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CONSTRUCTION OF MARITE POLICE STATION  
SOUTH AFRICAN POLICE SERVICES  
MPUMALANGA PROVINCE

		Brought Forward		R
39	"BEKA" or similar approved 15W ROUGHGUARD LED Luminaire - without nightlight	No	12	
<b><u>ELECTRICAL TESTS</u></b>				
<b><u>Making provision for the required inspection, tests and the commissioning of the complete installation and the issuing of the required certificate.</u></b>				
40	Building installation			SUM
<b><u>Others</u></b>				
41	200 x 200mm - Telephone & Data Cabinet	No		Rate Only
42	100 x 100 x 50mm - Draw box for Communication complete with blank cover	No	6	
43	2 compartment power skirting complete with socket outlets and blanks for telephone and data points and cover.	m	280	
44	Provide the Sum of R 125 000.00 for earthing and lightning protection			SUM
45	20A 2pole Isolator, in suitable York Box, for HVAC	No	37	
46	20A 3pole Isolator, in suitable York Box, for HVAC and Heat Pumps	No	5	
47	Perforated metal medium duty cable trays 152 x 38 mm complete with all mounting accessories.	m	120	
48	Perforated metal medium duty cable trays 152x38 mm 90 degree band	No	4	
49	Perforated metal medium duty cable trays 152x38 mm TEE	No	3	
50	Welded wire mesh medium duty 100 x 50 mm for data routing - Straight	m	120	
51	Welded wire mesh medium duty 100 x 50 mm for data routing - 90 Degree	No	5	
		Carried Forward		R
Section No. 3 ELECTRICAL INSTALLATION Bill No. 3 STATION BLOCK Takgalang Consulting				



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Item No		Unit	Quantity	Rate	Amount
	<p><b><u>SECTION NO. 3</u></b></p> <p><b><u>BILL NO. 4</u></b></p> <p><b><u>CELL BLOCK</u></b></p> <p>NOTE: The contractor is advised to study the "General Preambles for Trades 2017" before pricing this bill</p> <p>NOTE: The contractor is advised to study the Electrical Engineer's drawings before pricing this bill. In the case of any discrepancies between the bill and the drawings the contractor must notify the Principal Agent.</p> <p>NOTE: Unless otherwise stated herein, all items in this bill shall be deemed to fall into Work Group No.160 for CPAP formula purposes.</p>				
	<p><b><u>TRENCHING</u></b></p> <p>General trenching work for sleeves along the routes as pegged out on site after co-ordination with other services</p> <p><b><u>Allowance must be made for the sifting of soil when required, removal and carting away of all stones and rocks including dumping off site. Backfilling and compaction shall be carried out as specified for overall siteworks.</u></b></p>				
1	Trenching through floor for sleeves	m3			Rate only
2	Excavation and backfilling in hard rock	m3			rate only
	<p><b><u>CABLE AND DATA SLEEVES</u></b></p> <p><b><u>Supply and installation of PVC Sleeves through floor construction to power distribution board and communication board complete with standard radius sleeve bends</u></b></p>				
3	50 mm Diameter for Power Cables and data network	m	100		
	<b>Carried Forward</b>				R
	<p>Section No. 3 ELECTRICAL INSTALLATION Bill No. 4 CELL BLOCK Takgalang Consulting</p>				

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		Brought Forward		R	
<b>Radius bends:</b>					
4	75mm Diameter	No			rate only
5	110mm Diameter	No			rate only
<b>Draw Wires</b>					
6	Supply and install a 0,6mm diameter galvanised draw wire in sleeves and conduit for data installation	m	800		
<b>DISTRIBUTION BOARDS</b>					
<u>Supply, delivery, storage and submission of workshop drawings for the Flush mounted architrave steel type power distribution boards complete with flush trays, doors, switch gear mounting trays, copper bushbars, neutral and earth bars, correctly sized internal</u>					
7	Supply and install a two tier distribution board	No	1		
<b>Low Voltage PVC Cables</b> <u>Supply and installation of PVC SWA PVC cable and Bare Copper Earth Wire in sleeves and in trenches</u>					
8	50mm 4 core PVC SWA Cable	m			rate only
9	35mm BCEW	m			rate only
<b>Terminations:</b>					
10	50mm 4 core cable	No			Rate only
11	35mm BCEW	No			Rate only
		Carried Forward		R	
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			Brought Forward		R
<b><u>CONDUIT WORK</u></b>					
<b><u>Supply, delivery and installation of SABS approved PVC Conduits completed with all required conduit accessories.</u></b>					
<b><u>Built or Chase into brick or concrete work:</u></b>					
12	20mm PVC conduit	m			rate only
13	25mm PVC conduit	m	350		
<b><u>In Ceiling space and Timber work or along purlins</u></b>					
14	20mm PVC conduit	m	450		
15	25mm PVC conduit	m			rate only
<b><u>Supply and installation of SABS approved conduit boxes, installed in the run of the conduit installation, cast into concrete and built into brickwork or flush inside false ceiling spaces, complete with all required conduit termination accessories.</u></b>					
16	20mm diameter 4 way type(round box)	No	35		
<b><u>WALL BOXES</u></b>					
<b><u>Supply and installation of SABS approved galvanised pressed steel wall boxes for building flush into brickwork or cast into concrete work.</u></b>					
<b><u>Flush mounted type:</u></b>					
17	100 x 50 x 50mm	No	11		
18	100 x 100 x 50mm	No	7		
<b><u>PVC Wiring in conduits:</u></b>					
19	2.5mm <sup>2</sup> for lights circuits	m	900		
20	4mm <sup>2</sup> for plug sockets circuits and Isolators	m	1,080		
			Carried Forward		R

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		Brought Forward		R	
		<b><u>Stranded Bare Copper Earth Wire</u></b>			
		<u>Supply and installation of stranded bare copper earth wire along with PVC wiring in conduits. Tendered rates shall make provision for wastage.</u>			
21	2.5mm <sup>2</sup>	m	900		
22	4mm <sup>2</sup>	m			Rate only
		<b><u>LIGHT SWITCHES</u></b>			
		<u>Supply and installation of SABS approved type 16A flush and surface type light switches. Final paint finishes shall be confirmed at a later stage, allowance shall however be made as specified in the general specification.</u>			
23	16A Single lever light switch	No	3		
24	Rotary lever light switch	No	8		
25	2 Lever 2 way	No			Rate only
26	2 Lever 1 way	No			Rate only
27	360° Programmable ceiling P.I.R presence detector: - The unit shall control lights and air conditioner - Output channel 1 for simple ON/OFF switching - Output channel 2 for dimmable control of Dali luminaires	No	2		
28	360° Programmable ceiling P.I.R presence detector: - The unit shall control lights only - Unit to allow for maintained illuminance control in corridors and common areas - Corridors to be dimmed to 100LX when unoccupied	No	11		
29	DAY/NIGHT SWITCH	No	2		
		<b>Carried Forward</b>		R	
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		Brought Forward			R
<b><u>SOCKET OUTLETS</u></b>					
Supply and installation of SABS approved switched and unswitched type flush and surface mounted type 16A switched socket outlets suitable for mounting in flush steel wall boxes or in steel pedestal units or on surface.					
The final colour of the paint finish shall be confirmed at a later stage, allowance shall be made as specified in the specification.					
All flush type boxes and special pedestals measured elsewhere.					
<b><u>Flush switched sockets type:</u></b>					
30	16A single socket outlets - ZA plug	No	4		
31	16A double socket outlets	No	3		
32	Type F Socket outlet	No			Rate only
33	Type D Socket outlet	No	3		
34	Power Pole	No			Rate only
<b><u>LIGHT FITTINGS</u></b>					
<b><u>Supply, delivery to site, storage and installation of the below specified light fittings complete with lamps, fixing material, mounting and tubes. Allowance must be made in the rates for all the required fixing materials and accessories.</u></b>					
35	"BEKA" or similar approved 30W Recessed 600x600mm LED panel	No	3		
36	"BEKA" or similar approved 16W bulkhead series 51 LED with prismatic diffuser	No	10		
37	"BEKA" or similar approved 15W ROUGHGUARD LED luminaire - without nightlight	No	14		
		Carried Forward			R
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38	"BEKA" or similar approved 7W ROUGHGUARD LED luminaire - with nightlight	No	11		
39	"BEKA" or similar approved 56W ROUGHGUARD LED luminaire - without nightlight	No	9		
40	"BEKA" or similar approved 26W ROUGHGUARD LED luminaire - without nightlight	No	15		
<b><u>ELECTRICAL TESTS</u></b>					
<b><u>Making provision for the required inspection, tests and the commissioning of the complete installation and the issuing of the required certificate.</u></b>					
41	Building installation			SUM	
<b><u>Others</u></b>					
42	200 x 200mm - Telephone & Data Cabinet	No			Rate only
43	100 x 100 x 50mm - Draw box for Communication complete with blank cover	No	1		
44	2 compartment power skirting complete with socket outlets and blanks for telephone and data points and cover.	m			Rate only
45	Provide the Sum of R 28 500.00 for earthing and lightning protection			SUM	
46	20A 2pole Isolator, in suitable York Box, for HVAC	No	8		
47	20A 3pole Isolator, in suitable York Box, for HVAC and Heat Pumps	No			Rate only

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Item No		Unit	Quantity	Rate	Amount
	<p><b><u>SECTION NO. 3</u></b></p> <p><b><u>BILL NO. 5</u></b></p> <p><b><u>CLEANERS REST ROOM AND WASH BAY</u></b></p> <p>NOTE: The contractor is advised to study the "General Preambles for Trades 2017" before pricing this bill</p> <p>NOTE: The contractor is advised to study the Electrical Engineer's drawings before pricing this bill. In the case of any discrepancies between the bill and the drawings the contractor must notify the Principal Agent.</p> <p>NOTE: Unless otherwise stated herein, all items in this bill shall be deemed to fall into Work Group No.160 for CPAP formula purposes.</p>				
	<p><b><u>TRENCHING</u></b></p> <p>General trenching work for sleeves along the routes as pegged out on site after co-ordination with other services</p> <p><b><u>Allowance must be made for the sifting of soil when required, removal and carting away of all stones and rocks including dumping off site. Backfilling and compaction shall be carried out as specified for overall siteworks.</u></b></p>				
1	Trenching through floor for sleeves	m3			Rate only
2	Excavation and backfilling in hard rock	m3			Rate Only
	<p><b><u>CABLE AND DATA SLEEVES</u></b></p> <p><b><u>Supply and installation of PVC Sleeves through floor construction to power distribution board and communication board complete with standard radius sleeve bends</u></b></p>				
3	50 mm Diameter for Power Cables and data network	m	100		
				R	
	Carried Forward				
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**CONDUIT WORK**

**Supply, delivery and installation of SABS approved PVC Conduits completed with all required conduit accessories.**

Built or Chase into brick or concrete work:

12	20mm PVC conduit	m		Rate Only
13	25mm PVC conduit	m	150	

**In Ceiling space and Timber work or along purlins**

14	20mm PVC conduit	m	100	
15	25mm PVC conduit	m		Rate Only

**Supply and installation of SABS approved conduit boxes, installed in the run of the conduit installation, cast into concrete and built into brickwork or flush inside false ceiling spaces, complete with all required conduit termination accessories.**

16	20mm diameter 4 way type(round box)	No	5	
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**WALL BOXES**

**Supply and installation of SABS approved galvanised pressed steel wall boxes for building flush into brickwork or cast into concrete work.**

Flush mounted type:

17	100 x 50 x 50mm	No	1	
18	100 x 100 x 50mm	No	3	

**PVC Wiring in conduits:**

19	2.5mm <sup>2</sup> for lights circuits	m	270	
20	4mm <sup>2</sup> for plug sockets circuits and Isolators	m	270	

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		Brought Forward		R
		<b><u>Stranded Bare Copper Earth Wire</u></b>		
		<u>Supply and installation of stranded bare copper earth wire along with PVC wiring in conduits. Tendered rates shall make provision for wastage.</u>		
21	2.5mm <sup>2</sup>	m	270	
22	4mm <sup>2</sup>	m		Rate Only
		<b><u>LIGHT SWITCHES</u></b>		
		<u>Supply and installation of SABS approved type 16A flush and surface type light switches. Final paint finishes shall be confirmed at a later stage. allowance shall however be made as specified in the general specification.</u>		
23	16A Single lever light switch	No	1	
24	Rotary lever light switch	No		Rate Only
25	2 Lever 2 way	No		Rate Only
26	2 Lever 1 way	No		Rate Only
27	360° Programmable ceiling P.I.R presence detector: - The unit shall control lights and air conditioner - Output channel 1 for simple ON/OFF switching - Output channel 2 for dimmable control of Dali luminaires	No	4	
28	360° Programmable ceiling P.I.R presence detector: - The unit shall control lights only - Unit to allow for maintained illuminance control in corridors and common areas - Corridors to be dimmed to 100LX when unoccupied	No		Rate Only
29	Day/Night switch	No	1	
		Carried Forward		R
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		Brought Forward		R	
<b><u>SOCKET OUTLETS</u></b>					
Supply and installation of SABS approved switched and unswitched type flush and surface mounted type 16A switched socket outlets suitable for mounting in flush steel wall boxes or in steel pedestal units or on surface.					
The final colour of the paint finish shall be confirmed at a later stage, allowance shall be made as specified in the specification.					
All flush type boxes and special pedestals measured elsewhere.					
<b><u>Flush switched sockets type:</u></b>					
30	16A single socket outlets - ZA plug	No	1		
31	16A double socket outlets	No	2		
32	Type F Socket outlet	No			Rate Only
33	Type D Socket outlet	No			Rate Only
34	Power Pole	No			Rate Only
<b><u>LIGHT FITTINGS</u></b>					
Supply, delivery to site, storage and installation of the below specified light fittings complete with lamps, fixing material, mounting and tubes. Allowance must be made in the rates for all the required fixing materials and accessories.					
<b><u>Fittings to be equal and similar approved to the below quoted manufacture.</u></b>					
35	"BEKA" or similar approved 30W Recessed 600x600mm LED panel	No			Rate Only
36	"BEKA" or similar approved 16W bulkhead series 51 LED with prismatic diffuser	No	5		
		<b>Carried Forward</b>		R	
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		Brought Forward		R	
37	"BEKA" or similar approved 15W ROUGHGUARD LED luminaire - without nightlight	No	1		
38	"BEKA" or similar approved 7W RONDOLED maxi fitting	No	4		
39	"BEKA" or similar approved 56W ROUGHGUARD LED luminaire - without nightlight	No	2		
40	"BEKA" or similar approved 26W ROUGHGUARD LED luminaire - without nightlight	No			Rate Only
<b><u>ELECTRICAL TESTS</u></b>					
<b><u>Making provision for the required inspection, tests and the commissioning of the complete installation and the issuing of the required certificate.</u></b>					
41	Building installation			SUM	
<b><u>Others</u></b>					
42	200 x 200mm - Telephone & Data Cabinet	No			Rate Only
43	100 x 100 x 50mm - Draw box for Communication complete with blank cover	No			Rate Only
44	2 compartment power skirting complete with socket outlets and blanks for telephone and data points and cover.	m			Rate Only
45	Provide the Sum of R 12 500.00 for earthing and lightning protection			SUM	
46	20A 2pole Isolator, in suitable York Box, for HVAC	No	3		
47	20A 3pole Isolator, in suitable York Box, for HVAC and Heat Pumps	No			Rate Only
<b>Carried Forward to Summary of Section No. 3</b>				R	
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		Brought Forward		R	
<b><u>Radius bends:</u></b>					
4	75mm Diameter	No			Rate Only
5	110mm Diameter	No			Rate Only
<b><u>Draw Wires</u></b>					
6	Supply and install a 0,6mm diameter galvanised draw wire in sleeves and conduit for data installation	m	220		
<b><u>DISTRIBUTION BOARDS</u></b>					
<b><u>Supply, delivery, storage and submission of workshop drawings for the Flush mounted architrave steel type power distribution boards complete with flush trays, doors, switch gear mounting trays, copper bushbars, neutral and earth bars, correctly sized internal</u></b>					
7	Supply and install a two tier distribution board	No	2		
<b><u>Low Voltage PVC Cables</u></b>					
<b><u>Supply and installation of PVC SWA PVC cable and Bare Copper Earth Wire in sleeves and in trenches</u></b>					
8	50mm 4 core PVC SWA Cable	m			Rate Only
9	35mm BCEW	m			Rate Only
<b><u>Terminations:</u></b>					
10	50mm 4 core cable	No			Rate Only
11	35mm BCEW	No			Rate Only
		Carried Forward		R	
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Brought Forward			R
<b><u>CONDUIT WORK</u></b>			
<b><u>Supply, delivery and installation of SABS approved PVC Conduits completed with all required conduit accessories.</u></b>			
<b><u>Built or Chase into brick or concrete work:</u></b>			
12	20mm PVC conduit	m	Rate Only
13	25mm PVC conduit	m	100
<b><u>In Ceiling space and Timber work or along purlins</u></b>			
14	20mm PVC conduit	m	120
15	25mm PVC conduit	m	Rate Only
<b><u>Supply and installation of SABS approved conduit boxes, installed in the run of the conduit installation, cast into concrete and built into brickwork or flush inside false ceiling spaces, complete with all required conduit termination accessories.</u></b>			
16	20mm diameter 4 way type(round box)	No	4
<b><u>WALL BOXES</u></b>			
<b><u>Supply and installation of SABS approved galvanised pressed steel wall boxes for building flush into brickwork or cast into concrete work.</u></b>			
<b><u>Flush mounted type:</u></b>			
17	100 x 50 x 50mm	No	4
18	100 x 100 x 50mm	No	12
<b><u>PVC Wiring in conduits:</u></b>			
19	2.5mm <sup>2</sup> for lights circuits	m	360
20	4mm <sup>2</sup> for plug sockets circuits and Isolators	m	360
Carried Forward			R
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		Brought Forward		R	
		<b><u>Stranded Bare Copper Earth Wire</u></b>			
		<u>Supply and installation of stranded bare copper earth wire along with PVC wiring in conduits. Tendered rates shall make provision for wastage.</u>			
21	2.5mm <sup>2</sup>	m	360		
22	4mm <sup>2</sup>	m			Rate Only
		<b><u>LIGHT SWITCHES</u></b>			
		<u>Supply and installation of SABS approved type 16A flush and surface type light switches. Final paint finishes shall be confirmed at a later stage, allowance shall however be made as specified in the general specification.</u>			
23	16A Single lever light switch	No	4		
24	Rotary lever light switch	No			Rate Only
25	2 Lever 2 way	No			Rate Only
26	2 Lever 1 way	No			Rate Only
27	360° Programmable ceiling P.I.R presence detector: - The unit shall control lights and air conditioner - Output channel 1 for simple ON/OFF switching - Output channel 2 for dimmable control of Dali luminaires	No	2		
28	360° Programmable ceiling P.I.R presence detector: - The unit shall control lights only - Unit to allow for maintained illuminance control in corridors and common areas - Corridors to be dimmed to 100LX when unoccupied	No			Rate Only
29	Day/night switch	No	2		
		Carried Forward		R	
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		Brought Forward		R
<b><u>SOCKET OUTLETS</u></b>				
Supply and installation of SABS approved switched and unswitched type flush and surface mounted type 16A switched socket outlets suitable for mounting in flush steel wall boxes or in steel pedestal units or on surface.				
The final colour of the paint finish shall be confirmed at a later stage, allowance shall be made as specified in the specification.				
All flush type boxes and special pedestals measured elsewhere.				
<b><u>Flush switched sockets type:</u></b>				
30	16A single socket outlets - ZA plug	No	6	
31	16A double socket outlets	No	2	
32	Type F Socket outlet	No		Rate Only
33	Type D Socket outlet	No		Rate Only
34	Power Pole	No		Rate Only
<b><u>LIGHT FITTINGS</u></b>				
Supply, delivery to site, storage and installation of the below specified light fittings complete with lamps, fixing material, mounting and tubes. Allowance must be made in the rates for all the required fixing materials and accessories.				
<b><u>Fittings to be equal and similar approved to the below quoted manufacture.</u></b>				
35	TYPE 3: Series-30 round bulkhead LED 15W 4000K surface mount	No	2	
36	"BEKA" or similar approved 16W bulkhead series 51 LED with prismatic diffuser	No	6	
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37	"BEKA" or similar approved 15W ROUGHGUARD LED luminaire - without nightlight	No			Rate Only
38	"BEKA" or similar approved 7W RONDOLED maxi fitting	No	4		
39	"BEKA" or similar approved 56W ROUGHGUARD LED luminaire - without nightlight	No			Rate Only
40	"BEKA" or similar approved 26W ROUGHGUARD LED luminaire - without nightlight	No			Rate Only
<b><u>ELECTRICAL TESTS</u></b>					
<b><u>Making provision for the required inspection, tests and the commissioning of the complete installation and the issuing of the required certificate.</u></b>					
41	Building installation			SUM	
<b><u>Others</u></b>					
42	200 x 200mm - Telephone & Data Cabinet	No			Rate Only
43	100 x 100 x 50mm - Draw box for Communication complete with blank cover	No			Rate Only
44	2 compartment power skirting complete with socket outlets and blanks for telephone and data points and cover.	m			Rate Only
45	Provide the Sum of R 15 500.00 for earthing and lightning protection			SUM	
46	20A 2pole Isolator, in suitable York Box, for HVAC	No			Rate Only
47	20A 3pole Isolator, in suitable York Box, for HVAC and Heat Pumps	No			Rate Only
<b>Carried Forward to Summary of Section No. 3</b>				R	
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Item No		Unit	Quantity	Rate	Amount
	<p><b><u>SECTION NO. 3</u></b></p> <p><b><u>BILL NO. 7</u></b></p> <p><b><u>MARRIED ACCOMMODATION</u></b></p> <p>NOTE: The contractor is advised to study the "General Preambles for Trades 2017" before pricing this bill</p> <p>NOTE: The contractor is advised to study the Electrical Engineer's drawings before pricing this bill. In the case of any discrepancies between the bill and the drawings the contractor must notify the Principal Agent.</p> <p>NOTE: Unless otherwise stated herein, all items in this bill shall be deemed to fall into Work Group No.160 for CPAP formula purposes.</p>				
	<p><b><u>TRENCHING</u></b></p> <p>General trenching work for sleeves along the routes as pegged out on site after co-ordination with other services</p> <p><b><u>Allowance must be made for the sifting of soil when required, removal and carting away of all stones and rocks including dumping off site. Backfilling and compaction shall be carried out as specified for overall siteworks.</u></b></p>				
1	Trenching through floor for sleeves	m3			Rate Only
2	Excavation and backfilling in hard rock	m3			Rate Only
	<p><b><u>CABLE AND DATA SLEEVES</u></b></p> <p><b><u>Supply and installation of PVC Sleeves through floor construction to power distribution board and communication board complete with standard radius sleeve bends</u></b></p>				
3	50 mm Diameter for Power Cables and data network	m	20		
				R	
	Carried Forward				
	<p>Section No. 3 ELECTRICAL INSTALLATION Bill No. 7 MARRIED LIVING QUATERS Takgalang Consulting</p>				



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CONSTRUCTION OF MARITE POLICE STATION  
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		Brought Forward		R
<b><u>CONDUIT WORK</u></b>				
<b><u>Supply, delivery and installation of SABS approved PVC Conduits completed with all required conduit accessories.</u></b>				
<b><u>Built or Chase into brick or concrete work:</u></b>				
12	20mm PVC conduit	m		Rate Only
13	25mm PVC conduit	m	120	
<b><u>In Ceiling space and Timber work or along purlins</u></b>				
14	20mm PVC conduit	m	150	
15	25mm PVC conduit	m		Rate Only
<b><u>Supply and installation of SABS approved conduit boxes, installed in the run of the conduit installation, cast into concrete and built into brickwork or flush inside false ceiling spaces, complete with all required conduit termination accessories.</u></b>				
16	20mm diameter 4 way type(round box)	No	5	
<b><u>WALL BOXES</u></b>				
<b><u>Supply and installation of SABS approved galvanised pressed steel wall boxes for building flush into brickwork or cast into concrete work.</u></b>				
<b><u>Flush mounted type:</u></b>				
17	100 x 50 x 50mm	No	7	
18	100 x 100 x 50mm	No	11	
<b><u>PVC Wiring in conduits:</u></b>				
19	2.5mm <sup>2</sup> for lights circuits	m	240	
20	4mm <sup>2</sup> for plug sockets circuits and Isolators	m	380	
		Carried Forward		R
Section No. 3 ELECTRICAL INSTALLATION Bill No. 7 MARRIED LIVING QUATERS Takgalang Consulting				

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		Brought Forward		R	
		<b><u>Stranded Bare Copper Earth Wire</u></b>			
		<u>Supply and installation of stranded bare copper earth wire along with PVC wiring in conduits. Tendered rates shall make provision for wastage.</u>			
21	2.5mm <sup>2</sup>	m	240		
22	4mm <sup>2</sup>	m			
		<b><u>LIGHT SWITCHES</u></b>			
		<u>Supply and installation of SABS approved type 16A flush and surface type light switches. Final paint finishes shall be confirmed at a later stage, allowance shall however be made as specified in the general specification.</u>			
23	16A Single lever light switch	No	5		
24	Rotary lever light switch	No			Rate Only
25	2 Lever 2 way	No	2		
26	2 Lever 1 way	No			Rate Only
27	360° Programmable ceiling P.I.R presence detector: - The unit shall control lights and air conditioner - Output channel 1 for simple ON/OFF switching - Output channel 2 for dimmable control of Dali luminaires	No	1		
28	360° Programmable ceiling P.I.R presence detector: - The unit shall control lights only - Unit to allow for maintained illuminance control in corridors and common areas - Corridors to be dimmed to 100LX when unoccupied	No			Rate Only
29	Day/night switch	No	1		
		<b>Carried Forward</b>		R	
		Section No. 3 ELECTRICAL INSTALLATION Bill No. 7 MARRIED LIVING QUATERS Takgalang Consulting			

**CONSTRUCTION OF MARITE POLICE STATION  
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**SOCKET OUTLETS**

Supply and installation of SABS approved switched and unswitched type flush and surface mounted type 16A switched socket outlets suitable for mounting in flush steel wall boxes or in steel pedestal units or on surface.

The final colour of the paint finish shall be confirmed at a later stage, allowance shall be made as specified in the specification.

All flush type boxes and special pedestals measured elsewhere.

**Flush switched sockets type:**

30 16A single socket outlets - ZA plug

No 6

31 16A double socket outlets

No 2

32 Type F Socket outlet

No

**Rate Only**

33 Type D Socket outlet

No

**Rate Only**

34 Power Pole

No

**Rate Only**

**LIGHT FITTINGS**

Supply, delivery to site, storage and installation of the below specified light fittings complete with lamps, fixing material, mounting and tubes. Allowance must be made in the rates for all the required fixing materials and accessories.

**Fittings to be equal and similar approved to the below quoted manufacture.**

35 TYPE 3: Series-30 round bulkhead LED 15W 4000K surface mount

No 5

36 "BEKA" or similar approved 16W bulkhead series 51 LED with prismatic diffuser

No 4

**Carried Forward**

**R**

Section No. 3  
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Bill No. 7  
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Brought Forward				R	
37	"BEKA" or similar approved 15W ROUGHGUARD LED luminaire - with clear diffuser	No	1		
38	"BEKA" or similar approved 7W RONDOLED maxi fitting	No	4		
39	"BEKA" or similar approved 56W ROUGHGUARD LED luminaire - without nightlight	No			Rate Only
40	"BEKA" or similar approved 26W ROUGHGUARD LED luminaire - without nightlight	No			Rate Only
<b><u>ELECTRICAL TESTS</u></b>					
<b><u>Making provision for the required inspection, tests and the commissioning of the complete installation and the issuing of the required certificate.</u></b>					
41	Building installation			SUM	
<b><u>Others</u></b>					
42	200 x 200mm - Telephone & Data Cabinet	No			Rate Only
43	100 x 100 x 50mm - Draw box for Communication complete with blank cover	No			Rate Only
44	2 compartment power skirting complete with socket outlets and blanks for telephone and data points and cover.	m			Rate Only
45	Provide the Sum of R 15 500.00 for earthing and lightning protection			SUM	
46	20A 2pole Isolator, in suitable York Box, for HVAC	No			Rate Only
47	20A 3pole Isolator, in suitable York Box, for HVAC and Heat Pumps	No			Rate Only
<b>Carried Forward to Summary of Section No. 3</b>				R	
Section No. 3 ELECTRICAL INSTALLATION Bill No. 7 MARRIED LIVING QUATERS Takgalang Consulting					

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Item No		Unit	Quantity	Rate	Amount
	<p><b><u>SECTION NO. 3</u></b></p> <p><b><u>BILL NO. 8</u></b></p> <p><b><u>GENERATOR ROOM</u></b></p> <p>NOTE: The contractor is advised to study the "General Preambles for Trades 2017" before pricing this bill</p> <p>NOTE: The contractor is advised to study the Electrical Engineer's drawings before pricing this bill. In the case of any discrepancies between the bill and the drawings the contractor must notify the Principal Agent.</p> <p>NOTE: Unless otherwise stated herein, all items in this bill shall be deemed to fall into Work Group No.160 for CPAP formula purposes.</p>				
	<p><b><u>TRENCHING</u></b></p> <p>General trenching work for sleeves along the routes as pegged out on site after co-ordination with other services</p> <p><b><u>Allowance must be made for the sifting of soil when required, removal and carting away of all stones and rocks including dumping off site. Backfilling and compaction shall be carried out as specified for overall siteworks.</u></b></p>				
1	Trenching through floor for sleeves	m3			Rate Only
2	Excavation and backfilling in hard rock	m3			Rate Only
	<p><b><u>CABLE AND DATA SLEEVES</u></b></p> <p><b><u>Supply and installation of PVC Sleeves through floor construction to power distribution board and communication board complete with standard radius sleeve bends</u></b></p>				
3	50 mm Diameter for Power Cables and data network	m	20		
	Carried Forward				R
	<p>Section No. 3 ELECTRICAL INSTALLATION Bill No. 8 GENERATOR ROOM Takgalang Consulting</p>				



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**CONDUIT WORK**

**Supply, delivery and installation of SABS approved PVC Conduits completed with all required conduit accessories.**

**Built or Chase into brick or concrete work:**

12	20mm PVC conduit	m		Rate Only
13	25mm PVC conduit	m		Rate Only

**In Ceiling space and Timber work or along purlins**

14	20mm PVC conduit	m	30	Rate Only
15	25mm PVC conduit	m		Rate Only

**Supply and installation of SABS approved conduit boxes, installed in the run of the conduit installation, cast into concrete and built into brickwork or flush inside false ceiling spaces, complete with all required conduit termination accessories.**

16	20mm diameter 4 way type(round box)	No	5	
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**WALL BOXES**

**Supply and installation of SABS approved galvanised pressed steel wall boxes for building flush into brickwork or cast into concrete work.**

**Flush mounted type:**

17	100 x 50 x 50mm	No	1	
18	100 x 100 x 50mm	No		Rate Only

**PVC Wiring in conduits:**

19	2.5mm <sup>2</sup> for lights circuits	m	90	
20	4mm <sup>2</sup> for plug sockets circuits and Isolators	m	105	

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		Brought Forward		R
<b><u>Stranded Bare Copper Earth Wire</u></b>				
<u>Supply and installation of stranded bare copper earth wire along with PVC wiring in conduits. Tendered rates shall make provision for wastage.</u>				
21	2.5mm <sup>2</sup>	m	90	
22	4mm <sup>2</sup>	m		Rate Only
<b><u>LIGHT SWITCHES</u></b>				
<u>Supply and installation of SABS approved type 16A flush and surface type light switches. Final paint finishes shall be confirmed at a later stage, allowance shall however be made as specified in the general specification.</u>				
23	16A Single lever light switch	No	1	
24	Rotary lever light switch	No		Rate Only
25	2 Lever 2 way	No		Rate Only
26	2 Lever 1 way	No		Rate Only
27	360° Programmable ceiling P.I.R presence detector: - The unit shall control lights and air conditioner - Output channel 1 for simple ON/OFF switching - Output channel 2 for dimmable control of Dali luminaires	No		
28	360° Programmable ceiling P.I.R presence detector: - The unit shall control lights only - Unit to allow for maintained illuminance control in corridors and common areas - Corridors to be dimmed to 100LX when unoccupied	No		Rate Only
29	Day/night switch	No	1	
		Carried Forward		R
Section No. 3 ELECTRICAL INSTALLATION Bill No. 8 GENERATOR ROOM Takgalang Consulting				

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		Brought Forward			R
<b><u>SOCKET OUTLETS</u></b>					
Supply and installation of SABS approved switched and unswitched type flush and surface mounted type 16A switched socket outlets suitable for mounting in flush steel wall boxes or in steel pedestal units or on surface.					
The final colour of the paint finish shall be confirmed at a later stage, allowance shall be made as specified in the specification.					
All flush type boxes and special pedestals measured elsewhere.					
<b><u>Flush switched sockets type:</u></b>					
30	16A single socket outlets - ZA plug	No	2		
31	16A double socket outlets	No			Rate Only
32	Type F Socket outlet	No			Rate Only
33	Type D Socket outlet	No			Rate Only
34	Power Pole	No			Rate Only
<b><u>LIGHT FITTINGS</u></b>					
Supply, delivery to site, storage and installation of the below specified light fittings complete with lamps, fixing material, mounting and tubes. Allowance must be made in the rates for all the required fixing materials and accessories.					
<b><u>Fittings to be equal and similar approved to the below quoted manufacture.</u></b>					
35	TYPE 3: Series-30 round bulkhead LED 15W 4000K surface mount	No			
36	"BEKA" or similar approved 16W bulkhead series 51 LED with prismatic diffuser	No			
		Carried Forward			R
Section No. 3 ELECTRICAL INSTALLATION Bill No. 8 GENERATOR ROOM Takgalang Consulting					

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Brought Forward				R
37	"BEKA" or similar approved 15W ROUGHGUARD LED luminaire - with clear diffuser	No	3	
38	"BEKA" or similar approved 7W RONDOLED maxi fitting	No		
39	"BEKA" or similar approved 56W ROUGHGUARD LED luminaire - without nightlight	No		Rate Only
40	"BEKA" or similar approved 26W ROUGHGUARD LED luminaire - without nightlight	No		Rate Only
<b><u>ELECTRICAL TESTS</u></b>				
<b><u>Making provision for the required inspection, tests and the commissioning of the complete installation and the issuing of the required certificate.</u></b>				
41	Building installation			SUM
<b><u>Others</u></b>				
42	200 x 200mm - Telephone & Data Cabinet	No		Rate Only
43	100 x 100 x 50mm - Draw box for Communication complete with blank cover	No		Rate Only
44	2 compartment power skirting complete with socket outlets and blanks for telephone and data points and cover.	m		Rate Only
45	Provide the Sum of R 2 500.00 for earthing and lightning protection			SUM
46	20A 2pole Isolator, in suitable York Box, for HVAC	No		Rate Only
47	20A 3pole Isolator, in suitable York Box, for HVAC and Heat Pumps	No		Rate Only
<b><u>STANDBY POWER GENERATOR</u></b>				
48	40 kVA prime and 44kVA standby power Silent Diesel Generator	No	1	
<b>Carried Forward to Summary of Section No. 3</b>				R
Section No. 3 ELECTRICAL INSTALLATION Bill No. 8 GENERATOR ROOM Takgalang Consulting				

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Item No		Unit	Quantity	Rate	Amount
	<p><b><u>SECTION NO. 3</u></b></p> <p><b><u>BILL NO. 9</u></b></p> <p><b><u>REFUSE BLOCK</u></b></p> <p>NOTE: The contractor is advised to study the "General Preambles for Trades 2017" before pricing this bill</p> <p>NOTE: The contractor is advised to study the Electrical Engineer's drawings before pricing this bill. In the case of any discrepancies between the bill and the drawings the contractor must notify the Principal Agent.</p> <p>NOTE: Unless otherwise stated herein, all items in this bill shall be deemed to fall into Work Group No.160 for CPAP formula purposes.</p>				
	<p><b><u>TRENCHING</u></b></p> <p>General trenching work for sleeves along the routes as pegged out on site after co-ordination with other services</p> <p><b><u>Allowance must be made for the sifting of soil when required, removal and carting away of all stones and rocks including dumping off site. Backfilling and compaction shall be carried out as specified for overall siteworks.</u></b></p>				
1	Trenching through floor for sleeves	m3			Rate Only
2	Excavation and backfilling in hard rock	m3			Rate Only
	<p><b><u>CABLE AND DATA SLEEVES</u></b></p> <p><b><u>Supply and installation of PVC Sleeves through floor construction to power distribution board and communication board complete with standard radius sleeve bends</u></b></p>				
3	50 mm Diameter for Power Cables and data network	m	10		
	<b>Carried Forward</b>			R	
	<p>Section No. 3 ELECTRICAL INSTALLATION Bill No. 9 REFUSE BLOCK Takgalang Consulting</p>				

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		Brought Forward		R	
<b><u>Radius bends:</u></b>					
4	75mm Diameter	No			Rate Only
5	110mm Diameter	No			Rate Only
<b><u>Draw Wires</u></b>					
6	Supply and install a 0,6mm diameter galvanised draw wire in sleeves and conduit for data installation	m	30		
<b><u>DISTRIBUTION BOARDS</u></b>					
<b><u>Supply, delivery, storage and submission of workshop drawings for the Flush mounted architrave steel type power distribution boards complete with flush trays, doors, switch gear mounting trays, copper bushbars, neutral and earth bars, correctly sized internal</u></b>					
7	Supply and install a two tier distribution board	No			Rate Only
<b><u>Low Voltage PVC Cables</u></b> <b><u>Supply and installation of PVC SWA PVC cable and Bare Copper Earth Wire in sleeves and in trenches</u></b>					
8	50mm 4 core PVC SWA Cable	m			Rate Only
9	35mm BCEW	m			Rate Only
<b><u>Terminations:</u></b>					
10	50mm 4 core cable	No			Rate Only
11	35mm BCEW	No			Rate Only
		Carried Forward		R	
Section No. 3 ELECTRICAL INSTALLATION Bill No. 9 REFUSE BLOCK Takgalang Consulting					

CONSTRUCTION OF MARITE POLICE STATION  
SOUTH AFRICAN POLICE SERVICES  
MPUMALANGA PROVINCE

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Brought Forward

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**CONDUIT WORK**

**Supply, delivery and installation of SABS approved PVC Conduits completed with all required conduit accessories.**

**Built or Chase into brick or concrete work:**

12	20mm PVC conduit	m		Rate Only
13	25mm PVC conduit	m		Rate Only

**In Ceiling space and Timber work or along purlins**

14	20mm PVC conduit	m	30	Rate Only
15	25mm PVC conduit	m		Rate Only

**Supply and installation of SABS approved conduit boxes, installed in the run of the conduit installation, cast into concrete and built into brickwork or flush inside false ceiling spaces, complete with all required conduit termination accessories.**

16	20mm diameter 4 way type(round box)	No	1	
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**WALL BOXES**

**Supply and installation of SABS approved galvanised pressed steel wall boxes for building flush into brickwork or cast into concrete work.**

**Flush mounted type:**

17	100 x 50 x 50mm	No	1	
18	100 x 100 x 50mm	No		Rate Only

**PVC Wiring in conduits:**

19	2.5mm <sup>2</sup> for lights circuits	m	90	
20	4mm <sup>2</sup> for plug sockets circuits and Isolators	m		Rate Only

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		Brought Forward		R	
		<b><u>Stranded Bare Copper Earth Wire</u></b>			
		<u>Supply and installation of stranded bare copper earth wire along with PVC wiring in conduits. Tendered rates shall make provision for wastage.</u>			
21	2.5mm <sup>2</sup>	m	90		
22	4mm <sup>2</sup>	m			Rate Only
		<b><u>LIGHT SWITCHES</u></b>			
		<u>Supply and installation of SABS approved type 16A flush and surface type light switches. Final paint finishes shall be confirmed at a later stage, allowance shall however be made as specified in the general specification.</u>			
23	16A Single lever light switch	No	1		
24	Rotary lever light switch	No			Rate Only
25	2 Lever 2 way	No			Rate Only
26	2 Lever 1 way	No			Rate Only
27	360° Programmable ceiling P.I.R presence detector: - The unit shall control lights and air conditioner - Output channel 1 for simple ON/OFF switching - Output channel 2 for dimmable control of Dali luminaires	No			
28	360° Programmable ceiling P.I.R presence detector: - The unit shall control lights only - Unit to allow for maintained illuminance control in corridors and common areas - Corridors to be dimmed to 100LX when unoccupied	No			Rate Only
29	Day/night switch	No	1		
		<b>Carried Forward</b>		R	
		Section No. 3 ELECTRICAL INSTALLATION Bill No. 9 REFUSE BLOCK Takgalang Consulting			

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		Brought Forward			R
<b><u>SOCKET OUTLETS</u></b>					
Supply and installation of SABS approved switched and unswitched type flush and surface mounted type 16A switched socket outlets suitable for mounting in flush steel wall boxes or in steel pedestal units or on surface.					
The final colour of the paint finish shall be confirmed at a later stage, allowance shall be made as specified in the specification.					
All flush type boxes and special pedestals measured elsewhere.					
<b><u>Flush switched sockets type:</u></b>					
30	16A single socket outlets - ZA plug	No			Rate Only
31	16A double socket outlets	No			Rate Only
32	Type F Socket outlet	No			Rate Only
33	Type D Socket outlet	No			Rate Only
34	Power Pole	No			Rate Only
<b><u>LIGHT FITTINGS</u></b>					
Supply, delivery to site, storage and installation of the below specified light fittings complete with lamps, fixing material, mounting and tubes. Allowance must be made in the rates for all the required fixing materials and accessories.					
<b><u>Fittings to be equal and similar approved to the below quoted manufacture.</u></b>					
35	TYPE 3: SERIES-30 ROUND BULKHEAD LED - 15W - 4000K - SURFACE MOUNT	No			Rate Only
36	BEKA: 16W BULKHEAD SERIES 51 LED WITH PRISMATIC DIFFUSER	No	2		
		<b>Carried Forward</b>			R
Section No. 3 ELECTRICAL INSTALLATION Bill No. 9 REFUSE BLOCK Takgalang Consulting					

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		Brought Forward		R	
37	BEKA: 15W ROUGHGUARD LED LUMINAIRE - WITH CLEAR DIFFUSER	No	1		
38	BEKA: 7W RONDOLED MAXI FITTING	No			Rate Only
39	BEKA: 56W ROUGHGUARD LED LUMINAIRE - WITHOUT NIGHTLIGHT	No			Rate Only
40	BEKA: 26W ROUGHGUARD LED LUMINAIRE - WITHOUT NIGHTLIGHT	No			Rate Only
<b><u>ELECTRICAL TESTS</u></b>					
<b><u>Making provision for the required inspection, tests and the commissioning of the complete installation and the issuing of the required certificate.</u></b>					
41	Building installation			SUM	
<b><u>Others</u></b>					
42	200 x 200mm - Telephone & Data Cabinet	No			Rate Only
43	100 x 100 x 50mm - Draw box for Communication complete with blank cover	No			Rate Only
44	2 compartment power skirting complete with socket outlets and blanks for telephone and data points and cover.	m			Rate Only
45	Provide the Sum of R 2 500.00 for earthing and lightning protection			SUM	
46	20A 2pole Isolator, in suitable York Box, for HVAC	No			Rate Only
47	20A 3pole Isolator, in suitable York Box, for HVAC and Heat Pumps	No			Rate Only
<b>Carried Forward to Summary of Section No. 3</b>				R	
Section No. 3 ELECTRICAL INSTALLATION Bill No. 9 REFUSE BLOCK Takgalang Consulting					

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Item No		Unit	Quantity	Rate	Amount
<b><u>SECTION NO. 3</u></b>					
<b><u>BILL NO. 10</u></b>					
<b><u>AREA LIGHTING</u></b>					
NOTE: The contractor is advised to study the "General Preambles for Trades 2017" before pricing this bill					
NOTE: The contractor is advised to study the Electrical Engineer's drawings before pricing this bill. In the case of any discrepancies between the bill and the drawings the contractor must notify the Principal Agent.					
NOTE: Unless otherwise stated herein, all items in this bill shall be deemed to fall into Work Group No.162 for CPAP formula purposes.					
<b><u>AREA LIGHTING</u></b>					
<b><u>LOW VOLTAGE CABLE</u></b> <b><u>For the Supply, delivery to Site and Installation of the following Low Voltage Cable:(600/1000V PVC PVC SWA Cu)</u></b>					
1	4mm x 4 core	m			Rate Only
2	16mm x 2 core	m			Rate Only
3	2.5mm x 2 core	m	1,257		
4	For the Supply and Installation of the following BCE Wire to run with LV Cables: 16mm sq ( With 25mm sq Cable ) Wire to run with LV Cables	m			Rate Only
5	10mm sq ( With 10 - 16mm sq Cable )	m			Rate Only
6	1.5mm sq ( With 2.5mm sq cable)	m	1,257		
<b>Carried Forward</b>				R	
Section No. 3 ELECTRICAL INSTALLATION Bill No. 10 AREA LIGHTING Takgalang Consulting					

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		Brought Forward		R	
7	LOW VOLTAGE CABLE TERMINATIONS For the supply of Indoor terminations including suitable Lugs and Glands for the Low Voltage Cable and BCE Wire: 25mm x 4 core	No			rate only
8	16mm x 4 core	No			rate only
9	16mm x 2 core	No			rate only
10	4mm x 2 core	No			rate only
<b><u>BARE COPPER EARTH WIRE (STRANDED)</u></b>					
11	BCEW 16mm sq	No			rate only
12	BCEW 10mm sq	No			rate only
13	BCEW 1.5mm sq	No	1,257		
14	LOW VOLTAGE CABLE JOINTS For the Supply, delivery to Site and Installation of the following Low Voltage Cable Joints: 50mm x 4 core	No			rate only
15	16mm x 4 core	No			rate only
16	35mm x 2 core	No			rate only
17	6mm x 4 core	No			rate only
<b><u>Conduit Work</u></b>					
Supply, delivery and installation of SABS approved PVC Conduits completed with all required conduit accessories.					
<b><u>Built or Chase into brick or concrete work:</u></b>					
18	20mm PVC conduit	m			Rate Only
19	25mm PVC conduit	m			Rate Only
		Carried Forward		R	
Section No. 3 ELECTRICAL INSTALLATION Bill No. 10 AREA LIGHTING Takgalang Consulting					

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		Brought Forward		R
<b><u>In Ceiling space and Timber work or along purlins</u></b>				
20	20mm PVC conduit	m	300	
21	25mm PVC conduit	m		Rate Only
<b><u>Supply and installation of SABS approved conduit boxes, installed in the run of the conduit installation, cast into concrete and built into brickwork or flush inside false ceiling spaces, complete with all required conduit termination accessories.</u></b>				
22	20mm diameter 4 way type(round box)	No	15	
<b><u>STREET LIGHTS</u></b>				
<b><u>Supply, delivery to Site and Installation of the following Street light units complete as per Specification.</u></b>				
23	Galvanised steel poles, 2m mounting height complete accessories. Colour - Mineral Grey (K913) RAL 7045	No		Rate Only
24	Galvanised steel poles, 5m mounting height complete accessories. Colour - Mineral Grey (K913) RAL 7045	No	21	
25	Galvanised steel poles, 8m mounting height complete accessories. Colour - Mineral Grey (K913) RAL 7045	No		Rate Only
26	Galvanised steel poles, 15m mounting height with 4 way mounting spigot complete accessories. Colour - Mineral Grey (K913) RAL 7045	No		Rate Only
27	Beka shredder bollard 9LED/14W with all accessories	No		Rate Only
28	Beka shredder zela with all accessories	No		Rate Only
29	"BEKA" or similar approved 15W ROUGHGUARD LED luminaire - with clear diffuser	No	12	
30	"BEKA" or similar approved SAPS blue Zela decorative LED post-top luminaire 22W mounted on 5m poles	No	1	
		Carried Forward		R
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		Brought Forward		R
31	"BEKA" or similar approved Zela decorative LED post-top luminaire 38W mounted on 5m poles - with a symmetric light distribution	No	20	
<b><u>WIRING ON THE POLE</u></b>				
<b><u>600/1000V grade PVC insulated stranded copper conductors complete with terminations and accessories</u></b>				
32	Norse cable 2.5mm <sup>2</sup> or( Equivalent ) and other accessories for street light connection from ABC to Luminaire	m		Rate Only
33	1.5mm <sup>2</sup> Stranded bare copper earth wire	m		Rate Only
<b><u>Earthing and Lightning Protection System</u></b>				
34	Earth Electrode Supply and installation of 10mm <sup>2</sup> single core PVC SWA PVC cable earth Wire	m		Rate only
35	Earth spikes 1,2m long and accessories all the way to light fitting	No		Rate Only
36	Supply and install earthing accessories of the light fitting	No		Rate Only
37	TESTING AND COMMISSIONING Supply all Test equipment and Labour for Testing, Commissioning and Adjustment at Completion, as well as being in attendance for any Inspections and Tests that the Engineer may call for. All Eskom Standards and specifications will apply			SUM
Carried Forward to Summary of Section No. 3				R
Section No. 3 ELECTRICAL INSTALLATION Bill No. 10 AREA LIGHTING Takgalang Consulting				

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Item No		Unit	Quantity	Rate	Amount
	<p><b><u>SECTION NO. 3</u></b></p> <p><b><u>BILL NO. 11</u></b></p> <p><b><u>SOLAR INSTALLATION</u></b></p> <p>NOTE: The contractor is advised to study the "General Preambles for Trades 2017" before pricing this bill</p> <p>NOTE: The contractor is advised to study the Electrical Engineer's drawings before pricing this bill. In the case of any discrepancies between the bill and the drawings the contractor must notify the Principal Agent.</p> <p>NOTE: Unless otherwise stated herein, all items in this bill shall be deemed to fall into Work Group No.162 for CPAP formula purposes.</p>				
	<b><u>SOLAR MODULES</u></b>				
1	550W Monocrystalline solar panel with integrated connectors	No	65		
	<b><u>GRID INVERTERS</u></b>				
2	30 kW 3-phase Hybrid HPS Ateess inverter	No	1		
3	ATESS Automatic Transfer Switch for HPS100	No	1		
	<b><u>MOUNTING STRUCTURES</u></b>				
4	Mounting rail eco 41mm x 41mm	m	150		
5	Mounting clip	No	130		
6	Mid mounting clamp	No	104		
7	End mounting clamp	No	52		
8	Mounting structure bolting kit	No	286		
	<b>Carried Forward</b>				R
	<p>Section No. 3 ELECTRICAL INSTALLATION Bill No. 11 HYBRID SOLAR PV SYSTEM WITH BESS Takgalang Consulting</p>				

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		Brought Forward			R
	<b>Warranty</b>				
9	Warranty Extension 20 years for each all inverters				SUM
	<b>CABLE TRAYS, BASKETS AND LADDERS</b>				
10	P9800 wiring duct complete with cover, end cap and mounting accessories	m	35		
	<b>DISTRIBUTION BOARDS</b>				
11	Supply and install SU3 surface mount distribution board	No	1		
	<b>DC CABLES FOR MODULES AND INVERTERS</b>				
12	6mm2 PV1-F DC cable (red)	m	200		
13	6mm2 PV1-F DC cable (black)	m	200		
14	6mm2 PV1-F DC cable (green/gold)	m	200		
	<b>EARTHING SYSTEM FOR STRUCTURES, PANELS &amp; dns</b>				
15	Earthing system Installation and accessories for the structure and invertors and panels			Item	
	<b>ADDITIONAL CONSUMABLES</b>				
16	Installation accessories including, T-offs, riser, adapter, etc. as required to support all cables as listed above and any other unforeseen			Item	
	<b>BESS</b>				
17	120kW/h battery energy storage system pack with a 30kW converter	No	1		
<b>Carried Forward to Summary of Section No. 3</b>					R
Section No. 3 ELECTRICAL INSTALLATION Bill No. 11 HYBRID SOLAR PV SYSTEM WITH BESS Takgalang Consulting					

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Bill No	Section No. 3 ELECTRICAL INSTALLATION <b>SECTION SUMMARY - ELECTRICAL INSTALLATION</b>	Page No	Amount
1	MV RETICULATION	106	
2	LV RETICULATION	109	
3	STATION BLOCK	116	
4	CELL BLOCK	122	
5	CLEANERS, REST ROOMS AND WASHBAY	128	
6	BACHELORS LEAVING QUARTERS	134	
7	MARRIED LIVING QUARTERS	140	
8	GENERATOR ROOM	146	
9	REFUSE BLOCK	152	
10	AREA LIGHTING	156	
11	HYBRID SOLAR PV SYSTEM WITH BESS	158	
	<b>Carried to Final Summary</b>		R
	Section No. 3 ELECTRICAL INSTALLATION Takgalang Consulting		

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Item No	Unit	Quantity	Rate	Amount
<p><b><u>SECTION NO. 4</u></b></p> <p><b><u>BILL NO. 1</u></b></p> <p><b><u>FIRE PROTECTION</u></b></p> <p>NOTE: The contractor is advised to study the "General Preambles for Trades 2017" before pricing this bill</p> <p>NOTE: The contractor is advised to study the Mechanical Engineer's drawings before pricing this bill. In the case of any discrepancies between the bill and the drawings the contractor must notify the Principal Agent.</p> <p>NOTE: The contractor's prices for all items throughout these bills of quantities must take account of and include for all of the obligations, requirements and specifications.</p> <p>NOTE: Unless otherwise stated herein, all items in this bill shall be deemed to fall into Work Group No. 170 for CPAP formula purposes.</p>				
<p><b><u>SUPPLEMENTARY PREAMBLES</u></b></p> <p><b><u>Defects liability period</u></b></p> <p>All mechanical installations (including equipment) are subject to 12 months defect liability period from the date of practical completion by the contractor</p>				
<p><b><u>SUPPLY, DELIVERY, INSTALLATION, COMMISSIONING AND TESTING OF FIRE PROTECTION SYSTEMS COMPLETE WITH CONNECTIONS AND FITTINGS IN ACCORDANCE WITH SANS 10400 PART T AND SANS 10400 PART W</u></b></p> <p style="text-align: right;"><b>Carried Forward</b></p> <p>Section No. 4 MECHANICAL INSTALLATION Bill No. 1 FIRE PROTECTION Takgalang Consulting</p>			R	

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<b><u>Supply, delivery, installation, commissioning and testing of Fire Hydrants &amp; Fire Hose Reels</u></b>			
1	Φ100 Two Port Booster with Pressure Gauge (FPC) - Please align to SQS for Fire Protection	No	1
2	Φ100mm Storz Hydrant – Φ100mm female BSP inlet & Φ100mm Storz outlet (FPH)	No	1
3	Φ65mm Outlet Outdoor Type Fire Hydrant (FH)	No	5
4	Φ65mm, 30m MET Lay flat hose with coupling	No	1
5	30m, 20mm diameter, non-swinging rotary pattern type Fire Hose Reels	No	10
6	Φ100mm Non Return Valve and two gate valves	No	1
7	Φ25mm Galvanised Steel (SABS 62) Piping for Connection of Fire Hose Reels	m	200
8	Φ25mm Class 16 HDPE Piping for Connection of Fire Hose Reels	m	105
9	Φ65mm Galvanised Steel (SABS 62) Piping for Connection of Fire Hydrants	m	20
10	Φ110mm Class 16 HDPE Piping Mains Connection	m	500
11	Pipe Supports at Dia. 25mm Galvanised Reticulation at a minimum interval of 2.4m, Reducing Valves, Fittings and Accessories (Fire Hose Reels)		SUM
12	Pipe Supports at Dia. 25mm HDPE at a minimum interval of 0.5m, Reducing Valves, Fittings and Accessories (Fire Hose Reels)		SUM
13	Pipe Supports at Dia. 110mm uPVC at a minimum interval of 1.2m, Reducing Valves, Fittings and Accessories (Fire Hydrants)		SUM
14	Red Oxide Imperial Paint	l	10
Carried Forward			R
Section No. 4 MECHANICAL INSTALLATION Bill No. 1 FIRE PROTECTION Takgalang Consulting			

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<b>Brought Forward</b>				R	
15	Open Fire Hose Cabinet (This unit is only required for the refuse yard hose reel)	No	18		
<b><u>Pump room, pump house, pipework &amp; electrical connections</u></b>					
16	End suction centrifugal pump type, fire pump complete with 21 l/s at a total head of 5.5 Bar including by pass arrangement for periodical testing of the working of the pump set as required, strainer on suction side and pressure gauge on delivery side etc. The pump shall be provided with mechanical seals and outlet manifolds. The above mounted on a base, pre-piped, pre-wired and tested. Standby pump connected to diesel generator.	No	2		
17	Squirrel cage A.C induction motor suitable for operation on 415V, 3 Phase 50Hz A.C supply and of minimum 100kW for the above pump with flexible coupling as per specification	No	1		Included
18	All coupling of pump and motor should be covered with safety guard	No			Included
19	Jockey Pump: 1.5 L/s @ 5.5 Bar Jockey Electrically driven	No	1		Included
20	All pumphouse pipework and necessary valves to make the installation complete and functioning			SUM	Included
21	All electrical panels, cabling, safeties, switches, etc for electrical pump, jockey pump and any other equipment housed within the pump house			SUM	Included
22	Supply, installation, testing and commissioning a vertical inline centrifugal twin booster domestic water pump set (2 pumps: 1 duty, 1 standby) with common suction and discharge manifold complete with control panel, electrical connection, galvanized steel piping and fittings for above ground installation and HDPE piping for below ground. Pump set with a duty point of 3l/s @ 1.5 bard			SUM	
<b>Carried Forward</b>				R	
Section No. 4 MECHANICAL INSTALLATION Bill No. 1 FIRE PROTECTION Takgalang Consulting					

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<b><u>Supply, delivery, installation, commissioning and testing of Fire Extinguishers complete with chevron board</u></b>			
23	5 kg Carbon Dioxide Portable Fire Extinguishers	No	9
24	4.5 kg Dry Chemical Powder Portable Fire Extinguishers	No	22
25	Fire Extinguishers Cabinet for 5kg CO2	No	9
26	Fire Extinguishers Cabinet for 4.5kg DCP	No	22
<b><u>Supply, delivery and installation of Evacuation Signage and Fire Escape Doors</u></b>			
27	E1/E2, Size: 190mm x 380mm (h x w) Double sided photoluminescent sign framed in natural anodised aluminium. Supply and install with steel wire and ceiling hook/onto mild steel bracket at 3.0 meters from finished floor level/mechanically mounted onto wall/fixture.	No	20
28	E1/E2, Size: 380mm x 190mm (h x w) Vertical projecting double sided photoluminescent sign framed in natural anodised aluminium. Supply and install with steel wire and ceiling hook/onto mild steel bracket at 3.0 meters from finished floor level/mechanically mounted onto wall/fixture.	No	19
29	E2, Size: 190mm x 380mm (h x w) Double sided photoluminescent sign with back plate framed in natural anodised aluminium. Supply and install with steel wire and ceiling hook/onto mild steel bracket at 3.0 meters from finished floor level/mechanically mounted onto wall/fixture.	No	18
30	E1, Size: 190mm x 380mm (h x w) Double sided photoluminescent sign with back plate framed in natural anodised aluminium. Supply and install with steel wire and ceiling hook/onto mild steel bracket at 3.0 meters from finished floor level/mechanically mounted onto wall/fixture.	No	12
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		Brought Forward			R
31	E3, Size: 190mm x 380mm (h x w) Double sided photoluminescent sign with back plate framed in natural anodised aluminium. Supply and install with steel wire and ceiling hook/onto mild steel bracket at 3.0 meters from finished floor level/mechanically mounted onto wall/fixture.	No	45		
<b><u>Supply, delivery and installation of Fire Equipment Signage</u></b>					
32	F5/F6, Size: 190mm x 570mm (h x w) Double sided photoluminescent sign with back plate framed in natural anodised aluminium. Supply and install with steel wire and ceiling hook/onto mild steel bracket at 3.0 meters from finished floor level/mechanically mounted onto wall/fixture.	No	22		
33	F5, Size: 190mm x 570mm (h x w) Double sided photoluminescent sign with back plate framed in natural anodised aluminium. Supply and install with steel wire and ceiling hook/onto mild steel bracket at 3.0 meters from finished floor level/mechanically mounted onto wall/fixture.	No	20		
34	F4, Size: 190mm x 570mm (h x w) Double sided photoluminescent sign with back plate framed in natural anodised aluminium. Supply and install with steel wire and ceiling hook/onto mild steel bracket at 3.0 meters from finished floor level/mechanically mounted onto wall/fixture.	No	15		
35	F16/F19, Size: 190mm x 380mm (h x w) Double sided photoluminescent sign with back plate framed in natural anodised aluminium. Supply and install with steel wire and ceiling hook/onto mild steel bracket at 3.0 meters from finished floor level/mechanically mounted onto wall/fixture.	No	24		
36	F13, Size: 190mm x 380mm (h x w) Double sided photoluminescent sign with back plate framed in natural anodised aluminium. Supply and install with steel wire and ceiling hook/onto mild steel bracket at 3.0 meters from finished floor level/mechanically mounted onto wall/fixture.	No	31		
		Carried Forward			R
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