

APPENDIX A BILL OF QUANTITY
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Item No.	Payment Clause	Description	Unit	Quantity	Rate	Amount
1		SECTION 1: SANS 1200 A: GENERAL				
	8.3	SCHEDULED FIXED-CHARGE AND VALUE RELATED ITEMS				
1.1	8.3.1	Contractual requirements	Sum	1		
1.2	PSA 8.3.2	Establishment of facilities on the site				
1.2.2	8.3.2.2	Facilities for contractor				
1.2.2.1	(a)	Offices and storage sheds	Sum	1		
1.2.2.2	(b)	Workshop	Sum	1		
1.2.2.3	(c)	Laboratories	Sum	1		
1.2.2.4	(d)	Living accommodation	Sum	1		
1.2.2.5	(e)	Ablution and latrine facilities	Sum	1		
1.2.2.6	(f)	Tools and equipment	Sum	1		
1.2.2.7	(g)	Water supplies, electric power and communications	Sum	1		
1.2.2.8	(h)	Dealing with water	Sum	1		
1.2.2.9	(i)	Access	Sum	1		
1.3	PSA 8.3.3	Other fixed-charge obligations				
1.3.1	PSA 8.3.3.1	Occupational health & safety act	Sum	1		
1.3.2	PSA 8.3.3.2	Environmental management plan	Sum	1		
1.4	8.3.4	Removal of site establishment	Sum	1		
	8.4	SCHEDULED TIME-RELATED ITEMS				
1.5	8.4.1	Contractual requirements	Month	3		
1.6	PSA 8.4.2	Operation and maintenance of facilities on site, for duration of construction				
1.6.2	8.4.2.2	Facilities for Contractor				
1.6.2.1	(a)	Offices and storage sheds	Month	3		
1.6.2.2	(b)	Workshop	Month	3		
		TOTAL CARRIED FORWARD				R -

Item No.	Payment Clause	Description	Unit	Quantity	Rate	Amount
		TOTAL BROUGHT FORWARD				R -
1.6.2.3	(c)	Laboratories	Month	3		
1.6.2.4	(d)	Living accommodation	Month	3		
1.6.2.5	(e)	Ablution and latrine facilities	Month	3		
1.6.2.6	(f)	Tools and equipment	Month	3		
1.6.2.7	(g)	Water supplies, electric power and communications	Month	3		
1.6.2.8	(h)	Dealing with water	Month	3		
1.6.2.9	(i)	Access	Month	3		
1.7	8.4.3	Supervision for duration of contract	Month	3		
1.8	8.4.4	Company and head office overhead costs for the duration of the contract	Month	3		
1.9	PSA 8.4.5	Other time-related obligations				
1.9.1	PSA 8.4.5.1	Occupational health & safety	Month	3		
1.9.2	PSA 8.4.5.2	Environmental management	Month	3		
1.9.3	PSA 8.4.5.3	Community liaison officer (CLO)	Prov Sum	1	R 20 000.00	R 20 000.00
1.9.4		Contractors overheads, charges and profit on item 1.9.3 (State % and extend as an amount)	%		R 20 000.00	
1.9.5	PSA 8.4.5.4	Project steering committee (PSC)	Prov Sum	1	R 6 600.00	R 6 600.00
1.9.6		Contractors overheads, charges and profit on item 1.9.5 (State % and extend as an amount)	%		R 6 600.00	
1.10	8.7	Daywork				
1.10.1	(a)	Labour				
1.10.1.1	(i)	Unskilled labour: general labour	hr	160		
1.10.1.2	(ii)	Semi-skilled: pipe layer, section leader, survey assistant	hr	80		
1.10.1.3	(iii)	Skilled: artisan	hr	80		
1.10.1.4	(iv)	Survey including assistants and equipment	hr	24		
1.10.1.5	(v)	Foreman	hr	24		
1.10.2	(b)	Plant				
1.10.2.1	(i)	Compressor complete with all tools including pipes and a minimum air output 7m³/min	hr	-		Rate Only
1.10.2.2	(ii)	Excavator - minimum power of 75 kW (Similar to "Cat 215")	hr	-		Rate Only
		TOTAL CARRIED FORWARD				

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		TOTAL BROUGHT FORWARD				
1.10.2.3	(iii)	Motor grader - minimum power of 93 kW (Similar to "Cat 120B")	hr	-		Rate Only
1.10.2.4	(iv)	Tractor loader backhoe - minimum power of 50 kW (Similar to "Case 580G")	hr	-		Rate Only
1.10.2.5	(v)	Front end loader - minimum power of 60 kW (Similar to "Cat 920")	hr	-		Rate Only
1.10.2.6	(vi)	Tiptruck - minimum load mass of 10 ton and minimum load capacity of 6m ³	hr	-		Rate Only
1.10.2.7	(vii)	Vibrating pedestrian roller - minimum drum width of 0,39 m and minimum power of 3,7 kW	hr	-		Rate Only
1.10.2.8	(viii)	Vibrating plate compactor - minimum power of 2 kW	hr	-		Rate Only
1.10.2.9	(ix)	Vibro roller - min 12 ton	hr	-		Rate Only
1.10.2.10	(x)	Water tanker with sprinkler - minimum capacity of 6kl	hr	-		Rate Only
1.10.2.11	(xi)	Generating set - minimum output power of 10 kW	hr	-		Rate Only
1.11	PSA 8.8	Temporary works				
1.11.1	PSA 8.8.1	Main access road to works	Sum	-		Rate Only
1.11.2	PSA 8.8.2	Dealing with Traffic	Sum	-		Rate Only
		TOTAL CARRIED FORWARD TO SUMMARY				

Item No.	Payment Clause	Description	Unit	Quantity	Rate	Amount
2		SECTION 2: SANS 1200 C: SITE CLEARANCE				
2.1	PSC 8.2.1	Clear and grub:				
2.1.1	(i)	Clear & grub for construction of pipeline for a width of 4 metres wide	Km	-		Rate Only
2.1.2	(ii)	Clear & grub for construction of access road to and on site for a width of 10 metres wide	Km	-		Rate Only
2.1.3	(iii)	Clear & grub for construction of 300kl reservoir for a width of 30 meters wide	Km	-		Rate Only
2.2	8.2.2	Remove and grub large trees and tree stumps of girth:				
2.2.1	(a)	Over 1m and up to and including 2m	No	-		Rate Only
2.2.2	(b)	Over 2m and up to and including 3m	No	-		Rate Only
2.2.3	(c)	Over 3m and up to and including 4m	No	-		Rate Only
2.3	8.2.5	Take down existing fences	Km	-		Rate Only
2.4	PSC 8.2.10	Remove topsoil to a nominal depth of 150mm and stockpile:				
2.4.1	(i)	Remove topsoil for construction of pipeline	m³	-		Rate Only
2.4.2	(ii)	Remove topsoil for construction of access road to and on site	m³	-		Rate Only
2.4.3	(iii)	Remove topsoil for construction of 300kl reservoir	m³	-		Rate Only
TOTAL CARRIED FORWARD TO SUMMARY						R -

Item No.	Payment Clause	Description	Unit	Quantity	Rate	Amount
3		SECTION 3: SANS 1200 DB: EARTHWORKS (PIPE TRENCHES)				
3.1	PSDB 8.3.2	Excavation				
3.1.1	(a)	Excavate in all material for trenches, backfill, compact and dispose of surplus material				
		Over and up to:				
3.1.1.1	(i)	0.600m - 1.000m	m ³	-	R -	Rate Only
3.1.1.2	(ii)	1.001m - 1.500m	m ³	-	R -	Rate Only
3.1.1.3	(iii)	1.501m - 2.000m	m ³	-	R -	Rate Only
3.1.1.4	(iv)	2.001m - 2.500m	m ³	-	R -	Rate Only
3.1.1.5	(v)	2.501m - 3.000m	m ³	-	R -	Rate Only
3.1.2	(b)	Extra-over for				
3.1.2.1	2)	Hard rock excavation	m ³	-	R -	Rate Only
3.1.3	(c)	Excavate and dispose of unsuitable material from trench bottom (provisional)	m ³	-	R -	Rate Only
3.2	8.3.3	Excavation ancillaries				
3.2.1	8.3.3.1	Make up deficiency in backfill material (provisional)				
3.2.1.1	(a)	From other necessary excavations on site	m ³	-	R -	Rate Only
3.2.1.2	(b)	By importation from designated borrow pits	m ³	-	R -	Rate Only
3.2.1.3	(c)	By importation from commercial or off-site sources selected by the contractor	m ³	-	R -	Rate Only
3.2.2	8.3.3.2	Opening up and closing down of designated borrow pit	Sum	-	R -	Rate Only
3.2.3	8.3.3.3	Compaction in road reserves	m ³	-	R -	Rate Only
3.2.4	8.3.3.4	Overhaul				
3.2.4.1	(b)	Long overhaul (provisional)	m ³ .km	-	R -	Rate Only
3.3	8.3.5	Existing services that intersect or adjoin a pipe trench				
3.3.1	(a)	Services that intersect a trench	No.	-	R -	Rate Only
3.3.2	(b)	Services that adjoin a trench	m	-	R -	Rate Only
3.4	8.3.6	Finishing				
3.4.1	8.3.6.1	Reinstate road surfaces complete with all courses				
3.4.1.1	(d)	Gravel wearing course 150mm thick	m ²	-	R -	Rate Only
		TOTAL CARRIED FORWARD TO SUMMARY				

Item No.	Payment Clause	Description	Unit	Quantity	Rate	Amount
4		SECTION 4: SANS 1200 DK: GABIONS AND PITCHING				
4.1	8.2.5	Pitching	m ²	100		
		TOTAL CARRIED FORWARD TO SUMMARY				

Item No.	Payment Clause	Description	Unit	Quantity	Rate	Amount
5		SECTION 5: SANS 1200 DM: EARTHWORKS (ROADS, SUBGRADE)				
5.1	PSDM 8.3.3	Treatment of road-bed				
5.1.1	(a)	Road-bed preparation and compaction of material to				
5.1.1.1	(1)	Minimum of 90% of modified AASHTO maximum density	m³	-		Rate Only
5.1.1.2	(2)	Minimum of 93% of modified AASHTO maximum density	m³	2145		
5.2	PSDM 8.3.5	Selected layer compacted to 93% of modified AASHTO maximum density	m³	100		
5.3	PSDM 8.3.7	Cut to spoil or stockpile from				
5.3.1	(a)	Soft excavation	m³	1000		
5.3.2	(c)	Hard excavation	m³	500		
5.3.3	(d)	Boulder excavation Class A	m³	-		Rate Only
5.3.4	(e)	Boulder excavation Class B	m³	-		Rate Only
5.4	8.3.12	Overhaul	m³.km	0		
5.5	PSDM 8.3.16	Gravel Surface layer	m³	0		
TOTAL CARRIED FORWARD TO SUMMARY						

Item No.	Payment Clause	Description	Unit	Quantity	Rate	Amount
6		SECTION 6: SANS 1200 L: MEDIUM-PRESSURE PIPELINES				
6.1	PSL 8.2.1	Supply, Lay, and Bed Pipes Complete with Couplings				
6.1.1	(i)	110mm Diameter uPVC class 9 pipe	m	1600		
6.1.2	(ii)	75mm Diameter uPVC class 9 pipe	m	1500		
6.1.3	(iii)	50mm Diameter HDPE PN 10	m	500		
6.2	PSL 8.2.2	Extra-over 8.2.1 for supplying, laying, and Bedding of Specials Complete with Couplings				
6.2.1	(a)	Cast iron end caps				
6.2.1.1	(i)	110mm Diameter	No	10		
6.2.1.2	(ii)	75mm Diameter	No	10		
6.2.1.3	(iii)	50mm Diameter	No	10		
6.2.2	(b)	Cast iron reducing tee				
6.2.2.1	(i)	110 x 110 x 75mm Reducing tee	No	5		
6.2.2.2	(ii)	75 x 75 x 50mm Reducing tee	No	5		
6.2.5	(e)	110mm Diameter uPVC class 16 bends				
6.2.5.1	(i)	11.25° Bend	No	5		
6.2.5.2	(ii)	22.5° Bend	No	5		
6.2.5.3	(iii)	45° Bend	No	5		
6.2.5.4	(iv)	90° Bend	No	6		
6.2.6	(f)	75mm Diameter uPVC class 16 bends				
6.2.6.1	(i)	11.25° Bend	No	5		
6.2.6.2	(ii)	22.5° Bend	No	5		
6.2.6.3	(iii)	45° Bend	No	5		
6.2.6.4	(iv)	90° Bend	No	5		
6.3	PSL 8.2.3	Extra-over Item 8.1 for Supplying, Fixing and Bedding of Valves				
6.3.1	(a)	Fire Hydrant complete with all fittings and concrete to a height of 1m above ground	No			
		TOTAL CARRIED FORWARD				

Item No.	Payment Clause	Description	Unit	Quantity	Rate	Amount
		TOTAL BROUGHT FORWARD				
6.3.1.1	1)	75mm diameter pipe, fire hydrant as per direction from engineer	No	4		
		110mm diameter pipe, fire hydrant as per direction from engineer	No	3		
6.3.1.2	2)	75mm diameter pipe, fire hydrant as per direction from engineer	No	4		
6.3.2	(b)	Scour valve chamber fittings	No			
6.3.2.1	1)	chamber fittings for 50mm diameter pipe, as per drawing	No	-		Rate Only
6.3.2.3	3)	chamber fittings for 110mm diameter pipe, as per drawing	No	-		Rate Only
6.3.3	(c)	Isolating valve chamber fittings	No			
6.3.3.1	1)	chamber fittings for 50mm diameter pipe, as per drawing	No	1		
6.3.3.2	2)	chamber fittings for 75mm diameter pipe, as per drawing	No	2		
6.3.3.3	3)	chamber fittings for 110mm diameter pipe, as per drawing	No	3		
6.3.4	(d)	Pressure reducing valve chamber fittings	No			
6.3.4.1	1)	50mm Ø pressure reducing valve chamber, as per drawing	No	3		
6.3.5	(e)	Standtap details connected to pipelines	No	15		
6.3.6	(f)	Thrust blocks complete as per drawing				
6.3.6.1	(1)	11.25° Bend	No	25		
6.3.6.2	(2)	22.5° Bend	No	20		
6.3.6.3	(3)	45° Bend	No	15		
6.3.6.4	(4)	90° Bend	No	10		
6.3.7	(g)	Pedestals complete as per drawing	No	10		
6.3.8	(h)	Anchor blocks complete as per drawing	No	2		
6.4	8.2.13	Valve and Hydrant Chambers, etc				
6.4.1	(i)	Construct scour valve chamber complete as per drawing	No	0		
6.4.2	(ii)	Construct isolating valve chamber complete as per drawing	No	4		
6.4.3	(iii)	Construct pressure reducing valve chamber complete as per drawing	No	1		
		TOTAL CARRIED FORWARD				

Item No.	Payment Clause	Description	Unit	Quantity	Rate	Amount
		TOTAL BROUGHT FORWARD				
6.4.4	(iv)	Construct standtap to detail including all concrete works (Pipe work measured separately) complete as per drawing	No	15		
		Supply and install pipe markers complete as per drawing	No	10		
6.5	8.2.14 (a)	Manholes/chambers				
6.6	8.2.14 (b)	Extra-over for manholes/chambers of depth exceeding 1.5m	No	2		
		TOTAL CARRIED FORWARD TO SUMMARY				

Item No.	Payment Clause	Description	Unit	Quantity	Rate	Amount
7		SECTION 7: SANS 1200 LB: BEDDING (PIPES)				
7.1	PSLB 8.2.1	Provision of bedding from trench excavation				
7.1.1	(a)	Selected granular material	m ³		50	
7.1.2	(b)	Selected fill material	m ³		300	
7.2	8.2.2	Supply only of bedding by importation				
7.2.1	8.2.2.1	From other necessary excavations				
7.2.1.1	(a)	Selected granular material	m ³		20	
7.2.1.2	(b)	Selected fill material	m ³		100	
7.2.2	PSLB 8.2.2.2	From borrow pits (provisional)				
7.2.2.1	(a)	Selected granular material	m ³		25	
7.2.2.2	(b)	Selected fill material	m ³		25	
7.2.3	8.2.2.3	From commercial sources (provisional)				
7.2.3.1	(a)	Selected granular material	m ³		20	
7.2.3.2	(b)	Selected fill material	m ³		500	
7.3	8.2.4	Encasing of pipes in concrete	m ³		3	
7.4	PSLB 8.2.5	Overhaul of material for bedding cradle and selected fill blanket	m ³ .km		150	
		TOTAL CARRIED FORWARD TO SUMMARY				

Item No.	Payment Clause	Description	Unit	Quantity	Rate	Amount
8		SECTION 8: SANS 1200 LE: STORMWATER DRAINAGE				
8.1	8.2.1	Supply and lay concrete pipe culverts on bedding as per PSLB 5.2				
8.1.1	(i)	300mm Class 100D	m	-		Rate Only
8.1.2	(ii)	450mm Class 100D	m	100		
8.1.3	(iii)	600mm Class 100D	m	30		Rate Only
8.2	8.2.8	Supply and Install manholes, catchpits, and the like				
8.2.1	(b)	Catchpits (Type stated)				
		Over and Up to				
8.2.1.1	(i)	1.000m 2.000m	No.	8		
8.2.1.2	(ii)	2.001m 3.000m	No.	-		Rate Only
8.3	(d)	Outlet headwalls				
8.3.1	(i)	From 300, 450 and 600mm dia stormwater pipes	No.	3		
8.3.2	(ii)	From scour pipes outlets	No.	8		
8.3.3	8.2.10	Subsoil drainage, supply and lay as per detail to standtaps				
8.3.4	(i)	Perforated uPVC pipes - 110mm diameter	m	75		
8.3.5	(ii)	Concrete end cap for 110mm diameter subsoil drainage pipe	No.	-		Rate Only
	(iii)	PVC inspection eye for 110mm diameter subsoil drainage pipe	No.	-		Rate Only
	(iv)	Geofabric bidim grade A2 - laid in trench with width of 0.25 metres and depth of 0.25 metres, including 200mm overlap	m ²	75		
	(v)	19mm stone laid in sub-soil drainage trench as per detail	m ³	15		
		TOTAL CARRIED FORWARD TO SUMMARY				

SUMMARY PAGE OF BILL OF QUANTITIES

<u>Section No.</u>	<u>Description</u>	<u>Amount</u>
1	SANS 1200 A: GENERAL	
2	SANS 1200 C: SITE CLEARANCE	
3	SANS 1200 DB: EARTHWORKS (PIPE TRENCHES)	
4	SANS 1200 DK: GABIONS AND PITCHING	
5	SANS 1200 DM: EARTHWORKS (ROADS, SUBGRADE)	
6	SANS 1200 L: MEDIUM-PRESSURE PIPELINES	
7	SANS 1200 LB: BEDDING (PIPES)	
8	SANS 1200 LE: STORMWATER DRAINAGE	
9	SANS 1200 MF: BASE	
	SUB-TOTAL OF BILL OF QUANTITIES	
	Allow 15% Value Added Tax (VAT)	
	GROSS TOTAL OF TENDER (CARRIED TO FORM OF OFFER AND ACCEPTANCE)	

Signature of Tenderer:

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Date:

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