

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	PROPOSED UPGRADING & CIVIL WORKS				
	AT MAKANDE 33/11 KV SUBSTATION				
	BILL OF QUANTITIES [SECTION 1]				
1	Preliminaries				
a	Allow for a temporary site office for materials and tools storage.	ITEM	1		
b	Allow for clean water for the works	ITEM	1		
c	Allow for a qualified personel conversant with KPLC safety regulations to receive permit for the entire contract period.	ITEM	1		
d	Allow for ALL the necessary statutory certification and approvals for the working drawings.	ITEM	1		
e	Allow for supply of power connection for use for works	ITEM	1		
f	Allow for National Construction Authority [NCA] Project registration fee for onward submission on behalf of clients.This is 0.5% of the value of contract.	ITEM	1		
g	Allow for prompt communication and updates facilitation to client supervision team.	ITEM	1		
h	Allow for temporary sign post for the proposed works and permanent sign post as described.	ITEM	1		
i	Allow for security and insurance for the proposed works	ITEM	1		
j	Hoarding of traffic control during Demolition of exististing Control room,plinths and make good of affected areas.[i.e perimeter wall]	ITEM	1		
	[SECTION 2]ACCESS ROAD AND SWITCHYARD				
1	Switch yard				
a	clear working area of all the site of KPLC material as follows by utilizing in road base	ITEM	1		
b	hardcore-labour only	CM	35		
c	ballast-labour only-spread 150mm thick to yard-labour only	SM	346		
d	scoop loose top soil by cutting average 400mm deep to recieve imported fill	CM	750		
e	Average 300 mm thick selected well compacted imported murrum fill, compacted in layers of 150mm thick using a plate compactor to achieve slope	CM	828		

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
f	Prepare and apply Gradiator 4TC or equal and approved insecticide to surfaces of blinding as per Manufacturer's written instructions	SM	345		
g	Apply suitable weed killer, herbicide to surfaces of blinding as per the Manufacture's written instructions	SM	2300		
h	1000 gauge polythene or other equal and approved membrane laid on compacted and treated quarry dust with welted laps of 200mm wide.	SM	2300		
i	Supply and spread uniformly 150mm thick 'one inch' ballast in switch yard	SM	2300		
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Paving blocks [Access road]					
a	Excavate for 5m wide access road depth not exceeding 750mm and cart away the spoil	CM	260		
b	Average 300mm thick selected well compacted hardcore fill, compacted in layers of 150mm thick using 10 tonne vibrating roller to receive cabro/ballast	CM	104		
c	300mm approved compacted murrum fill in 150mm layers	CM	104		
d	50mm thick approved and well compacted quarry dust blinding on hardcore	SM	437		
e	Heavy duty industrial concrete paving blocks size (210x105x80mm) minimum strength 49N/mm square laid to slope on quarry dust and compacted	SM	437		
f	Allow for (125x100x900mm) pcc channels jointed in 12mm (1:3) mortar	LM	190		
g	125x250mm straight kerbs on concrete foundation jointed in 12mm (1:3) mortar	LM	190		
h	125x250mm curved kerbs on concrete foundation	LM	24		
i	Mass concrete (1:2:4) as kerbs foundations size (400x100mm thick)	CM	7		
Cable ducts					
a	Supply and install 3 sets of 6pcs of 150mm HD gauge pvc pipes as ducts	LM	15		

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
b	Provide excavate and lay 150mm HD pvc ducts pipes gauge including 100mm thick mass concrete (1;2:4) surrounding and laying provided HATARI slabs on it.	LM	34		
c	Vibrated mass concrete class 20/25 (1:2:4) in pvc cable ducts surrounding.	CM	5		
SECTION 3					
1	CONTROL BUILDING				
	ELEMENT 1-SUBSTRUCTURES				
a	Excavate oversite vegetable soil average depth 150mm and cart away	SM	258		
b	Excavate for foundation trench 1m wide commencing at reduced level and not exceeding 1.5m deep.	CM	173		
c	Ditto exceeding 1.5m but n.e 3m.	CM	81		
d	Excavations for column base size (1.5x1.5)m	CM	44		
e	Ditto exceeding 1.5m but n.e 3m.	CM	10		
f	Extra over excavation for excavating in hard rock.	CM	3		
g	Allow for keeping all excavations water free by pumping, bailing or otherwise.	ITEM	1		
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i	Fill in and ram selected imported materials around foudations and column bases.	CM	150		
j	Load, cart away from site surplus excavated materials and dispose at areas designated by county authority.	CM	81		
k	1200mm thick bed of selected hard-core well-compacted in layers n.e. 150mm thick blinded with fine material 50mm thick to receive damp proof membrane (m.s)	CM	104		
l	50mm thick approved murrum blinding well compacted, watered and rolled to satisfaction	SM	258		
m	Gradiator 4TC or equal and approved insecticide treatment to hardcore blinded surface and around entire building	SM	288		

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
n	1000 gauge polythene or other equal and approved membrane as damp proof laid on blinded hardcore.(m.s) with welted laps of 200mm wide.	SM	258		
o	50mm thick plain concrete(1:4:8) blinding under strip and columns foundations.	SM	138		
	<u>Vibrated reinforced concrete class</u>				
	<u>20/25 1:2:4/25 as described in;</u>				
p	Strip foundation (700x250)mm	CM	17		
q	Column bases size (1000x1000x250)mm	CM	9		
r	Columns size (250X250)mm	CM	3		
s	150mm thick concrete slab on damp proof membrane (m.s)	CM	39		
	<u>Steel reinforcement bars including tying bending spacer blocks tying wires and fixing high tensile bars to BS 4461 to strips,columns and bases</u>				
t	Y12mm	KG	541		
u	Y16mm	KG	915		
v	Y8 mm	KG	207		
	Total this page and Carried to Summary Page				
w	Steel wire fabric mesh reinforcement to B.S.4483 Ref BRC No.A142 in concrete bed (M.S) including 200mm laps, all necessary tying wire and supporting as required.	SM	246		
	<u>Sawn formworks to</u>				
x	Sides of column size 250 x 250 mm	SM	86		
y	Sides of floor slab 150-200mm girth.	LM	71		
	<u>Foundation walling</u>				
z	225mm thick approved natural stone walling bedded and jointed in mortar (1:3)	SM	207		
zz	Prepare and apply 3 coats of bituminous paint on rendered surfaces.	SM	150		
	<u>CABLE TRENCH</u>				
	Power cable trench [1200x1200mm deep] length approx. 85meters				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
a	Excavate for trench 1.8m wide from reduced level not exceeding 1.5m	CM	155		
b	Load, cart away from site excavated materials and dispose at areas designated by county authority.	CM	155		
c	Fill in and ram selected imported materials around trench.	CM	69		
	walls				
d	50mm plain concrete(1:4:8) blinding on cable trench foundation 1.5m wide	SM	92		
	Vibrated reinforced concrete class				
	20/25 1:2:4/25 as described in;				
e	In 150mm thick trench base	CM	14		
f	In 150mm thick retaining walls	CM	20		
	Steel form work to				
g	Sides of trench wall	SM	259		
	Total this page and Carried to Summary Page				
	Steel reinforcement bars including tying bending spacer blocks tying wires and fixing high tensile bars to BS 4461				
h	Y 8mm in cable trench	KG	1944		
	Control cable trench [600x600mm deep] length approx. 85m.				
i	Excavate from reduced level not exceeding 1.5x0.8m wide	CM	120		
j	Load, cart away from site surplus excavated materials and dispose at areas designated by local authority.	CM	110		
k	Fill in and ram selected imported materials around trench.	CM	17		
	walls				
	50mm plain concrete(1:4:8)blinding under cable trenches	SM	128		
l					
	Vibrated reinforced concrete class				
	20/25 1:2:4/25 as described in;				
m	In 150mm thick trench base	CM	20		
n	In 150mm thick retaining walls	CM	20		

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	Sawn form work to				
o	Sides of retaining wall	SM	259		
	Steel reinforcement bars including tying bending spacer blocks tying wires and fixing high tensile bars to BS 4461				
p	Y8mm in cable trench	KG	2161		
q	Prepare and apply 3 coats of bituminous paint to external surfaces of all retaining walls.	SM	460		
r	50x50x4mm angle line embedded in concrete	LM	345		
	Chequered plate cover				
s	900x600mmx4mm thick chequered plate trench covers reinforced at 300mm with 25mm tubes thick SHS all round primed and apply 3 coats of first quality gloss paint.	NO	28		
t	Ditto 600x600x4mm covers	NO	85		
	11KV INDOOR BOARD PANELSUPPORT STEEL STRUCT. TO B.S 4461.				
u	18Nos.50x50x6mm thick mild steel square hollow section SHS each average length850mm long width 2Nosx12mm diameter holes with 50mm long pipe sleeves at each end bolted to 4Nos. 50x50x6mm thick mild steelangle cleats, welded to 19Nos.150x50x6mm thick mild steel channel average length 1500mm long spanning across the 1200x1200mm internal cable trench.The channels must be casted together with the RC floor to give adequate allowance so that the finished floor level is flush with its top portion.	ITEM	1		
	Total this page and Carried to Summary Page				
	Precast concrete trench covers				
a	Provide and put in place (1200x300x75mm) thick precast concrete trench covers with 25x25mm galvanised angles at all edges reinforced Y8 bars spaced at 100mm both ways.	NO	145		
	Power Cable & Control Cable trays [Stainless steel] should be AISI type 316 conform to AMS5524,ASTM A240 and ASTM A 666 standards.				
b	Supply and fix for control cables perforated cable trays aluminium in 2 layers of 600x45mm thick complete with screws and fixing mechanism also for power	LM	400		

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	cables supply tray ladders complete for fixing to be done by appointed specialist.				
	ELEMENT 2-SUPERSTRUCTURE				
	Walling				
c	Pluvex No.1 or other equal and approved bituminous damp proof course to B.S.743. 225mm wide under walling (m.s) including for 200mm long laps (measured net no allowance included for the laps)	LM	138		
d	225mm thick approved smooth hand dressed natural stone walling in cement mortar (1:4) including for hoop iron in every alternate course.	SM	518		
	Vibrated reinforced concrete class				
	20/25 1:2:4/25 as described in:				
e	In columns size 250x250mm	CM	8		
f	In ring beam and upstand size 450-600x200mm	CM	21		
g	In plinth beam size 350x200mm with Y12 10mm ring.	CM	21		
h	In 150mm thick suspended slab	CM	39		
i	In 100mm thick canopies over all openings and hood	CM	10		
j	In lintols 300x200mm	CM	1		
	Steel reinforcement bars including tying bending spacer blocks tying wires and fixing high tensile bars to BS 4461 in upstands,ringbeam and slab,canopies				
k	Y 8mm	KG	159		
l	Y10 mm	KG	819		
m	Y12mm	KG	3156		
n	Y16mm	KG	288		
	Total this page and Carried to Summary Page				
	Sawn form work to				
o	Sides and soffits of ring beam	SM	288		
p	Sides of columns	SM	132		
q	Soffits of suspended slab	SM	258		
r	canopies and the like	SM	207		

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	ELEMENT-3 ROOF CONSTRUCTION AND COVERING				
	The following in 7 no trusses spanning 11.00m and hoisted 4m high above finished floor level are to be galvanized before hoisting to 85 microns.				
a	100x50x6mm rolled steel RHS in rafters	LM	207		
b	Ditto 50x50mm in struts	LM	196		
c	Supply and fix in concrete ring beam 28no. 16mm bolts	ITEM	1		
d	(200x200x6mm thick M.S plate cleats with 2no. holes welded to truss.	NO	16		
e	Supply and erect MS purlin cleats welded to truss at 1800 cc	NO	92		
f	Supply and erect 150x51x2mm Z purlins bolted to rafters primed with one coat of red oxide	LM	288		
g	Gauge 26 pre-painted IT 5 roof covering sheet including for 2no. side corrugations and 300mm long end laps	SM	403		
h	Ditto for side cladding	lm	69		
i	26 gauge matching ridge cap.	LM	35		
j	50x50x6mm RHS fascia support	LM	23		
k	50x50x6mm angle iron fascia support	LM	138		
l	Supply and fix cleats welded to fascia support	NO	32		
m	26 gauge 100x100mm corner edging	LM	138		
n	14 gauge galvanised M.s in gutters	lm	69		
o	Extra over for stopped ends	NO	7		
	Total this page and Carried to Summary Page				
a	Ditto for 100mm outlet	NO	9		
b	50x50mm thick timber bearers	LM	81		
c	100x50mm thick timber cornice	LM	81		
	Down pipes				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
d	100mm down pipes 24 gauge secured to wall with brackets at 900mm c/c	LM	35		
e	E.O for swan neck	NO	9		
f	Prepare surfaces , prime and apply two coats of first quality aluminium panit to all rainwater goods	ITEM	1		
	Windows				
	Aluminium powder coated off-white grey with 50mm framing and mullions with 6mm glass sliding option to client's approval				
	Provide meshed burglar grill on all windows internally made of 12mm square bars with diagonal orientation not over 50mm opening.				
g	Fixed glass Window size (1200 x 1000mm) high overall	NO	10		
h	Ditto size size (1200 x 1200mm)	NO	3		
i	Window size (450 x 600mm) high overall	NO	2		
j	Ditto size size (600 x 1000mm)	NO	2		
k	Fixed glass Window size (900 x 1000mm) high overall	NO	1		
l	Fixed glass window size (1200x1200mm)	NO	1		
m	6mm thick clear glass in steel putty	SM	35		
	Doors				
	Purpose made steel casement double leaf door divided into equal leafs aluminium with fan light and door closers made out of 75x50mm frame with four permanent louvred ventilation made from 25x3mm flat bars whole door hinged to end including (100x100x6mm) angle line built to wall with bracket sin sizes.				
	NOTE:All external doors to be as per provided kplc drawing SK No. 06249 Sheet 1 but galvanised to 95 microns with 1 panic lock				
	External finishes white slurry to conceal coral stone and grooves and pointing:-Refer Mbaraki 33/11kv substation and keep cooperate colours as spec-white to minimise heat absorption.				
n	Door size (1800x2500mm) double leaf	NO	2		
o	Door size (1000x2500mm) single leaf leaf	NO	7		
	Total this page and Carried to Summary Page				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
p	Door size (1200x2500mm) double leaf	NO	2		
q	(600x400mm) permanent louvre ventilations made from (25mmx3mm) flats	NO	23		
r	(150x50mm) prime grade cypress door frame	LM	81		
s	45mm thick solid flush door overall size (900x2100mm) with fan light above size (400x900mm)	NO	8		
t	4mm thick clear glass as fanlight (40x25mm)	SM	7		
u	(40x25mm) cypress timber beading including fixing to hold 4mm thick fanlight glass	LM	63		
v	40x25mm architrave	LM	127		
w	25mm quadrant	LM	127		
x	Three lever mortise lock	NO	8		
y	38mm rubber door stopper	NO	8		
z	100mm steel butt hinges	NO	24		
zz I	250mm long x 25mmx 1mm thick fixing cramps	NO	48		
zz II	Allow for priming all metal and flash doors surfaces and apply two coats of 1st quality paint to all doors and frames	SM	173		
	ELEMENT 4-FINISHES				
	Floor finishes				
a	25mm thick cement sand screed prepared to receive . granolithic paving	SM	299		
b	Ditto for ceramic tiles	SM	58		
c	Granolithic paving to wood floated floor screed including all the necessary strips	SM	299		
d	100mm skirting ditto	LM	173		
	Total this page and Carried to Summary Page				
e	12mm thick internal quality lime plaster finished smooth with steel trowel to all walls and suspended slab	SM	748		

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
f	Jointing to external walls using mortar (1:3)	SM	460		
g	Prepare surface and apply undercoat and 2 coats of 1st quality silk vinyl emulsion paint to plastered walls internally and externally.	SM	1783		
h	12mm plaster to window and door head, cill and jambs 200-300mm girth	LM	115		
i	Prepare surface, apply undercoat and 2 coats of 1st quality silk vinyl emulsion paint to plastered surfaces 200-300mm girth	LM	115		
j	200X250mm wall tiles bedded in cement grout pointed in colour cement to match colour of tiles	SM	58		
	Ditto 300x300mm floor tiles	SM	69		
	Kitchen				
k	100mm thick 1:2:4 concrete in kitchen work top	SM	6		
l	Y 10 reinforcement bars at 200 C/C	KG	230		
	150mm block wall	SM	23		
m	12mm 1:3 cement sand plaster	SM	69		
n	Single drain single bowl stainless sink	NO	1		
o	Bricon or approved kitchen mixer	NO	1		
p	400mm wide 25mm thick block board shelves fixed with brackets to wall	LM	35		
q	Ditto in locable cupboards including hinges, fasteners and locks.	LM	35		
Total this page and Carried to Summary Page					
ELEMENT 5 DRAINAGE AND PLUMBING WORKS					
Plumbing works					
a	Twyfords Hindustan vitreous china wash hand basin size 500x400mm fixed on semi-concealed brackets	NO	2		
b	Ref. No. 1200 complete with 2No. Approved 12mm. chrome plated taps	NO	2		

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
c	150x150mm semi- recessed "Twyfords" white toilet roll holder	NO	2		
d	White Twyfords classic WC suite comprising pan, heavy duty plastic seat and cover, ceramic cistern, flush pipe and trap.	NO	2		
e	Supplly and fix compact auto dryer satin chrome 2.2KW	NO	2		
f	12mm gate valve as per peglar	NO	9		
g	Ditto 15mm				
h	15mm class B pipes including all necessary fittings including all the necessaary excavations and chasing in wall	LM	173		
i	12mm class B pipes including all necessary fittings including all the necessaary excavations and chasing in wall	LM	230		
Total this page and Carried to Summary Page					
ELEMENT 6 FIRE EXTINGUISHERS, ELECTRICAL INSTALLATIONS AND SMOKE DETECTORS					
1 - FIRE EXTINGUISHERS					
Supply and fix controlled discharge 9 litre carbon dioxide gas fire extinguisher manufactured to BS EN 3-9:2006, Bs 7863:2009, BS 5306-4:2001and the cylinder manufactured to BS 5045 complete with the following:					
a	Charge and fixing bracket				
	Pictorial instructions				
	Colour code				
	Servicable on site				
	discharge horn and hose				
	Brass hot stamping				
	Operating valve				
	Local Fire Brigade approval				
b	Ditto fire blanket 6' x 4' container	NO	4		
ELECTRICAL INSTALLATIONS					
a	Allow for electrical installations to be carried out by a nominated sub-contractor as per electrical drawing	ITEM	1		

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
b	Builder's work in connection with electrical installations; cut away for and attend in all trades on the sub-contractor installing the following points in a mainly concealed system; including chases, holes and recess notching in timber etc; and making good all finishes for sockets, lighting points, consumer units etc	ITEM	1		
	SUBSTATION LIGHTING				
	Supply 240 watt AC (LIGHT DEPENDENT TYPE) bucky head floodlight with energy saver 100 watts sodium metal halide lamps to be hoisted on mast supplied by kplc including all connections	NO	8		
	Ditto but at the gate pillars	NO	2		
	supply and fix emergency chargeable lights in the control room to client approval.	NO	2		
c	Supply and install a 420V AC Autochangeover distribution panel as per attached specifications [kplc document number KP1/6C/1/13/TSP/09/092.]	ITEM	1		
	AIR CONDITIONING				
	Air conditioning				
	Supply and fix air conditioners complete with all fixing accesories to controll room temperartures from approved suppliers				
	AC INDOOR UNIT	NO.	4		
d	Split type direct expansion FREE STANDING AC unit with :-				
	Cooling capacity :- 36,000 Btu/hr				
	Fan speed :- 3steps				
	Condensate drain pipe [25mm diameter MUPVC] from indoor unit [approximately 18m].				
	LCD wireless remote controller.				
	Fan motor.				
	Limiting noise level 50dB[A] at high speed.				
	Cooling coil.				
	Refrigerant charge[R410A]				
	Condensate drip pan.				
	Refrigerant piping[Vapour and liquid lines]both insulated with 25mm thick Armaflex insulation [Approx.25m]				
	Support brackets etc.				
	Approximately 200mm raised base platform for each unit.				
	The unit must have an automatic restart system after power interruption.				
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	SMOKE DETECTORS				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
a	Allow for Hardwired Smoke detectors installations; including a battery back up; to be carried out by a nominated sub-contractor	ITEM	1		
b	Allow for general attendance on specialist contractor	ITEM	1		
c	Builder's work in connection with Smoke detector installations; cut away for and attend in all trades on the sub-contractor installing the following points in a mainly concealed system; including chases, holes and recess notching in timber etc; and making good all finishes for cut in boxes, electrical wiring, mounting brackets, smoke detector feeds, fire alarm points etc	ITEM	1		
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SECTION 4: GUARD HOUSE AND WC					
ELEMENT NO.1: SUBSTRUCTURES					
a	Rehabilitate the existing gate house and wc by redoing the internal and the external finishes.replace the existing windows frames to steel casement aluminium powder coated off white with 50mm framing, reposition & replace the doors to light weight steel aluminium powder coated off white with 50mm framing doors, hack and screed the floor and supply and fix approved ceramics tile on the floor.Prepare and apply first grade undercoat and two coat of paints on refurbished walls to match with the new control room colours.	SM	7		
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Fencing					
b	Create the precast wall with concrete louvers fence around the guard/ wc house to the client satisfaction.	SM	20		
c	Create pedestrian gate on the existing wall.	ITEM	1		
GRAVELLING [Access road]-entry					
	Repair and make good existing steel gate clear from ground lev.	ITEM	1		
d	Rehabilitate the existing gravel access road from the main road to substation gate.	SM	1342		
e	Excavate commencing from ground level 8.0metres wide 2nos access road and not exceeding 300mm deep and cart way the spoil	CM	33		
f	Hand pack and compact hardcore 300mm layer to external road section to main road.	CM	33		

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
g	Approved murrum fill 300mm well compacted with vibratory rollers in 150mm thick layers to above road to engineers approval	SM	110		
h	50mm surfacing of entry road with APPROVED gravell	SM	110		
	ROAD MARKING				
	Prepare surfaces and apply three coats of approved road marking paint: to				
l	Kerb stones and parking 75 to 150mm girth with Kenya Power branded colours.	KG	29		
	Cable ducts				
j	Supply and install 150mm diameter heavy gauge PVC pipes as ducts for cables crossing the access road and control room cable trench entrance location.				
k	Vibrated mass concrete class 20/25 (1:2:4) in pvc cable ducts surrounding.	SM	5		
	SWITCH YARD PLINTHS [2NO.TX. PLINTHS				
a	Excavate pit foundations not exceeding 1.5m deep from reduced levels.	CM	40		
b	Return fill and ram suitable excavated material to the sides of the plinths	CM	30		
c	Cart away from site surplus excavated materials	CM	76		
d	Plain concrete 50mmm thick blinding 1:4:8 to footing	SM	30		
	Vibrated Reinforced Concrete Class 25/20 mm Aggregate in:-				
e	Base	CM	9		
f	PEDESTALS	CM	6		
g	COVER SLAB-300mm thick	CM	10		
	High Tensile Steel Reinforcement Bars; Cold Worked to BS 4461 (Provisional)				
h	8 mm diameter	KG	340		
i	12 mm diameter	KG	2470		
	Fairface Formwork to:-				
j	Sides of base 225-300mm wide	LM	96		
k	Ditto slab	LM	36		
l	Vertical sides of footing	SM	48		
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	Hardcore filling				
a	Approved hardcore filling compacted to slopes at all directions not exceeding 100mm slope and average ballast be 150mm to Engineer's approval	CM	25		

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
b	Blind surface of hardcore with lean concrete	SM	30		
c	1000 gauge polythene sheet laid over hardcore	SM	30		
	SUMP RCC WALLING				
	Mass insitu concrete (1:4:8) in:-				
d	Strip footing	SM	28		
	Vibrated Reinforced Concrete Class 25/20 mm Aggregate in:-				
e	Base walling finished fair face.	CM	9		
	Formwork				
f	Vertical sides of base	SM	50		
	Vertical sides of walling	LM	56		
	High Tensile Steel Reinforcement Bars; Cold Worked to BS 4461 (Provisional)				
g	8 mm diameter	KG	525		
h	10 mm diameter	KG	790		
i	Supply and fix fabricated heavy duty grating 25x4mm thick flats fastened on 50x50x4mm angle iron fastened to concrete with 6mm plate with full welds; painted with zinc red oxide primer base coat and final aluminium leafing paint to cover the transformer oil spillage sump.	ITEM	1		
j	OIL sump chamber 2m x 5m x 2m 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 away-in two compartments	ITEM	1		
k	Provide galvanized 125 x 75mm U Channels welded to triangular shape (1.5x1.2x1.9metres); placed in reinforced concrete size, 1.0x1.0metres), with approx. of the tip exposed above the concrete, including 50mm diameter hole drilled on exposed section.	NO	2		
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Re-arrangement for all existing structures to new foundations plinths of 33kv structures to +150mm on new 4x33kv bays consisting of 56nos of 33kv plinths, 4nos of 33kv bus bars plinths & 16nos of transtional struct.plinths.[Total plinths 76nos.]					

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
a	Excavate foundation pits commencing from reduced level but not exceeding 1.5 m deep	CM	276		
	Ditto but not exceeding 3.0metres	CM	5		
b	Backfill and ram selected excavated material around foundations	CM	95		
c	Cart away surplus excavated materials from Site to county government designating dumping site.	CM	40		
d	Disposal of water and Strutting	ITEM	1		
e	Blinding mix (1:4:8 - 50 mm)	SM	115		
f	Class 25(20) in bases and stub column bases with face finishes	CM	73		
g	steel 8 to 12mm to bases and column	KG	4130		
h	Shuttering in all plinths	SM	350		
i	Edges; 75 to 250 mm to plinths	LM	335		
j	grouting bolts /inserts and the like by holding in position when pouring concrete not exceeding 600mm long-bolts supplied by client	NO.	544		
k	13mm thick plaster (1:3mix) to top surface of foundations with smooth finish trowelled	SM	40		
l	Attendance for KPLC staff to do earthing before all blinding including security for all copper strip edges	ITEM	1		
m	Supply and install 32mm heavy duty PVC flexible conduit fastened on switchgear plinth reinforcement to lengths not exceeding 5.0metres in every plinths inclusive Tx.plinths and to flush with finished plinth level for earthing conductor.	ITEM	1		
	CABLE TRENCH				
	Control cable trench [600x600mm deep] length approx.85metres at various locations				
a	Excavate for trench from reduced level not exceeding 1.5 metres deep and cart away	CM	120		
b	Load, cart away from site excavated materials and dispose at areas designated by local authority.	CM	110		
c	Fill in and ram selected excavated materials around trench walls	CM	17		

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	Trench bed				
d	50mm plain concrete(1:4:8) blinding on cable trench	SM	85		
	Vibrated reinforced concrete class 20/20 1:2:4 as described in;				
e	150mm thick trench base and walls with fair face finish	CM	20		
f	150mm thick plain concrete haunching on laid 100mm diameter PVC cable ducts	CM	5		
g	Supply and lay 150mm diameter heavy gauge PVC ducts	LM	100		
	Smooth formwork to				
h	Sides of trench wall	SM	350		
	Steel reinforcement bars including tying bending spacer blocks tying wires and fixing high tensile bars to BS 4461				
i	Y 8mm at 150 centres in cable trench	KG	1200		
	Precast concrete trench covers				
j	Provide and put in place (1000x300x75mm) thick precast concrete trench covers reinforced with Y8 bars spaced at 100mm both ways with fair face finish on both side; with all edges protected with 25x25x 3mm angle iron.	NO	350		
	Perforated trays for control cables.				
k	Supply and fix stainless perforated cable trays from 50x50x4mm thick angle iron frame, jointed together with 50x6mm thick galvanized flat iron bar to 600mm long pcs and place on top of angle iron spaced at 400 C/C to form cable tray and with 200mm high vertical trainglular support stand spaced at 400mm C/C.	LM	120		
1	SECTION 5; EXTERNAL WORKS				
	ELEMENT NO.1: STORM WATER DRAINAGE				
	Excavation of trenches starting from ground level including maintaining sides and keeping bottoms free from water, mud and falling materials; grading bottoms, backfilling and carting away surplus excavated materials				
a	For drains; 1100mm wide x 600mm average depth	CM	35		
	Pre-cast concrete units; pipes to BS 5911 and all fittings; jointed in cement sand (1:3) mortar				
b	300mm diameter half round inverted block drains(IBDs) including 100mm thick murrum bed and surround to approval	M	86		

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
c	stone pitching on sides with slates to 60 deg both sides 750mm each side	SM	140		
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d	culvert 600mm dia to cross road with 250mm haunch with headwall on both sides	LM	9		
e	twin culverts 900mm dia to existing road drainage with 250mm haunch with headwall on both sides on road crossing including all rehabilitation work on the existing drainage	LM	58		
ELEMENT NO.2; FOUL WATER DRAINAGE					
1	Excavation				
a	Excavate trench for buried drainage pipes not exceeding 150mm and average 500mm deep; part return, fill in, ram and cart away surplus	LM	46		
Allow in pipework prices for all the couplings, connectors, joints, bends etc as required in the running lengths of pipework and also where necessary for pipe fixing clips, holder bats plugged and screwed; Installation must comply with BS EN 12056 - 2:2000					
with BS EN 12056 - 2:2000 MuPVC Waste System Heavy gauge Pipework Class 41					
b	100mm waste pipe	M	46		
Inspection Chambers/Manholes					
c	Allow excavation, concreting to class 1:3:6 floor slab; walling 150mm thick solid concrete block walls with 1:3 mortar and plastering to 1:2; benching to floor slab; including heavy duty rectangular cover and frame for manhole not exceeding 1500mm depth; as per drawing No. (50) 5314, MH Type A.	NO	9		
Gully traps					
d	Allow for masonry gully trap in chamber complete with golden brown uPVC P-trap with seal drain pipe and concrete cover	NO	2		
e	Allow for setting, testing and commissioning of the whole drainage works and connection to existing sewer system	ITEM	1		
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SECTION 6					
1	WATER STORAGE TANK 3500 LITRES.				
a	Excavate for column bases (1.5X1.5)m n.e 1.5m	CM	21		

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	Earthing with earthing nest consisting supply and fixing of 150mm square bare copper wire, meshed to grids, square with earthing rods 5/8"x7', all under KPLC supervision all to underline blinding in:				
y	foundation strip trenches	LM	600		
z	column bases	LM	400		
z[1]	control room trenches	LM	250		
z[2]	external trenches.	LM	250		
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SUMMARY PAGE					
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