



## SANSa MATJIESFONTEIN

## ELECTRICAL INSTALLATION - LOW VOLTAGE INSTALLATION + UPS

## PART C1.2.2

## BILL OF QUANTITIES

ITEM	DESCRIPTION		UNIT	QTY	RATE	TOTAL
2.0	<b>BILL NO. 2</b>					
	<b>LOW VOLTAGE INSTALLATION</b>					
	<b>LOW VOLTAGE DISTRIBUTION BOARDS</b>					
	Supply and installation of low voltage electrical distribution boards					
2.1.1	MLV Main LV Distribution board in Energy Centre Building	Supply		1	R	-
		Install		1	R	-
2.1.2	SMDB-1 Main Operations Building MDB	Supply		1	R	-
		Install		1	R	-
2.1.3	SDB-1 Main Operations Building General DB	Supply		1	R	-
		Install		1	R	-
2.1.4	SDB-2 Energy Centre Building General DB	Supply		1	R	-
		Install		1	R	-
2.1.5	DB-SANSA-A Distribution boards for SANSA A-Supply in SANSA equipment room	Supply		1	R	-
		Install		1	R	-
2.1.6	DB-SER SANSA equipment room general DB	Supply		1	R	-
		Install		1	R	-
2.1.7	DB-UPS-A Distribution boards for NASA A-Supply UPS loads in NASA equipment room	Supply		1	R	-
		Install		1	R	-
2.1.8	DB-UPS-B Distribution boards for NASA B-Supply UPS loads in NASA equipment room	Supply		1	R	-
		Install		1	R	-
2.1.9	DB-GH Distribution boards for Main Gate Guardhouse	Supply		1	R	-
		Install		1	R	-
2.1.10	Kiosk 1 IP54 Polycarbonate Kiosk with wooden backboard, front and back padlock lockable doors, Mains Isolator, Busbars, DIN rail and MCB's for general circuits.	Supply		1	R	-
		Install		1	R	-
2.1.11	DB-NER General/Utility Distribution board for NASA equipment room	Supply		1	R	-
		Install		1	R	-
2.1.12	NASA MDP-A Distribution board for NASA equipment room A-Supply	Supply		1	R	-
		Install		1	R	-
2.1.13	NASA MDP-B Distribution board for NASA equipment room B-Supply	Supply		1	R	-
		Install		1	R	-
2.1.14	DB-ATS1 Automatic Transfer Switch for NASA CRAC Unit 1	Supply		1	R	-
		Install		1	R	-
2.1.15	DB-ATS2 Automatic Transfer Switch for NASA CRAC Unit 2	Supply		1	R	-
		Install		1	R	-
2.1.16	DB-ATS3 Automatic Transfer Switch for NASA CRAC Unit 3	Supply		1	R	-
		Install		1	R	-
2.1.17	DB-DSL IP43 Polycarbonate Kiosk with wooden backboard, front and back padlock lockable doors, Mains Isolator, Busbars, DIN rail and MCB's for general circuits.	Supply		1	R	-
		Install		1	R	-
	<b>BULK LV CABLING AND BUSBAR</b>					
2.2	600/1000V PVC/PVC/SWA/PVC/Cu cable in shaft, sleeve, trench, on cable rack or on surface, including strapping or clamping, supports etc. Terminations and connections of 600/1000V PVC/PVC/SWA/PVC/Cu cable including drilling, bolting, lugs, number tags, core markers, gland, shroud, etc					
2.2.1	1,5mm <sup>2</sup> 4C SWA Cu	Supply	m	0		Rate Only
		Install	m	0		Rate Only
2.2.2	1,5mm <sup>2</sup> 4C SWA Cu ECC	Supply	m	1	R	-
		Install	m	1	R	-
2.2.3	2,5mm <sup>2</sup> 4C SWA Cu	Supply	m	0		Rate Only
		Install	m	0		Rate Only
2.2.4	2,5mm <sup>2</sup> 4C SWA Cu ECC	Supply	m	1	R	-
		Install	m	1	R	-
2.2.5	4mm <sup>2</sup> 4C SWA Cu	Supply	m	75	R	-
		Install	m	75	R	-
2.2.6	4mm <sup>2</sup> 4C SWA Cu ECC	Supply	m	1	R	-
		Install	m	1	R	-
2.2.7	6mm <sup>2</sup> 4C SWA Cu	Supply	m	20	R	-
		Install	m	20	R	-

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ITEM	DESCRIPTION		UNIT	QTY	RATE	TOTAL
2.2.8	6mm <sup>2</sup> 4C SWA Cu ECC	Supply	m	1	R	-
		Install	m	1	R	-
2.2.9	10mm <sup>2</sup> 4C SWA Cu	Supply	m	145	R	-
		Install	m	145	R	-
2.2.10	10mm <sup>2</sup> 4C SWA Cu ECC	Supply	m	1	R	-
		Install	m	1	R	-
2.2.11	16mm <sup>2</sup> 4C SWA Cu	Supply	m	316	R	-
		Install	m	316	R	-
2.2.12	16mm <sup>2</sup> 4C SWA Cu ECC	Supply	m	1	R	-
		Install	m	1	R	-
2.2.13	25mm <sup>2</sup> 4C SWA Cu	Supply	m	80	R	-
		Install	m	80	R	-
2.2.14	25mm <sup>2</sup> 4C SWA Cu ECC	Supply	m	1	R	-
		Install	m	1	R	-
2.2.15	35mm <sup>2</sup> 4C SWA Cu	Supply	m	152	R	-
		Install	m	152	R	-
2.2.16	35mm <sup>2</sup> 4C SWA Cu ECC	Supply	m	1	R	-
		Install	m	1	R	-
2.2.17	50mm <sup>2</sup> 4C SWA Cu	Supply	m	0		Rate Only
		Install	m	0		Rate Only
2.2.18	50mm <sup>2</sup> 4C SWA Cu ECC	Supply	m	1	R	-
		Install	m	1	R	-
2.2.19	70mm <sup>2</sup> 4C SWA Cu	Supply	m	30	R	-
		Install	m	30	R	-
2.2.20	70mm <sup>2</sup> 4C SWA Cu ECC	Supply	m	1	R	-
		Install	m	1	R	-
2.2.21	95mm <sup>2</sup> 4C SWA Cu	Supply	m	101	R	-
		Install	m	101	R	-
2.2.22	95mm <sup>2</sup> 4C SWA Cu ECC	Supply	m	1	R	-
		Install	m	1	R	-
2.2.23	120mm <sup>2</sup> 4C SWA Cu	Supply	m	0		Rate Only
		Install	m	0		Rate Only
2.2.24	120mm <sup>2</sup> 4C SWA Cu ECC	Supply	m	1	R	-
		Install	m	1	R	-
2.2.25	150mm <sup>2</sup> 4C SWA Cu	Supply	m	0		Rate Only
		Install	m	0		Rate Only
2.2.26	150mm <sup>2</sup> 4C SWA Cu ECC	Supply	m	1	R	-
		Install	m	1	R	-
2.2.27	185mm <sup>2</sup> 4C SWA Cu	Supply	m	0		Rate Only
		Install	m	0		Rate Only
2.2.28	185mm <sup>2</sup> 4C SWA Cu ECC	Supply	m	1	R	-
		Install	m	1	R	-
2.2.29	240mm <sup>2</sup> 4C SWA Cu	Supply	m	0		Rate Only
		Install	m	0		Rate Only
2.2.30	240mm <sup>2</sup> 4C SWA Cu ECC	Supply	m	1	R	-
		Install	m	1	R	-
2.2.31	2,5mm <sup>2</sup> 12C Multicore Copper Cable	Supply	m	80	R	-
		Install	m	80	R	-
2.3	600/1000V PVC/PVC/SWA/PVC/Alu cable in shaft, sleeve, trench, on cable rack or on surface, including strapping or clamping, supports etc. Terminations and connections of 600/1000V PVC/PVC/SWA/PVC/Alu cable including drilling, bolting, lugs, number tags, core markers, gland, shroud, etc					
2.3.1	25mm <sup>2</sup> 4C SWA Alu	Supply	m	0		Rate Only
		Install	m	0		Rate Only
2.3.2	35mm <sup>2</sup> 4C SWA Alu	Supply	m	0		Rate Only
		Install	m	0		Rate Only
2.3.3	50mm <sup>2</sup> 4C SWA Alu	Supply	m	0		Rate Only
		Install	m	0		Rate Only
2.3.4	70mm <sup>2</sup> 4C SWA Alu	Supply	m	0		Rate Only
		Install	m	0		Rate Only

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ITEM	DESCRIPTION		UNIT	QTY	RATE	TOTAL
2.3.5	95mm <sup>2</sup> 4C SWA Alu	Supply	m	0		Rate Only
		Install	m	0		Rate Only
2.3.6	120mm <sup>2</sup> 4C SWA Alu	Supply	m	0		Rate Only
		Install	m	0		Rate Only
2.3.7	150mm <sup>2</sup> 4C SWA Alu	Supply	m	0		Rate Only
		Install	m	0		Rate Only
2.3.8	185mm <sup>2</sup> 4C SWA Alu	Supply	m	0		Rate Only
		Install	m	0		Rate Only
2.3.9	240mm <sup>2</sup> 4C SWA Alu	Supply	m	0		Rate Only
		Install	m	0		Rate Only
2.4	<b>Cable terminations</b>					
	Terminate and connect 600/1000V PVC/PVC/SWA/PVC/Cu cable including drilling, bolting, lugs, number tags, core markers, gland, shroud, etc					
2.4.1	1,5mm <sup>2</sup> 4C SWA Cu	Supply	each	0		Rate Only
		Install	each	0		Rate Only
2.4.2	2,5mm <sup>2</sup> 4C SWA Cu	Supply	each	0		Rate Only
		Install	each	0		Rate Only
2.4.3	4mm <sup>2</sup> 4C SWA Cu	Supply	each	10	R	-
		Install	each	10	R	-
2.4.4	6mm <sup>2</sup> 4C SWA Cu	Supply	each	0		Rate Only
		Install	each	0		Rate Only
2.4.5	10mm <sup>2</sup> 4C SWA Cu	Supply	each	4	R	-
		Install	each	4	R	-
2.4.6	16mm <sup>2</sup> 4C SWA Cu	Supply	each	24	R	-
		Install	each	24	R	-
2.4.7	25mm <sup>2</sup> 4C SWA Cu	Supply	each	0		Rate Only
		Install	each	0		Rate Only
2.4.8	35mm <sup>2</sup> 4C SWA Cu	Supply	each	20	R	-
		Install	each	20	R	-
2.4.9	50mm <sup>2</sup> 4C SWA Cu	Supply	each	0		Rate Only
		Install	each	0		Rate Only
2.4.10	70mm <sup>2</sup> 4C SWA Cu	Supply	each	4	R	-
		Install	each	4	R	-
2.4.11	95mm <sup>2</sup> 4C SWA Cu	Supply	each	8	R	-
		Install	each	8	R	-
2.4.12	120mm <sup>2</sup> 4C SWA Cu	Supply	each	0		Rate Only
		Install	each	0		Rate Only
2.4.13	150mm <sup>2</sup> 4C SWA Cu	Supply	each	0		Rate Only
		Install	each	0		Rate Only
2.4.14	185mm <sup>2</sup> 4C SWA Cu	Supply	each	0		Rate Only
		Install	each	0		Rate Only
2.4.15	240mm <sup>2</sup> 4C SWA Cu	Supply	each	0		Rate Only
		Install	each	0		Rate Only
2.4.16	2,5mm <sup>2</sup> 12C Multicore Copper Cable	Supply	each	0		Rate Only
		Install	each	0		Rate Only
2.5	<b>Cable terminations</b>					
	Terminate and connect 600/1000V PVC/PVC/SWA/PVC/ALU cable including drilling, bolting, lugs, number tags, core markers, gland, shroud, etc					
2.5.1	25mm <sup>2</sup> 4C SWA Alu	Supply	m	4	R	-
		Install	m	4	R	-
2.5.2	35mm <sup>2</sup> 4C SWA Alu	Supply	m	0		Rate Only
		Install	m	0		Rate Only
2.5.3	50mm <sup>2</sup> 4C SWA Alu	Supply	m	2	R	-
		Install	m	2	R	-
2.5.4	70mm <sup>2</sup> 4C SWA Alu	Supply	m	0		Rate Only
		Install	m	0		Rate Only
2.5.5	95mm <sup>2</sup> 4C SWA Alu	Supply	m	2	R	-
		Install	m	2	R	-

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ITEM	DESCRIPTION		UNIT	QTY	RATE	TOTAL
2.5.6	120mm <sup>2</sup> 4C SWA Alu	Supply	m	0		Rate Only
		Install	m	0		Rate Only
2.5.7	150mm <sup>2</sup> 4C SWA Alu	Supply	m	18	R	-
		Install	m	18	R	-
2.5.8	185mm <sup>2</sup> 4C SWA Alu	Supply	m	16	R	-
		Install	m	16	R	-
2.5.9	240mm <sup>2</sup> 4C SWA Alu	Supply	m	0		Rate Only
		Install	m	0		Rate Only
2.6	<b>Earth conductors</b>					
	<b>Copper earth conductor in trench or sleeve, on racking, steelwork or strapped to cable.</b>					
2.6.1	1,5mm <sup>2</sup> 1C BLACK Cu	Supply	m	0		Rate Only
		Install	m	0		Rate Only
2.6.2	2,5mm <sup>2</sup> 1C BLACK Cu	Supply	m	65	R	-
		Install	m	65	R	-
2.6.3	4mm <sup>2</sup> 1C BLACK Cu	Supply	m	10	R	-
		Install	m	10	R	-
2.6.4	6mm <sup>2</sup> 1C BLACK Cu	Supply	m	391	R	-
		Install	m	391	R	-
2.6.5	10mm <sup>2</sup> 1C BLACK Cu	Supply	m	150	R	-
		Install	m	150	R	-
2.6.6	16mm <sup>2</sup> 1C BLACK Cu	Supply	m	152	R	-
		Install	m	152	R	-
2.6.7	25mm <sup>2</sup> 1C BLACK Cu	Supply	m	0		Rate Only
		Install	m	0		Rate Only
2.6.8	35mm <sup>2</sup> 1C BLACK Cu	Supply	m	30	R	-
		Install	m	30	R	-
2.6.9	50mm <sup>2</sup> 1C BLACK Cu	Supply	m	101	R	-
		Install	m	101	R	-
2.6.10	70mm <sup>2</sup> 1C BLACK Cu	Supply	m	0		Rate Only
		Install	m	0		Rate Only
2.6.11	95mm <sup>2</sup> 1C BLACK Cu	Supply	m	0		Rate Only
		Install	m	0		Rate Only
2.6.12	120mm <sup>2</sup> 1C BLACK Cu	Supply	m	0		Rate Only
		Install	m	0		Rate Only
2.6.13	150mm <sup>2</sup> 1C BLACK Cu	Supply	m	0		Rate Only
		Install	m	0		Rate Only
2.6.14	185mm <sup>2</sup> 1C BLACK Cu	Supply	m	0		Rate Only
		Install	m	0		Rate Only
2.6.15	240mm <sup>2</sup> 1C BLACK Cu	Supply	m	0		Rate Only
		Install	m	0		Rate Only
2.7	<b>Earth conductors Terminations</b>					
	<b>Terminate and connect earth conductor including lug, bolt, nut, etc.</b>					
2.7.1	1,5mm <sup>2</sup> 1C BLACK Cu	Supply	each	0		Rate Only
		Install	each	0		Rate Only
2.7.2	2,5mm <sup>2</sup> 1C BLACK Cu	Supply	each	6	R	-
		Install	each	6	R	-
2.7.3	4mm <sup>2</sup> 1C BLACK Cu	Supply	each	4	R	-
		Install	each	4	R	-
2.7.4	6mm <sup>2</sup> 1C BLACK Cu	Supply	each	24	R	-
		Install	each	24	R	-
2.7.5	10mm <sup>2</sup> 1C BLACK Cu	Supply	each	6	R	-
		Install	each	6	R	-
2.7.6	16mm <sup>2</sup> 1C BLACK Cu	Supply	each	20	R	-
		Install	each	20	R	-
2.7.7	25mm <sup>2</sup> 1C BLACK Cu	Supply	each	0		Rate Only

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		Install	each	0		Rate Only
2.7.8	35mm <sup>2</sup> 1C BLACK Cu	Supply	each	4	R	-
		Install	each	4	R	-
2.7.9	50mm <sup>2</sup> 1C BLACK Cu	Supply	each	8	R	-
		Install	each	8	R	-
2.7.10	70mm <sup>2</sup> 1C BLACK Cu	Supply	each	0		Rate Only
		Install	each	0		Rate Only
2.7.11	95mm <sup>2</sup> 1C BLACK Cu	Supply	each	0		Rate Only
		Install	each	0		Rate Only
2.7.12	120mm <sup>2</sup> 1C BLACK Cu	Supply	each	0		Rate Only
		Install	each	0		Rate Only
2.7.13	150mm <sup>2</sup> 1C BLACK Cu	Supply	each	0		Rate Only
		Install	each	0		Rate Only
2.7.14	185mm <sup>2</sup> 1C BLACK Cu	Supply	each	0		Rate Only
		Install	each	0		Rate Only
2.7.15	240mm <sup>2</sup> 1C BLACK Cu	Supply	each	0		Rate Only
		Install	each	0		Rate Only
<b>2.8</b>	<b>CABLE LADDERS</b>					
	Similar or equal to O-line/Cabstrut Power way heavy duty cable ladder, including all necessary supports, clamps, strapping, welding lugs onto cast-in steel plates in Basement slab, brackets, splicers, hangers. Cable ladders to be supported to 1m centres.					
2.8.1	150mm Wide Cable Ladder	Supply	m	20	R	-
		Install	m	20	R	-
2.8.2	150mm Wide Cable Ladder 90° Bend	Supply	Each	12	R	-
		Install	Each	12	R	-
2.8.3	150mm Wide Cable Ladder T-Piece	Supply	Each	0		Rate Only
		Install	Each	0		Rate Only
2.8.4	150mm Wide Cable Ladder Vertical Inner Bend	Supply	Each	0		Rate Only
		Install	Each	0		Rate Only
2.8.5	200mm Wide Cable Ladder	Supply	m	90	R	-
		Install	m	90	R	-
2.8.6	200mm Wide Cable Ladder 90° Bend	Supply	Each	13	R	-
		Install	Each	13	R	-
2.8.7	200mm Wide Cable Ladder Vertical Inner Bend	Supply	Each	3	R	-
		Install	Each	3	R	-
2.8.8	200mm Wide Cable Ladder Outer Bend	Supply	Each	7	R	-
		Install	Each	7	R	-
2.8.9	300mm Wide Cable Ladder	Supply	m	10	R	-
		Install	m	10	R	-
2.8.10	300mm Wide Cable Ladder 90° Bend	Supply	Each	1	R	-
		Install	Each	1	R	-
2.8.11	300mm Wide Cable Ladder T-Piece	Supply	Each	0		Rate Only
		Install	Each	0		Rate Only
2.8.12	300mm Wide Cable Ladder Vertical Inner Bend	Supply	Each	0		Rate Only
		Install	Each	0		Rate Only
2.8.13	300mm Wide Cable Ladder Outer Bend	Supply	Each	0		Rate Only
		Install	Each	0		Rate Only
2.8.14	400mm Wide Cable Ladder	Supply	m	20	R	-
		Install	m	20	R	-
2.8.15	400mm Wide Cable Ladder 90° Bend	Supply	Each	0		Rate Only
		Install	Each	0		Rate Only
2.8.16	400mm Wide Cable Ladder T-Piece	Supply	Each	0		Rate Only
		Install	Each	0		Rate Only
2.8.17	400mm Wide Cable Ladder Vertical Inner Bend	Supply	Each	6	R	-
		Install	Each	6	R	-
2.8.18	400mm Wide Cable Ladder Outer Bend	Supply	Each	0		Rate Only
		Install	Each	0		Rate Only
2.8.19	500mm Wide Cable Ladder	Supply	m	95	R	-

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		Install	m	95	R	-
2.8.20	500mm Wide Cable Ladder 90° Bend	Supply	Each	4	R	-
		Install	Each	4	R	-
2.8.21	500mm Wide Cable Ladder T-Piece	Supply	Each	3	R	-
		Install	Each	3	R	-
2.8.22	500mm Wide Cable Ladder Vertical Inner Bend	Supply	Each	2	R	-
		Install	Each	2	R	-
2.8.23	500mm Wide Cable Ladder Outer Bend	Supply	Each	4	R	-
		Install	Each	4	R	-
2.8.24	600mm Wide Cable Ladder	Supply	m	0		Rate Only
		Install	m	0		Rate Only
2.8.25	600mm Wide Cable Ladder 90° Bend	Supply	Each	0		Rate Only
		Install	Each	0		Rate Only
2.8.26	600mm Wide Cable Ladder T-Piece	Supply	Each	0		Rate Only
		Install	Each	0		Rate Only
2.8.27	600mm Wide Cable Ladder Vertical Inner Bend	Supply	Each	0		Rate Only
		Install	Each	0		Rate Only
2.8.28	600mm Wide Cable Ladder Outer Bend	Supply	Each	0		Rate Only
		Install	Each	0		Rate Only
2.8.29	800mm Wide Cable Ladder	Supply	m	0		Rate Only
		Install	m	0		Rate Only
2.8.30	800mm Wide Cable Ladder 90° Bend	Supply	Each	0		Rate Only
		Install	Each	0		Rate Only
2.8.31	800mm Wide Cable Ladder T-Piece	Supply	Each	0		Rate Only
		Install	Each	0		Rate Only
2.8.32	800mm Wide Cable Ladder Vertical Inner Bend	Supply	Each	0		Rate Only
		Install	Each	0		Rate Only
2.8.33	800mm Wide Cable Ladder Outer Bend	Supply	Each	0		Rate Only
		Install	Each	0		Rate Only
2.9	<b>WIRE BASKET AND TRUNKING</b>					
	Trunking channel as per specification and drawings complete with mounting brackets, hangers, cover plates, knock outs, etc.					
	Wire baskets Similar or equal to O-Line/Cabstrut GS 75 heavy duty type Grid span wire mesh basket and accessories, including all necessary supports, clamps, strapping, brackets, splicers, hangers, etc.					
2.9.1	150mm Wire Mesh	Supply	m	335	R	-
		Install	m	335	R	-
2.9.2	150mm Wire Mesh 90° Bend	Supply	each	29	R	-
		Install	each	29	R	-
2.9.3	150mm Wire Mesh T-Piece	Supply	each	49	R	-
		Install	each	49	R	-
2.9.4	150mm Wire Mesh Inner Bend	Supply	each	34	R	-
		Install	each	34	R	-
2.9.5	150mm Wire Mesh Outer Bend	Supply	each	16	R	-
		Install	each	16	R	-
2.9.6	300mm Wire Mesh	Supply	m	500	R	-
		Install	m	500	R	-
2.9.7	300mm Wire Mesh 90° Bend	Supply	each	36	R	-
		Install	each	36	R	-
2.9.8	300mm Wire Mesh T-Piece	Supply	each	38	R	-
		Install	each	38	R	-
2.9.9	300mm Wire Mesh Inner Bend	Supply	each	25	R	-
		Install	each	25	R	-
2.9.10	300mm Wire Mesh Outer Bend	Supply	each	20	R	-
		Install	each	20	R	-
2.9.11	600mm Wire Mesh	Supply	m	0		Rate Only
		Install	m	0		Rate Only
2.9.12	600mm Wire Mesh 90° Bend	Supply	each	0		Rate Only
		Install	each	0		Rate Only



## SANS MATJESFONTEIN

## ELECTRICAL INSTALLATION - LOW VOLTAGE INSTALLATION + UPS

## PART C1.2.2

## BILL OF QUANTITIES

ITEM	DESCRIPTION		UNIT	QTY	RATE	TOTAL
4.0	<b>BILL NO. 4</b>					
	<b>POWER INSTALLATION FITTINGS AND ACCESSORIES</b>					
4.1	<b>Socket Outlet and Isolators</b>					
	Isolators (All isolators to include relevant adapters, glands, labelling etc) All socket outlets to include relevant adapters, glands, labelling etc) Conduit to be Chased in PVC and to include all required round boxes, covers etc.					
4.1.1	16A Combination Socket Outlet Type 1A as per Major Tech Vet3 1 x 16A RSA, 3 x SANS 164-2, 1 x Black SP Switch, 100x100 Black Cover Plate	Supply	No	52	R	-
		Install	No	52	R	-
4.1.2	16A Combination Socket Outlet Type 1B as per Major Tech Vet3 1 x 16A RSA, 3 x SANS 164-2, 1 x White SP Switch, 100x100 White Cover Plate	Supply	No	28	R	-
		Install	No	28	R	-
4.1.3	16A Combination Socket Outlet Type 2A as per Major Tech Vet3 1 x 16A RSA, 2 x SANS 164-2, 2x USB Type A, 1 x Black SP Switch, 100x100 Black Cover Plate	Supply	No	10	R	-
		Install	No	10	R	-
4.1.4	16A Combination Socket Outlet Type 2B as per Major Tech Vet3 1 x 16A RSA, 2 x SANS 164-2, 2x USB Type A, 1 x White SP Switch, 100x100 White Cover Plate	Supply	No	0		Rate Only
		Install	No	0		Rate Only
4.1.5	16A Combination Socket Outlet in Weather Proof Slide Lid Box 1 x 16A RSA, 1 x SANS 164-2, 1 x White SP Switch	Supply	No	1	R	-
		Install	No	1	R	-
4.1.6	Double 16A Dedicated Socket Outlet as per Major Tech Vet3 2 x Shaved 16A RSA, 2 x Red SP Switch, 100x100 Red Cover Plate	Supply	No	174	R	-
		Install	No	174	R	-
4.1.7	Blank Cover Plate Type A as per Major Tech Vet3 1 x Black 100x100 Blank Cover Plate	Supply	No	150	R	-
		Install	No	150	R	-
4.1.8	Blank Cover Plate Type B as per Major Tech Vet3 1 x White 100x100 Blank Cover Plate	Supply	No	0		Rate Only
		Install	No	0		Rate Only
4.1.9	Box for 2 x RJ45 Mods as per Major Tech Vet3 (RJ45 Modules Excluded) 1 x Black Cover Plate	Supply	No	150	R	-
		Install	No	150	R	-
4.1.10	32A 3P+N+E Surface Mounted IP44 Socket Outlet Welding Socket	Supply	No	0		Rate Only
		Install	No	0		Rate Only
4.1.11	32A 2P+E Surface Mounted IP44 Socket Outlet Welding Socket	Supply	No	28	R	-
		Install	No	28	R	-
4.1.12	32A DP Isolator Type A Installed in recessed or surface 100x100 box with Black cover plate	Supply	No	10	R	-
		Install	No	10	R	-
4.1.13	32A DP Isolator Type B Installed in recessed or surface 50x100 box with white cover plate	Supply	No	2	R	-
		Install	No	2	R	-
4.1.14	32A DP Weatherproof Isolator Installed in surface Weather Proof box with slide lid 100x100 box with white cover plate	Supply	No	12	R	-
		Install	No	12	R	-
4.1.15	Floor Box 2 x Shaved 16A RSA, 2 x Red SP Switch, 1 x 16A RSA, 1 x SANS 164-2, 1 x White SP Switch	Supply	No	5	R	-
		Install	No	5	R	-
4.1.16	63mm PVC Round Box Recessed or surface with white cover plate	Supply	No	738	R	-
		Install	No	738	R	-
4.1.17	2x4 PVC Box 50x100 Recessed or surface Box	Supply	No	7	R	-
		Install	No	7	R	-
4.1.18	4x4 PVC Box 100x100 Recessed or surface Box	Supply	No	625	R	-
		Install	No	625	R	-
4.2	<b>Power Skirting as per Cabstrut Platinum Black or equal.</b>					
	<b>Socket outlets on power skirting including all fittings to mount fittings on power skirting.</b>					
4.2.1	Dual Compartment PVC Power Skirting as per Cabstrut Platinum Black	Supply	m	185	R	-
		Install	m	185	R	-
4.2.2	16A Combo Socket Outlet as per Major Tech Vet1 1 x 16A RSA, 1 x SANS 164-2 Black	Supply	No	68	R	-
		Install	No	68	R	-
4.2.3	16A Dedicated Socket Outlet as per Major Tech Vet1 1 x Red 16A RSA, 1 x Red SP Switch, Red Cover Plate	Supply	No	102	R	-
		Install	No	102	R	-
4.2.4	Dual RJ45 Outlet as per Crabtree Classic 1 x Yoke and Cover for Dual RJ45, RJ45 Sockets Excluded	Supply	No	55	R	-
		Install	No	55	R	-
4.2.5	63mm PVC Round Box Recessed or surface with white cover plate	Supply	No	140	R	-
		Install	No	140	R	-
4.2.6	2x4 PVC Box 50x100 Recessed or surface Box	Supply	No	63	R	-
		Install	No	63	R	-
4.2.7	4x4 PVC Box 100x100 Recessed or surface Box	Supply	No	68	R	-
		Install	No	68	R	-

## SANS MATJIESFONTEIN

## ELECTRICAL INSTALLATION - LOW VOLTAGE INSTALLATION + UPS

## PART C1.2.2

## BILL OF QUANTITIES

ITEM	DESCRIPTION		UNIT	QTY	RATE	TOTAL	
4.3	<b>Conductors</b>						
	600/1000V PVC insulated copper conductors into conduit, trunking, void duct or power skirting, including conductor identification labels, terminating, etc.						
4.3.1	2,5mm <sup>2</sup> Conductor	Supply	m	5 455	R	-	
		Install	m	5 455	R	-	
4.3.2	4mm <sup>2</sup> Conductor	Supply	m	6 150	R	-	
		Install	m	6 150	R	-	
4.3.3	6mm <sup>2</sup> Conductor	Supply	m	0		Rate Only	
		Install	m	0		Rate Only	
4.3.4	2,5mm <sup>2</sup> T&E Conductor	Supply	m	0		Rate Only	
		Install	m	0		Rate Only	
4.3.5	4mm <sup>2</sup> T&E Conductor	Supply	m	0		Rate Only	
		Install	m	0		Rate Only	
4.3.6	6mm <sup>2</sup> T&E Conductor	Supply	m	0		Rate Only	
		Install	m	0		Rate Only	
4.3.7	2,5mm <sup>2</sup> 2C+E Surfex	Supply	m	0		Rate Only	
		Install	m	0		Rate Only	
4.3.8	4mm <sup>2</sup> 2C+E Surfex	Supply	m	0		Rate Only	
		Install	m	0		Rate Only	
4.3.9	6mm <sup>2</sup> 2C+E Surfex	Supply	m	0		Rate Only	
		Install	m	0		Rate Only	
4.3.10	2,5mm <sup>2</sup> 4C+E Surfex	Supply	m	0		Rate Only	
		Install	m	0		Rate Only	
4.3.11	4mm <sup>2</sup> 4C+E Surfex	Supply	m	0		Rate Only	
		Install	m	0		Rate Only	
4.3.12	6mm <sup>2</sup> 4C+E Surfex	Supply	m	0		Rate Only	
		Install	m	0		Rate Only	
4.4	<b>PVC/Bosal conduit complete with bends, joints, adaptors, couplings, saddles, cutting, etc.</b>						
4.4.1	20mm PVC Conduit cast in concrete built into or chased into brickwork or surface mounted	Supply	m	4 088	R	-	
		Install	m	4 088	R	-	
4.4.2	25mm PVC Conduit cast in concrete built into or chased into brickwork or surface mounted	Supply	m	362	R	-	
		Install	m	362	R	-	
4.4.3	32mm PVC Conduit cast in concrete built into or chased into brickwork or surface mounted	Supply	m	60	R	-	
		Install	m	60	R	-	
4.4.4	20mm Bosal Conduit cast in concrete built into or chased into brickwork or surface mounted	Supply	m	0		Rate Only	
		Install	m	0		Rate Only	
4.4.5	25mm Bosal Conduit cast in concrete built into or chased into brickwork or surface mounted	Supply	m	300	R	-	
		Install	m	300	R	-	
4.4.6	32mm Bosal Conduit cast in concrete built into or chased into brickwork or surface mounted	Supply	m	0		Rate Only	
		Install	m	0		Rate Only	
<b>TOTAL - BILL NO 4 CARRIED TO FINAL SUMMARY PAGE</b>						<b>R</b>	<b>-</b>

## SANS MATJESFONTEIN

## ELECTRICAL INSTALLATION - LOW VOLTAGE INSTALLATION + UPS

## PART C1.2.2

## BILL OF QUANTITIES

ITEM	DESCRIPTION		UNIT	QTY	RATE	TOTAL
	<b>BILL NO. 5</b>					
	<b>LIGHTING INSTALLATION FITTINGS AND ACCESSORIES</b>					
5.1	<b>Light Fittings</b>					
	<b>Supply, store and installation of light fittings.</b>					
5.1.1	Type A	Supply	Each	33	R	-
	Vapor Proof LED Fitting Aquaman 40W - LED Light Consult or Similarly Approved	Install	Each	33	R	-
5.1.2	Type AE	Supply	Each	34	R	-
	Vapor Proof LED Fitting Aquaman 40W With 2hr Battery Back-Up - LED Light Consult or Similarly Approved	Install	Each	34	R	-
5.1.3	Type AEX	Supply	Each	2	R	-
	Spark/Explosion Proof LED Fitting Aquaman-EX-VP 38W - LED Light Consult or Similarly Approved	Install	Each	2	R	-
5.1.4	Type B1	Supply	Each	79	R	-
	600x600 LED Fitting Luxon Prism Backlit - Regent Lighting or Similarly Approved	Install	Each	79	R	-
5.1.5	Type B1E	Supply	Each	45	R	-
	600x600 LED Fitting Luxon Prism Backlit With 2hr Battery Back-Up - Regent Lighting or Similarly Approved	Install	Each	45	R	-
5.1.6	Type C1	Supply	Each	162	R	-
	Dimmable GU10 LED Downlight 2229 Low-Glare Downlight With 5W Osram 3000k Bulb - LED Light Consult or Similarly Approved	Install	Each	162	R	-
5.1.7	Type C2	Supply	Each	32	R	-
	Dimmable GU10 LED Downlight 2229 Low-Glare Downlight With 5W Osram 4000k Bulb - LED Light Consult or Similarly Approved	Install	Each	32	R	-
5.1.8	Battery Packs For Type C1E & C2E	Supply	Each	20	R	-
	2hr Self Testing Battery Pack For 3x C1 or C2 Downlights(3x Downlights Per Pack)	Install	Each	20	R	-
5.1.9	Type C3	Supply	Each	4	R	-
	Integrated LED Downlight MERA-M 18W 44° 3000k - LED Light Consult or Similarly Approved	Install	Each	4	R	-
5.1.10	Type C3E	Supply	Each	12	R	-
	Integrated LED Downlight MERA-M 18W 44° 3000k With 2hr Battery Back-Up- LED Light Consult or Similarly Approved	Install	Each	12	R	-
5.1.11	Type C4	Supply	Each	6	R	-
	Integrated LED Downlight MERA-M 18W 44° 4000k - LED Light Consult or Similarly Approved	Install	Each	6	R	-
5.1.12	Type C4E	Supply	Each	7	R	-
	Integrated LED Downlight MERA-M 18W 44° 4000k With 2hr Battery Back-Up- LED Light Consult or Similarly Approved	Install	Each	7	R	-
5.1.13	Type D1	Supply	m	60	R	-
	Dimmable LED Linear Light Fitting Batman 75 16,4W/m 3000k - LED Light Consult or Similarly Approved	Install	m	60	R	-
5.1.14	Type D1E	Supply	m	2	R	-
	Dimmable LED Linear Light Fitting Batman 75 16,4W/m 3000k With 2hr Battery Back-Up - LED Light Consult or Similarly Approved	Install	m	2	R	-
5.1.15	Type D2	Supply	m	80	R	-
	Dimmable LED Linear Light Fitting Batman 75 16,4W/m 4000k - LED Light Consult or Similarly Approved	Install	m	80	R	-
5.1.16	Type D2E	Supply	m	20	R	-
	Dimmable LED Linear Light Fitting Batman 75 16,4W/m 4000k With 2hr Battery Back-Up - LED Light Consult or Similarly Approved	Install	m	20	R	-
5.1.17	Type E1	Supply	Each	58	R	-
	LED Foot Light IP65 Plato 7W 4000k - Regent Lighting or Similarly Approved	Install	Each	58	R	-
5.1.18	Type E2	Supply	Each	28	R	-
	LED Flood Light IP65 Nerus 65W 4000k - LED Light Consult or Similarly Approved	Install	Each	28	R	-
5.1.19	Type E3	Supply	Each	3	R	-
	LED Bulkhead Giza Eyelid 13W 4000k - Regent Lighting or Similarly Approved	Install	Each	3	R	-
5.1.20	Type E4	Supply	Each	8	R	-
	LED Flood Light IP65 Nerus 180W 4000k - LED Light Consult or Similarly Approved	Install	Each	8	R	-
5.1.21	Type E5	Supply	Each	10	R	-
	LED Bulkhead Focal Round 8W 3000k - LED Light Consult or Similarly Approved	Install	Each	10	R	-
5.1.22	Type F1	Supply	Each	0		Rate Only
	Concrete LED Bollard Light Slabo 7W 3000k - Regent Lighting or Similarly Approved	Install	Each	0		Rate Only
5.1.23	Type F1E	Supply	Each	8	R	-
	Concrete LED Bollard Light Slabo 7W 3000k With 2hr Battery Back-Up - Regent Lighting or Similarly Approved	Install	Each	8	R	-
5.1.24	Type F2	Supply	Each	8	R	-
	Concrete LED Bollard Light Slabo 7W 4000k - Regent Lighting or Similarly Approved	Install	Each	8	R	-
5.1.25	Type PL1	Supply	Each	2	R	-
	3,5m Light Pole Black galvanized	Install	Each	2	R	-
5.1.26	Type PL2	Supply	Each	4	R	-
	5m Light Pole Black galvanized	Install	Each	4	R	-

## SANS MATJIESFONTEIN

## ELECTRICAL INSTALLATION - LOW VOLTAGE INSTALLATION + UPS

## PART C1.2.2

## BILL OF QUANTITIES

ITEM	DESCRIPTION		UNIT	QTY	RATE	TOTAL
5.1.27	Type Track	Supply	m	60	R	-
	<i>Three Wire Recessed Track - Spazio or Similarly Approved</i>	Install	m	60	R	-
5.1.28	Type T1	Supply	Each	62	R	-
	<i>GU10 LED Track Spot With 5W Osram 3000k Bulb - LED Light Consult or Similarly Approved</i>	Install	Each	62	R	-
5.1.29	Type T2	Supply	Each	0		Rate Only
	<i>GU10 LED Track Spot With 5W Osram 4000k Bulb - LED Light Consult or Similarly Approved</i>	Install	Each	0		Rate Only
5.1.30	Type TE	Supply	Each	0		Rate Only
	<i>Emergency LED Track Spot - Regent Lighting or Similarly Approved</i>	Install	Each	0		Rate Only
5.1.31	Type LED1-DIM	Supply	m	75	R	-
	<i>Dimmable LED Strip Light With 24V 22W/m LED Board 3000k - LED Light Consult or Similarly Approved</i>	Install	m	75	R	-
5.1.32	Type LED1	Supply	m	45	R	-
	<i>Non-Dimmable LED Strip Light With 24V 22W/m LED Board 3000k - LED Light Consult or Similarly Approved</i>	Install	m	45	R	-
5.1.33	Type LED2	Supply	m	10	R	-
	<i>Non-Dimmable LED Strip Light Slim Recessed Profile Black With 9W/m 24V LED Tape 3000k - LED Light Consult or Similarly Approved</i>	Install	m	10	R	-
5.1.34	Type LED3	Supply	m	4	R	-
	<i>Non-Dimmable LED Strip Light Slim Recessed Profile Black With 9W/m 24V LED Tape 4000k - LED Light Consult or Similarly Approved</i>	Install	m	4	R	-
5.1.35	Type LED Driver - DIM	Supply	Each	17	R	-
	<i>Dimmable LED Strip Light Driver 120W 24V LED Strip Light Driver - LED Light Consult or Similarly Approved</i>	Install	Each	17	R	-
5.1.36	Type LED Driver	Supply	Each	15	R	-
	<i>NON Dimmable LED Strip Light Driver 120W 24V LED Strip Light Driver - LED Light Consult or Similarly Approved</i>	Install	Each	15	R	-
5.1.37	Type S1 Occupancy sensor	Supply	Each	34	R	-
		Install	Each	34	R	-
5.2	<b>5A socket outlet mounted on trunking or concrete including all boxes, glands and fixings, Wiring included in Section 4 of this bill.</b>					
5.2.1	5A Unswitched Socket outlets	Supply	No	465	R	-
	<i>5A unswitched socket outlet in surface mounted 75x75 metal box mounted on P8000 ceiling void trunking</i>	Install	No	465	R	-

## SANS MATJIESFONTEIN

## ELECTRICAL INSTALLATION - LOW VOLTAGE INSTALLATION + UPS

## PART C1.2.2

## BILL OF QUANTITIES

ITEM	DESCRIPTION		UNIT	QTY	RATE	TOTAL	
5.3	<b>Light switches</b>						
	Light switches, complete with all necessary connections, labelling, screws, cover plates, etc as specified. 50x100 flush metal back boxes are to be allowed with all light switches						
5.3.1	16A one lever one-way flush mounted light switch	Supply	No	18	R	-	
		Install	No	18	R	-	
5.3.2	16A one lever two-way flush mounted light switch	Supply	No	2	R	-	
		Install	No	2	R	-	
5.3.3	16A two lever one-way flush mounted light switch	Supply	No	0		Rate Only	
		Install	No	0		Rate Only	
5.3.4	16A three lever one-way flush mounted light switch	Supply	No	0		Rate Only	
		Install	No	0		Rate Only	
5.3.5	16A four lever one-way flush mounted light switch	Supply	No	0		Rate Only	
		Install	No	0		Rate Only	
5.3.6	16A one lever DIMMABLE one-way flush mounted light switch with bell press switch	Supply	No	0		Rate Only	
		Install	No	0		Rate Only	
5.3.7	16A two lever DIMMABLE one-way flush mounted light switch with bell press switch	Supply	No	4	R	-	
		Install	No	4	R	-	
5.3.8	Photocell	Supply	No	4	R	-	
		Install	No	4	R	-	
5.4	<b>Conductors</b>						
	600/1000V PVC insulated copper conductors into conduit, trunking, void duct or power skirting, including conductor identification labels, terminating, etc.						
5.4.1	1,5mm <sup>2</sup> Conductor	Supply	m	17 000	R	-	
		Install	m	17 000	R	-	
5.4.2	2,5mm <sup>2</sup> Conductor	Supply	m	2 160	R	-	
		Install	m	2 160	R	-	
5.4.3	4mm <sup>2</sup> Conductor	Supply	m	0		Rate Only	
		Install	m	0		Rate Only	
5.4.4	6mm <sup>2</sup> Conductor	Supply	m	0		Rate Only	
		Install	m	0		Rate Only	
5.4.5	2,5mm <sup>2</sup> 2C+E Surfex	Supply	m	0		Rate Only	
		Install	m	0		Rate Only	
5.8	<b>PVC/Bosal conduit complete with bends, joints, adaptors, couplings, saddles, cutting, etc.</b>						
5.8.1	20mm PVC Conduit cast in concrete built into or chased into brickwork or surface mounted	Supply	m	5 040	R	-	
		Install	m	5 040	R	-	
5.8.2	25mm PVC Conduit cast in concrete built into or chased into brickwork or surface mounted	Supply	m	0		Rate Only	
		Install	m	0		Rate Only	
5.8.3	32mm PVC Conduit cast in concrete built into or chased into brickwork or surface mounted	Supply	m	0		Rate Only	
		Install	m	0		Rate Only	
5.8.4	20mm Bosal Conduit cast in concrete built into or chased into brickwork or surface mounted	Supply	m	0		Rate Only	
		Install	m	0		Rate Only	
5.8.5	25mm Bosal Conduit cast in concrete built into or chased into brickwork or surface mounted	Supply	m	0		Rate Only	
		Install	m	0		Rate Only	
5.8.6	32mm Bosal Conduit cast in concrete built into or chased into brickwork or surface mounted	Supply	m	0		Rate Only	
		Install	m	0		Rate Only	
<b>TOTAL - BILL NO 5 CARRIED TO FINAL SUMMARY PAGE</b>						<b>R</b>	<b>-</b>

## SANS MATJIESFONTEIN

## ELECTRICAL INSTALLATION - LOW VOLTAGE INSTALLATION + UPS

## PART C1.2.2

## BILL OF QUANTITIES

ITEM	DESCRIPTION		UNIT	QTY	RATE	TOTAL
	<b>BILL NO. 6</b>					
	<b>HVAC INSTALLATION</b>					
6.1	Isolators for indoor and outdoor units installed in surface mounted boxes with the appropriate glands cover plates, fixings,etc. Wiring included in Bill No 4. <b>100x100 back boxes are to be allowed with all isolators unless otherwise specified.</b>					
6.1.1	30A DP Isolator <i>Flush or Surface for indoor application</i>	Supply Install	No No	10 10	R R	- -
6.1.2	60A DP Isolator <i>Flush or Surface for indoor application</i>	Supply Install	No No	0 0		Rate Only Rate Only
6.1.3	30A 3P Isolator <i>Flush or Surface for indoor application</i>	Supply Install	No No	0 0		Rate Only Rate Only
6.1.4	60A 3P Isolator <i>Flush or Surface for indoor application</i>	Supply Install	No No	0 0		Rate Only Rate Only
6.1.5	32A 2P+N+E Rotary Isolator with Lockout, IP67 <i>For outdoor application</i>	Supply Install	No No	32 32	R R	- -
6.1.6	63A 2P+N+E Rotary Isolator with Lockout, IP67 <i>For outdoor application</i>	Supply Install	No No	2 2	R R	- -
6.1.7	32A 3P+N+E Rotary Isolator with Lockout, IP67 <i>For outdoor application</i>	Supply Install	No No	11 11	R R	- -
6.1.8	63A 3P+N+E Rotary Isolator with Lockout, IP67 <i>For outdoor application</i>	Supply Install	No No	3 3	R R	- -
6.1.9	Blank Cover Plate Type A as per Major Tech Vet3 <i>1 x Black 100x100 Blank Cover Plate</i>	Supply Install	No No	28 28	R R	- -
6.1.10	Blank Cover Plate Type B as per Major Tech Vet3 <i>1 x White 100x100 Blank Cover Plate</i>	Supply Install	No No	0 0		Rate Only Rate Only
6.1.11	63mm PVC Round Box <i>Recessed or surface with white cover plate</i>	Supply Install	No No	206 206	R R	- -
6.1.12	2x4 PVC Box <i>50x100 Recessed or surface Box</i>	Supply Install	No No	50 50	R R	- -
6.1.13	4x4 PVC Box <i>100x100 Recessed or surface Box</i>	Supply Install	No No	53 53	R R	- -
6.2	<b>Conductors</b>					
	<b>600/1000V PVC insulated copper conductors into conduit, trunking, void duct or power skirting, including conductor identification labels, terminating, etc.</b>					
6.2.1	2,5mm <sup>2</sup> Conductor	Supply Install	m m	0 0		Rate Only Rate Only
6.2.2	4mm <sup>2</sup> Conductor	Supply Install	m m	0 0		Rate Only Rate Only
6.2.3	6mm <sup>2</sup> Conductor	Supply Install	m m	0 0		Rate Only Rate Only
6.2.4	2,5mm <sup>2</sup> T&E Conductor	Supply Install	m m	0 0		Rate Only Rate Only
6.2.5	4mm <sup>2</sup> T&E Conductor	Supply Install	m m	0 0		Rate Only Rate Only
6.2.6	6mm <sup>2</sup> T&E Conductor	Supply Install	m m	0 0		Rate Only Rate Only
6.2.7	2,5mm <sup>2</sup> 2C+E Surfex	Supply Install	m m	852 852	R R	- -
6.2.8	4mm <sup>2</sup> 2C+E Surfex	Supply Install	m m	1 085 1 085	R R	- -
6.2.9	6mm <sup>2</sup> 2C+E Surfex	Supply Install	m m	0 0		Rate Only Rate Only
6.2.10	2,5mm <sup>2</sup> 4C+E Surfex	Supply Install	m m	610 610	R R	- -
6.2.11	4mm <sup>2</sup> 4C+E Surfex	Supply Install	m m	0 0		Rate Only Rate Only
6.2.12	6mm <sup>2</sup> 4C+E Surfex	Supply Install	m m	0 0		Rate Only Rate Only

## SANS MATJIESFONTEIN

## ELECTRICAL INSTALLATION - LOW VOLTAGE INSTALLATION + UPS

## PART C1.2.2

## BILL OF QUANTITIES

ITEM	DESCRIPTION		UNIT	QTY	RATE	TOTAL
6.3	<b>PVC/Bosal conduit complete with bends, joints, adaptors, couplings, saddles, cutting, etc.</b>					
6.3.1	20mm PVC Conduit cast in concrete built into or chased into brickwork or surface mounted	Supply	m	420	R	-
		Install	m	420	R	-
6.3.2	25mm PVC Conduit cast in concrete built into or chased into brickwork or surface mounted	Supply	m	264	R	-
		Install	m	264	R	-
6.3.3	32mm PVC Conduit cast in concrete built into or chased into brickwork or surface mounted	Supply	m	0		Rate Only
		Install	m	0		Rate Only
6.3.4	20mm Bosal Conduit cast in concrete built into or chased into brickwork or surface mounted	Supply	m	0		Rate Only
		Install	m	0		Rate Only
6.3.5	25mm Bosal Conduit cast in concrete built into or chased into brickwork or surface mounted	Supply	m	300	R	-
		Install	m	300	R	-
6.3.6	32mm Bosal Conduit cast in concrete built into or chased into brickwork or surface mounted	Supply	m	0		Rate Only
		Install	m	0		Rate Only
<b>TOTAL - BILL NO 6 CARRIED TO FINAL SUMMARY PAGE</b>						<b>R -</b>
<b>BILL NO. 7</b>						
<b>ELECTRONIC INSTALLATIONS</b>						
7.1	<b>PVC/Bosal conduit fittings.</b>					
7.1.1	63mm PVC Round Box	Supply	No	292	R	-
	Recessed or surface with white cover plate	Install	No	292	R	-
7.1.2	2x4 PVC Box	Supply	No	115	R	-
	50x100 Recessed or surface Box	Install	No	115	R	-
7.1.3	4x4 PVC Box	Supply	No	244	R	-
	100x100 Recessed or surface Box	Install	No	244	R	-
7.2	<b>PVC/Bosal conduit complete with bends, joints, adaptors, couplings, saddles, cutting, etc.</b>					
7.2.1	20mm PVC Conduit cast in concrete built into or chased into brickwork or surface mounted	Supply	m	0		Rate Only
		Install	m	0		Rate Only
7.2.2	25mm PVC Conduit cast in concrete built into or chased into brickwork or surface mounted	Supply	m	2 190	R	-
		Install	m	2 190	R	-
7.2.3	25mm PVC Conduit With Metal Saddles mounted every 500mm For Fire Detection	Supply	m	738	R	-
		Install	m	738	R	-
7.2.4	20mm Bosal Conduit cast in concrete built into or chased into brickwork or surface mounted	Supply	m	0		Rate Only
		Install	m	0		Rate Only
7.2.5	25mm Bosal Conduit cast in concrete built into or chased into brickwork or surface mounted	Supply	m	300	R	-
		Install	m	300	R	-
7.2.6	32mm Bosal Conduit cast in concrete built into or chased into brickwork or surface mounted	Supply	m	0		Rate Only
		Install	m	0		Rate Only
7.2.7	Draw wire for electronic Services	Supply	m	4 196	R	-
		Install	m	4 196	R	-
<b>TOTAL - BILL NO 7 CARRIED TO FINAL SUMMARY PAGE</b>						<b>R -</b>

## SANSa MATJIESFONTEIN

## ELECTRICAL INSTALLATION - LOW VOLTAGE INSTALLATION + UPS

## PART C1.2.2

## BILL OF QUANTITIES

ITEM	DESCRIPTION		UNIT	QTY	RATE	TOTAL	
<b>BILL NO. 8</b>							
<b>UPS</b>							
8.1	Supply, Store, Install and Commissioning of UPS's <i>Cost for supply and installation to include rigging, training, Preparation of As Built drawings, Commissioning, O&amp;M Manuals, Cost of protection of machines during construction.</i>						
8.1.1	UPS 1 - SANSa Equipment Room - UPS only excluding batteries	Supply	each	1	R	-	
	Batteries and Battery enclosure including DC cabling	Supply	each	1			
	Stand per UPS and Battery Enclosure	Supply	each	1			
	12 Month maintenance	Supply	each	1			
	12 Month maintenance	Supply	each	1			
	<i>80kVA Riello Multi Sentry 3:3 with 30mins backup @ 100% as per specification. Network Adaptor for BMS Communications.</i>	Install	each	1	R	-	
8.1.2	UPS 2 - SANSa Gate House	Supply	each	1	R	-	
	Batteries and Battery enclosure including DC cabling	Supply	each	1			
	12 Month maintenance	Supply	each	1			
	12 Month maintenance	Supply	each	1			
	<i>10kVA 3:3 with 15mins backup @100% as per specification. Network Adaptor for BMS Communications.</i>	Install	each	1	R	-	
8.1.3	UPS 1 - NASA Equipment Room	Supply	each	0		NA	
	<i>60kVA 3:3 Free Issued by NASA. Installation Only by Electrical Contractor</i>	Install	each	1	R	-	
8.1.4	UPS 2 - NASA Equipment Room	Supply	each	0		NA	
	<i>60kVA 3:3 Free Issued by NASA. Installation Only by Electrical Contractor</i>	Install	each	1	R	-	
8.1.5	UPS 3 - NASA LEGS Antenna	Supply	each	0		NA	
	<i>60kVA 3:3 Free Issued by NASA. Installation Only by Electrical Contractor</i>	Install	each	1	R	-	
<b>TOTAL - BILL NO 8 CARRIED TO FINAL SUMMARY PAGE</b>						<b>R</b>	<b>-</b>
<b>BILL NO. 9</b>							
<b>PC SUMS</b>							
9.1	None	Item	Sum			Rate Only	
<b>TOTAL - BILL NO 9 CARRIED TO FINAL SUMMARY PAGE</b>						<b>R</b>	<b>-</b>

## SANSA MATJIESFONTEIN

## ELECTRICAL INSTALLATION - LOW VOLTAGE INSTALLATION + UPS

## PART C1.2.2

## BILL OF QUANTITIES

ITEM	DESCRIPTION	UNIT	QTY	RATE	TOTAL
	<b>FINAL SUMMARY PAGE</b>				
	<b>BILL NO. 1</b>				
	PRELIMINARIES AND GENERAL			R	-
	<b>BILL NO. 2</b>				
	LOW VOLTAGE INSTALLATION			R	-
	<b>BILL NO. 3</b>				
	MEDIUM VOLTAGE INSTALLATION				Under Infrastructure BoQ
	<b>BILL NO. 4</b>				
	POWER INSTALLATION FITTINGS AND ACCESSORIES			R	-
	<b>BILL NO. 5</b>				
	LIGHTING INSTALLATION FITTINGS AND ACCESSORIES			R	-
	<b>BILL NO. 6</b>				
	HVAC INSTALLATION			R	-
	<b>BILL NO. 7</b>				
	ELECTRONIC INSTALLATIONS			R	-
	<b>BILL NO. 8</b>				
	UPS			R	-
	<b>BILL NO. 9</b>				
	PC SUMS			R	-
	Any other items tenderers may wish to add of a Technical nature not specifically mentioned above in order to comply with the specification and contract conditions. Please add below:				
	<b>TOTAL CARRIED TO BILL NO. 16 ELECTRICAL INSTALLATION - LOW VOLTAGE INSTALLATION + UPS PART C1.2.2</b>			R	-