

Carried Forward

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| <p style="text-align: right;">Brought Forward</p> <p>vii) The amount or the items of the Preliminaries are adjusted to take account of the theoretical financial effect which changes in time or value (or both) have on this section. Such adjustments are based on adjustments in the following categories as recorded in the Bill of Quantities:</p> <p>a) an amount which is not varied, namely Fixed</p> <p>b) an amount which is varied in proportion to the contract value, namely Value Related; and</p> <p>c) an amount which is varied in proportion to the construction period as compared to the initial construction period excluding revisions to the construction period for which the contractor is not entitled to adjustment in terms of the contract, namely Time Related.</p> <p>viii) Where no provision is made in the Bill of Quantities to indicate which of the three categories in (vii) apply or where no selection is made, the adjustments shall be based on the following breakdown:</p> <p>a) 10 percent is Fixed</p> <p>b) 15 percent is Value Related</p> <p>c) 75 percent is Time Related</p> <p>ix) The adjustment of the Preliminaries shall apply notwithstanding the actual employment of resources in the execution of the works. The contract value used for the adjustment of the Preliminaries shall exclude any contingency sum, the amount for the Preliminaries and any amount in respect of contract price adjustment provided for in the contract. Adjustments in respect of any staged or sectional completion shall be prorated to the value of each section.</p> <p>x) Items not priced in these preliminaries are deemed to be included elsewhere in this bills of quantities.</p> <p><u>SECTION A : CORE CLAUSES</u></p> <p><u>GENERAL (A1)</u></p> <p>Clause 1.0</p> <p style="text-align: right;">Carried Forward</p> <p>Section No. 1 Bill No. 1 Preliminaries and General</p> | | R | |
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| <p>Clause 11.2(4) is amended by replacing it with the following:</p> <p>The Contract Date is the date when the contractor receives one fully completed signed copy of this document, including the schedule of deviations (if any) as contained in the Form of Offer and Acceptance</p> | | |
| 1 | Fixed:..... Value Related:..... Time Related:..... | Item |
| <u>THE CONTRACTOR'S MAIN RESPONSIBILITIES (A2)</u> | | |
| <p>Clause 2.0</p> <p>The contractor must provide and keep a copy of the NEC3 Engineering and Construction Contract - Option B: Priced contract with bill of quantities applicable to this contract and a copy of the Procurement Document on the site, to which the Project Manager and Supervisor have access at all times.</p> | | |
| 2 | Fixed:..... Value Related:..... Time Related:..... | Item |
| <u>TIME (A3)</u> | | |
| <p>Clause 3.0</p> | | |
| 3 | Fixed:..... Value Related:..... Time Related:..... | Item |
| <u>TESTING AND DEFECTS (A4)</u> | | |
| <p>Clause 4.0</p> | | |
| 4 | Fixed:..... Value Related:..... Time Related:..... | Item |
| <u>PAYMENT (A5)</u> | | |
| <p>Clause 5.0</p> <p>Clause 50.0 is amended by the addition of the following clause:</p> | | |
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| <p>Section No. 1 Bill No. 1 Preliminaries and General</p> | | |

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| | Materials and goods stored off site are not included in the amount authorised for payment unless approved by the Employer in writing | | | |
| 5 | Fixed:..... Value Related:..... Time Related:..... | Item | | |
| | <u>COMPENSATION EVENTS (A6)</u> | | | |
| | Clause 6.0 | | | |
| | <u>TITLE (A7)</u> | | | |
| 6 | Fixed:..... Value Related:..... Time Related:..... | Item | | |
| | <u>RISK AND INSURANCE (A8)</u> | | | |
| | Clause 8.0 | | | |
| 7 | Fixed:..... Value Related:..... Time Related:..... | Item | | |
| | <u>TERMINATION (A9)</u> | | | |
| | Clause 9.0 | | | |
| 8 | Fixed:..... Value Related:..... Time Related:..... | Item | | |
| | <u>SECTION B: MAIN OPTION CLAUSES</u> | | | |
| | <u>PRICED CONTRACT WITH BILL OF QUANTITIES (B1)</u> | | | |
| | Clause 10.0 | | | |
| | The quantities in provisional bill of quantities are an indication of the works to be executed and are subject to remeasurement. | | | |
| 9 | Fixed:..... Value Related:..... Time Related:..... | Item | | |
| | <u>SECTION C : DISPUTE RESOLUTION</u> | | | |
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| | Section No. 1 | | | |
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| | Preliminaries and General | | | |

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| | Brought Forward | R | |
| | <u>OPTION W1 (C1)</u> | | |
| | Clause 11.0 | | |
| 10 | Fixed:..... Value Related:..... Time Related:..... | Item | |
| | <u>SECTION D: SECONDARY OPTION CLAUSES</u> | | |
| | <u>X1 PRICE ADJUSTMENT FOR INFLATION (D1)</u> | | |
| | Clause 12.0 | | |
| 11 | Fixed:..... Value Related:..... Time Related:..... | Item | |
| | <u>X2 CHANGES IN THE LAW (D2)</u> | | |
| | Clause 13.0 | | |
| 12 | Fixed:..... Value Related:..... Time Related:..... | Item | |
| | <u>X3 MULTIPLE CURRENCIES (D3)</u> | | |
| | Clause 14.0 | | |
| 13 | Fixed:..... Value Related:..... Time Related:..... | Item | |
| | <u>X4 PARENT COMPANY GUARANTEE (D4)</u> | | |
| | Clause 16.0 | | |
| 14 | Fixed:..... Value Related:..... Time Related:..... | Item | |
| | <u>X5 SECTIONAL COMPLETION (D5)</u> | | |
| | Clause 16.0 | | |
| 15 | Fixed:..... Value Related:..... Time Related:..... | Item | |
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| | Carried Forward | R | |
| | Section No. 1 Bill No. 1 Preliminaries and General | | |

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| | Brought Forward | | R |
| | X6 BONUS FOR EARLY COMPLETION (D6) | | |
| | Clause 17.0 | | |
| 16 | Fixed:..... Value Related:..... Time Related:..... | Item | |
| | X7 DELAY DEMAGES (D7) | | |
| | Clause 18.0 | | |
| 17 | Fixed:..... Value Related:..... Time Related:..... | Item | |
| | X12 PARTNERING (D8) | | |
| | Clause 19.0 | | |
| 18 | Fixed:..... Value Related:..... Time Related:..... | Item | |
| | X13 PERFORMANCE BOND (D9) | | |
| | Clause 20.0 | | |
| 19 | Fixed:..... Value Related:..... Time Related:..... | Item | |
| | X14 ADVANCED PAYMENT TO THE CONTRACTOR (D10) | | |
| | Clause 21.0 | | |
| 20 | Fixed:..... Value Related:..... Time Related:..... | Item | |
| | X15 LIMITATION OF THE CONTRACTOR'S LIABILITY FOR HIS DESIGN TO REASONABLE SKILL AND CARE (D11) | | |
| | Clause 22.0 | | |
| 21 | Fixed:..... Value Related:..... Time Related:..... | Item | |
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| | Carried Forward | | R |
| | Section No. 1 Bill No. 1 Preliminaries and General | | |

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| | | Brought Forward | | R | |
| | | <u>X16 RETENTION (D12)</u> | | | |
| | | Clause 23.0 | | | |
| 22 | Fixed:..... Value Related:..... Time Related:..... | | Item | | |
| | | <u>X17 LOW PERFORMANCE DAMAGES (D13)</u> | | | |
| | | Clause 24.0 | | | |
| 23 | Fixed:..... Value Related:..... Time Related:..... | | Item | | |
| | | <u>X18 LIMITATION OF LIABILITY (D14)</u> | | | |
| | | Clause 25.0 | | | |
| 24 | Fixed:..... Value Related:..... Time Related:..... | | Item | | |
| | | <u>X20 KEY PERFORMANCE INDICATORS (D15)</u> | | | |
| | | Clause 26.0 | | | |
| 25 | Fixed:..... Value Related:..... Time Related:..... | | Item | | |
| | | <u>SECTION E : CONTRACT DATA</u> | | | |
| | | <u>CONTRACT DATA (E1)</u> | | | |
| | | Tenderers are referred to Part C1.2 Contract Data for variables pertaining to this contract. | | | |
| 26 | Fixed:..... Value Related:..... Time Related:..... | | Item | | |
| | | <u>Z ADDITIONAL CONDITIONS OF CONTRACT (D16)</u> | | | |
| | | Clause 27.0 | | | |
| 27 | Fixed:..... Value Related:..... Time Related:..... | | Item | | |
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| | | Carried Forward | | R | |
| | | Section No. 1 | | | |
| | | Bill No. 1 | | | |
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| | Brought Forward | | | R | |
| | <u>Z1.1 PHASING OF THE PROJECT</u> | | | | |
| | Allow for the phasing of the project during construction | | | | |
| 28 | Fixed:..... Value Related:..... Time Related:..... | Item | | | |
| | <u>Z1.2 NEW OCCUPATIONAL HEALTH AND SAFETY REGULATIONS</u> | | | | |
| | Allow costs for complying with the Occupational Health and Safety Act (No. 85 of 1993) as ammended by the Occupational Health and Safety Amendment Act (No 181 of 1993) and the Construction regulations of 2014, paying attention in particular to medicals, induction and protective equipment with a special focus on asbestos removal as part of the project. | | | | |
| 29 | Fixed:..... Value Related:..... Time Related:..... | Item | | | |
| | <u>Z1.4 PROVISION OF WATER</u> | | | | |
| | Contractor to allow for provision of water for the works | | | | |
| 30 | Fixed:..... Value Related:..... Time Related:..... | Item | | | |
| | <u>Z1.5 PROVISION OF ELECTRICAL POWER</u> | | | | |
| | Contractor to allow for provision of electrical power for the works | | | | |
| 31 | Fixed:..... Value Related:..... Time Related:..... | Item | | | |
| | <u>Z1.6 PROVISION OF ABLUTION FACILITIES</u> | | | | |
| | Contractor to allow for provision of ablution facilities for the works | | | | |
| 32 | Fixed:..... Value Related:..... Time Related:..... | Item | | | |
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| | Carried to Final Summary | | | R | |
| | Section No. 1 | | | | |
| | Bill No. 1 | | | | |
| | Preliminaries and General | | | | |

| Item No | Quantity | Rate | Amount |
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| <u>SECTION NO. 2</u> | | | |
| <u>BILL NO. 1</u> | | | |
| <u>EARTHWORKS (PROVISIONAL)</u> | | | |
| <u>WORK GROUP ALLOCATION</u> | | | |
| Unless otherwise stated, all items in this Bill will be allocated to Work Group 104 - Earthworks | | | |
| <u>PREAMBLES</u> | | | |
| The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be included in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained | | | |
| The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles | | | |
| <u>SUPPLEMENTARY PREAMBLES</u> | | | |
| <u>Nature of ground</u> | | | |
| The nature of the ground is assumed to be loose sandy material, therefore "earth", but possibly interspersed with "hard rock" or "soft rock". | | | |
| The nature of the ground is assumed to be gravel, therefore "earth", but possibly interspersed with "soft rock". | | | |
| The nature of the ground is assumed to be silty clay with loose river boulders varying in size up to approximately 450mm diameter, therefore "earth", but possibly interspersed with "hard rock". | | | |
| Carried Forward | | R | |
| Section No. 2 Bill No. 1 Earthworks (Provisional) | | | |

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| <p style="text-align: right;">Brought Forward</p> <p>Trial holes indicate that the nature of the ground is silty clay to a depth of approximately 500mm with fine to medium loose sandy material below, therefore "earth". The trial holes also indicate that the water table is at a maximum depth of approximately 1000mm.</p> <p>A soils investigation has been carried out on site by the engineer and the report is annexed to these bills of quantities. Descriptions of excavations shall be deemed to include all ground conditions classifiable as "earth" described in the above report and where conditions of a more difficult character are indicated these are separately measured</p> <p><u>Subterranean water:</u></p> <p>No subterranean water is expected</p> <p>Should the Contractor however, encounter any subterranean water on the site, he shall immediately notify the Principal Agent thereof and submit recommendations for keeping the works free from subterranean water together with all costs involved therewith</p> <p><u>Excavation for working space in rock:</u></p> <p>Notwithstanding clause 10 measurement rule 27 of the Standard System of Measuring Building Work, excavation for working space in material of a more different character (e.g. soft or hard rock) will be measured in cubic metres to the extent executed and given as "extra over" bulk excavation or trench and hole excavation as the case may be</p> <p><u>Carting away of excavated material</u></p> <p>Descriptions of carting away of excavated material shall be deemed to include loading excavated material onto trucks directly from the excavations or, alternatively, from stock piles situated on the building site</p> | | R | |
| <p style="text-align: right;">Carried Forward</p> <p>Section No. 2 Bill No. 1 Earthworks (Provisional)</p> | | R | |

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| | Brought Forward | | | R |
| | <u>Filling</u> | | | |
| | Notwithstanding the reference to prescribed multiple handling in clause 1 page 6 of the Standard System of Measuring Building Work, prices for filling and backfilling shall include for all selection and any multiple handling of material | | | |
| | <u>Testing:</u> | | | |
| | <i>Prices for backfilling to trenches and holes only are to include for all necessary density tests in accordance with SANS 1200D</i> | | | |
| | <u>REMOVAL OF TREES ETC</u> | | | |
| | <u>Taking out and removing, grubbing up roots and filling in holes</u> | | | |
| 1 | Tree stump exceeding 200mm and not exceeding 500mm girth | No | 15 | |
| | <u>PROTECTION OF TREES</u> | | | |
| | <u>Protect existing trees from all damage on site, complete</u> | | | |
| 2 | Tree exceeding 200mm and not exceeding 500mm girth | No | 20 | |
| | <u>TREE TRANSPLANT</u> | | | |
| | <u>Lift and move existing trees to new location as instructed by the client including digging of new holes and taking into account all necessary steps as set out in the preambles above.</u> | | | |
| 3 | Tree exceeding 200mm and not exceeding 500mm girth | No | 4 | |
| | <u>EXCAVATIONS, FILLING, ETC</u> | | | |
| | <u>EXCAVATIONS, ETC</u> | | | |
| | <u>Excavation in earth not exceeding 2m deep:</u> | | | |
| 4 | Reduced levels under floors | m3 | 15 | |
| | Carried Forward | | | R |
| | Section No. 2 | | | |
| | Bill No. 1 | | | |
| | Earthworks (Provisional) | | | |

PASSENGER RAIL AGENCY OF SOUTH AFRICA
PV SOLAR PLANT
UMJANTSHI HOUSE OFFICE BUILDING

| Brought Forward | | | R |
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| <u>Extra over trench and hole excavations in earth for excavation in:</u> | | | |
| 5 | Soft rock | m3 | 9 |
| 6 | Hard rock | m3 | 4 |
| <u>Extra over all excavations for carting away:</u> | | | |
| 7 | Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor | m3 | 15 |
| <u>Risk of collapse of excavations:</u> | | | |
| 8 | Sides of trench and hole excavations not exceeding 1,5m deep | m2 | 15 |
| <u>Keeping excavations free of water:</u> | | | |
| 9 | Keeping excavations free of all water other than subterranean water | Item | |
| <u>FILLING ETC</u> | | | |
| <u>Earth filling obtained from the excavations and/or prescribed stock piles on site, compacted to 93% Mod AASHTO density:</u> | | | |
| 10 | Backfilling to trenches, holes, etc. | m3 | 13 |
| <u>G5 filling material supplied by the contractor, compacted to 93% Mod AASHTO density:</u> | | | |
| 11 | Under floors, steps, pavings, etc. | m3 | 13 |
| 12 | Backfilling to trenches, holes, etc. | m3 | 13 |
| <u>G7 filling material supplied by the contractor, compacted to 95% Mod AASHTO density:</u> | | | |
| 13 | Under floors, steps, pavings, etc. | m3 | 13 |
| Carried Forward | | | R |
| Section No. 2 Bill No. 1 Earthworks (Provisional) | | | |

| Brought Forward | | | R |
|--|---|----|----|
| <u>Compaction of surfaces:</u> | | | |
| 14 | Compaction of ground surface under floors etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 91% Mod AASHTO density | m2 | 89 |
| <u>Prescribed density tests on filling:</u> | | | |
| 15 | "Modified AASHTO Density" test | No | 3 |
| <u>SOIL POISONING</u> | | | |
| <u>Soil insecticide in accordance with SANS 5859:</u> | | | |
| 16 | Soil insecticide (protection against termites) applied as specified under floors, etc. including forming and poisoning shallow furrows against foundation walls, etc. filling in furrows and ramming | m2 | 89 |
| Carried Forward to Summary of Section No. 2 | | | R |
| Section No. 2 | | | |
| Bill No. 1 | | | |
| Earthworks (Provisional) | | | |

| Item No | Quantity | Rate | Amount |
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| <u>SECTION NO. 2</u> | | | |
| <u>BILL NO. 2</u> | | | |
| <u>CONCRETE, FORMWORK AND REINFORCEMENT</u> | | | |
| <u>WORK GROUP ALLOCATION</u> | | | |
| The items in this Bill will be allocated to Work Groups as indicated in brackets at the end of headings or descriptions | | | |
| <u>PREAMBLES</u> | | | |
| The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained | | | |
| The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles | | | |
| <u>SUPPLEMENTARY PREAMBLES</u> | | | |
| <u>Cost of tests:</u> | | | |
| <u>Breeze concrete:</u> | | | |
| Breeze concrete shall consist of twelve parts clean dry furnace ash, free from coal or other foreign matter, to one part cement (1:12); the ash graded up to particles which will pass a 16,5mm ring from a minimum which fails to pass a 4,75mm mesh. The finer materials from the screening are to be first mixed with the cement into a mortar and the ash added afterwards and thoroughly incorporated | | | |
| Carried Forward | | R | |
| Section No. 2 Bill No. 2 Concrete, Formwork and Reinforcement | | | |

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| <p style="text-align: right;">Brought Forward</p> <p><u>Lightweight concrete:</u></p> <p>Lightweight concrete shall have a density of 600kg/m³ for the top 50mm and 400kg/m³ for the remaining thickness. The minimum thickness at outlets, channels, etc shall be 50mm</p> <p><u>Waterproof concrete:</u></p> <p>"Waterproof concrete" shall have the same properties as normal concrete, but the following shall be modified to make the the concrete more water-tight:</p> <ol style="list-style-type: none"> 1. a cement/water ratio of minimum 1.9 and maximum 2.1 2. minimum OPC content of 300kg/m³ 3. Polypropylene micro fibres added to concrete at rate of 182 million per m³ <p><u>Formwork:</u></p> <p>Descriptions of formwork shall be deemed to include use and waste only (except where described as "left in" or "permanent"), for fitting together in the required forms, wedging, plumbing and fixing to true angles and surfaces as necessary to ensure easy release during stripping and for reconditioning as necessary before re-use</p> <p>The vertical strutting shall be carried down to such construction as is sufficiently strong to afford the required support without damage and shall remain in position until the newly constructed work is able to support itself</p> <p>Formwork to soffits of solid slabs, etc shall be deemed to be to slabs not exceeding 250mm thick unless otherwise described</p> <p>Formwork to soffits of slabs, beams, etc shall be deemed to be propped up exceeding 1,5m and not exceeding 3,5m high unless otherwise described</p> <p><u>REINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES (WORK GROUP 110)</u></p> | <p style="text-align: right;">R</p> |
| <p style="text-align: right;">Carried Forward</p> <p>Section No. 2 Bill No. 2 Concrete, Formwork and Reinforcement</p> | <p style="text-align: right;">R</p> |

| Brought Forward | | | R |
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| <u>30MPa/19mm concrete:</u> | | | |
| | Surface beds on waterproofing | m3 | 116 |
| <u>TEST CUBES (WORK GROUP 110)</u> | | | |
| 1 | Making and testing sets of three 150 x 150 x 150mm concrete strength test cubes (Provisional) | Sets | 3 |
| <u>CONCRETE SUNDRIES (WORK GROUP 110)</u> | | | |
| <u>Finishing top surfaces of concrete smooth with a steel trowel:</u> | | | |
| 2 | Surface beds, slabs, etc. | m2 | 116 |
| <u>REINFORCEMENT (PROVISIONAL) (WORK GROUP 114)</u> | | | |
| <u>High tensile steel reinforcement to structural concrete work:</u> | | | |
| 3 | High tensile steel bar reinforcement (8 to 40mm diameter bars) | t | 0.20 |
| <u>Fabric reinforcement:</u> | | | |
| 4 | Type 395 fabric reinforcement in concrete surface beds, slabs, etc. | m2 | 268 |
| Carried Forward to Summary of Section No. 2 | | | R |
| Section No. 2 | | | |
| Bill No. 2 | | | |
| Concrete, Formwork and Reinforcement | | | |

| Item No | Quantity | Rate | Amount |
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| <u>SECTION NO. 2</u> | | | |
| <u>BILL NO. 3</u> | | | |
| <u>WATERPROOFING</u> | | | |
| <u>WORK GROUP ALLOCATION</u> | | | |
| Unless otherwise stated, all items in this Bill will be allocated to Work Group 120 - Waterproofing | | | |
| <u>PREAMBLES</u> | | | |
| The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained | | | |
| The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles | | | |
| <u>SUPPLEMENTARY PREAMBLES</u> | | | |
| <u>Waterproofing:</u> | | | |
| Waterproofing of roofs, basements, etc shall be laid under a ten year guarantee. Waterproofing to roofs shall be laid to even falls to outlets, etc with necessary ridges, hips and valleys. Descriptions of sheet or membrane waterproofing shall be deemed to include additional labour to turn-ups and turn-downs | | | |
| <u>DAMPPROOFING OF WALLS AND FLOORS</u> | | | |
| <u>One layer 250 micron green polyethylene waterproof sheeting (SANS 952-1985 type C) sealed at laps with PVC self-adhesive tape:</u> | | | |
| 1 | Under surface beds | m2 | 268 |
| Carried Forward to Summary of Section No. 2 | | | R |
| Section No. 2 | | | |
| Bill No. 3 | | | |
| Waterproofing | | | |

| Item No | Quantity | Rate | Amount |
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| <p><u>SECTION 2</u></p> <p><u>BILL NO. 4</u></p> <p><u>METALWORK</u></p> <p><u>WORK GROUP ALLOCATION</u></p> <p>Unless otherwise stated, all items in this Bill will be allocated to Work Group 136 - Metalwork</p> <p><u>PREAMBLES</u></p> <p>The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p> <p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Descriptions of bolts, anchors, etc:</u></p> <p>Descriptions of bolts shall be deemed to include nuts and washers</p> <p>Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork or concrete</p> <p>Items described as "holed for bolt(s)" shall be deemed to exclude the bolts, unless otherwise described</p> <p>Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 600mm centres</p> | | | |
| <p>Carried Forward</p> | | | <p>R</p> |
| <p>Section No. 2 Bill No. 4 Metalwork</p> | | | |

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| <p><u>Fixing:</u></p> <p>Unless otherwise described, descriptions of items shall be deemed to include for fixing to brickwork or concrete</p> <p>Where items are described as "bolted", the bolts are measured elsewhere as stated in clause N.7 of the Model Preambles</p> <p><u>References:</u></p> <p>References in descriptions of windows, doors, gates, refer to the respective types of windows, doors, etc. detailed in the Architect's window schedules bound into the back of these bills of quantities</p> <p>Tenderers are to price the following items in conjunction with the above Architect's drawings, etc. and no claim arising from brevity of descriptions in these bills of quantities, of items shown on the Architect's drawings, etc. shall be entertained</p> <p><u>GALVANISED STEEL GATES, SCREENS, ETC</u></p> | | | |
| 1 | Custom-made screen, 2500 x 4000mm high, spot welded to columns | No | 1 |
| <p>Carried Forward to Summary of Section No. 2</p> <p>Section No. 2 Bill No. 4 Metalwork</p> | | R | |

| Item No | Quantity | Rate | Amount |
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| <u>SECTION NO. 2</u> | | | |
| <u>BILL NO. 5</u> | | | |
| <u>PLASTERING</u> | | | |
| <u>WORK GROUP ALLOCATION</u> | | | |
| Unless otherwise stated, all items in this Bill will be allocated to Work Group 142 - In situ finishes | | | |
| <u>PREAMBLES</u> | | | |
| The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained | | | |
| The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles | | | |
| <u>SUPPLEMENTARY PREAMBLES</u> | | | |
| <u>Moisture tests:</u> | | | |
| Before any finishes, coverings, etc are applied to screeds, plastering, etc or any other in-situ finish, moisture tests are to be carried out to the complete satisfaction of the Project Manager to ensure that these surfaces have the correct moisture content for the finish to be applied | | | |
| <u>Labours, etc</u> | | | |
| Labours such as fair, rounded and chamfered edges, trowel cuts, throats, V-joints, angles, etc shall be deemed to be included in the descriptions | | | |
| Carried Forward | | R | |
| Section No. 2 Bill No. 5 Plastering | | | |

| | | | |
|--|--|---|--|
| <p style="text-align: right;">Brought Forward</p> <p><u>Sample Panels</u></p> <p>A sample panel size 1m x1m, of each of the various plaster type wall and floor finishes in this contract, shall be prepared for the approval of the Project Manager and the cost of the sample panel(s) shall be deemed to be included in the overall costs of the <u>relevant</u> wall and floor finishes</p> <p><u>GRANOLITHIC</u></p> <p><u>Method:</u></p> <p>The method to be used shall be either the monolithic method or the bonded method</p> <p><u>Preparation:</u></p> <p>For granolithic applied monolithically, the concrete floor shall be swept clean after bleeding of the concrete has ceased and the slab has begun to stiffen; any remaining bleed water shall be removed and the granolithic applied immediately thereafter. For granolithic to be bonded to the floor slab after it has hardened, the slab surface shall be hacked (preferably by mechanical means) until all laitance, dirt, oil, etc is dislodged and swept clean of all loose matter. The slab shall then be wetted and kept damp for at least six hours before applying the granolithic</p> <p><u>Mix:</u></p> <p>Unless otherwise described, granolithic shall attain a compressive strength of at least 41MPa. The coarse aggregate shall comply with SANS 1083 and shall generally be capable of passing a 10mm mesh sieve. Where the thickness of the granolithic exceeds 25mm, the size of the coarse aggregate shall be increased to the maximum size compatible with the thickness of the granolithic</p> | | R | |
| <p style="text-align: right;">Carried Forward</p> <p>Section No. 2 Bill No. 5 Plastering</p> | | R | |

| | | | |
|--|--|---|--|
| <p style="text-align: right;">Brought Forward</p> <p><u>Panels:</u></p> <p>Granolithic shall be laid in panels not exceeding 14m² for monolithic finishes, not exceeding 9,5m² for bonded finishes and not exceeding 6m² for all external granolithic. Wherever possible, panels shall be square but at no time should the length of the panel exceed 1,5 times its width</p> <p>Where possible joints between panels shall be positioned over joints in the floor slab and shall be at least 3mm wide through the full thickness of the finish, separated by strips of wood or fibreboard and finished with V-joints</p> <p><u>Laying:</u></p> <p>Monolithic granolithic shall be applied to the partially set slab and thoroughly compacted and lightly wood floated to the required levels</p> <p>Bonded granolithic shall be applied to the slab after applying a 1:1 sand-and-cement slurry brushed over the surface and allowed to partially set before applying the granolithic. The granolithic shall be thoroughly compacted and lightly wood floated to the required levels</p> <p>After wood floating, the monolithic and bonded granolithic shall remain undisturbed until bleeding has ceased and the surface has stiffened. Any remaining bleed water and laitance shall then be removed and the surface steel trowelled or power floated</p> <p><u>Curing, seasoning and protection:</u></p> <p>Granolithic shall be covered with clean hessian with waterproof building foil over and kept wet for at least seven days after laying</p> <p><u>Colour:</u></p> <p>Coloured granolithic shall be tinted with an approved colouring pigment mixed into a true and even colour</p> | | R | |
| <p style="text-align: right;">Carried Forward</p> <p>Section No. 2 Bill No. 5 Plastering</p> | | R | |

| Brought Forward | | | R |
|--|-----------------------------------|----|----|
| <u>TINTED WHITE CEMENT SCREEDS</u> | | | |
| Tinted screed shall be composed of one bag White Portland Cement and two wheelbarrows "Malmesbury" sand. Surfaces shall be finished with a steel trowel to leave a smooth finish and coated with two coats "Earthcote S.I. Floorcote" two-pack polyurethane floor sealer applied as per the manufacturer's recommendations | | | |
| NOTE: Tinted screeds are to be strengthened with "Primal Eccos" acrylic polymer (15% of the water volume is to be substituted with the acrylic polymer during the mixing process) | | | |
| Coarse sand is to be used for these screeds | | | |
| All tinting, finishing, strengthening, etc are to be mixed, applied, etc strictly in accordance with the manufacturer's instructions | | | |
| <u>CEMENT PLASTER</u> | | | |
| Unless otherwise described, cement plaster shall be taken to mean Class 1 cement plaster i.e. 1:4 cement:sand plaster (common cement) | | | |
| <u>SCREEDS</u> | | | |
| <u>3:1 Cement plaster screeds wood floated for "vinyl" or other flexible type flooring, including applying an approved self-levelling coating applied by an approved specialist, on concrete:</u> | | | |
| 1 | 40mm Thick on floors and landings | m2 | 89 |
| <u>SPECIAL FLOOR COATING</u> | | | |
| <u>5mm Thick non-slip "Polyurethane" or similar approved self-levelling epoxy floor coating applied by an approved specialist, on:</u> | | | |
| 2 | On floors | m2 | 89 |
| Carried Forward to Summary of Section No. 2 | | | R |
| Section No. 2 | | | |
| Bill No. 5 | | | |
| Plastering | | | |

| Bill No | | Page No | | Amount |
|---------------------------------|--------------------------------------|---------|---|--------|
| 1 | Earthworks (Provisional) | 13 | | |
| 2 | Concrete, Formwork and Reinforcement | 16 | | |
| 3 | Waterproofing | 17 | | |
| 4 | Metalwork | 19 | | |
| 5 | Plastering | 23 | | |
| | | | R | |
| Section No. 2 | | | | |
| Carried to Final Summary | | | | |

| Item No | | Quantity | Rate | Amount |
|------------|--|----------|------|--------|
| | <u>SECTION NO. 3</u> | | | |
| | <u>BILL NO. 1</u> | | | |
| | <u>EXTERNAL WORK (PROVISIONAL)</u> | | | |
| | <u>(ALL TRADES)</u> | | | |
| | <u>WORK GROUP ALLOCATION</u> | | | |
| | The items in this Bill will be allocated to Work Groups as indicated in brackets at the end of headings or descriptions | | | |
| | <u>PREAMBLES</u> | | | |
| | The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained | | | |
| | The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles | | | |
| | <u>SUPPLEMENTARY PREAMBLES</u> | | | |
| | <u>Nature of ground:</u> | | | |
| | The nature of the ground is assumed to be loose sandy material, therefore "earth", but possibly interspersed with "soft rock" or "hard rock" | | | |
| | The nature of the ground is assumed to be gravel, therefore "earth", but possibly interspersed with "soft rock" or "hard rock" | | | |
| | The nature of the ground is assumed to be silty clay with loose river boulders varying in size up to approximately 450mm diameter, all of which will be deemed as "earth", but possibly interspersed with "hard rock" | | | |
| | Carried Forward | | R | |
| | Section No. 3 Bill No. 1 External Works (Provisional) | | | |

| | |
|--|-------------------------------------|
| <p style="text-align: right;">Brought Forward</p> <p>Trial holes indicate that the nature of the ground is silty clay to a depth of approximately 500mm with fine to medium loose sandy material below, therefore "earth"</p> <p>A soils investigation has been carried out on the site by the Engineer and the report is annexed to these bills of quantities. The soils report indicates that the ground varies between transported soils at surface comprising gravel layers of varying thickness and interspersed with clay, and weathered shales varying from very soft rock to medium hard rock consistency, all of which will be deemed as "earth". All very hard unweathered shale, ironstone, etc the removal of which necessitates the use of explosives or heavy duty hydraulic percussion hammers (peckers), will be classified as "hard rock"</p> <p>Should the Contractor encounter any "soft" or "hard" rock in the excavations, he shall immediately notify the Engineer who shall be the sole arbiter as to what constitutes "soft" or "hard" rock for final account purposes</p> <p><u>Subterranean water:</u></p> <p>No subterranean water is expected</p> <p><u>Excavation for working space in rock:</u></p> <p>Notwithstanding clause 11 of the Standard System of Measuring Building Work, excavation for working space in rock will be measured in cubic metres to the extent executed and given as "extra over" bulk excavation or trench and hole excavation as the case may be</p> <p><u>Carting away of excavated material:</u></p> <p>Descriptions of carting away of excavated material shall be deemed to include loading excavated material onto trucks directly from the excavations or, alternatively, from stock piles situated on the building site</p> <p><u>Filling:</u></p> <p>Notwithstanding the reference to prescribed multiple handling in Clause 1 of the Standard System of Measuring Building Work, prices for filling and backfilling shall include for all selection and any necessary multiple handling of material</p> | <p style="text-align: right;">R</p> |
| <p style="text-align: right;">Carried Forward</p> <p>Section No. 3 Bill No. 1 External Works (Provisional)</p> | <p style="text-align: right;">R</p> |

| | | | | |
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| Brought Forward | | | | R |
| <u>Testing:</u> | | | | |
| <i>Prices for backfilling to trenches and holes only are to include for all necessary density tests in accordance with SANS 1200D</i> | | | | |
| <u>Maintenance period:</u> | | | | |
| The maintenance period to civil works such as roads, parking and related earthworks shall be twelve calendar months | | | | |
| <u>SITE CLEARANCE, ETC (WORK GROUP 104)</u> | | | | |
| <u>Site clearance:</u> | | | | |
| 1 | Stripping average 150mm thick layer of top soil and depositing material in prescribed stock piles on site | m2 | 3,911 | |
| <u>PAVINGS, ETC</u> | | | | |
| <u>SUPPLEMENTARY PREAMBLES</u> | | | | |
| <u>Testing of material and filling:</u> | | | | |
| Descriptions of earth filling, compaction, etc shall be deemed to include for all necessary testing required in accordance with the SABS 1200 series | | | | |
| <u>EARTHWORKS (WORK GROUP 104)</u> | | | | |
| <u>Excavation in earth not exceeding 2m deep:</u> | | | | |
| 2 | Over site between buildings, retaining walls, etc to reduce levels and dispose in prescribed stock piles on site | m3 | 3,435 | |
| <u>Extra over all excavations for carting away:</u> | | | | |
| 3 | Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor | m3 | 3,435 | |
| Carried Forward | | | | R |
| Section No. 3 Bill No. 1 External Works (Provisional) | | | | |

**PASSENGER RAIL AGENCY OF SOUTH AFRICA
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| | Brought Forward | | | R |
|----|--|----|-------|---|
| | <u>Compaction of surfaces:</u> | | | |
| 4 | Compaction of ground surface under pavings, etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 98% Mod AASHTO density | m2 | 3,911 | |
| | <u>Earth filling from commercial sources supplied by the Contractor under parking areas, roadways, etc:</u> | | | |
| 5 | Sub-base course of G5 material compacted to 95% Mod AASHTO density | m3 | 723 | |
| 6 | Sub-base course of G7 material compacted to 93% Mod AASHTO density | m3 | 723 | |
| | <u>Weedkiller (active ingredients metalaclor 102,8 g/l, terbitilasien 248,6 g/l and atrisien 248,6 g/l) mixed in the proportion of 100 ml weedkiller to 100 l water and applied at a rate of 10 l/m2:</u> | | | |
| 7 | Under paving, etc | m2 | 3,455 | |
| | <u>PRECAST CONCRETE (WORK GROUP 112)</u> | | | |
| | <u>Paving of 200 x 100 x 80mm "Type S-A" precast concrete paving bricks with butt joints, on 20mm thick river sand bed with sand-and-cement mixture swept into joints and hosed down, including preparation of ground or filling:</u> | | | |
| 8 | Paving in herringbone bond pattern to falls [LI] | m2 | 3,455 | |
| | <u>Precast concrete finished smooth on exposed surfaces, including bedding, jointing and pointing:</u> | | | |
| 9 | 150 x 300mm High kerbs (SANS 927 fig 3) with 150 x 150 x 300mm unreinforced concrete haunching at back of each joint, circular-on-plan exceeding 4m radius, formed with straight kerbs, including excavation, backfilling, etc | m | 480 | |
| | <u>FENCING (WORK GROUP 136)</u> | | | |
| | <u>4m HIGH, 5m WIDE CONCRETE WALL</u> | | | |
| 10 | Concrete Panel and Column Price per meter | m | 480 | |
| | Carried Forward | | | R |
| | Section No. 3 Bill No. 1 External Works (Provisional) | | | |

[illegible]

| Item No | | Quantity | Rate | Amount |
|---------|--|----------|-------|-----------|
| | <u>SECTION NO. 4</u> | | | |
| | <u>BILL NO. 1</u> | | | |
| | <u>ELECTRICAL SUBSTATION</u> | | | |
| | <u>DISCONNECTION/ REMOVAL OF REDUNDANT ELECTRICAL EQUIPMENT</u> | | | |
| | <u>The following equipment shall be isolated, disconnected, removed and handed over to the Employer:</u> | | | |
| 1 | Decommissioning and stripping of existing electrical installations including cables, conductors, luminaries, control devices, DB's, etc in the existing building as indicated on the drawing and scope of works. this include MV and LV installations. | | SUM | |
| | <u>LOW VOLTAGE</u> | | | |
| | <u>LV SWITCHGEAR</u> | | | |
| | <u>DBs and LV Switchgear</u> | | | |
| | <u>Manufacture, deliver to site, install, commission, test kiosks, distribution boards as per specification and single line diagram, to be housed in electrical. All electrical panels shall be stainless steel material, rates to include powder coated, busbars and drilling, busbar connections internal wiring etc. Refer to single line diagram for electrical panel colour</u> | | | |
| 2 | Kiosk | No | 2 | |
| | <u>CABLES</u> | | | |
| | <u>Supply, deliver to site cables and conductors as specified. Install, rack, strap and testing of cables as per specification including clamps, ties and cable numbering system</u> | | | |
| 3 | 2,5mm conductors (mixed colours - live, neutral and earth) | m | 1,600 | Rate only |
| | Carried Forward | | R | |
| | Section No. 4 | | | |
| | Bill No. 1 | | | |
| | Electrical Installation | | | |

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| | Brought Forward | | | R | |
|---|--|----|-------|----------|------------------|
| 4 | 4,0mm conductors (mixed colours - live, neutral and earth) | m | 1,200 | | Rate only |
| 5 | 2.5 mm ² 2c 600/1000V PVC/SWA/PVC ECC Cu Cable | m | 50 | | |
| 6 | 2.5 mm ² 4c 600/1000V PVC/SWA/PVC ECC Cu Cable | m | 200 | | |
| 7 | 4,0 mm ² 2c 600/1000V PVC/SWA/PVC ECC Cu Cable | m | 400 | | |
| 8 | 6,0 mm ² 2c 600/1000V PVC/SWA/PVC ECC Cu Cable | m | 4,600 | | |
| 9 | 10 mm ² 2c 600/1000V PVC/SWA/PVC Cu Cable | m | 500 | | |
| 10 | 10 mm ² 4c 600/1000V PVC/SWA/PVC ECC Cu Cable | m | 200 | | |
| 11 | 16mm ² 4c 600/1000V PVC/SWA/PVC ECC Cu Cable | m | 700 | | |
| 12 | 25mm ² 4c 600/1000V PVC/SWA/PVC ECC Cu Cable | m | 1 | | |
| 13 | 35mm ² 4c 600/1000V PVC/SWA/PVC ECC Cu Cable | m | 700 | | |
| 14 | 50mm ² 4c 600/1000V PVC/SWA/PVC ECC Cu Cable | m | 1 | | Rate Only |
| 15 | 70mm ² 4c 600/1000V PVC/SWA/PVC ECC Cu Cable | m | 200 | | |
| 16 | 95mm ² 4c 600/1000V PVC/SWA/PVC ECC Cu Cable | m | 50 | | |
| 17 | 120mm ² 4c 600/1000V PVC/SWA/PVC ECC Cu Cable | m | 300 | | |
| <u>CABLE TERMINATIONS</u> | | | | | |
| <u>Termination of cables shall include supply installation and testing of the glands with corrosion guard, making-off the cable, lugs, and fitting the gland to the board gland plate, switchgear or equipment and final connection of cable tails into board or terminals. Include for Reducing Glands and shrouds where applicable. NB: IP65 Glands are to be used where applicable.</u> | | | | | |
| 18 | 2.5 mm ² 4c 600/1000V PVC/SWA/PVC ECC Cu Cable | No | 20 | | |
| 19 | 4,0 mm ² 4c 600/1000V PVC/SWA/PVC Cu Cable | No | 20 | | |
| 20 | 6,0 mm ² 2c 600/1000V PVC/SWA/PVC ECC Cu Cable | No | 3,332 | | |
| Carried Forward | | | | R | |
| Section No. 4 Bill No. 1 Electrical Installation | | | | | |

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| | Brought Forward | | | R |
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| 21 | 10 mm ² 2c 600/1000V PVC/SWA/PVC Cu Cable | No | 22 | |
| 22 | 10 mm ² 4c 600/1000V PVC/SWA/PVC ECC Cu Cable | No | 110 | |
| 23 | 16mm ² 4c 600/1000V PVC/SWA/PVC ECC Cu Cable | No | 40 | |
| 24 | 25mm ² 4c 600/1000V PVC/SWA/PVC ECC Cu Cable | No | 20 | |
| 25 | 35mm ² 4c 600/1000V PVC/SWA/PVC ECC Cu Cable | No | 30 | |
| 26 | 50mm ² 4c 600/1000V PVC/SWA/PVC ECC Cu Cable | No | 20 | |
| 27 | 70mm ² 4c 600/1000V PVC/SWA/PVC ECC Cu Cable | No | 26 | |
| 28 | 95mm ² 4c 600/1000V PVC/SWA/PVC ECC Cu Cable | No | 14 | |
| 29 | 120mm ² 4c 600/1000V PVC/SWA/PVC ECC Cu Cable | No | 10 | |
| <u>CABLE TRAY, LADDER, TRUNKING, POWER SKIRTING, CONDUIT AND ACCESSORIES</u> | | | | |
| <u>Supply, deliver to site unpainted hot dipped galvanised steel cable tray, cable ladder as specified heavy duty range, inclusive of all items required to install in accordance with manufacturers specification. Power skirting and shall be PVC as per line item below. Rate to include all necessary required accessories for a complete installation.</u> | | | | |
| <u>Supply, deliver and Install hot dip galvanised heavy duty all items such as brackets, rawl bolts, splices, bonding straps etc. required to install in accordance with manufacturers specification. NB: all additional HDG steel supports to be included in the rates.</u> | | | | |
| 30 | 300mm wide tray - Cable ladder complete with all required accessories. | No | 800 | |
| 31 | Cable ladder bends, 4-way (x4), 90 degree bends (x6), tee ways (x5) and accessories | | | SUM |
| 32 | 300mm wide heavy duty tray - Cable tray complete with all required accessories. | m | 100 | |
| 33 | Cable tray Heavy duty 4-ways complete with accessories | No | 16 | |
| Carried Forward | | | | R |
| Section No. 4 Bill No. 1 Electrical Installation | | | | |

PASSENGER RAIL AGENCY OF SOUTH AFRICA
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| | Brought Forward | | | R |
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| 34 | Cable tray bends Heavy duty - 90 degree bends complete with accessories | No | 10 | |
| | <u>LIGHT SWITCHES, SOCKET OUTLET, WELDING ISOLATORS AND ACCESSORIES</u> | | | |
| | <u>Supply, deliver and installation of the following control devices and accessories as per specification. Rate must allow for the termination and connecting of the PVC conductor to the accessory, fixing to the conduit box and the fitting of the cover plate. (PVC covers)</u> | | | |
| 35 | Photo electric cell as per specification | No | 10 | |
| 36 | Supply and installation of 20Amp, 2-pole 230V surface mounted solator IP65 red coloured/red toggle, complete with all necessary accessories | No | 10 | |
| 37 | Supply and installation of 32Amp, 2-pole 230V surface mounted solator IP65 red coloured/red toggle, complete with all necessary accessories | No | 10 | |
| 38 | 32mm PVC conduit, chased on wall, make good, complete with cover and all necessary accessories. | m | 30 | |
| 39 | 25mm steel conduit / bosal surface mounted complete with cover and all necessary accessories. | m | 250 | |
| 40 | 25mm steel conduit / bosal surface mounted complete with cover and all necessary accessories. | m | 50 | |
| | <u>LUMINARIES AND CONTROL DEVICES</u> | | | |
| | <u>Supply, deliver and install the following luminaires, complete with lamps and control gear as per specification. See and refer to the specification document for details of each luminaire.</u> | | | |
| 41 | Type C4 - 80W / +/-13000lm LED (4000k) Lowbay, rated IP65 with powder coating complete with mounting accessories. Refer to detailed specification document. | No | 22 | |
| 42 | A 7m Pole Fibre-glass pole - Supply, deliver and installation of 7 meter fibre-glass poles. Rates to include mounting brackets for the 2xcameras | No | 22 | |
| | Carried Forward | | | R |
| | Section No. 4 Bill No. 1 Electrical Installation | | | |

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| | Brought Forward | | | R |
| | <u>SUNDRIES</u> | | | |
| 43 | Labelling of light switches, sockets and isolators outlets as per drawing pop riveted to cover plate. | | | SUM |
| 44 | Signs, Labels & Equipment Tags Supply and install all power, lighting, motors and earthing signs, labels and equipment tags as specified and in accordance with all Statutory requirements. | | | SUM |
| 45 | EARTH BAR - A 500 mm x 20mm x4mm copper earth bar with 10no. 6 mm diameter holes pre-drilled, surface fixed on insulators | No | 4 | |
| 46 | 70mm ² PVC Green insuare Copper single core | m | 600 | |
| 47 | Supply, deliver, installation and terminate conductors of Copper earth spike 1,2m, install in ground for earthing purpose. Rate to include termination of conductors. | No | 30 | |
| 48 | Service and Maintenance of the existing 800kVA, 400V Generator sets | No | 2 | |
| | <u>EXCAVATIONS</u> | | | |
| | For all low voltage cables from existing Substation to DB room in Resident building. | | | |
| | <u>Trenching shall be calculated using the formula below: (700mm deep * 0.5m wide * length)</u> | | | |
| 49 | Excavate in concrete/tar and hard soil, backfilling and compaction to 93% MOD AASHTO and re-instate tar / concrete | m3 | 350 | |
| | <u>PHOTOVOLTAIC SOLAR SYSTEM</u> | | | |
| | <u>Supply, deliver, accept and install the following solar system equipment, complete with control gear supporting structure. Refer to the specification document for details.</u> | | | |
| 50 | Photovoltaic Modules / solar panels - 650W as per specification | No | 1,666 | |
| | Carried Forward | | | R |
| | Section No. 4 Bill No. 1 Electrical Installation | | | |

UMJANTSHI HOUSE OFFICE BUILDING

Carried Forward

| Brought Forward | | | | R |
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| 64 | The close out pack including all operational and maintenance manuals, As Built drawings, monitoring and sign off. Provide support during the defects notification period including sign off of the defects certificate, issuing the performance certificate, including the sign off. | | | SUM |
| 65 | Service and Maintenance for 36 months of the entire PV Solar system and electrical infrastructure. Rates shall include all necessary costs such as travelling, labour, tools, etc as indicated on the works information document. | | | SUM |
| 66 | Liaising with supply authority and Municipal authority approval for grid tie with the solar system | | | SUM |
| 67 | Provisional sum of Three Hundred Thousand rand only (R300 000) for Specialist services. Amount shall be paid upon receiving quotations and or invoice | | | SUM |
| <u>TEST AND COMMISSIONING</u> | | | | |
| <u>Test and commission the complete electrical installation including completion of quality checksheets, Compliance Certificates & test results for the entire electrical installation and submitting them to the Employer's Representative.</u> | | | | |
| 68 | Hot and Cold Commissioning | | | SUM |
| 69 | Test and commission the complete electrical installation including Certificates of Compliance & test results to the Engineer. | | | SUM |
| <u>ELECTRONICS INSTALLATIONS - SECURITY SYSTEM</u> | | | | |
| <u>Supply, deliver and installation of the following electronics units for security system in the building and to include all required accessories as per specification. Rate must allow for the termination and connecting fixing testing and commissioning as indicated below. Refer to specification document for details.</u> | | | | |
| 70 | VMA-AS3X-8P8-EU HD Video Appliance 3X 8-port 8TB, EU, Windows 10 IoT Enterprise v21H2 LTSC | No | 1 | |
| Carried Forward | | | | R |
| Section No. 4 Bill No. 1 Electrical Installation | | | | |

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| Brought Forward | | | R |
|--|--|----|----|
| 71 | RM7-WKS-2MN-EU Remote Monitoring Workstation, 2 Monitors, EU | No | 1 |
| 72 | MHD24-G2-EU Monitor, 24" LCD HD, WUXGA | No | 2 |
| 73 | ACC7-ENT ACC 7 Enterprise camera channel | No | 11 |
| <u>BULLET CAMERA - OUTDOOR DOME</u> | | | |
| 74 | Type 1 - IR Bullet camera with analytics 3MP, 9-22mm | No | 4 |
| 75 | Housing, brackets and all other required accessories | No | 4 |
| <u>HIGH SPEED PTZ CAMERA, EXTERNAL</u> | | | |
| 76 | Type 3 - 2.0C-H4IRPTZ-DP30-WP 2MP H4 IR PTZ, with Wiper 30X, Self-learning analytics, IK10, IP66, 250m IR | No | 5 |
| 77 | IRPTZ-MNT-WALL1 Wall arm for use with H4 IR PTZ or H4A-MH-AD-PEND1 on H4/H5 Multisensor | m | 2 |
| 78 | POE-INJ2-95W-NA Indoor single Port PoE Injector Gigabit, 95W, NA power cord, for use with H4IR PTZ - indoor installation rated. Temperature range of the PoE injector is -10C to +45C. Compatible with power cord with C13 on one side and with country specific plug on the other side. | No | 5 |
| <u>ACCESS CONTROL</u> | | | |
| 79 | Face, Palm and Fingerprint recognition Terminal with Mask Detection including applicable software and software integration | No | 3 |
| Carried Forward | | | R |
| Section No. 4 Bill No. 1 Electrical Installation | | | |

**PASSENGER RAIL AGENCY OF SOUTH AFRICA
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| | Brought Forward | | | R |
|--|---|----|---|----------|
| 80 | AC-APP-16R-PRO-6 Access Control Manager Professional 6 – Web-Based PACS Professional Appliance for 16 Readers - includes: physical appliance embedded 64 bit Linux OS & Open LDAP for configuration database Access Control Manager Security Management Software 16 Reader Count Software License One (1) ACM Verify ACC Video Integration Five (5) partitions Identities CSV export, recurring, one-time, long & short format Total reader capacity can be expanded from 16 to 32 readers with the purchase of one AC-SW-LIC-16RCU-6-P 16 Reader Count Software License Supports up to 32 controllers, 75K identities, 75M stored transactions and ten (10) simultaneous operators (via browser) Three (3) year appliance hardware warranty begins at date of shipment. to be installed on the battery container | No | 1 | |
| 81 | AC-MER-CONT-LP1501 Intelligent Controller, Linux Based with 1 door, 2 inputs and 2 outputs, PoE+ Support, expandable up to 17 doors. (Mercury Part #: LP1501) | No | 2 | |
| 82 | AC-SW-LIC-REST-6-P Access Control Manager 6 REST Connectivity Software License (per appliance) | No | 1 | |
| 83 | AC-SW-LIC-VIRDI-BIO-6-P ViRDI BE Manager Integration Software Licenses for suppliers Access Control Manager 6 Professional, Enterprise, Enterprise Plus & Virtual | No | 1 | |
| Carried Forward | | | | R |
| Section No. 4 Bill No. 1 Electrical Installation | | | | |

| | Brought Forward | | R |
|----|--|----|-----|
| 84 | AC-LSP-2DR-MER-LCK Two Door Mercury Dual Voltage Integrated Power System supporting two AC-MER-CONT-1DR or one AC-MER-CONT-2DR (Mercury hardware sold separately). The advantage of a dual voltage power supply is the ability to power both Mercury boards and door locks from the same supply. Includes a painted steel enclosure, removable pre drilled back plate, controller standoffs and mounting screws and a 75 watt 12V/2A and 24V/2A power supply-battery charger. The power supply is pre-wired to four Class 2, Power Limited (CL2PL) outputs (C4P Board) delivering a regulated independent power connection to each Mercury board and lock power and control. The power supply features dual outputs (12 & 24volts DC), form 'C' fault relay contacts, a fire alarm input and network interface (interface module sold separately) to enable monitoring, reporting and control of the power system from Access Control Manager (ACM) link. Battery space for two 12V, 8Ah batteries is available in cabinet (unless using two AC-MER-CONT-1DR). Cabinet size: 12" x 14" x 4.5" with door lock and two (2) keys. Weight 14 lb.(LifeSafety Power Part Number: FPO75-B100C4PE1M) | No | 2 |
| 85 | Labour | No | 1 |
| | <u>Software</u> | | |
| 86 | Application Software interface | | SUM |
| 87 | Plug in for VMS integration | No | 1 |
| 88 | Babylon Integration License | | SUM |
| | <u>TEST AND COMMISSIONING</u> | | |
| | <u>Test and commission the complete electrical installation including completion of quality checksheets, Compliance Certificates & test results for the entire electrical installation and submitting them to the Employer's Representative.</u> | | |
| 89 | Test and commission the complete electronics installation including Certificates of Compliance & test results to the Engineer. | | SUM |
| | Carried to Final Summary | | R |
| | Section No. 4 | | |
| | Bill No. 1 | | |
| | Electrical Installation | | |

| Item No | | Quantity | Rate | Amount |
|--|---|----------|------|--------|
| <u>SECTION NO. 5</u> | | | | |
| <u>BILL NO. 1</u> | | | | |
| <u>WET SERVICES</u> | | | | |
| <u>COLD WATER RETICULATION</u> | | | | |
| <u>Supply install and commission the water reticulation systems with all associated fittings.</u> | | | | |
| 1 | 25mm Galvanized Steel Free Standing 1.5m high water Tap Including all Associated Fittings | No | 4 | |
| 2 | 20mmx50m water Hose pipe with connection fittings and end nozzle | No | 4 | |
| 3 | <u>Free Standing PVC Water Hose Cabinet</u> | No | 4 | |
| 4 | Allowance For Water Reticulation Pipework and Fittings. Water Shall be connected from the nearest Connection Point on the existing Potable water reticulation network on site | m | 50 | |
| Carried to Final Summary | | | | R |
| Section No. 5 | | | | |
| Bill No. 1 | | | | |
| Wet Services | | | | |

Carried Forward

| | | | |
|--|--|---|--|
| <p style="text-align: right;">Brought Forward</p> <p><u>General attendance on nominated/selected subcontractors:</u></p> <p>The item "General Attendance" which follows each subcontract amount for nominated/selected subcontractors' work, shall be deemed to cover all the contractor's costs incurred in providing free of charge to the nominated/selected subcontractors, the following:</p> <ol style="list-style-type: none"> 1. Access to the site and places where the subcontract work is to be carried out, including the reasonable use of any temporary personnel hoists erected by the contractor 2. The provision of water and lighting and of single phase electric power to a position within 50 metres of the place where the subcontract work is to be carried out but excluding water, fuel and power for commissioning of any installation 3. The provision of an area for the subcontractor to establish temporary office accommodation and workshops and for the storage of plant and materials 4. The use of erected scaffolding belonging to the contractor, in common with others having the like right, while it remains erected on the site 5. The use, at reasonable times by arrangement of the contractor's erected hoisting equipment 6. Making good in all trades and cleaning down and removal of rubbish on completion <p><u>Special attendance on nominated/selected subcontractors:</u></p> <p>Where stated, special attendance as set out in clause 8.1 of section B of the Preliminaries will be described in detail in this bill</p> <p><u>Builder's work:</u></p> <p>Builder's work in connection with specialist services is given elsewhere in these bills of quantities</p> | | R | |
| <p style="text-align: right;">Carried Forward</p> <p>Section No. 6 Bill No. 1 Provisional Sums, ETC</p> | | R | |

**PASSENGER RAIL AGENCY OF SOUTH AFRICA
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| Brought Forward | | | R |
|--|---|------|------------|
| <u>SHIPPING CONTAINER</u> | | | |
| 1 | Sub-contract amount of One Hundred and Fifty Thousand Rand for the construction of boreholes complete | Item | 150,000.00 |
| 2 | Profit (.....%) | % | |
| 3 | General attendance (.....%) | % | |
| <u>MOCK-UPS AND SAMPLES</u> | | | |
| 4 | Budgetary Allowance of Fifty Thousand Rand for mock-ups and samples | Item | 50,000.00 |
| 5 | Profit (.....%) | % | |
| 6 | General attendance (.....%) | % | |
| <u>COMMUNITY LIAISON OFFICER</u> | | | |
| 7 | Subcontract amount of one One Hundred and Twenty Thousand Rand for Community Liaison Officer | Item | 120,000.00 |
| 8 | Profit (.....%) | % | |
| 9 | General attendance (.....%) | % | |
| <u>TRAINING PERSONNEL</u> | | | |
| 10 | Subcontract amount of one Two Hundred Thousand Rand for Training Personnel | Item | 200,000.00 |
| 11 | Profit (.....%) | % | |
| 12 | General attendance (.....%) | % | |
| Carried Forward to Summary of Section No. 6 | | | R |
| Section No. 6 | | | |
| Bill No. 1 | | | |
| Provisional Sums, ETC | | | |

| Item No | | Quantity | Rate | Amount |
|---------|---|----------|------|--------------|
| | <u>SECTION NO. 6</u> | | | |
| | <u>BILL NO. 2</u> | | | |
| | <u>BUDGETARY ALLOWANCES</u> | | | |
| | <u>PREAMBLES</u> | | | |
| | <u>General:</u> | | | |
| | A Budgetary Allowance is a sum of money included in the contract sum for work intended for execution by the Contractor, the extent of which is identified but not detailed | | | |
| | Work for which budgetary allowances are provided will be measured and valued in accordance with clause 32 of the Principal Building Agreement and deducted in whole or in part if not required without any compensation for loss or profit on the said allowances | | | |
| | Each Budgetary Allowance may comprise more than one element of work | | | |
| | <u>SOLAR PANEL STRUCTURAL SUPPORT</u> | | | |
| 1 | Budgetary Allowance of Four Million Rand for the solar panels structural support | Item | | 4,000,000.00 |
| | <u>ARTWORK TO CONCRETE WALL</u> | | | |
| 2 | Budgetary Allowance of Two Million Five Hundred Thousand Rand for the artwork to concrete wall | Item | | 2,500,000.00 |
| | <u>REMOVAL OF WATERPROOFING</u> | | | |
| 3 | Budgetary Allowance of Five Hundred Thousand Rand for the removal of waterproofing | Item | | 500,000.00 |
| | <u>NEW WATERPROOFING</u> | | | |
| 4 | Budgetary Allowance of One Million Five Hundred Thousand Rand for the new waterproofing | Item | | 1,500,000.00 |
| | | | | |
| | Carried Forward to Summary of Section No. 6 | | R | |
| | Section No. 6 | | | |
| | Bill No. 2 | | | |
| | Budgetary Allowances | | | |

| SECTION SUMMARY - Provisional Sums | | Page No | | | Amount |
|------------------------------------|-----------------------|---------|--|--|--------|
| Bill No | | | | | |
| 1 | Provisional Sums, ETC | 43 | | | |
| 2 | Budgetary Allowances | 44 | | | |
| Carried to Final Summary | | | | | |
| Section No. 6 | | | | | |

**PASSENGER RAIL AGENCY OF SOUTH AFRICA
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| Section No | <u>FINAL SUMMARY</u> | Page No | Amount |
|---------------|--------------------------------------|------------|--------|
| 1 | Preliminaries and General | 8 | |
| 2 | Building Works | 24 | |
| 3 | External Works | 29 | |
| 4 | Electrical Installations | 39 | |
| 5 | Mechanical Installations | 40 | |
| 6 | Provisional Sums | 45 | |
| | SUB TOTAL (EXCLUDING CONTINGENCIES) | | R |
| | <u>CONTRACT CONTINGENCIES</u> | | |
| | Contingencies (10%) | | R |
| | SUB TOTAL (INCLUDING CONTINGENCIES) | | R |
| | <u>VALUE ADDED TAX</u> | | |
| | Value Added Tax [15%] | | R |
| | Carried to Form of Tender | | R |