








**CONSTRUCTION OF VERENA A TO D BUS AND TAXI ROUTE
WARD 8 (PHASE 1)
(BILL OF QUANTITIES)**



Tenderer


Witness 1


Witness 2



Employer



Witness 1



Witness 2





**ROAD A1 AND ROAD A2
(BILL OF QUANTITIES)**



Tenderer


Witness 1


Witness 2


Employer


Witness 1


Witness 2



Item No.	LI	Description	Unit	Quantity	Rate	Amount
Section 1200		GENERAL REQUIREMENTS AND PROVISIONS				
B12.01		Protection, removal, realignment and replacement of services				
(a)	LI	Locating existing services (known and unknown)	No	50,00		
(b)	LI	Relocating or lowering of measured by length services				
i.		Relocating or lowering water services	km	1,00		
ii.		Relocating or lowering of sewer services	km	1,00		
iii.		Relocating or lowering of other services (eg. Electricity & Telkom)	Prov Sum	1,00	300 000,00	R 300 000,00
iv.		Handling cost and profit in respect of sub item B12.01(b) above	%	300 000,00		
(c)		Protection of existing services	m	180,00		
B12.02		Community Liaison Officer				
(a)		Community liaison officer (s) (R12500 per month for 12 months)	Prov Sum	150 000,00		R 150 000,00
(b)		Contractor's charge to allow for handling costs and all other charges in respect of subitems C12.01 (a)	%	150 000,00		
(c)		Project Steering Committee (R140 per member per seating per month, for a duration of 12 months, up to 10 members)	Prov Sum	16 800,00		R 16 800,00
(d)		Contractor's charge to allow for handling costs and all other charges in respect of subitems B12.02 (a) and (b)	%	16 800,00		
B12.03		Engineering student on-job / (in-service) Training (R4500 per month)				
(a)		Provisional allowance paid to two (2) Engineering students undergoing on-job / (in-service) training for a period of not less than 12 months	Prov Sum	108 000,00		R 108 000,00
(b)		Contractor's charge to allow for handling costs and all other charges in respect of subitem B12.03 (a)	%	108 000,00		
1200		TOTAL CARRIED FORWARD TO SUMMARY				

Tenderer

Witness 1

Witness 2

Employer

Witness 1

Witness 2



Tenderer

Witness 1

Witness 2

Employer

Witness 1

Witness 2

Witness 2



Section 1400	OFFICES FOR THE ENGINEER'S SITE PERSONNEL				
14.01	Office and laboratory accommodation:				
(e)	Ablution units	m ²	24,00		
(q)	Conference room	m ²	36,00		
14.02	Office and laboratory furniture:				
(a)	Chairs	no	24,00		
(f)	Conference tables (to seat up to 18 persons)	no	4,00		
14.03	Office and laboratory fittings, installations				
(a)	Items measured by number:				
(i)	220/250 volt power points	no	2,00		
(iii)	Double 80 watt fluorescent-light fittings complete with ballast and tubes	no	2,00		
(xi)	Air-conditioning units with 2,2 kW minimum capacity, mounted and with own power connection	no	2,00		
(b)	Prime cost items and items paid for in lump sum				
(ix)	Provision of Cellphone service, including the cost of calls in connection with contract administration and cellphone rental	Prime Cost	1,00		
(x)	Provision of telephone services with fax facility including the cost of calls and fax transmission in connection with contract administration and telephone rental	Prime Cost	1,00	6 000,00	R 6 000,00
(xi)	Handling cost and profit in respect of subitem B14.03(b)(ix) and B14.03(b)(x) above	%	6 000,00		
14.08	Services:				
(a)	Services at offices and laboratories:				
(i)	Fixed costs	Lump Sum	1,00		
(ii)	Running costs	Mth	12,00		
14.10	Photostat and Fax Facilities:				
	Provision of photostat and faxing facilities	Mth	12,00		
	CARRIED FORWARD				

Tenderer

Witness 1

Witness 2

Employer

Witness 1

Witness 2



Tenderer

Witness 1

Witness 2

Employer

Witness 1

Witness 2

Witness 2



Tenderer

Witness 1

Witness 2

Employer

Witness 1

Witness 2

Witness 2



Tenderer

Witness 1

Witness 2

Employer

Witness 1

Witness 2

Witness 2



Tenderer

Witness 1

Witness 2

Employer


Witness 1


Witness 2


Witness 2





Section 2100		DRAINS				
21,01		Excavation for open drains:				
(a)	LI	Excavate soft material situated within the following depth ranges below the surface				
(i)		0m to 1.5m	m ³	1 217,00		
(i)		Exceeding 1.5m and up to 3.0m	m ³	Rate only		
(b)		Extra over subitem 212.01 (a) for excavation in hard material, irrespective of depth (the rate should be inclusive of other methods of excavation/drilling/rock breaking)	m ³	487,00		
21,031		Excavation for subsoil drainage system:				
(a)	LI	Excavate soft material situated within the following depth ranges below the surface				
(i)		0m to 1.5m	m ³	1 184,00		
(i)		Exceeding 1.5m and up to 3.0m	m ³	Rate only		
(b)		Extra over subitem 21.03 (a) for excavation in hard material, irrespective of depth (the rate should be inclusive of other methods of excavation/drilling/rock breaking)	m ³	474,00		
21,06		Natural permeable in subsoil drainage systems (crushed stone)::				
(a)		Crush stones obtained from commercial sources (19mm stone)	m ³	188,00		
21,08		Pipes in subsoil drainage system:				
(a)		Unplasticized PVC pipes and fittings, normal duty, complete with coupling (150mm dia. slotted drain pipe)	m	15,00		
21,09		Geotextiles (Kaytech U24 or similar approved)	m ²	-		
21.10		Synthetic-fibre filter fabric (A6 Bidum or similar approved)	m ²	9 789,00		
B21.12		Concrete outlet structures, manholes boxes, catchpits, junction boxes and cleaning eye for subsoil drainage system:				
(a)		2 No. of Outlet structures see drawing STD004	Prov Sum	25 000,00		R 25 000,00
(b)		Contractor's charge to allow for handling and all other charges in respect of subitem B12.12 (a)	%	25 000,00		
2100		TOTAL CARRIED FORWARD TO SUMMARY				



Tenderer


Witness 1


Witness 2



Employer



Witness 1



Witness 2





Section 2200		PREFABRICATED CULVERTS				
22,01		Excavation:				
(a)	LI	Excavate soft material situated within the following depth ranges below the surface level:				
(i)		0m to 1.5m	m³	752,00		
(i)		Exceeding 1.5m and up to 3.0m	m³	1 858,00		
(i)		Exceeding 3,0m and up to 4,5m	m³	1 680,00		
(b)		Extra over subitem 22.01 (a) for excavation in hard material, irrespective of depth (the rate should be inclusive of other methods of excavation/drilling/rock breaking)	m³	858,00		
22,02		Backfilling:				
(a)		Using excavated material:	m³	3 311,00		
(b)		Using imported material	m³	125,00		
(c)		Extra over subitem 22.02 (a) and (b) for soil cement backfill	m³	248,00		
22,03		Concrete pipe culverts:				
		Class B bedding/ Class 100D				
(a)		1050mm diameter	m	600,00		
22,05		Portal and rectangular culverts:				
(a)		Complete with prefabricated floor slabs				
		(i) 1200mm x 300mm Type SANS	m	154,00		
(b)		Complete with prefabricated floor slabs				
		(ii) 1500mm x 450mm Type SANS	m	308,00		
(c)		Complete with prefabricated floor slabs				
		(iii) 2400mm x 600mm Type SANS	m	78,00		
B22.14		Removing and disposing off site existing prefabricated culverts	m	25,00		
22,17		Manholes, catchpits, precast inlet and outlet structures complete				
(a)		Grid Inlet see drawing STD003	no	7,00		
(b)		Precast Inlet and outlet structure, see drawing STD 004	no	4,00		
(c)		Manholes Complete see drawing STD003	no	9,00		
2200		TOTAL CARRIED FORWARD TO SUMMARY				



Tenderer


Witness 1


Witness 2


Employer


Witness 1


Witness 2



Section 2300		CONCRETE KERBING, CONCRETE CHANNELLING, OPEN CONCRETE CHUTES AND CONCRETE LININGS FOR OPEN DRAINS				
23,01		Concrete kerbing:				
(a)		Prefabricated battered concrete kerb:				
i		SABS Fig. 8c	m	3 476,00		
ii		SABS Fig. 3	m	100,00		
B23.02		Concrete kerbing-channelling combination:				
(b)	LI	Cast in situ concrete in edge beam using 30/19 concrete measuring 300 x 300mm	m	32,00		
23,07		Trimming of excavation for concrete-lined open drains				
(a)		In soft material	m ²	2 071,00		
(b)		In hard material	m ²	1 381,00		
23,08		Concrete lining for open drains:				
(a)		Cast in situ concrete lining (Class 25/19 Type 3 Side Drain as indicated on STD 017)	m ³	346,00		
(b)		Class F2 surface finish to cast in situ concrete Type 3 Side Drain as indicated on STD 017	m ²	3 452,00		
23,09		Formwork to cast in situ concrete lining for open drains (Class F2 surface finish				
(a)		To sides with formwork on the internal face only	m ²	443,00		
(c)		To end of slab	m ²	299,00		
23,10		Sealed joints in concrete linings of open drains (as indicated on STD 017)	m	1 993,00		
23,12		Steel reinforcement				
(c)		Welded steel fabric (Ref 395)	kg	13 631,63		
23,14		Cutting bituminous surfacing and pavement layers for concrete kerbing, channelling or concrete-lined drains	m	6,00		
2300		TOTAL CARRIED FORWARD TO SUMMARY				

Tenderer

Witness 1

Witness 2

Employer

Witness 1

Witness 2



Tenderer

Witness 1

Witness 2

Employer

Witness 1

Witness 2

Witness 2



Section 3300	MASS EARTHWORKS				
33,01	Cut and borrow to fill, including free-haul up to 0,5km:				
(a)	Material (G7 min) in compacted layer thickness of 200mm and less:				
(i)	Compaction to 93% of modified AASHTO density	m³	1 125,00		
(c)	Rockfill processing and compaction	m³	996,00		
B33.02	Fill constructed from gravel obtained from commercial sources or approved sources provided by the Contractor, including all haul				
(a)	G6 min compacted to 95% mod. AASHTO density (200mm thick)	m³	Rate Only		
(b)	G5 min compacted to 97% mod. AASHTO density (150mm thick)	m³	Rate Only		
33,04	Cut to spoil, including free-haul up to 5km. Material obtained from:				
(a)	Soft material	m³	2 219,00		
(b)	Intermediate material	m³	2 219,00		
(c)	Hard material (the rate should be inclusive of other methods of excavation/drilling/rock breaking)	m³	1 758,00		
(d)	Boulder material class A	m³	Rate Only		
(e)	Boulder material class B	m³	Rate Only		
33,09	Material bladed to windrow	m³	2 257,00		
33,10	Roadbed preparation and the compaction of material				
(a)	Compaction to 93% mod. AASHTO density	m³	2 257,00		
33,14	Extra over item 33.01 for excavating material from pavement and fills of existing roads:				
(a)	Non-cemented material	m³	Rate Only		
33,17	Extra over items 33.04 for spoiling material excavated from benches constructed for widening existing fills	m³	Rate Only		
3300	TOTAL CARRIED FORWARD TO SUMMARY				


Tenderer


Witness 1


Witness 2


Employer


Witness 1


Witness 2



Tenderer

Witness 1

Witness 2

Employer

Witness 1

Witness 2

Witness 2



Witness 2



Tenderer

Witness 1

Witness 2

Employer


Witness 1


Witness 2


Witness 2





Section 5600		ROAD SIGNS				
56,01	LI	Road sign boards with painted or coloured semi-matt background. Symbols, lettering and borders in semi-matt black or in Class 1 retro-reflective material, where the sign board is constructed from:				
(c)		Pre-painted galvanised steel plate (chromadek or approved equivalent):				
i.		Area not exceeding 2m ²	m ²	9,00		
ii.		Area exceeding 2m ² but not 10m ²	m ²	Rate Only		
iii.		Area exceeding 10m ²	m ²	Rate Only		
56,02		Extra over item 56.01 for using:				
(a)		Background of retro-reflective material:				
i.		Class I	m ²	9,00		
(b)		Lettering, symbols, numbers, arrows, emblems and borders of retro-reflective material:				
i.		Class II	m ²	9,00		
56,03		Road-sign supports (overhead road sign structures excluded):				
(a)		Steel tubing (100mm diameter, 4mm wall thickness)	t	0,27		
(b)		Timber (140mm diameter, treated)	m			
56,05	LI	Excavation and backfilling for road sign supports (not applicable to kilometre posts)	m ³	8,00		
56,06		Extra over item 56.05 for cement-treated soil backfill	m ³	8,00		
5600		TOTAL CARRIED FORWARD TO SUMMARY				



Tenderer


Witness 1


Witness 2


Employer


Witness 1


Witness 2



Witness 2



Tenderer

Witness 1

Witness 2

Employer

Witness 1

Witness 2

Witness 2



Tenderer

Witness 1

Witness 2

Employer


Witness 1


Witness 2


119





INTERSECTION UPGRADE – ROAD A2 AND R25
(BILL OF QUANTITIES)



Tenderer


Witness 1


Witness 2


Employer


Witness 1


Witness 2



Tenderer

Witness 1

Witness 2

Employer

Witness 1

Witness 2

Witness 2



Tenderer

Witness 1

Witness 2

Employer

Witness 1

Witness 2

Witness 2



Tenderer

Witness 1

Witness 2

Employer

Witness 1

Witness 2

Witness 2



Section 2100		DRAINS				
21,01		Excavation for open drains:				
(a)	LI	Excavate soft material situated within the following depth ranges below the surface level:				
(i)		0m to 1.5m	m ³	250,00		
(i)		Exceeding 1.5m and up to 3.0m	m ³			
(b)		Extra over subitem 212.01 (a) for excavation in hard material, irrespective of depth (the rate should be inclusive of other methods of excavation/drilling/rock breaking)	m ³	25,00		
21,031		Excavation for subsoil drainage system:				
(a)	LI	Excavate soft material situated within the following depth ranges below the surface level:				
(i)		0m to 1.5m	m ³	-		
(i)		Exceeding 1.5m and up to 3.0m	m ³	Rate only		
(b)		Extra over subitem 21.03 (a) for excavation in hard material, irrespective of depth	m ³	-		
21,06		Natural permeable in subsoil drainage systems (crushed stone)::				
(a)		Crush stones obtained from commercial sources (19mm stone)	m ³			
21,08		Pipes in subsoil drainage system:				
(a)		Unplasticized PVC pipes and fittings, normal duty, complete with coupling (150mm dia. slotted drain pipe)	m			
21,09		Geotextiles (Kaytech U24 or similar approved)	m ²	-		
21.10		Synthetic-fibre filter fabric (A6 Bidum or similar approved)	m ²	-		
B21.12		Concrete outlet structures, manholes boxes, catchpits, junction boxes and cleaning eye for subsoil drainage system:				
(a)		No. of Wingwall Outlet structures	No.	2,00		
(b)		No. of Wingwall Intlet structures	No.	2,00		
2100		TOTAL CARRIED FORWARD TO SUMMARY				

Tenderer

Witness 1

Witness 2

Employer

Witness 1

Witness 2



Tenderer

Witness 1

Witness 2

Employer


Witness 1


Witness 2


Witness 2





Section 2300		CONCRETE KERBING, CONCRETE CHANNELLING, OPEN CONCRETE CHUTES AND CONCRETE LININGS FOR OPEN DRAINS				
23,01		Concrete kerbing:				
(a)		Prefabricated battered concrete kerb:				
i		SABS Fig. 8c	m	70,00		
ii		SABS Fig. 3	m	80,00		
B23.02		Concrete kerbing-channelling combination:				
(b)	LI	Cast in situ concrete in edge beam using 30/19 concrete measuring 300 x 300mm	m	10,00		
23,07		Trimming of excavation for concrete-lined open drains				
(a)		In soft material	m ²			
(b)		In hard material	m ²			
23,08		Concrete lining for open drains:				
(a)		Cast in situ concrete lining (Class 25/19 Type 3 Side Drain as indicated on STD 017)	m ³	-		
(b)		Class F2 surface finish to cast in situ concrete Type 3 Side Drain as indicated on STD 017	m ²			
23,09		Formwork to cast in situ concrete lining for open drains (Class F2 surface finish				
(a)		To sides with formwork on the internal face only	m ²			
(c)		To end of slab	m ²			
23,10		Sealed joints in concrete linings of open drains (as indicated on STD 017)	m			
23,12		Steel reinforcement				
(c)		Welded steel fabric (Ref 395)	kg			
23,14		Cutting bituminous surfacing and pavement layers for concrete kerbing, channelling or concrete-lined drains	m			
2300		TOTAL CARRIED FORWARD TO SUMMARY				



Tenderer


Witness 1


Witness 2


Employer


Witness 1


Witness 2



Tenderer

Witness 1

Witness 2

Employer


Witness 1


Witness 2


Witness 2





Section 3300		MASS EARTHWORKS				
33,01		Cut and borrow to fill, including free-haul up to 0,5km:				
(a)		Material (G7 min) in compacted layer thickness of 200mm and less:				
(i)		Compaction to 93% of modified AASHTO density	m³	200,00		
(c)		Rockfill processing and compaction	m³	140,00		
B33.02		Fill constructed from gravel obtained from commercial sources or approved sources provided by the Contractor, including all haul				
(a)		G6 min compacted to 95% mod. AASHTO density (200mm thick)	m³	100,00		
(b)		G5 min compacted to 97% mod. AASHTO density (150mm thick)	m³	100,00		
33,04		Cut to spoil, including free-haul up to 5km. Material obtained from:				
(a)		Soft material	m³	900,00		
(b)		Intermediate material	m³	500,00		
(c)		Hard material	m³	500,00		
(d)		Boulder material class A	m³	Rate only		
(e)		Boulder material class B	m³	Rate only		
33,09		Material bladed to windrow	m³	470,00		
33,10		Roadbed preparation and the compaction				
(a)		Compaction to 93% mod. AASHTO density	m³	470,00		
33,14		Extra over item 33.01 for excavating				
(a)		Non-cemented material	m³	-		
33,17		Extra over items 33.04 for spoiling material excavated from benches constructed for widening existing fills	m³	-		
3300		TOTAL CARRIED FORWARD TO SUMMARY				



Tenderer


Witness 1


Witness 2


Employer


Witness 1


Witness 2



Tenderer

Witness 1

Witness 2

Employer

Witness 1

Witness 2

Witness 2



Tenderer

Witness 1

Witness 2

Employer

Witness 1

Witness 2

Witness 2



Tenderer

Witness 1

Witness 2

Employer

Witness 1

Witness 2

Witness 2



Tenderer

Witness 1

Witness 2

Employer

Witness 1

Witness 2

Witness 2



Tenderer

Witness 1

Witness 2

Employer


Witness 1


Witness 2


Witness 2





Section 5600		ROAD SIGNS				
56,01	LI	Road sign boards with painted or coloured semi-matt background. Symbols, lettering and borders in semi-matt black or in Class 1 retro-reflective material, where the sign board is constructed from:				
(c)		Pre-painted galvanised steel plate (chromadek or approved equivalent):				
i.		Area not exceeding 2m ²	m ²	4,00		
ii.		Area exceeding 2m ² but not 10m ²	Rate only			
iii.		Area exceeding 10m ²	Rate only			
56,02		Extra over item 56.01 for using:				
(a)		Background of retro-reflective material:				
i.		Class I	m ²	4,00		
(b)		Lettering, symbols, numbers, arrows,				
i.		Class II	m ²	4,00		
56,03		Road-sign supports (overhead road sign structures excluded):				
(a)		Steel tubing (100mm diameter, 4mm wall thickness)	t	0,30		
(b)		Timber (140mm diameter, treated)	m			
56,05	LI	Excavation and backfilling for road sign supports (not applicable to kilometre posts)	m ³	6,00		
56,06		Extra over item 56.05 for cement-treated soil backfill	m ³	6,00		
5600		TOTAL CARRIED FORWARD TO SUMMARY				



Tenderer


Witness 1


Witness 2


Employer


Witness 1


Witness 2



Witness 2



Tenderer

Witness 1

Witness 2

Employer


Witness 1


Witness 2


Witness 2





**OCCUPATIONAL HEALTH AND SAFETY AND TRAINING
(BILL OF QUANTITIES)**



Tenderer


Witness 1


Witness 2


Employer


Witness 1


Witness 2



Witness 2



Tenderer

Witness 1

Witness 2

Employer

Witness 1

Witness 2

Witness 2



Witness 2



Section No.	Description	Amount
Section 1200	GENERAL REQUIREMENTS AND PROVISIONS	
Section 1300	CONTRACTOR'S ESTABLISHMENT ON SITE AND GENERAL OBLIGATIONS	
Section 1400	OFFICES FOR THE ENGINEER'S SITE PERSONNEL	
	ROADS SECTION (ROAD A1 AND ROAD A2)	
Section 1500	ACCOMMODATION OF TRAFFIC	
Section 1700	CLEARING AND GRUBBING	
Section B1800	DAYWORKS	
Section 2100	DRAINS	
Section 2200	PREFABRICATED CULVERTS	
Section 2300	CONCRETE KERBING, CONCRETE CHANNELLING, OPEN CONCRETE CHUTES AND CONCRETE LININGS FOR OPEN DRAINS	
Section 3200	SELECTION, STOCKPILING AND BREAKING-DOWN THE MATERIAL FROM BORROW PITS, CUTTINGS AND EXISTING PAVEMENT LAYERS, AND PLACING AND COMPACTING THE GRAVEL LAYERS	
Section 3300	MASS EARTHWORKS	
Section 3400	PAVEMENT LAYERS OF GRAVEL MATERIAL	
Section 3500	STABILISATION	
Section 5200	GABIONS	
Section 5600	ROAD SIGNS	
Section 5700	ROAD MARKINGS	
Section 7300	CONCRETE BLOCK PAVING FOR ROADS	
Section 8100	SPECIAL TESTS	
	Sub-Total A1	

Tenderer

Witness 1

Witness 2

Employer


Witness 1


Witness 2





Section No.	Description	Amount
	INTERSECTION UPGRADE SECTION	
Section 1500	ACCOMMODATION OF TRAFFIC	
Section 1700	CLEARING AND GRUBBING	
Section B1800	DAYWORKS	
Section 2100	DRAINS	
Section 2300	CONCRETE KERBING, CONCRETE CHANNELLING, OPEN CONCRETE CHUTES AND CONCRETE LININGS FOR OPEN DRAINS	
Section 3200	SELECTION, STOCKPILING AND BREAKING-DOWN THE MATERIAL FROM BORROW PITS, CUTTINGS AND EXISTING PAVEMENT LAYERS, AND PLACING AND COMPACTING THE GRAVEL LAYERS	
Section 3300	MASS EARTHWORKS	
Section 3400	PAVEMENT LAYERS OF GRAVEL MATERIAL	
Section 3500	STABILISATION	
Section 3600	CRUSH STONE BASE	
Section 4100	PRIME COAT	
Section 4200	ASPHALT BASE AND SURFACING	
Section 5600	ROAD SIGNS	
Section 5700	ROAD MARKINGS	
Section 8100	SPECIAL TESTS	
	Sub-Total A2	
	TOTAL SCHEDULE A (Sub-Total A1 + Sub-Total A2)	
Section E	Structured Training	
Section C	Occupational Health and Safety	
	SUB-TOTAL 1 (Total Schedule A + Section E + Section C)	
	CONTINGENCIES (10% of Sub-total 1)	
	SUB-TOTAL 2 (Sub-Total 1 + 10 % Contingencies)	
	VAT (15% of Sub-total 2)	
	TOTAL CONSTRUCTION COST	



Tenderer


Witness 1


Witness 2


Employer


Witness 1


Witness 2