

**CONSTRUCTION OF SUBSURFACE DRAINAGE - MAKHATHINI IRRIGATION SCHEME
BLOCK 6A - JOZINI - UMKHANYAKUDE DISTRICT**

SCHEDULE 1

1200A

1200 GENERAL REQUIREMENTS AND PROVISIONS

Item No.	Payment	Description	Unit	Quantity	Rate	Amount
A	SANS 1200 PS.A 8.5	SUMS STATED PROVISIONALLY BY ENGINEER				
A.1.1	8.5 b1	1) Provision for Community Liaison Officer (CLO)	Provisional / Month	18	R 5 000,00	R 90 000,00
A.1.2	PSA12.5	2) Specialist professional services geotechnical agricultural & subsurface drainage engineer & ECSA mentorship. Approval by KZNDARD required of consultant to be appointed.	Provisional / Month	18	R 39 500,00	R 711 000,00
A.1.3	8.5 b1	3) Entrepreneurial skills Training and Venue	Provisional / Month	18	R 1 000,00	R 18 000,00
A.1.4	PSA12.5	4) Geotechnical and Filtration tests requirements	Provisional / Month	18	R 3 000,00	R 54 000,00
A.1.5	PSA12.5	5) Surveys (Stakeouts, Quality Control & Verification)	Provisional / Month	18	R 7 500,00	R 135 000,00
A.1.6	PSA12.5	6) Re-establishment of damaged agricultural crops or crop losses within farms.	Provisional / Hectare	59	R 20 000,00	R 1 180 000,00
A,1,7	PSA12.5	7) Typical remedial works scope required to existing concrete drainage canal				
A.1.8	8.5 a)	1. Add missing concrete panels within existing canal. 2. General- grout around sub-soil drain inlets into canal 3. Add incomplete drainage pipe junctions to the canal. 4. Remove soil & debris deposits in the existing canal. 5. Installation of emergency access ladders within existing canal 6. Repair / replace cracked & damaged canal panels. 7. Backfill behind concrete panels of canal.	Provisional sum	1000	R 1 250,00	R 1 250 000,00
A.1.9	8.5 b1	8) Construction contingencies 5% of estimated contract value	Provisional sum	1	R 1 550 000,00	R 1 550 000,00
A. 1.10	8.5 b2	Contractors handling costs, overheads, charges and profit and all other charges in respect of sub items	%			
TOTAL CARRIED FORWARD TO SUMMARY						R 4 988 000,00

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SCHEDULE 2

1200A

1200 GENERAL REQUIREMENTS AND PROVISIONS

Item No.	Payment	Description	Unit	Quantity	Rate	Amount
	SANS 1200 A	PRELIMINARY & GENERAL				
B	8,3	FIXED-CHARGE ITEMS				
B.1.1	8.3.1	Contractual requirements (eg. Insurances, UIF etc)	Months	18		
B.1.2	8.3.2	Establish facilities on site (eg. Fencing, Electricity, Water, Plant ...)	Sum	1		
	8.3.2.1	Facilities for Engineer (SANS 1200 AB)				
B.1.3	8.3.2.1 (c)	Supply and install Two Name boards	Sum	1		
B.1.4	8.3.2.2	Facilities for contractor				
B.1.5	8.3.2.2 (a)	Office and storage sheds	Sum	1		
B.1.6	8.3.2.2 (b)	Workshops	Sum	1		
B.1.7	8.3.2.2 (c)	Laboratories	Sum	1		
B.1.8	8.3.2.2 (d)	Living Accommodation - Site Security	Sum	1		
B.1.9	8.3.2.2 (e)	Ablution and latrine facilities	Sum	1		
B.1.10	8.3.2.2 (f)	Tools and equipment	Sum	1		
B.1.11	8.3.2.2 (g)	Water supplies, electricity and communications	Sum	1		
B.1.12	8.3.3	Other fixed-charge obligations	Sum	1		
B.1.13	8.3.4	Remove Engineer`s and contractor`s site establishment on completion of contract	Sum	1		
B.1.14	8.3.5	Provision for OSH&S requirements such as but not limited to : HIV awareness and safety training	Sum	1		
B.1.15	8.3.6	Provision for Environmental management plan requirements	Sum	1		
		TOTAL CARRIED FORWARD				
		TOTAL BROUGHT FORWARD				

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SCHEDULE 2

1200A

1200 GENERAL REQUIREMENTS AND PROVISIONS

	Payment	Description	Unit	Quantity		
B.2	8,4	TIME-RELATED ITEMS				
B.2.1	8.4.1	Contractual requirements	Month	18		
	8.4.2.2	Facilities for contractor				
B.2.2	8.4.2.2 (a)	Office and storage sheds	Month	18		
B.2.3	8.4.2.2 (b)	Workshops	Month	18		
B.2.4	8.4.2.2 (c)	Laboratories	Month	18		
B.2.5	8.4.2.2 (d)	Living Accommodation	Month	18		
B.2.6	8.4.2.2 (e)	Ablution and latrine facilities	Month	18		
B.2.7	8.4.2.2 (f)	Tools and equipment	Month	18		
B.2.8	8.4.2.2 (g)	Water supplies, electricity and communications	Month	18		
B.2.9	8.4.2.2 (h)	Dealing with water	Month	18		
B.2.10	8.4.2.2 (i)	Access for contractor and affected parties	Month	18		
B.2.11	8.4.3	Supervision for duration of construction or contract	Month	18		
B.2.12	8.4.4	Provision for OSH&S requirements such as but not limited to : HIV awareness and safety training	Month	18		
B.2.13	8.4.5	Provision for Environmental management plan requirements	Month	18		
	TOTAL CARRIED FORWARD					

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SCHEDULE 2

1200A

1200 GENERAL REQUIREMENTS AND PROVISIONS

TOTAL BROUGHT FORWARD				
	Payment	Description	Unit	Quantity
B.3	PS A 8.6	DAYWORKS		
B.3.1		Unskilled Labour	Day	20
B.3.2		Semi-skilled Labour	Day	20
B.3.3		Skilled Labour	Day	20
B.3.4		Foreman	Day	20
B.3.5		6 ton Tipper truck with operator	Hour	200
B.3.6		10 ton Tipper truck with operator	Hour	200
B.3.7		0.5 cubic metre excavator with operator	Hour	200
B.3.8		5 000 litres water tanker with operator	Hour	200
TOTAL CARRIED FORWARD TO SUMMARY				

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SCHEDULE 3

1200C

SANS
1200C

SITE CLEARING CIVIL WORKS

BLOCK 6A - MAKATHINI

Item No.	Payment	Description	Unit	Quantity	Rate	Amount
	8.2.1	SITE CLEARANCE				
C.1.1	8.2.1 (a)	Clear and grub area within existing canal reserve	ha	12,75		
C.1.2	8.2.1 (b)	Clear and grub subsoil drainage route (10,0m wide)	m	29 500		
C.1.3	8.2.2	Remove and grub large trees and tree stumps regardless of girth	No.	10		
C.1.4	8.2.3	Trees over 1.0 m and up to and including 2,0 m	No	30		
C.1.5	8.2.9	Transport debris and shrubs of materials cleared on the site to a dumping site identified by the Engineer (incl. hauling up to 5km)	m ³ .km	60		
TOTAL CARRIED FORWARD						

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SCHEDULE 4

1200D

1200 D SITE CLEARANCE					BLOCK 6A - MAKATHINI	
Item No.	Payment	Description	Unit	Quantity	Rate	Amount
D.1	SANS 1200 D	EARTHWORKS				
		EXCAVATION				
		8.3.2 Restricted excavation:				
D.1.1	8.3.2 (a)	1) Excavate for restricted manhole foundations or structures in all materials, and use for backfill or dispose	No.	360		
D.1.2	8.3.5 (b)	Extra excavation in all materials to provide working space around structure	m ²	3 240		
D.1.3	8.3.7 (a)	1) Intermediate excavation	m ³	33402		
D.1.4	8.3.7 (b)	2) Hard rock excavation	m ³	150		
D.1.5	8.3.7 (c)	3) Hand excavation and backfill where ordered by the Engineer	m ³	50		
D.1.6	8.3.7 (d)	Soilcrete backfill where directed by the Engineer	m ³	100		
D.1.7	8.3.6 (b)	Overhaul (provisional)				
D.1.8	8.3.6 (b)	Limited overhaul	m ³	2 500		
D.1.9	8.3.6 (c)	Long overhaul	m ³ /km	6 250		
D.1.10	8.3.10	Top soiling	m ³	13000		
D.1.11		Extra over for temporary stock piling	m ³	2 500		
D.1.12		Extra over items for disposing of spoil material on a site provided by the contractor	m ³	7 500		
TOTAL CARRIED FORWARD TO SUMMARY						

**CONSTRUCTION OF SUBSURFACE DRAINAGE - MAKHATHINI IRRIGATION SCHEME
BLOCK 6A - JOZINI - UMKHANYAKUDE DISTRICT**

SCHEDULE 5

1200DB

1200 DB		SUBSOIL DRAINAGE PIPELINES			BLOCK 6A - MAKATHINI	
	Payment	Short Description	Unit	Qty	Rate	Amount
E.1	SANS 1200DB	PIPE TRENCHES				
	PSDB 8.3.2	Trench Excavations for restricted working width				
	8.3.2 (a)	Excavation in all materials for trenches, backfill, compact and dispose of surplus materials within 0.5 km for 200mm dia & smaller PE pipes and trench widths of 600 mm (min) and trench depths of :				
E.1.1		Exceeding 0,0m up to 1,5m	m	50		
E.1.2		Exceeding 1,5m up to 2,0m	m	29 300		
E.1.3		Exceeding 2,0m up to 2,5m	m	300		
	8.3.2(b)	Extra-over item DB 8.3.2(a) for:				
E.1.4		Intermediate Material	m ³	6 500		
E.1.5		Hard rock excavation	m ³	500		
	8.3.3	Excavation Ancillaries				
	8.3.3.1	Make up deficiency in backfill materials				
E.1.6		a) from other necessary excavations on site	m ³	500		
E.1.7		b) by importation from designated borrow pits	m ³	500		
TOTAL CARRIED FORWARD						

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SCHEDULE 5

1200DB

1200 DB		SUBSOIL DRAINAGE PIPELINES			BLOCK 6A - MAKATHINI	
TOTAL BROUGHT FORWARD						
	Payment	Description	Unit	Quantity		
E.2	8.3.4	Particular Items				
E.2.1	8.3.4(a)	Shore trench	m	10 000		
E.2.2	8.3.4(b)	Control of ground water	Day	150		
	8.3.6	Finishing				
	8.3.6.1	Reinstate road surfaces complete with all courses				
E.2.3		Gravel roads	m ²	3000		
	SANS 1200LB	BEDDING				
	8.2.1	Provision of bedding from trench excavation				
	8.2.1	Available from trench excavations within 0,5 km				
E.2.4		a) From commercial sources: Selected granular material Graded Riversand or Crushed Stone 6,7 - 13mm	m ³	1 770		
E.2.5		b) Selected fill material	m ³	2 000		
	8.2.5	Overhaul of material for bedding, cradle and selected fill blanket				
E.2.6		a) Selected granular material	m ³ .km	1 770		
E.2.7		b) Selected fill material	m ³ .km	2 000		
E.2.8	8.2.8	Controlled levelling & compation of trench bottom	m ²	10 325		
	SANS 1200LE	PE DRAINAGE PIPES				
	8.2.15	Supply, lay join bed perforated subsoil PE drainage pipes, 100 Kpa, hoop stiffness heavy duty to SABS 1601-1994 for the following:				
E.2.9		110mm internal dia, perforated pipes	m	26 600		
TOTAL CARRIED FORWARD						

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SCHEDULE 5

1200DB

1200 DB		SUBSOIL DRAINAGE PIPELINES			BLOCK 6A - MAKATHINI	
TOTAL BROUGHT FORWARD						
	Payment	Description	Unit	Quantity		
E.3.1		160mm internal dia, perforated pipes	m	1 450		
E.3.2		200mm internal dia, perforated pipes	m	1 250		
	8.2.3	MANHOLES				
		Concrete Manholes				
	8.2.3.1	Supply and install 1,2m diameter pre-cast concrete manholes, complete with cover, frame and step irons, for the following depths.				
E.3.3		a) Depth 0,0m up to 1,5m	No.	10		
E.3.2		b) Depth 1,5m up to 2,0m	No.	320		
E.3.3		c) Depth 2,0m up to 2,5m	No.	30		
		Connections				
		Supply, lay join and bed PE subsurface drainage pipes, SABS 1601 - 1994 sewer pipes of the following connections, sloping and vertical:				
E.3.4		110mm x 110mm Ø junction	No.	100		
E.3.5		160mm x 110mm Ø at junction	No.	75		
	PSG 8.6	FOUNDATIONS				
E.3.6	8.4.4	Unformed surface finishes	m ³	360		
	8.2.3	END CAPS				
E.3.7		Supply all material and labour for the installation of the elbows to the 110mm diameter pipes and rodding-eyes complete within manhole junctions	No	720		
E.3.8	PSLE 8.2.18	a) Permeable material to subsoil eg. Selected granular material Approved Graded Riversand Crushed Stone 6,7 - 13mm	m ³	8 850		
CARRIED FORWARD TO SUMMARY						

**CONSTRUCTION OF SUBSURFACE DRAINAGE - MAKHATHINI IRRIGATION SCHEME
BLOCK 6A - JOZINI - UMKHANYAKUDE DISTRICT**

SCHEDULE 6

1200 G

1200 G		STRUCTURAL CONCRETE	BLOCK 6A - MAKATHINI			
	Payment	Short Description	Unit	Qty	Rate	Amount
G.1.	SANS 1200G	STRUCTURAL CONCRETE				
	8,2	FORMWORK				
G1.1	8.2.2	Smooth vertical formwork	m ²	132		
	8,3	REINFORCEMENT				
	8.3.1	Steel bars				
G1.2	a)	Mild steel	t	0,4		
G.1.3	b)	High tensile steel	t	0,4		
G1.4	8.3.2	High tensile welded mesh sheets REF. 617 - (sheet 2,4 x 6,0)	m ²	504		
	8,4	CONCRETE				
	8.4.1	Prescribed mix 1 : 3 : 6 concrete to fill cavities upon				
G1.5		Instruction of Engineer	m ³	5		
G1.6.	8.4.2	Blinding layer in 50mm thick concrete class 15/19	m ²	87		
	8.4.3	Strength concrete				
G1.7	a)	Class 15/19	m ³	38		
G1.8	b)	Class 25/19	m ³	19		
G1.9	c)	Class 30/19	m ³	54		
	8.4.4	Unformed surface finishes:				
G1.10	a)	Wood floated finish	m ²	100		
		MARK-UP RATES				
G1.11		Percentage markup on rates listed on term contracts	%			
		Percentage markup on items (with attached invoices) approved by the Employer or his representative for materials, (other than those set out in this list) used in execution of work ordered by the Employer				
G1.12		Employer	%			
TOTAL CARRIED FORWARD						
CARRIED FORWARD TO SUMMARY						

CONSTRUCTION OF SUBSURFACE DRAINAGE - MAKHATHINI IRRIGATION SCHEME BLOCK 6A - JOZINI - UMKHANYAKUDE DISTRICT

<i>SECTION</i>	<i>SUMMARY OF SCHEDULES</i>	<i>AMOUNT</i>
1. - 1200	SUMS STATED PROVISIONALLY BY ENGINEER	
2. - 1200A	1200A. GENERAL REQUIREMENTS AND PROVISIONS	
3. - 1200C	1200C. SITE CLEARANCE	
4. - 1200D	1200D. EARTHWORKS	
5. - 1200DB	1200DB. AGRICULTURAL INFIELD SUBSOIL DRAINAGE LINES	
6. - 1200G	1200G. STRUCTURAL CONCRETE	
SUB TOTAL 03		
		15% VAT
ESTIMATED CONTRACT VALUE		

Sum stated provisionally :-

- 1) Community Liaison Officer
 - 2) Overheads, charges and profit : %
 - 3) The Contractor will pay the remuneration of the CLO & farmers agricultural practice re-instatement after construction
- A provisional sum has been provided for these expenditures