



BILL OF QUANTITIES

DATE: Jun-23

PROJECT TITLE: H39 ADDITIONAL WORKS BOQ

SAP PROJECT NUMBER: P. 04389

CONTRACT NUMBER RW001368/17

Preamble and Pricing Instructions

1	Definition of The Scope of Scheduled Items
1.1	Preamble and Pricing Instructions
1.1.1	The prices and rates to be inserted in Bills of Quantities are to be the fully inclusive prices for the work described under the Price Schedules therein. Such prices and rates shall cover all costs and expenses that may be required in and for the execution of the work described, and shall cover the cost of all general risks, liabilities, and obligations set forth or implied in the documents on which the tender is based, as well as overhead charges and profit. This shall include any documentation or attendance of mandatory safety induction. Reasonable prices shall be inserted, as these will be used as a basis for assessment of payment for additional work that may have to be carried out.
1.1.2	A price or rate is to be entered against each item in Bills of Quantities, whether the quantities are stated or not. Items that are required to be inserted in the Provisional Bills of Quantities by the Contractor, and which have not been duly inserted, shall be considered as covered by other rates or prices in the Provisional Bills of Quantities.
1.1.3	Except where rates only are required, insert all amounts to be included in the total tendered price in the "Amount" column and show the corresponding total tendered price.
1.1.4	The units of measurement described in the Bills of Quantities are in metric units.
1.1.5	The Price Schedule is provisional and shall be subject to finalisation of the requirements on site and accurate measurement of actual quantities installed on site by the Contractor. The Contractor shall verify all quantities, dimensions, etc by actual measurement on site before the ordering of material, etc. Rand Water does not accept responsibility for under or over measure as a result of the failure of the Contractor to verify quantities and dimensions before ordering. Jointing of e.g cables which have resulted due to erroneous measurements will not be accepted.
1.1.6	The quantities in the Provisional Schedules are estimates of the final quantities to enable the Contractor to determine the magnitude and scope of the works. Payment will be made on final measurement of quantities of each item of the work on site.
1.1.7	The Contractor in executing the work or in ordering any Contractors equipment or in ordering any plant shall not be guided by or work to any descriptions, dimensions or quantities as set forth in the Provisional Bills of Quantities. He/she shall be guided by and work to the drawings supplied for the works, specifications and by the instructions of the Engineer and measurements taken on site.
1.1.8	Where Provisional Sums appear in the Bills of Quantities the contractor shall provide competitive quotations with breakdowns of costs for work required and agreed, and payments will be against these quotations taking into account the contractors mark up. All items described as "Provisional" shall be measured as executed and paid for according to prices in the Bills of Quantities and any unexpended amounts shall be deducted from the amount of the Contract Sum. No work for which "Provisional" items are provided shall be commenced without written instructions from the Engineer.
1.1.9	System Specification Clause column is provided to make it easier for the Contractor to quickly locate some of the major clauses pertaining to that equipment/works within the System Specifications document. It is still the responsibility of the Contractor to thoroughly read through the entire System Specification document (including the entire Tender Documents, Drawings, Applicable Standards and Site Information) identify other applicable clauses pertaining to an equipment/works that have not been stated in the System Specification Clause column.
1.1.10	These Bills of Quantities shall be used to assist both parties in administering and agreeing any changes/variations, which may arise during the course of the Contract.
1.1.11	These Bills of Quantities shall be used to calculate the value of work completed in the evaluation of interim/final payments.
1.1.12	The Contractor is deemed to have allowed opposite each item contained in these Bills of Quantities whatever costs and charges it may consider necessary for the carrying out, complying with and due observance of the provisions, conditions and requirements set out in the Contract.
1.1.13	No claim whatsoever will be entertained in respect of errors or omissions in pricing due to the brevity of a description of any item contained in these Bills of Quantities which items are fully described or can reasonably be inferred when read in conjunction with the relevant clauses provided for in the Conditions of Contract, Specifications, Drawings or other relevant documentation.
1.1.14	Any item left un-priced will be deemed to be provided for elsewhere and no claim for any extras arising out of the Contractor's omission to price any item will be entertained.
1.1.15	Whatever rate the tenderer puts in the Bill of Quantities as "rate only" shall be subject to verification by Rand Water quantity surveyors during project implementation.
1.1.16	For the purposes of this schedule of quantities, the following words shall have the meaning hereby assigned to them:
	· Unit: The unit of measurement for each item of work as defined in the specifications.
	· Quantity: The number of units of work for each item.
	· Rate: The payment per unit of work for which the tenderer tenders to do the work.

	Amount: An amount tendered for an item, the extent of which is described in the schedule of quantities, the specification or elsewhere, but of which the quantity of work is not measured in units.
1.1.1.17	The Form of Tender, the General and Particular Conditions of Contract, the Specification and Drawings shall be read in conjunction with the price schedule.
1.1.1.18	The price schedules and summary of price schedules shall be priced, extended, totalled and signed by the Tenderer. The total tender price shall be carried to the Form of Tender. The Form of Tender and the Schedules shall be completed and signed.
1.1.1.19	The tender price will be taken to be the price entered in the Form of Tender. In the event of discrepancies between tendered rates and extended amounts in the price schedule, the amounts will be deemed to be correct and the rates will be corrected accordingly. In the event of discrepancies between extended amounts and the total tender price entered in the Form of Tender, the total tender price will be deemed to be correct and adjustments made by agreement to rates and extended amounts.
1.1.1.20	The quantities set out in the Schedule of Quantities are the estimated quantities of the Contract Works, but the Contractor will be required to undertake whatever quantities may be directed by the Engineer from time to time. The Contract Price for the completed contract shall be computed from the actual quantities of work done, valued at the relevant unit rates and prices. The validity of the contract shall in no way be affected by differences between the quantities in the schedule of quantities and the quantities finally certified for payment. Work shall be valued at the rates or lump sums tendered, subject only to the provisions of the general conditions of contract.
1.1.1.21	All rates and sums of money quoted in the schedule of quantities shall be in Rands and whole cents. Fractions of a cent shall be discarded.
1.1.1.22	The Employer shall without prejudice retain the rights to exclude and/or include certain aspects of the Bill of Quantities
1.1.1.23	The items included in Bills of Quantities are a guideline to the contractor. It is the Contractor's responsibility to thoroughly familiarise himself with all of the works information and specifications for this Contract so as to ascertain the scope and extent of the works and ensure that any items that are required to achieve the functional requirements of this Contract are included in the Bill of Quantities.
1.1.1.24	Where no requirement has been stated in the documentation for Technical Data Sheets, Tenderers shall provide for items as reflected in the "measurement and payment" clauses of the applicable standard specification (e.g. SABS 1200 series specifications).
1.1.1.25	The description of each item shall, unless otherwise stated herein, be held to include making, conveying and delivering, unloading, storing, unpacking, hoisting, setting, fitting and fixing in position, cutting and waste, patterns, models and templates, plant, temporary works, return of packings, establishment charges, profit and all other obligations arising out of the Conditions of Contract.
1.1.1.26	Unless a separate rate for the supply and for the installation of any item is specifically called for, the supply, delivery and installation costs of any item shall be fully included in the unit price.
1.1.1.27	No alteration, erasure or addition is to be made in the typed text of the Bills of Quantities. Should any alteration, erasure or addition be made other than in the areas allowed for this, it will not be recognised but the original wording of the Bill of Quantities will be adhered to.
1.1.1.28	The Tenderer shall not be relieved of responsibility for measuring quantities at the Tender stage, and the Tender Sum submitted shall be in respect of the quantities set out in the Bills of Quantities. The Tenderer shall be required to make his assessment and allowance of sundry equipment such as gaskets, bolts, nuts, brackets, fixing, etc., to form part of his pricing and shall include in the item prices for such small installation materials as are required for complete installation in accordance with the Specification.
1.1.1.29	The following abbreviations are used in the schedule of quantities:
	mm = millimetre
	m = metre
	m ² = square metre
	m ³ = cubic metre
	t = tons
	No = number
	PC Sum = prime cost sum
	Prov Sum = provisional sum
2	Civil and Pipeline Preamble
2.1	All tenderers are to ensure that they familiarise themselves with the variations and additions to SANS 1200 which are provided as part of the contract documentation.
2.2	The tenderer shall state separately against each item the rate per metre of pipe that shall be deemed to include the full inclusive cost of providing the material and of carrying out the work required to manufacture the steel pipe shell, provide the coatings and for the transport to the route of the pipelines, all in accordance with Sub-Clause 7.1 of the Conditions of Contract Fidic Redbook. The rate shall include all conditions, liabilities, general risks and obligations set forth or implied in the Contract Documents. The preamble hereafter headed Methods of Measurement and Payment regarding the scope of the prices and rates shall be taken as amplifying but not limiting Sub-Clause 7.1 of the Conditions of Contract Fidic Redbook.

Contract No:RW001368/17		Description: H39 PIPELINE ADDITIONAL WORKS				Section 1 : P&G Time Jun-23
Item No.	Payment Refers	Description	Unit	Qty	Rate	Amount
1	SABS 1200AA	SECTION AA: PRELIMINARY & GENERAL - GENERAL (Small Works)				
1.1	8,3	SCHEDULED FIXED-CHARGE AND VALUE-RELATED ITEMS				
1.1.1	8.3.1	Contractual Requirements (items to be broken down and qualified by Contractor during pricing of document)	Sum	1		
1.1.2	8.3.2	Provision of Facilities on Site				
1.1.2.1		a) Facilities required by the Engineer	Sum	1		
1.1.2.2		b) Facilities required by the Contractor	Sum	1		
1.1.3	8.3.3	General Responsibilities and other fixed-charge obligations	Sum	1		
1.1.4	8.3.4	Removal of site establishment	Sum	1		
1.2	8,4	SCHEDULED TIME-RELATED ITEMS				
1.2.1	8.3.1	Contractual Requirements (items to be broken down and qualified by Contractor during pricing of document)	Sum	1		
1.2.2	8.3.2	Operation and Maintenance of Facilities on Site				
1.2.2.1		a) Facilities required by the Engineer	Sum	1		
1.2.2.2		b) Facilities required by the Contractor	Sum	1		
1.2.3	8.3.3	General Responsibilities and other time-related obligations (items to be broken down and qualified by Contractor during pricing of document)	Sum	1		
		SECTION 1 CARRIED FORWARD TO SUMMARY				

Contract No:RW001368/17			Description: H39 PIPELINE ADDITIONAL WORKS			Section 2: Civil Works	
ITEM	NO	PAYMENT REFERS	SHORT DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
2,1	8.2.1	SANS 1200 C	SECTION C: SITE CLEARANCE				
2.1.1			<u>Clear and grub site (and remove any obstruction that may occur. Only areas indicated in writina by the Enaineer)</u>				
2.1.1.1			a). Chamber (including reno mattress)	m²	25		
2.1.1.2			b). Earth Berm	m²	1 055		
			Carried Forward				

Contract No:RW001368/17		Description: H39 PIPELINE ADDITIONAL WORKS			Section 2: Civil Works	
		Brought Forward				
2,2	SABS 1200DA	SECTION DA: EARTHWORKS				
2.2.1	8.3.2	Excavation				
2.2.1.1		a) Remove topsoil to nominal depth 150mm, stockpile and maintain	m ²	18		
2.2.1.2	8.3.4	b) Excavate in all materials and use for embankment or backfill or dispose, as ordered	m ³	17		
2.2.3		Importing of material from commercial sources or from borrow pits				
2.2.3.1		a) Importing of backfill G7 Material compacted in layers not exceeding 150mm in thickness compacted to 93% MOD AASHTO density at - 1% to +2% OMC	m ³	9		
2.2.3.2		b) Importing of backfill G5 Material compacted in layers not exceeding 150mm in thickness compacted to 95% MOD AASHTO density at - 1% to +2% OMC	m ³	3		
2.2.3.3	8.3.10	c) Importing of Earth fill G9 Material compacted in layers not exceeding 150mm in thickness compacted to 90% MOD AASHTO density at - 1% to +2% OMC	m ³	370		
2.2.3.4		b) 80mm thick layer of reno mattress	m ²	10		
2.2.4		Topsoiling	m ²	18		
2.2.5		Shoring of deep excavations	Sum	1		
		Carried Forward				

Contract No:RW001368/17		Description: H39 PIPELINE ADDITIONAL WORKS				Section 2: Civil Works
		Brought Forward				
2,3	SABS 1200GA	SECTION GA: CONCRETE (SMALL WORKS)				
2.3.1	8.2	Scheduled Formwork Items				
2.3.1.1	8.2.3	<u>Narrow widths</u>				
2.3.1.1.1		a) Sides of base slab (200mm high)	m	8		
2.3.2	8.3	Scheduled Concrete Items				
2.3.2.1	8.3.2	<u>High Tensile Welded Mesh (Mesh Ref. 395)</u>	m²	8		
2.3.3	8.4	Scheduled Concrete Items				
2.3.3.1	8.4.2	<u>Blinding Layer in Concrete</u> (50mm Class 15/19MPa Blinding Layer)	m²	4		
2.3.3.2	8.4.3	<u>Strength Concrete</u>				
2.3.3.2.1		a) Grade 35MPa/19mm (base slab)	m³	1		
2.3.3.2.2		a) Grade 15MPa/19mm (mass concrete steps)				
2.3.3.2.2.1		i) <u>Scour outlet chamber</u>	m³	0,7		
2.3.3.2.2.2		ii) <u>Air valve 1</u>	m³	0,5		
2.3.3.2.2.3		iii) <u>Air valve 2</u>	m³	0,5		
2.3.3.3	8.4.4	<u>Unformed surface finishes</u> <u>Wood-floated finish to floor slab</u>	m²	4		
2.3.4	8.8	Miscellaneous				
2.3.4.1		Create 200mm diameter openings in the 83mm thick precast rings	No.	6		
2.3.4.2		Cast in standard Rand Water manhole frame and cover (Contractor to collect from Rand Water Central Depot)	No.	1		
2.3.4.3		Supply and istall 200mm wide waterproofing membrane compatible with use over an expansion joint.	m	12		
2.3.4.4		<u>Construction of Earth Berm</u>				
2.3.4.4.1		Construction of the Earth Berm as per DRG No. RA26991/800 and R026991/19/01	m	211		
		Carried Forward				

Contract No:RW001368/17		Description: H39 PIPELINE ADDITIONAL WORKS			Section 2: Civil Works	
		Brought Forward				
2,4	SABS 1200GE	SECTION GE: PRECAST CONCRETE (STRUCTURAL)				
2.4.1	8,2	SCHEDULED ITEMS				
2.4.1.1	8.2.1	<u>Provide Structural Precast Units</u>				
2.4.1.1.1		a) <u>1500mm ND x 1000mm x 83mm thick precast circular rings</u>	No.	2		
2.4.1.1.2		b) <u>1500mm ND x 500mm x 83mm thick precast circular rings</u>	No.	1		
2.4.1.1.3		c) <u>1500mm ND x 175mm thick precast circular roof slab</u>	No.	1		
2.4.1.2	8.2.2	<u>Erection of Structural Precast Units</u>				
2.4.1.2.1		a) <u>1500mm ND x 1000mm x 83mm thick precast circular rings</u>	No.	2		
2.4.1.2.2		b) <u>1500mm ND x 500mm x 83mm thick precast circular rings</u>	No.	1		
2.4.1.2.3		c) <u>1500mm ND x 175mm thick precast circular roof slab</u>	No.	1		
		Carried Forward				

Contract No:RW001368/17		Description: H39 PIPELINE ADDITIONAL WORKS			Section 2: Civil Works	
		Brought Forward				
2,5	SABS 1200HA	SECTION HA: STRUCTURAL STEELWORK (SUNDRY ITEMS)				
2.5.1	8.3	Scheduled Items				
2.5.1.1	8.3.1	Structural Steel (Grade S355JR)	t	0,85		
2.5.1.1.1		Access steel platforms (for a total of 4 No. of chambers refer to DRG No. R026991/900 and R026991/901)				
2.5.1.2	8.3.2	Handrails	Sum	1		
2.5.1.2.1		a) Handrail assembly complete (DRG No. R026991/900 and R026991/901)				
2.5.1.3	8.3.3	Ladders complete and installed	No.	10		
2.5.1.3.1		Supply and Install step irons as per RA26991/800				
2.5.1.4	8.3.4	Flooring, Complete and Installed with Frames (DRG No. R026991/900 and R026991/901)				
2.5.1.4.1		a) Open grid floors	m²	18		
2.5.1.4.1		25x4.5mm Rectagrid floor				
2.5.1.5		Supply and install Grab Rails as detailed on Rand Water Detail (as per DRG. No. A9858)	No.	1		
		Carried Forward				
SECTION 2 CARRIED FORWARD TO SUMMARY						

Contract No.: RW		Description: H39 PIPELINE ADDITIONAL WORKS				Section 3: Pipeline Works
ITEM NO	PAYMENT REFERS	SHORT DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
3		<u>Pipework from the Air valve to outlet chamber</u>				
3.1		<u>Site Clearance</u>	m ²	94,00		
3.2		<u>Excavation</u>				
3.2.1		0 m to 1.66 m depth x 0.9m width for a permanent 200mm diameter pipe (refer to R027141)	m	104,00		
3.3		<u>Bedding (Pipes)</u>				
3.3.1		Selected bedding material	m ³	14,04		
3.4		<u>Backfill (Pipes)</u>				
3.4.1		150mm thick layer of Selected Fill Class 1 (Stage 1) compacted to 90% Mod Aashto Density at Optimum Moisture Content (refer to R027141)	m ³	120,00		
3.4.2		<u>Street Base Along Minor Road Crossings</u>				
3.4.2.1		The 300mm layer to match existing and to be mixed with 3% cement.	m ³	5,40		
3.4.3		<u>Top soiling</u>				
3.4.3.1		Reinstate the 300mm layer of topsoil (expect on road crossing, where 3.3.2.1 applies.)	m ³	25,00		
3.5		<u>Supply, Handle, Lay Bed and Test Disinfect Pipes Complete</u>				
3.5.1		200 mm dia uPVC pipe, class 16 with a fully end load resistant coupling system	m	104,00		
3.6		<u>mPVC Bends, class 16</u>				
3.6.1		200mm diameter x 45° UPVC bend C/16	No	2,00		
3.6.2		200mm diameter x 11.5° UPVC bend C/16	No	1,00		
3.6.3		200mm diameter x 25° UPVC bend C/16	No	1,00		
3.6.4		200mm diameter x 30° UPVC bend C/16	No	1,00		
3.6.5		200mm diameter x 90° UPVC bend C/16	No	1,00		
SECTION 3 CARRIED FORWARD TO SUMMARY						

Contract No.: Description:	RW H39 Pipeline Additional Works	Jun-23
	SUMMARY OF PRICING SCHEDULES	
Schedule	Description	Amount
Schedule 1	Preliminary and General (Fixed and Time Related Items)	R -
Schedule 2	Civil Works	R -
Schedule 3	Pipeline Works	R -
SUBTOTAL E		R -
VALUE ADDED TAX Add 15% of Subtotal (Provisional sum based on current rate of VAT)		R -
		R -
<u>SIGNED ON BEHALF OF TENDERER:</u>		

