Tender price shall include all duties, taxes, and other levies payable by the Contractor under the Contract, or for any other cause and SHALL include 0.03% of the contract sum being Capacity Building Levy in compliance with the Executive Levy Order, 2023 (Legal Notice No. 206 of 2023)

PART 2 - WORKS' REQUIREMENTS

SECTION V - BILLS OF QUANTITIES

SCOPE OF WORKS

KWA NGINDU - KWA UKUNGU PIPELINE EXTENSIONS					
GRAND BILL SUMMARY					
Bill No.	**Description**		**Page**	**Amount (Ksh)**	
1	Preliminaries & General Items				
2	Booster Works				
i	Purchase/installation of Pump and Solar power assembly at kwa ngindu tanks				
3	Transmission Lines				
i	Rising Main (Kwa Ngindu Tanks - Proposed tank site at St. Augustine Sec. Kwa Ukungu)				
ii	Proposed Tank Site (St. Augustine Sec. Kwa Ukungu) - Nyekini main Ditribution Line				
iii	St. Agustine Sec Sch. - Kwa Ukungu Market Branchline				
4	Water Storage Tanks				
i	Construction of 100M3 Masonry Storage water tank				
5	Water Drawing points				
i	2No. Water Kiosks				
	Sub Total				
	Add % contingencies to be expended at the dully approval of the Project Engineer/Project Supervisor and Project Manager	**0.05**			
	Grand Total				
	Note: Prices Inclusive of VAT				

KWA NGINDU - KWA UKUNGU PIPELINE EXTENSIONS					
Bill No. 1: PRELIMINARIES AND GENERAL ITEMS					
S/No.	**Description**	**Unit**	**Qty**	**Rate (Ksh)**	**Amount(Ksh)**
1.1	**Project Signboard**				
1.1.1	Provide, erect and maintain contract signboard throughout the contract as directed by the Project Manager	No.	1		

1.2	**Mobilization and demobilization**				
1.2.1	Provide for mobilization and demobilization of equipment to site and setting up of contractor's camp and demobilization on completion of contract	Sum	1		
1.3	**Provisional Sums**				
1.3.1	Allow Provisional Sum of Kshs. **45,000** for setting out by Department of Water Design Unit	PS	L/sum	**45000**	**45000**
1.3.2	Allow Provisional Sum of Kshs. **400,000** for project supervision, Management and level checks	PS	L/sum	**400000**	**400000**
1.3.3	Allow provisional sum of **KES 150,000** for carrying out Environmental, Social, Health and Safety Management as outlined in the specifications. The cost to include NEMA fees .	PS		**150000**	**150000**
1.4.4	Allow for profit overhead on items 1.3.1 ,1.3.2 and 1.3.3	%			
	Total Carried forward to Grand Bill Summary for Bill No. 1				

KWA NGINDU - KWA UKUNGU PIPELINE EXTENSIONS

BILL No. 2: INTAKE WORKS

Bill No. 2(i): Purchase/installation of Pump and Solar power assembly at kwa ngindu tanks

Item	Description	Unit	Qnty	Rate (Ksh)	Amount (In Kshs)
A	**Supply and delivery to site, installation and commission testing of the following;**				
i	Supply, deliver, install and test a Solar Submersible Multistage Centrifugal Pump Set (wetend) c/w 5.5Kw motor , Duty Point: - 12 m^3/hour at a 101m head (Sump well static level of 8 m). The pump Efficiency at duty point should be at least 60%. The pump Impellers should be of Stainless Steel. Must Provide Copies of Pump Characteristic/ Performance Curves (Brochures). Install as directed by the project manager.	No.	1		
iii	Supply, deliver and install 5.5KW 3Ph control module AC/DC inverter designed for solar powering AC motors. Install hybrid sunverter or similar approved by Project Manager	No.	1		
iv	Supply, Deliver, Install and Test monocrystaline PV Solar panels, properly arrayed for maximum insolation on steel tower. Design must be approved by the Engineer	Watts	8250		
v	Supply and install Fabricated Steel Tower, (on properly casted concrete stands). Use square tubes, 3" x 3" x 4mm for solar Array System; minimum height - 5meters high. Include lockable steel box for solar inverter.	Item	1		
B	**Other Accessories**				

	Supply, deliver, Install and test the following accessories to ther satisfaction of the Project Manager and or Resident Engineer.				
1	PV Disconnect switch 1000VDC/40A	No.	1		
2	6mm² twin flat cable with earth	M	100		
3	6mm² safety wire cable	M	80		
4	Earth Rod c/w clamp	No.	1		
5	Electrode Pencil	No.	1		
6	**6mm² 4 Core** underground Armored cable for main load (provisional)	LM	80		
7	6core -4 mm² 3 Ph Sump well drop cable	M	30		
8	Sensor Cable, Twin, Double Insulated, 0.75mm² c/w well probe sensor	M	80		
9	Upvc Sump well Pipes, Heavy Duty, 21/2"Ø x 3 m	No.	3		
10	uPVC Pipes for airlines, 3/4" Ø X 6m, Class 'D'	No.	2		
11	Adaptor Set, , 21/2"Ø, Upvc Heavy duty	Set	1		
12	Non return valve, 21/2", class B c/w Fittings	No.	1		
13	Sump well installation sundries as per Engineers instructions (Provisional)	Item	L/Sum		
	Total Carried forward to Grand Bill Summary for Bill No.2(i)				

KWA NGINDU - KWA UKUNGU PIPELINE EXTENSIONS

Bill No. 3: TRANSMISSION LINES

Bill No. 3(i): Rising Main (Kwa Ngindu Tanks - Proposed tank site at St. Augustine Sec. Kwa Ukungu)

No.	Description	Unit	Qty	Rate (Kshs)	Amount (In Kshs)
A.	**Clearing/excavation**				
1	Clear pipe route of bushes, shrubs and cart away all arisings	M	2923		
2	Excavate for 600mmx600mm channel and stockpile soil materials for reuse. Rate to include trench bottom levelling	M	2923		
B.	**Provide, transport to site, and install the pipes (with sockets and / butt-fusion for HDPE pipes) and accompanying fittings as described here below**				
1	80mm dia. GS pipe class B	M	1		
2	90mm dia. HDPE pipe =(PN 12.5)	M	2923		
C.	**Valve chambers**				
1	Source supply materials to site and Construct STD ministry valve chambers 1MX1MX1M deep with 1:2:4 rc concrete manhole cover of 600mm x600mm size. The cover to be encased in 25mm angle framing and have a allan key locking system. Chamber to be of well dressed quarry stone and plastered to finish.	No.	8		
D.	**Provide, transport to site, and install pipe fittings as described here below:**				
1	80mm dia. GS plain sockets	No.	4		
2	80mm dia. GS plain nipples	No.	3		
3	80mm dia. GS unions	No.	2		
4	80mm dia. 90^0 GS bend – M & F	No.	3		
5	80mm dia. x 40mmm dia. flanged Red. GI tee	No.	2		
6	20mm dia. PN 12.5 Pressure gauge c/w gate valve and all other accessories	No.	1		
7	80mm dia. Non Return Valve (pegler)	No.	1		

8	80mm dia. Master meter complete with all accompanying fittings and accessories, including preparion of site and construction of 1m x 1m std chamber	No.	1		
	Total Carried to Collection page Bill No. 3(i)				-

KWA NGINDU - KWA UKUNGU PIPELINE EXTENSIONS

Bill No. 3: TRANSMISSION LINES

Bill No. 3(i): Rising Main (Kwa Ngindu Tanks - Proposed tank site at St. Augustine Sec. Kwa Ukungu)

(Continued)

No.	Description	Unit	Qty	Rate (Kshs)	Amount (In Kshs)
E	**Air Valves 4No.**				
	Provide, transport to site and install the following items:				
1	90mm dia x 11/2"dia. HDPE saddle clamp	No.	4		
2	40mm dia. Barrel/Pain nipple , one side flanged	No.	4		
3	40mm dia. hexagonal nipple one side flanged	No.	4		
4	40mm dia. Gate Valve (pegler type)	No.	4		
5	40mm dia. Flanged double acting air relief valve PN12.5 of good quality e.g. Neptune Clenfield	No.	4		
F	**Wash out 4No.**				
	Provide, transport to site and install the following items:				
1	90mm dia x11/2"dia. HDPE saddle clamp	No.	4		
2	40mm dia. Hex. Nipple	No.	4		
3	40mm dia. Gate Valve (pegler type)	No.	4		
4	40mm dia. GI Pipe 2M one side threaded	No.	4		
G	**Finishes**				
1	Back filling (A2) above leaving joints exposed	m	2923		
2	Final backfilling of item (A2), making good of site	%	0.1		
3	Provide precast concrete class 25 pipeline marker posts according to the drawings or as shall be directed by the Engineer. Include costs for excavations and mass concrete to post surround	No.	28		
I	**River /Road Crossings**				
1	Provide, transport to site and cast insitu concrete class 20 (1:2:4) for encasing and/or anchoring of pipe in river/stream as required or as shall be directed	M3	5		

	Total Carried to Collection page Bill No. 3(i)				
KWA NGINDU - KWA UKUNGU PIPELINE EXTENSIONS					
Bill No. 3: TRANSMISSION LINES					
Bill No. 3(i): Rising Main (Kwa Ngindu Tanks - Proposed tank site at St. Augustine Sec. Kwa Ukungu)					
(Continued)					
No.	**Description**	**Unit**	**Qty**	**Rate (Kshs)**	**Amount (In Kshs)**
	COLLECTION PAGE BILL No. 3(i)				
	Carried forward from page				**-**
	Carried forward from page				**-**
	Total Carried forward to Grand Bill Summary for Bill No. 3(i)				**-**
KWA NGINDU - KWA UKUNGU PIPELINE EXTENSIONS					
Bill No. 3: TRANSMISSION LINES					
Bill No. 3(ii): Proposed Tank Site (St. Augustine Sec. Kwa Ukungu) - Nyekini main Ditribution Line					

No.	Description	Unit	Qty	Rate (Kshs)	Amount (In Kshs)
A.	**Clearing/excavation**				
1	Clear pipe route of bushes, shrubs and cart away all arisings	M	2432		
2	Excavate for 600mmx600mm channel and stockpile soil materials for reuse. Rate to include trench bottom levelling	M	2432		
B.	**Provide, transport to site, and install the pipes (with sockets and / butt-fusion for HDPE pipes) and accompanying fittings as described here below**				
1	90mm dia. HDPE pipe PN 10	m	79		
2	75mm dia. HDPE pipe PN 10	m	2035		
3	63mm dia. HDPE pipe class PN 10	m	318		
C	**Interconnection Chamber near St. Augustine Sec gate**				
1	80mm dia. GI Equal tee	Nr	1		
2	80mmx 50mm dia. Red bush	Nr	1		
3	80mm x 65mm dia. red bush	Nr	1		
4	65mm dia. Sluice valve of good approved quality	Nr	1		
5	50mm dia. Sluice valve of good approved quality	Nr	1		
6	90mm dia. HDPE spigot	Nr	1		
C.	**Valve chamber**				
1	Source supply materials to site and Construct STD ministry valve chambers 1MX1MX1M deep with 1:2:4 rc concrete manhole cover of 600mm x600mm size. The cover to be encased in 25mm angle framing and have a allan key locking system. Chamber to be of well dressed quarry stone and plastered to finish.	Nr	10		
	Total Carried to Collection page Bill No. 3(ii)				-

KWA NGINDU - KWA UKUNGU PIPELINE EXTENSIONS

Bill No. 3: TRANSMISSION LINES

Bill No. 3(ii): Proposed Tank Site (St. Augustine Sec. Kwa Ukungu) - Nyekini main Ditribution Line

(Continued)

No.	Description	Unit	Qty	Rate (Kshs)	Amount (In Kshs)
F	**Air Valves 6No.**				
	Provide, transport to site and install the following items:				
1	75mm dia. X 1½" dia.. PE saddle clamp	No.	6		
2	40mm dia. Barrel nipple one side flanged	No.	6		
3	40mm dia. Hex. Nipple	No.	6		
4	40mm dia. Gate Valve (pegler type)	No.	6		
5	40mm dia. flanged double orifice air valve of good quality eg. Neptune Glenfiled	No.	6		
G	**Wash out 3No.**				
	Provide, transport to site and install the following items:				

1	75mm dia. X 1½" dia.. PE saddle clamp	No.	3		
2	40mm dia. Hex. Nipple	No.	3		
3	40mm dia. Gate Valve (pegler type)	No.	3		
4	40mm dia. GI Pipe 2M one side threaded	No.	3		
H	**Finishes**				
1	Back filling (A2) above leaving joints exposed	M	2432		
2	Final backfilling of item (A2), making good of site	%	0.25		
3	Provide precast concrete class 25 pipeline marker posts according to the drawings or as shall be directed by the Engineer. Include costs for excavations and mass concrete to post surround	No.	21		
I	**River /Road Crossings**				
1	Provide, transport to site and cast insitu concrete class 20 (1:2:4) for encasing and/or anchoring of pipe in river/stream as required or as shall be directed	M3	5		
	Total Carried to Collection page Bill No. 3(ii)				-

KWA NGINDU - KWA UKUNGU PIPELINE EXTENSIONS

Bill No. 3: TRANSMISSION LINES

Bill No. 3(ii): Proposed Tank Site (St. Augustine Sec. Kwa Ukungu) - Nyekini main Ditribution Line

(Continued)

No.	Description	Unit	Qty	Rate (Kshs)	Amount (In Kshs)
	COLLECTION PAGE BILL No. 3(ii)				
	Carried forward from page 19 of 30				-
	Carried forward from page 21 of 30				-

	Total Carried forward to Grand Bill Summary for Bill No. 3(ii)				**-**

KWA NGINDU - KWA UKUNGU PIPELINE EXTENSIONS

Bill No. 3: TRANSMISSION LINES

Bill No. 3(iii): St. Agustine Sec Sch. - Kwa Ukungu Market Branchline

No.	Description	Unit	Qty	Rate (Kshs)	Amount (Kshs)
A.	**Clearing/excavation**				
1	Clear pipe route of bushes, shrubs and cart away all arisings	M	679		
2	Excavate for 600mmx600mm channel and stockpile soil materials for reuse. Rate to include trench bottom levelling	M	679		
B.	Provide, transport to site, and install the pipes (with sockets and / **butt-fusion for HDPE pipes**) and accompanying fittings as described here below				
1	63mm dia. HDPE pipe =(PN 10)	M	679		
C.	**Valve chambers**				
1	Source supply materials to site and Construct STD ministry valve chambers 1MX1MX1M deep with 1:2:4 rc concrete manhole cover of 600mm x600mm size. The cover to be encased in 25mm angle framing and have a allan key locking system. Chamber to be of well dressed quarry stone and plastered to finish.	No.	2		
D.	**Provide, transport to site, and install pipe fittings as described here below:**				
1	50mm dia. nipples one flanged, other threaded	No.	2		
2	50mm dia. Master meter complete with all accompanying fittings and accessories, including preparion of site and construction of 1m x 1m std chamber	No.	1		
	Total Carried to Collection page Bill No. 3(iii)				**-**

KWA NGINDU - KWA UKUNGU PIPELINE EXTENSIONS

Bill No. 3: TRANSMISSION LINES

Bill No. 3(iii): St. Agustine Sec Sch. - Kwa Ukungu Market Branchline

(Continued)

No.	Description	Unit	Qty	Rate (Kshs)	Amount (Kshs)
E	**Air Valves 2No.**				
	Provide, transport to site and install the following items:				

1	63mm dia x 11/2"dia. HDPE saddle clamp	No.	2		
2	40mm dia. Barrel/Pain nipple	No.	2		
3	40mm dia. hexagonal nipple one side flanged	No.	2		
4	40mm dia. Gate Valve (pegler type)	No.	2		
5	40mm dia. Flanged double acting air relief valve PN12.5 of good quality e.g. Neptune Clenfield	No.	2		
F	**Wash out 2No.**				
	Provide, transport to site and install the following items:				
1	63mm dia x11/2"dia. HDPE saddle clamp	No.	2		
2	40mm dia. Hex. Nipple	No.	2		
3	40mm dia. Gate Valve (pegler type)	No.	2		
4	40mm dia. GI Pipe 2M one side threaded	No.	2		
G	**Finishes**				
1	Back filling (A2) above leaving joints exposed	m	679		
2	Final backfilling of item (A2), making good of site	%	0.1		
3	Provide precast concrete class 25 pipeline marker posts according to the drawings or as shall be directed by the Engineer. Include costs for excavations and mass concrete to post surround	No.	28		
I	**River /Road Crossings**				
1	Provide, transport to site and cast insitu concrete class 20 (1:2:4) for encasing and/or anchoring of pipe in river/stream/ on rocks as required or as shall be directed	M3	5		
	Total Carried to Collection page Bill No. 3(iii)				-

KWA NGINDU - KWA UKUNGU PIPELINE EXTENSIONS

Bill No. 3: TRANSMISSION LINES

Bill No. 3(iii): St. Agustine Sec Sch. - Kwa Ukungu Market Branchline

(Continued)

No.	Description	Unit	Qty	Rate (Kshs)	Amount (Kshs)
	<u>COLLECTION PAGE BILL No. 3(iii)</u>				
	Carried forward from page				-
	Carried forward from page				-

	Total Carried forward to Grand Bill Summary for Bill No. 3(iii)				**-**

TIVA - MAVUSI SUMPWELL WATER SUPPLY PROJECT

Bill No. 4: STORAGE/DISTRIBUTION WATER TANK

Bill No. 4(i): Construction of 100M3 Masonry Storage water tank

Item	Description	Unit	Qnty	Rate	Amount
1	Place 200mm THK hardcore filling and ram to attain even level	M3	3		
2	Hack to remove loose stone chippings from rock surface and create key for blinding	M2	34		
3	Prepare and cast insitu 1:3:6 concrete ,75mm THK blinding layer	M2	34		
4	1:2:4 concrete to make up levels	Item	-		
5	Prepare and cast insitu reinforced concrete class 20/20 (1:2:4) for 150mm THK floor slab	M3	5		
6	Prepare and cast insitu Place reinforced concrete class 20/20 (1:2:4) for 150mm THK roof slab	M3	5		
7	Construct masonry wall 225mm THK in sand/cement - 1:3 mortar/including wall for making up levels	M2	40		
8	Ditto but 150mm THK	M2	51		
9	Apply 20mm x 20mm Bondex fill as shown in the drawing	M	19		

10	1:2 sand/cement Plastering to walls internally	M2	85		
11	1:2 sand/cement Plastering to walls externally	M2	77		
12	Formwork				
	(i) To roof soffit	M2	29		
	(ii) 3Ply to sides of roof slab	M2	5		
13	Supply, cut and fix reiforcement to floor , wall and roof slab as specified in the DRG				
	(i) D6	Kgs	17		
	(ii) D8	Kgs	327		
	(iii) D10	Kgs	995		
	(iv) D16	Kgs	584		
	Sub Total Carried forward to Collection page Bill No. 4(i)				

KWA NGINDU - KWA UKUNGU PIPELINE EXTENSIONS

Bill No. 4: STORAGE/DISTRIBUTION WATER TANK

Bill No. 4(i): Construction of 100M3 Masonry Storage water tank

(continued)

Item	Description	Unit	Qnty	Rate	Amount
14	Fabricate, supply and Install externally and internally 3.7M long x 0.45m wide stainless steel ladder as per specification or as shall be directed by the engineer on site	No.	2		
15	Fabricate, supply and fix 600mm x 400mm steel manhole cover complete with frame and locking system	No.	1		
16	Supply and fix the following fittings as per specications or as per engineers directions on site				
A	**Intake**				
1	80mm dia. M & M bend	No.	2		
2	80mm dia. GI union	No.	2		
3	80mm dia. Hex. Nippl;e	No.	4		
4	80mm dia. GI Pipe M.G.	No.	2		
B	**Offtake/Scour**				
1	150mm x 100mm dia. Re. Socket	No.	2		
2	100mm dia. Barrel nipple	No.	4		
3	100mm dia. Screwed flange	No.	4		
4	100mm x 90^0 M & F Bend	No.	2		
5	100mm dia. GI Sockets	No.	4		
6	100mm dia. GI pipe M.G. 4m long threaded both sides	No.	2		
7	100mm dia. Gate valve (Pegler) - PN 8	No.	1		
8	80mm dia. Gate valve (Pegler) - PN 8	No.	1		
9	80mm dia. GI tee	No.	1		
10	100mm dia. GI tee	No.	1		
11	100mm x 80mm dia. red bush	No.	2		
12	80mm dia. Hex. Nipples	No.	4		
13	80mm dia. Plain socket	No.	2		

C	**Overflow (to be connected to distribution lines)**				
1	150mm x 100mm dia. Red. Socket	No.	4		
2	100mm dia. M & F. 90^0 bend	No.	4		
3	100mm dia. Screwed flange	No.	2		
4	100mm dia. Hex. Nipple	No.	6		
	Sub Total Carried forward to Collection page Bill No. 4(i)				

KWA NGINDU - KWA UKUNGU PIPELINE EXTENSIONS

Bill No. 4: STORAGE/DISTRIBUTION WATER TANK

Bill No. 4(i): Construction of 100M3 Masonry Storage water tank

(continued)

Item	Description	Unit	Qnty	Rate	Amount
D	**Breather**				
1	80mm dia. GS bends	No.	4		
2	80mm dia. Screwed flanges	No.	4		
3	80mm dia. Barrel Nipples	No.	4		
4	80mm dia. Elbows	No.	4		
17	**Valve Chamber**				
1	Source supply materials to site and Construct STD ministry valve chambers 1.5MX1.5MX1M deep with 1:2:4 rc concrete manhole cover of 600mm x600mm size. The cover to be encased in 25mm angle framing and have a allan key locking system. Chamber to be of well dressed quarry stone and plastered to finish.	No.	1		
18	**Painting**				
i	Prepare and apply 3 coats black gloss oil paint to wall surfaces externally for 1000m high skirting	SM	21		
ii	Prepare and apply 3 coats white emulsion paint to wall surfaces externally.	SM	64		
iii	Prepare and apply 3 coats black paint to roof edge	SM	3.2		
19	**Water Treatment**				
i	Source, supply and install Inline chlorine doser unit c/w refill kit and chlorine testing/monitoring kit	No.	1		
20	**Fencing of water tank site**				
i	Provide all material and construct 2m high chain link fencing held in place by a four strand 16 Gauge galvanized barbed wire on a 2.4m high 100mm square Concrete post at 2.5M c/c mortised in 1:3:6 mass concrete surround (provisional)	m	60		
ii	Fabricate, supply and erect 1.2m wide single leave gate . The gate to have 80mm Ø Side posts. The	No.	1		
iii	Supply , Prepare and apply two coats of high gloss blue paint to gate	item	1		
	Sub Total Carried forward to Collection page Bill No. 4(i)				

KWA NGINDU - KWA UKUNGU PIPELINE EXTENSIONS

Bill No. 4: STORAGE/DISTRIBUTION WATER TANK

Bill No. 4(i): Construction of 100M3 Masonry Storage water tank					
(continued)					
Item	**Description**	**Unit**	**Qnty**	**Rate**	**Amount**
	Collection page Bill No. 4(i)				
	Carried forward From page				
	Carried forward From page				
	Carried forward From page				

6	1:2:4 mix reinforced concrete in foundations	CM	1		
7	300mm thick hardcore filling	CM	2		
8	50mm thick murram blinding	SM	12		
9	Anti-termite treatment	SM	12		
10	100mm thick 1:3:6 mix concrete	SM	12		
11	200mm x 25mm softwood sawn formwork to side of slab	LM	10		
12	150mm thick block walling laid in cement/ sand mortar 1:5	SM	8		
2	**WALLING**				
	provide , transport to site the following and erect wall				
1	1:2:4 mix reinforced concrete lintel size 2300 x 200 x 200mm	Item	L/Sum		
2	150mm thick burnt clay brick walling laid in cement/ sand mortar 1:5	SM	20		
3	200 x 25mm soft wood sawn timber formwork to sides of lintol	LM	8		
4	10mm diameter mild steel round bars.	Kgs	5		
3	**ROOFING**				
	Provide, transport to site the following materials and fix as required				
1	200 x 25mm soft wood sawn timber formwork for roof slab.	SM	7		
2	100mm dia.- 2.4m long Timber props	No.	4		
3	100 x 25mm soft wood sawn timber formwork to sides of roof slab	LM	10		
4	D8 mild steel reinforcement	LM	40		
5	8 x 4 weld mesh	No.	2		
6	1:2:4 mix reinforced concrete to roof slab - 100mm T.H.L	CM	1		
	DOORS				
1	Fix standard steel purpose made door size 1000 x 2000mm	No.	1		
	Total Carried to Collection page Bill No. 3(i)				**-**

TULIA - KAVONGE PIPELINE EXTENSION

Bill No. 3: WATER DRAWING POINTS

Bill No. 3(i): 2M x 2M STD Ministry Water Kiosk

Item	Description	Unit	Qty	Rate	Amount
	WINDOWS				
1	Fix standard steel casement purpose made window size 950 x 1000mm	No.	1		
2	150mm thick precast concrete window all sizes 1000 x 300mm	Item			
	PLASTERING				
1	prepare & apply 12mm thick internal plaster	SM	19		
2	Ditto but 12mm thick external plaster	SM	22		
3	Ditto but 25mm thick cement/ sand screed	SM	12		
	PAINTING				
1	Prepare and apply 3 coats gloss oil paint to wall surfaces externally	SM	22		
2	Ditto but to walls internally	SM	19		
3	Ditto but to wood surfaces	SM	4		
	SOAK PIT				

1	Excavate soakpit n.e. 1.5M deep	CM	1.5		
2	Excavate pit 1.50 but not exceeding 3.0Mdeep	CM	1.5		
3	D12 mild steel bars	Kgs	16		
4	stone Rubble	CM	1		
5	Provide materials and cast insitu 1:2:4 reinforced concrete in soak pit cover	CM	0.5		
	PLUMPING				
	Provide and install the following fittings & Pipes as per drawings or as shall be required				
1	25mm dia GI pipe M.G.	Lengths	2		
2	20mm dia GI pipe M.G.	Lengths	2		
3	25mm dia Bend	No.	4		
4	25mm dia Nipples	No.	4		
5	25mm dia Union	No.	4		
6	25mm dia Socket	No.	3		
7	25 x 20mm dia reducing tee	No.	2		
8	25mm dia water meter	No.	1		
9	25mm diameter Gate Valve (Peglar)	No.	1		
10	20mm dia Bend	No.	8		
11	20mm dia stop cock	No.	4		
12	Purchase, supply and intall ontop of water kiosk, all fitting inlusive a 10,000ltr plastic water tank.Rate to include connection to kiosk plumbing network. **NB:A PN10 ball valve with all accessories to be installed on the 25mm dia. intake pipe**	No.	1		
	Total Carried to Collection page Bill No. 5(i)				-

TULIA - KAVONGE PIPELINE EXTENSION

Bill No. 5: WATER DRAWING POINTS

Bill No. 5(i): 2M x 2M STD Ministry Water Kiosk

Item	Description	Unit	Qty	Rate	Amount
	COLLECTION PAGE Bill No. 5(i)				
	Sub total carried forward from				-
	Sub total carried forward from				-
	Total for 1No. Water Kiosk				-
	To be constructed at sites as shall be agreed upon between stakeholders and the Engineer on site;-				

				2	
Total for 2No Water Kiosks Carried forward for Bill No. 5(i)					-

These Notes for Preparing Bills of Quantities are intended only as information for the Procuring Entity or the person drafting the tendering documents. They should not be included in the final documents.

1. Objectives

1.1 The objectives of the Bills of Quantities are:

a) to provide sufficient information on the quantities of Works to be performed to enable tenders to be prepared efficiently and accurately; and

(b) when a contract has been entered into, to provide a priced Bills of Quantities for use in the periodic valuation of Works executed.

1.2. In order to attain these objectives, Works should be itemized in the Bills of Quantities in sufficient detail to distinguish between the different classes of Works, or between Works of the same nature carried out in different locations or in other circumstances which may give rise to different considerations of cost. Consistent with these requirements, the layout and content of the Bills of Quantities should be as simple and brief as possible.

2. Content

The Bills of Quantities should be divided generally into the following sections:

a) Preamble;
b) Work Items (grouped into parts);
c) Day work Schedule; and
d) Summary.

3. Preamble

The Preamble should indicate the inclusiveness of the unit prices, and should state the methods of measurement that have been adopted in the preparation of the Bills of Quantities and that are to be used for the measurement of any part of the Works.

4. Rock

Where excavation, boring, or drilling is included in the Works, a comprehensive definition of rock (always a contentious topic in contract administration), should be provided in the Technical Specification and this definition should be used for the purposes of measurement and payment.

5. Work Items

The items in the Bill of Quantities should be grouped into sections to distinguish between those parts of the Works that by nature, location, access, timing, or any other special characteristics may give rise to different methods of construction, phasing of the Works, or considerations of cost. General items common to all parts of the Works may be grouped as a separate section in the Bills of Quantities. When a family of Price Adjustment Formulae are used, they should relate to appropriate sections in the Bills of Quantities.

6. Quantities

Quantities should be computed net from the Drawings, unless directed otherwise in the Contract, and no allowance should be made for bulking, shrinkage, or waste. Quantities should be rounded up or down where appropriate and spurious accuracy should be avoided.

7. Units of Measurement

The following units of measurement and abbreviations are recommended for use (unless other national units are mandatory in the country of the Procuring Entity).

Unit	Abbreviation	Unit	Abbreviation
hectare	ha	millimeter	mm
hour	h	month	mon
kilogram	kg	number	nr
lump sum	sum	square meter	m^2 *or* sq m
meter	m	square millimeter	mm^2 *or* sq mm
metric ton		week	wk

8. Ground and Excavation Levels

The commencing surface should be identified in the description of each item for work involving excavation, boring, or driving, for which the commencing surface is not also the original surface. The excavated surface should be identified in the description of each item for worki nvolving excavation for which the excavated surface is not also the final surface. The depths of work should be measured from the commencing surface to the excavated surface, as defined.

9. Day work Schedule

A Day work Schedule should be included if the probability of unforeseen work, outside the items included in the Bills of Quantities, is relatively high. To facilitate checking by the Procuring Entity of the realism of rates quoted by the Tenderers, the Day work Schedule should normally comprise:

a) a list of the various classes of labor, materials, and Contractor's Equipment for which basic Day work rates or prices are to be inserted by the Tenderer, together with a statement of the conditions under which the Contractor will be paid for work executed on a Day work basis; and

b) a percentage to be entered by the Tenderer against each basic Daywork Subtotal amount for labor, materials, and Plant representing the Contractor's profit, overheads, supervision, and other charges.

10. Provisional Quantities and Sums

10.1 Provision for quantity contingencies in any particular item or class of work with a high expectation of quantity overrun should be made by entering specific “Provisional Quantities” or “Provisional Items” in the Bills of Quantities, and *not* by increasing the quantities for that item or class of work beyond those of the work normally expected to be required. To the extent not covered above, a general provision for physical contingencies (quantity overruns) should be made by including a “Provisional Sum” in the Summary of the Bills of Quantities. Similarly, a contingency allowance for possible price increases should be provided as a “Provisional Sum” in the Summary of the Bills of Quantities. The inclusion of such Provisional Sums often facilitates budgetary approval by avoiding the need to request periodic supplementary approvals as the future need arises.

10.2 The estimated cost of specialized work to be carried out, or of special goods to be supplied, by a Nominated Subcontractor should be specified in the relevant part of the Bills of Quantities as a particular Provisional Sum with an appropriate brief description. A separate tendering procedure is normally carried out by the Procuring Entity to select the specialists, who are then nominated as subcontractors to the main or prime contractor. To provide an element of competition among the main Tenderers (or prime contractors) in respect of any facilities, amenities, attendance, etc., to be provided by the successful Tenderer as prime contractor for the use and convenience of the specialist or nominated subcontractor, each related Provisional Sum should be following by an item in the Bills of Quantities inviting a percentage (to be quoted by the main Tenderer) payable on the actual expenditure from the Provisional Sum.

11. Summary

The Summary should contain a tabulation of the separate parts of the Bills of Quantities carried forward, with provisional sums for Day work, for physical (quantity) contingencies, and for price contingencies (upward price adjustment) where applicable.

12 Sample Bills of Quantities

A. Preamble

1. The Bills of Quantities shall be read in conjunction with the Instructions to Tenderers, General and Particular Conditions of Contract, Technical Specifications, and Drawings.

2. The quantities given in the Bills of Quantities are estimated and provisional, and are given to provide a common basis for tendering. The basis of payment will be the actual quantities of work ordered and carried out, as measured by the Contractor and verified by the Engineer and valued at the rates and prices tender in the priced Bills of Quantities, where applicable, and otherwise at such rates and prices as the Engineer may fix within the terms of the Contract.

3. The rates and prices tender in the priced Bills of Quantities shall, except in so far as it is otherwise provided under the Contract, include all Constructional Plant, labor, supervision, materials, erection, maintenance, insurance, profit, taxes, and duties, together with all general risks, liabilities, and obligations set out or implied in the Contract.

4. A rate or price shall be entered against each item in the priced Bills of Quantities, whether quantities are stated or not. The cost of Items against which the Contractor has failed to enter a rate or price shall be deemed to be covered by other rates and prices entered in the Bills of Quantities.

5. The whole cost of complying with the provisions of the Contract shall be included in the Items provided in the priced Bills of Quantities, and where no Items are provided, the cost shall be deemed to be distributed among the rates and prices entered for the related Items of Work.

6. General directions and descriptions of work and materials are not necessarily repeated nor summarized in the Bills of Quantities. References to the relevant sections of the Contract documentation shall be made before entering prices against each item in the priced Bills of Quantities.

7. Provisional Sums included and so designated in the Bills of Quantities shall be expended in whole or in part at the direction and discretion of the Engineer in accordance with Sub-Clause 13.5 and Clause 13.6 of the General Conditions.

8. The method of measurement of completed work for payment shall be in accordance with *[insert the name of a standard reference guide, or full details of the methods to be used]* [6].

B. Work Items

1. The Bills of Quantities usually contains the following part Bills, which have been grouped according to the nature or timing of the work:

Bill No. 1: General Items;
Bill No. 2: Earthworks;
Bill No. 3: Culverts and Bridges;
Bill No. 4: etc., as required;
Daywork Schedule; and
Summary Bills of Quantities.

[6] *The method of measurement should be spelled out precisely in the Preamble to the Bills of Quantities, describing for example the allowances (if any) for timbering in excavation, etc. Many national standard reference guides have been prepared on the subject, and one such guide is the Standard Method of Measurement of the U.K. Institution of Civil Engineers.*

2. If TDS-ITT 15.1 (a) applies, Tenderers shall price the Bills of Quantities in local currency only and shall indicate in the Appendix to Tender the percentage expected for payment in foreign currency or currencies. If TDS-ITT 15.1 (b) applies Tenderers shall price the Bills of Quantities in the applicable currency or currencies.

[Note to the Procuring Entity: The tables in BOQ must be prepared in accordance with the currency alternative retained in TDS – ITT 15.1.]

Bills of Quantities

Bill No. 1: General Items

Item no.					
					_____

Payments under this item shall be made in the following currency proportions:

i) foreign: percent (to be stated by Tenderer)[7].

ii) local: percent (to be stated by Tenderer).

[7] *The Tenderer shall state the percentage in a common foreign currency equivalent required for payment and the exchange rates and official sources used.*

Bill No. 2: Work items *(organized appropriately into worksections, such as General Items, earth works, Culverts and Bridges, etc.) in tables as the one below.*

Bill No 2 - *(Name of Section E.g. Earthworks)*

Item no.	*Description*	*Unit*	*Quantity*	*Rate*	*Amount*
Total for Bill No…….. (carried forward to Summary, p. _____)					xxx

Payments under this item shall be made in the following currency proportions:

i) foreign:_____percent (to be stated by Tenderer)[8].

ii) local:_____percent (to be stated by Tenderer).

[8]*The Tenderer shall state the percentage in a common foreign currency equivalent required for payment and the exchange rates and official sources used.*

C. Schedule of Daywork

Rates [Note to the Procuring

Entity:

i) A "Daywork Schedule" is commonly found in contracts where the likely incidence of unforeseen work cannot be covered by definitive descriptions and approximate quantities in the Bills of Quantities. The preferred alternative is to value the additional work in accordance with the Conditions of Contract. A Daywork Schedule normally has the disadvantage of not being competitive among Tenderers, who may therefore load the rates as signed to some or all the items. If a Daywork Schedule is to be included at all in the tendering documents, it is preferable to include nominal quantities against the items most likely to be used, and to carry the sum of the extended amounts forward into the Tender Summary in order to make the basic Schedule of Daywork Rates competitive.

ii) The total amount assigned to such competitive daywork is normally 3–5 percent of the estimated base Contract Price and is regarded as a Provisional Sum for contingencies to be expended under the direction and at the discretion of the Engineer.]

1. General

Reference should be made to Sub-Clause 13.6 of the General Conditions. Work shall not be executed on a day work basis except by written order of the Engineer. Tenderers shall enter basic rates for day work items in the Schedules, which rates shall apply to any quantity of day work ordered by the Engineer. Nominal quantities have been indicated against each item of daywork, and the extended total for Daywork shall be carried forward as a Provisional Sum to the Summary Total Tender Amount. Unless otherwise adjusted, payments for day work shall be subject to price adjustment in accordance with the provisions in the Conditions of Contract.

2. Daywork Labor

2.1 In calculating payments due to the Contract or for the execution of day work, the hours for labor will be reckoned from the time of arrival of the labor at the job site to execute the particular item of day work to thetimeofreturnto the original place of departure, but excluding meal breaks and rest periods. Only the time of classes of labor directly doing work ordered by the Engineer and for which they are competent to perform will be measured. The time of gangers (charge hands) actually doing work with the gangs will also be measured but not the time of foremen or other supervisory personnel.

2.2 The Contractor shall be entitled to payment in respect of the total time that labor is employed on daywork, calculated at the basic rates entered by the Contractor in the **Schedule of Daywork Rates: 1. Labor,** together with an additional percentage payment on basic rates representing the Contractor's profit, overheads, etc., as described below:

a) The basic rates for labor shall cover all direct costs to the Contractor, including (but not limited to) the amount of wages paid to such labor, transportation time, overtime, subsistence allowances, and any sums paid to or on behalf of such labor for social benefits in accordance with *[country of Procuring Entity]* law. The basic rates will be payable in local currency only.

b) The additional percentage payment to be quoted by the Tenderer and applied to costs incurred under (a) above shall be deemed to cover the Contractor's profit, overheads, superintendence, liabilities, and insurances and allowances to labor, time keeping, and clerical and office work, the use of consumable stores, water, lighting, and power; the use and repair of stagings, scaffolding, workshops, and stores, portable power tools, manual plant, and tools; supervision by the Contractor's staff, foremen, and other supervisory personnel; and charges incidental to the fore going. Payments under this item shall be made in the following currency proportions:

i) foreign:_____percent (to be stated by Tenderer)[9].

ii) local:_____percent (to be stated by

Tenderer). [***Note to the Procuring Entity****:*

This method of indicating profit and overheads separately facilitates the addition of further items of daywork, if needed, the basic costs of which can then be checked more easily. An alternative is to make Daywork rates all- inclusive of the Contractor's overhead and profit, etc., in which case this paragraph and the relevant Daywork Schedule should be modified accordingly.]

3. Daywork Materials

The Contractor shall be entitled to payment in respect of materials used for daywork (except for materials for which the cost is included in the percentage addition to labor costs as detailed hereto fore), at the basic rates entered by the Contractor in the **Schedule of Daywork Rates: 2. Materials,** together with an additional percentage payment on the basic rates to cover overhead charges and profit, as follows:

a) the basic rates for materials shall be calculated on the basis of the invoiced price, freight, insurance, handling expenses, damage, losses, etc., and shall provide for delivery to store for stockpiling at the Site. The basic rates shall be stated in local currency, but payment will be made in the currency or currencies expended upon presentation of supporting documentation.

b) the additional percentage payment shall be quoted by the Tenderer and applied to the equivalent local currency payments made under (a) above. Payments under this item will be made in the following currency proportions:

i) foreign:____percent (to be stated by the Tenderer)[10];

ii) local:_____percent (to be stated by the Tenderer);

c) the cost of hauling materials for use on work ordered to be carried out as daywork from the store or stockpile on the Site to the place where it is to be used will be paid in accordance with the terms for Labor and Construction in this schedule.

4. Daywork Contractor's Equipment

4.1 The Contractor shall be entitled to payments in respect of Contractor's Equipment already on Site and employed on daywork at the basic rental rates entered by the Contractor in the **Schedule of Daywork Rates: 3. Contractor's Equipment.** Said rates shall be deemed to include due and complete allowance for depreciation, interest, indemnity, and insurance, repairs, maintenance, supplies, fuel, lubricants, and other consumables, and all overhead, profit, and administrative costs related to the use of such equipment.

[***Note to the Procuring Entity****: This is an example of wording to include overhead and profit, etc., in the daywork rates. A separate percentage addition could be used as for labor and materials*.] The cost of drivers, operators, and assistants will be paid for separately as described under the section on Daywork Labor. *[**Note to the Procuring Entity**: An alternative, sometimes adopted for administrative convenience, is to include the cost of drivers, operators, and assistants in the basic rates for Contractor's Equipment. The last sentence of this paragraph 5 should then be modified accordingly.]*

4.2 In calculating the payment due to the Contractor for Contractor's Equipment employed on daywork, only the actual number of working hours will be eligible for payment, except that where applicable and agreed with the Engineer, the traveling time from the part of the Site where the Contractor's Equipment was located when ordered by the Engineer to be employed on daywork and the time for return journey thereto shall be included for payment.

4.3 The basic rental rates for Contractor's Equipment employed on daywork shall be stated in local currency, but payments to the Contractor will be made incurrency proportions, as follows:

a) foreign:_____percent (to be stated by the Tenderer)[11].

b) local:_____percent (to be stated by the Tenderer).

[9]TheTenderer shall state the percentage in a common foreign currency equivalent required for payment and the exchange rates and official sources used. *[10]The Tenderer shall state the percentage in a single foreign currency equivalent and the exchange rates and official sources used.*
[11]The Tenderer shall state the percentage in a single foreign currency equivalent and the exchange rates and official sources used.

Schedule of Daywork Rates: 1. Labor

	Description	*Unit*	*Nominal quantity*	*Rate*	*Extended amount*
	Subtotal				
	Allow ____ percent[a] of Subtotal for Contractor's overhead, profit, etc., in accordance with paragraph 3 (b) above.				

a. To be entered by the Tenderer.

Schedule of Daywork Rates: 2. Materials

	Description	*Unit*	*Nominal quantity*	*Rate*	*Extended amount*
	Subtotal				
	Allow ____ percent of Subtotal for Contractor's overhead, profit, etc., in accordance with paragraph 4 (b) above.				

a. To be entered by the Tenderer.

Schedule of Daywork Rates: 3. Contractor's Equipment

	Description	*Nominal quantity (hours)*	*Basic hourly rental rate*	*Extended amount*

Summary of Specified Provisional Sums in the Bills of Quantities

		Description	*Amount*
1			
2			
3			
4			
etc.			
Total for Specified Provisional Sums			

Grand Summary

General Summary	Page	Amount
Bill No. 2: Work items		
Bill No. 2: Work items		
Bill No. 2: Work items		
Subtotal of Bills	(A)	
ADD Total for Daywork (Provisional Sum) *	(B)	
ADD Specified Provisional Sums in their subtotal of bills[ii]	(C)	[sum]
Total of Bills Plus Provisional Sums (A + B + C)[i]	(D)	
Add Provisional Sum for Contingency Allowance (if any)[ii]	(E)	[sum]
Tender Price (D + E) (Carried forward to Letter of Tender)	(F)	

i) All Provisional Sums are to be expended in whole or in part at the direction and discretion of the Engineer in accordance with +Clause 13.5 of the General Conditions.

ii) TobeenteredbytheProcuringEntity.

** For evaluation purposes, Provisional Sum, other than Daywork will be excluded.*

SECTION VI - SPECIFICATIONS

[In drafting of the Specification, care must be taken when drafting the Work's Requirements to ensure that the requirements are not restrictive. Recognized international standards should be used as much as possible for the description of goods, materials and workmanship. Where other particular standards are specified, whether national standards or other standards, it should be stated that goods, materials and workmanship meeting other authoritative standards and which promise to ensure equal or higher quality than the standards specified, will also be acceptable. Where a brand name of a productis specified it should always be qualified with the terms "orequivalent".]

Notes for preparing Specifications

1. Specifications must be drafted to present a clear and precise statement of the required standards of materials, and workmanship for tenderers to respond realistically and competitively to the requirements of the Procuring Entity and ensure responsiveness of tenders. The Specifications should require that all materials, plant, and other supplies to be permanently incorporated in the Works be new, unused, of the most recent or current models, and incorporating all recent improvements in design and materials unless provided otherwise in the Contract.Where the Contractor is responsible for the design of any part of the permanent Works, the extent of his obligations must be stated.

2. Specifications from previous similar projects are useful and may not be necessary to re-write specifications for everyWorks Contract.

3. There are considerable advantages in standardizing **General Specifications** for repetitive Works in recognized public sectors, such as highways, urban housing, irrigation and water supply. The General Specifications should cover all classes of workmanship, materials and equipment commonly involved in constructions, although not necessarily to be used in a particular works contract. Deletions or addenda should then adapt the General Specifications to the particular Works.

4. Care must be taken in drafting Specifications to ensure they are not restrictive. In the Specifications of standards for materials, plant and workmanship, existing Kenya Standards should be used as much as possible, otherwise recognized international standards may also be used.

5. The Procuring Entity should decide whether technical solutions to specified parts of the Works are to be permitted. Alternatives are appropriate in cases where obvious (and potentially less costly) alternatives are possible to the technical solutions indicated in tender documents for certain elements of the Works, taking into consideration the comparative specialized advantage of potential tenderers.

6. The Procuring Entity should provide a description of the selected parts of the Works with appropriate reference to Drawings, Specifications, Bills of Quantities, and Design or Performance criteria, stating that the alternative solutions shall be atleast structurally and functionally equivalent to the basic design parameters and Specifications.

7. Such alternative solutions shall be accompanied by all information necessary for a complete evaluation by the Procuring Entity, including drawings, design calculations, technical specifications, breakdown of prices, proposed construction methodology, and other relevant details. Technical alternatives permitted in this manner shall be considered by the Procuring Entity each on its own merits and independently of whether the tenderer has priced the item as described in the Procuring Entity's design included with the tender documents.

SECTION VII - DRAWINGS

Note: A list of drawings should be inserted here. The actual drawings including Site plans should be annexed in a separate booklet