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| | Item | Description | Unit | Qty | Supply & Deliver Rate | Overheads | Total |
|---|------|---|------|-----|-----------------------|-----------|-------|
| | | | | | | | |
| A | | ELECTRICAL WORKS | | | | | |
| | | BILL OF QUANTITIES: BILL NO 1 OF 19 | | | | | |
| | | ARTISAN | | | | | |
| | | The artisans and technical persons as described below and registered in terms of the Department of Labour, Engineering Council of South Africa. | | | | | |
| | | Labour rates for work not covered by any scheduled rates: | | | | | |
| | | Labour rates for normal working hours to include transport costs: | | | | | |
| | | LABOUR RATES | | | | | |
| | | (NORMAL WORKING HOURS - 07:00-16:00) | | | | | |
| | A 1 | Professional Technician or higher (Engineering Council of South Africa) | hrs | 10 | R 530,78 | | |
| | A 2 | Master Registered Electrician (Registered with Department of Labour) | hrs | 10 | R 119,19 | | |
| | A 3 | Registered Installation Electrician (Wiremans License) | hrs | 10 | R 109,76 | | |
| | A 4 | Electrical Trade Test Artisan | hrs | 10 | R 95,32 | | |
| | A 5 | Electrical Artisan Assistant | hrs | 10 | R 32,56 | | |
| | A 6 | General Labour Assistant | hrs | 10 | R 24,21 | | |
| | A 7 | Administration Clerk | hrs | 10 | R 32,56 | | |
| | A 8 | Traveling expenses | km | 1 | R 1,00 | | |
| | | LABOUR RATES FOR AFTER HOURS WORK | | | | | |
| | | LABOUR RATES | | | | | |
| | | (AFTER NORMAL WORKING HOURS – 16:00-07:00) | | | | | |
| | A 9 | Professional Technician (Engineering Council of South Africa) | hrs | 10 | R 796,17 | | |
| | A 10 | Master Registered Electrician | hrs | 10 | R 178,79 | | |
| | A 11 | Registered Installation Electrician (Wiremans License) | hrs | 10 | R 164,64 | | |
| | A 12 | Electrical Trade Test Artisan | hrs | 10 | R 142,98 | | |
| | A 13 | Electrical Artisan Assistant | hrs | 10 | R 48,84 | | |
| | A 14 | General Labour Assistant | hrs | 10 | R 36,32 | | |
| | | TOTAL CARRIED TO BILL SUMMARY Page 92 EE | | | | | |

| Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|--|---|-----------|-----|-----------------------|--------------|--------|
| B | <p>ELECTRICAL WORKS</p> <p>BILL OF QUANTITIES: BILL NO 2 OF 19</p> <p>CERTIFICATE OF COMPLIANCE</p> <p>Allow for the tesing, commissioning and issuing of the Electrical Compliance Certificate in terms of SANS10142: Wiring Code, latest revision and to be completed by the recognised person in terms of the Wiring Code and Department of Labour.</p> | | | | | |
| B | 1 Single phase Distribution Board: CoC | No | 5 | | | |
| B | 2 Three phase Distribution Board: CoC | No | 5 | | | |
| B | 3 Infra-Red Testing | per day | 5 | | | |
| B | 4 Testing and fault finding on low voltage(600/1000V) grade cables using specialist equitment. (Using a cable fault locator) | per cable | 1 | | | |
| B | 5 Electrical Warning/Danger Signage (Distribution Board) | No | 5 | | | |
| B | 6 Power Load logging, analysis and report on a 230/400V system up to 3000A (Low voltage substation and distribution board) | per day | 7 | | | |
| TOTAL CARRIED TO BILL SUMMARY Page 92 EE | | | | | | |

| Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|------|---|------|-----|-----------------------|--------------|--------|
| C | ELECTRICAL WORKS BILL OF QUANTITIES: BILL NO 3 OF 19 CIRCUIT BREAKERS, SWITCHGEAR, DISTRIBUTION BOARD & ASSOCIATED EQUIPMENT CIRCUIT BREAKERS MINIATURE CIRCUIT BREAKERS(MCB) Supply, deliver and install miniature circuit breakers in accordance with SANS 156. Approved by SABS. The circuit breakers are to be fitted into existing or new distribution boards. 3KA, CURVE 3(STANDARD) HYDRAULIC MAGNETIC TYPE SINGLE PHASE, 240V, 50Hz CBI or equal approved | | | | | |
| C | 1 5A, Single Pole | No | 1 | | | |
| C | 2 10A to 20A, Single Pole | No | 1 | | | |
| C | 3 25A to 40A, Single Pole | No | 1 | | | |
| C | 4 45A to 60A, Single Pole | No | 1 | | | |
| C | 5 5A to 20A, Double Pole | No | 1 | | | |
| C | 6 25A to 50A, Double Pole | No | 1 | | | |
| C | 7 60A, Double Pole | No | 1 | | | |
| | Merlin Gerin or equal approved | | | | | |
| C | 8 5A, Single Pole | No | 1 | | | |
| C | 9 10A to 20A, Single Pole | No | 1 | | | |
| C | 10 25A to 40A, Single Pole | No | 1 | | | |
| C | 11 45A to 60A, Single Pole | No | 1 | | | |
| C | 12 5A to 20A, Double Pole | No | 1 | | | |
| C | 13 25A to 50A, Double Pole | No | 1 | | | |
| C | 14 60A, Double Pole | No | 1 | | | |
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| Item | | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|---------------------------------|----|---|------|-----|-----------------------|--------------|--------|
| | | 3KA, CURVE 3(STANDARD) HYDRAULIC MAGNETIC TYPE | | | | | |
| | | THREE PHASE, 400V, 50Hz | | | | | |
| | | CBI or equal approved | | | | | |
| C | 15 | 5A, Triple Pole | No | 1 | | | |
| C | 16 | 10A to 20A, Triple Pole | No | 1 | | | |
| C | 17 | 25A to 40A, Triple Pole | No | 1 | | | |
| C | 18 | 45A to 60A, Triple Pole | No | 1 | | | |
| | | Merlin Gerin or equal approved | | | | | |
| C | 19 | 5A, Triple Pole | No | 1 | | | |
| C | 20 | 10A to 20A, Triple Pole | No | 1 | | | |
| C | 21 | 25A to 40A, Triple Pole | No | 1 | | | |
| C | 22 | 45A to 60A, Triple Pole | No | 1 | | | |
| | | 6KA, CURVE 2(STANDARD) HYDRAULIC MAGNETIC TYPE | | | | | |
| | | SINGLE PHASE, 240V, 50Hz | | | | | |
| | | CBI or equal approved | | | | | |
| C | 23 | 5A, Single Pole | No | 1 | | | |
| C | 24 | 10A to 20A, Single Pole | No | 1 | | | |
| C | 25 | 25A to 40A, Single Pole | No | 1 | | | |
| C | 26 | 45A to 60A, Single Pole | No | 1 | | | |
| C | 27 | 5A to 20A, Double Pole | No | 1 | | | |
| C | 28 | 25A to 50A, Double Pole | No | 1 | | | |
| C | 29 | 60A, Double Pole | No | 1 | | | |
| | | Merlin Gerin or equal approved | | | | | |
| C | 30 | 5A, Single Pole | No | 1 | | | |
| C | 31 | 10A to 20A, Single Pole | No | 1 | | | |
| C | 32 | 25A to 40A, Single Pole | No | 1 | | | |
| C | 33 | 45A to 60A, Single Pole | No | 1 | | | |
| C | 34 | 5A to 20A, Double Pole | No | 1 | | | |
| C | 35 | 25A to 50A, Double Pole | No | 1 | | | |
| C | 36 | 60A, Double Pole | No | 1 | | | |
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| Item | | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|------|----|---|------|-----|-----------------------|--------------|--------|
| | | 6KA, CURVE 2(STANDARD) HYDRAULIC MAGNETIC TYPE | | | | | |
| | | THREE PHASE, 400V, 50Hz | | | | | |
| | | CBI or equal approved | | | | | |
| C | 37 | 5A, Triple Pole | No | 1 | | | |
| C | 38 | 10A to 20A, Triple Pole | No | 1 | | | |
| C | 39 | 25A to 40A, Triple Pole | No | 1 | | | |
| C | 40 | 45A to 60A, Triple Pole | No | 1 | | | |
| | | Merlin Gerin or equal approved | | | | | |
| C | 41 | 5A, Triple Pole | No | 1 | | | |
| C | 42 | 10A to 20A, Triple Pole | No | 1 | | | |
| C | 43 | 25A to 40A, Triple Pole | No | 1 | | | |
| C | 44 | 45A to 60A, Triple Pole | No | 1 | | | |
| | | 6KA, CURVE 1 (MOTOR) THERMAL MAGNETIC TYPE | | | | | |
| | | SINGLE PHASE, 240V, 50Hz | | | | | |
| | | CBI or equal approved | | | | | |
| C | 45 | 6A to 20A, Single Pole | No | 1 | | | |
| C | 46 | 25A to 32A, Single Pole | No | 1 | | | |
| C | 47 | 35A to 63A, Single Pole | No | 1 | | | |
| C | 48 | 6A to 20A, Double Pole | No | 1 | | | |
| C | 49 | 25A to 40A, Double Pole | No | 1 | | | |
| C | 50 | 50 to 63A, Double Pole | No | 1 | | | |
| | | Merlin Gerin or equal approved | | | | | |
| C | 51 | 6A to 20A, Single Pole | No | 1 | | | |
| C | 52 | 25A to 32A, Single Pole | No | 1 | | | |
| C | 53 | 35A to 63A, Single Pole | No | 1 | | | |
| C | 54 | 6A to 20A, Double Pole | No | 1 | | | |
| C | 55 | 25A to 40A, Double Pole | No | 1 | | | |
| C | 56 | 50 to 63A, Double Pole | No | 1 | | | |
| | | 6KA, CURVE 1 (MOTOR) THERMAL MAGNETIC TYPE | | | | | |
| | | THREE PHASE, 400V, 50Hz | | | | | |
| | | CBI or equal approved | | | | | |
| C | 57 | 6A, Triple Pole | No | 1 | | | |
| C | 58 | 10A to 20A, Triple Pole | No | 1 | | | |
| C | 59 | 25A to 63A, Triple Pole | No | 1 | | | |
| C | 60 | 6A to 20A, Triple Pole + Neutral | No | 1 | | | |
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| | Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|---|------|--|------|-----|-----------------------|--------------|--------|
| C | 61 | 25A to 40A, Triple Pole + Neutral | No | 1 | | | |
| C | 62 | 50A to 63A, Triple Pole + Neutral | No | 1 | | | |
| | | Merlin Gerin or equal approved | | | | | |
| C | 63 | 6A, Triple Pole | No | 1 | | | |
| C | 64 | 10A to 20A, Triple Pole | No | 1 | | | |
| C | 65 | 25A to 63A, Triple Pole | No | 1 | | | |
| C | 66 | 6A to 20A, Triple Pole + Neutral | No | 1 | | | |
| C | 67 | 25A to 40A, Triple Pole + Neutral | No | 1 | | | |
| C | 68 | 50A to 63A, Triple Pole + Neutral | No | 1 | | | |
| | | SWITCH DISCONNECTORS | | | | | |
| | | Supply, deliver and install switch disconnectors in accordance with SANS 156. | | | | | |
| | | The switch disconnectors are to be fitted into existing or new distribution boards. | | | | | |
| | | 3KA, DUAL MOUNT: HYDRAULIC MAGNETIC TYPE | | | | | |
| | | SINGLE PHASE, 240V, 50Hz | | | | | |
| | | CBI or equal approved | | | | | |
| C | 69 | 63A, Single Pole | No | 1 | | | |
| | | Merlin Gerin or equal approved | | | | | |
| C | 70 | 63A, Single Pole | No | 1 | | | |
| | | 6KA, DUAL MOUNT: HYDRAULIC MAGNETIC TYPE | | | | | |
| | | SINGLE PHASE, 240V, 50Hz | | | | | |
| | | CBI or equal approved | | | | | |
| C | 71 | 63A, Single Pole | No | 1 | | | |
| C | 72 | 100A, Single Pole | No | 1 | | | |
| | | Merlin Gerin or equal approved | | | | | |
| C | 73 | 63A, Single Pole | No | 1 | | | |
| C | 74 | 100A, Single Pole | No | 1 | | | |
| | | 3KA, DUAL MOUNT: HYDRAULIC MAGNETIC TYPE | | | | | |
| | | THREE PHASE, 400V, 50Hz | | | | | |
| | | CBI or equal approved | | | | | |
| C | 75 | 63A, Four Pole | No | 1 | | | |
| | | Merlin Gerin or equal approved | | | | | |
| C | 76 | 63A, Four Pole | No | 1 | | | |
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| | Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|---|------|--|------|-----|-----------------------|--------------|--------|
| | | 6KA, DUAL MOUNT: HYDRAULIC MAGNETIC TYPE | | | | | |
| | | THREE PHASE, 400V, 50Hz | | | | | |
| | | CBI or equal approved | | | | | |
| C | 77 | 63A, Four Pole | No | 1 | | | |
| C | 78 | 100A, Four Pole | No | 1 | | | |
| | | Merlin Gerin or equal approved | | | | | |
| C | 79 | 63A, Four Pole | No | 1 | | | |
| C | 80 | 100A, Four Pole | No | 1 | | | |
| | | SWITCH DISCONNECTORS | | | | | |
| | | Supply, deliver and install switch disconnectors in accordance with IEC 60947-3. | | | | | |
| | | The switch disconnectors are to be surface mounted and shall be complete with all extension boxes, enclosures, fittings, fixtures and accessories required for the works. | | | | | |
| | | Padlockable in OFF position. IP55 rating | | | | | |
| | | The switch disconnectors shall be as per Waco: Era: E Series or equal approved | | | | | |
| C | 81 | 20A Double Pole Isolator | No | 1 | | | |
| C | 82 | 25A Double Pole Isolator | No | 1 | | | |
| C | 83 | 32A Double Pole Isolator | No | 1 | | | |
| C | 84 | 45A Double Pole Isolator | No | 1 | | | |
| C | 85 | 63A Double Pole Isolator | No | 1 | | | |
| C | 86 | 100A Double Pole Isolator | No | 1 | | | |
| C | 87 | 20A Three Pole + N, Isolator | No | 1 | | | |
| C | 88 | 25A Three Pole + N, Isolator | No | 1 | | | |
| C | 89 | 32A Three Pole + N, Isolator | No | 1 | | | |
| C | 90 | 45A Three Pole + N, Isolator | No | 1 | | | |
| C | 91 | 63A Three Pole + N, Isolator | No | 1 | | | |
| C | 92 | 100A Three Pole + N, Isolator | No | 1 | | | |
| C | 93 | 20A Four Pole Isolator | No | 1 | | | |
| C | 94 | 25A Four Pole Isolator | No | 1 | | | |
| C | 95 | 32A Four Pole Isolator | No | 1 | | | |
| C | 96 | 45A Four Pole Isolator | No | 1 | | | |
| C | 97 | 63A Four Pole Isolator | No | 1 | | | |
| C | 98 | 100A Four Pole Isolator | No | 1 | | | |
| | | Automatic Changeover Switches | | | | | |
| | | 4 pole motorised change over switches to have failsafe mechanical interlock, Padlockable in the OFF position, Fully independent position auxiliary contacts one for each position (I / O / II) and Wide-band AC control voltage $\pm 20\%$. All sundries to be included. Socomec or equally approved. (Installation to comply with all warranties and guarantees costs) | | | | | |
| C | 99 | 1000A | ea | 1 | | | |
| C | 100 | 1600A | ea | 1 | | | |
| C | 101 | 2500A | ea | 1 | | | |
| C | 102 | 3200A | ea | 1 | | | |
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| Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|-------|---|------|-----|-----------------------|--------------|--------|
| | MOLDED CASE CIRCUIT BREAKERS Supply, deliver and install molded case circuit breakers in accordance with SANS 156. Approved by SABS. The circuit breakers are to be fitted into existing or new distribution panels. To Include all mounting fixtures and bus bar tails to fit into existing or new LV panel. Molded case circuit breakers to be CBI or equally approved | | | | | |
| C 103 | 75A - 125A, 3 pole, 37kA at 400V | | 1 | | | |
| C 104 | 150A, 3 pole, 37kA at 400V | | 1 | | | |
| C 105 | 175A - 225A, 3 pole, 37kA at 400V | | 1 | | | |
| C 106 | 250A, 3 pole, 37kA at 400V | | 1 | | | |
| C 107 | 250A, 3 pole, 50kA at 400V | | 1 | | | |
| C 108 | 300A - 400A, 3 pole, 50kA at 400V | | 1 | | | |
| C 109 | 500A and 630A, 3 pole, 65kA at 400V | | 1 | | | |
| C 110 | 700A and 800A, 3 pole, 65kA at 400V | | 1 | | | |
| C 111 | 1000A, 3 pole, 65kA at 400V | | 1 | | | |
| C 112 | 1200A, 3 pole, 65kA at 400V | | 1 | | | |
| | AIR CIRCUIT BREAKERS Supply, deliver and install air circuit breakers in accordance with SANS 156. Approved by SABS. The circuit breakers are to be fitted into existing or new distribution panels - Draw Out. To Include all mounting fixtures, cradles and bus bar tails to fit into existing or new LV panel. Air circuit breakers to be CBI or equally approved. | | | | | |
| C 113 | 1250A - 2500A, 3 pole horizontal terminals, 85kA at 400V | | 1 | | | |
| C 114 | 1600A - 3200A, 3 pole horizontal terminals, 85kA at 400V | | 1 | | | |
| C 115 | 2000A - 4000A, 3 pole horizontal terminals, 85kA at 400V | | 1 | | | |
| | Carried to Collection Page 14EE | | | | | |

| Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|-------|---|------|-----|-----------------------|--------------|--------|
| | CONTACTORS Supply, deliver and install contactors in existing or new panels and switchboards. The contactors shall comply to IEC158-1 The contactors shall be complete with all necessary accessories required for the works. The switch disconnectors shall be as per Lovato Electric or equal approved SINGLE PHASE, 240V, 50Hz | | | | | |
| C 116 | 20A to 60A | No | 1 | | | |
| C 117 | Auxillary contacts compatible with above contactors | No | 1 | | | |
| | THREE PHASE, 240V, 50Hz 20A to 60A Auxillary contacts compatible with above contactors | No | 1 | | | |
| C 118 | 20A to 60A | No | 1 | | | |
| C 119 | Auxillary contacts compatible with above contactors | No | 1 | | | |
| | 110V DC, three pole 4kW 7.5kW | No | 1 | | | |
| C 120 | 4kW | No | 1 | | | |
| C 121 | 7.5kW | No | 1 | | | |
| | EARTH LEAKAGE UNIT Supply, deliver and install earth leakage units in existing or new panels and switchboards. The ELU shall comply to SANS 767 and bear the SANS mark. The unit shall be complete with all fixing accessories required for the works. The ELU shall have a sensitivity of 30mA and shall be complete with overload protection. 3KA, DUAL MOUNT: HYDRAULIC MAGNETIC TYPE SINGLE PHASE, 240V, 50Hz CBI or equal approved | | | | | |
| C 122 | 30A Earth Leakage Unit with overload | No | 1 | | | |
| C 123 | 40A Earth Leakage Unit with overload | No | 1 | | | |
| C 124 | 60A Earth Leakage Unit with overload | No | 1 | | | |
| | Merlin Gerin or equal approved 30A Earth Leakage Unit with overload 40A Earth Leakage Unit with overload 60A Earth Leakage Unit with overload | No | 1 | | | |
| C 125 | 30A Earth Leakage Unit with overload | No | 1 | | | |
| C 126 | 40A Earth Leakage Unit with overload | No | 1 | | | |
| C 127 | 60A Earth Leakage Unit with overload | No | 1 | | | |
| | THREE PHASE, 400V, 50Hz CBI or equal approved 30A Earth Leakage Unit with overload 40A Earth Leakage Unit with overload 60A Earth Leakage Unit with overload | No | 1 | | | |
| C 128 | 30A Earth Leakage Unit with overload | No | 1 | | | |
| C 129 | 40A Earth Leakage Unit with overload | No | 1 | | | |
| C 130 | 60A Earth Leakage Unit with overload | No | 1 | | | |
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| Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|-------|---|------|-----|-----------------------|--------------|--------|
| | Merlin Gerin or equal approved | | | | | |
| C 131 | 30A Earth Leakage Unit with overload | No | 1 | | | |
| C 132 | 40A Earth Leakage Unit with overload | No | 1 | | | |
| 133 | 60A Earth Leakage Unit with overload | No | 1 | | | |
| | 6KA, DUAL MOUNT: HYDRAULIC MAGNETIC TYPE | | | | | |
| | SINGLE PHASE, 240V, 50Hz | | | | | |
| | CBI or equal approved | | | | | |
| C 134 | 30A Earth Leakage Unit with overload | No | 1 | | | |
| C 135 | 40A Earth Leakage Unit with overload | No | 1 | | | |
| 136 | 60A Earth Leakage Unit with overload | No | 1 | | | |
| | Merlin Gerin or equal approved | | | | | |
| C 137 | 30A Earth Leakage Unit with overload | No | 1 | | | |
| C 138 | 40A Earth Leakage Unit with overload | No | 1 | | | |
| C 139 | 60A Earth Leakage Unit with overload | No | 1 | | | |
| | THREE PHASE, 400V, 50Hz | | | | | |
| | CBI or equal approved | | | | | |
| C 140 | 30A Earth Leakage Unit with overload | No | 1 | | | |
| C 141 | 40A Earth Leakage Unit with overload | No | 1 | | | |
| C 142 | 60A Earth Leakage Unit with overload | No | 1 | | | |
| | Merlin Gerin or equal approved | | | | | |
| C 143 | 30A Earth Leakage Unit with overload | No | 1 | | | |
| C 144 | 40A Earth Leakage Unit with overload | No | 1 | | | |
| C 145 | 60A Earth Leakage Unit with overload | No | 1 | | | |
| | 6KA, DUAL MOUNT: THERMAL MAGNETIC TYPE | | | | | |
| | SINGLE PHASE, 240V, 50Hz | | | | | |
| | CBI or equal approved | | | | | |
| C 146 | 30A Earth Leakage Unit with overload | No | 1 | | | |
| C 147 | 40A Earth Leakage Unit with overload | No | 1 | | | |
| C 148 | 60A Earth Leakage Unit with overload | No | 1 | | | |
| | Merlin Gerin or equal approved | | | | | |
| C 149 | 30A Earth Leakage Unit with overload | No | 1 | | | |
| C 150 | 40A Earth Leakage Unit with overload | No | 1 | | | |
| C 151 | 60A Earth Leakage Unit with overload | No | 1 | | | |
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| Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|-------|--|------|-----|-----------------------|--------------|--------|
| | THREE PHASE, 400V, 50Hz | | | | | |
| | CBI or equal approved | | | | | |
| C 152 | 30A Earth Leakage Unit with overload | No | 1 | | | |
| C 153 | 40A Earth Leakage Unit with overload | No | 1 | | | |
| C 154 | 60A Earth Leakage Unit with overload | No | 1 | | | |
| | Merlin Gerin or equal approved | | | | | |
| C 155 | 30A Earth Leakage Unit with overload | No | 1 | | | |
| C 156 | 40A Earth Leakage Unit with overload | No | 1 | | | |
| C 157 | 60A Earth Leakage Unit with overload | No | 1 | | | |
| | RAIL MOUNT METERS | | | | | |
| | Supply, deliver and install rail mount meters(Class 1) in existing or new panels and switchboards. The meter shall comply to IEC 61036. The unit shall be complete with all fixing accessories required for the works. | | | | | |
| | The meters shall be as CBI or equal approved. | | | | | |
| | SINGLE PHASE, 240V, 50Hz | | | | | |
| C 158 | Ecolec Rail Mount Meter: EC320CM | No | 1 | | | |
| C 159 | Ecolec Rail Mount Meter: EC320CD | No | 1 | | | |
| | THREE PHASE, 400V, 50Hz | | | | | |
| C 160 | Ecolec Rail Mount Meter: EC330CM | No | 1 | | | |
| C 161 | Ecolec Rail Mount Meter: EC330CD | No | 1 | | | |
| | LV FUSES | | | | | |
| | Supply, deliver and install HRC fuses in existing or new panels and switchboards. The fuses shall comply to SANS 172 & 173. The unit shall be complete with all terminals, lugs, holders and accessories required for the works. | | | | | |
| | The fuses shall be as Siemens, Bussman or equal approved. | | | | | |
| C 162 | 10A to 20A | No | 1 | | | |
| C 163 | 25A to 40A | No | 1 | | | |
| C 164 | 50A to 63A | No | 1 | | | |
| C 165 | 100A to 250A | No | 1 | | | |
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| Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|-------|--|------|-----|-----------------------|--------------|--------|
| | DISTRIBUTION BOARDS Supply, deliver and install LV sheetmetal distribution boards. The distribution boards shall comply to SANS 1765. The boards shall be , Colour: White, sheet steel 15/10 thick. The distribution boards shall be of the industrial/commerical architrave boards type. The distribution boards shall be complete with front full sheet metal hinged door, functional chassis, interior kits for circuit breakers and modular products, full sized top and bottom gland plates, blank covers, lockable door, adjustable DIN rail depth facility/Samite, rear adjustment screws, earth/neutral terminals, necessary fittings, fixtures and accessories for the works. | | | | | |
| | SURFACE MOUNTED : SINGLE PHASE, 240V | | | | | |
| C 166 | 12 Way DB | No | 1 | | | |
| C 167 | 18 Way DB | No | 1 | | | |
| C 168 | 24 Way DB | No | 1 | | | |
| | SURFACE MOUNTED : THREE PHASE, 400V | | | | | |
| C 169 | 12 Way DB | No | 1 | | | |
| C 170 | 18 Way DB | No | 1 | | | |
| C 171 | 24 Way DB | No | 1 | | | |
| | FLUSH MOUNTED : SINGLE PHASE, 240V | | | | | |
| C 172 | 12 Way DB | No | 1 | | | |
| C 173 | 18 Way DB | No | 1 | | | |
| C 174 | 24 Way DB | No | 1 | | | |
| | FLUSH MOUNTED : THREE PHASE, 400V | | | | | |
| C 175 | 12 Way DB | No | 1 | | | |
| C 176 | 18 Way DB | No | 1 | | | |
| C 177 | 24 Way DB | No | 1 | | | |
| | DISTRIBUTION BOARDS Supply, deliver and install LV sheetmetal distribution boards. The distribution boards shall comply to SANS 1765. The boards shall be IP65. The distribution boards shall be of the industrial/commerical architrave boards type. The distribution boards shall be complete with front full hinged door, functional chassis, interior kits for circuit breakers and modular products, full sized top and bottom gland plates, blank covers, lockable door, adjustable DIN rail depth facility/Samite, rear adjustment screws, earth/neutral terminals, necessary fittings, fixtures and accessories for the works. | | | | | |
| | SURFACE MOUNTED : SINGLE PHASE, 240V | | | | | |
| C 178 | 12 Way DB | No | 1 | | | |
| C 179 | 18 Way DB | No | 1 | | | |
| C 180 | 24 Way DB | No | 1 | | | |
| | Carried to Collection Page 14EE | | | | | |

| Item | | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|------|-----|--|------|-----|-----------------------|--------------|--------|
| | | SURFACE MOUNTED : THREE PHASE, 400V | | | | | |
| C | 181 | 12 Way DB | No | 1 | | | |
| C | 182 | 18 Way DB | No | 1 | | | |
| C | 183 | 24 Way DB | No | 1 | | | |
| | | AUXILIARY EQUIPMENT | | | | | |
| C | 184 | Distribution Board Blank covers | No | 1 | | | |
| C | 185 | DIN Rail | m | 1 | | | |
| | | ELECTRICAL READY BOARDS | | | | | |
| | | Supply, deliver and install LV electrical ready boards. | | | | | |
| | | The ready boards shall consist of the following switchgear and fittings: 1 x QA 17C 63A, 2 x QA-1 13mm 20A, 1 x Switched Bulkhead, 3 x 16A Switched Sockets, 1 x 6A Euro Socket | | | | | |
| | | The board shall be compatible with prepayment meters, knockouts for additional circuit breakers and/or auxiliary products as well as 15 access points for conduit or twin and earth wire. | | | | | |
| | | Switches (light and socket outlets) shall have a glow-in-dark fluorescent insert. | | | | | |
| | | The unit shall comply with national specifications. | | | | | |
| | | The unit shall be as per CBI or equal approved. | | | | | |
| C | 186 | Readyboard NRBCON003 with CFL version including 18W lamp | No | 1 | | | |
| | | ELECTRONIC TIMER SWITCHES | | | | | |
| | | Supply, deliver and install electronic timer switches into existing or new distribution boards. | | | | | |
| | | The programmable time switch to be suitable for use to automatically control pool pumps, lights, geysers, etc. | | | | | |
| | | The unit shall have a LCD touch screen allow simple settings of time and programs, multiple on/off programs, 15min segments, graphical display on home screen of 24hr display, dual mount, backup reserve power for 12hr display and 24hr timekeeping and a bypass capability. | | | | | |
| | | The unit shall be as per CBI or equal approved. | | | | | |
| C | 187 | QAT-TRDM | No | 1 | | | |
| | | PHOTO ELECTRONIC CONTROLS | | | | | |
| | | Supply, deliver and install photo electronic sensors on sites to control lighting and/or power circuits. | | | | | |
| | | The unit shall have a rating of 250V , 50Hz, 1800VA, IP65, thermal switching, plug in Nema twist lock type, nema base | | | | | |
| C | 188 | Royce Thompson: V1SSWDAYLITE/P3HDI | No | 1 | | | |
| C | 189 | National: NS416: Code: V1SSWD/LITENS416 | No | 1 | | | |
| C | 190 | National: NS116: Code: V1SSWD/LITENS116 | No | 1 | | | |
| | | Carried to Collection Page 14EE | | | | | |

| | Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|---|------|---|----------------|-----|-----------------------|--------------|--------|
| D | | ELECTRICAL WORKS BILL OF QUANTITIES: BILL NO 4 OF 19 CABLE TRENCHING EXCAVATIONS: TRENCHING & BACKFILLING All prices below shall include the excavation of trenches and holes, separating of stones, ground and rock, leveling of trench bed, refill compacting and reparation of all surfaces to their original finish. Trenching shall be calculated using the formula below: (1m ³ = a trench of 600mm deep * 420mm wide * 4m length) (1m ³ = 4m linear of trenching) | | | | | |
| | 1 | Excavate and backfilling in soft ground(pickable material) | m ³ | 5 | | | |
| | 2 | Excavate and backfilling in soft rock | m ³ | 5 | | | |
| | 3 | Excavate and backfilling in hard rock | m ³ | 5 | | | |
| | 4 | Excavating for cable road crossing and placing 4 x 110m sleeves across road way. | m ³ | 5 | | | |
| | 5 | Backfilling road crossing and reinstating road surface and compaction as before. | m ³ | 5 | | | |
| | 6 | Provide sand or stone-free ground complete with handling cost | m ³ | 5 | | | |
| | 7 | Compaction of all electrical and telecoms sleeve trenches under hardended surfaces to 95% MOD AASHTO | m ³ | 5 | | | |
| | 8 | Remove all waste material complete with handling cost | m ³ | 5 | | | |
| | | CABLE MARKERS | | | | | |
| | 9 | Electrical reinforced concrete cable route marker with inscription as per engineers detail. Dimension: Height: 265mm, Depth: 750mm, Weight: 19.5kg | No | 1 | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | Carried to Collection Page 17EE | | | | | |

| | Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|---|------|---|------|------|-----------------------|--------------|--------|
| D | 10 | Electrical concrete cable route marker with inscription as per engineers detail. Dimension: Height: 250mm, Width: 250mm, Depth: 250mm | No | 1 | | | |
| D | 11 | Electrical concrete cable route marker with inscription as per engineers detail. Dimension: Height: 305mm, Width: 305mm, Depth: 152mm, including 101x76mm lead insert for inscription | No | 1 | | | |
| | | CABLE DANGER TAPE | | | | | |
| D | 12 | Electrical buried danger tape in compliance with OSHA 1910.144 for marking physical hazards. The tape shall be lightweight and of high visibility safety yellow polyethylene (plastic) with bold black letters(2 inch height). The tape shall be 76mm wide and 0.102mm thick. The cable warning/danger tape shall be placed 150mm above the cables in excavations. | m | 1000 | | | |
| | | MANHOLES | | | | | |
| D | 13 | Electrical manhole 1200x1200x790mm deep with 230mm brick surround, 150mm concrete base and complete with 6mm flush chequer plate and 150mm concrete base. As per Ethewini Electricity: Manhole specifications for cable circuits where there are hardened surfaces. Drawing: SS_Manholes | Item | 1 | | | |
| D | 14 | Electrical manhole 1200x1200x790mm deep with 230mm brick surround, 150mm concrete base and complete with heavy duty polymer plate and 150mm concrete base. As per Ethewini Electricity: Manhole specifications for cable circuits where there are hardened surfaces. Drawing: SS_Manholes | Item | 1 | | | |
| | | Carried to Collection Page 17EE | | | | | |

| | Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|---|------|---|------|-----|-----------------------|--------------|--------|
| E | | ELECTRICAL WORKS BILL OF QUANTITIES: BILL NO 5 OF 19 CABLE RETICULATION LOW VOLTAGE CABLING Supply, deliver and install low voltage(600/1000V), PVC insulated, PVC bedded SWA, PVC sheathed, ECC stranded copper conductor cables. Checking of cable and overhead conductor lengths. The Contractor shall check such lengths on site before ordering the cable as he will not be paid for excess cable after the completion of the service. Any allowance for off-cuts shall be made in the unit rates. The final measurements shall be based on the net route length of cables and overhead lines concerned, installed in accordance with the requirements. However, the onus is on the Contractor to prove compliance with the specification. The cabling shall be installed either in excavations, cable trays, trunking, wireways, ground, sleeves, ducts, etc(measured elsewhere) and shall include all necessary fittings, fixtures and accessories required for the works. The cables shall be as per Abedare Cables or equal approved. | | | | | |
| E | 1 | TWO CORE 1.5mm ² | m | 1 | | | |
| E | 2 | 2.5mm ² | m | 1 | | | |
| E | 3 | 4mm ² | m | 1 | | | |
| E | 4 | 6mm ² | m | 1 | | | |
| E | 5 | 10mm ² | m | 1 | | | |
| E | 6 | 16mm ² | m | 1 | | | |
| E | 7 | 25mm ² | m | 1 | | | |
| E | 8 | THREE CORE 1.5mm ² | m | 1 | | | |
| E | 9 | 2.5mm ² | m | 1 | | | |
| E | 10 | 4mm ² | m | 1 | | | |
| | | Carried to Collection Page 23 EE | | | | | |

| | Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|---|------|---|------|-----|-----------------------|--------------|--------|
| E | 11 | 6mm ² | m | 1 | | | |
| E | 12 | 10mm ² | m | 1 | | | |
| E | 13 | 16mm ² | m | 1 | | | |
| E | 14 | 25mm ² | m | 1 | | | |
| | | AIRDAC: THREE CORE | | | | | |
| E | 15 | 10mm ² | m | 1 | | | |
| E | 16 | 16mm ² | m | 1 | | | |
| | | FOUR CORE | | | | | |
| E | 17 | 1.5mm ² | m | 1 | | | |
| E | 18 | 2.5mm ² | m | 1 | | | |
| E | 19 | 4mm ² | m | 1 | | | |
| E | 20 | 6mm ² | m | 1 | | | |
| E | 21 | 10mm ² | m | 1 | | | |
| E | 22 | 16mm ² | m | 1 | | | |
| E | 23 | 25mm ² | m | 1 | | | |
| E | 24 | 35mm ² | m | 1 | | | |
| E | 25 | 50mm ² | m | 1 | | | |
| E | 26 | 70mm ² | m | 1 | | | |
| E | 27 | 95mm ² | m | 1 | | | |
| E | 28 | 120mm ² | m | 1 | | | |
| E | 29 | 150mm ² | m | 1 | | | |
| E | 30 | 185mm ² | m | 1 | | | |
| | | LOW VOLTAGE CABLE TERMINATIONS | | | | | |
| | | Supply, deliver and install low voltage(600/1000V), PVC insulated, PVC bedded SWA, PVC sheathed, ECC stranded copper conductor cable terminations. | | | | | |
| | | The terminations shall be for the referred cables specified and shall include for all shrouds, glands, lugs, connections, fittings, fixtures and accessories for the terminations in terms of the relevant SANS guidelines. | | | | | |
| | | TWO CORE | | | | | |
| E | 31 | 1.5mm ² | No | 1 | | | |
| E | 32 | 2.5mm ² | No | 1 | | | |
| E | 33 | 4mm ² | No | 1 | | | |
| E | 34 | 6mm ² | No | 1 | | | |
| E | 35 | 10mm ² | No | 1 | | | |
| | | Carried to Collection Page 23 EE | | | | | |

| | Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|---|------|---|------|-----|-----------------------|--------------|--------|
| E | 36 | 16mm ² | No | 1 | | | |
| E | 37 | 25mm ² | No | 1 | | | |
| | | THREE CORE | | | | | |
| E | 38 | 1.5mm ² | No | 1 | | | |
| E | 39 | 2.5mm ² | No | 1 | | | |
| E | 40 | 4mm ² | No | 1 | | | |
| E | 41 | 6mm ² | No | 1 | | | |
| E | 42 | 10mm ² | No | 1 | | | |
| E | 43 | 16mm ² | No | 1 | | | |
| E | 44 | 25mm ² | No | 1 | | | |
| | | AIRDAC: THREE CORE | | | | | |
| E | 45 | 10mm ² | No | 1 | | | |
| E | 46 | 16mm ² | No | 1 | | | |
| | | FOUR CORE | | | | | |
| E | 47 | 1.5mm ² | No | 1 | | | |
| E | 48 | 2.5mm ² | No | 1 | | | |
| E | 49 | 4mm ² | No | 1 | | | |
| E | 50 | 6mm ² | No | 1 | | | |
| E | 51 | 10mm ² | No | 1 | | | |
| E | 52 | 16mm ² | No | 1 | | | |
| E | 53 | 25mm ² | No | 1 | | | |
| E | 54 | 35mm ² | No | 1 | | | |
| E | 55 | 50mm ² | No | 1 | | | |
| E | 56 | 70mm ² | No | 1 | | | |
| E | 57 | 95mm ² | No | 1 | | | |
| E | 58 | 120mm ² | No | 1 | | | |
| E | 59 | 150mm ² | No | 1 | | | |
| E | 60 | 185mm ² | No | 1 | | | |
| | | Aerial Bundle Conductor (ABC) Cable | | | | | |
| | | Supply, deliver and install low voltage (600/1000V), XLPE insulated, self supporting copper conductor cable. | | | | | |
| | | The terminations shall be for the referred cables specified and shall include for all shrouds, glands, lugs, connections, fittings, fixtures and accessories for the terminations in terms of SANS 1418 part 1 and part 2 | | | | | |
| | | The cables shall be as per Abedare Cables or equal approved. | | | | | |
| E | 61 | 25mm ² | m | 1 | | | |
| E | 62 | 35mm ² | m | 1 | | | |
| E | 63 | 50mm ² | m | 1 | | | |
| E | 64 | 70mm ² | m | 1 | | | |
| E | 65 | 95mm ² | m | 1 | | | |
| | | Carried to Collection Page 23 EE | | | | | |

[illegible]

| | Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|--|------|---|------|-----|-----------------------|--------------|--------|
| | | ELECTRICAL WORKS BILL OF QUANTITIES: BILL NO 5 OF 19 COLLECTION CABLE RETICULATION Page 18 EE Page 19 EE Page 20 EE Page 21 EE Page 22 EE | | | | | |
| | | TOTAL CARRIED TO BILL SUMMARY Page 92 EE | | | | | |

| Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|------|---|------|-----|-----------------------|--------------|--------|
| F | ELECTRICAL WORKS | | | | | |
| | BILL OF QUANTITIES: BILL NO 6 OF 19 | | | | | |
| | WIREWAYS & ACCESSORIES | | | | | |
| | PVC CONDUIT | | | | | |
| | The supply and installation of PVC conduit, prices to include for couplings, saddles, adaptors, spacers, lids, conduit boxes and all bending, gluing and other necessary material. | | | | | |
| | The conduit shall be installed in concrete, walls, ground, brickwork, roof spaces, against trusses, etc and shall include for all against trusses, etc and shall include for all necessary fittings, fixtures and accessories to complete the installation. | | | | | |
| | The conduit shall comply to SANS 950. | | | | | |
| | Chased into brickwork | | | | | |
| | 1 20mm diameter | m | 1 | | | |
| | 2 25mm diameter | m | 1 | | | |
| | 3 32mm diameter | m | 1 | | | |
| | 4 50mm diameter | m | 1 | | | |
| | Chased into concrete | | | | | |
| | 5 20mm diameter | m | 1 | | | |
| | 6 25mm diameter | m | 1 | | | |
| | 7 32mm diameter | m | 1 | | | |
| | 8 50mm diameter | m | 1 | | | |
| | Cast into concrete | | | | | |
| | 9 20mm diameter | m | 1 | | | |
| | 10 25mm diameter | m | 1 | | | |
| | 11 32mm diameter | m | 1 | | | |
| | 12 50mm diameter | m | 1 | | | |
| | 13 100mm diameter sleeve | m | 1 | | | |
| | Fixed on surface | | | | | |
| | 14 20mm diameter | m | 1 | | | |
| | 15 25mm diameter | m | 1 | | | |
| | 16 32mm diameter | m | 1 | | | |
| | 17 50mm diameter | m | 1 | | | |
| | Carried to Collection Page 29 EE | | | | | |

| | Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|---|------|--|------|-----|-----------------------|--------------|--------|
| | | GALVANISED STEEL CONDUIT: BOSAL The supply and installation of galvanised steel conduit, prices to include for couplings, saddles, adaptors, spacers, lids, conduit boxes and all bending, gluing and other necessary material. The conduit shall be installed in concrete, walls, ground, brickwork, roof spaces, against trusses, etc and shall include for all against trusses, etc and shall include for all necessary fittings, fixtures and accessories to complete the installation. The conduit shall comply to SANS 1065 Parts 1 & 2. | | | | | |
| | | Fixed on surface | | | | | |
| F | 18 | 20mm diameter | m | 1 | | | |
| F | 19 | 25mm diameter | m | 1 | | | |
| F | 20 | 32mm diameter | m | 1 | | | |
| F | 21 | 50mm diameter | m | 1 | | | |
| | | CONDUIT ACCESSORIES The supply and installation of conduit accessories for PVC and galvanised steel conduit(Bosal). The conduit accessories shall be fitted as per installation details for the conduit. The accessories shall be complete with all screws, adaptors, etc required to complete the installation. The conduit accessories shall comply to SANS 950. | | | | | |
| | | EXTENSION BOXES All extension boxes shall be of the galvanised steel type and shall be of 1mm thickness. The boxes shall be suitable for standard switches(lights and plugs) application. The boxes shall be in accordance with SANS 1085 and the plates with SANS 1084 | | | | | |
| F | 22 | 100 x 100 x 50mm | No | 1 | | | |
| F | 23 | 100 x 50 x 50mm | No | 1 | | | |
| F | 24 | 100 x 100 x 75mm(back to back) | No | 1 | | | |
| F | 25 | 100 x 50 x 75mm(back to back) | No | 1 | | | |
| | | PVC: CONDUIT BOXES | | | | | |
| F | 26 | One Way | No | 1 | | | |
| F | 27 | Two Way | No | 1 | | | |
| F | 28 | Three Way | No | 1 | | | |
| F | 29 | Four Way | No | 1 | | | |
| | | Carried to Collection Page 29 EE | | | | | |

| | Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|---|------|--|------|-----|-----------------------|--------------|--------|
| | | FLEXIBLE CONDUIT | | | | | |
| | | The supply and installation of flexible conduit accessories for PVC and galvanised steel conduit(Bosal). The flexible conduit shall be complete with all necessary connectors, fittings, fixtures and accessories required for the complete works. | | | | | |
| | | The flexible conduit shall comply to SANS 950, SANS 1065 | | | | | |
| | | PVC: FLEXIBLE CONDUIT (SPRAGUE) | | | | | |
| F | 30 | 20mm diameter | m | 1 | | | |
| F | 31 | 25mm diameter | m | 1 | | | |
| F | 32 | 32mm diameter | m | 1 | | | |
| F | 33 | 50mm diameter | m | 1 | | | |
| F | 34 | 75mm diameter | m | 1 | | | |
| | | GALVANISED STEEL: FLEXIBLE CONDUIT (SPRAGUE) | | | | | |
| F | 35 | 20mm diameter | m | 1 | | | |
| F | 36 | 25mm diameter | m | 1 | | | |
| F | 37 | 32mm diameter | m | 1 | | | |
| F | 38 | 50mm diameter | m | 1 | | | |
| F | 39 | 75mm diameter | m | 1 | | | |
| | | GENERAL | | | | | |
| | | The conduit accessories listed below shall be utilised for existing installations. It shall be complete with all necessary screws, fittings, fixtures and accessories to complete the works. | | | | | |
| | | PVC SADDLES | | | | | |
| F | 40 | 20mm diameter | No | 1 | | | |
| F | 41 | 25mm diameter | No | 1 | | | |
| F | 42 | 32mm diameter | No | 1 | | | |
| F | 43 | 50mm diameter | No | 1 | | | |
| | | PVC HOSPITAL SADDLES | | | | | |
| F | 44 | 20mm diameter | No | 1 | | | |
| F | 45 | 25mm diameter | No | 1 | | | |
| F | 46 | 32mm diameter | No | 1 | | | |
| F | 47 | 50mm diameter | No | 1 | | | |
| | | BOSAL SADDLES | | | | | |
| F | 48 | 20mm diameter | No | 1 | | | |
| F | 49 | 25mm diameter | No | 1 | | | |
| F | 50 | 32mm diameter | No | 1 | | | |
| F | 51 | 40mm diameter | No | 1 | | | |
| | | Carried to Collection Page 29 EE | | | | | |

| | Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|---|------|---|------|-----|-----------------------|--------------|--------|
| | | BOSAL HOSPITAL SADDLES | | | | | |
| F | 52 | 20mm diameter | No | 1 | | | |
| F | 53 | 25mm diameter | No | 1 | | | |
| F | 54 | 32mm diameter | No | 1 | | | |
| F | 55 | 50mm diameter | No | 1 | | | |
| | | PVC COUPLINGS | | | | | |
| F | 56 | 20mm diameter | No | 1 | | | |
| F | 57 | 25mm diameter | No | 1 | | | |
| F | 58 | 32mm diameter | No | 1 | | | |
| F | 59 | 50mm diameter | No | 1 | | | |
| | | BOSAL COUPLINGS | | | | | |
| F | 60 | 20mm diameter | No | 1 | | | |
| F | 61 | 25mm diameter | No | 1 | | | |
| F | 62 | 32mm diameter | No | 1 | | | |
| F | 63 | 50mm diameter | No | 1 | | | |
| | | TRUNKING & WIRING DUCT | | | | | |
| | | PVC TRUNKING | | | | | |
| | | Supply and install PVC compact mini trunking complete with cover plates, tees, angles(internal, external and flat), bends, end caps and all necessary fittings fixtures and accessories required to complete the works. | | | | | |
| | | The trunking shall be installed surface on brickwork, slab, concrete, walls, ceilings, etc as required. | | | | | |
| | | The trunking shall be as Cabstrut or equal approved. | | | | | |
| F | 64 | YT/1: 16mm x 16mm | m | 1 | | | |
| F | 65 | YT/2: 25mm x 16mm | m | 1 | | | |
| F | 66 | YT/2.5: 25mm x 25mm | m | 1 | | | |
| F | 67 | YT/3: 40mm x 16mm | m | 1 | | | |
| F | 68 | YT/4: 40mm x 25mm | m | 1 | | | |
| F | 69 | YT/5: 40mm x 40mm | m | 1 | | | |
| F | 70 | NBT/4: 100mm x 40mm | m | 1 | | | |
| | | Carried to Collection Page 29 EE | | | | | |

| Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|------|--|------|-----|-----------------------|--------------|--------|
| | GALVANISED STEEL TRUNKING Supply and install galvanised steel trunking complete with PVC cover plates, tees, angles(internal, external and flat), bends, end caps, bolts, screws, anchors, threaded rods, hangards, anchors, suspension system and all necessary fittings, fixtures and accessories required to complete the works. The trunking shall be installed surface on brickwork, slab, concrete, walls, ceilings, etc as required. The trunking shall be as Cabstrut or equal approved. | | | | | |
| F 71 | P2000: 41mm x 41mm x 1mm | m | 1 | | | |
| F 72 | P8000: 76mm x 76mm x 0.8mm | m | 1 | | | |
| F 73 | P9800: 127mm x 76mm x 0.8mm | m | 1 | | | |
| | CABLE TRAYS Supply and install galvanised steel cable trays complete with tees, bends, elbows, splices, bolts, screws, anchors, threaded rods, hangars, anchors, suspension system and all necessary fittings, fixtures and accessories required to complete the works. The trays shall be installed 300mm from surface on brickwork, slab, concrete, walls, ceilings, etc as required. The trays shall be as Cabstrut or equal approved. | | | | | |
| | LIGHT DUTY 103mm x 19mm x 1mm | m | 1 | | | |
| F 74 | | | | | | |
| F 75 | 205mm x 19mm x 1.2mm | m | 1 | | | |
| F 76 | 305mm x 19mm x 1.2mm | m | 1 | | | |
| | MEDIUM DUTY 152mm x 38mm x 1.6mm | m | 1 | | | |
| F 77 | | | | | | |
| F 78 | 229mm x 38mm x 1.6mm | m | 1 | | | |
| F 79 | 305mm x 38mm x 1.6mm | m | 1 | | | |
| | HEAVY DUTY 152mm x 76mm x 1.6mm | m | 1 | | | |
| F 80 | | | | | | |
| F 81 | 229mm x 76mm x 1.6mm | m | 1 | | | |
| F 82 | 305mm x 76mm x 1.6mm | m | 1 | | | |
| | Carried to Collection Page 29 EE | | | | | |

| Item | Description | | | | | Amount |
|------|--|--|--|--|--|--------|
| | ELECTRICAL WORKS BILL OF QUANTITIES: BILL NO 6 OF 19 COLLECTION PAGE WIREWAYS & ACCESSORIES Page 24 EE Page 25 EE Page 26 EE Page 27 EE Page 28 EE | | | | | |
| | WIREWAYS & ACCESSORIES | | | | | |
| | TOTAL CARRIED TO BILL SUMMARY Page 92 EE | | | | | |

| Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|------|--|------|-----|-----------------------|--------------|--------|
| G | ELECTRICAL WORKS BILL OF QUANTITIES: BILL NO 7 OF 19 WIRING & CONDUCTORS All cable and conductor wiring rates shall include for off cuts, slack, wastage, etc. The cost shall include all consumables. The measurements shall be taken from point to point. LOW VOLTAGE CONDUCTORS HOUSEWIRE Supply, deliver, install and terminate low voltage(600/1000V), PVC insulated, stranded copper conductors drawn into wireways, trunking, conduits, etc. Wiring channels measured elsewhere. The conductor shall be a low friction single core general purpose cable. The cable shall be manufactured to SANS 1507-2. The cables shall be as per Slipdac housewire, Abedare Cables or equal approved. | | | | | |
| | 1 1.5mm ² | m | 10 | | | |
| | 2 2.5mm ² | m | 10 | | | |
| | 3 4mm ² | m | 10 | | | |
| | 4 6mm ² | m | 10 | | | |
| | 5 10mm ² | m | 10 | | | |
| | 6 16mm ² | m | 10 | | | |
| | SURFIX Supply, deliver, install and terminate low voltage(300/500V), PVC insulated, stranded copper conductors laid up with a bare tinned copper earth wire in contact with a longitudinal aluminium/polyethylene laminate, UV stable PVC sheathed to SANS 1411-2, specification SANS 1507-2 The cables shall be as per Surfix, Abedare Cables or equal approved only. | | | | | |
| | TWO CORE 7 1.5mm ² | m | 10 | | | |
| | 8 2.5mm ² | m | 10 | | | |
| | 9 4mm ² | m | 10 | | | |
| | 10 6mm ² | m | 10 | | | |
| | Carried to Collection Page 33 EE | | | | | |

| | Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|---|------|---|------|-----|-----------------------|--------------|--------|
| G | 11 | 10mm ² | m | 10 | | | |
| G | 12 | 16mm ² | m | 10 | | | |
| | | THREE CORE | | | | | |
| G | 13 | 1.5mm ² | m | 10 | | | |
| G | 14 | 2.5mm ² | m | 10 | | | |
| G | 15 | 4mm ² | m | 10 | | | |
| G | 16 | 6mm ² | m | 10 | | | |
| | | FOUR CORE | | | | | |
| G | 17 | 1.5mm ² | m | 10 | | | |
| G | 18 | 2.5mm ² | m | 10 | | | |
| G | 19 | 4mm ² | m | 10 | | | |
| G | 20 | 6mm ² | m | 10 | | | |
| | | FLAT TWIN & EARTH | | | | | |
| | | Supply, deliver, install and terminate low voltage(300/500V), PVC insulated, stranded copper conductors laid up with a bare copper continuity conductor between them, PVC sheated to SANS 1411-2. Specification SANS 1574 | | | | | |
| | | The cables shall be as per Flat Twin and Earth, Abedare Cables or equal approved. | | | | | |
| | | TWO CORE | | | | | |
| G | 21 | 1.5mm ² | m | 10 | | | |
| G | 22 | 2.5mm ² | m | 10 | | | |
| G | 23 | 4mm ² | m | 10 | | | |
| G | 24 | 6mm ² | m | 10 | | | |
| G | 25 | 10mm ² | m | 10 | | | |
| G | 26 | 16mm ² | m | 10 | | | |
| | | THREE CORE | | | | | |
| G | 27 | 1.5mm ² | m | 10 | | | |
| G | 28 | 2.5mm ² | m | 10 | | | |
| G | 29 | 4mm ² | m | 10 | | | |
| | | FOUR CORE | | | | | |
| G | 30 | 1.5mm ² | m | 5 | | | |
| G | 31 | 2.5mm ² | m | 5 | | | |
| G | 32 | 4mm ² | m | 5 | | | |
| | | Carried to Collection Page 33 EE | | | | | |

| Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|------|--|------|-----|-----------------------|--------------|--------|
| | <p>CABTYRE - NORMAL DUTY</p> <p>Supply, deliver, install and terminate low voltage(300/500V), normal duty, PVC insulated, high conductivity bunched plain flexible copper conductors to SANS 1411. Cores to be twisted together and sheathed with a flexible grade PVC.</p> <p>The cables shall be as per Cabtyre- normal duty, Abedare Cables or equal approved.</p> | | | | | |
| | THREE CORE | | | | | |
| G 33 | 1.5mm ² | m | 10 | | | |
| G 34 | 2.5mm ² | m | 10 | | | |
| G 35 | 4mm ² | m | 10 | | | |
| | FOUR CORE | | | | | |
| G 36 | 1.5mm ² | m | 5 | | | |
| G 37 | 2.5mm ² | m | 5 | | | |
| G 38 | 4mm ² | m | 5 | | | |
| | PVC INSULATED MVGP GRADE CONDUCTORS | | | | | |
| | <p>Supply, deliver, install and terminate PVC insulated MVGP grade conductor.</p> <p>The conductor shall be as per Abedare or equal approved.</p> | | | | | |
| G 39 | 1.5mm ² | m | 10 | | | |
| G 40 | 2.5mm ² | m | 10 | | | |
| G 41 | 4mm ² | m | 10 | | | |
| G 42 | 6mm ² | m | 10 | | | |
| G 43 | 10mm ² | m | 10 | | | |
| G 44 | 16mm ² | m | 10 | | | |
| | Carried to Collection Page 33 EE | | | | | |

| Item | Description | | | | | Amount |
|------|--|--|--|--|--|--------|
| | ELECTRICAL WORKS BILL OF QUANTITIES: BILL NO 7 OF 19 COLLECTION WIRING & CONDUCTORS Page 30 EE Page 31 EE Page 32 EE | | | | | |
| | WIRING & CONDUCTORS | | | | | |
| | TOTAL CARRIED TO BILL SUMMARY Page 92 EE | | | | | |

| | Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|---|------|--|------|-----|-----------------------|--------------|--------|
| | | | | | | | |
| H | | <p>ELECTRICAL WORKS</p> <p>BILL OF QUANTITIES: BILL NO 8 OF 19</p> <p>LUMINAIRES</p> <p>The supply, delivery and installation of luminaires, complete with electronic control gear and ballasts, lamps, fittings, fixtures and accessories.</p> <p>The luminaires shall be delivered to site in a protective cover.</p> <p>The lamps shall be delivered to site separately in a protective cover with the exception of the IP65 fittings which will be delivered pre lamped by the supplier/manufacturer.</p> <p>All lamps to be Colour rendering index Ra ≥80, 3000K, Osram</p> <p>The luminaires shall bear the SANS safety mark.</p> <p>The luminaires shall be fitted and wired in terms of the SANS 10142: Wiring Code Latest Revision</p> <p>The luminaires shall be suitable for operation at 250V, 50Hz.</p> <p>The luminaires shall be mounted surface, suspended, recessed, semi recessed where applicable to walls, ceilings, roofs, poles, etc.</p> <p>The luminaires shall be as per the specified brand or other approved only.</p> <p>All LED Luminaires shall not be less than LM97 B50 type with a minimum of 50 000 hours life and 5 year warrenty.</p> <p>The LED luminaires shall be SABS approved and shall have an internal surge protection unit.</p> <p>An outdoor luminaire shall be UV stabalised.</p> <p>BULKHEADS:</p> <p>INDUSTRIAL & SEMI INDUSTRIAL APPLICATIONS</p> <p>IP65</p> <p>The luminaires shall be as per Lascon or equal approved</p> | | | | | |
| H | 1 | B40-57W - LED bulkhead | No | 1 | | | |
| H | 2 | B40-80W - MVE- Mercury Vapour bulkhead | No | 1 | | | |
| H | 3 | B40-70W - HPSE- High Pressure Sodium bulkhead | No | 1 | | | |
| H | 4 | B40-100W - HPSE- High Pressure Sodium bulkhead | No | 1 | | | |
| H | 5 | B40-150W - HPSE- High Pressure Sodium bulkhead | No | 1 | | | |
| H | 6 | B40-70W - MH- Metal Halide bulkhead | No | 1 | | | |
| H | 7 | B40-100W - MH- Metal Halide bulkhead | No | 1 | | | |
| H | 8 | B40-150W - MH- Metal Halide bulkhead | No | 1 | | | |
| H | 9 | B40-242W - ELB - 2x42W Fluorescent bulkhead | No | 1 | | | |
| | | Carried to Collection Page 48 EE | | | | | |

| | Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|---|------|---|------|-----|-----------------------|--------------|--------|
| | | BULKHEADS: DECORATIVE: ROUND & DOME INDUSTRIAL & SEMI INDUSTRIAL APPLICATIONS IP65 , 230 mm diameter, Colour: Black The luminaires shall be as per Lascon or equal approved | | | | | |
| H | 10 | Round: B10 -10W - LED | No | 1 | | | |
| H | 11 | Round: B10 - ES - 18W Energy saver lamp | No | 1 | | | |
| H | 12 | Dome: B10 - 10W - LED | No | 1 | | | |
| H | 13 | Dome: B10 - ES - 18W Energy saver lamp | No | 1 | | | |
| H | 14 | B10 - Decorative skirt | No | 1 | | | |
| | | DECORATIVE: SQUARE INDUSTRIAL & SEMI INDUSTRIAL APPLICATIONS IP65 , 205 mm width, Colour: Black The luminaires shall be as per Lascon or equal approved | | | | | |
| H | 15 | Round: B20 -10W - LED | No | 1 | | | |
| H | 16 | Round: B20 - ES - 18W Energy saver lamp | No | 1 | | | |
| H | 17 | B20 - Decorative skirt | No | 1 | | | |
| | | BULKHEADS: GENERAL: DECORATIVE IP65 The luminaires shall be as per Lascon or equal approved | | | | | |
| H | 18 | CFL Rimini: 218-ELB-DOME- 355mm dia White or Black | No | 1 | | | |
| H | 19 | LED Rimini: 17.5-LED-DOME- 355mm dia White or Black | No | 1 | | | |
| H | 20 | CFL Milano: 218-ELB-DOME- 270mm dia White or Black | No | 1 | | | |
| H | 21 | LED Milano: 17.5-LED-DOME- 355mm dia White or Black | No | 1 | | | |
| H | 22 | CFL Roma: 218-ELB-DOME- 266mm dia White or Black | No | 1 | | | |
| H | 23 | LED Roma: 17.5-LED-DOME- 266mm dia White or Black | No | 1 | | | |
| | | Carried to Collection Page 48 EE | | | | | |

| Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|------|--|------|-----|-----------------------|--------------|--------|
| | BULKHEADS: COMMERCIAL: ROUND: ALUMINIUM BASE, UV STABILISED POLYCARBONATE DIFFUSER, IP65 INDOOR & OUTDOOR APPLICATION 295mm DIAMETER The luminaires shall be as per Swanlite or equal approved | | | | | |
| H 24 | ILM/MAS/SOL/2PL9 - Black or White | No | 1 | | | |
| H 25 | ILM/MAS/SOL/1PL18 - Black or White | No | 1 | | | |
| H 26 | ILM/MAS/SOL/LED/ - Black or White | No | 1 | | | |
| | COMMERCIAL: ROUND: ALUMINIUM BASE, UV STABILISED OPAL OR PRISMATIC, FLAT OR DOMED DIFFUSER: CLIENT TO SELECT INDOOR & OUTDOOR APPLICATION 360mm DIAMETER The luminaires shall be as per Swanlite or equal approved | | | | | |
| H 27 | MAS/LLB/2D16/AL - Black or White Trim | No | 1 | | | |
| H 28 | MAS/LLB/2D28/AL - Black or White Trim | No | 1 | | | |
| H 29 | MAS/LLB/2PL18/AL - Black or White Trim | No | 1 | | | |
| H 30 | MAS/LLB/LED/AL - Black or White Trim | No | 1 | | | |
| | COMMERCIAL: ROUND: ALUMINIUM BASE, UV STABILISED OPAL DIFFUSER INDOOR & OUTDOOR APPLICATION 280mm DIAMETER The luminaires shall be as per Beka or equal approved | | | | | |
| H 31 | Series 30: 31007/15W LED - Black or White Trim | No | 1 | | | |
| H 32 | Series 30: 31116/2D16W - Black or White Trim | No | 1 | | | |
| H 33 | Series 30: 31118/1PL18W CFL - Black or White Trim | No | 1 | | | |
| H 34 | Series 30: 31209/2PL9W CFL - Black or White Trim | No | 1 | | | |
| H 35 | Series 30: 31218/2PL18W CFL - Black or White Trim | No | 1 | | | |
| | BULKHEAD ACCESSORIES | | | | | |
| H 36 | Adaptor Ring for surface wiring per bulkhead | Item | 1 | | | |
| | PORCELAIN BOWL FITTING | | | | | |
| | The luminaires shall be as per Radiant or equal approved and fitted with Osram or equal approved lamp | | | | | |
| H 37 | 6" Opal, porcelain bowl, screw neck, complete with gallery and porcelain lampholder and 15W ES, stick lamp. | No | 1 | | | |
| | Carried to Collection Page 48 EE | | | | | |

| | Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|---|------|---|------|-----|-----------------------|--------------|--------|
| H | 38 | 8" Opal, porcelain bowl, screw neck, complete with gallery and porcelain lampholder and 15W ES, stick lamp. OPEN CHANNEL LUMINAIRES: CHANNELS & BATTENS DOMESTIC & COMMERCIAL APPLICATIONS BODY: COLD MILD ROLLED STEEL WITH EPOXY POWDER COATED FINISH, IP20 SURFACE/SUSPENDEED MOUNTED CHANNELS The luminaires shall be as per Lascon or equal approved T5 4 FOOT (1180mm length): | No | 1 | | | |
| H | 39 | Channel/228/ELB: 2x28W | No | 1 | | | |
| H | 40 | Channel/254/ELB: 2x54W ACCESSORIES WIRE GUARD | No | 1 | | | |
| H | 41 | 4ft Galvanised steel wire as per for above fittings INDUSTRIAL WING | Item | 1 | | | |
| H | 42 | 4ft mild steel, B-Focal wing attachment as per for above fittings SEAMLESS BATTEN The luminaires shall be as per Lascon or equal approved T5 4 FOOT (1180mm length): | Item | 1 | | | |
| H | 43 | Seamless Batten/154/ELB: 1x54W BATTEN T5 2 FOOT (680mm length): | No | 1 | | | |
| H | 44 | Batten/124/ELB: 1x24W 4 FOOT (1180mm length): | No | 1 | | | |
| H | 45 | Batten/128/ELB: 1x28W | No | 1 | | | |
| H | 46 | Batten/154/ELB: 1x54W 5 FOOT (1480mm length): | No | 1 | | | |
| H | 47 | Batten/149/ELB: 1x35W | | | | | |
| H | 48 | Batten/149/ELB: 1x49W | No | 1 | | | |
| H | 49 | Batten/180/ELB: 1x80W | No | 1 | | | |
| | | Carried to Collection Page 48 EE | | | | | |

| | Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|---|------|--|------|-----|-----------------------|--------------|--------|
| | | INDUSTRIAL WING | | | | | |
| H | 50 | 2ft mild steel, B-Focal wing attachment as per for above fittings | Item | 1 | | | |
| H | 51 | 4ft mild steel, B-Focal wing attachment as per for above fittings | Item | 1 | | | |
| H | 52 | 5ft mild steel, B-Focal wing attachment as per for above fittings | Item | 1 | | | |
| | | LED | | | | | |
| | | 4 FOOT (1120mm length): | | | | | |
| H | 53 | Batten/22W/LED | No | 1 | | | |
| H | 54 | Batten/28W/LED | No | 1 | | | |
| H | 55 | Batten/32W/LED | No | 1 | | | |
| H | 56 | Batten/39W/LED | No | 1 | | | |
| H | 57 | Batten/46W/LED | No | 1 | | | |
| | | LIGHTING SYSTEMS | | | | | |
| | | RAIL | | | | | |
| | | COMMERCIAL APPLICATION: | | | | | |
| | | WAREHOUSES, FACTORIES, AISLE LIGHTING | | | | | |
| | | The luminaires shall be as per Lascon or equal approved | | | | | |
| | | T5 | | | | | |
| | | 4 FOOT (1225mm length): | | | | | |
| H | 58 | Rail - 154 - ELB | No | 1 | | | |
| | | 5 FOOT (1525mm length): | | | | | |
| H | 59 | Rail - 180 - ELB | No | 1 | | | |
| | | LED | | | | | |
| | | 4 FOOT (1225mm length): | | | | | |
| H | 60 | Rail - 32W - LED | No | 1 | | | |
| H | 61 | Rail - 46W - LED | No | 1 | | | |
| | | | | | | | |
| | | Carried to Collection Page 48 EE | | | | | |

| Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|------|--|------|-----|-----------------------|--------------|--------|
| | VAPOUR & TAMPERPROOF LUMINAIRES: COMMERCIAL & INDUSTRIAL APPLICATIONS BODY: GREY INJECTION MOULDED UV STABILISED SELF EXTINGUISHING POLYCARBONATE. DIFFUSER: ONE PIECE INJECTION MOULDED UV SELF EXTINGUISHING POLYCARBONATE. LINEAR LIGHT CONTROL PRISMS ON THE INSIDE SURFACE/SUSPENDED MOUNTED, IP65 The luminaires shall be as per Lascon or equal approved 4 FOOT (1225mm length): T5: 16mm: ROTA-LOCK LAMP HOLDERS | | | | | |
| H 62 | C10: 228-ELB: 2x28W | No | 1 | | | |
| H 63 | C10: 228-ELB: 2x54W | No | 1 | | | |
| | LED | | | | | |
| H 64 | C10: 27W-LED | No | 1 | | | |
| H 65 | C10: 37W-LED | No | 1 | | | |
| | 5 FOOT (1570mm length): | | | | | |
| | T5: 16mm: ROTA-LOCK LAMP HOLDERS | | | | | |
| H 64 | C10: 235-ELB: 2x35W | No | 1 | | | |
| H 65 | C10: 249-ELB: 2x49W | No | 1 | | | |
| | DECORATIVE COMMERCIAL LUMINAIRES COMMERCIAL APPLICATIONS BODY: COLD MILD ROLLED STEEL WITH EPOXY POWDER COATED FINISH, IP20 LOUVRE: ONE PIECE, 1520G3 ANTI-IRIDESCENT MATT ALUMINIUM SURFACE/SUSPENDED MOUNTED LOW LEVEL BRIGHTNESS The luminaires shall be as per Lascon or equal approved 4 FOOT (1229mm length): T5: 16mm: ROTA-LOCK LAMP HOLDERS | | | | | |
| H 66 | M95N-228-ELB: 2x28W LLB | No | 1 | | | |
| H 67 | M95N-254-ELB: 2x54W LLB | No | 1 | | | |
| | Carried to Collection Page 48 EE | | | | | |

| Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|------|---|------|-----|-----------------------|--------------|--------|
| | 4 FOOT (1260mm length): | | | | | |
| | T5: 16mm: ROTA-LOCK LAMP HOLDERS | | | | | |
| H 68 | SL95-228-ELB: 2x28W | No | 1 | | | |
| H 69 | SL95-254-ELB: 2x54W | No | 1 | | | |
| | LED | | | | | |
| H 70 | SL95-27W-LED | No | 1 | | | |
| H 71 | SL95-37W-LED | No | 1 | | | |
| | 4 FOOT (1260mm length): | | | | | |
| | T5: 16mm | | | | | |
| H 72 | SL95-S-228-ELB: 2x28W | No | 1 | | | |
| H 73 | SL95-S-254-ELB: 2x54W | No | 1 | | | |
| | LED | | | | | |
| H 74 | SL95-S-32W-LED | No | 1 | | | |
| H 75 | SL95-S-46W-LED | No | 1 | | | |
| | OPAL COVER | | | | | |
| | 4 FOOT (1250mm length): | | | | | |
| | T5: 16mm | | | | | |
| H 76 | M6V-228-ELB: 2x28W | No | 1 | | | |
| H 77 | M6V-254-ELB: 2x54W | No | 1 | | | |
| | LED | | | | | |
| H 78 | M6V-27-LED | No | 1 | | | |
| H 79 | M6V-37-LED | No | 1 | | | |
| | DECORATIVE COMMERCIAL LUMINAIRES | | | | | |
| | COMMERCIAL APPLICATIONS | | | | | |
| | BODY: COLD MILD ROLLED STEEL WITH EPOXY | | | | | |
| | POWDER COATED FINISH, IP20 | | | | | |
| | LOUVRE: ONE PIECE, | | | | | |
| | 1520G3 ANTI-IRIDESCENT MATT ALUMINIUM | | | | | |
| | COMPLETE WITH 5A PLUGTOP & 3m CABTYRE | | | | | |
| | RECESSED MOUNTED, LOW LEVEL BRIGHTNESS | | | | | |
| | The luminaires shall be as per Lascon or equal approved | | | | | |
| | 2 FOOT (597mm length): | | | | | |
| | T5 | | | | | |
| H 80 | FM95: 224-ELB: 2x24W LLB | No | 1 | | | |
| H 81 | FM95: 324-ELB: 3x24W LLB | No | 1 | | | |
| | Carried to Collection Page 48 EE | | | | | |

| Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|------|--|------|-----|-----------------------|--------------|--------|
| | LED | | | | | |
| H 82 | FM95: 27W LED | No | 1 | | | |
| H 83 | FM95: 37W LED | No | 1 | | | |
| | 4 FOOT (1197mm length): | | | | | |
| | T5 | | | | | |
| H 84 | FM95: 228-ELB: 2x28W | No | 1 | | | |
| H 85 | FM95: 254-ELB: 2x54W | No | 1 | | | |
| | DECORATIVE COMMERCIAL LUMINAIRES | | | | | |
| | COMMERCIAL APPLICATIONS | | | | | |
| | BODY: COLD MILD ROLLED STEEL WITH EPOXY | | | | | |
| | POWDER COATED FINISH, IP20 | | | | | |
| | COMPLETE WITH 5A PLUGTOP & 3m CABTYRE | | | | | |
| | RECESSED MOUNTED | | | | | |
| | ACRYLIC DIFFUSER | | | | | |
| | The luminaires shall be as per Lascon or equal approved | | | | | |
| | 2 FOOT (595mm length): | | | | | |
| | T5 | | | | | |
| H 86 | FM90AR27: 324-ELB: 3x24W LLB | No | 1 | | | |
| | 4 FOOT (1195mm length): | | | | | |
| | T5 | | | | | |
| H 87 | FM95: 328-ELB: 3x28W LLB | No | 1 | | | |
| | DECORATIVE COMMERCIAL LUMINAIRES | | | | | |
| | COMMERCIAL APPLICATIONS | | | | | |
| | LED PANELS | | | | | |
| | A high end honeycomb LED panel, with a PMMA prism diffuser. | | | | | |
| | The diffuser to be manufactured with optical grade MMA single crystal. | | | | | |
| | The panels have a UGR <19 with a lumen package of >100 lm /W. | | | | | |
| | Complete with 5A plugtop and 3m cabtyre | | | | | |
| | RECESSED MOUNTED | | | | | |
| | The luminaires shall be as per Genesis One or equal approved | | | | | |
| | 2 FOOT (600mm length): | | | | | |
| H 88 | Honeycomb: 600 x 600, 30W, 3000 lm | No | 1 | | | |
| H 89 | Honeycomb: 600 x 600, 40W, 4000 lm | No | 1 | | | |
| H 90 | Honeycomb: 600 x 600, 48W, 5000 lm | No | 1 | | | |
| | Carried to Collection Page 48 EE | | | | | |

| | Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|---|------|---|------|-----|-----------------------|--------------|--------|
| | | 4 FOOT (1200mm length): | | | | | |
| H | 91 | Honeycomb: 1200 x 300, 40W, 4000 lm | No | 1 | | | |
| H | 92 | Honeycomb: 1200 x 300, 54W, 5400 lm | No | 1 | | | |
| H | 93 | Honeycomb: 1200 x 600, 50W, 5000 lm | No | 1 | | | |
| H | 94 | Honeycomb: 1200 x 600, 60W, 6000 lm | No | 1 | | | |
| H | 95 | Honeycomb: 1200 x 600, 72W, 7200 lm | No | 1 | | | |
| | | 5 FOOT (1500mm length): | | | | | |
| H | 96 | Honeycomb: 1500 x 500, 60W, 6000 lm | No | 1 | | | |
| H | 97 | Honeycomb: 1500 x 500, 72W, 7200 lm | No | 1 | | | |
| | | SURFACE/SUSPENDEED MOUNTED | | | | | |
| | | 2 FOOT (600mm length): | | | | | |
| H | 98 | Honeycomb: 600 x 600, 30W, 3000 lm | No | 1 | | | |
| H | 99 | Honeycomb: 600 x 600, 40W, 4000 lm | No | 1 | | | |
| H | 100 | Honeycomb: 600 x 600, 48W, 5000 lm | No | 1 | | | |
| | | 4 FOOT (1200mm length): | | | | | |
| H | 101 | Honeycomb: 1200 x 300, 40W, 4000 lm | No | 1 | | | |
| H | 102 | Honeycomb: 1200 x 300, 54W, 5400 lm | No | 1 | | | |
| H | 103 | Honeycomb: 1200 x 600, 50W, 5000 lm | No | 1 | | | |
| H | 104 | Honeycomb: 1200 x 600, 60W, 6000 lm | No | 1 | | | |
| H | 105 | Honeycomb: 1200 x 600, 72W, 7200 lm | No | 1 | | | |
| | | 5 FOOT (1500mm length): | | | | | |
| H | 106 | Honeycomb: 1500 x 500, 60W, 6000 lm | No | 1 | | | |
| H | 107 | Honeycomb: 1500 x 500, 72W, 7200 lm | No | 1 | | | |
| | | HIGHBAY, LOWBAY & CANOPY | | | | | |
| | | WAREHOUSE, INDUSTRIAL & FACTORY APPLICATIONS | | | | | |
| | | HIGH/LOW BAY | | | | | |
| | | Type: Surface or recessed type. | | | | | |
| | | Louvre: High performance MIR04 silver louvre | | | | | |
| | | Beam: Narrow | | | | | |
| | | Body: Rolled mild steel body and a structured silver epoxy powder | | | | | |
| | | coated finish. Complete with 3m cabtyre and 5A plugtop. IP 20. | | | | | |
| | | The luminaire shall be as per Lascon or equal approved | | | | | |
| | | T5 | | | | | |
| | | 4 FOOT (1195mm length): | | | | | |
| H | 108 | S-BAY-454-ELB | No | 1 | | | |
| | | Carried to Collection Page 48 EE | | | | | |

| | Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|---|------|--|------|-----|-----------------------|--------------|--------|
| | | 5 FOOT (1495mm length): | | | | | |
| H | 109 | S-BAY-480-ELB DIFFUSER | No | 1 | | | |
| H | 110 | Clear Diffuser for 4ft, T5 fittings as above | No | 1 | | | |
| H | 111 | Clear Diffuser for 5ft, T5 fittings as above LED | No | 1 | | | |
| | | 4 FOOT (1195mm length): | | | | | |
| H | 112 | S-BAY-111-LED complete with diffuser | No | 1 | | | |
| H | 113 | S-BAY-148-LED complete with diffuser HIGHBAY, LOWBAY & CANOPY WAREHOUSE, INDUSTRIAL & FACTORY APPLICATIONS HIGH/LOW BAY Type: Surface. Diffuser: UV stabilised, self-extinguishing polycarbonate Beam: Narrow Body: Glass reinforced polyester (GRP), IP 65, MIRO 4 Refeectors, Stainless steel latches, complete with mounting brackets The luminaire shall be as per Lascon or equal approved T5 | No | 1 | | | |
| | | 4 FOOT (1330mm length): | | | | | |
| H | 114 | C-BAY-454-ELB LED | No | 1 | | | |
| H | 115 | C-BAY-74-LED (80W) complete with diffuser | No | 1 | | | |
| H | 116 | C-BAY-111-LED (120W) complete with diffuser | No | 1 | | | |
| H | 117 | C-BAY-148-LED (160W) complete with diffuser CANOPY Type: Surface or recessed type. Louvre: High performance MIR04 silver louvre Beam: Narrow Body: LM6 marine grade aluminium, chemically treated & epoxy coated. Diffuser: Opal polycarbonate diffuser Complete with 3m cabtyre and 5A plugtop IP 65 LED | No | 1 | | | |
| H | 118 | CAN-33W-LED (530x280mm) | No | 1 | | | |
| H | 119 | CAN-67W-LED (530x280mm) FLOODLIGHTS GENERAL & AREA LIGHTING All floodlights to be complete with all lamps, mounting brackets, fittings, fixtures and accessories required for the works. The fittings(HID) shall have separate control gear housing. All luminaires to be SANS approved. HIGH INTENSITY DISCHARGE The luminaire shall be as per Genlux or equal approved. | No | 1 | | | |
| H | 120 | Solar floodlight: Metal Halide 1000W | No | 1 | | | |
| H | 121 | Solar floodlight: HPS 1000W | No | 1 | | | |
| H | 122 | Anthea floodlight: Metal Halide 50W, Wide Beam | No | 1 | | | |
| H | 123 | Anthea floodlight: Metal Halide 100W, Wide Beam | No | 1 | | | |
| H | 124 | Anthea floodlight: Metal Halide 150W, Wide Beam | No | 1 | | | |
| H | 125 | Anthea floodlight: Mercury Vapour 80W, Wide Beam | No | 1 | | | |
| | | Carried to Collection Page 48 EE | | | | | |

| | Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|---|------|--|------|-----|-----------------------|--------------|--------|
| H | 126 | Anthea floodlight: Mercury Vapour 125W, Wide Beam | No | 1 | | | |
| H | 127 | Anthea floodlight: High Pressure Sodium 70W, Wide Beam | No | 1 | | | |
| H | 128 | Anthea floodlight: High Pressure Sodium 100W, Wide B | No | 1 | | | |
| H | 129 | Anthea floodlight: High Pressure Sodium 125W, Wide B | No | 1 | | | |
| H | 130 | Anthea floodlight: High Pressure Sodium 150W, Wide B | No | 1 | | | |
| | | CFL | | | | | |
| H | 131 | Anthea floodlight: CFL 2x18W, Wide Beam | No | 1 | | | |
| H | 132 | Anthea floodlight: CFL 2x26W, Wide Beam | No | 1 | | | |
| | | HIGH INTENSITY DISCHARGE | | | | | |
| H | 133 | Odyssey floodlight: MH 250W, Wide Beam | No | 1 | | | |
| H | 134 | Odyssey floodlight: MH 400W, Wide Beam | No | 1 | | | |
| H | 135 | Odyssey floodlight: MV 250W, Wide Beam | No | 1 | | | |
| H | 136 | Odyssey floodlight: HPS 150W, Wide Beam | No | 1 | | | |
| H | 137 | Odyssey floodlight: HPS 250W, Wide Beam | No | 1 | | | |
| H | 138 | Odyssey floodlight: HPS 400W, Wide Beam | No | 1 | | | |
| H | 139 | Odyssey floodlight: HPS 600W, Wide Beam | No | 1 | | | |
| | | LED | | | | | |
| | | The luminaire shall be as per Lascon or equal approved. | | | | | |
| H | 140 | L18-218W-LED | No | 1 | | | |
| H | 141 | Pescara-33W-LED black | No | 1 | | | |
| H | 142 | Pescara-67W-LED black | No | 1 | | | |
| H | 143 | Genoa-35W-LED black | No | 1 | | | |
| | | DOWNLIGHTERS RECESSED TYPE | | | | | |
| | | APPLICATION: GENERAL AREAS, OFFICE, | | | | | |
| | | CONFERENCE ROOMS & CORRIDORS | | | | | |
| | | ALL DOWNLIGHTERS TO BE COMPLETE WITH | | | | | |
| | | 5A PLUGTOP & 3m CABTYRE | | | | | |
| | | The luminaire shall be as per Lascon or equal approved. | | | | | |
| | | CFL TYPE | | | | | |
| | | FUTURA 1: | | | | | |
| | | DIMENSION: 210mm dia x 170mm height | | | | | |
| H | 144 | FUT1 - 113 - ELB, 1x13W | No | 1 | | | |
| H | 145 | FUT1 - 118 - ELB, 1x18W | No | 1 | | | |
| | | ACCESSORIES | | | | | |
| H | 146 | Decorative Flush glass accessory for the above fitting | No | 1 | | | |
| H | 147 | Decorative dropped glass accessory for the above fitting | No | 1 | | | |
| | | Carried to Collection Page 48 EE | | | | | |

| Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|-------|---|------|-----|-----------------------|--------------|--------|
| | FUTURA 2: DIMENSION: 240mm dia x 170mm height | | | | | |
| H 148 | FUT2 - 218 - ELB, 2x18W | No | 1 | | | |
| H 149 | FUT2 - 226 - ELB, 2x26W | No | 1 | | | |
| | ACCESSORIES | | | | | |
| H 150 | Decorative Flush glass accessory for the above fitting | No | 1 | | | |
| H 151 | Decorative dropped glass accessory for the above fitting | No | 1 | | | |
| | FUTURA 3: DIMENSION: 240mm dia x 170mm height | | | | | |
| H 152 | FUT3 - 213 - ELB, 2x13W complete with flush glass | No | 1 | | | |
| H 153 | FUT3 - 218 - ELB, 2x18W complete with flush glass | No | 1 | | | |
| | HIGH INTENSITY DISCHARGE LAMP | | | | | |
| | FUTURA 4: DIMENSION: 240mm dia x 170mm height | | | | | |
| H 154 | FUT4 - 70 - ELB, 1x70W complete with flush glass | No | 1 | | | |
| | FUTURA 5: DIMENSION: 174mm dia x 162mm height | | | | | |
| H 155 | FUT5 - 35 - ELB, 1x35W complete with flush glass | No | 1 | | | |
| H 156 | FUT5 - 70 - ELB, 1x70W complete with flush glass | No | 1 | | | |
| | LED | | | | | |
| | FUTURA 6: DIMENSION: 46mm dia x 16.5mm height | | | | | |
| H 157 | FUT6 - 1W - LED complete with silver trim | No | 1 | | | |
| H 158 | FUT6 - 3W - LED complete with silver trim | No | 1 | | | |
| | FUTURA 7: DIMENSION: 68mm dia x 64mm height | | | | | |
| H 159 | FUT7-10.5W- LED-830 complete with silver trim | No | 1 | | | |
| H 160 | FUT7-10.5W- LED-840 complete with silver trim | No | 1 | | | |
| | FUTURA 8: DIMENSION: 95mm dia x 87mm height | | | | | |
| H 161 | FUT8-10.5W- LED-830 complete with silver trim | No | 1 | | | |
| H 162 | FUT8-10.5W- LED-840 complete with silver trim | No | 1 | | | |
| | APPLICATION: COVER LIGHTING, RETAIL LIGHTING, STORAGE ROOMS, PARKING GARAGES The luminaires shall be as per Lascon or equal approved. | | | | | |
| | Carried to Collection Page 48 EE | | | | | |

| Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|------|--|------|-----|-----------------------|--------------|--------|
| H | <p>FUTURA 9: DIMENSION: 140mm dia x 120mm height</p> <p>163 FUT9-17W- LED complete with silver trim</p> <p>FUTURA 10: DIMENSION: 190mm dia x 135mm height</p> <p>164 FUT9-23W- LED complete with silver trim</p> <p>165 FUT9-38W- LED complete with silver trim</p> | No | 1 | | | |
| H | | No | 1 | | | |
| H | | No | 1 | | | |
| | <p>EMERGENCY LIGHTING</p> <p>Emergency luminaires to be constructed from rolled mild steel body with a white epoxy coated finish and frosted prismatic diffuser. The luminaire shall have snap on injection moulded plastic end caps.</p> <p>The luminaire shall be of the maintained emergency type with 2.6hrs of emergency duration and 40% light output in emergency mode. The unit shall be complete with pictogram pack (1 x running man left, 1 x running man right, 1 x running down and 1 x EXIT pictogram)</p> <p>The luminaires shall be complete with all necessary fittings, fixtures and accessories required for the works.</p> <p>The luminaires shall be SABs approved.</p> <p>The luminaires shall be as per Lascon or equal approved</p> | | | | | |
| H | <p>166 LILI-1x8-ELB (L=420mm,W=208mm, H=77mm)</p> <p>complete with battery backup and pictogram pack</p> <p>The luminaire shall be constructed of a fibreglass frame, toughened glass lens, galvanised hanging bolts and electronic control gear.</p> <p>The luminaire shall be of the maintained emergency type with 2.6hrs of emergency duration and 40% light output in emergency mode. The unit shall be complete with pictogram pack (1 x running man left, 1 x running man right, 1 x running down and 1 x EXIT pictogram - Green on white)</p> <p>The luminaires shall be SABs approved.</p> | No | 1 | | | |
| | Carried to Collection Page 48 EE | | | | | |

| | Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|----------------------------------|------|--|------|-----|-----------------------|--------------|--------|
| H | 167 | <p>The luminaires shall be as per Lascon or equal approved</p> <p>WALL MOUNTED</p> <p>MAINTAINED</p> <p>E10-2x9-EMG (L=310mm,W=310mm, H=65mm)</p> <p>complete with battery backup and pictogram pack -</p> <p>Maintained version</p> | No | 1 | | | |
| H | 168 | <p>CEILING MOUNTED</p> <p>SINGLE SIDED</p> <p>MAINTAINED</p> <p>E10-2x9-EMG (L=310mm,W=310mm, H=65mm)</p> <p>complete with battery backup and pictogram pack -</p> <p>Maintained version - Ceiling - Single sided</p> | No | 1 | | | |
| H | 169 | <p>DOUBLE SIDED</p> <p>MAINTAINED</p> <p>E10-2x9-EMG (L=310mm,W=310mm, H=65mm)</p> <p>complete with battery backup and pictogram pack -</p> <p>Maintained version - Ceiling - Double sided</p> | No | 1 | | | |
| H | 170 | <p>SINGLE SIDED</p> <p>NON - MAINTAINED</p> <p>E10-2x9-EMG (L=310mm,W=310mm, H=65mm)</p> <p>complete with battery backup and pictogram pack -</p> <p>Non-Maintained version - Ceiling - Single sided</p> | No | 1 | | | |
| H | 171 | <p>DOUBLE SIDED</p> <p>NON - MAINTAINED</p> <p>E10-2x9-EMG (L=310mm,W=310mm, H=65mm)</p> <p>complete with battery backup and pictogram pack -</p> <p>Non-Maintained version - Ceiling - Single sided</p> | No | 1 | | | |
| Carried to Collection Page 48 EE | | | | | | | |

| Item | Description | | | | | Amount |
|------|---|--|--|--|--|--------|
| | ELECTRICAL WORKS BILL OF QUANTITIES: BILL NO 8 OF 19 COLLECTION LUMINAIRES Page 34 EE Page 35 EE Page 36 EE Page 37 EE Page 38 EE Page 39 EE Page 40 EE Page 41 EE Page 42 EE Page 43 EE Page 44 EE Page 45 EE Page 46 EE Page 47 EE | | | | | |
| | LUMINAIRES: | | | | | |
| | TOTAL CARRIED TO BILL SUMMARY Page 92 EE | | | | | |

| | Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate |
|----------------------------------|------|--|------|-----|-----------------------|--------------|
| I | | ELECTRICAL WORKS | | | | |
| | | BILL OF QUANTITIES: BILL NO 9 OF 19 | | | | |
| | | LAMPS | | | | |
| | | COMPACT FLUORESCENT LAMPS: | | | | |
| | | WITH INTEGRATED CONTROL GEAR | | | | |
| | | The lamps shall be complete with integrated control gear. | | | | |
| | | The lamps shall be rated 220-240V, 50Hz. | | | | |
| | | The lamps to be Colour rendering index Ra ≥80, and available in 2700K, 4000K and 6500K. | | | | |
| | | The colour temperature shall be confirmed on site. | | | | |
| | | The lamps to be provided in either E14 or E27 types dependant upon the existing or new fitting lampholder. | | | | |
| | | The lamps shall have an average life of 10000hrs. | | | | |
| | | The lamps shall be as per Osram or Philips or equal approved. | | | | |
| | | STICK TYPE | | | | |
| | 1 | DULUX STICK 8W | No | 5 | | |
| | 2 | DULUX STICK 11W | No | 5 | | |
| | 3 | DULUX STICK 15W | No | 5 | | |
| | 4 | DULUX STICK 20W | No | 5 | | |
| | 5 | DULUX STICK 23W | No | 5 | | |
| | | TWIST(SPIRAL) TYPE | | | | |
| | 6 | DULUX TWIST 9W | No | 5 | | |
| | 7 | DULUX TWIST 12W | No | 5 | | |
| | 8 | DULUX TWIST 15W | No | 5 | | |
| | 9 | DULUX TWIST 20W | No | 5 | | |
| | 10 | DULUX TWIST 23W | No | 5 | | |
| | | CIRCULAR TYPE | | | | |
| | 11 | CIRCOLUX 24W | No | 5 | | |
| | | CLASSIC BULB SHAPE TYPE | | | | |
| | 12 | DULUX, CLA 11W | No | 5 | | |
| | 13 | DULUX, CLA 15W | No | 5 | | |
| | 14 | DULUX, CLA 20W | No | 5 | | |
| | | CANDLE SHAPE TYPE | | | | |
| | 15 | DULUX, CLB 6W | No | 5 | | |
| | 16 | DULUX, CLB 9W | No | 5 | | |
| Carried to Collection Page 57 EE | | | | | | |

| | Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|---|------|---|------|-----|-----------------------|--------------|--------|
| | | MINI BULLET SHAPE TYPE | | | | | |
| I | 17 | DULUX, CL P 6W | No | 5 | | | |
| I | 18 | DULUX, CL P 9W | No | 5 | | | |
| | | GLOBE SHAPE TYPE | | | | | |
| I | 19 | DULUX, GL 15W | No | 5 | | | |
| I | 20 | DULUX, GL 20W | No | 5 | | | |
| | | WITHOUT INTEGRATED CONTROL GEAR | | | | | |
| | | The lamps shall be suitable for operation on conventional or electronic control gear as required. | | | | | |
| | | The lamps shall be rated 220-240V, 50Hz. | | | | | |
| | | The lamps to be Colour rendering index Ra ≥80, and available in 2700K, 4000K and 6500K. | | | | | |
| | | The colour temperature shall be confirmed on site. | | | | | |
| | | The lamps shall have an average life of 10000hrs. | | | | | |
| | | The lamps shall be as per Osram or Philips or equal approved. | | | | | |
| | | T PLUS | | | | | |
| | | CFLni, 3 tubes, with 2-pin base for CCG operation | | | | | |
| I | 21 | DULUX T PLUS, 13W | No | 5 | | | |
| I | 22 | DULUX T PLUS, 18W | No | 5 | | | |
| I | 23 | DULUX T PLUS, 26W | No | 5 | | | |
| | | T/E PLUS | | | | | |
| | | CFLni, 3 tubes, with 4-pin base for ECG operation | | | | | |
| I | 24 | DULUX T/E PLUS, 13W | No | 5 | | | |
| I | 25 | DULUX T/E PLUS, 18W | No | 5 | | | |
| I | 26 | DULUX T/E PLUS, 26W | No | 5 | | | |
| I | 27 | DULUX T/E PLUS, 32W | No | 5 | | | |
| I | 28 | DULUX T/E PLUS, 42W | No | 5 | | | |
| | | T/E CONSTANT | | | | | |
| | | CFLni, 3 tubes, with 4-pin base for ECG operation | | | | | |
| I | 29 | DULUX T/E CONSTANT, 26W | No | 5 | | | |
| I | 30 | DULUX T/E CONSTANT, 32W | No | 5 | | | |
| I | 31 | DULUX T/E CONSTANT, 42W | No | 5 | | | |
| | | Carried to Collection Page 57 EE | | | | | |

| | Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|---|------|--|------|-----|-----------------------|--------------|--------|
| | | T/E XT | | | | | |
| | | CFLni, 3 tubes, with 4-pin base for ECG operation | | | | | |
| I | 32 | DULUX T/E, XT, 32W | No | 5 | | | |
| I | 33 | DULUX T/E, XT, 42W | No | 5 | | | |
| | | D | | | | | |
| | | CFLni, 3 tubes, with 2-pin base for ECG operation | | | | | |
| I | 34 | DULUX D, 10W | No | 5 | | | |
| I | 35 | DULUX D, 13W | No | 5 | | | |
| I | 36 | DULUX D, 18W | No | 5 | | | |
| I | 37 | DULUX D, 26W | No | 5 | | | |
| | | D/E | | | | | |
| | | CFLni, 2 tubes, with 4-pin base for ECG operation | | | | | |
| I | 38 | DULUX D/E, 10W | No | 5 | | | |
| I | 39 | DULUX D/E, 13W | No | 5 | | | |
| I | 40 | DULUX D/E, 18W | No | 5 | | | |
| I | 41 | DULUX D/E, 26W | No | 5 | | | |
| | | S | | | | | |
| | | Short CFLni, with 2-pin base for CCG operation | | | | | |
| I | 42 | DULUX S, 5W | No | 5 | | | |
| I | 43 | DULUX S, 7W | No | 5 | | | |
| I | 44 | DULUX S, 9W | No | 5 | | | |
| I | 45 | DULUX S, 11W | No | 5 | | | |
| | | S/E | | | | | |
| | | Short CFLni, with 4-pin base for ECG operation | | | | | |
| I | 46 | DULUX S/E, 7W | No | 5 | | | |
| I | 47 | DULUX S/E, 9W | No | 5 | | | |
| I | 48 | DULUX S/E, 11W | No | 5 | | | |
| | | LUMILUX | | | | | |
| | | CFLni, with 4-pin base 2G11 for ECG/CCG operation | | | | | |
| I | 49 | DULUX L, 18W | No | 5 | | | |
| I | 50 | DULUX L, 24W | No | 5 | | | |
| I | 51 | DULUX L, 36W | No | 5 | | | |
| I | 52 | DULUX L, 40W | No | 5 | | | |
| I | 53 | DULUX L, 55W | No | 5 | | | |
| I | 54 | DULUX L, 80W | No | 5 | | | |
| | | Carried to Collection Page 57 EE | | | | | |

| Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|----------------------------------|--|------|-----|-----------------------|--------------|--------|
| | CFL SQUARE: 2D TYPE: 2 PIN | | | | | |
| | Square CFLni, with 2-pin base GR8 base for | | | | | |
| | CCG operation | | | | | |
| I 55 | Square, 16W | No | 5 | | | |
| I 56 | Square, 28W | No | 5 | | | |
| | CFL SQUARE: 2D TYPE: 4 PIN | | | | | |
| | Square CFLni, with 4-pin base GR8 base for | | | | | |
| | ECG/CCG operation | | | | | |
| I 57 | Square, 16W | No | 5 | | | |
| I 58 | Square, 28W | No | 5 | | | |
| I 59 | Square, 38W | No | 5 | | | |
| | TUBULAR FLUORESCENT LAMPS | | | | | |
| | The lamps shall be rated 220-240V, 50Hz. | | | | | |
| | The lamps to be Colour rendering index Ra ≥80, and | | | | | |
| | available in 2700K, 3500K, 4000K and 6500K. | | | | | |
| | The colour temperature shall be confirmed on site. | | | | | |
| | The lamps shall have an average life of 10000hrs. | | | | | |
| | The lamps shall be as per Osram or Philips or equal approved | | | | | |
| | T5 | | | | | |
| | LUMILUX HE | | | | | |
| | Tubular fluorescent lamp 16mm, high efficiency, | | | | | |
| | with G5 base | | | | | |
| I 60 | HE 14W | No | 5 | | | |
| I 61 | HE 21W | No | 5 | | | |
| I 62 | HE 28W | No | 5 | | | |
| I 63 | HE 35W | No | 5 | | | |
| | LUMILUX HO | | | | | |
| | Tubular fluorescent lamp 16mm, high efficiency, | | | | | |
| | with G5 base | | | | | |
| I 64 | HO 24W | No | 5 | | | |
| I 65 | HO 39W | No | 5 | | | |
| I 66 | HO 49W | No | 5 | | | |
| I 67 | HO 54W | No | 5 | | | |
| I 68 | HO 80W | No | 5 | | | |
| Carried to Collection Page 57 EE | | | | | | |

| | Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|---|------|--|------|-----|-----------------------|--------------|--------|
| | | LUMILUX FC | | | | | |
| | | Circular fluorescent lamp, 16mm, with 2GX13 base | | | | | |
| I | 69 | FC 22W | No | 5 | | | |
| I | 70 | FC 40W | No | 5 | | | |
| I | 71 | FC 55W | No | 5 | | | |
| | | T8 | | | | | |
| | | LUMILUX ES | | | | | |
| | | Tubular fluorescent lamp 26mm, high efficiency, with G13 base, energy saver | | | | | |
| I | 72 | L 16W | No | 5 | | | |
| I | 73 | L 32W | No | 5 | | | |
| I | 74 | L 51W | No | 5 | | | |
| | | T9 | | | | | |
| | | LUMILUX T9 C | | | | | |
| | | Circular fluorescent lamp 29mm, with G10q base | | | | | |
| I | 75 | L 22W | No | 5 | | | |
| I | 76 | L 32W | No | 5 | | | |
| I | 77 | L 40W | No | 5 | | | |
| | | LED LAMPS | | | | | |
| | | The lamps to be Colour rendering index Ra ≥80, and available in 2700K or 4000K. | | | | | |
| | | The colour temperature shall be confirmed on site. | | | | | |
| | | The lamps shall have an average life of 15000hrs. | | | | | |
| | | The lamps shall be as per Osram or Philips or equal approved | | | | | |
| | | PARATHOM PAR 16 | | | | | |
| | | LED reflector lamps with retrofit plug base | | | | | |
| I | 78 | Parathom PAR 16, 2.6W | No | 5 | | | |
| I | 79 | Parathom PAR 16, 4.3W | No | 5 | | | |
| I | 80 | Parathom PAR 16, 6.9W | No | 5 | | | |
| | | PARATHOM PRO PAR 16 | | | | | |
| | | Dimmable LED reflector lamps with retrofit plug base | | | | | |
| I | 81 | Parathom Pro, PAR 16, 4.6W | No | 5 | | | |
| I | 82 | Parathom Pro, PAR 16, 6.1W | No | 5 | | | |
| | | PARATHOM MR 16 | | | | | |
| | | Low-voltage LED reflector lamps with retrofit plug base | | | | | |
| I | 83 | MR 16, 2.9W | No | 5 | | | |
| I | 84 | MR 16, 4.6W | No | 5 | | | |
| I | 85 | MR 16, 7.2W | No | 5 | | | |
| | | Carried to Collection Page 57 EE | | | | | |

| | Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|---|------|--|------|-----|-----------------------|--------------|--------|
| I | 86 | PARATHOM MR 11 12V Low-voltage LED reflector lamps with retrofit plug base MR 11, 2.3W | No | 5 | | | |
| I | 87 | PARATHOM Advanced MR 11 12V Dimmable Low-voltage LED reflector lamps with retrofit plug base ADV MR 11, 3.1W | No | 5 | | | |
| I | 88 | PARATHOM Advanced PAR 20 Dimmable LED reflector lamps with retrofit screw base ADV PAR 20, 4.2W | No | 5 | | | |
| I | 89 | PARATHOM Advanced PAR 30 Dimmable LED reflector lamps with retrofit screw base ADV PAR 30, 6.7W | No | 5 | | | |
| I | 90 | PARATHOM CLASSIC A LED lamps, classic bulb shape Parathom CL A, 5W | No | 5 | | | |
| I | 91 | Parathom CL A, 8W | No | 5 | | | |
| I | 92 | Parathom CL A, 9W | No | 5 | | | |
| I | 93 | Parathom CL A, 23W | No | 5 | | | |
| I | 94 | PARATHOM ADVANCED CLASSIC A Dimmable LED lamps, classic bulb shape Parathom ADV CL A, 6W | No | 5 | | | |
| I | 95 | Parathom ADV CL A, 9W | No | 5 | | | |
| I | 96 | Parathom ADV CL A, 10W | No | 5 | | | |
| I | 97 | Parathom ADV CL A, 14.4W | No | 5 | | | |
| I | 98 | Parathom ADV CL A, 21W | No | 5 | | | |
| I | 99 | PARATHOM CLASSIC B LED lamps, classic mini-candle shape Parathom CL B, 3.3W | No | 5 | | | |
| I | 100 | Parathom CL B, 5.7W | No | 5 | | | |
| I | 101 | PARATHOM ADVANCED CLASSIC B Dimmable LED lamps, classic mini-candle shape Parathom ADV CL B, 6W | No | 5 | | | |
| | | Carried to Collection Page 57 EE | | | | | |

| Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|-------|--|------|-----|-----------------------|--------------|--------|
| | LINEAR LED | | | | | |
| | SUBSTITUTE T8 VALUE EM | | | | | |
| | LED lamps, stick shaped, 27.5mm with G13 base | | | | | |
| | 600mm | | | | | |
| I 102 | ST8V, 8W | No | 5 | | | |
| | 1200mm | | | | | |
| I 103 | ST8V, 17W | No | 5 | | | |
| | 1500mm | | | | | |
| I 104 | ST8V, 20W | No | 5 | | | |
| | SUBSTITUTE T8 ADVANCED UNIVERSAL | | | | | |
| | LED lamps, stick shaped, 27mm with G13 base | | | | | |
| | 1200mm | | | | | |
| I 105 | ST8AU, XYW | No | 5 | | | |
| | 1500mm | | | | | |
| I 106 | ST8AU, XYW | No | 5 | | | |
| | HIGH INTENSITY DISCHARGE | | | | | |
| | MERCURY VAPOUR | | | | | |
| I 107 | 50W, MV | No | 5 | | | |
| I 108 | 80W, MV | No | 5 | | | |
| I 109 | 125W, MV | No | 5 | | | |
| I 110 | 250W, MV | No | 5 | | | |
| I 111 | 400W, MV | No | 5 | | | |
| | HIGH PRESSURE SODIUM | | | | | |
| | TUBULAR SINGLE SIDED | | | | | |
| I 112 | 50W | No | 5 | | | |
| I 113 | 70W | No | 5 | | | |
| I 114 | 100W | No | 5 | | | |
| I 115 | 150W | No | 5 | | | |
| I 116 | 250W | No | 5 | | | |
| I 117 | 400W | No | 5 | | | |
| I 118 | 1000W | No | 5 | | | |
| | ELLIPTICAL COATED SINGLE SIDED | | | | | |
| I 119 | 50W | No | 5 | | | |
| I 120 | 70W | No | 5 | | | |
| I 121 | 100W | No | 5 | | | |
| I 122 | 150W | No | 5 | | | |
| I 123 | 250W | No | 5 | | | |
| I 124 | 400W | No | 5 | | | |
| I 125 | 1000W | No | 5 | | | |
| | Carried to Collection Page 57 EE | | | | | |

| | Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|---|------|---|---------|-----|-----------------------|--------------|--------|
| | | METAL HALIDE | | | | | |
| | | CERAMIC METAL HALIDE: | | | | | |
| | | SINGLE ENDED TUBULAR (CLEAR): HCI-T | | | | | |
| I | 126 | 35W | No | 5 | | | |
| I | 127 | 70W | No | 5 | | | |
| I | 128 | 100W | No | 5 | | | |
| I | 129 | 150W | No | 5 | | | |
| | | SINGLE ENDED TUBULAR (CLEAR): HCI-TC | | | | | |
| I | 130 | 20W | No | 5 | | | |
| I | 131 | 35W | No | 5 | | | |
| I | 132 | 70W | No | 5 | | | |
| | | SINGLE ENDED TUBULAR (CLEAR): HCI-TF | | | | | |
| I | 133 | 20W | No | 5 | | | |
| I | 134 | 35W | No | 5 | | | |
| | | DOUBLE ENDED TUBULAR (CLEAR): HCI-TS | | | | | |
| I | 135 | 70W | No | 5 | | | |
| I | 136 | 150W | No | 5 | | | |
| I | 137 | 250W | No | 5 | | | |
| | | QUARTZ METAL HALIDE | | | | | |
| | | SINGLE ENDED TUBULAR (CLEAR): HQI-T | | | | | |
| I | 138 | 250W | No | 5 | | | |
| I | 139 | 450W | No | 5 | | | |
| I | 140 | 1000W | No | 5 | | | |
| | | SINGLE ENDED ELLIPTICAL COATED: HQI-E | | | | | |
| I | 141 | 70W | No | 5 | | | |
| I | 142 | 100W | No | 5 | | | |
| I | 143 | 150W | No | 5 | | | |
| I | 144 | 250W | No | 5 | | | |
| I | 145 | 400W | No | 5 | | | |
| | | DOUBLE ENDED TUBULAR CLEAR: HQI-TS | | | | | |
| I | 146 | 1000W | No | 5 | | | |
| I | 147 | 2000W, short arc | No | 5 | | | |
| I | 148 | 2000W, long arc | No | 5 | | | |
| I | 149 | To hire a Cherry picker to reach a minimum of 15m in height | per day | 5 | | | |
| I | 150 | To erect scaffolding to a minimum height of 10m | per day | 5 | | | |
| | | T8 TL-D LOW-PRESSURE MERCURY DISCHARGE LAMPS | | | | | |
| | | WITH A TUBULAR 26mm ENVELOPE, G13 CAP BASE | | | | | |
| I | 151 | 18W - 6200K, Cool Daylight | No | 1 | | | |
| I | 152 | 36W - 6200K, Cool Daylight | No | 1 | | | |
| I | 153 | 56W - 6200K, Cool Daylight | No | 1 | | | |
| | | T5 TL-D LOW-PRESSURE MERCURY DISCHARGE LAMPS | | | | | |
| | | WITH A TUBULAR 26mm ENVELOPE, G13 CAP BASE | | | | | |
| I | 154 | 18W - 6200K, Cool Daylight | No | 1 | | | |
| I | 155 | 36W - 6200K, Cool Daylight | No | 1 | | | |
| I | 156 | 56W - 6200K, Cool Daylight | No | 1 | | | |
| | | Carried to Collection Page 57 EE | | | | | |

| Item | Description | | | | | Amount |
|------|---|--|--|--|--|--------|
| | ELECTRICAL WORKS BILL OF QUANTITIES: BILL NO 9 OF 19 COLLECTION PAGE LAMPS Page 49 EE Page 50 EE Page 51 EE Page 52 EE Page 53 EE Page 54 EE Page 55 EE Page 56 EE | | | | | |
| | TOTAL CARRIED TO BILL SUMMARY Page 92 EE | | | | | |

| Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|------|---|------|-----|-----------------------|--------------|--------|
| J | ELECTRICAL WORKS BILL OF QUANTITIES: BILL NO 10 OF 19 LUMINAIRE ACCESSORIES LIGHT POLES GALVANISED STEEL POLES: Body: Galvanised steel Mounting: Plinth Mounted or buried Finish: Raw Accessories: Access door complete with circuit breaker, gland plate, wiring, etc. Features: Tapered reduction or a flat reduction SANS: Manufactured from Grade S 355 steel in accordance5 to SANS 657/1&3. Hot Dipped galvanised in accordance to SANS 121 Colour: Matt Silver All poles shall be complete with all necessary fittings, fixtures and accessories required for the works. All poles are to be in accordance to the Ethekwini Municipality specification The poles shall be as per Regent Lighting or equal approved. | | | | | |
| | STRAIGHT POLE | | | | | |
| | 1 Straight, 6m TL | No | 5 | | | |
| | STEPPED 1 REDUCTION | | | | | |
| | 2 Stepped 1, 6m TL | No | 5 | | | |
| | 3 Stepped 1, 8m TL | No | 5 | | | |
| | 4 Stepped 1, 9.2m TL | No | 5 | | | |
| | STEPPED 2 REDUCTION | | | | | |
| | 5 Stepped 2, 8.2m TL | No | 5 | | | |
| | 6 Stepped 2, 9.2m TL | No | 5 | | | |
| | WOODEN POLES CCA POLES: LEVEL H4 Copper chromium arsenic treated wooden pole, Level H4, SANS approved. The poles shall be suitable for transmission and lighting purposes and in accordance with the Ethekwini Municipality specifications. All poles shall be complete with all necessary fittings, fixtures and | | | | | |
| | Carried to Collection Page 61 EE | | | | | |

| Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|------|--|------|-----|-----------------------|--------------|--------|
| | accessories required for the works. | | | | | |
| J 7 | 6m pole | No | 5 | | | |
| J 8 | 7m pole | No | 5 | | | |
| J 9 | 8m pole | No | 5 | | | |
| J 10 | 9m pole | No | 5 | | | |
| | LUMINAIRE COMPONENTS | | | | | |
| | The luminaire components shall be as per Osram or equal approved | | | | | |
| | STARTERS | | | | | |
| J 11 | ST 111, Longlife (4...65W;80W) | No | 5 | | | |
| J 12 | ST 151, Longlife(4...22W) | No | 5 | | | |
| J 13 | DEOS ST 171 SAFETY, (36...65W) | No | 5 | | | |
| J 14 | DEOS ST 172 SAFETY, (18...22W) | No | 5 | | | |
| J 15 | DEOS ST 173 SAFETY, (15...32W) | No | 5 | | | |
| | TRANSFORMERS | | | | | |
| J 16 | ET PARROT low voltage halogen lamps | No | 5 | | | |
| | CONTROL GEAR | | | | | |
| | ELECTRONIC | | | | | |
| | FLUORESCENT | | | | | |
| J 17 | Quicktronic, (28 to 80W), T5 & T8 | No | 10 | | | |
| J 18 | Quicktronic, Dimmable: T8 | No | 10 | | | |
| J 19 | Quicktronic, Multiwatt: CFL | No | 10 | | | |
| J 20 | Quicktronic, Economic: CFL | No | 10 | | | |
| | LAMP HOLDERS | | | | | |
| J 21 | RS Lampholder | No | 5 | | | |
| J 22 | ES Lampholder | No | 5 | | | |
| J 23 | BC Lampholder | No | 5 | | | |
| J 24 | Fluorescent fitting Lampholder | No | 5 | | | |
| J 25 | 400W HPS Lampholder | No | 5 | | | |
| J 26 | Brass Lampholder, ES or BC | No | 5 | | | |
| | Carried to Collection Page 61 EE | | | | | |

| Item | Description | | | | | Amount |
|------|--|--|--|--|--|--------|
| | ELECTRICAL WORKS BILL OF QUANTITIES: BILL NO 10 OF 19 COLLECTION PAGE LUMINAIRE ACCESSORIES Page 58 EE Page 59 EE Page 60 EE | | | | | |
| | LUMINAIRE ACCESSORIES | | | | | |
| | TOTAL CARRIED TO BILL SUMMARY Page 92 EE | | | | | |

| | Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|---|------|--|------|-----|-----------------------|--------------|--------|
| | | | | | | | |
| K | | ELECTRICAL WORKS BILL OF QUANTITIES: BILL NO 11 OF 19 LIGHT SWITCHES STEEL COVER TYPE All switches shall be suitable for mounting in 100 x 50 x 50mm boxes and shall comply with SANS 1663 and shall bear the SANS mark. The light switches shall be rated 16A, 250V. The light switches shall be complete with a white switch/s on yoke, SS screws and WHITE STEEL coverplates(SANS 1084). The light switch shall include all necessary accessories to complete the works. The light switch shall be installed into existing extension boxes or into new galvanised steel boxes. The galvanised steel boxes are measured elsewhere. The light switches shall be as per Crabtree, Classic Range or equal approved. | | | | | |
| K | 1 | 16A, Single lever one way | No | 20 | | | |
| K | 2 | 16A, Two lever one way | No | 20 | | | |
| K | 3 | 16A, Three lever one way | No | 20 | | | |
| K | 4 | 16A, Four lever one way | No | 10 | | | |
| K | 5 | 16A, Five lever one way | No | 5 | | | |
| K | 6 | 16A, Six lever one way | No | 5 | | | |
| K | 7 | 16A, One lever one way with dimmer | No | 5 | | | |
| K | 8 | 16A, Two lever one way with dimmer | No | 5 | | | |
| K | 9 | 16A, One lever two way | No | 10 | | | |
| | | All switches shall be suitable for mounting in 100 x 50 x 50mm boxes and shall comply with SANS 1663 and shall bear the SANS mark. The light switches shall be rated 16A, 250V. The light switches shall be complete with a white switch/s on yoke, SS screws and WHITE PLASTIC coverplates(SANS 1084). The light switch shall include all necessary accessories to complete the works. The light switch shall be installed into existing extension boxes or into new galvanised steel boxes. The galvanised steel boxes are measured elsewhere. The light switches shall be as per Crabtree, Classic Range or equal approved. | | | | | |
| K | 10 | 16A, Single lever one way | No | 20 | | | |
| K | 11 | 16A, Two lever one way | No | 20 | | | |
| K | 12 | 16A, Three lever one way | No | 20 | | | |
| K | 13 | 16A, Four lever one way | No | 10 | | | |
| K | 14 | 16A, Five lever one way | No | 5 | | | |
| K | 15 | 16A, Six lever one way | No | 5 | | | |
| K | 16 | 16A, One lever one way with dimmer | No | 5 | | | |
| K | 17 | 16A, Two lever one way with dimmer | No | 5 | | | |
| K | 18 | 16A, One lever two way | No | 10 | | | |
| | | Carried to Collection Page 64 EE | | | | | |

| Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|------|---|------|-----|-----------------------|--------------|--------|
| | INDUSTRIAL LIGHT SWITCHES All switches shall be suitable for mounting in 75 x 75mm boxes and shall comply with SANS 1663 and shall bear the SANS mark. The light switches shall be rated 16A, 250V. The light switches shall be complete with a white switch/s on yoke and steel coverplates(White or Orange)(SANS 1084). The light switch shall include all necessary accessories to complete the works. The light switch shall be installed into existing extension boxes or into new galvanised steel boxes. The galvanised steel boxes are measured elsewhere. The light switches shall be as per Crabtree, Classic Range or equal approved. | | | | | |
| K | 19 16A, Single lever one way | No | 5 | | | |
| K | 20 16A, Two lever one way | No | 5 | | | |
| K | 21 16A, Three lever one way | No | 5 | | | |
| K | 22 16A, Three lever two way | No | 5 | | | |
| | INDUSTRIAL WATER PROOF LIGHT SWITCHES All switches shall be suitable for mounting in 119 x 83mm weatherproof surface boxes and shall comply with SANS 1663 and shall bear the SANS mark. The light switches shall be rated 16A, 250V. The light switches shall be complete with a white switch/s on yoke and coverplates(White or Orange)(SANS 1084). The light switch shall include all necessary accessories to complete the works. The light switch shall be installed complete with new extension boxes The light switches shall be as per Crabtree, Classic Range or equal approved. | | | | | |
| | STEEL TYPE | | | | | |
| K | 23 16A, Single lever one way | No | 5 | | | |
| K | 24 16A, Two lever one way | No | 5 | | | |
| K | 25 16A, Three lever one way | No | 5 | | | |
| K | 26 Limit Switches | No | 5 | | | |
| | PLASTIC TYPE | | | | | |
| K | 27 16A, Single lever one way | No | 10 | | | |
| K | 28 16A, Two lever one way | No | 10 | | | |
| K | 29 16A, Three lever one way | No | 10 | | | |
| | Carried to Collection Page 64 EE | | | | | |

| Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|------|--|------|-----|-----------------------|--------------|--------|
| | WIRELESS LIGHT SWITCHES All switches shall be suitable for mounting in 75 x 75mm boxes and shall comply with SANS 1663 and shall bear the SANS mark. The light switches shall be rated 5A, 220V. The wireless light switch shall include all necessary accessories to complete the works. (Batteries, etc) The wireless light switches shall be as per QwikSwitch or equal approved. | | | | | |
| K 30 | Receiver and relay. Max load 5A. Device is controllable from the WiFi Bridge remotely. Input and output supply at 220Vac, 50Hz. Radio frequency 868MHz. 30m Range through walls and floors, 100m line of site | No | 5 | | | |
| K 31 | 2 button wireless transmitter. Input supply 1 x CR2032 Battery to be included. From factor moulded casing 80mm (w) x 123mm (L) x 10mm (H) Radio frequency 868MHz. 30m Range through walls and floors, 100m line of site | No | 5 | | | |
| | Carried to Collection Page 64 EE | | | | | |

| Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|------|--|------|-----|-----------------------|--------------|--------|
| | <p>ELECTRICAL WORKS</p> <p>BILL OF QUANTITIES: BILL NO 11 OF 19</p> <p>COLLECTION PAGE</p> <p>LIGHT SWITCHES</p> <p>Page 62 EE</p> <p>Page 63 EE</p> | | | | | |
| | LIGHT SWITCHES: | | | | | |
| | TOTAL CARRIED TO BILL SUMMARY Page 92 EE | | | | | |

| | Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|---|------|--|------|-----|-----------------------|--------------|--------|
| L | | ELECTRICAL WORKS BILL OF QUANTITIES: BILL NO 12 OF 19 POWERSKIRTING, OUTLETS & ACCESSORIES PVC TYPE Supply, deliver and install PVC type powerskirting installed surface on wall surface, bricking, concrete, desktop,etc. The powerskirting shall be suitable for low voltage(600/1000V) conductors and 16A, 250V switched socket outlets well as for . telecommunication, data and power points. The powerskirting shall be supplied complete with all covers, necessary bends, elbows, corner pieces, tees, droppers, end caps and all other necessary fittings, fixtures and accessories required for the works. All outlets(sso), telephone, data, power, etc shall also be installed complete with covers, cradles, yokes, etc to complete the works. The powerskirting shall be as Legrand (Colour White) or equal approved. All outlets shall also be of the Legrand range or equal approved and compatible with the powerskirting. POWERSKIRTING | | | | | |
| L | 1 | Two Compartment with cover and accessories, etc | m | 100 | | | |
| L | 2 | Three Compartment with cover and accessories, etc | m | 50 | | | |
| | | POWERSKIRTING OUTLETS | | | | | |
| L | 3 | 16A, Single switched socket outlet - Normal - White | No | 100 | | | |
| L | 4 | 16A, Single switched socket outlet - Dedicated - RED | No | 100 | | | |
| L | 5 | 16A, Single switched socket outlet - UPS - Blue | No | 100 | | | |
| L | 6 | RJ11 Telephone outlets | No | 100 | | | |
| L | 7 | RJ45 Data outlets | No | 100 | | | |
| L | 8 | Blank Outlets | No | 100 | | | |
| | | ACCESSORIES | | | | | |
| | | The following accessories are to be supplied, delivered and installed for existing powerskirting that require damaged, missing or replacements. These items however will form part of the costing per m length of new powerskirting systems and as such will not be paid for separately with the exception of the internal divider. | | | | | |
| L | 9 | Elbows | Item | 60 | | | |
| L | 10 | Internal/External bends | Item | 60 | | | |
| L | 11 | End Caps | Item | 100 | | | |
| L | 12 | Internal divider | m | 50 | | | |
| | | POWERSKIRTING, OUTLETS & ACCESSORIES | | | | | |
| | | TOTAL CARRIED TO BILL SUMMARY Page 92 EE | | | | | |

| | Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|---|------|---|------|-----|-----------------------|--------------|--------|
| | | | | | | | |
| M | | ELECTRICAL WORKS BILL OF QUANTITIES: BILL NO 13 OF 19 SWITCHED SOCKET OUTLETS, ENCLOSURES & ACCESSORIES STEEL COVER TYPE All switches shall be suitable for mounting in 100 x 100 x 50mm boxes and shall comply with SANS 164 and shall bear the SANS mark. The switches shall be rated 16A, 250V. The switches shall be complete with a white switch/s on yoke, SS screws and WHITE STEEL coverplates(SANS 1084). The switch shall include all necessary accessories to complete the works. The switch shall be installed into existing extension boxes or into new galvanised steel boxes. The galvanised steel boxes are measured elsewhere. The switches shall be as per Crabtree, Classic Range or equal approved. | | | | | |
| M | 1 | 16A, Single switched socket outlet | No | 100 | | | |
| M | 2 | 16A, Double switched socket outlet | No | 100 | | | |
| M | 3 | 16A, Single switched socket outlet - Dedicated - RED | No | 100 | | | |
| | | Switched socket outlet on 100 x 50 x 50mm extension boxes | | | | | |
| M | 4 | 16A, Single switched socket outlet | No | 50 | | | |
| M | 5 | 16A, Single switched socket outlet - Dedicated - RED | No | 50 | | | |
| | | PLASTIC COVER TYPE All switches shall be suitable for mounting in 100 x 50 x 50mm boxes and shall comply with SANS 1664 and shall bear the SANS mark. The switches shall be rated 16A, 250V. The switches shall be complete with a white switch/s on yoke, SS screws and WHITE PLASTIC coverplates. The switches shall include all necessary accessories to complete the works. The switches shall be installed into existing extension boxes or into new galvanised steel boxes. The galvanised steel boxes are measured elsewhere. The light switches shall be as per Crabtree, Classic Range or equal approved. | | | | | |
| | | Carried to Collection Page 72 EE | | | | | |

| | Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|---|------|--|------|-----|-----------------------|--------------|--------|
| M | 6 | 16A, Single switched socket outlet | No | 100 | | | |
| M | 7 | 16A, Double switched socket outlet | No | 100 | | | |
| M | 8 | 16A, Single switched socket outlet - Dedicated - RED | No | 100 | | | |
| M | 9 | 16A, VETi 2 Double RSA & Double RSA V-Slim Socket Outlet - White | No | 100 | | | |
| M | 10 | 16A, VETi 2 Switched Socket with Single RSA & 3 x RSA V-Slim - White | No | 100 | | | |
| | | Switched socket outlet on 100 x 50 x 50mm extension boxes | | | | | |
| M | 11 | 16A, Single switched socket outlet | No | 50 | | | |
| M | 12 | 16A, Single switched socket outlet - Dedicated - RED | No | 50 | | | |
| | | INDUSTRIAL SWITCHED SOCKET OUTLETS | | | | | |
| | | All switches shall be suitable for mounting in 119 x 83mm boxes and shall comply with SANS 1664 and shall bear the SANS mark. The switches shall be rated 16A, 250V. | | | | | |
| | | The switches shall be complete with a white switch/s on yoke and steel coverplates(White or Orange). | | | | | |
| | | The switch shall include all necessary accessories to complete the works. | | | | | |
| | | The switches shall be installed complete with extension boxes. | | | | | |
| | | The switches shall be as per Crabtree, Classic Range or equal approved. | | | | | |
| | | STEEL TYPE | | | | | |
| M | 13 | 16A, Single switched socket outlet | No | 10 | | | |
| M | 14 | 16A, Double switched socket outlet | No | 10 | | | |
| | | INDUSTRIAL WATER PROOF LIGHT SWITCHES | | | | | |
| | | All switches shall be suitable for mounting in 119 x 83mm weatherproof surface boxes and shall comply with SANS 1664 and shall bear the SANS mark. | | | | | |
| | | The switches shall be rated 16A, 250V. | | | | | |
| | | The switches shall be complete with a white switch/s on yoke and coverplates(White or Orange). | | | | | |
| | | The switch shall include all necessary accessories to complete the works. | | | | | |
| | | The switches shall be installed complete with extension boxes. | | | | | |
| | | The light switches shall be as per Crabtree, Classic Range or equal approved. | | | | | |
| | | Carried to Collection Page 72 EE | | | | | |

| | Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|---|------|---|------|-----|-----------------------|--------------|--------|
| M | 15 | STEEL TYPE 16A, Single switched socket outlet | No | 5 | | | |
| M | 16 | PLASTIC TYPE 16A, Single switched socket outlet | No | 5 | | | |
| M | 17 | General Snapper - FBLP 31 - 8 way multiplug(4 x 16A, 4 x 5A, 0.5m cord) with surge protection | No | 5 | | | |
| M | 18 | 5A plugtops | No | 50 | | | |
| M | 19 | 16A plugtops - White | No | 50 | | | |
| M | 20 | 16A plugtops - Red | No | 50 | | | |
| M | 21 | 16A plugtops - Blue | No | 5 | | | |
| M | 22 | GENERAL INDUSTRIAL SWITCHED SOCKET OUTLETS AND PLUG TOPS According to SANS / IEC 60309-1+2, 1999 PLUGS AND SOCKETS The units shall bear the SABS authorisation mark CEE ROUND TYPE PLUGS & SOCKETS: MOULDED The outlets shall be as per Powermite or equal approved. Ref Code: A3001: 250V, 32A, IP67 switched socket outlet | No | 5 | | | |
| M | 23 | Ref Code: A0138: 250V, 32A, IP67 moulded plugtop | No | 5 | | | |
| M | 24 | Ref Code: A3002: 400V, 16A, 4 PIN, IP67 switched socket outlet | No | 5 | | | |
| M | 25 | Ref Code: A0140: 400V, 16A, 4 PIN, IP67 moulded plugtop | No | 5 | | | |
| M | 26 | Ref Code: A3009: 400V, 32A, 5 PIN, IP67 switched socket outlet | No | 5 | | | |
| M | 27 | Ref Code: A0135: 400V, 32A, 5 PIN, IP67 moulded plugtop | No | 5 | | | |
| M | 28 | Ref Code: A3102: 400V, 63A, 5 PIN, IP67 switched socket outlet | No | 5 | | | |
| M | 29 | Ref Code: A0134: 400V, 63A, 5 PIN, IP67 moulded plugtop | No | 5 | | | |
| M | 30 | EXTENSION BOXES All extension boxes shall be of the galvanised steel type and shall be of 1mm thickness. The boxes shall be suitable for standard switches(lights and plugs) application. The boxes shall be in accordance with SANS 1085 and the plates with SANS 1084 100 x 100 x 50mm | No | 100 | | | |
| M | 31 | 100 x 50 x 50mm | No | 100 | | | |
| | | Carried to Collection Page 72 EE | | | | | |

| Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|------|---|------|-----|-----------------------|--------------|--------|
| | EXTENSION BOXES All PVC extension boxes shall be suitable for standard switches (lights and plugs) application. The boxes shall be in accordance with SANS 1085 and the plates with SANS 1084 The boxes shall be of ALLBRO type or equal approved. | | | | | |
| M 32 | Ref Code: 04 - 788: Box: H62 x W107 x D51mm | No | 5 | | | |
| M 33 | Ref Code: 04 - 789: Box: H109 x W108 x D51mm | No | 5 | | | |
| | BLANK COVER PLATES - WHITE STEEL TYPE | | | | | |
| M 34 | 100 x 100 x 50mm | No | 100 | | | |
| M 35 | 100 x 50 x 50mm | No | 100 | | | |
| | PLASTIC TYPE | | | | | |
| M 36 | 100 x 100 x 50mm | No | 100 | | | |
| M 37 | 100 x 50 x 50mm | No | 100 | | | |
| | ELECTRICAL YORK BOXES The electrical york(installation enclosure) boxes shall be of the outdoor weatherproof socket outlet enclosure type. The box shall be suitable for surface or semi-flush installation. The box is to have a sliding lid which is capable of being closed while the plug is in the socket. The box shall be constructed of polyester material(DMC). The boxes shall be of ABB/ALLBRO type or equal approved. | | | | | |
| M 38 | 100 x 100mm type box | No | 5 | | | |
| M 39 | 100 x 50mm type box | No | 5 | | | |
| | ELECTRICAL METER BOXES: YORK TYPE SINGLE PHASE - SMB The electrical meter york(installation enclosure) boxes shall be of the outdoor weatherproof single kwh meter enclosure type. The box shall be suitable for standard kWh meter. The mounting shall be, surface or semi-flush installation. It shall have square or triangular securing screw and a stand off for circuit breaker , a circuit breaker reset rod and pole mount brackets. ,Material - Polyester (DMC) The boxes shall be of ABB/ALLBRO type or equal approved. | | | | | |
| M 40 | Single Phase Meter Box - SMB | No | 5 | | | |
| | Carried to Collection Page 72 EE | | | | | |

| Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|------|--|------|-----|-----------------------|--------------|--------|
| | THREE PHASE - DMB The electrical meter yolk(installation enclosure) boxes shall be of the outdoor weatherproof to house 3 x single phase kwh. The box shall be suitable for standard kWh meters. The meter box mounting shall be on a baseplate. The mounting shall be, surface or semi-flush installation. The meter box shall have meter reading window. It shall have square or triangular securing screw and a stand off for circuit breaker , a circuit breaker reset rod and pole mount brackets and circuit breaker mounting facility. Material - Polyester (DMC) The boxes shall be of ABB/ALLBRO type or equal approved. | | | | | |
| M | 41 Three phase Meter Box - DMB | No | 5 | | | |
| | SWITCH DISCONNECTOR - ISOLATOR - BOXES The isolator housing box shall be weatherproof with pad lockable facility. The box shall have isolator mounting screws. Material - Polyester (DMC) The boxes shall be of ABB/ALLBRO type or equal approved. | | | | | |
| M | 42 Isolator housing box enclosure | No | 5 | | | |
| | INSTALLATION ENCLOSURES INDUSTRIAL: WEATHERTIGHT BOXES Industrial general purpose weatherproof enclosures. The box shall be suitable for surface or semi-flush installation. The box is to have a sliding lid which is capable of being closed while the plug/cable is in the socket. To include a Device plate in DMC and pole mount brackets. Material - Polyester (DMC) The boxes shall be of ABB/ALLBRO type or equal approved. | | | | | |
| M | 43 J1 Range | No | 5 | | | |
| M | 44 J2 Range | No | 5 | | | |
| M | 45 J3 Range | No | 5 | | | |
| M | 46 J4 Range | No | 5 | | | |
| | | | | | | |
| | Carried to Collection Page 72 EE | | | | | |

| Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|------|---|------|-----|-----------------------|--------------|--------|
| | GENERAL: WEATHERTIGHT BOXES General purpose weatherproof connection/enclosures. The box shall be suitable for surface or semi-flush installation. The box is to have a sliding lid which is capable of being closed while the plug/cable is in the socket. To include a Device plate in DMC and pole mount brackets. Housing Material - Polyester (DMC) The boxes shall be of ABB/ALLBRO type or equal approved. | | | | | |
| M 47 | U2 Range | No | 5 | | | |
| M 48 | U3 Range | No | 5 | | | |
| M 49 | U4 Range | No | 5 | | | |
| M 50 | U5 Range | No | 5 | | | |
| M 51 | U6 Range | No | 5 | | | |
| M 52 | U7 Range | No | 5 | | | |
| M 53 | U8 Range | No | 5 | | | |
| | GENERAL: WEATHERTIGHT BOXES General purpose weatherproof connection/enclosures. The box shall be suitable for surface or semi-flush installation. The box is to have a sliding lid which is capable of being closed while the plug/cable is in the socket. To include a Device plate in CHIPBOARD and pole mount brackets. Housing Material - Polyester (DMC) The boxes shall be of ABB/ALLBRO type or equal approved. | | | | | |
| M 54 | U2 Range | No | 5 | | | |
| M 55 | U3 Range | No | 5 | | | |
| M 56 | U4 Range | No | 5 | | | |
| M 57 | U5 Range | No | 5 | | | |
| M 58 | U6 Range | No | 5 | | | |
| M 59 | U7 Range | No | 5 | | | |
| M 60 | U8 Range | No | 5 | | | |
| | | | | | | |
| | Carried to Collection Page 72 EE | | | | | |

| | Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|---|------|--|------|-----|-----------------------|--------------|--------|
| | | | | | | | |
| N | | ELECTRICAL WORKS | | | | | |
| | | BILL OF QUANTITIES: BILL NO 14 OF 19 | | | | | |
| | | GEYSER SPARES & ACCESSORIES | | | | | |
| | | Supply, deliver and install domestic geyser spares and accessories. | | | | | |
| | | The units shall be suitable for application at 250V, 50Hz and shall bear the SANS safety mark and in accordance with SANS 10254 Geyser Installation Specifications. | | | | | |
| | | The works shall include for the isolation, disconnection & removal of the existing equipment and replacement with the new equipment. It shall also include the disconnection and reconnection of the geyser. | | | | | |
| | | The equipment shall include all necessary fittings, fixtures and accessories to complete the works. | | | | | |
| | | The equipment shall be as per Kwikot or equal approved. | | | | | |
| | | SINGLE PHASE | | | | | |
| | 1 | 2kW spiral element with thermostat pocket | No | 10 | | | |
| N | 2 | 3kW spiral element with thermostat pocket | No | 10 | | | |
| N | 3 | 4kW spiral element with thermostat pocket | No | 10 | | | |
| N | 4 | Thermostat 20A | No | 20 | | | |
| N | 5 | 2kW Industrial Immersion element with thermostat pocket | No | 10 | | | |
| N | 6 | 3kW Industrial Immersion element with thermostat pocket | No | 10 | | | |
| N | 7 | 4kW Industrial Immersion element with thermostat pocket | No | 10 | | | |
| N | | THREE PHASE | | | | | |
| | 8 | 6kW element | No | 10 | | | |
| N | | GENERAL | | | | | |
| | 9 | Geyser Gasket | No | 10 | | | |
| | | GEYSER SPARES & ACCESSORIES | | | | | |
| | | TOTAL CARRIED TO BILL SUMMARY Page 92 EE | | | | | |

| | Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|---|------|---|------|-----|-----------------------|--------------|--------|
| O | | ELECTRICAL WORKS | | | | | |
| | | BILL OF QUANTITIES: BILL NO 15 OF 19 | | | | | |
| | | HYDROBOILS | | | | | |
| | | Supply, deliver and install wall mounted hydroboils. | | | | | |
| | | The units shall be suitable for application at 250V, 50Hz and shall bear the SANS safety mark. | | | | | |
| | | The units shall be fully automatic, energy efficient, electronic controls, provide instant boiling water, designed to operate within 3°C of boiling point with thermal temperature control, energy conserving tap, two way tap control, steam free, white epoxy coated, concealed plumbing and electrical connections and a flexible 2m electrical cord with plugtop. | | | | | |
| | | The equipment shall include all necessary fittings, fixtures and accessories to complete the works. | | | | | |
| | | The hydroboils shall be as per Franke or equal approved | | | | | |
| | 1 | 2.5 litre white epoxy hydroboil | No | 1 | | | |
| | 2 | 5 litre white epoxy hydroboil | No | 5 | | | |
| | 3 | 7.5 litre white epoxy hydroboil | No | 1 | | | |
| | 4 | 10 litre white epoxy hydroboil | No | 1 | | | |
| | 5 | 15 litre white epoxy hydroboil | No | 1 | | | |
| | 6 | 25 litre white epoxy hydroboil | No | 1 | | | |
| | | The hydroboils shall be as per Kwikot or equal approved | | | | | |
| | 7 | 2.5 litre white epoxy hydroboil | No | 1 | | | |
| | 8 | 5 litre white epoxy hydroboil | No | 5 | | | |
| | 9 | 7.5 litre white epoxy hydroboil | No | 1 | | | |
| | 10 | 10 litre white epoxy hydroboil | No | 1 | | | |
| | 11 | 15 litre white epoxy hydroboil | No | 1 | | | |
| | 12 | 25 litre white epoxy hydroboil | No | 1 | | | |
| | | HYDROBOILS | | | | | |
| | | TOTAL CARRIED TO BILL SUMMARY Page 92 EE | | | | | |

| Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|------|--|------|-----|-----------------------|--------------|--------|
| P | ELECTRICAL WORKS BILL OF QUANTITIES: BILL NO 16 OF 19 FANS, DRYERS & EXTRACTORS Supply, deliver and install industrial ceiling and wall fans, wall mounted extractor fans and industrial hand dryers. The units shall be suitable for application at 250V, 50Hz and shall bear the SANS safety mark. The equipment shall include all necessary fittings, fixtures and accessories to complete the works. CEILING FAN The unit shall be a 4 speed, 3 blade industrial ceiling fan with a diameter of 1200/1400mm and a 450mm long down rod. A steel shackle is to be fixed to the upper end of the down rod by means of a nut and bolt which is complete with resilient rubber bush and a 'U' shaped ceiling hook. Both upper and lower fixings on the down rod together with the electrical connections are to be concealed behind plastic canopies. It shall have a permanent capacitor motor with external squirrel cage rotor in a lightweight steel housing. The stator and rotor is to be constructed from high grade silicon steel lamination stampings. The unit shall be complete with surface mounted speed regulator complete with 2 inserts for light switches. The unit shall be as Luft or equal approved. | | | | | |
| | 1 1200mm (LCF48) ceiling fan complete with speed regulator | No | 10 | | | |
| | 2 1400mm (LCF56) ceiling fan complete with speed regulator | No | 10 | | | |
| | 3 4 speed (CF56) regulator | No | 10 | | | |
| | | | | | | |
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| | | | | | | |
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| | | | | | | |
| | | | | | | |
| | Carried to Collection Page 78 EE | | | | | |

| Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|----------------------------------|--|------|-----|-----------------------|--------------|--------|
| P | <p>WALL MOUNTED AIR CIRCULATORS (FAN)</p> <p>The unit shall be a 3 speed, 2 blade industrial wall fan with a diameter of 730mm. The unit shall be robust, reliable, efficient, adjustable height and oscillation, low noise and finished in dark grey paint.</p> <p>The unit shall be complete with a wall arm mounting bracket, fittings, fixtures and accessories for the works.</p> <p>At speed setting 3 the unit shall operate at 1400rpm, 2.95 volume m/sec, 56dBA and 200W.</p> <p>The unit shall be as Luft or equal approved.</p> | No | 10 | | | |
| | <p>4 Wall circulator(FB65) (fan)</p> <p>PROPELLER(EXTRACTOR) FAN</p> <p>The complete fan assembly is to be mounted on an octagonal pressed steel mounting plate.</p> <p>The impeller shall comprise of four heavy gauge pressed steel blades bolted to the die cast aluminium alloy hub, dynamically balanced after assembly.</p> <p>The unit shall have four rigid mild steel arms provided for the fixing of the motor and impeller to the mounting plate by way of special vibration absorbers. The unit shall have a side wire guard to prevent accidental contact and air borne objects from passing through the fan.</p> <p>The unit shall be IP54 rated with sealed for life ball bearings and class 'E' insulation to BS2613/1970.</p> <p>The unit shall be suitable for operation in ambient temperatures between -20°C and 40°C in relative humidity up to 95%.</p> <p>The unit shall be rated at 250V, 50Hz and supplied with a 1m electrical cord.</p> <p>The units, louvres and cowls shall be as Luft or equal approved.</p> | | | | | |
| | <p>5 300mm, (FAC30/4), 130W, 52dBA, Extractor Fan with guard</p> | | | | | |
| | <p>6 400mm, (FAC40/4), 200W, 62dBA, Extractor Fan with guard</p> | | | | | |
| P | <p>LOUVRE SHUTTER</p> <p>7 Louvre shutter for FAC30/4 Extractor Fan</p> | No | 5 | | | |
| | <p>8 Louvre shutter for FAC40/4 Extractor Fan</p> | No | 5 | | | |
| Carried to Collection Page 78 EE | | | | | | |

| Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|------|---|------|-----|-----------------------|--------------|--------|
| | ELECTRICAL WORKS BILL OF QUANTITIES: BILL NO 16 OF 19 COLLECTION FANS, DRYERS & EXTRACTORS Page 75 EE Page 76 EE Page 77 EE | | | | | |
| | FANS, DRYERS & EXTRACTORS | | | | | |
| | TOTAL CARRIED TO BILL SUMMARY Page 92 EE | | | | | |

| Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|------|---|------|-----|-----------------------|--------------|--------|
| | <p>HIGHBAY FLUORESCENT OCCUPANCY SENSOR</p> <p>Industrial T5 & T8 fixtures</p> <p>Supply, deliver and install ceiling mounted occupancy sensors.</p> <p>The units shall be suitable for application at 250V, 50Hz and be ETL, UL, cUL and Title 24 compliant.</p> <p>The units shall be digital passive infrared sensors with self adaptive technology.</p> <p>The unit shall be complete with a quick to install connector (QTI) and universal voltage power pack(UVP).</p> <p>The equipment shall include all necessary fittings, fixtures and accessories to complete the works.</p> <p>The units shall be as Hubbell Building Automation or equal approved.</p> <p>SINGLE OUTPUT VERSION(ON/OFF - OPTION)</p> | | | | | |
| Q 4 | <p>HBA: WASP: FHB141NPUNV with adpators, QTI and UVP</p> <p>DUAL OUTPUT VERSION</p> <p>(Step Dimming & Smart Cycling - OPTION)</p> | No | 5 | | | |
| Q 5 | <p>HBA: WASP: FHB142NPUNV with adpators, QTI and UVP</p> <p>Occupancy and Daylight Harvesting Sensor</p> | No | 5 | | | |
| Q 6 | <p>Sensors are ceiling/surface mount devices that provide a range of daylight harvesting features for Light Control System installations with finished ceilings (e.g. office ceiling board, tiles, sheetrock, plaster)</p> | No | 10 | | | |
| Q 7 | <p>High Bay Tridonic Sensors are ceiling/surface mount devices that provide a range of daylight harvesting features for Light Control System installations with finished ceilings (e.g. ceiling tiles, sheetrock, plaster)</p> | No | 5 | | | |
| | Carried to Collection Page 81 EE | | | | | |

| Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|------|---|------|-----|-----------------------|--------------|--------|
| | ELECTRICAL WORKS BILL OF QUANTITIES: BILL NO 17 OF 19 COLLECTION OCCUPANCY SENSORS Page 79 EE Page 80 EE | | | | | |
| | OCCUPANCY SENSORS | | | | | |
| | TOTAL CARRIED TO BILL SUMMARY Page 92 EE | | | | | |

| | Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|---|------|--|------|-----|-----------------------|--------------|--------|
| | | | | | | | |
| R | | ELECTRICAL WORKS BILL OF QUANTITIES: BILL NO 18 OF 19 LIGHTNING & SURGE PROTECTION Supply, deliver and install low voltage surge protection equipment and devices. The equipment shall include all necessary fittings, fixtures and accessories to complete the works. BARE COPPER EARTH CABLE Supply, deliver and install low voltage(600/1000V), bare, stranded, compacted, copper conductor cables. Checking of cable and overhead conductor lengths. The Contractor shall check such lengths on site before ordering the cable as he will not be paid for excess cable after the completion of the service. Any allowance for off-cuts shall be made in the unit rates. The final measurements shall be based on the net route length of cables concerned, installed in accordance with the requirements. However, the onus is on the Contractor to prove compliance with the specification. The cabling shall be installed either in excavations, cable trays, trunking, wireways, ground, sleeves, ducts, etc(measured elsewhere) and shall include all necessary fittings, fixtures and accessories required for the works. The cables shall be as per Abedare Cables or equal approved. | | | | | |
| R | 1 | 70mm ² Bare Copper earth conductor | m | 5 | | | |
| R | 2 | 70mm ² Insulated Copper earth conductor | m | 5 | | | |
| R | 3 | 150mm ² Bare Copper earth conductor | m | 5 | | | |
| R | 4 | 150mm ² Insulated Copper earth conductor | m | 5 | | | |
| | | EARTH ROD (Roof Conductor) Supply, deliver and install low voltage(600/1000V), copper clad, 16mm diameter, 1.8m earth rods, SABS approved. The rods shall be complete with all terminations, double nuts, washers, coupling, clamps, etc required for the works. | | | | | |
| R | 5 | 1.8m Copper Earth Rod | No | 5 | | | |
| R | 6 | Extensible copper earth electrodes into ground mech driving, incl cpl driv blt | No | 5 | | | |
| R | 7 | 50mm ² Aluminium roof conductor insulated on roof including Aluminium fixing accessories | No | 5 | | | |
| | | Carried to Collection Page 85 EE | | | | | |

| Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|------|--|------|-----|-----------------------|--------------|--------|
| | GENERAL ITEMS | | | | | |
| R 8 | Sealing of joints with Denso tapes | No | 5 | | | |
| | Joining of various round/flat copper conductors by means of bolting, brazing or exothermic bonds | | | | | |
| R 9 | Brass clamps termination to copper cable and to the top of the earth electrodes | No | 5 | | | |
| R 10 | Bonding of air termination conductor between, roof, gutters, etc | No | 5 | | | |
| R 11 | Bi-Metallic test joint between d/c system and earth | No | 5 | | | |
| R 12 | Re-inforcing brass bracket complete with galvanised steel wire, U bolt, brass terminal | No | 5 | | | |
| R 13 | Lightning protection points test in SIS Duo york box complete with PVC sliding lid, stainless steel screws and engraved cover. | No | 5 | | | |
| R 14 | Allow for visiting of the site and the carrying out of the required pre resistivity tests, risk assessments and the issuing of the test results and construction shop drawings to the Engineer prior to the works (earthing & lightning protection system) | Item | 5 | | | |
| R 15 | Allow for the testing of the completed system and the issue of a prescribed test certificate. | Item | 5 | | | |
| | SURGE ARRESTORS | | | | | |
| | Supply, deliver and install indoor surge arrestors in existing or new switchboards. | | | | | |
| | The units shall comply with SANS 61643 or VDE 0675. | | | | | |
| | The equipment shall include all necessary fittings, fixtures and accessories to complete the works. | | | | | |
| | The units shall be as Dehn or equal approved. | | | | | |
| | SINGLE PHASE | | | | | |
| | Combined SPDS TYPE 1: Type 1, Class 1 | | | | | |
| R 16 | Modular combined lightning current and surge arrestor | No | 5 | | | |
| | SINGLE PHASE | | | | | |
| | Combined SPDS TYPE 2: Type 2, Class 2 | | | | | |
| R 17 | Modular combined lightning current and surge arrestor | No | 5 | | | |
| | THREE PHASE | | | | | |
| | Combined SPDS TYPE 1: Type 1, Class 1 | | | | | |
| R 18 | Modular combined lightning current and surge arrestor | No | 5 | | | |
| | THREE PHASE | | | | | |
| | Combined SPDS TYPE 2: Type 2, Class 2 | | | | | |
| R 19 | Modular combined lightning current and surge arrestor | No | 5 | | | |
| | Carried to Collection Page 85 EE | | | | | |

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| Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|------|---|------|-----|-----------------------|--------------|--------|
| | <p>ELECTRICAL WORKS</p> <p>BILL OF QUANTITIES: BILL NO 18 OF 19</p> <p>COLLECTION</p> <p>LIGHTNING & SURGE PROTECTION</p> <p>Page 82 EE</p> <p>Page 83 EE</p> <p>Page 84 EE</p> | | | | | |
| | LIGHTNING & SURGE PROTECTION | | | | | |
| | TOTAL CARRIED TO BILL SUMMARY Page 92 EE | | | | | |

| | Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|---|------|--|------|-----|-----------------------|--------------|--------|
| | | | | | | | |
| S | | ELECTRICAL WORKS BILL OF QUANTITIES: BILL NO 19 OF 19 PHOTOVOLTAIC SYSTEMS Supply, deliver and install photovoltaics systems, including all accessories to complete the works in full compliance with applicable SABS or IEC and SANS standards. The technologies of the system must be market related. PV MODULES (inclusive of 25-year reliability and warranty) NB: Min +25 year performance warranty + 10 years equipment guarantee | | | | | |
| S | 1 | Canadian Solar SuperPower CS6K-305MS 305W Mono-crystalline Solar Panel with Integrated Compatible Power Optimizer, MC4 I/O connectors and all accessories inclusive or Equally Approved | ea | 1 | | | |
| S | 2 | Canadian Solar KuPower CS3K-320MS 320W Mono-crystalline Solar Panel with Integrated Compatible Power Optimizer, MC4 I/O connectors and all accessories inclusive or Equally Approved | ea | 1 | | | |
| S | 3 | Canadian Solar HiDM Black CS1H-320MS 320W Mono-crystalline Solar Panel with Integrated Compatible Power Optimizer, MC4 I/O connectors and all accessories inclusive or Equally Approved | ea | 1 | | | |
| S | 4 | Canadian Solar HiDM Black CS1H-325MS 325W Mono-crystalline Solar Panel with Integrated Compatible Power Optimizer, MC4 I/O connectors and all accessories inclusive or Equally Approved | ea | 1 | | | |
| S | 5 | Canadian Solar HiDM Black CS1H-330MS 330W Mono-crystalline Solar Panel with Integrated Compatible Power Optimizer, MC4 I/O connectors and all accessories inclusive or Equally Approved | ea | 1 | | | |
| S | 6 | Canadian Solar 330W Polycrystalline 72cells 35mm frame Polycrystalline Solar Panel with Integrated Compatible Power Optimizer, MC4 I/O connectors and all accessories inclusive or Equally Approved | ea | 1 | | | |
| S | 7 | Canadian Solar 265W Polycrystalline 60cells 40mm frame Polycrystalline Solar Panel with Integrated Compatible Power Optimizer, MC4 I/O connectors and all accessories inclusive or Equally Approved POWER OPTIMIZER NB: Min 25-year performance warranty + 10-years equipment guarantee (continue on next page) | ea | 1 | | | |
| | | Carried to Collection Page 91 EE | | | | | |

| | Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|---|------|---|------|-----|-----------------------|--------------|--------|
| S | 8 | Solaredge or equally approved UV Resistance Power Optimizer Module P300 (for 60-cell modules) including MC4 Input/Output Connectors and Double Insulated Wire | ea | 1 | | | |
| S | 9 | Solaredge or equally approved UV Resistance Power Optimizer Module P370 (for high power 60 / 72 cell modules) including MC4 Input/Output Connectors and Double Insulated Wire | ea | 1 | | | |
| S | 10 | Solaredge or equally approved UV Resistance Power Optimizer Module P404 (for 60 / 72 cell short strings) including MC4 Input/Output Connectors and Double Insulated Wire | ea | 1 | | | |
| S | 11 | Solaredge or equally approved UV Resistance Power Optimizer Module P730 (for 2x 72-cell modules) including MC4 Input/Output Connectors and Double Insulated Wire | ea | 1 | | | |
| | | INVERTORS (inclusive of 25-year reliability and warranty) | | | | | |
| S | 12 | Solaredge or equally approved Grid-Tied Three Phase SE10K 10kW String Inverter with Synergy Technology including Anti-Islanding Protection | ea | 1 | | | |
| S | 13 | Solaredge or equally approved Grid-Tied Three Phase SE33.3K 33.3kW String Inverter with Synergy Technology including Anti-Islanding Protection | ea | 1 | | | |
| S | 14 | Solaredge or equally approved Grid-Tied Three Phase SE50K 50kW String Inverter with Synergy Technology including Anti-Islanding Protection | ea | 1 | | | |
| S | 15 | Solaredge or equally approved Grid-Tied Three Phase SE60K 60kW String Inverter with Synergy Technology including Anti-Islanding Protection | ea | 1 | | | |
| S | 16 | Solaredge or equally approved Grid-Tied Three Phase SE82.5K 82.5kW String Inverter with Synergy Technology including Anti-Islanding Protection | ea | 1 | | | |
| S | 17 | Solaredge or equally approved Off-Grid Three Phase SE10K 10kW String Inverter with Synergy Technology including Protection | ea | 1 | | | |
| S | 18 | Solaredge or equally approved Off-Grid Three Phase SE33.3K 33.3kW String Inverter with Synergy Technology including Protection | ea | 1 | | | |
| S | 19 | Solaredge or equally approved Off-Grid Three Phase SE50K 50kW String Inverter with Synergy Technology including Protection | ea | 1 | | | |
| S | 20 | Solaredge or equally approved Off-Grid Three Phase SE60K 60kW String Inverter with Synergy Technology including Protection | ea | 1 | | | |
| S | 21 | Solaredge or equally approved Off-Grid Three Phase SE82.5K 82.5kW String Inverter with Synergy Technology including Protection | ea | 1 | | | |
| | | Carried to Collection Page 91 EE | | | | | |

| Item | Description | Unit | Qty | | | |
|---|---|------|-----|--|--|--|
| | MISCELENIUS | | | | | |
| | NB: Min 25-year performance warranty + 10-years equipment guarantee | | | | | |
| S 22 | SolarEdge Module temperature sensor (SE1000-SEN-TMOD-S2) or Equally approved | ea | 1 | | | |
| S 23 | SolarEdge Ambient temperature sensor (SE1000-SEN-TAMB-S2) or Equally approved | ea | 1 | | | |
| S 24 | SolarEdge Irradiance sensor (SE1000-SEN-IRR-S1) or Equally approved | ea | 1 | | | |
| S 25 | SolarEdge Wind sensor (SE1000-SEN-WIND-S1) or Equally approved | ea | 1 | | | |
| S 26 | ARTsolar 100Ah 12V GEL Deep-cycle Battery or Equally approved | ea | 1 | | | |
| S 27 | ARTsolar 200Ah 12V GEL Deep-cycle Battery or Equally approved | ea | 1 | | | |
| S 28 | SolarEdge StoreEdge Interface SEST1-S1 or Equally approved | ea | 1 | | | |
| S 29 | SolarEdge StoreEdge Interface SEST1-S2 or Equally approved | ea | 1 | | | |
| S 30 | SolarEdge StoreEdge Interface SEST1-S4 or Equally approved | ea | 1 | | | |
| S 31 | Victron Energy or Equally approved SmartSolar Charge Controllers with load output MPPT BlueSolar 150/85 | ea | 1 | | | |
| S 32 | Victron Energy or Equally approved SmartSolar Charge Controllers with load output EasySolar 12/1600/70 | ea | 1 | | | |
| S 33 | Victron Energy or Equally approved SmartSolar Charge Controllers with load output EasySolar 24/3000/70-50 MPPT 150/70 | ea | 1 | | | |
| S 34 | Victron Energy or Equally approved SmartSolar Charge Controllers with Controllers with load output EasySolar 48/5000/70-100 MPPT 150/100 | ea | 1 | | | |
| Carried to Collection Page 91 EE | | | | | | |

| Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|------|--|------|-----|-----------------------|--------------|--------|
| | CABLES Cable installation Incl U-clamps, tag numbers and cable straps. Supply deliver to site and store 1000/600 volt Cu/PVC/SWA/PVC/ECC cables. Install, rack, strap and testing of cables as per specification including clamps, ties and cable numbering system. Rates to include for wastage. Contractor will only be reimbursed for installed cable measured on site between terminations. Cable bonding of all Earth Continuity Conductors from the incoming and outgoing cables will be properly crimped into cable lugs and bolted to their respective earth bars. NB: All cables installed in outdoors environment shall be UV resistance and shall have MC4 Input/Output connectors | | | | | |
| S 35 | Lapp Ölflex Solar XLR 4mm² single core DC cable | ea | 1 | | | |
| S 36 | Lapp Ölflex Solar XLR 6mm² single core DC cable | m | 1 | | | |
| S 37 | Lapp Ölflex Solar XLR 10mm² single core DC cable | m | 1 | | | |
| S 38 | Lapp Ölflex Solar XLR 16mm² single core DC cable | m | 1 | | | |
| S 39 | LV AWA 25mm² PVC copper single core DC cable | m | 1 | | | |
| S 40 | LV AWA 35mm² PVC copper single core DC cable | m | 1 | | | |
| S 41 | 16mm² x 4 core copper PVC/SWA+ECC 600/1000V + 10mm² Earth Wire | m | 1 | | | |
| S 42 | 25mm² x 4 core copper PVC/SWA+ECC 600/1000V + 16mm² Earth Wire | m | 1 | | | |
| S 43 | 50mm² x 4 core copper PVC/SWA+ECC 600/1000V + 25mm² Earth Wire | m | 1 | | | |
| S 44 | 70mm² x 4 core copper PVC/SWA+ECC 600/1000V + 35mm² Earth Wire | m | 1 | | | |
| | Carried to Collection Page 91 EE | | | | | |

| Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|------|---|------|-----|-----------------------|--------------|--------|
| | TERMINATIONS Cable terminations & Joints - Incl glands, cable numbers, wire numbers, lugs. For PVC/SWA/PVC/ECC cables, shall include supply installation and testing of the IP 65 glands with corrosion guard, making -off the cable, gland plate, switchgear or appliance and final connection of cable tails into board or terminals. NB: All cables terminations installed in outdoor environment shall be UV resistance and shall have MC4 Input/Output connectors | | | | | |
| S 45 | Lapp Ölflex Solar XLR 4mm² single core DC cable | ea | 1 | | | |
| S 46 | Lapp Ölflex Solar XLR 6mm² single core DC cable | ea | 1 | | | |
| S 47 | Lapp Ölflex Solar XLR 10mm² single core DC cable | ea | 1 | | | |
| S 48 | Lapp Ölflex Solar XLR 16mm² single core DC cable | ea | 1 | | | |
| S 49 | LV AWA 25mm² PVC copper single core DC cable | ea | 1 | | | |
| S 50 | LV AWA 35mm² PVC copper single core DC cable | ea | 1 | | | |
| S 51 | 16mm² x 4 core copper PVC/SWA+ECC 600/1000V + 10mm² Earth Wire | ea | 1 | | | |
| S 52 | 25mm² x 4 core copper PVC/SWA+ECC 600/1000V + 16mm² Earth Wire | ea | 1 | | | |
| S 53 | 50mm² x 4 core copper PVC/SWA+ECC 600/1000V + 25mm² Earth Wire | ea | 1 | | | |
| S 54 | 70mm² x 4 core copper PVC/SWA+ECC 600/1000V + 35mm² Earth Wire | ea | 1 | | | |
| | TESTING, MONITORING and COMMISSIONING | | | | | |
| S 55 | Testing, Monitoring and Commission PV System to Remote Monitoring Software and Provide As-Built Maintenance Manuals and COC's in accordance to the applicable SANS for the complete installation | ea | 1 | | | |
| | Carried to Collection Page 91 EE | | | | | |

| Item | Description | Unit | Qty | Supply & Deliver Rate | Install Rate | Amount |
|------|--|------|-----|--------------------------|--------------|--------|
| | ELECTRICAL WORKS BILL OF QUANTITIES: BILL NO 19 OF 19 COLLECTION PHOTO-VOLTAIC SYSTEM Page 86 EE Page 87 EE Page 88 EE Page 89 EE Page 90 EE | | | | | |
| | PHOTOVOLTAIC SYSTEMS | | | | | |
| | TOTAL CARRIED TO BILL SUMMARY Page 92 EE | | | | | |

| | <u>Page</u> | <u>Description</u> | |
|---|-------------|---|---------------|
| | | <u>SCHEDULE OF RATES - BILL SUMMARY</u> | <u>Amount</u> |
| A | 1 | BILL NO 1: ARTISAN | |
| B | 2 | BILL NO 2: CERTIFICATE OF COMPLIANCE | |
| C | 13 | BILL NO 3: CIRCUIT BREAKERS, SWITCHGEAR, DIST. BOARD & ASSOCIATED EQUIPMENT | |
| D | 16 | BILL NO 4: CABLE TRENCHING | |
| E | 21 | BILL NO 5: CABLE RETICULATION | |
| F | 27 | BILL NO 6: WIREWAYS & ACCESSORIES | |
| G | 31 | BILL NO 7: WIRING | |
| H | 46 | BILL NO 8: LUMINAIRES | |
| I | 55 | BILL NO 9: LAMPS | |
| J | 62 | BILL NO 10: LUMINAIRE ACCESSORIES | |
| K | 62 | BILL NO 11: LIGHT SWITCHES | |
| L | 63 | BILL NO 12: POWERSKIRTING | |
| M | 70 | BILL NO 13: SWITCHED SOCKET OUTLETS, ENCLOSURES & ACCESSORIES | |
| N | 71 | BILL NO 14: GEYSER SPARES & ACCESSORIES | |
| O | 72 | BILL NO 15: HYDROBOIL | |
| P | 76 | BILL NO 16: FANS, DRYERS & ACCESSORIES | |
| Q | 79 | BILL NO 17: OCCUPANCY SENSORS | |
| R | 83 | BILL NO 18: LIGHTNING & SURGE PROTECTION | |
| S | 86 | BILL No 19: PHOTOVOLTAIC SYSTEMS | |
| | | TOTAL EXCLUDING VAT (CARRIED TO FINAL SUMMARY) | |
| | | 15% VAT | |
| | | TOTAL INCLUDING 15% VAT | |