PROPOSED CIVIL & STRUCTURAL WORKS FOR NEW INCOMER ON LANGATA S/S 66/11 KV

Item No.	Description	Unit	Qty	Rate (Ksh.)	Amount (Kshs)
1	**PRELIMINARIES**				
	Location and access to the site				
1.1	The Langata 66/11kv Substation is located in Langata, along Langata - Karen Road - adjacent to Galleria mall. The bidder is advised to visit Site, to familiarize himself with the nature and position of the Site. No claims arising from the Contractor's failure to do site visit will be entertained.	ITEM	0		
	Pricing items of preliminaries				
1.2	Prices SHALL BE INSERTED against items of "preliminaries" in the tenderer's priced Bills of Quantities. The Contractor is advised to read and understand all preliminary items. The Contractor shall be deemed to have included in his prices or rates for the various items in the Bills of Quantities or Specification for all cost involved in complying with all the requirements for the proper execution of the whole of the Works in the Contract	ITEM	0		
	Prevention of Accidents, damage or loss.				
1.3	The Contractor is notified that these works are to be carried out on a restricted site where the client is going on with other normal system operation activities. The Contractor is thus instructed to take reasonable care in the execution of the works as to prevent accidents, damage or loss and disruption of activities being carried out by the Client. The Contractor shall allow in his rates any expense he deemed necessary by taking such care within the site.	ITEM	0		
	Existing Services				
1.4	Prior to the commencement of any work, the Contractor is to ascertain from the relevant authority the exact position, depth and level of all existing services in the area and he/she shall make whatever provisions may be required by the authorities concerned for the support, maintenance and protection of such services. The Contractor shall take every precaution to avoid damage to all existing property including roads, cables, drains and other services, and he will be held responsible for and shall make good all such damage arising from the execution of this contract at his own expense to the satisfaction of the Client.	ITEM	0		
1.5	Allow for liaising with the relevant road agencies (KeNHA, KURA, KeRRA or the County Government) on proposals and approvals for any external road works, including access, road crossings and drainage. Prepare and submit all drawings and applications, attend meetings, and obtain the necessary permits and wayleaves. Pay all fees and charges, and indemnify the Employer against all costs, fees, penalties and claims arising.	ITEM	1		
	CONTRACTOR'S SUPERINTENDENCE/SITE AGENT				
1.6	The Contractor MUST avail on site a literate English speaking Agent or Representative, competent and experienced in the kind of work involved who shall give his whole experience in the kind of work involved and shall give his whole time to the Resident Engineer's of the works. Such Agent or Representative shall receive on behalf of the Contractor all directions and instructions from the Project Manager and such directions shall be deemed to have been given to the Contractor in accordance with the Conditions of Contract.	ITEM	1		
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	Safety Personnel				
1.7	Contractor should allow for a qualified Safety Officer conversant with Kenya Power contractors safety regulations for the entire contract period who will be responsible for receiving Daily Work Permits in daily basis The working hours shall be those generally given by the client in accordance with the safety regulations. No work shall start in the absence of the safety person having received permit to work from the relevant authorizing officer.	ITEM	1		
	Insurance				
1.8	The Contractor shall insure as required in Conditions of the Conditions of Contract. No payment on account of the work executed will be made to the Contractor until he has satisfied the PROJECT MANAGER either by production of an Insurance Policy or and Insurance Certificate that the provision of the foregoing Insurance Clauses have been complied with in all respects. Thereafter the PROJECT MANAGER shall from time to time ascertain that premiums are duly paid up by the Contractor who shall if called upon to do so, produce the receipted premium renewals for the PROJECT MANAGER's inspection.	ITEM	1		
	Site Security				
1.9	The Contractor shall be entirely responsible for the security of all the Works, stores, materials, plant, personnel, etc, both his own and sub-contractors' and must provide all necessary watching, lighting and other precautions as necessary to ensure security against theft, loss or damage and the protection from the public.	ITEM	1		
	Sign Boards				
1.1	The Contractor shall allow for the provision and erection of publicity, project-information, directional, safety and other signboards, and shall maintain them throughout the Works and remove them upon completion. The location, size, construction and lettering of the signboards shall be subject to the Client's approval.	ITEM	1		
	Visitor's Book and Site Diary				
1.11	The Contractor shall keep a visitors' book on the Site to record the names of all persons visiting the Site in connection with the Project. The Contractor shall also maintain a daily site diary recording site activities and, in particular, any occurrences that may affect the progress of the Works. The visitors' book and site diary shall be handed over to the Client upon completion of the Project or whenever directed by the Client.	ITEM	1		
	Statutory County & Government approvals				
1.12	Allow KES 200,000 for revising, customizing and reproducing drawings to meet the requirements and standards of the approving authorities, including the professional fees of the Contractor's nominated professionals.	ITEM	1		
1.13	Allow for various approval levies fees and the like	ITEM	1		
1.14	Allow for the preparation and submission of two colour A3 copies of the final as-built drawings, bound in spiral booklets, together with a digital backup on a portable drive, upon completion of the Works	ITEM	1		
	Site Offices				
1.15	The Contractor shall provide and maintain adequate site offices, approximately 12 m² in area, with standard furniture for the use of the Project Manager and for site meetings. The Contractor shall also provide and maintain one heavy-duty, three-in-one colour A3 printer. The offices and printer shall be removed from the Site upon completion of the Works.	ITEM	1		
	Storage of Materials				
1.16	The Contractor shall, at their own risk and expense, provide weatherproof, lockable storage sheds at locations directed by the Project Manager for the safe storage of materials and for the use of workers engaged on the Works. Upon completion, the Contractor shall remove the sheds and make good any damaged or disturbed surfaces to the satisfaction of the Project Manager.	ITEM	1		
	Water				
1.17	Allow for the provision of clean water required for the execution of the Works.	ITEM	1		
	Tests				
1.18	The Contractor shall, at their own cost, provide samples of materials and workmanship, including concrete test cubes, as required by the Client for approval or rejection. If a sample is rejected, the Contractor shall provide further samples until they are approved. The Client may reject any materials or workmanship that, in the Client's opinion, do not conform to the approved samples.	ITEM	1		
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Item No.	Description	Unit	Qty	Rate (Ksh.)	Amount (Kshs)
	Earthing				
1.19	Provide a PC sum for re-instating the substation earthing affected by the new works, to match the existing earthing system. This includes earth conductors, connections to new foundations and structures, and testing of earth resistance. The contractor shall submit a detailed earthing proposal to KPLC for approval before execution, and the sum shall be expended as directed by the Engineer.	ITEM	1		

Item No.	Description	Unit	Qty	Rate (Ksh.)	Amount (Kshs)
2	**GATE & RAMP WORKS**				
2.1	Take down the existing 6.0 m gate (2 No. 3.0 m leaves) and store it securely for re-hanging. Provide temporary security to the opening during the works.	ITEM	1		
2.2	Lift the existing 80 mm paving blocks over the ramp area, then clean and stack them for re-use. Re-lay salvaged blocks on a sand bed to make good both ends of the ramp.	M^2	96		
2.3	Excavate to formation for the ramps at both gates as per drawing, including cut-off beams and toe channels. Trim and compact the formation to 95% MDD and cart away surplus.	M^3	90		
2.4	Supply and hand-pack approved hardcore to the ramp profiles at both gates, compacted in 150 mm layers.	M^3	80		
2.5	Vibrated reinforced concrete Class 30/20 in the 250 mm ramp slabs, cut-off beams and thickened edges at both gates. Price to include fair-faced edge formwork, a brushed finish to the slopes and 7 days' curing.	M^3	38		
2.6	Prepare a Reinforced concrete lined drain (7 m at the existing gate, 7 m at the new gate), 450 mm wide × 400 mm deep internally, with 150 mm thick walls and base in Class 25/20 concrete reinforced D10 bars 150mm both ways center to center, on 50 mm Class 15 blinding. Lay to even falls of not less than 1:100 to the outfall, with invert levels established before construction and approved by the Engineer, so that water discharges freely without ponding or backflow. Price to include excavation, formwork, a smooth trowelled finish to the invert, backfilling and carting away surplus material.	LM	14		
2.7	Extra over the RC lined drain for hot-dip galvanised mild steel gratings to load Class D400 (EN 124) across the gate access at the foot of the ramp, in panels 550 mm wide × 1000 mm long × 50 mm deep (7 No. panels per gate, 14 No. total), made of bearing bars with cross bars at 30 × 100 mm pitch. Seat the gratings in a 50 × 50 × 6 mm galvanised angle frame cast into rebates in the drain walls, and bolt each panel down with 4 No. M12 galvanised bolts. Include thickening the drain walls and base to carry vehicle loads.	LM	14		
2.8	Supply and install fabric mesh BRC gauge A393 6.16 kg/m2 to the ramp slabs at both gates.	M^2	200		
2.9	Supply and fix 75 × 50 × 4 mm RHS extensions to the gate frame. Re-hang both leaves 500 mm higher, opening inward only, with 50 mm clearance over the crest. Fix drop-bolt sockets and gate stops. For both gates.	ITEM	2		
2.10	Prepare and paint the gate leaves and extensions (zinc primer plus 2 coats gloss), both faces.	M^2	29		
2.11	Carefully remove existing barbed wire and steel bars from top of the perimeter wall(adjacent to the gate on both sides) about 40m in length, store on site, and re-fix on top of raised wall after walling is complete; bars to be grouted in cement:sand (1:3) mortar, barbed wire to be tensioned and tied	ITEM	1		
2.12	Raise existing perimeter wall by 500mm along the front wall of the station(Approx 40m length) adjacent to the gate in 200mm thick machine-cut stone walling in cement:sand (1:4) mortar with hoop iron at alternate courses, including preparing top of existing wall and 12mm cement:sand (1:4) plaster to both faces and top	M^2	20		
2.13	Supply, fabricate and install a 6.0 m × 2.4 m double-leaf, inward-opening steel gate (2 No. 3.0 m leaves) to match existing KPLC substation gates. Frame in 75×75×4 mm SHS with mid-rail and diagonal brace, 16 mm square bar infill at 100 mm maximum clear spacing, and anti-climb spikes. Hang each leaf on 3 No. adjustable heavy-duty hinges with 50 mm bottom clearance. Include locking bar, padlock hasps, drop bolts with concrete-set sockets, centre stop and hold-open catches. Clean to bare metal, degrease, and apply one coat of red oxide primer and two coats of gloss enamel to KPLC colours. Construct 2 No. 300×300 mm C25 RC columns (4T12, T8 links at 125 mm) with cast-in hinge plates, on 900×900×300 mm reinforced bases at about 1.2 m depth. Include excavation, blinding, formwork, backfill, and a level C25 apron over the full swing area. Bond the gate and posts to the substation earth grid with flexible copper jumpers. Make good the adjoining fence or wall. **Shop drawings to be approved before fabrication**.	ITEM	1		
2.14	Allow for kplc PM,PE and Project Supervisor on communication and updates facilitation including data processing and print a provisional Sum of Ksh.1,200,000 Within entire project period	ITEM	1		
	SWITCHYARD BALLASTING				
2.15	Scoop existing ballast in the substation switchyard and heap for re-use as directed.	ITEM	1		
2.16	Excavate approx.150mm thick deep on existing ground and cart away.	M^2	350		
2.17	Supply and spread approved murram/gravel,150mm thick to make levels, compacted to 95% MDD to receive cleaned heaped ballast(m.s).	M^3	52.5		
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Item No.	Description	Unit	Qty	Rate (Ksh.)	Amount (Kshs)
2.18	Prepare and apply an approved weedicide and herbicide to surfaces of compacted switching yard as per the Manufacturer's written instructions and of 5 years and beyond guarantee.	M^2	350		
2.19	Supply and lay 1000 gauge polythene or other equal and approved membrane laid on compacted switchyard ground and treated with welted laps of 200mm wide.	M^2	350		
2.20	Clean the heaped 1" ballast and cart away the debris.	ITEM	1		
2.21	Spread uniformly 75mm thick cleaned heaped 1" ballast on treated and membrane covered switchyard (m.s).	M^2	350		
2.22	Supply and spread uniformly 75mm thick well-graded ballast, size 30mm - 40mm, in switchyard.	M^2	350		
	D.K.M				

Item No.	Description	Unit	Qty	Rate (Ksh.)	Amount (Kshs)
3	**SWITCHGEAR EQUIPMENT FOUNDATIONS**				
3.1	Scoop existing ballast and heap for reuse; Excavate foundation pits commencing from ground level and not exceeding 1.5m deep	M^3	336		
3.2	Ditto but over 1.5m but not exceeding 3.0m	M^3	50		
3.3	Extra -Over for excavating in all classes of rock	M^3	20		
3.4	Allow for all necessary planking and strutting	ITEM	1		
3.5	Allow for keeping all excavations free from water, including surface run-off, rainwater, groundwater and seepage, by pumping, bailing, sumps or otherwise. Provide, operate and maintain all pumps and equipment for as long as necessary to complete the foundation works in dry conditions. Dispose of the water clear of the works to an approved discharge point without causing erosion, flooding or nuisance.	ITEM	1		
3.6	Allow for a temporary flood mitigation plan, with standby measures, for the duration of construction. The contractor shall propose methods for the Engineer's approval before starting work. Include standby pumps, sandbags, diversion channels and bunds to protect excavations, foundations and live substation equipment. Maintain all measures in readiness throughout the works and remove them on completion.	ITEM	1		
3.7	Return, fill and ram selected excavated material and approved borrow material around foundations, in layers, to the Engineer's satisfaction.	M^3	214		
3.8	Load and cart away surplus excavated material from site to a dumping site approved by the County Government.	M^3	66		
	Blinding(Plain Concrete Class 15)				
3.9	50mm thick (1:3:6) Concrete blinding to pit bottoms	M^3	7		
	Vibrated reinforced concrete Class 25(1:1.5:3) with 20 mm maximum aggregate in:				
3.10	Bases	M^3	39		
3.11	Stub columns	M^3	43.5		
3.12	15 mm average thickness smooth steel-trowelled finish to top surfaces of plinths, including forming 50 mm chamfers to all exposed edges of all plinths.	M^2	30		
	High yield steel reinforcement bars to BS 4449, including cutting, bending, tying and fixing in position, spacer blocks and tying wire.				
3.13	D8-12mm	KG	5500		
	Fair - Face Formwork to:				
3.14	To vertical sides of stub-Columns	M^2	286		
3.15	To vertical sides of bases	M^2	101		
	Waterproofing				
3.16	Prepare and apply two coats of approved black bituminous waterproof paint to all concrete surfaces in contact with the ground, prior to backfilling.	M^2	400		
	CABLE TRENCHES				
	Type I - (600x600mm deep)				
3.17	Excavate for cable trench 900mm wide and commencing from reduced level not exceeding 1.5m metres deep.	M^3	50		
3.18	Load and cart away excess excavated materials from site to County Government Approved dumping site	M^3	50		
3.19	50mm thick Plain concrete blinding (1:3:6)mix (Class 15/20 mm Aggregate)	M^3	2		
	Vibrated reinforced concrete class 25/20 1:1.5:3 as described in;				
3.20	150mm thick trench bed	M^3	6		
3.21	150mm thick trench walls with fairly smooth face finish.	M^3	8		
3.22	Cast and put in place precast concrete cable trench covers reinforced with D8 bars spaced at 100mm both ways with fair face finish on both sides. Size; (900x300x75mm) thick [Note: The concrete used for precast covers shall be Class 30]	NO	135		
3.23	Supply and fix 14 Gauge galvanized perforated steel cable trays; 300mm wide and 50mm deep and 1.2mm thick including mounting on the trench on well secured hangers/support (Ms) and all jointed by welds and bended as appropriate to client satisfactory.	LM	40		
	High yield steel reinforcement bars to BS 4449, including cutting, bending, tying and fixing in position, spacer blocks and tying wire.				
3.24	D8 in cable trench at 150mm centres both ways	KG	500		
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Item No.	Description	Unit	Qty	Rate (Ksh.)	Amount (Kshs)
	Fair Face - Form work to:				
3.25	Vertical sides of trench walls.(Internally and Externally)	M^2	112		
3.26	50mm thick average screeding in cable trench, sloping to drain run-off water including making outlet holes and supply and fix PVC outlet pipes.	M^2	24		
3.27	Make 115mm diameter holes on the existing 150mm thick concrete cable trench walls to receive 110mm diameter UPVC ducts (ms).	NO	10		
	Type III - (400x400mm deep)				
3.28	Excavate for cable trench 700mm wide and commencing from reduced level not exceeding 1.5m metres deep.	M^3	10		
3.29	Load and cart away excess excavated materials from site to County Government Approved dumping site	M^3	10		
3.30	50mm thick Plain concrete blinding (1:3:6)mix (Class 15/20 mm Aggregate)	M^3	0.5		
	Vibrated reinforced concrete class 25/20 1:1.5:3 as described in;				
3.31	150mm thick trench bed	M^3	1.2		
3.32	150mm thick trench walls with fairly smooth face finish.	M^3	1.5		
3.33	Cast and put in place precast concrete cable trench covers reinforced with D8 bars spaced at 100mm both ways with fair face finish on both sides. Size; (700x300x75mm) thick [Note: The concrete used for precast covers shall be Class 30]	NO	34		
3.34	Supply and fix 14 Gauge galvanized perforated steel cable trays; 300mm wide and 50mm deep and 1.2mm thick including mounting on the trench on well secured hangers/support (Ms) and all jointed by welds and bended as appropriate to client satisfactory.	LM	10		
	High yield steel reinforcement bars to BS 4449, including cutting, bending, tying and fixing in position, spacer blocks and tying wire.				
3.35	D8 in cable trench at 150mm centres both ways	KG	100		
	Fair Face - Form work to:				
3.36	Vertical sides of trench walls.(Internally and Externally)	M^2	19		
3.37	50mm thick average screeding in cable trench, sloping to drain run-off water including making outlet holes and supply and fix PVC outlet pipes.	M^2	4		
3.38	Make 115mm diameter holes on the existing 150mm thick concrete cable trench walls to receive 110mm diameter UPVC ducts (ms).	NO	6		
	TYPE II - Road Crossing				
3.39	Remove the existing 80mm thick paving blocks, road kerbs and channels along the cable trench route and secure for re-use.	ITEM	1		
3.40	Excavate trench across existing access road, commencing from reduced level but not exceeding 1.5m deep and cart away the excavated materials.	M^3	5		
3.41	Extra over excavation in compacted gravel, decomposed rock and hard murram	M^3	5		
3.42	Supply and lay 6No. lines of 150mm diameter UPVC class 41 ducts at road crossings.	LM	36		
3.43	50mm thick blinding Plain concrete (1:4:8)mix Class 10/20 mm Aggregate in:	M^3	1		
	Vibrated reinforced concrete class 15/20 1:3:6 as described in;				
3.44	Concrete surround on laid UPVC ducts	M^3	3		
3.45	Make good all disturbed areas on road furniture's and other affected areas along the cable trench path.	ITEM	1		
3.46	Supply and lay at different locations, 110mm diameter UPVC ducts from various switchgear foundations to inside concrete cable trench (ms), including provision of equal 900 and 450 bends and tees as directed by the Engineer.	LM	50		
3.47	Plain 150mm thick concrete (1:3:6) surround and 50mm thick blinding on UPVC ducts, including excavations of ducts trenches, backfilling and compaction as necessary.	M^3	5		
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4	**DRAINAGE WORKS**				
	Regrading to sump				
4.1	Trim and regrade the existing ground surface and drainage channels to even falls of not less than 1:100 towards the new sump, so that surface water drains freely without ponding. Include cutting, filling with approved material, compacting to 95% MDD, and reshaping the channel inverts and sides to line and level. Load and dispose of all surplus and unsuitable material off site, or to a spoil area approved by the Engineer.	M^3	150		
4.2	Construct 300 mm wide precast concrete open channel laid to falls, bedded on 50 mm Class 15/20 concrete, discharging into the sump	LM	100		
	PUMP HOUSE (Built ontop of the sump)				
4.3	Construct pump house of 2.4 m × 2.4 m external, built directly on the reinforced concrete sump walls (sump measured separately), comprising: bituminous damp-proof course on top of sump walls; 25 mm steel-trowelled cement-sand (1:3) screed to the pump house floor (sump top slab), laid to falls towards the door;1 No. in-situ Class 25/20 concrete generator platform approximately 0.25 m² and 100 mm high, bonded to the floor slab; 200 mm thick machine-cut stone walling in cement-sand (1:3) mortar, reinforced with hoop iron every two courses, plastered and painted two coats emulsion internally, and keyed and painted two coats weatherproof paint externally;200 × 200 mm Class 30/20 reinforced concrete ring beam and door lintel; 3 m² precast concrete louvred ventilator blocks (2 No. panels 1500 × 1000 mm, set directly under the ring beam) with insect mesh to the inner face;150 mm thick Class 30/20 reinforced concrete suspended roof slab with 150 mm overhang and cast-in lifting eye, reinforced with T10 bars at 200 mm centres both ways, top and bottom, finished with cement-sand screed to falls and a torch-on waterproofing membrane; 900 × 2100 mm high purpose-made 16-gauge mild steel louvred door complete with frame, hinges, lock and padlock hasp, primed and painted two coats gloss enamel;1.0 m wide concrete apron to falls around the building; including formwork, reinforcement and all incidentals necessary for completion	ITEM	1		
	SUMP				
4.4	Construct underground stormwater sump, 2.0 × 2.0 m internal and 1.7 m deep internal (2.4 × 2.4 m external), in vibrated reinforced water-retaining concrete Class 30/20 with integral waterproofing admixture, comprising: 250 mm thick base slab on 75 mm Class 15 blinding; 200 mm thick walls; 200 mm thick suspended top slab forming the pump house floor, with 600 × 600 mm opening; high yield reinforcement to BS 4449 (T12 at 150 mm centres each face to walls and base, T12/T10 to top slab with 2T16 trimmers at the opening) as per drawing ; PVC waterstop at the base/wall kicker; bitumen tanking to external faces; cast-in puddle-flanged sleeves (300 mm inlet, 75 mm discharge riser, 75 mm vent and 50 mm cable); galvanised step irons at 300 mm centres; 600 × 600 mm lockable galvanised chequer-plate manhole cover; including excavation, planking and strutting, dewatering, backfilling, carting away surplus spoil, formwork and a 7-day water tightness test.	ITEM	1		
4.5	Supply, install, test and commission a 10kva diesel generator set as standby power to the pump, rated to start and run the duty pump, with fuel tank, battery and automatic start on mains failure, mounted on the generator platform in the pump house with exhaust taken outside.	NO	1		
4.6	Supply, install, test and commission submersible electric drainage pump with vortex / semi-open impeller passing minimum 35 mm solids and top discharge, on a galvanised stand with stainless steel lifting chain, capable of emptying the sump at a minimum 15 m³/h against 30 m total head.	NO	1		
4.7	Supply, install, test and commission IP55 pump control panel complete with motor starter, overload and phase-failure protection, auto/off/manual selector, level relay, run/fault lamps, float switch for automatic start and stop of the pump; automatic changeover between the station LV supply and the standby generator; all cables from the station LVAC board, earthing and terminations, to the Engineer's approval.	ITEM	1		
4.8	Supply, install and test 75 mm (3 inch) HDPE PN16 (100m roll) discharge pipework complete with fittings from the pump outlet through the top slab, with flanged joint for pump removal, non-return valve, supports and brackets, and rising main to the road drainage outfall with flap valve. Contractor to submit pump selection curves and pipework drawings for the Engineer's approval before ordering.	ITEM	1		
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5	**STEEL GALVANIZED STRUCTURES**				
	Supply Fabricated Steel Structures for 66kV equipment including; Current transformers, Surge Diverters, Circuit Breakers, Cable Transition Structure and Isolator. The steel structures shall be manufactured from hot-rolled structural steel sections of tensile strength of 430-460N/mm2, yield strength of 255N/mm2, density of 7860kg/m3 galvanizing thickness of >110 microns as per drawings attached including all welding and nuts and bolts connections, stiffener plates, washers, etc, including transport and delivery to site in well coded manner handed over to client ready for erection.NB:				
	Notes: **1) All Holes To Be 18mm diameter where applicable for M16 Bolts unless otherwise stated.** **2) All Steelwork to Be Free From Rust, Dust Burrs E.T.C Then Galvanised By Hot Dip. Process, Thickness and Quality of Zinc Coating to Withstand Test of 729.** **3) Assembly Bolts, Nuts and washers to Conform to BS 916 and the Quantity Supplied to Include 10% Spare Allowance.** **4) Fabricators Are To Designate All Steelwork Items and Provide Erection Mark Plans.** **5) All Individual Steel Parts to Be Marked - KPLC**				
5.1	CTs Structure; size 150x150x6mm thick SHS and 2.40m long - Approx. 200 Kgs each.	NO	9		
5.2	VTs Structure; size 150x150x6mm thick SHS and 2.40m long - Approx. 200 Kgs each.	NO	3		
5.3	Post Insulator Structure; size 150x150x6mm thick SHS and 2.40m long - Approx. 200 Kgs each.	NO	3		
5.4	Isolator (Air break switch); size 150x150x6mm thick SHS and 3.0m high; two-legged - Approx.500kg each.	NO	7		
5.5	Surge Diverter Structure, size 150x150x6mm thick SHS and 2.40m long -200Kgs each	NO	3		
5.6	Busbar support Structure 66kV 150x150x6mm thick SHS - Approx 800kgs each	NO	1		
5.7	66kV Incoming Gantry structure Approx 3500kgs	NO	1		
5.8	66kV CB Support Structure, four-legged, 75x75x8mm equal angle legs with 65x65x6mm bracings, complete with base plates and 2-step operating platform, hot-dip galvanised - 220Kgs each	NO	3		
5.9	Supply and fix all galvanized steel bolts min M25x600mm long Including poring anchoring holding in position and allowing for all bolts nuts washers and bottom plates.	NO	260		
5.10	Assess and measure the existing steel structures on site (gantries and equipment supports), including member sizes, connections and base plate details. Redraft the drawings to match the existing, and compute the specific weight of each member and assembly into a steel weight schedule. Submit the drawings and weight computations to the Engineer for approval in hard and soft copy (PDF and DWG). Note: **the steel structure drawings issued with this tender are for bidding purposes only and shall not be used for fabrication.**	ITEM	1		
5.11	Allow a provisional sum of Ksh.1,000,000.00 for factory visit, inspection and tests before, during and after, in workshop/factory fabrication and galvanization. All required tests shall be carried out by client Inspection Team/Engineers to Accept/Reject every process, Quality, Workmanship etc before delivery to site as specified in Technical Specifications for steel structures, including all facilitation/transport and communication for 6no.(CIT members ,PE,PM)-Allow necessary mark ups.	ITEM	1		
5.12	Allow for concrete beddings, thickenings, extensions and haunchings at various locations affected by the works, or made necessary by unforeseeable depths encountered during excavation, all as directed by the Engineer.	M^3	70		
5.13	Make good all paving, kerbs, ballast and surfaces disturbed during the works. Use the recovered materials, or new matching ones where needed, to match the existing line, level and finish. Clear debris to an approved tip, all to the satisfaction of the Engineer.	ITEM	1		
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					Amount (Kshs) For Tender
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	TOTAL PAGE 9				
	SUB-TOTAL				
	Add 16% VAT			**16%**	
	Add 0.03% PPDL Levy			**0.03%**	
	TOTAL CARRIED TO FORM OF TENDER				
	AMOUNT IN WORDS				
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	COMPANY NAME..... SIGN..... STAMP.....				
	PROPOSED WORK DURATION IN WEEKS (Please indicate) ..... WEEKS				