Provision of Incremental Services to Informal Settlements within the Southern Region: Road, Footpaths and Associated Stormwater Control in Settlement eMlaza J17 (Ward 111)

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# **BILL OF QUANTITIES**

#### **SECTION** 1 PRELIMINARY AND GENERAL

#### **PART** $\mathbf{A}\mathbf{A}$ **PRELIMINARIES**

Item	Clause	Description	Unit	Quantity	Rate	Amount
		GENERAL CONDITIONS OF CONTRACT (GCC2015) READ IN CONJUNCTION WITH CONTRACT DATA				
1	GCC 2015	Fixed Charge obligations	sum	1		
2	GCC 2015	Time Related obligations	sum	1		
		SANS 1921-1: GENERAL ENGINEERING AND CONSTRUCTION WORKS READ IN CONJUNCTION WITH THE ASSOCIATED SPECIFICATION DATA IN THE SCOPE OF WORKS				
3	SANS 1921-1	Fixed Charge Items	sum	1		
4	SANS 1921-1	Time Related Items	sum	1		
5	C1.2.3.1	COMMUNITY LIAISON OFFICER	PC Sum	87000	1.00	87 000.00
6		Allow for CLO to be appointed	%	87000		

TOTAL CARRIED TO SECTION 1 SUMMARY: PRELIMINARY AND GENERAL

**PART GENERAL SPECIFICATIONS** AB

Item	Clause	Description	Unit	Quantity	Rate	Amount
		FIXED CHARGES				
1	PS.AB.2	Offices for Engineer and Staff	sum	1		
2	PS.14	Contractor's Camp Site / Store Yard	sum	1		
3	AB.5	Notice Board as per Annexure C3.6.1	no.	1		
4	PS.15.3	Deductions for re-tests requested when density of a layer is not as per specification as determined by Acceptance Testing (minus R1000 per set)	-R1000/set			
5	PS.AB.7	Initial Supply of all signs, barricades and delineators	sum	1		
6	PS.11.1	Survey for, and Preparation of, 'As-Built' Drawings	sum	1		
7	PS.11.3	Additional Site Survey	PC Sum	5000	1.00	5 000.00
8	PS.11.3	Contractor's markup on item 7	%	5000		
		TIME RELATED CHARGES				
9	PS.AB.2	Offices for Engineer and Staff	sum	1		
10	PS.14	Contractors Camp Site/Store Yard	sum	1		

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### Part Continued PART AB GENERAL SPECIFICATIONS

Item	Clause	Description	Unit	Quantity	Rate	Amount
11	AB.6	Cost of Samples and Contractor's Preliminary and Site and Site Control Testing	sum	1		
12	AB.7	Maintenance of Pedestrain and Traffic Facilities	sum	1		
13	AB.7	Maintenance of all signs, barricades and delineators	sum	1		
14	PS.11.2	Setting out of works	sum	1		
15	PS.12	Site Security	sum	1		
16	C1.2.3.6/PS.A B.8	Expected Risks: De-establishment costs	sum	1		
17	C1.2.3.6/PS.A B.8	Expected Risks: Re-establishment costs	sum	1		
18	PS.19.1	Penalties for not removing unwanted material by end of work day	-R1000/day			

TOTAL CARRIED TO SECTION 1 SUMMARY: PRELIMINARY AND GENERAL

PART AH OCCUPATIONAL HEALTH and SAFETY

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	AH.14.1/ PS.10	Contractor's initial obligations in respect of the Occupational Health and Safety Act and Construction Regulations	sum	1		
2	AH.14.2/ PS.10	Contractor's time related obligations in respect of the Occupational Health and Safety Act and Construction Regulations	sum	1		
3	AH.14.3/ PS.10	Submission of the Health and Safety File	sum	1		

TOTAL CARRIED TO SECTION 1 SUMMARY: PRELIMINARY AND GENERAL

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### **SECTION** 2 ROADWORKS & FOOTPATHS

### **PART** B SITE CLEARANCE

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	B.8.2	General clearance and grubbing including trees up to a maximum girth of 1.5m	m2	1090		
2	B.8.4	Removal of trees of girth exceeding 1,5 m	no.	5		
3	PS.B.8.5	Removal of 1,2 m - 2,4 m high wire mesh fence, stockpile and reinstate. Rate to include all haulage	m	40		
4	B.8.9	Removal of brickwork	m3	10		
5	PS.B.8.13	Removal of reinforced/unreinforced concrete	m3	10		
6	B.8.13	Removal of existing asphalt roadway to tip	m3	3		
7	PS.B.8.24	Removal of informal retaining structures	m2	25		

TOTAL CARRIED TO SECTION 2 SUMMARY: ROADWORKS FOOTPATHS

### PART C CONCRETE WORK

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	C.8.1	Grade 20MPa/19mm concrete for Footpaths (Class 3 - Wood Float Surface Finish)	m3	40		
2	C.8.1	Grade 20MPa/19mm concrete for Handrail Post Bases and Bollard Bases	m3	2		
3	C.8.2	Welded fabric reinforcement - Ref Mesh 193	t	1		
4	C.8.2	Welded fabric reinforcement - Ref Mesh 311	t	1		
5	C.8.3	Class 1 Formwork for concrete works	m2	250		
6	PS.C.8.4	Movement Joints for footpaths as per Detail Drawing 49287 (Sheet 3 of 3)	m	25		
7	PS.C.8.5	Saw cut joints for footpaths as per Detail Drawing 49287 (Sheet 3 of 3)	m	170		

TOTAL CARRIED TO SECTION 2 SUMMARY: ROADWORKS FOOTPATHS

**PART** DA EARTHWORKS: BULK

Item	Clause	Description	Unit	Quantity	Rate	Amount
	1 DA.8.2	Remove topsoil to stockpile and if surplus to requirements, spoil in an approved dump site. Rate to include for stockpile handling.	m3	80		

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### Part Continued PART DA EARTHWORKS: BULK

Item	Clause	Description	Unit	Quantity	Rate	Amount
2	DA.8.3	Excavate in all material, deposit and spread material as fill or stockpile or,if surplus to requirements, spoil in an approved dump site. Rate to include for stockpile handling.	m3	400		
3	DA.8.3	Excavate soft material to spoil	m3	80		
4	DA.8.3	Extra over on item 3 for excavation in intermediate material	m3	60		
5	DA.8.3	Extra over on item 3 for excavation in hard material	m3	60		
6	DA.8.4	Import G4 material from commercial sources	m3	40		
7	DA.8.4	Import G5 Material from commercial sources	m3	25		
8	DA.8.4	Import G7 material from commercial sources	m3	60		
9	DA.8.5	Compact imported G4 material to 97% Mod. AASHTO	m3	40		
10	DA.8.5	Compact imported G5 material to 95% Mod. AASHTO.	m3	25		
11	DA.8.5	Compact imported G7 material to 93% Mod. AASHTO.	m3	60		
12	PS.DA.8.11	Rip and re-compact insitu material to 90% Mod AASHTO	m3	75		
13	DA.8.6	Trimming of embankments	m2	365		
14	DA.8.9	Formation	m2	695		
15	DA.8.9	Extra over item 14 above for areas of cut or where the fill layer thickness is less than 150mm	m2	150		

TOTAL CARRIED TO SECTION 2 SUMMARY: ROADWORKS FOOTPATHS

#### PART ED ROAD ASPHALT

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	PS.ED.8.2	Sand skeletal - 30mm thick continuously graded Sa-S10 Asphalt wearing course (A-E2)(Level 1B)	t	15		
2	PS.ED.8.5	Prime Coat (Application rate = 0.8L/m2)	m2	180		

TOTAL CARRIED TO SECTION 2 SUMMARY: ROADWORKS FOOTPATHS

# **PART** EF KERBS AND HAUNCHES

Item Cla	use Description	Unit	Quantity	Rate	Amount
1 EF.8	.1 Fig.12 kerb	m	290		

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### Part Continued PART EF KERBS AND HAUNCHES

Item	Clause	Description	Unit	Quantity	Rate	Amount
2	EF.8.1	Extra over item 1 for curves of radius less than 25 m	m	35		
3	EF.8.1	Type F mountable kerb and cast insitu channel as per drawing 38577	m	125		

TOTAL CARRIED TO SECTION 2 SUMMARY: ROADWORKS FOOTPATHS

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### PART EG SIDEWALKS, FOOTPATHS and MEDIAN AREAS

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	PS.EG.8.7	Precast Concrete Steps (Base steps or similar approved) including Grade 20/13 base as per Standard Details Drawing No. 49287 (Sheet 3 of 3)	no.	110		
2	PS.EG.8.8	Handrails as per Standard Detail Drawing No. 49287 (Sheet 3 of 3)	m	65		
3	PS.EG.8.9	Precast Handrail Posts as per Standard Detail Drawing No. 49287 (Sheet 3 of 3)	no.	18		
4	PS.EG.8.10	Precast Concrete Bollards as per Standard Detail Drawing No. 49287 (Sheet 3 of 3)	no.	2		

TOTAL CARRIED TO SECTION 2 SUMMARY: ROADWORKS FOOTPATHS

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### **PART** F PROTECTION WORKS

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	F.8.1	Topsoiling on banks, verges and service lines from stockpile - thickness 100mm	m2	185		
2	PS.F.8.3	Grass planting on banks, verges and service lines. Rate to include for supply and lay of Cynodon 'Dactylon' grass, fertilizer and maintenance etc.	m2	185		

TOTAL CARRIED TO SECTION 2 SUMMARY: ROADWORKS FOOTPATHS

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### 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 including galvanising	m2	2		
2	TA.8.2	Supply and erect standard 76mm diameter hot dipped galvanised road name sign supports	no.	2		
3	TA.8.3	Excavate and backfill for road sign supports	m3	1		
4	TA.8.4	Concrete grade 20/19 for road sign footings	m3	1		

TOTAL CARRIED TO SECTION 2 SUMMARY: ROADWORKS FOOTPATHS

Provision of Incremental Services to Informal Settlements within the Southern Region: Road, Footpaths and Associated Stormwater Control in Settlement eMlaza J17 (Ward 111)

## **PART** TB ROAD MARKINGS

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	TB.8.1.1	Road marking paint as per SANS 731 150mm wide (white), including setting out and premarking	km	0.2		

TOTAL CARRIED TO SECTION 2 SUMMARY: ROADWORKS FOOTPATHS

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### **SECTION** 3 STORMWATER DRAINAGE

### **PART** B SITE CLEARANCE

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	B.8.3	General clearance and grubbing for pipelines within a servitude for a width of 2m	m2	25		

TOTAL CARRIED TO SECTION 3 SUMMARY: STORMWATER DRAINAGE

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### PART C CONCRETE WORK

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	C.8.1	Grade 25MPa/19mm concrete for 600mm wide x 100mm thick 'trapezodial' drain.	m3	6		
2	C.8.2	Welded fabric reinforcement Ref : Mesh 193	t	0.2		
3	C.8.3	Class 1 Formwork for concrete drain	m2	6		

TOTAL CARRIED TO SECTION 3 SUMMARY: STORMWATER DRAINAGE

R

### PART DB EARTHWORKS FOR PIPE TRENCHES

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	DB.8.4	Remove topsoil to stockpile and if surplus to requirement, spoil in approved dump site. Depth 100mm. Rate to include for stockpile handling.	m2	15		
2	PS.DB.8.5	Excavate and backfill in soft material for 450 mm diameter pipe where depth is : Over 0,0 m and not exceeding 1,5 m	m3	15		
3	PS.DB.8.5	Excavate and backfill in soft material for 450 mm diameter pipe where depth is : Over 1.5m and not exceeding 2,0m	m3	35		
4	DB.8.6	Extra over items 2-3 for hard material	m3	5		
5	DB.8.6	Extra over items 2-3 for rock	m3	5		
6	DB.8.15	Disposal of unsuitable or surplus material including material displaced by pipe from trench excavation	m3	10		
7	DB.8.9	Provision of selected fill for pipe bedding from scheduled excavation.	m3	5		
8	DB.8.9	Provision of selected fill for pipe bedding from a commercial or off- site source	m3	10		
9	DB.8.9	Provision of clean coarse sand for pipe bedding from commercial or off-site source	m3	10		
10	DB.8.10	Placing and compacting of Class C bedding for 450mm diameter pipe	m3	10		

### 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 trench bottom from commercial or offsite source	m3	5		
12	DB.8.19	Prove existing services by hand excavation (provisional), where depth is: Over 0,0 m and not exceeding 1,5 m	m3	5		

TOTAL CARRIED TO SECTION 3 SUMMARY: STORMWATER DRAINAGE

R

### **PART** F PROTECTION WORKS

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	F.8.1	Topsoiling from stockpile as directed by the Engineer - thickness 100mm	m2	25		
2	PS.F.8.3	Grass planting as directed by the Engineer. Rate to include for supply and lay of Cynodon 'Dactylon' grass, fertilizers, pesticides etc	m2	25		
3	F.8.6	Gabion Mattresses: 300mm thick	m3	3		

TOTAL CARRIED TO SECTION 3 SUMMARY: STORMWATER DRAINAGE

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#### PART PG NON PRESSURE PIPELINES and PC CULVERTS

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	PG.8.2	450mm diameter Weholite stormwater pipe with rubber seal joint or similar approved. (Pressure rating = 1.5bar, Ring Stiffness = 4KN/m2)	m	40		
2	PG.8.5	Grade 15/26 concrete for anchor blocks as per Standard Detail No. 38575	no.	3		

TOTAL CARRIED TO SECTION 3 SUMMARY: STORMWATER DRAINAGE

R

## PART PH MANHOLES and APPURTENANT DRAINAGE WORKS

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	PS.PH.8.2	Standard Single Stormwater manhole. As per standard detail drawing No. 38572. Depth:- Over 1.5m and not exceeding 2m	no.	1		
2	PS.PH.8.3	Standard inlet manhole type S1. Depth as per standard detail drawing No. 38572. Depth : Over 0,0 m and not exceeding 1,5 m	no.	1		
3	PH.8.2	Extra over item 1-2 for type B benching	no.	1		
4	PH.8.2	Extra over item 1-2 for type A channel with 450 x 450mm junction including any change in direction.	no.	1		

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Part Continued PART PH MANHOLES and APPURTENANT DRAINAGE WORKS

Item	Clause	Description	Unit	Quantity	Rate	Amount
5	PS.PH.8.9	Construct standard outlet headwall for 450mm diameter pipes as per standard detail drawing No. 38576	no.	3		

TOTAL CARRIED TO SECTION 3 SUMMARY: STORMWATER DRAINAGE

### **SECTION** 4 RETAINING STRUCTURES - CIVIL WORKS

### **PART** B SITE CLEARANCE

Item Clause	Description	Unit	Quantity	Rate	Amount
1 B.8.2	General site clearance and grubbing	m2	110		

TOTAL CARRIED TO SECTION 4 SUMMARY: RETAINING STRUCTURES - CIVIL WORKS

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### PART C CONCRETE WORK

1	[tem	Clause	Description	Unit	Quantity	Rate	Amount
	1	C.8.1	Grade 25MPa/28mm concrete for retaining wall bases	m3	16		

TOTAL CARRIED TO SECTION 4 SUMMARY: RETAINING STRUCTURES - CIVIL WORKS

R

### **PART** DA EARTHWORKS: BULK

]	Item	Clause	Description	Unit	Quantity	Rate	Amount
_	1	DA.8.4	Import G5 material from commercial	m3	10		
			sources				

TOTAL CARRIED TO SECTION 4 SUMMARY: RETAINING STRUCTURES - CIVIL WORKS

R

### PART DB EARTHWORKS FOR PIPE TRENCHES

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	DB.8.9	Provision of 19 mm single size stone chippings for subsoil drain from commercial or off-site source	m3	5		
2	DB.8.9	Provision of clean coarse sand for pipe trench bedding from commercial or offsite source	m3	65		

TOTAL CARRIED TO SECTION 4 SUMMARY: RETAINING STRUCTURES - CIVIL WORKS

R

## PART DD EARTHWORKS FOR STRUCTURES

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	DD.8.2	Excavate soft material, load, haul, deposit, stockpile or surplus to requirements, spoil in an approved dump site.	m3	135		
2	DD.8.2	Extra-over item 1 above for hard material.	m3	40		
3	DD.8.2	Extra-over item 1 above for rock	m3	35		
4	DD.8.5	Backfill G7/G9 material and compact to 93% Mod AASHTO	m3	150		

TOTAL CARRIED TO SECTION 4 SUMMARY: RETAINING STRUCTURES - CIVIL WORKS

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**PART** F PROTECTION WORKS

Item	Clause	Description	Unit	Quantity	Rate	Amount
		Supply and construct the following blocks:				
1	PS.F.8.9	Supply and construct dry stack retaining wall using Geolok - G400 or similar approved	m2	110		
2	PS.F.8.11	50mm dia. uPVC Pipe for retaining wall	no.	25		

TOTAL CARRIED TO SECTION 4 SUMMARY: RETAINING STRUCTURES - CIVIL WORKS

R

## PART PG NON PRESSURE PIPELINES and PC CULVERTS

Item	Clause	Description	Unit	Quantity	Rate	Amount
		Supply 450mm diameter Concrete pipe (50D)				
1	PG.8.12.1	Geotextile blanket for gabion baskets(2.3mm thick, Penetration load = 2.5KN, Porosity = 93%)	m2	90		
2	PG.8.12.1	Geotextile blanket as surround to Subsoil Drains (1.6mm thick, Penetration load = 1.7KN, Porosity = 93%)	m2	90		
3	PG.8.12.2	110 mm diameter pitch fibre sub-soil pipes	m	75		
4	PS.PG.8.14	Sub-soil drains and outlets	no.	3		

 ${\bf TOTAL\ CARRIED\ TO\ SECTION\ 4\ SUMMARY:\ RETAINING\ STRUCTURES\ -\ CIVIL\ WORKS}$ 

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Provision of Incremental Services to Informal Settlements within the Southern Region: Road, Footpaths and Associated Stormwater Control in Settlement eMlaza J17 (Ward 111)

### **SECTION** 5 SEWER RETICULATION

### PART PH MANHOLES and APPURTENANT DRAINAGE WORKS

Item	Clause	Description	Unit	Quantity	Rate	Amount
1	PS.PH.8.7	Lowering of existing manholes to suit foopath profile	no.	3		
2	PS.PH.8.7	Extra over item 1 for precast concrete heavy duty manhole cover and frame as per standard drawing 38570 and dispose of existing covers and frames	no.	3		

TOTAL CARRIED TO SECTION 5 SUMMARY: SEWER RETICULATION

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# **BILL OF QUANTITIES SECTION SUMMARY**

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# **BILL OF QUANTITIES SECTION SUMMARY**

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# **BILL OF QUANTITIES SECTION SUMMARY**

# **SECTION 3** STORMWATER DRAINAGE

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# **BILL OF QUANTITIES SECTION SUMMARY**

## **SECTION 4** RETAINING STRUCTURES - CIVIL WORKS

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PRICING DATA

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# **BILL OF QUANTITIES SECTION SUMMARY**

# **SECTION** 5 SEWER RETICULATION

PART	PH	MANHOLES and APPURTENANT DRAINAGE WORKS						
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