

BILL OF QUANTITIES
SECTION 1: PRELIMINARY AND GENERAL

ITEM	PAYMENT REFERS	LIC	DESCRIPTION	UNIT	QTY.	RATE	AMOUNT
1	SANS 1200 A		SECTION 1 : PRELIMINARY AND GENERAL				
			Fixed-Charge items				
1,1	8.3.1		Contractual requirements	Sum	1		
1.1.1	8.3.2		Establish facilities on the Site				
1,2	8.3.2.3 PSA8-2 PSAB8-5 PSAB8-6 PSAB3-3 PSAB4		Facilities for Engineer:				
1.2.1			Nameboards	Sum	1		
1.2.2			Survey	Sum	1		
1.2.3			Protective clothing	Sum	1		
1.2.4			Telephone	Sum	1		
1.2.5			Office/conference room	Sum	1		
1.2.6			Parking facility	Sum	1		
1,3	8.3.2.3 PS4 PS5 PSA8-6 PSA8-7 PSA8-8 PSA8-13		Facilities for Contractor including offices, storage sheds, workshops, laboratories, living accommodation, ablution and latrine facilities, tools and equipment, water supplies, electric power, communications, setting out of Works, security and dealing with water, traffic and access.	Sum	1		
1,4	SPEC AO		Health and safety:				
1.4.1	8.2.1		General safety obligations	Sum	1		
1.4.2	8.2.2		Risk assessment	Sum	1		
1.4.3	8.2.3		Health and safety plan	Sum	1		
1.4.4	8.2.5		Training	Sum	1		
1.4.5	8.2.6		Medical assessment of employees	Sum	1		
1,5	SANS 1200 A		Other fixed-charge obligations	Sum	1		
1,6	8.3.3 8.3.4		Removal of Site establishment on completion	Sum	1		
TOTAL CARRIED FORWARD							

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ITEM	PAYMENT REFERS	LIC	DESCRIPTION	UNIT	QTY.	RATE	AMOUNT
BROUGHT FORWARD							
1,7	SDA8-1		Time-Related Items				
1.7.1	8.4.1		Contractual requirements	Sum	10		
			Operate and maintain facilities on the Site for duration of construction except where otherwise stated				
1,8	8.4.2.3 PSA8-2 PSAB8-5 PSAB8-6		Facilities for Engineer:				
1.8.1			Nameboard	Sum	10		
1.8.2			Survey	Sum	10		
1.8.3			Protective clothing	Sum	10		
1.8.4			Medical and safety	Sum	10		
1.8.5			Office/conference room	Sum	10		
1.8.6			Parking facility	Sum	10		
1.8.7	SDAB8-4		Mobile internet services	Sum	10		
1,9	8.4.2.3 PS4 PS5 PSA8-6 PSA8-7 PSA8-8 PSA8-13		Facilities for Contractor as for Item 1.3	Sum	10		
1.10	8.4.3		Supervision for duration of construction	Sum	10		
1,11			Supervision of sub contractor(s) for duration of contract	Sum	1		
1,12	8.4.4		Company and Head Office overhead costs for the duration of the Contract	Sum	10		
TOTAL CARRIED FORWARD							

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ITEM	PAYMENT REFERS	LIC	DESCRIPTION	UNIT	QTY.	RATE	AMOUNT
BROUGHT FORWARD							
1,13	SPEC AO		Health and Safety:				
1.13.1	8.2.1		General safety obligations	Sum	10		
1.13.2	8.2.3		Health and safety plan	Sum	10		
1.13.3	8.2.4 10.2.1(a)		Construction Supervisor	Sum	10		
1.13.4	10.2.1(b)		Construction Health and Safety Officer	Sum	10		
1.13.5	10.2.2		Records and Registers	Sum	10		
1.13.6	8.4.5		Other time-related obligations	Sum	10		
1.13.7	PSA8-12		Allow for the costs of providing insurance cover in terms of the Compensation for Occupational Injuries and Disease (COID) Act	Sum	10		
	SANS 1200 A 8,5 PSA8-3		Sums stated provisionally by Engineer:				
1,14			Existing services				
1.14.1			Locating, protection, alteration and relocation of existing services carried out by authorities	Prov Sum			R 30 000,00
1.14.2			Percentage adjustment on Item 1.14.1 for Contractor's overheads and profit (<i>State % and extend as an amount</i>)	%	R 30 000,00%	
1.14.3	PSA8-7		Excavation for services	m ³	8		
1.14.4	PSA8-14		Community Liaison Officer (CLO)	Prov Sum			R 88 000,00
1.14.5			Percentage adjustment on Item 1.14.4 for Contractor's overheads and profit (<i>State % and extend as an amount</i>)	%	R 88 000,00%	
1.14.6			Reimbursement of Project steering Committee members for attendance of meetings to the value of R500 per meeting (PSC) No. 6	Prov Sum			R 40 000,00
1.14.7			Percentage adjustment on Item 1.14.6 for Contractor's overheads and profit (<i>State % and extend as an amount</i>)	%	R 40 000,00%	
1,15	8.7 PSA8-5		Daywork (Provisional)				
1.15.1			Labour				
1.15.2			Skilled labour	h	100		
1.15.3			Semi-skilled labour	h	100		
1.15.4			Unskilled labour	h	100		
TOTAL CARRIED FORWARD							

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SECTION 1: PRELIMINARY AND GENERAL

ITEM	PAYMENT REFERS	LIC	DESCRIPTION	UNIT	QTY.	RATE	AMOUNT
BROUGHT FORWARD							
1,16			Materials				
1.16.1			Allow for net cost of goods or materials actually used	Prov Sum			R 50 000,00
1.16.2			Percentage mark-up on Item 1.16.1 (<i>State % and extend as an amount</i>)	%	R 50 000,00%	
1,17			Contractor's own plant on site				
1.17.1			Allow for all-inclusive cost of using Contractor's own plant on site	Prov Sum			R 15 000,00
1,18			Plant hired by Contractor				
1.18.1			Allow for net cost of hired plant	Prov Sum			R 60 000,00
1.18.2			Percentage mark-up on Item 1.18.1 (<i>State % and extend as an amount</i>)	%	R 60 000,00%	
1,19	SPEC EM		Environmental				
1.19.1			All requirements of the environmental management specification	Sum			
1.20			FACILITIES FOR THE ENGINEERS ON SITE				
1.20.1			Allow for the Equipment for the Engineer's Representative on Site	Prov Sum			R 65 000,00
1.20.2			Allow for Supervision by the Engineer's Site Representative for the Duration of the Contract	Prov Sum			R 400 000,00
1.20.3			Transportation for the Engineers (Including Fuel) for the Duration of the Project (R20,000 pm).	Prov Sum			R 200 000,00
1.20.4			Accommodation for the Engineer for the Duration of the Contract	Prov Sum			R 35 000,00
1.20.5			Contractor's mark up on Item 1.20.1 to 1.20.4 above	%	R 700 000,00%	
TOTAL FOR SECTION 1 CARRIED FORWARD TO SUMMARY/---							

**BILL OF QUANTITIES
 SECTION 2: NYANDENI EARTHWORKS**

ITEM	PAYMENT REFERS	LIC	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
2,1	SANS 1200DB		SECTION 2 :NYANDENI- EARTHWORKS: WATER RETICULATION PIPE TRENCHES FROM PREFABRICATED STEEL RESERVOIRS				
			SITE CLEARANCE AND REMOVAL OF TOPSOIL				
2.1.1	8.3.1 (c)	LI	Remove 1m wide topsoil to a nominal depth of 150mm, stockpile and maintain next to trench.	m ²	3642,0		
2.1.3		LI	After trench has been backfilled and surplus material has been removed, replace topsoil and local grasses in accordance with the enviromental specifications.	m ²	3642,0		
2,2	SABS 1200D		EXISTING SERVICES				
2.2.1	8.3.8.1(c)	LI	Excavate by hand in soft material to expose existing services of which the position is unknown	m ³	10,0		
2,3	SABS 1200 DB		TRENCH EXCAVATION				
2.3.1	8.3.2 (a) PSDB8-1,2,3	LI	Excavate in all materials for trench selectively to width up to 650mm for single pipes with a diameter between 63 mmØ and 160 mmØ, backfill, compact, including dispose surplus/unsuitable material to the followina depths Over and up to				
2.3.1.1		LI	0.0 m to 1.5 m	m	1126,5		
2.3.1.2			1.5m to 2.0m	m	675,9		
2.3.1.3			2.0m to 3.0m	m	450,6		
2.3.2	8.3.2 (a) PSDB8-1,2,3	LI	Excavate in all materials for trench selectively to width up to 400mm for single pipes with a diameter between 25 mmØ and 50 mmØ, backfill, compact, including dispose surplus/unsuitable material to the followina depths Over and up to				
2.3.2.1		LI	0.0 m to 1.5 m	m	1389		
	8.3.2 (b) PSB8.1		Extra over item 2.3.2.1 incl. For excavation (provisional) in hard rock:				
2.3.4		LI	Using Mechanical means	m ³	260		
2.3.5		LI	Using Hand Pneumatic Hammers	m ³	260		
2.3.6	8.3.2(c)	LI	Excavate unsuitable material from trench bottom and dispose thereof (Provisional)	m ³	6		
TOTAL CARRIED FORWARD							

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SECTION 2: NYANDENI EARTHWORKS**

ITEM	PAYMENT REFERS	LIC	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
BROUGHT FORWARD							
2,4	8.3.3		EXCAVATION ANCILLARIES				
	8.3.3.1		Make up deficiency in backfill material (Provisional)				
2.4.1	8.3.3.1(a)	LI	a) Other excavations on site	m ³	36		
	8.3.3.1(b)		b) By importation from designated borrow pits(Prov)	m ³	71		
2.4.2	8.3.3.1(c)		b) Imported backfill materials from commercial sources (Prov)	m ³	12,00		
2.4.3	8.3.3.3	LI	Additional compaction at road crossings	m ³	50		
			Overhaul				
2.4.4	8.3.3.4(a)		Limited overhaul	m ³	18		
2.4.5	8.3.3.4(a)		Long overhaul	m ³ /km	36		
2,5			FINISHING				
	8.3.6	LI	Reinstate road surfaces complete with all courses				
2.5.1	8.3.6.1(a)		150mm thick gravel layer compacted to 95% Mod AASHTO	m ²	50		
2.5.2		LI	Construction of cross drainage beams as detailed	No	10		
2.6			EXISTING SERVICES				
2.6.1	8.3.5(a)	LI	Services that intersect a trench. (All sizes)	No	30		
2.6.2	8.3.5(b)	LI	Services that adjoin a trench. (All sizes)	m	500		
	SABS 1200LB		BEDDING (PIPES)				
2,6	8.2.1 PSL8-1		PROVISION OF BEDDING				
			Available from trench excavation				
2.6.1		LI	a) Selected granular material	m ³	236,73		
2.6.2		LI	b) Selected fill material	m ³	71,02		
	8.2.2.2		Import from other excavations on site (Only with written consent of Employers Representative) (Provisional)				
2.6.3		LI	a) Selected granular material	m ³	40,00		
2.6.4		LI	b) Selected fill material	m ³	37,00		
	8.2.2.3 PSDB 8.3		Import from commercial sources (only with written consent of Employer's Representative) (Provisional)				
2.6.5		LI	a) Selected granular material	m ³	142,04		
2.6.6		LI	b) Selected fill material	m	426,11		
2.6.7	8.2.2.3 PSDB 8.3	LI	19 mm crushed stone bedding from commercial sources	m ³	6		
2.6.8	8.2.4	LI	Encasing of pipes in Class 20/19 concrete	m ³	5		
TOTAL CARRIED FORWARD							

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ITEM	PAYMENT REFERS	LIC	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
BROUGHT FORWARD							
2,7	SABS 1200DK		GABIONS Gabion/Reno mattresses, using 6x8 mesh with 1.0m diaphragm spacing, of sizes				
2.7.1	8.2.2	LI	2.0 x 1.0 x 1.0m	m ³	10		
2.7.2		LI	2.0 x 1.0 x 0.3m	m ³	10		
2.7.3		LI	Excavation and compaction in all classes of material	m ³	20		
2.7.4		LI	Surface preparation for bedding the gabions	m ²	40		
2.7.5	8.2.4	LI	Filter fabric Grade 4 geotextile with minimum 2.5kN penetration load and at least 235l/s/m ² through flow	m ²	80		
TOTAL FOR SECTION 2 CARRIED FORWARD TO SUMMARY/---							

**BILL OF QUANTITIES
 SECTION 3: NYANDENI PIPEWORK**

ITEM	PAYMENT REFERS	LIC	DESCRIPTION	UNIT	SHED QTY	RATE	AMOUNT
3,1	SABS 1200L		SECTION 3 :NYANDENI- PIPEWORK RETICULATION FROM PREFABRICATED STEEL RESERVOIRS				
	8.2.1 PSL8.1 to PSL8.4	LI	MEDIUM-PRESSURE PIPELINES Supply, lay, joint, bed, test and disinfect the following pipes complete with couplings to the relevant SABS standards including short lengths. HDPE pipes PE100				
3.1.1		LI	50mm PN10	m	1362		
3.1.2		LI	63mm PN10 uPVC pipes	m	610		
3.1.3		LI	160mm Class 9	m			Rate Only
3.1.4		LI	110mm Class 9	m			Rate Only
3.1.5		LI	90mm Class 9	m			Rate Only
3.1.6		LI	75mm Class 9	m	1670		
3,2	SABS 1200L	LI	PIPE FITTINGS				
	8.2.1		Extra-over the above for supplying, installing and testing in the pipeline all fittings and specials complete				
			HDPE Fittings:				
			Equal Tees:				
3.2.1		LI	50mm dia.	No	3		
3.2.2		LI	63mm dia.	No	6		
			Reducing Tees				
3.2.3		LI	63 x 50mm dia.	No	1		
			Reducers				
3.2.5		LI	63 x 50	No			Rate Only
3.2.6		LI	75 x 50	No			Rate Only
3.2.7		LI	75 x 63	No	1		
3.2.8		LI	90 x 75	No	1		
TOTAL CARRIED FORWARD							

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SECTION 3: NYANDENI PIPEWORK

ITEM	PAYMENT REFERS	LIC	DESCRIPTION	UNIT	SHED QTY	RATE	AMOUNT
BROUGHT FORWARD							
			Male Threaded Adaptors				
3.2.9		LI	50 x 2" dia.	No			Rate Only
3.2.10		LI	50 x 2.5" dia.	No			Rate Only
3.2.11		LI	63 x 2,5" dia.	No			Rate Only
			Flanged adaptors for HDPE pipes				
3.2.10		LI	63 x 2,5" dia.	No			Rate Only
3.2.11		LI	75 x 3" dia.	No			Rate Only
3.2.11		LI	110 x 4"	No			Rate Only
			90 Degree Bends				
3.2.12		LI	50mm dia	No	4		
3.2.13		LI	63mm dia	No	2		
			45 Degree Bends				
3.2.14		LI	50mm dia	No			Rate Only
3.2.15		LI	63mm dia	No			Rate Only
	8.2.1		uPVC Fittings:				
			Equal Tees				
3.2.16		LI	160mm dia.	No			Rate Only
3.2.17		LI	90mm dia.	No			Rate Only
3.2.18		LI	110mm dia.	No			Rate Only
			Reducing Tees				
3.2.19		LI	110 x 90mm dia.	No			Rate Only
			Reducers				
3.2.20		LI	160 x 63mm dia.	No			Rate Only
3.2.21		LI	160 x 110mm dia.	No			Rate Only
3.2.22		LI	90 x 63mm dia.	No			Rate Only
3.2.23		LI	110 x 90mm dia.	No			Rate Only
3.2.22		LI	90 x 75mm dia.	No			Rate Only
3.2.22		LI	75 x 63mm dia.	No	1		
TOTAL CARRIED FORWARD							

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ITEM	PAYMENT REFERS	LIC	DESCRIPTION	UNIT	SHED QTY	RATE	AMOUNT
BROUGHT FORWARD							
			Flanged adapters				
3.2.24		LI	63 mm dia	No	8		
3.2.25		LI	75 mm dia	No	5		
3.2.26		LI	90 mm dia	No			Rate Only
			22,5 Degree Bends				
3.2.27		LI	160mm dia	No			Rate Only
3.2.28		LI	110mm dia	No			Rate Only
3.2.28		LI	90mm dia	No			Rate Only
3.2.28		LI	75mm dia	No	2		
			45 Degree Bends				
3.2.27		LI	160mm dia	No			Rate Only
3.2.28		LI	110mm dia	No			Rate Only
3.2.28		LI	90mm dia	No			Rate Only
3.2.28		LI	75mm dia	No	2		
			90 Degree Bends				
3.2.31		LI	90mm dia	No			Rate Only
3.2.32		LI	110mm dia	No			Rate Only
			Saddles				
3.2.33		LI	75 x 2" dia.	No	6		
3.2.34		LI	90 x 2" dia	No	2		
3.2.35		LI	110 x 2," dia	No			Rate Only
3.2.35		LI	160 x 2" dia	No			Rate Only
3.2.35		LI	160 x 63' dia	No			Rate Only
3,3	SABS 1200L 8.2.3		GATE VALVES UPVC Line Double-Socketed C.I. valve assemblies. Extra over the above for supplying, installing, bedding and testing Class 16 line cast iron valve assemblies as per specification complete cutting of pipes and coulinas included.				
TOTAL CARRIED FORWARD							

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 SECTION 3: NYANDENI PIPEWORK**

ITEM	PAYMENT REFERS	LIC	DESCRIPTION	UNIT	SHED QTY	RATE	AMOUNT
BROUGHT FORWARD							
3.3.2		LI	90mm	No			Rate Only
3.3.4		LI	110mm	No			Rate Only
3.3.5		LI	160mm	No			Rate Only
	8.2.3		HDPE Line brass valve assemblies. Extra over above for supplying, installing, bedding and testing Class 16 line brass valve assemblies as per specification complete cutting of pipes and couplings included.				
3.3.6		LI	2"mm	No	6		
3.3.7		LI	65 x 2.5"mm	No	4		
3,4			STANDPIPES				
3.4.1		LI	Complete supply, install and test single standpipe arrangement as detailed on Dwg No 014044-SD-010. Rate to include Aqua-Loc Housing with water meter and pre-cast water meter box as per detail and all the works to complete the installation. Heavy duty that is suitable for operating pressures.	No	30		
3,5	8.2.13		VALVE CHAMBERS				
3.5.1		LI	Valve chambers complete as per detail on Dwg No	No	2		
3,6	SANS 1200LF		MARKERS				
3.6.1	8.2.8	LI	Supply and install marker posts as detailed	No	10		
3,7	SABS 1200L		ANCHOR/THRUST BLOCKS AND PEDESTALS				
3.4.2	8.2.11	LI	a) Concrete Class 15/19	m ³	6		
TOTAL FOR SECTION 3 CARRIED FORWARD TO SUMMARY/---							

BILL OF QUANTITIES
SECTION 4: NYANDENI EARTHWORKS: RISING MAIN

ITEM	PAYMENT REFERS	LIC	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
4,1	SANS 1200DB		SECTION 4 :NYANDENI- EARTHWORKS: RISING MAIN PIPE TRENCHES FROM PREFABRICATED STEEL RESERVOIRS				
			SITE CLEARANCE AND REMOVAL OF TOPSOIL				
4.1.2	8.3.1 (c)	LI	Remove 1m wide topsoil to a nominal depth of 150mm, stockpile and maintain next to trench.	m ²	1780		
4.1.3		LI	After trench has been backfilled and surplus material has been removed, replace topsoil and local grasses in accordance with the enviromental specifications.	m ²	1780		
4,2	SABS 1200D		EXISTING SERVICES				
4.2.1	8.3.8.1 (c)	LI	Excavate by hand in soft material to expose existing services of which the position is unknown	m ³	10		
4,3	SABS 1200 DB		TRENCH EXCAVATION				
4.3.1	PSDB8-1	LI	Excavate in all materials for trench selectively to width up to 400mm for single pipes with a diameter between 25 mm and 50 mm, backfill, compact, including dispose surplus/unsuitable material to the followina depths				
			Over and up to				
4.3.1.1		LI	0.0 m to 1.5 m	m	1121		
4.3.1.2			1.5m to 2.0m	m	427		
4.3.1.3			2.0m to 3.0m	m	320		
	8.3.2 (b) PSB8.1		Extra over 4.3 incl. For excavation (provisional) in hard rock:				
4.3.2		LI	Mechanical means	m ³	260		
4.3.3		LI	Using Hand Pneumatic Hammers	m ³	250		
4.3.4	8.3.2(c)	LI	Excavate unsuitable material from trench bottom and dispose thereof (Provisional)	m ³	100		
TOTAL CARRIED FORWARD							

BILL OF QUANTITIES
SECTION 4: NYANDENI EARTHWORKS: RISING MAIN

ITEM	PAYMENT REFERS	LIC	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
BROUGHT FORWARD							
4,4	8.3.3		EXCAVATION ANCILLARIES				
	8.3.3.1		Make up deficiency in backfill material (Provisional)				
4.4.1	8.3.3.1 (a)	LI	a) Other excavations on site	m ³	20		
	8.3.3.1 (b)		by importation from-designated borrow pits	m ³	200		
4.4.2	8.3.3.1 (c)		b) Imported backfill materials from commercial sources (Prov)	m ³	120		
4.4.3	8.3.3.3	LI	Compaction in road reserves	m ³	35		
4,5			FINISHING				
	8.3.6	LI	Reinstate road surfaces complete with all courses				
4.5.1	8.3.6.1 (a)		150mm thick gravel layer compacted to 95% Mod AASHTO	m ²	50		
4.5.2		LI	Construction of cross drainage beams as detailed	m	150		
4,6			EXISTING SERVICES				
4.6.1	8.3.5(a)	LI	Services that intersect a trench. (All sizes)	No	5		
4.6.2	8.3.5(b)	LI	Services that adjoin a trench. (All sizes)	m	100		
4.6.3	8.3.5(a)	LI	Strip and repair existing domestic fences intersecting pipeline route	m	500		
	SABS 1200LB		BEDDING (PIPES)				
4,7	8.2.1 PSL8-1		PROVISION OF BEDDING				
			Available from trench excavation				
4.7.1		LI	a) Selected granular material	m ³	250		
4.7.2		LI	b) Selected fill material	m ³	350		
	8.2.2.2		Import from other excavations on site (Only with written consent of Employers Representative) (Provisional)				
4.7.3		LI	a) Selected granular material	m ³	30		
4.7.4		LI	b) Selected fill material	m ³	80		
TOTAL CARRIED FORWARD							

BILL OF QUANTITIES
SECTION 4: NYANDENI EARTHWORKS: RISING MAIN

ITEM	PAYMENT REFERS	LIC	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
BROUGHT FORWARD							
	8.2.2.3 PSDB 8.3		Import from commercial sources (only with written consent of Employer's Representative) (Provisional)				
4.7.5		LI	a) Selected granular material	m ³	150		
4.7.6		LI	b) Selected fill material	m ³	250		
4.7.7	8.2.2.3 PSDB 8.3	LI	Supply and lay 19mm stone covered with Bidim A4 for dainage of sub-surface water on trench bottom as instructed by the Engineer	m ³	15		
4.7.8			Extra-over 4.7.8 for the supply of A4 Bidim	m ²	50		
4.7.9	8.2.4	LI	Encasing of pipes in Class 20/19 concrete	m ³	20		
4,8			GABIONS				
	SABS 1200DK		Gabion/Reno mattresses, using 6x8 mesh with 1.0m diaphragm spacing, of sizes				
4.8.1	8.2.2	LI	2.0 x 1.0 x 1.0m	m ³	10		
4.8.2		LI	2.0 x 1.0 x 0.3m	m ³	10		
4.8.3		LI	Excavation and compaction in all classes of material	m ³	10		
4.8.4		LI	Surface preparation for bedding the gabions	m ²	30		
4.8.5	8.2.4	LI	Filter fabric Grade 4 geotextile with minimum 2.5kN penetration load and at least 235l/s/m ² through flow	m ²	30		
TOTAL FOR SECTION 4 CARRIED FORWARD TO SUMMARY/---							

BILL OF QUANTITIES
SECTION 5: NYANDENI PIPEWORKS: RISING MAIN

ITEM	PAYMENT REFERS	LIC	DESCRIPTION	UNIT	SCHED. QTY.	RATE	AMOUNT
<p>SECTION 5: NYANDENI-RISING MAIN-PIPEWOKS TO PREFABRICATED STEEL RESERVOIRS</p> <p>MEDIUM-PRESSURE PIPELINES</p>							
5.1	SANS 1200 L						
5.1.1	PSL8-1 to 8-4		Supply, lay, joint, bed, test and disinfect the following pipes complete with couplings to the relevant SABS standards including short lengths.				
	8.2.1						
5.1.1.1		LI	50mm dia. HDPE (Class 10)	m	695		
5.1.1.2		LI	50mm dia. HDPE (Class 12)	m	260		
5.1.1.3		LI	50mm dia. HDPE (Class 16)	m	420		
5.1.1.4		LI	50mm dia. HDPE (Class 20)	m	400		
5.1.2			<p>Pipe sleeves for road crossings Supply, handle, lay and joint the following pipe sleeves as detailed on drawing No's 014044-DET-505, rate to include the expanded foam at the ends of the sleeves</p>				
	8.2.1						
5.1.2.1		LI	110mm dia. uPVC (Class 9) for 75mm dia HDPE. water mains	m	60		
5.2	8.2.1		<p>Valves, specials and fittings Extra over above for the supply, laying and bedding of fittings suitable for use with the above pipes</p>				
5.2.6			<p>HDPE Couplings</p>				
5.2.6.1		LI	50mm dia.	No	18		
5.3			<p>Special and fittings for Air Valves and Scour Valves Air valve assemblies. Extra over E.2 for supplying, installing and testing class 16 air valve assemblies as per details and specifications complete with all fittings.</p>				
5.3.1		LIC	a) On 50mm dia Class 20 main, RC 25mm dia	No	1		
5.3.1		LIC	a) On 50mm dia Class 16 main, RC 25mm dia	No	1		
5.3.1		LIC	a) On 50mm dia Class 12 main, RC 25mm dia	No	1		
5.3.1		LIC	a) On 50mm dia Class 10 main, RC 25mm dia	No	1		
TOTAL CARRIED FORWARD							

BILL OF QUANTITIES
SECTION 5: NYANDENI PIPEWORKS: RISING MAIN

ITEM	PAYMENT REFERS	LIC	DESCRIPTION	UNIT	SCHED. QTY.	RATE	AMOUNT
BROUGHT FORWARD							
5.4.1		LIC	Scour valve assemblies. Extra over E.2 for supplying, installing and testing class 25 scour valve assemblies as per details and specifications complete with all fittings. a) On 50mm HDPE dia main, 50 Valve	No	1		
5.4			Valve chambers complete as detailed				
5.4.1		LI	Construct Air Valve chamber as detailed on drawing No's 014044-DET-501. Rate to include for all the works including cover and frame, and air vents to complete the installation	No	4		
5.4.1		LI	Construct Scour Valve chamber as detailed on drawing No's 014044-DET-501. Rate to include for all the works including cover and frame, and air vents to complete the installation	No	1		
5.4.2		LI	Extra over for item C4.1 for variation of height as specified from 0 and to 500 mm	No	1		
5.5	8.2.11		Anchor/Thrust Blocks and Pedestals				
5.5.1		LI	Concrete thrust blocks: all sizes	No	4		
5.5.2		LI	Concrete pedestals : all sizes	No	4		
5.7	SANS 1200 LF		Markers				
5.7.1	8.2.8	LI	Supply and install pipeline marker posts as detailed on Drawing No 014044-DET-501.	No	15		
SUB-TOTAL FOR SECTION 5 Carried forward to summary of shedule of quantities							

BILL OF QUANTITIES
SECTION 6: LUQOLWENI EARTHWORKS

ITEM	PAYMENT REFERS	LIC	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
6,1	SANS 1200DB		SECTION 6 : LUQOLWENI-EARTHWORKS: WATER RETICULATION PIPE TRENCHES FROM ELEVATED STEEL TANK				
			SITE CLEARANCE AND REMOVAL OF TOPSOIL				
6.1.2	8.3.1 (c)	LI	Remove 1m wide topsoil to a nominal depth of 150mm, stockpile and maintain next to trench.	m ²	5763,00		
6.1.3		LI	After trench has been backfilled and surplus material has been removed, replace topsoil and local grasses in accordance with the enviromental specifications.	m ²	5763,00		
6,2	SABS 1200D		EXISTING SERVICES				
6.2.1	8.3.8.1(c)	LI	Excavate by hand in soft material to expose existing services of which the position is unknown	m ³	55,00		
6,3	SABS 1200 DB		TRENCH EXCAVATION				
6.3.1	PSDB8-1	LI	Excavate in all materials for trench selectively to width up to 650mm for single pipes with a diameter between 63 mm and 160 mm, backfill, compact, including dispose surplus/unsuitable material to the followina depths				
			Over and up to				
6.3.1.1		LI	0.0 m to 1.5 m	m	1328		
6.3.1.2			1.5m to 2.0m	m	796,8		
6.3.1.3			2.0m to 3.0m	m	531,2		
6.3.2	PSDB8-1	LI	Excavate in all materials for trench selectively to width up to 400mm for single pipes with a diameter between 25 mm and 50 mm, backfill, compact, including dispose surplus/unsuitable material to the followina depths				
			Over and up to				
6.3.2.1		LI	0.0 m to 1.5 m	m	3107		
	8.3.2 (b) PSB8.1		Extra over item 6.3.2.1 incl. For excavation (provisional) in hard rock:				
6.3.4		LI	Mechanical means	m ³	100		
6.3.5		LI	Using Hand Pneumatic Hammers	m ³	100		
6.3.6	8.3.2(c)	LI	Excavate unsuitable material from trench bottom and dispose thereof (Provisional)	m ³	100		
TOTAL CARRIED FORWARD							

BILL OF QUANTITIES
SECTION 6: LUQOLWENI EARTHWORKS

ITEM	PAYMENT REFERS	LIC	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
BROUGHT FORWARD							
6,4	8.3.3		EXCAVATION ANCILLARIES				
	8.3.3.1		Make up deficiency in backfill material (Provisional)				
6.4.1	8.3.3.1(a)	LI	a) Other excavations on site	m ³	100		
6.4.2	8.3.3.1(c)		b) Imported backfill materials from commercial sources (Prov)	m ³	562		
6.4.3	8.3.3.3	LI	Additional compaction at road crossings	m ³	50		
6,5			FINISHING				
	8.3.6	LI	Reinstate road surfaces complete with all courses				
6.5.1	8.3.6.1(a)		150mm thick gravel layer compacted to 95% Mod AASHTO	m ²	32,5		
6.5.2		LI	Construction of cross drainage beams as detailed	No	10		
6.6			EXISTING SERVICES				
6.6.1	8.3.5(a)	LI	Services that intersect a trench. (All sizes)	No	15		
6.6.2	8.3.5(b) SABS 1200LB	LI	Services that adjoin a trench. (All sizes)	m	500		
6,6			BEDDING (PIPES)				
	8.2.1 PSL8-1		PROVISION OF BEDDING				
			Available from trench excavation				
6.6.1		LI	a) Selected granular material	m ³	374,60		
6.6.2		LI	b) Selected fill material	m ³	112,38		
	8.2.2.2		Import from other excavations on site (Only with written consent of Employers Representative) (Provisional)				
6.6.3		LI	a) Selected granular material	m ³	374,60		
6.6.4		LI	b) Selected fill material	m ³	1123,79		
	8.2.2.3 PSDB 8.3		Import from commercial sources (only with written consent of Employer's Representative) (Provisional)				
6.6.5		LI	a) Selected granular material	m ³	224,76		
6.6.6		LI	b) Selected fill material	m	674,27		
6.6.7	8.2.2.3 PSDB 8.3	LI	13 mm crushed stone bedding from commercial sources (Provisional)	m ³	20		
6.6.8	8.2.4	LI	Encasing of pipes in Class 20/19 concrete	m ³	10		
TOTAL CARRIED FORWARD							

BILL OF QUANTITIES
SECTION 6: LUQOLWENI EARTHWORKS

ITEM	PAYMENT REFERS	LIC	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
BROUGHT FORWARD							
6,7	SABS 1200DK		GABIONS Gabion/Reno mattresses, using 6x8 mesh with 1.0m diaphragm spacing, of sizes				
6.7.1	8.2.2	LI	2.0 x 1.0 x 1.0m	m ³	10		
6.7.2		LI	2.0 x 1.0 x 0.3m	m ³	10		
6.7.3		LI	Excavation and compaction in all classes of material	m ³	20		
6.7.4		LI	Surface preparation for bedding the gabions	m ²	40		
6.7.5	8.2.4	LI	Filter fabric Grade 4 geotextile with minimum 2.5kN penetration load and at least 235l/s/m ² through flow	m ²	80		
TOTAL FOR SECTION 6 CARRIED FORWARD TO SUMMARY/---							

BILL OF QUANTITIES
SECTION 7: LUQOLWENI PIPEWORK RETICULATION

ITEM	PAYMENT REFERS	LIC	DESCRIPTION	UNIT	SHED QTY	RATE	AMOUNT
7,1	SABS 1200L		SECTION 7 :LUQOLWENI- PIPEWORK RETICULATION FROM ELEVATED STEEL TANK				
	8.2.1 PSL8.1 to PSL8.4	LI	MEDIUM-PRESSURE PIPELINES Supply, lay, joint, bed, test and disinfect the following pipes complete with couplings to the relevant SABS standards including short lengths. HDPE pipes PE100				
7.1.1		LI	50mm PN10	m	3467		
7.1.2		LI	63mm PN10	m	1061		
			uPVC pipes				
7.1.3		LI	160mm Class 9	m			
7.1.4		LI	110mm Class 9	m	197		
7.1.5		LI	90mm Class 9	m	2276		
7.1.6		LI	75mm Class 9	m	779		
7,2	SABS 1200L 8.2.1	LI	PIPE FITTINGS Extra-over the above for supplying, installing and testing in the pipeline all fittings and specials complete				
			HDPE Fittings:				
			Equal Tees:				
7.2.1		LI	50mm dia.	No	6		
7.2.2		LI	63mm dia.	No	8		
			Reducing Tees				
7.2.3		LI	63 x 50mm dia.	No	4		
			Reducers				
7.2.5		LI	63 x 50	No			
7.2.6		LI	75 x 50	No			
7.2.7		LI	75 x 63	No			
7.2.8		LI	90 x 50	No			
TOTAL CARRIED FORWARD							

BILL OF QUANTITIES
SECTION 7: LUQOLWENI PIPEWORK RETICULATION

ITEM	PAYMENT REFERS	LIC	DESCRIPTION	UNIT	SHED QTY	RATE	AMOUNT
BROUGHT FORWARD							
			Male Threaded Adaptors				
7.2.9		LI	50 x 2" dia.	No			
7.2.10		LI	50 x 2.5" dia.	No			
7.2.11		LI	63 x 2,5" dia.	No			
			Flanged adapters for HDPE pipes				
7.2.10		LI	63 x 2,5" dia.	No			
7.2.11		LI	75 x 3" dia.	No			
7.2.11		LI	110 x 4"	No			
			90 Degree Bends				
7.2.12		LI	50mm dia	No	1		
7.2.13		LI	63mm dia	No	2		
			45 Degree Bends				
7.2.14		LI	50mm dia	No	2		Rate Only
7.2.15		LI	63mm dia	No	2		Rate Only
	8.2.1		uPVC Fittings:				
			Equal Tees				
7.2.16		LI	110mm dia.	No	3		
7.2.17		LI	90mm dia.	No	9		
7.2.18		LI	75mm dia.	No	3		
			Reducing Tees				
7.2.19		LI	90 x 75mm dia.	No	3		
			Reducers				
7.2.20		LI	160 x 63mm dia.	No			
7.2.21		LI	160 x 110mm dia.	No			
7.2.22		LI	90 x 63mm dia.	No			
7.2.23		LI	110 x 90mm dia.	No	2		
7.2.22		LI	90 x 75mm dia.	No	4		
7.2.22		LI	75 x 63mm dia.	No	3		
TOTAL CARRIED FORWARD							

BILL OF QUANTITIES
SECTION 7: LUQOLWENI PIPEWORK RETICULATION

ITEM	PAYMENT REFERS	LIC	DESCRIPTION	UNIT	SHED QTY	RATE	AMOUNT
BROUGHT FORWARD							
			Flanged adapters				
7.2.24		LI	63 mm dia	No	8		
7.2.25		LI	75 mm dia	No	5		
7.2.26		LI	90 mm dia	No	10		
			22,5 Degree Bends				
7.2.27		LI	160mm dia	No			
7.2.28		LI	110mm dia	No			
7.2.28		LI	90mm dia	No	1		
7.2.28		LI	75mm dia	No	2		
			45 Degree Bends				
7.2.27		LI	160mm dia	No			Rate Only
7.2.28		LI	110mm dia	No			Rate Only
7.2.28		LI	90mm dia	No			Rate Only
7.2.28		LI	75mm dia	No	2		
			90 Degree Bends				
7.2.31		LI	90mm dia	No	2		
7.2.32		LI	110mm dia	No	2		
			Saddles				
7.2.33		LI	75 x 2" dia.	No	4		
7.2.34		LI	90 x 2" dia	No			Rate Only
7.2.35		LI	110 x 2," dia	No	2		
7.2.35		LI	160 x 2" dia	No			Rate Only
7.2.35		LI	160 x 63' dia	No			Rate Only
7,3	SABS 1200L		GATE VALVES				
	8.2.3		UPVC Line Double-Socketed C.I. valve assemblies. Extra over the above for supplying, installing, bedding and testing Class 16 line cast iron valve assemblies as per specification complete cutting of pipes and couplings included.				
TOTAL CARRIED FORWARD							

BILL OF QUANTITIES
SECTION 7: LUQOLWENI PIPEWORK RETICULATION

ITEM	PAYMENT REFERS	LIC	DESCRIPTION	UNIT	SHED QTY	RATE	AMOUNT
BROUGHT FORWARD							
7.3.2		LI	80mm	No	3		Rate Only
7.3.4		LI	110mm	No	3		
7.3.5		LI	160mm	No			
	8.2.3		HDPE Line brass valve assemblies. Extra over above for supplying, installing, bedding and testing Class 16 line brass valve assemblies as per specification complete cutting of pipes and couplings included.				
7.3.6		LI	2"mm	No	6		
7.3.7		LI	65 x 2.5"mm	No	4		
7,4			STANDPIPES				
7.4.1		LI	Complete supply, install and test single standpipe arrangement as detailed on Dwg No 014044-SD-010. Rate to include Aqua-Loc Housing with water meter and pre-cast water meter box as per detail and all the works to complete the installation.	No	34		
7,5	8.2.13		VALVE CHAMBERS				
7.5.1		LI	Valve chambers complete as per detail on Dwg No 014044-SD-005	No	2		
7,6	SANS 1200LF		MARKERS				
7.6.1	8.2.8	LI	Supply and install pipe marker posts as PER detailed 014044-SD-005	No	10		
7,7	SABS 1200L		ANCHOR/THRUST BLOCKS AND PEDESTALS				
7.4.2	8.2.11	LI	a) Concrete Class 15/19	m ³	20		
TOTAL FOR SECTION 7 CARRIED FORWARD TO SUMMARY/---							

BILL OF QUANTITIES
SECTION 8: LUQOLWENI PIPEWORK RISING MAIN

ITEM	PAYMENT REFERS	LIC	DESCRIPTION	UNIT	SHED QTY	RATE	AMOUNT
8.1	SANS 1200 L		SECTION 8: LUQOLWENI-RISING MAIN-PIPEWOKS TO ELEVATED STEEL TANK				
			MEDIUM-PRESSURE PIPELINES				
8.1.1	PSL8-1 to 8-4		Supply, lay, joint, bed, test and disinfect the following pipes complete with couplings to the relevant SABS standards including short lengths.				
8.1.1.1	8.2.1	LI	50mm dia. HDPE (Class 10)	m	447		
8.1.1.2		LI	50mm dia. HDPE (Class 12)	m	140		
8.1.1.3		LI	50mm dia. HDPE (Class 16)	m	240		
8.1.1.4		LI	50mm dia. HDPE (Class 20)	m	240		
8.1.2			Pipe sleeves for road crossings Supply, handle, lay and joint the following pipe sleeves as detailed on drawing No's 014044-DET-505, rate to include the expanded foam at the ends of the sleeves				
8.1.2.1	8.2.1	LI	110mm dia. uPVC (Class 9) for 75mm dia HDPE. water mains	m	60		
8.2	8.2.1		Valves, specials and fittings Extra over above for the supply, laying and bedding of fittings suitable for use with the above pipes				
8.2.6			HDPE Couplings				
8.2.6.1		LI	50mm dia.	No	12		
8.3			Special and fittings for Air Valves and Scour Valves Air valve assemblies. Extra over 8.2.1 for supplying, installing and testing class 16 air valve assemblies as per details and specifications complete with all fittings.				
8.3.1		LIC	a) On 50mm dia Class 20 main, RC 25mm dia	No	1		
8.3.1		LIC	a) On 50mm dia Class 16 main, RC 25mm dia	No	1		
8.3.1		LIC	a) On 50mm dia Class 12 main, RC 25mm dia	No	1		
TOTAL CARRIED FORWARD							

BILL OF QUANTITIES
SECTION 8: LUQOLWENI PIPEWORK RISING MAIN

ITEM	PAYMENT REFERS	LIC	DESCRIPTION	UNIT	SHED QTY	RATE	AMOUNT
BROUGHT FORWARD							
8.4.1		LIC	Scour valve assemblies. Extra over 8.3 for supplying, installing and testing class 25 scour valve assemblies as per details and specifications complete with all fittings. a) On 50mm HDPE dia main, 50 Valve	No	1		
8.4			Valve chambers complete as detailed				
8.4.1		LI	Construct Air Valve chamber as detailed on drawing No's 014044-DET-501. Rate to include for all the works including cover and frame, and air vents to complete the installation	No	3		
8.4.2		LI	Construct Scour Valve chamber as detailed on drawing No's 014044-DET-501. Rate to include for all the works including cover and frame, and air vents to complete the installation	No	1		
8.4.3		LI	Extra over for item E.4.1 for variation of height as specified from 0 and to 500 mm	No	1		
8.5	8.2.11		Anchor/Thrust Blocks and Pedestals				
8.5.1		LI	Concrete thrust blocks: all sizes	No	5		
8.5.2		LI	Concrete pedestals : all sizes	No	5		
8.7	SANS 1200 LF		Markers				
8.7.1	8.2.8	LI	Supply and install pipeline marker posts as detailed on Drawing No 014044-DET-501	No	12		
SUB-TOTAL FOR SECTION 8 Carried forward to summary of shedule of quantities							

BILL OF QUANTITIES
SECTION 9: LUQOLWENI EARTHWORKS RISING MAIN

ITEM	PAYMENT REFERS	LIC	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
9,1	SANS 1200DB		SECTION 9 : LUQOLWENI-EARTHWORKS: RISING MAIN PIPE TRENCHES FROM ELEVATED STEEL TANK				
			SITE CLEARANCE AND REMOVAL OF TOPSOIL				
9.1.1	8.3.1 (a)	LI	Clear route of pipe trench of vegetation and trees up 1 meter girth	m	1070		
9.1.2	8.3.1 (c)	LI	Remove topsoil to a nominal depth of 150mm, stockpile and maintain next to trench.	m ²	1070		
9.1.3		LI	After trench has been backfilled and surplus material has been removed, replace topsoil and local grasses in accordance with the enviromental specifications.	m ²	1070		
9,2	SABS 1200D		EXISTING SERVICES				
9.2.1	8.3.8.1 (c)	LI	Excavate by hand in soft material to expose existing services of which the position is unknown	m ³	10		
9,3	SABS 1200 DB		TRENCH EXCAVATION				
9.3.1	PSDB8-1	LI	Excavate in all materials for trench selectively to width up to 600mm for single pipes with a diameter between 50 mm and 110 mm, backfill, compact, including dispose surplus/unsuitable material to the followina depths Over and up to				
9.3.1.1		LI	0.0 m to 1.5 m	m	856		
9.3.1.2			1.5m to 2.0m	m	161		
9.3.1.3			2.0m to 3.0m	m	55		
9.3.2	8.3.2 (b) PSB8.1	LI	Extra over 7.3 incl. For excavation (provisional) in hard rock: Using Blasting or Mechanical means	m ³	40		
9.3.3		LI	Using Hand Pneumatic Hammers	m ³	35		
9.3.4	8.3.2(c)	LI	Excavate unsuitable material from trench bottom and dispose thereof (Provisional)	m ³	50		
TOTAL CARRIED FORWARD							

BILL OF QUANTITIES
SECTION 9: LUQOLWENI EARTHWORKS RISING MAIN

ITEM	PAYMENT REFERS	LIC	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
BROUGHT FORWARD							
9,4	8.3.3		EXCAVATION ANCILLARIES				
	8.3.3.1		Make up deficiency in backfill material (Provisional)				
9.4.1	8.3.3.1 (a)	LI	a) Other excavations on site	m ³	50		
9.4.2	8.3.3.1 (c)		b) Imported backfill materials from commercial sources (Prov)	m ³	20		
9.4.3	8.3.3.3	LI	Compaction in road reserves	m ³	50		
9,5			FINISHING				
	8.3.6	LI	Reinstate road surfaces complete with all courses				
9.5.1	8.3.6.1 (a)		150mm thick gravel layer compacted to 95% Mod AASHTO	m ²	20		
9.5.2		LI	Construction of cross drainage beams as detailed	m	170		
9,6			EXISTING SERVICES				
9.6.1	8.3.5(a)	LI	Services that intersect a trench. (All sizes)	No	13		
9.6.2	8.3.5(b)	LI	Services that adjoin a trench. (All sizes)	m	250		
9.6.3	8.3.5(a)	LI	Strip and repair existing domestic fences intersecting pipeline route	m	300		
	SABS 1200LB		BEDDING (PIPES)				
9,7	8.2.1 PSL8-1		PROVISION OF BEDDING				
			Available from trench excavation				
9.7.1		LI	a) Selected granular material	m ³	105		
9.7.2		LI	b) Selected fill material	m ³	75		
	8.2.2.2		Import from other excavations on site (Only with written consent of Employers Representative) (Provisional)				
9.7.3		LI	a) Selected granular material	m ³	15		
9.7.4		LI	b) Selected fill material	m ³	15		
TOTAL CARRIED FORWARD							

BILL OF QUANTITIES
SECTION 9: LUQOLWENI EARTHWORKS RISING MAIN

ITEM	PAYMENT REFERS	LIC	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
BROUGHT FORWARD							
	8.2.2.3 PSDB 8.3		Import from commercial sources (only with written consent of Employer's Representative) (Provisional)				
9.7.5		LI	a) Selected granular material	m ³	50		
9.7.6		LI	b) Selected fill material	m ³	35		
9.7.7	8.2.2.3 PSDB 8.3	LI	13 mm crushed stone bedding from commercial sources (Provisional)	m ³	10		
9.7.8	8.2.4	LI	Encasing of pipes in Class 20/19 concrete	m ³	10		
9,8			GABIONS				
	SABS 1200DK		Gabion/Reno mattresses, using 6x8 mesh with 1.0m diaphragm spacing, of sizes				
9.8.1	8.2.2	LI	2.0 x 1.0 x 1.0m	m ³	8		
9.8.2		LI	2.0 x 1.0 x 0.3m	m ³	8		
9.8.3		LI	Excavation and compaction in all classes of material	m ³	8		
9.8.4		LI	Surface preparation for bedding the gabions	m ²	20		
9.8.5	8.2.4	LI	Filter fabric Grade 4 geotextile with minimum 2.5kN penetration load and at least 235l/s/m ² through flow	m ²	20		
TOTAL FOR SECTION 9 CARRIED FORWARD TO SUMMARY/---							

BILL OF QUANTITIES
SECTION 10: PREFABRICATED STEEL TANK

ITEM	PAYMENT REFERS	LIC	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
			SECTION 10: 75 Kℓ PREFABRICATED STEEL TANK (Including inlet/outlet control chamber)				
			Excavation				
			Site Clearance				
10,1	SANS 1200 C						
10.1.1	8.2.1	LI	Clear and grub reservoir site and control chambers	m ²	30		
10.1.2		LI	Remove topsoil to a depth of 150 mm to stockpile and maintain for re-use or spread on local dips and hollow or spoil if quantity is in excess of requirements (cut-fill section only)	m ³	12		
10,2	1200D PSD8-2 PSD8-3 PSD8-5		Excavation for structures				
10.2.1	8.3.3(a)	LI	Excavation in all materials for reservoir and control chambers	m ³	79		
10.2.2	8.3.3(b)	LI	Extra-over Item 10.2.1 for excavation in hard rock	m ³	79		
10.2.3	SPEC RC 8.2.1.2	LI	Remove unsuitable materials (Prov)	m ³	5		
10.2.4	8.2.1.3(a)	LI	Replace unsuitable materials with Grade 15/20 mm concrete (Prov)	m ³	5		
10.2.5	8.3.4		Import gravel from an approved source and compact to 98% Mod AASHTO density under floor slab of reservoir and chambers	m ³	3		
10,3	SANS 1200 DB		Trench excavation				
	8.3.2 PSD8-1		Excavate in all materials, backfill and compact, including disposal of surplus/unsuitable material for scour pipes up to 200 mm dia:				
10.3.1			Single pipes for depths:				
10.3.1.1			Over and Up to 1.0m 1.5m	m	18		
10,5	1200 LB PSLB8-1		Bedding				
10.5.1	8.2.1		Provision of bedding from stock piled top soil				
10.5.1.1			Selected granular material	m ³	1,7		
10.5.1.2			Selected fill material	m ³	0,4		
10,1	SPEC RC 8.2.2 SANS 1200 G 8.1.3 PSG8-2		Concrete				
10.1.1	8.4.2 PSG8-6.1		Blinding layer 80 mm thick, Grade 10 MPa/20 including filling of overbreak in hard rock	m ²	20		
10.1.2	8.4.3		Strength concrete, Grade 30 MPa/20 mm: Floor of reservoir	m ³	4,3		
TOTAL CARRIED FORWARD							

BILL OF QUANTITIES
SECTION 10: PREFABRICATED STEEL TANK

ITEM	PAYMENT REFERS	LIC	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
BROUGHT FORWARD							
10.1.3			wall footings	m ³	18		
10.1.4			Column	m ³	7,1		
10.1.6	8.4.3		Strength concrete, Grade 25 MPa/20 mm in: Inlet/outlet blocks under reservoir	m ³	0,5		
10.1.5			Roof of control chamber	m ³	1,4		
10.1.7			Floor of control chamber	m ³	1,6		
10.1.8	SPEC RC 8.2.2 PSL8-2		Concrete Grade 15 MPa/20 mm in thrust and anchor blocks, pipes and valve supports	m ³	0,1		
	SANS 1200 G 8.4.4 PSG8-7		Unformed surfaces:				
10.1.11			Power float finish to floor of reservoir and finish to footing	m ²	30		
10.1.11			Power float finish to floor and roof of chambers and finish to footings	m ²	16		
10,2	1200 G 8.1.1 PSG8-6.1		Formwork				
	8.2.1		Rough:				
10.2.1	8.2.5		Wall footing circular vertical less than 300 mm high	m	42		
10.2.2			Control chamber footing and thrust block - vertical	m ²	12		
10.2.3			Inlet/outlet - vertical to ends of blocks and encasement and, if ordered, to sides of same	m ²	2,3		
	8.2.2		Smooth:				
10.2.4			Circular vertical to wall - internal and external	m ²			RATE ONLY
10.2.5			Circular vertical to column	m ²			RATE ONLY
10.2.6			Horizontal to roof soffit	m ²	34		
10.2.7			Horizontal to roof of control chambers	m ²	4,5		
10.2.8	8.2.5		Vertical circular to outer edge of roof slab - 175 mm deep	m	22		
10.2.9	8.2.5		Vertical to outer edges of roof control chambers < 300mm	m	16		
10.2.11	8.2.6		Forming openings in roof for air vents	No	1		
10,3	PSG8-1		Reinforcement				
	8.1.2						
10.3.1	8.3.1		Mild steel bars				
10.3.2			8 mm to 16 mm inclusive	Kg	18		
10.3.3	8.3.1		High tensile steel				
10.3.4			10 mm to 16 mm inclusive	Kg	300		
10.3.6	8.3.2		Welded mesh No. 617 to floor	m ²	8		
	SPEC RC						
10,4	8.2.3 PSG8-3 PSG8-4 PSG8-5		Joints (Drgs 014044-75KI-001) (Works to be carried out by an approved subcontractor)				
10.4.1	8.2.3.1		Bond breaker on top of blinding layer - double coat bitumen	m ²	47		
TOTAL CARRIED FORWARD							

BILL OF QUANTITIES
SECTION 10: PREFABRICATED STEEL TANK

ITEM	PAYMENT REFERS	LIC	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
BROUGHT FORWARD							
10.4.2	8.2.3.2 PSG8-4		Floor/footing Type C joint complete	m	18		
10.4.3	PSG8-4		Joint Type A between main floor panels complete	m	9		
10.4.4	PSG8-4		Joint Type B in floor panels complete	m	9		
10.4.5	8.2.3.2 PSG8-4		Flat strip waterstop in horizontal wall joints Type G	m	22		
10.4.6	8.2.3.1		DPC Type H joint between wall and roof	m	22		
10,5			Pipework				
	8.2.4.1 PSL8-2 PSL8-3 PSL8-4		Inlet/outlet pipework, specials and fittings - encased in concrete. (Refer Drg 014044-75KI-005)				
	8.2.4.2 PSL8-1 PSL8-2 PSL8-3		Supply, lay, joint, disinfect and test the following pipes and specials complete. not encased in concrete. (Refer Drg 014044-75KI-003)				
10.5.1	8.2.4		GMS Pipes:				
			Inlet:				
10.5.1.1			50mm dia x 1100mm long (FBE) (2)	No	1		
10.5.1.2			50mm dia pipe approximately 2075mm long (FBE) Including support brackets (8)	No	1		
10.5.1.3			50mm dia x 995mm long (FBE) (4)	No	1		
10.5.1.4			50mm dia x 1000mm long (FBE) (5)	No	1		
10.5.1.13			50 mm dia aproximately 1130 mm long (FBE) (7)	No	1		
10.5.1.14			50 mm dia x 575mm long (FBE) (10)	No	1		
10.9.2	8.2.4		Outlet:				
10.9.2.1			125mm dia x 65mm dia reducer, 65mm dia distance piece, incorporating 90° bend and 65mm dia distance piece (FOE) (Refer Drg 014044-75KI-005)	No	1		
10.5.1.5			65mm dia x 1000 mm long (FBE) (11)	No	1		
10.5.1.6			50mm dia x 900mm long (FBE) (13)	No	1		
10.5.1.7			50mm dia x 450mm long (FBE) (15)	No	2		
10.5.1.8			50mm dia x 730mm long (FBE) (18)	No	1		
10.9.3	8.2.4		Scour:				
10.9.2.1			150mm dia x 100mm dia reducer, 100mm dia distance piece, incorporating 90° bend and 100mm dia distance piece (FOE) (Refer Drg 014044-75KI-100mm dia x 1000mm long (FBE) (21)	No	1		
10.5.1.9				No	1		
10.5.1.10			100mm dia x 1010mm long (FBE) (22)	No	1		
10.5.1.11			100mm dia x 2000mm long (FBE) (23)	No	1		
10.5.2.			uPVC Pipes:				
10.5.2.1			110mm dia Class 9	m	18		
10.5.3			GMS Reducers: (Flanged)				
10.5.3.1			65mm dia x 50mm dia	No	1		
TOTAL CARRIED FORWARD							

BILL OF QUANTITIES
SECTION 10: PREFABRICATED STEEL TANK

ITEM	PAYMENT REFERS	LIC	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
BROUGHT FORWARD							
10.5.4	SPEC RC 8.2.4.2 PSL8-1 PSL8-2 PSL8-3		GMS Elbows:				
10.5.4.3			50mm dia x 90° elbow long radius (FBE)	No	1		
10.5.4.2			50mm dia x 45° elbow long radius (FBE)	No	2		
10.5.5			DUROFLO CI Flange Adaptors:				
10.5.5.1			110mm dia	No	1		
10.5.5.3		LI	50mm dia	No	2		
			50mm dia	No	1		
10.5.6			RESILIENT SEAL Gate Valves: (Flanged)				
10.5.6.1			100mm dia	No	1		
10.5.6.3			50mm dia	No	2		
10.5.7			Seive:				
10.5.11.1			50mm dia WP-F Dynamic seive (FBE)	No			RATE ONLY
10.5.8			Overflow pipe:				
10.5.8.1			100mm dia pipe welded to a 100mm dia GMS long radius bend with mesh inset (Refer Drg 014044-75KI-005)	No			RATE ONLY
10,6	SPEC RC 8.2.6		Iron and steelwork: Supply and erect/install complete with protective coating and all fastenings				
10.6.1			3CR12 internal ladder, 2.535m long, as per detail of MS ladder on Drg 014044-75KI-005	No			RATE ONLY
10.6.2	PPS 1		Allow a provisional sum for supply and installation of SBS or similar approved prefabricated steel tank.	Prov Sum %	100%		R 330 200,00
10.6.3			Contractor's cost and profit on Item 10.6.2	%	R 330 200,00	
10.6.4			GMS manhole cover with frame and building into reservoir roof slab (600mm x 900mm opening) as per Drg 014-75KI-001	No			RATE ONLY
10.6.5			GMS manhole cover with frame and building into control chamber roof slab (600mm x 600mm opening) as per Drg 014044-DET-017	No	3		
10.6.6			Air vents number 1, as per Drg 014044-75KI-003	No	2		
10.6.7			Air vents number 2, as per Drg 014044-75KI-003	No	2		
10.6.8			Air vent , as per Drg 014044-75KI-001	No	1		
10.6.9			Polypropylene coated step irons in control chamber	No	12		
10.6.10			25mm dia grabing bars	No	2		
10,7	8.2.8.3		Control chamber: Brickwork 220 mm plastered both sides	m ²	21		
10.7.1			220 mm brick reinforcing	m	56		
10.7.2	8.2.8.1		Miscellaneous: Clean and sterilize reservoir and all pipes from control chamber to reservoir	Sum	100%		
10.7.3	8.2.8.2		Test reservoir for water- tightness	Sum	100%		
10,8			Equilibrium valve:				
10.8.1			50mm dia Vosa series 7354 float valve	No			RATE ONLY
10,9			Headwall				
10.9.1			Construct scour headwall complete as detailed on Drg 014044-DET-628	no	1		
TOTAL SECTION 10:Carried to Summary							

**BILL OF QUANTITIES
 SECTION 11: GENERATOR ROOM**

ITEM	PAYMENT REFERS	LIC	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
SECTION 11: GENERATOR ROOM (2 NO REQUIRED)							
11,1	SABS 1200 D PSD5-1 PSD8-2		Earthworks				
11.1.1	8.3.2	LI	Excavate in all materials for footings and floor slab as per drw.No 014044-PS-001	m ³	12		
11.1.2	8.3.4	LI	Import gravel from an approved source and compact to 98% Mod. AASHTO density under floor slab as per drw.No 014044-PS-001	m ³	10		
11,2	1200 GA PSG8-3	LI	Formwork				
11.2.1			Smooth to side of roof	m ²	5		
11.2.2			Smooth for side of foundation slab and plinth	m ²	18		
11.2.3			Soffit for Roof	m ²	26		
11.2.4			QC drip flashing	m	30		
11,3		LI	Reinforcement				
11.3.1	8.3.2		High tensile welded mesh Ref. 311	m ²			Rate only
11.3.2	8.3.2		High tensile welded mesh Ref. 193	m ²	28		
11.3.2	8.3.2		High tensile steel up to Y12	kg			Rate only
11.3.2	8.3.2		High tensile steel up to Y10	kg	224		
11,4	8.4 8.4.3 PSG8-4	LI	Concrete Strength concrete 25/19 in:				
11.4.1			Blinding (10Mpa)	m ²	32		
11.4.2			Foundation, Floor slab and Toe Drain (25Mpa)	m ³	14		
11.4.3			Roof slab (25Mpa)	m ³	6		
11.4.4	8.6		Precast lintels 1.4m long	No	6		
11.4.5	8.6		Precast lintels 1.6m long	No	2		
TOTAL CARRIED FORWARD							

BILL OF QUANTITIES
SECTION 11: GENERATOR ROOM

ITEM	PAYMENT REFERS	LIC	DESCRIPTION	UNIT	SCHED. QTY.	RATE	AMOUNT
BROUGHT FORWARD							
11,5	SPEC QB	LI	Brickwork				
11.5.1	13.5.1		220mm Brickwork Outside facebrick and plastered on inside as per drw.No 014044-PS-001.	m ²	80		
11.5.2	13.5.3		Damproof course 230mm wide(drw.No 014044-PS-001)	m	30		
11.5.3	13.5.3		250micron Plastic Sheeting 900mm wide	No			Rate only
11.5.4	13.5.3		2 layers mathoid 230mm wide between roof slab and wall	m	30		
11.5.5	13.5.3		10mm soft board to be placed between plinth and foundation slab	m	30		
11,6			Louvre Unit panels				
11.6.1	13.7.2		800 X 800mm wide louvre vent (014044-PS-001)	No	4		
11.6.3	13.6.3		915 X 2440 louvre door(drw.No 014044-PS-001)	No	2		
11,7		LI	Painter				
11.7.1	13.10.1		Paintwork, undercoat and one coat high gloss enamel to interior walls	Sum	100%		
11,6			Louvre Unit panels				
11.6.1	13.7.2		800 X 800mm wide louvre vent	No	4		
11.6.3	13.6.3		915 X 2440 louvre door	No	2		
11,7		LI	Painter				
11.7.1	13.10.1		Paintwork, undercoat and one coat high gloss enamel to interior walls	Sum	100%		
11,8	SABS 1200HA	LI	Sundries				
11.8.1	PSL8-1		Supply and cast in to floor slab 110mm dia. PVC cable conduit as shown including 90 degree bend	m	8		
11.8.2			Supply and install 600x600mm Galvanized Steel frame and lid as per 014044-DET-507	No	2		
TOTAL SECTION 11: CARRIED TO SUMMARY							

**BILL OF QUANTITIES
 SECTION 12: GENERATOR ROOM**

ITEM	PAYMENT REFERS	LIC	DESCRIPTION	UNIT	SCHED. QTY.	RATE	AMOUNT
12,9			SECTION 12 : NEW BOREHOLE NO- EC-T34-0672 TO REINFOCED CONCRETE RESERVOIR				
			Provisional Sums				
			These provisional sums may be utilised in full or in part. No expenditure will be allowed without the authority of the Consulting Engineer, in writing. These sums may be deleted in full or in part.				
12.9.1			Allow a provisional sum for the supply and installation of the Mechanical and Electrical installation to the borehole pumpstations by a specialist Contractor. Prov Sum (R450 000,00)	ProvSum	100%		R450 000,00
12.9.2			Contractor's cost and profit on Item 12.9.1	%	R 450 000,00	
TOTAL SECTION 12: CARRIED TO SUMMARY							

**BILL OF QUANTITIES
 SECTION 13: GENERATOR ROOM**

ITEM	PAYMENT REFERS	LIC	DESCRIPTION	UNIT	SCHED. QTY.	RATE	AMOUNT
13,9			SECTION 13 : EXISTING BOREHOLE NO-EC-T34-267 TO ELEVATED STEEL TANK				
			Provisional Sums				
			These provisional sums may be utilised in full or in part. No expenditure will be allowed without the authority of the Consulting Engineer, in writing. These sums may be deleted in full or in part. Allow a provisional sum for the supply and installation of the Mechanical and Electrical installation to the borehole pumpstations by a specialist Contractor. Prov Sum (R450 000,00)	ProvSum	100%		R450 000,00
13.9.1							
13.9.2			Contractor's cost and profit on Item 13.9.1	%	R 450 000,00	
TOTAL SECTION 13: CARRIED TO SUMMARY							

**BILL OF QUANTITIES
 SECTION 14: GENERATOR ROOM**

ITEM	PAYMENT REFERS	LIC	DESCRIPTION	UNIT	SCHED. QTY.	RATE	AMOUNT
			SECTION 14 : ROADWRKS TO PUMPSTATIONS				
14,1	SANS 1200 DM		Road works 3km long				
			Excavations (Cut to fill)				
14.1.1	8.3.3.a2 & PSDM 8.3		Rip, cut, shape and compact (including driveway) to 93% Mod. AASHTO density.	m ³	2000		
14.1.2			Cut to Spoil or Stockpile from:-				
14.1.3	8.3.7(a) 8.3.7(c)		Soft excavation	m ³	2000		
			Extra over item 14.1 for hard rock	m ³	20		
14.1.4			Borrow to fill				
14.1.5	8.3.4(a)		Borrow to fill material from borrow pit and compacted in 150mm layers to 93% Mod. AASHTO max density.	m ³	210		
14.1.6			Wearing Course				
14.1.7	8.3.16		Construct 150mm thick G-5 Gravel and compacted to 98 % Mod. AASHTO density	m ³	700,0		
14.1.8			Borrow Pits				
14.1.9			Rehabilitation (open, removal of topsoil and stockpile, shape and replacing of topsoil)		LumpSum		R30 000,00
14.1.9.1		LI	Mark up on Item 14.1.9	%	R30 000,00		
TOTAL SECTION 14: CARRIED TO SUMMARY							

**BILL OF QUANTITIES
 SECTION 15: GENERATOR ROOM**

ITEM	PAYMENT REFERS	LIC	DESCRIPTION	UNIT	QTY.	RATE	AMOUNT
SECTION 15: 70KL ELEVATED STEEL TANK							
(Including inlet/outlet control chamber)							
15,1	SANS 1200DB		Site Clearance and Removal of topsoil				
15.1.1	8.3.1 (a)	LI	Clear reservoir site of vegetation and trees up to 1 meter girth.	m ²	50		
15.1.2	8.3.1 (c)	LI	Remove topsoil to a nominal depth of 150mm, stockpile and maintain.	m ³	7,5		
15,2	1200D PSD8-2		Excavation for structures				
15.2.1	PSD8-3 PSD8-5 8.3.3(a)	LI	Excavation in all materials for tank footings and control chamber	m ³	55		
15.2.2	8.3.3(b)	LI	Extra-over Item 15.2.1 for excavation in hard rock	m ³	5		
15.2.3	8.3.5	LI	Excavation for working space	m ²	7		
15.2.4	PSD8-4 SPEC RC 8.2.1.2	LI	Remove unsuitable materials (Prov)	m ³	2		
15.2.5	8.2.1.3(a)	LI	Replace unsuitable materials with Grade 15/20 mm concrete (Prov)	m ³	2		
15,3	8.3.2		Trench Excavation				
Excavate in all materials, backfill and compact, including disposal of surplus/unsuitable material for scour pipes up to 110 mm dia:							
Over and Up to							
15.3.1	PSDB8-1	LI	1.0m 1.5m	m	15		
15.3.2	8.3.2(b) PSD8.1		Extra-over Items 15.3.1 for excavation in hard rock by the following means:				
15.3.2.1		LI	Mechanical means	m ³	1		
15.3.2.2		LI	Using Hand Pneumatic Hammers	m ³	1		
TOTAL CARRIED FORWARD							

**BILL OF QUANTITIES
 SECTION 15: GENERATOR ROOM**

ITEM	PAYMENT REFERS	LIC	DESCRIPTION	UNIT	QTY.	RATE	AMOUNT
BROUGHT FORWARD							
15.4	SANS 1200 LB PSLB 8-1		Bedding				
15.4.1	8.2.1		Provision of bedding from Trench excavation				
15.4.1.1		LI	Selected granular material	m ³	1		
15.4.1.2		LI	Selected fill material	m ³	3		
15,5	SPEC RC 8.2.2 SANS 1200 G 8.1.3 PSG8-2		Concrete				
15.5.1	8.4.2	LI	Blinding layer 50 mm thick, Grade 10 MPa/20 including filling of overbreak in hard rock	m ²	40		
	PSG8-6.1 8.4.3		Strength concrete, Grade 30 MPa/20 mm:				
15.5.2		LI	Base of the tank	m ³	16		
15.5.3		LI	Roof of control chamber	m ³	1		
15.5.4	8.4.3		Strength concrete, Grade 25 MPa/20 mm in:				
		LI	Inlet/outlet blocks under tank	m ³	0,5		
15.5.5		LI	Floor and thrust block of control chamber	m ³	1,6		
15.5.6	SPEC RC 8.2.2 PSL8-2	LI	Concrete Grade 15 MPa/20 mm in thrust and anchor blocks, pipes and valve supports	m ³	0,2		
	SANS 1200 G 8.4.4 PSG8-7		Unformed surfaces:				
15.5.7		LI	Power float finish to footings, floor and roof of control chamber	m ²	25		
15,6	1200 G 8.1.1 PSG8-6.1 8.2.1		Formwork				
			Rough:				
15.6.1	8.2.5	LI	Control chamber footing and thrust block - vertical	m ²	6		
TOTAL CARRIED FORWARD							

BILL OF QUANTITIES
SECTION 15: GENERATOR ROOM

ITEM	PAYMENT REFERS	LIC	DESCRIPTION	UNIT	QTY.	RATE	AMOUNT
BROUGHT FORWARD							
15.6.2		LI	Inlet/outlet - vertical to ends of blocks and encasement and, if ordered, to sides of same	m ²	2,3		
	8.2.2		Smooth:				
15.6.3		LI	Vertical to base walls and stub columns	m ²	24		
15.6.4		LI	Horizontal to roof of control chamber (Soffit)	m ²	5		
15.6.5		LI	Vertical to upstands on outer edges of roof control chamber	m	4		
15.6.6		LI	Forming openings in roof for air vents	No	2		
15.6.7		LI	Forming openings in roof for manhole covers	No	2		
15,7	PSG8-1		Reinforcement				
	8.1.2						
15.7.1	8.3.1	LI	Mild steel (R8 - R12) as per 014044-70KL-003	Kg	32		
15.7.2	8.3.1	LI	High tensile steel (Y10 - Y16) as per 014044-70KL-003	Kg	646		
15.7.3	8.3.2	LI	Welded mesh No. 617 to floor as per 014044-70KL-003	m ²	8		
15,8			Pipework				
	8.2.4.2		Supply, lay, joint, disinfect and test the following pipes and specials complete. Not encased in concrete				
	PSL8-1						
	PSL8-2						
	PSL8-3						
			GMS Pipes:				
15.8.1	8.2.4		Inlet:				
15.8.1.1		LI	80mm dia pipe 1500mm long (FBE) with puddle flange (2)	No	1		
15.8.1.2		LI	80mm dia pipe 2500mm long (FBE) Including support brackets (8)	No	1		
15.8.1.3		LI	80mm dia pipe 1000mm long (FBE) (4)	No	1		
15.8.1.4		LI	80mm dia pipe 1440mm long (FBE) (5)	No	2		
15.8.1.5		LI	80mm dia pipe 2500mm long (FBE) (7)	No	4		
15.8.1.6		LI	80mm dia pipe 770mm long (FBE) (9)	No	1		
15.8.1.7		LI	80mm dia pipe 500mm long (FBE) (A)	No	1		
TOTAL CARRIED FORWARD							

BILL OF QUANTITIES
SECTION 15: GENERATOR ROOM

ITEM	PAYMENT REFERS	LIC	DESCRIPTION	UNIT	QTY.	RATE	AMOUNT
BROUGHT FORWARD							
15.8.2	8.2.4		Outlet:				
15.8.2.1		LI	100mm dia pipe 2500mm long (FBE) (10)	No	4		
15.8.2.2		LI	100mm dia pipe 1000mm long (FBE) (11)	No	1		
15.8.2.3		LI	50mm dia pipe 900mm long (FBE) (13) with puddle flange	No	1		
15.8.2.4		LI	80mm dia pipe 450 mm long (FBE) (15)	No	2		
15.8.2.5		LI	80mm dia pipe 730 mm long (FBE) (18)	No	1		
15.8.3	8.2.4		Scour:				
15.8.3.1		LI	100mm dia pipe 2500mm long (FBE) (20)	No	4		
15.8.3.2		LI	100mm dia pipe 1000mm long (FBE) (21) with puddle flange	No	1		
15.8.3.3		LI	100mm dia pipe 2000mm long (FBE) with puddle flange (23)	No	1		
15.8.3.4		LI	100mm dia pipe 900mm long (FBE) (25)	No	2		
15.8.4			Overflow pipe:				
15.8.4.1		LI	100mm dia x 2500mm long (FBE) (27)	No	4		
15.8.4.2		LI	100mm dia x 1000mm long (FOE) with rat mesh inset (28)	No	1		
15.8.4.3		LI	100mm dia x 600mm long (FBE) (29)	No	1		
15.8.4.4		LI	100mm dia x 1250mm long (FBE) (30)	No	1		
15.8.5			uPVC Pipes:				
15.8.5.1		LI	110mm dia Class 9	m	24		
15.8.5.2		LI	110mm dia x 90° elbow (33)	No	1		
TOTAL CARRIED FORWARD							

BILL OF QUANTITIES
SECTION 15: GENERATOR ROOM

ITEM	PAYMENT REFERS	LIC	DESCRIPTION	UNIT	QTY.	RATE	AMOUNT
BROUGHT FORWARD							
15.8.6			GMS Reducers:				
15.8.6.1		LI	100mm dia. - 80mm dia (FBE) (12)	No	2		
15.8.7			GMS Elbows:				
15.8.7.1		LI	80mm dia x 90° elbow (FBE) (6)	No	4		
15.8.7.2		LI	100mm dia x 90° elbow (FBE) (26)	No	5		
15.8.8			DUROFLO CI Flange Adaptors:				
15.8.8.1		LI	110mm dia (24)	No	4		
15.8.8.2		LI	75mm dia (19)	No	1		
15.8.9			Gate Valves: (Flanged)				
15.8.9.1		LI	100mm dia (22)	No	1		
15.8.9.2		LI	80mm dia (3)	No	1		
15.8.9.3		LI	80mm dia (14)	No	1		
15.8.10			Meter:				
15.8.10.1		LI	80mm dia WP-Daynamic water meter (FBE) (17)	No	1		
15.8.11			Strainer:				
15.8.11.1		LI	50mm dia WP-F Dynamic seive (FBE) (16)(B)	No	2		
15.9	SPEC RC 8.2.6		Iron and steelwork				
			Supply and erect/install complete with protective coating and all fastenings				
15.9.1			Allow a provisional sum for supply and installation of Abeco or Structa or similar approved rectangular ,galvanised ,with Cover Type Standard Galvanised Steel Roof Panels elevated steel tank Hot dipped galvanised in accordance with SANS 121(ISO 1461).(Rate to include 10m stand to conform with SANS 10162, ladder and base as per manufactures standards	Prov Sum	100%		R1 000 000,00
15.9.2			Contractor's cost and profit on Item 15.9.1	%	R 1 000 000,00	
15.9.3		LI	GMS manhole cover with frame and building into control chamber roof slab (600mm x 600mm opening) as per Drq 014044-70KL-002	No	2		
15.9.4		LI	Air vent number 1, as per Drg 014044-70KL-002	No	1		
TOTAL CARRIED FORWARD							

BILL OF QUANTITIES
SECTION 15: GENERATOR ROOM

ITEM	PAYMENT REFERS	LIC	DESCRIPTION	UNIT	QTY.	RATE	AMOUNT
BROUGHT FORWARD							
15.9.5		LI	Air vent number 2, as per Drg 014044-70KL-002	No	1		
15.9.6		LI	Polypropylene coated step irons in control chamber	No	6		
15.9.7			All material and labour for the erection of security fence around reservoir site as per 014044-FD-SD008	m	50		
15.9.8			All material and labour for the erection of security gate at the reservoir site as per 014044-FD-SD008	No	1		
15,10			Control chamber				
15.10.1	8.2.8.3	LI	Brickwork 220 mm plastered both sides	m ²	18		
15.10.2		LI	220 mm brick reinforcing	m	56		
15.10.3		LI	220 mm wall to roof joint	m	10		
15,11			Miscellaneous				
15.11.1	8.2.8.1	LI	Clean and sterilize reservoir and all pipes from control chamber to reservoir	Sum			
15.11.2	8.2.8.2	LI	Test reservoir for water- tightness	Sum			
15,12			Equilibrium valve:				
15.12.1		LI	Install 80mm dia Vosa series 7354 float valve complete	No	1		
15,13			Headwall				
15.13.1		LI	Construct scour headwalls complete as detailed on Drg 014044-DET-628	No	1		
15,14			Anchor Bolts				
15.14.1		LI	M24 Anchor Bolts (Length = 1000mm)	No	16		
TOTAL FOR SECTION 15 CARRIED FORWARD TO SUMMARY/---							