

PROJECT: **PR 4924938 MRU  
KONDELE REAR GATE  
AND SIDE FENCE  
RENOVATION**

**BILLS OF QUANTITIES**

CLIENT: **THE CONTRACTING OFFICER  
US EMBASSY IN NAIROBI  
P.O. BOX 606,00621  
NAIROBI**

# **PR 4924938 MRU KONDELE REAR GATE AND SIDE FENCE RENOVATION**

## **BILLS OF QUANTITIES**

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These Bills of Quantities are supplied as part of the Contract for the

# PR 4924938 MRU KONDELE REAR GATE AND SIDE FENCE RENOVATION

The Contract for the above mentioned works entered into on the ..... day of ..... 2016 by the undersigned parties refers to these Bills of Quantities consisting of those pages numbered on Page (i) and those drawings listed in the Particular Preliminaries which shall be read and construed as part of the said Contract.

.....  
(CONTRACTOR)

.....  
(EMPLOYER)

.....  
(Date)

.....  
(Date)

**SPECIAL NOTES**

1. The Contractor is required to check the numbers of the pages of these Bills of Quantities against the contents stated on page (i) and should he find any missing, in duplicate or indistinct, he must inform the Contracting Officer at once and have the same rectified.
2. Should the Contractor be in doubt about the precise meaning of any item or figure, for any reason whatsoever, he must inform the Contracting Officer in order that the correct meaning may be decided before the date for submission of tenders.
3. No liability will be admitted or claim allowed in respect of errors in the Contractor's tender due to mistakes in the Bills of Quantities which should have been rectified in the manner described above.
4. The accurate ordering of materials is the sole responsibility of the contractor in accordance with the final drawings and the instructions from the Project Manager. No claim for any loss or expense will be entertained for orders for materials based upon Bills of Quantities.
5. The Bills of Quantities shall be priced as described in the Solicitation Documents.
6. These Bills of Quantities shall be treated as an addendum to the Solicitation Document and where any of the conditions or instructions in these Bills of Quantities contradict or are parallel to any other conditions in the Solicitation Document, the Conditions in the Solicitation Document shall override
7. Expenses incurred in preparation of this tender shall not be reimbursed.

**CONDITIONS OF TENDERING**

1. Bids shall be submitted in the manner described and must be delivered to the place and at the time stated as directed in the Solicitation Document:
2. The Documents in this Bills of Quantities are as follows:
  - (a) Bills of Quantities
  - (b) Grand Summary

**PREAMBLES AND PRICING NOTES**

**GENERAL SPECIFICATION**

The works under this contract shall be carried out in accordance with the Ministry of works General Specification 1976 Edition.

**MANUFACTURER'S NAME** and references are given as a guide to quality. Alternative manufacture of equal quality will be accepted at the discretion of the Architect.

**EXCAVATION**

Prices are to include for excavating in all materials met with except Rock as specified. Prices are also to include for planking and strutting, and for destroying all white ants nests and keeping excavations free from water.

**Insecticide Treatment**

Treating surface of hardcore with approved insecticide shall include execution by any reputable supplier/manufacturer who shall give a ten year guarantee to the Employer.

**CONCRETE WORK**

**Test Cubes**

Allowance must be included in the tender for the preparation of concrete test cubes as required by the Engineer.

**Precast Concrete Works**

Prices are to include for handling reinforcement, and for bedding in cement mortar.

**WALLING**

**Concrete Blocks**

All concrete walling blocks are to be in metric sizes and to the specified quantities.

Wall reinforcement shall be hoop iron, one layer per 90mm thickness, and placed in the bed joint of alternate courses.

**Samples**

Prices are to include for packing and sending sample blocks to the approved Testing Laboratory

**PREAMBLES AND PRICING NOTES (CONTD.)**

**ROOFING**

All roof materials shall be specified in the Bills of Quantities, and laid in accordance with the manufacturer's instructions.

**CARPENTRY AND JOINERY**

Cypress

The grading rules for cypress shall be the same as those for podocarpus.

Laminated Plastic Sheeting

Shall be fixed with an approved waterproof adhesive.

Prices of joinery

Shall include for pencil rounded arises; for protection against damage and for bedding frames and cills in cement mortar.

Plugged shall mean drilling walling or concrete with a drill and filling with proprietary plugs of the correct size

**IRONMONGERY**

Shall be as specified in the Bills of Quantities, or equal and approved.

Prices must include for removing and refixing during and after painting, for labelling all keys, and for fixing with matching screws.

**METAL WORK**

Generally

All steel work shall be cleaned free from rust and priced one coat or red lead primer before being delivered to the site.

Prices for Metal Windows

To include for assembling parts, bedding and pointing in mastic, building in fixing lugs, and plugging as necessary.

**PREAMBLES AND PRICING NOTES (CONTD.)**

**PLASTERWORK AND OTHER FINISHES**

Generally

All plaster work and paving to be as described in the Specifications and in the Bills of Quantities

Pavings

Prices are to include for brushing concrete clean, wetting and coating with cement and sand grout (1:1).

**GLAZING**

Polished Plate Glass

Shall be general Glazing Quality

Prime Rebates

Prices are to include for priming rebates before placing putty

Broken or Scratched Glass

The contractor will be responsible at his own cost, for replacing any broken or scratched glass and handing over in perfect condition.

**PAINTING**

Generally

Note that the General Contractor is to provide scaffolding for all trades including painting.

Paint category

Painting shall be applied in accordance with the manufacturer's instructions and to the required coats.

Prices

Prices are to include for all preparatory work, priming coats and for protecting other works and for cleaning up on completion. Prices for painting on galvanised metal are to include for mordant solution as necessary.

**PREAMBLES AND PRICING NOTES (CONTD.)**

**PLUMBING AND ENGINEERING INSTALLATION INCLUDING SOLAR PANELS**

Generally

All work shall be executed by an approved specialist and the General Contractor shall first obtain written approval from the Architect before engaging the specialist.

Description

The sizes given are internal diameter. the words 'pipe' and 'tube' are synonymous.

Prices of Sanitary Fittings

To include for assembling and jointing parts, plugging as necessary, and all joints to services and wastes or soil pipes.

**ROADS AND CAR PARKS**

All work must be supervised by an experienced Road Engineer or Foreman.

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**B I L L   N O . 1**  
**E X T E R N A L   W O R K S**

Ref.	Description	Quantity	Unit	Rate	USD
	<b><u>EXTERNAL WORKS</u></b>				
	<b><u>DEMOLITIONS AND ALTERATIONS</u></b>				
	<b><u>DEMOLITIONSANDALTERATIONS(ALL PROVISIONAL)</u></b>				
	<i><u>DEMOLITIONS(ALL PROVISIONAL)</u></i>				
	<u>Various locations</u>				
	Demolish parts of structures and cart away debris				
A	Existing precast concrete side slabs making good disturbed surfaces to receive new tarmac	4	sm		
B	Carefully demolish existing 2400mm high chainlink fence complete with 100 x 100 x 3000mm high cranked concrete posts at 3000mm centres complete with foundations and 8No.strand barbed wire,;hand over salvaged usable materials to client and cart away debris	7	lm		
C	Material and labour for repairing and making good existing 1800mm high chainlink fence complete with 100 x 100 x 2400mm high cranked concrete posts at 3000mm centres complete with foundations and 8No.strand barbed wire	12	lm		
D	Carefully demolish existing fence complete with concrete strip foundations and walling,1950mm superstructure walling,400mm high 25 x 25mm spiked grilles at the top and 400 x 400 x 2550mm high concrete columns at 4000mm centres including brick cladding and copings;10No.strand electric wires;hand over salvaged usable materials to client and cart away debris	4	lm		
	External works				
	Removing existing metal gate complete with frames and ironmongery; making good all disturbed surfaces to match existing; hand over to client and carting away unused materials from site				
E	Gate size 3600 x 1800 mm high	1	No		
F	Demolish existing 500 x 400mm deep concrete open drain complete with slotted drain cover and cart away debris	6	lm		
G	Demolish existing 450mm diameter invert block drain and cart away debris	6	lm		

Ref.	Description	USD
	DEMOLITIONS AND ALTERATIONS  Page No. 1	
KDL	To EXTERNAL WORKS	

Ref.	Description	Quantity	Unit	Rate	USD
	<b><u>FENCE AND GATE</u></b>				
	<b><u>EXCAVATION AND EARTHWORK</u></b>				
	<i><u>EXCAVATION</u></i>				
	Excavating				
	Pits; to receive isolated bases or the like; starting from ground level				
A	Not exceeding 1.50 m deep	12	cm		
	<i><u>Disposal</u></i>				
	Surplus excavated material				
B	Removing from site	5	cm		
	<i><u>DISPOSAL OF WATER</u></i>				
	<i><u>Labour and materials</u></i>				
	Keeping excavation free from				
C	All water including spring or running water		Item		
	<i><u>FILLING</u></i>				
	<i><u>Approved excavated material</u></i>				
	Filling in making up levels well rolled and compacted to 95% maximum dry density				
D	Return fill and ram approved excavated material around foundations	6	cm		
	<b><u>CONCRETE WORK</u></b>				
	<i><u>INSITU CONCRETE: PLAIN</u></i>				
	<i><u>Normal: mass concrete class 'P'</u></i>				
	Bases				
E	50 mm thick	6	sm		
	<i><u>INSITU CONCRETE: REINFORCED</u></i>				
	<i><u>Normal: class 20/(20mm): vibrated</u></i>				
	Foundations to isolated stanchions columns and piers				
F	Generally	3	cm		
	Column bases				
G	Generally	2	cm		
	Columns: vertical or sloping exceeding 15 degrees from horizontal				
H	Generally	1	cm		
KDL					

Ref.	Description	Quantity	Unit	Rate	USD
	<u><b>REINFORCEMENT</b></u>				
	<u>Bars: high yield steel: cold worked: B.S. 4461 including bends, hooks, tying wire, distance blocks, and spacers</u>				
	Square twisted high tensile steel bars				
A	12 mm Diameter	85	kg		
B	8 mm Diameter	45	kg		
	<u><b>FORMWORK TO INSITU CONCRETE</b></u>				
	<u>Formwork generally</u>				
	Sides; vertical or battering				
C	Columns or the like	17	sm		
	<u><b>PRECAST CONCRETE</b></u>				
	<u>Normal: class 20/(20mm): vibrated</u>				
	Copings				
D	50 mm extreme thick; size 400 x 400 mm; the top side four times weathered and throated all round; reinforced as necessary for handling; bedding, jointing and pointing in cement mortar (1:4)	4	no		
	<u><b>METALWORK</b></u>				
	<u>ROLLED PLATES, BARS, SECTIONS AND TUBES</u>				
	<u>Mild steel; K.S. 02-18 all welded including grinding all welds, edges and the like and priming after prefabrication</u>				
	Frames				
E	25 x 25 x 3 mm hollow section	1243	lm		
F	50 x 50 x 3 mm hollow section	53	lm		
G	100 x 75 x 3 mm hollow section	115	lm		
H	100 x 100 x 3 mm hollow section	135	lm		
J	50 x 6 mm flat bar section	229	lm		
	<u><b>PURPOSE MADE UNITS</b></u>				
	<u>Special Security Hut</u>				
	To Manufacturers Specifications				
K	Supply and install on site as directed by the Project Manager, prefabricated security huts overall size internally 1200 x1200mm and 2400mm in 50 x 75 x 2mm m.s frame, 4 mm aluminium chequered plate flooring, side infills of 4mm aluminium plates upto 1200mm and 6mm thick clear laminated glass above, with bituminous shingle rooftop on T & G boarding all as per drawings and to Project Managers approval	4	No		

Ref.	Description	Quantity	Unit	Rate	USD
	<u>SUNDRIES</u>				
	<u>Labour and material</u>				
	Spikes				
A	Extra over labour and material for forming spikes to 25 x 25 x 3mm square hollow sections(m/s)	710	No		
B	Extra over labour and material for forming spikes to 50 x 50 x 3mm square hollow sections(m/s)	30	No		
C	Extra over labour and material for forming spikes to 100 x 100 x 3mm square hollow sections(m/s)	30	No		
	<b><u>FLOOR, WALL AND CEILING FINISHES</u></b>				
	<u>INSITU FINISHINGS</u>				
	<u>Plaster: 12 mm first coat of cement and sand (1:4); 3 mm second coat of cement and lime putty (1:5); steel trowelled</u>				
	12 mm thick 3 No. coat work; to concrete or blockwork base (m/s); generally to				
D	Walls; external	12	sm		
	<u>TILE, SLAB OR BLOCK FINISHINGS</u>				
	<u>Approved clay red bricks jointed and bedded in cement and sand (1:3) mortar and pointed in matching colour mortar</u>				
	50 mm thick brick facing to wall jointed and pointed in coloured cement/sand(1:4) mortar to match				
E	Walls; external	12	sm		
	<b><u>PAINTING AND DECORATING</u></b>				
	<u>PREPARE AND APPLY ONE UNDERCOAT AND TWO FINISHING COATS OF GLOSS OIL PAINT ON</u>				
	<u>Metal surfaces</u>				
	General surfaces				
F	Over 300 mm girth; external	94	sm		
G	Not exceeding 100 mm girth; external	1472	lm		
H	100 to 200 mm girth; external	53	lm		
	<u>PREPARE AND APPLY TWO FINISHING COATS OF GLOSS OIL PAINT ON</u>				
	<u>Existing metal surfaces</u>				
	General surfaces				
J	Not exceeding 100 mm girth; external	1649	lm		
K	100 to 200 mm girth; external	120	lm		

KDL

Ref.	Description	Quantity	Unit	Rate	USD
	<p><b>FENCING</b></p> <p><u>GATES</u></p> <p><u>Mild steel gates</u></p> <p>Comprising 50 x 50 x 3mm thick hollow section frame all round,2No. 50 x 50 x 3mm thick RHS middle rails,25 x 25 x3mm bars with bottom and top including 4mm thick mild steel panelled sheeting both sides and hanging gate to concrete column in approved means including 100 x 100 x 3500mm x 6mm RHS post and including foundations ; two pairs per leaf of purpose made hinges welded to gate leaf and gate Post ; 2No purpose made slide bolts and 2No padlock hasps welded to gate; all welding ground to smooth finish and priming gate after fabrication and applying three coats of gloss oil paint as per drawings</p>				
A	<p>Overall size 3600 x 2450 mm in two equal leaves</p>	1	No		
	<p>Comprising 50 x 50 x 3mm thick hollow section frame all round,2No. 50 x 50 x 3mm thick RHS middle rails,25 x 25 x3mm bars with bottom and top including 4mm thick mild steel panelled sheeting both sides and hanging gate to concrete column in approved means including 100 x 100 x 3500mm x 6mm RHS post and including foundations ; two pairs per leaf of purpose made hinges welded to gate leaf and gate Post ; 2No purpose made slide bolts and 2No padlock hasps welded to gate; all welding ground to smooth finish and priming gate after fabrication and applying three coats of gloss oil paint as per drawings</p>				
B	<p>Overall size 6000 x 2450 mm in two equal leaves</p>	1	No		
	<p>Comprising 50 x 50 x 3mm thick hollow section frame all round,2No. 50 x 50 x 3mm thick RHS middle rails,25 x 25 x3mm bars with bottom and top including 4mm thick mild steel panelled sheeting both sides and hanging gate to concrete column in approved means including 100 x 100 x 3500mm x 6mm RHS post and including foundations ; two pairs per leaf of purpose made hinges welded to gate leaf and gate Post ; 2No purpose made slide bolts and 2No padlock hasps welded to gate; all welding ground to smooth finish and priming gate after fabrication and applying three coats of gloss oil paint as per drawings</p>				
C	<p>Overall size 3600 x 2450 mm in two equal leaves</p>	1	No		



Ref.	Description	Quantity	Unit	Rate	USD
	<b><u>ROADS AND CARPARKS</u></b>				
	<b><u>EXCAVATION AND EARTHWORK</u></b>				
	<u>EXCAVATION</u>				
	<u>Excavating</u>				
	Bulk or the like; starting from ground level				
A	Not exceeding 1.50 m deep	48	cm		
	<u>Disposal</u>				
	Surplus excavated material				
B	Removing from site	48	cm		
	<u>DISPOSAL OF WATER</u>				
	<u>Labour and materials</u>				
	Keeping excavation free from				
C	All water including spring or running water		Item		
	<u>FILLING</u>				
	<u>Hardcore</u>				
	Filling in making up levels well rolled and compacted to 95% maximum dry density				
D	Over 300 mm thick; handpacked in layers not exceeding 200mm thick	20	cm		
E	300 mm thick; handpacked in layers not exceeding mm thick	80	sm		
	<u>Stone or quarry dust</u>				
	Blinding surfaces of fill				
F	50 mm thick	80	sm		
	<b><u>ROADWORKS</u></b>				
	<u>ROAD FINISHINGS</u>				
	<u>125mm thick hot rolled asphalt wearing course penetration 60-70 to B.S. 1621 and 2040 including 5mm slurry seal to the satisfaction of the Engineer</u>				
	To prepared subbase (m/s)				
G	Roads; to falls, crossfalls or sloping not exceeding 15 degrees from horizontal	80	sm		
	<u>MC 30 bitumen prime coat at the nominal spray rate of 1.2-1.5 litre per square metre</u>				
	To prepared subbase (m/s)				
H	Roads; to falls, crossfalls or sloping not exceeding 15 degrees from horizontal	80	sm		

**PR 4924938 - MRU KONDELE REAR GATE & SIDE FENCE (DETAILED BILLS OF QUANTITIES)**

Ref.	Description	Quantity	Unit	Rate	USD
A	<p><u>K160 bitumen prime coat at the nominal spray rate of 0.5 litre per square metre</u></p> <p>To prepared subbase (m/s)</p> <p>Roads; to falls, crossfalls or sloping not exceeding 15 degrees from horizontal</p>	80	sm		
B	<p><u>Precast concrete: Normal: class 20/(20 mm): vibrated</u></p> <p>Kerbs; splayed; B.S. 340; bedding, jointing and pointing in cement:sand mortar (1:3); including all necessary excavation, disposal and formwork</p> <p>250 x 125 mm laid on and including 100 mm thick plain insitu concrete class 20 haunched base and back 830 mm wide</p>	40	lm		
C	<p>Channel; B.S. 340; bedding, jointing and pointing in cement:sand mortar (1:3); including all necessary excavation, disposal and formwork</p> <p>125 x 100 mm laid on and including 100 mm thick plain insitu concrete class 20 haunched base and back 830 mm wide</p>	4	lm		

Ref.	Description	USD
	ROADS AND CARPARKS  Page No. 8  Page No. 9	
KDL	To EXTERNAL WORKS	

Ref.	Description	Quantity	Unit	Rate	USD
	<b><u>STORM WATER DRAINAGE</u></b>				
	<b><u>DRAINAGE</u></b>				
	<u>INSITU CONCRETE: REINFORCED</u>				
	<u>Normal: class 25/(20 mm): vibrated</u>				
	Rectangular open channel drain comprising 50mm thick class 15 concrete blinding, 200mm thick class 25/20 bed and side walls including reinforcing with Y8 at 150 mm centres both ways on both internal and external face ; the bed finished with 12mm thick cement/sand (1:3) screed and the walls finished with 12mm thick cement/sand (1:3) render internally and including all necessary excavations, disposal , formwork and forming 100 x 75 mm wide rebate at top				
A	Overall size 300 mm wide x 600 mm deep (internal dimensions)	10	lm		
	<b><u>PRECAST CONCRETE WATER CHANNELS AND DRAINS</u></b>				
	<u>Normal: class 20/(20 mm): vibrated</u>				
	Half round invert block drain; size 450 x 250 mm high; jointed and bedded in cement/sand (1:3) mortar and laid on and including 75 mm thick compacted murrum base and sides including all excavations				
B	300 mm internal diameter	18	lm		
	<b><u>OPEN DRAIN COVERS</u></b>				
	<u>Accessories</u>				
C	500mm wide metal grating comprising 2No. 50 x 50 x 3 mm thick mild steel angle section side rails plugged to concrete with fishtailed plates; 2No. 50 x 50 x 3 mm thick mild steel angle section side rails welded to and infilled with 50 x 50 x 3 mm thick and 400mm long square hollow section bar at 80mm centres filled with concrete class 25 and both ends welded to angle sections all primed with red lead oxide and applying three coats of gloss oil paint	10	lm		
	<b><u>THE FOLLOWING IN HEADWALLS AND CULVERTS</u></b>				
	<u>Excavating</u>				
	Foundation trench ; starting from ground level				
D	Not exceeding 1.50 m deep	15	cm		
	<u>Disposal</u>				
	Surplus excavated material				
E	Removing from site	13	cm		
	<u>Filling</u>				
	Approved excavated material				
F	Filling depositing and compacting in layers maximum 150 mm thick; over 300 mm thick	2	cm		
	<u>Disposal of water</u>				
	Keeping excavations free from				
G	General water		Item		

**PR 4924938 - MRU KONDELE REAR GATE & SIDE FENCE (DETAILED BILLS OF QUANTITIES)**

Ref.	Description	Quantity	Unit	Rate	USD
	<u>In situ concrete plain; normal; class 20/(20 mm)</u>				
	Beds and surrounds				
A	Generally	11	cm		
	<u>In situ concrete plain; normal; class 15</u>				
	Blinding				
B	50 mm thick	30	sm		
	<u>In situ concrete reinforced; normal; class 20/(20 mm) ; vibrated</u>				
	Beds				
C	150 mm thick	30	sm		
	Walls				
D	150 mm thick	36	sm		
	<u>Formwork to insitu concrete; formwork generally</u>				
	Sides of sorround				
E	Walls or the like	30	sm		
	<u>Pipe; precast concrete (1:2:4); B.S. 556: spun ogee, spigot and socket joints; surface fair finish</u>				
	Pipes; bedded and jointed in cement and sand (1:3) mortar; laid in concrete bed and surround (m/s)				
F	450 mm diameter	5	lm		
G	600 mm diameter	15	lm		
	<u>Labour and material</u>				
	Building in ends of drains				
H	600 mm internal diameter in 150 mm thick reinforced concrete walling	4	No		

Ref.	Description	USD
	<p>STORM WATER DRAINAGE</p> <p>Page No. 11</p> <p>Page No. 12</p>	
KDL	To EXTERNAL WORKS	



Ref.	Description	USD
	<p>SITE CLEARANCE</p> <p>Page No. 14</p>	
KDL	To EXTERNAL WORKS	

Ref.	Description	Quantity	Unit	Rate	USD
	<p><b><u>PRIME COST AND PROVISIONAL SUMS</u></b></p> <p><b><u>PRIME COST AND PROVISIONAL SUMS</u></b></p> <p><i><u>PROVISIONAL SUMS</u></i></p> <p><u>P.C. Sums for works to be executed by Nominated Sub-Contractors</u></p> <p>Provide P.C. Sums for</p>				
A	Barriers; two hundred thousand shillings		Item		
B	Add for profit (%)		Item		
C	Allow for general attendance				
D	Allow a contingency of 2 (two) percent		Item		

Ref.	Description	USD
	<p>PRIME COST AND PROVISIONAL SUMS</p> <p>Page No. 16</p>	
KDL	To EXTERNAL WORKS	



PR 4924938 - MRU KONDELE REAR GATE & SIDE FENCE (DETAILED BILLS OF QUANTITIES)

Ref.	Description	USD
	<p>Summary</p> <p>EXTERNAL WORKS</p>	

KDL

EXTERNAL WORKS

**B I L L   N O . 2**

**S O L A R   L I G H T I N G   I N S T A L L A T I O N S**

PR 4924938 MRU KONDELE REAR GATE AND SIDE FENCE RENOVATION

BILL No. 2 : SOLAR STREET LIGHTING AND PROVISIONAL PARKING LIGHTING

ITEM	DESCRIPTION	UNIT	QTY.	RATE	AMOUNT
				USD	USD
3.1.1	SOLAR STREET LIGHTING				
	Supply, install, set to work, test and commission the following as specified and described below :-				
1.0	50,000 hours life at 25°C, IP66 48W LED light complete with pole mounting structure, impact and shock resistant diffuser glass, as Disano Mini Brera or other equal and approved.	No.	8		
2.0	10M powder coated galvanized street lighting column with a 1.5m arm for side entry lighting fitting complete with housing for 2No. Batteries, power control box, support mechanism for 2No. PV solar panels and all necessary accessories, as manufactured by Power Technics Ltd or other equal and approved.	No.	8		
3.0	2No. 100AH, sealed maintenance free rechargeable lead-lead dioxide technology batteries with provision for pressure release mechanism in the event of overcharge.	No.	8		
4.0	2No. 125Wp, 12V multi-crystalline silicon PV modules with operating temperature from -15°C to 85°C	No.	8		
TOTAL CARRIED FORWARD TO NEXT PAGE					

ITEM	DESCRIPTION	UNIT	QTY.	RATE	AMOUNT
				USD	USD
	Brought Forward From Previous Page				
5.0	30A Solar charge controller as per specification complete with enclosure.	No.	8		
6.0	Intelligent PV Inverter, as per specification complete with enclosure.	No.	8		
7.0	Complete wiring set for interconnections	Item	8		
8.0	Connection facility at each pole, complete with 2 pole 6A MCB.	No.	8		
9.0	2.5mm <sup>2</sup> twin with earth cable from MCB to luminaire.	LM	120		
10.0	Earthing at every Street light poles.	Item	8		
11.0	30A SP contactor for switching the street lights.	No.	8		
12.0	Timer circuit/switch	No.	8		
13.0	Any other item to complete the installation.	Item	1		
B	Excavate holes to take security light poles and backfill of the poles.	No.	8		
c	800 x 800 x 300mm thick concrete base with Y12 at 200mm centres both ways and 300 x 300 x 1350mm high concrete column with 4Y12 and Y8 at 150mm Centres including 4NO. 16mm diameter bolts and plates Including form work and all necessary accessories as per drawings	No.	8		
3.1.2	GATE LIGHTING				
1.0	a) Decorative amenity lantern, post top, with dome top or wide canopy in opal, white or grey for 150W HPS-T, (IP65) As Thorn Mexico or approved equivalent. Type Z	No.	2		
2.0	2 core 4mm <sup>2</sup> for street lighting PVC/SWA/PVC copper cables complete with appropriate cable glands and lugs.	LM	40		
TOTAL CARRIED FORWARD TO NEXT PAGE					

BILL No. 2. MAINS SUPPLY WIRING TO STREET LIGHTING

ITEM	DESCRIPTION	UNIT	QTY.	RATE	AMOUNT
				USD	USD
3.1.2	Brought Forward From Previous Page MAINS WIRING				
	CABLES				
1.0	i) 4.0mm <sup>2</sup> 2-core PVC/SWA/PVC armoured cable for street lighting	LM	250		
	ii) Cable glands for the 4mm <sup>2</sup> 2-core cables	LM	35		
	iii) 4-pole Lucy connector mounted on street lighting columns.	No.	8		
	iv) Wiring with 1.5mm <sup>2</sup> twin PVC with ECC for street lighting column between Lucy connector and lantern.	LM	100		
	v) 10.0mm <sup>2</sup> 2-core PVC/SWA/PVC armoured cable for Power supply to the control pillar.	LM	30		
2.0	<u>CONTROL PILLAR</u>				
	Lockable control pillar made in 14SWG galvanized sheet steel to Engineer's approval spray painted with rust proof paint and made with a provision for mounting the following: a 4-pole contactor, 80A SPN switch fuse, RCBO and a 4-way Consumers unit. The control pillar to be secured at 450mm above ground in concrete 1:2:4 ratio extending to 450mm below ground.	No.	1		
3.0	Allow for Earthing at every third pole interval and the control pillars. The contractor to ensure that the earth resistance does not exceed 10 Ohms.	No	3		
4.0	80A SP/N Switchfuse as Crabtree or approved equivalent	LM	1		
5.0	A photocell to fit 70-75lux switch on level and 1.5 maximum differential and as THORN QPK	No	1		
6.0	30A, 240V 3-pole contactor as manufactured by Telemecanique or approved equivalent, to be installed inside the control pillar.	No	1		
7.0	<u>CONSUMER UNITS</u>				
	a) 4-way SP/N consumers unit Flush mounted, complete with a 100A SP/N integral isolator installed in the Guard House as CRABTREE.	No	1		
	b) Single pole Miniature Circuit Breakers for above DB's				
	(i) 5A SP	No.	1		
	(ii) 10A SP	No.	1		
	(iii) 20A SP	No.	1		
	(iv) 30A SP	No.	1		
	(v) Blanking plates	No.	1		
8.0	Allow a contingency of 2 (Two) Percent		1		
	<b>TOTAL FOR BILL NO. 2 C/F TO GRAND SUMMARY</b>				

**G R A N D   S U M M A R Y**

<b><u>PR 4924938 MRU KONDELE REAR GATE AND SIDE FENCE RENOVATION</u></b>			USD
<b><u>GRAND SUMMARY</u></b>			
<b><u>NO.</u></b>	<b><u>ITEM</u></b>	<b><u>PAGE NO.</u></b>	
1	- PARTICULAR PRELIMINARIES		
2	- GENERAL PRELIMINARIES		
3	BILL NO.1 - EXTERNAL WORKS	EW/19	
4	BILL NO.2 - SOLAR LIGHTING INSTALLATIONS	SL/3	
5	- ALLOW A CONTINGENCY OF TWO (2) PERCENT		
	<b>SUB-TOTAL</b>		
	<b>ADD 16% V.A.T</b>		
	<b>NET GRAND TOTAL CARRIED TO FORM OF TENDER</b>		
CONTRACTOR .....			
Address .....			
Date .....			
WITNESS-Name .....			
(Signature) .....			
Address .....			
Date .....			