791 | | |
| | <u>Fair - Face FormWork to:</u> | | | | |
| O | To vertical sides of bases -(225-300mm) | LM | 154 | | |
| P | To vertical sides of stub-Columns | SM | 203 | | |
| Q | Rehabilitate part of the disturbed switch-yard by providing averagely 200mm thick selected and approved imported murrum fill , compacted in layers not exceeding 100mm thick using a 10 tonne vibrating roller and finally finishing the top to achieve slope to receive polythene membrane and ballast | CM | 56 | | |
| R | Prepare and apply Gradiator 4TC or equal and approved insecticide to surfaces of murrum fill and blinding as per Manufacturer's written instructions | SM | 390 | | |
| S | Apply suitable weed killer, herbicide to surfaces of blinding as per the Manufacture's written instructions | SM | 390 | | |
| T | 1000 gauge polythene or other equal and approved mebrane laid on compacted and treated murrum with welted laps of 200mm wide. | SM | 390 | | |
| U | Re-Use Set aside ballast and spread Uniformly in switch- yard and Top up with new ones to Client Approval. | SM | 390 | | |
| | ELEMENT No.3 | | | | |
| | CABLE TRENCHES AND DUCTS (All Provisional) | | | | |
| | <u>Trench (600x600mm deep) length approx. 80 metres long at various locations</u> | | | | |
| A | Excavate for cable trench 1,2m wide from ground level not exceeding 1.0m metres deep. | CM | 96 | | |
| B | Load and cart- away excess excavated materials from site to County Government Approved dumping site | CM | 27 | | |
| C | Backfill and ram selected excavated materials around trench walls. | CM | 60 | | |
| D | 50mm plain concrete(1:4:8) blinding on cable trench base | SM | 72 | | |
| E | Allow for all necessary plunking and stritting | ITEM | 1 | | |
| F | Allow for disposal of general water by pumping. Bailing or otherwise. | ITEM | 1 | | |
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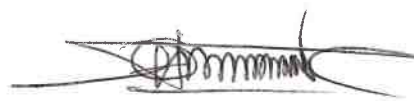
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| Item | Description | Unit | Qty | Rate | Amount (Kshs) |
|------|---|------|------|------|---------------|
| G | Vibrated reinforced concrete class 20/25 1:2:4 as described in; | | | | |
| H | 150mm thick trench base. | CM | 11 | | |
| I | 150mm thick trench walls with fairly smooth face finish. | CM | 15 | | |
| 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 | | |
| H | Provide and put in place (900x300x75mm) thick precast concrete trench covers reinforced with Y8 bars spaced at 100mm both ways with fair face finish on both sides, with all edges protected with 25x25x3mm angle iron. smooth face finish on both sides. | No. | 268 | | |
| I | Supply and fix steel fabricated cable trays from 50x50x4mm thick angle irons frame, jointed together with 50x6mm thick galvanized flat iron bars to 600mm long pieces and weld on top of angle iron spaced at 400 c/c to form cable tray and with 200mm high vertical triangular support stands spaced at 400mm c/c | LM | 90 | | |
| | High yielded steel reinforcement bars including cutting, tying, bending and fixing in place, spacer blocks and tying wires to BS 4449. | | | | |
| J | Y 8 and Y10 in cable trench | KG | 1440 | | |
| | Fair Face - Form work to: | | | | |
| K | Vertical sides of trench walls.(Internally and Externally) | SM | 192 | | |
| L | Vertical side of trench base-(75-150mm) | LM | 160 | | |
| | ELEMENT No. 4 | | | | |
| | ACCESS ROAD EXTENSION | | | | |
| A | Excavate for 4m wide access road depth not exceeding 750mm and cart away the spoil | SM | 40 | | |
| B | Average 300mm thick selected well compacted hardcore fill, compacted in layers of 150mm thick using 10 tonne vibrating roller to receive paving blocks | CM | 12 | | |
| C | 300mm approved compacted murrum fill in 150mm thick layers | CM | 12 | | |
| D | 50mm thick approved and well compacted quarry dust blinding on hardcore | SM | 40 | | |
| E | Heavy duty industrial concrete paving blocks size (210x105x80mm) minimum strength 49N/mm square laid to slope on quarry dust and compacted | SM | 40 | | |
| 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 | 30 | | |
| G | Allow for connecting the new road extension to the old road including forming all the necessary curves to match existing and levels | ITEM | 1 | | |
| | Painting | | | | |
| H | Prepare and apply approved gloss paint to kerblines; 125mm girth; colour to engineer's approval | LM | 30 | | |
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|------|---|------|-----|------|---------------|
| | ELEMENT No. 5 | | | | |
| | GALVANIZED FOUNDATION BOLTS | | | | |
| A | Allow for Grouting the foundtion bolts in stub columns by setting to precision and securing them in place when pouring concrete. (Bolts provided by client approx. size 600mm long and 20mm diameter). | PCS | 154 | | |
| | ELEMENT No. 6 | | | | |
| | DRAINAGE WORKS | | | | |
| A | Allow for an Invert Block Drainage (IBD) along the new extended road to match the existing including all necessary excavations, planking, strutting and disposal of surplus spoil, slopes to facilitate flow and making good any disturbed surfaces as a result and connections to existing IBD to client satisfaction including re-directing and channelling all the surface waters to the existing storm water darins | LM | 30 | | |
| | ELEMENT No. 7 | | | | |
| | CABLE DUCTS CROSSING ACCESS ROAD | | | | |
| A | Supply and install 150mm diameter medium gauge PVC pipes as ducts. with and including 150mm thick concrete class 20 surround, formwork, excavations, plunking and strutting and murrum compaction underlying pipe bases and all this merge with road level | LM | 36 | | |
| | ELEMENT No. 8 | | | | |
| | PVC PIPES FOR SWITCH-GEAR PLINTHS | | | | |
| A | Supply and fix 100mm diameter medium gauge PVC pipes as ducts on switch-gear plinths including terminations into 600x600mm cable trenches as necessary, 15Nos.x 100mm diameter bends, excavations, burrying of pipes below the ground in class 20 concrete where necessary and making good any disturbed surfaces/areas to client satisfaction | LM | 36 | | |
| | ELEMENT No. 9 | | | | |
| | Supply the Following in Structural Steel To BS | | | | |
| A | Fabricate and supply 33kv Bus-Bar stand-alone post not exceeding 5m high consisting of I-Beam top cross member to match existing formation and all galvanized to 85 microns | ITEM | 2 | | |
| B | Fabricate and supply Switch-Isolator structure not exceeding 3m high consisting of lattice formation with main member legs 65x65x6mm thick equal angles;bracings to match existing formation all bolted with 12mm bolttts, and all galvanized to 85 microns | ITEM | 12 | | |
| C | Fabricate and supply Current Transformer(CT) structure not exceeding 3m high consisting of lattice formation with main member legs 65x65x6mm thick equal angles;bracings to match existing formation, all bolted with 12mm bolttts and all galvanized to 85 microns | ITEM | 4 | | |
| D | Fabricate and supply 33kv feeder kick-off column not exceeding 13m high consisting of lattice formation with main member legs 100x100x10mm thick equal angles;bracingstomatch existing formation all bolted with 12mm bolttts and all galvanized to 85 microns | ITEM | 3 | | |
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| | SUB TOTAL | | | | |
| | NCA FEES | | | | |
| | 16%VAT | | | | |
| | GRAND TOTAL | | | | |
| | AMOUNT IN WORDS | | | | |
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| | NAME & ADDRESS: | | | | |
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| | CONTRACT PERIOD: - 25 WEEKS. | | | | |
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