

CONTRACT 01/RAWR/PN/NC061/06/2022**RICHTERSVELD MUNICIPALITY****PORT NOLLOTH REPLACEMENT OF ASBESTOS WATER RETICULATION NETWORK****C2.2 BILL OF QUANTITIES**

SECTION 1 : SITE ESTABLISHMENT

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
1		SECTION 1 : SITE ESTABLISHMENT				
1.1		FIXED-CHARGE AND VALUE RELATED ITEMS				
1.1.1	8.3.1	Contractual Requirements	Sum	1		
1.1.2	8.3.2	Establishment of Facilities on Site				
1.1.2.1	8.3.2.1	Facilities for Engineer:				
	c)	Erection of Project Nameboards (2 No.)	Sum	1		
1.1.2.2	8.3.2.2	Facilities for Contractor:				
	a)	Offices and Storage Sheds	Sum	1		
	b)	Workshops	Sum	1		
	d)	Living Accommodation	Sum	1		
	e)	Ablution and Latrine Facilities	Sum	1		
	f)	Tools and Equipment	Sum	1		
	g)	Water Supply, Electric Power and Communications	Sum	1		
	h)	Dealing with Water	Sum	1		
	i)	Access	Sum	1		
	j)	Plant	Sum	1		
1.1.3	8.3.4	Removal of Site Establishment	Sum	1		
Total Carried Forward						

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SECTION 1 : SITE ESTABLISHMENT

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
1,2	8.4	TIME RELATED ITEMS				
1.2.1	8.4.1	Contractual Requirements	Sum	1		
1.2.2	8.4.2	Operation and Maintenance of Facilities on Site				
	8.4.2.2	Facilities for Contractor				
	a)	Offices and Storage Sheds	Sum	1		
	b)	Workshops	Sum	1		
	d)	Living Accommodation	Sum	1		
	e)	Ablution and Latrine Facilities	Sum	1		
	f)	Tools and Equipment	Sum	1		
	g)	Water Supply, Electric Power and Communications	Sum	1		
	h)	Dealing with Water	Sum	1		
	i)	Access	Sum	1		
	j)	Plant	Sum	1		
	8.4.3	Supervision for Duration of Construction	Sum	1		
	8.4.4	Company and Head Office Overhead Costs	Sum	1		
1.3		SUMS STATED PROVISIONALLY BY ENGINEER				
1.3.1		Community Liaison Officer for full duration of the Contract	Prov Sum	1		45000
1.3.2		Overheads, charges and profit on item 1.3.1	%			
Total Carried Forward						

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SECTION 1 : SITE ESTABLISHMENT

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
1.4		OCCUPATIONAL HEALTH AND SAFETY MEASURES				
1.4.1		Cost of Health and Safety measures ito the Construction Regulations 2014 of the Occupational Health and Safety Act	Sum	1		
1.4.2		Compilation and maintenance of H&S plan and file, incl. all risk assessments, safe work procedures and method statements	Sum	1		
1.4.3		Allowance for EPWP branded PPE during training and for the duration of the Contract	Sum	1		
1.4.4		Overheads, charges and profit on item 1.5.1	%			
1.4.5		Allowance for compliance with the COVID 19 regulations	Sum	1		
1.4.6		Allowance for compliance with "workng with asbsts materials" regulations	Sum	1		
Total Carried Forward To Summary						

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SECTION 2 : SITE CLEARANCE

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
2	SANS 1200 C	SECTION 2 : SITE CLEARANCE				
2.2	SANS 1200 DB	SITE CLEARANCE PIPELINES				
2.2.1	PS C 8.2.1	Clear and grub (2.5m wide strip) for bulk pipeline routes not in the street reserve (LI)	m	5285		
Total Carried Forward To Summary						

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SECTION 3 : WATER PIPE EXCAVATION

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
4		SECTION 3: WATER PIPE EXCAVATION				
	SANS 1200 DB	EARTHWORKS : PIPE TRENCHES (Water)				
4.1	DB 8.3.2a	Excavation of trenches (min depth 900mm above pipe) for water pipelines in all materials, widths as specified in PS DB 5.2, backfill and compact to DB 8.3.2 and including crossing of any fences, built-up walls and electrical cables for				
4.1.1		All pipes 200mmØ and smaller (LI)	m	9860		
4.1.2	DB 8.3.2.b	Extra over item 4.1.1 for hard rock and boulder excavation	m³	1300		
4.1.3	DB 8.3.3	Extra over items 4.1.1 for the spoil & disposal of surplus/unsuitable material.	m³	4352		
4.1.4	DB 8.3.3.1	Make up deficiency in backfill material from municipal borrow pit (No additional payment for overhaul)	m³	50		
4.2	DB 8.3.5a	SERVICES THAT INTERSECT A TRENCH				
4.2.1		Sewer pipes	No.	0		
		Water pipes	No	12		
4.2.2		All electrical / telephone Conductors	No.	2		
4.3	DB 8.3.5b	SERVICES THAT ADJOIN A TRENCH				
4.3.1		Sewer pipes	m	0		
		Water pipes	m	2488		
		All electrical / telephone Conductors	m	25		
4.4	DB	FINISHING				
4.4.1		Reinstate road surfaces complete with all courses to original standard (LI)	m²	100		
4.5	PS D 8.3.14	Barricading of all open water trenches over night as per Construction Regulations or prescribed by the engineer.	m	9860		
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SECTION 4 : WATER PIPE INSTALLATION

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
6		SECTION 4 : WATER PIPE INSTALLATION				
6.1	SANS 1200 LB	SELECTED BEDDING AND BACKFILL				
6.1.1	LB 8.2.2.3	Import and compact 100mm bedding material from commercial sources beneath water pipelines on prescribed levels including trench bottom finishing (No over haul applicable). (LI)	m³	789		
6.1.2	LB 8.2.2.3	Import blanket material from commercial sources and compact up to 300mm above water pipelines (No over haul applicable). (LI)	m³	3563		
	SANS 1200 L	MEDIUM PRESSURE PIPE LINES (LI)				
6.2	L	PIPE LINES				
	L 8.2.1	Supply, lay, connect and test the following uPVC pressure pipes complete in class C bedding. SABS 966 (Socket ended)				
6.2.1		Ø 75mm uPVC class 9	m	50		
6.2.2		Ø 110mm uPVC class 9	m	2718		
6.2.3		Ø 160mm uPVC class 9	m	2616		
6.2.4		Ø 160mm uPVC class 16	m	3069		
6.2.5		Ø 200mm uPVC class 9	m	1407		
	L 8.2.1	Lay, connect and test the following uPVC pressure pipes complete in class C bedding. SABS 966 (Socket ended) (LABOUR ONLY)				
6.2.6		Ø 110mm uPVC class 9	m	Rate Only		
6.2.7		Ø 160mm uPVC class 9	m	Rate Only		
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SECTION 4: WATER PIPE INSTALLATION

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
6.3	L	BENDS (LI)				
	L8.2.2	Supply, install, test and disinfect the following uPVC Class 16 pressure bends and casting of thrust blocks.				
6.3.1		Ø 75mm x 22½°	No.	1		
6.3.2		Ø 75mm x 11¼°	No.	1		
6.3.3		Ø 75mm x 90°	No.	1		
6.3.4		Ø 75mm x 45°	No.	1		
6.3.5		Ø 110mm x 11¼°	No.	1		
6.3.6		Ø 110mm x 22½°	No.	1		
6.3.7		Ø 110mm x 45°	No.	2		
6.3.6		Ø 160mm x 11¼°	No.	7		
6.3.7		Ø 160mm x 22½°	No.	6		
6.3.8		Ø 160mm x 45°	No.	7		
6.3.9		Ø 160mm x 90°	No.	7		
6.3.10		Ø 200mm x 11¼°	No.	8		
6.3.11		Ø 200mm x 22½°	No.	1		
6.3.12		Ø 200mm x 90°	No.	5		
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SECTION 4 : WATER PIPE INSTALLATION

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
6.4	L	FITTINGS (LI)				
	L8.2.2	Supply, install, test and disinfect the following Cast Iron pieces and casting of thrust blocks.				
		<u>Equal T-Pieces</u>				
6.4.1		110mm x 110mm	No.	7,0		
6.4.2		160mm x 160mm	No.	2,0		
6.4.3		200mm x 200mm	No.	2,0		
		<u>Reducing T-Pieces</u>				
6.4.9		110mm x 75mm	No.	0,0		
6.4.10		160mm x 75mm	No.	0,0		
6.4.11		160mm x 110mm	No.	1,0		
6.4.12		200mm x 75mm	No.			
6.4.13		200mm x 110mm	No.	1,0		
		<u>Reducers</u>				
6.4.19		160mm x110mm	No.	4,0		
6.4.19		200mm x160mm	No.	1,0		
		<u>Cast iron End caps</u>				
6.4.19		110mm	No.	4,0		
6.4.19		160mm	No.	1,0		
Total Carried Forward						

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SECTION 4 : WATER PIPE INSTALLATION

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
6.5	L	FIRE HYDRANT (LI)				
	L 8.2.13	<i>"Supply and install cast iron Fire Hydrant with 65mm inlet, complete according to the drawing, including excavations backfilling, materials, form work, paint, labour etc.Provision to be made for wrapping hydrants in Densowrap."</i>				
6.5.1		Above-ground Hydrants complete as per detail drawing		13,0		
6.5.3		Ø 110 mm x 80mm Fire Hydrant T-Piece	No.	5,0		
6.5.3		Ø 160 mm x 80mm Fire Hydrant T-Piece	No.	3,0		
6.5.3		Ø 200 mm x 80mm Fire Hydrant T-Piece	No.	5,0		
6.6	L	VALVES (LI)				
6.6.1	L 8.2.3	<i>"Supply, install and test the following AVK resilient seal flanged RHC cast iron isolating valves with 2 x flange adaptors and 2 x flanged socket ends for uPVC pipe (SABS 664), PN16. Provision to be made for wrapping valves in Densowrap."</i>				
6.6.1		DN 80 mm	No.	0,0		
6.6.2		DN 100 mm	No.	14,0		
6.6.3		DN 150 mm	No.	7,0		
6.6.4		DN 200 mm	No.	5,0		
6.6.6		Supplying, install and test scour valves on 250mm pipe as per detail drawing	No.	0,0		
6.6.7		Supplying, install and test 50mm air valves on 160mm uPVC Class 16 pump main	No.	5,0		
Total Carried Forward						

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SECTION 4 : WATER PIPE INSTALLATION

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
6.7	L	METER/ VALVE CHAMBERS (LI)				
	L 8.2.13	Item to include all costs related to the supply and installation of valve chambers as per drawing RIB-4697-700-1101				
6.7.1		Heavy duty Poly-Urethane Bell Tobi type valve boxes to isolating valves	No.	26,0		
6.7.2		Concrete none return valve chamber as per detail dwg	No.	1,0		
6.7.2		Concrete bulk meter chamber as per detail dwg	No.	1,0		
6.7.3		Concrete air valve chamber as per detail dwg	No.	5,0		
6.8	L	CONNECT EXISTING PIPELINES (LI)				
		Connect new water reticulation to existing water supply and reticulation including excavation, backfilling, compacting and finishing				
6.8.1		75mm Ø AC mains	No.	1,0		
6.8.2		110mm Ø AC mains	No.	4,0		
6.8.3		160mm Ø uPVC pump main	No.	1,0		
		Mc Dougal Resrvoir outlet pipe	No.	1,0		
		Mc Dougal Resrvoir inlet pipe	No.	1,0		
6.9	L	PIPE MARKERS (LI)				
6.9.1	PS L 8.2.17	Construct pipe markers as per standard drawing on all node marker positions indicated on layout plans	No.	24,0		
Total Carried Forward To Summary						

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SECTION 5: ERF CONNECTIONS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
6.10	SANS 1200 LF	ERF CONNECTIONS (Water) (LI)				
		SADDLES				
	LF 8.2.1	Supply and install the following duraflo saddles with Plasson couplings & fittings for the following new pipes:				
6.10.1		Ø 110mm uPVC pipe (25mm Ø)	No.	116,0		
6.10.2		Ø 110mm uPVC pipe (20mm Ø)	No.	14,0		
6.10.3		Ø 160mm uPVC pipe (25mm Ø)	No.	38,0		
6.10.4		Ø 160mm uPVC pipe (20mm Ø)	No.	1,0		
6.10.5		Ø 200mm uPVC pipe (25mm Ø)	No.	52,0		
6.10.6		Ø 200mm uPVC pipe (20mm Ø)	No.	1,0		
6.11	LF	EXCAVATION & PIPES: HOUSE CONNECTIONS (LI)				
	LF 8.2.1	Excavate 450mm wide in all materials, backfill and compact for installation of HDPE pressure pipe house connections for the following yard connections:				
6.11.1		700mm deep for Ø 25mm long double connections	m³	1 236,0		
6.11.2		700mm deep for Ø 20mm long single connections	m³	82,0		
6.11.3		450mm deep for Ø 25mm short double connections	m³	94,0		
6.11.4		450mm deep for Ø 20mm short single connections	m³	10,0		
6.12	LF 8.2.2	Supply, bed, lay and installation of HDPE PE 80, PN 10 pressure pipe house connections for the following:				
6.12.1		Ø 25mm pipe in 700mm deep trench for long double yard connections	m	1 236,0		
6.12.2		Ø 20mm pipe in 700mm deep trench for long single yard connections	m	82,0		
Total Carried Forward						

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SECTION 5: ERF CONNECTIONS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						
6.12.3		Ø 25mm pipe in 450mm deep trench for short double yard connections	m	94,0		
6.12.4		Ø 20mm pipe in 450mm deep trench for short single yard connections	m	10,0		
6.14	LF	SPECIAL FITTINGS (LI)				
	LF 8.2.2	Supply and install Plasson fittings between saddle and existing onsite water meter for double house connections:				
6.14.1		Long double house connection	No.	110,0		
6.14.2		Short double house connection	No.	96,0		
6.15	SANS 1200 GA	GENERAL : CONCRETE (LI)				
	GA 8.4.1	<i>Supply and casting of prescribed concrete mixture, including the excavations, shutters, backfill, compaction and finishing for the following</i>				
6.15.1		Class 20/19MPa concrete for all thrust (kicker) blocks at water pipeline bends and junctions	m³	10,0		
Total Carried Forward To Summary						

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SUMMARY OF SECTIONS		
SECTION	DESCRIPTION	AMOUNT R
1	SECTION 1 : SITE ESTABLISHMENT
2	SECTION 2 : SITE CLEARANCE
3	SECTION 3 : WATER PIPE EXCAVATION
4	SECTION 4 : WATER PIPE INSTALLATION
5	SECTION 5 : ERF CONNECTIONS
	SUBTOTAL	_____
	Add 15% VAT

	Total Carried Forward To Summary Of Schedules	

	C2.2-13	