



The Republic of Uganda



MINISTRY OF WATER AND ENVIRONMENT

CIVIL WORKS FOR OFF-FARM IRRIGATION INFRASTRUCTURE AND FACILITIES

Volume 3: Bills of Quantities

Proc. Ref. No.: MWE/WRKS/24-25/...../3

LOT 3 EASTERN PROVINCE AREA

Issued on:January 2025

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

GRAND SUMMARY

Bill/ Scheme ID.	Description			Amount (UGx.)
	GENERAL			
PG	Preliminaries and General Items			
GI.1	Method Related Charges			
DW	Dayworks			
SUB TOTAL 1				
	WORK ITEMS			
Cluster No.	Scheme Name	Type	District	
1.1	Kapsarur	GFS	Bukwo	
1.2	Kululu / Sityo	GFS	Bukwo	
1.3	Lwongon	GFS	Bukwo	
1.4	Kongta Tulwo	GFS	Bukwo	
1.5	Weere/ Bosha	GFS	Kapchorwa	
1.6	Tuikat	GFS	Kween	
1.7	Mutufu	SPIS	Sironko	
2.1	Luwambi	GFS	Budaka	
2.2	Nalwanza	GFS	Bududa	
2.3	Iyolwa/ Geno SIS	SPIS	Tororo	
2.4	Mukuju	SPIS	Tororo	
2.5	Nankusi	GFS	Mbale	
2.6	Buwerebe	SPIS	Manafwa	
3.1	Obajai	SPIS	Kaberamaido	
3.2	Ajulon/ Abirabira	SPIS	Kaberamaido	
3.3	Totolim / Eden Farm	SPIS	Kumi	
3.4	Kagologolo	SPIS	Serere	
3.5	Kitukilo/ Minani	SPIS	Bugweri	
3.6	Luwanula/ Imanyiro	SPIS	Mayuge	
4.1	Bumooli	SPIS	Manayingo	
4.2	Namaboni	SPIS	Namayingo	
4.3	Namadope	SPIS	Luuka	
4.4	Bunamulungi (Lirima)	GFS	Namisindwa	
4.5	Nawampiti	SPIS	Kaliro	
SUB TOTAL 2				
SUB TOTAL 1 + 2				
Add 10% Contingencies				
SUB TOTAL 3				
Add 18% VAT				
GRAND TOTAL Carried to Bid Form				
GFS - Gravity Flow Scheme. SPIS - Solar Powered Scheme				

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

BILL No. PG : PRELIMINARIES AND GENERAL ITEMS

ITEM NO.	DESCRIPTION	UNIT	QTY	RATE (UGX)	AMOUNT (UGX)
1.0	Contractual Requirement				
1.1	Performance Security. - PCC 49.1	Sum	1		
1.2	Advance Payment Guarantee - PCC 48.1	Sum	1		
1.3	Insurance of the Works - GCC 13	Sum	1		
2.0	Testing of Materials and Works				
2.1	Concrete cube tests as ordered by the Engineer; 4 No. per Scheme .	Nr	96		
2.2	Pressure testing & sterilisation of main lines	km	24		
2.3	Witness testing for Solar power systems	P.S	1	90,000,000	
2.4	Contractor's handling charge on all provisional sums under 2.3 above.	%	10		
3.0	Temporary works				
3.1	Provide, erect and maintain during the construction period 2No. sign boards per scheme at locations shown by the Engineer and in accordance with the Drawings and Specifications.	Nr	48		
3.2	De-watering; Allow for work in water affected areas, including all temporary works, pumping, protection, access, etc to ensure the works are completed as specified; include removal of facilities.	Sum	1		
3.3	Control and diversion of water from site and work areas to ensure the works are completed as specified. Rate to include removal of all temporary facilities and construction.	Sum	1		
3.4	Set up container converted to temprary office (20ft long by 8ft wide by 8ft 6 inch high) and with windows and doors, well maintained communication systems i.e. mobile, wireless internet etc. as directed and to the satisfaction of the Engineer.	Sum	1		
4.0	Provisional Sums				
4.1	Provision Sum for Client's administration and Supervision expenses	month	24	8,500,000	
4.2	Allow for Site Handover / Project Launch.	P.S	24	2,100,000	
4.3	Allow for Technical Commissioning at Completion.	P.S	24	2,100,000	
4.4	Resident Supervision vehicle running costs	P.S	24	4,200,000	
4.5	Contractor's handling charge on all provisional sums under 4.1a, 4.1b, 4.2, 4.3, 4.4a, & 4.4b above	%	10		
Total Carried to Collection					
Total Bill No. PG Carried to Summary					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

BILL No. GI.2 : METHOD RELATED CHARGES

ITEM NO.	DESCRIPTION	UNIT	QTY	RATE (UGX)	AMOUNT (UGX)
	Method-Related Charges <i>Other applicable Method-related Charges, if any, may be inserted by the Bidder.</i>				
	<u>Fixed charge items</u>				
1.1	Mobilisation on site	sum	1		
1.2	Demobilise on completion of the Works	sum	1		
1.3	Supply and/or erect Contractor's site offices.	sum	1		
1.4	Remove Contractor's site offices on completion of the Works	sum	1		
	<u>Time related charge items</u>				
	<i>Other applicable Time-Related Charges, if any, may be inserted by the Bidder.</i>				
2.1	Maintain Contractor's site offices, including all services	month	24		
2.2	Contractors Superintendence of Works	month	24		
Total Bill No. GI. 1 Carried to Summary					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

BILL No. DW : DAY WORKS

ITEM NO.	DESCRIPTION	UNIT	QTY	RATE (UGX)	AMOUNT (UGX)
	Personnel				
DW-.1	Working ganger	hr	10		
DW-.2	Artisan	hr	10		
DW-.3	Semi-skilled	hr	10		
DW-.4	Unskilled	hr	100		
DW-.5	Driver for light vehicle	hr	7		
DW-.6	Driver for heavy vehicle	hr	10		
DW-.7	Operator for heavy equipment	hr	10		
	Materials				
DW-.8	Ordinary Portland Cement in 50 kg bags	t	1		
DW-.9	Coarse aggregate for concrete.	m³	1		
DW-.10	Fine aggregate for concrete.	m³	0.5		
DW-.11	Water for concrete	litres	10		
DW-.12	Sand for building	m³	0.5		
DW-.13	Sand for plaster	m³	0.5		
DW-.14	Fired Clay bricks for building.	nr	5,000		
DW-.15	Concrete blocks for building, 225mm for building,150mm thick	m²	0.5		
DW-.16	Concrete blocks for building, 225mm for building, 200 mm thick.	m²	0.5		
DW-.17	Hydrated lime for building 150 mm thick.	kg	1		
DW-.18	Timber, sawn.	m³	0.5		
DW-.19	Timber wrot.	m³	0.5		
	High yield steel reinforcement:-				
DW-.20	8-10 mm dia	kg	2,000		
DW-.21	12-16 mm dia.	kg	1,000		
DW-.22	Steel reinforcement fabric reference: A252	m²	5		
DW-.23	Hardcore filling	m³	10		
DW-.24	Topsoil delivered to site and spread	m³	50		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

BILL No. DW : DAY WORKS

ITEM NO.	DESCRIPTION	UNIT	QTY	RATE (UGX)	AMOUNT (UGX)
	CONTRACTOR'S EQUIPMENT				
DW-.25	Road vehicles:Pick-up,1 1/2t.	hr	5	100,000	500,000
	<u>Road vehicles: Lorries:</u>				
DW-.26	Flat-5t capacity	hr	4		
DW-.27	Flat-10t capacity	hr	4		
	<u>Tipping :</u>				
G-1.21.28	5t capacity	hr	5		
G-1.21.29	10t capacity	hr	5		
	<u>Water tankers with pump and hoses:</u>				
DW-.30	5,000 Litre capacity.	hr	10		
	<u>Excavator, face shovel or dragline:</u>				
DW-.31	0.25 m ³ bucket.	hr	10		
DW-.32	0.5m ³ bucket.	hr	10		
DW-.33	1.0m ³ bucket.	hr	10		
	<u>Super long reach boom Excavator:</u>				
DW-.34	0.25 m ³ bucket.	hr	10		
DW-.35	0.5m ³ bucket.	hr	10		
DW-.36	1.0m ³ bucket.	hr	10		
	<u>Tractors:</u>				
DW-.37	Rubber tyred with trailer, 75 kw.	hr	10		
	Tracked including bull and angle dozer with ripper:				
	(i) 150 kw.	hr	10		
	(ii) 200 kw	hr	10		
	(iii) 250 kw.	hr	10		
	<u>Rollers:</u>				
DW-.38	Manual, 250 kg	hr	10		
DW-.39	vibratory, self, propelled, 1500 kg.	hr	10		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

BILL No. DW : DAY WORKS

ITEM NO.	DESCRIPTION	UNIT	QTY	RATE (UGX)	AMOUNT (UGX)
	<u>Concrete mixers with weigh batchers and loading hoppers:</u>				
DW-.40	300 litre capacity.	hr	20		
DW-.41	400 litre capacity.	hr	20		
	<u>Concrete vibrator, pneumatic with hoses:</u>				
DW-.42	poker type, 50 mm	hr	10		
	<u>Air compressor, mobile with 5m of hose and steels with:</u>				
DW-.43	1 breaker.	hr	10		
DW-.44	2 breakers.	hr	10		
	<u>Mobile electricity generating sets, 240v, 1 ph, 50 Hz:</u>				
DW-.45	5 kvA	hr	2		
DW-.46	10 kvA	hr	2		
	<u>Dewatering Pumps with motor and 5m suction, 3m delivery hose</u>				
DW-.47	Norminal size 50mm.	hr	20		
DW-.48	Nominal size 100mm.	hr	20		
	<u>Mobile Cranes: including slings chains, dogs and nips</u>				
DW-.49	5t capacity	hr	5		
Total Carried to Collection					
	COLLECTION				
	Page 1				
	Page 2				
	Page 3				
Total Carried to Grand Summary					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID 1.1: KAPSARUR IN BUKWO DISTRICT

BILL SUMMARY

Bill No.	Description			Amount (UGx.)
	WORK ITEMS			
1	Abstraction Works			
2	Transmission Mains			
3	Storage Reservoir Works	N/A		
4	Distribution Network			
Total Carried to Grand Summary				

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID 1.1: KAPSARUR IN BUKWO DISTRICT

BILL No. 1 : ABSTRACTION WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>General Site Clearance</u>				
1	General site clearance, felling trees, grabbing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1		
	<u>Earthworks</u>				
2.1	Excavation to form river/ stream diversion towards the intake / abstraction structure in normal ground, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to receive hardcore fill.	m ³	35		
2.2	Ditto but for the Intake Structure	m ³	45		
2.3	Ditto but for the River Weir Structure	m ³	4		
	<u>Filling Structures</u>				
	<u>Filling to precast concrete sump structure by methods specified and to depths as shown in the drawings with the following materials: -</u>				
3.1	Imported rock/ hardcore fill, size 75 to 300mm hand packed or compacted by the arm of an excavator.	m ³	55		
3.2	Selected excavated material including topping with a 200mm thick layer of top/ vegetable soil.	m ³	44		
3.3	Imported murram.	m ³	18		
4	Single layer of geotextile laid to manufacturer's specifications	m ²	Rate Only		
	<u>Landscaping</u>				
5	Turfing for lawns inside fenced off compound, including filling with excavated topsoil and the preparation of surfaces at Intake Site.	m ²	840		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID 1.1: KAPSARUR IN BUKWO DISTRICT

BILL No. 1 : ABSTRACTION WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	IN-SITU CONCRETE				
	Provision and Placing of Concrete				
	Ordinary Design Mix Concrete				
	<u>Designed mix , concrete to BS 8500 and BS EN 206-1, with ordinary portland cement to BS 12, aggregate to BS 882 for the following structures: -</u>				
	Grade C15/10				
	Blinding				
6.1	50mm thick blinding concrete, for base slabs, toes, key and heel; grade C15, of the following thickness	m ³	1		
	Grade C25/10				
	Reinforced Concrete Base Slabs, Toe, Key and Heel				
6.2	200mm thick key and toe.	m ³	5		
6.3	200mm thick base and heel slabs.	m ³	5		
6.4	500/ 200mm thick reaining wall/ weir stem.	m ³	19		
6.5	200mm thick sump wall.	m ³	41		
6.6	200mm thick top slab.	m ³	1		
	Formwork				
	Formwork-Fair Finish				
	Fair Finish Plane Horizontal				
7.1	Plane fair finish horizontal formwork to the tops slab including charmfering and / or filleting of all exposed concrete corners.	m ²	5		
	Fair Finish Plane Vertical				
7.2	Plane fair finish vertical and / or slightly slping formwork to walls including charmfering and / or filleting of all exposed concrete corners.	m ²	145		
	Finishing of top surfaces				
7.3	Steel trowel finishing of top surfaces.	m ²	20		
	Reinforcement				
	Deformed High Yield Steel				
	<u>High yield square twisted bars to BS 4449 and of the following sizes</u>				
8.1	Nominal size, 12mm	t	2		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID 1.1: KAPSARUR IN BUKWO DISTRICT

BILL No. 1 : ABSTRACTION WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
8.2	Inserts DN 250 CI / ST flanged, puddled pipe insert pipe inserts projecting from two faces of the concrete wall and of the following sizes,excluding supply of pipe.	No.	2		
	PIPEWORK - FITTINGS AND VALVES Cast or Spum Iron Pipe Fittings.				
	Flanged Reducers				
9.1	DN250 x 150mm	No.	1		
	Flange Adaptors				
9.2	DN 150mm Maxi Type or similar wide range adaptor to fit pipe spigots, flanges to BS 4505, all to PN6.	No.	1		
	Strainers <u>Flanged outlet pipe strainer, to BS 4772, flanges to BS 4504, all to PN 10, cement mortar lined, and of the following sizes: -</u>				
9.3	DN 250 mm	No.	2		
	End Caps				
9.4	DN250mm flanged end cap.	No.	1		
	Valves and Penstocks Gate Valves: Hand Operated				
	<u>All flanged CI gate valves to BS 5150 ,flanges to BS 4505 , all to PN 10 for operation by tee key, with extension spindle not exceeding 1.5 metres long, and of the following sizes:-</u>				
9.5	150 mm ND	No.	1		
	<u>Penstocks: hand operated including head stock and distance spindle, as specified in drawings of the following size: -</u>				
9.6	300mm wide x 1000mm high <u>Stainless Steel.</u>	No.	2		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID 1.1: KAPSARUR IN BUKWO DISTRICT

BILL No. 1 : ABSTRACTION WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	MISCELLANEOUS METAL WORK				
	Ladders				
10.1	External galvanized mild steel ladder to BS 4211, galvanized to BS 729, complete and as shown in the drawings including fixing to precast concrete units..	m	8		
	Access Manhole Cover				
10.2	600 x 600mm clear opening painted mild steel cover and frame include fixing and locking arrangement.	No.	1		
	Valve Surface Boxes				
10.3	Valve surface box with lockable cover securely attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to a depth not exceeding 4.5 m.	No.	0		
	MISCELLANEOUS WORKS				
X1	450mm diameter reinforced concrete pipe/ culvert	m	2		
	Training of Operator's staff				
X2	Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
	Operation and Maintenance Manuals				
X3	Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
Total Carried to Collection					
BILL No. 1 : ABSTRACTION WORKS					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
Total Bill No. 1 Carried to Bill Summary					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID 1.1: KAPSARUR IN BUKWO DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>DEMOLITION AND SITE CLEARANCE</u>				
	<u>General Site Clearance</u>				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing tree stumps and disposal of arising materials.	Item	1		
	<u>PIPEWORKS - PIPES</u>				
2	<u>Steel Pipes</u>				
	<u>Galvanised steel pipes (Class B) with threaded joints, include unions/sockets, all to ISO 2531, of the following sizes.</u>				
2.1	DN125mm, not in trenches;	m	3		
2.2	DN125mm, in trenches; depth not exceeding 1.5m.	m	3		
3	<u>HDPE Pipes</u>				
	<u>HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m</u>				
3.1	OD140mm HDPE PN16	m	Rate Only		
4	<u>uPVC Pipes</u>				
	<u>uPVC pressure pipes to UNBS US 264: 2000 and DIN 8062 with integral rubber ring socket joints laid in trenches to depths not exceeding 1.5m</u>				
4.1	OD140 to PN 16	m	2,220		
	<u>PIPEWORK - FITTINGS AND VALVES</u>				
	<u>Cast or Spun Iron Pipe Fittings</u>				
5	<u>Bends</u>				
	<u>Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizes</u>				
5.1	DN125mm	No.	4		
	Steel pipe fittings; flanges to PN 16; in trenches not exceeding 1.5 m				
	<u>Viking Johnson stepped couplings as Maxistep</u>				
5.2	DN100 x OD100	No.	Rate Only		
5.3	DN150 x OD100	No.	Rate Only		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID 1.1: KAPSARUR IN BUKWO DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>Viking Johnson Flanged adaptors as Aquafast to PN16</u>				
5.4.1	DN50	No.	6		
5.4.2	DN65	No.	1		
5.4.3	DN75	No.	1		
5.4.4	DN100	No.	Rate Only		
5.4.5	DN125	No.	16		
5.4.6	DN150	No.	Rate Only		
6	Cast or Spun Iron Pipe Fittings <i>Junctions and Branches</i> All flanged tee to BS 4346, flanges to BS 4504 ,all to PN6 and of the following sizes;				
6.1	DN125mm	No.	5		
6.2	DN150mm	No.	Rate Only		
	<i>Tapers</i> All flanged concentric taper to BS4772, flanges to BS4504 all to PN6, cement mortar lined, and of the following sizes;				
6.3	DN125 x 50mm	No.	5		
6.4	DN125 x 65mm	No.	1		
7	<i>Bulk Flow Meters</i> <u>Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as specified, all fittings, including a masonry chamber, and on the following main pipe sizes</u>				
7.1	DN125mm PN16	No.	1		
7.2	DN150mm PN16	No.	Rate Only		
	<u>PN16 HDPE Compression fitting to DIN 8074/BS 5114</u>				
8	Equal Adapters				
8.1	OD90 female adapter	No.	Rate Only		
8.2	OD100 female adapter	No.	Rate Only		
9	<u>Valves and Penstocks</u> <u>Air Valves</u> <u>Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified.</u>				
9.1	DN125mm	No.	3		
9.2	DN150mm	No.	Rate Only		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID 1.1: KAPSARUR IN BUKWO DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
10	Washouts <u>Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, union ball valve, flap valve, stone masonry outfall structure and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box to detail.</u>				
10.1	DN75mm	No.	1		
10.2	DN100mm	No.	Rate Only		
10.3	DN125mm	No.	4		
10.4	DN150mm	No.	Rate Only		
	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES				
	Other Chambers <u>Masonry air valve chamber, complete as specified in the drawings, and of the following depths</u>				
	Depth not exceeding 1.5m	No.	3		
11	Valve Surface Boxes <u>Valve surface box for DN100 - DN300 valves, with lockable cover securely attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to the following depths</u>				
11.1	Depth not exceeding 1.5m	No.	4		
	<u>Pipe surrounds, of imported granular material, for the following pipe</u>				
12.1	Not exceeding DN200mm	m	250		
	<u>Pipe surrounds, of mass concrete, for the following pipe sizes</u>				
12.2	Not exceeding DN200mm	m	60		
	Concrete Stools and Thrust Blocks				
	Thrust Blocks <u>Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m³, for the following pipe sizes</u>				
13	Diameter not exceeding DN200mm	No.	Rate Only		
	Other Pipework Ancillaries				
	Marker Posts				
14	Marker posts for pipes, gate valves, air valves, washouts	nr	20		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID 1.1: KAPSARUR IN BUKWO DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<p>Bill No. 2 Collection</p> <p>Page 6</p> <p>Page 7</p> <p>Page 8</p>				
Total Bill No. 2 Carried to Bill Summary					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID 1.1: KAPSARUR IN BUKWO DISTRICT

BILL No. 4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>DEMOLITION AND SITE CLEARANCE</u>				
	<u>General Site Clearance</u>				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing tree stumps and disposal of arising materials.	Item	1		
	<u>PIPEWORK-PIPES</u>				
2	<u>Plastic Pressure Pipes- Distribution</u> <u>HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in trench to the following depths not exceeding 1.5m</u>				
2.1	OD63mm PN16	m	265		
2.2	OD75mm PN16	m	255		
2.3	OD90mm PN16	m	701		
	<u>PIPEWORK - FITTINGS AND VALVES</u>				
	<u>PN10 HDPE Compression fitting to DIN 8074/BS 5114</u>				
	<u>Plastic Pipe Fittings</u>				
3	<u>Equal tees</u>				
3.1	OD63mm	No.	2		
3.2	OD90mm	No.	1		
	<u>Unequal tees</u>				
3.1	OD75 x 63mm	No.	7		
3.2	OD90 x 63mm	No.	5		
3.3	OD90 x 75mm	No.	3		
	<u>PN10 HDPE Compression fitting to DIN 8074/BS 5114</u>				
	<u>Plastic Pipe Fittings</u>				
	<u>End caps</u>				
4	OD63mm	No.	28		
	<u>Cast or Spun Iron Pipe Fittings</u>				
	<u>Bends</u> <u>Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizes</u>				
5	DN125mm	No.	2		
	<u>Steel pipe fittings; flanges to PN 16; in trenches not exceeding 1.5 m</u>				
	<u>Viking Johnson stepped couplings as Maxistep</u>				
6.1	DN150 x 100	No.	Rate Only		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID 1.1: KAPSARUR IN BUKWO DISTRICT

BILL No. 4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6.2	Viking Johnson Flanged adaptors as Aquafast. DN50	No.	1		
6.3	DN65	No.	1		
6.4	DN75	No.	1		
	Cast or Spun Iron Pipe Fittings Junctions and Branches All flanged tee to BS 4346, flanges to BS 4504 ,all to PN6 and of the following sizes;				
7.1	DN125mm	No.	Rate Only		
7.2	DN125 x 50mm	No.	5		
7.3	DN125 x 65mm	No.	1		
	Tapers All flanged concentric taper to BS4772, flanges to BS4504 all to PN6, cement mortar lined, and of the following sizes;				
7.4	DN125 x 50mm	No.	2		
7.5	DN125 x 65mm	No.	1		
	PN16 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
	Reducing Couplers/ Unions				
8.1	OD75 x 63mm	No.	4		
8.2	OD90 x 63mm	No.	1		
8.3	OD90 x 75mm	No.	1		
	Valves and Penstocks Air Valve Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified.				
9	OD125mm	No.	3		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID 1.1: KAPSARUR IN BUKWO DISTRICT

BILL No. 4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Washouts Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, PVC union ball valve, flap valve and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box and stone masonry outfall structure to detail as per Drawing				
10.1	DN50mm	No.	Rate Only		
10.2	DN125mm	No.	4		
	Farm Gate Connections Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: -				
11	DN50mm	No.	26		
	Other Pipework Ancillaries				
	Marker Posts				
12	Marker posts for pipes, gate valves, air valves, washouts	nr	52		
	Reinstatement				
	Roads Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes				
13	Not exceeding DN300mm	m	36		

Total Carried to Collection

BILL No. 4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 4 Collection				
	Page 10				
	Page 11				
	Page 12				
Total Bill No. 4 Carried to Bill Summary					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.2: KULULU BUKWO DISTRICT

BILL SUMMARY

Bill No.	Description			Amount (UGx.)
	WORK ITEMS			
1	Abstraction Works			
2	Transmission Mains			
3	Storage Reservoir Works	N/A		
4	Distribution Network			
Total Carried to Grand Summary				

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.2: KULULU BUKWO DISTRICT

BILL No. 1 : ABSTRACTION WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	General Site Clearance				
1	General site clearance, felling trees, grabbing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1		
	Earthworks				
2.1	Excavation to form river/ stream diversion towards the intake / abstraction structure in normal ground, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to receive hardcore fill.	m ³	35		
2.2	Ditto but for the Intake Structure	m ³	45		
2.3	Ditto but for the River Weir Structure	m ³	4		
	Filling Structures				
	<u>Filling to precast concrete sump structure by methods specified and to depths as shown in the drawings with the following materials: -</u>				
3.1	Imported rock/ hardcore fill, size 75 to 300mm hand packed or compacted by the arm of an excavator.	m ³	55		
3.2	Selected excavated material including topping with a 200mm thick layer of top/ vegetable soil.	m ³	44		
3.3	Imported murrum.	m ³	18		
4	Single layer of geotextile laid to manufacturer's specifications	m ²	0		
	Landscaping				
5	Turfing for lawns inside fenced off compound, including filling with excavated topsoil and the preparation of surfaces at Intake Site.	m ²	840		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.2: KULULU BUKWO DISTRICT

BILL No. 1 : ABSTRACTION WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	IN-SITU CONCRETE				
	Provision and Placing of Concrete				
	Ordinary Design Mix Concrete				
	<u>Designed mix , concrete to BS 8500 and BS EN 206-1, with ordinary portland cement to BS 12, aggregate to BS 882 for the following structures: -</u>				
	Grade C15/10				
	Blinding				
6.1	50mm thick blinding concrete, for base slabs, toes, key and heel; grade C15, of the following thickness	m ³	1		
	Grade C25/10				
	Reinforced Concrete Base Slabs, Toe, Key and Heel				
6.2	200mm thick key and toe.	m ³	5		
6.3	200mm thick base and heel slabs.	m ³	5		
6.4	500/ 200mm thick retaining wall/ weir stem.	m ³	19		
6.5	200mm thick sump wall.	m ³	41		
6.6	200mm thick top slab.	m ³	1		
	Formwork				
	Formwork-Fair Finish				
7.1	Fair Finish Plane Horizontal Plane fair finish horizontal formwork to the tops slab including charmfering and / or filleting of all exposed concrete corners.	m ²	5		
7.2	Fair Finish Plane Vertical Plane fair finish vertical and / or slightly sloping formwork to walls including charmfering and / or filleting of all exposed concrete corners.	m ²	145		
7.3	Finishing of top surfaces Steel trowel finishing of top surfaces.	m ²	20		
	Reinforcement				
	Deformed High Yield Steel				
	<u>High yield square twisted bars to BS 4449 and of the following sizes</u>				
8.1	Nominal size, 12mm	t	2		
Total Carried to Collection					
BILL No. 1 : ABSTRACTION WORKS					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
8.2	Inserts DN 250 CI / ST flanged, puddled pipe insert pipe inserts projecting from two faces of the concrete wall and of the following sizes,excluding supply of pipe.	No.	2		
	PIPEWORK - FITTINGS AND VALVES				
	Cast or Spun Iron Pipe Fittings.				

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.2: KULULU BUKWO DISTRICT

9.1	Flanged Reducers DN250 x 150mm	No.	1		
9.2	Flange Adaptors DN 150mm Maxi Type or similar wide range adaptor to fit pipe spigots, flanges to BS 4505, all to PN6.	No.	1		
9.3	Strainers <u>Flanged outlet pipe strainer, to BS 4772, flanges to BS 4504, all to PN 10, cement mortar lined, and of the following sizes: -</u> DN 250 mm	No.	2		
9.4	End Caps DN250mm flanged end cap.	No.	1		
9.5	Valves and Penstocks Gate Valves: Hand Operated <u>All flanged CI gate valves to BS 5150 ,flanges to BS 4505 , all to PN 10 for operation by tee key, with extension spindle not exceeding 1.5 metres long, and of the following sizes:-</u> 150 mm ND <u>Penstocks: hand operated including head stock and distance spindle, as specified in drawings of the following size: -</u>	No.	1		
9.6	300mm wide x 1000mm high <u>Staniless Steel.</u>	No.	2		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.2: KULULU BUKWO DISTRICT

BILL No. 1 : ABSTRACTION WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	MISCELLANEOUS METAL WORK				
	Ladders				
10.1	External galvanized mild steel ladder to BS 4211, galvanized to BS 729, complete and as shown in the drawings including fixing to precast concrete units..	m	8		
	Access Manhole Cover				
10.2	600 x 600mm clear opening painted mild steel cover and frame include fixing and locking arrangement.	No.	1		
	Valve Surface Boxes				
10.3	Valve surface box with lockable cover securely attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to a depth not exceeding 4.5 m.	No.	0		
	MISCELLANEOUS WORKS				
X1	450mm diameter reinforced concrete pipe/ culvert	m	2		
	Training of Operator's staff				
X2	Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
	Operation and Maintenance Manuals				
X3	Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		

Total Carried to Collection

BILL No. 1 : ABSTRACTION WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				

Total Bill No. 1 Carried to Bill Summary

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.2: KULULU BUKWO DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing tree stumps and disposal of arising materials.	Item	1		
	PIPEWORKS - PIPES				
2	Steel Pipes				
	<u>Galvanised steel pipes (Class B) with threaded joints, include unions/sockets, all to ISO 2531, of the following sizes.</u>				
2.1	DN150mm, not in trenches;	m	3		
2.20	DN150mm, in trenches; depth not exceeding 1.5m.	m	3		
3	HDPE Pipes				
	<u>HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m</u>				
3.1	OD100mm HDPE PN10	m	Rate Only		
4	uPVC Pipes				
	<u>uPVC pressure pipes to UNBS US 264: 2000 and DIN 8062 with integral rubber ring socket joints laid in trenches to depths not</u>				
4.1	OD100 to PN 10	m	1,845		
	PIPEWORK - FITTINGS AND VALVES				
	Cast or Spun Iron Pipe Fittings				
5	Bends				
	<u>Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizes</u>				
5.1	DN150mm	No.	4		
	Steel pipe fittings; flanges to PN 10; in trenches not exceeding 1.5 m				
	<u>Viking Johnson stepped couplings as Maxistep</u>				
5.2	DN150 x 100	No.	Rate Only		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.2: KULULU BUKWO DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>Viking Johnson Flanged adaptors as Aquafast to PN10</u>				
5.3	DN50	No.	3		
5.4	DN65	No.	1		
5.5	DN100	No.	7		
5.6	DN150	No.	3		
	Cast or Spun Iron Pipe Fittings				
6	Junctions and Branches All flanged tee to BS 4346, flanges to BS 4504 ,all to PN6 and of the following sizes;				
6.1	DN100mm	No.	3		
6.2	DN150mm	No.	3		
	Tapers All flanged concentric taper to BS4772, flanges to BS4504 all to PN6, cement mortar lined, and of the following sizes;				
6.3	DN125 x 50mm	No.	5		
6.4	DN125 x 65mm	No.	1		
	Tapers Cont'd				
6.5	DN150 x 65mm	No.	1		
7	Bulk Flow Meters <u>Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as specified, all fittings, including a masonry chamber, and on the following main pipe sizes</u>				
7.1	DN150mm PN10	No.	1		
	<u>PN10 HDPE Compression fitting to DIN 8074/BS 5114</u>				
8	Equal Adapters				
8.1	OD90 female adapter	No.	Rate Only		
8.2	OD100 female adapter	No.	Rate Only		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.2: KULULU BUKWO DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
9	Valves and Penstocks				
	Air Valves				
	<u>Flanged CI double orifice air relief valve, DN50mm, as specified, flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified.</u>				
9.1	DN125mm	No.	2		
10	Washouts				
	<u>Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, union ball valve, flap valve, stone masonry outfall structure and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box to detail.</u>				
10.1	DN125mm	No.	2		
	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES				
	Other Chambers				
	<u>Masonry air valve chamber, complete as specified in the drawings, and of the following depths</u>				
	Depth not exceeding 1.5m	No.	2		
11	Valve Surface Boxes				
	<u>Valve surface box for DN100 - DN300 valves, with lockable cover securely attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to the following depths</u>				
11.1	Depth not exceeding 1.5m	No.	2		
	Reinstatement				
	Roads				
	<u>Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes</u>				
11.2	Not exceeding DN300mm	m	12		
Total Carried to Collection					
BILL No. 2 : TRANSMISSION MAINS					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
12	Surrounds				
	<u>Pipe surrounds, of selected excavated granular material, for the following pipe sizes</u>				
12.1	Not exceeding DN200mm	m	Rate Only		
	<u>Pipe surrounds, of imported granular material, for the following pipe</u>				

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.2: KULULU BUKWO DISTRICT

12.2	Not exceeding DN200mm	m	60		
	<u>Pipe surrounds, of mass concrete, for the following pipe sizes</u>				
12.3	Not exceeding DN200mm	m	50		
13	<u>Concrete Stools and Thrust Blocks</u>				
	<i>Thrust Blocks</i>				
	<u>Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m³, for the following pipe sizes</u>				
13.1	Diameter not exceeding DN200mm	No.	Rate Only		
	<u>Other Pipework Ancillaries</u>				
	<i>Marker Posts</i>				
14	Marker posts for pipes, gate valves, air valves, washouts	nr	92		
Total Carried to Collection					
BILL No. 2 : TRANSMISSION MAINS					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 2 Collection				
	Page 6				
	Page 7				
	Page 8				
	Page 9				
Total Bill No. 2 Carried to Bill Summary					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.2: KULULU BUKWO DISTRICT

BILL No. 4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>DEMOLITION AND SITE CLEARANCE</u>				
	<u>General Site Clearance</u>				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing tree stumps and disposal of arising materials.	Item	1		
	<u>PIPEWORK-PIPES</u>				
2	<u>Plastic Pressure Pipes- Distribution</u> HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in trench to the following depths not exceeding 1.5m				
2.1	OD63mm PN10	m	240		
2.2	OD75mm PN10	m	650		
2.2	OD110mm PN10, uPVC	m	375		
	<u>PIPEWORK - FITTINGS AND VALVES</u>				
	<u>PN10 HDPE Compression fitting to DIN 8074/BS 5114</u>				
	<u>Plastic Pipe Fittings</u>				
3	<u>Equal tees</u>				
3.1	OD75mm	No.	Rate Only		
3.2	OD110mm	No.	Rate Only		
	<u>Unequal tees</u>				
3.3	OD75 x 63mm	No.	6		
3.4	OD110 x 63mm	No.	3		
3.50	OD110 x 75mm	No.	3		
	<u>PN10 HDPE Compression fitting to DIN 8074/BS 5114</u>				
	<u>Plastic Pipe Fittings</u>				
4	<u>End caps</u>				
4.1	OD63mm	No.	Rate Only		
4.2	OD110mm	No.	Rate Only		
	<u>Cast or Spun Iron Pipe Fittings</u>				
5	<u>Bends</u> Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizes				
5.1	DN125mm	No.	2		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.2: KULULU BUKWO DISTRICT

BILL No. 4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Steel pipe fittings; flanges to PN 10; in trenches not exceeding 1.5 m <u>Viking Johnson stepped adaptors as Maxistep</u>				
6.1	DN100 x 63	No.	Rate Only		
6.2	DN100 x 75	No.	Rate Only		
	<u>Viking Johnson Flanged adaptors as Aquafast.</u>				
6.3	DN50	No.	3		
6.4	DN65	No.	1		
6.5	DN100	No.	7		
6.60	DN150	No.	3		
	Cast or Spun Iron Pipe Fittings				
7	Junctions and Branches All flanged tee to BS 4346, flanges to BS 4504 ,all to PN6 and of the following sizes;				
7.1	DN125mm	No.	2		
7.2	DN150mm	No.	3		
	Tapers All flanged concentric taper to BS4772, flanges to BS4504 all to PN6, cement mortar lined, and of the following sizes;				
7.3	DN150 x 65mm	No.	2		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
8	Reducing Couplers/ Unions				
8.1	OD90 x 63mm	No.	1		
8.2	OD90 x 75mm	No.	1		
8.3	OD110 x 63mm	No.	1		
	Valves and Penstocks				
9	Air Valve <u>Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified.</u>				
9.1	OD160mm	No.	1		

Total Carried to Collection

BILL No. 4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
10	Washouts <u>Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, PVC union ball valve, flap valve and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box and stone masonry outfall structure to detail as per</u>				

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.2: KULULU BUKWO DISTRICT

10.1	DN150mm	No.	2		
11	Farm Gate Connections Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: -				
11	DN50mm	No.	22		
	Other Pipework Ancillaries				
	Marker Posts				
12	Marker posts for pipes, gate valves, air valves, washouts	nr	34		
	Reinstatement				
	Roads				
	<u>Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes</u>				
13	Not exceeding DN300mm	m	24		
Total Carried to Collection					
BILL No. 4 : DISTRIBUTION NETWORK					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 4 Collection				
	Page 11				
	Page 13				
	Page 14				
Total Bill No. 4.4 Carried to Bill Summary					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA
SCHEME ID. 1.3: LWONGON IN BUKWO DISTRICT
BILL SUMMARY

Bill No.	Description			Amount (UGx.)
	WORK ITEMS			
1	Abstraction Works			
2	Transmission Mains			
3	Storage Reservoir Works	N/A		
4	Distribution Network			
Total Carried to Grand Summary				

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.3: LWONGON IN BUKWO DISTRICT

BILL No. 1 : ABSTRACTION WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>General Site Clearance</u>				
1	General site clearance, felling trees, grabbing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1		
	Earthworks				
2.1	Excavation to form river/ stream diversion towards the intake / abstraction structure in normal ground, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to receive hardcore fill.	m ³	35		
2.2	Ditto but for the Intake Structure	m ³	45		
2.3	Ditto but for the River Weir Structure	m ³	4		
	Filling Structures				
	<u>Filling to precast concrete sump structure by methods specified and to depths</u>				
3.1	Imported rock/ hardcore fill, size 75 to 300mm hand packed or compacted by the arm of an excavator.	m ³	55		
3.2	Selected excavated material including topping with a 200mm thick layer of top/ vegetable soil.	m ³	44		
3.3	Imported murrum.	m ³	18		
4	Single layer of geotextile laid to manufacturer's specifications	m ²	0		
	Landscaping				
5	Turfing for lawns inside fenced off compound, including filling with excavated topsoil and the preparation of surfaces at Intake Site.	m ²	840		
	IN-SITU CONCRETE				
	Provision and Placing of Concrete				
	Ordinary Design Mix Concrete				
	<u>Designed mix , concrete to BS 8500 and BS EN 206-1, with ordinary portland cement to BS 12, aggregate to BS 882 for the following structures: -</u>				
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.3: LWONGON IN BUKWO DISTRICT

BILL No. 1 : ABSTRACTION WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Grade C15/10				
	Blinding				
6.1	50mm thick blinding concrete, for base slabs, toes, key and heel; grade C15, of the following thickness	m ³	1		
	Grade C25/10				
	Reinforced Concrete Base Slabs, Toe, Key and Heel				
6.2	200mm thick key and toe.	m ³	5		
6.3	200mm thick base and heel slabs.	m ³	5		
6.4	500/ 200mm thick reaining wall/ weir stem.	m ³	19		
6.5	200mm thick sump wall.	m ³	41		
	200mm thick top slab.	m ³	1		
	Formwork				
	Formwork-Fair Finish				
7.1	Fair Finish Plane Horizontal Plane fair finish horizontal formwork to the tops slab including charmfering and / or filleting of all exposed concrete corners.	m ²	5		
7.2	Fair Finish Plane Vertical Plane fair finish vertical and / or slightly slping formwork to walls including charmfering and / or filleting of all exposed concrete corners.	m ²	145		
7.3	Finishing of top surfaces Steel trowel finishing of top surfaces.	m ²	20		
	Reinforcement				
	Deformed High Yield Steel				
	<u>High yield square twisted bars to BS 4449 and of the following sizes</u>				
8.1	Nominal size, 12mm	t	2		
	Inserts				
8.2	DN 250 CI / ST flanged, puddled pipe insert pipe inserts projecting from two faces of the concrete wall and of the following sizes,excluding supply of pipe.	No.	2		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.3: LWONGON IN BUKWO DISTRICT

BILL No. 1 : ABSTRACTION WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	PIPEWORK - FITTINGS AND VALVES				
	Cast or Spum Iron Pipe Fittings.				
9.1	Flanged Reducers DN250 x 150mm	No.	1		
9.2	Flange Adaptors DN 150mm Maxi Type or similar wide range adaptor to fit pipe spigots, flanges to BS 4505, all to PN6.	No.	1		
9.3	Strainers <u>Flanged outlet pipe strainer, to BS 4772, flanges to BS 4504, all to PN 10, cement mortar lined, and of the following sizes: -</u> DN 250 mm	No.	2		
9.4	End Caps DN250mm flanged end cap.	No.	1		
9.5	Valves and Penstocks Gate Valves: Hand Operated <u>All flanged CI gate valves to BS 5150 ,flanges to BS 4505 , all to PN 10 for operation by tee key, with extension spindle not exceeding 1.5 metres long, and of the following sizes:-</u> 150 mm ND	No.	1		
9.6	<u>Penstocks; hand operated including head stock and distance spindle, as specified in drawings of the following size: -</u> 300mm wide x 1000mm high <u>Staniless Steel.</u>	No.	2		
	MISCELLANEOUS METAL WORK				
10.1	Ladders External galvanized mild steel ladder to BS 4211, galvernized to BS 729, complete andas shown in the drawings including fixing to precast concrete units..	m	8		
10.2	Access Manhole Cover 600 x 600mm clear opening painted mild steel cover and frame include fixing and locking arrangement.	No.	1		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.3: LWONGON IN BUKWO DISTRICT

BILL No. 1 : ABSTRACTION WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
10.3	Valve Surface Boxes Valve surface box with lockable cover securely attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to a depth not exceeding 4.5 m.	No.	Rate Only		
	MISCELLANEOUS WORKS				
X1	450mm diameter reinforced concrete pipe/ culvert	m	2		
	Training of Operator's staff				
X2	Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
	Operation and Maintenance Manuals				
X3	Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
Total Carried to Collection					
BILL No. 1 : ABSTRACTION WORKS					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
Total Bill No. 1 Carried to Bill Summary					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.3: LWONGON IN BUKWO DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing tree stumps and disposal of arising materials.	Item	1		
	PIPEWORKS - PIPES				
2	Steel Pipes				
	<u>Galvanised steel pipes (Class B) with threaded joints, include unions/sockets, all to ISO 2531, of the following sizes.</u>				
2.9	DN150mm, not in trenches;	m	3		
2.10	DN150mm, in trenches; depth not exceeding 1.5m.	m	3		
3	HDPE Pipes				
	<u>HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m</u>				
3.7	OD160mm HDPE PN10	m	Rate Only		
4	uPVC Pipes				
	<u>uPVC pressure pipes to UNBS US 264: 2000 and DIN 8062 with integral rubber ring socket joints laid in trenches to depths not</u>				
4.4	OD160 to PN 10	m	3,640		
	PIPEWORK - FITTINGS AND VALVES				
	Cast or Spun Iron Pipe Fittings				
5	Bends				
	<u>Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all</u>				
5.6	DN150mm	No.	4		
	Steel pipe fittings; flanges to PN 16; in trenches not exceeding 1.5 m				
	<u>Viking Johnson stepped couplings as Maxistep</u>				
5.7.4	DN150 x 00	No.			
	<u>Viking Johnson Flanged adaptors as Aquafast to PN16</u>				
5.7.8	DN100	No.	3		
5.7.10	DN150	No.	4		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.3: LWONGON IN BUKWO DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Cast or Spun Iron Pipe Fittings Junctions and Branches All flanged tee to BS 4346, flanges to BS 4504 ,all to PN6 and of the following sizes;				
6.1	DN100mm	No.	3		
6.2	DN150mm	No.	3		
	Tapers All flanged concentric taper to BS4772, flanges to BS4504 all to PN6, cement mortar lined, and of the following sizes;				
6.3	DN125 x 50mm	No.	5		
6.4	DN125 x 65mm	No.	1		
	Tapers Cont'd DN150 x 65mm	No.	1		
6.10	DN150 x 100mm	No.	2		
7	Bulk Flow Meters <u>Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as specified, all fittings, including a masonry chamber, and on the following main pipe sizes</u>				
7.6	DN150mm PN10	No.	1		
	PN16 HDPE Compression fitting to DIN 8074/BS 5114				
8	Equal Adapters				
8.1	OD90 female adapter	No.	Rate Only		
8.2	OD100 female adapter	No.	Rate Only		
9	Valves and Penstocks Air Valves <u>Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified.</u>				
9.7	DN150mm	No.	8		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.3: LWONGON IN BUKWO DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
10	Washouts <u>Washout as specified in the drawings, complete with plastic compression pipe fittings: tee, drainage pipes, union ball valve, flap valve, stone masonry outfall structure and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box to detail.</u>				
10.7	DN150mm	No.	5		
	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES				
	Other Chambers <u>Masonry air valve chamber, complete as specified in the drawings, and of the following depths</u>				
	Depth not exceeding 1.5m	No.	8		
11	Valve Surface Boxes <u>Valve surface box for DN100 - DN300 valves, with lockable cover securely attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to the following depths</u>				
11.1	Depth not exceeding 1.5m	No.	2		
	Reinstatement Roads <u>Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes</u>				
11.2	Not exceeding DN300mm	m	12		
12	Surrounds <u>Pipe surrounds, of selected excavated granular material, for the following pipe sizes</u>				
12.1	Not exceeding DN200mm	m	Rate Only		
	<u>Pipe surrounds, of imported granular material, for the following pipe</u>				
Total Carried to Collection					
BILL No. 2 : TRANSMISSION MAINS					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
12.2	Not exceeding DN200mm	m	220		
	<u>Pipe surrounds, of mass concrete, for the following pipe sizes</u>				

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.3: LWONGON IN BUKWO DISTRICT

12.3	Not exceeding DN200mm	m	450		
13	<u>Concrete Stools and Thrust Blocks</u>				
	<i>Thrust Blocks</i>				
	<u>Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m³, for the following pipe sizes</u>				
13.1	Diameter not exceeding DN200mm	No.	6		
	<u>Other Pipework Ancillaries</u>				
	<i>Marker Posts</i>				
14	Marker posts for pipes, gate valves, air valves, washouts	nr	126		
Total Carried to Collection					
BILL No. 2 : TRANSMISSION MAINS					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 2 Collection				
	Page 6				
	Page 7				
	Page 8				
	Page 9				
Total Bill No. 2 Carried to Bill Summary					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.3: LWONGON IN BUKWO DISTRICT

BILL No. 4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>DEMOLITION AND SITE CLEARANCE</u>				
	<u>General Site Clearance</u>				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing tree stumps and disposal of arising materials.	Item	1		
	<u>PIPEWORK-PIPES</u>				
2	<u>Plastic Pressure Pipes- Distribution</u> <u>HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in trench to the following depths not exceeding 1.5m</u>				
2.1	OD63mm PN6	m	20		
	<u>PIPEWORK - FITTINGS AND VALVES</u>				
	<u>PN10 HDPE Compression fitting to DIN 8074/BS 5114</u>				
	<u>Plastic Pipe Fittings</u>				
3	<u>Equal tees</u>				
3.1	OD50mm	No.	Rate Only		
3.2	OD63mm	No.	Rate Only		
	<u>Unequal tees</u>				
3.3	OD110 x 63mm	No.	1		
	<u>PN10 HDPE Compression fitting to DIN 8074/BS 5114</u>				
	<u>Plastic Pipe Fittings</u>				
4	<u>End caps</u>				
4.1	OD63mm	No.	3		
	<u>Cast or Spun Iron Pipe Fittings</u>				
5	<u>Bends</u> <u>Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizes</u>				
5.1	DN125mm	No.	2		
	<u>Steel pipe fittings; flanges to PN 16; in trenches not exceeding 1.5 m</u>				
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.3: LWONGON IN BUKWO DISTRICT

BILL No. 4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6.1	<u>Viking Johnson stepped adaptors as Maxistep</u> DN100 x OD100	No.	Rate Only		
6.2	<u>Viking Johnson Flanged adaptors as Aquafast.</u> DN50	No.	3		
6.3	DN65	No.	1		
6.4	DN100	No.	7		
6.5	DN150	No.	3		
	Cast or Spun Iron Pipe Fittings				
7	<i>Junctions and Branches</i> All flanged tee to BS 4346, flanges to BS 4504 ,all to PN6 and of the following sizes;				
7.1	DN125mm	No.	2		
7.2	DN150mm	No.	3		
	<i>Tapers</i> All flanged concentric taper to BS4772, flanges to BS4504 all to PN6, cement mortar lined, and of the following sizes;				
7.3	DN150 x 65mm	No.	2		
	<u>PN10 HDPE Compression fitting to DIN 8074/BS 5114</u> <u>Plastic Pipe Fittings</u>				
8	<u>Reducing Couplers/ Unions</u>				
8.1	OD90 x 63mm	No.	1		
8.2	OD90 x 75mm	No.	1		
8.3	OD110 x 63mm	No.	1		
	<u>Valves and Penstocks</u>				
9	<u>Air Valve</u> Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified.				
9.1	OD63mm	No.	Rate Only		
9.2	OD75mm	No.	Rate Only		
9.3	OD90mm	No.	Rate Only		
9.4	OD110mm	No.	Rate Only		
Total Carried to Collection					
BILL No. 4 : DISTRIBUTION NETWORK					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
10	<i>Washouts</i>				

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.3: LWONGON IN BUKWO DISTRICT

	<u>Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, PVC union ball valve, flap valve and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box and stone masonry outfall structure to detail as per</u>				
10.1	DN50mm	No.	Rate Only		
10.2	DN65mm	No.	Rate Only		
10.3	DN75mm	No.	Rate Only		
11	Farm Gate Connections Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: -				
11.1	DN50mm	No.	3		
	<u>Other Pipework Ancillaries</u>				
	<u>Marker Posts</u>				
12	Marker posts for pipes, gate valves, air valves, washouts	nr	2		
	<u>Reinstatement</u>				
	<u>Roads</u>				
	<u>Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes</u>				
13	Not exceeding DN300mm	m	Rate Only		
Total Carried to Collection					
BILL No. 4 : DISTRIBUTION NETWORK					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 4 Collection				
	Page 10				
	Page 11				
	Page 12				
Total Bill No. 4.4 Carried to Bill Summary					0

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.4: KONGTA TULWO IN BUKWO DISTRICT

BILL SUMMARY

Bill No.	Description			Amount (UGx.)
	WORK ITEMS			
1	Abstraction Works			
2	Transmission Mains			
3	Storage Reservoir Works			
4	Distribution Network			
Total Carried to Grand Summary				

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.4: KONGTA TULWO IN BUKWO DISTRICT

BILL SUMMARY

BILL No. 1 : ABSTRACTION WORKS					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>General Site Clearance</u>				
1	General site clearance, felling trees, grabbing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1		
	<u>Earthworks</u>				
2.1	Excavation to form river/ stream diversion towards the intake / abstraction structure in normal ground, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to receive hardcore fill.	m ³	35		
2.2	Ditto but for the Intake Structure	m ³	45		
2.3	Ditto but for the River Weir Structure	m ³	4		
	<u>Filling Structures</u>				
	<u>Filling to precast concrete sump structure by methods specified and to depths as shown in the drawings with the following materials: -</u>				
3.1	Imported rock/ hardcore fill, size 75 to 300mm hand packed or compacted by the arm of an excavator.	m ³	55		
3.2	Selected excavated material including topping with a 200mm thick layer of top/ vegetable soil.	m ³	44		
3.3	Imported murram.	m ³	18		
4	Single layer of geotextile laid to manufacturer's specifications	m ²	0		
	<u>Landscaping</u>				
5	Turfing for lawns inside fenced off compound, including filling with excavated topsoil and the preparation of surfaces at Intake Site.	m ²	840		
	<u>IN-SITU CONCRETE</u>				
	Provision and Placing of Concrete				
	Ordinary Design Mix Concrete				
	<u>Designed mix , concrete to BS 8500 and BS EN 206-1, with ordinary portland cement to BS 12, aggregate to BS 882 for the following structures: -</u>				
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.4: KONGTA TULWO IN BUKWO DISTRICT

BILL SUMMARY

BILL No. 1 : ABSTRACTION WORKS					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Grade C15/10				
	Blinding				
6.1	50mm thick blinding concrete, for base slabs, toes, key and heel; grade C15, of the following thickness	m ³	1		
	Grade C25/10				
	Reinforced Concrete Base Slabs, Toe, Key and Heel				
6.2	200mm thick key and toe.	m ³	5		
6.3	200mm thick base and heel slabs.	m ³	5		
6.4	500/ 200mm thick retaining wall/ weir stem.	m ³	19		
6.5	200mm thick sump wall.	m ³	41		
6.6	200mm thick top slab.	m ³	1		
	Formwork				
	Formwork-Fair Finish				
7.1	Fair Finish Plane Horizontal Plane fair finish horizontal formwork to the tops slab including charmfering and / or filleting of all exposed concrete corners.	m ²	5		
7.2	Fair Finish Plane Vertical Plane fair finish vertical and / or slightly sloping formwork to walls including charmfering and / or filleting of all exposed concrete corners.	m ²	145		
7.3	Finishing of top surfaces Steel trowel finishing of top surfaces.	m ²	20		
	Reinforcement				
	Deformed High Yield Steel				
	<u>High yield square twisted bars to BS 4449 and of the following sizes</u>				
8.1	Nominal size, 12mm	t	2		
	Inserts				
8.2	DN 250 CI / ST flanged, puddled pipe insert pipe inserts projecting from two faces of the concrete wall and of the following sizes, excluding supply of pipe.	No.	2		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.4: KONGTA TULWO IN BUKWO DISTRICT

BILL SUMMARY

BILL No. 1 : ABSTRACTION WORKS					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	PIPEWORK - FITTINGS AND VALVES				
	Cast or Spum Iron Pipe Fittings.				
9.1	Flanged Reducers DN250 x 150mm	No.	1		
9.2	Flange Adaptors DN 150mm Maxi Type or similar wide range adaptor to fit pipe spigots, flanges to BS 4505, all to PN6.	No.	1		
9.3	Strainers <u>Flanged outlet pipe strainer, to BS 4772, flanges to BS 4504, all to PN 10, cement mortar lined, and of the following sizes: -</u> DN 250 mm	No.	2		
9.4	End Caps DN250mm flanged end cap.	No.	1		
	Valves and Penstocks				
	Gate Valves: Hand Operated <u>All flanged CI gate valves to BS 5150, flanges to BS 4505, all to PN 10 for operation by tee key, with extension spindle not exceeding 1.5 metres long, and of the following sizes:-</u>				
9.5	150 mm ND	No.	1		
	<u>Penstocks: hand operated including head stock and distance spindle, as specified in drawings of the following size: -</u>				
9.6	300mm wide x 1000mm high <u>Stainless Steel.</u>	No.	2		
	MISCELLANEOUS METAL WORK				
	Ladders				
10.1	External galvanized mild steel ladder to BS 4211, galvernized to BS 729, complete and as shown in the drawings including fixing to precast concrete units..	m	8		
	Access Manhole Cover				
10.2	600 x 600mm clear opening painted mild steel cover and frame include fixing and locking arrangement.	No.	1		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.4: KONGTA TULWO IN BUKWO DISTRICT

BILL SUMMARY

BILL No. 1 : ABSTRACTION WORKS					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
10.3	Valve Surface Boxes Valve surface box with lockable cover securely attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to a depth not exceeding 4.5 m.	No.	Rate Only		
	<u>MISCELLANEOUS WORKS</u>				
X1	450mm diameter reinforced concrete pipe/ culvert	m	2		
	<u>Training of Operator's staff</u>				
X2	Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
	<u>Operation and Maintenance Manuals</u>				
X3	Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
Total Carried to Collection					
BILL No. 1 : ABSTRACTION WORKS					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
Total Bill No. 1 Carried to Bill Summary					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.4: KONGTA TULWO IN BUKWO DISTRICT

BILL SUMMARY

BILL No. 2 : TRANSMISSION MAINS					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing tree stumps and disposal of arising materials.	Item	1		
	PIPEWORKS - PIPES				
2	Steel Pipes				
	<u>Galvanised steel pipes (Class B) with threaded joints, include unions/sockets, all to ISO 2531, of the following sizes.</u>				
2.9	DN150mm, not in trenches;	m	3		
2.10	DN150mm, in trenches; depth not exceeding 1.5m.	m	3		
3	HDPE Pipes				
	<u>HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m</u>				
3.7	OD160mm HDPE PN10	m	Rate Only		
4	uPVC Pipes				
	<u>uPVC pressure pipes to UNBS US 264: 2000 and DIN 8062 with integral rubber ring socket joints laid in trenches to depths not</u>				
4.4	OD160 to PN 10	m	5,040		
	PIPEWORK - FITTINGS AND VALVES				
	Cast or Spun Iron Pipe Fittings				
5	Bends				
	<u>Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizes</u>				
5.6	DN150mm	No.	4		
	Steel pipe fittings; flanges to PN 16; in trenches not exceeding 1.5 m				
	<u>Viking Johnson stepped couplings as Maxistep</u>				
5.7.4	DN150	No.	0		
	<u>Viking Johnson Flanged adaptors as Aquafast to PN16</u>				
5.7.8	DN100	No.	3		
5.7.10	DN150	No.	4		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.4: KONGTA TULWO IN BUKWO DISTRICT

BILL SUMMARY

BILL No. 2 : TRANSMISSION MAINS					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Cast or Spun Iron Pipe Fittings Junctions and Branches All flanged tee to BS 4346, flanges to BS 4504 ,all to PN6 and of the following sizes;				
6.1	DN100mm	No.	3		
6.2	DN150mm	No.	3		
	Tapers All flanged concentric taper to BS4772, flanges to BS4504 all to PN6, cement mortar lined, and of the following sizes;				
6.3	DN125 x 50mm	No.	5		
6.4	DN125 x 65mm	No.	1		
	Tapers Cont'd DN150 x 65mm	No.	1		
6.10	DN150 x 100mm	No.	2		
7	Bulk Flow Meters <u>Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as specified, all fittings, including a masonry chamber, and on the following main pipe sizes</u>				
7.6	DN150mm PN10	No.	1		
	PN16 HDPE Compression fitting to DIN 8074/BS 5114				
8	Equal Adapters				
8.1	OD90 female adapter	No.	Rate Only		
8.2	OD100 female adapter	No.	Rate Only		
9	Valves and Penstocks Air Valves <u>Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified.</u>				
9.7	DN150mm	No.	8		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.4: KONGTA TULWO IN BUKWO DISTRICT

BILL SUMMARY

BILL No. 2 : TRANSMISSION MAINS					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
10	Washouts <u>Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, union ball valve, flap valve, stone masonry outfall structure and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box to detail.</u>				
10.7	DN150mm	No.	5		
	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES				
	Other Chambers <u>Masonry air valve chamber, complete as specified in the drawings, and of the following depths</u>				
	Depth not exceeding 1.5m	No.	8		
11	Valve Surface Boxes <u>Valve surface box for DN100 - DN300 valves, with lockable cover securely attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to the following depths</u>				
11.1	Depth not exceeding 1.5m	No.	2		
	Reinstatement Roads <u>Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes</u>				
11.2	Not exceeding DN300mm	m	12		
12	Surrounds <u>Pipe surrounds, of selected excavated granular material, for the</u>				
12.1	Not exceeding DN200mm	m	Rate Only		
	<u>Pipe surrounds, of imported granular material, for the following pipe</u>				
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.4: KONGTA TULWO IN BUKWO DISTRICT

BILL SUMMARY

BILL No. 2 : TRANSMISSION MAINS					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
12.2	Not exceeding DN200mm	m	220		
	<u>Pipe surrounds, of mass concrete, for the following pipe sizes</u>				
12.3	Not exceeding DN200mm	m	450		
13	<u>Concrete Stools and Thrust Blocks</u>				
	<i>Thrust Blocks</i>				
	<u>Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m³, for the following pipe sizes</u>				
13.1	Diameter not exceeding DN200mm	No.	6		
	<u>Other Pipework Ancillaries</u>				
	<i>Marker Posts</i>				
14	Marker posts for pipes, gate valves, air valves, washouts	nr	126		
Total Carried to Collection					
BILL No. 2 : TRANSMISSION MAINS					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 2 Collection				
	Page 6				
	Page 7				
	Page 8				
	Page 9				
Total Bill No. 2 Carried to Bill Summary					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.4: KONGTA TULWO IN BUKWO DISTRICT

BILL SUMMARY

BILL No. 4 : DISTRIBUTION NETWORK					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing tree stumps and disposal of arising materials.	Item	1		
	PIPEWORK-PIPES				
2	Plastic Pressure Pipes- Distribution HDPE pressure pipes to BS 3505, include unions / sockets, all to be laid in trench to the following depths not exceeding 1.5m				
2.2	OD63mm PN10	m	120		
2.3	OD75mm PN10	m	374		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
3	Equal tees				
3.2	OD63mm	No.	Rate Only		
3.3	OD75mm	No.	Rate Only		
	Unequal tees				
3.9	OD75 x 63mm	No.	4		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
4	End caps				
4.1	OD63mm	No.	Rate Only		
4.2	OD75mm	No.	Rate Only		
	Cast or Spun Iron Pipe Fittings				
5	Bends Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizes				
5.1	DN50mm	No.	Rate Only		
5.2	DN65mm	No.	Rate Only		
5.3	DN75mm	No.	Rate Only		
Total Carried to Collection					
BILL No. 4 : DISTRIBUTION NETWORK					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Steel pipe fittings; flanges to PN 16; in trenches not exceeding 1.5 m				

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.4: KONGTA TULWO IN BUKWO DISTRICT

BILL SUMMARY

6.1	Viking Johnson stepped adaptors as Maxistep DN100 x OD63	No.	Rate Only		
6.2	DN100 x OD 75	No.	Rate Only		
6.6	Viking Johnson Flanged adaptors as Aquafast. DN65	No.	1		
6.9	DN125	No.	2		
7	Cast or Spun Iron Pipe Fittings Junctions and Branches All flanged tee to BS 4346, flanges to BS 4504 ,all to PN6 and of the following sizes;				
7.1	DN125mm	No.	1		
7.8	Tapers All flanged concentric taper to BS4772, flanges to BS4504 all to PN6, cement mortar lined, and of the following sizes;	No.	Rate Only		
7.11	DN150 x 40mm	No.	Rate Only		
8	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
8.1	Reducing Couplers/ Unions OD75 x 63mm	No.	2		
9	Valves and Penstocks Air Valve Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified.				
9.1	OD63mm	No.	Rate Only		
9.2	OD75mm	No.	Rate Only		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.4: KONGTA TULWO IN BUKWO DISTRICT

BILL SUMMARY

BILL No. 4 : DISTRIBUTION NETWORK					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
10	Washouts <u>Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, PVC union ball valve, flap valve and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box and stone masonry outfall structure to detail as per</u>				
10.1	DN50mm	No.	Rate Only		
10.2	DN65mm	No.	Rate Only		
11	Farm Gate Connections Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connecor pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: -				
11.1	DN50mm	No.	9		
	STRUCTURAL METALWORK <u>Fabrication and erection of rolled steel section pipe bridge complete as shown on drawings</u>				
12.1	Span 3 - 5m at height not exceeding 2m.	No.	Rate Only		
12.2	Span 5.5 - 10m at height not exceeding 2m.	No.	1		
	Other Pipework Ancillaries Marker Posts				
13	Marker posts for pipes, gate valves, air valves, washouts	nr	15		
	Reinstatement Roads <u>Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes</u>				
14	Not exceeding DN300mm	m	Rate Only		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.4: KONGTA TULWO IN BUKWO DISTRICT

BILL SUMMARY

BILL No. 4 : DISTRIBUTION NETWORK					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<p style="text-align: center;">Bill No. 4 Collection</p> <p style="text-align: center;">Page 10</p> <p style="text-align: center;">Page 11</p> <p style="text-align: center;">Page 12</p>				
Total Bill No. 4.4 Carried to Bill Summary					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.5: WERE IN KAPCHORWA DISTRICT

BILL SUMMARY

Bill No.	Description			Amount (UGx.)
	WORK ITEMS			
1	Abstraction Works			
2	Transmission Mains			
3	Storage Reservoir Works	N/A		
4	Distribution Network			
Total Carried to Grand Summary				

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.5: WERE IN KAPCHORWA DISTRICT

BILL No. 1 : ABSTRACTION WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	General Site Clearance				
1	General site clearance, felling trees, grabbing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1		
	Earthworks				
2.1	Excavation to form river/ stream diversion towards the intake / abstraction structure in normal ground, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to receive hardcore fill.	m ³	35		
2.2	Ditto but for the Intake Structure	m ³	45		
2.3	Ditto but for the River Weir Structure	m ³	4		
	Filling Structures				
	<u>Filling to precast concrete sump structure by methods specified and to depths as shown in the drawings with the following materials: -</u>				
3.1	Imported rock/ hardcore fill, size 75 to 300mm hand packed or compacted by the arm of an excavator.	m ³	55		
3.2	Selected excavated material including topping with a 200mm thick layer of top/ vegetable soil.	m ³	44		
3.3	Imported murrum.	m ³	18		
4	Single layer of geotextile laid to manufacturer's specifications	m ²	0		
	Landscaping				
5	Turfing for lawns inside fenced off compound, including filling with excavated topsoil and the preparation of surfaces at Intake Site.	m ²	840		
Total Carried to Collection					
BILL No. 1 : ABSTRACTION WORKS					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	IN-SITU CONCRETE				
	Provision and Placing of Concrete				
	Ordinary Design Mix Concrete				

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.5: WERE IN KAPCHORWA DISTRICT

	Designed mix , concrete to BS 8500 and BS EN 206-1, with ordinary portland cement to BS 12, aggregate to BS 882 for the following structures: -				
	Grade C15/10				
	Blinding				
6.1	50mm thick blinding concrete, for base slabs, toes, key and heel; grade C15, of the following thickness	m ³	1		
	Grade C25/10				
	Reinforced Concrete Base Slabs, Toe, Key and Heel				
6.2	200mm thick key and toe.	m ³	5		
6.3	200mm thick base and heel slabs.	m ³	5		
6.4	500/ 200mm thick retaining wall/ weir stem.	m ³	19		
6.5	200mm thick sump wall.	m ³	41		
6.6	200mm thick top slab.	m ³	1		
	Formwork				
	Formwork-Fair Finish				
7.1	Fair Finish Plane Horizontal Plane fair finish horizontal formwork to the tops slab including charmfering and / or filleting of all exposed concrete corners.	m ²	5		
7.2	Fair Finish Plane Vertical Plane fair finish vertical and / or slightly sloping formwork to walls including charmfering and / or filleting of all exposed concrete corners.	m ²	145		
7.3	Finishing of top surfaces Steel trowel finishing of top surfaces.	m ²	20		
Total Carried to Collection					
BILL No. 1 : ABSTRACTION WORKS					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Reinforcement				
	Deformed High Yield Steel				
	<u>High yield square twisted bars to BS 4449 and of the following sizes</u>				
8.1	Nominal size, 12mm	t	2		
	Inserts				
8.2	DN 250 CI / ST flanged, puddled pipe insert pipe inserts projecting from two faces of the concrete wall and of the following sizes,excluding supply of pipe.	No.	2		

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.5: WERE IN KAPCHORWA DISTRICT

	PIPEWORK - FITTINGS AND VALVES Cast or Spum Iron Pipe Fittings.				
	Flanged Reducers				
9.1	DN250 x 150mm	No.	1		
	Flange Adaptors				
9.2	DN 150mm Maxi Type or similar wide range adaptor to fit pipe spigots, flanges to BS 4505, all to PN6.	No.	1		
	Strainers				
	<u>Flanged outlet pipe strainer, to BS 4772, flanges to BS 4504, all to PN 10, cement mortar lined, and of the following sizes: -</u>				
9.3	DN 250 mm	No.	2		
	End Caps				
9.4	DN250mm flanged end cap.	No.	1		
	Valves and Penstocks				
	Gate Valves: Hand Operated				
	<u>All flanged CI gate valves to BS 5150 ,flanges to BS 4505 , all to PN 10 for operation by tee key, with extension spindle not exceeding 1.5 metres long, and of the following sizes:-</u>				
9.5	150 mm ND	No.	1		
	<u>Penstocks; hand operated including head stock and distance spindle, as specified in drawings of the following size: -</u>				
9.6	300mm wide x 1000mm high Staniless Steel.	No.	2		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.5: WERE IN KAPCHORWA DISTRICT

BILL No. 1 : ABSTRACTION WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	MISCELLANEOUS METAL WORK				
	Ladders				
10.1	External galvanized mild steel ladder to BS 4211, galvanized to BS 729, complete and as shown in the drawings including fixing to precast concrete units..	m	8		
	Access Manhole Cover				
10.2	600 x 600mm clear opening painted mild steel cover and frame include fixing and locking arrangement.	No.	1		
	Valve Surface Boxes				
10.3	Valve surface box with lockable cover securely attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to a depth not exceeding 4.5 m.	No.	0		
	MISCELLANEOUS WORKS				
X1	450mm diameter reinforced concrete pipe/ culvert	m	2		
	Training of Operator's staff				
X2	Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
	Operation and Maintenance Manuals				
X3	Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
Total Carried to Collection					0
BILL No. 1 : ABSTRACTION WORKS					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
Total Bill No. 1 Carried to Bill Summary					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.5: WERE IN KAPCHORWA DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>DEMOLITION AND SITE CLEARANCE</u>				
	<u>General Site Clearance</u>				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing tree stumps and disposal of arising materials.	Item	1		
	<u>PIPEWORKS - PIPES</u>				
2	<u>Steel Pipes</u>				
	<u>Galvanised steel pipes (Class B) with threaded joints, include unions/sockets, all to ISO 2531, of the following sizes.</u>				
2.7	DN125mm, not in trenches;	m	3		
2.8	DN125mm, in trenches; depth not exceeding 1.5m.	m	3		
3	<u>HDPE Pipes</u>				
	<u>HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m</u>				
3.6	OD140mm HDPE PN16	m	Rate Only		
4	<u>uPVC Pipes</u>				
	<u>uPVC pressure pipes to UNBS US 264: 2000 and DIN 8062 with integral rubber ring socket joints laid in trenches to depths not</u>				
4.3	OD140 to PN 16	m	2,476		
	<u>PIPEWORK - FITTINGS AND VALVES</u>				
	<u>Cast or Spun Iron Pipe Fittings</u>				
5	<u>Bends</u>				
	<u>Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizes</u>				
5.5	DN125mm	No.	4		
	<u>Steel pipe fittings; flanges to PN 16; in trenches not exceeding 1.5 m</u>				
	<u>Viking Johnson stepped couplings as Maxistep</u>				
5.7.2	DN100 x OD 75	No.	Rate Only		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.5: WERE IN KAPCHORWA DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
5.7.9	Viking Johnson Flanged adaptors as Aquafast to PN16 DN125	No.	5		
6	Cast or Spun Iron Pipe Fittings Junctions and Branches All flanged tee to BS 4346, flanges to BS 4504 ,all to PN6 and of the following sizes;				
6.1	DN100mm	No.	3		
6.2	DN150mm	No.	3		
	Tapers All flanged concentric taper to BS4772, flanges to BS4504 all to PN6, cement mortar lined, and of the following sizes;				
6.3	DN125 x 50mm	No.	4		
6.4	DN125 x 65mm	No.	2		
6.5	DN125 x 100mm	No.	Rate Only		
7	Bulk Flow Meters <u>Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as specified, all fittings, including a masonry chamber, and on the following main pipe sizes</u>				
7.5	DN125mm PN10	No.	1		
	<u>PN16 HDPE Compression fitting to DIN 8074/BS 5114</u>				
8	Equal Adapters				
8.1	OD90 female adapter	No.	Rate Only		
8.2	OD100 female adapter	No.	Rate Only		
9	Valves and Penstocks Air Valves <u>Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified.</u>				
9.6	DN125mm	No.	4		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.5: WERE IN KAPCHORWA DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
10	Washouts <u>Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, union ball valve, flap valve, stone masonry outfall structure and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box to detail.</u>				
10.6	DN125mm	No.	4		
	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES Other Chambers <u>Masonry air valve chamber, complete as specified in the drawings, and of the following depths</u> Depth not exceeding 1.5m	No.	4		
11	Valve Surface Boxes <u>Valve surface box for DN100 - DN300 valves, with lockable cover securely attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to the following depths</u>				
11.1	Depth not exceeding 1.5m	No.	4		
	Reinstatement Roads <u>Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes</u>				
11.2	Not exceeding DN300mm	m	12		
12	Surrounds <u>Pipe surrounds, of selected excavated granular material, for the following pipe sizes</u>				
12.1	Not exceeding DN200mm	m	Rate Only		
	<u>Pipe surrounds, of imported granular material, for the following pipe</u>				
12.2	Not exceeding DN200mm	m	60		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.5: WERE IN KAPCHORWA DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
12.3	Pipe surrounds, of mass concrete, for the following pipe sizes Not exceeding DN200mm	m	50		
13	Concrete Stools and Thrust Blocks Thrust Blocks Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m³, for the following pipe sizes				
13.1	Diameter not exceeding DN200mm	No.	Rate Only		
14	Other Pipework Ancillaries Marker Posts Marker posts for pipes, gate valves, air valves, washouts	nr	66		
Total Carried to Collection					
BILL No. 2 : TRANSMISSION MAINS					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 2 Collection Page 6 Page 7 Page 8 Page 9				
Total Bill No. 2 Carried to Bill Summary					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.5: WERE IN KAPCHORWA DISTRICT

BILL No. 4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing tree stumps and disposal of arising materials.	Item	1		
	PIPEWORK-PIPES				
2	Plastic Pressure Pipes- Distribution HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in trench to the following depths not exceeding 1.5m				
2.2	OD63mm PN6	m	100		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
3	Equal tees				
3.5	OD110mm	No.	1		
	Unequal tees				
3.13	OD110 x 63mm	No.	3		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
4	End caps				
4.1	OD63mm	No.	5		
7	Washouts Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, PVC union ball valve, flap valve and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box and stone masonry outfall structure to detail as per				
7.1	DN50mm	No.	Rate Only		
Total Carried to Collection					
BILL No. 4 : DISTRIBUTION NETWORK					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.5: WERE IN KAPCHORWA DISTRICT

8	Farm Gate Connections Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: -				
8.1	DN50mm	No.	5		
	Other Pipework Ancillaries Marker Posts 9 Marker posts for pipes, gate valves, air valves, washouts	No.	3		
	Reinstatement Roads <u>Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes</u>				
12	Not exceeding DN300mm	m	Rate Only		
Total Carried to Collection					
BILL No. 4 : DISTRIBUTION NETWORK					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 4 Collection Page 10 Page 11				
Total Bill No. 4.4 Carried to Bill Summary					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA
SCHEME ID. 1.6: TUIKAT IN KWEEN DISTRICT
BILL SUMMARY

Bill No.	Description			Amount (UGx.)
	WORK ITEMS			
1	Abstraction Works			
2	Transmission Mains			
3	Storage Reservoir Works	N/A		
4	Distribution Network			
Total Carried to Grand Summary				

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.6: TUIKAT IN KWEEN DISTRICT

BILL No. 1 : ABSTRACTION WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	General Site Clearance				
1	General site clearance, felling trees, grubbing tree stumps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1		
	Earthworks				
2.1	Excavation to form river/ stream diversion towards the intake / abstraction structure in normal ground, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to receive hardcore fill.	m ³	35		
2.2	Ditto but for the Intake Structure	m ³	45		
2.3	Ditto but for the River Weir Structure	m ³	4		
	Filling Structures				
	<u>Filling to precast concrete sump structure by methods specified and to depths as shown in the drawings with the following materials: -</u>				
3.1	Imported rock/ hardcore fill, size 75 to 300mm hand packed or compacted by	m ³	55		
3.2	Selected excavated material including topping with a 200mm thick layer of top/ vegetable soil.	m ³	44		
3.3	Imported murrum.	m ³	18		
4	Single layer of geotextile laid to manufacturer's specifications	m ²	0		
	Landscaping				
5	Turfing for lawns inside fenced off compound, including filling with excavated topsoil and the preparation of surfaces at Intake Site.	m ²	840		
Total Carried to Collection					

BILL No. 1 : ABSTRACTION WORKS

Scheme ID. 1.6 Pg. 69 of 336

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.6: TUIKAT IN KWEEN DISTRICT

	Cast or Spum Iron Pipe Fittings.				
	Flanged Reducers				
9.1	DN250 x 150mm	No.	1		
	Flange Adaptors				
9.2	DN 150mm Maxi Type or similar wide range adaptor to fit pipe spigots, flanges to BS 4505, all to PN6.	No.	1		
	Strainers				
	<u>Flanged outlet pipe strainer, to BS 4772, flanges to BS 4504, all to PN 10, cement mortar lined, and of the following sizes:-</u>				
9.3	DN 250 mm	No.	2		
	End Caps				
9.4	DN250mm flanged end cap.	No.	1		
	Valves and Penstocks				
	Gate Valves: Hand Operated				
	<u>All flanged CI gate valves to BS 5150 ,flanges to BS 4505 , all to PN 10 for operation by tee key, with extension spindle not exceeding 1.5 metres long, and of the following sizes:-</u>				
9.5	150 mm ND	No.	1		
	<u>Penstocks; hand operated including head stock and distance spindle, as specified in drawings of the following size:-</u>				
9.6	300mm wide x 1000mm high <u>Staniless Steel.</u>	No.	2		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.6: TUIKAT IN KWEEN DISTRICT

BILL No. 1 : ABSTRACTION WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	MISCELLANEOUS METAL WORK				
	Ladders				
10.1	External galvanized mild steel ladder to BS 4211, galvornized to BS 729, complete and as shown in the drawings including fixing to precast concrete units..	m	8		
	Access Manhole Cover				
10.2	600 x 600mm clear opening painted mild steel cover and frame include fixing and locking arrangement.	No.	1		
	Valve Surface Boxes				
10.3	Valve surface box with lockable cover securely attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to a depth not exceeding 4.5 m.	No.	0		
	MISCELLANEOUS WORKS				
X1	450mm diameter reinforced concrete pipe/ culvert	m	2		
	Training of Operator's staff				
X2	Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
	Operation and Maintenance Manuals				
X3	Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
Total Carried to Collection					
BILL No. 1 : ABSTRACTION WORKS					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
Total Bill No. 1 Carried to Bill Summary					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.6: TUIKAT IN KWEEN DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing tree stumps and disposal of arising materials.	Item	1		
	PIPEWORKS - PIPES				
2	Steel Pipes				
	<u>Galvanised steel pipes (Class B) with threaded joints, include unions/sockets, all to ISO 2531, of the following sizes.</u>				
2.9	DN150mm, not in trenches;	m	3		
2.10	DN150mm, in trenches; depth not exceeding 1.5m.	m	3		
3	HDPE Pipes				
	<u>HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m</u>				
3.4	OD110mm HDPE PN10	m	1,166		
4	uPVC Pipes				
	<u>uPVC pressure pipes to UNBS US 264: 2000 and DIN 8062 with integral rubber ring socket joints laid in trenches to depths not</u>				
4.1	OD110 to PN 10	m	Rate Only		
4.2	OD125 to PN 10	m	Rate Only		
	PIPEWORK - FITTINGS AND VALVES				
	Cast or Spun Iron Pipe Fittings				
5	Bends				
	<u>Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all</u>				
5.4	DN100mm	No.	4		
	Steel pipe fittings; flanges to PN 16; in trenches not exceeding 1.5 m				
	<u>Viking Johnson stepped couplings as Maxistep</u>				
5.7.1	DN100 x OD63	No.	Rate Only		
5.7.2	DN100 x OD 75	No.	Rate Only		
Total Carried to Collection					
BILL No. 2 : TRANSMISSION MAINS					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>Viking Johnson Flanged adaptors as Aquafast to PN16</u>				
5.7.7	DN75	No.	Rate Only		
5.7.8	DN100	No.	Rate Only		

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA
SCHEME ID. 1.6: TUIKAT IN KWEEN DISTRICT

6	Cast or Spun Iron Pipe Fittings Junctions and Branches All flanged tee to BS 4346, flanges to BS 4504 ,all to PN6 and of the following sizes;				
6.1	DN100mm	No.	Rate Only		
	Tapers All flanged concentric taper to BS4772, flanges to BS4504 all to PN6, cement mortar lined, and of the following sizes;				
6.3	DN125 x 50mm	No.	Rate Only		
6.4	DN125 x 65mm	No.	Rate Only		
6.5	DN125 x 75mm	No.	Rate Only		
6.6	DN125 x 100mm	No.	Rate Only		
7	Bulk Flow Meters <u>Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as specified, all fittings, including a masonry chamber, and on the following main pipe sizes</u>				
7.4	DN100mm PN10	No.	1		
	<u>PN16 HDPE Compression fitting to DIN 8074/BS 5114</u>				
8	Equal Adapters				
8.2	OD100 female adapter	No.	2		
9	Valves and Penstocks Air Valves <u>Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified.</u>				
9.5	DN100mm	No.	2		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.6: TUIKAT IN KWEEN DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
10	<u>Washouts</u> Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, union ball valve, flap valve, stone masonry outfall structure and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box to detail.				
10.5	DN100mm	No.	4		
	<u>PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES</u> <u>Other Chambers</u> Masonry air valve chamber, complete as specified in the drawings, and of the following depths Depth not exceeding 1.5m	No.	2		
11	<u>Valve Surface Boxes</u> Valve surface box for DN100 - DN300 valves, with lockable cover securely attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to the following depths				
11.1	Depth not exceeding 1.5m	No.	4		
	<u>Reinstatement</u> <u>Roads</u> Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes				
11.2	Not exceeding DN300mm	m	12		
12	<u>Surrounds</u> Pipe surrounds, of selected excavated granular material, for the following pipe sizes				
12.1	Not exceeding DN200mm	m	Rate Only		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.6: TUIKAT IN KWEEN DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
12.2	Pipe surrounds, of imported granular material, for the following pipe Not exceeding DN200mm	m	240		
12.3	Pipe surrounds, of mass concrete, for the following pipe sizes Not exceeding DN200mm	m	150		
13	Concrete Stools and Thrust Blocks Thrust Blocks Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m³, for the following pipe sizes				
13.1	Diameter not exceeding DN200mm	No.	12		
14	Other Pipework Ancillaries Marker Posts Marker posts for pipes, gate valves, air valves, washouts	nr	56		
Total Carried to Collection					
BILL No. 2 : TRANSMISSION MAINS					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 2 Collection Page 6 Page 7 Page 8 Page 9				
Total Bill No. 2 Carried to Bill Summary					0

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.6: TUIKAT IN KWEEN DISTRICT

BILL No. 4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>DEMOLITION AND SITE CLEARANCE</u>				
	<u>General Site Clearance</u>				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing tree stumps and disposal of arising materials.	Item	1		
	<u>PIPEWORK-PIPES</u>				
2	<u>Plastic Pressure Pipes- Distribution</u> HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in trench to the following depths not exceeding 1.5m				
2.1	OD63mm PN10	m	70		
2.2	OD110mm PN10, <u>uPVC</u>	m	350		
	<u>PIPEWORK - FITTINGS AND VALVES</u>				
	<u>PN10 HDPE Compression fitting to DIN 8074/BS 5114</u>				
	<u>Plastic Pipe Fittings</u>				
3	<u>Equal tees</u>				
3.1	OD110mm	No.	2		
	<u>Unequal tees</u>				
3.2	OD75 x 63mm	No.	6		
3.3	OD110 x 63mm	No.	2		
	<u>PN10 HDPE Compression fitting to DIN 8074/BS 5114</u>				
	<u>Plastic Pipe Fittings</u>				
4	<u>End caps</u>				
4.1	OD63mm	No.	4		
	<u>Cast or Spun Iron Pipe Fittings</u>				
5	<u>Bends</u> Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizes				
5.1	DN75mm	No.	1		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.6: TUIKAT IN KWEEN DISTRICT

BILL No. 4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Steel pipe fittings; flanges to PN 16; in trenches not exceeding 1.5 m				
6.1	<u>Viking Johnson stepped adaptors as Maxistep</u> DN100 x OD63	No.	Rate Only		
6.2	<u>Viking Johnson Flanged adaptors as Aquafast.</u> DN50	No.	Rate Only		
6.3	DN65	No.	Rate Only		
7	Cast or Spun Iron Pipe Fittings Junctions and Branches All flanged tee to BS 4346, flanges to BS 4504 ,all to PN6 and of the following sizes;				
7.1	DN125mm	No.	2		
7.2	DN150mm	No.	3		
	Tapers All flanged concentric taper to BS4772, flanges to BS4504 all to PN6, cement mortar lined, and of the following sizes;				
7.3	DN125 x 50mm	No.	Rate Only		
7.4	DN125 x 65mm	No.	Rate Only		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
8	Reducing Couplers/ Unions OD110 x 63mm	No.	2		
	Valves and Penstocks Air Valve <u>Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified.</u>				
9.1	OD63mm	No.	Rate Only		
9.2	OD75mm	No.	Rate Only		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.6: TUIKAT IN KWEEN DISTRICT

BILL No. 4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Farm Gate Connections Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connecor pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: -				
10	DN50mm	No.	2		
	Other Pipework Ancillaries				
	Marker Posts				
11	Marker posts for pipes, gate valves, air valves, washouts	nr	2		
	Reinstatement Roads				
	<u>Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes</u>				
12	Not exceeding DN300mm	m	24		

Total Carried to Collection

BILL No. 4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 4 Collection				
	Page 10				
	Page 11				
	Page 12				

Total Bill No. 4.4 Carried to Bill Summary

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.7: MUTUFU IN SIRONKO DISTRICT

BILL SUMMARY

Bill No.	Description	Amount (UGx.)
	WORK ITEMS	
1	Abstraction and Electromechanical Works	
2	Transmission Mains	
3	Storage Reservoir Works	
4	Distribution Network	
Total Carried to Grand Summary		

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.7: MUTUFU IN SIRONKO DISTRICT

BILL No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>General Site Clearance</u>				
1	General site clearance, felling trees, grabbing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1		
	<u>Earthworks</u>				
	Excavation to form trapezoidal prism reservoir in material other than topsoil, rock or other artificial hard material, depth not exceeding 6.0m including forming earth bands along the channel of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.1	Marshy soils	m ³	52		
2.2	Soft / decomposed rock soils	m ³	26		
	Excavation to form trapezoidal channel in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.4	Marshy soils	m ³	48		
2.5	Soft / decomposed rock soils	m ³	12		
	Excavation to form cylindrical sump well in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.6	Marshy soils	m ³	16		
2.7	Soft / decomposed rock soils	m ³	8		
	<u>Filling Structures</u>				
	<u>Filling to precast concrete sump structure by methods specified and to depths as shown in the drawings with the following materials: -</u>				
3	Selected excavated material including topping with a 200mm thick layer of top/vegetable soil.	m ³	10		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.7: MUTUFU IN SIRONKO DISTRICT

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
4	Landscaping Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	40		
	IN-SITU CONCRETE Provision and Placing of Concrete Ordinary Design Mix Concrete <u>Designed mix , concrete to BS 8500 and BS EN 206-1, with ordinary portland cement to BS 12, aggregate to BS 882 , maximum aggregate size ; 20mm for the following structures: -</u>				
5	In situ Concrete 75mm thick Grade C15 concrete blinding to pump sump base	m ³	0.25		
6.1	2200mm Diameter x 150mm thick Grade C25 concrete base slab reinforced with H12 - 200 E.W (B) complete with all associated formwork, finishing with a steel float.	Item	1		
6.2	2200mm Diameter x 150mm thick Grade C25 concrete top slab reinforced with H12 - 200 E.W (B) complete with all associated formwork, finishing with a steel float and forming a 600 x 600mm opening for the inspection cover (MS).	Item	1		
7	Pre-cast Concrete Pump Well/ Sump Supply and install 100mm thick precast reinforced concrete vertical culverts on concrete base slab (MS) ; complete with water tight jointing and finishing works to approval. 1200mm diameter ; height n.e 8m	Item	1		
8	Concrete Inserts Cast or Spum Iron Pipe Fittings. Flanged, puddled and plain end pipe insert projecting from one face of the concrete, all to PN6 and of the following sizes and lengths, including supply of the pipe and as shown in the drawings. 200mm ND and not exceeding 0.5m length	No.	2		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.7: MUTUFU IN SIRONKO DISTRICT

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Adaptors Flange adaptor to fit ductile PVC to all to PN6 and of the following sizes:-				
9	200 mm ND	No.	2		
10	OD225mm PN10 plain end uPVC pipe connection between Silt Trap Basin and Pump Sump.	m	8		
	Bellmouths Flanged bellmouth to ISO 2531, flanges to ISO 2441, of the following sizes all to PN 6				
11	200 mm ND	No.	1		
	PIPEWORK - FITTINGS AND VALVES Gate Valves: Hand Operated				
12	DN 200 mm all flanged CI gate valves to BS 5150 ,flanges to BS 4505 , all to PN 6 for operation by tee key, with extension spindle not exceeding 4.5 metres long, and of the following sizes				
	MISCELLANEOUS WORK Ladders				
13	Internal galvanized mild steel ladder to BS 4211, galvanized to BS 729, complete and as shown in the drawings including fixing to precast concrete units..	m	8		
	Steel grating				
14.1	Galvanized iron Coarse Trash Screen as detailed in the drawings.	No.	1		
14.2	Galvanized iron Fine Trash Screen as detailed in the drawings.	No.	1		
	Pump Well/ Sump Supply and install 8.0m long HDPE vertical culverts on concrete base slab (MS) ; complete with a Single ND200mm flanged branch to receive a ND200 gate valve. Branch height/ positioning to be determined on site.				
15	Internal diameter ; 1200x200mm	Item	Rate Only		
	Stone pitched Channel.				
16	3.0 x 1.5 top x bottom width x 1.5m deep maximum trapezoidal lined drain as detailed in the drawing.	m	5		
	Gabion boxes				
17	PVC coated gabion boxes ; size 1m x 1m x 1m; including rockfill of size 100 - 250mm; as instructed by the Engineer	nr	Rate Only		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.7: MUTUFU IN SIRONKO DISTRICT

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>ELECTRO-MECHANICAL WORKS</u>				
	<u>Solar Pumping System</u> (based on 550Wp panels; bidder to adjust numbers to match rating of panel offered)				
ME1	11.0kW submersible pump set, rated flow Q = 20 m ³ /hr., rated head H = 85m total head; set not to more than 5m below ground including Dry- run protection, 15kW Inverter, Controller with Data Module , Motor and Pump End.	No.	1		
ME2	2x17No. x 550Wp panels solar array to provide 18.7kW power to the pump system complete including wiring.	Item	1		
ME3	Mild steel welded structure for holding solar PV panels at 15° tilt angle and suitable for a 2x17No. x 550Wp panels Solar Aarray in Item 2 above as per drawings, including foundations, vandal proofing mounting to the Engineer's approval	Sum	1		
ME4	PV Disconnect 1000-40-2	No.	1		
ME5	PV Protect 1000-15, SPD x 1 on incoming solar PV.	No.	1		
ME6	Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc.	Item	1		
ME7	PV Combiner	No.	1		
ME7a	Pressure Switch and Gauge - P6/12	No.	1		
ME8	Sinewave filter - SWAP0022D.	No.	1		
ME9	16mm ² Borehole drop cable,	m	5		
ME10	16mm ² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding.	m	200		
ME10a	6mm ² UV Single Cable.	m	60		
ME11	Wire kit array from solar array to controller with MC4 connectors	No.	2		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.7: MUTUFU IN SIRONKO DISTRICT

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
ME11a	Adapter box	No.	1		
ME12	Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4.	Item	1		
	<u>Earthing and Lightening Protection</u>				
ME13	Earthing at solar array and borehole installation by 16mm ² PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME14	Lightning Protection at solar array and borehole installation consisting of 25x3mm copper tape, air terminal, test block and earth electrode in a manhole and all accessories.	Sum	1		
ME15	60W Solar security light and battery complete with 6m steel pole and lockable battery box	No.	5		
	<u>Alarm System</u>				
ME16	GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array.	Item	1		
ME17	GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor for the pump protection as instructed by the Engineer.	Item	1		
	<u>MISCELLANEOUS WORKS</u>				
	<u>Pump Protection System</u>				
X1	Vertical pipe pump stilling tube/ anti-vandal protection sleeve structure to detail as per Drawing No. OIS/NUC/SD/010, including 1.5x1.5x0.3m support base.	No.	1		
	<u>Kerbs</u>				
	<u>Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the following alignment: -</u>				
X2	Straight or curved to a radius exceeding 12 m	m	70		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.7: MUTUFU IN SIRONKO DISTRICT

BILL No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS					
Item No.	Description				Amount (UGx.)
X3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet.	m ²	220		
X4	450mm diameter reinforced concrete pipe/ culvert	m	2		
	<u>Pump House</u>				
X5	Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.	Sum	1		
	<u>Fences</u>				
X6a	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Intake Site, including special erection methods in "marshy grounds" to the Engineer's approval.	m	50		
X6b	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Pumping Station Site.	m	10		
	<u>Gates</u>				
X7	Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	2		
	<u>Training of Operator's staff</u>				
X8	Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
	<u>Operation and Maintenance Manuals</u>				
X9	Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
Total Carried to Collection					
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
	Page 6				
	Page 7				
Total Bill No. 1 Carried to Bill Summary					
BILL No. 2 : TRANSMISSION MAINS					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>DEMOLITION AND SITE CLEARANCE</u>				
	<u>General Site Clearance</u>				

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.7: MUTUFU IN SIRONKO DISTRICT

1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing tree stumps and disposal of arising materials.	Item	1		
<u>PIPEWORKS - PIPES</u>					
2	<u>Steel Pipes</u> Galvanized iron pipes (Class B) with threaded joints, include unions/sockets, all to ISO 2531 of the following sizes:				
2.1	DN75mm, in trenches; depths not exceeding 1.5m	m	12		
3	<u>HDPE Pipes</u> HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m				
3.1	OD75mm HDPE PN6	m	740		
4	<u>uPVC Pipes</u> uPVC pressure pipes to UNBS US 264: 2000 and DIN 8062 with integral rubber ring socket joints laid in trenches				
4.1	OD110 to PN 10 Depth not exceeding 1.5m	m	Rate Only		
PIPEWORK - FITTINGS AND VALVES					
<u>Cast or Spun Iron Pipe Fittings</u>					
5	<u>Bends</u> Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizes				
5.1	DN65mm	No.	4		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.7: MUTUFU IN SIRONKO DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Bulk Flow Meters <u>Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as specified, all fittings to PN10 including a masonry chamber, and on the following main pipe sizes</u>				
6.1	DN65mm PN10	No.	1		
	<u>PN16 HDPE Compression fitting to DIN 8074/BS 5114</u>				
7	Equal Adapters				
7.1	OD75 female adapter	No.	2		
8	<u>Valves and Penstocks</u> <u>Air Valves</u> <u>Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified.</u>				
8.1	DN65mm	No.	1		
9	<u>Washouts</u> <u>Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, union ball valve, flap valve, stone masonry outfall structure and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box to detail.</u>				
9.1	DN65mm	No.	1		
	<u>PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES</u> <u>Other Chambers</u> <u>Masonry air valve chamber, complete as specified in the drawings, and of the following depths</u>				
10.1	Depth not exceeding 1.5m	No.	1		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.7: MUTUFU IN SIRONKO DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>Valve Surface Boxes</u> <u>Valve surface box for DN100 - DN300 valves, with lockable cover securely attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to the following depths</u>				
10.2	Depth not exceeding 1.5m	No.	1		
	<u>Reinstatement Roads</u> <u>Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes</u>				
11	Not exceeding DN300mm	m	36		
	<u>Surrounds</u> <u>Pipe surrounds, of selected excavated granular material, for the following pipe sizes</u>				
12.1	Not exceeding DN200mm	m	20		
	<u>Pipe surrounds, of imported granular material, for the following pipe</u>				
12.2	Not exceeding DN200mm	m	60		
	<u>Pipe surrounds, of mass concrete, for the following pipe sizes</u>				
12.3	Not exceeding DN200mm	m	40		
13	<u>Concrete Stools and Thrust Blocks</u> <u>Thrust Blocks</u> <u>Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m³, for the following pipe sizes</u>				
13.1	Diameter not exceeding DN200mm	No.	Rate Only		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.7: MUTUFU IN SIRONKO DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
14	<u>Other Pipework Ancillaries</u>	No.	20		
	<u>Marker Posts</u>				
	Marker posts for pipes, gate valves, air valves, washouts				
15.1	<u>STRUCTURAL METALWORK</u>	No.	Rate Only		
	<u>Fabrication and erection of rolled steel section pipe bridge complete as shown on drawings</u>				
	Span 3 - 5m at height not exceeding 2m.				
15.2	Span 5.5 - 10m at height not exceeding 2m.	No.	Rate Only		

Total Carried to Collection

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 2 Collection				
	Page 8				
	Page 9				
	Page 10				
	Page 11				

Total Bill No. 2 Carried to Bill Summary

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.7: MUTUFU IN SIRONKO DISTRICT

BILL No. 3 : STORAGE RESERVOIR WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>DEMOLITION AND SITE CLEARANCE</u>				
	<u>General Site Clearance</u>				
1	General site clearance including trees, stumps and disposal of arising materials.	Item	1		
2	<u>Reservoir</u>				
	Erect a welded steel tower for reservoir support complete, include foundations, columns, beams, access ladders, plates, braces, walkway/ guardrail, base plates, anchor bolts, nuts, washers, etc, painting and finishes; complete as specified and detailed in the drawings , of the following height and reservoir capacities.				
2.1	Height; 9.0m for (4No. x 10m ³ Tanks)	No.	1		
3	<u>Plastic Tanks</u>				
	Supply and install a vertical cylindrical Rotational Moulded Polyethylene Water Storage Tank to DUS 1560: 2013 as manufactured by Ms Gentex Ltd. / Crest Tanks or any other approved complete with a lockable access man ways, inlet/ riser, ball float valve, overflow with insect screen, float type water level indicator and outlet/ down pipe with a strainer, washout and overflow connection, including interconnecting pipe work and fittings, as detailed in the drawings, supply specifications and of the following capacity.				
3.1	10m ³	No.	4		
4	<u>150-200 micron union/ compresion type clear uPVC Y- Screen Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement screen element and seal ring :-</u>				
4.1	DN75mm, PN10	No.	1		
5	<u>150-200 micron union/ compresion type clear uPVC Y- Disc Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement disk element and seal ring :-</u>				
	[OPTIONAL]				
5.1	DN75mm, PN10	No.	1		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.7: MUTUFU IN SIRONKO DISTRICT

BILL No. 3 : STORAGE RESERVOIR WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	<u>Landscaping and Walkways</u>				
6.1	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	150		
6.2	500 x 500 x 50mm precast concrete paving slabs laid "Space out Stone method" between the gate, pump house and solar array in one row, laid onto and including 200mm thick murrum fill.	No.	Rate Only		
7	<u>Fences</u>				
7.1	Galvanised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m.	m	60		
	<u>Gates</u>				
7.2	Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	1		
	Provision and Placing of Concrete <i>Ordinary Designed Mix Concrete</i>				
8	<u>Designed mix concrete, to BS 5328, with ordinary portland cement to BS 12 , aggregate to BS882 , for 10mm aggregate sizes and the following grades:</u>				
8.1	Grade C15	m ³	2		
8.2	Grade C20	m ³	Rate Only		
8.3	Grade C25	m ³	Rate Only		
8.4	Grade C30	m ³	Rate Only		
Total Carried to Collection					
BILL No. 3 : STORAGE RESERVOIR WORKS					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 3 Collection				
	Page 12				
	Page 13				
Total Bill No. 3 Carried to Bill Summary					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.7: MUTUFU IN SIRONKO DISTRICT

BILL No.4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>DEMOLITION AND SITE CLEARANCE</u>				
	<u>General Site Clearance</u>				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing tree stumps and disposal of arising materials.	Item	1		
	<u>PIPEWORK-PIPES</u>				
2	<u>Plastic Pressure Pipes- Distribution</u> HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in trench to the following depths not exceeding 1.5m				
2.1	OD63mm PN10	m	240		
2.2	OD75mm PN10	m	Rate Only		
2.3	OD90mm PN6	m	740		
	<u>PIPEWORK - FITTINGS AND VALVES</u>				
	<u>PN10 HDPE Compression fitting to DIN 8074/BS 5114</u>				
	<u>Plastic Pipe Fittings</u>				
3	<u>Equal tees</u>				
3.1	OD90mm	No.	6		
	<u>Unequal tees</u>				
3.2	OD90 x 63mm	No.	30		
	<u>PN10 HDPE Compression fitting to DIN 8074/BS 5114</u>				
	<u>Plastic Pipe Fittings</u>				
4	<u>Couplers</u>				
4.1	OD90mm	No.	Rate Only		
4.2	OD75mm	No.	Rate Only		
4.3	OD63mm	No.	Rate Only		
5	<u>End caps</u>				
5.1	OD63mm	No.	30		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.7: MUTUFU IN SIRONKO DISTRICT

BILL No.4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	<u>Valves and Penstocks</u> <u>Air Vaves</u> <u>Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified.</u>				
6.1	OD75mm	No.	1		
7	<u>Washouts</u> <u>Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, PVC union ball valve, flap valve and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box and stone masonry outfall structure to detail as per Drawing</u>				
7.1	DN75mm	No.	3		
7.2	DN50mm	No.	1		
8	<u>Farm Gate Connections</u> <u>Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: -</u>				
8.1	DN50mm	No.	30		
	<u>Other Pipework Ancillaries</u> <u>Marker Posts</u> Marker posts for pipes, gate valves, air valves, washouts	nr	26		
	<u>STRUCTURAL METALWORK</u> <u>Fabrication and erection of rolled steel section pipe bridge complete as shown on drawings</u>				
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 1.7: MUTUFU IN SIRONKO DISTRICT

BILL No.4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
10.1	Span 3 - 5m at height not exceeding 2m.	No.	Rate Only		
10.2	Span 5.5 - 10m at height not exceeding 2m.	No.	Rate Only		
	<u>Reinstatement Roads</u>				
	<u>Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes</u>				
11	Not exceeding DN300mm	m	32		

Total Carried to Collection

BILL No. 4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 4 Collection				
	Page 14				
	Page 15				
	Page 16				
Total Bill No. 4 Carried to Bill Summary					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA
SCHEME ID. 2.1: LUWAMBI IN BUDUDA DISTRICT
BILL SUMMARY

Bill No.	Description			Amount (UGx.)
	WORK ITEMS			
1	Abstraction Works			
2	Transmission Mains			
3	Storage Reservoir Works	N/A		
4	Distribution Network			
Total Carried to Grand Summary				

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.1: LUWAMBI IN BUDUDA DISTRICT

BILL No. 1 : ABSTRACTION WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>General Site Clearance</u>				
1	General site clearance, felling trees, grabbing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1		
	<u>Earthworks</u>				
2.1	Excavation to form river/ stream diversion towards the intake / abstraction structure in normal ground, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to receive hardcore fill.	m ³	35		
2.2	Ditto but for the Intake Structure	m ³	45		
2.3	Ditto but for the River Weir Structure	m ³	4		
	<u>Filling Structures</u>				
	<u>Filling to precast concrete sump structure by methods specified and to depths as shown in the drawings with the following materials: -</u>				
3.1	Imported rock/ hardcore fill, size 75 to 300mm hand packed or compacted by the arm of an excavator.	m ³	55		
3.2	Selected excavated material including topping with a 200mm thick layer of top/ vegetable soil.	m ³	44		
3.3	Imported murram.	m ³	18		
4	Single layer of geotextile laid to manufacturer's specifications	m ²	Rate Only		
	<u>Landscaping</u>				
5	Turfing for lawns inside fenced off compound, including filling with excavated topsoil and the preparation of surfaces at Intake Site.	m ²	840		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.1: LUWAMBI IN BUDUDA DISTRICT

BILL No. 1 : ABSTRACTION WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	IN-SITU CONCRETE				
	Provision and Placing of Concrete				
	Ordinary Design Mix Concrete				
	<u>Designed mix , concrete to BS 8500 and BS EN 206-1, with ordinary portland cement to BS 12, aggregate to BS 882 for the following structures: -</u>				
	Grade C15/10				
	Blinding				
6.1	50mm thick blinding concrete, for base slabs, toes, key and heel; grade C15, of the following thickness	m ³	1		
	Grade C25/10				
	Reinforced Concrete Base Slabs, Toe, Key and Heel				
6.2	200mm thick key and toe.	m ³	5		
6.3	200mm thick base and heel slabs.	m ³	5		
6.4	500/ 200mm thick reining wall/ weir stem.	m ³	19		
6.5	200mm thick sump wall.	m ³	41		
6.6	200mm thick top slab.	m ³	1		
	Formwork				
	Formwork-Fair Finish				
7.1	Fair Finish Plane Horizontal Plane fair finish horizontal formwork to the tops slab including charmfering and / or filleting of all exposed concrete corners.	m ²	5		
7.2	Fair Finish Plane Vertical Plane fair finish vertical and / or slightly sping formwork to walls including charmfering and / or filleting of all exposed concrete corners.	m ²	145		
7.3	Finishing of top surfaces Steel trowel finishing of top surfaces.	m ²	20		
	Reinforcement				
	Deformed High Yield Steel				
	<u>High yield square twisted bars to BS 4449 and of the following sizes</u>				
8.1	Nominal size, 12mm	t	2		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.1: LUWAMBI IN BUDUDA DISTRICT

BILL No. 1 : ABSTRACTION WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
8.2	Inserts DN 250 CI / ST flanged, puddled pipe insert pipe inserts projecting from two faces of the concrete wall and of the following sizes,excluding supply of pipe.	No.	2		
	PIPEWORK - FITTINGS AND VALVES Cast or Spum Iron Pipe Fittings.				
9.1	Flanged Reducers DN250 x 150mm	No.	1		
9.2	Flange Adaptors DN 150mm Maxi Type or similar wide range adaptor to fit pipe spigots, flanges to BS 4505, all to PN6.	No.	1		
	Strainers <u>Flanged outlet pipe strainer, to BS 4772, flanges to BS 4504, all to PN 10, cement mortar lined, and of the following sizes: -</u>				
9.3	DN 250 mm	No.	2		
9.4	End Caps DN250mm flanged end cap.	No.	1		
	Valves and Penstocks Gate Valves: Hand Operated				
	<u>All flanged CI gate valves to BS 5150 ,flanges to BS 4505 , all to PN 10 for operation by tee key, with extension spindle not exceeding 1.5 metres long, and of the following sizes:-</u>				
9.5	150 mm ND <u>Penstocks; hand operated including head stock and distance spindle, as specified in drawings of the following size: -</u>	No.	1		
9.6	300mm wide x 1000mm high <u>Staniless Steel.</u>	No.	2		

Total Carried to Collection

BILL No. 1 : ABSTRACTION WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	MISCELLANEOUS METAL WORK				
10.1	Ladders External galvanized mild steel ladder to BS 4211, galvernized to BS 729, complete andas shown in the drawings including fixing to precast concrete units..	m	8		
	Access Manhole Cover				

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.1: LUWAMBI IN BUDUDA DISTRICT

10.2	600 x 600mm clear opening painted mild steel cover and frame include fixing and locking arrangement.	No.	1		
	Valve Surface Boxes				
10.3	Valve surface box with lockable cover securely attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to a depth not exceeding 4.5 m.	No.	Rate Only		
	MISCELLANEOUS WORKS				
X1	450mm diameter reinforced concrete pipe/ culvert	m	2		
	Training of Operator's staff				
X2	Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
	Operation and Maintenance Manuals				
X3	Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
Total Carried to Collection					
BILL No. 1 : ABSTRACTION WORKS					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
Total Bill No. 1 Carried to Bill Summary					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.1: LUWAMBI IN BUDUDA DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing tree stumps and disposal of arising materials.	Item	1		
	PIPEWORKS - PIPES				
2	Steel Pipes				
	Galvanised steel pipes (Class B) with threaded joints, include unions/sockets, all to ISO 2531, of the following sizes.				
2.1	DN150mm, not in trenches;	m	3		
2.20	DN150mm, in trenches; depth not exceeding 1.5m.	m	3		
3	HDPE Pipes				
	HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m				
3.1	OD160mm HDPE PN10	m	Rate Only		
4	uPVC Pipes				
	uPVC pressure pipes to UNBS US 264: 2000 and DIN 8062 with integral rubber ring socket joints laid in trenches to depths not				
4.1	OD160 to PN 10	m	1,472		
	PIPEWORK - FITTINGS AND VALVES				
	Cast or Spun Iron Pipe Fittings				
5	Bends				
	Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizes				
5.1	DN150mm	No.	4		
	Steel pipe fittings; flanges to PN 16; in trenches not exceeding 1.5 m				
	Viking Johnson stepped couplings as Maxistep				
5.2	DN100 x OD100	No.	1		
5.3	DN150 x OD63	No.	1		
Total Carried to Collection					
BILL No. 2 : TRANSMISSION MAINS					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
5.3	Viking Johnson Flanged adaptors as Aquafast to PN16	No.	2		
5.4	DN75	No.	1		
5.5	DN100	No.	7		
	DN150	No.			

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.1: LUWAMBI IN BUDUDA DISTRICT

6	Cast or Spun Iron Pipe Fittings				
	Junctions and Branches				
	All flanged tee to BS 4346, flanges to BS 4504 ,all to PN6 and of the following sizes;				
6.1	DN150mm	No.	3		
6.2	DN150 x 50mm	No.	2		
6.3	DN150 x 100mm	No.	1		
	Tapers				
	All flanged concentric taper to BS4772, flanges to BS4504 all to PN6, cement mortar lined, and of the following sizes;				
6.4	DN125 x 50mm	No.	Rate Only		
6.5	DN125 x 65mm	No.	Rate Only		
6.6	DN125 x 75mm	No.	Rate Only		
6.7	DN150 x 50mm	No.	Rate Only		
6.8	DN150 x 65mm	No.	1		
6.9	DN150 x 75mm	No.	Rate Only		
6.10	DN150 x 100mm	No.	Rate Only		
7	Bulk Flow Meters				
	<u>Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as specified, all fittings, including a masonry chamber, and on the following main pipe sizes</u>				
7.1	DN150mm PN16	No.	1		
	<u>PN16 HDPE Compression fitting to DIN 8074/BS 5114</u>				
8	Equal Adapters				
8.1	OD90 female adapter	No.	Rate Only		
8.2	OD100 female adapter	No.	Rate Only		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.1: LUWAMBI IN BUDUDA DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
9	Valves and Penstocks				
	Air Valves				
	<u>Flanged CI double orifice air relief valve, DN50mm, as specified, flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified.</u>				
9.1	DN150mm	No.	2		
10	Washouts				
	<u>Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, union ball valve, flap valve, stone masonry outfall structure and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box to detail.</u>				
10.1	DN150mm	No.	2		
	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES				
	Other Chambers				
	<u>Masonry air valve chamber, complete as specified in the drawings, and of the following depths</u>				
	Depth not exceeding 1.5m	No.	1		
11	Valve Surface Boxes				
	<u>Valve surface box for DN100 - DN300 valves, with lockable cover securely attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to the following depths</u>				
11.1	Depth not exceeding 1.5m	No.	2		
	Reinstatement Roads				
	<u>Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes</u>				
11.2	Not exceeding DN300mm	m	24		
Total Carried to Collection					
BILL No. 2 : TRANSMISSION MAINS					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
12	Surrounds				
	<u>Pipe surrounds, of selected excavated granular material, for the following pipe sizes</u>				
12.1	Not exceeding DN200mm	m	Rate Only		
	<u>Pipe surrounds, of imported granular material, for the following pipe</u>				

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.1: LUWAMBI IN BUDUDA DISTRICT

12.2	Not exceeding DN200mm	m	40		
	<u>Pipe surrounds, of mass concrete, for the following pipe sizes</u>				
12.3	Not exceeding DN200mm	m	35		
13	<u>Concrete Stools and Thrust Blocks</u>				
	<u>Thrust Blocks</u>				
	<u>Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m³, for the following pipe sizes</u>				
13.1	Diameter not exceeding DN200mm	No.	4		
	<u>Other Pipework Ancillaries</u>				
	<u>Marker Posts</u>				
14	Marker posts for pipes, gate valves, air valves, washouts	nr	47		
Total Carried to Collection					
BILL No. 2 : TRANSMISSION MAINS					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 2 Collection				
	Page 6				
	Page 7				
	Page 8				
	Page 9				
Total Bill No. 2 Carried to Bill Summary					
BILL No. 4 : DISTRIBUTION NETWORK					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>DEMOLITION AND SITE CLEARANCE</u>				
	<u>General Site Clearance</u>				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing tree stumps and disposal of arising materials.	Item	1		
	<u>PIPEWORK-PIPES</u>				
2	<u>Plastic Pressure Pipes- Distribution</u>				
	<u>HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in trench to the following depths not exceeding 1.5m</u>				
2.1	OD75mm PN10	m	432		
2.2	OD90mm PN10	m	80		
2.3	OD110mm PN10	m	172		
	<u>PIPEWORK - FITTINGS AND VALVES</u>				

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.1: LUWAMBI IN BUDUDA DISTRICT

PN10 HDPE Compression fitting to DIN 8074/BS 5114					
<u>Plastic Pipe Fittings</u>					
3	<u>Equal tees</u>				
3.1	OD63mm	No.	1		
3.2	OD110mm	No.	1		
<u>Unequal tees</u>					
3.3	OD75 x 63mm	No.	6		
3.4	OD90 x 63mm	No.	5		
3.5	OD110 x 63mm	No.	2		
3.60	OD110 x 75mm	No.	3		
PN10 HDPE Compression fitting to DIN 8074/BS 5114					
<u>Plastic Pipe Fittings</u>					
4	<u>End caps</u>				
4.1	OD63mm	No.	13		
<u>Cast or Spun Iron Pipe Fittings</u>					
5	<u>Bends</u>				
<u>Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizes</u>					
5.1	DN75mm	No.	2		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.1: LUWAMBI IN BUDUDA DISTRICT

BILL No. 4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Steel pipe fittings; flanges to PN 16; in trenches not exceeding 1.5 m				
	<u>Viking Johnson stepped adaptors as Maxistep</u>				
6.1	DN100 x OD63	No.	Rate Only		
6.2	DN100 x OD 75	No.	Rate Only		
6.3	DN100 x OD100	No.	Rate Only		
6.4	DN150 x OD100	No.	Rate Only		
	<u>Viking Johnson Flanged adaptors as Aquafast.</u>				
6.5	DN50	No.	2		
6.6	DN65	No.	Rate Only		
6.7	DN75	No.	2		
6.8	DN100	No.	Rate Only		
6.9	DN125	No.	Rate Only		
6.10	DN150	No.	3		
	Cast or Spun Iron Pipe Fittings				
7	<i>Junctions and Branches</i>				
	All flanged tee to BS 4346, flanges to BS 4504 ,all to PN6 and of the following sizes;				
7.1	DN125mm	No.	2		
7.2	DN150mm	No.	3		
	<i>Tapers</i>				
	All flanged concentric taper to BS4772, flanges to BS4504 all to PN6, cement mortar lined, and of the following sizes;				
7.3	DN125 x 50mm	No.	Rate Only		
7.4	DN125 x 65mm	No.	Rate Only		
	<u>PN10 HDPE Compression fitting to DIN 8074/BS 5114</u>				
	<u>Plastic Pipe Fittings</u>				
8	<u>Reducing Couplers/ Unions</u>				
8.1	OD90 x 63mm	No.	3		
8.2	OD90 x 75mm	No.	1		
8.3	OD110 x 63mm	No.	2		
8.4	OD110 x 90mm	No.	1		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.1: LUWAMBI IN BUDUDA DISTRICT

BILL No. 4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
9	Valves and Penstocks Air Valve <u>Flanged CI double orifice air relief valve, DN50mm, as specified, flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified.</u>				
9.1	OD63mm	No.	Rate Only		
9.2	OD75mm	No.	Rate Only		
10	Washouts <u>Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, PVC union ball valve, flap valve and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box and stone masonry outfall structure to detail as per</u>				
10.1	DN50mm	No.	Rate Only		
10.2	DN65mm	No.	Rate Only		
11	Farm Gate Connections Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: -				
11.1	DN50mm	No.	13		
	Other Pipework Ancillaries Marker Posts Marker posts for pipes, gate valves, air valves, washouts	No.	19		
	Reinstatement Roads <u>Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes</u>				
13	Not exceeding DN300mm	m	24		

Total Carried to Collection

BILL No. 4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 4 Collection				
	Page 10				
	Page 11				

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.1: LUWAMBI IN BUDUDA DISTRICT

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Total Bill No. 4.4 Carried to Bill Summary					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.2: NALWANZA IN BUDUDA DISTRICT

BILL SUMMARY

Bill No.	Description			Amount (UGx.)
	WORK ITEMS			
1	Abstraction Works			
2	Transmission Mains			
3	Storage Reservoir Works	N/A		
4	Distribution Network			
Total Carried to Grand Summary				

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.2: NALWANZA IN BUDUDA DISTRICT

BILL No. 1 : ABSTRACTION WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>General Site Clearance</u>				
1	General site clearance, felling trees, grabbing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1		
	<u>Earthworks</u>				
2.1	Excavation to form river/ stream diversion towards the intake / abstraction structure in normal ground, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to receive hardcore fill.	m ³	35		
2.2	Ditto but for the Intake Structure	m ³	45		
2.3	Ditto but for the River Weir Structure	m ³	4		
	<u>Filling Structures</u>				
	<u>Filling to precast concrete sump structure by methods specified and to depths as shown in the drawings with the following materials: -</u>				
3.1	Imported rock/ hardcore fill, size 75 to 300mm hand packed or compacted by the arm of an excavator.	m ³	55		
3.2	Selected excavated material including topping with a 200mm thick layer of top/ vegetable soil.	m ³	44		
3.3	Imported murrum.	m ³	18		
4	Single layer of geotextile laid to manufacturer's specifications	m ²	0		
	<u>Landscaping</u>				
5	Turfing for lawns inside fenced off compound, including filling with excavated topsoil and the preparation of surfaces at Intake Site.	m ²	840		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.2: NALWANZA IN BUDUDA DISTRICT

BILL No. 1 : ABSTRACTION WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	IN-SITU CONCRETE				
	Provision and Placing of Concrete				
	Ordinary Design Mix Concrete				
	<u>Designed mix . concrete to BS 8500 and BS EN 206-1, with ordinary portland cement to BS 12, aggregate to BS 882 for the following structures: -</u>				
	Grade C15/10				
	Blinding				
6.1	50mm thick blinding concrete, for base slabs, toes, key and heel; grade C15, of the following thickness	m ³	1		
	Grade C25/10				
	Reinforced Concrete Base Slabs, Toe, Key and Heel				
6.2	200mm thick key and toe.	m ³	5		
6.3	200mm thick base and heel slabs.	m ³	5		
6.4	500/ 200mm thick reaining wall/ weir stem.	m ³	19		
6.5	200mm thick sump wall.	m ³	41		
6.6	200mm thick top slab.	m ³	1		
	Formwork				
	Formwork-Fair Finish				
7.1	<i>Fair Finish Plane Horizontal</i> Plane fair finish horizontal formwork to the tops slab including charmfering and / or filleting of all exposed concrete corners.	m ²	5		
7.2	<i>Fair Finish Plane Vertical</i> Plane fair finish vertical and / or slightly slping formwork to walls including charmfering and / or filleting of all exposed concrete corners.	m ²	145		
7.3	<i>Finishing of top surfaces</i> Steel trowel finishing of top surfaces.	m ²	20		
	Reinforcement				
	<i>Deformed High Yield Steel</i>				
	<u>High yield square twisted bars to BS 4449 and of the following sizes</u>				
8.1	Nominal size, 12mm	t	2		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.2: NALWANZA IN BUDUDA DISTRICT

BILL No. 1 : ABSTRACTION WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
8.2	Inserts DN 250 CI / ST flanged, puddled pipe insert pipe inserts projecting from two faces of the concrete wall and of the following sizes,excluding supply of pipe.	No.	2		
	PIPEWORK - FITTINGS AND VALVES Cast or Spum Iron Pipe Fittings.				
9.1	Flanged Reducers DN250 x 150mm	No.	1		
9.2	Flange Adaptors DN 150mm Maxi Type or similar wide range adaptor to fit pipe spigots, flanges to BS 4505, all to PN6.	No.	1		
	Strainers <u>Flanged outlet pipe strainer, to BS 4772, flanges to BS 4504, all to PN 10, cement mortar lined, and of the following sizes: -</u>				
9.3	DN 250 mm	No.	2		
9.4	End Caps DN250mm flanged end cap.	No.	1		
	Valves and Penstocks Gate Valves: Hand Operated <u>All flanged CI gate valves to BS 5150 ,flanges to BS 4505 , all to PN 10 for operation by tee key, with extension spindle not exceeding 1.5 metres long, and of the following sizes:-</u>				
9.5	150 mm ND <u>Penstocks; hand operated including head stock and distance spindle, as specified in drawings of the following size: -</u>	No.	1		
9.6	300mm wide x 1000mm high <u>Staniless Steel.</u>	No.	2		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.2: NALWANZA IN BUDUDA DISTRICT

BILL No. 1 : ABSTRACTION WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	MISCELLANEOUS METAL WORK				
	Ladders				
10.1	External galvanized mild steel ladder to BS 4211, galvanized to BS 729, complete and as shown in the drawings including fixing to precast concrete units..	m	8		
	Access Manhole Cover				
10.2	600 x 600mm clear opening painted mild steel cover and frame include fixing and locking arrangement.	No.	1		
	Valve Surface Boxes				
10.3	Valve surface box with lockable cover securely attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to a depth not exceeding 4.5 m.	No.	0		
	MISCELLANEOUS WORKS				
X1	450mm diameter reinforced concrete pipe/ culvert	m	2		
	Training of Operator's staff				
X2	Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
	Operation and Maintenance Manuals				
X3	Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
Total Carried to Collection					

BILL No. 1 : ABSTRACTION WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
Total Bill No. 1 Carried to Bill Summary					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.2: NALWANZA IN BUDUDA DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>DEMOLITION AND SITE CLEARANCE</u>				
	<u>General Site Clearance</u>				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing tree stumps and disposal of arising materials.	Item	1		
	<u>PIPEWORKS - PIPES</u>				
2	<u>Steel Pipes</u>				
	Galvanised steel pipes (Class B) with threaded joints, include unions/sockets, all to ISO 2531, of the following sizes.				
2.1	DN150mm, not in trenches;	m	3		
2.2	DN150mm, in trenches; depth not exceeding 1.5m.	m	3		
3	<u>HDPE Pipes</u>				
	HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m				
3.1	OD160mm HDPE PN10	m	Rate Only		
4	<u>uPVC Pipes</u>				
	uPVC pressure pipes to UNBS US 264: 2000 and DIN 8062 with integral rubber ring socket joints laid in trenches to depths not				
4.1	OD110 to PN 16	m	Rate Only		
4.2	OD125 to PN 16	m	Rate Only		
4.3	OD140 to PN 16	m	Rate Only		
4.4	OD160 to PN 10	m	1,304		
	<u>PIPEWORK - FITTINGS AND VALVES</u>				
	<u>Cast or Spun Iron Pipe Fittings</u>				
5	<u>Bends</u>				
	Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizes				
5.1	DN150mm	No.	4		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.2: NALWANZA IN BUDUDA DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Steel pipe fittings; flanges to PN 16; in trenches not exceeding 1.5 m				
5.2	<u>Viking Johnson stepped couplings as Maxistep</u> DN150 x OD100	No.			
5.3	<u>Viking Johnson Flanged adaptors as Aquafast to PN16</u> DN50	No.	2		
5.4	DN100	No.	7		
5.5	DN150	No.	6		
6	Cast or Spun Iron Pipe Fittings <i>Junctions and Branches</i> All flanged tee to BS 4346, flanges to BS 4504 ,all to PN6 and of the following sizes;				
6.1	DN100mm	No.	1		
6.2	DN150mm	No.	3		
	<i>Tapers</i> All flanged concentric taper to BS4772, flanges to BS4504 all to PN6, cement mortar lined, and of the following sizes;				
	<i>Tapers Cont'd</i>				
6.3	DN150 x 50mm	No.	1		
6.4	DN150 x 65mm	No.	Rate Only		
6.5	DN150 x 75mm	No.	Rate Only		
7	<i>Bulk Flow Meters</i> <u>Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as specified, all fittings, including a masonry chamber, and on the following main pipe sizes</u>				
7.1	DN150mm PN10	No.	1		
	<u>PN16 HDPE Compression fitting to DIN 8074/BS 5114</u>				
8	Equal Adapters				
8.1	OD90 female adapter	No.	Rate Only		
8.2	OD100 female adapter	No.	Rate Only		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.2: NALWANZA IN BUDUDA DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
9	<u>Valves and Penstocks</u> <u>Air Valves</u> <u>Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified.</u>				
9.1	DN125mm	No.	Rate Only		
9.2	DN150mm	No.	1		
10	<u>Washouts</u> <u>Washout as specified in the drawings, complete with plastic compression pipe fittings: tee, drainage pipes, union ball valve, flap valve, stone masonry outfall structure and all other fittings necessary to make the complete installation on pipes of the following sizes: all to PN10 including valve surface box to detail.</u>				
10.1	DN125mm	No.	Rate Only		
10.2	DN150mm	No.	2		
	<u>PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES</u> <u>Other Chambers</u> <u>Masonry air valve chamber, complete as specified in the drawings, and of the following depths</u> Depth not exceeding 1.5m	No.	1		
11	<u>Valve Surface Boxes</u> <u>Valve surface box for DN100 - DN300 valves, with lockable cover securely attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to the following depths</u>				
11.1	Depth not exceeding 1.5m	No.	2		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.2: NALWANZA IN BUDUDA DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>Reinstatement</u>				
	<u>Roads</u>				
	<u>Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes</u>				
11.2	Not exceeding DN300mm	m	12		
12	<u>Surrounds</u>				
	<u>Pipe surrounds, of selected excavated granular material, for the following pipe sizes</u>				
12.1	Not exceeding DN200mm	m	Rate Only		
	<u>Pipe surrounds, of imported granular material, for the following pipe</u>				
12.2	Not exceeding DN200mm	m	75		
	<u>Pipe surrounds, of mass concrete, for the following pipe sizes</u>				
12.3	Not exceeding DN200mm	m	85		
13	<u>Concrete Stools and Thrust Blocks</u>				
	<u>Thrust Blocks</u>				
	<u>Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m³, for the following pipe sizes</u>				
13.1	Diameter not exceeding DN200mm	No.	Rate Only		
	<u>Other Pipework Ancillaries</u>				
	<u>Marker Posts</u>				
14	Marker posts for pipes, gate valves, air valves, washouts	nr	54		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.2: NALWANZA IN BUDUDA DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<p>Bill No. 2 Collection</p> <p>Page 6</p> <p>Page 7</p> <p>Page 8</p> <p>Page 9</p>				
Total Bill No. 2 Carried to Bill Summary					0

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.2: NALWANZA IN BUDUDA DISTRICT

BILL No. 4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	<u>General Site Clearance</u>				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing tree stumps and disposal of arising materials.	Item	1		
	PIPEWORK-PIPES				
2	<u>Plastic Pressure Pipes- Distribution</u> HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in trench to the following depths not exceeding 1.5m				
2.1	OD63mm PN10	m	360		
2.2	OD90mm PN10	m	Rate Only		
2.3	OD110mm PN10	m	295		
	PIPEWORK - FITTINGS AND VALVES				
	<u>PN10 HDPE Compression fitting to DIN 8074/BS 5114</u>				
	<u>Plastic Pipe Fittings</u>				
3	<u>Equal tees</u>				
3.1	OD110mm	No.	2		
	<u>Unequal tees</u>				
3.2	OD110 x 63mm	No.	1		
3.30	OD110 x 75mm	No.	1		
	<u>PN10 HDPE Compression fitting to DIN 8074/BS 5114</u>				
	<u>Plastic Pipe Fittings</u>				
4	<u>End caps</u>				
4.1	OD63mm	No.	8		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.2: NALWANZA IN BUDUDA DISTRICT

BILL No. 4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
5	<u>Cast or Spun Iron Pipe Fittings</u> <u>Bends</u> Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizes				
5.1	DN50mm	No.	2		
	Steel pipe fittings; flanges to PN 16; in trenches not exceeding 1.5 m <u>Viking Johnson stepped adaptors as Maxistep</u>				
6.1	DN100 x 65	No.	Rate Only		
6.2	DN100 x 75	No.	Rate Only		
	<u>Viking Johnson Flanged adaptors as Aquafast.</u>				
6.3	DN65	No.	Rate Only		
6.4	DN75	No.	Rate Only		
6.4	DN100	No.	Rate Only		
7	<u>Cast or Spun Iron Pipe Fittings</u> <u>Junctions and Branches</u> All flanged tee to BS 4346, flanges to BS 4504 ,all to PN6 and of the following sizes;				
7.1	DN125mm	No.	Rate Only		
	<u>Tapers</u> All flanged concentric taper to BS4772, flanges to BS4504 all to PN6, cement mortar lined, and of the following sizes;				
7.2	DN125 x 50mm	No.	Rate Only		
7.3	DN125 x 65mm	No.	Rate Only		
	<u>PN10 HDPE Compression fitting to DIN 8074/BS 5114</u> <u>Plastic Pipe Fittings</u>				
8	<u>Reducing Couplers/ Unions</u>				
8.1	OD110 x 63mm	No.	Rate Only		
8.2	OD110 x 75mm	No.	1		
8.3	OD110 x 90mm	No.	Rate Only		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.2: NALWANZA IN BUDUDA DISTRICT

BILL No. 4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>Valves and Penstocks</u>				
9	<u>Air Valve</u> <u>Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified.</u>				
9.1	OD63mm	No.	Rate Only		
9.2	OD75mm	No.	Rate Only		
9.3	OD90mm	No.	Rate Only		
9.4	OD110mm	No.	Rate Only		
10	<u>Washouts</u> <u>Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, PVC union ball valve, flap valve and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box and stone masonry outfall structure to detail as per Drawing</u>				
10.1	DN50mm	No.	Rate Only		
10.2	DN65mm	No.	Rate Only		
10.3	DN75mm	No.	Rate Only		
10.4	DN100mm	No.	Rate Only		
11	<u>Farm Gate Connections</u> Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connecor pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: -				
11.1	DN50mm	No.	8		
	<u>Other Pipework Ancillaries</u>				
	<u>Marker Posts</u>				
12	Marker posts for pipes, gate valves, air valves, washouts	nr	20		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.2: NALWANZA IN BUDUDA DISTRICT

BILL No. 4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
13	<u>Reinstatement Roads</u>	m	24		
	Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes				
	Not exceeding DN300mm				

Total Carried to Collection

BILL No. 4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<p align="center">Bill No. 4 Collection</p> <p align="center">Page 11</p> <p align="center">Page 12</p> <p align="center">Page 13</p> <p align="center">Page 14</p>				

Total Bill No. 4 Carried to Bill Summary

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.3: IYOLWA IN TORORO DISTRICT

BILL SUMMARY

Bill No.	Description			Amount (UGx.)
	WORK ITEMS			
1	Abstraction and Electromechanical Works			
2	Transmission Mains			
3	Storage Reservoir Works			
4	Distribution Network			
Total Carried to Grand Summary				

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.3: IYOLWA IN TORORO DISTRICT

BILL No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>General Site Clearance</u>				
1	General site clearance, felling trees, grabbing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1		
	<u>Earthworks</u>				
2	Excavation to form trapezoidal reservoir in soft ground, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to receive hardcore fill.	m ³	158		
	<u>Filling Structures</u>				
	<u>Filling to precast concrete sump structure by methods specified and to depths as shown in the drawings with the following materials: -</u>				
3.1	Imported rock/ hardcore fill, size 75 to 300mm hand packed or compacted by the arm of an excavator.	m ³	115		
3.2	Selected excavated material including topping with a 200mm thick layer of top/ vegetable soil.	m ³	45		
4	Double layer of woven polythene sheet laid to approval.	m ²	60.0		
	<u>Landscaping</u>				
5	Turfing for lawns inside fenced off compound, including filling with excavated topsoil and the preparation of surfaces; 240m ² at Intake Site and 800m ² at Pump Station.	m ²	1,050		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.3: IYOLWA IN TORORO DISTRICT

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>ELECTRO-MECHANICAL WORKS</u>				
	<u>Solar Pumping System</u> (based on 550Wp panels; bidder to adjust numbers to match rating of panel offered)				
ME1	7.5kW Submersible Pump Set with 11.0kW Pumping Inverter with Data Module, rated flow Q = 20 m ³ /hr., rated head H = 55m total head; set to not more than 5m below ground including Dry- run protection, Motor and Pump End.	No.	1		
ME2	2x17No. x 550Wp panels solar array to provide 18.7kW power to the pump system complete including wiring.	Item	1		
ME3	Mild steel welded structure for holding solar PV panels at 15° tilt angle and suitable for a 2x17No. x 550Wp panels Solar Aarray in Item 2 above as per drawings, including foundations, vandal proofing mounting to the Engineer's approval	Sum	1		
ME4	PV Disconnect 1000-40-2	No.	1		
ME5	PV Protect 1000-15, SPD x 1 on incoming solar PV.	No.	1		
ME6	Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc.	Item	1		
ME7	PV Combiner	No.	1		
ME7a	Pressure Switch and Gauge - P5/8	No.	1		
ME8	Sinewave filter - SWAP0017D.	No.	1		
ME9	10mm ² Borehole drop cable,	m	5		
ME10	10mm ² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding.	m	200		
ME10a	6mm ² UV Single Cable.	m	60		
ME11	Wire kit array from solar array to controller with MC4 connectors	No.	2		
ME11a	Adapter box	No.	1		
ME12	Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4.	Item	1		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.3: IYOLWA IN TORORO DISTRICT

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>Earthing and Lightening Protection</u>				
ME13	Earthing at solar array and borehole installation by 16mm ² PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME14	Lightning Protection at solar array and borehole installation consisting of 25x3mm copper tape, air terminal, test block and earth electrode in a manhole and all accessories.	Sum	1		
ME15	60W Solar security light and battery complete with 6m steel pole and lockable battery box	No.	5		
	<u>Alarm System</u>				
ME16	GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array.	Item	1		
ME17	GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor for the pump protection as instructed by the Engineer.	Item	1		
	<u>MISCELLANEOUS WORKS</u>				
	<u>Pump Protection System</u>				
X1	Vertical pipe pump stilling tube/ anti-vandal protection sleeve including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/002a or OIS/ABS/003, including 1.5x1.5x0.3m support base.	No.	1		
	<u>Kerbs</u>				
	<u>Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the following alignment: -</u>				
X2	Straight or curved to a radius exceeding 12 m	m	70		
X3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet.	m ²	220		
X4	450mm diameter reinforced concrete pipe/ culvert	m	0		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.3: IYOLWA IN TORORO DISTRICT

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
X5	Pump House Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.	Sum	1		
X6a	Fences Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Intake Site, <u>including special erection methods in "marshy grounds"</u> to the Engineer's approval.	m	80		
X6b	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Pumping Station Site.	m	120		
X7	Gates Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	2		
X8	Training of Operator's staff Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
X9	Operation and Maintenance Manuals Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
XX	Horizontal pump installation option out of flanged/ sealed end HDPE culvert pipe mounted on fabricated GI support structure including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/005.	Item	Rate Only		

Total Carried to Collection

BILL No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description				Amount (UGx.)
	Bill No. 1 Collection Page 2 Page 3 Page 4 Page 5				
Total Bill No. 1 Carried to Bill Summary					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.3: IYOLWA IN TORORO DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>DEMOLITION AND SITE CLEARANCE</u>				
	<u>General Site Clearance</u>				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing tree stumps and disposal of arising materials.	Item	1		
	<u>PIPEWORKS - PIPES</u>				
2	<u>Steel Pipes</u> Galvanized iron pipes (Class B) with threaded joints, include unions/sockets, all to ISO 2531 of the following sizes;				
2.6	DN75mm, in trenches; depths not exceeding 1.5m	m	12		
3	<u>HDPE Pipes</u> HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m				
3.3	OD90mm HDPE PN10	m	1,240		
4	<u>uPVC Pipes</u> uPVC pressure pipes to UNBS US 264: 2000 and DIN 8062 with integral rubber ring socket joints laid in trenches				
4.1	OD110 to PN 10 Depth not exceeding 1.5m	m	Rate Only		
	<u>PIPEWORK - FITTINGS AND VALVES</u>				
	<u>Cast or Spun Iron Pipe Fittings</u>				
5	<u>Bends</u> Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizes				
5.4	DN75mm	No.	4		
6	<u>Bulk Flow Meters</u> Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as specified, all fittings to PN10 including a masonry chamber, and on the following main pipe sizes				
6.2	DN75mm PN10	No.	1		
Total Carried to Collection					

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>PN16 HDPE Compression fitting to DIN 8074/BS 5114</u>				
7	<u>Equal Adapters</u>				
7.1	OD90 female adapter	No.	2		

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.3: IYOLWA IN TORORO DISTRICT

8	<u>Valves and Penstocks</u>				
	<u>Air Valves</u>				
	<u>Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified.</u>				
8.4	DN75mm	No.	1		
9	<u>Washouts</u>				
	<u>Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, union ball valve, flap valve, stone masonry outfall structure and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box to detail.</u>				
9.2	DN75mm	No.	1		
	<u>PIPEWORK-MANHOLE AND PIPEWORK ANCILLARIES</u>				
	<u>Other Chambers</u>				
	<u>Masonry air valve chamber, complete as specified in the drawings, and of the following depths</u>				
10a	Depth not exceeding 1.5m	No.	1		
	<u>Valve Surface Boxes</u>				
	<u>Valve surface box for DN100 - DN300 valves, with lockable cover securely attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to the following depths</u>				
10b	Depth not exceeding 1.5m	No.	1		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.3: IYOLWA IN TORORO DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>Reinstatement</u>				
	<u>Roads</u>				
	Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes				
11	Not exceeding DN300mm	m	12		
	<u>Surrounds</u>				
	Pipe surrounds, of selected excavated granular material, for the following pipe sizes				
12.1	Not exceeding DN200mm	m	30		
	Pipe surrounds, of imported granular material, for the following pipe				
12.2	Not exceeding DN200mm	m	50		
	Pipe surrounds, of mass concrete, for the following pipe sizes				
12.3	Not exceeding DN200mm	m	60		
13	<u>Concrete Stools and Thrust Blocks</u>				
	<u>Thrust Blocks</u>				
	Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m³, for the following pipe sizes				
13.1	Diameter not exceeding DN200mm	No.	4		
	<u>Other Pipework Ancillaries</u>				
	<u>Marker Posts</u>				
14	Marker posts for pipes, gate valves, air valves, washouts	nr	44		

Total Carried to Collection

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 2 Collection				
	Page 6				

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.3: IYOLWA IN TORORO DISTRICT

	Page 7				
	Page 8				
Total Bill No. 2 Carried to Bill Summary					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.3: IYOLWA IN TORORO DISTRICT

BILL No. 4.3 : STORAGE RESERVOIR WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>DEMOLITION AND SITE CLEARANCE</u>				
	<u>General Site Clearance</u>				
1	General site clearance including trees, stumps and disposal of arising materials.	Item	1		
2	<u>Reservoir</u>				
	Erect a welded steel tower for reservoir support complete, include foundations, columns, beams, access ladders, plates, braces, walkway/ guardrail, base plates, anchor bolts, nuts, washers, etc, painting and finishes; complete as specified and detailed in the drawings , of the following height and reservoir capacities.				
2.4	Height; 9.0m for (4No. x 10m ³ Tanks)	No.	1		
3	<u>Plastic Tanks</u>				
	Supply and install a vertical cylindrical Rotational Moulded Polyethylene Water Storage Tank to DUS 1560: 2013 as manufactured by Ms Gentex Ltd. / Crest Tanks or any other approved complete with a lockable access man ways, inlet/ riser, ball float valve, overflow with insect screen, float type water level indicator and outlet/ down pipe with a strainer, washout and overflow connection, including interconnecting pipe work and fittings, as detailed in the drawings, supply specifications and of the following capacity.				
3.1	10m ³	No.	4		
4	<u>150-200 micron union/ compresion type clear uPVC Y- Screen Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement screen element and seal ring :-</u>				
4.2	DN75mm, PN6	No.	1		
5	<u>150-200 micron union/ compresion type clear uPVC Y- Disc Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement disk element and seal ring :-</u>				
	[OPTIONAL]				
5.2	DN75mm, PN10	No.	1		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.3: IYOLWA IN TORORO DISTRICT

BILL No. 3 : STORAGE RESERVOIR WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	<u>Landscaping and Walkways</u>				
6.1	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	150		
6.2	500 x 500 x 50mm precast concrete paving slabs laid "Space out Stone method" between the gate, pump house and solar array in one raw, laid onto and including 200mm thick murram fill.	No.	Rate Only		
7	<u>Fences</u>				
7.1	Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m.	m	60		
	<u>Gates</u>				
7.2	Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	1		
	Provision and Placing of Concrete <i>Ordinary Designed Mix Concrete</i>				
8	<u>Designed mix concrete, to BS 5328, with ordinary portland cement to BS 12 , aggregate to BS882 , for 10mm aggregate sizes and the following grades:</u>				
8.1	Grade C15	m ³	2		

Total Carried to Collection

BILL No. 3 : STORAGE RESERVOIR WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 3 Collection				
	Page 10				
	Page 11				

Total Bill No. 3 Carried to Bill Summary

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.3: IYOLWA IN TORORO DISTRICT

BILL No.4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing tree stumps and disposal of arising materials.	Item	1		
	PIPEWORK-PIPES				
2	Plastic Pressure Pipes- Distribution HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in trench to the following depths not exceeding 1.5m				
2.3	OD90mm PN6	m	140		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
3	Equal tees				
3.2	OD90mm	No.	1		
	Unequal tees				
3.7	OD90 x 63mm	No.	1		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
4	Couplers				
4.2	OD90mm	No.	Rate Only		
4.3	OD75mm	No.	Rate Only		
4.4	OD63mm	No.	Rate Only		
5	End caps				
5.1	OD110mm	No.	Rate Only		
5.2	OD90mm	No.	Rate Only		
5.3	OD75mm	No.	Rate Only		
5.4	OD63mm	No.	1		
5.5	OD50mm	No.	Rate Only		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.3: IYOLWA IN TORORO DISTRICT

BILL No.4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	<u>Valves and Penstocks</u>				
	<u>Air Vaves</u>				
	Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified.				
6.2	OD90mm	No.	Rate Only		
6.3	OD75mm	No.	Rate Only		
7	<u>Washouts</u>				
	Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, PVC union ball valve, flap valve and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box and stone masonry outfall structure to detail as per Drawing				
7.2	DN75mm	No.	Rate Only		
7.3	DN65mm	No.	Rate Only		
8	<u>Farm Gate Connections</u>				
	Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: -				
8.4	DN50mm	No.	1		
	<u>Other Pipework Ancillaries</u>				
	<u>Marker Posts</u>				
9	Marker posts for pipes, gate valves, air valves, washouts	nr	Rate Only		
	<u>Reinstatement</u>				
	<u>Roads</u>				
	Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes				
10	Not exceeding DN300mm	m	Rate Only		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.3: IYOLWA IN TORORO DISTRICT

BILL No. 4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<p>Bill No. 4 Collection</p> <p>Page 12</p> <p>Page 13</p>				
Total Bill No. 4 Carried to Bill Summary					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.4: MUKUJU IN TORORO DISTRICT

BILL SUMMARY

Bill No.	Description	Amount (UGx.)
	WORK ITEMS	
1	Abstraction and Electromechanical Works	
2	Transmission Mains	
3	Storage Reservoir Works	
4	Distribution Network	
Total Carried to Grand Summary		

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.4: MUKUJU IN TORORO DISTRICT

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>General Site Clearance</u>				
1	General site clearance, felling trees, grabbing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1		
	<u>Landscaping</u>				
2	Turfing for lawns inside fenced off compound, including filling with excavated topsoil and the preparation of surfaces; 240m ² at Intake Site and 800m ² at Pump Station.	m ²	1,050		
3	Reinforced concrete pipe support to detail as per Drawings.	No.	2		
	<u>MISCELLANEOUS METAL WORK</u>				
	<u>Pump Protection System</u>				
4.1	Diagonal pipe sleeve pump anti-vandal protection structure to detail as per Drawing No. OIS/NUC/SD/010.	Item	1		
4.2	Purpose -made pipe support structure made of welded GI pipes to detail as per Drawing No. OIS/NUC/SD/010.	Item	1		
	<u>ELECTRO-MECHANICAL WORKS</u>				
	<u>Solar Pumping System</u> (based on 550Wp panels; bidder to adjust numbers to match rating of panel offered)				
ME1	7.5kW Submersible Pump Set with 11.0kW Pumping Inverter with Data Module, rated flow Q = 20 m ³ /hr., rated head H = 75m total head; set to not more than <u>5m</u> below ground including Dry- run protection, Motor and Pump End.	No.	1		
ME2	2x17No. x 550Wp panels solar array to provide 18.7kW power to the pump system complete including wiring.	Item	1		
ME3	Mild steel welded structure for holding solar PV panels at 15° tilt angle and suitable for a 2x17No. x 550Wp panels Solar Aarray in Item 2 above as per drawings, including foundations, vandal proofing mounting to the Engineer's approval	Sum	1		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.4: MUKUJU IN TORORO DISTRICT

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
ME4	PV Disconnect 1000-40-2	No.	1		
ME5	PV Protect 1000-15, SPD x 1 on incoming solar PV.	No.	1		
ME6	Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc.	Item	1		
ME7	PV Combiner	No.	1		
ME7a	Pressure Switch and Gauge - P5/8	No.	1		
ME8	Sinewave filter - SWAP0017D.	No.	1		
ME9	16mm ² Borehole drop cable,	m	5		
ME10	16mm ² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding.	m	100		
ME10a	6mm ² UV Single Cable.	m	60		
ME11	Wire kit array from solar array to controller with MC4 connectors	No.	2		
ME11a	Adapter box	No.	1		
ME12	Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4.	Item	1		
	<u>Earthing and Lightening Protection</u>				
ME13	Earthing at solar array and borehole installation by 16mm ² PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME14	Lightning Protection at solar array and borehole installation consisting of 25x3mm copper tape, air terminal, test block and earth electrode in a manhole and all accessories.	Sum	1		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.4: MUKUJU IN TORORO DISTRICT

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
ME15	60W Solar security light and battery complete with 6m steel pole and lockable battery box	No.	5		
	Alarm System				
ME16	GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array.	Item	1		
ME17	GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor for the pump protection as instructed by the Engineer.	Item	1		
	MISCELLANEOUS WORKS				
	Pump Protection System				
X1	Diagonal pipe sleeve pump anti-vandal protection including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/004.	No.	1		
	Kerbs				
	<u>Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the following alignment: -</u>				
X2	Straight or curved to a radius exceeding 12 m	m	70		
X3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet.	m ²	220		
X4	450mm diameter reinforced concrete pipe/ culvert	m	0		
	Pump House				
X5	Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.	Sum	1		
	Fences				
X6a	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Intake Site, including special erection methods in "marshy grounds" to the Engineer's approval.	m	80		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.4: MUKUJU IN TORORO DISTRICT

BILL No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS					
Item No.	Description				Amount (UGx.)
X6b	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Pumping Station Site.	m	120		
	<u>Gates</u>				
X7	Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	2		
	<u>Training of Operator's staff</u>				
X8	Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
	<u>Operation and Maintenance Manuals</u>				
X9	Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
XX	Horizontal pump installation option out of flanged/ sealed end HDPE culvert pipe mounted on fabricated GI support structure including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/005.	Item	Rate Only		
Total Carried to Collection					
BILL No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS					
Item No.	Description				Amount (UGx.)
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
Total Bill No. 1 Carried to Bill Summary					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.4: MUKUJU IN TORORO DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>DEMOLITION AND SITE CLEARANCE</u>				
	<u>General Site Clearance</u>				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing tree stumps and disposal of arising materials.	Item	1		
	<u>PIPEWORKS - PIPES</u>				
2	<u>Steel Pipes</u>				
	unions/sockets, all to ISO 2531 of the following sizes;				
2.1	DN75mm, not in trenches;	m	Rate Only		
2.2	DN75mm, in trenches; depths not exceeding 1.5m	m	12		
3	<u>HDPE Pipes</u>				
	HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m				
3.1	OD75mm HDPE PN10	m	1,055		
	<u>PIPEWORK - FITTINGS AND VALVES</u>				
	<u>Cast or Spun Iron Pipe Fittings</u>				
5	<u>Bends</u>				
	Galvanized iron threaded socket 45° bends, to BS EN 10242:1995, all to PN 10, and of the following sizes				
5.1	DN75mm	No.	4		
6	<u>Bulk Flow Meters</u>				
	Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as specified, all fittings to PN10 including a masonry chamber, and on the following main pipe sizes				
6.1	DN75mm PN10	No.	1		
6.2	DN40mm PN10	No.	Rate Only		
	<u>PN16 HDPE Compression fitting to DIN 8074/BS 5114</u>				
7	<u>Equal Adapters</u>				
7.1	OD90 female adapter	No.	2		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.4: MUKUJU IN TORORO DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
8	<u>Valves and Penstocks</u>				
	<u>Air Valves</u>				
	<u>Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified.</u>				
8.1	DN65mm	No.	Rate Only		
8.2	DN75mm	No.	Rate Only		
9	<u>Washouts</u>				
	<u>Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, union ball valve, flap valve, stone masonry outfall structure and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box to detail.</u>				
9.1	DN75mm	No.	1		
9.2	DN65mm	No.	Rate Only		
	<u>PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES</u>				
	<u>Other Chambers</u>				
	<u>Masonry air valve chamber, complete as specified in the drawings, and of the following depths</u>				
10.1	Depth not exceeding 1.5m	No.	Rate Only		
	<u>Valve Surface Boxes</u>				
	<u>Valve surface box for DN100 - DN300 valves, with lockable cover securely attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to the following depths</u>				
10.2	Depth not exceeding 1.5m	No.	1		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.4: MUKUJU IN TORORO DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>Reinstatement</u>				
	<u>Roads</u>				
	<u>Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes</u>				
11	Not exceeding DN300mm	m	12		
	<u>Surrounds</u>				
	<u>Pipe surrounds, of selected excavated granular material, for the following pipe sizes</u>				
12.1	Not exceeding DN200mm	m	14		
	<u>Pipe surrounds, of imported granular material, for the following pipe</u>				
12.2	Not exceeding DN200mm	m	25		
	<u>Pipe surrounds, of mass concrete, for the following pipe sizes</u>				
12.3	Not exceeding DN200mm	m	15		
13	<u>Concrete Stools and Thrust Blocks</u>				
	<u>Thrust Blocks</u>				
	<u>Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m³, for the following pipe sizes</u>				
13.1	Diameter not exceeding DN200mm	No.	3		
	<u>Other Pipework Ancillaries</u>				
	<u>Marker Posts</u>				
14	Marker posts for pipes, gate valves, air valves, washouts	nr	34		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.4: MUKUJU IN TORORO DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<p>Bill No. 2 Collection</p> <p>Page 6</p> <p>Page 7</p> <p>Page 8</p>				
Total Bill No. 2 Carried to Bill Summary					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.4: MUKUJU IN TORORO DISTRICT

BILL No. 4.3 : STORAGE RESERVOIR WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>DEMOLITION AND SITE CLEARANCE</u>				
	<u>General Site Clearance</u>				
1	General site clearance including trees, stumps and disposal of arising materials.	Item	1		
2	<u>Reservoir</u>				
	Erect a welded steel tower for reservoir support complete, include foundations, columns, beams, access ladders, plates, braces, walkway/ guardrail, base plates, anchor bolts, nuts, washers, etc, painting and finishes; complete as specified and detailed in the drawings , of the following height and reservoir capacities.				
2.1	Height; 6.0m for (4No. x 10m ³ Tanks)	No.	1		
3	<u>Plastic Tanks</u>				
	Supply and install a vertical cylindrical Rotational Moulded Polyethylene Water Storage Tank to DUS 1560: 2013 as manufactured by Ms Gentex Ltd. / Crest Tanks or any other approved complete with a lockable access man ways, inlet/ riser, ball float valve, overflow with insect screen, float type water level indicator and outlet/ down pipe with a strainer, washout and overflow connection, including interconnecting pipe work and fittings, as detailed in the drawings, supply specifications and of the following capacity.				
3.1	10m ³	No.	4		
4	<u>150-200 micron union/ compresion type clear uPVC Y- Screen Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement screen element and seal ring :-</u>				
4.1	DN75mm, PN10	No.	1		
5	<u>150-200 micron union/ compresion type clear uPVC Y- Disc Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement disk element and seal ring :-</u> [OPTIONAL]				
5.1	DN75mm, PN10	No.	1		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.4: MUKUJU IN TORORO DISTRICT

BILL No. 3 : STORAGE RESERVOIR WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	<u>Landscaping and Walkways</u>				
6.1	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	150		
6.2	500 x 500 x 50mm precast concrete paving slabs laid "Space out Stone method" between the gate, pump house and solar array in one row, laid onto and including 200mm thick murram fill.	No.	Rate Only		
7	<u>Fences</u>				
7.1	Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m.	m	60		
	<u>Gates</u>				
7.2	Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	1		
	Provision and Placing of Concrete <i>Ordinary Designed Mix Concrete</i>				
8	<u>Designed mix concrete, to BS 5328, with ordinary portland cement to BS 12 , aggregate to BS882 , for 10mm aggregate sizes and the following grades:</u>				
8.1	Grade C15	m ³	2		

Total Carried to Collection

BILL No. 3 : STORAGE RESERVOIR WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 3 Collection				
	Page 10				
	Page 11				

Total Bill No. 3 Carried to Bill Summary

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.4: MUKUJU IN TORORO DISTRICT

BILL No.4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>DEMOLITION AND SITE CLEARANCE</u>				
	<u>General Site Clearance</u>				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing tree stumps and disposal of arising materials.	Item	1		
	<u>PIPEWORK-PIPES</u>				
2	<u>Plastic Pressure Pipes- Distribution</u> HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in trench to the following depths not exceeding 1.5m				
2.1	OD63mm PN6	m	365		
2.2	OD75mm PN6	m	Rate Only		
2.3	OD90mm PN6	m	380		
2.3	OD110mm <u>uPVC</u> PN6	m	865		
	<u>PIPEWORK - FITTINGS AND VALVES</u>				
	<u>PN10 HDPE Compression fitting to DIN 8074/BS 5114</u>				
	<u>Plastic Pipe Fittings</u>				
3	<u>Equal tees</u>				
3.1	OD110mm	No.	1		
3.2	OD90mm	No.	Rate Only		
3.3	OD75mm	No.	Rate Only		
3.4	OD63mm	No.	1		
	<u>Unequal tees</u>				
3.5	OD90 x 63mm	No.	3		
3.6	OD75 x 63mm	No.	2		
	<u>PN10 HDPE Compression fitting to DIN 8074/BS 5114</u>				
	<u>Plastic Pipe Fittings</u>				
4	<u>Couplers</u>				
4.1	OD110mm	No.	Rate Only		
4.2	OD90mm	No.	Rate Only		
4.3	OD75mm	No.	Rate Only		
4.4	OD63mm	No.	Rate Only		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.4: MUKUJU IN TORORO DISTRICT

BILL No.4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
5	<u>End caps</u>				
5.1	OD63mm	No.	14		
6	<u>Valves and Penstocks</u>				
	<u>Air Vaves</u>				
	Flanged CI double orifice air relief valve, DN50mm, as specified, flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified.				
6.1	OD75mm	No.	2		
7	<u>Washouts</u>				
	Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, PVC union ball valve, flap valve and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box and stone masonry outfall structure to detail as per Drawing				
7.1	DN65mm	No.	2		
8	<u>Farm Gate Connections</u>				
	Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: -				
8.1	DN50mm	No.	14		
	<u>Other Pipework Ancillaries</u>				
	<u>Marker Posts</u>				
9	Marker posts for pipes, gate valves, air valves, washouts	nr	26		
	<u>Reinstatement</u>				
	<u>Roads</u>				
	Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes				
10	Not exceeding DN300mm	m	Rate Only		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.4: MUKUJU IN TORORO DISTRICT

BILL No. 4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<p>Bill No. 4 Collection</p> <p>Page 12</p> <p>Page 13</p>				
Total Bill No. 4 Carried to Bill Summary					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.5: NANKUSI IN MBALE DISTRICT

BILL SUMMARY

Bill No.	Description			Amount (UGx.)
	WORK ITEMS			
1	Abstraction Works			
2	Transmission Mains			
3	Storage Reservoir Works	N/A		
4	Distribution Network			
Total Carried to Grand Summary				

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.5: NANKUSI IN MBALE DISTRICT

BILL No. 1 : ABSTRACTION WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>General Site Clearance</u>				
1	General site clearance, felling trees, grabbing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1		
	<u>Earthworks</u>				
2.1	Excavation to form river/ stream diversion towards the intake / abstraction structure in normal ground, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to receive hardcore fill.	m ³	35		
2.2	Ditto but for the Intake Structure	m ³	45		
2.3	Ditto but for the River Weir Structure	m ³	4		
	<u>Filling Structures</u>				
	<u>Filling to precast concrete sump structure by methods specified and to depths as shown in the drawings with the following materials: -</u>				
3.1	Imported rock/ hardcore fill, size 75 to 300mm hand packed or compacted by the arm of an excavator.	m ³	55		
3.2	Selected excavated material including topping with a 200mm thick layer of top/ vegetable soil.	m ³	44		
3.3	Imported murram.	m ³	18		
4	Single layer of geotextile laid to manufacturer's specifications	m ²	0		
	<u>Landscaping</u>				
5	Turfing for lawns inside fenced off compound, including filling with excavated topsoil and the preparation of surfaces at Intake Site.	m ²	840		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.5: NANKUSI IN MBALE DISTRICT

BILL No. 1 : ABSTRACTION WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	IN-SITU CONCRETE Provision and Placing of Concrete Ordinary Design Mix Concrete <u>Designed mix , concrete to BS 8500 and BS EN 206-1, with ordinary portland cement to BS 12, aggregate to BS 882 for the following structures: -</u>				
	Grade C15/10 Blinding				
6.1	50mm thick blinding concrete, for base slabs, toes, key and heel; grade C15, of the following thickness	m ³	1		
	Grade C25/10 Reinforced Concrete Base Slabs, Toe, Key and Heel				
6.2	200mm thick key and toe.	m ³	5		
6.3	200mm thick base and heel slabs.	m ³	5		
6.4	500/ 200mm thick retaining wall/ weir stem.	m ³	19		
6.5	200mm thick sump wall.	m ³	41		
6.6	200mm thick top slab.	m ³	1		
	Formwork Formwork-Fair Finish				
7.1	Fair Finish Plane Horizontal Plane fair finish horizontal formwork to the tops slab including charmfering and / or filleting of all exposed concrete corners.	m ²	5		
7.2	Fair Finish Plane Vertical Plane fair finish vertical and / or slightly slping formwork to walls including charmfering and / or filleting of all exposed concrete corners.	m ²	145		
7.3	Finishing of top surfaces Steel trowel finishing of top surfaces.	m ²	20		
	Reinforcement Deformed High Yield Steel <u>High yield square twisted bars to BS 4449 and of the following sizes</u>				
8.1	Nominal size, 12mm	t	2		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.5: NANKUSI IN MBALE DISTRICT

BILL No. 1 : ABSTRACTION WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
8.2	Inserts DN 250 CI / ST flanged, puddled pipe insert pipe inserts projecting from two faces of the concrete wall and of the following sizes,excluding supply of pipe.	No.	2		
	PIPEWORK - FITTINGS AND VALVES Cast or Spum Iron Pipe Fittings.				
9.1	Flanged Reducers DN250 x 150mm	No.	1		
9.2	Flange Adaptors DN 150mm Maxi Type or similar wide range adaptor to fit pipe spigots, flanges to BS 4505, all to PN6.	No.	1		
	Strainers <u>Flanged outlet pipe strainer, to BS 4772, flanges to BS 4504, all to PN 10, cement mortar lined, and of the following sizes: -</u>				
9.3	DN 250 mm	No.	2		
9.4	End Caps DN250mm flanged end cap.	No.	1		
	Valves and Penstocks Gate Valves: Hand Operated <u>All flanged CI gate valves to BS 5150 ,flanges to BS 4505 , all to PN 10 for operation by tee key, with extension spindle not exceeding 1.5 metres long, and of the following sizes:-</u>				
9.5	150 mm ND <u>Penstocks; hand operated including head stock and distance spindle, as specified in drawings of the following size: -</u>	No.	1		
9.6	300mm wide x 1000mm high <u>Stainless Steel.</u>	No.	2		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.5: NANKUSI IN MBALE DISTRICT

BILL No. 1 : ABSTRACTION WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	MISCELLANEOUS METAL WORK				
	Ladders				
10.1	External galvanized mild steel ladder to BS 4211, galvanized to BS 729, complete and as shown in the drawings including fixing to precast concrete units..	m	8		
	Access Manhole Cover				
10.2	600 x 600mm clear opening painted mild steel cover and frame include fixing and locking arrangement.	No.	1		
	Valve Surface Boxes				
10.3	Valve surface box with lockable cover securely attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to a depth not exceeding 4.5 m.	No.	0		
	MISCELLANEOUS WORKS				
X1	450mm diameter reinforced concrete pipe/ culvert	m	2		
	Training of Operator's staff				
X2	Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
	Operation and Maintenance Manuals				
X3	Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		

Total Carried to Collection

BILL No. 1 : ABSTRACTION WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				

Total Bill No. 1 Carried to Bill Summary

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.5: NANKUSI IN MBALE DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>DEMOLITION AND SITE CLEARANCE</u>				
	<u>General Site Clearance</u>				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing tree stumps and disposal of arising materials.	Item	135		
	<u>PIPEWORKS - PIPES</u>				
2	<u>Steel Pipes</u>				
	<u>Galvanised steel pipes (Class B) with threaded joints, include unions/sockets, all to ISO 2531, of the following sizes.</u>				
2.1	DN125mm, in trenches; depth not exceeding 1.5m.	m	3		
3	<u>HDPE Pipes</u>				
	<u>HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m</u>				
3.1	OD125mm HDPE PN16	m	Rate Only		
3.2	OD140mm HDPE PN10	m	Rate Only		
4	<u>uPVC Pipes</u>				
	<u>uPVC pressure pipes to UNBS US 264: 2000 and DIN 8062 with integral rubber ring socket joints laid in trenches to depths not</u>				
4.1	OD140 to PN 16	m	2,836		
	<u>PIPEWORK - FITTINGS AND VALVES</u>				
	<u>Cast or Spun Iron Pipe Fittings</u>				
5	<u>Bends</u>				
	<u>Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizes</u>				
5.1	DN125mm	No.	4		
	<u>Steel pipe fittings; flanges to PN 16; in trenches not exceeding 1.5 m</u>				
	<u>Viking Johnson stepped couplings as Maxistep</u>				
5.2	DN100 x 63	No.	Rate Only		
5.3	DN100 x 75	No.	Rate Only		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.5: NANKUSI IN MBALE DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
5.4	Viking Johnson Flanged adaptors as Aquafast to PN16 DN75	No.	1		
5.5	DN100	No.	1		
5.6	DN125	No.	10		
6	Cast or Spun Iron Pipe Fittings Junctions and Branches All flanged tee to BS 4346, flanges to BS 4504 ,all to PN6 and of the following sizes;				
6.1	DN125mm	No.	2		
6.2	Tapers All flanged concentric taper to BS4772, flanges to BS4504 all to PN6, cement mortar lined, and of the following sizes; DN125 x 50mm	No.	1		
7	Bulk Flow Meters Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as specified, all fittings, including a masonry chamber, and on the following main pipe sizes				
7.1	DN125mm PN10	No.	1		
8	PN16 HDPE Compression fitting to DIN 8074/BS 5114 Equal Adapters				
8.1	OD90 female adapter	No.	Rate Only		
8.2	OD100 female adapter	No.	Rate Only		
9	Valves and Penstocks Air Valves Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified.				
9.1	DN125mm	No.	2		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.5: NANKUSI IN MBALE DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
10	<u>Washouts</u> <u>Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, union ball valve, flap valve, stone masonry outfall structure and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box to detail.</u>				
10.1	DN125mm	No.	2		
	<u>PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES</u> <u>Other Chambers</u> <u>Masonry air valve chamber, complete as specified in the drawings, and of the following depths</u>				
10.2	Depth not exceeding 1.5m	No.	2		
11	<u>Valve Surface Boxes</u> <u>Valve surface box for DN100 - DN300 valves, with lockable cover securely attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to the following depths</u>				
11.1	Depth not exceeding 1.5m	No.	2		
	<u>Reinstatement</u> <u>Roads</u> <u>Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes</u>				
11.2	Not exceeding DN300mm	m	Rate Only		
12	<u>Surrounds</u> <u>Pipe surrounds, of selected excavated granular material, for the following pipe sizes</u>				
12.1	Not exceeding DN200mm	m	Rate Only		
12.2	<u>Pipe surrounds, of imported granular material, for the following pipe</u> Not exceeding DN200mm	m	200		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.5: NANKUSI IN MBALE DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
12.3	Pipe surrounds, of mass concrete, for the following pipe sizes Not exceeding DN200mm	m	90		
13	<u>Concrete Stools and Thrust Blocks</u> <i>Thrust Blocks</i> <u>Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m³, for the following pipe sizes</u>				
13.1	Diameter not exceeding DN200mm	No.	12		
	<u>Other Pipework Ancillaries</u> <i>Marker Posts</i>				
14	Marker posts for pipes, gate valves, air valves, washouts	nr	102		

Total Carried to Collection

0

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 2 Collection Page 6 Page 7 Page 8 Page 9				

Total Bill No. 2 Carried to Bill Summary

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.5: NANKUSI IN MBALE DISTRICT

BILL No. 4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>DEMOLITION AND SITE CLEARANCE</u>				
	<u>General Site Clearance</u>				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing tree stumps and disposal of arising materials.	Item	1		
	<u>PIPEWORK-PIPES</u>				
2	<u>Plastic Pressure Pipes- Distribution</u> <u>HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in trench to the following depths not exceeding 1.5m</u>				
2.1	OD63mm PN6	m	360		
2.2	OD75mm PN6	m	122		
2.3	OD90mm PN6	m	432		
2.4	OD110mm PN6	m	95		
2.5	OD140mm PN6	m	Rate Only		
	<u>PIPEWORK - FITTINGS AND VALVES</u>				
	<u>PN10 HDPE Compression fitting to DIN 8074/BS 5114</u>				
	<u>Plastic Pipe Fittings</u>				
3	<u>Equal tees</u>				
3.1	OD50mm	No.	Rate Only		
3.2	OD63mm	No.	Rate Only		
3.3	OD75mm	No.	Rate Only		
3.4	OD90mm	No.	Rate Only		
3.5	OD110mm	No.	Rate Only		
	<u>Unequal tees</u>				
3.6	OD75 x 63mm	No.	1		
3.7	OD90 x 63mm	No.	8		
3.8	OD110 x 63mm	No.	2		
3.9	OD110 x 75mm	No.	3		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.5: NANKUSI IN MBALE DISTRICT

BILL No. 4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	<u>Plastic Pipe Fittings</u>				
4	<u>End caps</u>				
4.1	OD63mm	No.	14		
	<u>Cast or Spun Iron Pipe Fittings</u>				
5	<u>Bends</u>				
	<u>Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizes</u>				
5.1	DN50mm	No.	Rate Only		
5.2	DN65mm	No.	Rate Only		
5.3	DN75mm	No.	Rate Only		
5.4	DN100mm	No.	Rate Only		
5.5	DN125mm	No.	Rate Only		
	<u>Steel pipe fittings; flanges to PN 16; in trenches not exceeding 1.5 m</u>				
	<u>Viking Johnson stepped adaptors as Maxistep</u>				
6.1	DN100 x 63	No.	Rate Only		
6.2	DN100 x 75	No.	Rate Only		
6.3	DN100 x 100	No.	Rate Only		
	<u>Viking Johnson Flanged adaptors as Aquafast.</u>				
6.4	DN100	No.	Rate Only		
6.5	DN125	No.	Rate Only		
	<u>Cast or Spun Iron Pipe Fittings</u>				
7	<u>Junctions and Branches</u>				
	All flanged tee to BS 4346, flanges to BS 4504 ,all to PN6 and of the following sizes;				
7.1	DN125mm	No.	1		
7.2	DN150mm	No.	Rate Only		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.5: NANKUSI IN MBALE DISTRICT

BILL No. 4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>Tapers</u> All flanged concentric taper to BS4772, flanges to BS4504 all to PN6, cement mortar lined, and of the following sizes;				
7.3	DN125 x 50mm	No.	Rate Only		
7.4	DN125 x 65mm	No.	Rate Only		
7.5	DN125 x 75mm	No.	Rate Only		
7.6	DN125 x 100mm	No.	Rate Only		
	<u>PN10 HDPE Compression fitting to DIN 8074/BS 5114</u>				
	<u>Plastic Pipe Fittings</u>				
8	<u>Reducing Couplers/ Unions</u>				
8.1	OD90 x 63mm	No.	1		
8.2	OD110 x 63mm	No.	1		
	<u>Valves and Penstocks</u>				
9	<u>Air Valve</u> Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified.				
9.1	OD90mm	No.	Rate Only		
9.2	OD110mm	No.	Rate Only		
9.3	OD125mm	No.	Rate Only		
9.4	OD140mm	No.	Rate Only		
10	<u>Washouts</u> Washout as specified in the drawings, complete with plastic compression pipe fittings: tee, drainage pipes, PVC union ball valve, flap valve and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box and stone masonry outfall structure to detail as per Drawing				
10.1	DN75mm	No.	Rate Only		
10.2	DN100mm	No.	Rate Only		
10.3	DN125mm	No.	Rate Only		
10.4	DN140mm	No.	Rate Only		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.5: NANKUSI IN MBALE DISTRICT

BILL No. 4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
11	Farm Gate Connections Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: -				
11.1	DN50mm	No.	13		
	<u>Other Pipework Ancillaries</u>				
	<u>Marker Posts</u>				
12	Marker posts for pipes, gate valves, air valves, washouts	No.	36		
	<u>Reinstatement</u>				
	<u>Roads</u>				
	<u>Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes</u>				
13	Not exceeding DN300mm	m	Rate Only		

Total Carried to Collection

BILL No. 4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 4 Collection				
	Page 10				
	Page 11				
	Page 12				
	Page 13				

Total Bill No. 4.4 Carried to Bill Summary

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.6: BUWEREBE IN MANAFWA DISTRICT

BILL SUMMARY

Bill No.	Description	Amount (UGx.)
	WORK ITEMS	
1	Abstraction and Electromechanical Works	
2	Transmission Mains	
3	Storage Reservoir Works	
4	Distribution Network	
Total Carried to Grand Summary		

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.6: BUWEREBE IN MANAFWA DISTRICT

BILL No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>General Site Clearance</u>				
1	General site clearance, felling trees, grabbing tree stumps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1		
	<u>Earthworks</u>				
2.1	Excavation to form trapezoidal prism reservoir in material other than topsoil, rock or other artificial hard material, depth not exceeding 6.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.	m ³	520		
2.2	Ditto but in marshy soils	m ³	296		
2.3	Ditto but in soft / decomposed rock soils	m ³	136		
2.4	Excavation to form trapezoidal drain in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.	m ³	90		
2.5	Ditto but in marshy soils	m ³	65		
2.6	Ditto but in soft / decomposed rock soils	m ³	45		
	<u>Filling Structures</u>				
	<u>Filling to precast concrete sump structure by methods specified and to depths as shown in the drawings with the following materials: -</u>				
3.1	Imported rock/ hardcore fill, size 75 to 300mm hand packed or compacted by the arm of an excavator.	m ³	Rate Only		
3.2	Selected excavated material including topping with a 200mm thick layer of top/ vegetable soil.	m ³	Rate Only		
4	Single layer of geotextile laid to manufacturer's specifications	m ²	Rate Only		
	<u>Landscaping</u>				
5	Turfing for lawns inside fenced off compound, including filling with excavated topsoil and the preparation of surfaces; 40m ² at Intake Site and 800m ² at Pump Station.	m ²	850		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.6: BUWEREBE IN MANAFWA DISTRICT

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	IN-SITU CONCRETE Provision and Placing of Concrete Ordinary Design Mix Concrete <u>Designed mix , concrete to BS 8500 and BS EN 206-1, with ordinary Portland cement to BS 12, aggregate to BS 882 for the following structures: -</u>				
	Grade C15/10 Blinding 6.1 50mm thick blinding concrete, for base slabs, toes, key and heel; grade C15, of the following thickness	m ³	1.1		
	Grade C25/10 Reinforced Concrete Base Slabs, Toe and Heel 6.2 200mm thick toe.	m ³	0.3		
	6.3 200mm thick base slab.	m ³	2.4		
	6.4 350/ 200mm thick retaining wall/ weir stem.	m ³	0		
	6.5 200mm thick sump walls.	m ³	13.5		
	6.6 200mm thick top slab.	m ³	1.2		
	Formwork Formwork-Fair Finish				
	Fair Finish Plane Horizontal 7.1 Plane fair finish horizontal formwork to the tops slab including chamfering and / or filleting of all exposed concrete corners.	m ²	4.0		
	Fair Finish Plane Vertical 7.2 Plane fair finish vertical and / or slightly sloping formwork to walls including chamfering and / or filleting of all exposed concrete corners.	m ²	140		
	Finishing of top surfaces 7.3 Steel trowel finishing of top surfaces.	m ²	11		
	Reinforcement Deformed High Yield Steel <u>High yield square twisted bars to BS 4449 and of the following sizes</u>				
	8.1 Nominal size, 12mm	t	1.2		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.6: BUWEREBE IN MANAFWA DISTRICT

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
8.2	Inserts DN 250 CI / ST flanged, puddled pipe insert pipe inserts projecting from two faces of the concrete wall and of the following sizes, excluding supply of pipe.	No.	Rate Only		
	PIPEWORK - FITTINGS AND VALVES Cast or Spun Iron Pipe Fittings.				
	Flanged Reducers				
9.1	DN250 x 150mm	No.	Rate Only		
	Flange Adaptors				
9.2	DN 150mm Maxi Type or similar wide range adaptor to fit pipe spigots, flanges to BS 4505, all to PN6.	No.	Rate Only		
	Strainers <u>Flanged outlet pipe strainer, to BS 4772, flanges to BS 4504, all to PN 10, cement mortar lined, and of the following sizes: -</u>				
9.3	DN 250 mm	No.	Rate Only		
	End Caps				
9.4	DN250mm flanged end cap.	No.	Rate Only		
	Valves and Penstocks Gate Valves: Hand Operated				
	<u>All flanged CI gate valves to BS 5150, flanges to BS 4505, all to PN 10 for operation by tee key, with extension spindle not exceeding 1.5 m long, and of the following sizes:-</u>				
9.5	150 mm ND	No.	Rate Only		
	<u>Penstocks: hand operated including head stock and distance spindle, as specified in drawings of the following size: -</u>				
9.6	300mm wide x 1000mm high, Stainless steel.	No.	1		
	MISCELLANEOUS METAL WORK				
	Ladders				
10.1	External galvanized mild steel ladder to BS 4211, galvanized to BS 729, complete and as shown in the drawings including fixing to precast concrete units..	m	8		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.6: BUWEREBE IN MANAFWA DISTRICT

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
10.2	Access Manhole Cover 600 x 600mm clear opening painted mild steel cover and frame include fixing and locking arrangement.	No.	2		
10.3	Pump Protection System Vertical pipe pump stilling tube/ anti-vandal protection sleeve structure to detail as per Drawing No. OIS/NUC/SD/010, including 1.5x1.5x0.3m support base.	No.	0		
10.4	Valve Surface Boxes Valve surface box with lockable cover securely attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to a depth not exceeding 4.5 m.	No.	Rate Only		
<u>ELECTRO-MECHANICAL WORKS</u>					
<u>Solar Pumping System</u> (based on 550Wp panels; bidder to adjust numbers to match rating of panel offered)					
ME1	4.0kW Submersible Pump Set with 5.5kW Pumping Inverter with Data Module, rated flow Q = 15 m ³ /hr., rated head H = 55m total head; set to not more than 5m below ground including Dry- run protection, Motor and Pump End.	No.	1		
ME2	1x17No. x 550Wp panels solar array to provide 19.35kW power to the pump system complete including wiring.	Item	1		
ME3	Mild steel welded structure for holding solar PV panels at 15° tilt angle and suitable for a 1x17No. x 550Wp panels Solar Array in Item 2 above as per drawings, including foundations, vandal proofing mounting to the Engineer's approval	Sum	135		
ME4	PV Disconnect 1000-40-2	No.	1		
ME5	PV Protect 1000-15, SPD x 1 on incoming solar PV.	No.	1		
ME6	Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc.	Item	1		
ME7	PV Combiner	No.	1		
ME7a	Pressure Switch and Gauge - P5/8	No.	1		
ME8	Sinewave filter - SWAP0017D.	No.	1		
ME9	10mm ² Borehole drop cable,	m	5		
ME10	10mm ² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding.	m	150		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.6: BUWEREBE IN MANAFWA DISTRICT

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
ME10a	6mm ² UV Single Cable.	m	60		
ME11	Wire kit array from solar array to controller with MC4 connectors	No.	2		
ME11a	Adapter box	No.	1		
ME12	Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4.	Item	1		
ME13	Earthing at solar array and borehole installation by 16mm ² PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME14	Lightning Protection at solar array and borehole installation consisting of 25x3mm copper tape, air terminal, test block and earth electrode in a manhole and all accessories.	Sum	1		
ME15	60W Solar security light and battery complete with 6m steel pole and lockable battery box	No.	5		
	Alarm System				
ME16	GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array.	Item	1		
ME17	GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor for the pump protection as instructed by the Engineer.	Item	1		
	<u>MISCELLANEOUS WORKS</u>				
	<u>Pump Protection System</u>				
X1	Vertical pipe pump stilling tube/ anti-vandal protection sleeve including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/002a or OIS/ABS/003, including 1.5x1.5x0.3m support base.	No.	1		
	<u>Kerbs</u>				
	<u>Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the following alignment: -</u>				
X2	Straight or curved to a radius exceeding 12 m	m	60		
X3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a gauge 500 polythene sheet.	m ²	120		
X4	450mm diameter reinforced concrete pipe/ culvert	m	2		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.6: BUWEREBE IN MANAFWA DISTRICT

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
X5	<u>Pump House</u> Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.	Sum	1		
X6a	<u>Fences</u> Galvanized wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Intake Site, <u>including special erection methods in "marshy grounds"</u> to the Engineer's approval.	m	80		
X6b	Galvanized wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Pumping Station Site.	m	120		
X7	<u>Gates</u> Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	1		
X8	<u>Training of Operator's staff</u> Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
X9	<u>Operation and Maintenance Manuals</u> Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
XX	Horizontal pump installation option out of flanged/ sealed end HDPE culvert pipe mounted on fabricated GI support structure including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/005.	Item	Rate Only		

Total Carried to Collection

BILL No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description				Amount (UGx.)
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
	Page 6				
	Page 7				

Total Bill No. 1 Carried to Bill Summary

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.6: BUWEREBE IN MANAFWA DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>DEMOLITION AND SITE CLEARANCE</u>				
	<u>General Site Clearance</u>				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing tree stumps and disposal of arising materials.	Item	1		
	<u>PIPEWORKS - PIPES</u>				
2	<u>Steel Pipes</u>				
	<u>Galvanized iron pipes (Class B) with threaded joints, include unions/sockets, all to ISO 2531 of the following sizes:</u>				
2.1	DN75mm, in trenches; depths not exceeding 1.5m	m	12		
	<u>HDPE Pipes</u>				
	<u>HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m</u>				
3.1	OD75mm HDPE PN10	m	Rate Only		
	<u>uPVC Pipes</u>				
	<u>uPVC pressure pipes to UNBS US 264: 2000 and DIN 8062 with integral rubber ring socket joints laid in trenches</u>				
	<u>OD110 to PN 10</u>				
4.1	Depth not exceeding 1.5m	m	353		
	<u>PIPEWORK - FITTINGS AND VALVES</u>				
	<u>Cast or Spun Iron Pipe Fittings</u>				
5	<u>Bends</u>				
	<u>Galvanized iron threaded socket 45° bends, EN 10242:1995, all to PN 10, and of the following sizes</u>				
5.1	DN65mm	No.	4		
6	<u>Bulk Flow Meters</u>				
	<u>Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc. and all other fittings to make the installation complete, as specified, all fittings to PN10 including a masonry chamber, and on the following main pipe sizes</u>				
6.1	DN65mm PN10	No.	1		
	<u>PN16 HDPE Compression fitting to DIN 8074/BS 5114</u>				
7	<u>Equal Adapters</u>				
7.1	OD75 female adapter	No.	2		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.6: BUWEREBE IN MANAFWA DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
8	<u>Valves and Penstocks</u> <u>Air Valves</u> <u>Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to ISO 2441 , complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber</u>				
8.1	DN65mm	No.	Rate Only		
8.2	DN75mm	No.	1		
9	<u>Washouts</u> <u>Washout as specified in the drawings, complete with plastic compression pipe fittings ; tee, drainage pipes, union ball valve, flap valve, stone masonry outfall structure and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box to detail.</u>				
9.1	DN100mm	No.	Rate Only		
9.2	DN75mm	No.	1		
9.3	DN65mm	No.	Rate Only		
	<u>PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES</u> <u>Other Chambers</u> <u>Masonry air valve chamber, complete as specified in the drawings, and of the following depths</u>				
10.1	Depth not exceeding 1.5m	No.	1		
	<u>Valve Surface Boxes</u> <u>Valve surface box for DN100 - DN300 valves, with lockable cover securely attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to the following depths</u>				
10.2	Depth not exceeding 1.5m	No.	1		
	<u>Reinstatement Roads</u> <u>Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes</u>				
11	Not exceeding DN300mm	m	Rate Only		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.6: BUWEREBE IN MANAFWA DISTRICT

BILL No.2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>Surrounds</u>				
	Pipe surrounds, of selected excavated granular material, for the following pipe sizes				
12.1	Not exceeding DN200mm	m	Rate Only		
	<u>Pipe surrounds, of imported granular material, for the following pipe sizes</u>				
12.2	Not exceeding DN200mm	m	25		
	<u>Pipe surrounds, of mass concrete, for the following pipe sizes</u>				
12.3	Not exceeding DN200mm	m	6		
	<u>Concrete Stools and Thrust Blocks</u>				
	<u>Thrust Blocks</u>				
	Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m³, for the following pipe sizes				
13	Diameter not exceeding DN200mm	No.	Rate Only		
	<u>Other Pipework Ancillaries</u>				
	<u>Marker Posts</u>				
14	Marker posts for pipes, gate valves, air valves, washouts.	No.	4		

Total Carried to Collection

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 2 Collection				
	Page 8				
	Page 9				
	Page 10				

Total Bill No. 2 Carried to Bill Summary

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.6: BUWEREBE IN MANAFWA DISTRICT

BILL No. 3 : STORAGE RESERVOIR WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>DEMOLITION AND SITE CLEARANCE</u>				
	<u>General Site Clearance</u>				
1	General site clearance including trees, stumps and disposal of arising materials.	Item	1		
2	<u>Reservoir</u> <u>Erect a welded steel tower for reservoir support complete, include foundations, columns, beams, access ladders, plates, braces, walkway/ guardrail, base plates, anchor bolts, nuts, washers, etc., painting and finishes; complete as specified and detailed in the drawings , of the following height and reservoir capacities.</u>				
2.1	Height; 9.0m for (4No. x 10m ³ Tanks)	No.	1		
3	<u>Plastic Tanks</u> Supply and install a vertical cylindrical Rotational Moulded Polyethylene Water Storage Tank to DUS 1560: 2013 as manufactured by Ms. Gentex Ltd. / Crest Tanks or any other approved complete with a lockable access man ways, inlet/ riser, ball float valve, overflow with insect screen, float type water level indicator and outlet/ down pipe with a strainer, washout and overflow connection, including interconnecting pipe work and fittings, as detailed in the drawings, supply specifications and of the following capacity.				
3.1	10m ³	No.	4		
4	<u>150-200 micron union/ compression type clear uPVC Y- Screen Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement screen element and seal ring :-</u>				
4.1	DN100mm, PN10	No.	1		
5	<u>150-200 micron union/ compression type clear uPVC Y- Disc Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement disk element and seal ring :-</u> [OPTIONAL]				
5.1	DN100mm, PN10	No.	1		
6	<u>Landscaping and Walkways</u>				
6.1	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	150		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.6: BUWEREBE IN MANAFWA DISTRICT

BILL No. 3 : STORAGE RESERVOIR WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6.2	500 x 500 x 50mm precast concrete paving slabs laid " Space out Stone method" between the gate, pump house and solar array in one raw, laid onto 200mm thick murram fill.	No.	Rate Only		
7	Fences				
7.1	Galvanized wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m.	m	60		
	Gates				
7.2	Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	2		
	Provision and Placing of Concrete Ordinary Designed Mix Concrete				
8	<u>Designed mix concrete, to BS 5328, with ordinary Portland cement to BS 12 , aggregate to BS882 , for 10mm aggregate sizes and the following grades:</u>				
8.1	Grade C15	m ³	2		
Total Carried to Collection					

BILL No. 3 : STORAGE RESERVOIR WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 3 Collection				
	Page 11				
	Page 12				
Total Bill No. 3 Carried to Bill Summary					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.6: BUWEREBE IN MANAFWA DISTRICT

BILL No.4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>DEMOLITION AND SITE CLEARANCE</u>				
	<u>General Site Clearance</u>				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing tree stumps and disposal of arising materials.	Item	1		
	<u>PIPEWORK-PIPES</u>				
2	<u>Plastic Pressure Pipes- Distribution</u> HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in trench to the following depths not exceeding 1.5m				
2.1	OD63mm PN6	m	278		
2.2	OD75mm PN6	m	102		
2.3	OD90mm PN6	m	110		
2.4	OD110mm PN6	m	295		
	<u>PIPEWORK - FITTINGS AND VALVES</u>				
	<u>PN10 HDPE Compression fitting to DIN 8074/BS 5114</u>				
	<u>Plastic Pipe Fittings</u>				
3	<u>Equal tees</u>				
3.1	OD110mm	No.	Rate Only		
3.2	OD90mm	No.	1		
	<u>Unequal tees</u>				
3.3	OD90 x 75mm	No.	2		
3.4	OD90 x 63mm	No.	5		
3.5	OD75 x 63mm	No.	5		
	<u>PN10 HDPE Compression fitting to DIN 8074/BS 5114</u>				
	<u>Plastic Pipe Fittings</u>				
4	<u>Couplers</u>				
4.1	OD110mm	No.	Rate Only		
4.2	OD90mm	No.	Rate Only		
4.3	OD75mm	No.	Rate Only		
4.4	OD63mm	No.	Rate Only		
5	<u>End caps</u>				
5.1	OD110mm	No.	Rate Only		
5.2	OD90mm	No.	Rate Only		
5.3	OD75mm	No.	Rate Only		
5.4	OD63mm	No.	13		
5.5	OD50mm	No.	Rate Only		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 2.6: BUWEREBE IN MANAFWA DISTRICT

BILL No.4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	<u>Valves and Penstocks</u> <u>Air Valves</u> Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to ISO 2441 , complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber				
6.1	OD110mm	No.	Rate Only		
6.2	OD90mm	No.	Rate Only		
7	<u>Washouts</u> Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, PVC union ball valve, flap valve and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box and stone masonry outfall structure to detail as per Drawing No. OIS/NUC/SD/004.				
7.1	DN100mm	No.	Rate Only		
7.2	DN75mm	No.	Rate Only		
8	<u>Farm Gate Connections</u> Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and lockable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: -				
8.1	DN100mm	No.	Rate Only		
8.2	DN75mm	No.	Rate Only		
8.3	DN65mm	No.	Rate Only		
8.4	DN50mm	No.	13		
	<u>Other Pipework Ancillaries</u> <u>Marker Posts</u>				
9	Marker posts for pipes, gate valves, air valves, washouts.	No.	34		

Total Carried to Collection

BILL No. 4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 4 Collection				
	Page 14				
	Page 15				
Total Bill No. 4 Carried to Bill Summary					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.1: OBAJAI IN KABERAMAIDO DISTRICT

BILL SUMMARY

Bill No.	Description	Amount (UGx.)
	WORK ITEMS	
1	Abstraction and Electromechanical Works	
2	Transmission Mains	
3	Storage Reservoir Works	
4	Distribution Network	
Total Carried to Grand Summary		

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.1: OBAJAI IN KABERAMAIDO DISTRICT

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>General Site Clearance</u>				
1	General site clearance, felling trees, grabbing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1		
	<u>Earthworks</u>				
	Excavation to form trapezoidal prism reservoir in material other than topsoil, rock or other artificial hard material, depth not exceeding 6.0m including forming earth bands along the channel of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.1	Marshy soils	m ³	52		
2.2	Soft / decomposed rock soils	m ³	26		
	Excavation to form trapezoidal channel in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.4	Marshy soils	m ³	42		
2.5	Soft / decomposed rock soils	m ³	12		
	Excavation to form cylindrical sump well in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.6	Marshy soils	m ³	16		
2.7	Soft / decomposed rock soils	m ³	8		
	<u>Filling Structures</u>				
	<u>Filling to precast concrete sump structure by methods specified and to depths as shown in the drawings with the following materials: -</u>				
3	Selected excavated material including topping with a 200mm thick layer of top/ vegetable soil.	m ³	10		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.1: OBAJAI IN KABERAMAIDO DISTRICT

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
4	Landscaping Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	40		
	IN-SITU CONCRETE Provision and Placing of Concrete Ordinary Design Mix Concrete <u>Designed mix , concrete to BS 8500 and BS EN 206-1, with ordinary portland cement to BS 12, aggregate to BS 882 , maximum aggregate size : 20mm for the following structures: -</u>				
5	Insitu Concrete 75mm thick Grade C15 concrete blinding to pump sump base	m ³	0.25		
6.1	2200mm Diameter x 150mm thick Grade C25 concrete base slab reinforced with H12 - 200 E.W (B) complete with all associated formwork, finishing with a steel float.	Item	1		
6.2	2200mm Diameter x 150mm thick Grade C25 concrete top slab reinforced with H12 - 200 E.W (B) complete with all associated formwork, finishing with a steel float and forming a 600 x 600mm opening for the inspection cover (MS).	Item	1		
	Pre-cast Concrete Pump Well/ Sump Supply and install 100mm thick precast reinforced concrete vertical culverts on concrete base slab (MS) ; complete with water tight jointing and finishing works to approval.				
7	1200mm diameter ; height n.e 8m	Item	1		
	Concrete Inserts Cast or Spum Iron Pipe Fittings. Flanged, puddled and plain end pipe insert projecting from one face of the concrete, all to PN6 and of the following sizes and lengths, including supply of the pipe and as shown in the drawings.				
8	200mm ND and not exceeding 0.5m length	No.	2		
	Adaptors Flange adaptor to fit ductile PVC to all to PN6 and of the following sizes:-				
9	200 mm ND	No.	2		
10	OD225mm PN10 plain end uPVC pipe connection between Silt Trap Basin and Pump Sump.	m	8		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.1: OBAJAI IN KABERAMAIDO DISTRICT

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
11	Bellmouths Flanged bellmouth to ISO 2531, flanges to ISO 2441, of the following sizes all to PN 6 200 mm ND	No.	1		
	PIPEWORK - FITTINGS AND VALVES Gate Valves: Hand Operated				
12	DN 200 mm all flanged CI gate valves to BS 5150 ,flanges to BS 4505 , all to PN 6 for operation by tee key, with extension spindle not exceeding 4.5 metres long, and of the following sizes				
	MISCELLANEOUS WORK Ladders				
13	Internal galvanized mild steel ladder to BS 4211, galvernized to BS 729, complete andas shown in the drawings including fixing to precast concrete units..	m	8		
	Steel grating				
14.1	Galvanized iron Coarse Trash Screen as detailed in the drawings.	No.	1		
14.2	Galvanized iron Fine Trash Screen as detailed in the drawings.	No.	1		
	Pump Well/ Sump Supply and install 8.0m long HDPE vertical culverts on concrete base slab (MS) ; complete with a Single ND200mm flanged branch to receive a ND200 gate valve. Branch height/ positioning to be determined on site.	Item	Rate Only		
15	Internal diameter ; 1200x200mm				
	Stone pitched Channel.				
16	3.0 x 1.5 top x bottom width x 1.5m deep maximum trapezoidal lined drain as detailed in the drawing.	m	5		
	Gabion boxes				
17	PVC coated gabion boxes ; size 1m x 1m x 1m; including rockfill of size 100 - 250mm; as instructed by the Engineer	nr	Rate Only		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.1: OBAJAI IN KABERAMAIDO DISTRICT

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>ELECTRO-MECHANICAL WORKS</u>				
	<u>Solar Pumping System</u> (based on 550Wp panels; bidder to adjust numbers to match rating of panel offered)				
ME1	7.5kW Submersible Pump Set with 11.0kW Pumping Inverter with Data Module, rated flow Q = 20 m ³ /hr., rated head H = 55m total head; set to not more than 5m below ground including Dry- run protection, Motor and Pump End.	No.	1		
ME2	2x17No. x 550Wp panels solar array to provide 18.7kW power to the pump system complete including wiring.	Item	1		
ME3	Mild steel welded structure for holding solar PV panels at 15° tilt angle and suitable for a 2x17No. x 550Wp panels Solar Aarray in Item 2 above as per drawings, including foundations, vandal proofing mounting to the Engineer's approval	Sum	1		
ME4	PV Disconnect 1000-40-2	No.	1		
ME5	PV Protect 1000-15, SPD x 1 on incoming solar PV.	No.	1		
ME6	Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc.	Item	1		
ME7	PV Combiner	No.	1		
ME7a	Pressure Switch and Gauge - P5/8	No.	1		
ME8	Sinewave filter - SWAP0017D.	No.	1		
ME9	10mm ² Borehole drop cable,	m	5		
ME10	10mm ² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding.	m	125		
ME10a	6mm ² UV Single Cable.	m	60		
ME11	Wire kit array from solar array to controller with MC4 connectors	No.	2		
ME11a	Adapter box	No.	1		
ME12	Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4.	Item	1		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.1: OBAJAI IN KABERAMAIDO DISTRICT

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>Earthing and Lightening Protection</u>				
ME13	Earthing at solar array and borehole installation by 16mm ² PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME14	Lightning Protection at solar array and borehole installation consisting of 25x3mm copper tape, air terminal, test block and earth electrode in a manhole and all accessories.	Sum	1		
ME15	60W Solar security light and battery complete with 6m steel pole and lockable battery box	No.	5		
	<u>Alarm System</u>				
ME16	GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array.	Item	1		
ME17	GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor for the pump protection as instructed by the Engineer.	Item	1		
	<u>MISCELLANEOUS WORKS</u>				
	<u>Pump Protection System</u>				
X1	Vertical pipe pump stilling tube/ anti-vandal protection sleeve including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/002a or OIS/ABS/003, including 1.5x1.5x0.3m support base.	No.	1		
	<u>Kerbs</u>				
	<u>Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the following alignment: -</u>				
X2	Straight or curved to a radius exceeding 12 m	m	135		
X3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet.	m ²	220		
X4	450mm diameter reinforced concrete pipe/ culvert	m	0		
	<u>Pump House</u>				
X5	Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.	Sum	1		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.1: OBAJAI IN KABERAMAIDO DISTRICT

BILL No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS					
Item No.	Description				Amount (UGx.)
	<u>Fences</u>				
X6a	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Intake Site, <u>including special erection methods in "marshy grounds"</u> to the Engineer's approval.	m	50		
X6b	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Pumping Station Site.	m	10		
	<u>Gates</u>				
X7	Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	2		
	<u>Training of Operator's staff</u>				
X8	Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
	<u>Operation and Maintenance Manuals</u>				
X9	Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
XX	Horizontal pump installation option out of flanged/ sealed end HDPE culvert pipe mounted on fabricated GI support structure including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/005.	Item	Rate Only		
Total Carried to Collection					
BILL No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS					
Item No.	Description				Amount (UGx.)
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
	Page 6				
	Page 7				
Total Bill No. 1 Carried to Bill Summary					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.1: OBAJAI IN KABERAMAIDO DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>DEMOLITION AND SITE CLEARANCE</u>				
	<u>General Site Clearance</u>				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing tree stumps and disposal of arising materials.	Item	1		
	<u>PIPEWORKS - PIPES</u>				
	<u>Steel Pipes</u>				
	<u>Galvanized iron pipes (Class B) with threaded joints, include unions/sockets, all to ISO 2531 of the following sizes;</u>				
2.1	DN75mm, in trenches; depths not exceeding 1.5m	m	12		
	<u>HDPE Pipes</u>				
	<u>HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m</u>				
3.1	OD90mm HDPE PN10	m	660		
	<u>uPVC Pipes</u>				
	<u>uPVC pressure pipes to UNBS US 264: 2000 and DIN 8062 with integral rubber ring socket joints laid in trenches</u>				
	<u>OD110 to PN 10</u>				
4.1	Depth not exceeding 1.5m	m	Rate Only		
	<u>PIPEWORK - FITTINGS AND VALVES</u>				
	<u>Cast or Spun Iron Pipe Fittings</u>				
	<u>Bends</u>				
	<u>Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizes</u>				
5.4	DN75mm	No.	4		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.1: OBAJAI IN KABERAMAIDO DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	<u>Bulk Flow Meters</u> <u>Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as specified, all fittings to PN10 including a masonry chamber, and on the following main pipe sizes</u>				
6.1	DN100mm PN10	No.	Rate Only		
6.2	DN75mm PN10	No.	1		
6.3	DN65mm PN10	No.	Rate Only		
6.4	DN50mm PN10	No.	Rate Only		
6.5	DN40mm PN10	No.	Rate Only		
	<u>PN16 HDPE Compression fitting to DIN 8074/BS 5114</u>				
7	<u>Equal Adapters</u>				
7.1	OD90 female adapter	No.	2		
8	<u>Valves and Penstocks</u> <u>Air Valves</u> <u>Flanged CI double orifice air relief valve, DN50mm, as specified, flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified.</u>				
8.1	DN75mm	No.	1		
9	<u>Washouts</u> <u>Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, union ball valve, flap valve, stone masonry outfall structure and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box to detail.</u>				
9.1	DN75mm	No.	1		
	<u>PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES</u> <u>Other Chambers</u> <u>Masonry air valve chamber, complete as specified in the drawings, and of the following depths</u>				
10.1	Depth not exceeding 1.5m	No.	1		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.1: OBAJAI IN KABERAMAIDO DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>Valve Surface Boxes</u> <u>Valve surface box for DN100 - DN300 valves, with lockable cover securely attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to the following depths</u>				
10.2	Depth not exceeding 1.5m	No.	1		
	<u>Reinstatement Roads</u> <u>Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes</u>				
11	Not exceeding DN300mm	m	48		
	<u>Surrounds</u> <u>Pipe surrounds, of selected excavated granular material, for the following pipe sizes</u>				
12.1	Not exceeding DN200mm	m	72		
	<u>Pipe surrounds, of imported granular material, for the following pipe</u>				
12.2	Not exceeding DN200mm	m	150		
	<u>Pipe surrounds, of mass concrete, for the following pipe sizes</u>				
12.3	Not exceeding DN200mm	m	100		
13	<u>Concrete Stools and Thrust Blocks</u> <u>Thrust Blocks</u> <u>Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m³, for the following pipe sizes</u>				
13.1	Diameter not exceeding DN200mm	No.	4		
	<u>Other Pipework Ancillaries</u> <u>Marker Posts</u> <u>Marker posts for pipes, gate valves, air valves, washouts</u>				
14		nr	28		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.1: OBAJAI IN KABERAMAIDO DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<p>Bill No. 2 Collection</p> <p>Page 6</p> <p>Page 7</p> <p>Page 8</p>				
Total Bill No. 2 Carried to Bill Summary					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.1: OBAJAI IN KABERAMAIDO DISTRICT

BILL No. 4.3 : STORAGE RESERVOIR WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>DEMOLITION AND SITE CLEARANCE</u>				
	<u>General Site Clearance</u>				
1	General site clearance including trees, stumps and disposal of arising materials.	Item	1		
2	<u>Reservoir</u>				
	Erect a welded steel tower for reservoir support complete, include foundations, columns, beams, access ladders, plates, braces, walkway/ guardrail, base plates, anchor bolts, nuts, washers, etc, painting and finishes; complete as specified and detailed in the drawings , of the following height and reservoir capacities.				
2.1	Height; 9.0m for (4No. x 10m ³ Tanks)	No.	1		
3	<u>Plastic Tanks</u>				
	Supply and install a vertical cylindrical Rotational Moulded Polyethylene Water Storage Tank to DUS 1560: 2013 as manufactured by Ms Gentex Ltd. / Crest Tanks or any other approved complete with a lockable access man ways, inlet/ riser, ball float valve, overflow with insect screen, float type water level indicator and outlet/ down pipe with a strainer, washout and overflow connection, including interconnecting pipe work and fittings, as detailed in the drawings, supply specifications and of the following capacity.				
3.1	10m ³	No.	4		
4	<u>150-200 micron union/ compresion type clear uPVC Y- Screen Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement screen element and seal ring :-</u>				
4.1	DN75mm, PN10	No.	1		
5	<u>150-200 micron union/ compresion type clear uPVC Y- Disc Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement disk element and seal ring :-</u>				
	[OPTIONAL]				
5.1	DN75mm, PN10	No.	1		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.1: OBAJAI IN KABERAMAIDO DISTRICT

BILL No. 3 : STORAGE RESERVOIR WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	<u>Landscaping and Walkways</u>				
6.1	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	150		
6.2	500 x 500 x 50mm precast concrete paving slabs laid "Space out Stone method" between the gate, pump house and solar array in one raw, laid onto and including 200mm thick murram fill.	No.	Rate Only		
7	<u>Fences</u>				
7.1	Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m.	m	60		
	<u>Gates</u>				
7.2	Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	1		
	Provision and Placing of Concrete <i>Ordinary Designed Mix Concrete</i>				
8	<u>Designed mix concrete, to BS 5328, with ordinary portland cement to BS 12 , aggregate to BS882 , for 10mm aggregate sizes and the following grades:</u>				
8.1	Grade C15	m ³	2		

Total Carried to Collection

BILL No. 3 : STORAGE RESERVOIR WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 3 Collection				
	Page 10				
	Page 11				

Total Bill No. 3 Carried to Bill Summary

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.1: OBAJAI IN KABERAMAIDO DISTRICT

BILL No.4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>DEMOLITION AND SITE CLEARANCE</u>				
	<u>General Site Clearance</u>				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing tree stumps and disposal of arising materials.	Item	1		
	<u>PIPEWORK-PIPES</u>				
2	<u>Plastic Pressure Pipes- Distribution</u> <u>HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in trench to the following depths not exceeding 1.5m</u>				
2.1	OD63mm PN10	m	1,364		
2.2	OD90mm PN10	m	384		
	<u>PIPEWORK - FITTINGS AND VALVES</u>				
	<u>PN10 HDPE Compression fitting to DIN 8074/BS 5114</u>				
	<u>Plastic Pipe Fittings</u>				
3	<u>Equal tees</u>				
3.1	OD63mm	No.	6		
	<u>Unequal tees</u>				
3.2	OD90 x 63mm	No.	6		
	<u>PN10 HDPE Compression fitting to DIN 8074/BS 5114</u>				
	<u>Plastic Pipe Fittings</u>				
4	<u>Couplers</u>				
4.1	OD90 x 63mm	No.	6		
5	<u>End caps</u>				
5.1	OD110mm	No.	Rate Only		
5.2	OD90mm	No.	Rate Only		
5.3	OD75mm	No.	Rate Only		
5.4	OD63mm	No.	7		
5.5	OD50mm	No.	Rate Only		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.1: OBAJAI IN KABERAMAIDO DISTRICT

BILL No.4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	<u>Valves and Penstocks</u>				
	<u>Air Vaves</u>				
	Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges				
6.1	OD63mm	No.	4		
7	<u>Washouts</u>				
	Washout as specified in the drawings, complete with plastic				
7.1	DN50mm	No.	6		
8	<u>Farm Gate Connections</u>				
	Make DN50mm Irrigation Water Supply Hydrant connection to the				
8.4	DN50mm	No.	7		
	<u>Other Pipework Ancillaries</u>				
	<u>Marker Posts</u>				
8.4	Marker posts for pipes, gate valves, air valves, washouts	nr	62		
	<u>Reinstatement</u>				
	<u>Roads</u>				
	Breaking up, temporary and permanent reinstatement of gravel roads for				
9	Not exceeding DN300mm	m	Rate Only		
Total Carried to Collection					
BILL No. 4 : DISTRIBUTION NETWORK					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 4 Collection				
	Page 12				
	Page 13				
Total Bill No. 4 Carried to Bill Summary					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.2: AJULON IN KABERAMAIDO DISTRICT

BILL SUMMARY

Bill No.	Description	Amount (UGx.)
	<p>WORK ITEMS</p> <p>1 Abstraction and Electromechanical Works</p> <p>2 Transmission Mains</p> <p>3 Storage Reservoir Works</p> <p>4 Distribution Network</p>	
	Total Carried to Grand Summary	

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.2: AJULON IN KABERAMAIDO DISTRICT

BILL No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	General Site Clearance				
1	General site clearance, felling trees, grabbing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1		
	Earthworks				
	Excavation to form trapezoidal prism reservoir in material other than topsoil, rock or other artificial hard material, depth not exceeding 6.0m including forming earth bands along the channel of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.1	Marshy soils	m ³	52		
2.2	Soft / decomposed rock soils	m ³	26		
	Excavation to form trapezoidal channel in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.4	Marshy soils	m ³	60		
2.5	Soft / decomposed rock soils	m ³	15		
	Excavation to form cylindrical sump well in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.6	Marshy soils	m ³	16		
2.7	Soft / decomposed rock soils	m ³	8		
	Filling Structures				
	<u>Filling to precast concrete sump structure by methods specified and to depths as shown in the drawings with the following materials: -</u>				
3	Selected excavated material including topping with a 200mm thick layer of top/ vegetable soil.	m ³	10		
	Landscaping				
4	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	40		
Total Carried to Collection					

SCHEME ID. 3.2: AJULON IN KABERAMAIDO DISTRICT

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	IN-SITU CONCRETE Provision and Placing of Concrete Ordinary Design Mix Concrete <u>Designed mix , concrete to BS 8500 and BS EN 206-1, with ordinary portland cement to BS 12, aggregate to BS 882 , maximum aggregate size : 20mm for the following structures: -</u> Insitu Concrete				
5	75mm thick Grade C15 concrete blinding to pump sump base	m ³	0.25		
6.1	2200mm Diameter x 150mm thick Grade C25 concrete base slab reinforced with H12 - 200 E.W (B) complete with all associated formwork, finishing with a steel float.	Item	1		
6.2	2200mm Diameter x 150mm thick Grade C25 concrete top slab reinforced with H12 - 200 E.W (B) complete with all associated formwork, finishing with a steel float and forming a 600 x 600mm opening for the inspection cover (MS).	Item	1		
	Pre-cast Concrete Pump Well/ Sump Supply and install 100mm thick precast reinforced concrete vertical culverts on concrete base slab (MS) ; complete with water tight jointing and finishing works to approval.				
7	1200mm diameter ; height n.e 8m	Item	1		
	Concrete Inserts Cast or Spum Iron Pipe Fittings. Flanged, puddled and plain end pipe insert projecting from one face of the concrete, all to PN6 and of the following sizes and lengths, including supply of the pipe and as shown in the drawings.				
8	200mm ND and not exceeding 0.5m length	No.	2		
	Adaptors Flange adaptor to fit ductile PVC to all to PN6 and of the following sizes:-				
9	200 mm ND	No.	2		
10	OD225mm PN10 plain end uPVC pipe connection between Silt Trap Basin and Pump Sump.	m	8		
	Bellmouths Flanged bellmouth to ISO 2531, flanges to ISO 2441, of the following sizes all to PN 6				
11	200 mm ND	No.	1		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.2: AJULON IN KABERAMAIDO DISTRICT

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	PIPEWORK - FITTINGS AND VALVES <i>Gate Valves: Hand Operated</i>				
12	DN 200 mm all flanged CI gate valves to BS 5150 ,flanges to BS 4505 , all to PN 6 for operation by tee key, with extension spindle not exceeding 4.5 metres long, and of the following sizes				
	MISCELLANEOUS WORK				
	Ladders				
13	Internal galvanized mild steel ladder to BS 4211, galvanized to BS 729, complete and as shown in the drawings including fixing to precast concrete units..	m	8		
	Steel grating				
14.1	Galvanized iron Coarse Trash Screen as detailed in the drawings.	No.	1		
14.2	Galvanized iron Fine Trash Screen as detailed in the drawings.	No.	1		
	Pump Well/ Sump				
	Supply and install 8.0m long HDPE vertical culverts on concrete base slab (MS) ; complete with a Single ND200mm flanged branch to receive a ND200 gate valve. Branch height/ positioning to be determined on site.	Item	Rate Only		
15	Internal diameter ; 1200x200mm				
	Stone pitched Channel.				
16	3.0 x 1.5 top x bottom width x 1.5m deep maximum trapezoidal lined drain as detailed in the drawing.	m	5		
	Gabion boxes				
17	PVC coated gabion boxes ; size 1m x 1m x 1m; including rockfill of size 100 - 250mm; as instructed by the Engineer	nr	Rate Only		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.2: AJULON IN KABERAMAIDO DISTRICT

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>ELECTRO-MECHANICAL WORKS</u>				
	<u>Solar Pumping System</u> (based on 550Wp panels; bidder to adjust numbers to match rating of panel offered)				
ME1	11.0kW Submersible Pump Set with 15kW Pumping Inverter with Data Module, rated flow Q = 22 m ³ /hr., rated head H = 75m total head; set to not more than <u>5m</u> below ground including Dry- run protection, Motor and Pump	No.	1		
ME2	2x17No. x 550Wp panels solar array to provide 18.7kW power to the pump system complete including wiring.	Item	1		
ME3	Mild steel welded structure for holding solar PV panels at 15° tilt angle and suitable for a 2x17No. x 550Wp panels Solar Aarray in Item 2 above as per drawings, including foundations, vandal proofing mounting to the Engineer's approval	Sum	1		
ME4	PV Disconnect 1000-40-2	No.	1		
ME5	PV Protect 1000-15, SPD x 1 on incoming solar PV.	No.	1		
ME6	Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc.	Item	1		
ME7	PV Combiner	No.	1		
ME7a	Pressure Switch and Gauge - P5/8	No.	1		
ME8	Sinewave filter - SWAP0022D.	No.	1		
ME9	10mm ² Borehole drop cable,	m	5		
ME10	10mm ² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding.	m	240		
ME10a	6mm ² UV Single Cable.	m	60		
ME11	Wire kit array from solar array to controller with MC4 connectors	No.	135		
ME11a	Adapter box	No.	1		
ME12	Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4.	Item	1		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.2: AJULON IN KABERAMAIDO DISTRICT

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>Earthing and Lightning Protection</u>				
ME13	Earthing at solar array and borehole installation by 16mm ² PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME14	Lightning Protection at solar array and borehole installation consisting of 25x3mm copper tape, air terminal, test block and earth electrode in a manhole and all accessories.	Sum	1		
ME15	60W Solar security light and battery complete with 6m steel pole and lockable battery box	No.	5		
	<u>Alarm System</u>				
ME16	GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array.	Item	1		
ME17	GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor for the pump protection as instructed by the Engineer.	Item	1		
	<u>MISCELLANEOUS WORKS</u>				
	<u>Pump Protection System</u>				
X1	Vertical pipe pump stilling tube/ anti-vandal protection sleeve including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/002a or OIS/ABS/003, including 1.5x1.5x0.3m support base.	No.	1		
	<u>Kerbs</u>				
	<u>Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the following alignment: -</u>				
X2	Straight or curved to a radius exceeding 12 m	m	70		
X3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet.	m ²	220		
X4	450mm diameter reinforced concrete pipe/ culvert	m	0		
	<u>Pump House</u>				
X5	Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.	Sum	1		
	<u>Fences</u>				
X6a	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Intake Site, including special erection methods in "marshy grounds" to the Engineer's approval.	m	50		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.2: AJULON IN KABERAMAIDO DISTRICT

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
X6b	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Pumping Station Site.	m	10		
	<u>Gates</u>				
X7	Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	2		
	<u>Training of Operator's staff</u>				
X8	Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
	<u>Operation and Maintenance Manuals</u>				
X9	Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
XX	Horizontal pump installation option out of flanged/ sealed end HDPE culvert pipe mounted on fabricated GI support structure including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/005.	Item	Rate Only		

Total Carried to Collection

BILL No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description				Amount (UGx.)
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
	Page 6				
	Page 7				

Total Bill No. 1 Carried to Bill Summary

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.2: AJULON IN KABERAMAIDO DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>DEMOLITION AND SITE CLEARANCE</u>				
	<u>General Site Clearance</u>				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing tree stumps and disposal of arising materials.	Item	1		
	<u>PIPEWORKS - PIPES</u>				
2	<u>Steel Pipes</u>				
	<u>Galvanized iron pipes (Class B) with threaded joints, include unions/sockets, all to ISO 2531 of the following sizes:</u>				
2.1	DN75mm, in trenches; depths not exceeding 1.5m	m	12		
3	<u>HDPE Pipes</u>				
	<u>HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m</u>				
3.1	OD90mm HDPE PN10	m	1,240		
4	<u>uPVC Pipes</u>				
	<u>uPVC pressure pipes to UNBS US 264: 2000 and DIN 8062 with integral rubber ring socket joints laid in trenches</u>				
	<u>OD110 to PN 10</u>				
4.1	Depth not exceeding 1.5m	m	Rate Only		
	<u>PIPEWORK - FITTINGS AND VALVES</u>				
	<u>Cast or Spun Iron Pipe Fittings</u>				
5	<u>Bends</u>				
	<u>Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizes</u>				
5.1	DN40mm	No.	Rate Only		
5.2	DN50mm	No.	Rate Only		
5.3	DN65mm	No.	Rate Only		
5.4	DN75mm	No.	Rate Only		
5.5	DN100mm	No.	Rate Only		
6	<u>Bulk Flow Meters</u>				
	<u>Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as specified, all fittings to PN10 including a masonry chamber, and on the following main pipe sizes</u>				
6.1	DN100mm PN10	No.	Rate Only		
6.2	DN75mm PN10	No.	1		
6.3	DN65mm PN10	No.	Rate Only		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.2: AJULON IN KABERAMAIDO DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>PN16 HDPE Compression fitting to DIN 8074/BS 5114</u>				
7	Equal Adapters				
7.1	OD90 female adapter	No.	2		
8	<u>Valves and Penstocks</u>				
	<u>Air Valves</u>				
	<u>Flanged CI double orifice air relief valve, DN50mm, as specified</u>				
	<u>,flanges to ISO 2441, complete with isolating gate valve to ISO 7259,</u>				
	<u>flange adaptors, distance pieces, and all fittings necessary to make the</u>				
	<u>installation on pipes of the following sizes, all to PN10, include chamber</u>				
	<u>as specified.</u>				
8.1	DN40mm	No.	Rate Only		
8.2	DN50mm	No.	Rate Only		
8.3	DN65mm	No.	Rate Only		
8.4	DN75mm	No.	1		
8.5	DN100mm	No.	Rate Only		
9	<u>Washouts</u>				
	<u>Washout as specified in the drawings, complete with plastic</u>				
	<u>compression pipe fittings; tee, drainage pipes, union ball valve, flap</u>				
	<u>valve, stone masonry outfall structure and all other fittings necessary to</u>				
	<u>make the complete installation on pipes of the following sizes; all to</u>				
	<u>PN10 including valve surface box to detail.</u>				
9.1	DN100mm	No.	Rate Only		
9.2	DN75mm	No.	1		
9.3	DN65mm	No.	Rate Only		
9.4	DN50mm	No.	Rate Only		
	<u>PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES</u>				
	<u>Other Chambers</u>				
	<u>Masonry air valve chamber, complete as specified in the drawings, and</u>				
	<u>of the following depths</u>				
10.1	Depth not exceeding 1.5m	No.	1		
	<u>Valve Surface Boxes</u>				
	<u>Valve surface box for DN100 - DN300 valves, with lockable cover</u>				
	<u>securely attached to main body of surface box by chain or bolt, include</u>				
	<u>down pipe, complete as specified and to the following depths</u>				
10.2	Depth not exceeding 1.5m	No.	1		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.2: AJULON IN KABERAMAIDO DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>Reinstatement Roads</u>				
	<u>Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes</u>				
11	Not exceeding DN300mm	m	Rate Only		
	<u>Surrounds</u>				
	<u>Pipe surrounds, of selected excavated granular material, for the following pipe sizes</u>				
12.1	Not exceeding DN200mm	m	55		
	<u>Pipe surrounds, of imported granular material, for the following pipe</u>				
12.2	Not exceeding DN200mm	m	120		
	<u>Pipe surrounds, of mass concrete, for the following pipe sizes</u>				
12.3	Not exceeding DN200mm	m	180		
	<u>Concrete Stools and Thrust Blocks</u>				
	<u>Thrust Blocks</u>				
	<u>Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m³, for the following pipe sizes</u>				
13.1	Diameter not exceeding DN200mm	No.	6		
	<u>Other Pipework Ancillaries</u>				
	<u>Marker Posts</u>				
14	Marker posts for pipes, gate valves, air valves, washouts	nr	20		
Total Carried to Collection					
BILL No. 2 : TRANSMISSION MAINS					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 2 Collection				
	Page 8				
	Page 9				
	Page 10				
Total Bill No. 2 Carried to Bill Summary					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.2: AJULON IN KABERAMAIDO DISTRICT

BILL No. 4.3 : STORAGE RESERVOIR WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>DEMOLITION AND SITE CLEARANCE</u>				
	<u>General Site Clearance</u>				
1	General site clearance including trees, stumps and disposal of arising materials.	Item	1		
2	<u>Reservoir</u> Erect a welded steel tower for reservoir support complete, include foundations, columns, beams, access ladders, plates, braces, walkway/ guardrail, base plates, anchor bolts, nuts, washers, etc, painting and finishes; complete as specified and detailed in the drawings , of the following height and reservoir capacities.				
2.1	Height; 9.0m for (4No. x 10m ³ Tanks)	No.	1		
3	<u>Plastic Tanks</u> Supply and install a vertical cylindrical Rotational Moulded Polyethylene Water Storage Tank to DUS 1560: 2013 as manufactured by Ms Gentex Ltd. / Crest Tanks or any other approved complete with a lockable access man ways, inlet/ riser, ball float valve, overflow with insect screen, float type water level indicator and outlet/ down pipe with a strainer, washout and overflow connection, including interconnecting pipe work and fittings, as detailed in the drawings, supply specifications and of the following capacity.				
3.1	10m ³	No.	4		
4	<u>150-200 micron union/ compression type clear uPVC Y- Screen Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement screen element and seal ring :-</u>				
4.1	DN75mm, PN10	No.	1		
5	<u>150-200 micron union/ compression type clear uPVC Y- Disc Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement disk element and seal ring :-</u> [OPTIONAL]				
5.1	DN100mm, PN10	No.	Rate Only		
5.2	DN75mm, PN10	No.	1		
5.3	DN65mm, PN10	No.	Rate Only		
6	<u>Landscaping and Walkways</u>				
6.1	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	150		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.2: AJULON IN KABERAMAIDO DISTRICT

BILL No. 3 : STORAGE RESERVOIR WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6.2	500 x 500 x 50mm precast concrete paving slabs laid "Space out Stone method" between the gate, pump house and solar array in one raw, laid onto and including 200mm thick murram fill.	No.	Rate Only		
7	Fences				
7.1	Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m.	m	60		
	Gates				
7.2	Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	1		
	Provision and Placing of Concrete Ordinary Designed Mix Concrete				
8	<u>Designed mix concrete, to BS 5328, with ordinary portland cement to BS 12 , aggregate to BS882 , for 10mm aggregate sizes and the following grades:</u>				
8.1	Grade C15	m ³	2		

Total Carried to Collection

BILL No. 3 : STORAGE RESERVOIR WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 3 Collection Page 11 Page 12				

Total Bill No. 3 Carried to Bill Summary

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.2: AJULON IN KABERAMAIDO DISTRICT

BILL No.4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>DEMOLITION AND SITE CLEARANCE</u>				
	<u>General Site Clearance</u>				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing tree stumps and disposal of arising materials.	Item	1		
	<u>PIPEWORK-PIPES</u>				
2	<u>Plastic Pressure Pipes- Distribution</u> HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in trench to the following depths not exceeding 1.5m				
2.1	OD63mm PN10	m	325		
2.2	OD75mm PN10	m	Rate Only		
2.3	OD90mm PN10	m	806		
	<u>PIPEWORK - FITTINGS AND VALVES</u>				
	<u>PN10 HDPE Compression fitting to DIN 8074/BS 5114</u>				
	<u>Plastic Pipe Fittings</u>				
3	<u>Equal tees</u>				
3.1	OD90mm	No.	1		
3.2	OD75mm	No.	1		
3.3	OD63mm	No.	Rate Only		
	<u>Unequal tees</u>				
3.5	OD90 x 75mm	No.	Rate Only		
3.6	OD90 x 63mm	No.	6		
	<u>PN10 HDPE Compression fitting to DIN 8074/BS 5114</u>				
	<u>Plastic Pipe Fittings</u>				
4	<u>Couplers</u>				
4.1	OD90mm	No.	Rate Only		
4.2	OD75mm	No.	Rate Only		
4.3	OD63mm	No.	Rate Only		
5	<u>End caps</u>				
5.1	OD90mm	No.	Rate Only		
5.2	OD75mm	No.	Rate Only		
5.3	OD63mm	No.	3		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.2: AJULON IN KABERAMAIDO DISTRICT

BILL No.4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	<u>Valves and Penstocks</u>				
	<u>Air Vaves</u>				
	Flanged CI double orifice air relief valve, DN50mm, as specified, flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified.				
6.1	OD90mm	No.	Rate Only		
6.2	OD75mm	No.	Rate Only		
6.3	OD63mm	No.	Rate Only		
7	<u>Washouts</u>				
	Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, PVC union ball valve, flap valve and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box and stone masonry outfall structure to detail as per Drawing				
7.2	DN75mm	No.	Rate Only		
7.1	DN65mm	No.	Rate Only		
7.2	DN50mm	No.	Rate Only		
8	<u>Farm Gate Connections</u>				
	Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: -				
8.1	DN65mm	No.	Rate Only		
8.2	DN50mm	No.	5		
	<u>Other Pipework Ancillaries</u>				
	<u>Marker Posts</u>				
9	Marker posts for pipes, gate valves, air valves, washouts	nr	40		
	<u>Reinstatement</u>				
	<u>Roads</u>				
	Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes				
10	Not exceeding DN300mm	m	Rate Only		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.2: AJULON IN KABERAMAIDO DISTRICT

BILL No. 4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<p>Bill No. 4 Collection</p> <p>Page 13</p> <p>Page 14</p>				
Total Bill No. 4 Carried to Bill Summary					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA
SCHEME ID. 3.3: TOTOLIM IN KUMI DISTRICT
BILL SUMMARY

Bill No.	Description	Amount (UGx.)
	WORK ITEMS	
1	Abstraction and Electromechanical Works	
2	Transmission Mains	
3	Storage Reservoir Works	
4	Distribution Network	
Total Carried to Grand Summary		

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.3: TOTOLIM IN KUMI DISTRICT

BILL No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	General Site Clearance				
1	General site clearance, felling trees, grabbing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1		
	Earthworks				
	Excavation to form trapezoidal prism reservoir in material other than topsoil, rock or other artificial hard material, depth not exceeding 6.0m including forming earth bands along the channel of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.1	Marshy soils	m ³	52		
2.2	Soft / decomposed rock soils	m ³	26		
	Excavation to form trapezoidal channel in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.4	Marshy soils	m ³	4		
2.5	Soft / decomposed rock soils	m ³	1		
	Excavation to form cylindrical sump well in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.6	Marshy soils	m ³	16		
2.7	Soft / decomposed rock soils	m ³	8		
	Filling Structures				
	Filling to precast concrete sump structure by methods specified and to depths as shown in the drawings with the following materials: -				
3	Selected excavated material including topping with a 200mm thick layer of top/ vegetable soil.	m ³	10		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.3: TOTOLIM IN KUMI DISTRICT

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
4	Landscaping Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	40		
	IN-SITU CONCRETE Provision and Placing of Concrete Ordinary Design Mix Concrete <u>Designed mix , concrete to BS 8500 and BS EN 206-1, with ordinary portland cement to BS 12, aggregate to BS 882 , maximum aggregate size ; 20mm for the following structures: -</u>				
5	In situ Concrete 75mm thick Grade C15 concrete blinding to pump sump base	m ³	0.25		
6.1	2200mm Diameter x 150mm thick Grade C25 concrete base slab reinforced with H12 - 200 E.W (B) complete with all associated formwork, finishing with a steel float.	Item	1		
6.2	2200mm Diameter x 150mm thick Grade C25 concrete top slab reinforced with H12 - 200 E.W (B) complete with all associated formwork, finishing with a steel float and forming a 600 x 600mm opening for the inspection cover (MS).	Item	1		
7	Pre-cast Concrete Pump Well/ Sump Supply and install 100mm thick precast reinforced concrete vertical culverts on concrete base slab (MS) ; complete with water tight jointing and finishing works to approval. 1200mm diameter ; height n.e 8m	Item	1		
8	Concrete Inserts Cast or Spun Iron Pipe Fittings. Flanged, puddled and plain end pipe insert projecting from one face of the concrete, all to PN6 and of the following sizes and lengths, including supply of the pipe and as shown in the drawings. 200mm ND and not exceeding 0.5m length	No.	2		
9	Adaptors Flange adaptor to fit ductile PVC to all to PN6 and of the following sizes:- 200 mm ND	No.	2		

Total Carried to Collection

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
10	OD225mm PN10 plain end uPVC pipe connection between Silt Trap Basin and Pump Sump.	m	8		
11	Bellmouths Flanged bellmouth to ISO 2531, flanges to ISO 2441, of the following sizes all to PN 6 200 mm ND	No.	1		
	PIPEWORK - FITTINGS AND VALVES				

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.3: TOTOLIM IN KUMI DISTRICT

12	Gate Valves: Hand Operated DN 200 mm all flanged CI gate valves to BS 5150 ,flanges to BS 4505 , all to PN 6 for operation by tee key, with extension spindle not exceeding 4.5 metres long, and of the following sizes				
	MISCELLANEOUS WORK				
	Ladders				
13	Internal galvanized mild steel ladder to BS 4211, galvernized to BS 729, complete andas shown in the drawings including fixing to precast concrete units..	m	8		
	Steel grating				
14.1	Galvanized iron Coarse Trash Screen as detailed in the drawings.	No.	1		
14.2	Galvanized iron Fine Trash Screen as detailed in the drawings.	No.	1		
	Pump Well/ Sump				
	Supply and install 8.0m long HDPE vertical culverts on concrete base slab (MS) ; complete with a Single ND200mm flanged branch to receive a ND200 gate valve. Branch height/ positioning to be determined on site.	Item	Rate Only		
15	Internal diameter ; 1200x200mm				
	Stone pitched Channel.				
16	3.0 x 1.5 top x bottom width x 1.5m deep maximum trapezoidal lined drain as detailed in the drawing.	m	5		
	Gabion boxes				
17	PVC coated gabion boxes ; size 1m x 1m x 1m; including rockfill of size 100 - 250mm; as instructed by the Engineer	nr	Rate Only		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.3: TOTOLIM IN KUMI DISTRICT

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>ELECTRO-MECHANICAL WORKS</u>				
	<u>Solar Pumping System</u> (based on 550Wp panels; bidder to adjust numbers to match rating of panel offered)				
ME1	7.5kW Submersible Pump Set with 11.0kW Pumping Inverter with Data Module, rated flow Q = 20 m ³ /hr., rated head H = 75m total head; set to not more than 5m below ground including Dry- run protection, Motor and Pump End.	No.	1		
ME2	2x17No. x 550Wp panels solar array to provide 18.7kW power to the pump system complete including wiring.	Item	1		
ME3	Mild steel welded structure for holding solar PV panels at 15° tilt angle and suitable for a 2x17No. x 550Wp panels Solar Aarray in Item 2 above as per drawings, including foundations, vandal proofing mounting to the Engineer's approval	Sum	1		
ME4	PV Disconnect 1000-40-2	No.	1		
ME5	PV Protect 1000-15, SPD x 1 on incoming solar PV.	No.	1		
ME6	Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc.	Item	1		
ME7	PV Combiner	No.	1		
ME7a	Pressure Switch and Gauge - P5/8	No.	1		
ME8	Sinewave filter - SWAP0017D.	No.	1		
ME9	10mm ² Borehole drop cable,	m	5		
ME10	10mm ² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding.	m	100		
ME10a	6mm ² UV Single Cable.	m	60		
ME11	Wire kit array from solar array to controller with MC4 connectors	No.	2		
ME11a	Adapter box	No.	1		
ME12	Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4.	Item	1		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.3: TOTOLIM IN KUMI DISTRICT

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>Earthing and Lightening Protection</u>				
ME13	Earthing at solar array and borehole installation by 16mm ² PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME14	Lightning Protection at solar array and borehole installation consisting of 25x3mm copper tape, air terminal, test block and earth electrode in a manhole and all accessories.	Sum	1		
ME15	60W Solar security light and battery complete with 6m steel pole and lockable battery box	No.	5		
	<u>Alarm System</u>				
ME16	GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array.	Item	1		
ME17	GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor for the pump protection as instructed by the Engineer.	Item	1		
	<u>MISCELLANEOUS WORKS</u>				
	<u>Pump Protection System</u>				
X1	Vertical pipe pump stilling tube/ anti-vandal protection sleeve including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/002a or OIS/ABS/003, including 1.5x1.5x0.3m support base.	No.	1		
	<u>Kerbs</u>				
	<u>Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the following alignment: -</u>				
X2	Straight or curved to a radius exceeding 12 m	m	70		
X3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet.	m ²	220		
X4	450mm diameter reinforced concrete pipe/ culvert	m	0		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.3: TOTOLIM IN KUMI DISTRICT

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
X5	<u>Pump House</u> Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.	Sum	1		
X6a	<u>Fences</u> Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Intake Site, <u>including special erection methods in "marshy grounds"</u> to the Engineer's approval.	m	50		
X6b	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Pumping Station Site.	m	10		
X7	<u>Gates</u> Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	2		
X8	<u>Training of Operator's staff</u> Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
X9	<u>Operation and Maintenance Manuals</u> Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
XX	Horizontal pump installation option out of flanged/ sealed end HDPE culvert pipe mounted on fabricated GI support structure including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/005.	Item	Rate Only		
Total Carried to Collection					
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Total Bill No. 1 Carried to Bill Summary					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.3: TOTOLIM IN KUMI DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>DEMOLITION AND SITE CLEARANCE</u>				
	<u>General Site Clearance</u>				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing tree stumps and disposal of arising materials.	Item	1		
	<u>PIPEWORKS - PIPES</u>				
2	<u>Steel Pipes</u>				
	<u>Galvanized iron pipes (Class B) with threaded joints, include unions/sockets, all to ISO 2531 of the following sizes;</u>				
2.1	DN75mm, not in trenches;	m	Rate Only		
2.2	DN75mm, in trenches; depths not exceeding 1.5m	m	12		
3	<u>HDPE Pipes</u>				
	<u>HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m</u>				
3.1	OD90mm HDPE PN10	m	630		
	<u>PIPEWORK - FITTINGS AND VALVES</u>				
	<u>Cast or Spun Iron Pipe Fittings</u>				
	<u>Bends</u>				
	<u>Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizes</u>				
4.1	DN75mm	No.	4		
4.2	DN100mm	No.	Rate Only		
	<u>Bulk Flow Meters</u>				
	<u>Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as specified, all fittings to PN10 including a masonry chamber, and on the following main pipe sizes</u>				
5.1	DN75mm PN10	No.	1		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.3: TOTOLIM IN KUMI DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>PN16 HDPE Compression fitting to DIN 8074/BS 5114</u>				
6	Equal Adapters OD90 female adapter	No.	2		
	<u>Valves and Penstocks</u>				
	<u>Air Valves</u> <u>Flanged CI double orifice air relief valve, DN50mm, as specified, flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified.</u>				
7	DN75mm <u>Washouts</u> <u>Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, union ball valve, flap valve, stone masonry outfall structure and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box to detail.</u>	No.	Rate Only		
9	DN75mm <u>PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES</u> <u>Other Chambers</u> <u>Masonry air valve chamber, complete as specified in the drawings, and of the following depths</u>	No.	Rate Only		
9.1	Depth not exceeding 1.5m <u>Valve Surface Boxes</u> <u>Valve surface box for DN100 - DN300 valves, with lockable cover securely attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to the following depths</u>	No.	Rate Only		
9.2	Depth not exceeding 1.5m	No.	Rate Only		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.3: TOTOLIM IN KUMI DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>Reinstatement Roads</u>				
	<u>Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes</u>				
10	Not exceeding DN300mm	m	Rate Only		
	<u>Surrounds</u>				
	<u>Pipe surrounds, of selected excavated granular material, for the following pipe sizes</u>				
11.1	Not exceeding DN200mm	m	Rate Only		
	<u>Pipe surrounds, of imported granular material, for the following pipe</u>				
11.2	Not exceeding DN200mm	m	60		
	<u>Pipe surrounds, of mass concrete, for the following pipe sizes</u>				
11.3	Not exceeding DN200mm	m	80		
	<u>Concrete Stools and Thrust Blocks</u>				
	<u>Thrust Blocks</u>				
	<u>Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m³, for the following pipe sizes</u>				
12	Diameter not exceeding DN200mm	No.	Rate Only		
	<u>Other Pipework Ancillaries</u>				
	<u>Marker Posts</u>				
13	Marker posts for pipes, gate valves, air valves, washouts	nr	26		
Total Carried to Collection					
BILL No. 2 : TRANSMISSION MAINS					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 2 Collection				
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CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.3: TOTOLIM IN KUMI DISTRICT

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Total Bill No. 2 Carried to Bill Summary						

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.3: TOTOLIM IN KUMI DISTRICT

BILL No. 4.3 : STORAGE RESERVOIR WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site clearance including trees, stumps and disposal of arising materials.	Item	1		
2	Reservoir				
	Erect a welded steel tower for reservoir support complete, include foundations, columns, beams, access ladders, plates, braces, walkway/ guardrail, base plates, anchor bolts, nuts, washers, etc, painting and finishes; complete as specified and detailed in the drawings, of the following height and reservoir capacities.				
2.1	Height; 9.0m for (4No. x 10m ³ Tanks)	No.	1		
3	Plastic Tanks				
	Supply and install a vertical cylindrical Rotational Moulded Polyethylene Water Storage Tank to DUS 1560: 2013 as manufactured by Ms Gentex Ltd. / Crest Tanks or any other approved complete with a lockable access man ways, inlet/ riser, ball float valve, overflow with insect screen, float type water level indicator and outlet/ down pipe with a strainer, washout and overflow connection, including interconnecting pipe work and fittings, as detailed in the drawings, supply specifications and of the following capacity.				
3.1	10m ³	No.	4		
4	<u>150-200 micron union/ compresion type clear uPVC Y- Screen Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement screen element and seal ring :-</u>				
4.1	DN75mm, PN10	No.	1		
5	<u>150-200 micron union/ compresion type clear uPVC Y- Disc Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement disk element and seal ring :-</u> [OPTIONAL]				
5.1	DN75mm, PN10	No.	1		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.3: TOTOLIM IN KUMI DISTRICT

BILL No. 3 : STORAGE RESERVOIR WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	<u>Landscaping and Walkways</u>				
6.1	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	150		
6.2	500 x 500 x 50mm precast concrete paving slabs laid "Space out Stone method" between the gate, pump house and solar array in one row, laid onto and including 200mm thick murram fill.	No.	Rate Only		
7	<u>Fences</u>				
7.1	Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m.	m	60		
	<u>Gates</u>				
7.2	Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	1		
	<u>Provision and Placing of Concrete</u> <u>Ordinary Designed Mix Concrete</u>				
8	<u>Designed mix concrete, to BS 5328, with ordinary portland cement to BS 12 , aggregate to BS882 , for 10mm aggregate sizes and the following grades:</u>				
8.1	Grade C15	m ³	2		

Total Carried to Collection

BILL No. 3 : STORAGE RESERVOIR WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 3 Collection				
	Page 12				
	Page 13				

Total Bill No. 3 Carried to Bill Summary

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.3: TOTOLIM IN KUMI DISTRICT

BILL No.4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>DEMOLITION AND SITE CLEARANCE</u>				
	<u>General Site Clearance</u>				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing tree stumps and disposal of arising materials.	Item	1		
	<u>PIPEWORK-PIPES</u>				
2	<u>Plastic Pressure Pipes- Distribution</u> <u>HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in trench to the following depths not exceeding 1.5m</u>				
2.1	OD63mm PN6	m	80		
2.2	OD90mm PN6	m	180		
	<u>PIPEWORK - FITTINGS AND VALVES</u>				
	<u>PN10 HDPE Compression fitting to DIN 8074/BS 5114</u>				
	<u>Plastic Pipe Fittings</u>				
3	<u>Equal tees</u>				
3.1	OD90mm	No.	Rate Only		
	<u>Unequal tees</u>				
3.2	OD90 x 75mm	No.	Rate Only		
3.3	OD90 x 63mm	No.	3		
	<u>PN10 HDPE Compression fitting to DIN 8074/BS 5114</u>				
	<u>Plastic Pipe Fittings</u>				
4	<u>Couplers</u>				
4.2	OD90mm	No.	Rate Only		
5	<u>End caps</u>				
5.1	OD63mm	No.	3		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.3: TOTOLIM IN KUMI DISTRICT

BILL No.4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Valves and Penstocks Air Vaves <u>Flanged CI double orifice air relief valve, DN50mm, as specified, flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified.</u>				
6.1	OD90mm	No.	Rate Only		
6.2	OD75mm	No.	Rate Only		
7	Washouts <u>Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, PVC union ball valve, flap valve and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box and stone masonry outfall structure to detail as per</u>				
7.1	DN75mm	No.	Rate Only		
7.2	DN65mm	No.	Rate Only		
8	Farm Gate Connections Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: -				
8.1	DN50mm	No.	3		
	Other Pipework Ancillaries Marker Posts				
9	Marker posts for pipes, gate valves, air valves, washouts	nr	12		
	Reinstatement Roads <u>Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes</u>				
10	Not exceeding DN300mm	m	Rate Only		
Total Carried to Collection					
BILL No. 4 : DISTRIBUTION NETWORK					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 4 Collection				
	Page 14				

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA
SCHEME ID. 3.3: TOTOLIM IN KUMI DISTRICT

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Total Bill No. 4 Carried to Bill Summary					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.4: KAGOLOGOLO IN SERERE DISTRICT

BILL SUMMARY

Bill No.	Description	Amount (UGx.)
	<p>WORK ITEMS</p> <p>1 Abstraction and Electromechanical Works</p> <p>2 Transmission Mains</p> <p>3 Storage Reservoir Works</p> <p>4 Distribution Network</p>	
	Total Carried to Grand Summary	

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.4: KAGOLOGOLO IN SERERE DISTRICT

BILL No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	General Site Clearance				
1	General site clearance, felling trees, grabbing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1		
	Earthworks				
	Excavation to form trapezoidal prism reservoir in material other than topsoil, rock or other artificial hard material, depth not exceeding 6.0m including forming earth bands along the channel of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.1	Marshy soils	m ³	52		
2.2	Soft / decomposed rock soils	m ³	26		
	Excavation to form trapezoidal channel in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.4	Marshy soils	m ³	46		
2.5	Soft / decomposed rock soils	m ³	14		
	Excavation to form cylindrical sump well in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.6	Marshy soils	m ³	16		
2.7	Soft / decomposed rock soils	m ³	8		
	Filling Structures				
	<u>Filling to precast concrete sump structure by methods specified and to depths as shown in the drawings with the following materials:-</u>				
3	Selected excavated material including topping with a 200mm thick layer of top vegetable soil.	m ³	10		
	Landscaping				
4	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	40		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.4: KAGOLOGOLO IN SERERE DISTRICT

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	IN-SITU CONCRETE Provision and Placing of Concrete Ordinary Design Mix Concrete Designed mix , concrete to BS 8500 and BS EN 206-1, with ordinary portland cement to BS 12, aggregate to BS 882 , maximum aggregate size ; 20mm for the following structures: - In situ Concrete				
5	75mm thick Grade C15 concrete blinding to pump sump base	m ³	0.25		
6.1	2200mm Diameter x 150mm thick Grade C25 concrete base slab reinforced with H12 - 200 E.W (B) complete with all associated formwork, finishing with a steel float.	Item	1		
6.2	2200mm Diameter x 150mm thick Grade C25 concrete top slab reinforced with H12 - 200 E.W (B) complete with all associated formwork, finishing with a steel float and forming a 600 x 600mm opening for the inspection cover (MS).	Item	1		
	Pre-cast Concrete Pump Well/ Sump Supply and install 100mm thick precast reinforced concrete vertical culverts on concrete base slab (MS) ; complete with water tight jointing and finishing works to approval.				
7	1200mm diameter ; height n.e 8m	Item	1		
	Concrete Inserts Cast or Spum Iron Pipe Fittings. Flanged, puddled and plain end pipe insert projecting from one face of the concrete, all to PN6 and of the following sizes and lengths, including supply of the pipe and as shown in the drawings.				
8	200mm ND and not exceeding 0.5m length	No.	2		
	Adaptors Flange adaptor to fit ductile PVC to all to PN6 and of the following sizes:-				
9	200 mm ND	No.	2		
10	OD225mm PN10 plain end uPVC pipe connection between Silt Trap Basin and Pump Sump.	m	8		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.4: KAGOLOGOLO IN SERERE DISTRICT

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
11	Bellmouths Flanged bellmouth to ISO 2531, flanges to ISO 2441, of the following sizes all to PN 6 200 mm ND	No.	1		
	PIPEWORK - FITTINGS AND VALVES Gate Valves: Hand Operated				
12	DN 200 mm all flanged CI gate valves to BS 5150 ,flanges to BS 4505 , all to PN 6 for operation by tee key, with extension spindle not exceeding 4.5 metres long, and of the following sizes				
	MISCELLANEOUS WORK				
13	Ladders Internal galvanized mild steel ladder to BS 4211, galvernized to BS 729, complete andas shown in the drawings including fixing to precast concrete units..	m	8		
14.1	Steel grating Galvanized iron Coarse Trash Screen as detailed in the drawings.	No.	1		
14.2	Galvanized iron Fine Trash Screen as detailed in the drawings.	No.	1		
	Pump Well/ Sump Supply and install 8.0m long HDPE vertical culverts on concrete base slab (MS) ; complete with a Single ND200mm flanged branch to receive a ND200 gate valve. Branch height/ positioning to be determined on site.	Item	Rate Only		
15	Internal diameter ; 1200x200mm				
	Stone pitched Channel.				
16	3.0 x 1.5 top x bottom width x 1.5m deep maximum trapezoidal lined drain as detailed in the drawing.	m	5		
	Gabion boxes				
17	PVC coated gabion boxes ; size 1m x 1m x 1m; including rockfill of size 100 - 250mm; as instructed by the Engineer	nr	Rate Only		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.4: KAGOLOGOLO IN SERERE DISTRICT

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>ELECTRO-MECHANICAL WORKS</u>				
	<u>Solar Pumping System</u> (based on 550Wp panels; bidder to adjust numbers				
ME1	7.5kW Submersible Pump Set with 11.0kW Pumping Inverter with Data Module, rated flow Q = 20 m ³ /hr., rated head H = 55m total head; set to not more than <u>5m</u> below ground including Dry- run protection, Motor and Pump End.	No.	1		
ME2	2x17No. x 550Wp panels solar array to provide 18.7kW power to the pump system complete including wiring.	Item	1		
ME3	Mild steel welded structure for holding solar PV panels at 15° tilt angle and suitable for a 2x17No. x 550Wp panels Solar Aarray in Item 2 above as per drawings, including foundations, vandal proofing mounting to the Engineer's approval	Sum	1		
ME4	PV Disconnect 1000-40-2	No.	1		
ME5	PV Protect 1000-15, SPD x 1 on incoming solar PV.	No.	1		
ME6	Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc.	Item	1		
ME7	PV Combiner	No.	1		
ME7a	Pressure Switch and Gauge - P5/8	No.	1		
ME8	Sinewave filter - SWAP0017D.	No.	1		
ME9	10mm ² Borehole drop cable,	m	5		
ME10	10mm ² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding.	m	100		
ME10a	6mm ² UV Single Cable.	m	60		
ME11	Wire kit array from solar array to controller with MC4 connectors	No.	2		
ME11a	Adapter box	No.	1		
ME12	Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4.	Item	1		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.4: KAGOLOGOLO IN SERERE DISTRICT

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>Earthing and Lightening Protection</u>				
ME13	Earthing at solar array and borehole installation by 16mm ² PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME14	Lightning Protection at solar array and borehole installation consisting of 25x3mm copper tape, air terminal, test block and earth electrode in a manhole and all accessories.	Sum	1		
ME15	60W Solar security light and battery complete with 6m steel pole and lockable battery box	No.	5		
	<u>Alarm System</u>				
ME16	GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array.	Item	1		
ME17	GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor for the pump protection as instructed by the Engineer.	Item	1		
	<u>MISCELLANEOUS WORKS</u>				
	<u>Pump Protection System</u>				
X1	Vertical pipe pump stilling tube/ anti-vandal protection sleeve including a floating suction assembly structure to detail as per Drawing No.OIS/ABS/002a or OIS/ABS/003, including 1.5x1.5x0.3m support base.	No.	1		
	<u>Kerbs</u>				
	<u>Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the following alignment: -</u>		135		
X2	Straight or curved to a radius exceeding 12 m	m	70		
X3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet.	m ²	220		
X4	450mm diameter reinforced concrete pipe/ culvert	m	0		
	<u>Pump House</u>				
X5	Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.	Sum	1		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.4: KAGOLOGOLO IN SERERE DISTRICT

BILL No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description				Amount (UGx.)
	<u>Fences</u>				
X6a	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Intake Site, <u>including special erection methods in "marshy grounds"</u> to the Engineer's approval.	m	50		
X6b	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Pumping Station Site.	m	10		
	<u>Gates</u>				
X7	Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	2		
	<u>Training of Operator's staff</u>				
X8	Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
	<u>Operation and Maintenance Manuals</u>				
X9	Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
XX	Horizontal pump installation option out of flanged/ sealed end HDPE culvert pipe mounted on fabricated GI support structure including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/005.	Item	Rate Only		

Total Carried to Collection

BILL No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description				Amount (UGx.)
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
	Page 6				
	Page 7				

Total Bill No. 1 Carried to Bill Summary

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.4: KAGOLOGOLO IN SERERE DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>DEMOLITION AND SITE CLEARANCE</u>				
	<u>General Site Clearance</u>				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing tree stumps and disposal of arising materials.	Item	1		
	<u>PIPEWORKS - PIPES</u>				
2	<u>Steel Pipes</u>				
	<u>Galvanized iron pipes (Class B) with threaded joints, include unions/sockets, all to ISO 2531 of the following sizes:</u>				
2.1	DN75mm, in trenches; depths not exceeding 1.5m	m	12		
3	<u>HDPE Pipes</u>				
	<u>HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m</u>				
3.1	OD75mm HDPE PN10	m	185		
4	<u>uPVC Pipes</u>				
	<u>uPVC pressure pipes to UNBS US 264: 2000 and DIN 8062 with integral rubber ring socket joints laid in trenches</u>				
	<u>OD110 to PN 10</u>				
4.1	Depth not exceeding 1.5m	m	Rate Only		
	<u>PIPEWORK - FITTINGS AND VALVES</u>				
	<u>Cast or Spun Iron Pipe Fittings</u>				
5	<u>Bends</u>				
	<u>Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizes</u>				
5.1	DN65mm	No.	4		
6	<u>Bulk Flow Meters</u>				
	<u>Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as specified, all fittings to PN10 including a masonry chamber, and on the following main pipe sizes</u>				
6.1	DN65mm PN10	No.	1		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.4: KAGOLOGOLO IN SERERE DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
7	<u>PN16 HDPE Compression fitting to DIN 8074/BS 5114</u>				
	<u>Equal Adapters</u>				
7.1	OD75 female adapter	No.	2		
8	<u>Valves and Penstocks</u>				
	<u>Air Valves</u>				
	<u>Flanged CI double orifice air relief valve, DN50mm, as specified, flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified.</u>				
8.1	DN65mm	No.	Rate Only		
9	<u>Washouts</u>				
	<u>Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, union ball valve, flap valve, stone masonry outfall structure and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box to detail.</u>				
9.1	DN65mm	No.	Rate Only		
9.2	DN50mm	No.	Rate Only		
	<u>PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES</u>				
	<u>Other Chambers</u>				
	<u>Masonry air valve chamber, complete as specified in the drawings, and of the following depths</u>				
10.1	Depth not exceeding 1.5m	No.	1		
	<u>Valve Surface Boxes</u>				
	<u>Valve surface box for DN100 - DN300 valves, with lockable cover securely attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to the following depths</u>				
10.2	Depth not exceeding 1.5m	No.	Rate Only		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.4: KAGOLOGOLO IN SERERE DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>Reinstatement</u>				
	<u>Roads</u>				
11	<u>Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes</u> Not exceeding DN300mm	m	12		
	<u>Surrounds</u>				
12.1	<u>Pipe surrounds, of selected excavated granular material, for the following pipe sizes</u> Not exceeding DN200mm	m	Rate Only		
12.2	<u>Pipe surrounds, of imported granular material, for the following pipe</u> Not exceeding DN200mm	m	30		
12.3	<u>Pipe surrounds, of mass concrete, for the following pipe sizes</u> Not exceeding DN200mm	m	6		
13	<u>Concrete Stools and Thrust Blocks</u>				
	<u>Thrust Blocks</u>				
	<u>Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m³, for the following pipe sizes</u>				
13.1	Diameter not exceeding DN200mm	No.	2		
	<u>Other Pipework Ancillaries</u>				
	<u>Marker Posts</u>				
14	Marker posts for pipes, gate valves, air valves, washouts	nr	13		
Total Carried to Collection					
	Bill No. 2 Collection				
	Page 8				
	Page 8				
	Page 10				
Total Bill No. 2 Carried to Bill Summary					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.4: KAGOLOGOLO IN SERERE DISTRICT

BILL No. 4.3 : STORAGE RESERVOIR WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>DEMOLITION AND SITE CLEARANCE</u>				
	<u>General Site Clearance</u>				
1	General site clearance including trees, stumps and disposal of arising materials.	Item	1		
2	<u>Reservoir</u>				
	<u>Erect a welded steel tower for reservoir support complete, include foundations, columns, beams, access ladders, plates, braces, walkway/ guardrail, base plates, anchor bolts, nuts, washers, etc, painting and finishes; complete as specified and detailed in the drawings , of the following height and reservoir capacities.</u>				
2.1	Height; 6.0m for (4No. x 10m ³ Tanks)	No.	1		
3	<u>Plastic Tanks</u>				
	Supply and install a vertical cylindrical Rotational Moulded Polyethylene Water Storage Tank to DUS 1560: 2013 as manufactured by Ms Gentex Ltd. / Crest Tanks or any other approved complete with a lockable access man ways, inlet/ riser, ball float valve, overflow with insect screen, float type water level indicator and outlet/ down pipe with a strainer, washout and overflow connection, including interconnecting pipe work and fittings, as detailed in the drawings, supply specifications and of the following capacity.				
3.1	10m ³	No.	4		
4	<u>150-200 micron union/ compresion type clear uPVC Y- Screen Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement screen element and seal ring :-</u>				
4.1	DN100mm, PN10	No.	1		
5	<u>150-200 micron union/ compresion type clear uPVC Y- Disc Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement disk element and seal ring :-</u> [OPTIONAL]				
5.1	DN75mm, PN10	No.	1		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.4: KAGOLOGOLO IN SERERE DISTRICT

BILL No. 3 : STORAGE RESERVOIR WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	<u>Landscaping and Walkways</u>				
6.1	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	150		
6.2	500 x 500 x 50mm precast concrete paving slabs laid "Space out Stone method" between the gate, pump house and solar array in one raw, laid onto and including 200mm thick murram fill.	No.	Rate Only		
7	<u>Fences</u>				
7.1	Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m.	m	60		
	<u>Gates</u>				
7.2	Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	1		
	Provision and Placing of Concrete Ordinary Designed Mix Concrete				
8	<u>Designed mix concrete, to BS 5328, with ordinary portland cement to BS 12 , aggregate to BS882 , for 10mm aggregate sizes and the following grades:</u>				
8.1	Grade C15	m ³	2		

Total Carried to Collection

BILL No. 3 : STORAGE RESERVOIR WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 3 Collection				
	Page 11				
	Page 12				

Total Bill No. 3 Carried to Bill Summary

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.4: KAGOLOGOLO IN SERERE DISTRICT

BILL No.4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>DEMOLITION AND SITE CLEARANCE</u>				
	<u>General Site Clearance</u>				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing tree stumps and disposal of arising materials.	Item	1		
	<u>PIPEWORK-PIPES</u>				
2	<u>Plastic Pressure Pipes- Distribution</u> <u>HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in trench to the following depths not exceeding 1.5m</u>				
2.1	OD63mm PN6	m	208		
2.2	OD90mm PN6	m	610		
	<u>OD110 to PN 6</u>				
2.3	Depth not exceeding 1.5m	m	1,670		
	<u>PIPEWORK - FITTINGS AND VALVES</u>				
	<u>PN10 HDPE Compression fitting to DIN 8074/BS 5114</u>				
	<u>Plastic Pipe Fittings</u>				
3	<u>Equal tees</u>				
3.1	OD90mm	No.	1		
3.2	OD75mm	No.	1		
	<u>Unequal tees</u>				
3.3	OD90 x 75mm	No.	2		
3.4	OD90 x 63mm	No.	1		
	<u>PN10 HDPE Compression fitting to DIN 8074/BS 5114</u>				
	<u>Plastic Pipe Fittings</u>				
4	<u>Couplers</u>				
4.1	OD90mm	No.	Rate Only		
4.2	OD75mm	No.	Rate Only		
4.3	OD63mm	No.	Rate Only		
5	<u>End caps</u>				
5.1	OD75mm	No.	Rate Only		
5.2	OD63mm	No.	9		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.4: KAGOLOGOLO IN SERERE DISTRICT

BILL No.4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	<u>Valves and Penstocks</u>				
	<u>Air Vaves</u>				
	<u>Flanged CI double orifice air relief valve, DN50mm, as specified, flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified.</u>				
6.1	OD110mm	No.	3		
6.2	OD90mm	No.	2		
6.3	OD63mm	No.	2		
7	<u>Washouts</u>				
	<u>Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, PVC union ball valve, flap valve and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box and stone masonry outfall structure to detail as per</u>				
7.1	DN100mm	No.	2		
7.2	DN75mm	No.	3		
7.4	DN50mm	No.	4		
8	<u>Farm Gate Connections</u>				
	Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: -				
8.1	DN50mm	No.	9		
	<u>Other Pipework Ancillaries</u>				
	<u>Marker Posts</u>				
9	Marker posts for pipes, gate valves, air valves, washouts	nr	108		
	<u>Reinstatement</u>				
	<u>Roads</u>				
	<u>Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes</u>				
10	Not exceeding DN300mm	m	Rate Only		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.4: KAGOLOGOLO IN SERERE DISTRICT

BILL No. 4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<p>Bill No. 4 Collection</p> <p>Page 13</p> <p>Page 14</p>				
Total Bill No. 4 Carried to Bill Summary					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA
SCHEME ID. 3.5: KITUKILO IN BUGWERI DISTRICT
BILL SUMMARY

Bill No.	Description	Amount (UGx.)
	WORK ITEMS	
1	Abstraction and Electromechanical Works	
2	Transmission Mains	
3	Storage Reservoir Works	
4	Distribution Network	
Total Carried to Grand Summary		

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.5: KITUKILO IN BUGWERI DISTRICT

BILL No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>General Site Clearance</u>				
1	General site clearance, felling trees, grabbing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1		
	<u>Earthworks</u>				
	Excavation to form trapezoidal prism reservoir in material other than topsoil, rock or other artificial hard material, depth not exceeding 6.0m including forming earth bands along the channel of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.1	Marshy soils	m ³	52		
2.2	Soft / decomposed rock soils	m ³	26		
	Excavation to form trapezoidal channel in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.4	Marshy soils	m ³	64		
2.5	Soft / decomposed rock soils	m ³	16		
	Excavation to form cylindrical sump well in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.6	Marshy soils	m ³	16		
2.7	Soft / decomposed rock soils	m ³	8		
	<u>Filling Structures</u>				
	<u>Filling to precast concrete sump structure by methods specified and to depths as shown in the drawings with the following materials: -</u>				
3	Selected excavated material including topping with a 200mm thick layer of top vegetable soil.	m ³	10		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.5: KITUKILO IN BUGWERI DISTRICT

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
4	Landscaping Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	40		
	IN-SITU CONCRETE Provision and Placing of Concrete Ordinary Design Mix Concrete <u>Designed mix , concrete to BS 8500 and BS EN 206-1, with ordinary portland cement to BS 12, aggregate to BS 882 , maximum aggregate size ; 20mm for the following structures: -</u>				
5	In situ Concrete 75mm thick Grade C15 concrete blinding to pump sump base	m ³	0.25		
6.1	2200mm Diameter x 150mm thick Grade C25 concrete base slab reinforced with H12 - 200 E.W (B) complete with all associated formwork, finishing with a steel float.	Item	1		
6.2	2200mm Diameter x 150mm thick Grade C25 concrete top slab reinforced with H12 - 200 E.W (B) complete with all associated formwork, finishing with a steel float and forming a 600 x 600mm opening for the inspection cover (MS).	Item	1		
	Pre-cast Concrete Pump Well/ Sump Supply and install 100mm thick precast reinforced concrete vertical culverts on concrete base slab (MS) ; complete with water tight jointing and finishing works to approval.				
7	1200mm diameter ; height n.e 8m	Item	1		
	Concrete Inserts Cast or Spum Iron Pipe Fittings. Flanged, puddled and plain end pipe insert projecting from one face of the concrete, all to PN6 and of the following sizes and lengths, including supply of the pipe and as shown in the drawings.				
8	200mm ND and not exceeding 0.5m length	No.	2		
	Adaptors Flange adaptor to fit ductile PVC to all to PN6 and of the following sizes:-				
9	200 mm ND	No.	2		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.5: KITUKILO IN BUGWERI DISTRICT

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
10	OD225mm PN10 plain end uPVC pipe connection between Silt Trap Basin and Pump Sump.	m	8		
	Bellmouths				
11	Flanged bellmouth to ISO 2531, flanges to ISO 2441, of the following sizes all to PN 6 200 mm ND	No.	1		
	PIPEWORK - FITTINGS AND VALVES				
	Gate Valves: Hand Operated				
12	DN 200 mm all flanged CI gate valves to BS 5150 ,flanges to BS 4505 , all to PN 6 for operation by tee key, with extension spindle not exceeding 4.5 metres long, and of the following sizes				
	MISCELLANEOUS WORK				
	Ladders				
13	Internal galvanized mild steel ladder to BS 4211, galvanized to BS 729, complete and as shown in the drawings including fixing to precast concrete units..	m	8		
	Steel grating				
14.1	Galvanized iron Coarse Trash Screen as detailed in the drawings.	No.	1		
14.2	Galvanized iron Fine Trash Screen as detailed in the drawings.	No.	1		
	Pump Well/ Sump				
	Supply and install 8.0m long HDPE vertical culverts on concrete base slab (MS) ; complete with a Single ND200mm flanged branch to receive a ND200 gate valve. Branch height/ positioning to be determined on site.	Item	Rate Only		
15	Internal diameter ; 1200x200mm				
	Stone pitched Channel.				
16	3.0 x 1.5 top x bottom width x 1.5m deep maximum trapezoidal lined drain as detailed in the drawing.	m	5		
	Gabion boxes				
17	PVC coated gabion boxes ; size 1m x 1m x 1m; including rockfill of size 100 - 250mm; as instructed by the Engineer	nr	Rate Only		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.5: KITUKILO IN BUGWERI DISTRICT

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>ELECTRO-MECHANICAL WORKS</u>				
	<u>Solar Pumping System</u> (based on 550Wp panels; bidder to adjust numbers to match rating of panel offered)				
ME1	5.5kW Submersible Pump Set with 7.5kW Pumping Inverter with Data Module, rated flow Q = 15m ³ /hr., rated head H = 85m total head; set to not more than 5m below ground including Dry- run protection, Motor and Pump End.	No.	1		
ME2	1x17No. x 550Wp panels solar array to provide 18.7kW power to the pump system complete including wiring.	Item	1		
ME3	Mild steel welded structure for holding solar PV panels at 15° tilt angle and suitable for a 1x17No. x 550Wp panels Solar Array in Item 2 above as per drawings, including foundations, vandal proofing mounting to the Engineer's approval	Sum	1		
ME4	PV Disconnect 1000-40-2	No.	1		
ME5	PV Protect 1000-15, SPD x 1 on incoming solar PV.	No.	1		
ME6	Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc.	Item	1		
ME7	PV Combiner	No.	1		
ME7a	Pressure Switch and Gauge - P6/12	No.	1		
ME8	Sinewave filter - SWAP0012D.	No.	1		
ME9	6mm ² Borehole drop cable,	m	5		
ME10	6mm ² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding.	m	100		
ME10a	6mm ² UV Single Cable.	m	60		
ME11	Wire kit array from solar array to controller with MC4 connectors	No.	2		
ME11a	Adapter box	No.	1		
ME12	Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4.	Item	1		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA
SCHEME ID. 3.5: KITUKILO IN BUGWERI DISTRICT
BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>Earthing and Lightening Protection</u>				
ME13	Earthing at solar array and borehole installation by 16mm ² PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME14	Lightning Protection at solar array and borehole installation consisting of 25x3mm copper tape, air terminal, test block and earth electrode in a manhole and all accessories.	Sum	1		
ME15	60W Solar security light and battery complete with 6m steel pole and lockable battery box	No.	5		
	<u>Alarm System</u>				
ME16	GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array.	Item	1		
ME17	GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor for the pump protection as instructed by the Engineer.	Item	1		
	<u>MISCELLANEOUS WORKS</u>				
	<u>Pump Protection System</u>				
X1	Vertical pipe pump stilling tube/ anti-vandal protection sleeve including a floating suction assembly structure to detail as per Drawing No.OIS/ABS/002a or OIS/ABS/003, including 1.5x1.5x0.3m support base.	No.	1		
	<u>Kerbs</u>				
	<u>Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the following alignment: -</u>				
X2	Straight or curved to a radius exceeding 12 m	m	70		
X3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet.	m ²	135		
X4	450mm diameter reinforced concrete pipe/ culvert	m	0		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.5: KITUKILO IN BUGWERI DISTRICT

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>Pump House</u>				
X5	Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.	Sum	1		
	<u>Fences</u>				
X6a	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Intake Site, <u>including special erection methods in "marshy grounds"</u> to the Engineer's approval.	m	50		
X6b	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Pumping Station Site.	m	10		
	<u>Gates</u>				
X7	Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	2		
	<u>Training of Operator's staff</u>				
X8	Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
	<u>Operation and Maintenance Manuals</u>				
X9	Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
XX	Horizontal pump installation option out of flanged/ sealed end HDPE culvert pipe mounted on fabricated GI support structure including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/005.	Item	Rate Only		

Total Carried to Collection

BILL No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description				Amount (UGx.)
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
	Page 6				
	Page 7				

Total Bill No. 1 Carried to Bill Summary

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>DEMOLITION AND SITE CLEARANCE</u>				
	<u>General Site Clearance</u>				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	Item	1		
	<u>PIPEWORKS - PIPES</u>				

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.5: KITUKILO IN BUGWERI DISTRICT

2	<u>Steel Pipes</u> <u>Galvanized iron pipes (Class B) with threaded joints, include unions/sockets, all to ISO 2531 of the following sizes:</u>				
2.1	DN75mm, in trenches; depths not exceeding 1.5m	m	12		
3	<u>HDPE Pipes</u> <u>HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m</u>				
3.1	OD160mm HDPE PN10	m	Rate Only		
4	<u>uPVC Pipes</u> <u>uPVC pressure pipes to UNBS US 264: 2000 and DIN 8062 with integral rubber ring socket joints laid in trenches</u>				
4.1	<u>OD160 to PN 10</u> Depth not exceeding 1.5m	m	1,240		
PIPEWORK - FITTINGS AND VALVES					
5	<u>Cast or Spun Iron Pipe Fittings</u> <u>Bends</u> <u>Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizes</u>				
5.1	DN160mm	No.	4		
6	<u>Bulk Flow Meters</u> <u>Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as specified, all fittings to PN10 including a masonry chamber, and on the following main pipe sizes</u>				
6.1	DN15mm PN10	No.	1		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA
SCHEME ID. 3.5: KITUKILO IN BUGWERI DISTRICT
BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>PN16 HDPE Compression fitting to DIN 8074/BS 5114</u>				
7	Equal Adapters				
7.1	OD90 female adapter	No.	2		
8	<u>Valves and Penstocks</u>				
	<u>Air Valves</u>				
	<u>Flanged CI double orifice air relief valve, DN50mm, as specified</u> <u>,flanges to ISO 2441, complete with isolating gate valve to ISO 7259,</u> <u>flange adaptors, distance pieces, and all fittings necessary to make the</u> <u>installation on pipes of the following sizes, all to PN10, include chamber</u> <u>as specified.</u>				
8.1	DN150mm	No.	2		
9	<u>Washouts</u>				
	<u>Washout as specified in the drawings, complete with plastic</u> <u>compression pipe fittings; tee, drainage pipes, union ball valve, flap</u> <u>valve, stone masonry outfall structure and all other fittings necessary to</u> <u>make the complete installation on pipes of the following sizes; all to</u> <u>PN10 including valve surface box to detail.</u>				
9.1	DN150mm	No.	2		
	<u>PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES</u>				
	<u>Other Chambers</u>				
	<u>Masonry air valve chamber, complete as specified in the drawings, and</u> <u>of the following depths</u>				
10.1	Depth not exceeding 1.5m	No.	2		
	<u>Valve Surface Boxes</u>				
	<u>Valve surface box for DN100 - DN300 valves, with lockable cover</u> <u>securely attached to main body of surface box by chain or bolt, include</u> <u>down pipe, complete as specified and to the following depths</u>				
10.2	Depth not exceeding 1.5m	No.	2		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA
SCHEME ID. 3.5: KITUKILO IN BUGWERI DISTRICT
BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
11	<u>Reinstatement</u> <u>Roads</u> <u>Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes</u> Not exceeding DN300mm	m	Rate Only		
12.1	<u>Surrounds</u> <u>Pipe surrounds, of selected excavated granular material, for the following pipe sizes</u> Not exceeding DN200mm	m	150		
12.2	<u>Pipe surrounds, of imported granular material, for the following pipe</u> Not exceeding DN200mm	m	180		
12.3	<u>Pipe surrounds, of mass concrete, for the following pipe sizes</u> Not exceeding DN200mm	m	160		
13	<u>Concrete Stools and Thrust Blocks</u> <u>Thrust Blocks</u> <u>Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m³, for the following pipe sizes</u> Diameter not exceeding DN200mm	No.	8		
14	<u>Other Pipework Ancillaries</u> <u>Marker Posts</u> Marker posts for pipes, gate valves, air valves, washouts	nr	46		
Total Carried to Collection					
BILL No. 2 : TRANSMISSION MAINS					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 2 Collection Page 6 Page 7 Page 8				
Total Bill No. 2 Carried to Bill Summary					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.5: KITUKILO IN BUGWERI DISTRICT

BILL No. 4.3 : STORAGE RESERVOIR WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>DEMOLITION AND SITE CLEARANCE</u>				
	<u>General Site Clearance</u>				
1	General site clearance including trees, stumps and disposal of arising materials.	Item	1		
2	<u>Reservoir</u>				
	Erect a welded steel tower for reservoir support complete, include foundations, columns, beams, access ladders, plates, braces, walkway/ guardrail, base plates, anchor bolts, nuts, washers, etc. painting and finishes; complete as specified and detailed in the drawings , of the following height and reservoir capacities.				
2.1	Height; 9.0m for (4No. x 10m ³ Tanks)	No.	1		
3	<u>Plastic Tanks</u>				
	Supply and install a vertical cylindrical Rotational Moulded Polyethylene Water Storage Tank to DUS 1560: 2013 as manufactured by Ms Gentex Ltd. / Crest Tanks or any other approved complete with a lockable access man ways, inlet/ riser, ball float valve, overflow with insect screen, float type water level indicator and outlet/ down pipe with a strainer, washout and overflow connection, including interconnecting pipe work and fittings, as detailed in the drawings, supply specifications and of the following capacity.				
3.1	10m ³	No.	4		
4	<u>150-200 micron union/ compresion type clear uPVC Y- Screen Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement screen element and seal ring :-</u>				
4.1	DN75mm, PN10	No.	1		
5	<u>150-200 micron union/ compresion type clear uPVC Y- Disc Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement disk element and seal ring :-</u>				
	[OPTIONAL]				
5.2	DN75mm, PN10	No.	1		
Total Carried to Collection					0

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 3.5: KITUKILO IN BUGWERI DISTRICT

BILL No. 3 : STORAGE RESERVOIR WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	<u>Landscaping and Walkways</u>				
6.1	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	150		
6.2	500 x 500 x 50mm precast concrete paving slabs laid "Space out Stone method" between the gate, pump house and solar array in one row, laid onto and including 200mm thick murram fill.	No.	Rate Only		
7	<u>Fences</u>				
7.1	Galvanised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m.	m	60		
	<u>Gates</u>				
7.2	Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	1		
	<u>Provision and Placing of Concrete</u> <u>Ordinary Designed Mix Concrete</u>				
8	<u>Designed mix concrete, to BS 5328, with ordinary portland cement to BS 12 , aggregate to BS882 , for 10mm aggregate sizes and the following grades:</u>				
8.1	Grade C15	m ³	2		

Total Carried to Collection

BILL No. 3 : STORAGE RESERVOIR WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 3 Collection				
	Page 9				
	Page 10				

Total Bill No. 3 Carried to Bill Summary

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA
SCHEME ID. 3.5: KITUKILO IN BUGWERI DISTRICT
BILL No.4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>DEMOLITION AND SITE CLEARANCE</u>				
	<u>General Site Clearance</u>				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing tree stumps and disposal of arising materials.	Item	1		
	<u>PIPEWORK-PIPES</u>				
2	<u>Plastic Pressure Pipes- Distribution</u> <u>HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in trench to the following depths not exceeding 1.5m</u>				
2.1	OD63mm PN6	m	345		
2.2	OD75mm PN6	m	485		
2.3	OD90mm PN6	m	1,120		
	<u>PIPEWORK - FITTINGS AND VALVES</u>				
	<u>PN10 HDPE Compression fitting to DIN 8074/BS 5114</u>				
	<u>Plastic Pipe Fittings</u>				
3	<u>Equal tees</u>				
3.1	OD63mm	No.	1		
	<u>Unequal tees</u>				
3.2	OD90 x 75mm	No.	1		
3.3	OD90 x 63mm	No.	1		
3.4	OD75 x 63mm	No.	1		
	<u>PN10 HDPE Compression fitting to DIN 8074/BS 5114</u>				
	<u>Plastic Pipe Fittings</u>				
4	<u>Reducing Couplers/ Unions</u>				
4.1	OD90 x 63mm	No.	Rate Only		
4.2	OD75 x 63mm	No.	Rate Only		
4.3	OD63mm	No.	Rate Only		
5	<u>End caps</u>				
5.1	OD63mm	No.	12		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA
SCHEME ID. 3.5: KITUKILO IN BUGWERI DISTRICT
BILL No.4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	<u>Valves and Penstocks</u> <u>Air Vaves</u> Flanged CI double orifice air relief valve, DN50mm, as specified flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified.				
6.1	OD75mm	No.	2		
7	<u>Washouts</u> Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, PVC union ball valve, flap valve and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box and stone masonry outfall structure to detail as per				
7.1	DN75mm	No.	3		
8	<u>Farm Gate Connections</u> Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: -				
8.1	DN50mm	No.	12		
9	<u>Other Pipework Ancillaries</u> <u>Marker Posts</u> Marker posts for pipes, gate valves, air valves, washouts	nr	68		
10	<u>Reinstatement</u> <u>Roads</u> Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes Not exceeding DN300mm	m	Rate Only		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA
 SCHEME ID. 3.5: KITUKILO IN BUGWERI DISTRICT
 BILL No. 4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<p>Bill No. 4 Collection</p> <p>Page 11</p> <p>Page 12</p>				
Total Bill No. 4 Carried to Bill Summary					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME No. 3.6: LUWANULA IN MAYUGE DISTRICT

BILL SUMMARY

Bill No.	Description	Amount (UGx.)
	WORK ITEMS	
1	Abstraction and Electromechanical Works	
2	Transmission Mains	
3	Storage Reservoir Works	
4	Distribution Network	
Total Carried to Grand Summary		

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME No. 3.6: LUWANULA IN MAYUGE DISTRICT

BILL SUMMARY

BILL No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>General Site Clearance</u>				
1	General site clearance, felling trees, grabbing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1		
	<u>Earthworks</u>				
	Excavation to form trapezoidal prism silt basin and reservoir in material other than topsoil, rock or other artificial hard material, depth not exceeding 4.0m including forming earth bands around the reservoir banks with the excavated material as per the drawings to fair profiles to receive grassing and/ or disposing the excavated material on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.1	Marshy soils	m ³	1555		
2.2	Soft / decomposed rock soils	m ³	30		
	Excavation to form trapezoidal channel in material other than topsoil, rock or other artificial hard material, depth not exceeding 3.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.4	Marshy soils	m ³	150		
2.5	Soft / decomposed rock soils	m ³	6		
	Excavation to form cylindrical sump well in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.6	Marshy soils	m ³	16		
2.7	Soft / decomposed rock soils	m ³	8		
	<u>Filling Structures</u>				
	<u>Filling to precast concrete sump structure by methods specified and to depths as shown in the drawings with the following materials: -</u>				
3	Selected excavated material including topping with a 200mm thick layer of top/ vegetable soil.	m ³	10		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME No. 3.6: LUWANULA IN MAYUGE DISTRICT

BILL SUMMARY

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
4	Landscaping Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	2725		
	<u>ELECTRO-MECHANICAL WORKS</u>				
	<u>Solar Pumping System</u> (based on 550Wp panels; bidder to adjust numbers to match rating of panel offered)				
ME1	11.0kW Submersible Pump Set with 15kW Pumping Inverter with Data Module, rated flow Q = 15 m ³ /hr., rated head H = 150m total head; set to not more than 5m below ground including Dry- run protection, Motor and Pump Fnd	No.	1		
ME2	2x17No. x 550Wp panels solar array to provide 18.7kW power to the pump system complete including wiring.	Item	1		
ME3	Mild steel welded structure for holding solar PV panels at 15° tilt angle and suitable for a 2x17No. x 550Wp panels Solar Aarray in Item 2 above as per drawings, including foundations, vandal proofing mounting to the Engineer's approval	Sum	1		
ME4	PV Disconnect 1000-40-2	No.	1		
ME5	PV Protect 1000-15, SPD x 1 on incoming solar PV.	No.	1		
ME6	Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc.	Item	1		
ME7	PV Combiner	No.	1		
ME7a	Pressure Switch and Gauge - P6/12	No.	1		
ME8	Sinewave filter - SWAP0022D.	No.	1		
ME9	10mm ² Borehole drop cable,	m	5		
ME10	10mm ² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding.	m	100		
ME10a	6mm ² UV Single Cable.	m	60		
ME11	Wire kit array from solar array to controller with MC4 connectors	No.	2		
ME11a	Adapter box	No.	1		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME No. 3.6: LUWANULA IN MAYUGE DISTRICT

BILL SUMMARY

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
ME12	Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4.	Item	1		
	<u>Earthing and Lightening Protection</u>				
ME13	Earthing at solar array and borehole installation by 16mm ² PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME14	Lightning Protection at solar array and borehole installation consisting of 25x3mm copper tape, air terminal, test block and earth electrode in a manhole and all accessories.	Sum	1		
ME15	60W Solar security light and battery complete with 6m steel pole and lockable battery box	No.	5		
	<u>Alarm System</u>				
ME16	GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array.	Item	1		
ME17	GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor for the pump protection as instructed by the Engineer.	Item	1		
	<u>MISCELLANEOUS WORKS</u>				
	<u>Pump Protection System</u>				
X1	Vertical pipe pump stilling tube/ anti-vandal protection sleeve including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/002a or OIS/ABS/003, including 1.5x1.5x0.3m support base.	No.	1		
	<u>Kerbs</u>				
	<u>Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the following alignment: -</u>				
X2	Straight or curved to a radius exceeding 12 m	m	70		
X3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet.	m ²	220		
X4	450mm diameter reinforced concrete pipe/ culvert	m	Rate Only		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME No. 3.6: LUWANULA IN MAYUGE DISTRICT

BILL SUMMARY

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>Pump House</u>				
X5	Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.	Sum	1		
	<u>Fences</u>				
X6a	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Intake Site, including special erection methods in "marshy grounds" to the Engineer's approval.	m	80		
X6b	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Pumping Station Site.	m	120		
	<u>Gates</u>				
X7	Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	2		
	<u>Training of Operator's staff</u>				
X8	Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
	<u>Operation and Maintenance Manuals</u>				
X9	Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
XX	Horizontal pump installation option out of flanged/ sealed end HDPE culvert pipe mounted on fabricated GI support structure including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/005.	Item	Rate Only		
	<u>Stone Pitching.</u>				
XXX	250mm minimum thick grouted stone masonry jointed in cement : sand (1:4) motar as detailed in the drawing.	m ²	125		
Total Carried to Collection					
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
Total Bill No. 1 Carried to Bill Summary					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME No. 3.6: LUWANULA IN MAYUGE DISTRICT

BILL SUMMARY

BILL No. 2 : TRANSMISSION MAINS					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>DEMOLITION AND SITE CLEARANCE</u>				
	<u>General Site Clearance</u>				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing tree stumps and disposal of arising materials.	Item	1		
	<u>PIPEWORKS - PIPES</u>				
2	<u>Steel Pipes</u>				
	<u>Galvanized iron pipes (Class B) with threaded joints, include unions/sockets, all to ISO 2531 of the following sizes;</u>				
2.1	DN50mm, in trenches; depths not exceeding 1.5m	m	12		
3	<u>HDPE Pipes</u>				
	<u>HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m</u>				
3.1	OD63mm HDPE PN10	m	135 346		
	<u>PIPEWORK - FITTINGS AND VALVES</u>				
	<u>Cast or Spun Iron Pipe Fittings</u>				
4	<u>Bends</u>				
	<u>Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizes</u>				
4.1	DN40mm	No.	Rate Only		
4.2	DN50mm	No.	4		
5	<u>Bulk Flow Meters</u>				
	<u>Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as specified, all fittings to PN10 including a masonry chamber, and on the following main pipe sizes</u>				
5.1	DN50mm PN10	No.	1		
	<u>PN16 HDPE Compression fitting to DIN 8074/BS 5114</u>				
6	<u>Equal Adapters</u>				
6.1	OD63 female adapter	No.	2		
Total Carried to Collection					
BILL No. 2 : TRANSMISSION MAINS					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
7	<u>Valves and Penstocks</u>				
	<u>Air Valves</u>				

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME No. 3.6: LUWANULA IN MAYUGE DISTRICT

BILL SUMMARY

	<p><u>Flanged CI double orifice air relief valve, DN50mm, as specified, flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified.</u></p>				
7.1	DN50mm	No.	Rate Only		
8	<p><i>Washouts</i> <u>Washout as specified in the drawings, complete with plastic compression pipe fittings: tee, drainage pipes, union ball valve, flap valve, stone masonry outfall structure and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box to detail.</u></p>				
8.1	<p>DN50mm</p> <p><u>PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES</u> <u>Other Chambers</u> <u>Masonry air valve chamber, complete as specified in the drawings, and of the following depths</u></p>	No.	Rate Only		
9.1	<p>Depth not exceeding 1.5m</p> <p><u>Valve Surface Boxes</u> <u>Valve surface box for DN100 - DN300 valves, with lockable cover securely attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to the following depths</u></p>	No.	Rate Only		
9.2	<p>Depth not exceeding 1.5m</p> <p><u>Reinstatement</u> <u>Roads</u> <u>Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes</u></p>	No.	Rate Only		
10	<p><u>Not exceeding DN300mm</u></p>	m	Rate Only		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME No. 3.6: LUWANULA IN MAYUGE DISTRICT

BILL SUMMARY

BILL No. 2 : TRANSMISSION MAINS					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>Surrounds</u>				
	<u>Pipe surrounds, of selected excavated granular material, for the following pipe sizes</u>				
11.1	Not exceeding DN200mm	m	15		
	<u>Pipe surrounds, of imported granular material, for the following pipe</u>				
11.2	Not exceeding DN200mm	m	20		
	<u>Pipe surrounds, of mass concrete, for the following pipe sizes</u>				
11.3	Not exceeding DN200mm	m	40		
12	<u>Concrete Stools and Thrust Blocks</u>				
	<u>Thrust Blocks</u>				
	<u>Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m³, for the following pipe sizes</u>				
12.1	Diameter not exceeding DN200mm	No.	1		
	<u>Other Pipework Ancillaries</u>				
	<u>Marker Posts</u>				
13	Marker posts for pipes, gate valves, air valves, washouts	nr	20		
Total Carried to Collection					
BILL No. 2 : TRANSMISSION MAINS					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 2 Collection				
	Page 6				
	Page 7				
	Page 8				
Total Bill No. 2 Carried to Bill Summary					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME No. 3.6: LUWANULA IN MAYUGE DISTRICT

BILL SUMMARY

BILL No. 4.3 : STORAGE RESERVOIR WORKS					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>DEMOLITION AND SITE CLEARANCE</u>				
	<u>General Site Clearance</u>				
1	General site clearance including trees, stumps and disposal of arising materials.	Item	1		
2	<u>Reservoir</u>				
	<u>Erect a welded steel tower for reservoir support complete, include foundations, columns, beams, access ladders, plates, braces, walkway/ guardrail, base plates, anchor bolts, nuts, washers, etc, painting and finishes; complete as specified and detailed in the drawings , of the following height and reservoir capacities.</u>				
2.1	Height; 3.0m for (4No. x 10m ³ Tanks)	No.	1		
3	<u>Plastic Tanks</u>				
	Supply and install a vertical cylindrical Rotational Moulded Polyethylene Water Storage Tank to DUS 1560: 2013 as manufactured by Ms Gentex Ltd. / Crest Tanks or any other approved complete with a lockable access man ways, inlet/ riser, ball float valve, overflow with insect screen, float type water level indicator and outlet/ down pipe with a strainer, washout and overflow connection, including interconnecting pipe work and fittings, as detailed in the drawings, supply specifications and of the following capacity.				
3.1	10m ³	No.	4		
4	<u>150-200 micron union/ compresion type clear uPVC Y- Screen Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement screen element and seal ring :-</u>				
4.1	DN75mm, PN10	No.	1		
5	<u>150-200 micron union/ compresion type clear uPVC Y- Disc Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement disk element and seal ring :-</u>				
	[OPTIONAL]				
5.1	DN75mm, PN10	No.	1		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME No. 3.6: LUWANULA IN MAYUGE DISTRICT

BILL SUMMARY

BILL No. 3 : STORAGE RESERVOIR WORKS					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	<u>Landscaping and Walkways</u>				
6.1	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	150		
6.2	500 x 500 x 50mm precast concrete paving slabs laid "Space out Stone method" between the gate, pump house and solar array in one raw, laid onto and including 200mm thick murrum fill.	No.	Rate Only		
7	<u>Fences</u>				
7.1	Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m.	m	60		
	<u>Gates</u>				
7.2	Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	1		
	<u>Provision and Placing of Concrete</u> <u>Ordinary Designed Mix Concrete</u>				
8	<u>Designed mix concrete, to BS 5328, with ordinary portland cement to BS 12 , aggregate to BS882 , for 10mm aggregate sizes and the following grades:</u>				
8.1	Grade C15	m ³	2		
Total Carried to Collection					
BILL No. 3 : STORAGE RESERVOIR WORKS					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 3 Collection				
	Page 11				
	Page 12				
Total Bill No. 3 Carried to Bill Summary					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME No. 3.6: LUWANULA IN MAYUGE DISTRICT

BILL SUMMARY

BILL No.4 : DISTRIBUTION NETWORK					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>DEMOLITION AND SITE CLEARANCE</u>				
	<u>General Site Clearance</u>				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grubbing tree stumps and disposal of arising materials.	Item	1		
	<u>PIPEWORK-PIPES</u>				
2	<u>Plastic Pressure Pipes- Distribution</u> HDPE pressure pipes to BS 3505, include unions / sockets, all to be laid in trench to the following depths not exceeding 1.5m				
2.1	OD63mm PN6	m	82		
2.2	OD75mm PN6	m	Rate Only		
2.3	OD90mm PN6	m	100		
	<u>PIPEWORK - FITTINGS AND VALVES</u>				
	<u>PN10 HDPE Compression fitting to DIN 8074/BS 5114</u>				
	<u>Plastic Pipe Fittings</u>				
3	<u>Equal tees</u>				
3.1	OD90mm	No.	Rate Only		
3.2	OD75mm	No.	Rate Only		
3.3	OD63mm	No.	Rate Only		
	<u>Unequal tees</u>				
3.4	OD90 x 75mm	No.	Rate Only		
3.5	OD90 x 63mm	No.	2		
	<u>PN10 HDPE Compression fitting to DIN 8074/BS 5114</u>				
	<u>Plastic Pipe Fittings</u>				
4	<u>Couplers</u>				
4.1	OD90mm	No.	Rate Only		
4.2	OD75mm	No.	Rate Only		
4.3	OD63mm	No.	Rate Only		
5	<u>End caps</u>				
5.1	OD75mm	No.	Rate Only		
5.2	OD63mm	No.	2		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME No. 3.6: LUWANULA IN MAYUGE DISTRICT

BILL SUMMARY

BILL No.4 : DISTRIBUTION NETWORK					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	<u>Valves and Penstocks</u>				
	<u>Air Vaves</u>				
	<u>Flanged CI double orifice air relief valve, DN50mm, as specified</u>				
	<u>,flanges to ISO 2441, complete with isolating gate valve to ISO 7259,</u>				
	<u>flange adaptors, distance pieces, and all fittings necessary to make the</u>				
	<u>installation on pipes of the following sizes, all to PN10, include chamber</u>				
	<u>as specified.</u>				
6.1	OD90mm	No.	Rate Only		
6.2	OD75mm	No.	Rate Only		
6.3	OD63mm	No.	Rate Only		
7	<u>Washouts</u>				
	<u>Washout as specified in the drawings, complete with plastic</u>				
	<u>compression pipe fittings: tee, drainage pipes, PVC union ball valve,</u>				
	<u>flap valve and all other fittings necessary to make the complete</u>				
	<u>installation on pipes of the following sizes; all to PN10 including valve</u>				
	<u>surface box and stone masonry outfall structure to detail as per</u>				
7.1	DN75mm	No.	Rate Only		
7.2	DN65mm	No.	Rate Only		
7.3	DN50mm	No.	Rate Only		
8	<u>Farm Gate Connections</u>				
	<u>Make DN50mm Irrigation Water Supply Hydrant connection to the</u>				
	<u>distribution main, inclusive of PVC compressive ball valve and end</u>				
	<u>cap complete with connector pipes and locakable chamber as detailed</u>				
	<u>on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all</u>				
	<u>to PN10: -</u>				
8.1	DN50mm	No.	2		
	<u>Other Pipework Ancillaries</u>				
	<u>Marker Posts</u>				
9	Marker posts for pipes, gate valves, air valves, washouts	nr	5		
	<u>Reinstatement</u>				
	<u>Roads</u>				
	<u>Breaking up, temporary and permanent reinstatement of gravel roads</u>				
	<u>for the following pipe sizes</u>				
10	Not exceeding DN300mm	m	Rate Only		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME No. 3.6: LUWANULA IN MAYUGE DISTRICT

BILL SUMMARY

BILL No. 4 : DISTRIBUTION NETWORK					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<p>Bill No. 4 Collection</p> <p>Page 11</p> <p>Page 12</p>				
Total Bill No. 4 Carried to Bill Summary					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.1: NAMUNKANAGA IN IGANGA DISTRICT

BILL SUMMARY

Bill No.	Description	Amount (UGx.)
	<p>WORK ITEMS</p> <p>1 Abstraction and Electromechanical Works</p> <p>2 Transmission Mains</p> <p>3 Storage Reservoir Works</p> <p>4 Distribution Network</p>	
	Total Carried to Grand Summary	

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.1: NAMUNKANAGA IN IGANGA DISTRICT

BILL No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>General Site Clearance</u>				
1	General site clearance, felling trees, grabbing tree stumps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1		
	<u>Earthworks</u>				
	Excavation to form trapezoidal prism reservoir in material other than topsoil, rock or other artificial hard material, depth not exceeding 6.0m including forming earth bands along the channel of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.1	Marshy soils	m ³	52		
2.2	Soft / decomposed rock soils	m ³	26		
	Excavation to form trapezoidal channel in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.4	Marshy soils	m ³	48		
2.5	Soft / decomposed rock soils	m ³	12		
	Excavation to form cylindrical sump well in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.6	Marshy soils	m ³	16		
2.7	Soft / decomposed rock soils	m ³	8		
	<u>Filling Structures</u>				
	<u>Filling to precast concrete sump structure by methods specified and to depths as shown in the drawings with the following materials: -</u>				
3	Selected excavated material including topping with a 200mm thick layer of topsoil and vegetable soil.	m ³	10		
	<u>Landscaping</u>				
4	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	40		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.1: NAMUNKANAGA IN IGANGA DISTRICT

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	IN-SITU CONCRETE Provision and Placing of Concrete Ordinary Design Mix Concrete <u>Designed mix , concrete to BS 8500 and BS EN 206-1, with ordinary portland cement to BS 12, aggregate to BS 882 , maximum aggregate size ; 20mm for the following structures: -</u> In situ Concrete 5 75mm thick Grade C15 concrete blinding to pump sump base 6.1 2200mm Diameter x 150mm thick Grade C25 concrete base slab reinforced with H12 - 200 E.W (B) complete with all associated formwork, finishing with a steel float. 6.2 2200mm Diameter x 150mm thick Grade C25 concrete top slab reinforced with H12 - 200 E.W (B) complete with all associated formwork, finishing with a steel float and forming a 600 x 600mm opening for the inspection cover (MS). Pre-cast Concrete Pump Well/ Sump Supply and install 100mm thick precast reinforced concrete vertical culverts on concrete base slab (MS) ; complete with water tight jointing and finishing works to approval. 7 1200mm diameter ; height n.e 8m Concrete Inserts Cast or Spun Iron Pipe Fittings. Flanged, puddled and plain end pipe insert projecting from one face of the concrete, all to PN6 and of the following sizes and lengths, including supply of the pipe and as shown in the drawings. 8 200mm ND and not exceeding 0.5m length Adaptors Flange adaptor to fit ductile PVC to all to PN6 and of the following sizes:- 9 200 mm ND 10 OD225mm PN10 plain end uPVC pipe connection between Silt Trap Basin and Pump Sump.	 m ³ Item Item Item No. No. m	 0.25 1 1 1 2 2 8		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.1: NAMUNKANAGA IN IGANGA DISTRICT

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
11	Bellmouths Flanged bellmouth to ISO 2531, flanges to ISO 2441, of the following sizes all to PN 6 200 mm ND PIPEWORK - FITTINGS AND VALVES <i>Gate Valves: Hand Operated</i>	No.	1		
12	DN 200 mm all flanged CI gate valves to BS 5150 ,flanges to BS 4505 , all to PN 6 for operation by tee key, with extension spindle not exceeding 4.5 metres long, and of the following sizes MISCELLANEOUS WORK Ladders				
13	Internal galvanized mild steel ladder to BS 4211, galvernized to BS 729, complete andas shown in the drawings including fixing to precast concrete units..	m	8		
14.1	Steel grating Galvanized iron Coarse Trash Screen as detailed in the drawings.	No.	1		
14.2	Galvanized iron Fine Trash Screen as detailed in the drawings.	No.	1		
15	Pump Well/ Sump Supply and install 8.0m long HDPE vertical culverts on concrete base slab (MS) ; complete with a Single ND200mm flanged branch to receive a ND200 gate valve. Branch height/ positioning to be determined on site. Internal diameter ; 1200x200mm Stone pitched Channel.	Item	Rate Only		
16	3.0 x 1.5 top x bottom width x 1.5m deep maximum trapezoidal lined drain as detailed in the drawing.	m	5		
17	Gabion boxes PVC coated gabion boxes ; size 1m x 1m x 1m; including rockfill of size 100 - 250mm; as instructed by the Engineer	nr	Rate Only		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.1: NAMUNKANAGA IN IGANGA DISTRICT

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>ELECTRO-MECHANICAL WORKS</u>				
	<u>Solar Pumping System</u> (based on 550Wp panels; bidder to adjust numbers to match rating of panel offered)				
ME1	7.5kW Submersible Pump Set with 11.0kW Pumping Inverter with Data Module, rated flow Q = 20 m ³ /hr., rated head H = 55m total head; set to not more than <u>5m</u> below ground including Dry- run protection, Motor and Pump End.	No.	1		
ME2	2x17No. x 550Wp panels solar array to provide 18.7kW power to the pump system complete including wiring.	Item	1		
ME3	Mild steel welded structure for holding solar PV panels at 15° tilt angle and suitable for a 2x17No. x 550Wp panels Solar Aarray in Item 2 above as per drawings, including foundations, vandal proofing mounting to the Engineer's approval	Sum	1		
ME4	PV Disconnect 1000-40-2	No.	1		
ME5	PV Protect 1000-15, SPD x 1 on incoming solar PV.	No.	1		
ME6	Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc.	Item	1		
ME7	PV Combiner	No.	1		
ME7a	Pressure Switch and Gauge - P5/8	No.	1		
ME8	Sinewave filter - SWAP0017D.	No.	1		
ME9	10mm ² Borehole drop cable,	m	5		
ME10	10mm ² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding.	m	175		
ME10a	6mm ² UV Single Cable.	m	60		
ME11	Wire kit array from solar array to controller with MC4 connectors	No.	2		
ME11a	Adapter box	No.	1		
ME12	Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4.	Item	1		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.1: NAMUNKANAGA IN IGANGA DISTRICT

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>Earthing and Lightening Protection</u>				
ME13	Earthing at solar array and borehole installation by 16mm ² PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME14	Lightning Protection at solar array and borehole installation consisting of 25x3mm copper tape, air terminal, test block and earth electrode in a manhole and all accessories.	Sum	1		
ME15	60W Solar security light and battery complete with 6m steel pole and lockable battery box	No.	5		
	<u>Alarm System</u>				
ME16	GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array.	Item	1		
ME17	GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor for the pump protection as instructed by the Engineer.	Item	1		
	<u>MISCELLANEOUS WORKS</u>				
	<u>Pump Protection System</u>				
X1	Vertical pipe pump stilling tube/ anti-vandal protection sleeve including a floating suction assembly structure to detail as per Drawing No.OIS/ABS/002a or OIS/ABS/003, including 1.5x1.5x0.3m support base.	No.	1		
	<u>Kerbs</u>				
	<u>Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the following alignment: -</u>		135		
X2	Straight or curved to a radius exceeding 12 m	m	70		
X3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet.	m ²	220		
X4	450mm diameter reinforced concrete pipe/ culvert	m	0		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.1: NAMUNKANAGA IN IGANGA DISTRICT

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
X5	<u>Pump House</u> Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.	Sum	1		
X6a	<u>Fences</u> Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Intake Site, <u>including special erection methods in "marshy grounds"</u> to the Engineer's approval.	m	50		
X6b	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Pumping Station Site.	m	10		
X7	<u>Gates</u> Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	2		
X8	<u>Training of Operator's staff</u> Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
X9	<u>Operation and Maintenance Manuals</u> Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
XX	Horizontal pump installation option out of flanged/ sealed end HDPE culvert pipe mounted on fabricated GI support structure including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/005.	Item	Rate Only		
Total Carried to Collection					
BILL No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS					
Item No.	Description				Amount (UGx.)
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
	Page 6				
	Page 7				
Total Bill No. 1 Carried to Bill Summary					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.1: NAMUNKANAGA IN IGANGA DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>DEMOLITION AND SITE CLEARANCE</u>				
	<u>General Site Clearance</u>				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing tree stumps and disposal of arising materials.	Item	1		
	<u>PIPEWORKS - PIPES</u>				
	<u>Steel Pipes</u>				
	<u>Galvanized iron pipes (Class B) with threaded joints, include unions/sockets, all to ISO 2531 of the following sizes;</u>				
2.1	DN75mm, in trenches; depths not exceeding 1.5m	m	12		
	<u>HDPE Pipes</u>				
	<u>HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m</u>				
3.1	OD90mm HDPE PN10	m	506		
	<u>PIPEWORK - FITTINGS AND VALVES</u>				
	<u>Cast or Spun Iron Pipe Fittings</u>				
	<u>Bends</u>				
	<u>Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizes</u>				
4.1	DN75mm	No.	4		
	<u>Bulk Flow Meters</u>				
	<u>Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as specified, all fittings to PN10 including a masonry chamber, and on the following main pipe sizes</u>				
5.1	DN75mm PN10	No.	1		
	<u>PN16 HDPE Compression fitting to DIN 8074/BS 5114</u>				
	<u>Equal Adapters</u>				
6.1	OD75 female adapter	No.	2		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.1: NAMUNKANAGA IN IGANGA DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
7	<u>Valves and Penstocks</u> <u>Air Valves</u> <u>Flanged CI double orifice air relief valve, DN50mm, as specified</u> <u>,flanges to ISO 2441, complete with isolating gate valve to ISO 7259,</u> <u>flange adaptors, distance pieces, and all fittings necessary to make the</u> <u>installation on pipes of the following sizes, all to PN10, include chamber</u> <u>as specified.</u>				
7.1	DN75mm	No.	2		
8	<u>Washouts</u> <u>Washout as specified in the drawings, complete with plastic</u> <u>compression pipe fittings; tee, drainage pipes, union ball valve, flap</u> <u>valve, stone masonry outfall structure and all other fittings necessary to</u> <u>make the complete installation on pipes of the following sizes; all to</u> <u>PN10 including valve surface box to detail.</u>				
8.1	DN75mm	No.	3		
	<u>PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES</u> <u>Other Chambers</u> <u>Masonry air valve chamber, complete as specified in the drawings, and</u> <u>of the following depths</u>				
9.1	Depth not exceeding 1.5m	No.	2		
	<u>Valve Surface Boxes</u> <u>Valve surface box for DN100 - DN300 valves, with lockable cover</u> <u>securely attached to main body of surface box by chain or bolt, include</u> <u>down pipe, complete as specified and to the following depths</u>				
9.2	Depth not exceeding 1.5m	No.	1		
	<u>Reinstatement</u> <u>Roads</u> <u>Breaking up, temporary and permanent reinstatement of gravel roads</u> <u>for the following pipe sizes</u>				
10	Not exceeding DN300mm	m	24		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.1: NAMUNKANAGA IN IGANGA DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>Surrounds</u>				
	<u>Pipe surrounds, of selected excavated granular material, for the following pipe sizes</u>				
11.1	Not exceeding DN200mm	m	Rate Only		
	<u>Pipe surrounds, of imported granular material, for the following pipe</u>				
11.2	Not exceeding DN200mm	m	70		
	<u>Pipe surrounds, of mass concrete, for the following pipe sizes</u>				
11.3	Not exceeding DN200mm	m	12		
12	<u>Concrete Stools and Thrust Blocks</u>				
	<u>Thrust Blocks</u>				
	<u>Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m³, for the following pipe sizes</u>				
12.1	Diameter not exceeding DN200mm	No.	4		
	<u>Other Pipework Ancillaries</u>				
	<u>Marker Posts</u>				
13	Marker posts for pipes, gate valves, air valves, washouts	nr	40		

Total Carried to Collection

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 2 Collection				
	Page 6				
	Page 7				
	Page 8				

Total Bill No. 2 Carried to Bill Summary

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.1: NAMUNKANAGA IN IGANGA DISTRICT

BILL No. 3 : STORAGE RESERVOIR WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>DEMOLITION AND SITE CLEARANCE</u>				
	<u>General Site Clearance</u>				
1	General site clearance including trees, stumps and disposal of arising materials.	Item	1		
	<u>Reservoir</u>				
2	Erect a welded steel tower for reservoir support complete, include foundations, columns, beams, access ladders, plates, braces, walkway/ guardrail, base plates, anchor bolts, nuts, washers, etc. painting and finishes; complete as specified and detailed in the drawings , of the following height and reservoir capacities.				
2.1	Height; 9.0m for (4No. x 10m ³ Tanks)	No.	1		
	<u>Plastic Tanks</u>				
3	Supply and install a vertical cylindrical Rotational Moulded Polyethylene Water Storage Tank to DUS 1560: 2013 as manufactured by Ms Gentex Ltd. / Crest Tanks or any other approved complete with a lockable access man ways, inlet/ riser, ball float valve, overflow with insect screen, float type water level indicator and outlet/ down pipe with a strainer, washout and overflow connection, including interconnecting pipe work and fittings, as detailed in the drawings, supply specifications and of the following capacity.				
3.1	10m ³	No.	4		
	<u>150-200 micron union/ compresion type clear uPVC Y- Screen Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement screen element and seal ring :-</u>				
4					
4.1	DN75mm, PN10	No.	1		
	<u>150-200 micron union/ compresion type clear uPVC Y- Disc Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement disk element and seal ring :-</u>				
5	[OPTIONAL]				
5.1	DN75mm, PN10	No.	1		
	<u>Landscaping and Walkways</u>				
6					
6.1	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	150		

Total Carried to Collection

BILL No. 3 : STORAGE RESERVOIR WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6.2	500 x 500 x 50mm precast concrete paving slabs laid "Space out Stone method" between the gate, pump house and solar array in one raw, laid onto and including 200mm thick murram fill.	No.	Rate Only		
7	<u>Fences</u>				

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.1: NAMUNKANAGA IN IGANGA DISTRICT

7.1	Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m.	m	60		
7.2	Gates Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence. Provision and Placing of Concrete <i>Ordinary Designed Mix Concrete</i>	No.	1		
8	<u>Designed mix concrete, to BS 5328, with ordinary portland cement to BS 12 , aggregate to BS882 , for 10mm aggregate sizes and the following grades:</u>				
8.1	Grade C15	m ³	2		
Total Carried to Collection					
BILL No. 3 : STORAGE RESERVOIR WORKS					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 3 Collection Page 11 Page 12				
Total Bill No. 3 Carried to Bill Summary					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.1: NAMUNKANAGA IN IGANGA DISTRICT

BILL No.4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>DEMOLITION AND SITE CLEARANCE</u>				
	<u>General Site Clearance</u>				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing tree stumps and disposal of arising materials.	Item	1		
	<u>PIPEWORK-PIPES</u>				
2	<u>Plastic Pressure Pipes- Distribution</u> HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in trench to the following depths not exceeding 1.5m				
2.1	OD63mm PN10	m	400		
2.3	OD90mm PN10	m	110		
2.5	OD110mm uPVC PN10	m	728		
	<u>PIPEWORK - FITTINGS AND VALVES</u>				
	<u>PN10 HDPE Compression fitting to DIN 8074/BS 5114</u>				
	<u>Plastic Pipe Fittings</u>				
3	<u>Equal tees</u>				
3.1	OD90mm	No.	2		
	<u>Unequal tees</u>				
3.2	OD90 x 75mm	No.	Rate Only		
3.3	OD90 x 63mm	No.	Rate Only		
	<u>PN10 HDPE Compression fitting to DIN 8074/BS 5114</u>				
	<u>Plastic Pipe Fittings</u>				
4	<u>Couplers</u>				
4.1	OD90mm	No.	1		
5	<u>End caps</u>				
5.1	OD75mm	No.	Rate Only		
5.2	OD63mm	No.	8		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.1: NAMUNKANAGA IN IGANGA DISTRICT

BILL No.4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	<u>Valves and Penstocks</u> <u>Air Vaves</u> <u>Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified.</u>				
6.1	OD90mm	No.	1		
7	<u>Washouts</u> <u>Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, PVC union ball valve, flap valve and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box and stone masonry outfall structure to detail as per</u>				
7.1	DN50mm	No.	2		
7.2	DN40mm	No.	Rate Only		
8	<u>Farm Gate Connections</u> <u>Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: -</u>				
8.1	DN50mm	No.	8		
	<u>Other Pipework Ancillaries</u> <u>Marker Posts</u> Marker posts for pipes, gate valves, air valves, washouts	nr	22		
	<u>Reinstatement</u> <u>Roads</u> <u>Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes</u>				
10	Not exceeding DN300mm	m	48		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.1: NAMUNKANAGA IN IGANGA DISTRICT

BILL No. 4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<p>Bill No. 4 Collection</p> <p>Page 11</p> <p>Page 12</p>				
Total Bill No. 4 Carried to Bill Summary					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA
SCHEME ID. 4.2: NAMABONI IN NAMAYINGO DISTRICT REGION.
BILL SUMMARY

Bill No.	Description	Amount (UGx.)
	WORK ITEMS	
1	Abstraction and Electromechanical Works	
2	Transmission Mains	
3	Storage Reservoir Works	
4	Distribution Network	
Total Carried to Grand Summary		

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.2: NAMABONI IN NAMAYINGO DISTRICT REGION.

BILL No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>General Site Clearance</u>				
1	General site clearance, felling trees, grabbing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1		
	<u>Earthworks</u>				
2.1	Excavation to form trapezoidal prism reservoir in material other than topsoil, rock or other artificial hard material, depth not exceeding 6.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.	m ³	520		
2.2	Ditto but in marshy soils	m ³	296		
2.3	Ditto but in soft / decomposed rock soils	m ³	136		
2.4	Excavation to form trapezoidal drain in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.	m ³	345		
2.5	Ditto but in marshy soils	m ³	255		
2.6	Ditto but in soft / decomposed rock soils	m ³	165		
	<u>Filling Structures</u>				
	<u>Filling to precast concrete sump structure by methods specified and to depths as shown in the drawings with the following materials: -</u>				
3.1	Imported rock/ hardcore fill, size 75 to 300mm hand packed or compacted by the arm of an excavator.	m ³	Rate Only		
3.2	Selected excavated material including topping with a 200mm thick layer of top vegetable soil.	m ³	Rate Only		
4	Single layer of geotextile laid to manufacturer's specifications	m ²	Rate Only		
	<u>Landscaping</u>				
5	Turfing for lawns inside fenced off compound, including filling with excavated topsoil and the preparation of surfaces; 240m ² at Intake Site and 800m ² at Pump Station.	m ²	1,050		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.2: NAMABONI IN NAMAYINGO DISTRICT REGION.

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>ELECTRO-MECHANICAL WORKS</u>				
	<u>Solar Pumping System</u> (based on 550Wp panels; bidder to adjust numbers to match rating of panel offered)				
ME1	7.5kW Submersible Pump Set with 11.0kW Pumping Inverter with Data Module, rated flow Q = 20 m ³ /hr., rated head H = 55m total head; set to not more than 5m below ground including Dry- run protection, Motor and Pump End.	No.	1		
ME2	2x17No. x 550Wp panels solar array to provide 18.7kW power to the pump system complete including wiring.	Item	1		
ME3	Mild steel welded structure for holding solar PV panels at 15° tilt angle and suitable for a 2x17No. x 550Wp panels Solar Array in Item 2 above as per drawings, including foundations, vandal proofing mounting to the Engineer's approval	Sum	1		
ME4	PV Disconnect 1000-40-2	No.	1		
ME5	PV Protect 1000-15, SPD x 1 on incoming solar PV.	No.	1		
ME6	Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc.	Item	1		
ME7	PV Combiner	No.	1		
ME7a	Pressure Switch and Gauge - P5/8	No.	1		
ME8	Sinewave filter - SWAP0017D.	No.	1		
ME9	10mm ² Borehole drop cable,	m	5		
ME10	10mm ² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding.	m	200		
ME10a	6mm ² UV Single Cable.	m	60		
ME11	Wire kit array from solar array to controller with MC4 connectors	No.	2		
ME11a	Adapter box	No.	1		
ME12	Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4.	Item	1		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.2: NAMABONI IN NAMAYINGO DISTRICT REGION.

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>Earthing and Lightening Protection</u>				
ME13	Earthing at solar array and borehole installation by 16mm ² PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME14	Lightning Protection at solar array and borehole installation consisting of 25x3mm copper tape, air terminal, test block and earth electrode in a manhole and all accessories.	Sum	1		
ME15	60W Solar security light and battery complete with 6m steel pole and lockable battery box	No.	5		
	<u>Alarm System</u>				
ME16	GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array.	Item	1		
ME17	GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor for the pump protection as instructed by the Engineer.	Item	1		
	<u>MISCELLANEOUS WORKS</u>				
	<u>Pump Protection System</u>				
X1	Vertical pipe pump stilling tube/ anti-vandal protection sleeve including a floating suction assembly structure to detail as per Drawing No.OIS/ABS/002a or OIS/ABS/003, including 1.5x1.5x0.3m support base.	No.	1		
	<u>Kerbs</u>				
	<u>Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the following alignment: -</u>				
X2	Straight or curved to a radius exceeding 12 m	m	70		
X3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a gauge 500 polythene sheet.	m ²	220		
X4	450mm diameter reinforced concrete pipe/ culvert	m	Rate Only		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.2: NAMABONI IN NAMAYINGO DISTRICT REGION.

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
X5	<u>Pump House</u> Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.	Sum	1		
X6a	<u>Fences</u> Galvanized wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Intake Site, <u>including special erection methods in "marshy grounds"</u> to the Engineer's approval.	m	80		
X6b	Galvanized wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Pumping Station Site.	m	120		
X7	<u>Gates</u> Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	2		
X8	<u>Training of Operator's staff</u> Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
X9	<u>Operation and Maintenance Manuals</u> Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
XX	Horizontal pump installation option out of flanged/ sealed end HDPE culvert pipe mounted on fabricated GI support structure including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/005.	Item	Rate Only		

Total Carried to Collection

BILL No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description				Amount (UGx.)
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				

Total Bill No. 1 Carried to Bill Summary

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.2: NAMABONI IN NAMAYINGO DISTRICT REGION.

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>DEMOLITION AND SITE CLEARANCE</u>				
	<u>General Site Clearance</u>				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing tree stumps and disposal of arising materials.	Item	1		
	<u>PIPEWORKS - PIPES</u>				
2	<u>Steel Pipes</u>				
	<u>Galvanized iron pipes (Class B) with threaded joints, include unions/sockets, all to ISO 2531 of the following sizes;</u>				
2.1	Galvanised steel pipes with threaded joints, include unions/sockets, all to ISO 2531 and to PN10, laid in trench of the following sizes and	m	12		
3	<u>HDPE Pipes</u>				
	<u>HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m</u>				
3.1	OD75mm HDPE PN10	m	1,010		
	<u>PIPEWORK - FITTINGS AND VALVES</u>				
	<u>Cast or Spun Iron Pipe Fittings</u>				
4	<u>Bends</u>			135	
	<u>Galvanized iron threaded socket 45° bends. EN 10242:1995, all to PN 10, and of the following sizes</u>				
4.1	DN100mm	No.	4		
5	<u>Bulk Flow Meters</u>				
	<u>Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc. and all other fittings to make the installation complete, as specified, all fittings to PN10 including a masonry chamber, and on the following main pipe sizes</u>				
5.1	DN100mm PN10	No.	1		
	<u>PN16 HDPE Compression fitting to DIN 8074/BS 5114</u>				
6	<u>Equal Adapters</u>				
6.1	OD75female adapter	No.	2		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.2: NAMABONI IN NAMAYINGO DISTRICT REGION.

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
7	<u>Valves and Penstocks</u>				
	<u>Air Valves</u>				
	<u>Flanged CI double orifice air relief valve, DN50mm, as specified</u> <u>,flanges to ISO 2441, complete with isolating gate valve to ISO 7259,</u> <u>flange adaptors, distance pieces, and all fittings necessary to make the</u> <u>installation on pipes of the following sizes, all to PN10, include chamber</u> <u>as specified.</u>				
7.1	DN65mm	No.	3		
8	<u>Washouts</u>				
	<u>Washout as specified in the drawings, complete with plastic</u> <u>compression pipe fittings ; tee, drainage pipes, union ball valve, flap</u> <u>valve, stone masonry outfall structure and all other fittings necessary to</u> <u>make the complete installation on pipes of the following sizes; all to</u> <u>PN10 including valve surface box to detail.</u>				
8.1	DN75mm	No.	4		
	<u>PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES</u>				
	<u>Other Chambers</u>				
	<u>Masonry air valve chamber, complete as specified in the drawings, and</u> <u>of the following depths</u>				
9.1	Depth not exceeding 1.5m	No.	3		
	<u>Valve Surface Boxes</u>				
	<u>Valve surface box for DN100 - DN300 valves, with lockable cover</u> <u>securely attached to main body of surface box by chain or bolt, include</u> <u>down pipe, complete as specified and to the following depths</u>				
9.1	Depth not exceeding 1.5m	No.	4		
	<u>Reinstatement</u>				
10	<u>Roads</u>				
	<u>Breaking up, temporary and permanent reinstatement of gravel roads</u> <u>for the following pipe sizes</u>				
10.1	Not exceeding DN300mm	m	36		
11	<u>Surrounds</u>				
	<u>Pipe surrounds, of selected excavated granular material, for the</u> <u>following pipe sizes</u>				
11.1	Not exceeding DN200mm	m	80		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.2: NAMABONI IN NAMAYINGO DISTRICT REGION.

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
11.2	<u>Pipe surrounds, of imported granular material, for the following pipe</u> Not exceeding DN200mm	m	350		
11.3	<u>Pipe surrounds, of mass concrete, for the following pipe sizes</u> Not exceeding DN200mm	m	60		
12	<u>Concrete Stools and Thrust Blocks</u> <i>Thrust Blocks</i> <u>Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m³, for the following pipe sizes</u>				
12.1	Diameter not exceeding DN200mm	No.	6		
13	<u>Other Pipework Ancillaries</u> <i>Marker Posts</i> Marker posts for pipes, gate valves, air valves, washouts.	No.	40		
Total Carried to Collection					

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 2 Collection Page 6 Page 7 Page 8				
Total Bill No. 2 Carried to Bill Summary					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.2: NAMABONI IN NAMAYINGO DISTRICT REGION.

BILL No. 3 : STORAGE RESERVOIR WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>DEMOLITION AND SITE CLEARANCE</u>				
	<u>General Site Clearance</u>				
1	General site clearance including trees, stumps and disposal of arising materials.	Item	1		
2	<u>Reservoir</u> <u>Erect a welded steel tower for reservoir support complete, include foundations, columns, beams, access ladders, plates, braces, walkway/ guardrail, base plates, anchor bolts, nuts, washers, etc., painting and finishes; complete as specified and detailed in the drawings , of the following height and reservoir capacities.</u>				
2.1	Height; 9.0m for (4No. x 10m ³ Tanks)	No.	1		
3	<u>Plastic Tanks</u> Supply and install a vertical cylindrical Rotational Moulded Polyethylene Water Storage Tank to DUS 1560: 2013 as manufactured by Ms. Gentex Ltd. / Crest Tanks or any other approved complete with a lockable access man ways, inlet/ riser, ball float valve, overflow with insect screen, float type water level indicator and outlet/ down pipe with a strainer, washout and overflow connection, including interconnecting pipe work and fittings, as detailed in the drawings, supply specifications and of the following capacity.				
3.1	10m ³	No.	4		
4	<u>150-200 micron union/ compression type clear uPVC Y- Screen Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement screen element and seal ring :-</u>				
4.1	DN75mm, PN10	No.	1		
4.2	DN65mm, PN10	No.	Rate Only		
5	<u>150-200 micron union/ compression type clear uPVC Y- Disc Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement disk element and seal ring :-</u> [OPTIONAL]				
5.1	DN75mm, PN10	No.	1		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.2: NAMABONI IN NAMAYINGO DISTRICT REGION.

BILL No. .3 : STORAGE RESERVOIR WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	<u>Landscaping and Walkways</u>				
6.1	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	150		
6.2	500 x 500 x 50mm precast concrete paving slabs laid " Space out Stone method" between the gate, pump house and solar array in one raw, laid onto 200mm thick murram fill.	No.	Rate Only		
7	<u>Fences</u>				
7.1	Galvanized wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m.	m	60		
	<u>Gates</u>				
7.2	Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	1		
	<u>Provision and Placing of Concrete</u> <u>Ordinary Designed Mix Concrete</u>				
8	<u>Designed mix concrete, to BS 5328, with ordinary Portland cement to BS 12 , aggregate to BS882 , for 10mm aggregate sizes and the following grades:</u>				
8.1	Grade C15	m ³	2		
Total Carried to Collection					

BILL No. 3 : STORAGE RESERVOIR WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 3 Collection				
	Page 9				
	Page 10				
Total Bill No.3 Carried to Bill Summary					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.2: NAMABONI IN NAMAYINGO DISTRICT REGION.

BILL No.4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>DEMOLITION AND SITE CLEARANCE</u>				
	<u>General Site Clearance</u>				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing tree stumps and disposal of arising materials.	Item	1		
	<u>PIPEWORK-PIPES</u>				
2	<u>Plastic Pressure Pipes- Distribution</u> HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in trench to the following depths not exceeding 1.5m				
2.1	OD63mm PN10	m	540		
2.2	OD90mm PN10	m	1,580		
	<u>PIPEWORK - FITTINGS AND VALVES</u>				
	<u>PN10 HDPE Compression fitting to DIN 8074/BS 5114</u>				
	<u>Plastic Pipe Fittings</u>				
3	<u>Equal tees</u>				
3.1	OD90mm	No.	8		
3.2	OD63mm	No.	4		
	<u>Unequal tees</u>				
3.3	OD90 x 63mm	No.	12		
	<u>PN10 HDPE Compression fitting to DIN 8074/BS 5114</u>				
	<u>Plastic Pipe Fittings</u>				
4	<u>Couplers</u>				
4.1	OD90mm	No.	12		
4.2	OD63mm	No.	3		
5.1	<u>End caps</u>				
5.4	OD63mm	No.	15		
6	<u>Valves and Penstocks</u>				
	<u>Air Valves</u>				
	Flanged CI double orifice air relief valve, DN50mm, as specified				
	flanges to ISO 2441, complete with isolating gate valve to ISO 7259,				
	flange adaptors, distance pieces, and all fittings necessary to make the				
	installation on pipes of the following sizes, all to PN10, include chamber				
	as specified.				
6.1	OD90mm	No.	4		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.2: NAMABONI IN NAMAYINGO DISTRICT REGION.

BILL No.4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
7	<u>Washouts</u> <u>Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, PVC union ball valve, flap valve and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box and stone masonry outfall structure to detail as per</u>				
7.1	DN75mm	No.	6		
7.2	DN50mm	No.	1		
8	<u>Farm Gate Connections</u> Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and lockable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: -				
8.1	DN50mm	No.	15		
	<u>Other Pipework Ancillaries</u>				
	<u>Marker Posts</u>				
9	Marker posts for pipes, gate valves, air valves, washouts.	No.	72		

Total Carried to Collection

BILL No. 4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 4 Collection				
	Page 11				
	Page 12				

Total Bill No. 4 Carried to Bill Summary

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA
SCHEME ID. 4.3: BUYEMBA IN TORORO DISTRICT
BILL SUMMARY

Bill No.	Description	Amount (UGx.)
	WORK ITEMS	
1	Abstraction and Electromechanical Works	
2	Transmission Mains	
3	Storage Reservoir Works	
4	Distribution Network	
Total Carried to Grand Summary		

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.3: BUYEMBA IN TORORO DISTRICT

BILL No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>General Site Clearance</u>				
1	General site clearance, felling trees, grabbing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1		
	<u>Earthworks</u>				
	Excavation to form trapezoidal prism reservoir in material other than topsoil, rock or other artificial hard material, depth not exceeding 6.0m including forming earth bands along the channel of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.1	Marshy soils	m ³	52		
2.2	Soft / decomposed rock soils	m ³	26		
	Excavation to form trapezoidal channel in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.4	Marshy soils	m ³	66		
2.5	Soft / decomposed rock soils	m ³	17		
	Excavation to form cylindrical sump well in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.6	Marshy soils	m ³	16		
2.7	Soft / decomposed rock soils	m ³	8		
	<u>Filling Structures</u>				
	<u>Filling to precast concrete sump structure by methods specified and to depths as shown in the drawings with the following materials: -</u>				
3	Selected excavated material including topping with a 200mm thick layer of top/vegetable soil.	m ³	10		
	<u>Landscaping</u>				
4	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	40		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.3: BUYEMBA IN TORORO DISTRICT

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	IN-SITU CONCRETE Provision and Placing of Concrete Ordinary Design Mix Concrete <u>Designed mix , concrete to BS 8500 and BS EN 206-1, with ordinary portland cement to BS 12, aggregate to BS 882 , maximum aggregate size ; 20mm for the following structures: -</u> Insitu Concrete 5 75mm thick Grade C15 concrete blinding to pump sump base	m ³	0.25		
6.1	2200mm Diameter x 150mm thick Grade C25 concrete base slab reinforced with H12 - 200 E.W (B) complete with all associated formwork, finishing with a steel float.	Item	1		
6.2	2200mm Diameter x 150mm thick Grade C25 concrete top slab reinforced with H12 - 200 E.W (B) complete with all associated formwork, finishing with a steel float and forming a 600 x 600mm opening for the inspection cover (MS).	Item	1		
	Pre-cast Concrete Pump Well/ Sump Supply and install 100mm thick precast reinforced concrete vertical culverts on concrete base slab (MS) ; complete with water tight jointing and finishing works to approval. 7 1200mm diameter ; height n.e 8m	Item	1		
	Concrete Inserts Cast or Spum Iron Pipe Fittings. Flanged, puddled and plain end pipe insert projecting from one face of the concrete, all to PN6 and of the following sizes and lengths, including supply of the pipe and as shown in the drawings. 8 200mm ND and not exceeding 0.5m length	No.	2		
	Adaptors Flange adaptor to fit ductile PVC to all to PN6 and of the following sizes:- 9 200 mm ND	No.	2		
10	OD225mm PN10 plain end uPVC pipe connection between Silt Trap Basin and Pump Sump.	m	8		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.3: BUYEMBA IN TORORO DISTRICT

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
11	Bellmouths Flanged bellmouth to ISO 2531, flanges to ISO 2441, of the following sizes all to PN 6 200 mm ND	No.	1		
	PIPEWORK - FITTINGS AND VALVES Gate Valves: Hand Operated				
12	DN 200 mm all flanged CI gate valves to BS 5150 ,flanges to BS 4505 , all to PN 6 for operation by tee key, with extension spindle not exceeding 4.5 metres long, and of the following sizes				
	MISCELLANEOUS WORK				
13	Ladders Internal galvanized mild steel ladder to BS 4211, galvernized to BS 729, complete andas shown in the drawings including fixing to precast concrete units..	m	8		
14.1	Steel grating Galvanized iron Coarse Trash Screen as detailed in the drawings.	No.	1		
14.2	Galvanized iron Fine Trash Screen as detailed in the drawings.	No.	1		
15	Pump Well/ Sump Supply and install 8.0m long HDPE vertical culverts on concrete base slab (MS) ; complete with a Single ND200mm flanged branch to receive a ND200 gate valve. Branch height/ positioning to be determined on site. Internal diameter ; 1200x200mm	Item	Rate Only		
16	Stone pitched Channel. 3.0 x 1.5 top x bottom width x 1.5m deep maximum trapezoidal lined drain as detailed in the drawing.	m	5		
17	Gabion boxes PVC coated gabion boxes ; size 1m x 1m x 1m; including rockfill of size 100 - 250mm; as instructed by the Engineer	nr	Rate Only		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.3: BUYEMBA IN TORORO DISTRICT

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>ELECTRO-MECHANICAL WORKS</u>				
	<u>Solar Pumping System</u> (based on 550Wp panels; bidder to adjust numbers to match rating of panel offered)				
ME1	11.0kW Submersible Pump Set with 15kW Pumping Inverter with Data Module, rated flow Q = 20 m ³ /hr., rated head H = 100m total head; set to not more than 5m below ground including Dry- run protection, Motor and Pump End.	No.	1		
ME2	2x17No. x 550Wp panels solar array to provide 18.7kW power to the pump system complete including wiring.	Item	1		
ME3	Mild steel welded structure for holding solar PV panels at 15° tilt angle and suitable for a 2x17No. x 550Wp panels Solar Array in Item 2 above as per drawings including foundations, vandal proofing mounting to the Engineer's approval	Sum	1		
ME4	PV Disconnect 1000-40-2	No.	1		
ME5	PV Protect 1000-15, SPD x 1 on incoming solar PV.	No.	1		
ME6	Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc.	Item	1		
ME7	PV Combiner	No.	1		
ME7a	Pressure Switch and Gauge - P6/12	No.	1		
ME8	Sinewave filter - SWAP0022D.	No.	1		
ME9	10mm ² Borehole drop cable,	m	5		
ME10	10mm ² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding.	m	150		
ME10a	6mm ² UV Single Cable.	m	60		
ME11	Wire kit array from solar array to controller with MC4 connectors	No.	2		
ME11a	Adapter box	No.	1		
ME12	Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4.	Item	1		
ME13	Earthing at solar array and borehole installation by 16mm ² PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.3: BUYEMBA IN TORORO DISTRICT

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
ME14	Lightning Protection at solar array and borehole installation consisting of 25x3mm copper tape, air terminal, test block and earth electrode in a manhole and all accessories.	Sum	1		
ME15	60W Solar security light and battery complete with 6m steel pole and lockable battery box	No.	5		
	Alarm System				
ME16	GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array.	Item	1		
ME17	GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor for the pump protection as instructed by the Engineer.	Item	1		
	<u>MISCELLANEOUS WORKS</u>				
	<u>Pump Protection System</u>				
X1	Vertical pipe pump stilling tube/ anti-vandal protection sleeve including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/002a or OIS/ABS/003, including 1.5x1.5x0.3m support base.	No.	1		
	<u>Kerbs</u>				
	<u>Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the following alignment: -</u>				
X2	Straight or curved to a radius exceeding 12 m	m	70		
X3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a gauge 500 polythene sheet.	m ²	220		
X4	450mm diameter reinforced concrete pipe/ culvert	m	135	Rate Only	
	<u>Pump House</u>				
X5	Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.	Sum	1		
	<u>Fences</u>				
X6a	Galvanized wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Intake Site, <u>including special erection methods in "marshy grounds" to the Engineer's approval.</u>	m	50		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.3: BUYEMBA IN TORORO DISTRICT

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
X6b	Galvanized wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Pumping Station Site.	m	10		
	<u>Gates</u>				
X7	Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	2		
	<u>Training of Operator's staff</u>				
X8	Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
	<u>Operation and Maintenance Manuals</u>				
X9	Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
XX	Horizontal pump installation option out of flanged/ sealed end HDPE culvert pipe mounted on fabricated GI support structure including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/005.	Item	Rate Only		

Total Carried to Collection

BILL No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description				Amount (UGx.)
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
	Page 6				
	Page 7				
Total Bill No. 1 Carried to Bill Summary					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.3: BUYEMBA IN TORORO DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>DEMOLITION AND SITE CLEARANCE</u>				
	<u>General Site Clearance</u>				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing tree stumps and disposal of arising materials.	Item	1		
	<u>PIPEWORKS - PIPES</u>				
	<u>Steel Pipes</u>				
	<u>Galvanized iron pipes (Class B) with threaded joints, include unions/sockets, all to ISO 2531 of the following sizes;</u>				
2.1	DN75mm, in trenches; depths not exceeding 1.5m	m	12		
	<u>HDPE Pipes</u>				
	<u>HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m</u>				
3.1	OD75mm HDPE PN10	m	962		
	<u>PIPEWORK - FITTINGS AND VALVES</u>				
	<u>Cast or Spun Iron Pipe Fittings</u>				
	<u>Bends</u>				
	<u>Galvanized iron threaded socket 45° bends, to BS EN 10242:1995, all to PN 10, and of the following sizes</u>				
4.1	DN65mm	No.	4		
	<u>Bulk Flow Meters</u>				
	<u>Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc. and all other fittings to make the installation complete, as specified, all fittings to PN10 including a masonry chamber, and on the following main pipe sizes</u>				
5.1	DN65mm PN10	No.	1		
	<u>PN16 HDPE Compression fitting to DIN 8074/BS 5114</u>				
	<u>Equal Adapters</u>				
6.1	OD90 female adapter	No.	6		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.3: BUYEMBA IN TORORO DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
7	<u>Valves and Penstocks</u>				
	<u>Air Valves</u>				
	<u>Flanged CI double orifice air relief valve, DN50mm, as specified, flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified.</u>				
7.1	DN65mm	No.	2		
8	<u>Washouts</u>				
	<u>Washout as specified in the drawings, complete with plastic compression pipe fittings ; tee, drainage pipes, union ball valve, flap valve, stone masonry outfall structure and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box to detail.</u>				
8.1	DN65mm	No.	2		
	<u>PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES</u>				
	<u>Other Chambers</u>				
	<u>Masonry air valve chamber, complete as specified in the drawings, and of the following depths</u>				
9.1	Depth not exceeding 1.5m	No.	2		
	<u>Valve Surface Boxes</u>				
	<u>Valve surface box for DN100 - DN300 valves, with lockable cover securely attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to the following depths</u>				
9.2	Depth not exceeding 1.5m	No.	2		
	<u>Reinstatement</u>				
	<u>Roads</u>				
	<u>Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes</u>				
10	Not exceeding DN300mm	m	12		
11	<u>Surrounds</u>				
	<u>Pipe surrounds, of selected excavated granular material, for the following pipe sizes</u>				
11.1	Not exceeding DN200mm	m	260		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.3: BUYEMBA IN TORORO DISTRICT

BILL No.3 : STORAGE RESERVOIR WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>DEMOLITION AND SITE CLEARANCE</u>				
	<u>General Site Clearance</u>				
1	General site clearance including trees, stumps and disposal of arising materials.	Item	1		
2	<u>Reservoir</u> Erect a welded steel tower for reservoir support complete, include foundations, columns, beams, access ladders, plates, braces, walkway/ guardrail, base plates, anchor bolts, nuts, washers, etc., painting and finishes; complete as specified and detailed in the drawings , of the following height and reservoir capacities.				
2.1	Height; 9.0m for (4No. x 10m ³ Tanks)	No.	1		
3	<u>Plastic Tanks</u> Supply and install a vertical cylindrical Rotational Moulded Polyethylene Water Storage Tank to DUS 1560: 2013 as manufactured by Ms. Gentex Ltd. / Crest Tanks or any other approved complete with a lockable access man ways, inlet/ riser, ball float valve, overflow with insect screen, float type water level indicator and outlet/ down pipe with a strainer, washout and overflow connection, including interconnecting pipe work and fittings, as detailed in the drawings, supply specifications and of the following capacity.				
3.1	10m ³	No.	4		
4	<u>150-200 micron union/ compression type clear uPVC Y- Screen Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement screen element and seal ring :-</u>				
4.1	DN75mm, PN10	No.	1		
5	<u>150-200 micron union/ compression type clear uPVC Y- Disc Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement disk element and seal ring :-</u> [OPTIONAL]				
5.1	DN75mm, PN10	No.	1		
6	<u>Landscaping and Walkways</u>				
6.1	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	150		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.3: BUYEMBA IN TORORO DISTRICT

BILL No. 3 : STORAGE RESERVOIR WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6.2	500 x 500 x 50mm precast concrete paving slabs laid " Space out Stone method" between the gate, pump house and solar array in one raw, laid onto 200mm thick murram fill.	No.	Rate Only		
7	Fences				
7.1	Galvanized wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m.	m	60		
	Gates				
7.2	Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	1		
	Provision and Placing of Concrete Ordinary Designed Mix Concrete				
8	<u>Designed mix concrete, to BS 5328, with ordinary Portland cement to BS 12 , aggregate to BS882 , for 10mm aggregate sizes and the following grades:</u>				
8.1	Grade C15	m ³	2		

Total Carried to Collection

BILL No. 3 : STORAGE RESERVOIR WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 3 Collection				
	Page 9				
	Page 10				

Total Bill No. 3 Carried to Bill Summary

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.3: BUYEMBA IN TORORO DISTRICT

BILL No.4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>DEMOLITION AND SITE CLEARANCE</u>				
	<u>General Site Clearance</u>				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing tree stumps and disposal of arising materials.	Item	1		
	<u>PIPEWORK-PIPES</u>				
2	<u>Plastic Pressure Pipes- Distribution</u> HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in trench to the following depths not exceeding 1.5m				
2.1	OD63mm PN10	m	1,580		
2.2	OD90mm PN10	m	260		
	<u>PIPEWORK - FITTINGS AND VALVES</u>				
	<u>PN10 HDPE Compression fitting to DIN 8074/BS 5114</u>				
	<u>Plastic Pipe Fittings</u>				
3	<u>Equal tees</u>				
3.1	OD90mm	No.	2		
	<u>Unequal tees</u>				
3.7	OD90 x 63mm	No.	3		
	<u>PN10 HDPE Compression fitting to DIN 8074/BS 5114</u>				
	<u>Plastic Pipe Fittings</u>				
4	<u>Couplers</u>				
4.1	OD90mm	No.	12		
5	<u>End caps</u>				
5.1	OD63mm	No.	8		
6	<u>Valves and Penstocks</u>				
	<u>Air Valves</u> Flanged CI double orifice air relief valve, DN50mm, as specified flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified.				
6.1	OD90mm	No.	2		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.3: BUYEMBA IN TORORO DISTRICT

BILL No.4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
7	Washouts Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, PVC union ball valve, flap valve and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box and stone masonry outfall structure to detail as per Drawing				
7.1	DN75mm	No.	6		
7.2	DN50mm	No.	3		
8	Farm Gate Connections Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and lockable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: -				
8.1	DN50mm	No.	8		
	Other Pipework Ancillaries				
	Marker Posts				
9	Marker posts for pipes, gate valves, air valves, washouts.	No.	88		

Total Carried to Collection

BILL No. 4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 4 Collection				
	Page 11				
	Page 12				

Total Bill No. 4 Carried to Bill Summary

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.4: HABAYAGA IN NAMAMAYINGO DISTRICT

BILL SUMMARY

Bill No.	Description			Amount (UGx.)
	WORK ITEMS			
1	Abstraction Works			
2	Transmission Mains			
3	Storage Reservoir Works			
4	Distribution Network			
Total Carried to Grand Summary				

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.4: HABAYAGA IN NAMAMAYINGO DISTRICT

BILL No. 1 : ABSTRACTION WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>General Site Clearance</u>				
1	General site clearance, felling trees, grabbing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1		
	<u>Earthworks</u>				
2.1	Excavation to form river/ stream diversion towards the intake / abstraction structure in normal ground, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to receive hardcore fill.	m ³	35		
2.2	Ditto but for the Intake Structure	m ³	45		
2.3	Ditto but for the River Weir Structure	m ³	4		
	<u>Filling Structures</u>				
	<u>Filling to precast concrete sump structure by methods specified and to depths as shown in the drawings with the following materials: -</u>				
3.1	Imported rock/ hardcore fill, size 75 to 300mm hand packed or compacted by the arm of an excavator.	m ³	55		
3.2	Selected excavated material including topping with a 200mm thick layer of top vegetable soil.	m ³	44		
3.3	Imported murrum.	m ³	18		
4	Single layer of geotextile laid to manufacturer's specifications	m ²	0		
	<u>Landscaping</u>				
5	Turfing for lawns inside fenced off compound, including filling with excavated topsoil and the preparation of surfaces at Intake Site.	m ²	840		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.4: HABAYAGA IN NAMAMAYINGO DISTRICT

BILL No. 1 : ABSTRACTION WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
8.2	Inserts DN 250 CI / ST flanged, puddled pipe insert pipe inserts projecting from two faces of the concrete wall and of the following sizes,excluding supply of pipe.	No.	2		
	PIPEWORK - FITTINGS AND VALVES Cast or Spum Iron Pipe Fittings.				
9.1	Flanged Reducers DN250 x 150mm	No.	1		
9.2	Flange Adaptors DN 150mm Maxi Type or similar wide range adaptor to fit pipe spigots, flanges to BS 4505, all to PN6.	No.	1		
	Strainers <u>Flanged outlet pipe strainer, to BS 4772, flanges to BS 4504, all to PN 10, cement mortar lined, and of the following sizes: -</u>				
9.3	DN 250 mm	No.	2		
9.4	End Caps DN250mm flanged end cap.	No.	1		
	Valves and Penstocks Gate Valves: Hand Operated <u>All flanged CI gate valves to BS 5150 ,flanges to BS 4505 , all to PN 10 for operation by tee key, with extension spindle not exceeding 1.5 metres long, and of the following sizes:-</u>				
9.5	150 mm ND <u>Penstocks; hand operated including head stock and distance spindle, as specified in drawings of the following size: -</u>	No.	1		
9.6	300mm wide x 1000mm high <u>Stainless Steel.</u>	No.	2		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.4: HABAYAGA IN NAMAMAYINGO DISTRICT

BILL No. 1 : ABSTRACTION WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	MISCELLANEOUS METAL WORK				
	Ladders				
10.1	External galvanized mild steel ladder to BS 4211, galvanized to BS 729, complete and as shown in the drawings including fixing to precast concrete units..	m	8		
	Access Manhole Cover				
10.2	600 x 600mm clear opening painted mild steel cover and frame include fixing and locking arrangement.	No.	1		
	Valve Surface Boxes				
10.3	Valve surface box with lockable cover securely attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to a depth not exceeding 4.5 m.	No.	0		
	MISCELLANEOUS WORKS				
X1	450mm diameter reinforced concrete pipe/ culvert	m	2		
	Training of Operator's staff				
X2	Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
	Operation and Maintenance Manuals				
X3	Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
Total Carried to Collection					
BILL No. 1 : ABSTRACTION WORKS					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
Total Bill No. 1 Carried to Bill Summary					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.4: HABAYAGA IN NAMAMAYINGO DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	135	Rate (UGx.)	Amount (UGx.)
	<u>DEMOLITION AND SITE CLEARANCE</u>				
	<u>General Site Clearance</u>				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing tree stumps and disposal of arising materials.	Item	1		
	<u>PIPEWORKS - PIPES</u>				
2	<u>Steel Pipes</u>				
	<u>Galvanised steel pipes (Class B) with threaded joints, include unions/sockets, all to ISO 2531, of the following sizes.</u>				
2.1	DN150mm, not in trenches;	m	6		
2.2	DN150mm, in trenches; depth not exceeding 1.5m.	m	6		
3	<u>HDPE Pipes</u>				
	<u>HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m</u>				
3.1	OD90mm HDPE PN10	m	930		
4	<u>uPVC Pipes</u>				
	<u>uPVC pressure pipes to UNBS US 264: 2000 and DIN 8062 with integral rubber ring socket joints laid in trenches to depths not</u>				
4.1	OD160 to PN 10	m	2,160		
	<u>PIPEWORK - FITTINGS AND VALVES</u>				
	<u>Cast or Spun Iron Pipe Fittings</u>				
5	<u>Bends</u>				
	<u>Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizes</u>				
5.1	DN125mm	No.	Rate Only		
5.2	DN150mm	No.	6		
	<u>Steel pipe fittings; flanges to PN 16; in trenches not exceeding 1.5 m</u>				
	<u>Viking Johnson stepped couplings as Maxistep</u>				
5.3	DN150 x 100	No.	1		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.4: HABAYAGA IN NAMAMAYINGO DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
5.4	Viking Johnson Flanged adaptors as Aquafast to PN16 DN150	No.	4		
6	Cast or Spun Iron Pipe Fittings Junctions and Branches All flanged tee to BS 4346, flanges to BS 4504 ,all to PN6 and of the following sizes;				
6.1	DN150mm	No.	3		
	Tapers All flanged concentric taper to BS4772, flanges to BS4504 all to PN6, cement mortar lined, and of the following sizes;				
6.2	DN150 x 50mm	No.	8		
6.3	DN150 x 65mm	No.	4		
6.4	DN150 x 75mm	No.	Rate Only		
7	Bulk Flow Meters <u>Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as specified, all fittings, including a masonry chamber, and on the following main pipe sizes</u>				
7.1	DN150mm PN10	No.	1		
	PN16 HDPE Compression fitting to DIN 8074/BS 5114				
8	Equal Adapters				
8.1	OD90 female adapter	No.	Rate Only		
8.2	OD100 female adapter	No.	Rate Only		
9	Valves and Penstocks Air Valves <u>Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified.</u>				
9.1	DN125mm	No.	Rate Only		
9.2	DN150mm	No.	2		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.4: HABAYAGA IN NAMAMAYINGO DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
10	<u>Washouts</u> <u>Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, union ball valve, flap valve, stone masonry outfall structure and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box to detail.</u>				
10.1	DN125mm	No.	Rate Only		
10.2	DN150mm	No.	4		
	<u>PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES</u> <u>Other Chambers</u> <u>Masonry air valve chamber, complete as specified in the drawings, and of the following depths</u> Depth not exceeding 1.5m	No.	2		
11	<u>Valve Surface Boxes</u> <u>Valve surface box for DN100 - DN300 valves, with lockable cover securely attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to the following depths</u>				
11.1	Depth not exceeding 1.5m	No.	4		
	<u>Reinstatement</u> <u>Roads</u> <u>Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes</u>				
11.2	Not exceeding DN300mm	m	12		
12	<u>Surrounds</u> <u>Pipe surrounds, of selected excavated granular material, for the following pipe sizes</u>				
12.1	Not exceeding DN200mm	m	80		
12.2	<u>Pipe surrounds, of imported granular material, for the following pipe</u> Not exceeding DN200mm	m	420		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.4: HABAYAGA IN NAMAMAYINGO DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
12.3	Pipe surrounds, of mass concrete, for the following pipe sizes Not exceeding DN200mm	m	85		
13	<u>Concrete Stools and Thrust Blocks</u> <i>Thrust Blocks</i> Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m³, for the following pipe sizes				
13.1	Diameter not exceeding DN200mm	No.	6		
	<u>Other Pipework Ancillaries</u> <i>Marker Posts</i>				
14	Marker posts for pipes, gate valves, air valves, washouts	nr	72		
Total Carried to Collection					

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 2 Collection Page 6 Page 7 Page 8 Page 9				
Total Bill No. 2 Carried to Bill Summary					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.4: HABAYAGA IN NAMAMAYINGO DISTRICT

BILL No. 3 : STORAGE RESERVOIR WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>DEMOLITION AND SITE CLEARANCE</u>				
	<u>General Site Clearance</u>				
1	General site clearance including trees, stumps and disposal of arising materials.	Item	1		
2	<u>Reservoir</u> <u>Erect a welded steel tower for reservoir support complete, include foundations, columns, beams, access ladders, plates, braces, walkway/ guardrail, base plates, anchor bolts, nuts, washers, etc. painting and finishes; complete as specified and detailed in the drawings , of the following height and reservoir capacities.</u>				
2.1	Height; 9.0m for (4No. x 10m ³ Tanks)	No.	1		
3	<u>Plastic Tanks</u> Supply and install a vertical cylindrical Rotational Moulded Polyethylene Water Storage Tank to DUS 1560: 2013 as manufactured by Ms Gentex Ltd. / Crest Tanks or any other approved complete with a lockable access man ways, inlet/ riser, ball float valve, overflow with insect screen, float type water level indicator and outlet/ down pipe with a strainer, washout and overflow connection, including interconnecting pipe work and fittings, as detailed in the drawings, supply specifications and of the following capacity.				
3.1	10m ³	No.	4		
4	<u>150-200 micron union/ compresion type clear uPVC Y- Screen Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement screen element and seal ring :-</u>				
4.1	DN75mm, PN10	No.	1		
5	<u>150-200 micron union/ compresion type clear uPVC Y- Disc Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement disk element and seal ring :-</u> [OPTIONAL]				
5.1	DN75mm, PN10	No.	1		
6	<u>Landscaping and Walkways</u>				
6.1	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	150		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.4: HABAYAGA IN NAMAMAYINGO DISTRICT

BILL No. 3 : STORAGE RESERVOIR WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6.2	500 x 500 x 50mm precast concrete paving slabs laid "Space out Stone method" between the gate, pump house and solar array in one raw, laid onto and including 200mm thick murram fill.	No.	Rate Only		
7	<u>Fences</u>				
7.1	Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m.	m	60		
	<u>Gates</u>				
7.2	Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	1		
	<u>Provision and Placing of Concrete</u> <u>Ordinary Designed Mix Concrete</u>				
8	<u>Designed mix concrete, to BS 5328, with ordinary portland cement to BS 12 , aggregate to BS882 , for 10mm aggregate sizes and the following grades:</u>				
8.1	Grade C15	m ³	2		

Total Carried to Collection

BILL No. 3 : STORAGE RESERVOIR WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 3 Collection				
	Page 10				
	Page 11				

Total Bill No. 3 Carried to Bill Summary

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.4: HABAYAGA IN NAMAMAYINGO DISTRICT

BILL No. 4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>DEMOLITION AND SITE CLEARANCE</u>				
	<u>General Site Clearance</u>				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing tree stumps and disposal of arising materials.	Item	1		
	<u>PIPEWORK-PIPES</u>				
2	<u>Plastic Pressure Pipes- Distribution</u> HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in trench to the following depths not exceeding 1.5m				
2.1	OD63mm PN10	m	350		
2.3	OD90mm PN10	m	110		
2.5	OD110mm uPVC PN10	m	728		
	<u>PIPEWORK - FITTINGS AND VALVES</u>				
	<u>PN10 HDPE Compression fitting to DIN 8074/BS 5114</u>				
	<u>Plastic Pipe Fittings</u>				
3	<u>Equal tees</u>				
3.1	OD90mm	No.	4		
3.2	OD110mm	No.	2		
	<u>Unequal tees</u>				
3.3	OD110 x 63mm	No.	Rate Only		
3.4	OD110 x 75mm	No.	6		
3.5	OD110 x 90mm	No.	6		
	<u>PN10 HDPE Compression fitting to DIN 8074/BS 5114</u>				
	<u>Plastic Pipe Fittings</u>				
4	<u>End caps</u>				
4.1	OD63mm	No.	12		
4.2	OD75mm	No.	Rate Only		
4.3	OD90mm	No.	Rate Only		
4.4	OD110mm	No.	Rate Only		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.4: HABAYAGA IN NAMAMAYINGO DISTRICT

BILL No. 4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
5	<u>Cast or Spun Iron Pipe Fittings</u> <u>Bends</u> Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizes				
5.4	DN100mm	No.	8		
5.6	DN150mm	No.	Rate Only		
	Steel pipe fittings; flanges to PN 16; in trenches not exceeding 1.5 m Viking Johnson stepped adaptors as Maxistep				
6.1	DN100 x 63	No.	Rate Only		
6.2	DN100 x 75	No.	Rate Only		
	<u>Viking Johnson Flanged adaptors as Aquafast.</u>				
6.5	DN50	No.	3		
6.6	DN65	No.	Rate Only		
6.7	DN75	No.	Rate Only		
6.8	DN100	No.	8		
6.9	DN125	No.	Rate Only		
7	<u>Cast or Spun Iron Pipe Fittings</u> <u>Junctions and Branches</u> All flanged tee to BS 4346, flanges to BS 4504 ,all to PN6 and of the following sizes;				
7.1	DN125mm	No.	Rate Only		
7.2	DN150mm	No.	Rate Only		
	<u>PN10 HDPE Compression fitting to DIN 8074/BS 5114</u> <u>Plastic Pipe Fittings</u>				
8	<u>Reducing Couplers/ Unions</u>				
8.1	OD75 x 63mm	No.	Rate Only		
8.2	OD90 x 63mm	No.	2		
8.3	OD90 x 75mm	No.	Rate Only		
8.3	OD110 x 63mm	No.	4		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.4: HABAYAGA IN NAMAMAYINGO DISTRICT

BILL No. 4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
9	<u>Valves and Penstocks</u> <u>Air Valve</u> <u>Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified.</u>				
9.1	OD90mm	No.	2		
9.2	OD110mm	No.	1		
10	<u>Washouts</u> <u>Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, PVC union ball valve, flap valve and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box and stone masonry outfall structure to detail as per</u>				
10.1	DN100mm	No.	1		
11	<u>Farm Gate Connections</u> Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connecor pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: -				
11.1	DN50mm	No.	12		
12	<u>Other Pipework Ancillaries</u> <u>Marker Posts</u> Marker posts for pipes, gate valves, air valves, washouts	nr	30		
13	<u>Reinstatement</u> <u>Roads</u> <u>Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes</u> Not exceeding DN300mm	m	Rate Only		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.4: HABAYAGA IN NAMAMAYINGO DISTRICT

BILL No. 4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 4 Collection Page 12 Page 13 Page 14				
Total Bill No. 4.4 Carried to Bill Summary					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA
SCHEME ID. 4.5: GWERI IN SOTOTI DISTRICT
BILL SUMMARY

Bill No.	Description	Amount (UGx.)
	WORK ITEMS	
1	Abstraction and Electromechanical Works	
2	Transmission Mains	
3	Storage Reservoir Works	
4	Distribution Network	
Total Carried to Grand Summary		

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.5: GWERI IN SOTOTI DISTRICT

BILL No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	General Site Clearance				
1	General site clearance, felling trees, grabbing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1		
	Earthworks				
	Excavation to form trapezoidal prism reservoir in material other than topsoil, rock or other artificial hard material, depth not exceeding 6.0m including forming earth bands along the channel of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.1	Marshy soils	m ³	52		
2.2	Soft / decomposed rock soils	m ³	26		
	Excavation to form trapezoidal channel in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.4	Marshy soils	m ³	60		
2.5	Soft / decomposed rock soils	m ³	15		
	Excavation to form cylindrical sump well in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.6	Marshy soils	m ³	16		
2.7	Soft / decomposed rock soils	m ³	8		
	Filling Structures				
	<u>Filling to precast concrete sump structure by methods specified and to depths as shown in the drawings with the following materials: -</u>				
3	Selected excavated material including topping with a 200mm thick layer of top/ vegetable soil.	m ³	10		
	Landscaping				
4	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	40		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.5: GWERI IN SOTOTI DISTRICT

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	IN-SITU CONCRETE				
	Provision and Placing of Concrete				
	Ordinary Design Mix Concrete				
	<u>Designed mix , concrete to BS 8500 and BS EN 206-1, with ordinary portland cement to BS 12, aggregate to BS 882 , maximum aggregate size ; 20mm for the following structures: -</u>				
	<u>In situ Concrete</u>				
5	75mm thick Grade C15 concrete blinding to pump sump base	m ³	0.25		
6.1	2200mm Diameter x 150mm thick Grade C25 concrete base slab reinforced with H12 - 200 E.W (B) complete with all associated formwork, finishing with a steel float.	Item	1		
6.2	2200mm Diameter x 150mm thick Grade C25 concrete top slab reinforced with H12 - 200 E.W (B) complete with all associated formwork, finishing with a steel float and forming a 600 x 600mm opening for the inspection cover	Item	1		
	Pre-cast Concrete				
	Pump Well/ Sump				
	Supply and install 100mm thick precast reinforced concrete vertical culverts on concrete base slab (MS) ; complete with water tight jointing and finishing works to approval.				
7	1200mm diameter ; height n.e 8m	Item	1		
	Concrete Inserts				
	Cast or Spun Iron Pipe Fittings.				
	Flanged, puddled and plain end pipe insert projecting from one face of the concrete, all to PN6 and of the following sizes and lengths, including supply of the pipe and as shown in the drawings.				
8	200mm ND and not exceeding 0.5m length	No.	2		
	Adaptors				
	Flange adaptor to fit ductile PVC to all to PN6 and of the following sizes:-				
9	200 mm ND	No.	2		
10	OD225mm PN10 plain end uPVC pipe connection between Silt Trap Basin and Pump Sump.	m	8		
	Bellmouths				
11	Flanged bellmouth to ISO 2531, flanges to ISO 2441, of the following sizes all to PN 6				
	200 mm ND	No.	1		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.5: GWERI IN SOTOTI DISTRICT

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	PIPEWORK - FITTINGS AND VALVES				
	<i>Gate Valves: Hand Operated</i>				
12	DN 200 mm all flanged CI gate valves to BS 5150 ,flanges to BS 4505 , all to PN 6 for operation by tee key, with extension spindle not exceeding 4.5 metres long, and of the following sizes				
	MISCELLANEOUS WORK				
	Ladders				
13	Internal galvanized mild steel ladder to BS 4211, galvernized to BS 729, complete andas shown in the drawings including fixing to precast concrete units..	m	8		
	Steel grating				
14.1	Galvanized iron Coarse Trash Screen as detailed in the drawings.	No.	1		
14.2	Galvanized iron Fine Trash Screen as detailed in the drawings.	No.	1		
	Pump Well/ Sump				
	Supply and install 8.0m long HDPE vertical culverts on concrete base slab (MS) ; complete with a Single ND200mm flanged branch to receive a ND200 gate valve. Branch height/ positioning to be determined on site.	Item	Rate Only		
15	Internal diameter ; 1200x200mm				
	Stone pitched Channel.				
16	3.0 x 1.5 top x bottom width x 1.5m deep maximum trapezoidal lined drain as detailed in the drawing.	m	5		
	Gabion boxes				
17	PVC coated gabion boxes ; size 1m x 1m x 1m; including rockfill of size 100 -	nr	Rate Only		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.5: GWERI IN SOTOTI DISTRICT

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>ELECTRO-MECHANICAL WORKS</u>				
	<u>Solar Pumping System</u> (based on 550Wp panels; bidder to adjust numbers to match rating of panel offered)				
ME1	11.0kW Submersible Pump Set with 15kW Pumping Inverter with Data Module, rated flow Q = 22 m ³ /hr., rated head H = 75m total head; set to not more than 5m below ground including Dry- run protection, Motor and Pump End.	No.	1		
ME2	2x17No. x 550Wp panels solar array to provide 18.7kW power to the pump system complete including wiring.	Item	1		
ME3	Mild steel welded structure for holding solar PV panels at 15° tilt angle and	Sum	1		
ME4	PV Disconnect 1000-40-2	No.	1		
ME5	PV Protect 1000-15, SPD x 1 on incoming solar PV.	No.	1		
ME6	Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc.	Item	1		
ME7	PV Combiner	No.	1		
ME7a	Pressure Switch and Gauge - P5/8	No.	1		
ME8	Sinewave filter - SWAP0022D.	No.	1		
ME9	10mm ² Borehole drop cable,	m	5		
ME10	10mm ² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding.	m	240		
ME10a	6mm ² UV Single Cable.	m	60		
ME11	Wire kit array from solar array to controller with MC4 connectors	No.	2		
ME11a	Adapter box	No.	1		
ME12	Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4.	Item	1		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.5: GWERI IN SOTOTI DISTRICT

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>Earthing and Lightening Protection</u>				
ME13	Earthing at solar array and borehole installation by 16mm ² PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME14	Lightning Protection at solar array and borehole installation consisting of 25x3mm copper tape, air terminal, test block and earth electrode in a manhole and all accessories.	Sum	1		
ME15	60W Solar security light and battery complete with 6m steel pole and lockable battery box	No.	5		
	<u>Alarm System</u>				
ME16	GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array.	Item	1		
ME17	GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor for the pump protection as instructed by the Engineer.	Item	1		
	<u>MISCELLANEOUS WORKS</u>				
	<u>Pump Protection System</u>				
X1	Vertical pipe pump stilling tube/ anti-vandal protection sleeve including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/002a or OIS/ABS/003, including 1.5x1.5x0.3m support base.	No.	1		
	<u>Kerbs</u>				
	Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m ² to the following alignment: -				
X2	Straight or curved to a radius exceeding 12 m	m	70		
X3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet.	m ²	220		
X4	450mm diameter reinforced concrete pipe/ culvert	m	0		
	<u>Pump House</u>				
X5	Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.	Sum	1		
	<u>Fences</u>				
X6a	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Intake Site, including special erection methods in "marshy grounds" to the Engineer's approval.	m	50		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.5: GWERI IN SOTOTI DISTRICT

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
X6b	Galvanised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Pumping Station Site.	m	10		
	<u>Gates</u>				
X7	Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	2		
	<u>Training of Operator's staff</u>				
X8	Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
	<u>Operation and Maintenance Manuals</u>				
X9	Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
XX	Horizontal pump installation option out of flanged/ sealed end HDPE culvert pipe mounted on fabricated GI support structure including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/005.	Item	Rate Only		

Total Carried to Collection

BILL No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Item No.	Description				Amount (UGx.)
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
	Page 6				
	Page 7				

Total Bill No. 1 Carried to Bill Summary

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.5: GWERI IN SOTOTI DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing tree stumps and disposal of arising materials.	Item	1		
	PIPEWORKS - PIPES				
2	Steel Pipes				
	<u>Galvanized iron pipes (Class B) with threaded joints, include unions/sockets, all to ISO 2531 of the following sizes:</u>				
2.1	DN75mm, in trenches; depths not exceeding 1.5m	m	12		
3	HDPE Pipes				
	<u>HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m</u>				
3.1	OD90mm HDPE PN10	m	982		
4	uPVC Pipes				
	<u>uPVC pressure pipes to UNBS US 264: 2000 and DIN 8062 with integral rubber ring socket joints laid in trenches</u>				
	<u>OD110 to PN 10</u>				
4.1	Depth not exceeding 1.5m	m	Rate Only		
	PIPEWORK - FITTINGS AND VALVES				
	Cast or Spun Iron Pipe Fittings				
5	Bends				
	<u>Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all</u>				
5.1	DN40mm	No.	Rate Only		
5.2	DN50mm	No.	Rate Only		
5.3	DN65mm	No.	Rate Only		
5.4	DN75mm	No.	Rate Only		
5.5	DN100mm	No.	Rate Only		
6	Bulk Flow Meters				
	<u>Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as specified, all fittings to PN10 including a masonry chamber, and on the following main pipe sizes</u>				
6.1	DN100mm PN10	No.	Rate Only		
6.2	DN75mm PN10	No.	1		
6.3	DN65mm PN10	No.	Rate Only		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.5: GWERI IN SOTOTI DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	PN16 HDPE Compression fitting to DIN 8074/BS 5114				
7	Equal Adapters				
7.1	OD90 female adapter	No.	2		
8	Valves and Penstocks				
	Air Valves				
	<u>Flanged CI double orifice air relief valve, DN50mm, as specified, flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified.</u>				
8.1	DN40mm	No.	Rate Only		
8.2	DN50mm	No.	Rate Only		
8.3	DN65mm	No.	Rate Only		
8.4	DN75mm	No.	1		
8.5	DN100mm	No.	Rate Only		
9	Washouts				
	<u>Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, union ball valve, flap valve, stone masonry outfall structure and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box to detail.</u>				
9.1	DN100mm	No.	Rate Only		
9.2	DN75mm	No.	1		
9.3	DN65mm	No.	Rate Only		
9.4	DN50mm	No.	Rate Only		
	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES				
	Other Chambers				
	<u>Masonry air valve chamber, complete as specified in the drawings, and of the following depths</u>				
10.1	Depth not exceeding 1.5m	No.	1		
	Valve Surface Boxes				
	<u>Valve surface box for DN100 - DN300 valves, with lockable cover securely attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to the following depths</u>				
10.2	Depth not exceeding 1.5m	No.	1		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.5: GWERI IN SOTOTI DISTRICT

BILL No. 2 : TRANSMISSION MAINS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>Reinstatement</u>				
	<u>Roads</u>				
	<u>Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes</u>				
11	Not exceeding DN300mm	m	Rate Only		
	<u>Surrounds</u>				
	<u>Pipe surrounds, of selected excavated granular material, for the following pipe sizes</u>				
12.1	Not exceeding DN200mm	m	55		
	<u>Pipe surrounds, of imported granular material, for the following pipe</u>				
12.2	Not exceeding DN200mm	m	120		
	<u>Pipe surrounds, of mass concrete, for the following pipe sizes</u>				
12.3	Not exceeding DN200mm	m	180		
	<u>Concrete Stools and Thrust Blocks</u>				
	<u>Thrust Blocks</u>				
	<u>Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m³, for the following pipe sizes</u>				
13.1	Diameter not exceeding DN200mm	No.	6		
	<u>Other Pipework Ancillaries</u>				
	<u>Marker Posts</u>				
14	Marker posts for pipes, gate valves, air valves, washouts	nr	20		
Total Carried to Collection					
BILL No. 2 : TRANSMISSION MAINS					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 2 Collection				
	Page 8				
	Page 9				
	Page 10				
Total Bill No. 2 Carried to Bill Summary					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.5: GWERI IN SOTOTI DISTRICT

BILL No. 4.3 : STORAGE RESERVOIR WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>DEMOLITION AND SITE CLEARANCE</u>				
	<u>General Site Clearance</u>				
1	General site clearance including trees, stumps and disposal of arising materials.	Item	1		
2	<u>Reservoir</u>				
	Erect a welded steel tower for reservoir support complete, include foundations, columns, beams, access ladders, plates, braces, walkway/ guardrail, base plates, anchor bolts, nuts, washers, etc, painting and finishes; complete as specified and detailed in the drawings , of the following height and reservoir capacities.				
2.1	Height; 9.0m for (4No. x 10m ³ Tanks)	No.	1		
3	<u>Plastic Tanks</u>				
	Supply and install a vertical cylindrical Rotational Moulded Polyethylene Water Storage Tank to DUS 1560: 2013 as manufactured by Ms Gentex Ltd. / Crest Tanks or any other approved complete with a lockable access man ways, inlet/ riser, ball float valve, overflow with insect screen, float type water level indicator and outlet/ down pipe with a strainer, washout and overflow connection, including interconnecting pipe work and fittings, as detailed in the drawings, supply specifications and of the following capacity.				
3.1	10m ³	No.	4		
4	<u>150-200 micron union/ compresion type clear uPVC Y- Screen Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement screen element and seal ring :-</u>				
4.1	DN75mm, PN10	No.	1		
5	<u>150-200 micron union/ compresion type clear uPVC Y- Disc Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement disk element and seal ring :-</u>				
	[OPTIONAL]				
5.1	DN100mm, PN10	No.	Rate Only		
5.2	DN75mm, PN10	No.	1		
5.3	DN65mm, PN10	No.	Rate Only		
6	<u>Landscaping and Walkways</u>				
6.1	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	150		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.5: GWERI IN SOTOTI DISTRICT

BILL No. 3 : STORAGE RESERVOIR WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6.2	500 x 500 x 50mm precast concrete paving slabs laid "Space out Stone method" between the gate, pump house and solar array in one row, laid onto and including 200mm thick murram fill.	No.	Rate Only		
7	Fences				
7.1	Galvanised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m.	m	60		
	Gates				
7.2	Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	1		
	Provision and Placing of Concrete Ordinary Designed Mix Concrete				
8	<u>Designed mix concrete, to BS 5328, with ordinary portland cement to BS 12 , aggregate to BS882 , for 10mm aggregate sizes and the following grades:</u>				
8.1	Grade C15	m ³	2		

Total Carried to Collection

BILL No. 3 : STORAGE RESERVOIR WORKS

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 3 Collection Page 11 Page 12				
Total Bill No. 3 Carried to Bill Summary					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.5: GWERI IN SOTOTI DISTRICT

BILL No.4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>DEMOLITION AND SITE CLEARANCE</u>				
	<u>General Site Clearance</u>				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing tree stumps and disposal of arising materials.	Item	1		
	<u>PIPEWORK-PIPES</u>				
2	<u>Plastic Pressure Pipes- Distribution</u> HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in trench to the following depths not exceeding 1.5m				
2.1	OD63mm PN10	m	480		
2.2	OD75mm PN10	m	Rate Only		
2.3	OD90mm PN10	m	1150		
	<u>PIPEWORK - FITTINGS AND VALVES</u>				
	<u>PN10 HDPE Compression fitting to DIN 8074/BS 5114</u>				
	<u>Plastic Pipe Fittings</u>				
3	<u>Equal tees</u>				
3.1	OD90mm	No.	1		
3.2	OD75mm	No.	1		
3.3	OD63mm	No.	Rate Only		
	<u>Unequal tees</u>				
3.5	OD90 x 75mm	No.	Rate Only		
3.6	OD90 x 63mm	No.	6		
	<u>PN10 HDPE Compression fitting to DIN 8074/BS 5114</u>				
	<u>Plastic Pipe Fittings</u>				
4	<u>Couplers</u>				
4.1	OD90mm	No.	Rate Only		
4.2	OD75mm	No.	Rate Only		
4.3	OD63mm	No.	Rate Only		
5	<u>End caps</u>				
5.1	OD90mm	No.	Rate Only		
5.2	OD75mm	No.	Rate Only		
5.3	OD63mm	No.	3		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.5: GWERI IN SOTOTI DISTRICT

BILL No.4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	<u>Valves and Penstocks</u>				
	<u>Air Vaves</u>				
	<u>Flanged CI double orifice air relief valve, DN50mm, as specified, flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified.</u>				
6.1	OD90mm	No.	Rate Only		
6.2	OD75mm	No.	Rate Only		
6.3	OD63mm	No.	Rate Only		
7	<u>Washouts</u>				
	<u>Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, PVC union ball valve, flap valve and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box and stone masonry outfall structure to detail as per</u>				
7.2	DN75mm	No.	Rate Only		
7.1	DN65mm	No.	Rate Only		
7.2	DN50mm	No.	Rate Only		
8	<u>Farm Gate Connections</u>				
	<u>Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: -</u>				
8.1	DN65mm	No.	Rate Only		
8.2	DN50mm	No.	5		
	<u>Other Pipework Ancillaries</u>				
	<u>Marker Posts</u>				
9	Marker posts for pipes, gate valves, air valves, washouts	nr	40		
	<u>Reinstatement Roads</u>				
	<u>Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes</u>				
10	Not exceeding DN300mm	m	Rate Only		
Total Carried to Collection					

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA

SCHEME ID. 4.5: GWERI IN SOTOTI DISTRICT

BILL No. 4 : DISTRIBUTION NETWORK

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<p>Bill No. 4 Collection</p> <p>Page 13</p> <p>Page 14</p>				
Total Bill No. 4 Carried to Bill Summary					