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BILL OF QUANTITIES**SECTION 1 PRELIMINARY AND GENERAL****PART AA PRELIMINARIES**

Item	Clause	Description	Unit	Quantity	Rate	Amount
		<u>GENERAL CONDITIONS OF CONTRACT (GCC 2015) READ IN CONJUNCTION WITH THE CONTRACT DATA</u>				
1	GCC 2015	Fixed Charge obligations	sum	1		
2	GCC 2015	Time Related obligations	sum	1		
		<u>SANS 1921-1 : GENERAL ENGINEERING AND CONSTRUCTION WORKS READ IN CONJUNCTION WITH THE ASSOCIATED SPECIFICATION DATA IN THE SCOPE OF WORKS</u>				
3	SANS 1921-1	Fixed Charge obligations	sum	1		
4	SANS 1921-1	Time Related obligations	sum	1		
		<u>COMMUNITY LIAISON OFFICER</u>				
5	PS.13	Allow for a CLO to be appointed	PC Sum	200000	1.00	200,000.00
6	PS.13	Allow for a percentage (%) mark up on Item 5	%	200000		
		<u>LOCAL LABOUR</u>				
7	PS.14	Allow for the weekly submission of proof of employment of local labour	week	32		
		<u>STAKEHOLDER MANAGEMENT AND LIAISON</u>				
8	PS.AB.11	Stakeholder Management and Liaison	week	32		

TOTAL CARRIED TO SECTION 1 SUMMARY: PRELIMINARY AND GENERAL**R****PART AB GENERAL SPECIFICATIONS**

Item	Clause	Description	Unit	Quantity	Rate	Amount
		<u>FIXED ITEMS</u>				
1	PS.AB.4	Notice Board	sum	1		
2	GCC.6.2.1	Surities	sum	1		
3	GCC.8.6.1.1	Workman's compensation	sum	1		
4	GCC.8.6.1.5	Insurance of works, damage to persons and property, etc	sum	1		
5	AB.4	Contractor's Camp Site / Store Yard	sum	1		
6	AB.7	Initial supply of all signs, barricades and delineators	sum	1		
7	PS.AB.5	Road Deviations	sum	1		

Upgrading of TRK 86004 from gravel to asphalt surfaces in Embo Area, Ward 08

Part Continued **PART** AB GENERAL SPECIFICATIONS

Item	Clause	Description	Unit	Quantity	Rate	Amount
8	PS.AB.10	Survey coordination of existing valves, manholes, catchpit and cable duct markers	sum	1		
9	PS.AB.10	Survey control and setting out of works	sum	1		
10	PS.15	Survey for, and Preparation of, 'As-Built' Drawings	sum	1		
11	PS.AB.9	Proving of existing services by hand	m3	15		
12	PS.AB.8	Raise or lower existing valves / water meter pipes. Rate to include for all repairs, supply of fittings, pipes, plant and labour necessary.	sum	1		
13	AB.6	Cost of Samples and Contractor's Preliminary and Site Control Testing	sum	1		
14	AB.6	Acceptance Testing to be carried out by an external independent accredited SANAS Soil Laboratory	PC Sum	15000	1.00	15,000.00
15	AB.6	Contractors mark-up on item above	%	15000		
TIME RELATED ITEMS						
16	PS.AB.7	Allow for Progress Photographs (Contractor to submit a USB every second week with photographs depicting works on site and as required by the Engineer)	week	32		
17	PS.AB.6	Contractors superintendence	week	32		
18	PS.11	Site Security	week	32		
19	AB.7	Maintenance of Pedestrian and Traffic Facilities	week	32		
20	AB.7	Maintenance of all signs, barricades and delineators	week	32		

TOTAL CARRIED TO SECTION 1 SUMMARY: PRELIMINARY AND GENERAL

R

SECTION 2 OCCUPATIONAL HEALTH AND SAFETY

PART AH OCCUPATIONAL HEALTH and SAFETY

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	AH.14	Contractor's initial obligations in respect of the Occupational Health and Safety Act and Construction Regulations	sum	1		
2	AH.14.1	Contractor's time related obligations in respect of the Occupational Health and Safety Act and Construction Regulations	week	32		
3	AH.14.3	Submission of the Health and Safety File	sum	1		

TOTAL CARRIED TO SECTION 2 SUMMARY: OCCUPATIONAL HEALTH AND SAFETY R

Upgrading of TRK 86004 from gravel to asphalt surfaces in Embo Area, Ward 08

SECTION 3 SITE CLEARANCE**PART B SITE CLEARANCE**

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	B.8.2	General clearance and grubbing in contractor's camp site.	m2	600		
2	B.8.2	General clearance and grubbing in road reserve.	m2	4500		
3	B.8.2	General clearance and grubbing in temporary stockpile area.	m2	300		
4	B.8.3	Removal of existing stones and boulders.	m3	15		
5	B.8.4	Removal of large trees and stumps (girth not exceeding 1,5 m) to spoil.	no.	30		
6	B.8.5 & PS.B.2	Removal of existing fences and store on site for reuse. Rate to include removal of posts, brickwork and concrete where necessary.	m	60		
7	B.8.5 & PS.B.3	Removal of existing damaged fences to spoil. Rate to include removal of posts and concrete where necessary.	m	30		
8	PS.B.5	Removal of existing retaining loffelstain walls and store for later use	m2	200		
9	PS.B.5	Removal of existing broken retaining loffelstain walls and spoil at tip	m2	50		
10	PS.B.6	Removal of existing handmade (tyre) retaining walls to store at the Engineer's descretion.	m2	90		
11	B.8.9 & 10	Removal of existing brickwork/concrete to spoil	m3	5		
12	B.8.14 & PS.B.4	Removal of roadways to tip	m3	22		

TOTAL CARRIED TO SECTION 3 SUMMARY: SITE CLEARANCE**R**

Upgrading of TRK 86004 from gravel to asphalt surfaces in Embo Area, Ward 08

SECTION 4 ROADWORKS**PART C CONCRETE WORK**

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	C.8.1, PS.C.1-PS.C.3, PS.C.11, PS.C.13	Grade 25/19 Mpa mass concrete to be used at Engineers discretion	m3	40		
2	C.8.1,PS.C.1-PS.C.12	Grade 25/19 Mpa (base Type A) concrete to wall footing. Rate to include the supply of all materials required to fully construct, handling, levelling, vibrating, soft board expansion joints and shuttering.	m3	20		
3	C.8.1,PS.C.1-PS.C.12	Grade 25/19 Mpa (base Type B) concrete to wall footing. Rate to include the supply of all materials required to fully construct, handling, levelling, vibrating, soft board expansion joints, shuttering and Mesh Ref 245 for the reinforced concrete wall footing.	m3	20		
4	C.8.1,PS.C.1-PS.C.12	Grade 25/19 Mpa (base Type C) concrete to wall footing. Rate to include the supply of all materials required to fully construct, handling, levelling, vibrating, soft board expansion joints, shuttering and Mesh Ref 245 for the reinforced concrete wall footing.	m3	5		
5	C.8.1,PS.C.1-PS.C.12	Grade 25/19 Mpa (base Type D) concrete to wall footing. Rate to include the supply of all materials required to fully construct, handling, levelling, vibrating, soft board expansion joints, shuttering and Mesh Ref 245 for the	m3	5		
6	PS.C.1 & PS.C.1-PS.C.1-PS.C.3,PS.C.10,PS.C.11	Construct 100mm Grade 25/19 MPa concrete driveways. Rate to include for the excavation, supply of all materials, shuttering, formwork, expansion joints, reinforcing Mesh Ref 193 and weedkiller	m3	10		
7	C.8.1	Reinforced trapezoidal concrete chutes (1m wide x 300mm deep) using 25/19Mpa concrete with Mesh Ref 245. Rate to nclude all necessary shuttering, formwork, expansion joints & finishing. 245	m	50		

TOTAL CARRIED TO SECTION 4 SUMMARY: ROADWORKS

R

PART DA EARTHWORKS : BULK

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	DA.8.3	Excavate in all material and place into fill and compact to 95% Mod A.A.S.H.T.O.	m3	2500		
2	DA.8.3	Excavate in all material to stockpile.	m3	3500		

Upgrading of TRK 86004 from gravel to asphalt surfaces in Embo Area, Ward 08

Part Continued **PART** DA EARTHWORKS : BULK

Item	Clause	Description	Unit	Quantity	Rate	Amount
3	DA.8.3	Excavate in all soft material to spoil. Rate to include haulage and royalties.	m3	1160		
4	DA.8.3	Excavation in intermediate material to spoil at tip	m3	1215		
5	DA.8.3	Extra over above for excavation in hard material to spoil at tip.	m3	60		
6	DA.8.3	Excavate unsuitable material below embankments or formation and spoil at tip. Rate to include haulage and royalties.	m3	30		
7	DA.8.4	Import suitable fill material (G9 or better quality) from Contractors off-site source and compact to 93% MOD A.A.S.H.T.O inclusive of haulage and royalties	m3	1500		
8		Rip and recompact existing material	m3	600		
9	DA.8.9	Formation	m2	4000		
10	DA.8.6	Trimming of embankments	m2	3500		
11	DA.8.10	Overhaul material in excess of free haul distance of 1km	m3 * km	1000		

TOTAL CARRIED TO SECTION 4 SUMMARY: ROADWORKS

R

PART DD EARTHWORKS FOR STRUCTURES

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	DD.8.2	Excavate in all material for headwall to spoil.	m3	5		
2	DD.8.2	Excavate in all material for TB 300 wall to spoil. Rate to include base (Type A) excavation for retaining wall.	m3	390		
3	DD.8.2	Excavate in all material for TB 500 wall to spoil. Rate to include base (Type B) excavation for retaining wall.	m3	250		
4	DD.8.2	Excavate in all material for Type C wall to spoil. Rate to include base (Type C) excavation for retaining wall.	m3	350		
5	DD.8.2	Excavate in all material for Type D wall to spoil. Rate to include base (Type D) excavation for retaining wall.	m3	370		
6	DD.8.2	Excavate in all material for gabion boxes to spoil.	m3	300		
7	DD.8.3	Backfill and compact using material from site	m3	650		

TOTAL CARRIED TO SECTION 4 SUMMARY: ROADWORKS

R

Upgrading of TRK 86004 from gravel to asphalt surfaces in Embo Area, Ward 08

PART EB GRADED CRUSHED STONE

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	EB.8.1	Supply, load, transport and process base layer G2 graded crushed stone, 150mm thick from commercial source compacted to 98% Mod ASSHTO	m3	600		
2	EB.8.1	Supply, load, transport and process sub-base layer G5 graded crushed stone, 150mm thick from commercial source compacted to 95% Mod ASSHTO on Site	m3	640		
3	EB.8.2	Supply and apply prime coat at 0.6l/m2	m2	4000		

TOTAL CARRIED TO SECTION 4 SUMMARY: ROADWORKS

R

PART ED ROAD ASPHALT

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	ED.8.2	Continuously graded base course of compacted thickness 40mm (Mix Sa-S10) compacted at 93% - Private Plant	t	400		
2	ED.8.4	Tack Coat	m2	4000		
3	PS.ED.7	Saw Cut existing road edge	m	50		

TOTAL CARRIED TO SECTION 4 SUMMARY: ROADWORKS

R

PART EF KERBS AND HAUNCHES

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	PS.EF.1	Type D Barrier kerb and 150mm channel. Rate inclusive of concrete base of 65mm to 75mm thick grade 20/19 mPa, all excavation, levelling and compaction work	m	700		
2	EF.8.2	Type D Barrier kerb with NO channel. Rate inclusive of concrete base of 65mm to 75mm thick grade 20/19 mPa, all excavation, levelling and compaction work	m	100		
3	EF.8.2	Precast concrete 1.0m transition to scoop. [Type D Kerb]	no.	20		

TOTAL CARRIED TO SECTION 4 SUMMARY: ROADWORKS

R

PART EH STEEL GUARDRAILS & CONC. MEDIAN BARRIERS

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	EH 8.1	Supply and erect galvanised straight steel guardrails on precast concrete post	m	210		
2	EH 8.1	Supply and erect galvanised curved steel guardrails on precast concrete post	m	250		
3	EH 8.1	Supply and install reflective plates at 7.62 c/c	no.	62		

Upgrading of TRK 86004 from gravel to asphalt surfaces in Embo Area, Ward 08

Part Continued **PART** EH STEEL GUARDRAILS & CONC. MEDIAN BARRIERS

Item	Clause	Description	Unit	Quantity	Rate	Amount
4	EH 8.1	Supply and install precast concrete posts @ 3.81 c/c	no.	122		
5	EH 8.1	End wings	no.	10		

TOTAL CARRIED TO SECTION 4 SUMMARY: ROADWORKS

R

PART S REINSTATEMENT

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	S.8.4 & PS.S.1	Reinstatement of existing fences stored on site. Rate to include installation of posts, concrete for footings.	m	30		
2	PS.S.2	Repairs to existing damaged fences stored on site. Rate to include fence reinstatement, the supply of materials, fittings, plant and labour required.	m	30		
3	PS.S.3	Supply new fences and posts to match existing on site. Rate to include the supply of fences and posts, fittings, plant and labour required.	PC Sum	50000	1.00	50,000.00
4	PS.S.3	Allow for a percentage (%) mark up on item above	%	50000		
5		Reinstatement of TB300 retaining wall stored on site. Rate to include supply, lay sand filling, geofabric extended into fill and laid under 2nd row, as per detail, approved weepholes at 2,5m c/c, compaction of subgrade to 95% Mod A.A.S.H.T.O	m2	25		

TOTAL CARRIED TO SECTION 4 SUMMARY: ROADWORKS

R

PART TA ROAD SIGNS

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	TA.8.1	Supply and erect road sign boards, area not exceeding 2m2	no.	4		
2	TA.8.2.2	Supply and erect 75mm x 75mm square hot dipped galvanised steel supports. Rate to include all haulage.	m	15		
3	TA.8.3	Excavate and backfill for road sign supports	m3	5		
4	TA.8.4	Concrete grade 20/19 for road sign footings	m3	5		

TOTAL CARRIED TO SECTION 4 SUMMARY: ROADWORKS

R

PART TB ROAD MARKINGS

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	PS.TB.1	Painted road lines 100mm wide (white), including setting out and premarking	m	780		

Part Continued **PART** **TB** **ROAD MARKINGS**

Item	Clause	Description	Unit	Quantity	Rate	Amount
2	PS.TB.3	Road Marking for lettering, symbols and traffic islands (white), including setting out lettering, symbols and traffic island markings.	m2	20		
3	PS.TB.1	Painted road lines 300mm wide (white), including setting out and premarking	m	30		

TOTAL CARRIED TO SECTION 4 SUMMARY: ROADWORKS

R

Upgrading of TRK 86004 from gravel to asphalt surfaces in Embo Area, Ward 08

SECTION 5 STORMWATER DRAINAGE**PART DB EARTHWORKS FOR PIPE TRENCHES**

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	DB.8.5	Excavate in all material for 600mm diameter stormwater pipes where depth is :- 0.0m -1.5m. Rate to include for preparation of Class C bedding, compaction, placing of pipe and selected backfill.	m3	350		
2	DB.8.5	Excavate in all material for 600mm diameter stormwater pipes where depth is :- Over 1,5 m and not exceeding 2,0 m. Rate to include for preparation of Class C bedding, compaction, placing of pipe and selected backfill.	m3	35		
3	DB.8.5	Excavate in all material for 600mm diameter stormwater pipes where depth is :- Over 2,0 m and not exceeding 2,5 m. Rate to include for preparation of Class C bedding, compaction, placing of pipe and selected backfill.	m3	25		
4	DB.8.5	Excavate in all material for 600mm diameter stormwater pipes where depth is :- Over 2,5 m and not exceeding 3,0 m. Rate to include for preparation of Class C bedding, compaction, placing of pipe and selected backfill.	m3	15		
5	DB.8.5	Excavate in all material for 110mm subsoil pipe (0.00m-1.50m deep). Rate to include for preparation of bedding, compaction, placing of pipe and backfill.	m3	5		
6	DB.8.5	Excavate in all material for 160mm diameter UPVC (400kPA) pipe ducts for crossings including joiners and end caps. Rate to include for preparation of bedding, compaction, placing of pipes and backfill	m3	5		
7	DB.8.6	Extra over above for excavation in hard material.	m3	10		
8	DB.8.8	Excavation of unsuitable material from trench bottom and spoil at tip including material displaced by pipe from trench excavation	m3	10		
9	DB.8.9	Provision of clean coarse sand for backfilling of pipe trenches from designated borrow area	m3	15		
10		Supply and lay approved U14 Bidium or equally approved drainage grade geofabric seperation blanket	m2	100		

Upgrading of TRK 86004 from gravel to asphalt surfaces in Embo Area, Ward 08

Part Continued **PART DB EARTHWORKS FOR PIPE TRENCHES**

Item	Clause	Description	Unit	Quantity	Rate	Amount
11	DB.8.9	Provision of 19 mm stone chippings for subsoil drain from commercial or off-site source	m3	15		
12	DB.8.20	Trench shoring to remain in excavation	m3	10		

TOTAL CARRIED TO SECTION 5 SUMMARY: STORMWATER DRAINAGE

R

PART PG NON PRESSURE PIPELINES and PC CULVERTS

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	PG.8.2	Supply and lay 600 mm diameter concrete pipe Class 100D.	m	350		
2	PG.8.2	Supply and lay 110mm diameter subsoil pipe	m	60		
3		160mm diameter UPVC (400kPA) pipe ducts	m	50		

TOTAL CARRIED TO SECTION 5 SUMMARY: STORMWATER DRAINAGE

R

PART PH MANHOLES and APPURTENANT DRAINAGE WORKS

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	PH.8.3	Standard inlet type S1. Depth :- - Over 0.0m and not exceeding 1.5m	no.	7		
2	PH.8.3	Standard inlet type S2. Depth :- - Over 0.0m and not exceeding 1.5m	no.	2		
3	PH.8.3	Standard inlet type D3. Depth:-- Over 0.0m and not exceeding 2.0m	no.	2		
4	PH.8.3	Drop inlet. Depth up to 3.5m	no.	5		
5	PH.8.3	Construct Type A headwall as per Standard Drawing 38576	no.	6		

TOTAL CARRIED TO SECTION 5 SUMMARY: STORMWATER DRAINAGE

R

Upgrading of TRK 86004 from gravel to asphalt surfaces in Embo Area, Ward 08

SECTION 6 PROTECTION WORKS**PART F PROTECTION WORKS**

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	F.8.4,	Stone pitching	m2	20		
2	PS.F.4	Supply and construct reno mattresses: 230mm thick X 1.0m X 3.0m. Rate to include anchor blocks	m3	15		
3	PS.F.5	Supply and lay of PVC coated 1m high gabion boxes. Rate to include stones and geofabric as surround cage.	m3	30		
4	PS.F.5	Supply and lay of PVC coated 2m high gabion boxes. Rate to include stones and geofabric as surround cage.	m3	320		
5	PS.F.5	Supply and lay of PVC coated 3m high gabion boxes. Rate to include stones and geofabric as surround cage.	m3	360		
6	PS.F.6	TB300 Loffestain Blocks. Rate to include supply, lay sand filling, geofabric extended into fill and laid under 2nd row, as per detail, approved weepholes at 2,5m c/c, compaction of subgrade to 95% Mod A.A.S.H.T.O	m2	400		
7	PS.F.6	TB500 Loffestain Blocks. Rate to include supply, lay sand filling, geofabric extended into fill and laid under 2nd row, as per detail, approved weepholes at 2,5m c/c, compaction of subgrade to 95% Mod A.A.S.H.T.O	m2	380		
8	PS.F.6	Type C Loffestain Blocks. Rate to include supply, lay sand filling, geofabric extended into fill and laid under 2nd row, as per detail, approved weepholes at 2,5m c/c, compaction of subgrade to 95% Mod A.A.S.H.T.O	m2	150		
9	PS.F.6	Type D Loffestain Blocks. Rate to include supply, lay sand filling, geofabric extended into fill and laid under 2nd row, as per detail, approved weepholes at 2,5m c/c, compaction of subgrade to 95% Mod A.A.S.H.T.O	m2	85		
10	PS.F.7	Repairs to existing TB300/TB500 Loffestain Blocks	m2	50		

TOTAL CARRIED TO SECTION 6 SUMMARY: PROTECTION WORKS**R**

SUMMARY OF BILL OF QUANTITIES

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	AH OCCUPATIONAL HEALTH and SAFETY	R		
3	SITE CLEARANCE		R	
	B SITE CLEARANCE	R		
4	ROADWORKS		R	
	C CONCRETE WORK	R		
	DA EARTHWORKS : BULK	R		
	DD EARTHWORKS FOR STRUCTURES	R		
	EB GRADED CRUSHED STONE	R		
	ED ROAD ASPHALT	R		
	EF KERBS AND HAUNCHES	R		
	EH STEEL GUARDRAILS & CONC. MEDIAN BARRIERS	R		
	S REINSTATEMENT	R		
	TA ROAD SIGNS	R		
	TB ROAD MARKINGS	R		
5	STORMWATER DRAINAGE		R	
	DB EARTHWORKS FOR PIPE TRENCHES	R		
	PG NON PRESSURE PIPELINES and PC CULVERTS	R		
	PH MANHOLES and APPURTENANT DRAINAGE WORKS	R		
6	PROTECTION WORKS		R	
	F PROTECTION WORKS	R		
SUB TOTAL				R
ADD VAT (15%) - (only if a registered VAT Vendor)				R
TOTAL CARRIED TO FORM OF TENDER				R