



Annexure A

Bill of Quantities

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|---|-----|----------|------|--------|
| | SECTION 1 | | | | |
| | BILL NO. 1 | | | | |
| | PRELIMINARIES AND GENERAL(Applicable to the whole of the works) | | | | |
| | FIXED CHARGE ITEMS | | | | |
| 1 | Contractual requirements. | SUM | 1 | | |
| | <u>Establishment of Facilities on the Site</u> | | | | |
| | <u>Facilities for Engineer</u> | | | | |
| 2 | Furnished offices. | SUM | 1 | | |
| 3 | Telephone. | SUM | 1 | | |
| 4 | Name boards. (In No. 1). | SUM | 1 | | |
| | <u>Facilities for Contractor</u> | | | | |
| 5 | Offices and storage sheds. | SUM | 1 | | |
| 6 | Workshops. | SUM | 1 | | |
| 7 | Laboratories. | SUM | 1 | | |
| 8 | Living accommodation. | SUM | 1 | | |
| 9 | Ablution and latrine facilities. | SUM | 1 | | |
| 10 | Tools and equipment. | SUM | 1 | | |
| 11 | Water supplies, electric power, communications, dealing with water, and access. | SUM | 1 | | |
| 12 | Plant. | SUM | 1 | | |
| 13 | Other fixed charge obligations. | SUM | 1 | | |
| 14 | Removal of site establishment. | SUM | 1 | | |
| | VALUE RELATED ITEMS | | | | |
| 15 | Contractual requirements. | SUM | 1 | | |
| | <u>Establishment of Facilities on the Site</u> | | | | |
| | <u>Facilities for Engineer</u> | | | | |
| 16 | Furnished offices. | SUM | 1 | | |
| 17 | Telephone. | SUM | 1 | | |
| | <u>Facilities for Contractor</u> | | | | |
| 18 | Offices and storage sheds. | SUM | 1 | | |
| 19 | Workshops. | SUM | 1 | | |
| 20 | Laboratories. | SUM | 1 | | |
| 21 | Living accommodation. | SUM | 1 | | |
| 22 | Ablution and latrine facilities. | SUM | 1 | | |
| 23 | Tools and equipment. | SUM | 1 | | |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|---|--------|----------|------|--------|
| 24 | Water supplies, electric power, communications, dealing with water, and access. | SUM | 1 | | |
| 25 | Plant. | SUM | 1 | | |
| 26 | Other value related obligations. | SUM | 1 | | |
| 27 | Removal of site establishment. | SUM | 1 | | |
| | TIME RELATED ITEMS | | | | |
| 28 | Contractual requirements. | SUM | 1 | | |
| | <u>Operation and Maintenance of Facilities on Site, for Duration of Construction, (unless otherwise stated)</u> | | | | |
| | <u>Facilities for Engineer</u> | | | | |
| 29 | Furnished offices. | SUM | 1 | | |
| 30 | Telephone. | SUM | 1 | | |
| 31 | Survey assistants and materials. | SUM | 1 | | |
| | <u>Facilities for Contractor</u> | | | | |
| 32 | Offices and storage sheds. | SUM | 1 | | |
| 33 | Workshops. | SUM | 1 | | |
| 34 | Laboratories. | SUM | 1 | | |
| 35 | Living accommodation. | SUM | 1 | | |
| 36 | Ablution and latrine facilities. | SUM | 1 | | |
| 37 | Tools and equipment. | SUM | 1 | | |
| 38 | Water supplies, electric power, communications, dealing with water, and access. | SUM | 1 | | |
| 39 | Plant. | SUM | 1 | | |
| 40 | Supervision for duration of construction. | SUM | 1 | | |
| 41 | Company and head office overhead costs for duration of construction. | SUM | 1 | | |
| 42 | Other time related obligations. | SUM | 1 | | |
| | DAYWORK | | | | |
| 43 | Artisan | HR/DAY | 1 | | |
| 44 | Labourer | HR/DAY | 1 | | |
| 45 | Operator/Machine operator | HR/DAY | 1 | | |
| 46 | Supervisor | MONTH | 1 | | |
| 47 | Contractor's manager | MONTH | 1 | | |
| | TEMPORARY WORKS | | | | |
| 48 | Main access road to works. | SUM | 1 | | |
| 49 | Dealing with or accommodation of traffic. | SUM | 1 | | |
| | <u>Existing services.</u> | | | | |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|--|-----|----------|------|-------------|
| 50 | Supply or hire of specialist equipment for the detection of a particular service. | SUM | 1 | | |
| 51 | The use of equipment referred to in (a) above. <u>Cost of survey in terms of the Land Survey Act.</u> | SUM | 1 | | |
| 52 | Trigonometrical survey and plot boundary pegs - locate and record. | SUM | 1 | | |
| 53 | Trigonometrical survey of plot boundary pegs - protect and re-establish. | SUM | 1 | | |
| 54 | Special water control in terms of Project Specification. | SUM | 1 | | |
| 55 | Compensation in terms of sub-clause 57(4)(b)(ii) for delays due to the circumstances described in Sub-clauses 57(1) and (2) of the General Conditions of Contract, as amended | DAY | 1 | | |
| 56 | Compliance with OHS and MHSA Act and Regulations (including the Construction Regulations, 2003).The tenderers attention is drawn to the fact that the Occupational Health and Safety Act (Act 85 of 1993) is in force. Copies of the Act are available from the Government Printing Works, 149 Bosman Street, Pretoria (Private Bag X85, Pretoria, 0001, Tel No. (012) 334-4500). Tenderers are expected to be fully acquainted with the requirements of the Act.A pro-forma "Agreement in terms of the Occupational Health and Safety Act - Part C 1.4" is included in these bid documents. Tenderers are advised to study this pro-forma in order to make themselves fully conversant with the requirements and responsibilities of the Act and the Municipality.Tenderers are to provide for the above-mentioned requirements and to allow for all cost implications regarding the above including risk assesment, safety plan and monitoring system for the duration of the contract. | SUM | 1 | | |
| | CARRIED TO FINAL SUMMARY / ... | | | | 0,00 |
| | <p>SECTION 2</p> <p>BILL NO.1</p> <p>ALTERATIONS (PROVISIONAL)</p> <p>WORK GROUP ALLOCATION</p> <p>Unless otherwise stated, all items in this Bill will be allocated to Work Group 102 - Alterations</p> <p>PREAMBLES</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>SUPPLEMENTARY PREAMBLES</p> <p>View site:</p> <p>Before submitting his tender, the Contractor shall visit the site and satisfy himself as to the nature and extent of the work to be done and the value of the materials contained in the buildings or portions of the buildings to be demolished. No claim for any variations of the contract sum in respect of the nature and extent of the work or of inferior or damaged materials will be entertained</p> | | | | |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|--|--|----------|------|--------|
| | <p>Old materials to become property of the Contractor:</p> <p>Old materials from alterations, except where described as to be re-used or handed over, become the property of the Contractor, who must allow credit for same in the last item of the "Alterations" trade</p> <p>Old materials to be carted away:</p> <p>Old materials from the alterations, except where described as to be re-used or handed over, as well as all rubbish, etc must be regularly carted from the site and not be allowed to accumulate on or around the site</p> <p>Old materials to be re-used:</p> <p>None of the old materials are to be used for new work, except where specifically described as being set aside for re-use</p> <p>Handing over of materials:</p> <p>Where certain materials or articles from demolitions or alterations are described as to be "handed over to the Employer", it shall be taken to mean "handed over by the Contractor to the Principal Agent" and such materials or articles shall be properly stored by the Contractor until handing over thereof and shall include all necessary transport The Contractor must obtain an official receipt from the Principal Agent listing the materials or articles and dates of handing over Should the Contractor fail to submit the receipt when requested to do so, it shall be deemed that the materials or articles are still in his possession and he will be held liable to the Employer for the full replacement value thereof, which amount will be deducted from any monies due to the Contractor</p> <p>Explosives:</p> <p>No explosives whatsoever may be used for demolition purposes, unless otherwise stated</p> <p>GENERAL</p> <p><u>The contractor shall carry out the whole of the work with as little mess and noise as possible and with a minimum of disturbance to adjoining premises and their tenants. He shall provide proper protection and provide and erect any temporary tarpaulins and temporary plumbing that may be necessary during the progress of the works, all to the satisfaction of the Architect, and remove when directed.</u></p> <p><u>Any water supplies pipes and other piping that may be met with and found necessary to disconnect or cut, shall be effectually stopped or grubbed up and removed, and any new connections that may be necessary shall be made with proper fittings, to the satisfaction of the Architect.</u></p> <p><u>Doors, fanlights, fittings, frames, linings, etc shall be thoroughly overhauled before re-fixing including taking off, easing and rehangng, cramping up, re-wedging as required and making good cramps, dowels, etc and easing, oiling, adjusting and repairing ironmongery if necessary, replacing any glass damaged in removal or subsequently and stopping up all nail and screw holes with tinted wood to match timber.</u></p> <p><u>Where doors, windows, etc are described as taken out this shall be understood to include for removal of all beads, architraves, ironmongery, etc and doors which are re-fixed are to be provided with new architraves (elsewhere measured).</u></p> <p><u>Prices for taking out and removing doors and frames shall include for removing door stops, cabin locks, etc and making good to match existing.</u></p> <p><u>With regard to building up openings in existing walls, cement screeds and pavings, granolithic, etc, shall be levelled and prepared for raising of brickwork.</u></p> | | | | |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|--|----------------|----------|------|--------|
| | <p><u>Allow for making good all existing plastered walls where damaged by furniture, etc. and stopping up all screw and holes before painting.</u></p> <p><u>Making good finishes shall be deemed to include making good of the brick and concrete surfaces onto which new finishes are applied, where necessary.</u></p> <p><u>The contractor will be required to take all dimensions affecting existing building on the site and he will be held solely responsible for the accuracy of all such dimensions.</u></p> <p>Hazardous materials:</p> <p>Demolitions of buildings, services, external works, site services, etc are to include for the safe removal and disposal of asbestos or asbestos products or other hazardous materials by approved Registered Specialists</p> <p>-----</p> <p>TEMPORARY BARRIERS, SCREENS, ETC</p> <p>Temporary barriers, screens, etc including removal:</p> <p>Dust screen 3000mm high formed of suitable timber framing with 250 micron polyethylene sheeting stapled on including corners, ends, etc. to be used on all the phases of the construction project and in accordance to the Health and Safety specifications and regulations</p> | | | | |
| 1 | | m | 646 | | 0,00 |
| | <p>REMOVAL OF EXISTING WORK</p> <p>Demolishing and removing:</p> <p>Double- storey building, approximately 43750mm long x 12300mm wide x 8000mm high overall comprising one brick walls and corrugated roof sheeting</p> <p>Corrugated shelter, approximately 7500mm long x 3295mm wide x 3500mm high</p> <p>Taking out and removing doors, windows, etc including thresholds, sills, etc from brickwork (altering openings and making good finishes elsewhere):</p> <p>Timber single door and steel frame not exceeding 2,5m²</p> <p>Glazed clerestory window, size 1948 x 6300mm High</p> <p>Glazed clerestory window, size 2066 x 6300mm High</p> <p>Roller shutter door approximately 1800 x 2100mm high and prepare for a new roller shutter door</p> <p>Taking down and removing large unit roof coverings, accessories, etc:</p> <p>Profiled sheet metal roof covering including timber purlins</p> <p>Taking down and removing ceilings, partitions, etc:</p> <p>Suspended ceilings, including cornices, suspension grid, hangers, etc.</p> <p>ALTERING OPENINGS</p> <p>Altering openings including building in new prestressed concrete lintels and bonding new brickwork to existing, all as required:</p> <p>Altering opening in one brick wall where 1948 x 6300mm high steel window removed to receive new aluminium window</p> | | | | |
| 2 | | SUM | 1 | | |
| 3 | | SUM | 1 | | |
| 4 | | No | 3 | | 0,00 |
| 5 | | No | 2 | | 0,00 |
| 6 | | No | 1 | | 0,00 |
| 7 | | No | 1 | | 0,00 |
| 8 | | m ² | 37 | | 0,00 |
| 9 | | m ² | 45 | | 0,00 |
| 10 | | No | 2 | | 0,00 |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|--|----------------|----------|------|-------------|
| 11 | Altering opening in one brick wall where 2066 x 6300mm high steel window removed to receive new aluminium window | No | 2 | | 0,00 |
| | <u>MAKING GOOD OF FINISHES, ETC</u> | | | | |
| | Making good untinted granolithic: | | | | |
| 12 | Floors in patches | m ² | 50 | | 0,00 |
| | Making good internal/external cement plaster: | | | | |
| 13 | Walls in patches | m ² | 512 | | 0,00 |
| | Making good concrete: | | | | |
| 14 | Floors in patches | m ² | 6 | | 0,00 |
| | <u>GENERAL REPAIRWORK</u> | | | | |
| | Repairwork to existing brick and cladded walls: | | | | |
| | Waterjetting surfaces of existing retaining walls with high pressure low-volume water jetting lance to remove all dirt, brushing down and washing to remove surface contamination, mould, fungus, damp and treating with two coats of anti-fungal wash and leaving perfectly clean on completion | | | | |
| 15 | | m ² | 30 | | 0,00 |
| | Carried to section summary / ... | | | | 0,00 |
| | <u>SECTION 2</u> | | | | |
| | <u>BILL NO. 2</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> | | | | |
| | Nature of ground | | | | |
| | 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". | | | | |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|--|----------------|----------|------|--------|
| | <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>Subterranean water:</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>Excavation for working space in rock:</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>Carting away of excavated material</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>Filling</p> <p>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</p> <p>Testing:</p> <p>Prices for backfilling to trenches and holes only are to include for all necessary density tests in accordance with SANS 1200D</p> <p><u>EXCAVATIONS, FILLING, ETC</u></p> <p>EXCAVATIONS, ETC</p> <p>Excavation in earth not exceeding 2m deep:</p> | | | | |
| 1 | Reduced levels under floors | m ³ | 63 | | 0,00 |
| 2 | Trenches | m ³ | 62 | | 0,00 |
| 3 | Holes | m ³ | 28 | | 0,00 |
| | Extra over trench and hole excavations in earth for excavation in: | | | | |
| 4 | Soft rock | m ³ | 9 | | 0,00 |
| 5 | Hard rock | m ³ | 6 | | 0,00 |
| | Extra over all excavations for carting away: | | | | |
| 6 | Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor | m ³ | 90 | | 0,00 |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|---|----------------|----------|------|-------------|
| | Risk of collapse of excavations: | | | | |
| 7 | Sides of trench and hole excavations not exceeding 1,5m deep | m ² | 230 | | 0,00 |
| | Keeping excavations free of water: | | | | |
| 8 | Keeping excavations free of all water other than subterranean water | SUM | 1 | | |
| | FILLING ETC | | | | |
| | Earth filling obtained from the excavations and/or prescribed stock piles on site, compacted to 93% Mod AASHTO density: | | | | |
| 9 | Backfilling to trenches, holes, etc. | m ³ | 20 | | 0,00 |
| | G5 filling material supplied by the contractor, compacted to 93% Mod AASHTO density: | | | | |
| 10 | Under floors, steps, pavings, etc. | m ³ | 79 | | 0,00 |
| 11 | Backfilling to trenches, holes, etc. | m ³ | 61 | | 0,00 |
| | G7 filling material supplied by the contractor, compacted to 95% Mod AASHTO density: | | | | |
| 12 | Backfilling to trenches, holes, etc. | m ³ | 12 | | 0,00 |
| 13 | Under floors, steps, pavings, etc. | m ³ | 61 | | 0,00 |
| | Compaction of surfaces: | | | | |
| | 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 | | | | |
| 14 | | m ² | 473 | | 0,00 |
| | Prescribed density tests on filling: | | | | |
| 15 | "Modified AASHTO Density" test | No | 2 | | 0,00 |
| | SOIL POISONING | | | | |
| | Soil insecticide in accordance with SANS 5859: | | | | |
| | 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 | | | | |
| 16 | | m ² | 409 | | 0,00 |
| 17 | To bottoms and sides of trenches, etc. | m ² | 210 | | 0,00 |
| | Carried to section summary / ... | | | | 0,00 |
| | SECTION 2 | | | | |
| | BILL NO. 3 | | | | |
| | CONCRETE, FORMWORK AND REINFORCEMENT | | | | |
| | WORK GROUP ALLOCATION | | | | |
| | The items in this Bill will be allocated to Work Groups as indicated in brackets at the end of headings or descriptions | | | | |
| | PREAMBLES | | | | |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|--|----------------|----------|------|--------|
| | <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>SUPPLEMENTARY PREAMBLES</p> <p>Cost of tests:</p> <p>Breeze concrete:</p> <p>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</p> <p>Lightweight concrete:</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>Waterproof concrete:</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: 1. a cement/water ratio of minimum 1.9 and maximum 2.1 2. minimum OPC content of 300kg/m³ 3. Polypropolene micro fibres added to concrete at rate of 182 million per m³</p> <p>Formwork:</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>UNREINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES (WORK GROUP 110)</p> <p>10MPa/15mm concrete:</p> | | | | |
| 1 | Filling in hollow brick walls | m ³ | 60 | | 0,00 |
| | <p>15MPa/19mm concrete:</p> | | | | |
| 2 | Surface blinding under footings and bases | m ³ | 12 | | 0,00 |
| | <p>REINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES (WORK GROUP 110)</p> | | | | |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|--|----------------|----------|------|--------|
| | 30MPa/19mm concrete: | | | | |
| | Surface beds on waterproofing | m ³ | 59 | | 0,00 |
| 3 | Stub columns | m ³ | 1 | | 0,00 |
| | <u>REINFORCED CONCRETE CAST ON/IN FORMWORK (WORK GROUP 110)</u> | | | | |
| | 30MPa/19mm concrete: | | | | |
| 4 | Slabs including beams and inverted beams | m ³ | 23 | | 0,00 |
| | Strip footings | m ³ | 21 | | 0,00 |
| 5 | Bases | m ³ | 28 | | 0,00 |
| 6 | Isolated beams | m ³ | 7 | | 0,00 |
| 7 | Bottoms and sides of isolated gutter beams | m ³ | 7 | | 0,00 |
| 8 | Plinths | m ³ | 5 | | 0,00 |
| | <u>TEST CUBES (WORK GROUP 110)</u> | | | | |
| 9 | Making and testing sets of three 150 x 150 x 150mm concrete strength test cubes (Provisional) | Sets | 11 | | 0,00 |
| | <u>CONCRETE SUNDRIES (WORK GROUP 110)</u> | | | | |
| | Finishing top surfaces of concrete smooth with a steel trowel: | | | | |
| 10 | Surface beds, slabs, etc. | m ² | 586 | | 0,00 |
| | 35 MPa non-shrink grout: | | | | |
| 11 | Bedding approximately 20mm thick under 320 x 250mm base plate, including chamfered edges all round | No | 8 | | 0,00 |
| 12 | Bedding approximately 20mm thick under 215 x 215mm base plate, including chamfered edges all round | No | 2 | | 0,00 |
| 13 | Bedding approximately 20mm thick under 265 x 250mm base plate, including chamfered edges all round | No | 3 | | 0,00 |
| | <u>ROUGH FORMWORK (DEGREE OF ACCURACY III) (WORK GROUP 111)</u> | | | | |
| | Rough formwork to sides: | | | | |
| 14 | Stub columns | m ² | 3 | | 0,00 |
| | <u>SMOOTH FORMWORK (DEGREE OF ACCURACY II) (WORK GROUP 111)</u> | | | | |
| | Smooth formwork to sides: | | | | |
| 15 | Beams | m ² | 52 | | 0,00 |
| 16 | Edges, risers, ends and reveals not exceeding 300mm high or wide | m | 24 | | 0,00 |
| | Smooth formwork to soffits: | | | | |
| 17 | Slabs | m ² | 153 | | 0,00 |
| | Boxing in special formwork to form: | | | | |
| 18 | 20 x 20mm Chamfers along top or bottom edges | m | 24 | | 0,00 |
| | <u>MOVEMENT JOINTS, ETC (WORK GROUP 110)</u> | | | | |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|--|----------------|----------|------|-------------|
| | Expansion joints with 10mm softboard between vertical concrete and brick surfaces: | | | | |
| 19 | Not exceeding 300mm high to edges of surface beds | m | 7 | | 0,00 |
| | Saw-cut joints: | | | | |
| 20 | 6 x 10mm Saw-cut joints in top of concrete | m | 150 | | 0,00 |
| | Two layers of five-ply matthoid in slip joints between horizontal concrete and brick surfaces, including cement mortar bed: | | | | |
| 21 | Joints not exceeding 300mm wide | m | 150 | | 0,00 |
| | REINFORCEMENT (PROVISIONAL) (WORK GROUP 114) | | | | |
| | Mild steel reinforcement to structural concrete work: | | | | |
| 22 | Mild steel bar reinforcement (8 to 40mm diameter bars) | t | 9,73 | | 0,00 |
| | High tensile steel reinforcement to structural concrete work: | | | | |
| 23 | High tensile steel bar reinforcement (8 to 40mm diameter bars) | t | 22,77 | | 0,00 |
| | Fabric reinforcement: | | | | |
| 24 | Type 395 fabric reinforcement in concrete surface beds, slabs, etc. | m ² | 433 | | 0,00 |
| | Carried to section summary / ... | | | | 0,00 |
| | SECTION 2 | | | | |
| | BILL NO. 4 | | | | |
| | MASONRY | | | | |
| | WORK GROUP ALLOCATION | | | | |
| | Unless otherwise stated, all items in this Bill will be allocated to Work Group 116 - Brick and Blockwork | | | | |
| | PREAMBLES | | | | |
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| | 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 | | | | |
| | SUPPLEMENTARY PREAMBLES | | | | |
| | BRICKWORK | | | | |
| | General: | | | | |
| | Non-load bearing brickwork is to be built to full height less 20mm gap next to the ceiling and is to be left for 14 days before grouting up in 1:3 cement mortar. | | | | |
| | Sizes in descriptions: | | | | |
| | Where sizes in descriptions are given in brick units, "one brick" shall represent the length and "half brick" the width of a brick | | | | |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|--|----------------|----------|------|--------|
| 1 | <p>Hollow walls:</p> <p>Descriptions of hollow walls shall be deemed to include leaving every fifth perpend of the bottom course of the external skin open as a weep hole</p> <p>Bagged and sealed walls:</p> <p>Walls in two skins described as "bagged and sealed" shall be deemed to include having the outer face of the inner skin bagged with 1:6 cement and sand mixture and sealed with two coats bitumen emulsion waterproofing coating</p> <p>Face bricks :</p> <p>Bricks shall be ordered timeously to obtain uniformity in size and colour All face brickwork shall be regularly cleaned down as the work proceeds and shall be protected as necessary by an approved method</p> <p>Pointing:</p> <p>Descriptions of recessed pointing to fair face brickwork and face brickwork shall be deemed to include smooth floated square recessed, hollow recessed, weathered pointing, etc</p> <p>BLOCKWORK</p> <p>Concrete masonry units:</p> <p>Blocks are to be either solid or hollow modular dense concrete masonry units having a compressive strength of 7MPa</p> <p>Wall ties for blockwork:</p> <p>Wall ties shall be polypropylene ties complying with BS 76377. Ties for hollow walls shall be of sufficient length to allow not less than 75mm of each end to be built into the blockwork. Ties are to be spaced at intervals of not more than 1m in the horizontal direction and not more than 400mm staggered in the vertical direction except at openings, vertical joints or ends of walls where they are to be placed vertically above each other</p> <p>Blockwork:</p> <p>Blockwork shall comply with SANS 10145 "Concrete Masonry Construction"</p> <p>Surfaces to be plastered shall have joints raked out to a depth of at least 10mm to provide a key. Cavities of hollow walls shall be kept free of mortar droppings or other undesirable matter. Every second perpend of the bottom course of the external skin of hollow walls shall be left open as a weep hole</p> <p>Standard complementary blocks:</p> <p>Descriptions of blockwork shall be deemed to include standard complementary blocks such as corner, three-quarter, half and quarter blocks required in the construction of corners, reveals, jambs, ends, etc to solid and hollow walls and for bonding as necessary</p> <p>DECORATIVE BLOCKS</p> <p>Blocks shall be of approved manufacture, sound, well burnt or cured and uniform and true in size, shape and colour</p> <p>SUPERSTRUCTURE</p> <p>Brickwork of NFP bricks in class II mortar</p> <p>Half brick walls</p> | m ² | 119 | | 0,00 |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|--|----------------|----------|------|-------------|
| | Brickwork of NFX bricks (14 MPa nominal compressive strength) in class II mortar in loadbearing walls etc: | | | | |
| 2 | One brick walls | m ² | 612 | | 0,00 |
| 3 | One brick walls in beamfilling | m ² | 261 | | 0,00 |
| 4 | 345mm Solid walls of two half brick skins including wire ties and with cavity filled solid with 15Mpa /15 mm concrete as the work proceeds | m ² | 515 | | 0,00 |
| 5 | 352mm Solid walls of two half brick skins including wire ties and with cavity filled solid with 15Mpa /15 mm concrete as the work proceeds | m ² | 54 | | 0,00 |
| | 2,5mm Brickwork reinforcement: | | | | |
| 6 | 75mm Wide reinforcement built in horizontally | m | 351 | | 0,00 |
| 7 | 150mm Wide reinforcement built in horizontally | m | 3 877 | | 0,00 |
| | Prestressed fabricated concrete lintels, including necessary temporary supports: | | | | |
| 8 | 75 x 110mm Lintels in lengths not exceeding 3m long | m | 19 | | 0,00 |
| | Turning pieces to lintels, etc: | | | | |
| 9 | 220mm Wide turning pieces | m | 36 | | 0,00 |
| | FACE BRICKWORK | | | | |
| | External/Internal face bricks (Allow a Prime Cost Amount of R8500/1000 bricks delivered to site) pointed with recessed horizontal and vertical joints: | | | | |
| 10 | Extra over brickwork for face brickwork | m ² | 352 | | 0,00 |
| | Brick-on-edge header course copings, sills, etc of face bricks at a purchase price of R6500,00/1000 bricks delivered to site pointed with polished recessed joints on all exposed faces (Provisional) | | | | |
| 11 | 150mm Wide sills set sloping and slightly projecting | m | 218 | | 0,00 |
| | Carried to section summary / ... | | | | 0,00 |
| | SECTION 2 | | | | |
| | BILL NO. 5 | | | | |
| | WATERPROOFING | | | | |
| | WORK GROUP ALLOCATION | | | | |
| | Unless otherwise stated, all items in this Bill will be allocated to Work Group 120 - Waterproofing | | | | |
| | PREAMBLES | | | | |
| | 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 | | | | |
| | SUPPLEMENTARY PREAMBLES | | | | |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|---|----------------|----------|------|-------------|
| | <p>Waterproofing:</p> <p>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</p> <p>DAMP-PROOFING OF WALLS AND FLOORS</p> <p>One layer 375 micron embossed polyethylene dampproof course (SANS 952-1985 type B):</p> | | | | |
| 1 | In walls | m ² | 109 | | 0,00 |
| 2 | In walls vertically at reveals | m ² | 210 | | 0,00 |
| | <p>One layer 250 micron green polyethylene waterproof sheeting (SANS 952-1985 type C) sealed at laps with PVC self-adhesive tape:</p> | | | | |
| 3 | Under surface beds | m ² | 409 | | 0,00 |
| | <p>JOINT SEALANTS ETC</p> <p>Two- part grey polysulphide sealing compound including backing cord, bond breaker, primer, etc</p> | | | | |
| 4 | 6 x 10mm In saw cut joints in floors | m | 179 | | 0,00 |
| | <p>White silicone sealing compound</p> | | | | |
| 5 | 6 x 10mm in joints | m | 179 | | 0,00 |
| | Carried to section summary / ... | | | | 0,00 |
| | <p>SECTION 2</p> <p>BILL NO. 6</p> <p>ROOF COVERINGS</p> <p>WORK GROUP ALLOCATION</p> <p>The items in this Bill will be allocated to Work Groups as indicated in brackets at the ends of headings or descriptions</p> <p>PREAMBLES</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>SUPPLEMENTARY PREAMBLES</p> <p>Profiled metal roof sheeting and accessories shall be supplied with a 10 year guarantee and be installed by an approved installer</p> <p>All fixing holes shall be drilled and not punched</p> <p>Roof covering accessories shall be manufactured from the same material as used for roof covering</p> | | | | |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|--|----------------|----------|------|-------------|
| | PROFILED METAL SHEETING AND ACCESSORIES (WORK GROUP 124) | | | | |
| | 0,58mm Galvanised "Chromadek" pre-painted roof sheeting in single-length sheets, fixed to cold formed lipped channel at 1000mm c/c on sisalation/PVC underlay: | | | | |
| 1 | Roof coverings with pitch not exceeding 25 degrees | m ² | 608 | | 0,00 |
| | Accessories: | | | | |
| 2 | 0.8mm Aluminium barge flashings 605mm girth | m | 139 | | 0,00 |
| | PROFILED POLYCARBONATE SHEETING AND ACCESSORIES (WORK GROUP 122) | | | | |
| | 0.47mm IBR profile roof sheeting fixed to intermediate coated steel purlins at 1200mm c/c with 65mm fixtite metal fastners. Side laps to be stitched at 500mm c/c between purlins with 22mm metal stitching fastener in accordance with manufaturer's recommendations: | | | | |
| 3 | Side cladding | m ² | 77 | | 0,00 |
| | ROOF AND WALL INSULATION (WORK GROUP 122) | | | | |
| | Heavy industrial grade aluminium foil based insulation: | | | | |
| 4 | Two sided bubble insulation membrane | m ² | 551 | | 0,00 |
| | Carried to section summary / ... | | | | 0,00 |
| | SECTION 2 | | | | |
| | BILL NO. 7 | | | | |
| | CARPENTRY AND JOINERY | | | | |
| | WORK GROUP ALLOCATION | | | | |
| | Unless otherwise stated, all items in this Bill will be allocated to Work Group 126 - Carpentry & Joinery | | | | |
| | PREAMBLES | | | | |
| | 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 | | | | |
| | SUPPLEMENTARY PREAMBLES | | | | |
| | Fixing: | | | | |
| | Items described as "nailed" shall be deemed to be fixed with hardened steel nails or pins, or to be shot-pinned, to brickwork or concrete | | | | |
| | Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 500mm centres, and where described as "bolted", the bolts have been given separately elsewhere | | | | |
| | Joinery: | | | | |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|---|----|----------|------|--------|
| | <p>Descriptions of frames shall be deemed to include frames, transomes, rails, etc</p> <p>Descriptions of hardwood joinery shall be deemed to include sinking and pelleting heads and nuts of bolts</p> <p>Particle board</p> <p>All particle board shall comply with SANS 50312 having the required marking as per SANS 50312/EN 312</p> <p>Decorative thermosetting plastic laminate covering:</p> <p>Laminate covering shall be glued under pressure and edge strips of same shall be butt jointed at junctions with adjacent similar finish</p> <p>Sizes:</p> <p>Sizes are nominal and the Contractor shall make allowance in his prices for minor variances in stated finished sizes of timber doors, door members, door frames, architraves, etc</p> <p>Prices</p> <p>Prices for all joinery work are to include for general framing, housing and notching, arris rounded angles, glueing, blocking, planting on, screwing, adhesives, dowels, pellets, cross tongues, screws and nails and setting up complete and also for all square cutting and waste. Tops shall be secured with metal or hardwood buttons.</p> <p>FLOORS, ETC</p> <p>SKIRTINGS</p> <p>Wrought meranti:</p> | | | | |
| 1 | 19 x 76mm Skirtings including 19mm quadrant bead, nailed | m | 208 | | 0,00 |
| | <p>DOORS, ETC</p> <p>Semi-solid flush doors with gaboon veneer, hung to steel frames:</p> | | | | |
| 2 | 44mm Door 820 x 2025mm high (TP-03) | No | 6 | | 0,00 |
| 3 | 44mm Door 1020 x 2025mm high (TP-05) | No | 1 | | 0,00 |
| | <p>Solid flush doors with horizontal curved-in grooves and gaboon veneer, hung to aluminium frames:</p> | | | | |
| 4 | 40mm Door 1020 x 2025mm high (TP-04) | No | 2 | | 0,00 |
| | <p>Solid hardwood doors with slatted panels on both sides and concealed edges to suit opening, including three (3) hinges per leaf (measured elsewhere) hung to aluminium frames:</p> | | | | |
| 5 | 44mm Folding door 2400 x 2060mm high with concealed edges (TP-12) | No | 1 | | 0,00 |
| 6 | 44mm Door 820 x 2060mm high with concealed edges (TP-14) | No | 1 | | 0,00 |
| | <p>SUPPLEMENTARY PREAMBLES</p> <p>Fire doors:</p> <p>Fire doors are to be in accordance with SANS 1253</p> <p>DUCT COVERS</p> <p>Exterior grade hardwood P.A.R., coated and treated:</p> | | | | |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|--|----|----------|------|-------------|
| 7 | 50 x 300mm Timber slats coated and treated | No | 26 | | 0,00 |
| | <u>NOTICEBOARDS, KEYBOARDS, ETC</u> | | | | |
| | Pinning boards: | | | | |
| 8 | Pinning board 900 x 1200mm high overall formed of 9mm thick pinning material fixed to brickwork with suitable contact adhesive and framed with aluminium frame, plugged | No | 4 | | 0,00 |
| | Carried to section summary / ... | | | | 0,00 |
| | <u>SECTION 2</u> | | | | |
| | <u>BILL NO. 8</u> | | | | |
| | <u>CEILINGS, PARTITIONS AND ACCESS FLOORING</u> | | | | |
| | <u>WORK GROUP ALLOCATION</u> | | | | |
| | Unless otherwise stated, all items in this Bill will be allocated to Work Group 129 - Ceilings | | | | |
| | <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> | | | | |
| | Fixing: | | | | |
| | Items described as "nailed" shall be deemed to be fixed with hardened steel nails or pins, or to be shot-pinned, to brickwork or concrete | | | | |
| | Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 500mm centres, and where described as "bolted", the bolts have been given separately elsewhere | | | | |
| | Ceilings: | | | | |
| | Unless otherwise described, ceilings shall be deemed to be horizontal | | | | |
| | Bulkheads: | | | | |
| | Bulkheads are defined as those portions of ceilings which are stepped down from the general ceiling level in a particular room or area and which generally occur along the perimeter. Their purpose is either to conceal services or to create architectural features | | | | |
| | Bulkheads have only been described as such where they conform to the above definition and where the horizontal, vertical or sloping dimensions do not exceed 1200mm. Where these dimensions are more than 1200mm such portions of ceilings have been included in the appropriate general items of ceilings | | | | |
| | Unless otherwise described, bulkheads shall be deemed to be horizontal along the length | | | | |
| | Openings: | | | | |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|--|----------------|----------|------|--------|
| | Prices for openings for light fittings, ventilation grilles, air conditioning diffusers, etc are to include for any necessary additional support, trimming around, etc | | | | |
| | Steel components: | | | | |
| | All steel components for ceilings, partitions, etc are to be galvanised in accordance with SANS 121 | | | | |
| | INSULATION | | | | |
| | Non-combustible fibreglass insulation of a density of not less than 10kg/m3 bonded with an inert thermo-setting resin: | | | | |
| 1 | 120mm Insulation in blanket form, closely fitted and laid on top of branderings between roof timbers | m ² | 603 | | 0,00 |
| | Flexible acoustic insulation: | | | | |
| 2 | 50mm Thick laid on top of timber and/or steel structure | m ² | 311 | | 0,00 |
| | NAILED UP CEILINGS | | | | |
| | 12.5mm Thick Fibre-cement plain ceiling boards with H-profile galvanised steel jointing strips: | | | | |
| 3 | Ceilings including 38 x 38mm sawn softwood branderings at 400mm centres and cross branderings at 400mm centres | m ² | 76 | | 0,00 |
| 4 | Sloping ceilings including 38 x 38mm sawn softwood branderings at 400mm centres | m ² | 26 | | 0,00 |
| | 9.5mm Thick rhinoboard with taped and skimmed flush joints: | | | | |
| 5 | Ceilings including 38 x 38mm sawn softwood branderings at 400mm centres and cross branderings at 400mm centres | m ² | 44 | | 0,00 |
| 6 | Soffits and sides of horizontal bulkheads, size 1200 x 75mm deep, suspended exceeding 2m but not exceeding 4m below concrete soffits | m | 47 | | 0,00 |
| 7 | Extra over ceiling for 600 x 600mm trap door of 38 x 38mm wrought softwood rebated framing with one cross brander, covered with ceiling board and fitted flush in opening, including necessary trimmers around | No | 5 | | 0,00 |
| | Gypsum plasterboard cornices: | | | | |
| 8 | 75mm Coved cornices | m | 345 | | 0,00 |
| | SUSPENDED CEILINGS | | | | |
| | SUPPLEMENTARY PREAMBLES | | | | |
| | Proprietary suspended ceilings: | | | | |
| | Hangers, suspension grids, "lay-in" panels, etc are to be in accordance with the manufacturers' recommendations | | | | |
| | Electrical light fittings, diffusers, panels, etc are generally "lay-in" units of the same dimensions as the suspension grid described and an allowance must be made in the rates accordingly for their support inclusive of any flexibility in setting out that may be required (ceiling panels have not been deducted and pricing is to take cognisance thereof) | | | | |
| | Flush plastered gypsum plasterboard suspended ceilings: | | | | |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|---|----------------|----------|------|--------|
| | <p>Ceilings shall comprise 12,5mm gypsum plasterboard boards screwed to and including screw-up suspension grid consisting of main tees at 1200mm centres and galvanised steel capped cross tees at 400mm centres and with tape fixed over joints and the whole finished with gypsum plaster trowelled to a smooth polished surface</p> <p>The grid shall be suspended by means of galvanised steel L-section hangers at suitable centres, securely shot-pinned or screwed to concrete, steel or wood</p> <p>Flush plastered gypsum plasterboard suspended bulkheads:</p> <p>Bulkheads shall comprise galvanised steel studding of 63,5mm top and bottom tracks with vertical studs at maximum 400mm centres, pop-riveted to the top and bottom tracks with similar additional vertical studs as necessary at abutments, ends, etc and covered as described with plasterboard screwed to studding with drywall screws at maximum 300mm centres. Boards shall be butt jointed and finished with tape and jointing compound and the whole finished with gypsum plaster trowelled to a smooth polished surface to the thickness recommended by the manufacturer</p> <p>Descriptions shall be deemed to include any additional studs at ends and intersections, corner beads, cornices at junctions with ceilings, jointing compound, tape, etc</p> <p>600 x 1200 x 15mm pre-painted acoustic panels on exposed suspension grid system including hangers, necessary hold-down clips and wedges, etc:</p> | | | | |
| 9 | <p>Ceilings suspended not exceeding 1m below timber purlins at 950mm centres (trusses at 1000m centres)</p> | m ² | 577 | | 0,00 |
| | <p>Cornices, perimeter trims, etc to suspended ceilings:</p> | | | | |
| 10 | <p>30 x 30mm Pre-painted aluminium shadow line perimeter trims, plugged</p> | m | 345 | | 0,00 |
| | <p><u>PARTITIONS, ETC</u></p> | | | | |
| | <p>RW 45dB - 60 minutes fire rating steel stud drywall partitions, consisting of stud and track system with 102 x 35mm "Drywall Ultrasteel" studs at 600mm centres friction fitted into head track and floor track and clad on both sides with 15mm thick "FireStop" board fixed at 220mm centres using 25mm "RhinoBoard Sharp Point" screws, external angles to have Drywall cornerbeads attached and all joints to be covered with "RhinoTape" and finished with two layers of "RhinoGlide" applied and lightly sanded down, leaving wall surface prepared for painting (elsewhere measured):</p> | | | | |
| 11 | <p>Partitions 3000mm high with bottom and top tracks plugged</p> | m | 27 | | 0,00 |
| 12 | <p>Extra over partition 3000mm high for vertical abutment</p> | No | 5 | | 0,00 |
| 13 | <p>Extra over partition 3000mm high for corner</p> | No | 2 | | 0,00 |
| 14 | <p>Extra over partition 3000mm high for T-intersection</p> | No | 3 | | 0,00 |
| 15 | <p>Extra over partition 3000mm high for fair end</p> | No | 2 | | 0,00 |
| | <p>Carried to section summary / ...</p> | | | | 0,00 |
| | <p><u>SECTION 2</u></p> <p><u>BILL NO. 9</u></p> <p><u>FLOOR COVERINGS, WALL LININGS, ETC</u></p> <p><u>WORK GROUP ALLOCATION</u></p> | | | | |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|--|----------------|----------|------|-------------|
| | <p>Unless otherwise stated, all items in this Bill will be allocated to Work Group 130 - Resilient floor and wall coverings</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>Fixing:</p> <p>Floor coverings, wall linings, etc shall, where applicable, be fixed with adhesive as recommended by the manufacturers of the flooring, linings, etc</p> <p>Woodblock flooring:</p> <p>Woodblock flooring shall be fixed with bitumen or a similar approved adhesive</p> <p>Sanding:</p> <p>Sanding shall be done by using dustless sanders</p> <p>Where woodblock flooring is to be laid in areas which were previously covered by woodblocks, there may still be traces of existing bitumen and/or adhesive on the floor. The substrate must therefor be suitably prepared for the proper relaying of woodblock flooring and prices must include therefor, all to the approval of the Principal Agent</p> <p><u>FLOOR COVERINGS</u></p> <p>Timber flooring (Allow a Prime Cost Amount of R 750/m2 delivered to site) laid on existing timber joists on subfloors:</p> | | | | |
| 1 | On floors | m ² | 50 | | 0,00 |
| | 2.6mm "Smoked Chill Oak" flexible vinyl sheeting: | | | | |
| 2 | On floors | m ² | 60 | | 0,00 |
| | 450 x 450 x 2mm Antistatic semi flexible vinyl tiles: | | | | |
| 3 | On floors | m ² | 50 | | 0,00 |
| | <u>SKIRTINGS, NOSINGS, ETC</u> | | | | |
| | Skirtings, nosings, etc: | | | | |
| 4 | 70mm Clip-top capping skirtings to vinyl sheeting | m | 31 | | 0,00 |
| | <u>POLISH, SEALERS, ETC</u> | | | | |
| 5 | Two coats wax polish on vinyl flooring | m ² | 110 | | 0,00 |
| | Carried to section summary / ... | | | | 0,00 |
| | <u>SECTION 2</u> | | | | |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|--|----|----------|------|--------|
| | <p><u>BILL NO. 10</u></p> <p><u>IRONMONGERY</u></p> <p><u>WORK GROUP ALLOCATION</u></p> <p>Unless otherwise stated, all items in this Bill will be allocated to Work Group 132 - Ironmongery</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>Proprietary items:</p> <p>Where applicable, the manufacturers' names or product catalogue titles are given in sub-headings preceding the items. Note that the manufacturers names specified in this trade are for the purposes of competitive pricing. Prices are to be based on the specific products/articles specified. On request, returnable samples are to be provided to the Project Manager for consideration</p> <p>Locks:</p> <p>Notwithstanding Clause 2, Item 3 of the "Ironmongery" trade of the "Standard System of Measuring Building Work, Seventh Edition", descriptions of locks shall be deemed to include two keys per lock</p> <p>Finishes to ironmongery:</p> <p>Where applicable, finishes to ironmongery are indicated by suffixes in accordance with the following list: BS Satin bronze lacquered CH Chromium plated SC Satin chromium plated SE Silver enamelled GE Grey enamelled AN Anodised natural AS Anodised silver AB Anodised bronze AG Anodised gold ABL Anodised black PB Polished brass PL Polished and lacquered PTE epoxy coated SDSanded BBSB brushed stainless steel</p> <p><u>HINGES, BOLTS, ETC</u></p> | | | | |
| 1 | Surface mounted aluminium indicator bolt set | No | 8 | | 0,00 |
| 2 | 100mm Stainless steel ball bearing butt hinge with stainless steel screws | No | 15 | | 0,00 |
| | <p><u>LOCKS</u></p> <p>"EN-SUITE" LOCKS</p> <p>The following locks are to be suitable for master and grand master key operation</p> | | | | |
| 3 | Three-lever upright mortice lockset | No | 2 | | 0,00 |
| 4 | Grand master key | No | 1 | | 0,00 |
| 5 | Brass padlock | No | 2 | | 0,00 |
| | <p><u>HANDLES</u></p> | | | | |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|---|-------|----------|------|-------------|
| | Approved handles: | | | | |
| 6 | Anodised aluminium dove pull handle with 45 x 192mm back plates fixed back-to-back with male/female screws | Pairs | 9 | | 0,00 |
| | 104 x 30mm Perspex room number plates with white 25mm high "Helvetica" engraved letters and numbers on clear background, screw-fixed to timber doors with two chrome-plated self-tapping screws: | | | | |
| | <u>PUSH PLATES AND KICK PLATES</u> | | | | |
| | 1,2mm Thick satin finished stainless steel plates countersunk screwed along edges at not exceeding 200mm centres: | | | | |
| 7 | 300 x 150mm High push plate | No | 1 | | 0,00 |
| 8 | 1020 x 300mm High kick plate | No | 2 | | 0,00 |
| | <u>DOOR CLOSERS</u> | | | | |
| | Approved door furniture: | | | | |
| 9 | Door closer | No | 3 | | 0,00 |
| | <u>SUNDRIES</u> | | | | |
| | Approved sundries: | | | | |
| 10 | Door stop, plugged | No | 3 | | 0,00 |
| | <u>BATHROOM FITTINGS</u> | | | | |
| | Approved fittings: | | | | |
| 11 | Soap dispenser, plugged | No | 1 | | 0,00 |
| 12 | Wall-mounted automated hands free hand dryer | No | 6 | | 0,00 |
| 13 | Stainless steel soap dish, plugged | No | 7 | | 0,00 |
| 14 | Stainless steel lockable toilet roll holder, plugged | No | 8 | | 0,00 |
| 15 | Paper towel dispenser and waste bin combination, plugged | No | 6 | | 0,00 |
| 16 | Stainless steel sanitary towel disposal bin, plugged | No | 6 | | 0,00 |
| | Approved fittings: | | | | |
| 17 | Stainless steel back grab rail 750mm long, plugged | No | 2 | | 0,00 |
| 18 | Stainless steel side grab rail 874mm girth, plugged | No | 2 | | 0,00 |
| 19 | Fold down shower seat, plugged | No | 1 | | 0,00 |
| | <u>FITTINGS, ETC</u> | | | | |
| | Grade 304 stainless steel: | | | | |
| 20 | 500 x 180 x 492mm Deep overal stainless steel wall-mounted "First Aid" cabinet with sloping top, internal shelf and drop-down door | No | 2 | | 0,00 |
| | Carried to section summary / ... | | | | 0,00 |
| | <u>SECTION 2</u> | | | | |
| | <u>BILL NO. 11</u> | | | | |
| | <u>STRUCTURAL STEELWORK</u> | | | | |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|---|--|----------|------|--------|
| | <p><u>WORK GROUP ALLOCATION</u></p> <p>Unless otherwise stated, all items in this Bill will be allocated to Work Group 134 - Structural Steelwork in Buildings</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>Specification:</p> <p>All structural steel must comply with SANS 1200H (Degree of Accuracy II)</p> <p>All hot rolled structural steel sections must comply with SANS 1431 grade 300W, unless otherwise specified on the drawings</p> <p>Unless otherwise designated, all bolts and nuts will be grade 4.6 to SANS 135 and BS 916. Descriptions of bolts shall be deemed to include nuts and washers. Descriptions of L-shaped and U-shaped anchor bolts shall be deemed to include bending, threading, nuts and washers and embedding in concrete. 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>All connections must be welded all round with a 6mm fillet weld, unless otherwise specified on the drawings</p> <p>Drawings and shop details:</p> <p>The Contractor shall be responsible for preparing shop drawings and details which must be submitted to the Principal Agent for approval prior to commencement of fabrication. Before commencing any fabrication, the steel fabricator must check the accessibility of the site and design the sizes of individual parts accordingly</p> <p>Hot-dipped galvanizing:</p> <p>After fabrication and prior to delivery to site, all steelwork described as hot-dipped galvanized, is to be descaled and thoroughly cleaned by pickling, after which it is to be hot dip galvanized in accordance with the requirements of SANS 121/1501461</p> <p>Descriptions:</p> <p>Descriptions of bolts shall be deemed to include nuts and washers</p> <p>Descriptions of L-shaped and U-shaped anchor bolts shall be deemed to include bending, threading, nuts and washers and embedding in concrete</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><u>STEEL COLUMNS AND BEAMS</u></p> <p>Welded columns in single lengths with flat base, cap, bearer and connection plates, bolted to concrete:</p> | | | | |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|---|----------------|----------|------|--------|
| 1 | 203 x 203mm x 46kg/m I-section universal columns | t | 0,87 | | 0,00 |
| 2 | 254 x 146mm x 31kg/m I-section universal columns | t | 1,46 | | 0,00 |
| 3 | 305 x 165mm x 46kg/m I-section universal columns | t | 3,31 | | 0,00 |
| | Welded beams in single lengths with flat bearer and connection plates, bolted to steel: | | | | |
| 4 | IPE - AA 140 x 73 I-section rafters | t | 0,17 | | 0,00 |
| 5 | 203 x 133mm x 30kg/m I-section universal beams | t | 1,49 | | 0,00 |
| 6 | 101.6 x 3mm x 8kg/m I-section universal beams | t | 0,24 | | 0,00 |
| 7 | 254 x 146mm x 31kg/m I-section universal beams | t | 1,10 | | 0,00 |
| 8 | 305 x 165mm x 40kg/m I-section universal beams | t | 2,40 | | 0,00 |
| | STEEL PURLINS, GIRTS, BRACING, ETC. | | | | |
| | Purlins and girts, bolted to steel: | | | | |
| 9 | 125 x 65 x 20 x 2,5mm Thick cold-formed lipped channel purlins | t | 0,97 | | 0,00 |
| 10 | 125 x 75 x 20 x 2mm Thick cold-formed lipped channel purlins | t | 0,13 | | 0,00 |
| 11 | 150 x 50 x 20 x 2,5mm Thick cold-formed lipped channel purlins | t | 6,79 | | 0,00 |
| 12 | 250 x 75 x 20 x 3mm Thick cold-formed lipped channel purlins | t | 3,00 | | 0,00 |
| | Welded bracing, anti-sag rails, etc with flat connection plates, bolted to steel: | | | | |
| 13 | 50 x 50 x 3mm Thick sag angle | t | 0,29 | | 0,00 |
| 14 | 60 x 60 x 6mm Thick angle false rafters | t | 0,34 | | 0,00 |
| 15 | 80 x 80 x 3.5mm Thick square hollow section | t | 0,18 | | 0,00 |
| 16 | 120 x 120 x 8mm Thick angle rafters | t | 1,05 | | 0,00 |
| | BASE PLATES, ETC. | | | | |
| 17 | 20mm Thick base plates holed four for 20 diameter (bolts measured elsewhere in No. 18 base plates) | t | 0,23 | | 0,00 |
| | BOLTS, FASTENERS, ETC | | | | |
| 18 | 20mm Diameter chemical anchor | No | 604 | | 0,00 |
| | PAINTING | | | | |
| | Prepare and apply one galvanised iron primer to a DFT of 25-40 microns, one coat universal undercoat to a DFT of 25-35 microns and two coats of gloss enamel to a DFT of 25-35 microns per coat, on: | | | | |
| 19 | Structural steel columns, beams, etc | m ² | 349 | | 0,00 |
| 20 | Steel purlins, girts, etc | m ² | 409 | | 0,00 |
| | Paint testing: | | | | |
| 21 | Provide the sum of Seventy Five Thousand for quality control inspection by an authorised independent inspection authority | Item | 1 | | 0,00 |
| 22 | Profit (.....%) | %IT | | | |
| 23 | General attendance (.....%) | %IT | | | |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|---|----|----------|------|--------|
| | Carried to section summary / ... | | | | 0,00 |
| | <p>SECTION 2</p> <p>BILL NO. 12</p> <p>METALWORK</p> <p>WORK GROUP ALLOCATION</p> <p>Unless otherwise stated, all items in this Bill will be allocated to Work Group 136 - Metalwork</p> <p>PREAMBLES</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>SUPPLEMENTARY PREAMBLES</p> <p>Descriptions of bolts, anchors, etc:</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>Fixing:</p> <p>Unless otherwise described, descriptions of items shall be deemed to include for fixing to brickwork or concrete. Where items are described as "bolted", the bolts are measured elsewhere as stated in clause N.7 of the Model Preambles</p> <p>References:</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. 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>STEEL BALUSTRADES</p> <p>Welded and bolted patent balustrades to balconies and stairs:</p> <p>Horizontal balustrades 1000mm high, formed of continuous pipe top and bottom rails and stanchions bolted to concrete (bolts elsewhere)</p> <p>1</p> <p>2</p> | | | | |
| | | m | 30 | | 0,00 |
| | | No | 2 | | 0,00 |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|--|----|----------|------|--------|
| 3 | 16mm Expansion bolt | No | 36 | | 0,00 |
| 4 | 16mm Chemical anchor with loose bolt | No | 36 | | 0,00 |
| | <u>GALVANISED STEEL GATES, SCREENS, ETC</u> | | | | |
| 5 | Custom-made screen, 1652 x 2100mm high, spot welded to columns | No | 2 | | 0,00 |
| 6 | Custom-made screen, 2796 x 5800mm high, spot welded to columns | No | 1 | | 0,00 |
| 7 | Custom-made screen, 4906 x 8976mm high, spot welded to columns | No | 1 | | 0,00 |
| 8 | Custom -made screen, 8261 x 2100mm high , spot welded to columns | No | 1 | | 0,00 |
| | Laser cut galvanised mild steel screens, fixed to structural steel columns: | | | | |
| | <u>PRESSED STEEL DOOR FRAMES</u> | | | | |
| | 1,6mm Rebated frames suitable for one brick walls: | | | | |
| 9 | Frame for door 1500 x 2100mm high (TP-02) | No | 2 | | 0,00 |
| 10 | Frame for door 1100 x 2100mm high (TP-05) | No | 1 | | 0,00 |
| | <u>PRESSED STEEL TRANSFORMER ROOM DOORS AND FRAMES</u> | | | | |
| | Steel doors with ventilation louvres: | | | | |
| 11 | Purpose made mild steel transformer double door with steel louvres, 1500 x 2100mm High (TP-02) | No | 2 | | 0,00 |
| | <u>ALUMINIUM WINDOWS, DOORS, ETC</u> | | | | |
| | Aluminium windows, doors, etc: | | | | |
| | The successful tenderer shall be responsible for the complete design work including determining required section sizes and fixing details, all subject to the Project Manager's approval | | | | |
| | Doors, windows, etc shall be designed and constructed to withstand wind pressures of 1,1kn/m2 (unfactored) and 1,5kn/m2 (factored) | | | | |
| | All calculations shall be submitted to the Project Manager for approval | | | | |
| | Doors and windows shall comply with AAAMSA design criteria | | | | |
| | Glazing shall comply with SAGGA regulations. Glass thicknesses shall comply with SAGGA regulations irrespective of thicknesses shown on the schedules/drawings | | | | |
| | Doors and windows shall be supplied with protective tape and plastic which shall be removed only once surrounding trades have been completed | | | | |
| | The following certificates shall be provided prior to commencement of site work: 1 A copy of the relevant AAAMSA Performance Test Certificate from the manufacturer/contractor supplying the architectural aluminium product | | | | |
| | 2 A Certificate of Conformance confirming that anodising or powder coating has been processed in accordance with SANS 999 and SANS 1796 respectively | | | | |
| | 3 A copy of the relevant Performance Compliance Report from the system suppliers | | | | |
| | 4 A copy of the relevant Safiera Energy Rating Certification | | | | |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|--|----|----------|------|--------|
| | <p>5 A powder guarantee of not less than 15 years issued by the powder manufacturer. The specific conditions contained in this guarantee shall form part of the powder coating process</p> <p>6 A Certificate of Conformance confirming that glazing has been installed in accordance with SANS 10400-N, ensuring that safety glazing materials have been installed in the mandatory areas and that each individual pane of safety glazing materials has been permanently marked</p> <p>7 A warranty from the manufacturer of the laminated safety glass and/or hermetically sealed glazing units guaranteeing the products against delamination and colour degradation for a period of not less than five years</p> <p>All windows and door joints must be sealed to the inside with "Dow Corning" silicone during manufacturing</p> <p>All dimensions shall be verified on site before commencing the work and a full set of shop drawings showing all relevant details shall be submitted to the Architect for his approval, prior to the manufacture of the units</p> <p>Sizes</p> <p>Where sizes are given these are nominal sizes</p> <p>Ironmongery</p> <p>The tenderer must allow in his pricing for supply and fixing of ALL ironmongery Heavy duty high quality fittings must be allowed for and samples will be required for approval by the Project Manager</p> <p><u>ALUMINIUM CASEMENT WINDOWS</u></p> <p>Powder coated black aluminium windows with and including 12 x 12mm solid square aluminium burglar bars fixed to window over opening sashes, 6mm clear float safety glass, glazing beads, black nylon ironmongery, woolpile weather seals, packing pieces, friction stays, coverstrips and sealing all round on both sides with polysulphide or similar approved sealant:</p> | | | | |
| 12 | Window type TP01, 2800 x 400mm high (W01) | No | 2 | | 0,00 |
| 13 | Window type TP02, 4446 x 400mm high (W02) | No | 2 | | 0,00 |
| 14 | Window type TP03, 1850 x 400mm high (W03) | No | 2 | | 0,00 |
| 15 | Window type TP04, 3000 x 400mm high (W04) | No | 1 | | 0,00 |
| 16 | Window type TP05, 400 x 2808mm high (W05) | No | 1 | | 0,00 |
| 17 | Window type TP06, 5990 x 400mm high, including a side window, 399 x 1558mm High (W06) | No | 1 | | 0,00 |
| 18 | Window type TP07, 5330 x 400mm high (W07) | No | 1 | | 0,00 |
| 19 | Window type TP08, 400 x 900mm high (W08) | No | 2 | | 0,00 |
| 20 | Window type TP09, 400 x 2725mm high (W09) | No | 3 | | 0,00 |
| 21 | Window type TP10, 6000 x 900mm high (W10) | No | 1 | | 0,00 |
| 22 | Window type TP11, 996 x 1200mm high (W11) | No | 2 | | 0,00 |
| 23 | Window type TP12, 1893 x 1200mm high (W12) | No | 1 | | 0,00 |
| 24 | Window type TP13, 1893 x 720mm high (W13) | No | 1 | | 0,00 |
| 25 | Window type TP14, 5600 x 2400mm high (W14) | No | 1 | | 0,00 |
| 26 | Window type TP15, 2845 x 2900mm high (W15) | No | 1 | | 0,00 |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|---|----|----------|------|--------|
| 27 | Window type TP16, 2845 x 3087mm high (W16) | No | 1 | | 0,00 |
| 28 | Window type TP17, 5870 x 3087mm high (W17) | No | 1 | | 0,00 |
| 29 | Window type TP18, 3273 x 400mm high (W18) | No | 1 | | 0,00 |
| 30 | Window type TP19, 3280 x 400mm high (W19) | No | 1 | | 0,00 |
| 31 | Window type TP20, 2540 x 2331mm high (W20) | No | 1 | | 0,00 |
| 32 | Window type TP20, 6465 x 400mm high (W21) | No | 1 | | 0,00 |
| 33 | Trapezium-shaped window TP22, 10546mm x 1200mm high (extreme height) (W22) (Drawing No. 1002-001-0405) | No | 1 | | 0,00 |
| 34 | Trapezium-shaped window TP23, 10546mm x 1200mm high (extreme height) (W23) (Drawing No. 1002-001-0405) | No | 1 | | 0,00 |
| 35 | Window type TP24, 10645 x 1320mm high (W24) | No | 1 | | 0,00 |
| 36 | Window type TP25, 58400 x 1522mm high (W25) | No | 1 | | 0,00 |
| 37 | Triangular-shaped window TP26, 5325mm x 1500mm high (extreme height) (W26) (Drawing No. 1002-001-0405) | No | 1 | | 0,00 |
| 38 | Window type TP27-A, 6975 x 4000mm high (W27-A) | No | 1 | | 0,00 |
| 39 | Window type TP27-B, 6050 x 4000mm high (W27-B) | No | 1 | | 0,00 |
| 40 | Window type TP28, 2365 x 400mm high (W28) | No | 2 | | 0,00 |
| 41 | Window type TP29, 3000 x 2400mm high (W29) | No | 1 | | 0,00 |
| 42 | Window type TP30, 2100 x 1000mm high (W30) | No | 1 | | 0,00 |
| | ALUMINIUM DOORS, FRAMES, ETC | | | | |
| | Powder coated black aluminium door units complete with coupling mullions, 6mm clear safety glass, pvc gaskets, woolpile draught seats, packing pieces, coverstrips, ironmongery and sealing all round on both sides with polysulphide or similar approved sealant: | | | | |
| 43 | Double door unit, size 1500mm x 2100mm high overall with door in two equal leaves (TP01) | No | 1 | | 0,00 |
| 44 | Door frame, size 900 x 2100mm high with lockset and handles (TP-03) | No | 6 | | 0,00 |
| 45 | Door frame, size 1100 x 2100mm high with lockset and handles (TP-04) | No | 2 | | 0,00 |
| 46 | Door frame, size 2400 x 2100mm high with lockset and handles (TP-12) | No | 1 | | 0,00 |
| 47 | Door frame, size 900 x 2100mm high with lockset and handles (TP-14) | No | 1 | | 0,00 |
| 48 | Door size, 1500 x 2400mm high with lockset and handles (SF-01) | No | 1 | | 0,00 |
| 49 | Door size, 1780 x 2100mm high with lockset and handles (SF-02) | No | 1 | | 0,00 |
| 50 | Door size, 1500 x 2100mm high with lockset and handles (SF-03) | No | 1 | | 0,00 |
| 51 | Door size, 3700 x 2100mm high with lockset and handles (SF-04) | No | 1 | | 0,00 |
| 52 | Door size, 1500 x 2800mm high with lockset and handles (TP-08) | No | 1 | | 0,00 |
| 53 | Door frame, size 1500 x 2400mm high with lockset and handles (TP-09) | No | 2 | | 0,00 |
| | ALUMINIUM SLIDING FOLDING DOORS | | | | |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|--|----|----------|------|-------------|
| | Powder coated sliding folding doors complete with subframes, ironmongery, glass, cover strips and sealing all round on both sides with poly sulphide or similar approved sealant: | | | | |
| 54 | Purpose made sliding folding door, 9815 x 2330mm high (TP-06) | No | 1 | | 0,00 |
| 55 | Purpose made sliding folding door, 5870 x 2900mm high (TP-07) | No | 2 | | 0,00 |
| | <u>STEEL ROLLER SHUTTERS, ETC</u> | | | | |
| | Natural anodised zincalume roller shutters: | | | | |
| 56 | Manual push-up slatted roller shutter for 3500 x 2100mm high opening (TP-10) | No | 1 | | 0,00 |
| 57 | Manual push-up slatted roller shutter for 3500 x 2400mm high opening (TP-11) | No | 2 | | 0,00 |
| | <u>SHOWER CUBICLE PANELS AND DOORS</u> | | | | |
| | Anodised aluminium shower cubicle panels and doors with frames, sliding gear, pivot hinges, cleats, stops, etc and 6,38mm toughened clear safety glass, plugged to tiled walls and sealed on both sides with silicone sealant: | | | | |
| 58 | Swing door 1000 x 2100mm high with 165mm undercut | No | 6 | | 0,00 |
| | Carried to section summary / ... | | | | 0,00 |
| | <u>SECTION 2</u> | | | | |
| | <u>BILL NO. 13</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> | | | | |
| | Moisture tests: | | | | |
| | 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 | | | | |
| | Labours, etc | | | | |
| | Labours such as fair, rounded and chamfered edges, trowel cuts, throats, V-joints, angles, etc shall be deemed to be included in the descriptions | | | | |
| | Sample Panels | | | | |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|---|--|----------|------|--------|
| | <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 relevant wall and floor finishes</p> <p>GRANOLITHIC</p> <p>Method:</p> <p>The method to be used shall be either the monolithic method or the bonded method</p> <p>Preparation:</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>Mix:</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> <p>Panels:</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>Laying:</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>Curing, seasoning and protection:</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>Colour:</p> <p>Coloured granolithic shall be tinted with an approved colouring pigment mixed into a true and even colour</p> <p>TINTED WHITE CEMENT SCREEDS</p> | | | | |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|---|----------------|----------|------|--------|
| | <p>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</p> <p>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</p> <p>CEMENT PLASTER</p> <p>Unless otherwise described, cement plaster shall be taken to mean Class 1 cement plaster i.e. 1:4 cement:sand plaster (common cement)</p> <p>SCREEDS</p> <p>3:1 Cement plaster screeds wood floated for tiles, on concrete:</p> | | | | |
| 1 | 40mm Thick on floors and landings | m ² | 169 | | 0,00 |
| | <p>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:</p> | | | | |
| 2 | 40mm Thick on floors and landings | m ² | 110 | | 0,00 |
| | <p>SPECIAL FLOOR COATING</p> <p>5mm Thick non-slip "Polyurethane" or similar approved self-levelling epoxy floor coating applied by an approved specialist, on:</p> | | | | |
| 3 | On floors | m ² | 218 | | 0,00 |
| | <p>INTERNAL PLASTER</p> <p>Cement plaster wood floated for tiles, on brickwork:</p> | | | | |
| 4 | On walls | m ² | 839 | | 0,00 |
| 5 | On narrow widths | m ² | 10 | | 0,00 |
| | <p>EXTERNAL PLASTER</p> <p>Cement plaster steel floated, on brickwork:</p> | | | | |
| 6 | On walls | m ² | 523 | | 0,00 |
| 7 | On walls in sunk/raised panels | m ² | 97 | | 0,00 |
| 8 | On narrow widths | m ² | 52 | | 0,00 |
| | <p>CORNER PROTECTORS, DIVIDING STRIPS, ETC</p> <p>Brass:</p> | | | | |
| 9 | 3 x 30mm Flat section dividing strip | m | 30 | | 0,00 |
| | Carried to section summary / ... | | | | 0,00 |
| | SECTION 2 | | | | |
| | BILL NO. 14 | | | | |
| | TILING | | | | |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|---|----------------|----------|------|--------|
| | <p><u>WORK GROUP ALLOCATION</u></p> <p>Unless otherwise stated, all items in this Bill will be allocated to Work Group 144 - Tiling</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>Fixing:</p> <p>Unless described as "fixed with adhesive to plaster (plaster elsewhere)", descriptions of tiling on brick or concrete walls, columns, etc shall be deemed to include 1:4 cement plaster backing and descriptions of tiling on concrete floors, etc shall be deemed to include 1:3 cement plaster bedding</p> <p>Tiling described as "fixed with adhesive on power floated concrete" shall be deemed to include for approved tiling key-coat</p> <p>Ceramic, porcelain, marble and granite tiles are to be fixed and grouted with suitable adhesives and grouts from the "Tal Goldstar" or similar approved range of products as recommended by the manufacturer of the tiles</p> <p>Preparatory work to existing painted plastered surfaces:</p> <p>Preparation of all existing painted plastered surfaces is to include for removing all loose and flaking material by wire brushing, thoroughly washing down and allowing to dry completely and applying one coat masonry bonding agent</p> <p><u>WALL TILING</u></p> <p>75 x 300mm Glass tiles (Allow a Prime Cost Amount of R 200/m2 delivered to site) fixed with adhesive to plaster (plaster elsewhere) and flush pointing with and including waterproof grout:</p> | | | | |
| 1 | On walls | m ² | 335 | | 0,00 |
| 2 | On narrow widths | m ² | 84 | | 0,00 |
| | <p>Mosaic tiles (Allow a Prime Cost Amount of R 250/m delivered to site) fixed with adhesive to plaster (plaster elsewhere) and flush pointing with and including waterproof grout:</p> | | | | |
| 3 | Listello strip dado trim | m | 160 | | 0,00 |
| | <p><u>FLOOR TILING</u></p> <p>8.6 x 590 x 1190mm Porcelain floor tiles (Allow a Prime Cost Amount of R 450/m2 delivered to site) fixed with adhesive to 40mm screed (screed elsewhere) and flush pointing with and including waterproof grout:</p> | | | | |
| 4 | On floors | m ² | 169 | | 0,00 |
| 5 | Skirting 100mm high (of fair cut tiles) | m | 137 | | 0,00 |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|--|----------------|----------|------|-------------|
| | 48 x 48mm Non-slip mosaic floor tiles (Allow a Prime Cost Amount of R 380/m2 delivered to site) fixed with adhesive to screed (screed elsewhere) and flush pointing with and including waterproof grout: | | | | |
| 6 | On shower floors to falls and currents | m ² | 21 | | 0,00 |
| | SUNDRIES | | | | |
| | Stainless steel dividing strips: | | | | |
| 7 | 50 x 15mm Flat section dividing strips between tiles and vinyl sheeting | m | 30 | | 0,00 |
| 8 | 28 x 10 x 2,5mm L-section dividing strips between tiles | m | 100 | | 0,00 |
| | Stainless steel corner protectors, stair nosings, expansion joint strips, etc: | | | | |
| 9 | 22,5mm Stainless steel expansion joint strip with and including neoprene compression strip type MCN100 | m | 100 | | 0,00 |
| | Carried to section summary / ... | | | | 0,00 |
| | SECTION 2 | | | | |
| | BILL NO. 15 | | | | |
| | PLUMBING AND DRAINAGE (PROVISIONAL) | | | | |
| | WORK GROUP ALLOCATION | | | | |
| | The items in this Bill will be allocated to Work Groups as indicated in brackets at the end of headings or descriptions | | | | |
| | PREAMBLES | | | | |
| | 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 | | | | |
| | SUPPLEMENTARY PREAMBLES | | | | |
| | Wire gratings: | | | | |
| | Descriptions of gutter outlets, etc shall be deemed to include wire balloon gratings | | | | |
| | Stormwater channels: | | | | |
| | Descriptions of channels shall be deemed to include necessary excavation, surface preparation, compaction, etc and disposal of surplus material on site | | | | |
| | French drains: | | | | |
| | Descriptions of french drains shall be deemed to include excavation, stone filling graded from 300mm diameter at bottom to 75mm diameter at top, approved geofabric filter blanket over stone, 300mm earthfilling over and disposal of surplus material on site | | | | |
| | Septic tanks: | | | | |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|--|--|----------|------|--------|
| | <p>Descriptions of proprietary type septic tanks shall be deemed to include excavation, bedding and jointing, concrete base slabs, jointing to drains and backfilling, compaction, etc all in accordance with the manufacturer's instructions and disposal of surplus material on site</p> <p>Stainless steel basins, sinks, wash troughs, urinals, etc:</p> <p>Stainless steel for economy basins, domestic sinks and worktops shall be Type 430 (17/0) Stainless steel for urinals, basins, quality sinks, wash troughs, institutional equipment, etc shall be Type 304 (18/8) Stainless steel for laboratory sinks, photographic equipment, etc shall be Type 316 (18/8) Units shall have standard aprons on all exposed edges and tiling keys against walls where applicable</p> <p>Sealing of edges:</p> <p>Outer edges of sinks, basins, baths, urinals, etc are to be sealed against adjacent surfaces with approved mildew resistant silicone sealant and prices must include therefor</p> <p>uPVC pipes and fittings:</p> <p>Sewer and drainage pipes and fittings shall be jointed and sealed with butyl rubber rings Soil, waste and vent pipes and fittings shall be solvent weld jointed or sealed with butyl rubber rings</p> <p>uPVC pressure pipes and fittings:</p> <p>Pipes of 50mm diameter and smaller shall be plain ended with solvent welded uPVC loose sockets and fittings Pipes of 63mm diameter and greater shall have sockets and spigots with push-in type integral rubber ring joints. Bends shall be uPVC and all other fittings shall be cast iron, all with similar push-in type joints</p> <p>High density polyethylene (HDPE) pipes and fittings:</p> <p>Pipes shall be type IV and of the class specified with "Plasson" or "Alprene" compression fittings</p> <p>Polypropylene pipes:</p> <p>Polypropylene pipes 54mm diameter and smaller shall be seamless copper coloured Class 16 pipes jointed with "Fast-fuse" heat welded thermoplastic or where so described "Polylock" compression fittings Pipes shall be firmly fixed to walls, etc with coloured nylon snap-in pipe clips with provision for accommodating thermal movement and jointed and fixed strictly in accordance with the manufacturer's instructions</p> <p>Copper pipes:</p> <p>Pipes shall be hard drawn and half-hard "Maksal" pipes of the class described. Class 0 (thin walled hard drawn) pipes shall not be bent. Class 1 (thin walled half-hard), Class 2 (half-hard) and Class 3 (heavy walled half-hard) pipes shall only be bent with benders with inner and outer formers. Fittings to copper waste, vent and anti-syphon pipes, capillary solder fittings and compression fittings shall be "Cobra Watertech" type. Capillary solder fittings shall comply with ISO 2016. Only compression fittings shall be used in walls or in ground</p> <p>Copper pipes are to be installed in accordance with the latest revision of the Code of Practice for Copper Plumbing soldering techniques. Flux, solder, etc to be strictly in accordance with the manufacturer's requirements with special attention to copper flux composition</p> <p>Reducing fittings:</p> | | | | |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|--|--|----------|------|--------|
| | <p>Where fittings have reducing ends or branches they are described as "reducing". In the case of pipes with diameters not exceeding 60mm, only the largest end or branch size is given. Should the Contractor wish to use other fittings and bushes or reducers he may do so on the understanding that no claim in this regard will be entertained. In the case of pipes with diameters exceeding 60mm, all sizes are given and no claims for extra bushes, reducers, etc will be entertained</p> <p>Fixing of pipes:</p> <p>Unless specifically otherwise stated, descriptions of pipes shall be deemed to include fixing to walls, etc casting in, building in or suspending not exceeding 1m below suspension level</p> <p>Paper wrapping to pipes:</p> <p>Pipes chased into brickwork must be wrapped with two layers of stout brown paper tied with wire. Rates are to include for wrapping around joints and fittings</p> <p>Disinfection of water pipework:</p> <p>Water pipework is to be disinfected at completion in accordance with SANS 1200L (provision for disinfection elsewhere)</p> <p>Petrolatum anti-corrosion tape</p> <p>Pipes to be taped shall be coated with the appropriate primer and the tape shall be applied in the appropriate widths and with suitable overlaps Couplings and fittings to pipes shall be taped in strict accordance with the manufacturer's instructions including mastic, tape, "Layflat" sheeting, securing of same, etc</p> <p>Prices for wrapping of pipes shall include for all work as described to couplings in the length</p> <p>Laying, backfilling, bedding, etc of pipes:</p> <p>Pipes shall be laid and bedded in accordance with manufacturers' instructions and trenches shall be carefully backfilled</p> <p>Where no manufacturers' instructions exist, pipes shall be laid in accordance with Clauses 5.1 and 5.2 of each of the following: SANS 1200L : Medium-pressure pipelines SANS 1200LD : Sewers SANS 1200LE : Stormwater drainage Pipe trenches, etc shall be backfilled in accordance with Clauses 3, 5.5, 5.6, 5.7 and 7 of SANS 1200DB : Earthworks (Pipe trenches) Pipes shall be bedded in accordance with Clauses 3.1 to 3.4.1, 5.1 to 5.3 and 7 of SANS 1200LB : Bedding (Pipes) Unless otherwise described, bedding of rigid pipes shall be Class B bedding</p> <p>General:</p> <p>Descriptions of cast iron roof outlets shall be deemed to include joints to pipes and casting into concrete (adaptors for joints to PVC pipes, etc are given separately) Descriptions of overflow pipes where measured in number, shall be deemed to include joints to cisterns and splay cut ends</p> <p>Descriptions of pipes laid in and including trenches and of inspection chambers, catchpits, etc shall be deemed to include excavation, bedding, backfilling, compaction to a minimum of 98% Mod AASHTO density and disposal of surplus material on site</p> <p>Descriptions of service pipes and flexible connecting pipes shall be deemed to include connections to taps, cisterns, etc and to steel pipes (adaptors for connections to copper pipes, etc are given separately)</p> | | | | |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|--|----|----------|------|--------|
| | <p>Descriptions of WC pans, slop hoppers, etc shall be deemed to include for joints to soil pipes (pan connectors are separately measured) and shall have straight or side outlets and "P" or "S" traps as necessary</p> <p>Description of waste unions shall be deemed to include rubber or vulcanite plugs and chains fixed to fittings.</p> <p>As-built drawings:</p> <p>Where required, the Contractor shall prepare an updated set of as-built drawings. At completion of the contract the Contractor shall hand these drawings to the Project Manager for reproducing onto the originals for handing over to the Employer (provision for allowance of as-built drawings elsewhere)</p> <p>Proprietary items:</p> <p>Where applicable, the manufacturers' names or product catalogue titles are given in sub-headings preceding the items. Note that the manufacturers names specified in this trade are for the purposes of competitive pricing. Prices are to be based on the specific products/articles specified. On request, returnable samples are to be provided to the Project Manager for consideration</p> <p>RAINWATER DISPOSAL (WORK GROUP 148)</p> <p>0,6mm Galvanised sheet steel gutters and rainwater pipes with powder coated finish on outside to match roof sheeting colour:</p> | | | | |
| 1 | 150 x 150mm Box gutters | m | 31 | | 0,00 |
| 2 | 100 x 75mm Rainwater pipes | m | 12 | | 0,00 |
| 3 | Extra over gutter for stopped end | No | 2 | | 0,00 |
| 4 | Extra over gutter for angle | No | 2 | | 0,00 |
| 5 | Extra over gutter for outlet for 100 x 75mm pipe | No | 2 | | 0,00 |
| 6 | Extra over rainwater pipe for bend | No | 4 | | 0,00 |
| 7 | Extra over rainwater pipe for shoe | No | 2 | | 0,00 |
| 8 | Extra over rainwater pipe for eaves or plinth offset | No | 2 | | 0,00 |
| | <p>SANITARY FITTINGS (WORK GROUP 148)</p> <p>Approved stainless steel:</p> | | | | |
| 9 | 1800 x 535mm sink with two 343 x 410mm centre bowls, on cupboard (cupboard elsewhere) | No | 1 | | 0,00 |
| | <p>Sanitary fittings:</p> | | | | |
| 10 | 595 x 455mm Vanity basin mounted in vanity slab (vanity slab elsewhere) | No | 10 | | 0,00 |
| 11 | 580 x 410mm Underslung wash hand basin mounted in vanity slab (vanity slab elsewhere) | No | 1 | | 0,00 |
| 12 | Close-coupled WC suite comprising pan with double flap heavy duty thermoset seat and matching 9 litre cistern | No | 6 | | 0,00 |
| 13 | Paraplegic WC suite with lid, fittings, purpose made CP side flush lever and purpose made double flap white epoxy painted wooden seat | No | 2 | | 0,00 |
| 14 | Wall urinal with spreader and waste union (flush valve elsewhere) | No | 6 | | 0,00 |
| 15 | 900 x 900 x 150mm shower tray with waste outlet, bedded in position | No | 7 | | 0,00 |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|--|----|----------|------|--------|
| | <u>WASTE UNIONS, ETC</u> | | | | |
| 16 | 40mm CP basin waste union and anti-theft plug | No | 11 | | 0,00 |
| 17 | 38mm Sink waste union with plug, stay and chain | No | 1 | | 0,00 |
| | <u>TRAPS, ETC</u> | | | | |
| | <u>uPVC:</u> | | | | |
| 18 | 40mm "P" or "S" trap | No | 11 | | 0,00 |
| 19 | CP hinged urinal domical grating | No | 12 | | 0,00 |
| 20 | 40mm Shower trap with chromium plated grating | No | 7 | | 0,00 |
| 21 | 50mm Bottle trap | No | 6 | | 0,00 |
| | <u>TAPS, VALVES, ETC</u> | | | | |
| 22 | 15mm Basin mixer with waste union and angle flow regulating valves | No | 10 | | 0,00 |
| 23 | Chrome single lever, extra long handle basin mixer with waste union and angle flow regulating valves | No | 1 | | 0,00 |
| 24 | 15mm Star sink mixer | No | 1 | | 0,00 |
| 25 | 15mm Shower mixer | No | 7 | | 0,00 |
| 26 | 15mm Shower head | No | 7 | | 0,00 |
| 27 | 15mm Overhead shower arm | No | 7 | | 0,00 |
| 28 | Urinal flush valve | No | 6 | | 0,00 |
| | <u>ELECTRIC GEYSERS (WORK GROUP 148)</u> | | | | |
| 29 | 150 Litre electric geyser | No | 1 | | 0,00 |
| | <u>ELECTRIC WATER HEATERS</u> | | | | |
| | <u>Powdercoated Instant Water Boiler, etc:</u> | | | | |
| 30 | 10 Litre stainless steel Hydroboil, 340 x 205 x 630mm high with a two-way tap | No | 1 | | 0,00 |
| | <u>WATER TANKS, ETC.</u> | | | | |
| 31 | 10, 000 Litre water storage tank | No | 4 | | 0,00 |
| | <u>AS-BUILT DRAWINGS</u> | | | | |
| 32 | Provision of as-built drawings | No | 1 | | 0,00 |
| | Carried to section summary / ... | | | | 0,00 |
| | <u>SECTION 2</u> | | | | |
| | <u>BILL NO. 16</u> | | | | |
| | <u>GLAZING</u> | | | | |
| | <u>WORK GROUP ALLOCATION</u> | | | | |
| | Unless otherwise stated, all items in this Bill will be allocated to Work Group 150 - Glazing | | | | |
| | <u>PREAMBLES</u> | | | | |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|--|----|----------|------|-------------|
| | <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>SUPPLEMENTARY PREAMBLES</p> <p>Float glass:</p> <p>The term "float glass" is used for monolithic annealed glass</p> <p>Laminated glass:</p> <p>Laminated glass to have polyvinyl butyral (PVB) interlayer(s)</p> <p>TOPS, SHELVES, DOORS, MIRRORS, ETC</p> <p>4mm Silvered float glass copper backed mirrors with 10mm bevelled and polished edges fixed with double sided adhesive tape:</p> | | | | |
| 1 | Mirror 600 x 1200mm high | No | 2 | | 0,00 |
| 2 | Mirror 1200 x 1200mm high | No | 1 | | 0,00 |
| 3 | Mirror 1800 x 1200mm high | No | 3 | | 0,00 |
| | Carried to section summary / ... | | | | 0,00 |
| | <p>SECTION 2</p> <p>BILL NO. 17</p> <p>PAINTWORK</p> <p>WORK GROUP ALLOCATION</p> <p>Unless otherwise stated, all items in this Bill will be allocated to Work Group 152 - Painting</p> <p>PREAMBLES</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>SUPPLEMENTARY PREAMBLES</p> <p>PREPARATORY WORK TO EXISTING WORK</p> <p>Previously painted plastered surfaces:</p> <p>Surfaces shall be thoroughly washed down and allowed to dry completely before any paint is applied. Blistered or peeling paint shall be completely removed and minor cracks shall be opened, filled with a suitable filler and finished smooth</p> | | | | |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|---|----------------|----------|------|-------------|
| | <p>Previously painted metal surfaces:</p> <p>Surfaces shall be thoroughly rubbed and cleaned down. Blistered or peeling paint shall be completely removed down to bare metal</p> <p>Previously painted wood surfaces:</p> <p>Surfaces shall be thoroughly cleaned down. Blistered or peeling paint shall be completely removed and cracks and crevices shall be primed, filled with suitable filler and finished smooth</p> <p>PAINT SPECIFICATIONS</p> <p>All painting shall be done in accordance with specifications, unless otherwise described</p> <p>COLOURS</p> <p>When staining timber, the resultant colour or shade must be to the complete satisfaction of the Project Manager before any overcoating or preservative is applied. Paintwork is classified in the following different colour groups: "White", "Pastel", "Deep" and "Transparent" in accordance with the "Natural Colour System" (NCS) adopted by the SA National Standards. Unless otherwise described, all paintwork shall be deemed to be classified in the "White" colour group</p> <p><u>PAINTWORK, ETC TO NEW WORK</u></p> <p><u>ON INTERNAL FLOATED PLASTER SURFACES</u></p> <p>One coat alkali resistant plaster primer and two coats PVA acrylic emulsion paint on</p> | | | | |
| 1 | Walls | m ² | 218 | | 0,00 |
| | <p><u>ON EXTERNAL FLOATED PLASTER SURFACES</u></p> <p>One coat alkali resistant primer and two coats premium quality polyurethane enamel paint, on:</p> | | | | |
| 2 | Walls | m ² | 2 058 | | 0,00 |
| 3 | On narrow widths | m ² | 196 | | 0,00 |
| | <p><u>ON INTERNAL GYPSUM PLASTER SURFACES</u></p> <p>One coat primer and two coats interior quality acrylic PVA paint</p> | | | | |
| 4 | Ceilings and beams | m ² | 716 | | 0,00 |
| | <p><u>METAL SURFACES WITH</u></p> <p>One coat alkyd based zinc phosphate primer and two coats premium quality polyurethane enamel paint, on steel:</p> | | | | |
| 5 | Door frames | m ² | 9 | | 0,00 |
| | <p><u>ON WOOD SURFACES</u></p> <p>One coat primer, one coat alkyd based universal undercoat and two coats superior quality universal enamel paint, on:</p> | | | | |
| 6 | Doors | m ² | 4 | | 0,00 |
| 7 | Skirtings, rails not exceeding 300mm girth | m | 208 | | 0,00 |
| | Carried to section summary / ... | | | | 0,00 |

| ITEM NO | DESCRIPTION | QUANTITY | RATE | AMOUNT |
|---------|--|----------|------|--------|
| | <u>SECTION SUMMARY</u> | | | |
| 1 | Alterations (Provisional) | | | 0,00 |
| 2 | Earthworks (Provisional) | | | 0,00 |
| 3 | Concrete, Formwork and Reinforcement | | | 0,00 |
| 4 | Masonry | | | 0,00 |
| 5 | Waterproofing | | | 0,00 |
| 6 | Roof Coverings | | | 0,00 |
| 7 | Carpentry and Joinery | | | 0,00 |
| 8 | Ceilings, Partitions and Access Flooring | | | 0,00 |
| 9 | Floor Coverings | | | 0,00 |
| 10 | Ironmongery | | | 0,00 |
| 11 | Structural Steelwork | | | 0,00 |
| 12 | Metalwork | | | 0,00 |
| 13 | Plastering | | | 0,00 |
| 14 | Tiling | | | 0,00 |
| 15 | Plumbing and Drainage (Provisional) | | | 0,00 |
| 16 | Glazing | | | 0,00 |
| 17 | Paintwork | | | 0,00 |
| | CARRIED TO FINAL SUMMARY /... | | | 0,00 |
| | <p><u>SECTION 3</u></p> <p><u>BILL NO.1</u></p> <p><u>SLIPWAY DECK (PROVISIONAL)</u></p> <p><u>EARTHWORKS</u></p> <p><u>WORK GROUP ALLOCATION</u></p> <p>Unless otherwise stated, all items in this Bill will be allocated to Work Group 104 - Earthworks</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 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</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>Nature of ground:</p> | | | |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|--|----------------|----------|------|--------|
| 1 | <p>The nature of the ground is assumed to be loose sandy material, therefore "earth", but possibly interspersed with "soft rock" or "hard rock"</p> <p>The nature of the ground is assumed to be gravel, therefore "earth", but possibly interspersed with "soft rock" or "hard rock"</p> <p>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"</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 silty sand, reworked soil of mixed origin and residual shale, 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>Excavation for working space in rock:</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>Carting away of excavated material:</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>Filling:</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>Testing:</p> <p>Prices for backfilling to trenches and holes only are to include for all necessary density tests in accordance with SANS 1200D</p> <p>Formwork:</p> <p>Formwork to sides of bases, pile caps, ground beams, etc will only be measured where it is prescribed by the Engineer for design reasons. Formwork necessitated by irregularity or collapse of excavated faces will not be measured and the cost thereof shall be deemed to be included in the allowance for taking the risk of collapse of the sides of the excavations, provision for which is made in "Earthworks"</p> <p><u>SITE CLEARANCE, ETC</u></p> <p>Site clearance:</p> <p>Digging up and removing rubbish, debris, vegetation, hedges, shrubs, bush, etc and trees not exceeding 200mm girth</p> | m ² | 451 | | 0,00 |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|--|----------------|----------|------|--------|
| | FILLING, ETC | | | | |
| | Earth filling supplied by the Contractor, compacted to 95% Mod AASHTO density: | | | | |
| 2 | 200mm Cement stabilised material over site to form platforms, compacted to Engineer's specification | m ³ | 90 | | 0,00 |
| | Compaction of surfaces: | | | | |
| 3 | 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 95% Mod AASHTO density | m ² | 451 | | 0,00 |
| | Prescribed density tests on filling: | | | | |
| 4 | "Modified AASHTO Density" test | No | 9 | | 0,00 |
| | REVETMENT | | | | |
| | Revetment | | | | |
| 5 | 50 - 300KG Rock | m ³ | 1 258 | | 0,00 |
| 6 | 750 - 1250KG Rock | m ² | 6 714 | | 0,00 |
| 7 | 150mm quarry run | m ³ | 98 | | 0,00 |
| | WORK GROUP ALLOCATION | | | | |
| | The items in this Bill will be allocated to Work Groups as indicated in brackets at the end of headings or descriptions | | | | |
| | PREAMBLES | | | | |
| | 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 | | | | |
| | SUPPLEMENTARY PREAMBLES | | | | |
| | Cost of tests: | | | | |
| | Breeze concrete: | | | | |
| | 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 | | | | |
| | Lightweight concrete: | | | | |
| | Lightweight concrete shall have a density of 600kg/m ³ for the top 50mm and 400kg/m ³ for the remaining thickness. The minimum thickness at outlets, channels, etc shall be 50mm | | | | |
| | Waterproof concrete: | | | | |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|---|----------------|----------|------|--------|
| | <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: 1. a cement/water ratio of minimum 1.9 and maximum 2.1 2. minimum OPC content of 300kg/m³ 3. Polypropolene micro fibres added to concrete at rate of 182 million per m³</p> <p>Formwork:</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>50MPa/19mm concrete:</p> <p>200mm Surface beds on waterproofing</p> | | | | |
| | | m ³ | 83 | | 0,00 |
| | <u>TEST CUBES (WORK GROUP 110)</u> | | | | |
| 8 | Making and testing sets of three 150 x 150 x 150mm concrete strength test cubes (Provisional) | Sets | 14 | | 0,00 |
| | <u>CONCRETE SUNDRIES (WORK GROUP 110)</u> | | | | |
| | Finishing top surfaces of concrete smooth with a steel trowel: | | | | |
| 9 | Surface beds, slabs, etc. | m ² | 414 | | 0,00 |
| | <u>MOVEMENT JOINTS, ETC (WORK GROUP 110)</u> | | | | |
| | Saw-cut joints: | | | | |
| 10 | 3 x 70mm Saw-cut joints in top of concrete | m | 89 | | 0,00 |
| | Fabric reinforcement: | | | | |
| 11 | Type 395 fabric reinforcement in concrete surface beds, slabs, etc. | m ² | 414 | | 0,00 |
| | <u>TESTING</u> | | | | |
| 12 | Testing piles to specified loads as directed by the Project Manager | SUM | 1 | | |
| | <u>DAMPPROOFING OF WALLS AND FLOORS</u> | | | | |
| | One layer geofabric: | | | | |
| 13 | Under surface beds | m ² | 451 | | 0,00 |
| | One layer 250 micron green polyethylene waterproof sheeting (SANS 952-1985 type C) sealed at laps with PVC self-adhesive tape: | | | | |
| 14 | To sub-base | m | 58 | | 0,00 |
| | <u>JOINT SEALANTS ETC</u> | | | | |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|--|---|----------|------|-------------|
| | White silicone sealing compound | | | | |
| 15 | 10 x 10mm in joints | m | 89 | | 0,00 |
| 16 | 12mm Wide in joints | m | 89 | | 0,00 |
| 17 | Silicone keyed joint sealant | m | 99 | | 0,00 |
| | CARRIED TO FINAL SUMMARY / ... | | | | 0,00 |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|--|--|----------|------|--------|
| | <p>SECTION 4</p> <p>BILL NO. 1</p> <p>EXTERNAL WORKS (PROVISIONAL)</p> <p>(ALL TRADES)</p> <p>WORK GROUP ALLOCATION</p> <p>The items in this Bill will be allocated to Work Groups as indicated in brackets at the end of headings or descriptions</p> <p>PREAMBLES</p> <p>The Model Preambles for Trades (2008 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>SUPPLEMENTARY PREAMBLES</p> <p>Nature of ground:</p> <p>The nature of the ground is assumed to be loose sandy material, therefore "earth", but possibly interspersed with "soft rock" or "hard rock"</p> <p>The nature of the ground is assumed to be gravel, therefore "earth", but possibly interspersed with "soft rock" or "hard rock"</p> <p>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"</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>Subterranean water:</p> <p>No subterranean water is expected</p> <p>Excavation for working space in rock:</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> | | | | |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|---|----------------|----------|------|--------|
| | <p>Carting away of excavated material:</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>Filling:</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>Testing:</p> <p>Prices for backfilling to trenches and holes only are to include for all necessary density tests in accordance with SANS 1200D</p> <p>Maintenance period:</p> <p>The maintenance period to civil works such as roads, parking and related earthworks shall be twelve calendar months</p> <p>DEMOLITIONS, ETC (WORK GROUP 104)</p> <p>Breaking up and removing:</p> | | | | |
| 1 | 150mm Thick mesh reinforced concrete surface beds, paving, etc. | m ² | 561 | | 0,00 |
| | <p>Taking down and removing:</p> | | | | |
| 2 | Palisade fence 3000mm high | m | 40 | | 0,00 |
| | <p>SITE CLEARANCE, ETC (WORK GROUP 104)</p> <p>Site clearance:</p> | | | | |
| 3 | Stripping average 150mm thick layer of top soil and depositing material in prescribed stock piles on site | m ² | 200 | | 0,00 |
| | <p>PAVINGS, ETC</p> <p>SUPPLEMENTARY PREAMBLES</p> <p>Testing of material and filling:</p> <p>Descriptions of earth filling, compaction, etc shall be deemed to include for all necessary testing required in accordance with the SABS 1200 series</p> <p>EARTHWORKS (WORK GROUP 104)</p> <p>Excavation in earth not exceeding 2m deep:</p> | | | | |
| 4 | Over site between buildings, retaining walls, etc to reduce levels and dispose in prescribed stock piles on site | m ³ | 135 | | 0,00 |
| | <p>Extra over all excavations for carting away:</p> | | | | |
| 5 | Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor | m ³ | 135 | | 0,00 |
| | <p>Compaction of surfaces:</p> | | | | |
| 6 | 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 | m ² | 200 | | 0,00 |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|---|----------------|----------|------|--------|
| | Earth filling from commercial sources supplied by the Contractor under parking areas, roadways, etc: | | | | |
| 7 | Sub-base course of G5 material compacted to 95% Mod AASHTO density | m ³ | 30 | | 0,00 |
| 8 | Sub-base course of G7 material compacted to 93% Mod AASHTO density | m ³ | 30 | | 0,00 |
| | Weedkiller (active ingredients metalaclor 102,8 g/l, terbitilasien 248,6 g/l and atrasion 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: | | | | |
| 9 | Under paving, etc | m ² | 200 | | 0,00 |
| | PRECAST CONCRETE (WORK GROUP 112) | | | | |
| | Paving of 200 x 100 x 60mm "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: | | | | |
| 10 | Paving in herringbone bond pattern | m ² | 100 | | 0,00 |
| | 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: | | | | |
| 11 | Paving in herringbone bond pattern to falls [LI] | m ² | 100 | | 0,00 |
| | Precast concrete finished smooth on exposed surfaces, including bedding, jointing and pointing: | | | | |
| 12 | 150 x 300mm High kerbs (SANS 927 fig 3) with 150 x 150 x 300mm unreinforced concrete haunching at back of each joint, including excavation, backfilling, etc | m | 2 | | 0,00 |
| 13 | 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 | 2 | | 0,00 |
| 14 | 150 x 300mm High kerbs (SANS 927 fig 8) with 150 x 150 x 300mm unreinforced concrete haunching at back of each joint, including excavation, backfilling, etc | m | 4 | | 0,00 |
| 15 | 150 x 300mm High kerbs (SANS 927 fig 8) 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 | 7 | | 0,00 |
| 16 | 100 x 300mm High kerbs (SANS 927 fig 5b) with 150 x 150 x 300mm unreinforced concrete haunching at back of each joint, including excavation, backfilling, etc | m | 2 | | 0,00 |
| | Road signs: | | | | |
| 17 | Standard "STOP" sign with 50mm diameter galvanised mild steel post bedded in and including unreinforced concrete base, including any necessary excavation, paint finish, etc | No | 1 | | 0,00 |
| | Paintwork: | | | | |
| | Prepare and apply one coat white reflective road marking paint on bituminous road surfacing, precast concrete paving blocks, etc: | | | | |
| 18 | 100mm Wide dotted line | m | 10 | | 0,00 |
| | RAMPS | | | | |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|---|----------------|----------|------|--------|
| | EARTHWORKS (WORK GROUP 104) | | | | |
| | Excavation in earth not exceeding 2m deep: | | | | |
| 19 | Reduced levels under floors | m ³ | 37 | | 0,00 |
| | Extra over all excavations for carting away: | | | | |
| 20 | Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor | m ³ | 35 | | 0,00 |
| | G5 filling material supplied by the contractor, compacted to 95% Mod AASHTO density: | | | | |
| 21 | Under floors, steps, pavings, etc | m ³ | 8 | | 0,00 |
| | Compaction of surfaces: | | | | |
| 22 | 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 | m ² | 55 | | 0,00 |
| | Prescribed density tests on filling: | | | | |
| 23 | "Modified AASHTO Density" test | No | 9 | | 0,00 |
| | Soil insecticide in accordance with SANS 5859: | | | | |
| 24 | Soil insecticide (protection against termites) applied as specified to bottoms and sides of trenches, etc including forming and poisoning shallow furrows against foundation walls, etc filling in furrows and ramming | m ² | 55 | | 0,00 |
| | CONCRETE WORK (WORK GROUP 110) | | | | |
| | 25MPa/19mm reinforced concrete: | | | | |
| | Ramps | m ³ | 18 | | 0,00 |
| | Test cubes | | | | |
| 25 | Making and testing sets of three 150 x 150 x 150mm concrete strength test cubes (Provisional) | Sets | 5 | | 0,00 |
| | Finishing top surfaces of concrete smooth with a steel trowel: | | | | |
| 26 | Surface beds, slabs, etc to falls | m ² | 55 | | 0,00 |
| | FORMWORK (WORK GROUP 111) | | | | |
| | Smooth formwork to sides: | | | | |
| 27 | Sloping outer edges of ramps approximately 450mm high extreme | m | 9 | | 0,00 |
| | REINFORCEMENT (WORK GROUP 114) | | | | |
| | Fabric reinforcement: | | | | |
| 28 | Type 395 fabric reinforcement in concrete surface beds, slabs, etc | m ² | 55 | | 0,00 |
| | FENCING (WORK GROUP 136) | | | | |
| | Clear view or similar and approved galvanised steel security fence with posts at 3382mm centres, erected complete including concrete bases, stays, rails, verticals, galvanised steel bolts, straining eye bolts, single overhang with 3 strands of barbed wire, etc. and finished with epoxy coating and including site clearance, preparation of ground, etc.: | | | | |
| 29 | Security fence 3000mm high | m | 40 | | 0,00 |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|--|----|----------|------|--------|
| 30 | <p><u>STEEL BOLLARDS (WORK GROUP 136)</u></p> <p>273mm Dia., 2125mm High stainless Grade 4.4, 250MPA (MIN) steel bollards with PL 25 x 2115mm weld to pipe w/(4) 6 x 50mm fillet welds top and bottom, 25 x 2115 x 16mm thick steel plate (Grade 4.4, FY=250MPA-MIN) including 800 x 800 x 1200mm deep excavation, 25MPA mass concrete and backfilled to 95% MOD ASSHTO density (Refer to drawing no. 1002-011-2005)</p> | No | 10 | | 0,00 |
| | Carried to section summary / ... | | | | 0,00 |
| | <p><u>SECTION 4</u></p> <p><u>BILL NO. 2</u></p> <p><u>SITE SERVICES (PROVISIONAL)</u></p> <p><u>WORK GROUP ALLOCATION</u></p> <p>The items in this Bill will be allocated to Work Groups as indicated in brackets at the end of headings or descriptions</p> <p><u>PREAMBLES</u></p> <p>The Model Preambles for Trades (2008 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>Stormwater channels:</p> <p>Descriptions of channels shall be deemed to include necessary excavation, surface preparation, compaction, etc and disposal of surplus material on site</p> <p>French drains:</p> <p>Descriptions of french drains shall be deemed to include excavation, stone filling graded from 300mm diameter at bottom to 75mm diameter at top, approved geofabric filter blanket over stone, 300mm earthfilling over and disposal of surplus material on site</p> <p>Septic tanks:</p> <p>Descriptions of proprietary type septic tanks shall be deemed to include excavation, bedding and jointing, concrete base slabs, jointing to drains and backfilling, compaction, etc all in accordance with the manufacturer's instructions and disposal of surplus material on site</p> <p>uPVC pipes and fittings:</p> <p>Sewer and drainage pipes and fittings shall be jointed and sealed with butyl rubber rings Soil, waste and vent pipes and fittings shall be solvent weld jointed or sealed with butyl rubber rings</p> <p>uPVC pressure pipes and fittings:</p> | | | | |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|--|--|----------|------|--------|
| | <p>Pipes of 50mm diameter and smaller shall be plain ended with solvent welded uPVC loose sockets and fittings Pipes of 63mm diameter and greater shall have sockets and spigots with push-in type integral rubber ring joints. Bends shall be uPVC and all other fittings shall be cast iron, all with similar push-in type joints</p> <p>High density polyethylene (HDPE) pipes and fittings:</p> <p>Pipes shall be type IV and of the class specified with "Plasson" or "Alprene" compression fittings</p> <p>"Polycop" polypropylene pipes:</p> <p>Polypropylene pipes 54mm diameter and smaller shall be seamless copper coloured Class 16 pipes jointed with "Fast-fuse" heat welded thermoplastic or where so described "Polylock" compression fittings Pipes shall be firmly fixed to walls, etc with coloured nylon snap-in pipe clips with provision for accommodating thermal movement and jointed and fixed strictly in accordance with the manufacturer's instructions</p> <p>Copper pipes:</p> <p>Pipes shall be hard drawn and half-hard "Maksal" pipes of the class described. Class 0 (thin walled hard drawn) pipes shall not be bent. Class 1 (thin walled half-hard), Class 2 (half-hard) and Class 3 (heavy walled half-hard) pipes shall only be bent with benders with inner and outer formers. Fittings to copper waste, vent and anti-syphon pipes, capillary solder fittings and compression fittings shall be "Cobra Watertech" type. Capillary solder fittings shall comply with ISO 2016</p> <p>Copper pipes are to be installed in accordance with the latest revision of the Code of Practice for Copper Plumbing soldering techniques. Flux, solder, etc to be strictly in accordance with the manufacturer's requirements with special attention to copper flux composition</p> <p>Reducing fittings:</p> <p>Where fittings have reducing ends or branches they are described as "reducing". In the case of pipes with diameters not exceeding 60mm, only the largest end or branch size is given. Should the Contractor wish to use other fittings and bushes or reducers he may do so on the understanding that no claim in this regard will be entertained. In the case of pipes with diameters exceeding 60mm, all sizes are given and no claim for extra bushes, reducers, etc will be entertained</p> <p>Disinfection of water pipework:</p> <p>Water pipework is to be disinfected at completion in accordance with SABS 1200L (provision for disinfection elsewhere)</p> <p>"Densyl" petrolatum anti-corrosion tape as manufactured by Denso SA (Pty) Ltd.:</p> <p>Pipes to be taped shall be coated with the appropriate primer and the tape shall be applied in the appropriate widths and with suitable overlaps Couplings and fittings to pipes shall be taped in strict accordance with the manufacturer's instructions including mastic, tape, "Layflat" sheeting, securing of same, etc</p> <p>Prices for wrapping of pipes shall include for all work as described to couplings in the length</p> <p>Laying, backfilling, bedding, etc of pipes:</p> <p>Pipes shall be laid and bedded in accordance with manufacturers' instructions and trenches shall be carefully backfilled</p> | | | | |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|--|----------------|----------|------|--------|
| | <p>Where no manufacturers' instructions exist, pipes shall be laid in accordance with Clauses 5.1 and 5.2 of each of the following: SABS 1200L : Medium-pressure pipelines SABS 1200LD : Sewers SABS 1200LE : Stormwater drainage Pipe trenches, etc shall be backfilled in accordance with Clauses 3, 5.5, 5.6, 5.7 and 7 of SABS 1200DB : Earthworks (Pipe trenches)Pipes shall be bedded in accordance with Clauses 3.1 to 3.4.1, 5.1 to 5.3 and 7 of SABS 1200LB : Bedding (Pipes)Unless otherwise described, bedding of rigid pipes shall be Class B bedding</p> <p>General:</p> <p>Descriptions of pipes laid in and including trenches and of inspection chambers, catchpits, etc shall be deemed to include excavation, bedding, backfilling, compaction to a minimum of 98% Mod AASHTO density and disposal of surplus material on site</p> <p>Descriptions of service pipes and flexible connecting pipes shall be deemed to include connections to taps, cisterns, etc and to steel pipes (adaptors for connections to copper pipes, etc are given separately)</p> <p>As-built drawings:</p> <p>Where required, the Contractor shall prepare an updated set of as-built drawings. At completion of the contract the Contractor shall hand these drawings to the Project Manager for reproducing onto the originals for handing over to the Employer (provision for allowance of as-built drawings elsewhere)</p> <p><u>DEMOLITIONS, ETC (WORK GROUP 104)</u></p> <p>Demolishing and removing:</p> | | | | |
| 1 | Existing rectangular concrete channel, 450 x 450mm deep | m | 134 | | 0,00 |
| 2 | Pipe jacking of 450mm Wide concrete channels | m | 134 | | 0,00 |
| 3 | Existing inspection chambers, size and depth to be confirmed on site | No | 6 | | 0,00 |
| | <p><u>STORMWATER CHANNELS (WORK GROUP 146)</u></p> <p>Precast concrete channels:</p> | | | | |
| 4 | 400 x 400mm Rectangular precast concrete channel cast in 1800mm lengths, finished smooth to falls, rounded edge to exposed side and 10mm mortar joints channels | m | 134 | | 0,00 |
| 5 | Extra over for angles, intersections, ends, dressing into sides of catchpits, etc | No | 5 | | 0,00 |
| 6 | Excavation in earth not exceeding 1m deep for channels | m ³ | 60 | | 0,00 |
| 7 | Backfilling to pipe trenches compacted to 95% Mod AASHTO density | m ³ | 15 | | 0,00 |
| | <p>Extra over all excavations for carting away:</p> | | | | |
| 8 | Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor | m ³ | 60 | | 0,00 |
| | <p><u>STORMWATER DRAINAGE (WORK GROUP 146)</u></p> | | | | |
| 9 | Excavation in earth not exceeding 1m deep for pipe trenches | m ³ | 29 | | 0,00 |
| 10 | Excavation in earth exceeding 1m and not exceeding 2m deep for pipe trenches | m ³ | 124 | | 0,00 |
| 11 | Excavation in earth exceeding 2m and not exceeding 4m deep for pipe trenches | m ³ | 107 | | 0,00 |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|--|----------------|----------|------|--------|
| 12 | Backfilling to pipe trenches compacted to 95% Mod AASHTO density | m ³ | 90 | | 0,00 |
| 13 | Selected granular filling in bedding under and filling around pipes | m ³ | 42 | | 0,00 |
| 14 | Sand filling in bedding under and filling around pipes | m ³ | 15 | | 0,00 |
| 15 | 19mm Crushed stone bedding under pipes | m ³ | 15 | | 0,00 |
| | Class 100D concrete pipes with interlocking joints: | | | | |
| 16 | 450mm Dia. pipe laid in trenches (trenches elsewhere) | m | 83 | | 0,00 |
| 17 | 1000mm Dia. pipe laid in trenches (trenches elsewhere) | m | 53 | | 0,00 |
| | Sumps, catchpits, inspection chambers, etc including concrete kerbs or precast concrete cover slabs (gratings and covers elsewhere): | | | | |
| 18 | 600 x 450mm Brick catchpit not exceeding 1m deep internally | No | 10 | | 0,00 |
| 19 | 1250mm Diameter precast concrete circular inspection chamber 1m deep internally | No | 6 | | 0,00 |
| | Cast iron gratings, covers, etc: | | | | |
| 20 | 700 x 550mm Grey iron square dish grating and frame | No | 10 | | 0,00 |
| 21 | 1250mm Diameter manhole cover and frame | No | 6 | | 0,00 |
| 22 | 30mm Diameter galvanised steel rod step iron 500mm long, built in across corner of chamber | No | 48 | | 0,00 |
| 23 | Lifting-key for manhole cover (handed to Employer) | No | 6 | | 0,00 |
| | Encasing pipes in concrete: | | | | |
| 24 | Unreinforced concrete encasing 150mm thick all round 450mm horizontal pipe | m | 30 | | 0,00 |
| 25 | Unreinforced concrete encasing 150mm thick all round 1000mm horizontal pipe | m | 37 | | 0,00 |
| | Sundries: | | | | |
| 26 | Extra over excavation in earth for pipe trenches, chambers, etc for excavation in soft rock | m ³ | 26 | | 0,00 |
| 27 | Extra over excavation in earth for pipe trenches, chambers, etc for excavation in hard rock | m ³ | 13 | | 0,00 |
| | Alterations, pipe connections, etc: | | | | |
| 28 | Connection to existing 300mm concrete stormwater pipe for and forming junction with new pipe including connection, fittings, couplings, etc. | No | 1 | | 0,00 |
| | TESTING: | | | | |
| 29 | Testing stormwater drainage system | SUM | 1 | | |
| | SOIL DRAINAGE (WORK GROUP 146) | | | | |
| 30 | Excavation in earth not exceeding 1m deep for pipe trenches | m ³ | 77 | | 0,00 |
| 31 | Backfilling to pipe trenches | m ³ | 56 | | 0,00 |
| 32 | Selected granular filling in bedding under and filling around pipes | m ³ | 15 | | 0,00 |
| | Normal duty uPVC sewer channels: | | | | |
| 33 | 450mm Channels in bottoms of inspection chambers | m | 22 | | 0,00 |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|---|-----|----------|------|-------------|
| | Heavy duty (Class 34) uPVC sewer and drain pipes: | | | | |
| 34 | 110mm Pipes laid in trenches (trenches elsewhere) | m | 72 | | 0,00 |
| | Extra over heavy duty (Class 34) uPVC sewer and drain pipes for fittings: | | | | |
| 35 | 110mm Bend | No | 14 | | 0,00 |
| 36 | 110mm Junction | No | 5 | | 0,00 |
| 37 | 110mm Rodding eye | No | 5 | | 0,00 |
| 38 | 110mm Reducing junction | No | 4 | | 0,00 |
| 39 | 160mm Overflow gulley head | No | 3 | | 0,00 |
| 40 | 160mm Access reducing junction | No | 3 | | 0,00 |
| | Alterations: | | | | |
| 41 | Excavate for and locate existing 160mm diameter uPVC soil drain pipe approximately 2000mm deep and connect to 160mm diameter uPVC pipe including all necessary fittings, backfilling, etc | No | 1 | | 0,00 |
| | Testing: | | | | |
| 42 | Testing soil drainage system | SUM | 1 | | |
| | AS-BUILT DRAWINGS | | | | |
| 43 | Provision of as-built drawings | SUM | 1 | | |
| | Carried to section summary / ... | | | | 0,00 |
| | SECTION SUMMARY | | | | |
| 1 | External Works (Provisional) | | | | 0,00 |
| 2 | Site Services (Provisional) | | | | 0,00 |
| | CARRIED TO FINAL SUMMARY /... | | | | 0,00 |
| | SECTION 5 | | | | |
| | BILL NO. 1 | | | | |
| | INSTALLATION OF CRADLES AND ASSOCIATED ITEMS (PROVISIONAL) | | | | |
| | Manufacture, works testing, supply and deliver to site, moving into position, installation, connecting up, site testing, witness testing, providing to insurance inspectors, demonstrating to the Employer, commissioning and maintenance of the complete cradles and associated items as shown on the drawings and in any other supplied supplementary documents. | | | | |
| | PREAMBLES | | | | |
| | The Model Preambles for Trades (2008 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 Model 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 Model Preambles | | | | |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|---|--|----------|------|--------|
| | <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p>General:</p> <p>Subcontract amounts are net. Subcontract amounts are for material and equipment supplied and installed complete by firms of specialists</p> <p>Each subcontract amount may comprise more than one element of work. Therefore, each subcontract amount may include for work to be carried out by more than one subcontractor</p> <p>Profit:</p> <p>Where stated, the contractor may allow for profit if required</p> <p>General attendance on nominated/selected subcontractors:</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>Special attendance on nominated/selected subcontractors:</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>Builder's work:</p> <p>Builder's work in connection with specialist services is given elsewhere in these bills of quantities</p> <p>Allocation for procurement, fabrication, installation, commissioning and handing over:</p> <p>NOTE: Procure material, complete fabrication, trial assemble (in the Contractors workshop for Engineers inspection prior to delivery to site) and delivery to site. The Contractor shall be paid for the cost of materials procured. The Contractor shall provide the invoice for the Materials to the Engineer. The Engineer will verify the materials at the Contractors workshop and following this verification will request the Quantity Surveyor to pay for the materials as per the invoice. The Contractor shall be paid the outstanding amounts for fabrication once the fabricated materials have been delivered to the site and verified by the engineer.</p> <p>MAIN CRADLE</p> | | | | |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|--|----|----------|------|--------|
| | Supply and installation of the "Main Cradle" complete as detailed in this BOQ and/or the Part C3 Scope of Works and the detailed construction drawings supplied, inclusive of diving | EI | 0 | | |
| 1 | Supply | t | 85,00 | | 0,00 |
| 2 | Install | t | 85,00 | | 0,00 |
| 3 | Comissioning | t | 85,00 | | 0,00 |
| | SIDE SLIP CRADLES | | | | |
| | Supply and installation of the two (2) "Side Slip Cradles" complete as detailed in this BOQ and/or the Part C3 Scope of Works and the detailed construction drawings supplied, inclusive of diving | EI | 0 | | |
| 4 | Supply | t | 70,00 | | 0,00 |
| 5 | Install | t | 70,00 | | 0,00 |
| 6 | Comissioning | t | 70,00 | | 0,00 |
| | MAIN AND SIDE SLIP CRADLE SETS | | | | |
| | Supply and installation of the two (2) "Main and side slip cradle sets" complete as detailed in this BOQ and/or the Part C3 Scope of Works and the detailed construction drawings supplied, inclusive of diving | EI | 0 | | |
| 7 | Supply | No | 460 | | 0,00 |
| 8 | Install | No | 460 | | 0,00 |
| 9 | Comissioning | No | 460 | | 0,00 |
| | DOCKING FRAMES AND ACCESS BRIDGES | | | | |
| | 4no.off frames for the main cradle and 6no.off frames for the side slip cradle. The tonnage stated is inclusive of all the docking frames and associated components. The Contractor shall supply the docking frames complete, with all associated parts assembled. The details and components of a complete main cradle docking frame and a complete side cradle docking frame are shown on the relevant drawings supplied to the Contractor. Contractor to supply and install the docking frames complete, with all associated parts assembled. | EI | 0 | | |
| 10 | Supply | No | 75 | | 0,00 |
| 11 | Install | No | 75 | | 0,00 |
| 12 | Comissioning | No | 75 | | 0,00 |
| | UPHAUL AND DOWNHAUL SHEAVE WHEELS AND SUPPORTS | | | | |
| | 1no.off Uphaul sheave wheel mounted on the main cradle and 2no.off Downhaul sheave wheel mounted at the slipway extremity, underwater. The Down haul sheave wheel assembly that was installed in 2015 must be removed for disposal. The old down haul sheave wheel assembly must also be removed and the concrete must be made good after removal. Contractor to supply and install complete, with all associated parts assembled. | EI | 0 | | |
| 13 | Procurement | t | 8,00 | | 0,00 |
| 14 | Installation | t | 8,00 | | 0,00 |
| 15 | Comissioning | t | 8,00 | | 0,00 |
| | Gr.316 STAINLESS STEEL BASE PLATES UNDER RAILS | | | | |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|--|------|----------|------|--------|
| | Supply and installation of 20mm thick base plates underneath the main, side and anti-tilt rails as detailed in the BOQ and/or the Part C3 SScope of Works and the detailed construction drawings supplied to the contractor. Contractor to supply and install complete, with all associated parts assembled. | EI | 0 | | |
| 16 | Supply | t | 85,00 | | 0,00 |
| 17 | Install | t | 85,00 | | 0,00 |
| 18 | Comissioning | t | 85,00 | | 0,00 |
| | MAIN, SIDE AND ANTI-TILT RAILS | | | | |
| | Supply and installation of all required rails, holding downplates, clips, fixing and securing elements as detailed in the BOQ and/or the Part C3 Scope of Works and the detailed construction drawings supplied to the contractor. Contractor to supply and install complete, with all associated parts assembled. | EI | 0 | | |
| 19 | Supply | t | 65,00 | | 0,00 |
| 20 | Install | t | 65,00 | | 0,00 |
| 21 | Comissioning | t | 65,00 | | 0,00 |
| | 5 TON BRIDGE GIRDER CRANE | | | | |
| 22 | Allow an amount of Five Million Rand Only for the supply and installation of a 5 Ton Bridge Girder Crane | Item | 1 | | 0,00 |
| 23 | Profit (.....%) | %IT | | | |
| 24 | General attendance (.....%) | %IT | | | |
| | UPHAUL, DOWNHAUL AND SIDE SLIP WINCHES | | | | |
| | Supply and installation of the complete uphaul, downhaul and side slip winches including ropes, hydraulic power units, control panels, base plates and any ancillaries eg.: hydraulic tubing, hydraulic flexibles, couplings, required to ensure fully operational winch units that can be subjected to performance testing, is provided. The winches supplied shall be in accordance and conformance to the relevant engineering Codes and Standards. The required winch specifications and performance/duty parameters are included in the Part C3 - Scope of Work. The quoted amount from the Contractor shall include for the careful removal and recovery of the existing winch unit and all ancilliary equipment, to the site laydown area. The existing winch and ancillaries have a heritage value for the TNPA and as such, the Contractor must ensure that the winch is not in any way damaged during the removal, recovery and transfer activities. | SUM | 1 | | |
| | UPHAUL AND DOWNHAUL WINCH STEEL WIRE ROPE SUPPORT BLOCKS | | | | |
| | Supply and installation of the complete uphaul, downhaul and side slip winches including ropes, hydraulic power units, control panels, base plates and any ancillaries such hydraulic tubing, hydraulic flexibles, couplings, etc. required to ensure fully operational winch units that can be subjected to performance testing, in accordance and conformance to the relevant engineering codes and standards. The Contractor conforms to all requirements as detailed in this BOQ and the Part C3 Scope of Works and the detailed construction drawings supplied by the TNPA. Rate includes diving. | SUM | 1 | | |
| | ZINC ANODES | | | | |
| 27 | Supply and Installation of zinc anodes conforming to TNPA specification | t | 3,00 | | 0,00 |
| | GENERAL AND MISCELLANEOUS ITEMS | | | | |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|--|-----|----------|------|--------|
| 28 | <p>HYDRAULIC SYSTEM FOR DOCKING SUPPORT ARMS AND ADJUSTABLE PADS AND POWER SYSTEM FOR CONTROL AND OPERATION OF THE DOCKING SUPPORT ARMS</p> <p>Supply and Installation of complete hydraulic docking arm and support pad system including associated power system required for powering and operating the docking support arms and pads</p> | SUM | 1 | | |
| 29 | <p>MECHANICAL EQUIPMENT - STORM WATER MANAGEMENT AND RECYCLING SYSTEM</p> <p>Stormwater system to handle run-off from the slipway deck generated during ship maintenance. The mechanical equipment requirements and quantities are described on the relevant drawings supplied to the Contractor.</p> | SUM | 1 | | |
| 30 | <p><u>OPERATIONAL REQUIREMENTS</u></p> <p>DEMOLITION OF OLD LEAD-IN JETTIES</p> <p>The Contractor shall completely remove and carefully recover all old jetty piles, bracing structures, decking and stiffening/bracing steelwork comprising the jetties which are currently located in the water. The old jetty components shall be carefully handled once removed and transported out of the water to the site lay down area. Particular care must be taken by the Contractor to not cause preventable damage to the jetty components as TNPA considers the components to possess heritage value.</p> <p>DEMOLITION AND DISPOSAL OF EXISTING MATERIALS, EQUIPMENT AND PLANT THROUGHOUT THE SITE</p> | SUM | 1 | | |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|--|----------------|----------|------|-------------|
| 31 | The Contractor shall make adequate allowance for the demolition and disposal of the existing materials and equipment from the site as required. | SUM | 1 | | |
| | ON-CRADLE VESSEL STEEL SUPPORTS WITH ASSEMBLED WOOD CHOCK BLOCKS | | | | |
| 32 | Supports to provide support to maintain the vessel upright on the cradle, they are collapsible steel structures mounted to the cradle frame and are topped with wood for the interface between the vessel body and the support | SUM | 1 | | |
| | SLIPWAY SERVICES (HIGH PRESSURE-LOW FLOW SEA WASH WATER, COMPRESSED AIR AND ALL ASSOCIATED ANCILLARIES) | | | | |
| 33 | Allow an amount of Two Million Rand to cater for slipway services i.e: high pressure-low flow sea wash water and compressed air. Sum to cover procurement, supply, installation, commissioning and handover | Item | 1 | | 0,00 |
| 34 | Profit (.....%) | %IT | | | |
| 35 | General attendance (.....%) | %IT | | | |
| | SIDE SLIP STRUCTURE | | | | |
| 36 | Demolition of existing and construction of new slipway structure complete (Refer to drawings no. 1002-011-3012, 1002-011-3013) - (Cradle rails, etc. measured elsewhere) | SUM | 1 | | |
| | CORROSION PROTECTION OF STEELWORK - Comprising factory priming, transport damage touch up and final site coats | | | | |
| 37 | Corrosion protection shall be applied to all steel surfaces including bolt and hole surfaces (wet assemblies) and shall be a 5year supplier guaranteed, AIA and Engineer approved marine grade corrosion protection system and the rate shall include grit/water blasting and high pressure washing and cleaning conforming to TNPA requirements and approved specifications | m ² | 15 000 | | 0,00 |
| | COMMISSIONING, TESTING AND HANDOVER: The Contractor shall be responsible for documenting, through the use of underwater video surveillance and bathymetric testing the complete installation and repairs of all concrete works and rail installations. | | | | |
| 38 | Underwater video and photographic surveillance - The video footage obtained shall be high resolution, enabling the engineer to assess the quality of the installations that are being videoed. The video shall be supplied in a readily available video format. | SUM | 1 | | |
| 39 | Detailed bathymetric survey - The survey must result in a detailed and accurate model of the submerged structures and rails and provide all levels with contour spacing of no larger than 500mm. Multi-beam sonar equipment is recommended to be used at a density that can be viewed in a point cloud or processed into a high resolution map. All vehicles, equipment and materials required to undertake the survey shall be allowed for in the pricing | SUM | 1 | | |
| 40 | Testing and other specialist studies (Others as defined by the Engineer during construction) | SUM | 1 | | |
| 41 | Hot and cold commission and trial operation | SUM | 1 | | |
| 42 | Handing over to Employer | SUM | 1 | | |
| | CARRIED TO FINAL SUMMARY / ... | | | | 0,00 |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|---|-----|----------|------|--------|
| | SECTION NO. 6 | | | | |
| | BILL NO. 1 | | | | |
| | ELECTRICAL INSTALLATION | | | | |
| | OPERATIONS BUILDING AND SLIPWAY | | | | |
| | LOW VOLTAGE | | | | |
| | DISCONNECTION / REMOVAL OF REDUNDANT ELECTRICAL EQUIPMENT | | | | |
| | The following equipment shall be isolated, disconnected, removed and handed over to the Employer: | | | | |
| 1 | Decommissioning of existing kiosks feeding streetlights, cables, DB's in the existing operations building. | SUM | 1 | | |
| | LV SWITCHGEAR | | | | |
| | MCCs, DBs and LV Switchgear | | | | |
| | Manufacture, deliver to site, install, commission, test kiosks, distribution boards motor control centre and tuning of 400 volt motor starters as per specification and single line diagram, to be housed in new MCC Enclosure. Rates to include for 3CR12 steelwork and powder coated, busbars and drilling, busbar connections internal wiring etc. Refer to attached single line diagram. Colour shall be Electric Orange and red doors for MCC. | | | | |
| 2 | MCC 1 | No | 1 | | 0,00 |
| 3 | DB/E - 1 | No | 1 | | 0,00 |
| 4 | DB/E - 2 | No | 1 | | 0,00 |
| 5 | DB/E - A | No | 1 | | 0,00 |
| 6 | KIOSK (SW-K2) - Slipway area | No | 1 | | 0,00 |
| 7 | KIOSK (SW-K3) - Slipway area | No | 1 | | 0,00 |
| | CABLES AND CONDUCTORS | | | | |
| | 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 | | | | |
| 8 | 2,5mm conductors (mixed colours - live, neutral and earth) | m | 5 400 | | 0,00 |
| 9 | 4,0mm conductors (mixed colours - live, neutral and earth) | m | 4 200 | | 0,00 |
| 10 | 2.5 mm ² 2c 600/1000V PVC/SWA/PVC ECC Cu Cable | m | 100 | | 0,00 |
| 11 | 2.5 mm ² 4c 600/1000V PVC/SWA/PVC ECC Cu Cable | m | 50 | | 0,00 |
| 12 | 4,0 mm ² 4c 600/1000V PVC/SWA/PVC ECC Cu Cable | m | 260 | | 0,00 |
| 13 | 6 mm ² 4c 600/1000V PVC/SWA/PVC ECC Cu Cable | m | 60 | | 0,00 |
| 14 | 10mm ² 4c 600/1000V PVC/SWA/PVC ECC Cu Cable | m | 210 | | 0,00 |
| 15 | 16mm ² 4c 600/1000V PVC/SWA/PVC ECC Cu Cable | m | 260 | | 0,00 |
| 16 | 35mm ² 4c 600/1000V PVC/SWA/PVC ECC Cu Cable | m | 100 | | 0,00 |
| 17 | 95mm ² 4c 600/1000V PVC/SWA/PVC ECC Cu Cable | m | 100 | | 0,00 |
| 18 | 6,0mm ² PVC Green insulated Copper single core | m | 100 | | 0,00 |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|--|-----|----------|------|--------|
| 19 | 1.5mm ² draw wire (not insulated) | m | 300 | | 0,00 |
| 20 | 630mm ² - 1 Core unarmoured XLPE insulated PVC sheathed copper cable (Red colour) | m | 400 | | 0,00 |
| 21 | 630mm ² - 1 Core unarmoured XLPE insulated PVC sheathed copper cable (Yellow/White colour) | m | 400 | | 0,00 |
| 22 | 630mm ² - 1 Core unarmoured XLPE insulated PVC sheathed copper cable (Blue colour) | m | 400 | | 0,00 |
| 23 | 630mm ² - 1 Core unarmoured XLPE insulated PVC sheathed copper cable (White colour) | m | 400 | | 0,00 |
| 24 | 6,0mm ² PVC Green insulated Copper single core | m | 160 | | 0,00 |
| 25 | 35mm ² PVC Green insulated Copper single core | m | 160 | | 0,00 |
| 26 | 50mm ² PVC Green insulated Copper single core | m | 300 | | 0,00 |
| 27 | 70mm ² PVC Green insulated Copper single core | m | 300 | | 0,00 |
| 28 | 120mm ² PVC Green insulated Copper single core | m | 300 | | 0,00 |
| 29 | 185mm ² PVC Green insulated Copper single core | m | 300 | | 0,00 |
| | CABLES TERMINATIONS | | | | |
| | Termination of cables shall include supply installation and testing of the IP68 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: IP68 Glands are to be used | | | | |
| 30 | 2.5 mm ² 2c 600/1000V PVC/SWA/PVC ECC Cu Cable | No | 16 | | 0,00 |
| 31 | 2.5 mm ² 4c 600/1000V PVC/SWA/PVC ECC Cu Cable | No | 4 | | 0,00 |
| 32 | 4mm ² 4c 600/1000V PVC/SWA/PVC ECC Cu Cable | No | 6 | | 0,00 |
| 33 | 6mm ² 4c 600/1000V PVC/SWA/PVC ECC Cu Cable | No | 16 | | 0,00 |
| 34 | 10mm ² 4c 600/1000V PVC/SWA/PVC ECC Cu Cable | No | 22 | | 0,00 |
| 35 | 16mm ² 4c 600/1000V PVC/SWA/PVC ECC Cu Cable | No | 16 | | 0,00 |
| 36 | 35mm ² 4c 600/1000V PVC/SWA/PVC ECC Cu Cable | No | 16 | | 0,00 |
| 37 | 95 mm ² 4c 600/1000V PVC/SWA/PVC ECC Cu Cable | No | 6 | | 0,00 |
| 38 | 6,0mm ² PVC Green insulated Copper single core | No | 20 | | 0,00 |
| 39 | Earthing and Bonding of all electrically connected Equipment and cable racking and supports as per Spec & regulations. | SUM | 1 | | |
| 40 | 630mm ² - 1 Core unarmoured XLPE insulated PVC sheathed copper cable (all 4 colour cables/for all phases plus neutral) | No | 50 | | 0,00 |
| | CABLE TRAY, LADDER, TRUNKING, POWER SKIRTING, CONDUIT AND ACCESSORIES | | | | |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|--|-----|----------|------|--------|
| | Supply, deliver to site unpainted hot dipped galvanised steel cable tray, cable ladder, P9000 trunking type as specified heavy duty range, inclusive of all items required to install in accordance with manufacturers specification. Power skirting shall be grey in colour. 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. | | | | |
| 41 | 300mm wide tray - Cable ladder | m | 120 | | 0,00 |
| 42 | Cable ladder bends (5), 4-ways (2), tee ways (5) and all required accessories | SUM | 1 | | |
| 43 | Supply and install HDG angle iron including mounting clamps for cable droppers as specified. 40mm x 40mm x 5mm. | No | 30 | | 0,00 |
| 44 | 300mm wide tray - Cable tray | m | 160 | | 0,00 |
| 45 | Cable tray bends (14), 4-ways (3), tee ways (8) and all required accessories | SUM | 1 | | |
| 46 | Supply and install HDG angle iron bends including mounting clamps for cable droppers as specified. 40mm x 40mm x 5mm. | No | 30 | | 0,00 |
| 47 | 2 compartment hot dip galvanised steel powerskirting complete with elbow, internal and external bends, covers and all required accessories. To be grey in colour. | m | 40 | | 0,00 |
| 48 | Supply, delivery and installation of P9000 steel trunking complete with covers, brackets and all required accessories for complete installation | m | 320 | | 0,00 |
| | Cable Boxes and Conduits: Supply, deliver to site, store and install IP65 Cable Boxes for light fitting cables inclusive of terminals etc as specified. Rates to include Termination glands & terminations | | | | |
| 49 | IP66 Four-way box | No | 10 | | 0,00 |
| 50 | 25mm PVC Conduit including all necessary accessories. Rate to include chasing conduit in the wall and close make good. | m | 600 | | 0,00 |
| 51 | 32mm PVC Conduit including all necessary accessories. Rate to include chasing conduit in the wall and close make good. | m | 240 | | 0,00 |
| 52 | 25mm steel Conduit including all necessary accessories. Rate to include surface mounted on the wall and close make good. | m | 100 | | 0,00 |
| 53 | 32mm steel Conduit including all necessary accessories. Rate to include surface mounted on the wall and close make good. | m | 100 | | 0,00 |
| | Sleeves: Supply and install the following underground flexible conduits in concrete slab, ground, chased through brick walls. All material to be SABS approved as suitable for cable installation. Must be black in colour. Must have 1,5mm draw wire. | | | | |
| 54 | 160mm Flexible sleeves | m | 350 | | 0,00 |
| 55 | 110mm Flexible sleeves | m | 350 | | 0,00 |
| | LUMINARIES AND CONTROL DEVICES | | | | |
| | Supply, deliver and install the following luminaires, complete with accessories and control gear as per specification. Contractor must refer to the specification document for details | | | | |
| 56 | Type A3 - IP65 Rated, LED 43W/ 5850 lumen Refer to the specification for details. | No | 3 | | 0,00 |
| 57 | Type A4 - IP65 Rated, LED 43W/ 5850 lumen with back up 1 hour battery. Refer to the specification for details. | No | 2 | | 0,00 |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|---|----|----------|------|--------|
| 58 | Type A5 - IP65 Rated, 30W/ 4440lumen LED Surface-mounted weather-proof fluorescent luminaire, GRP body and acrylic diffuser. Refer to the specification for details. | No | 16 | | 0,00 |
| 59 | Type A6 - IP65 Rated, LED 30W/ 4440lumen with back up 1 hour battery. Refer to the specification for details. | No | 9 | | 0,00 |
| 60 | Type A7 - Decorative suspended downlighter 65W/ 8600 lumen (4000K) luminaire suspended by 3 fold rope suspension luminaire. Refer to the specification for details. | No | 2 | | 0,00 |
| 61 | Type A8 - Decorative suspended downlighter 65W/ 8600 lumen (4000K) luminaire suspended by 3 fold rope suspension luminaire. Same as A7, but this has a backup back to operate for 1-hour. | No | 1 | | 0,00 |
| 62 | Type A9 - Lowbay Luminaire LED 144W/ 20 000 lumen 4000K. Refer to the specification for details. | No | 3 | | 0,00 |
| 63 | Type A10 - Lowbay Luminaire LED 144W/ 20 000 lumen 4000K with back up 1 hour battery. Refer to the specification for details. | No | 3 | | 0,00 |
| 64 | Type B1 - IP65 20W / 2300 lumen 4000K LED bulkhead luminaire with an opal high-impact acrylic diffuser. Refer to the specification for details. | No | 15 | | 0,00 |
| 65 | Type B2 - IP65 20W/ 2300 lumen 4000K LED bulkhead luminaire with an opal high-impact acrylic diffuser with back up 1 hour battery. Refer to the specification for details. | No | 2 | | 0,00 |
| 66 | Type C1 - 80W / 9500 lumen 4000K LED Floodlight, rated IP66. Refer to the specification for details. | No | 5 | | 0,00 |
| 67 | Type D1 - 10W/ 1200 lumen 4000K LED downlighters. Refer to the specification for details. | No | 31 | | 0,00 |
| 68 | Type D2 - 10W/ 1200 lumen 4000K LED downlighters. Same as type D1 above, but these have backup battery to operate for 1-hour. | No | 8 | | 0,00 |
| 69 | Type D3 - 20W/ 2000 lumen 4000K LED downlighters. Same as D1 above, but these have higher lumen of 2000 each. | No | 12 | | 0,00 |
| 70 | Type D4 - 20W/ 2000 lumen 4000K LED downlighters. Same as type D3 above, but these have backup battery to operate for 1-hour. | No | 5 | | 0,00 |
| 71 | Type R1 - 1200mm x 600mm - 65W/ 5850 lumen (4000K) recessed mounted LED lighting panel. Refer to the specification for details. | No | 4 | | 0,00 |
| 72 | Type R2 - 1200mm x 600mm 65W/ 5850 lumen (4000K) recessed mounted LED lighting panel with back up 1 hour battery. Refer to the specification for details. | No | 3 | | 0,00 |
| 73 | Type R3 - 600mm x 600mm, 39W/ 3900 lumen (4000K) recessed mounted LED lighting panel on suspended ceiling. Same as R1 above, but these have a lumen of 3900 each. | No | 3 | | 0,00 |
| 74 | Type R3 - 600mm x 600mm, 39W/ 3900 lumen (4000K) recessed mounted LED lighting panel on suspended ceiling. Same as type R3 above, but these have backup battery to operate for 1-hour. | No | 3 | | 0,00 |
| 75 | Type EXIT - wall mount LED Emergency Exit sign with back up 1 hour battery. | No | 4 | | 0,00 |
| 76 | Type A1 - 1200mm x 600mm - 65W/ 5850 lumen (4000K) surfaced mounted LED lighting panel. Refer to the specification for details. | No | 1 | | 0,00 |
| 77 | Type F - Floodlight luminaire LED 412W/ 54000 lumen 4000K. Refer to specification for details. | No | 4 | | 0,00 |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|---|----|----------|------|--------|
| | <u>LIGHT SWITCHES, SOCKET OUTLET, WELDING ISOLATORS AND ACCESSORIES</u> | | | | |
| | Supply, deliver and installation of the following 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) | | | | |
| 78 | Supply and installation of 15Amp, 1 lever, 1-way, white cover plate, red toggle, light circuit switch complete with cover and all accessories | No | 14 | | 0,00 |
| 79 | Supply and installation of 15Amp, 1 lever, 2-way, white cover plate, red toggle, light circuit switch complete with cover and all accessories | No | 8 | | 0,00 |
| 80 | Supply and installation of 15Amp, 2 lever, 1-way, white cover plate, red toggle, light circuit switch complete with cover and all accessories | No | 2 | | 0,00 |
| 81 | Supply and installation of 15Amp, 3 lever, 1-way, white cover plate, red toggle, light circuit switch complete with cover and all accessories | No | 4 | | 0,00 |
| 82 | Supply and install 16A, 3pin, 2-pin/ Euro-pin, 230V Switched Socket Outlets, white cover plate, red toggle mounted on the wall | No | 9 | | 0,00 |
| 83 | Supply and install 16A, 3pin, 230V Double Switched Socket Outlets, white cover plate, red toggle mounted on the wall | No | 10 | | 0,00 |
| 84 | Supply and install 16A, 3pin and 2pin / Euro pin, 230V Switched Socket Outlets, white cover plate, blue toggle mounted on the wall | No | 5 | | 0,00 |
| 85 | Supply and install 16A, 3pin, 230V Switched Socket Outlets, white cover plate, red toggle installed in a power skirting | No | 34 | | 0,00 |
| 86 | Supply and install 16A, 2pin, 230V Switched Socket Outlets, white coloured plate, red toggle installed in a power skirting | No | 18 | | 0,00 |
| 87 | Supply and install 16A, 3pin, 230V Switched Socket Outlets, white cover plate, red toggle with chamfered earth installed in a power skirting | No | 14 | | 0,00 |
| 88 | Supply and installation of 32Amp 2-Pole surface mounted isolator, white cover plate with red toggle or red cover plate complete with all necessary accessories | No | 20 | | 0,00 |
| 89 | Supply and installation of 60Amp 3-Pole surface mounted isolator, white cover plate with red toggle or red cover plate complete with all necessary accessories | No | 9 | | 0,00 |
| 90 | Supply, deliver and installation of 400V, 32A, 4-pole IP65 rated Isolator, white cover plate with red toggle or red cover plate, complete with all necessary accessories | No | 6 | | 0,00 |
| 91 | Supply and installation of 63Amp, 5 Pin, 400V Industrial IP65 Welding Socket Outlet, powder coated to electric orange coloured, complete with all necessary accessories | No | 8 | | 0,00 |
| 92 | 100mmX100mm hot dip galvanised draw box recessed mounted on wall | No | 12 | | 0,00 |
| 93 | 100mmX50mm hot dip galvanised draw box recessed mounted on wall | No | 24 | | 0,00 |
| 94 | Blank PVC cover plates 100mmx100mm complete with all necessary accessories | No | 6 | | 0,00 |
| 95 | Data point RJ45 mounted on wall, cabling by others / Specialists | No | 8 | | 0,00 |
| 96 | Data point RJ45 on power skirting, cabling by others / Specialists | No | 8 | | 0,00 |
| 97 | 65 mm round PVC box, complete with cover and all necessary accessories. | No | 300 | | 0,00 |
| 98 | Supply, deliver and installation of occupancy sensor as per specification | No | 20 | | 0,00 |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|--|----------------|----------|------|--------|
| 99 | Supply and installation of 60Amp Double Pole surface mounted isolator, white cover plate with red toggle or red cover plate complete with all necessary accessories | No | 2 | | 0,00 |
| 100 | Supply, deliver and installation of 20Amp, 3-pole isolator floodlight switch white cover plate, red toggle, light circuit switch complete with cover and all accessories, mounted at the winch room room | No | 1 | | 0,00 |
| 101 | Supply, deliver and installation of 5amp, unswitched socket outlet, mounted on P9000 with all necessary accessories for complete operation | No | 108 | | 0,00 |
| 102 | Supply, deliver and installation of brushed s/steel walkway outlet box kits and pop-up pedestal complete with all necessary accessories. Rate to allow or include chasing on the floor and make good. | No | 2 | | 0,00 |
| 103 | Photo electric cell as per specification | No | 3 | | 0,00 |
| | SUNDRIES | | | | |
| 104 | LV reticulation - Preparation of 'As-Built' drawings and manuals as per this specification. | No | 1 | | 0,00 |
| 105 | Supply of hard bound spiral folders containing commissioning/COC certificates, test results & operating & maintenance manuals for the LV equipment, cabling, light fittings, etc. | No | 3 | | 0,00 |
| 106 | Danger tape | m | 120 | | 0,00 |
| 107 | Labelling of light switches, sockets, isolators outlets and all control devices as per drawing pop riveted to cover plate. | SUM | 1 | | |
| 108 | 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 | 1 | | |
| 109 | EARTH BAR - A 500 mm x 20mm x4mm copper earth bar with 10no. 6 mm diameter holes pre-drilled, surface fixed on insulators | No | 7 | | 0,00 |
| 110 | Supply, deliver and installation of copper earth /rod spike 1200mm complete with all required accessories | No | 22 | | 0,00 |
| 111 | Supply and installation of 125Amp, 5 Pin, 400VAC Industrial IP66/67 industrial Isolator/socket/connector, powder coated to electric orange coloured, complete with all necessary accessories to mounted on the kiosk or as indicated on the drawing or work information. | No | 2 | | 0,00 |
| 112 | Supply and installation of 63Amp, 5 Pin, 400VAC Industrial IP66/67 industrial Isolator/socket/connector, powder coated to electric orange coloured, complete with all necessary accessories to mounted on the kiosk or as indicated on the drawing or work information. | No | 2 | | 0,00 |
| 113 | Supply and installation of 63Amp, 3 Pin, 230VAC Industrial IP66/67 industrial Isolator/socket/connector, powder coated to electric orange coloured, complete with all necessary accessories to mounted on the kiosk or as indicated on the drawing or work information. | No | 2 | | 0,00 |
| | EXCAVATIONS | | | | |
| | The Contractor conforms to all requirements as detailed in this BOQ and the Part C3 Scope of Works and the detailed construction drawings supplied by the TNPA. For LV streetlight cables, feeding cables from Slipway Substation to respective distribution boards, MCC and kiosk as per the drawing. Trenching shall be calculated using the formula below: (0.7m deep * 0.45m wide * length) | | | | |
| 114 | Excavate in soft rock, backfilling and compaction to 93% MOD AASHTO | m ³ | 4 | | 0,00 |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---|---|----------------|----------|------|--------|
| 115 | Excavate in concrete/road brick and hard soil, backfilling and compaction to 93% MOD AASHTO | m ³ | 42 | | 0,00 |
| 116 | Excavate in tar and hard soil, backfilling and compaction to 93% MOD AASHTO | m ³ | 42 | | 0,00 |
| 117 | Re-instate excavated tar, road brick and/or concrete to match existing. Rates to allow for all required materials and labour. | m ³ | 378 | | 0,00 |
| 118 | Excavate for street light poles in soft rock, concrete and hard soil, backfilling and compaction to 93% MOD AASHTO | m ³ | 4 | | 0,00 |
| 119 | Handling of material | m ³ | 42 | | 0,00 |
| 120 | Construction of manholes and complete with cover as per drawing no.100-011-3035 details - LV Manhole | No | 4 | | 0,00 |
| 121 | Provide fully dimensioned and marked up As-Built drawings of all new street lighting, area lighting, high mast and showing cable and route and cable sizes and type. | No | 1 | | 0,00 |
| <u>UNINTERRUPTED POWER SUPPLY (UPS)</u> | | | | | |
| 122 | Supply, deliver and Install 5kVA, 230VAC, UPS to operate for 15 minutes on full load for the server, complete with all necessary required accessories. Refer to specifications for details. | SUM | 1 | | |
| 123 | Supply and installation of 32Amp, 3 Pin, 230VAC Industrial Socket Outlet for Server and or UPS, powder coated to blue coloured, complete with all necessary accessories. | No | 4 | | 0,00 |
| <u>ELECTRONICS INSTALLATIONS</u> | | | | | |
| <u>8 CORE OPTIC CABLE</u> | | | | | |
| Supply, delivery and installation of 8 core fibre optic cable and all the necessary items required for the installation. | | | | | |
| 124 | Single mode 9/125 micrometre 8 core fibre optic cable | No | 150 | | 0,00 |
| 125 | 12 way Patch Panel Complete with splice trays and LC/APC connectors | No | 1 | | 0,00 |
| 126 | Pigtails 1m LC/APC connectors | No | 5 | | 0,00 |
| 127 | Dome joint: High impact polymer dome joint, complete with organiser tray and cable seals, 2 way. | No | 2 | | 0,00 |
| 128 | Splicing at both ends 24/24 | No | 10 | | 0,00 |
| 129 | Bi directional Testing (OTDR) | No | 10 | | 0,00 |
| 130 | Power meter testing | No | 10 | | 0,00 |
| 131 | Sum - For all the consumables and any necessary items required to fulfil the above scope of work. Fittings and Accessories. | SUM | 1 | | |
| 132 | Training | SUM | 1 | | |
| 133 | Testing and commissioning the complete fibre installation including issuing relevant and required | SUM | 1 | | |
| 134 | Labour | SUM | 1 | | |
| <u>SECURITY SYSTEM</u> | | | | | |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|---|----|----------|------|--------|
| | 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>HIGH SPEED PTZ CAMERA, EXTERNAL</u> | | | | |
| 135 | Type 1 - IP67 PTZ 2MP, 200m IR range, High resolution imaging, 360views, x36 zoom, Self-learning analytics, robust design, suitable for harshest coastal environment, body - Aluminum and technopolymer, Housing - Pendant and pedestal mount | No | 4 | | 0,00 |
| 136 | AVUEI9AA IR Illuminator 940nm | No | 4 | | 0,00 |
| 137 | AVUEBWAA Wall bracket & AVUEAC Corner adaptor | No | 4 | | 0,00 |
| 138 | POE-INJ-BT-90W-NA PoE injector 802.3bt 90W Single Port, cabling and all required accessories for completion operation. | No | 4 | | 0,00 |
| | <u>BULLET CAMERA</u> | | | | |
| 139 | Type 2 - 4.0C-H5A-BO1-IR 4.0 MP WDR, LightCatcher, 3.3-9mm f/1.3 P-iris lens, Integrated IR, Next-Generation Analytics | No | 9 | | 0,00 |
| 140 | H4-BO-JBOX1 Junction box for the H5A Bullet, H4A HD Bullet, H4SL HD Bullet, or H4 Thermal cameras, cabling and all required accessories for completion operation. | No | 9 | | 0,00 |
| | <u>FISHEYE CAMERA WITH AUDIO</u> | | | | |
| 141 | Type 3 - 8.0C-H5A-FE-DO1-IR 8.0 MP, H5A Fisheye Dome Camera, LightCatcher, Day/Night, WDR, 1.41mm f/2.0, Next-Generation Analytics, Integrated IR with Audio, cabling and all required accessories for completion operation. | No | 9 | | 0,00 |
| | <u>DOME CAMERA</u> | | | | |
| 142 | Type 4 - 4.0C-H5A-DO1-IR 4.0 MP WDR, LightCatcher, Day/Night, Outdoor Dome, 3.3-9mm f/1.3 P-iris lens, Integrated IR, Next-Generation Analytics | No | 6 | | 0,00 |
| 143 | Housing, brackets, cabling and all other required accessories for complete installation and operation | No | 6 | | 0,00 |
| 144 | 2 x RM6-WKS-2MN-EU Remote Monitoring Workstation, 2 Monitors, EU with mouse and keyboard | No | 2 | | 0,00 |
| 145 | Wall mounted 65" LED 4000K Full HD monitors smart TV with HDMI ports | No | 3 | | 0,00 |
| 146 | TV Mounting bracket for above mentioned televisions with all required accessories | No | 3 | | 0,00 |
| 147 | MHD24-G2-EU Monitor, 24" LCD HD, WUXGA | No | 4 | | 0,00 |
| | <u>NETWORK AND VIDEO RECORDER</u> | | | | |
| 148 | NVR with NVR support per channel, NVR support per audio input, NVR support per audio output, NVR4 Value 12TB, 1U Rack Mount, Windows 10, NVR4-VAL-12TB-EU | No | 1 | | 0,00 |
| 149 | Storage Manager Licence per Camera | No | 10 | | 0,00 |
| 150 | 12 Port Gigabit Switch - Smart PoE | No | 6 | | 0,00 |
| 151 | Network Cabinet 12U Swing Glass Door Wall Mounted 600mm X 600mm X 450mm (HWD) | No | 6 | | 0,00 |
| | <u>ACCESS CONTROL</u> | | | | |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|--|-----|----------|------|--------|
| 152 | Face, Palm, Card and Fingerprint recognition Terminal with Mask Detection including applicable software and software integration | No | 8 | | 0,00 |
| 153 | AC-VT-READ-BIO-USB-FOH02 - VIRDI Fingerprint and card enrollment USB reader, live fingerprint detection embedded, Fingerprint Platen Area: 16 x 19.6mm / Image Size: 15 x 17mm, (VIRDI Part Number: FOH02) | No | 1 | | 0,00 |
| 154 | Access Control Manager Enterprise 6 "Web-Based PACS Enterprise, Appliance for 20 Readers - includes: physical appliance embedded 64 bit LinuxOS & Open LDAP for configuration database Access Control Manager Security Management Software ACC Video Integration Identities CSV export, recurring, one-time, long & short format Total reader capacity can be expanded from 128 to 400 readers, in increments of 16, with the purchase of the desired quantity of AC-SW-LIC-16RCU-6-P, 16 Reader Count Software Licenses Supports up to 512 controllers 250K identities and 150M stored events and twenty (20) simultaneous operators (via browser) Three (3) year appliance hardware warranty begins at date of shipment | No | 1 | | 0,00 |
| 155 | Manager Integration Software Licenses Access Control Manager 6 Professional, Enterprise, Enterprise Plus & Virtual | No | 1 | | 0,00 |
| 156 | Single door intelligent controller 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 | 4 | | 0,00 |
| 157 | 12VDV power supply for card readers / door strikers. Integrated uninterruptable power supply (7 Ah UPS) Two Door Mercury Single Voltage Integrated Power System supporting two AC-MER-CONT-1DR or one AC-MER-CONT-2DR (Mercury hardware sold separately). Includes painted steel enclosure, removable pre drilled back plate, controller standoffs and mounting screws and a 75 watt 12V/6A or 24V/3A power supply-battery charger. The power supply is pre-wired to eight Class 2, Power Limited (CL2PL) outputs (D8P Board) delivering a regulated independent power connection to Mercury boards and auxiliary equipment. The power supply features dual outputs, form "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 must be made available in cabinet (unless using two AC-MER-CONT-1DR). Cabinet size: 12" x 14" x 4.5" with door lock, tamper switch and two (2) keys. Weight 14 lb.(LifeSafety Power Part Number: FPO75-D8PE1M) | No | 4 | | 0,00 |
| 158 | Magnetic Door Lock 1200pounds, Break glass and door closer complete with accessories | No | 4 | | 0,00 |
| 159 | Labour for complete door setup | No | 4 | | 0,00 |
| | SOFTWARE | | | | |
| 160 | Application Software interface | SUM | 1 | | |
| 161 | Plug in for VMS integration | No | 1 | | 0,00 |
| 162 | Babylon Integration License | m | 1 | | 0,00 |
| | CABLING AND CONDUIT | | | | |
| 163 | Cat 6 UTP link, including average of 50m run, shuttered RJ45 outlet in plate at terminal end, and patch panel mountd modular jack in rack at switch end | No | 7 | | 0,00 |
| 164 | 1.5m Cat 6 UTP fly leads with factory assembled connectors at both ends | m | 7 | | 0,00 |
| 165 | 150mm wide dg wire mesh basket mounted vertically in risers on unistrot supports, complete with connectors, bends, offsets, splices, etc | m | 100 | | 0,00 |
| 166 | 25mm PVC conduit on surface and chased on wall and make good including all fixings | m | 200 | | 0,00 |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|--|------|----------|------|--------|
| 167 | Labelling Cat 6 cable | No | 30 | | 0,00 |
| 168 | CAT6 UTP Twisted pair | m | 100 | | 0,00 |
| 169 | Server Cabinets Standing Glass Front & Back Door 42U 600mm X 450mm (HWD). Unit must have 4-way fan unit and 10-way PDU | No | 1 | | 0,00 |
| 170 | Fibre Outdoor Drop Cable 150M LC - LC/APC 1Core | No | 10 | | 0,00 |
| | COMMUNICATIONS SYSTEMS | | | | |
| | Voice Evacuation/Public Address System (to be linked with Fire panel) and Broadcasting, Audio Visual System | | | | |
| | Allow the sum of One Million Rand for Communications Systems. Amount to be paid at the discretion of Project Manager/Engineer and the Employer upon receiving and approving a quotation from Transnet accredited installer. | | | | |
| 171 | | Item | 1 | | 0,00 |
| 172 | Profit (.....%) | %IT | | | |
| 173 | General attendance (.....%) | %IT | | | |
| | EARTHING AND BONDING AND LIGHTNING PROTECTION | | | | |
| | Soil Resistivity Test Allow for the execution of a soil resistivity survey. (This installation must be undertaken by a specialist Sub-contractor). A Final Earth Resistance of less than 10 Ohm is required. | | | | |
| | Electrical Earthing Conductors Supply, deliver to site 1000/600 volt PVC insulated (green/yellow) cables with stranded copper conductors. Install, rack, strap and testing of cables as per specification including clamps, ties and cable numbering system as specified. Note: Cable supports measured elsewhere) | | | | |
| | Supply, install, test and commissioning of the Lightning protection of the entire building on all corners of the building and centre of the building as a minimum, complete with all necessary required material, accessories for a complete installation. Contractor to use copper earth spike, aluminium or copper conductors as per specification, and have testing points. Rates to include all necessary required accessories for a complete installation and issue test results certificate per building. The installation must comply with SANS 10313. Contractor to include rate for scaffolding where required. Further details on specification document. Refer to drawings and specifications documents for details. | | | | |
| 174 | Operations Building has a steel roof - 52m length X 15m width X 7m height | SUM | 1 | | |
| 175 | Substation building has concrete roof - 18m length X 8m width X 3,3m height | SUM | 1 | | |
| 176 | Water pump station has a steel structure and steel roof - steel structure. Refer to drawing for details. | SUM | 1 | | |
| | TESTING AND COMMISSIONING | | | | |
| | Test and commission the complete electrical installation including completion of quality checksheets, Compliance Certificates & test results and submitting them to the Employer's Representative. | | | | |
| 177 | Cold & Hot Commissioning | No | 1 | | 0,00 |
| 178 | Test and commission the complete electrical installation including Certificates of Compliance & test results to the Engineer. | SUM | 1 | | |
| 179 | Nett price for compliance with the conditions of contract including guarantees, insurance and other overheads | SUM | 1 | | |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|--|-----|----------|------|--------|
| 180 | Net amount for site establishment, transport, storage, supervision, quality control, etc. to comply with the conditions as specified | SUM | 1 | | |
| 181 | Compliance with the requirements of SANS 10142 and the OHS Act. | SUM | 1 | | |
| | GENERATOR SET | | | | |
| | Manufacture, deliver to site, install, test and commission of a generator set 400 volts at 50Hz as per specification and single line diagram. The generator shall be open type and installed in the generator room. Rates to include for steelwork and powder coated, busbars and drilling, busbar connections internal wiring, earthing for the generator set, etc. Refer to attached single line diagram. | | | | |
| 182 | 650kVA (prime), 400V Diesel Engine Alternator Set - open set frame. Refer to specification document for details and submit returnable schedule with this pricing. | SUM | 1 | | |
| 183 | Water Trap/Fuel Filter cartridge | SUM | 1 | | |
| 184 | New AMF panel as per single line diagram drawing | SUM | 1 | | |
| 185 | New Fuel Tank to supply generator with valves and instruments elevated stand | SUM | 1 | | |
| | Electrical reticulation | | | | |
| 186 | Interconnecting control & power cabling between genset and alternator and AMF panel | SUM | 1 | | |
| 187 | Support & protection of exposed cabling between genset & AMF panel | SUM | 1 | | |
| 188 | Electronic hooter & red flashing general alarm light mounted on the AMF panel. | SUM | 1 | | |
| 189 | Remote alarm indicator panel complete the red indicator lamp and label - GENERATOR FAULT | SUM | 1 | | |
| 190 | External emergency stop push button and cabling | SUM | 1 | | |
| 191 | Earthing of the generator set | SUM | 1 | | |
| | Test and Commissioning | | | | |
| 192 | Test & commission on site with load | SUM | 1 | | |
| 193 | Resistance testing of earth system | SUM | 1 | | |
| 194 | Balancing of the essential loads | SUM | 1 | | |
| 195 | Electrical Certification of Compliance | SUM | 1 | | |
| | Signage | | | | |
| 196 | As per OHS Act - fire & resussitation etc. | SUM | 1 | | |
| 197 | Generator "Manual Start/Test Procedure" | SUM | 1 | | |
| 198 | Caution - This generator will start automatically. Isolate power before working on plant | No | 1 | | 0,00 |
| 199 | Electricity logo on door to AMF panel | No | 1 | | 0,00 |
| 200 | TNPAs ID label of genset & control panel | No | 2 | | 0,00 |
| 201 | Contractors / TNPA details - laminated plastic | No | 1 | | 0,00 |
| | General | | | | |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|--|-----|----------|------|-------------|
| 202 | Diesel fuel for full tank | SUM | 1 | | |
| 203 | Automated pump from the diesel tank to the generator to fill up generator tank when required. Rate to included all necessary accessories required for a full operational pump. | SUM | 1 | | |
| 204 | Laminated plastic framed schematic wiring diagram fixed to the inside of the enclosure adjacent the AMF panel | No | 1 | | 0,00 |
| 205 | A4 size log book on chain in metal envelope in door | No | 1 | | 0,00 |
| 206 | Operational training of Employer's staff | SUM | 1 | | |
| 207 | Manuals - 3 sets | SUM | 1 | | |
| 208 | Drawings | SUM | 1 | | |
| 209 | Allow for crane, rigging and installation of the generator. | SUM | 1 | | |
| | Service | | | | |
| 210 | Inspection every quarter new fuel filters for 1st year | No | 4 | | 0,00 |
| 211 | Full annual service new battery for 1st year | No | 1 | | 0,00 |
| 212 | Disconnecting cables on existing generator and re-routing and re-connecting curcuits as per single line diagram and for the administration building. Rates to include re-testing of the generator set, provide diesel for testing. | SUM | 1 | | |
| | CARRIED TO FINAL SUMMARY / ... | | | | 0,00 |
| | SECTION 7 | | | | |
| | BILL NO. 1 | | | | |
| | HEATING, VENTILATION AND AIR CONDITIONING INSTALLATION | | | | |
| | WORK GROUP ALLOCATION | | | | |
| | Unless otherwise stated, all items in this Bill will be allocated to the appropriate Work Groups as follows: - Mechanical ServicesWork Group 170 - Ductwork InstallationsWork Group 171 - Refrigeration InstallationsWork Group 172 - Steel Water Pipe InstallationsWork Group 173 - Other general items will be allocated to Work Groups as indicated in brackets at the ends of headings or descriptions | | | | |
| | PREAMBLES | | | | |
| | The clauses under "Section A: GENERAL" (clauses A.1 to A.10) on page 2 of the Model Preambles for Trades (2008 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 Model Preambles will be entertained | | | | |
| | The descriptions of and quantities for the items measured in this trade have been based on the drawing(s?) and specification(s?) as prepared by ?name of Engineer? for this project, and the tenderers are referred to these documents, as separately listed hereunder, and the following "Supplementary Preambles", for the full descriptions of these items which are to be read and priced in conjunction with the said documents for the various installations | | | | |
| | SUPPLEMENTARY PREAMBLES | | | | |
| | Prices: | | | | |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|---|--|----------|------|--------|
| | <p>Unless otherwise stated, the description of each item shall be deemed to include manufacturing, conveying and delivering, unloading, storing, unpacking, hoisting, setting, fitting and fixing in position, cutting, waste, patterns, templets, plant, temporary works, return of packings, establishment charges, profit and other obligations arising out of the conditions of contract Prices for fans, coil units, major equipment, pumps, etc shall furthermore, allow for any and all electrical connections to the relevant isolators, etc as designed for this purpose</p> <p>Ductwork:</p> <p>Descriptions of ducts shall be deemed to include stiffeners, jointing materials, sealants, couplers in the running length and access/inspection panels in accordance with the specification Descriptions of spigot pipes shall be deemed to include the connection of the spigot pipe to the duct Where transformation or reducers occur, the larger size ductwork has been measured through the fitting</p> <p>Dampers:</p> <p>Descriptions of smoke and fire dampers shall be deemed to include fusible links, sleeves, frames, supports and access openings in ducts</p> <p>Air diffusion:</p> <p>Descriptions of air terminals, grilles, louvres and the like shall be deemed to include necks, frames, supports and flexible connections</p> <p>Fans:</p> <p>Descriptions of fan assemblies shall be deemed to include supports from the structure, flexible or other connections to ductwork, vibration isolation mountings and airtight inspection doors and the electrical installation up and the connection to the isolator (isolator installed by others)</p> <p>Sound attenuators:</p> <p>Descriptions of sound attenuators shall be deemed to include flanged or flexible connections to ducts and supports from the structure</p> <p>Fan coil units, fan air terminals and fan heaters:</p> <p>Descriptions of fan coil units, fan air terminals and fan heaters shall be deemed to include connection points for water, air and electrical supply, for air grilles, dust trays, condensate trays and vibration isolation mountings. Flexible ducts, flexible hose and connecting cables for connecting these units to each other or to water pipes and electrical supply are separately measured</p> <p>Major equipment:</p> <p>Descriptions of major equipment such as chillers, air handling units and the like shall be deemed to include connections to water, air and electrical supply and/or discharge points, supports, bearers, vibration insulation mountings, filters, insulation, inspection ladders and gangways, access doors and panels and painting, etc as specified</p> <p>Piping:</p> <p>Pipe diameters are nominal internal unless otherwise stated Where fittings have reducing ends or branches they are described as "reducing". In the case of pipes with diameters not exceeding 60mm only the largest end or branch diameter is given. Should the Contractor wish to use other fittings and bushes or reducers he may do so on the understanding that no claim in this regard will be entertained. In the case of pipes with diameters exceeding 60mm all diameters are given and no claim for extra bushes, reducers, etc will be entertained</p> | | | | |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|--|----|----------|------|--------|
| | <p>Fixing of pipes:</p> <p>Unless otherwise stated, descriptions of pipes shall be deemed to include fixing to walls, etc casting in, building in or suspending not exceeding 1m below suspension level</p> <p>Pump sets:</p> <p>Descriptions of pumps shall be deemed to include connections to water and electrical supply and/or discharge points, vibration insulation mountings, insulation, drip trays with outlets, pressure gauges, etc</p> <p>Valves:</p> <p>Descriptions of valves shall be deemed to include flanged or screwed connections to pipes, reducers, supports, etc</p> <p>Insulation:</p> <p>Descriptions of insulation shall be deemed to include priming the pipes with zinc chromate primer before the insulation is applied, painting the insulation when completed and applying vapour barrier where specified</p> <p>HEATING, VENTILATION AND AIR CONDITIONING INSTALLATION</p> <p>Supply, install and commission the following HVAC Systems as per specification:</p> | | | | |
| 1 | Multiple System Type Mini-Cassette 3.6 kW Cooling (Ceiling Mounted Unit With Panel cover) | No | 1 | | 0,00 |
| 2 | Multiple System Type Mini-Cassette 4.5 kW Cooling (Ceiling Mounted Unit With Panel cover) | No | 2 | | 0,00 |
| 3 | Multiple System Type Mini-Cassette 5.6 kW Cooling (Ceiling Mounted Unit With Panel cover) | No | 1 | | 0,00 |
| 4 | Multiple System Type Mini-Cassette 6.0 kW Cooling (Ceiling Mounted Unit With Panel cover) | No | 1 | | 0,00 |
| 5 | Multiple System Type Outdoor Air Processing Unit - 14 kW Cooling | No | 1 | | 0,00 |
| 6 | Multiple System Type Hide-away Unit - 18 kW Cooling | No | 1 | | 0,00 |
| 7 | Premium wired remote controller | No | 5 | | 0,00 |
| 8 | Gas and Liquid Refrigerant copper piping, refnets joints, insulation and galvanized cable wire baskets with consumables, nitrogen, welding with consumables, refrigerant gas and general consumables. | m | 180 | | 0,00 |
| 9 | 22-50mm Dia. PVC condensate drain piping with all associated fittings | m | 50 | | 0,00 |
| 10 | Multiple System, energy efficient condensing module with inverter motor- 61.60 & 69.3 kW (Cooling & Heating) | No | 1 | | 0,00 |
| 11 | BACnet gateway module | No | 1 | | 0,00 |
| | <p>Fabricate, Deliver, and Install the following Air-Conditioning Ducting with all Necessary Fittings, and Balance the Air Terminals And Commission as Per Specification:</p> | | | | |
| 12 | 600 x 300mm Internally lined galvanized steel duct | m | 2 | | 0,00 |
| 13 | 400 x 300mm Internally lined galvanized steel duct | m | 3 | | 0,00 |
| 14 | 300 x 300mm Internally lined galvanized steel duct | m | 6 | | 0,00 |
| 15 | 300 x 300mm Insulated duct end plate | No | 1 | | 0,00 |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|---|----|----------|------|--------|
| 16 | 300mm dia. internally lined galvanized steel duct | m | 4 | | 0,00 |
| 17 | 250mm dia. Internally lined galvanized steel duct | m | 15 | | 0,00 |
| 18 | 200mm dia. Internally lined galvanized steel duct | m | 6 | | 0,00 |
| 19 | 300mm x 300mm Internally lined galvanized steel 90 Deg Bend | No | 1 | | 0,00 |
| 20 | 300mm x 250mm Internally lined galvanized steel 45 Deg Bend | No | 2 | | 0,00 |
| 21 | 250mm x 200mm Internally lined galvanized steel 90 Deg Bend | No | 4 | | 0,00 |
| 22 | 200mm x 150mm Internally lined galvanized steel 90 Deg Bend | No | 1 | | 0,00 |
| 23 | 600 x 300mm - Hide-away Unit - internally lined galvanized steel reducer | No | 1 | | 0,00 |
| 24 | 300mm Dia - Hide-away Unit - internally lined galvanized steel reducer | No | 1 | | 0,00 |
| 25 | 600 x 300mm - 400 x 300mm Internally lined galvanized steel reducer | No | 1 | | 0,00 |
| 26 | 400 x 300mm - 300 x 300mm Internally Lined Galvanized Steel Reducer | No | 1 | | 0,00 |
| 27 | 300mm dia - 250mm x 200mm Internally Lined Galvanized Steel Reducer | No | 1 | | 0,00 |
| 28 | 250mm dia - 200mm dia Internally Lined Galvanized Steel Reducer | No | 1 | | 0,00 |
| 29 | 300x300 - 250mm dia Internally Lined Galvanized Steel Transformation Piece | No | 2 | | 0,00 |
| 30 | 600x300 -250mm dia Internally Lined Galvanized Steel Cross Junction | No | 1 | | 0,00 |
| 31 | 400x300 -250mm x 200mm Internally Lined Galvanized Steel Cross Junction | No | 1 | | 0,00 |
| 32 | 300x300 - 300x300 - 250mm dia. Internally lined galvanized steel cross junction | No | 1 | | 0,00 |
| 33 | 600x300 - 600x300 - 400x300 Internally lined galvanized steel tee junction | No | 1 | | 0,00 |
| 34 | 300x300 - 300x300 - 400x300 Internally lined galvanized steel tee junction | No | 1 | | 0,00 |
| 35 | 300x300 - 250mm dia. Internally lined galvanized steel tee junction | No | 2 | | 0,00 |
| 36 | 300mm x 200mm dia. Internally lined galvanized steel tee junction | No | 2 | | 0,00 |
| 37 | 250mm dia - 200mm dia Internally lined galvanized steel tee junction | No | 1 | | 0,00 |
| 38 | 600x600 Supply Air Diffuser - 250mm dia. neck | No | 6 | | 0,00 |
| 39 | 600mm x 300mm Supply Air Diffuser - 250mm dia. neck | No | 4 | | 0,00 |
| 40 | 600mm x 200mm Supply Air Diffuser - 200mm dia. neck | No | 4 | | 0,00 |
| 41 | 1200 x 600mm Return air grille with filter - 600 x 300 Neck with a 900 x 210 x 600mm return air plenum - to match the hide away unit return air opening | No | 1 | | 0,00 |
| 42 | 1000 x 210mm Fresh air aluminium weather louvre with filter - 1000 x 210 x 600mm return air plenum - to match the outdoor air processing unit fresh air opening | No | 1 | | 0,00 |
| 43 | 600 x 600mm Fresh air grille with filter - 250mm dia. neck | No | 1 | | 0,00 |
| 44 | 250mm dia. Flexible duct | m | 11 | | 0,00 |
| 45 | 200mm dia. Flexible duct | m | 4 | | 0,00 |
| 46 | 150mm dia. Flexible duct | m | 7 | | 0,00 |
| 47 | 150mm dia. Galvanized steel duct | m | 17 | | 0,00 |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|--|----|----------|------|--------|
| 48 | 200mm dia. Galvanized steel duct | m | 11 | | 0,00 |
| 49 | 250mm dia. Galvanized steel duct | m | 4 | | 0,00 |
| 50 | 300mm dia. Galvanized steel duct | m | 6 | | 0,00 |
| 51 | 150mm dia. 90 Deg Bend | No | 3 | | 0,00 |
| 52 | 200mm dia. 90 Deg Bend | No | 8 | | 0,00 |
| 53 | 300mm dia. 90 Deg Bend | No | 1 | | 0,00 |
| 54 | 150mm dia. Equal Tee | No | 2 | | 0,00 |
| 55 | 200mm dia. Equal Tee | No | 1 | | 0,00 |
| 56 | 200 - 150mm Dia. Reducing Tee | No | 4 | | 0,00 |
| 57 | 250mm dia. Equal Tee | No | 1 | | 0,00 |
| 58 | 300 -150mm dia. Reducing Tee | No | 2 | | 0,00 |
| 59 | 300 -200mm dia. Reducing Tee | No | 2 | | 0,00 |
| 60 | 300 -200mm dia. Reducing Cross Junction | No | 2 | | 0,00 |
| 61 | 200 - 150mm dia. Reducer | No | 3 | | 0,00 |
| 62 | 250 - 200mm dia. Reducer | No | 2 | | 0,00 |
| 63 | 300-200mm dia. Reducer | No | 2 | | 0,00 |
| 64 | 250mm dia. Flow Balancing Damper | No | 9 | | 0,00 |
| 65 | 500 x 500mm Exhaust air weather louvre in A 500 x 500 - 300mm dia. transformation piece | No | 2 | | 0,00 |
| 66 | Fan attenuator | No | 4 | | 0,00 |
| 67 | Axial flow fan @ 335 l/s & 150 Pa | No | 2 | | 0,00 |
| 68 | 300 x 300mm Exhaust air weather louvre in A 300 x 300 - 200mm dia. transformation piece | No | 1 | | 0,00 |
| 69 | Fan attenuator | No | 2 | | 0,00 |
| 70 | Axial flow fan @ 86 l/s & 50 Pa | No | 1 | | 0,00 |
| 71 | 300 x 300mm Supply air weather louvre in a 300 x 300 - 200mm dia. transformation piece | No | 1 | | 0,00 |
| 72 | Fan attenuator | No | 2 | | 0,00 |
| 73 | Axial flow fan @ 150 l/s & 100 Pa | No | 1 | | 0,00 |
| 74 | 600 x 600mm Extract air grille - 200mm neck | No | 6 | | 0,00 |
| 75 | 350mm dia. Air valve with 150mm dia. neck | No | 11 | | 0,00 |
| 76 | 350 x 250mm Door grille | No | 3 | | 0,00 |
| 77 | 350mm Aluminium turbine ventilator with extraction rate of 517 l/s @ 15 km/h wind speed | No | 2 | | 0,00 |
| 78 | 610mm Aluminium turbine ventilator with extraction rate of 1890 l/s @ 15 km/h wind speed | No | 6 | | 0,00 |
| | BUDGETARY ALLOWANCES | | | | |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|---|------|----------|------|-------------|
| 79 | Allow an amount of Two Hundred Thousand for a function room to be added on top of the proposed office space | Item | 1 | | 0,00 |
| | Carried to section summary / ... | | | | 0,00 |
| | <p>SECTION 7</p> <p>BILL NO. 2</p> <p>WET SERVICES</p> <p>WORK GROUP ALLOCATION</p> <p>Unless otherwise stated, all items in this Bill will be allocated to the appropriate Work Groups as follows: - Mechanical Services Work Group 170 - Ductwork Installations Work Group 171 - Refrigeration Installations Work Group 172 - Steel Water Pipe InstallationsWork Group 173 - Other general items will be allocated to Work Groups as indicated in brackets at the ends of headings or descriptions</p> <p>PREAMBLES</p> <p>The clauses under "Section A: GENERAL" (clauses A.1 to A.10) on page 2 of the Model Preambles for Trades (2008 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 Model Preambles will be entertained</p> <p>The descriptions of and quantities for the items measured in this trade have been based on the drawing(s?) and specification(s?) as prepared by ?name of Engineer? for this project, and the tenderers are referred to these documents, as separately listed hereunder, and the following "Supplementary Preambles", for the full descriptions of these items which are to be read and priced in conjunction with the said documents for the various installations</p> <p>SUPPLEMENTARY PREAMBLES</p> <p>Prices:</p> <p>Unless otherwise stated, the description of each item shall be deemed to include manufacturing, conveying and delivering, unloading, storing, unpacking, hoisting, setting, fitting and fixing in position, cutting, waste, patterns, templets, plant, temporary works, return of packings, establishment charges, profit and other obligations arising out of the conditions of contract Prices for fans, coil units, major equipment, pumps, etc shall furthermore, allow for any and all electrical connections to the relevant isolators, etc as designed for this purpose</p> <p>Ductwork:</p> <p>Descriptions of ducts shall be deemed to include stiffeners, jointing materials, sealants, couplers in the running length and access/inspection panels in accordance with the specification Descriptions of spigot pipes shall be deemed to include the connection of the spigot pipe to the duct Where transformation or reducers occur, the larger size ductwork has been measured through the fitting</p> <p>Dampers:</p> <p>Descriptions of smoke and fire dampers shall be deemed to include fusible links, sleeves, frames, supports and access openings in ducts</p> <p>Air diffusion:</p> | | | | |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|--|--|----------|------|--------|
| | <p>Descriptions of air terminals, grilles, louvres and the like shall be deemed to include necks, frames, supports and flexible connections</p> <p>Fans:</p> <p>Descriptions of fan assemblies shall be deemed to include supports from the structure, flexible or other connections to ductwork, vibration isolation mountings and airtight inspection doors and the electrical installation up and the connection to the isolator (isolator installed by others)</p> <p>Sound attenuators:</p> <p>Descriptions of sound attenuators shall be deemed to include flanged or flexible connections to ducts and supports from the structure</p> <p>Fan coil units, fan air terminals and fan heaters:</p> <p>Descriptions of fan coil units, fan air terminals and fan heaters shall be deemed to include connection points for water, air and electrical supply, for air grilles, dust trays, condensate trays and vibration isolation mountings. Flexible ducts, flexible hose and connecting cables for connecting these units to each other or to water pipes and electrical supply are separately measured</p> <p>Major equipment:</p> <p>Descriptions of major equipment such as chillers, air handling units and the like shall be deemed to include connections to water, air and electrical supply and/or discharge points, supports, bearers, vibration insulation mountings, filters, insulation, inspection ladders and gangways, access doors and panels and painting, etc as specified</p> <p>Piping:</p> <p>Pipe diameters are nominal internal unless otherwise stated Where fittings have reducing ends or branches they are described as "reducing". In the case of pipes with diameters not exceeding 60mm only the largest end or branch diameter is given. Should the Contractor wish to use other fittings and bushes or reducers he may do so on the understanding that no claim in this regard will be entertained. In the case of pipes with diameters exceeding 60mm all diameters are given and no claim for extra bushes, reducers, etc will be entertained</p> <p>Fixing of pipes:</p> <p>Unless otherwise stated, descriptions of pipes shall be deemed to include fixing to walls, etc casting in, building in or suspending not exceeding 1m below suspension level</p> <p>Pump sets:</p> <p>Descriptions of pumps shall be deemed to include connections to water and electrical supply and/or discharge points, vibration insulation mountings, insulation, drip trays with outlets, pressure gauges, etc</p> <p>Valves:</p> <p>Descriptions of valves shall be deemed to include flanged or screwed connections to pipes, reducers, supports, etc</p> <p>Insulation:</p> <p>Descriptions of insulation shall be deemed to include priming the pipes with zinc chromate primer before the insulation is applied, painting the insulation when completed and applying vapour barrier where specified</p> <p><u>WET SERVICES</u></p> | | | | |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|---|----|----------|------|--------|
| | Class 12 HDPE Piping Laid and Buried Trenches Not Exceeding 800m Deep. | | | | |
| 1 | 40mm dia. HDPE CI 12 underground water pipe | m | 65 | | 0,00 |
| | Fittings for HDPE Class 12 Piping | | | | |
| 2 | 40mm dia. 90 Degree Elbow | No | 4 | | 0,00 |
| 3 | 40mm dia. 45 Degree Elbow | No | 5 | | 0,00 |
| 4 | 110mm - 100mm Adaptor Flange | No | 2 | | 0,00 |
| 5 | 40mm Isolating valve inside a 400 x 400mm valve chamber | No | 1 | | 0,00 |
| | BLACK MILD STEEL FITTINGS | | | | |
| 6 | 100mm, 90 Degree threaded elbow flanged connections | No | 2 | | 0,00 |
| 7 | 100 NB Isolating valve with flanged connections | No | 2 | | 0,00 |
| 8 | Locally approved 100 NB Municipal Water Meter with flanged connections | No | 1 | | 0,00 |
| 9 | 100NB Strainer Flanged Connections With Flanged Connections | No | 1 | | 0,00 |
| | BLACK MILD STEEL PIPING | | | | |
| 10 | 100mm Pipes With Flanged Connections | m | 2 | | 0,00 |
| | CLASS 1 MEDIUM COPPER PIPES | | | | |
| 11 | 15mm dia Pipe | m | 72 | | 0,00 |
| 12 | 22mm dia Pipe | m | 31 | | 0,00 |
| 13 | 28mm dia Pipe | m | 10 | | 0,00 |
| 14 | 35mm dia Pipe | m | 20 | | 0,00 |
| 15 | 42mm dia Pipe | m | 40 | | 0,00 |
| | Capillary Tube Fittings With Soldered Joints | | | | |
| 16 | 15mm dia Elbow | No | 22 | | 0,00 |
| 17 | 22mm dia Elbow | No | 6 | | 0,00 |
| 18 | 28mm dia Elbow | No | 4 | | 0,00 |
| 19 | 35mm dia Elbow | No | 2 | | 0,00 |
| 20 | 42mm dia Elbow | No | 6 | | 0,00 |
| 21 | 22mm dia Equal Tee | No | 13 | | 0,00 |
| 22 | 28mm dia Equal Tee | No | 4 | | 0,00 |
| 23 | 35mm dia Equal Tee | No | 12 | | 0,00 |
| 24 | 42mm dia Equal Tee | No | 7 | | 0,00 |
| 25 | 22-15 mm dia Reducer | No | 10 | | 0,00 |
| 26 | 28-15 mm dia Reducer | No | 3 | | 0,00 |
| 27 | 28-22 mm dia Reducer | No | 3 | | 0,00 |
| 28 | 35-15 mm dia Reducer | No | 6 | | 0,00 |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|---|----|----------|------|--------|
| 29 | 35-22 mm dia Reducer | No | 3 | | 0,00 |
| 30 | 35-28 mm dia Reducer | No | 2 | | 0,00 |
| 31 | 42-15 mm dia Reducer | No | 2 | | 0,00 |
| 32 | 42-22 mm dia Reducer | No | 2 | | 0,00 |
| 33 | 42-35 mm dia Reducer | No | 2 | | 0,00 |
| | Brass Compression Fittings And Valves | | | | |
| 34 | 15mm dia Elbow | No | 31 | | 0,00 |
| 35 | 22mm dia Isolation Valve | No | 5 | | 0,00 |
| 36 | 28mm dia Isolation Valve | No | 2 | | 0,00 |
| 37 | 35mm dia Isolation Valve | No | 3 | | 0,00 |
| 38 | 35mm dia Strainer | No | 2 | | 0,00 |
| | Heavy brown paper loosely wrapped around pipe as sheath for expansion. | | | | |
| 39 | 15mm dia | m | 60 | | 0,00 |
| | Pipe Hangers - Anchor, Treaded Rod & Hanger | | | | |
| 40 | 15mm dia | No | 15 | | 0,00 |
| 41 | 22mm dia | No | 15 | | 0,00 |
| 42 | 28mm dia | No | 5 | | 0,00 |
| 43 | 35mm dia | No | 10 | | 0,00 |
| 44 | 42mm dia | No | 20 | | 0,00 |
| | <u>HOT WATER INSTALLATION</u> | | | | |
| | Supply, Install, and Commission The Following Hot Water System Complete with all Auxiliary Fittings As Per Specification | | | | |
| 45 | 5.5 kW Heat Pump With all field wiring and fittings | No | 1 | | 0,00 |
| 46 | 250 Liter Electric Geyser Supplied and Installed with all Valves and required Piping as per Manufacture's Specifications. | No | 1 | | 0,00 |
| 47 | Hot water circulation system with all relevant pumps, piping and valves. | No | 1 | | 0,00 |
| | CLASS 1 MEDIUM COPPER PIPES | | | | |
| 48 | 15mm dia Pipe | m | 36 | | 0,00 |
| 49 | 22mm dia Pipe | m | 31 | | 0,00 |
| 50 | 28mm dia Pipe | m | 21 | | 0,00 |
| 51 | 35mm dia Pipe | m | 67 | | 0,00 |
| | Capillary Tube Fittings With Soldered Joints | | | | |
| 52 | 15mm dia Elbow | No | 12 | | 0,00 |
| 53 | 22mm dia Elbow | No | 6 | | 0,00 |
| 54 | 28mm dia Elbow | No | 15 | | 0,00 |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|---|----|----------|------|--------|
| 55 | 35mm dia Elbow | No | 5 | | 0,00 |
| 56 | 22mm dia Equal Tee | No | 6 | | 0,00 |
| 57 | 28mm dia Equal Tee | No | 6 | | 0,00 |
| 58 | 35mm dia Equal Tee | No | 4 | | 0,00 |
| 59 | 22-15 mm dia Reducer | No | 6 | | 0,00 |
| 60 | 28-15 mm dia Reducer | No | 5 | | 0,00 |
| 61 | 28-22 mm dia Reducer | No | 1 | | 0,00 |
| 62 | 35-15 mm dia Reducer | No | 4 | | 0,00 |
| 63 | 35-22 mm dia Reducer | No | 1 | | 0,00 |
| 64 | 35-28 mm dia Reducer | No | 1 | | 0,00 |
| | Brass Compression Fittings And Valves | | | | |
| 65 | 22mm dia Isolation Valve | No | 1 | | 0,00 |
| 66 | 35mm dia Isolation Valve | No | 1 | | 0,00 |
| | Heavy brown paper loosely wrapped around pipe as sheath for expansion. | | | | |
| 67 | 15mm dia | m | 30 | | 0,00 |
| | Pipe Hangers - Anchor, Treaded Rod & Hanger | | | | |
| 68 | 15mm dia | No | 6 | | 0,00 |
| 69 | 22mm dia | No | 15 | | 0,00 |
| 70 | 28mm dia | No | 10 | | 0,00 |
| 71 | 35mm dia | No | 30 | | 0,00 |
| | Lagging Wrapped Around Pipe | | | | |
| 72 | 15mm dia | m | 10 | | 0,00 |
| 73 | 22mm dia | m | 31 | | 0,00 |
| 74 | 35mm dia | m | 67 | | 0,00 |
| | WASTE WATER DRAINAGE | | | | |
| | Class 34 uPVC PIPES | | | | |
| | <u>Sewer and drainage pipes and fittings shall be through Solid wall Class 34 uPVC socketed soil piping in according to SABS 791, jointed and sealed with butyl rubber rings Soil, waste and vent pipes and fittings shall be according to SABS 967 and solvent jointed Cold water supply pressure pipes and fittings shall be according to SABS 966 and jointed by means of the "Lying" type jointing system Pipes shall be fixed and jointed according to SABS 0112</u> | | | | |
| 75 | 50mm dia Pipe | m | 40 | | 0,00 |
| 76 | 110mm dia Pipe | m | 30 | | 0,00 |
| 77 | 160mm dia Pipe | m | 40 | | 0,00 |
| | Class 34 uPVC FITTINGS | | | | |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|--|----|----------|------|-------------|
| 78 | 50mm dia 90 Deg Bend | No | 21 | | 0,00 |
| 79 | 110mm dia 90 Deg Bend | No | 8 | | 0,00 |
| 80 | 110mm dia 90 Deg Access Bend | No | 6 | | 0,00 |
| 81 | 160mm dia 90 Access Deg Bend | No | 5 | | 0,00 |
| 82 | 50mm dia 45 90 Deg Bend | No | 13 | | 0,00 |
| 83 | 110mm dia 45 Deg Bend | No | 4 | | 0,00 |
| 84 | 160mm dia 45 Deg Bend | No | 4 | | 0,00 |
| 85 | 110mm dia Pan connector | No | 6 | | 0,00 |
| 86 | 50mm dia Equal 1cess junction | No | 15 | | 0,00 |
| 87 | 110mm dia - 50mm x junction | No | 7 | | 0,00 |
| 88 | 110mm dia Equal Access junction | No | 2 | | 0,00 |
| 89 | 160mm dia - 50mm x junction | No | 10 | | 0,00 |
| 90 | 160mm dia - 110mm x junction | No | 9 | | 0,00 |
| 91 | 160mm dia Equal Access junction | No | 2 | | 0,00 |
| | Pipe Hangers - Anchor, Treaded Rod & Hilti Hanger | | | | |
| 92 | 50mm dia | No | 14 | | 0,00 |
| 93 | 110mm dia | No | 2 | | 0,00 |
| 94 | 160mm dia | No | 1 | | 0,00 |
| | Carried to section summary / ... | | | | 0,00 |
| | <p><u>SECTION 7</u></p> <p><u>BILL NO. 3</u></p> <p><u>FIRE PROTECTION</u></p> <p><u>WORK GROUP ALLOCATION</u></p> <p>Unless otherwise stated, all items in this Bill will be allocated to the appropriate Work Groups as follows: - Mechanical Services Work Group 170 - Ductwork Installations Work Group 171 - Refrigeration Installations Work Group 172 - Steel Water Pipe InstallationsWork Group 173 - Other general items will be allocated to Work Groups as indicated in brackets at the ends of headings or descriptions</p> <p><u>PREAMBLES</u></p> <p>The clauses under "Section A: GENERAL" (clauses A.1 to A.10) on page 2 of the Model Preambles for Trades (2008 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 Model Preambles will be entertained</p> | | | | |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|--|--|----------|------|--------|
| | <p>The descriptions of and quantities for the items measured in this trade have been based on the drawing(s?) and specification(s?) as prepared by ?name of Engineer? for this project, and the tenderers are referred to these documents, as separately listed hereunder, and the following "Supplementary Preambles", for the full descriptions of these items which are to be read and priced in conjunction with the said documents for the various installations</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p>Prices:</p> <p>Unless otherwise stated, the description of each item shall be deemed to include manufacturing, conveying and delivering, unloading, storing, unpacking, hoisting, setting, fitting and fixing in position, cutting, waste, patterns, templets, plant, temporary works, return of packings, establishment charges, profit and other obligations arising out of the conditions of contract Prices for fans, coil units, major equipment, pumps, etc shall furthermore, allow for any and all electrical connections to the relevant isolators, etc as designed for this purpose</p> <p>Ductwork:</p> <p>Descriptions of ducts shall be deemed to include stiffeners, jointing materials, sealants, couplers in the running length and access/inspection panels in accordance with the specification Descriptions of spigot pipes shall be deemed to include the connection of the spigot pipe to the duct Where transformation or reducers occur, the larger size ductwork has been measured through the fitting</p> <p>Dampers:</p> <p>Descriptions of smoke and fire dampers shall be deemed to include fusible links, sleeves, frames, supports and access openings in ducts</p> <p>Air diffusion:</p> <p>Descriptions of air terminals, grilles, louvres and the like shall be deemed to include necks, frames, supports and flexible connections</p> <p>Fans:</p> <p>Descriptions of fan assemblies shall be deemed to include supports from the structure, flexible or other connections to ductwork, vibration isolation mountings and airtight inspection doors and the electrical installation up and the connection to the isolator (isolator installed by others)</p> <p>Sound attenuators:</p> <p>Descriptions of sound attenuators shall be deemed to include flanged or flexible connections to ducts and supports from the structure</p> <p>Fan coil units, fan air terminals and fan heaters:</p> <p>Descriptions of fan coil units, fan air terminals and fan heaters shall be deemed to include connection points for water, air and electrical supply, for air grilles, dust trays, condensate trays and vibration isolation mountings. Flexible ducts, flexible hose and connecting cables for connecting these units to each other or to water pipes and electrical supply are separately measured</p> <p>Major equipment:</p> <p>Descriptions of major equipment such as chillers, air handling units and the like shall be deemed to include connections to water, air and electrical supply and/or discharge points, supports, bearers, vibration insulation mountings, filters, insulation, inspection ladders and gangways, access doors and panels and painting, etc as specified</p> | | | | |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|--|----|----------|------|--------|
| | <p>Piping:</p> <p>Pipe diameters are nominal internal unless otherwise stated Where fittings have reducing ends or branches they are described as "reducing". In the case of pipes with diameters not exceeding 60mm only the largest end or branch diameter is given. Should the Contractor wish to use other fittings and bushes or reducers he may do so on the understanding that no claim in this regard will be entertained. In the case of pipes with diameters exceeding 60mm all diameters are given and no claim for extra bushes, reducers, etc will be entertained</p> <p>Fixing of pipes:</p> <p>Unless otherwise stated, descriptions of pipes shall be deemed to include fixing to walls, etc casting in, building in or suspending not exceeding 1m below suspension level</p> <p>Pump sets:</p> <p>Descriptions of pumps shall be deemed to include connections to water and electrical supply and/or discharge points, vibration insulation mountings, insulation, drip trays with outlets, pressure gauges, etc</p> <p>Valves:</p> <p>Descriptions of valves shall be deemed to include flanged or screwed connections to pipes, reducers, supports, etc</p> <p>Insulation:</p> <p>Descriptions of insulation shall be deemed to include priming the pipes with zinc chromate primer before the insulation is applied, painting the insulation when completed and applying vapour barrier where specified</p> <p><u>FIRE PROTECTION</u></p> <p>Supply, Install, and Commission the Following Fire Protection Systems Complete With all Auxiliary fittings as per Specification:</p> <p><u>CLASS 16 HDPE PIPING & FITTINGS</u></p> | | | | |
| 1 | 75mm Pipe laid and including trenches not exceeding 800m deep. | m | 2 | | 0,00 |
| 2 | 110mm Pipe laid and including trenches not exceeding 800m deep. | m | 99 | | 0,00 |
| 3 | 110mm - 100mm Adaptor Flange | No | 4 | | 0,00 |
| 4 | 75mm - 80mm Adaptor Flange | No | 2 | | 0,00 |
| 5 | 110 - 40mm Tee Joint | No | 1 | | 0,00 |
| 6 | 110 - 75mm Tee Joint | No | 2 | | 0,00 |
| 7 | 110mm Tee Joint | No | 1 | | 0,00 |
| 8 | 110mm 90 Deg Bend | No | 4 | | 0,00 |
| 9 | 110mm 45 Deg Bend | No | 8 | | 0,00 |
| 10 | 110mm Isolating valve inside a 400 x 400mm valve chamber | No | 2 | | 0,00 |
| 11 | 110mm None return valve | No | 1 | | 0,00 |
| | BLACK MILD STEEL FITTINGS | | | | |
| 12 | 100mm, 90 Degree Threaded Elbow | No | 18 | | 0,00 |
| 13 | 100mm, 45 Degree Threaded Elbow | No | 3 | | 0,00 |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|--|-----|----------|------|--------|
| 14 | 80mm, 90 Degree Threaded Elbow | No | 6 | | 0,00 |
| 15 | 25mm, 90 Degree Threaded Elbow | No | 9 | | 0,00 |
| 16 | 100 - 25mm, Threaded Reducing Tee | No | 3 | | 0,00 |
| 17 | 100 - 80mm, Threaded Reducing Tee | No | 1 | | 0,00 |
| 18 | 80mm Threaded Equal Tee | No | 1 | | 0,00 |
| 19 | 80 - 25mm, Threaded Reducing Tee | No | 1 | | 0,00 |
| | BLACK MILD STEEL PIPING | | | | |
| 20 | 100mm Pipes | m | 100 | | 0,00 |
| 21 | 80mm Pipes | m | 20 | | 0,00 |
| 22 | 25mm Pipes | m | 18 | | 0,00 |
| | FIRE APPLIANCES | | | | |
| 23 | Fire hose reel complete with 30m rubber hose, chromium plated stopcock, shut off nozzle and wall bracket, bolted to wall | No | 4 | | 0,00 |
| 24 | 4.5kg DCP fire extinguisher mounted on a wooden block | No | 4 | | 0,00 |
| 25 | 9kg DCP fire extinguisher mounted on wooden block | No | 5 | | 0,00 |
| 26 | 10kg Carbon Dioxide fire extinguisher mounted on a wooden block | No | 5 | | 0,00 |
| 27 | Twin booster connection | No | 1 | | 0,00 |
| 28 | Fire hydrant | No | 2 | | 0,00 |
| 29 | Allowance for a 120-minute rated (Class B) double fire doors with self closing mechanisms | No | 2 | | 0,00 |
| | FIRE DETECTION | | | | |
| | <u>Complete design, supply and installation of a smoke detection system. Smoke detection system to comply with SANS 10139. Smoke detection system to be an Conventional Extinguishing Panel Linked to the existing addressable system in the main Building</u> | | | | |
| 30 | Addressable fire control panel | No | 1 | | 0,00 |
| 31 | Combined fire alarm sounder and xenon flashing beacon | No | 8 | | 0,00 |
| 32 | Optical smoke detectors with bases conventional | No | 31 | | 0,00 |
| 33 | Base sounder/visual with detector | No | 6 | | 0,00 |
| 34 | Heat Detector 60 Deg Fixed With Bases Conventional | No | 2 | | 0,00 |
| 35 | Break glass manual call point | No | 7 | | 0,00 |
| 36 | Break glass manual-magnetic lock override | No | 2 | | 0,00 |
| 37 | PH30 Fire resistant cable | m | 250 | | 0,00 |
| 38 | 25mm Bosal conduit with all associated fittings | m | 250 | | 0,00 |
| | SIGNAGE | | | | |
| 39 | LED directional signage (With Back-up Power) | SUM | 1 | | |
| 40 | Photo luminated directional signage | SUM | 1 | | |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|------------------------------|-----|----------|------|--------|
| 41 | Photo luminated fire signage | SUM | 1 | | |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|--|----------------|----------|------|-------------|
| 42 | FIRE STOP Allowance for fire stop to all penetrations to through fire zones | m ³ | 10 | | 0,00 |
| | PROVISIONAL SUMS Allow an amount of One Million One Hundred and Fifty Thousand for a Fire Sprinkler System to be incorporated should the ceiling void space exceed 800mm. | Item | 1 | | 0,00 |
| 43 | Profit (.....%) | %IT | | | |
| 44 | General attendance (.....%) | %IT | | | |
| | Carried to section summary / ... | | | | 0,00 |
| | SECTION SUMMARY | | | | |
| 1 | HVAC Installations | | | | 0,00 |
| 2 | Wet Services | | | | 0,00 |
| 3 | Fire Protection | | | | 0,00 |
| | CARRIED TO FINAL SUMMARY / ... | | | | 0,00 |
| | SECTION NO. 8 | | | | |
| | BILL NO. 1 | | | | |
| | PROVISIONAL AMOUNTS | | | | |
| | PREAMBLES The Model Preambles for Trades (2008 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 Model 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 Model Preambles | | | | |
| | SUPPLEMENTARY PREAMBLES | | | | |
| | General: Subcontract amounts are net. Subcontract amounts are for material and equipment supplied and installed complete by firms of specialists Each subcontract amount may comprise more than one element of work. Therefore, each subcontract amount may include for work to be carried out by more than one subcontractor | | | | |
| | Profit: Where stated, the contractor may allow for profit if required | | | | |
| | General attendance on nominated/selected subcontractors: 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: | | | | |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|--|------|----------|------|--------|
| | <p>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</p> <p>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</p> <p>3. The provision of an area for the subcontractor to establish temporary office accommodation and workshops and for the storage of plant and materials</p> <p>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</p> <p>5. The use, at reasonable times by arrangement of the contractor's erected hoisting equipment</p> <p>6. Making good in all trades and cleaning down and removal of rubbish on completion</p> <p>Special attendance on nominated/selected subcontractors:</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>Builder's work:</p> <p>Builder's work in connection with specialist services is given elsewhere in these bills of quantities</p> <p>SHIPPING CONTAINER</p> <p>Sub-contract amount of One Hundred and Fifty Thousand Rand for the provision of a shipping container made to fit.</p> | | | | |
| 1 | | Item | 1 | | 0,00 |
| 2 | Profit (.....%) | %IT | | | |
| 3 | General attendance (.....%) | %IT | | | |
| | <p>KITCHEN EQUIPMENT</p> <p>Subcontract amount of Fifty Thousand Rand for kitchen equipment, etc. complete</p> | | | | |
| 4 | | Item | 1 | | 0,00 |
| 5 | Profit (.....%) | %IT | | | |
| 6 | General attendance (.....%) | %IT | | | |
| | <p>MOCK-UPS AND SAMPLES</p> <p>Budgetary Allowance of Fifty Thousand Rand for mock-ups and samples</p> | | | | |
| 7 | | Item | 1 | | 0,00 |
| 8 | Profit (.....%) | %IT | | | |
| 9 | General attendance (.....%) | %IT | | | |
| | <p>COMMUNITY LIAISON OFFICER</p> <p>Subcontract amount of one One Hundred and Eighty Thousand Rand for Community Liaison Officer for a period of twelve (12) months</p> | | | | |
| 10 | | Item | 1 | | 0,00 |
| 11 | Profit (.....%) | %IT | | | |
| 12 | General attendance (.....%) | %IT | | | |
| | APPROVED INSPECTION AUTHORITIES | | | | |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|---|------|----------|------|-------------|
| 13 | Subcontract amount of one Two Hundred and Fifty Thousand Rand for AIA requirements. | Item | 1 | | 0,00 |
| 14 | Profit (.....%) | %IT | | | |
| 15 | General attendance (.....%) | %IT | | | |
| | Carried to section summary / ... | | | | 0,00 |
| | SECTION 8 | | | | |
| | BILL NO. 1 | | | | |
| | BUDGETARY ALLOWANCES | | | | |
| | PREAMBLES | | | | |
| | General: | | | | |
| | 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 | | | | |
| | DREDGING, ETC. | | | | |
| 1 | Budgetary Allowance of Five Million Rand for Dredging, etc. | Item | 1 | | 0,00 |
| | SIGNAGE, ETC. | | | | |
| 2 | Budgetary Allowance of One Hundred and Fifty Thousand Rand for additional ironmongery, signage, etc. | Item | 1 | | 0,00 |
| | PROVISION OF LOCKERS | | | | |
| 3 | Budgetary Allowance of Seventy Five Thousand Rand for the provision of lockers | Item | 1 | | 0,00 |
| | LOOSE FURNITURE AND BUILT-IN CUPBOARDS | | | | |
| 4 | Budgetary Allowance of Two Hundred and Fifty Thousand for the provision of loose furniture and built-in cupboards | Item | 1 | | 0,00 |
| | BUILDER'S WORK IN CONNECTION WITH SPECIALIST INSTALLATIONS | | | | |
| 5 | Budgetary Allowance of Three Hundred and Fifty Thousand Rand for builder's work in connection with specialist installations | Item | 1 | | 0,00 |
| | Carried to section summary / ... | | | | 0,00 |
| | SECTION SUMMARY | | | | |
| 1 | Provisional Sums, ETC | | | | 0,00 |
| 2 | Budgetary Allowances | | | | 0,00 |
| | CARRIED TO FINAL SUMMARY / ... | | | | 0,00 |

| ITEM NO | DESCRIPTION | | QUANTITY | RATE | AMOUNT |
|---------|---|---|----------|------|-------------|
| | FINAL SUMMARY | | | | |
| 1 | Preliminaries and General | | | | 0,00 |
| 2 | Building Works | | | | 0,00 |
| 3 | Slipway Deck | | | | 0,00 |
| 4 | External Works | | | | 0,00 |
| 5 | Cradles and Associated Items | | | | 0,00 |
| 6 | Electrical Installations | | | | 0,00 |
| 7 | Mechanical Installations | | | | 0,00 |
| 8 | Provisional Sums | | | | 0,00 |
| | TOTAL (EXCLUDING CONTINGENCIES AND CPAP) | T | | | 0,00 |
| | VALUE ADDED TAX | | | | 0,00 |
| | TOTAL (INCLUDING VAT) | T | | | 0,00 |