

New Mashifane Park: Installation of Civil Engineering Services: Roads and Stormwater Network

Contract No: Area "A"

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New Mashifane Park: Installation of Civil Engineering Services: Roads and Stormwater Network**Contract No: Area "A"****C1.2 GENERAL REQUIREMENTS AND PROVISIONS**

Item	Description	Unit	Quantity	Rate	Amount (R)
C1.2	GENERAL REQUIREMENTS AND PROVISIONS				
C1.2.1.1	Monitoring compliance with and reporting on the EMP	month	12.00		
C1.2.1.2	Dedicated environmental officer	month	12.00		
C1.2.4	Stakeholder liaison	month	12.00		
C1.2.5	Safety:				
C1.2.5.1	Health and safety plan	Lump sum	1.00		
C1.2.5.2	Implementation of health and safety plan	month	12.00		
C1.2.8	Dayworks:				
C1.2.8.1	Personnel:				
	(a) Unskilled labourer	h	50.00		
	(b) Semi-skilled labourer	h	50.00		
	(c) Skilled labourer	h	50.00		
	(d) Gang leader	h	50.00		
	(e) Foreman	h	50.00		
	(f) Skilled Artisan	h	50.00		
C1.2.8.2	Construction equipment (specify size and / or model number):				
	(a) Motor grader	h	50.00		
	(b) Vibratory roller	h	50.00		
	(c) Pneumatic roller	h	50.00		
	(d) Front end loader	h	50.00		
	(e) Tractor loader backhoe	h	50.00		
	(f) Excavator	h	50.00		
	(g) Compressor	h	50.00		
Total Carried Forward					

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C1.3 CONTRACTOR'S SITE ESTABLISHMENT AND GENERAL OBLIGATIONS

Item	Description	Unit	Quantity	Rate	Amount (R)
C1.3	CONTRACTOR'S SITE ESTABLISHMENT AND GENERAL OBLIGATIONS				
C1.3.1	The Contractor's general obligations:				
C1.3.1.1	Fixed obligations	Lump sum	1.00		
C1.3.1.2	Value related obligations	Lump sum	1.00		
C1.3.1.3	Time-related obligations	month	12.00		
C1.3.2	Contract sign boards	m ²	36.00		
C1.3.3	(a)OHS Consultant to be Appointed by Client	Prov. Sum	1.00	750 000.00	
	(b) Contractors Handling cost and profit in respect of sub-item BC1.2.10(a)	%	-		
	(c)Provision for proper PPE's to Local Workers	No	120		
	(d)Provision for Compiling of Safety File	No	1		
	(e) Provision for proper PPE's for Visitors	No	20		
	(f)Provision for Medical Surveillance(entry and exit)	No	1		
	(g) Provision for Site Safety Signage	No	1		
	(h) Provision for Fire Fighting Equipment	No	10		
	(l) Provision for First Aid Kit(supply & maintenance)	No	2		
	(j) Provision for HCS Spill Kits(supply & maintain)	No	1		
	(k) Provision for Safety Barricades	No	15		
	(l) Provision for H&S Personnel(e.g CHSO.FA etc.)	No	12		
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C1.4 FACILITIES FOR THE ENGINEER

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	BROUGHT FORWARD				R 50 000.00
C1.4.3.17	Double 55 watt fluorescent light fittings complete with ballast and tubes	No.	5.00		
C1.4.3.16	Single incandescent light fittings complete with 100 watt globes	No.	1.00		
C1.4.3.19	Wash-hand basins complete with taps and drains	No.	2.00		
C1.4.3.20	Laboratory basins complete with swan-neck taps and drain	No.	1.00		Rate Only
C1.4.3.22	Fume cupboards complete according to the drawings	No.	1.00		
C1.4.3.24	Air-conditioning units with, 2,2 kW minimum capacity, mounted and with own power connection	No.	3.00		
C1.4.3.26	Curing chamber for UCS specimens, complete with water connection, including the provision of brick partitions, plaster, paint and shelving, all complete according to the drawings	No.	1.00		Rate Only
C1.4.3.30	A4 colour printer, copier, scanner	No.	1.00		
	Refrigerators	No.	1.00		
	Uninterruptable power supply units	No.	3.00		
	Floodlights complete with poles and 500 Watt minimum globes	No.	3.00		
C1.4.3.31	Rain gauge	No.	2.00		
C1.4.3.32	Minimum/maximum atmospheric temperature gauge	No.	2.00		
C1.4.3.38	Standpipe complete with 30 m of 19 mm dia. heavy duty hose pipe	No.	4.00		
C1.4.5	Services				
C1.4.5.1	fixed cost	Lump sum	1.00		Rate Only
C1.4.5.2	Running costs	month	12.00		Rate Only
	Services for rented houses	month	12.00		
	Provision of photostat facilities	month	12.00		
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C1.5 ACCOMMODATION OF TRAFFIC

Item	Description	Unit	Quantity	Rate	Amount (R)
C1.5	ACCOMMODATION OF TRAFFIC				
C1.5.2	Accommodation of vehicular traffic	month	7.20		
C1.5.4	Construction of temporary deviations	km	7.40		Rate Only
C1.5.5	Maintenance of temporary deviations:	km	7.00		Rate Only
C1.5.5.9	Grading of temporary deviations and existing roads used as detours	km	1.20		
C1.5.5.10	Watering of temporary deviations and existing roads used as detours	kℓ	650.00		
C1.5.5.11	Other road maintenance work ordered by the Engineer	prov sum	1.00	R 100 000.00	
C1.5.5.12	Handling cost, profit and all other charges in respect of item C1.5.6.11	%	150 000.00		
C1.5.6	Removal of temporary deviations	km	6.00		
BC1.5.7 L	Temporary traffic control facilities:				
	(a) Flagmen	Person	40.00		
	(b) Portable STOP and GO-RY signs	No	8.00		Rate Only
	(d) Amber flashing lights	No	20.00		Rate Only
	(e) Road signs, R- and TR-series				
	(ii) 1200mm diameter	No	25.00		-
	(f) Road signs, TW-series with distance board				
	(iii) 1500mm sides	No	20.00		-
	(g) Road signs, STW-, DTG-, TGS- AND TG-series (excluding delineators and barricades)	m²	100.00		-
	(h) Delineators: (TW 401 and TW 402)				
	(i) Single (1200mm x 300mm)	No	50.00		-
	(ii) Double sided blade (800mm x 200mm)	No	80.00		-
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C1.5 ACCOMMODATION OF TRAFFIC

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C3.1 DRAINS

Item	Description	Unit	Quantity	Rate	Amount (R)
C3.1	DRAINS				
C3.1.1.1	Excavating all material situated within the following depth ranges below the surface level using conventional methods				
	(a) 0 m up to 1,5 m	m³	550.00		
	(b) Exceeding 1,5 m and up to 3,0 m	m³	1200.00		
	(c) Etc, in increments of 1,5 m	m³			Rate Only
C3.1.1.2	Extra over sub-item C3.1.1.1 for excavation in hard and boulder material, irrespective of depth	m³	650.00		
C3.1.3	Clearing, shaping and disposal of accumulated sediment in existing lined open drains and systems				
C3.1.3.1	Using conventional methods (up to 1,5 m):				
	(a) Manholes and inlet and outlet structures	m³	500.00		
	(b) Culvert barrels	m³	200.00		Rate Only
	(c) Concrete or other lined side drains	m³	20.00		
C3.1.4	Excavation for subsoil drainage systems:				
C3.1.4.1	Excavating in all material situated within the following depth ranges below surface level				
	(a) 0 m up to 1,5 m	m³	1 000.00		
	(b) Exceeding 1,5 m and up to 3,0 m	m³	300.00		
C3.1.4.4	Extra over sub-item C3.1.4.1 for excavation in hard and boulder material, irrespective of depth	m³	500.00		
C3.1.5	Impermeable backfilling to subsoil drainage systems				
C3.1.5.1	Un-stabilised natural gravel obtained from approved sources on the site	m³	1 500.00		
C3.1.5.3	Extra over items C3.1.5.1	m³			
C3.1.8	Natural permeable material in subsoil drainage systems (sand)				
C3.1.8.1	Natural sand obtained from approved sources	m³	400.00		
C3.1.8.2	Natural sand from commercial sources	m³	150.00		
C3.1.9	Pipes in subsoil drainage systems:				
C3.1.9.1	HDPE (i) 110 mm internal dia., slotted	m	1200		
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C3.2 CULVERTS					
Item	Description	Unit	Quantity	Rate	Amount (R)
C3.2	CULVERTS				
C3.2.1.1	Excavating in all material situated within the following depth ranges below the surface level:				
(a)	0 m to 1,5 m	m³	3 575.00		
(b)	Exceeding 1,5 m and up to 3,0 m	m³	18500.00		
(c)	Exceeding 3,0m up to 4,0 m	m³	1200.00		
C3.2.1.4	Extra over sub-item C3.2.1.1 for excavation in hard or boulder material, irrespective of depth	m³	5000.00		
C3.2.2	Backfilling:				
C3.2.2.1	Using the excavated material	m³	28275.00		
C3.2.3	Concrete pipe culverts:				
C3.2.3.2	On Class B bedding:				
(a)	600mmØ 75D	m	3100.00		
(b)	600mmØ 100D	m	1900.00		
(c)	675mmØ 75D	m	250.00		
(d)	675mmØ 100D	m	485.00		
(e)	750mmØ 75D	m	210.00		
(f)	750mmØ 100D	m	200.00		
(g)	825mmØ 75D	m	155.00		
(h)	825mmØ 100D	m	210.00		
(i)	900mmØ 75D	m	110.00		
(j)	900mmØ 100D	m	155.00		
(k)	1050mmØ 75D	m	110.00		
(l)	1050mmØ 100D	m	125.00		
(m)	1200mmØ 75D	m	220.00		
(n)	1200mmØ 100D	m	210.00		
(o)	1350mmØ 75D	m	1 100.00		
(p)	1350mmØ 100D	m	355.00		
C3.2.3.5	Provision of skew ends of pipe culvert				
	(600-1350mmØ	No	20.00		
C3.2.7	Cast in situ concrete and formwork:				
C3.2.7.1	In Class A bedding, screeds, concrete backfill and the encasing for pipes, including formwork, (25MPa)	m³	110		
C3.2.7.2	In complete in situ floor slabs for rectangular culverts, manholes and catchpits including formwork, joints and Class U2 surface finish (25MPa) (installed at a standard depth of 1,0 m)	m³	155		
C3.2.7.3	In walls, excluding formwork but including Class U2 surface finish (25MPa)	m³	110		
C3.2.7.5	In inlet and outlet structures including kerbs, chutes and downpipes, skewer ends, catchpits, manholes, thrust and anchor blocks, excluding formwork but including Class U2 surfacing finish (25MPa)	m³	65		
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Item	Description	Unit	Quantity	Rate	Amount (R)
Brought Forward					
C3.2.7.6	Formwork of concrete under items C3.2.7.3 to 5 above (U2)	m ²	450		
C3.2.8	Concrete backfill or encasement for culverts (19mm 20MPa)	m ³	60		
C3.2.10	Reinforcement:				
C3.2.10.1	Mild steel bars	Ton	4		
C3.2.10.2	High-tensile steel bars	Ton	19		
C3.2.10.3	Welded steel fabric	kg	13000		
C3.2.15	Manholes and catch pits, with prefabricated elements				
C3.2.15.1	Prefabricated floors (installed at a standard depth of 1,5 m):				
(a)	600mmØ	No	200		
(b)	750mmØ	No	35		
(c)	900mmØ	No	38		
C3.2.15.2	Prefabricated roofs:				
(a)	600mmØ	No	200		
(b)	750mmØ	No	35		
(c)	900mmØ	No	38		
C3.2.15.3	Prefabricated walls				
(a)	600mmØ	m	300		
(b)	750mmØ	m	50		
(c)	900mmØ	m	38		
C3.2.15.4	Extra over item C3.2.15.1 and C3.2.7.2 for variations in the depths of all types of concrete manholes with prefabricated wall combinations deeper than 1,0 m	m	300		
C3.2.16	Brickwork (Engineering bricks):				
C3.2.16.2	230 mm thick	m ²	135		
C3.2.17	Plaster	m ²	135		
C3.2.18	Benching	m ²	210		
C3.2.19	Accessories:				
C3.2.19.2	Inlet grids or covers	No	24		
C3.2.19.3	Manhole frames	No	24		
C3.2.19.4	Manhole covers or gratings	No	15		
C3.2.20	Anchors for pipes	No	40		
C3.2.24	Compaction of bedding for inlets, outlets, manholes and catchpits:				
C3.2.24.1	Preparation and compaction of in situ bedding material to 93 % of MDD (200mm)	m ³	135		
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Item	Description	Unit	Quantity	Rate	Amount (R)
C3.3	CONCRETE KERBING AND CHANNELLING, ASPHALT BERMS, CHUTES, DOWNPIPES, AS WELL AS CONCRETE, STONE PITCHED AND GABION LININGS FOR OPEN DRAINS				
C3.3.1.1	Prefabricated kerbing-channeling				
	Figure 8c	m	17 500.00		
	Figure 7	m	3200.00		
	Figure 3	m	2200.00		
	Figure 12	m	12000.00		
	Cast in situ concrete channeling (300mm wide x 100mm thk)	m	12500.00		
	Transition kerbing as per drawing	m	450.00		
C3.3.3	Extra over items C3.3.1 for concrete kerbing or concrete kerbing and channeling on curves				
C3.3.3.1	On curves of radii more than or equal to 5,0 m but less than 20 m	m	755.00		
C3.3.3.2	On curves with radii more than or equal to 1,0 m but less than 5,0 m	m			Rate Only
C3.3.3.3	On curves with radii less than 1,0 m	m			Rate Only
C3.3.15	Energy dissipaters in outlet structures				
C3.3.15.1	Precast concrete blocks in outlet structures	No	150.00		
C3.3.15.2	Stones set in outlet structures	m²	250.00		
C3.3.16	Demolition and removal of existing kerbs and/or channel	m³	100.00		
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C4.2 CUT MATERIALS

Item	Description	Unit	Quantity	Rate	Amount (R)
C4.2	CUT MATERIALS				
C4.2.2	Additional material investigations during the supplementary exploration				
C4.2.2.1	Cost of additional trial pits and/or drilling and laboratory testing	Prov Sum	1.00	R 150 000.00	R 150 000.00
C4.2.2.2	Handling costs and profit in respect of item C4.2.2.1	%	150 000.00		
C4.2.3	Excavating of materials in cuttings, material obtained from				
C4.2.3.1	Soft excavation	m³	14 000.00		
C4.2.3.2	Boulder excavation class A	m³			Rate Only
C4.2.3.3	Boulder excavation class B	m³			Rate Only
C4.2.3.4	Hard excavation (other than by blasting)	m³	2 500.00		
C4.2.3.5	Hard excavation (by blasting)	m³			Rate Only
C4.2.4	Excavating of materials in box cuts, material obtained from				
C4.2.4.1	Soft excavation	m³	75 200.00		
C4.2.4.2	Boulder excavation class A	m³			Rate Only
C4.2.4.3	Boulder excavation class B	m³			Rate Only
C4.2.4.4	Hard excavation (other than by blasting)	m³	3 000.00		
C4.2.4.5	Hard excavation (by blasting)	m³	1 000.00		
C4.2.8	Excavate material to spoil in sites designated by the Contractor, material obtained from				
C4.2.8.1	Soft excavation, overburden and unsuitable material	m³	5 500.00		
C4.2.8.2	Boulder excavation class A	m³			Rate Only
C4.2.8.3	Boulder excavation class B	m³			Rate Only
C4.2.8.4	Hard excavation (other than by blasting)	m³	2 200.00		
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C4.4 COMMERCIAL MATERIALS

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C5.2 FILL LAYERS

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C5.3 ROAD PAVEMENT LAYERS

Item	Description	Unit	Quantity	Rate	Amount (R)
	ROAD PAVEMENT LAYERS				
C5.3.2	Construction of pavement layers:				
C5.3.2.1	Construction of layers using conventional construction methods:				
	(a) Selected layer - G5 - (150mm thick) compacted to 95 % Mos Aashto Density - Sub Base	m³	10 800.00		
	(b) Selected layer - G5- (150mm thick) Stabilised to C4 Lower Sub-Base	m³	11 300.00		
	(c) Selected layer G5 (Stabilized) (150mm thick) To C3 Upper Sub-Base Layer	m³	7 200.00		
	(d) Gravel Base layer G5 (Stabilized) (150mm thick) Stabilized to C4 Base layer	m³	6 780.00		
C5.3.2.2	Construction of layers using labour enhancement:				
	(e) Gravel wearing course layer (layer thickness indicated) compacted to 95 % of MDD	m³	2 500.00		
C5.3.9	Construction of a trial section:				
C5.3.9.1	Construction of a trial section using conventional methods of construction:				
	(a) Stabilised gravel layer (150mm thick) trial section	m³	342.00		
	(c) Crushed stone base layer (150mm thick) trial section	m³	342.00		
C5.3.12	Surface regularity payment adjustments	prov sum	1.00		
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Item	Description	Unit	Quantity	Rate	Amount (R)
C11.7	ROAD MARKINGS AND ROAD STUDS				
C11.7.2	Retro-reflective road-marking paint				
C11.7.2.1	White lines (broken or unbroken):				
	(i) 100 mm wide	km	10.00		
	(ii) 150 mm wide	km			Rate Only
	(iii) 200 mm wide	km			Rate Only
C11.7.2.2	Yellow lines (broken or unbroken):				
	(i) 100 mm wide	km			Rate Only
	(ii) 150 mm wide	km	7.00		
C11.7.2.4	White lettering and symbols	m²	300.00		
C11.7.2.5	Yellow lettering and symbols	m²	25.00		
C11.7.5	Variations in rate of application:				
C11.7.5.1	White paint	litre	10.00		
C11.7.5.2	Yellow paint	litre	10.00		
C11.7.7	Road studs				
C11.7.7.1	Permanent road studs compliant to SANS 1442 red, yellow and white	No	1 500.00		Rate Only
C11.7.8	Setting out and premarking the lines (excluding traffic-island markings, lettering and symbols)	km	9.00		
C11.7.9	Re-establishing the painting unit during the defects notification period and at other instances on instruction of the Engineer	Lump S	1.00		
57.08	Re-marking of road after liability period	Lump S	1.00		

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G1000 GUIDELINES FOR SUBCONTRACTING AND LABOUR ENHANCEMENT

Item	Description	Unit	Quantity	Rate	Amount (R)
G1000	GUIDELINES FOR SUBCONTRACTING AND LABOUR ENHANCEMENT				
G10.01	Project Liaison Committee costs	Prov sum	1.00	R 100 000.00	R 100 000.00
	(a) Handling cost and profit in respect of Item G10.01 above	%	100 000.00		R -
G10.02	Community Liaison Officer salary	month	12.00		R -
	(a) Handling cost and profit in respect of Item G10.02 above	%	-		R -
G10.03	Training:				
	(a) General training of potential ABE™s	Prov sum	1.00	R 150 000.00	R 150 000.00
	(b) Training of the temporary workforce:				
	(i) Technical training	Prov sum	1.00	R 450 000.00	R 450 000.00
	(ii) HIV/ AIDS training	Prov sum	1.00	R 50 000.00	R 50 000.00
	(iii) OHS Training	Prov sum	1.00	R 50 000.00	R 50 000.00
	(c) Handling cost and profit in respect of Items G10.03 (a) (b) (i) (ii) (iii)	%	700 000.00		
G10.05	Provision and maintenance of the ABE support office	month	12.00	R 15 000.00	R 180 000.00
G10.06	Penalties				
	(Refer to Part C3.7 : Guidelines for subcontracting and labour enhancement for the calculation of penalties)				
	(a) Contract participation goals for subcontracting to Affirmable Business Enterprise (ABE) / Targeted Enterprise (CIDB 1CE PE - CIDB 5CE PE) 15%	%	-	R -	
	(b) Targeted Labour (8%)	%	-	R -	
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