

Item No	SANS Pay Ref		Unit	Quantity	Rate	Amount
		<u>SECTION 1: PRELIMINARY AND GENERAL</u>				
		<u>BILL No. 1</u>				
	<u>SANS 1200A</u>	<u>PRELIMINARY AND GENERAL (Applicable to the whole of the Works)</u>				
	8.3	<u>FIXED CHARGE ITEMS</u>				
1	8.3.1	Contractual requirements.			SUM	
	8.3.2	<u>Establishment of Facilities on the Site</u>				
	8.3.2	<u>Facilities for Engineer</u>				
2	8.3.2.1c	Name boards. (In No. 2).			SUM	
	8.3.2.2	<u>Facilities for Contractor</u>				
3	8.3.2.2a	Offices and storage sheds.			SUM	
4	8.3.2.2b	Workshops.			SUM	
5	8.3.2.2c	Laboratories			SUM	
6	8.3.2.2d	Living accommodation.			SUM	
7	8.3.2.2e	Ablution and latrine facilities.			SUM	
8	8.3.2.2f	Tools and equipment.			SUM	
9	8.3.2.2g	Water supplies, electric power, communications, dealing with water, and access.			SUM	
10	8.3.2.2h	Dealing with water			SUM	
11	8.3.2.2i	Access			SUM	
12	8.3.2.2j	Plant.			SUM	
13	8.3.3	Other fixed charge obligations.			SUM	
14	8.3.4	Removal of site establishment.			SUM	
		Carried Forward			R	
		Section No. 1 SECTION NO. 1 - PRELIMINARY AND GENERAL Bill No. 1 FIXED CHARGE ITEMS				

**UMFOLOZI SUBSTATION
400KV FEEDER BAY 7
ESKOM TRANSMISSION**

Item No	SANS Pay Ref		Unit	Quantity	Rate	Amount
		Brought Forward			R	
15	8.3.3	Complying with Health and Safety Specifications			SUM	
16	8.3.3	Complying with Environmental Management Programme Act and all other statutory environmental requirements			SUM	
17	8.3.3	Security for the works for duration of the contract			SUM	
Carried Forward to Summary of Section No. 1						R
Section No. 1						
SECTION NO. 1 - PRELIMINARY AND GENERAL						
Bill No. 1						
FIXED CHARGE ITEMS						

Item No	SANS Pay Ref		Unit	Quantity	Rate	Amount
		<u>SECTION 1: PRELIMINARY AND GENERAL</u>				
		<u>BILL No. 1</u>				
	<u>SANS 1200A</u>	<u>PRELIMINARY AND GENERAL (Applicable to the whole of the Works)</u>				
	8.4	<u>TIME RELATED ITEMS</u>				
1	8.4.1	Contractual requirements.			SUM	
	8.4.2	<u>Operation and Maintenance of Facilities on Site, for Duration of Construction, (unless otherwise stated)</u>				
	8.4.2.1	<u>Facilities for Engineer</u>				
2	8.4.2.1c	Nameboards. (In No. 2).			SUM	
	8.4.2.2	<u>Facilities for Contractor</u>				
3	8.4.2.2a	Offices and storage sheds.			SUM	
4	8.4.2.2b	Workshops.			SUM	
5	8.4.2.2c	Laboratories			SUM	
6	8.4.2.2d	Living accommodation.			SUM	
7	8.4.2.2e	Ablution and latrine facilities.			SUM	
8	8.4.2.2f	Tools and equipment.			SUM	
9	8.4.2.2g	Water supplies, electric power, communications, dealing with water, and access.			SUM	
10	8.4.2.2h	Dealing with water			SUM	
11	8.4.2.2i	Access			SUM	
12	8.4.2.2j	Plant.			SUM	
		Carried Forward			R	
		Section No. 1 SECTION NO. 1 - PRELIMINARY AND GENERAL Bill No. 2 TIME RELATED ITEMS				

**UMFOLOZI SUBSTATION
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Item No	SANS Pay Ref		Unit	Quantity	Rate	Amount
		Brought Forward			R	
13	8.4.3	Supervision for duration of construction.			SUM	
14	8.4.3	Complying with Health and Safety Specifications			SUM	
15	8.4.4	Company and head office overhead costs for duration of construction.			SUM	
16	8.4.5	Other time related obligations.			SUM	
17	8.4.5	Complying with Environmental Management Programme Act and all other statutory environmental requirements			SUM	
18	8.4.5	Security for the works for the duration of the contract.			SUM	
	8.7	<u>DAYWORK</u>				
	8.8.4	<u>Existing services.</u>				
19	8.8.4a	Supply or hire of specialist equipment for the detection of a particular service.			SUM	
20	8.8.4b	The use of equipment referred to in (a) above.			SUM	
21	8.8.4c	Excavation by hand in soft material to expose Unknown services	m3	100		
22	8.8.4d	Temporary protection, as required in terms of the project specification and as directed by the Engineer			SUM	
		Carried Forward to Summary of Section No. 1			R	
		Section No. 1				
		SECTION NO. 1 - PRELIMINARY AND GENERAL				
		Bill No. 2				
		TIME RELATED ITEMS				

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Item No	SANS Pay Ref		Unit	Quantity	Rate	Amount
SECTION 2: 400KV EXTENSION						
BILL No. 1						
	<u>SANS 1200C</u>	SITE CLEARANCE				
	8.2.6	<u>Clear hedge or fence (or both) where not scheduled separately</u>				
1	8.2.6	Supply and install barricading (Shark Net) around the working area, compliant to Eskom Safety requirement.	m	600		
2	8.2.6	Supply and install 1.8m high safety fence around the working area, compliant to Eskom Safety requirements (Provisional).	m	600		
	8.2.8	<u>Demolish and remove structures/buildings and dismantle steelwork, etc.</u>				
3	<u>C</u> 8.2.8	Remove existing security fence including post foundations and all the accessories as detailed in drwg no.EUMF12P01-SE-DR,sht 0 rev 0.	m	282		
4	8.2.8	Remove existing 6m wide gate including post foundations and all the accessories as detailed in drwg no.EUMF12P01-SE-DR,sht 0 rev 0.	No	1		
5	8.2.8	Demolish existing oil dam drum bundwalls structures including diposal of rubble with to a designated dump site.	No	1		
6	8.2.8	Demolish existing bulding with 2 roller shutter doors storage complete including disposal of rubble to a designated dump site	No	1		
	<u>SANS 1200C</u>	<u>Rubble disposal.</u>				
7	8.2.9	Transport all rubble from demolitions and the works to a nearby registered dumping site.		Item		
Carried Forward to Summary of Section No. 2					R	
Section No. 2						
SECTION NO. 2 - ALTERATIONS						
Bill No. 1						
SITE CLEARANCE						

Item No	SANS Pay Ref		Unit	Quantity	Rate	Amount
		<u>SECTION 2: 400KV EXTENSION</u>				
		<u>BILL No. 2</u>				
	<u>SANS 1200DA</u>	<u>EARTHWORKS (SMALL WORKS)</u>				
	8.3.1	<u>Excavation</u>				
1	<u>DA</u> 8.3.1a	Dig up and remove rubbish, debris, vegetation, trees and shrubs.	m2	15 928		
2	8.3.1b	Remove top soil to nominal depth of 150mm, stockpile and maintain.	m2	15 928		
	<u>SANS 1200DA</u>	<u>Overhaul</u>				
3	8.3.3 <u>DA</u> 8.3.3	Overhaul (Provisional).	m3km	2 389		
	<u>SANS 1200DA</u>	<u>Importation of Materials from Commercial Sources.</u>				
4	8.3.4	G5 Material from commercial sources in accordance with SABS 1200 DM compacted to 93% Mod AASHTO density to be approved by the Engineer.	m3	2 844		
	<u>SANS 1200</u>	<u>SOIL POISONING</u>				
5	<u>SANS 1200DA</u> 8.3.7	Approved weedkiller applied in strict accordance to the manufacturer's instructions.	m2	15 928		
	<u>SANS 1200D</u>	<u>Pitching of Surfaces</u>				
6	8.3.11	New yard stones to terrace.	m2	16 724		
		Carried Forward to Summary of Section No. 2			R	
		Section No. 2				
		SECTION NO. 2 - ALTERATIONS				
		Bill No. 2				
		EARTHWORKS				

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Item No	SANS Pay Ref		Unit	Quantity	Rate	Amount
SECTION 3: 400KV YARD - MAIN BASES (COLUMN)						
BILL No. 1						
EARTHWORKS (PROVISIONAL)						
	<u>SANS 1200DA</u>	Excavation				
1	8.3.1 8.3.1b	Excavate in all materials and use for backfill or embankment as ordered.	m3	125		
2	<u>DA</u> 8.3.1b	Rip 150mm and compact at O.M.C to 93% MOD AASHTO density.	m2	144		
	<u>SANS 1200D</u>	<u>Extra over for:</u>				
3	8.3.2b 8.3.2b.1	Intermediate excavation.	m3	25		
4	8.3.2b.2	Hard rock excavation.	m3	19		
5	<u>SANS 1200DA</u> 8.3.1d.3	Boulder class A excavation.	m3	13		
6	8.3.1d.4	Boulder class B excavation.	m3	6		
	8.3.4	<u>Importation of Materials from Commercial Sources.</u>				
7	8.3.4	G6 Material from commercial sources in accordance with SABS 1200 DM compacted to 95% Mod AASHTO density to be approved by the Engineer.	m3	154		
	<u>SANS 1200D</u>	<u>Pitching of Surfaces</u>				
8	8.3.11 8.3.11	Reinstate 150mm yard stones from stockpile.	m2	1 541		
9		New yard stones to terrace.	m2	85		
Carried Forward to Summary of Section No. 3					R	
Section No. 3						
SECTION NO.3 - 400KV MAIN BASES						
Bill No. 1						
EARTHWORKS						

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Item No	SANS Pay Ref		Unit	Quantity	Rate	Amount
		SECTION 3: 400KV YARD - MAIN BASES (COLUMN)				
		BILL No. 3				
	<u>SANS 1200D</u>	EARTHMAT (PROVISIONAL)				
	8.3.14					
	8.3.14	Earthing				
	8.3.14	Supply, deliver and lay copper earthmat equipment earthing, earth straps, including excavation complete with risks of collapse, bedding, backfill, compaction and testing at depth up to (See earthmat specification). All flat copper to be 50 x 3mm in accordance with BS 1432, picled and annealed black copper (.701 kg/m:				
	<u>SANS 1200EE</u>	ELECTRICAL				
1	<u>SANS 1200EE</u>	1 x 10mm Diameter copper at 1,0m deep.	m	2 087		
2	8	2 x 10mm Diameter copper at 0,15m to 1,0m deep.	m	400		
3	8	2 x 10mm Diameter copper vertical in ground.	m	400		
4	8	50 x 3mm Flat copper laid at 0,15m to 1,0m deep or on top of concrete, including fixing.	m	70		
5	8	Terminate round copper tail to equipment and fence steel posts (Refer Sheets C6 and C7).	No	15		
6	8	Clamp connection 50 x 3mm flat to 2 no. x 10mm diameter rods.	No	210		
7	8	Crimp joints 10mm round to round (Refer sheets C5 to C8).	No	453		
8	8	Copper earthing stud - 20KA (D-DT6081)	No	18		
9	8	"L" shaped earthing stud adaptor plate (2 holes) 80KA	No	9		
		Carried Forward			R	
		Section No. 3 SECTION NO.3 - 400KV MAIN BASES Bill No. 3 EARTHMAT				

UMFOLOZI SUBSTATION
400KV FEEDER BAY 7
ESKOM TRANSMISSION

Item No	SANS Pay Ref		Unit	Quantity	Rate	Amount
		Brought Forward			R	
	<u>SANS 1200P12</u>	ELECTRICAL				
10	<u>SANS 1200P12</u> 8	Excavate, search for and locate existing earthmat, including excavations complete with risk of collapse, backfill and compaction.		Item		
Carried Forward to Summary of Section No. 3						R
Section No. 3						
SECTION NO.3 - 400KV MAIN BASES						
Bill No. 3						
EARTHMAT						

Item No	SANS Pay Ref		Unit	Quantity	Rate	Amount
SECTION 3: 400KV YARD - MAIN BASES (COLUMN) BILL No. 4 HIGHMAST LIGHTING EARTHWORKS (PROVISIONAL)						
<u>SANS 1200DA</u>		Excavation				
1	8.3.1b	Excavate in all materials and use for backfill or embankment as ordered.	m3	61		
<u>SANS 1200GA</u>		FORMWORK				
<u>8.2</u>						
<u>8.2.1</u>		<u>Rough</u>				
2	8.2.1	Sides of base, stub columns.	m2	29		
<u>8.2.2</u>		<u>Smooth</u>				
3	8.2.2	Stub columns.	m2	3		
<u>8.2.4</u>		<u>Special off -form</u>				
4	8.2.4	Form 20 x 20mm chamfer along top edge of exposed stub column or base.	m	11		
<u>SANS 1200G</u>		REINFORCEMENT				
<u>8.3</u>						
<u>8.3.1</u>		<u>Steel Bars</u>				
5	8.3.1	8mm G#8.3.1	t	0.333		
6	8.3.1	12mm	t	0.381		
7	<u>G</u> 8.3.1	25mm: G#8.3.1	t	0.097		
<u>SANS 1200G</u>		CONCRETE (STRUCTURAL)				
<u>8.4.2</u>		<u>Blinding layer in 15Mpa/19mm concrete</u>				
8	8.4.2	Blinding layer 50mm minimum thickness.	m2	56		
Carried Forward					R	
Section No. 3 SECTION NO.3 - 400KV MAIN BASES Bill No. 4 HIGHMAST LIGHTING						

Item No	SANS Pay Ref		Unit	Quantity	Rate	Amount
		Brought Forward			R	
	8.4.3	<u>Strength concrete, 25MPa/19mm</u>				
9	8.4.3	Bases and Stub Columns.	m3	27		
	8.4.4	<u>Unformed Surface Finishes</u>				
10	8.4.4a	Wood floated finish.	m2	50		
	8.7	<u>GROUTING</u>				
	8.7a	<u>Under Bases (or Beds)</u>				
11	8.7a	Non- shrink, non-metallic, free-flowing 30Mpa grouting under base plate.	m3	3		
	<u>SANS 1200HA</u>	<u>FLOODMAST</u>				
	8.3.1	<u>Contractor to supply Certificate of Compliance for all electrical work performed.</u>				
	<u>HA</u>	<u>FLOODMAST STRUCTURAL STEELWORK</u>				
	8.3.1					
12	<u>SANS 1200HA</u> 8.3.1	Steelwork to light mast to be mild steel landning, cat ladder and mast welded or bolted together as per the standard specifications, complete with all necessary cleats, brackets. gussets, packs, shop fasteners, baseplates and the like, including cleaning of steelwork, shop primming and loading ready for dispatch to site.	t	5		
	8.3.1	<u>FLOODLIGHT MAST</u>				
13	8.3.1	Yard Floodlight mast 24.00m high as detailed on Drawing No 0.54/4658, latest revision including delivery to site, offloading, stacking on site and erection complete.	No	3		
		Carried Forward			R	
		Section No. 3 SECTION NO.3 - 400KV MAIN BASES Bill No. 4 HIGHMAST LIGHTING				

Item No	SANS Pay Ref		Unit	Quantity	Rate	Amount
		Brought Forward			R	
	8.3.1	<u>ELECTRICAL INSTALLATION</u>				
14	8.3.1	Complete electrical installation as per drawing No's 0-WT, Sheets 1 to 4 inclusive of all cabling, circuit breakers, switches, connections equipment, cables and light fittings complete to one no 24m flood light mast.			SUM	
	<u>HA</u>	<u>LUMINAIRES AND LAMPS</u>				
15	8.3.1	400W Clear tubular high pressure Sodium luminaire.	No	24		
	8.3.1	<u>Contractor to supply and install luminair and lamps from Genlux Lighting Cat No: Olympia 22087</u>				
16	8.3.1	Supply and install all cables required for floodmast as indicated on drawing O-WT sheet 1-4 latest revision. Carefully study requirements and contact Eskom Assistant on 011 800 2141. Price to include for complete installation.			SUM	
	<u>SANS 1200H</u>	<u>H.D. BOLTS AND MISCELLANEOUS METALWORK</u>				
17	8.3.6	HD Bolts and miscellaneous metalwork.	kg	19.311		
		Carried Forward to Summary of Section No. 3			R	
		Section No. 3				
		SECTION NO.3 - 400KV MAIN BASES				
		Bill No. 4				
		HIGHMAST LIGHTING				

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Item No	SANS Pay Ref		Unit	Quantity	Rate	Amount
SECTION 4: 400KV FEEDER 7 BAY						
BILL No: 1 400KV FEEDER 7 BAY						
EARTHWORKS						
	<u>SANS 1200DA</u>	Excavation				
1	8.3.1 8.3.1b	Excavate in all materials and use for backfill or embankment as ordered.	m3	18		
2	<u>DA</u> 8.3.1b	Rip 150mm and compact at O.M.C to 93% MOD AASHTO density.	m2	23		
	<u>SANS 1200D</u>	<u>Extra over for:</u>				
3	8.3.2b 8.3.2b.1	Intermediate excavation.	m3	4		
4	8.3.2b.2	Hard rock excavation.	m3	3		
5	<u>SANS 1200DA</u> 8.3.1d.3	Boulder class A excavation.	m3	2		
6	8.3.1d.4	Boulder class B excavation.	m3	1		
	8.3.4	<u>Importation of Materials from Commercial Sources.</u>				
7	8.3.4	G5 Material from commercial sources in accordance with SABS 1200 DM compacted to 95% Mod AASHTO density to be approved by the Engineer.	m3	58		
	<u>SANS 1200GA</u>	FORMWORK				
	8.2 8.2.2	<u>Smooth</u>				
8	8.2.2	Sides of base, stub columns.	m2	20		
	<u>SANS 1200G</u>	<u>Narrow Widths</u>				
9	8.2.5 8.2.5	To edges, risers and ends not exceeding 300mm high or wide.	m	5		
Carried Forward					R	
Section No. 4 SECTION NO. 4 - 400KV FEEDER BAY Bill No. 1 400KV FEEDER 7 BAY						

**UMFOLOZI SUBSTATION
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Item No	SANS Pay Ref		Unit	Quantity	Rate	Amount
		Brought Forward			R	
	<u>SANS 1200G</u>	<u>CONCRETE (STRUCTURAL)</u>				
	8.4.2	<u>Blinding layer in 15Mpa/19mm concrete</u>				
14	8.4.2	Blinding layer 50mm minimum thickness.	m2	20		
	8.4.3	<u>Strength concrete, 25MPa/19mm</u>				
15	8.4.3	Bases and Stub Columns.	m3	13		
	8.4.4	<u>Unformed Surface Finishes</u>				
16	8.4.4a	Wood floated finish.	m2	8		
	8.7	<u>GROUTING</u>				
	8.7a	<u>Under Bases (or Beds)</u>				
17	8.7a	Non- shrink, non-metallic, free-flowing 30Mpa grouting under base plate.	m3	0.4		
Carried Forward to Summary of Section No. 4					R	
Section No. 4						
SECTION NO. 4 - 400KV FEEDER BAY						
Bill No. 1						
400KV FEEDER 7 BAY						

Item No	SANS Pay Ref		Unit	Quantity	Rate	Amount
		SECTION 4: 400KV FEEDER 7 BAY				
		BILL No: 2 400KV FEEDER 7 BAY EARTHING				
	<u>SANS 1200D</u>	EARTHMAT (PROVISIONAL)				
	8.3.14					
	8.3.14	Earthing				
	8.3.14	Supply, deliver and lay copper earthmat equipment earthing, earth straps, including excavation complete with risks of collapse, bedding, backfill, compaction and testing at depth up to (See earthmat specification). All flat copper to be 50 x 3mm in accordance with BS 1432, picled and annealed black copper (.701 kg/m:				
	<u>SANS 1200EE</u>	ELECTRICAL				
1	<u>SANS 1200EE</u>	1 x 10mm Diameter copper at 1,0m deep.	m	160		
2	8	2 x 10mm Diameter copper at 0,15m to 1,0m deep.	m	10		
3	8	2 x 10mm Diameter copper vertical in ground.	m	1		
4	8	50 x 3mm Flat copper laid at 0,15m to 1,0m deep or on top of concrete, including fixing.	m	10		
5	8	Terminate round copper tail to equipment and fence steel posts (Refer Sheets C6 and C7).	No	10		
6	8	Clamp connection 50 x 3mm flat to 2 no. x 10mm diameter rods.	No	31		
7	8	Crimp joints 10mm round to round (Refer sheets C5 to C8).	No	22		
		Carried Forward			R	
		Section No. 4 SECTION NO. 4 - 400KV FEEDER BAY Bill No. 2 400KV FEEDER 7 BA EARTHING				

UMFOLOZI SUBSTATION
400KV FEEDER BAY 7
ESKOM TRANSMISSION

Item No	SANS Pay Ref		Unit	Quantity	Rate	Amount
		Brought Forward			R	
	<u>SANS 1200P12</u>	ELECTRICAL				
8	<u>SANS 1200P12</u> 8	Excavate, search for and locate existing earthmat, including excavations complete with risk of collapse, backfill and compaction.		Item		
Carried Forward to Summary of Section No. 4						R
Section No. 4						
SECTION NO. 4 - 400KV FEEDER BAY						
Bill No. 2						
400KV FEEDER 7 BA EARTHING						

Item No	SANS Pay Ref		Unit	Quantity	Rate	Amount
		<u>SECTION 4: 400KV FEEDER 7 BAY</u>				
		<u>BILL No: 3 400KV FEEDER 7 BAY - PRIMARY PLANT EQUIPMENT</u>				
		<u>Supply, erect and all functional tests as per detailed scope of work document unique number Umf12P01-SE-E82 rev3 (Annexure B - page 14):</u>				
1		Isolator (conventional) - 400kV 3150A, 50kA, 220VDC Motor Operated Disconnecter 1425BIL, 5500mm phase spacing, etc complete.	No	1		
2	<u>SANS 1200</u>	Isolator (conventional) - 400kV 3150A, 50kA, 220VDC Motor Operated Disconnecter right hand earthing switch 1425BIL, 5500mm spacing, etc complete.	No	1		
3	<u>SANS 1200</u>	Isolator (conventional) - 400kV 3150A, 50kA, 220VDC Motor Operated Disconnecter left hand earthing switch 1425BIL, 5500mm spacing, etc complete.	No	1		
4	<u>SANS 1200</u>	Isolator (Pantograph) - 400kV 3150A, 50kA, 220VDC Motor Operated Disconnecter 1425BIL,	No	1		
5		Earth Switch - 400kV 3150A, 50kA, 220VDC Motor Operated Disconnecter 1425BIL,	No	1		
6	<u>SANS 1200</u>	Circuit Breaker - 400kV 4000A, 50kA, 31mm/kV 220VDC - Circuit Breaker	No	1		
		Carried Forward			R	
		Section No. 4 SECTION NO. 4 - 400KV FEEDER BAY Bill No. 3 PRIMARY PLANT EQUIPMENT				

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Item No	SANS Pay Ref		Unit	Quantity	Rate	Amount
		Brought Forward			R	
7	<u>SANS 1200</u>	Current Transformer - 400kV 3150A, 50kA, 2P32. 2M32, 2B16-24 31MM/kV - Current Transformer	No	3		
8	<u>SANS 1200</u>	Line Trap - 400kV line trap 3150A 50kA 1,2mH 25mm/kV,	No	2		
9	<u>SANS 1200</u>	Capacitive Voltage Transformer - 400kV/110V 2P1M 150/50VA (3P/0.2) 25MM/kV,	No	3		
10	<u>SANS 1200</u>	Surge Arrestor - Station Class, 400kV effectively earthed, insulated base, metal oxide, line discharge class 4 - 20kA, 50kA, 25mm/kV,	No	3		
11	<u>SANS 1200</u>	Stub Insulators - low voltage epox resin insulators for supporting surge arrester earth strap, (insulator length min 60mm/max 75mm), including stud, nut & washer all complete	No	12		
		Carried Forward to Summary of Section No. 4			R	
		Section No. 4				
		SECTION NO. 4 - 400KV FEEDER BAY				
		Bill No. 3				
		PRIMARY PLANT EQUIPMENT				

Item No	SANS Pay Ref		Unit	Quantity	Rate	Amount
		<u>SECTION 4: 400KV FEEDER 7 BAY</u>				
		<u>BILL No: 4 400KV FEEDER 7 BAY - CONVENTIONAL CLAMPS & CONDUCTORS</u>				
		<u>Supply, erect and all functional tests as per detailed scope of work document unique number Umf12P01-SE-E76 rev3 and Umf12P01-SE-E77 rev1</u>				
1		Type EX - D : Clamps : EX-D, bolt/bolt; stem 38 cond 26.5,etc complete.	No	8		
2	<u>SANS 1200</u>	Type EX - E : Clamps : EX-E, bolt/bolt; stem 38 cond 38.3,etc complete.	No	6		
3	<u>SANS 1200</u>	Type ETC - K : Clamps : ETC - K;T/Comp ; RUN 38.3 TAP 38.3,etc complete.	No	78		
4	<u>SANS 1200</u>	Type EYC - D : Clamps : EYC - D 2X38.3 Comp 38 bolted 45DG ,etc complete.	No	3		
5		Type EYC - S : Clamps : EYC - S Comp/Palm 45DG ; 2 X38.3mm ,etc complete.	No	34		
6	<u>SANS 1200</u>	Type EYC - T : Clamps : EYC - T Comp/Palm 90DG ; 2X38.3mm ,etc complete.	No	6		
7	<u>SANS 1200</u>	Type ES - B : Spacer : ES - B Cond ; 2X38.3mm; 150mm CRS,etc complete.	No	348		
		Carried Forward			R	
		Section No. 4 SECTION NO. 4 - 400KV FEEDER BAY Bill No. 4 CONVENTIONAL CLAMPS AND CONDUCTORS				

**UMFOLOZI SUBSTATION
400KV FEEDER BAY 7
ESKOM TRANSMISSION**

Item No	SANS Pay Ref		Unit	Quantity	Rate	Amount
		Brought Forward			R	
8	<u>SANS 1200</u>	Type EXCP2 - D : Clamps : EXCP2-D ; 2X38.3mm , PI-MOUNT;PCD127 ;etc complete.	No	9		
9	<u>SANS 1200</u>	EYCDT - B : 2 x 38.4mm - Newly developed clamp 45 degree clamp (8HHP)	No	3		
10	<u>SANS 1200</u>	T Bar Cable Support (as per detailed 0.54/3694)	No	9		
11	<u>SANS 1200</u>	Type W1 : 38,3 mm conductor 25kg,etc complete.	No	60		
12	<u>SANS 1200</u>	Universal Corona Ring : tpe UC - assembly of 1 ring and 2 supports.	No	4		
13	<u>SANS 1200</u>	Bull conductor - 61/4, 26mm AL (38,3mm diameter)	m	3 724		
14	<u>SANS 1200</u>	Hare Conductor 6/4, 72mm AL 1/4 , 72mm S (14, 16mm diameter)	m	502		
		Carried Forward to Summary of Section No. 4			R	
		Section No. 4				
		SECTION NO. 4 - 400KV FEEDER BAY				
		Bill No. 4				
		CONVENTIONAL CLAMPS AND CONDUCTORS				

Item No	SANS Pay Ref		Unit	Quantity	Rate	Amount
<u>SECTION 4: 400KV FEEDER 7 BAY</u> <u>BILL No: 5 400KV FEEDER 7 BAY - HARDWARE- INSULATOR REQUIREMENT AND LABELS</u> <u>Supply, erect and all functional tests as per detailed scope of work</u>						
1		SINGLE STRAIN ASSEMBLY B45 : 38 x 150mm Twin Conductor	No	39		
2	<u>SANS 1200</u>	V STRAIN ASSEMBLY C42 : 38 x 150mm Twin Conductor	No	6		
3	<u>SANS 1200</u>	V SUSPENSION ASSEMBLY F42 : 38 x 150mm Twin Conductor				
			No	15		
4	<u>SANS 1200</u>	CORONA RINGS : CRS TU L/H (for fitting to single and VEE strain string assemblies)	No	45		
5		CORONA RINGS : CRS TU R/H (for fitting to single and VEE strain string assemblies)	No	45		
6	<u>SANS 1200</u>	Glass Disc Insulator - U120/BS16	No	2 826		
Carried Forward to Summary of Section No. 4 Section No. 4 SECTION NO. 4 - 400KV FEEDER BAY Bill No. 5 HARDWARE - INSULATOR REQUIREMENTS AND LABELS						R

Item No	SANS Pay Ref		Unit	Quantity	Rate	Amount
		SECTION 4: 400KV FEEDER 7 BAY				
		BILL No: 6 400KV FEEDER 7 BAY - PTM &C EQUIPMENT				
	<u>SANS 1200</u>	DESIGN, MANUFACTURE, CONSTRUCT, INSTALL, TEST AND COMMISSION : Note : Supply, erect and all functional tests as per detailed scope of work document unique number Umf12P01- P- D5 rev1 :				
	<u>SANS 1200</u>	<u>Design Phase</u>				
1	<u>SANS 1200</u>	Preliminary Drawings			SUM	
2	<u>SANS 1200</u>	Construction Drawings			SUM	
3	<u>SANS 1200</u>	Factory Test			SUM	
4	<u>SANS 1200</u>	Maintanance Plan			SUM	
5	<u>SANS 1200</u>	As-built drawings			SUM	
	<u>SANS 1200</u>	<u>Construction Phase</u>				
6	<u>SANS 1200</u>	Manufacture, construct and install complete the protection system,including all the neccessary cost.			SUM	
7	<u>SANS 1200</u>	Manufacture, construct and install complete the teleprotection system,including all the neccessary cost.			SUM	
8	<u>SANS 1200</u>	Manufacture, construct and install complete the fibre optic requirements,including all the neccessary cost.			SUM	
		Carried Forward			R	
		Section No. 4 SECTION NO. 4 - 400KV FEEDER BAY Bill No. 6 PTM&C EQUIPMENT				

**UMFOLOZI SUBSTATION
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ESKOM TRANSMISSION**

Item No	SANS Pay Ref		Unit	Quantity	Rate	Amount
		Brought Forward			R	
9	<u>SANS 1200</u>	Integrate to the existing infrastructure the disturbance recorder and travelling wave fault locator requirements,including all the neccessary cost.			SUM	
10	<u>SANS 1200</u>	Integrate with the existing infrastructure the protection settings requirements,including all the neccessary cost.			SUM	
11	<u>SANS 1200</u>	Manufacture, construct and install complete the telecontrol and substation automation equipment requirements,including all the neccessary cost.			SUM	
12	<u>SANS 1200</u>	Manufacture, construct and install complete the auxiliary supplies (AC & DC systems) requirements,including all the neccessary cost.			SUM	
13	<u>SANS 1200</u>	Intergrate with the existing infrastructure, the telecommunications requirements,including all the neccessary cost.			SUM	
	<u>SANS 1200</u>	<u>Testing and Commission</u>				
14	<u>SANS 1200</u>	Factory Test and Commision of the system			SUM	
15	<u>SANS 1200</u>	Allow the training of 2 engineers and 5 technician for Eskom personnel (Provisional)			SUM	
		Carried Forward to Summary of Section No. 4			R	
		Section No. 4				
		SECTION NO. 4 - 400KV FEEDER BAY				
		Bill No. 6				
		PTM&C EQUIPMENT				

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Item No	SANS Pay Ref		Unit	Quantity	Rate	Amount
		SECTION NO.5: STRUCTURAL COMPONENTS				
	<u>SANS 1200</u>	STRUCTURAL STEELWORK				
	<u>SANS 1200</u>	BILL NO.1				
		Notes to Tenderers:				
		<u>The tenderer is to allow in the pricing of structural steelwork for all steelwork to be erected plumb and to include for all necessary steel packing pieces to achieve same</u>				
		<u>Preparation of acceptable shop detail drawings:</u>				
1	8.3.1.1	Prepare and submit to the engineer acceptable shop detail drawings and supporting calculations in terms of the project specifications.			SUM	
		<u>400KV COLUMNS & BEAMS</u>				
	8.3.1.2	<u>Supply and Fabrication of steelwork:</u>				
		<u>Steelwork to be hot dipped galvanised Grade 300W as per the standard specifications, complete with all necessary cleats, brackets, gussets, packs, shop fasteners, baseplates and the like, including cleaning of steelwork, shop priming and loading ready for dispatch to site.</u>				
2		Structural Steelwork	t	122.555		
3	<u>SANS 1200</u>	Tubular Structural Steel	t	58.81		
	8.3.2	<u>Delivery:</u>				
4		Delivery of normal loads of steelwork to site.	t	127.901		
		Carried Forward			R	
		Section No. 5 SECTION NO. 5 - STRUCTURAL STEEL Bill No. 1 STRUCTURAL STEELWORK				

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Item No	SANS Pay Ref		Unit	Quantity	Rate	Amount
SECTION NO. 6: SUBSOIL DRAINAGE						
BILL No. 1						
	<u>SANS 1200LE</u>	SUBSOIL DRAINAGE				
	<u>SANS 1200L</u> 8.2.1	<u>Supply, Lay, and Bed Pipes Complete with Couplings</u>				
1	8.2.1	300 diameter concrete pipe in class 50D on type "B" bedding for sub soil drainage laid in trenches exceeding 1m and not exceeding 2m (Provisional)	m	600		
2	8.2.1	160 diameter concrete pipe in class 50D on type "B" bedding for sub soil drainage laid in trenches exceeding 1m and not exceeding 2m (Provisional)	m	600		
	<u>SANS 1200LE</u> 8.2.8	<u>Supply and Install Manholes, Catchpits, etc.</u>				
3	<u>LE</u> 8.2.8	Manhole 1400mm x 1400mm not exceeding 1000mm deep with 150mm reinforced concrete base including 50mm blinding, mesh ref 395, with benching including 20mm benching render, with 230mm brickwall around including step irons at 300mm centres, with SABS 558 type 4 medium duty on 4 of them and 2 type 2A heavy duty cover and frame 940 x 940mm in size with 150mm reinforced concrete	No	2		
Carried Forward					R	
Section No. 6 SECTION NO. 6 - SUBSOIL DRAINAGE Bill No. 1 DRAINAGE						

Item No	SANS Pay Ref		Unit	Quantity	Rate	Amount
		Brought Forward			R	
4	8.2.8	Manhole 1400mm x 1400mm exceeding 1000mm not exceeding 1500mm deep with 150mm reinforced concrete base including 50mm blinding, mesh ref 395, with benching including 20mm benching render, with 230mm brickwall around including step irons at 300mm centres, with SABS 558 type 4 medium duty on 4 of them and 2 type 2A heavy duty cover and frame 940 x 940mm in size with 150mm reinforced concrete	No	2		
5	8.2.8	Manhole 1400mm x 1400mm exceeding 1500mm not exceeding 2000mm deep with 150mm reinforced concrete base including 50mm blinding, mesh ref 395, with benching including 20mm benching render, with 230mm brickwall around including step irons at 300mm centres, with SABS 558 type 4 medium duty on 4 of them and 2 type 2A heavy duty cover and frame 940 x 940mm in size with 150mm reinforced concrete	No	1		
		CONCRETE GUTTER				
6		Grated channel Gutter including gratings cover etc on edge of transformer plinth to Detail on Sheet 70 Drawing: 0.54/390.	m	120		
		Carried Forward			R	
		Section No. 6 SECTION NO. 6 - SUBSOIL DRAINAGE Bill No. 1 DRAINAGE				

UMFOLOZI SUBSTATION
400KV FEEDER BAY 7
ESKOM TRANSMISSION

Item No	SANS Pay Ref		Unit	Quantity	Rate	Amount
		Brought Forward			R	
7		<u>Sundries</u> Excavate for and build headwall comprising 150mm thick steel floated cement concrete (25MPa) bottom average size 600 x 700mm with 1000mm long toe size 230 x 300mm high to front edge, one brick headwall 1500mm girth x average 510mm high with 300mm diameter stormwater pipe built through same and finished on all exposed surfaces in 3.1 cement plaster including grouted stone pitching stilling basin and grid formed of welded rebar cast into floor/walls of headwall	No	2		
		Carried to Final Summary			R	
		Section No. 6				
		SECTION NO. 6 - SUBSOIL DRAINAGE				
		Bill No. 1				
		DRAINAGE				

Item No	SANS Pay Ref		Unit	Quantity	Rate	Amount
		<u>SECTION 7: FENCING</u>				
		<u>BILL NO. 1</u>				
		<u>SAFETY FENCE</u>				
		<u>SITE CLEARANCE ETC</u>				
		<u>Site clearance</u>				
1		Digging up and removing rubbish, debris, vegetation, hedges, shrubs, bush, etc and trees not exceeding 200mm girth	m2	545		
2		Stripping average 150mm thick layer of top soil and depositing material in prescribed stock piles on site	m2	545		
		<u>EXCAVATION</u>				
	<u>SANS 1200DA</u>	<u>Excavation</u>				
3	8.3.1	Trenches	m3	301		
4		Bases	m3	11		
5	<u>DA</u> 8.3.1b	Rip 150mm and compact at O.M.C to 93% MOD AASHTO density.	m2	464		
		<u>Extra over bulk excavation in earth for excavation in</u>				
6	<u>SANS 1200D</u> 8.3.2b.1	Intermediate excavation.	m3	60		
7	8.3.2b.2	Hard rock excavation.	m3	25		
8	8.3.2b.3	Boulder Class A excavation.	m3	17		
9	8.3.2b.4	Boulder Class B excavation.	m3	8		
		<u>Extra over all excavations for carting away</u>				
10		Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor	m3	116		
		Carried Forward			R	
		Section No. 7 SECTION NO. 7 - FENCING Bill No. 1 BOUNDARY FENCE				

Item No	SANS Pay Ref		Unit	Quantity	Rate	Amount
		Brought Forward			R	
11		<u>Keeping excavations free of water</u> Keeping excavations free of all water other than subterranean water <u>Earth filling obtained from the excavations and/or prescribed stock piles on site compacted to 93% MOD AASHTO.</u>		Item		
12		Backfill to trenches	m3	82		
		<u>CONCRETE, FORMWORK AND REINFORCEMENT</u> <u>CONCRETE</u> <u>UNREINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES</u> <u>Concrete 15Mpa/19mm in</u>				
13		Surface blinding under footings and bases	m3	24		
14		<u>TEST CUBES</u> Making and testing 150 x 150 x 150mm concrete strength test cube (6 per set) <u>SMOOTH FORMWORK (DEGREE OF ACCURACY II)</u> <u>Smooth formwork to sides</u>	No	15		
15		Footing	m2	1 500		
16		<u>Boxing in smooth formwork to form</u> 150 x 50 x 100mm Deep recess in side	m	625		
		Carried Forward			R	
		Section No. 7 SECTION NO. 7 - FENCING Bill No. 1 BOUNDARY FENCE				

Item No	SANS Pay Ref		Unit	Quantity	Rate	Amount
		Brought Forward			R	
		<u>BOLTS, ETC</u>				
17		Holding down bolt comprising one U-shaped hot dipped galvanised 6mm diameter rods 700mm girth with ends threaded for and including two 16mm diameter nuts and washers bedded in concrete wall, etc (Refer to drawing 0.54/5846 Sheet No 1 Rev 5)	No	250		
		<u>SAFETY FENCE</u>				
18		1800mm High security fence complete including all necessary posts with single overhang set up and embedded in position in concrete base (elsewhere), as per drawing 0.54/4963 sht 1 to 5	m	313		
		<u>ON METAL</u>				
		<u>Prepare, prime with a self-etching primer and apply two coats bituminous aluminium paint</u>				
19		On mild steel posts not exceeding 300mm girth	m2	59		
		<u>TESTS, ETC.</u>				
		<u>Prescribed density tests on filling</u>				
20		"Modified AASHTO Density" test	No	15		
21		Soil indicators	No	15		
22		"Field Density" test, including "Optimum Moisture Content" (four readings per test)	Sets	15		
		Carried Forward to Summary of Section No. 7			R	
		Section No. 7				
		SECTION NO. 7 - FENCING				
		Bill No. 1				
		BOUNDARY FENCE				

Item No	SANS Pay Ref		Unit	Quantity	Rate	Amount
SECTION 13: FENCING						
BILL NO. 2						
FENCING						
	<u>SANS 1200HA</u>	<u>Supply, offloading and erection of steel on site</u>				
	8.3.1					
1	8.3.1	Supply and deliver and install new 1.8m high galvanised diamond mesh "security fence" complete including excavations, backfilling, disposing of surplus excavated material, concrete, formwork, etc, all as per detail drawings number 0.54/4963 Sheets 1 to 4.	m	431		
2		Supply, deliver and install new type 1G gate.	No	2		
Carried Forward to Summary of Section No. 7						
Section No. 7						R
SECTION NO. 7 - FENCING						
Bill No. 2						
SAFETY FENCE						

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