PART A: PRELIMINARY AND GENERAL — SECTION 1 : PRELIMINARY & GENERAL

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (R)
A1	SABS 1200 A	**SECTION 1: PRELIMINARY AND GENERAL**				
A1.1	8.3	FIXED - CHARGE AND VALUE- RELATED ITEMS				
A1.1.1	8.3.1	Contractual Requirements	Sum	1		
A1.1.2	8.3.2	Establishment of facilities on the site				
A1.1.2.1	8.3.2.1	Facilities for Engineer				
	PS 13.4	a) Furnished offices	Sum	1		
	PS 13.5	b) Telecommunication Services	Sum	1		
	PS13.11	c) Name boards (2No.)	Sum	1		
A1.1.2.2	8.3.2.2	Facilities required by Contractor				
		a) Offices and Storage Sheds	Sum	1		
		b) Workshops	Sum	1		
		c) Laboratories	Sum	1		
		e) Ablution and latrine facilities	Sum	1		
		f) Tools and equipment	Sum	1		
		g) Water supplies, electric power and communications	Sum	1		
		h) Dealing with water	Sum	1		
		i) Access	Sum	1		
		j) Plant	Sum	1		
A1.1.3	8.3.3	General Responsibilities and Other fixed charge obligations	Sum	1		
A1.1.4	8.3.4	Removal of site establishment on completion	Sum	1		
A1.1.5	PS 10.5	Full compliance with the OHS Act and the latest construction regulations and particular specification	Sum	1		
A1.1.6	PS 9.7	Full compliance with the Enviromental Management Plan	Sum	1		
A1.1.7	PS 14.3	Provision of As-Built survey and survey drawing of all new services, roadworks within this contract. Survey of services to be co-ordinated, cover level and invert level. Roadway to have centre line, top and bottom and kerb, and back of sidewalk, edge of road if no kerbs	Sum	1		
	PS 11	Site security measures for the Engineer's facilities				
A1.1.8		Supply and installation of all required security measures at the Engineer's site offices and laboratories	Sum	1		
A1.2	8.4	TIME-RELATED ITEMS				
A1.2.1	8.4.1	Contractual Requirements	Month	15		
A1.2.2	8.4.2	Operation and maintenance of facilities on site, for duration of construction and, except where otherwise stated				
TOTAL CARRIED FORWARD						

PART A: PRELIMINARY AND GENERAL — SECTION 1 : PRELIMINARY & GENERAL

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (R)
	TOTAL BROUGHT FORWARD					
A1.2.2.1	8.4.2.1	Facilities for Engineer				
	PS 13.4	a) Furnished offices	Month	15		
	PS 13.5	b) Telecommunication Services	Month	15		
	PS13.11	c) Name boards (2No.)	Month	15		
	PS 13.10	d) Survey euipment and assistants	Month	15		
A1.2.2.2	8.4.2.2	Facilities required by Contractor				
		a) Offices and Storage Sheds	Month	15		
		b) Workshops	Month	15		
		c) Laboratories	Month	15		
		e) Ablution and latrine facilities	Month	15		
		f) Tools and equipment	Month	15		
		g) Water supplies, electric power and communications	Month	15		
		h) Dealing with water	Month	15		
		i) Access	Month	15		
		j) Plant	Month	15		
A1.2.3	8.4.3	Supervision for duration of the construction	Month	15		
A1.2.4	8.4.4	Company and head office overhead costs for the duration of the contract	Month	15		
A1.2.5	8.4.5	Other time related obligations	Month	15		
A1.2.6	PS10.5	Full compliance with the OHS Act and the latest construction regulations	Month	15		
A.1.2.7	PS 9.7	Monitoring of compliance with and reporting on the EMP	Month	15		
A.1.2.8	PS 9.8	Environmental Control Officer (ECO)	Month	15		
A.1.2.9	PS 11	Provision of security guards / watchmen and an armed response service at the Supervisor's site offices	Month	15		
A1.2.10		Provision of a safety officer: a) Part time	pd	10		
		b) Full time	pm	15		
A1.2.11		Health and safety training, including daily subsistence allownace	person / pd	160		
A1.2.12		Provision of personal protective clothing and equipment for visitors and Employer's Staff (safety boots, hard-hat and reflective vest)	p	30		
A1.2.13		Provision of safety fences, signs and barricades	Sum	1		
A1.2.14		Community liaison officer:				
		(a) Monthly Wage, including R 600 cell phone allowance, R 120 4G Data allowance and computer and printing facilities	Prov Sum	1	250 000.00	250 000.00
A1.2.15		Percentage on item A1.2.14 for charges and profit	%	250 000		
TOTAL CARRIED FORWARD						

PART A: PRELIMINARY AND GENERAL — SECTION 1 : PRELIMINARY & GENERAL

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (R)
	TOTAL BROUGHT FORWARD					
A1.3	PSA 8.5.2	PROVISIONAL SUMS				
A1.3.1		Additional tests required by the Engineer	Prov Sum	1	300 000.00	300 000.00
A1.3.2		Overheads and profit on item A1.3.1	%	300 000		
A1.3.3	PS14.4	Allowance for additional survey	Prov Sum	1	200 000.00	200 000.00
A1.3.4		Overheads and profit on item A1.3.3	%	200 000		
A1.3.5		Allowance for relocation of services	Prov Sum	1	2 000 000.00	2 000 000.00
A1.3.6		Overheads and profit on item A1.3.5	%	2 000 000		
A1.3.7		Allowance for payment of third party quality inspection	Prov Sum	1	100 000.00	100 000.00
A1.3.8		Overheads and profit on item A1.3.7	%	100 000		
A1.3.9		Allowance for design, supply and install and commissioning temporary and permanent cathodic protection during the contract, including for specialist design and investigations as needed	Prov Sum	1	1 500 000.00	1 500 000.00
A1.3.10		Overheads and profit on item A1.3.9	%	1 500 000		
A1.3.11		Allowance for repair to prestressed concrete pipe including fittings, valves, gaskets and specials required.	Prov Sum	1	1 000 000.00	1 000 000.00
A1.3.12		Overheads and profit on item A1.3.11	%	1 000 000		
TOTAL CARRIED FORWARD						

PART A: PRELIMINARY AND GENERAL — SECTION 1 : PRELIMINARY & GENERAL

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (R)
	TOTAL BROUGHT FORWARD					
A1.4	8.8	TEMPORARY WORKS				
A1.4.1	8.8.1	Maintain main access roads to the Works	Sum	1		
A1.4.2	8.8.2	Dealing with traffic	Sum	1		
A1.4.3	8.8.4	Existing services				
		a) Supply or hire specialist equipment for the detection of a particular service - Ground penetrating radar for a width of 10m	m	1 000		
		b) The use of equipment referred to in item (a) above	Day	50		
		c) Excavate by hand in soft material to expose service	m^3	800		
		d) Temporary protection, as required in terms of the project specification, of service	Sum	1		
A1.4.4		Provision of construction record information	Sum	1		
A1.4.5		Provision of temporary access to buildings and adjacent parking areas, including for moving system as needed for construction programming.	No.	20		
A1.4.6		Provision of Pedestrian Access ramps	No.	30		
A1.4.7		Moving of pedestrian ramps	No.	30		
A1.4.8		Provision of vehicle access ramps	No.	75		
A1.4.9		Moving vehicle access ramps	No.	75		
		TOTAL CARRIED FORWARD TO SUMMARY				

PART B: SITE CLEARANCE — SECTION 2 : SITE CLEARANCE

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (R)
B1	SABS 1200 C	**SECTION 2: SITE CLEARANCE**				
B1.1	8.2.1	Clear & grub 15m wide along the pipeline routes	m	1 980		
B1.2	8.2.7	Dismantle and remove to approved spoil site				
		a) sewer pipelines of diameter not greater than 300mm including manholes	m	300		
		b) Stormwater pipelines of diameter up to 600mm including manholes	m	300		
		c) water pipelines of diameter not greater than 1000mm including specials and fittings; valves and chambers.	m	2 000		
B1.3	8.2.8	Demolish and remove to approved spoil site				
		a) kerb and channel	m	2 500		
	PSC 8.2.14	b) Asphalt (in existing paved areas) up to 40mm thick, by means of milling or saw cutting and breaking up	m^3	280		
		c) Existing Base and Subbase layers	m^3	1 500		
		d) Carriageway crossings in all layers including concrete, paving and premix with existing layerworks	m^3	120		
		e) Concrete walkway	m^3	200		
		f) Road signs	No	15		
B.1.4	PSC 8.2.3	Remove and grub all trees and tree stumps regardless of girth	Ha	2.00		
B.1.5	8.2.5	Take down existing hedges, fences and walls	m	2 000.00		
B1.6		**Break up and remove existing underground concrete or brick elements (reinforced or unreinforced)**				
		a) Concrete elements (unreinforced)	m^3	400		
		b) Concrete elements (reinforced)	m^3	350		
B.1.7	8.2.10	Remove topsoil to a nominal depth of 150mm and stockpile fore reuse	m^3	1 500		
B.1.8	8.2.9	Transport materials and debris to unspecified sites and dump	m^3.km	150 000		
TOTAL CARRIED FORWARD TO SUMMARY						

PART C: WATER — SECTION 3: WATER - EARTHWORKS

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (R)
C1	SABS 1200 D	**SECTION 3: EARTHWORKS**				
C1.1	8.3.8	Existing services				
	8.3.8.1	a) Excavate by hand in soft material to expose service.	m^3	1 500		
C1.2	8.3.8.2	Dealing with service that are at risk because of the construction of earthworks				
		a) Cables	No.	200		
		b) Permanent protection of service	No.	200		
		c) Temporary protection of service.	No.	200		
C1.3	8.3.12	Road traffic signs and Markings	No.	100		
C2	SABS 1200 DB	**EARTHWORKS (PIPE TRENCHES)**				
C2.1	8.3.2	Excavation				
		a) Excavate between lateral support structures in all materials for trenches backfill, compact, and dispose of surplus material, for pipes not exceeding 700 mm nominal diameter in the following depth categories. (up to ND700)				
		i) 0,0 m - 1,0 m	m	Rate Only		
		ii) 1,0 m - 2,0 m	m	Rate Only		
		iii) 2,0 m - 3,0 m	m	Rate Only		
C2.1.1		b) Excavate between lateral support structures in all materials for trenches backfill, compact, and dispose of surplus material, for pipes over 700 mm nominal diameter and not exceeding 1200 mm nominal diameter in the following depth categories. (ND700 to ND1200)				
		i) 0,0 m - 1,0 m	m	Rate Only		
		ii) 1,0 m - 2,0 m	m	Rate Only		
		iii) 2,0 m - 3,0 m	m	Rate Only		
C2.1.2		c) Excavate between lateral support structures in all materials for trenches backfill, compact, and dispose of surplus material, for pipes over 1000 mm nominal diameter and not exceeding 2000 mm nominal diameter in the following depth categories. (ND1600)				
		i) 0,0 m - 1,0 m	m	20		
		ii) 1,0 m - 2,0 m	m	54		
		iii) 2,0 m - 3,0 m	m	300		
		iv) 3,0 m - 4,0 m	m	1 550		
		v) 4,0 m - 5,0 m	m	150		
		vi) 5,0 m - 6,0 m	m	100		
TOTAL CARRIED FORWARD						

PART C: WATER — SECTION 3: WATER - EARTHWORKS

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (R)
	TOTAL BROUGHT FORWARD					
C2.1.3		b) Extra-over (a) above for				
		i) Intermediate material (includes all road and paved areas)	m^3	8 300		
		ii) Hard rock material	m^3	450		
C2.1.4		c) Excavate and dispose of unsuitable material from trench bottom (Provisional)	m^3	900		
C2.1.5	8.3.3.3	Compact in road reserve	m^3	5 000		
	SABS 1200 DB	Particular Items				
C2.1.6	8.3.4 (a)	i) Shore trenches to both sides of all excavations to a depth of 5.0m	m	2 000		
		ii) Extra Over for trench or excavation depths greater than 5.0m	m	30		
C2.1.7	8.3.4(b)	Temporary works : Control water inflow from groundwater to pipe trenches				
		i) Provision, installation and removal of equipment	Sum	1		
		ii) Operation and maintenance of equipment	days	300		
		iii) Extra Over for installation and removal of additional set (pump, pipes, suction points etc.) of equipment if so instructed	Sum	1		
C2.2		EXISTING SERVICES				
C2.2.1	8.3.5(a)	Existing Services that intersect a pipe trench:				
		a) Communication/Electric cable (HT) & (LT)	No	50		
		b) Pipes up to 200mm diameter	No	30		
		c) Pipe or culvert greater than 200mm diameter up to 600mm diameter	No	30		
		d) Pipe or culvert greater than 600mm diameter up to 1100mm diameter	No	10		
C2.2.2	8.3.5(b)	*Existing Services that adjoin a pipe trench:* a) Communication/Electric cable (HT) & (LT)	m	600		
		b) Pipes up to 200mm diameter	m	350		
		c) Pipe or culvert greater than 200mm diameter up to 600mm diameter	m	350		
		d) Pipe or culvert greater than 600mm diameter up to 1100mm diameter	m	3 500		
C2.3	8.3.6	FINISHING				
C2.3.1	8.3.6.1	Reinstate road surfaces complete with all courses				
		a) Premix surfacing up to 80mm thick (2 x 40mm layers)	m^2	5 000		
		b) G2 Base course 150mm thick	m^2	5 000		
		c) G5 Subbase up to 150mm thick	m^2	5 000		
		d) G7 SSG up to 300mm thick (provisional)	m^2	5 000		
C2.3.2		Reinstate kerbs and channels including concrete bedding and backing to standard details	m	1 000		
TOTAL CARRIED FORWARD						

PART C: WATER					SECTION 3: WATER - EARTHWORKS	
ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (R)
	TOTAL BROUGHT FORWARD					
C2.3.3		Reinstate carraigeway crossings in all courses				
		a) Paved driveways and walkways	m^2	500		
		b) Concrete driveways and walkways	m^2	700		
		c) Premix driveways and walkways	m^2	700		
C2.3.4		Reinstate boundary walls and fences	m	250		
C2.3.5		Reinstate gardens	m^2	500		
C2.3.6		Reinstate traffic signs complete as per standard details	No	10		
C.2.3.7		Reinstate road markings Retro-reflective road-marking paint, including for reflective beads, to eThekwini Roads Department Specifications				
		a) White lines (broken or unbroken) 100mm wide	km	1		
		b) Yellow lines (broken or unbroken) 100mm wide	km	1		
		c) White lettering and symbols	m²	50		
		d) Yellow lettering and symbols	m²	50		
C2.3.8	SANS 1200 D	Topsoiling from temporary stockpiles	m^2	14 000		
TOTAL CARRIED FORWARD TO SUMMARY						

PART C: WATER					SECTION 4: WATER - BEDDING	
ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (R)
C3	**SABS 1200 LB**	**SECTION 4: BEDDING (PIPES)**				
C3.1	**SABS 1200LB**	**Pipe Bedding**				
	8.2.1	*Provision of bedding from trench excavations, including for passing through a sieve of no greater dimension than 10mm:*				
	PSLB 3.1	a) Selected granular material	m^3	300		
	PSLB 3.2	b) Selected fill material	m^3	950		
	8.2.2.3	*Provision from commercial or off-site sources:*				
	PSLB 3.1	a) Selected granular material	m^3	2 000		
	PSLB 3.2	b) Selected fill material	m^3	6 500		
	8.2.4	Encasing of pipes in concrete	m^3	500		
TOTAL CARRIED FORWARD TO SUMMARY						

PART C: WATER				SECTION 5: WATER - MEDIUM PRESSURE PIPES		
ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (R)
C4	SABS 1200 L	**SECTION 5: PRESSURE PIPELINES**				
C4.1		WATER MAINS				
	8.2.1	Supply, lay, bed & test pipes complete with all field welds and repairs to coating and lining for the following grade X42 Steel Pipes including the manufacture, coating, lining, repair, installation and testing complete of all bends up to 5 deg. (All ends prepared for field welding) :				
	PCS 7 PSL 3	Plate thickness as specified, ends finished for butt welding, Visco-elastic Polyisobutene Coating (Two Layer Polyethylene Coating System) and solvent free epoxy lined				
		a) 1600mm dia, 12mm plate thickness	m	1980		
		b) 1400mm NB, 11.1mm plate thickness	m	Rate only		
		b) 1200mm NB, 9.5mm plate thickness	m	Rate only		
C4.1.2	8.2.2	Extra over item C4.1.1 for supplying, laying & bedding of the following 2LPE coated Grade X42 special bends and reducers including welding and repairs to coatings and linings, (All ends prepared for field welding):				
		1600mm dia. (solvent free epoxy lined)				
		a) up to 45° medium radius 2 segmented bend to BS_534	No	12		
		b) 45 to 61°medium radius 3 segment bend to BS 534	No	6		
		c) 61 to 90° medium radius 4 segment bend to BS 534	No	6		
C4.1.3		Additional Special and Fittings in Steel (to include equal tees, reducing tees, reducers, blank flanges, flanges, couplings, universal flange adaptors and other up to and including 1600mm dia)	Prov Sum	1	10 000 000.00	
		WATER MAINS				
C4.1.4	8.2.2	Supply, lay, bed & test pipes complete with all field welds and repairs to coating and lining for the following Steel Pipes including the manufacture, coating, lining, repair, installation and testing complete of all bends up to 5 deg. (All ends prepared for field welding) :				
		a) 150mm diameter	m	100		
		b) 300mm diameter	m	500		
C4.1.5	8.2.11	ANCHOR AND THRUST BLOCKS				
		Grade 25/19 mass concrete				
		a) Anchor Blocks	m^3	50		
		b) Thrust Blocks	m^3	100		
C4.1.6		Extra over items C4.2.1 a) and b) for rough formwork to anchor and thrust blocks	m^2	120		
TOTAL CARRIED FORWARD						

PART C: WATER					SECTION 5: WATER - MEDIUM PRESSURE PIPES	
ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (R)
TOTAL BROUGHT FORWARD						
C4.2		**VALVES AND FITTINGS** **CROSS CONNECTIONS (X2)**				
C4.2.1	8.2.5	Supply and install complete assemblies including, valves, pipework, fittings, as per typical details:				
		a) 1600NB Epoxy coated and lined, flanged / puddle flanged / flanged pipes 1600mm long	No	4		
		b) Epoxy coated and lined, 1600 x 450 Tee, plain ended / flanged pipe, including 300mm wide, 8mm thick grade 300W steel collar plate, 1300mm long c/f 450 NB stub to be flanged	No.	4		
		c) 1600 NB Restrained Dismantling coupling	No.	4		
		d) 1600NB amri isoria butterfly valves (EPDM liner coated ductile iron disc) or equally approved F.B.E	No.	4		
		e) 1200NB Epoxy coated and lined, flanged / puddle flanged / flanged pipes 1600mm long	No	4		
		f) Epoxy coated and lined, 1200 x 450 Tee, plain ended / flanged pipe, including 300mm wide, 8mm thick grade 300W steel collar plate, 1100mm long c/f 450 NB stub to be flanged	No.	4		
		g) 1200 NB Restrained Dismantling coupling	No.	6		
		h) 1200NB amri isoria butterfly valves (EPDM liner coated ductile iron disc) or equally approved F.B.E	No.	6		
		i) Epoxy coated and lined, 1600 x 1200 NB steel tee, F.B.E, 1200NB Stub plain end	No.	2		
		j) Epoxy coated and lined, 1200 x 1200 NB steel tee, F.A.E	No.	2		
		k) Epoxy coated and lined 250NB F.B.E steel pipe, 100mm long including 4 No gusset plates	No.	8		
		l) 250mm Epoxy coated and lined, flanged, resilient seal gate valve with hand wheel	No.	8		
		m) 250NB Anti-shock air valves (Vent-o-Mat RBX) or similar approved	No.	8		
		n) Epoxy coated and lined 200NB F.O.E steel pipe, 586mm long pipe	No.	8		
		o) 200NB standard 90° flanged steel bend L.R = 152.4mm	No.	8		
		p) Epoxy coated and lined 200NB F.O.E steel pipe, 1259mm long including 4 No gusset plates	No.	12		
		q) Epoxy coated and lined 200NB steel pipe, palin ends, 1259mm long including 4 No gusset plates	No.	4		
		r) 200mm Epoxy coated and lined, flanged, resilient seal gate valve with hand wheel	No.	4		
		s) 200 NB Restrained Dismantling coupling	No.	4		
C4.3		**VALVES AND FITTINGS** **AIR VALVES (X8)**				
C4.3.1	8.2.5	Supply and install complete assemblies including, valves, pipework, fittings, as per typical details:				
		a) Epoxy coated and lined, 1600 x 500 Tee (2500mm length), Plain ended / puddle flanged / puddle flanged / plain ended pipe, including 300mm wide, 8mm thick grade 300W steel collar plate, 500 NB tee section to be flanged	No.	8		
TOTAL CARRIED FORWARD						

PART C: WATER				SECTION 5: WATER - MEDIUM PRESSURE PIPES		
ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (R)
TOTAL BROUGHT FORWARD						
		e) 300mm Epoxy coated and lined, flanged, resilient seal gate valve with hand wheel	No.	4		
		f) 250mm Epoxy coated and lined, flanged, resilient seal gate valve with hand wheel	No.	1		
		g) 200mm Epoxy coated and lined, flanged, resilient seal gate valve with hand wheel	No.	3		
		h) 300NB Anti-shock air valves (Vent-o-Mat RBX) or similar approved	No.	4		
		i) 250NB Anti-shock air valves (Vent-o-Mat RBX) or similar approved	No.	1		
		j) 200NB Anti-shock air valves (Vent-o-Mat RBX) or similar approved	No.	9		
C4.4		**VALVES AND FITTINGS** **SCOUR VALVES (X4)**				
C4.4.1	8.2.5	Supply and install complete assemblies including, valves, pipework, fittings, as per typical details:				
		a) Epoxy coated and lined, 1600 x 500 Scour Tee (2500mm length), Plain ended / puddle flanged / puddle flanged / plain ended pipe, including 300mm wide, 8mm thick grade 300W steel collar plate, 500 NB tee section to be flanged	No.	4		
		b) 500mm NB amri isoria butterfly valves (EPDM liner coated ductile iron disc) or equally approved F.B.E	No.	4		
		c) 500mm NB Epoxy coated and lined steel pipe flanged / plain ended (2m length)	No.	4		
TOTAL CARRIED FORWARD						

PART C: WATER				SECTION 5: WATER - MEDIUM PRESSURE PIPES		
ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (R)
TOTAL BROUGHT FORWARD						
C4.5		**VALVE CHAMBERS** **AIR VALVE CHAMBERS (X8)**				
C4.5.1	SANS 1200 D	**Excavation for Structure**				
	8.3.2	a) Excavate in all material and dispose of surplus material for air valve chambers	m3	500		
	8.3.2	b) Excavate in all material to temporary stockpile material to be used as fill around air valve chambers	m3	1 600		
C4.5.2	8.3.2.b	Extra-over (a&b) above for				
		i) Intermediate material (includes all road and paved areas)	m^3	700		
		ii) Hard rock material	m^3	300		
C4.5.3	8.3.7	Additional lateral support between excavations and existing structures (Provisional)	Prov Sum	1	500 000.00	500 000.00
C4.5.4	SANS 1200 G	**Formwork class F1 surface finish**				
	8.2.2	a) Smooth, vertical	m²	2 500		
	8.2.2	b) Smooth Horizontal to Soffit of Chamber	m²	200		
	8.2.6	**Box out holes / Form Voids**				
C4.5.5	8.2.6a	Small, circular up to and including 0.35m				
		Over and Up to 3.5m 4.0m 4.0m 4.5m 4.5m 5.0m	 No No No	 14 2 -		
C4.5.6	8.2.6c	Large, circular of diameter 750mm				
		In cover slabs	No	32		
c4.5.7		Large, circular of diameter over 1400mm and up to 1600mm				
		Over and Up to 3.5m 4.0m 4.0m 4.5m 4.5m 5.0m	 No No No	 30 3 2		
C4.5.8	8.3	**Reinforcement**				
		High-tensile steel bars				
		a) Bars with 12mm, 16mm or 20mm diameter	ton	35		
	8.4	**Concrete**				
C4.5.9		Blinding layer 50mm thick	m²	210		
C4.5.10		**Grade 25/19 concrete, including "Penetron" agent or similar for water-retaining concrete for:**				
		a) Base	m^3	80		
		b) Walls	m^3	300		
		c) Cover Slab	m^3	40		
		d) Pipe support	m^3	13		
TOTAL CARRIED FORWARD						

PART C: WATER					SECTION 5: WATER - MEDIUM PRESSURE PIPES	
ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (R)
TOTAL BROUGHT FORWARD						
		Ancillary Items				
C4.5.11		**Mentis grating, RS40, heavy duty galvanised, complete with supports and guard-rail as shown on the drawings**	No.	16		
C4.5.12		**Heavy duty manhole covers for road traffic application**				
		a) Circular, 760mm diameter, with ventilation openings	No.	32		
		b) GRP access ladder	No.	32		
C4.5.13		Spacer Rings to circular manhole covers				
		a) 500mm high	No.	40		
		b) 250mm high	No.	40		
C4.6		**VALVE CHAMBERS** **SCOUR VALVE CHAMBERS (x4)**				
C4.6.1	SANS 1200 D	**Excavation for Structure**				
	8.3.2	a) Excavate in all material and dispose of surplus material for air valve chambers	m^3	90		
	8.3.2	b) Excavate in all material to temporary stockpile material to be used as fill around air valve chambers	m^3	350		
C4.6.2	8.3.2.b	Extra-over (a&b) above for				
		i) Intermediate material (includes all road and paved areas)	m^3	80		
		ii) Hard rock material	m^3	40		
C4.6.3	8.3.7	Additional lateral support between excavations and existing structures (Provisional)	Prov Sum	1	500 000.00	500 000.00
C4.6.4	SANS 1200 G	**Formwork class F1 surface finish**				
	8.2.2	a) Smooth, vertical	m^2	220		
	8.2.2	b) Smooth Horizontal to Soffit of Chamber	m^2	15		
C4.6.5	8.2.6	**Box out holes / Form Voids**				
	8.2.6a	Small, circular over 0.35m and up to 0.75m				
		Over and Up to				
		3.0m 3.5m	No	3		
		3.5m 4.0m	No	2		
		4.0m 4.5m	No	3		
		4.5m 5.0m	No	1		
C4.6.6	8.2.6c	Large, circular of diameter 750mm				
		In cover slabs	No	3		
TOTAL CARRIED FORWARD						

PART C: WATER — SECTION 5: WATER - MEDIUM PRESSURE PIPES

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (R)
TOTAL BROUGHT FORWARD						
C4.6.7		Large, circular of diameter over 1200mm and up to 1400mm Over and Up to				
		3.0m 3.5m	No	1		
		3.5m 4.0m	No	3		
		4.0m 4.5m	No	2		
		4.5m 5.0m	No	2		
C4.6.8	8.3	**Reinforcement**				
		High-tensile steel bars				
		a) Bars with 12mm, 16mm or 20mm diameter	ton	10.0		
	8.4	**Concrete**				
C4.6.9		Blinding layer 50mm thick	m^2	25		
		Grade 25/19 concrete, including "Penetron" agent or similar for water-retaining concrete for:				
		a) Base	m^3	7		
		b) Walls	m^3	35		
		c) Cover Slab	m^3	5		
		d) Pipe support	m^3	4		
		Ancillary Items				
C4.6.10		**Mentis grating, RS40, heavy duty galvanised, complete with supports and guard-rail as shown on the drawings**	No.	2		
C4.6.11		**Heavy duty manhole covers for road traffic application**				
		a) Circular, 760mm diameter, with ventilation openings	No.	4		
		b) GRP access ladder	No.	4		
C4.6.12		GMS diffuser plate, as per detail.	No.	4		
C4.6.13		Spacer Rings to circular manhole covers				
		a) 500mm high	No.	3		
		b) 250mm high	No.	3		
TOTAL CARRIED FORWARD						

PART C: WATER					SECTION 5: WATER - MEDIUM PRESSURE PIPES	
ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT		RATE	AMOUNT (R)
TOTAL BROUGHT FORWARD						
C4.7		**VALVE CHAMBERS** **INTERCONNECTING CHAMBERS (x2)**				
C4.7.1	SANS 1200 D	**Excavation for Structure**				
	8.3.2	a) Excavate in all material and dispose of surplus material for air valve chambers	m3	1 500		
	8.3.2	b) Excavate in all material to temporary stockpile material to be used as fill around air valve chambers	m3	1 500		
C4.7.2	8.3.2.b	Extra-over (a&b) above for				
		i) Intermediate material (includes all road and paved areas)	m^3	700		
		ii) Hard rock material	m^3	250		
C4.7.3	8.3.7	Additional lateral support between excavations and existing structures (Provisional)	Prov Sum	1	100 000.00	100 000.00
C4.7.4	SANS 1200 G	**Formwork class F1 surface finish**				
	8.2.2	a) Smooth, vertical	m²	900		
	8.2.2	b) Smooth Horizontal to Soffit of Chamber	m²	270		
	8.2.6	**Box out holes / Form Voids**				
C4.7.5	8.2.6c	Large, circular of diameter 750mm				
		In cover slabs	No	12		
C4.7.6		Large, circular of diameter over 1200mm and up to 1400mm				
		Over and Up to		10		
		4.0m 4.5m	No			
		4.5m 5.0m	No	3		
C4.7.7	8.3	**Reinforcement**				
		High-tensile steel bars				
		a) Bars with 12mm, 16mm or 20mm diameter	ton	45		
	8.4	**Concrete**				
C4.7.8		Blinding layer 50mm thick	m²	300		
C4.7.9		**Grade 25/19 concrete, including "Penetron" agent or similar for water-retaining concrete for:**				
		a) Base	m^3	120		
		b) Walls	m^3	160		
		c) Cover Slab	m^3	100		
		d) Pipe support	m^3	10		
		Ancillary Items				
C4.7.10		**Mentis grating, RS40, heavy duty galvanised, complete with supports and guard-rail as shown on the drawings**	No.	4		
TOTAL CARRIED FORWARD						

PART C: WATER — SECTION 5: WATER - MEDIUM PRESSURE PIPES

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT		RATE	AMOUNT (R)
TOTAL BROUGHT FORWARD						
C4.7.11		**Heavy duty manhole covers for road traffic application**				
		a) Circular, 760mm diameter, with ventilation openings	No.	12		
		b) GRP access ladder	No.	12		
C4.7.12		Spacer Rings to circular manhole covers				
		a) 500mm high	No.	12		
		b) 250mm high	No.	12		
C4.8	8.2.12	**CONCRETE CASING**				
C4.8.1		Grade 25/19 concrete pipe encasement of pipe as instructed by the engineer	m3	120		
C4.9		**PRECAST ANCILLARIES**				
		Supply and position as instructed by the Engineer, precast concrete markers including concrete base and two coats approved enamel 'road marking' paint complete with lettering, as detailed on drawings for the following:				
C4.9.1		Standard Pipe markers	No	50		
C4.9.2		Valve markers	No	14		
C4.10		**COMMISSIONING AND TESTING**				
C4.10.1		Hydraulic Pressure Testing - pressure test the complete pipeline and all fittings, valves and appurtenances, to approval of Engineer and eThekwini Water and Sanitation Specification	Sum	1		
C4.10.2		Disinfection - Disinfect the complete pipeline including fittings, valves and all appurtenances after satisfactory completion of pressure testing, to the approval of the Engineer and eThekwini Water and Sanitation	Sum	1		
TOTAL CARRIED FORWARD TO SUMMARY						

PART D: SEWER — SECTION 6: SEWERS

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (R)
D1	SABS 1200 LD SABS 1200 DB	**SECTION 6: SEWERS (PROVISIONAL)** **EARTHWORKS (PIPE TRENCHES)**				
D1.1	8.3.2	Excavation				
		a) Excavate between lateral support structures in all materials for trenches backfill, compact, and dispose of surplus material, for pipes not exceeding 250mm NB				
		i) 0,0 m - 1,0 m	m	400		
		ii) 1,0 m - 2,0 m	m	300		
		iii) 2,0 m - 3,0 m	m	300		
D1.2	**SABS 1200 LB**	**SECTION 4: BEDDING (PIPES)**				
D1.2.1	**SABS 1200LB**	**Pipe Bedding**				
	8.2.1	*Provision of bedding from trench excavations, including for passing through a sieve of no greater dimension than 10mm:*				
	PSLB 3.1	a) Selected granular material	m^3	-		
	PSLB 3.2	b) Selected fill material	m^3	50		
D1.2.2	8.2.2.3	*Provision from commercial or off-site sources:*				
	PSLB 3.1	a) Selected granular material	m^3	150		
	PSLB 3.2	b) Selected fill material	m^3	400		
	8.2.1	Supply, lay, joint, test . The following pipes, pipe fittings, specials etc.				
D1.3		NON PRESSURE uPVC SEWER PIPES				
		a) 160mm dia. HD uPVC class 34	m	250		
		b) 200mm dia. HD uPVC class 34	m	250		
		c) 250mm dia. HD uPVC class 34	m	250		
		d) 300mm dia. HD uPVC class 34	m	250		
D1.4	8.2.3	Excavate for, supply , install and mark 1050mm dia. precast concrete manholes with heavy duty cover and lid. Complete with channels, Type A benching, etc., as per Metro standard details drw No. 38570 & 38574. Including backfill, compaction etc.				
		a) 2.00m - 2.50m	No	7		
		b) 2.50m - 3.00m	No	7		
		c) 3.00m - 3.50m	No	6		
		d) New manhole at Property Connections	No.	2		
		e) Tie-in to existing reticulation with new manhole complete with temporary measures.	No.	20		
D1.5	8.2.4	*Extra over for ramp manholes complete.* Depth measured as invert difference on manhole centreline in the following categories Straight connection:				
		a) 0.40 to 0.70m	No.	4		
TOTAL CARRIED FORWARD						

PART D: SEWER — SECTION 6: SEWERS

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT		RATE	AMOUNT (R)
TOTAL BROUGHT FORWARD						
D1.6	8.2.4	*Extra over for drop manholes complete* Depth measured as invert difference on manhole centreline in the following categories Straight connection:				
		a) 1,5 to 2,0	No.	2		
		b) 2,0 to 2,5	No.	4		
D1.7		Heavy Duty Cast Iron lids	No	20		
	8.2.2	Specials in manhole.				
	8.2.7	**Concrete encasing of pipes.**				
D1.8		1) Class 20/19 concrete	m3	10		
D1.9		Testing of manholes				
		a) Water Tightness	No	6		
TOTAL CARRIED FORWARD TO SUMMARY						

PART E: STORMWATER						SECTION 7: STORMWATER
ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (R)
E1	SABS 1200 LE SABS 1200 DB	**SECTION 7: STORMWATER** **EARTHWORKS (PIPE TRENCHES)**				
E1.1	8.3.2	Excavation				
		a) Excavate between lateral support structures in all materials for trenches backfill, compact, and dispose of surplus material, for pipes not exceeding 600mm NB				
		i) 0,0 m - 1,0 m	m	300		
		ii) 1,0 m - 2,0 m	m	300		
		iii) 2,0 m - 3,0 m	m	150		
		iv) 3,0 m - 4,0 m	m	50		
E1.2	**SABS 1200 LB**	**SECTION 4: BEDDING (PIPES)**				
E1.2.1	**SABS 1200LB**	**Pipe Bedding**				
	8.2.1	*Provision of bedding from trench excavations, including for passing through a sieve of no greater dimension than 10mm:*				
	PSLB 3.1	a) Selected granular material	m^3	-		
	PSLB 3.2	b) Selected fill material	m^3	20		
E1.2.2	8.2.2.3	*Provision from commercial or off-site sources:*				
	PSLB 3.1	a) Selected granular material	m^3	140		
	PSLB 3.2	b) Selected fill material	m^3	550		
		c) Supply and lay class B bedding for 500mm NB steel pipes (pipes measured elsewhere)	m^3	300		
E1.2.3	SANS 1200 LE 8.2.2	**Supply and lay concrete pipe culverts on class B bedding**				
		a) 375mm ND	m	500		
		b) 450mm ND	m	200		
		c) 525mm ND	m	100		
E1.2.4	8.2.4	Extra over E1.2.2 and E1.2.3 for cutting end units on site	No	50		
		Supply and install Manholes and Catchpits				
E1.2.5	8.2.3	Excavate for, supply , install and mark 1050mm dia. precast concrete manholes with heavy duty cover and lid. Complete with channels, Type A benching, etc., as per Metro standard details drw No. 38570 & 38574. Including backfill, compaction etc.				
		a) 2.00m - 2.50m	No	2		
		b) 2.50m - 3.00m	No	2		
		c) 3.00m - 3.50m	No	2		
E1.2.6		Construct complete concrete headwalls on stormwater pipes and water scour pipes as per standard details	No	35		
TOTAL CARRIED FORWARD TO SUMMARY						

PART F: DAYWORKS — SECTION 8: DAYWORKS

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (R)
F	PAA	**SECTION 8: DAYWORKS**				
		Labour				
F 5.1		(a) Unskilled workers	Hr	100		
		(b) Skilled workers	Hr	100		
		(c) Operators and drivers	Hr	200		
		(d) Foreman	Hr	200		
F 5.2		Construction Plant				
		(a) Lowbed transport of plant to and from the site	hr	20		
		(b) Bulldozer and ripper				
		(i) D6 of similar	hr	20		
		(e) Back-acting excavators				
		i) 50kW case 580 or similar	hr	20		
		(g) Compactors				
		i) Pedestrian vibrating roller	hr	20		
		ii) Plate Compactor	hr	20		
		(h) Compressor - 7m^3/min	hr	20		
		(i) Trucks				
		i) 7t or similar	hr	20		
		ii) 10m3 tipper truck or similar approved	hr	20		
		9k) Water Tanker	Hr	20		
TOTAL CARRIED FORWARD TO SUMMARY						

PART G: ROAD CROSSINGS — SECTION 9: ROAD CROSSINGS

ITEM NO	PAYMENT REFERS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (R)
G		**SECTION 9: ROAD CROSSINGS**				
	SANS 1200 LG	**Jacking Establishment**				
G1.1	8.2.1	Fixed charges	Sum	1		
G1.2		Time related charges	Sum	1		
	8.2.4 PSD 8.3.3	**Excavation for jacking**				
G2.1		Excavate for pipe at the drilling face (including removal and disposed of surplus excavated material). Rate shall include any shoring that is required	m^3	200		
	PSD 8.3.3	**Extra over for Excavation for jacking above:**				
G2.2		Hard rock excavation	m^3	50		
G2.3		Excavate by hand in soft material to expose existing services	m^3	50		
	8.2.6 PSLG 8.2.6	**Supply and install pipes by means of jacking for the following pipes:**				
G3.1		1800mm diameter, Class 100D Type SC reinforced concrete pipes	m	65	-	
		Miscellaneous				
G4.1	1200 A PSA 8.10	Lay, joint, fix and test DN 1200 steel pipes in the pipe sleeves complete with a manufactured steel and bar skid as detailed on the drawings	m	65		
G4.2	8.2.9	Stabilization of unstable areas or grouting of voids where ordered				
		a) Establishment of equipment and removal on completion	Sum	1		
		b) Operation of equipment	Day	7		
		c) Materials used	m^3	5		
G4.3	PSLG 8.2.10	Standing time for pipe jacking	Day	7		
G4.4	PSLG 8.2.11	Recording of movements	Sum	1		
G4.5	PSLG 8.2.12	Brick-up ends of pipe sleeve	No	2		
G4.6	PSLG 8.2.13	Pipe Markers	No	2		
		Modify Existing Pipe Jacking Channel under the M19 asper Drawing				
G4.7.1	PSLG 8.2.13	Removal of existing and disposal (900mm Pipe)	m	80		Rate only
G4.7.2		Modify existing stormwater channel in accordance with detail	m	80		Rate only
G4.7.2		Install the Steel Pipe in accordance with detail	m	80		Rate only
TOTAL CARRIED FORWARD TO SUMMARY						

SUMMARY OF SCHEDULES

PART	SECTION	DESCRIPTION	AMOUNT
A	1	**PRELIMINARY AND GENERAL**	
B	2	**SITE CLEARANCE**	
C		**WATER**	
	3	**EARTHWORKS (PIPE TRENCHES)**	
	4	**BEDDING (PIPELINES)**	
	5	**MEDIUM PRESSURE PIPELINES**	
D	6	**SEWER**	
E	7	**STORMWATER**	
F	8	**DAYWORKS**	
G	9	**ROAD CROSSINGS**	
SUB TOTAL 1 (SUM OF PARTS A TO F)……			
ADD: CONTINGENCIES (10% OF SUB TOTAL 1)……			
SUB TOTAL 2……			
ADD: CONTRACT PRICE ADJUSTMENT (PROVISIONAL ALLOWANCE 8% OF SUB TOTAL 2) ……			
SUB TOTAL 3……			
ADD: VALUE-ADDED TAX (15% OF SUB TOTAL 3)……			
TOTAL 4 CARRIED TO PAGE 54, FORM OF OFFER			

I/We, the undersigned, do hereby declare that these are the properly priced Bill / Schedules of Quantities forming part of this Contract Document containing Pages in consecutive order upon which I/we have tendered for.

My/our total Contract Price for this work and above items (Total 4) is (in words): -

……..

……..

SIGNED BY THE TENDERER