

Proposed New Makhaza Police Station  
Potion On ERF 75169 OF 59037 (Khayelitsha)

Brought Forward				R
15	On narrow widths (LI)	m2	13	
16	On concrete stair soffits and sides (LI)	m2	27	
	<u>One coat cement plaster steel floated on fibre cement boards</u>			
17	On ceilings (LI)	m2	517	
	<u>EXTERNAL PLASTER</u>			
	<u>One coat cement plaster steel floated on concrete</u>			
18	On concrete beams (LI)	m2	441	
	<u>CORNER PROTECTORS, DIVIDING STRIPS, ETC.</u>			
19	3 x 32mm Flat section aluminium dividing strips between different floor finishes	m	4	
Carried to Summary				R
Bill No. 12 Plastering				



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Brought Forward			R
<u>200 x 200mm Heavy Duty white Ceramic wall tiles, fixed with approved adhesive to plaster (plaster elsewhere measured) including bonding agent, expansion joints and grout, etc.</u>			
2	On walls (LI)	m2	505
3	On narrow widths (LI)	m2	35
4	Circular cutting for pipe size not exceeding 100mm diameter	No	44
5	Circular cutting for pipe size exceeding 100mm diameter	No	29
<u>70 x 296mm Kitkat Matt black Porcelain Mosaic, fixed with approved adhesive to plaster (plaster elsewhere measured) including bonding agent, expansion joints and grout, etc.</u>			
6	On walls (LI)	m2	24
<b>FLOOR TILING</b>			
<u>Porcelain floor tiles (PC R 350.00/m2) excluding VAT, fixed with approved adhesive to screeds (screeds elsewhere measured) including bonding agent, expansion joints and grout, etc.</u>			
7	On floors (LI)	m2	151
8	100mm High skirting (LI)	m	165
<u>Slip-Resistant Glazed EcoBody Porcelain floor tiles (PC R350.00/m2) excluding VAT, fixed with approved adhesive to screeds (screeds elsewhere measured) including bonding agent, expansion joints and grout, etc.</u>			
9	On floors	m2	230
10	On treads and risers of stairs	m2	13
11	100mm High skirting	m	309
Carried Forward			R
Bill No. 13 Tiling			

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	<u>Ceramic floor tiles (PC R350.00/m2) excluding VAT, fixed with approved adhesive to screeds (screeds elsewhere measured) including bonding agent, expansion joints and grout etc</u>			
12	On floors	m2	922	
13	100mm High skirting	m	939	
	<u>Non-slip mosaic tiles (PC R 1500.00/m2) excluding VAT fixed with approved adhesive on waterproofing surface on top of screeds (waterproofing and screeds elsewhere measured) including bonding agent, expansion joints and grout, etc.</u>			
14	To shower floors (LI)	m2	11	
	<b><u>SUNDRIES</u></b>			
15	10mm Aluminium straight edge trim	m	324	
Carried to Summary				R
Bill No. 13 Tiling				

Item  
No

Unit Quantity Rate Amount

**BILL NO. 14**

**PLUMBING & DRAINAGE**

**(CPAP WORK GROUP NO. 148 UNLESS  
OTHERWISE STATED)**

**PREAMBLES**

The descriptions given in the various items below are not necessarily full and complete and reference must be made to the "General Preambles for Trades 2017" as published by the Association of South African Quantity Surveyors", and Supplementary Preambles for further description and amplification of work in this section

**SUPPLEMENTARY PREAMBLES**

**Sealing of edges**

Outer edges of sinks, basins, baths, urinals, etc. are to be sealed against adjacent surfaces with silicone

**uPVC pipes and fittings**

Sewer and drainage pipes and fittings shall be jointed and sealed with butyl rubber rings. Soil, waste and vent pipes and fittings shall be solvent weld jointed or sealed with butyl rubber rings

**uPVC pressure pipes and fittings**

Pipes of 50mm diameter and smaller shall be plain ended with solvent welded uPVC loose sockets and fittings pipes of 63mm diameter and greater shall have sockets and spigots with push-in type integral rubber ring joints. Bends shall be uPVC and all other fittings shall be cast iron, all with similar push-in type joints

**High density polyethylene (HDPE) pipes and fittings**

Pipes shall be type IV and of the class specified with Plasson or Alprene compression fittings

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**Polycorp polypropylene pipes**

Polypropylene pipes 54mm diameter and smaller shall be seamless copper coloured Class 16 pipes jointed with Fast-Fuse heat welded thermoplastic or where so described Polylock compression fittings. Pipes shall be firmly fixed to walls, etc. with coloured nylon snap-in pipe clips with provision for accommodating thermal movement and jointed and fixed strictly in accordance with the manufacturer's instructions.

**Copper pipes**

Pipes shall be hard drawn and half-hard Maksal pipes of the class described. Class 0 (thin walled hard drawn) pipes shall not be bent. Class 1 (thin walled half-hard) Class 2 (Half-hard) and Class 3 (heavy walled half-hard) pipes shall only be bent with benders with inner and outer formers. Fittings to copper waste, vent and anti-syphon pipes, capillary solder fittings and compression fittings shall be Cobra Watertech type. Capillary solder fittings shall comply with ISO 2016.

Copper pipes are to be installed in accordance with the latest revision of the Code of Practice for Copper Plumbing soldering techniques. Flux, solder, etc. to be strictly in accordance with the manufacturer's requirements with special attention to copper flux composition.

**Reducing fittings**

Where fittings have reducing ends or branches they are described as "reducing" and only the largest end or branch size is given. Should the contractor wish to use other fittings and bushes or reducers he may do so on the understanding that no claim in this regard will be entertained.

**Fixing of pipes**

Unless specifically otherwise stated, descriptions of pipes shall be deemed to include fixing to walls, etc. casting in, building in or suspending not exceeding 1m below suspension.

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**Paper wrapping to pipes**

Pipes chased into brickwork must be wrapped with two layers of stout brown paper tied with wire. Rates are to include for wrapping around joints and fittings

**Densyl petrolatum anti-corrosion tape as manufactured by Denso SA (Pty) Ltd**

Pipes to be taped shall be coated with the appropriate primer and the tape shall be applied in the appropriate widths and with overlaps. Couplings and fittings to pipes shall be taped in strict accordance with the manufacturer's instructions including mastic, tape, Lay flat sheeting, securing of same, etc.

Prices for wrapping of pipes shall include for all work as described to couplings in the length.

**Excavations**

No claim for rock excavation will be entertained unless the contractor has timeously notified the quantity surveyor thereof prior to backfilling

"Intermediate material" and "hard material" shall be as defined in "Earthworks"

**Laying, backfilling, bedding, etc. of pipes**


Pipes shall be laid and bedded and trenches shall be carefully backfilled in accordance with manufacturers instructions

Where no manufacturers instructions exist pipes shall be laid in accordance with clauses 5.1 and 5.2 of each of the following: SABS 1200 L : Medium-pressure pipelines LD : Sewers LE : Stormwater drainage Pipe trenches, etc. shall be backfilled in accordance with clauses 3, 5.5, 5.6, 5.7 and 7 of SABS 1200 DB : Earthworks (Pipe trenches) Pipes shall be bedded in accordance with clauses 3.1 to 3.4.1, 5.1 to 5.3 and 7 of SABS 1200 LB : Bedding (Pipes). Unless otherwise described bedding of rigid pipes shall be class B bedding

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**Flush pans**

Flush pans shall have straight or side outlets and "P" or "S" traps as necessary

**Stainless steel basins, sinks, wash troughs, urinals, etc.**

Units shall have standard aprons on all exposed edges and tiling keys against walls where applicable

**General**

Descriptions of cast iron roof outlets shall be deemed to include joints to pipes and casting into concrete (adaptors for joints to PVC pipes, etc. are given separately) Descriptions of overflow pipes where measured in number, shall be deemed to include joints to cisterns and splay cut ends.

Descriptions of pipes laid in and including trenches and inspection chambers, catchpits, etc. shall be deemed to include excavation, bedding, backfilling, compaction to a minimum of 95% Mod AASHTO density.

Descriptions of service pipes and flexible connecting pipes shall be deemed to include connections to taps, cisterns, etc and to steel pipes (adaptors for connections to copper pipes, etc. are given separately).

Descriptions of WC pans, slop hoppers, etc. shall be deemed to include for joints to soil pipes (pan connectors are separately measured).

**As-built drawings**

Where required, the contractor shall prepare an updated set of as-built drawings. At completion of the contract the contractor shall hand these drawings to the principal agent for reproducing onto the originals for handing over to the employer (provision for allowance of as built drawings elsewhere)

**(CPAP WORK GROUP NO. 148 UNLESS OTHERWISE STATED)**

**RAINWATER DISPOSAL**

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<b><u>1.6mm Gauge aluminium gutter box</u></b>			
1	250 x 200mm High purpose made box Gutter	m	612
2	Extra over gutter box for stopped end	No	8
3	Extra over gutter box for corner	No	44
4	Extra over gutter box for outlet	No	87
<b><u>0.9mm Pre-coated aluminium seamless rainwater downpipes colour brown with baked enamel finish, including holder butts, etc.</u></b>			
5	100 x 100mm Rainwater downpipes	m	392
6	Extra on rainwater pipe for bend	No	174
7	Extra on rainwater pipe for shoe	No	87
<b><u>Heavy duty uPVC class 12 pipes cast into concrete slabs or columns, fixed to soffit and walls or chased into walls, fixed in structural steel columns, etc. all in accordance with manufacturers specifications</u></b>			
8	110mm Pipes (LI)	m	15
<b><u>Extra over Class 12 uPVC Pipes for fittings:</u></b>			
9	110mm Bend (LI)	No	6
10	110mm Junction (LI)	No	2
<b><u>Floor Drains</u></b>			
11	Fulbore 110mm 180 degree vertical roof outlet, centre bolt Saint Gobain or other approved	No	2
<b><u>(CPAP WORK GROUP NO. 148 UNLESS OTHERWISE STATED)</u></b>			
<b><u>SANITARY FITTINGS</u></b>			
<b><u>WC</u></b>			
12	Vitreous china Parktown 90 degree outlet top inlet or back inlet flush valve and double flap plastic seat (Code: 431600)	No	27
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<b>Brought Forward</b>					<b>R</b>
13	25mm diameter chrome flush valve for wc for concealed installation with push button actuator, 1.2 - 5.0 bar flow pressure, flow rate adjustment, including 25mm supply pipe, stop valve, flush pipe and 300mm extension pipe to wc	No	27		
<b><u>Wash hand Basin</u></b>					
14	Drop-In Vanity Basin vitreous China cloakroom basin colour white, size 535 x 410mm with two taphole including integrated overflow and chain stay, GIO bottle trap round 32 x 32mm (Code: LEC-SARBASVAN1530UE)	No	39		
15	Water saver self-closing push button pillar tap, non-hold cold water supply only, chrome finish, with flow time of 6-9secs, code (08212)	No	78		
16	GH angle valve bau 15 x 15mm	No	78		
17	303-32 Basin waste	No	39		
18	ISM Gio bottle trap CP 32mm	No	39		
<b><u>WC (Paraplegic)</u></b>					
19	"Whyte House" or other equally approved paraplegic WC with back inlet flush valve & double flap plastic seat (Code: 025134)	No	5		
20	25mm diameter chrome flush valve for wc for concealed installation with push button actuator, 1.2 - 5.0 bar flow pressure, flow rate adjustment, including 25mm supply pipe, stop valve, flush pipe and 300mm extension pipe to wc	No	5		
<b><u>Wash hand basin (Paraplegic)</u></b>					
21	Hibiscus vitreous china lavatory basin colour white, size 510 x 405mm with one tap hole including integrated overflow (Code: 7023)	No	5		
22	Medical elbow action pillar tap with high waist, chrome finish (Code: 504-21B)	No	5		
23	Medical elbow action pillar tap with high waist, chrome finish (Code: 504-21R)	No	5		
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<b>Brought Forward</b>			<b>R</b>
24	GH angle valve bau 15 x 15mm	No	10
25	303-32 Basin waste	No	5
26	ISM Gio bottle trap CP 32mm	No	5
<b><u>WC (Cell)</u></b>			
27	Vandal proof WC Pan manufactured from 1.2mm grade 304 (18/10) stainless steel, fully welded and polished to a no.4 satin finish, circular flushing rim & bowl. (All connections to be outside). Integral 35mm wide fixing flange to bottom sides & top, 7 times bolted to wall and floor complete with expanded metal mesh for mechanical bond for plaster/screed to the pan flange.	No	12
28	25mm diameter chrome flush valve for wc for concealed installation with push button actuator, 1.2 - 5.0 bar flow pressure, flow rate adjustment, including 25mm supply pipe, stop valve, flush pipe and 300mm extension pipe to wc	No	12
<b><u>Sink/Fountain (cell)</u></b>			
29	Vandal proof Hand Wash basin manufactured from 102mm grade 304 AISI (18/10) stainless steel, fully welded and polished to a no4 satin finish, size 340 x 350 x 125mm, including a fitted 15mm push butt-button tap mounted at top with 38 CP brass waste outlet, built flush into brick wall and secured with lugs.	No	3
<b><u>Urinals</u></b>			
30	Sweetpea wall mounted urinal with back inlet with automatic flush sensors or manual flush valve (at least (one urinal to be installed at lowered heights for kids) (Code: 705127).	No	16
<b><u>Kitchen Sink-Single Bowl</u></b>			
31	Projectline Model PLN611 stainless steel single bowl inset sink, overall size 800 x 460mm wide with one 340 x 370 x 150mm deep bowls waste fitting and PVC traps (traps elsewhere measured) (Code: 821047).	No	2
32	Watertech Noka 15mm chrome plated deck mounted sink mixer with overarm swivel outlet and adjustable flanges (Code: NA-970)	No	2
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<b>Brought Forward</b>			<b>R</b>
33	GH angle valve bau 15 x 10mm	No 4	
34	Bath/sink waste brevik brass cp 40mm (Code: BV40B)	No 2	
35	32 x 40mm Butyl rubber "P" or "S" trap jointed to waste outlet fitting and uPVC pipe including clamps	No 2	
<b><u>Kitchen Pot Sink-Double Bowl (cell)</u></b>			
36	1850 x 650mm Double centre bowl pot sink (Code: SR-POT-1850-DC) including 40mm 304 round tubing S/Steel legs(915mm high (Code: SR-LEGS-SET)	No 1	
37	BSL solid sink mixer wall type (BSL21)	No 1	
38	Bath/sink waste brevik brass cp 40mm (Code: BV40B)	No 1	
39	Trap sink combo 40 x 600mm & 5 clamp (Code: TPTWTC600)	No 1	
<b><u>Showers</u></b>			
40	Watertech Noka 15mm chrome plated wall mounted under wall mixer (code: NA-956)	No 1	
41	Water save vandal proof shower rose chrome finish (Code: 09033)	No 1	
42	40mm rough brass shower p trap with shallow seal and chrome plated square grating (Code: 373SQ).	No 1	
<b><u>Shower (cell)</u></b>			
43	Push Button metering non hold open valve as prison type or similar approved	No 10	
44	Walcro cirs hexs overhead ceiling shower with resistant sleeve	No 10	
<b><u>Floor Drains</u></b>			
45	"Herbish" or other equally approved HB GT 700 Under counter grease trap	No 1	
46	"Herbish" or other equally approved chemical dosing unit (Enzyme/Bio dosing for grease line) including Bio Fluid	No 1	
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Brought Forward			
47	"Herbish" or other equally approved HBSD100 stainless steel floor drain connected uPVC pipes all in accordance to manufacturer's details	No	10
48	"Herbish" or other equally approved HB 200 V (H) NW100 stainless steel floor drain connected uPVC pipes all in accordance to manufacturer's details	No	10
<b><u>(CPAP WORK GROUP NO. 146 UNLESS OTHERWISE STATED)</u></b>			
<b><u>SANITARY PLUMBING</u></b>			
<b><u>uPVC Pipes cast into concrete slabs, concrete surface bed, fixed to soffit and walls, or chased into walls, etc. in accordance with manufacturers specifications</u></b>			
49	50mm Pipes (LI)	m	250
50	110mm Pipes (LI)	m	300
51	160mm Pipes (LI)	m	10
<b><u>Extra over uPVC pipes for fittings</u></b>			
52	50mm Access junction (LI)	No	8
53	110mm Access junction (LI)	No	50
54	110 x 50mm Access junction (LI)	No	16
55	110mm Double access junction (LI)	No	5
56	50mm Junction (LI)	No	8
57	110mm Junction (LI)	No	55
58	110 x 50mm Junction (LI)	No	16
59	110mm Double junction (LI)	No	5
60	110 x 50mm Reducer (LI)	No	10
61	160 x 110mm Reducer (LI)	No	15
62	50mm Bend (LI)	No	38

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Brought Forward				R
63	110mm Bend (LI)	No	140	
64	50mm End cap (LI)	No	20	
65	110mm End cap (LI)	No	50	
66	110mm Air admittance valves (LI)	No	36	
67	50mm Kimberley sockets (LI)	No	10	
68	110mm Kimberley sockets (LI)	No	10	
69	110mm Pan connector (LI)	No	44	
<b><u>(CPAP WORK GROUP NO. 148 UNLESS OTHERWISE STATED)</u></b>				
<b><u>WATER SUPPLIES</u></b>				
All piping embedded into concrete or chased into walls to be twice wrapped in strong approved building paper.				
Rates for surface mounted pipe shall be deemed to include all fixtures and fittings for pipes fixed to walls, in chases, and in ceilings.				
<b><u>"Geberit Mepla" or other equally approved pipes fixed to soffit and walls, or chased into walls, chased into concrete, etc. in accordance with manufacturers specifications:</u></b>				
70	16mm Pipes (LI)	m	10	
71	20mm Pipes (LI)	m	500	
72	26mm Pipes (LI)	m	100	
73	32mm Pipes (LI)	m	100	
74	40mm Pipes (LI)	m	60	
75	50mm Pipes (LI)	m	30	
<b><u>Extra over "Geberit Mepla" or other equally approved pipes for fittings:</u></b>				
76	16mm Bend (LI)	No	10	
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Brought Forward				R
77	20mm Bend (LI)	No	300	
78	26mm Bend (LI)	No	50	
79	32mm Bend (LI)	No	38	
80	40mm Bend (LI)	No	10	
81	50mm Bend (LI)	No	5	
82	16mm Coupling (LI)	No	10	
83	20mm Coupling (LI)	No	80	
84	26mm Coupling (LI)	No	35	
85	32mm Coupling (LI)	No	33	
86	40mm Coupling (LI)	No	15	
87	50mm Coupling (LI)	No	10	
88	20mm Tees (LI)	No	50	
89	26mm Tees (LI)	No	30	
90	32mm Tees (LI)	No	30	
91	40mm Tees (LI)	No	30	
92	50mm Tees (LI)	No	10	
93	26 x 26 x 20mm Tees (LI)	No	32	
94	26 x 20 x 20mm Tees (LI)	No	22	
95	32 x 20 x 26mm Tees (LI)	No	8	
96	32 x 26 x 26mm Tees (LI)	No	5	
97	32 x 32 x 20mm Tees (LI)	No	15	
98	32 x 32 x 26mm Tees (LI)	No	8	
99	40 x 40 x 26mm Tees (LI)	No	5	
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Brought Forward			
100	40 x 40 x 32mm Tees (LI)	No	8
101	50 x 50 x 26mm Tees (LI)	No	5
102	50 x 50 x 32mm Tees (LI)	No	5
103	26 x 20mm Reducer (LI)	No	10
104	32 x 26mm Reducer (LI)	No	12
105	40 x 26mm Reducer (LI)	No	8
106	40 x 32mm Reducer (LI)	No	5
107	50 x 32mm Reducer (LI)	No	8
108	50 x 40mm Reducer (LI)	No	5
<u>Extra over "Geberit Mepla" or other equally approved pipes for brass compression fittings:</u>			
109	15mm Flexible service pipe 300mm girth	No	93
110	15mm Wallplate elbow	No	93
111	22mm Wallplate elbow	No	74
112	20mm Isolating valve	No	130
113	26mm Isolating valve	No	8
114	32mm Isolating valve	No	2
<u>HDPE Class 16 or other equally approved pipes fixed to soffit and walls, or chased into walls, chased into concrete, etc. in accordance with manufacturers specifications:</u>			
115	32mm Pipes (LI)	m	100
116	50mm Pipes (LI)	m	200
117	110mm Pipes (LI)	m	200
<u>Extra over HDPE Class 16 pipes for fittings:</u>			
118	32mm Bend (LI)	No	30

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119	50mm Bend (LI)	No	30	
120	110mm Bend (LI)	No	30	
121	110mm Tees (LI)	No	20	
122	110 x 110 x 32mm Tees (LI)	No	20	
123	110 x 110 x 50mm Tees (LI)	No	20	
<b><u>Extra over HDPE Class 16 pipes for brass compression fittings:</u></b>				
124	32mm Isolating valve	No	12	
125	50mm Isolating valve	No	8	
<b><u>Copper pipes:</u></b>				
Pipes shall be hard drawn and half-hard pipes of the class stated. Class 0 (thin walled hard drawn) pipes shall not be bent. Class 1 (thin walled half-hard), class 2 (half-hard) and class 3 (heavy walled half-hard) pipes shall only be bent with benders with inner and outer formers. Fittings to copper waste, vent and anti-syphon pipes, capillary solder fittings and compression fittings shall be "Cobra Watertech" type. Capillary solder fittings shall comply with ISO 2016. Only compression fittings shall be used in walls or in ground				
<b><u>Class 0 copper pipes cast into concrete slabs, concrete surface bed, fixed to soffit and walls, or chased into walls, etc. in accordance with manufacturers specifications</u></b>				
126	15mm Pipes (LI)	m	57	
127	22mm Pipes (LI)	m	48	
<b><u>Extra over class 0 copper pipes for capillary fittings</u></b>				
128	15mm Fittings (LI)	No	39	
129	22mm Fittings (LI)	No	31	
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Brought Forward			
<b><u>Extra over copper pipes for brass compression fittings:</u></b>			
130	28mm Epoxy coated and lined strainer with element	No	2
131	54mm Epoxy coated and lined strainer with element	No	2
132	28mm Relux (non-return) valves	No	6
133	42mm Relux (non-return) valves	No	4
134	54mm Gate valves	No	14
135	28mm Connecting valves	No	42
136	42mm Connecting valves	No	20
137	54mm Connecting valves	No	34
138	DN 26, 130 series balancing valves with venturic device, Caleffi or other approved	No	4
139	Reliance cast gun metal thermostatic mixing valve 22mm BSP	No	5
140	20mm Elbow tap connector	No	10
141	20mm Adaptor with male thread	No	10
<b><u>ELECTRIC HEAT PUMPS, WATER HEATERS, EXPANSION VESSELS, ETC.</u></b>			
142	For the complete supply, delivery and installation of 5kW air to water R410 A heat pump type water heater, heating reservoir water to a temperature of between 55 - 60°C, including controller, all safety features, temperature sensor, tube in shell exchanger, High EER Scroll compressor, intergral single circulating pump set with strainer, flow switch, complete with control panel, with maximum noise level of 65dB(A), fittings, copper pipework, insulation, cladding, bends,tees, and necessary accessories as specified. ("AIRCO" or other equally approved Model 5kW AKRS-RS 50)	No	7

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Brought Forward			
143	For the complete supply, delivery and installation of 200L "Kwikot" or other equally approved Superline 400 Dual high pressure electric water heater or other approved. Inner cylinder to be 1.6mm steel and thermofused porcelain enamelled for cylinder longevity and hygiene. Including insulation and cladding, pressure and temperature gauges, inlet and outlet flanged connections, drain and drain piping, all safety features, supports and all necessary accessories as specified. (KWIKOT DSG-200-5 or other equally approved)	No	7
144	10L Hydroboil, 2,4 kW element rating ("ZIP" or other equally approved). Unit to be installed in accordance with manufacturers instructions, connected to 15mm cold water supply and electrical power supply, plugged and screwed to wall.	No	3
<b><u>GAUGES AND FITTINGS</u></b>			
<b><u>For the supply, delivery and installation of the pressure gauges and fittings in accordance with the project specification and Standard specification for Mechanical Installation.</u></b>			
145	Heat Pump circulation pumps (delivery side)	No	2
146	Heat Pump circulation pumps (Inlet side)	No	2
147	Hot water return pumps (delivery side)	No	2
148	Hot water return pumps (Inlet side)	No	2
149	Thermostatic Balancing Valves 32mm diameter	No	2
<b><u>WATER SUPPLIES TO FIRE APPLIANCES</u></b>			
<b><u>SABS approved Black Mild Steel pipes including all holderbats and couplings in the running length with welded type fittings to be used. All pipe in wall/floor chases to be wrapped twice in brown Kraft paper. Pipes passing through opening in brickwork or slab shall be coated with DENZO Protective pipe wrapping. All pipes to be painted with one coat primer and two coats signal red.</u></b>			
150	25mm Pipes (LI)	m	200
151	32mm Pipes (LI)	m	120

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Proposed New Makhaza Police Station  
Potion On ERF 75169 OF 59037 (Khayelitsha)

Brought Forward				R
152	40mm Pipes (LI)	m	50	
153	100mm Pipes (LI)	m	350	
<u>Extra over Black Mild Steel pipes for welded type fittings:</u>				
154	25mm Fittings (LI)	No	98	
155	32mm Elbow (LI)	No	20	
156	32 x 25mm Elbow (LI)	No	8	
157	32 x 25mm Reducer (LI)	No	8	
158	40mm Elbow (LI)	No	8	
159	40 x 32mm Elbow (LI)	No	3	
160	40 x 32mm Tees (LI)	No	2	
161	40 x 32mm Reducer (LI)	No	2	
162	100mm Elbow (LI)	No	26	
163	100mm Tees (LI)	No	6	
164	100 x 32mm Tees (LI)	No	13	
165	100 x 65mm Tees (LI)	No	1	
166	100 x 80mm Tees (LI)	No	1	
167	100 x 40mm Reducer (LI)	No	4	
168	100 x 80mm Reducer (LI)	No	4	
<u>SUNDRIES TO FIRE WATER SUPPLIES</u>				
169	25mm M1 Union	No	15	
170	25mm Barrel nipples	No	15	
171	25mm Stop valve	No	15	
172	32mm Stop valve	No	8	
Carried Forward				R
Bill No. 14 Plumbing and Drainage (Provisional)				



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M.B

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**Proposed New Makhaza Police Station  
Potion On ERF 75169 OF 59037 (Khayelitsha)**

Brought Forward				R
173	40mm Stop valve	No	4	
174	100mm Stop valve	No	5	
175	25mm Coupling (LI)	No	15	
176	32mm Coupling (LI)	No	6	
177	40mm Coupling (LI)	No	13	
178	80mm Coupling (LI)	No	1	
179	100mm Coupling (LI)	No	1	
180	65mm Fire hydrant with instantaneous coupling	No	7	
181	100mm Fire hydrant with instantaneous coupling	No	1	
182	80mm Twin booster complete with non-return valve	No	1	
183	Fire blanket 1800 x 1800mm	No	1	
<b><u>FIRE APPLIANCES</u></b>				
184	Fire hose reel complete with 30m rubber hose, chromium plated stopcock, shut-off nozzle, wall bracket and cover.	No	15	
185	5kg Carbon dioxide fire extinguisher including approved bracket and meranti backing board fixed to wall	No	1	
186	4.5kg DCP portable fire extinguisher including approved bracket and meranti backing board fixed to wall	No	30	
<b><u>PIPE INSULATION</u></b>				
<b><u>"Geberit Mepla" or other equally approved red lagged insulation for hot water piping, neatly cut around pipe as required</u></b>				
187	Insulation to 16mm diameter piping and couplings including working around fittings (LI)	m	15	
188	Insulation to 20mm diameter piping and couplings including working around fittings (LI)	m	50	
Carried Forward				R
Bill No. 14 Plumbing and Drainage (Provisional)				

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M.B SS

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**Proposed New Makhaza Police Station  
Potion On ERF 75169 OF 59037 (Khayelitsha)**

<b>Brought Forward</b>				R
189	Insulation to 26mm diameter piping and couplings including working around fittings (LI)	m	50	
190	Insulation to 32mm diameter piping and couplings including working around fittings (LI)	m	20	
<b><u>WATER METER</u></b>				
191	50mm Sealed counter semi-positive rotary piston type water meter with a body length 165mm as "Kent PSM Size 5", suitable for vertical or horizontal installation and joints to brass connectors (elsewhere measured).	No	1	
<b><u>SUNDRIES</u></b>				
192	Provide a full set of as-built drawings on completion of the installation		Item	
193	Allow for pressure testing of the plumbing and drainage system.		Item	
194	Allow for disinfecting the system in this building in accordance with SANS 10252.		Item	
195	Testing and Commissioning of the plumbing and drainage system.		Item	
196	Guarantee and maintenance including fittings, materials and workmanship for a period of TWELVE MONTHS after date of completion and handover.		Item	
<b>Carried to Summary</b>				R
Bill No. 14 Plumbing and Drainage (Provisional)				



Item  
No

Unit Quantity Rate Amount

**BILL NO. 15**

**ELECTRICAL WORKS**

**(CPAP WORK GROUP NO. 160 UNLESS  
OTHERWISE STATED)**

**PREAMBLES**

The descriptions given in the various items below are not necessarily full and complete and reference must be made to the "General Preambles for Trades 2017" as published by the Association of South African Quantity Surveyors", and Supplementary Preambles for further description and amplification of work in this section

**SUPPLEMENTARY PREAMBLES**

Specifications drawings etc

Tenderers are referred to the specification and drawings annexed to these bills of quantities for the electrical work, for the full descriptions of the following items which are to be read and priced in conjunction with the said specification and drawings

Distribution boards etc

Rates for distribution boards, etc. are to include for bus bars, jumpers, neutral bars, internal wiring and connections, circuit identification markers, control gear labels, circuit legend cards and working drawings

Switches socket outlets etc.

Rates for switches, socket outlets, etc. are to include for screwing to outlet boxes, connecting up and cover plates

Light fittings

Rates for light fittings are to include for hanging, fixing and connecting and for lamp holders and fluorescent tubes and lamps of the type and wattage described

Carried Forward

R

Bill No. 15  
Electrical Works

  
M.B

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Brought Forward			R
<b><u>GENERAL ITEMS</u></b>			
1	Guarantee and maintenance for the complete Electrical Installation including fittings, materials and workmanship for a period of TWELVE MONTHS after date of completion and handover.	Item	
2	Allow for testing and commissioning the whole of the electrical installation as laid down in the specification and for re-testing as may be required after the making good of all defective work to the satisfaction f the Engineer	Item	
3	3 sets of as built drawings showing all conduit routes, draw boxes and positions of outlets etc.	Item	
4	Allowance for final testing and Certificate of Compliance to be issued on completion of the project in addition to the detailed testing specified.	Item	
5	Allow for instructing the clients staff in the correct operation of the installation.	Item	
6	Any items not specifically listed above but required to complete the installation as per the specification and drawings (list the items) a) b) c)	Item	
7	Provide an budgetary amount of R450,000.00 power application / municipal application	Item	450 000,00
8	Profit	%	
9	Attendance	%	
<b><u>SITE RETICULATION</u></b>			
10	Excavate not exceeding 800mm deep in soft material for cabling and cable pipe trench including bedding, backfilling, compaction and disposal of surplus material	m3	155
11	Excavate not exceeding 800mm deep in intermediate rock material for cabling and cable pipe trench including bedding, backfilling, compaction and	m3	55
Carried Forward			R
Bill No. 15 Electrical Works			



**Proposed New Makhaza Police Station**  
**Potion On ERF 75169 OF 59037 (Khayelitsha)**

<b>Brought Forward</b>		<b>R</b>	
12	Excavate not exceeding 800mm deep in hard rock material for cabling and cable pipe trench including bedding, backfilling, compaction and disposal of surplus material	m3	22
13	Earthing and bonding of cable ladder and galvanised trunking 10mm <sup>2</sup> Cu PVC jumpers with lugs	Item	
<b><u>ELECTRICAL / ELECTRONIC MANHOLES</u></b>			
14	Supply 600 x 600 x 600mm manhole to specification complete with heavy duty manhole cover	No	6
15	Extra on last to install	No	6
16	Supply 800 x 800 x 800mm manhole to specification complete with heavy duty manhole cover	No	4
17	Extra on last to install	No	4
18	Supply 1000 x 1000 x 1000mm manhole to specification complete with heavy duty manhole cover	No	1
19	Extra on last to install	No	1
<b><u>SLEEVES</u></b>			
<b><u>Supply the following cable sleeves:</u></b>			
20	160mm uPVC sleeves	m	229
21	110mm uPVC sleeves	m	335
22	50mm uPVC sleeves	m	160
<b><u>Extra on last to install the following in trech</u></b>			
23	160mm uPVC sleeves	m	229
24	110mm uPVC sleeves	m	335
25	50mm uPVC sleeves	m	160
<b><u>L.V CABLING</u></b>			
<b>Carried Forward</b>		<b>R</b>	
Bill No. 15 Electrical Works			

Proposed New Makhaza Police Station  
Potion On ERF 75169 OF 59037 (Khayelitsha)

Brought Forward		
<b><u>Supply the following 600/1000 Volt Cu PVC SWA PVC ECC cables:</u></b>		
26	185mm <sup>2</sup> 4 core	m 10
27	150mm <sup>2</sup> 4 core	m 15
28	120mm <sup>2</sup> 4 core	m 35
29	95mm <sup>2</sup> 4 core	m 140
30	70mm <sup>2</sup> 4 core	m 22
31	50mm <sup>2</sup> 4 core	m 140
32	35mm <sup>2</sup> 4 core	m 105
33	25mm <sup>2</sup> 4 core	m 240
34	16mm <sup>2</sup> 4 core	m 612
35	10mm <sup>2</sup> 4 core	m 165
36	6mm <sup>2</sup> 4 core	m 112
37	16mm <sup>2</sup> 2 core	m 65
38	10mm <sup>2</sup> 2 core	m 55
39	6mm <sup>2</sup> 2 core	m 45
<b><u>Extra on last to install in cable sleeve, ladder, tray, basket</u></b>		
40	185mm <sup>2</sup> 4 core	m 10
41	150mm <sup>2</sup> 4 core	m 15
42	120mm <sup>2</sup> 4 core	m 35
43	95mm <sup>2</sup> 4 core	m 140
44	70mm <sup>2</sup> 4 core	m 22
45	50mm <sup>2</sup> 4 core	m 140

Carried Forward

Bill No. 15  
Electrical Works

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Proposed New Makhaza Police Station  
Potion On ERF 75169 OF 59037 (Khayelitsha)

Brought Forward				R
46	35mm <sup>2</sup> 4 core	m	105	
47	25mm <sup>2</sup> 4 core	m	240	
48	16mm <sup>2</sup> 4 core	m	612	
49	10mm <sup>2</sup> 4 core	m	165	
50	6mm <sup>2</sup> 4 core	m	112	
51	16mm <sup>2</sup> 2 core	m	65	
52	10mm <sup>2</sup> 2 core	m	55	
53	6mm <sup>2</sup> 2 core	m	45	
<u>Termination inclusive of cable glands, lugs etc.</u>				
54	185mm <sup>2</sup> 4 core	m	2	
55	150mm <sup>2</sup> 4 core	m	2	
56	120mm <sup>2</sup> 4 core	m	4	
57	95mm <sup>2</sup> 4 core	m	8	
58	70mm <sup>2</sup> 4 core	No	4	
59	50mm <sup>2</sup> 4 core	No	2	
60	35mm <sup>2</sup> 4 core	No	12	
61	25mm <sup>2</sup> 4 core	No	6	
62	16mm <sup>2</sup> 4 core	No	8	
63	10mm <sup>2</sup> 4 core	No	4	
64	6mm <sup>2</sup> 4 core	No	4	
65	16mm <sup>2</sup> 2 core	No	8	
66	10mm <sup>2</sup> 2 core	No	6	
67	6mm <sup>2</sup> 2 core	No	6	
Carried Forward				R
Bill No. 15 Electrical Works				

Brought Forward				R
<b><u>Supply Scotchcast cable joint for the following PVC SWA PVC ECC cables:</u></b>				
<b><u>Extra on last to install</u></b>				
68	95mm <sup>2</sup> 4 core	No	1	
69	50mm <sup>2</sup> 4 core	No	1	
70	35mm <sup>2</sup> 4 core	No	1	
71	16mm <sup>2</sup> 4 core	No	2	
<b><u>DISTRIBUTION BOARDS</u></b>				
<b><u>Supply and delivery of the following distribution boards</u></b>				
72	Main LV Kiosk - Single line Drawing No. 32307_401_0	No	1	
73	Extra on last to install	No	1	
74	DB-A - Single line Drawing No. 32307_402_0	No	1	
75	Extra on last to install	No	1	
76	DB-B - Single line Drawing No. 32307_403_0	No	1	
77	Extra on last to install	No	1	
78	DB-C - Single line Drawing No. 32307_404_0	No	1	
79	Extra on last to install	No	1	
80	DB-A1 - Single line Drawing No. 32307_405_0	No	1	
81	Extra on last to install	No	1	
82	DB-Inverter Load - Single line Drawing No. 32307_406_0	No	1	
83	Extra on last to install	No	1	
84	DB-AE - Single line Drawing No. 32307_407_0	No	1	
85	Extra on last to install	No	1	
Carried Forward				R
Bill No. 15 Electrical Works				

**Proposed New Makhaza Police Station  
Potion On ERF 75169 OF 59037 (Khayelitsha)**

<b>Brought Forward</b>				<b>R</b>
86	DB-A1E - Single line Drawing No. 32307_408_0	No	1	
87	Extra on last to install	No	1	
88	DB-BE - Single line Drawing No. 32307_409_0	No	1	
89	Extra on last to install	No	1	
90	DB-CE - Single line Drawing No. 32307_410_0	No	1	
91	Extra on last to install	No	1	
92	DB-DE - Single line Drawing No. 32307_411_0	No	1	
93	Extra on last to install	No	1	
94	DB-MECH E - Single line Drawing No. 32307_412_0	No	1	
95	Extra on last to install	No	1	
96	Inverter Output - Single line Drawing No. 32307_413_0	No	1	
97	Extra on last to install	No	1	
98	Inverter C/O - Single line Drawing No. 32307_415_0	No	1	
99	Extra on last to install	No	1	
100	Main LV Panel - Single line Drawing No. 32307_416_0	No	1	
101	Extra on last to install	No	1	
	COC Testing and Commissioning of the following distribution boards			
102	Main LV Kiosk - Single line Drawing No. 32307_401_0	No	1	
103	DB-A- Single line Drawing No. 32307_402_0	No	1	
104	DB-B- Single line Drawing No. 32307_403_0	No	1	
105	DB-C- Single line Drawing No. 32307_404_0	No	1	
106	DB-A1- Single line Drawing No. 32307_405_0	No	1	
107	DB-Inverter Load -Single line Drawing No. 32307_406_0	No	1	
<b>Carried Forward</b>				<b>R</b>
Bill No. 15 Electrical Works				



**Proposed New Makhaza Police Station**  
**Potion On ERF 75169 OF 59037 (Khayelitsha)**

<b>Brought Forward</b>			
108	DB-AE--Single line Drawing No. 32307_407_0	No	1
109	DB-A1E--Single line Drawing No. 32307_408_0	No	1
110	DB-BE--Single line Drawing No. 32307_409_0	No	1
111	DB-CE--Single line Drawing No. 32307_410_0	No	1
112	DB-DE--Single line Drawing No. 32307_411_0	No	1
113	DB-MECH E--Single line Drawing No. 32307_412_0	No	1
114	Inverter Output-Single line Drawing No. 32307_413_0	No	1
115	Inverter C/O-Single line Drawing No. 32307_415_0	No	1
116	Main LV Panel - Single line Drawing No. 32307_416_0	No	1
<b><u>LIGHTING AND SMALL POWER - GROUND FLOOR</u></b>			
<b><u>LIGHTING</u></b>			
117	Supply 25mm PVC conduit surface mounted	m	433
118	Extra on last so install surface mounted	m	433
119	Supply 25mm PVC conduit	m	120
120	Extra on last so install cast-in to floor slab	m	120
121	Supply 25mm PVC conduit	m	202
122	Extra on last so install in partition wall	m	202
<b><u>Supply PVC insulated 1 000 V grade hard drawn copper wire drawn into trunking/conduit and coloured as per phase</u></b>			
123	Supply 2.5mm <sup>2</sup>	m	6 114
124	Extra on last to install	m	6 114
125	Supply 2,5mm <sup>2</sup> PVC insulated surfix cable	m	244
126	Extra on last to install	m	244

**Carried Forward**

Bill No. 15  
Electrical Works

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**Proposed New Makhaza Police Station  
Potion On ERF 75169 OF 59037 (Khayelitsha)**

<b>Brought Forward</b>			
127	Extra on last to terminate inclusive of glands etc.	No	36
128	Supply single lever 1 way 16 amp "Crabtree Classic" or other equally approved light switch in 100 x 50/50mm galvanised box inclusive of cover	No	25
129	Extra on last to install	No	25
130	Supply 2 lever 1 way 16 amp "Crabtree Classic" or other equally approved light switch or other in 100 x 50/50mm galvanised box inclusive of cover	No	8
131	Extra on last to install	No	8
132	Supply Two lever 2 way 16 amp "Crabtree Classic" or other equally approved light switch in 100 x 50/50mm galvanised box inclusive of cover	No	6
133	Extra on last to install	No	6
134	Supply three lever 1 way 16 amp "Crabtree Classic" or other equally approved light switch in 100 x 50/50mm galvanised box inclusive of cover	No	6
135	Extra on last to install	No	6
136	Supply single level IP65 rotatry switch complete with 50 x 50/50mm conduit box	No	25
137	Extra on last to install	No	25
138	Supply 6 amp unswitched socket outlet (yellow)	No	340
139	Extra on last to install	No	340
140	Supply 65mm PVC round box for 25mm conduit	No	45
141	Extra on last to install	No	45
142	Supply 65mm 3 way PVC round draw box	No	36
143	Extra on last to install	No	36
144	Supply 20A Photocell inclusive of bulkhead enclosure	No	12
145	Extra on last to install	No	12

**Carried Forward**

Bill No. 15  
Electrical Works

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W.B.

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231

**Proposed New Makhaza Police Station**  
**Potion On ERF 75169 OF 59037 (Khayelitsha)**

<b>Brought Forward</b>			
146	Supply occupancy sensor - "Province Lighting (PS-PIR3)" or other equally approved flush mounted, white with 360 degree detection angle	No	36
147	Extra on last to install	No	36
148	Supply P8000 trunking complete with cover plate to soffit	m	755
149	Extra on last to install	m	755
150	Supply P8000 crossover	No	10
151	Extra on last to install	No	10
152	Supply install P8000 elbow	No	8
153	Extra on last to install	No	8
154	Supply P8000 Tee-piece	No	12
155	Extra on last to install	No	12
156	Supply P8000 4-way piece	No	12
157	Extra on last to install	No	12
158	Supply install P8000 end caps	No	18
159	Extra on last to install	No	18
<b><u>SMALL POWER</u></b>			
160	Supply 20mm PVC conduit surface mounted	m	456
161	Extra on last to install	m	456
162	Supply 20mm PVC conduit cast-in slab	m	102
163	Extra on last to install	m	102
164	Supply 20mm PVC conduit in partition wall	m	190
165	Extra on last to install	m	190
166	Supply 25mm PVC conduit surface mounted	m	336

**Carried Forward**

Bill No. 15  
Electrical Works

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**Proposed New Makhaza Police Station  
Potion On ERF 75169 OF 59037 (Khayelitsha)**

<b>Brought Forward</b>			<b>R</b>
167	Extra on last to install	m	335
168	Supply 25mm PVC conduit cast-in to floor slab	m	542
169	Extra on last to install	m	542
170	Supply 25mm PVC conduit in partion wall	m	616
171	Extra on last to install	m	616
172	Supply 32mm PVC conduit surface mounted	m	334
173	Extra on last to install	m	334
174	Supply 32mm PVC conduit cast-in to floor slab	m	655
175	Extra on last to install	m	655
176	Supply 32mm PVC conduit in partion wall	m	318
177	Extra on last to install	m	318
<b><u>PVC insulated 1 000 V grade hard drawn copper wire drawn into trunking/conduit and coloured as per phase</u></b>			
178	Supply 2.5mm <sup>2</sup>	m	1 970
179	Extra on last to install	m	1 970
180	Supply 4.0mm <sup>2</sup>	m	8 471
181	Extra on last to install	m	8 471
182	Supply 6.0 mm <sup>2</sup>	m	1 976
183	Extra on last to install	m	1 976
184	Supply 2,5mm <sup>2</sup> PVC insulated surfix cable	m	744
185	Extra on last to install	m	744
186	Extra on last to terminate inclusive of glands etc.	No	22
187	Supply single switch socket outlet, with euro combo outlet in 100 x 100/50mm PVC conduit box "Crabtree Classic" or other equally approved	No	46

**Carried Forward**

**R**

Bill No. 15  
Electrical Works

**Proposed New Makhaza Police Station  
Potion On ERF 75169 OF 59037 (Khayelitsha)**

Brought Forward				R
188	Extra on last to install	No	46	
189	Supply 20A Three pin UPS switch socket outlet installed in power skirting / floor box	No	171	
190	Extra on last to install	No	171	
191	Supply 20A Three pin dedicated switch socket outlet installed in power skirting / floor box	No	171	
192	Extra on last to install	No	171	
193	Supply 20A Three pin normal switch socket outlet in installed in power skirting / floor box	No	171	
194	Extra on last to install	No	171	
195	Supply 20A Three pin euro switch socket outlet in installed in power skirting / floor box	No	171	
196	Extra on last to install	No	171	
197	Supply blank cover plate	No	40	
198	Extra on last to install	No	40	
199	Supply 65mm PVC round box for 25mm conduit	No	159	
200	Extra on last to install	No	159	
201	Supply 100 x 50/50mm PVC conduit boxes for AC controller	No	155	
202	Extra on last to install	No	155	
203	Supply P9000 trunking complete with cover plate to soffit	m	366	
204	Extra on last to install	m	366	
205	Supply P9000 crossover	No	10	
206	Extra on last to install	No	10	
207	Supply P9000 elbow	No	10	
208	Extra on last to install	No	10	
Carried Forward				R
Bill No. 15 Electrical Works				

**Proposed New Makhaza Police Station  
Potion On ERF 75169 OF 59037 (Khayelitsha)**

<b>Brought Forward</b>				<b>R</b>
209	Supply P9000 Tee-piece	No	8	
210	Extra on last to install	No	8	
211	Supply P9000 end caps	No	20	
212	Extra on last to install	No	20	
213	Supply P9000 4-way piece	No	4	
214	Extra on last to install	No	4	
215	Supply 10A single phase isolator for extraction	No	8	
216	Extra on last to install	No	8	
217	Supply 20A single phase isolators for aircon supply	No	40	
218	Extra on last to install	No	40	
219	Supply 20A single phase isolators for hydroboil / kitchen equipment	No	10	
220	Extra on last to install	No	10	
221	Supply 20A single phase isolators for hand drier power supplies	No	8	
222	Extra on last to install	No	8	
223	Supply 30A single phase isolators	No	45	
224	Extra on last to install	No	45	
225	Supply 30A single phase isolators	No	45	
226	Extra on last to install	No	45	
227	Supply 30A single phase weather proof isolator for aircon supply.	No	10	
228	Extra on last to install	No	10	
229	Supply 40A ("WACO" or other equally approved) lockable toggle single phase weather proof isolator for aircon	No	15	
<b>Carried Forward</b>				<b>R</b>
Bill No. 15 Electrical Works				



**Proposed New Makhaza Police Station  
Potion On ERF 75169 OF 59037 (Khayelitsha)**

<b>Brought Forward</b>			<b>R</b>
230	Extra on last to install	No	15
231	Supply 30A three phase isolators for stove	No	33
232	Extra on last to install	No	33
233	Supply 40A three phase isolators for cooker	No	20
234	Extra on last to install	No	20
235	Supply 40A three phase weather proof isolator for aircon supply	No	12
236	Extra on last to install	No	20
237	Supply 16A weather proof switch socket outlet	No	22
238	Extra on last to install	No	22
<b><u>Supply Cabstrut or other equally approved Corporate connection system complete with:</u></b>			
239	2 x Normal S.S.O (SANS 164-1) (white / white toggle) 2 x Normal Euro S.S.O (SANS 164-2) (white / white toggle) 2 x Essential S.S.O (SANS 164-1) (white / red toggle) 4 x RJ45 outlets	No	4
240	Extra on last to install	No	4
241	Supply ("WACO" or other equally approved) photocell enclosure	No	15
242	Extra on last to install	No	15
<b><u>TELEPHONE AND DATA</u></b>			
243	Supply Krone RJ 11 telephone outlets installed in power skirting	No	105
244	Extra on last to install	No	105
245	Supply Krone RJ 45 data outlets installed in power skirting inclusive of cradle and cover plate	No	105
246	Extra on last to install	No	105
<b>Carried Forward</b>			<b>R</b>
Bill No. 15 Electrical Works			



Brought Forward

R

**SENSORS AND RELAYS**

**DEMAN master unit relays / Slave units or other  
equally approved**

247	Alux Controller Alux M6 Master unit - AluxM6A10	No	30
248	Extra on last to install	No	30
249	Alux Controller Alux M7 Master unit - AluxM7A10	No	15
250	Extra on last to install	No	15
251	Alux Slave Alux S1 unit - AluxS1A11	No	90
252	Extra on last to install	No	90
253	Alux Slave Alux S2 unit - AluxS2A10	No	15
254	Extra on last to install	No	15

**LIGHTING AND SMALL POWER - FIRST  
FLOOR**

**LIGHTING**

255	Supply 25mm PVC conduit surface mounted	m	314
256	Extra on last so install surface mounted	m	314
257	Supply 25mm PVC conduit	m	95
258	Extra on last so install cast-in to floor slab	m	95
259	Supply 25mm PVC conduit	m	196
260	Extra on last so install in partition wall	m	196

**Supply PVC insulated 1 000 V grade hard drawn  
copper wire drawn into trunking/conduit and  
coloured as per phase**

261	Supply 2.5mm <sup>2</sup>	m	3 145
262	Extra on last to install	m	3 145
263	Supply 2,5mm <sup>2</sup> PVC insulated surfix cable	m	322

Carried Forward

R

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**Proposed New Makhaza Police Station  
Potion On ERF 75169 OF 59037 (Khayelitsha)**

<b>Brought Forward</b>			
264	Extra on last to install	m	322
265	Extra on last to terminate inclusive of glands etc.	No	12
266	Supply single lever 1 way 16 amp "Crabtree Classic" or other equally approved light switch in 100 x 50/50mm galvanised box inclusive of cover	No	18
267	Extra on last to install	No	18
268	Supply 2 lever 1 way 16 amp "Crabtree Classic" or other equally approved light switch or other in 100 x 50/50mm galvanised box inclusive of cover	No	2
269	Extra on last to install	No	2
270	Supply Two lever 2 way 16 amp "Crabtree Classic" or other equally approved light switch in 100 x 50/50mm galvanised box inclusive of cover	No	2
271	Extra on last to install	No	2
272	Supply three lever 1 way 16 amp "Crabtree Classic" or other equally approved light switch in 100 x 50/50mm galvanised box inclusive of cover	No	1
273	Extra on last to install	No	1
274	Supply single level IP65 rotatry switch complete with 50 x 50/50mm conduit box	No	1
275	Extra on last to install	No	1
276	Supply 6 amp unswitched socket outlet (yellow)	No	72
277	Extra on last to install	No	72
278	Supply 65mm PVC round box for 25mm conduit	No	41
279	Extra on last to install	No	41
280	Supply 65mm 3 way PVC round draw box	No	32
281	Extra on last to install	No	32
282	Supply 20A Photocell inclusive of bulkhead enclosure	No	1

**Carried Forward**

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**Proposed New Makhaza Police Station  
Potion On ERF 75169 OF 59037 (Khayelitsha)**

<b>Brought Forward</b>				R
283	Extra on last to install	No	1	
284	Supply occupancy sensor - "Province Lighting (PS-PIR3)" or other equally approved flush mounted, white with 360 degree detection angle	No	2	
285	Extra on last to install	No	2	
286	Supply P8000 trunking complete with cover plate to soffit	m	119	
287	Extra on last to install	m	119	
288	Supply P8000 crossover	No	2	
289	Extra on last to install	No	2	
290	Supply install P8000 elbow	No	2	
291	Extra on last to install	No	2	
292	Supply P8000 Tee-piece	No	2	
293	Extra on last to install	No	2	
294	Supply P8000 4-way piece	No	2	
295	Extra on last to install	No	2	
296	Supply install P8000 end caps	No	2	
297	Extra on last to install	No	2	
<b><u>SMALL POWER</u></b>				
298	Supply 20mm PVC conduit surface mounted	m	97	
299	Extra on last to install	m	97	
300	Supply 20mm PVC conduit cast-in slab	m	41	
301	Extra on last to install	m	41	
302	Supply 20mm PVC conduit in partition wall	m	67	
303	Extra on last to install	m	67	
<b>Carried Forward</b>				R
Bill No. 15 Electrical Works				

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**Proposed New Makhaza Police Station  
Potion On ERF 75169 OF 59037 (Khayelitsha)**

<b>Brought Forward</b>			<b>R</b>
304	Supply 25mm PVC conduit surface mounted	m	81
305	Extra on last to install	m	81
306	Supply 25mm PVC conduit cast-in to floor slab	m	92
307	Extra on last to install	m	92
308	Supply 25mm PVC conduit in partion wall	m	108
309	Extra on last to install	m	108
310	Supply 32mm PVC conduit surface mounted	m	33
311	Extra on last to install	m	33
312	Supply 32mm PVC conduit cast-in to floor slab	m	51
313	Extra on last to install	m	51
314	Supply 32mm PVC conduit in partion wall	m	196
315	Extra on last to install	m	196
<b><u>PVC insulated 1 000 V grade hard drawn copper wire drawn into trunking/conduit and coloured as per phase</u></b>			
316	Supply 2.5mm <sup>2</sup>	m	1 150
317	Extra on last to install	m	1 150
318	Supply 4.0mm <sup>2</sup>	m	3 348
319	Extra on last to install	m	3 348
320	Supply 6.0mm <sup>2</sup>	m	1 976
321	Extra on last to install	m	1 976
322	Supply 2,5mm <sup>2</sup> PVC insulated surfix cable	m	121
323	Extra on last to install	m	121
324	Extra on last to terminate inclusive of glands etc.	No	11

**Carried Forward**

**R**

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**Proposed New Makhaza Police Station  
Potion On ERF 75169 OF 59037 (Khayelitsha)**

<b>Brought Forward</b>			<b>R</b>
325	Supply single switch socket outlet, with euro combo outlet in 100 x 100/50mm PVC conduit box "Crabtree Classic" or other equally approved	No	22
326	Extra on last to install	No	22
327	Supply 20A Three pin UPS switch socket outlet installed in power skirting / floor box	No	45
328	Extra on last to install	No	45
329	Supply 20A Three pin dedicated switch socket outlet installed in power skirting / floor box	No	45
330	Extra on last to install	No	45
331	Supply 20A Three pin normal switch socket outlet in installed in power skirting / floor box	No	45
332	Extra on last to install	No	45
333	Supply 20A Three pin euro switch socket outlet in installed in power skirting / floor box	No	45
334	Extra on last to install	No	45
335	Supply blank cover plate	No	12
336	Extra on last to install	No	12
337	Supply 65mm PVC round box for 25mm conduit	No	159
338	Extra on last to install	No	159
339	Supply 100 x 50/50mm PVC conduit boxes for AC controller	No	155
340	Extra on last to install	No	155
341	Supply P9000 trunking complete with cover plate to soffit	m	62
342	Extra on last to install	m	62
343	Supply P9000 crossover	No	2
344	Extra on last to install	No	2
<b>Carried Forward</b>			<b>R</b>
Bill No. 15 Electrical Works			



**Proposed New Makhaza Police Station  
Potion On ERF 75169 OF 59037 (Khayelitsha)**

Brought Forward				R
345	Supply P9000 elbow	No	2	
346	Extra on last to install	No	2	
347	Supply P9000 Tee-piece	No	2	
348	Extra on last to install	No	2	
349	Supply P9000 end caps	No	2	
350	Extra on last to install	No	2	
351	Supply P9000 4-way piece	No	2	
352	Extra on last to install	No	2	
353	Supply 10A single phase isolator for extraction	No	2	
354	Extra on last to install	No	2	
355	Supply 20A single phase isolators for aircon supply	No	2	
356	Extra on last to install	No	2	
357	Supply 20A single phase isolators for hydroboil / kitchen equipment	No	2	
358	Extra on last to install	No	2	
359	Supply 20A single phase isolators for hand drier power supplies	No	2	
360	Extra on last to install	No	2	
361	Supply 30A single phase isolators	No	4	
362	Extra on last to install	No	4	
363	Supply 30A single phase isolators	No	4	
364	Extra on last to install	No	4	
365	Supply 30A single phase weather proof isolator for aircon supply	No	2	
366	Extra on last to install	No	2	
Carried Forward				R
Bill No. 15 Electrical Works				



**Proposed New Makhaza Police Station  
Potion On ERF 75169 OF 59037 (Khayelitsha)**

<b>Brought Forward</b>			<b>R</b>
367	Supply 40A single phase weather proof isolator for aircon supply	No 4	
368	Extra on last to install	No 4	
369	Supply 30A three phase isolators for aircon supply	No 3	
370	Extra on last to install	No 3	
371	Supply 40A three phase isolators for aircon supply	No 4	
372	Extra on last to install	No 4	
373	Supply 40A three phase weather proof isolator for aircon supply	No 2	
374	Extra on last to install	No 2	
375	Supply 16A weather proof switch socket outlet	No 2	
376	Extra on last to install	No 2	
377	Supply "Cabstrut" or other equally approved Corporate connection system complete with: 2 x Normal S.S.O (SANS 164-1) (white / white toggle) 2 x Normal Euro S.S.O (SANS 164-2) (white / white toggle) 2 x Essential S.S.O (SANS 164-1) (white / red toggle) 4 x RJ45 outlets	No 1	
378	Extra on last to install	No 1	
<b><u>TELEPHONE AND DATA</u></b>			
379	Supply Krone RJ 11 telephone outlets installed in power skirting	No 20	
380	Extra on last to install	No 20	
381	Supply Krone RJ 45 data outlets installed in power skirting inclusive of cradle and cover plate	No 44	
382	Extra on last to install	No 44	
<b><u>SENSORS AND RELAYS</u></b>			
<b>Carried Forward</b>			<b>R</b>
Bill No. 15 Electrical Works			

**Proposed New Makhaza Police Station  
Potion On ERF 75169 OF 59037 (Khayelitsha)**

Brought Forward			R
<b><u>DEMAN master unit relays / Slave units or other equally approved</u></b>			
383	Alux Controller Alux M6 Master unit - AluxM6A10	No 5	
384	Extra on last to install	No 5	
385	Alux Controller Alux M7 Master unit - AluxM7A10	No 2	
386	Extra on last to install	No 2	
387	Alux Slave Alux S1 unit - AluxS1A11	No 3	
388	Extra on last to install	No 3	
389	Alux Slave Alux S2 unit - AluxS2A10	No 2	
390	Extra on last to install	No 2	
<b><u>SOLAR PHOTOVOLTAIC INSTALLATION</u></b>			
391	Supply 550 Watt Solar Panel (Tier 1 or other equally approved)	No 220	
392	Extra on last to install on purpose made brackets	No 220	
393	Supply aluminium purpose made brackets for mounting of solar panels (16 panels per frame)	No 14	
394	Extra on last to install	No 14	
395	Sundries for the complete installation of panels	Item	
396	Supply 6mm <sup>2</sup> Cu PVC 1800V DC UV stablised cable	m 128	
397	Extra on last to install	m 128	
398	Supply 4mm <sup>2</sup> black/Red Cu PVC 1800V DC UV stablised cable	m 128	
399	Extra on last to install	m 128	
400	Supply DC combiner boxes consisting of 2 No. 40 Amp 2P DC circuit breakers for each string, 4 No. Class Type 2, 1500V DC 8/20µs 50 kA surge protection device	No 6	
401	Extra on last to install	No 6	
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**Proposed New Makhaza Police Station  
Potion On ERF 75169 OF 59037 (Khayelitsha)**

<b>Brought Forward</b>				R
402	Supply on load 2 pole 40A DC isolators	No	4	
403	Extra on last to install	No	4	
404	Supply Schneider PM 5320 complete with CT's, PT fuses in existing Main LV Board	No	2	
405	Extra on last to install	No	2	
406	Provision for final testing and Certificate of Compliance to be issued on completion of the project in addition to the detailed testing specified.		Item	
407	Supply 60A 10KA single phase circuit breaker in existing main LV panel ("CBI, Schneider, ABB" or other equally approved)	No	1	
408	Extra on last to install	No	1	
409	Supply 40A 10KA single phase circuit breaker in existing distribution board (CBI, Schneider, ABB or other equally approved)	No	8	
410	Extra on last to install	No	8	
411	Supply Class II Surge protection 20KA 4 pole with intergral health indicators in existing distribution board	No	4	
412	Extra on last to install	No	4	
413	Supply 60A 3 way break before make rotary switch	No	2	
414	Supply AVD Lith Ex 9L Lithium fire extinguisher or other equally approved	No	4	
415	Extra on last to install	No	4	
<b>Carried Forward</b>				R
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Brought Forward			
	<p><u>Supply the following "Canadian Solar, Sunsynk / Deye / Victron" equal and approved hybrid / grid tied inverter complete with battery monitoring system, LCD screen, charge controller enclosure to be IP54 rated, 50Hz 230V Single phase with reverse polarity Protection, Insulation Resistor Detection Residual Current monitoring Unit, Output over current protection, Output Shorted protection, Surge protection. Inverter to have &lt;3% THD and &lt;0.5% input current - DC current injection. Complete with 10 year warrantee.</u></p>		
416	50 kW hybrid inverter, Deye 3 phase or other equally approved complete with MPPT	No	2
417	Extra on last to install	No	2
<b><u>RACK MOUNTED BATTERIES</u></b>			
	<p><u>Supply the following "Hubble, Solar MD, Freedom One, Deye, Weco" or equal and approved 51.2V, IP54 enclosure (excluding battery terminals), rack mounted complete with LiFe - Lithium-Ion cell technology, SOC status indicator, LED indicators, 80% Depth of discharge capable low self discharge, integrated battery monitoring system with current limiting function, over charge protection, over discharge and over temperature battery protection and 2m canbus cable. Complete with warantee to match inverter.</u></p>		
418	12 x Deye 5,12kWh (Bos-G 61,4 kWh HV battery combo)	No	3
419	Extra on last to install	No	3
420	Rack for 12 No. high voltage batteries	No	3
421	Extra on last to install	No	3
422	Supply high Voltage control box for 120VDC - 750VDC as DEYE-HV- B750/100A-EU or other equally approved	No	2
423	Extra on last to install	No	1
424	Supply Victron Lynx's distributor 1000 with 4 battery connections	No	3
425	Extra on last to install	No	3

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**Proposed New Makhaza Police Station  
Potion On ERF 75169 OF 59037 (Khayelitsha)**

<b>Brought Forward</b>				<b>R</b>
426	Supply DP DC 500V 300A fuse holders (suitable for cylindrical fuses)	No	3	
427	Extra on last to install	No	3	
428	Supply DP DC 500V 400A fuse holders (suitable for cylindrical fuses)	No	2	
429	Extra on last to install	No	2	
430	Supply 300A 500V DC fuses (cylindrical)	No	3	
431	Extra on last to install	No	3	
432	Supply 400A 500V DC fuses (cylindrical)	No	2	
433	Extra on last to install	No	2	
<b><u>Data cabling</u></b>				
434	Supply Cat6e grey	m	120	
435	Extra on last to install	m	120	
436	RJ 45 Terminations for Cat 6e	No	8	
437	Supply Cat6e grey 1 meter flyleads (RJ45 to RJ45)	No	2	
438	Extra on last to install	No	2	
439	Supply Cat6e grey 5 meter flyleads (RJ45 to RJ45)	No	1	
440	Extra on last to install	No	1	
<b><u>DC CABLING</u></b>				
<b><u>PVC Insulated 1000V DC stranded Cu Cable</u></b>				
441	Supply '25mm <sup>2</sup> - Red / Black	m	190	
442	Extra on last to install	m	190	
443	Supply '35mm <sup>2</sup> - Red / Black	m	60	
444	Extra on last to install	m	60	
445	Supply '50mm <sup>2</sup> - Red / Black	m	180	
<b>Carried Forward</b>				<b>R</b>
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**Proposed New Makhaza Police Station  
Potion On ERF 75169 OF 59037 (Khayelitsha)**

	Brought Forward			R
446	Extra on last to install	m	180	
447	Supply 70mm <sup>2</sup> - Red / Black	m	90	
448	Extra on last to install	m	90	
449	Supply '95mm <sup>2</sup> - Red / Black	m	120	
450	Extra on last to install	m	120	
	<b><u>Termination using crimped lugs</u></b>			
451	25mm <sup>2</sup> - Red / Black	No	32	
452	35mm <sup>2</sup> - Red / Black	No	16	
453	50mm <sup>2</sup> - Red / Black	No	32	
454	70mm <sup>2</sup> - Red / Black	No	52	
455	95mm <sup>2</sup> - Red / Black	No	40	
	<b><u>LUMINAIRES</u></b>			
	<b><u>Supply the following luminaires, inclusive of lamps as per drawing No. 32307-601-0</u></b>			
456	Type A	No	402	
457	Type Ae	No	45	
458	Type A1	No	21	
459	Type A1e	No	4	
460	Type A2	No	35	
461	TypeA2e	No	5	
462	Type B	No	55	
463	Type Be	No	12	
464	Type C	No	52	
465	Type Ce	No	8	
	<b>Carried Forward</b>			R
	Bill No. 15 Electrical Works			

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Proposed New Makhaza Police Station  
Potion On ERF 75169 OF 59037 (Khayelitsha)

Brought Forward		R	
466	Type C1	No	18
467	Type D	No	54
468	Type De	No	8
469	Type E	No	35
470	Type F	No	8
471	Type G	No	4
472	Type J	No	36
473	Type J1	No	22
474	Type J2	No	26
475	Type J3	No	12
476	Type J4	No	24
<b><u>Install and connect the following luminaires, inclusive of lamps as per drawing No. 32307-601-0</u></b>			
477	Type A	No	402
478	Type Ae	No	45
479	Type A1	No	21
480	Type A1e	No	4
481	Type A2	No	35
482	Type A2e	No	5
483	Type B	No	55
484	Type Be	No	12
485	Type C	No	52
486	Type Ce	No	8
Carried Forward		R	
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Proposed New Makhaza Police Station  
Potion On ERF 75169 OF 59037 (Khayelitsha)

Brought Forward				R
487	Type C1	No	18	
488	Type D	No	54	
489	Type De	No	8	
490	Type E	No	35	
491	Type F	No	8	
492	Type G	No	4	
493	Type J	No	36	
494	Type J1	No	22	
495	Type J2	No	26	
496	Type J3	No	12	
497	Type J4	No	24	
498	Type J4	No	20	
<b><u>POWER SKIRTING</u></b>				
499	Supply two Compartment 2 cover, epoxy powder coated power skirting, surface mounted, inclusive of cover	m	680	
500	Extra on last to install	m	680	
501	Supply End caps	No	65	
502	Extra on last to install	No	65	
503	Supply 90° bends	No	156	
504	Extra on last to install	No	156	
<b><u>INTERCOM &amp; METAL DETECTOR</u></b>				
<b><u>SUPPLY, INSTALL, TEST AND COMMISSION INTERCOM WITH COLOUR VIDEO SYSTEM COMPLETE WITH ALL HARDWARE, SOFTWARE, TERMINATIONS, FIXINGS ETC.</u></b>				
Carried Forward				R
Bill No. 15 Electrical Works				

