

PROVISIONAL BILL OF QUANTITIES

FOR



MALUTI-A-PHOFUNG LOCAL MUNICIPALITY

**PROCUREMENT OF A SERVICE PROVIDER: HA-
SETHUNYA CONSTRUCTION OF WATER RETICULATION
FOR 500 STANDS**

BID NO: SCM/BID/14/2022/23

APRIL 2023

BILL OF QUANTITIES : HA-SETHUNYA: CONSTRUCTION OF WATER RETICULATION FOR 500 STANDS

GENERAL REQUIREMENTS

SECTION 101

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
GENERAL REQUIREMENTS AND CHARGES					
101.01	Preliminary and general charges:				
	.01 Fixed charges	Sum	1.00		R0.00
	.02 Value-related charges	Sum	1.00		R0.00
	.03 Time-related charges	Sum	1.00		R0.00
	<i>NOTE : The combined total tendered for subitems (01), (02) and (03) should not exceed 15% of the Tender Sum (Excl. CPA, contingencies and VAT)</i>				
101.02	Locating existing services	Sum	1.00		R0.00
101.03	Excavate by hand to expose existing services, and backfill	m³	745.00		R0.00
101.04	Compliance with the Occupational Health and Safety Act and applicable regulations:				
	.01 Provision of a Health and Safety Plan and PPE	Sum	1.00		R0.00
	.02 Provision and maintainance of Health and Safety file	Sum	1.00		R0.00
	.03 Provision of a safety officer (full-time)	Sum	1.00		R0.00
	.04 Implementation of Occupational Health and Safety Plan	Sum	1.00		R0.00
101.05	(a) Remuneration of Community liaison officer for the duration of the project	Prov Sum	1.00	R78 000.00	
	(b) Management and maintaining project steering committee and social facilitation for the duration of the project	Prov Sum	1.00	R108 000.00	
	(c)Contractor's charge to allow for handling costs and profit in respect of subitem 101.05(a) to (b)	%		R186 000.00	R0.00
101.06	The Contractor's obligations in respect of Local and other labourers				
	(a) Provision for Medical Examination for Local Labourers	Prov Sum	1.00	R35 000.00	
	(b) EPWP Technical skills	Prov Sum	1.00	R45 000.00	
	(c) Generic and Management Skills	Prov Sum	1.00	R45 000.00	
	(d)Remuneration of workers and other Labourers including wages during training	Prov Sum	1.00	R52 000.00	
	(e)Contractor's charge to allow for handling costs and profit in respect of subitem 101.06(a) to (d)	%		R177 000.00	R0.00
101.07	(a) Provision of new connection and fittings to the Mangaung Reservoir	Prov Sum	1.00	R96 000.00	
	(b)Contractor's charge to allow for handling costs and profit in respect of subitem 101.07(a)	%		R96 000.00	R0.00
101.08	Relocation of services				
	(a)Provisional sum for relocation protection of sewer	Prov Sum	1.00	R35 000.00	
	(b)Provisional sum for protection relocation of electrical services	Prov Sum	1.00	R62 000.00	
	(c)Provisional sum for protection relocation of existing water	Prov Sum	1.00	R65 000.00	
	(d)Contractor's charge to allow for handling costs and profit in respect of subitem 101.08(a) to (e)	%		R162 000.00	R0.00
101.09	Reinstatement of services				
	(a)Provisional sum for reinstatement of boundary fences	Prov Sum	1.00	R52 000.00	
	(b)Provisional sum for reinstatement of paved driveways	Prov Sum	1.00	R82 000.00	
	(c)Contractor's charge to allow for handling costs and profit in respect of subitem 101.09 (a) to (b)	%		R134 000.00	R0.00
101.10	(a)Establishment of facilities on site	Sum	1.00	R60 000.00	
	(b)Facilities for the Contractor (including storage, site office for Contactor, CLO facilities, security, electricity, water and and ablution facilities for duration of contract and any other items required by the Contractor)	Sum	1.00	R60 000.00	
101.11	Facilities for Engineer:				
	(a)Nameboards	No.	2.00		R0.00
101.12	Remove site establishment	Sum	1.00		R0.00
TOTAL CARRIED TO FORWARD					R0.00

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
TOTAL BROUGHT TO FORWARD					R0.00
102.13	Sums Stated Provisionally by the Engineer				
	'(a)Additional tests required by the Engineer	PC Sum	1.00	R500 000.00	
	'(b)Charge required by Contractor on subitem (a) above	%	500000.00		R0.00
	'(c)Cost to the Engineer for supervision, transport, accomodation	PC Sum	1.00	780 000.00	
	'(d)Charge required by Contractor on subitem (c) above	%	780000.00		R0.00
	'(e)Provision for specialist testing, detection and repair of services	PC Sum	1.00	R85 000.00	
	'(f)Charge required by Contractor on subitem (e) above	%	85000.00		R0.00
	'(g)Health and safety specialist (Engineer)	PC Sum	1.00	R110 000.00	
	'(h)Charge required by Contractor on subitem (g) above	%	110000.00		R0.00
	'(i)Environmental specialist (Engineer)	PC Sum	1.00	R110 000.00	
	'(j)Charge required by Contractor on subitem (i) above	%	110000.00		R0.00
	'(k)Provision for accredited training	PC Sum	1.00	R120 000.00	
	'(l)Charge required by Contractor on subitem (k) above	%	120000.00		R0.00
102.14	Dayworks (Provisional)				
	Labour:				
	Artisan	h	1.00		Rate Only
	Skilled labour	h	1.00		Rate Only
	Semi-skilled labour	h	1.00		Rate Only
	Unskilled labour	h	1.00		Rate Only
	Equipment:				
	Case 580F or similar	h	1.00		Rate Only
	Hitachi Ex 200 or similar	h	1.00		Rate Only
	Caterpillar 140G or similar	h	1.00		Rate Only
	6m³ tipper	h	1.00		Rate Only
	1 ton light delivery vehicle	km	1.00		Rate Only
	Bomag BW 76S or similar	Days	1.00		Rate Only
	20m³/h water pump	Days	1.00		Rate Only
	250 A DC welder	Days	1.00		Rate Only
	Compressor (breakers and piping included)	Days	1.00		Rate Only
	Combination Unit (Vacuum/Jetting Truck)	Days	1.00		Rate Only
	Materials				
	Allow for all-inclusive materials actually used	PC Sum	1.00	R250 000.00	
	Charge required by Contractor on subitem 1.5.3.1 above	%	0.00		R0.00
102.15	Temporary Works				
	Deal with traffic and maintain road (or accomodation of traffic)	Sum	1.00		R0.00
TOTAL CARRIED TO SUMMARY					R0.00

PROJECT MANAGER & ENGINEER'S REQUIREMENTS

SECTION 201

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<u>ENGINEER'S REQUIREMENTS</u>				
201.01	Office and laboratory accommodation:				
	.01 Offices (interior floor space only) of utility services	m ²	144.00		R0.00
	.02 Office and laboratory furniture:				
	(a) Chairs	No.	10.00		R0.00
	(b) Desks, complete with drawers and locks	No.	2.00		R0.00
	(c) Conference tables	No.	1.00		R0.00
	(d) Items measured by number:				
	(i) 220/250 volt power points	No.	3.00		R0.00
	(ii) Double 80 watt fluorescent-light fittings complete with ballast and tubes	No.	2.00		R0.00
	.03 Car ports as specified at offices	No	2.00		R0.00
	.04 Extra Services for Engineer and Project Manager:				
	(a) Computer and Cellular telephone				
	(i) Fixed costs	Prov Sum	1.00	R48 000.00	
	(ii) Running costs	Prov Sum	1.00	R36 000.00	
	(iii) Provision of laptop, photostat facilities and consumables	Prov Sum	1.00	R90 000.00	
	.05 Charge required by Contractor on subitem (a) above	%	174000.00		R0.00
201.02	Provision of survey equipment and assistants	Prov Sum	1.00	R105 000.00	
	Charge required by Contractor on subitem above	%	105000.00		R0.00
201.03	Tools and equipment	Prov Sum	1.00	R25 000.00	
	Charge required by Contractor on subitem above	%	25000.00		R0.00
201.04	Training and capacity building	Prov Sum	1.00	R42 000.00	
	Charge required by Contractor on subitem above	%	42000.00		R0.00
201	TOTAL CARRIED TO SUMMARY				R0.00

SITE CLEARANCE AND GRUBBING

SECTION 301

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	SITE CLEARING AND GRUBBING				
301.01	Clearing and grubbing:				
	.01 Clear vegetation	m ²	552.00		R0.00
301.02	Cutting and removing large trees with a girth:				
	.01 Exceeding 1 m and up to and including 2 m	No	15.00		R0.00
	.02 Exceeding 2 m and up to and including 3 m	No	9.00		R0.00
301.03	Grubbing and the removal of the stumps and roots of large trees with a girth:				
	.01 Exceeding 1 m and up to and including 2 m	No	15.00		R0.00
	.02 Exceeding 2 m and up to and including 3 m	No	9.00		R0.00
301	TOTAL CARRIED TO SUMMARY				R0.00

TRENCH EXCAVATION

SECTION 401

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<u>EXCAVATION AND BACKFILL</u>				
401.01	Excavate in all materials for trenches 0 - 0.8m wide, backfill, compact to 93% MOD AASHTO, and dispose of surplus and unsuitable material within the freehaul distance of 5km				
	.01 Up to 1,0 m deep	m	11 200.00		
	.02 Over 1,0 m and up to 2.0 m deep	m	3 900.00		
	0.3 Over 2,0 m and up to 3.0 m deep	m	2 500.00		
	0.4 Over 3,0 m and up to 4.0 m deep	m	75.00		
401.02	Extra over items 401.01, 401.02, 401.03, 401.04 for excavating in:				
	.01 Intermediate excavation	m ³	259.00		
	.02 Hard rock excavation	m ³	1 036.00		
401.03	Backfilling of trenches in Class I material selected material from trench excavation free from stones and with optimum	m ³	687.13		
401.04	Backfilling of trenches in Class II material selected material from trench excavation which shall not contain any stones larger than 300mm diameter	m ³	294.48		
401.05	Extra over items 401.01-05 for using backfill material obtained :				
	.01 From stockpile or borrow pit within a freehaul distance of 5km	m ³	647.50		
401.06	Bedding				
	01 Provision of bedding material from trench excavations (freehaul within the township boundaries - within 5km)	m ³	1 584.00		
	(i) Selected granular material	m ³	1 440.00		
	(ii) Selected fill material (borow pit).	m ³	388.00		
401	TOTAL CARRIED TO SUMMARY				

PIPEWORK AND PIPE JACKING					SECTION 501
ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
501	PIPELAYING				
501.01	Supply, lay, and bed pipes complete with couplings <u>The rates shall cover the cost of the provision of the pipes and the costs of the handling, inspecting, transporting, laying, jointing, anchoring, cutting, testing and disinfecting of the pipes and the joints.</u>				
	01. 250mm dia Class 12 uPVC spigot and socket water pipes to SANS 966-1	m	350.0		
	02. 110mm dia Class 12 uPVC spigot and socket water pipes to SANS 966-1	m	4 500.0		
	03. 90mm dia Class 12 uPVC spigot and socket water pipes to SANS 966-1	m	1 900.0		
	04. 75mm dia Class 12 uPVC spigot and socket water pipes to SANS 966-1	m	11 400.0		
	04. 63mm dia Class 12 uPVC spigot and socket water pipes to SANS 966-1	m	1 800.0		
	<u>Note: All spigot and socket pipes to have an integrally moulded rubber sealing ring which is retained in position by a polypropylene lock ring on one end.</u>				
	<u>Note: Disinfection of the pipes to be with 0.15 grams/ litre of calcium hypochlorite.</u>				
502.02	PIPE JACKING ON TARRED ROAD CROSSINGS				
	<u>Jacking establishment</u>				
	(a) Fixed charges	Prov Sum	1.0	150 000.00	
	(b) Time-related charges	Prov Sum	1.0	65 000.00	
	<u>Jacking of pipes</u>				
	All pipe diameters Class 12 uPVC spigot and socket water pipes to SANS 966-1 encased in a 350mm HDPE sleeve, under tarred road crossing. Jacked pipe to be connected to pipeline	m	40.0		
	<u>Excavation for jacking in all materials</u>	m³	640.0		
	<u>Extra-over item above for unforeseen rock or boulder(s) (provisional)</u>	Sum	1.0		
	<u>Mass Concrete</u>				
	25MPa/19mm concrete				
	Mass concrete to pipe under railway	m³	22.5		
	<u>Extra-over 8.2.1 for excavation in rock</u>				
	<u>using pneumatic tools of other techniques where blasting is not permitted</u>	m³	640.0		
	<u>Stabilization of unstable areas or grouting of voids where ordered</u>				
501	TOTAL CARRIED TO SUMMARY				

VALVES AND FITTINGS		SECTION 601			
ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	VALVES				
601.01	The rates, shall cover the cost of the provision of each valve complete with couplings, and the cost of the handling, fixing, bedding, and testing of the valve and the cutting of the pipes.				
	250mm RSV (Resilient Seal Gate) ductile iron Class PN16 isolation valve with hand wheel and anti clockwise closing, socket ending for uPVC pipes. Valves to be anti-clockwise closing non rising spindle. Valves to be fusion bonded epoxy powder coated. All valves to SANS 664	No	3.00		
	.01				
	110mm RSV (Resilient Seal Gate) ductile iron Class PN16 isolation valve with hand wheel and anti clockwise closing, socket ending for uPVC pipes. Valves to be anti-clockwise closing non rising spindle. Valves to be fusion bonded epoxy powder coated. All valves to SANS 664	No	16.00		
	.02				
	90mm RSV (Resilient Seal Gate) ductile iron Class PN16 isolation valve with hand wheel and anti clockwise closing, socket ending for uPVC pipes. Valves to be anti-clockwise closing non rising spindle. Valves to be fusion bonded epoxy powder coated. All valves to SANS 664	No	8.00		
	.03				
	75mm RSV (Resilient Seal Gate) ductile iron Class PN16 isolation valve with hand wheel and anti clockwise closing, socket ending for uPVC pipes. Valves to be anti-clockwise closing non rising spindle. Valves to be fusion bonded epoxy powder coated. All valves to SANS 664	No	12.00		
	.04				
	0.5 Air Valve with its fittings complete, as per drawing	No	4.00		
601.02	Valve Chambers as per drawing (measured as complete units)	No	43.00		
601.03	COMPRESSION FITTINGS AND SPECIALS				
	Class 12 Pressure Bends for:				
	<u>(a) 250mm dia uPVC Pipe</u>				
	1) 90 degree bend	No	2.00		
	2) 60 degree bend	No	3.00		
	3) 45 degree bend	No	4.00		
	4) 22.5 degree bend	No	3.00		
	5) 11.25 degree bend	No	3.00		
	<u>(b) 110mm dia uPVC Pipe</u>				
	1) 90 degree bend	No	21.00		
	2) 60 degree bend	No	18.00		
	3) 45 degree bend	No	4.00		
	4) 22.5 degree bend	No	4.00		
	5) 11.25 degree bend	No	4.00		
	<u>(c) 90mm dia uPVC Pipe</u>				
	1) 90 degree bend	No	45.00		
	2) 60 degree bend	No	38.00		
	3) 45 degree bend	No	30.00		
	4) 22.5 degree bend	No	8.00		
	5) 11.25 degree bend	No	5.00		
	<u>(d) 75mm dia uPVC Pipe</u>				
	1) 90 degree bend	No	115.00		
	2) 60 degree bend	No	157.00		
	3) 45 degree bend	No	118.00		
	4) 22.5 degree bend	No	38.00		
	5) 11.25 degree bend	No	55.00		
601	Carried forward				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	Brought forward				
	(e.) <u>63mm dia uPVC Pipe</u>				
	1) 90 degree bend	No	40.00		
	2) 60 degree bend	No	55.00		
	3) 45 degree bend	No	50.00		
	4) 22.5 degree bend	No	30.00		
	5) 11.25 degree bend	No	40.00		
	Class 12 Pressure Tees for:				
	(e.) <u>Equal T-Pieces for</u>				
	1) 110mm x 110mm	No	2.00		
	2) 90mm x 90mm	No	20.00		
	3) 75mm x 75mm	No	26.00		
	4) 63mm x 63mm	No	28.00		
	(f) <u>Reducing T-Pieces for</u>				
	1) 250mm x 110mm	No	2.00		
	2) 110mm x 90mm	No	20.00		
	3) 110mm x 90mm	No	32.00		
	4) 90mm x 75mm	No	84.00		
	4) 75mm x 63mm	No	70.00		
	(g.) Kent or similar Class C Conventional Consumer Meters (15mm - 40mm diameter), with plastic above ground box (bollard type) or to Municipality specifications inclusive of pipe specials and fittings, labour, etc	No	500.00		
	(h) Steel end Caps for uPVC Piping				
	1) 100mm	No	3.00		
	1) 90mm	No	4.00		
	2) 75mm	No	9.00		
	(i) Cast Iron Flange Adapters as per drawing	No	4.00		
	SUNDRIES				
	(j) Standard service marker as per standard drawing	No	75.00		
601.04	Fire Hydrants				
	100mm High efficiency fire hydrant set complete with 300mm flanged spacer, duck foot bend, hand wheel RSV valve and 500mm flanged valve spacer with HDG bolts and washers full face gasket (Klinger), all specials to be carboline coated 350 microns inside and outside complete with flanged cast iron Tee:				
	a) 110mm Diameter uPVC network	No.	7.00		
	a) 90mm Diameter uPVC network	No.	6.00		
	b) 75mm Diameter uPVC network	No.	8.00		
	c) Hydrant chambers to be built with engineering face brick with DCI cover and frame as per standard drawings	No.	21.00		
601.05	Thrust Block and Details as per Drawing				
	(a) 250mm dia.	No	15.00		
	(b) 100mm dia.	No	51.00		
	(c) 90mm dia.	No	126.00		
	(d) 75mm dia.	No	483.00		
	(e) 63mm dia.	No	215.00		
601.06	CONNECTIONS				
	a) Bulk Main Tie in: Supply fittings complete and connect to existing bulk water main. The rate shall include all concrete, fittings including gate valves, Shut Off Valve and chambers, Helix H4000 Woltmann type Bulk Zonal Water Meter (size to be determined by conducting a hydraulic analysis by a complete ECSA registered professional), T-Pieces, Reducers and VJ straight, etc.	Prov Sum	1.00	R120 000.00	
	b) Charge required by Contractor on subitem (a) above	%	120000.00		
	c) Erf connection provision and installation: Domestic erf connections including 10m of 20mm diameter class 12 HDPE pipe and supply and fix of stand pipes as shown on drawing				
	i) Single erf connections	No.	104.00		
	ii) Double erf connections	No.	198.00		
	d) Extra-over item (c)				
	i) Standpipes Complete with fittings laps, concrete slab as per drawings excavation which shall not contain any stones larger than 300mm diameter	No.	500.00		
401	TOTAL CARRIED TO SUMMARY				

SUMMARY OF BILL OF QUANTITIES

SECTION 101 GENERAL REQUIREMENTS

SECTION 201 ENGINEER'S REQUIREMENTS

SECTION 301 SITE CLEARANCE

SECTION 401 TRENCHING

SECTION 501 PIPEWORK AND PIPE JACKING

SECTION 601 VALVES AND FITTINGS

SUBTOTAL A: TOTAL OF BILLS OF QUANTITIES

Add 10% for contingencies on Subtotal B

SUBTOTAL B

Add 15% VAT on Subtotal C

CONTRACT PRICE CARRIED FORWARD TO FORM OF OFFER
