

Item No	Quantity	Rate	Amount
<u>SECTION NO. 1</u>			
<u>BILL NO. 1</u>			
<u>PRELIMINARIES</u>			
<u>BUILDING AGREEMENT AND PRELIMINARIES</u>			
<p>The JBCC Principal Building Agreement (Edition 6.2 - May 2018) prepared by the Joint Building Contracts Committee shall be the applicable building agreement, amended as hereinafter described</p> <p>The JBCC Principal Building Agreement contract data form an integral part of this agreement</p> <p>The JBCC General Preliminaries (May 2018) published by the Joint Building Contracts Committee for use with the JBCC Principal Building Agreement (Edition 6.2 - May 2018) shall be deemed to be incorporated in these bills of quantities, amended as hereinafter described</p> <p>The contractor is deemed to have referred to the above mentioned documents for the full intent and meaning of each clause</p> <p>The clauses in the above mentioned documents are hereinafter referred to by clause number and heading only</p> <p>Where any item is not relevant to this agreement such item is marked N/A signifying "not applicable"</p> <p>Where standard clauses or alternatives are not entirely applicable to this agreement such amendments, modifications, corrections or supplements as will apply are given under each relevant clause heading and such amendments, modifications, corrections or supplements shall take precedence notwithstanding anything to the contrary contained in the above mentioned documents</p>			
Carried Forward		R	
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Brought Forward

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PREAMBLES FOR TRADES

The General Preambles for Trades 2017 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

Supplementary preambles and/or specifications are incorporated in these **bills of quantities** to satisfy the requirements of this project. Such supplementary preambles and/or specifications shall take precedence over the provisions of the General Preambles

The **contractor's** prices for all items throughout these **bills of quantities** shall take account of and include where applicable for all of the obligations, requirements and specifications given in the General Preambles and in any supplementary preambles and/or specifications

STRUCTURE OF THIS PRELIMINARIES BILL

Section A :A recital of the headings of the individual clauses in the aforementioned **JBCC** Principal Building Agreement

Section B :A recital of the headings of the individual clauses in the aforementioned **JBCC** General Preliminaries

Section C :Any special clauses to meet the particular circumstances of the project

PRICING OF PRELIMINARIES

Should the **contractor** select Option A in the **contract data** for the adjustment of **preliminaries**, the amounts entered against the relevant items in these **preliminaries** are to be divided into one or more of the three categories provided namely fixed (F), value related (V) and time related (T)

SECTION A: PRINCIPAL BUILDING AGREEMENT

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<p style="text-align: center;">Brought Forward</p> <p><u>Interpretation (A1-A7)</u></p> <p>1 Clause 1.0 - Definitions and interpretation</p> <p>Pricing of bills of quantities</p> <p>2 The contractor is to allow opposite each item for all costs in connection therewith. All prices to include, unless otherwise stated, for all materials, fabrication, conveyance and delivery, unloading, storing, unpacking, hoisting, labour, setting, fitting and fixing in position, cutting and waste (except where to be measured in accordance with the standard system of measurement), patterns, models and templates, plant, temporary works, returning of packaging, duties, taxes (other than Value Added Tax), imposts, establishment charges, overheads, profit and all other obligations arising out of this agreement. Value Added Tax (VAT) is to be separately stated on the summary page of these bills of quantities</p> <p>Items left unpriced will be deemed to be covered in prices against other items throughout these bills of quantities and no claim for any extras arising out of the contractor's omission to price any item will be entertained</p> <p>3 Prices for all construction equipment, temporary works, services and other items shall include for the supply, maintenance, operating cost and subsequent removal and making good as necessary</p> <p>4 Abbreviated descriptions</p> <p>The items in these bills of quantities utilise abbreviated descriptions. It is the intention that the abbreviated descriptions be fully described when read with the applicable measuring system and the relevant preambles and/or specifications. However, should the full intent and meaning of any description not be clear, the contractor shall, before submission of his tender, call for a written directive from the Principal Agent, failing which it shall be assumed that the contractor has allowed in his pricing for materials and workmanship in terms of international best practice</p> <p style="text-align: center;">Carried Forward</p> <p>Section No. 1 Bill No. 1 Preliminaries</p>		R	
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Brought Forward		R
Legal status of contractor		
If the contractor constitutes a joint venture, consortium or other unincorporated grouping of two or more persons then:		
1. These persons are deemed to be jointly and severally liable to the employer for the performance of this agreement		
2. These persons shall notify the employer of their leader who has assigned authority to bind the contractor and each of these persons		
3. The contractor shall not alter its composition or legal status without the prior written consent of the employer		
F:..... V:..... T:.....	Item	
5 Clause 2.0 - Law, regulations and notices		
F:..... V:..... T:.....	Item	
6 Clause 3.0 - Offer and acceptance		
F:..... V:..... T:.....	Item	
7 Clause 4.0 - Cession and assignment		
F:..... V:..... T:.....	Item	
8 Clause 5.0 - Documents		
F:..... V:..... T:.....	Item	
9 Clause 6.0 - Employer's agents		
F:..... V:..... T:.....	Item	
10 Clause 7.0 - Design responsibility		
F:..... V:..... T:.....	Item	
<u>Insurances and securities (A8-A11)</u>		
11 Clause 8.0 - Works risk		
F:..... V:..... T:.....	Item	
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	Brought Forward		R
12	<p>Clause 9.0 - Indemnities</p> <p>F:..... V:..... T:.....</p>	Item	
13	<p>Clause 10.0 - Insurances</p> <p>F:..... V:..... T:.....</p>	Item	
14	<p>Clause 11.0 - Securities</p> <p>Guarantee for payment</p> <p>The Employer shall not provide to the contractor with a guarantee for payment</p> <p>By virtue of the contractor submitting a tender offer, he is deemed to have waived his lien or right of continuing possession of the works [11.10]</p> <p>Sub-clause 11.10 has been amended to read as follows:</p> <p>"The contractor shall waive his lien or right of continuing possession of the works."</p> <p>Clause 11.0 has been amended to include the following new sub-clauses:</p> <p>Sub-clause 11.11</p> <p>The guarantee provided by the contractor's Guarantor shall have an expiry date (if stated) no less than 3 months after the practical completion date and shall be extended accordingly should the practical completion date be extended. The cost for same shall be included on the contractor's tender price as no claims for additional cost shall be entertained</p> <p>Sub-clause 11.12</p> <p>The contractor is required to provide the Employer with a variable construction guarantee with twenty-one (21) calendar days of acceptance of the contractors' tender</p>		
	Carried Forward		R
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	<p style="text-align: center;">Brought Forward</p> <p>Sub-clause 11.13</p> <p>Extension of waiver of lien</p> <p>The contractor shall ensure that a waiver of lien is included in all subcontracts and that the works executed on the site are kept free of all liens and other encumbrances at all times</p> <p>F:..... V:..... T:.....</p> <p><u>Execution (A12 - A17)</u></p> <p>15 Clause 12.0 - Obligations of the parties</p> <p>Sub-clause 12.2.6 has been amended to include the following:</p> <p>The programme for the works must be prepared and issued in Microsoft Project Programming Software</p> <p>The contractor shall include a float of 20 working days within the contract period for project delays such as, but not limited to adverse weather conditions, etc., in the programme. Such provisions shall initially be included at the end of the contract period or proportionally allocate at the end of each section for contracts with sectional completion, and shall be monitored by the contractor and agreed with the Principal Agent as and when such delays takes place and shall be recorded in the programme based on actual stoppages when incurred. Revision of the date for Practical Completion shall only be considered once the 15 working days has been fully utilised</p> <p>Sub-clause 12.2.10 has been amended to include the following:</p> <p>The contractor shall be required to maintain, in addition to the approved programme, a comprehensive fortnightly bar-chart programme expanded to reflect anticipated daily activities for the ensuing fourteen (14) days</p> <p style="text-align: center;">Carried Forward</p> <p>Section No. 1 Bill No. 1 Preliminaries</p>	<p style="text-align: center;">Item</p>	<p style="text-align: center;">R</p>	
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UPGRADES TO ROADS TESTING MATERIAL LABORATORY - CSIR

	Brought Forward		R
	<p>Sub-clause 12.2.18 has been amended to include the following:</p> <p>Office accommodation</p> <p>The contractor shall provide, maintain and remove on practical completion air conditioned office accommodation with suitable tables and chairs for meetings to be held on the site. Such offices shall be kept clean and fit for use at all times [12.2.18]</p> <p>The contractor's site camp shall be equipped with Wi-Fi internet connection which shall be utilised by the contractor's staff, the client and members of professional team</p> <p>Notice board</p> <p>The contractor shall erect in a position approved by the principal agent, maintain and remove on practical completion a notice board recommended by the South African Institute of Architects and as approved by the Principal Agent listing the names and logos of the Employer, the contractor and the professional consultants. No subcontractor or supplier notice boards may be erected unless permission is granted by the principal agent for such notice boards to be erected [12.2.18]</p> <p>F:..... V:..... T:.....</p>	Item	
16	<p>Clause 13.0 - Setting out</p> <p>F:..... V:..... T:.....</p>	Item	
17	<p>Clause 14.0 - Nominated subcontractors</p> <p>F:..... V:..... T:.....</p>	Item	
18	<p>Clause 15.0 - Selected subcontractors</p> <p>F:..... V:..... T:.....</p>	Item	
19	<p>Clause 16.0 - Direct contractors</p> <p>Attendance on direct contractors</p> <p>In respect of direct contractors the contractor shall:</p>		
	Carried Forward		R
	<p>Section No. 1 Bill No. 1 Preliminaries</p>		

	Brought Forward		R
	<ol style="list-style-type: none"> 1. Designate an area for the direct contractor to establish a temporary office and workshop and storage of equipment and materials 2. Allow the use of personnel welfare facilities, where provided 3. Provide water, lighting and single phase electric power to a position within 50m of the place where the direct contract work is to be carried out, other than fuel or power for commissioning of any installation 4. Permit the direct contractor to use erected scaffolding, hoisting facilities, etc provided by the contractor, in common with others having the like right, while it remains erected on the site [16.1] 		
	F:..... V:.....T:.....	Item	
20	Clause 17.0 - Contract instructions		
	F:..... V:.....T:.....	Item	
	<u>Completion (A18 - A24)</u>		
21	Clause 18.0 - Interim completion		
	F:..... V:.....T:.....	Item	
22	Clause 19.0 - Practical completion		
	Practical Completion		
	In respect of practical completion:		
	<ol style="list-style-type: none"> 1. The following certificates of compliance, as applicable shall be required (excluding others that may be required by the local/national authority, etc.) from the contractor to achieve practical completion <ol style="list-style-type: none"> 1.1 Certificates from the contractor that all aspects of the Construction Regulations of 2014 have been complied with 1.2 Certificates from the contractor that the National Building Regulations have been complied with 1.3 Certificates of compliance with respect 		
	Carried Forward		R
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<p style="text-align: center;">Brought Forward</p> <p>to plumbing and drainage installations</p> <p>1.4 Certificates of compliance with respect to electrical and electronic installations</p> <p>1.5 Certificates of compliance with respect to all glazing</p> <p>1.6 Certificates of compliance with respect to structural and civil engineering</p> <p>1.7 Certificates of compliance with respect to roof installation</p> <p>1.8 Certificates of compliance with respect to mechanical installation</p> <p>1.9 Certificate of compliance and fire clearance certificate from the contractor and fire chief respectively</p> <p>1.10 Any other compliance documentation deemed necessary as instructed by the Principal Agent</p> <p>1.11 Three complete sets of approved maintenance and operating manuals together with all workmanship and material warranties and guarantees (to be compiled and issued to the Principal Agent prior to achievement of practical completion for approval) and three complete copies of documents in electronic format</p> <p>2. In order to achieve practical completion of the works and without deviating from the generality of the term practical completion, the contractor shall, as a minimum comply with the following basic criteria, as applicable. These criteria should not be regarded as comprehensive but as an expansion of the term practical completion</p> <p>2.1 Electrical installation is to be completed and fully commissioned permanent power and lighting inclusive of all telephone and data installations</p> <p>2.2 Plumbing installation it to be complete, commissioned permanent water supply and drainage tested. Pipe work to be pressured tested</p> <p style="text-align: center;">Carried Forward</p> <p>Section No. 1 Bill No. 1 Preliminaries</p>	<p style="text-align: center;">R</p> <p style="text-align: center;">R</p>
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<p style="text-align: center;">Brought Forward</p> <p>2.3 HVAC system installation shall be complete and fully commissioned (except for final adjustments and cooling performance recoding / temperature logging), commissioning reports submitted to the consulting engineer for review and major commissioning defects resolved</p> <p>2.4 All field controllers, network controllers and network fully commissioned operator terminal installed, graphics loaded and all monitoring points operational on the operator terminal. (Customisation of the BMS time schedules, alarm routing and using the BMS to detect and report faults on other services shall be completed prior to works completion)</p> <p>2.5 Sprinklers and fire-fighting equipment completed, commissioned tested and operational</p> <p>3. Health and Safety file</p> <p>Clause 19.0 has been amended to include the following new sub-clauses:</p> <p>Sub-clause 19.2.3</p> <p>The contractor shall within five (5) calender days of receipt of the list for practical completion issue a program indicating dates for completion for all listed items</p> <p>Sub-clause 19.2.4</p> <p>In the event that such inspection does not result in the work being accepted as practically complete then the costs of such inspection and subsequent inspections shall be for the account of the contractor, at a rate of Ten Thousand Rand (R10 000.00) per man hour or part thereof, calculated by multiplying the total of the number of Employer's agents and Employer's staff present at each abortive practical completion inspection meeting, i.e. Where practical completion is not achieved, by the time taken for such an inspection until practical completion is achieved. In this regard, the Employer reserves the right to recover such costs in addition to any other remedies it may have in accordance with Clause 27</p>		R	
<p style="text-align: center;">Carried Forward</p> <p>Section No. 1 Bill No. 1 Preliminaries</p>		R	

UPGRADES TO ROADS TESTING MATERIAL LABORATORY - CSIR

Brought Forward		R
	F:..... V:..... T:.....	Item
23	Clause 20.0 - Completion in sections	
24	F:..... V:..... T:.....	N/A
25	Clause 21.0 - Defects liability period and final completion	
26	Clause 21.0 has been amended to include the following new sub-clauses: Sub-clause 21.13 In the event that the certificate of Final Completion is not issued due to the contractor's work not being sufficiently complete then the costs of such inspection and subsequent inspections shall be for the account of the contractor, at a rate of Ten Thousand Rand (R10 000.00) per man hour or part thereof, calculated by multiplying the total of the number of Employer's agents and Employer's staff present at each abortive final completion inspection meeting, i.e. Where final completion is not achieved in terms of 21.6, by the time taken for such an inspection until final completion is achieved. In this regard, the Employer reserves the right to recover such costs in accordance with Clause 27	
27	Sub-clause 21.14 Notwithstanding [21.2], where the contractor fails to rectify/attend to outstanding works or defects on the list for completion, list for final completion or latent defects that appear before the issue of certificate of final completion and where the contractor remains in default, the Employer may engage others to carry out said outstanding works or defects and recover expense and/or loss incurred [27]	
	F:..... V:..... T:.....	Item
28	Clause 22.0 - Latent defects liability period	
	F:..... V:..... T:.....	Item
Carried Forward		R
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	Brought Forward		R
29	<p>Clause 23.0 - Revision of the date for practical completion</p> <p>Sub-clause 23.1 has been amended to include the following new sub-clause:</p> <p>Sub-clause 23.1.7</p> <p>Delayed possession of site [12.1.5]</p> <p>Sub-clause 23.2 has been amended to omit the following sub-clause:</p> <p>Sub-clause 23.2.1 Delayed possession of the site [12.1.5]</p> <p>Clause 23.0 has been amended to include the following new sub-clauses:</p> <p>Sub-clause 23.9</p> <p>Notwithstanding, sub-clause(s) 23.1 to 23.8 a revision to the practical completion date will only be considered for work on the critical path of the contractual programme or the revised contractual programme, as applicable</p> <p>Any revised programme, in order to be considered as a contractual programme, must be approved by the Principal Agent in writing, prior to it becoming effective</p> <p>F:..... V:.....T:.....</p>	Item	
30	<p>Clause 24.0 - Penalty for late or non-completion</p> <p>F:..... V:.....T:.....</p> <p><u>Payment (A25 - A27)</u></p>	Item	
31	Clause 25.0 - Payment		
32	<p>Sub-clause 25.1 has been amended to include the following:</p> <p>The contractor shall submit the following information on a monthly basis to the Principal Agent and Quantity Surveyor in order to assist with the processing of the payment certificate and the preparation of the empowerment report:</p> <ul style="list-style-type: none"> A detailed breakdown of the work done. (The work breakdown must be referenced strictly in 		
	Carried Forward		R
	<p>Section No. 1</p> <p>Bill No. 1</p> <p>Preliminaries</p>		

<p style="text-align: center;">Brought Forward</p> <p>accordance with the Tender Document or the detailed Priced Bills of Quantities, as applicable.)</p> <ul style="list-style-type: none"> • A detailed breakdown of all variation order costs claimed (With specific reference to work done by the Principal Building Contractor) in the certificate concerned, together with copies of the relevant contract instructions • A detailed breakdown of the work done by each sub-contractor. (The work breakdown must be referenced strictly in accordance with the Tender Document or the detailed Priced Bills of Quantities, as applicable.) • A detailed breakdown of all variation order costs claimed in the certificate concerned for sub-contract work, together with copies of the relevant contract instructions • A written declaration authenticated by the contracts manager confirming, that the payment claims for work done by sub-contractors has been audited and amended by the contractor's quantity surveyor, prior to it being forwarded to the Principal Agent and Quantity Surveyor for evaluation • If applicable, a combined empowerment report which shall include reports on contractor and sub-contractor compliance, in accordance with the format required by the empowerment manager. In this regard, the combined, contractor and sub-contractor empowerment report must contain an affidavit certifying that all information contained the report as being true and correct and must be authenticated by the contractor and a commissioner of oaths. The combined reports must also state that the contractor has checked and verified that all information submitted by sub-contractors is true and correct • Tax invoice: the contractor shall attach a tax invoice as prescribed in the Value Added Tax Legislation to each payment certificate when presenting the certificate to the employer for payment. Such tax invoices shall correctly reflect the prescribed information and the amounts shall match precisely the amounts included in the payment certificate. Should the contractor fail to comply with these requirements, the date of presentation of the certificate shall be deemed to be delayed at the contractor's default until such time as the requirements are met 		R	
<p style="text-align: center;">Carried Forward</p> <p>Section No. 1 Bill No. 1 Preliminaries</p>		R	

Brought Forward		R
	Should anyone or any combination of the above requirements not be complied with, the Principal Agent reserves the right to exclude any amounts that may have been due for certification from the payment certificate concerned and/ or delay the issue of payment certificates and/ or, revise the contractual payment date, as applicable, until such time compliance is achieved	
33	<p>Sub-clause 25.4 has been amended to include the following:</p> <p>Where the Employer agrees to pay for materials on/off site, the contractor shall be required to provide the Principal Agent with the necessary forms for cession of ownership for such materials, with the necessary delivery notes and invoices (where applicable)</p> <p>Sub-clause 25.10 has been amended as follows:</p> <p>Replace the words "fourteen (14) calendar days" with "thirty (30) calendar days"</p> <p>F:..... V:..... T:.....</p>	Item
34	Clause 26.0 - Adjustment of the contract value and final account	
35	<p>Sub-clause 26.1 has been amended to include the following:</p> <p>Contract Instructions</p> <p>Instructions given by the Employer's agents in relation to the contract works, shall, irrespective of the format or wording of such instructions, not indicate that the work involved represents an extra or variation and shall not be deemed to be acceptance of any prices or quotations contained in any correspondence</p> <p>It is recorded that only the quantity surveyor where appointed by the employer for quantity surveying services is empowered, to rule whether any instructions issued constitutes an extra or not and, to resolve cost aspects of any matter pertaining to this contract</p> <p>F:..... V:..... T:.....</p>	Item
36	<p>Clause 27.0 - Recovery of expense and/or loss</p> <p>F:..... V:..... T:.....</p>	Item
Carried Forward		R
<p>Section No. 1</p> <p>Bill No. 1</p> <p>Preliminaries</p>		

Brought Forward		R
<u>Suspension and termination (A28 - A29)</u>		
37	Clause 28.0 - Suspension by the contractor F:..... V:..... T:.....	Item
38	Clause 29.0 - Termination F:..... V:..... T:.....	Item
<u>Dispute resolution (A30)</u>		
39	Clause 30.0 - Dispute resolution F:..... V:..... T:.....	Item
40	<u>Agreement</u> The required information of the parties and the amount of the contract sum shall be inserted in the agreement for signature of the agreement by the parties F:..... V:..... T:.....	Item
41	<u>Contract data</u> Tenderer's selections Before submission of his Tender the contractor is to complete the Tenderer's selections in the contract data F:..... V:..... T:.....	Item
Carried Forward		R
Section No. 1 Bill No. 1 Preliminaries		

Brought Forward		R
<u>SECTION B: GENERAL PRELIMINARIES</u>		
<u>Definitions and interpretation (B1)</u>		
42	Clause 1.1 - Definitions F:..... V:..... T:.....	Item
43	Clause 1.2 - Interpretation F:..... V:..... T:.....	Item
<u>Documents (B2)</u>		
44	Clause 2.1 - Checking of documents Sub-clause 2.1 refers – the following is to be added after the words “written directive”: The items in these Bills of Quantities are to be read and priced in conjunction with, and the descriptions regarded as amplified by the General Preambles for Trades 2017 as recommended and published by the Association of South African Quantity Surveyors, 2017 edition, and no claim arising from brevity of description of items fully described in the said General Preambles for Trades 2017 and Supplementary documentation will be entertained. Notwithstanding the issue of the tender drawings, it will remain the responsibility of the Tenderer to study all available drawings at the offices of the Principal Agent during normal working hours in order to acquaint himself with all the cost implications of the design, programming, phasing, etc F:..... V:..... T:.....	Item
45	Clause 2.2 - Provisional bills of quantities F:..... V:..... T:.....	Item
46	Clause 2.3 - Availability of construction information F:..... V:..... T:.....	Item
47	Clause 2.4 - Ordering of materials and goods F:..... V:..... T:.....	Item
Carried Forward		R
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Brought Forward		R	
<u>Previous work and adjoining properties (B3)</u>			
48	Clause 3.1 - Previous work - dimensional accuracy F:..... V:..... T:.....	Item	
49	Clause 3.2 - Previous work - defects F:..... V:..... T:.....	Item	
50	Clause 3.3 - Inspection of adjoining properties F:..... V:..... T:.....	Item	
<u>The site (B4)</u>			
51	Clause 4.1 - Handover of site in stages F:..... V:..... T:.....	Item	
52	Clause 4.2 - Enclosure of the works F:..... V:..... T:.....	Item	
53	Clause 4.3 - Geotechnical and other investigations F:..... V:..... T:.....	N/A	
54	Clause 4.4 - Encroachments F:..... V:..... T:.....	Item	
55	Clause 4.5 - Existing premises occupied F:..... V:..... T:.....	Item	
56	Clause 4.6 - Services - known F:..... V:..... T:.....	Item	
57	Clause 4.6 - Services - known The contractor shall consult the Principal Agent before disconnecting any services. The contractor shall take special care not to damage any existing services that could have been foreseen or what have been shown to him by the Principal Agent. Damage to this services shall be for the contractor's account F:..... V:..... T:.....	Item	
Carried Forward		R	
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Brought Forward		R	
<u>Management of contract (B5)</u>			
58	Clause 5.1 - Management of the works F:..... V:..... T:.....	Item	
59	Clause 5.2 - Progress meetings F:..... V:..... T:.....	Item	
60	Clause 5.3 - Technical meetings F:..... V:..... T:.....	Item	
61	Clause 5 has been amended to include the following new sub-clause: Sub-clause 5.4 - Daily records The contractor shall keep daily records of people and equipment employed as well as a site diary in respect of work performed on the site At the end of each week the contractor shall provide the Principal Agent with a written record, in schedule form, reflecting the number and description of tradesmen and labourers employed by him and all sub-contractors on the works each day At the end of each week the contractor shall provide the Principal Agent with a written record, in schedule form, reflecting the number, type and capacity of all plant, excluding hand tools, currently used on the works F:..... V:..... T:.....	Item	
Carried Forward		R	
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	Brought Forward		R
	<u>Samples, shop drawings and manufacturer's instructions (B6)</u>		
62	<p>Clause 6.1 - Samples of materials</p> <p>All material samples and colour samples must be submitted to the Principal Agent for selections and approval of the colour, shape and finish including mechanical, electrical and plumbing equipment that will be visible. The samples shall be provided in A4 size unless otherwise agreed. General samples shall be provided for Principal Agent/Employer to choose from each type of finish</p> <p>The Principal Agent/Employer may reject all or part of the submitted samples and request for additional selections if the first submission are not acceptable</p> <p>All samples must be kept in a sample room to be provided by the contractor for reference</p> <p>Sample Board:</p> <p>The contractor shall provide a board(s) of approved samples and make available one set at the site (sample room) and one for the Employer</p> <p>F:..... V:..... T:.....</p>	Item	
63	<p>Clause 6.2 - Workmanship samples</p> <p>Sub-clause 6.2 has been amended to include the following:</p> <p>The contractor shall provide a mock-up of all finished surfaces prior to commencement of the relevant work. The contractor shall only be permitted to commence with the relevant scope of work, on approval of the mock-up by the Principal Agent or its designated representative</p> <p>F:..... V:..... T:.....</p>	Item	
64	Clause 6.3 - Shop drawings		
	Carried Forward		R
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Brought Forward		R	
65	<p>Sub-clause 6.3 refers – the following is to be added after the words 'and/or approval'</p> <p>Shop drawings shall be submitted to the principal agents for approval at least ten (10) working days weeks prior to the date on which such approval is required in order to comply with the programme</p> <p>All submissions shall be prepared in accordance with the contract drawings and specifications and/or any Principal Agents instructions and any deviation shall be specifically highlighted in writing, with a detailed explanation of the reason for such deviation, together with any cost and/or time implications. Delays in approval of shop drawings due to non compliance with drawings, specifications and/or Principal Agent's instruction shall not constitute grounds for any claims for delay, extension of time and the like</p> <p>The contractor shall be responsible for ensuring that all dimensions affecting shop drawings conform to the dimensions of built work</p> <p>Should the contractor, sub-contractor, supplier or manufacturer be of the opinion that corrections to shop drawings made by the Principal Agent, constitute a change to the scope of work, then he shall immediately advise the Principal Agent in writing of this, together with the cost and/or programme implications thereof, in order to obtain the Principal Agent's directive</p>		
66	<p>Sub-clause 6.3.1 has been amended as follows:</p> <p>Replace the words “two (2) copies” with “four (4) copies” under bullet point number 6</p> <p>F:..... V:.....T:.....</p>	Item	
67	<p>Clause 6.4 - Compliance with manufacturer's instructions</p> <p>F:..... V:.....T:.....</p> <p><u>Deposits and fees (B7)</u></p>	Item	
68	<p>Clause 7.1 - Deposits and fees</p> <p>F:..... V:.....T:.....</p>	Item	
Carried Forward		R	
<p>Section No. 1 Bill No. 1 Preliminaries</p>			

Brought Forward			R
<u>Temporary services (B8)</u>			
69	Clause 8.1 - Water F:..... V:..... T:.....	Item	
70	Clause 8.2 - Electricity F:..... V:..... T:.....	Item	
71	Clause 8.3 - Ablution and welfare facilities F:..... V:..... T:.....	Item	
72	Clause 8.4 - Communication facilities F:..... V:..... T:.....	Item	
<u>Prime cost amounts (B9)</u>			
73	Clause 9.1 - Responsibility for prime cost amounts F:..... V:..... T:.....	Item	
<u>Attendance on subcontractors (B10)</u>			
74	Clause 10.1 - General attendance F:..... V:..... T:.....	Item	
75	Clause 10.2 - Special attendance Sub-clause 10.2 has been amended to include the following: The Tenderer shall examine all drawings and information pertaining to the works as a whole and shall provide all necessary special attendance resources required for the due and proper execution and completion of all sub-contract works F:..... V:..... T:.....	Item	
<u>General (B11)</u>			
76	Clause 11.1 - Protection of the works F:..... V:..... T:.....	Item	
Carried Forward			R
Section No. 1 Bill No. 1 Preliminaries			

Brought Forward			R
77	Clause 11.2 - Protection/isolation of existing works and works occupied in sections F:..... V:..... T:.....	Item	
78	Clause 11.3 - Security of the works F:..... V:..... T:.....	Item	
79	Clause 11.4 - Notice before covering work F:..... V:..... T:.....	Item	
80	Clause 11.5 - Disturbance F:..... V:..... T:.....	Item	
81	Clause 11.6 - Environmental disturbance F:..... V:..... T:.....	Item	
82	Clause 11.7 - Works cleaning and clearing Disposal of Waste Material, etc. The contractor shall provide appropriate equipment (such as chutes, if required), etc., for the rapid removal of waste material, etc., at points as agreed with the Principal Agent in writing. In addition, the contractor is to provide for adequate waste skips for the disposal of such material to be located in positions as advised by the Principal Agent in writing The contractor shall ensure that there is a maximum of a twenty four (24) hour turn-around time for the removal of all full waste skips from site. The contractor further acknowledges that the Employer reserves the right to appoint others to remove waste material and waste skips from site, should the contractor fail to meet the twenty four (24) hour turn-around time and that such costs shall be deducted from amounts due to the contractor F:..... V:..... T:.....	Item	
83	Clause 11.8 - Vermin F:..... V:..... T:.....	Item	
Carried Forward			R
Section No. 1 Bill No. 1 Preliminaries			

UPGRADES TO ROADS TESTING MATERIAL LABORATORY - CSIR

Brought Forward			R
84	Clause 11.9 - Overhand work F:..... V:.....T:.....	Item	
85	Clause 11.10 - Tenant installations F:..... V:.....T:.....	Item	
86	Clause 11.11 - Advertising F:..... V:.....T:.....	Item	
Carried Forward			R
Section No. 1 Bill No. 1 Preliminaries			

	Brought Forward		R
	<u>SECTION C: SPECIFIC PRELIMINARIES</u>		
87	Health and Safety <p>Without limiting the generality of the provisions of clause 2.0, of the agreement, the contractor's attention is drawn to the provisions of the Construction Regulations, 2014 issued in terms of the Occupational Health and Safety Act, No.85 of 1993 in which it is specifically stated that the employer shall prepare a documented health and safety specification for the works and that the employer shall ensure that the contractor has made provision for the cost of health and safety measures during the execution of the works. In addition, the Contractor shall ensure compliance with Disaster Management Act (57/2002), Covid-19 Occupational Health and Safety Measures in Workplaces, Covid-19 Hazardous Biological Agents Regulations, National disaster published in Government Gazette 43096 on 15 March 2020 and Basic Conditions of Employment Act, 1997 (Act No. 75 of 1997). The principal agent shall, on behalf of the employer, issue such health and safety specification and the contractor shall price opposite this item for compliance with the act and the regulations and the provisions of the aforementioned health and safety specification, provided such provisions are reasonable in terms of the act and the regulations.</p> <p>F:..... V:.....T:.....</p>	Item	
88	Personal Protective Equipment <p>The contractor shall provide and keep on site an adequate supply of clean safety helmets and reflective vests for the use of all professional personnel and all authorised visitors. The Contractor must also allow COVID-19 PPE such as:</p> <p>Infra red- Non Contact Thermometer 3 Layer material face masks Face Shields Latex gloves Hand Sanitisers Screening of employees and visitors</p> <p>as deemed necessary</p> <p>F:..... V:.....T:.....</p>	Item	
	Carried Forward		R
	Section No. 1 Bill No. 1 Preliminaries		

[illegible]

Brought Forward

R

SUMMARY OF CATEGORIES

Category : Fixed R.....

Category : Value R.....

Category : Time R.....

Carried to Final Summary

R

Section No. 1
Bill No. 1
Preliminaries

Item No	Quantity	Rate	Amount
<u>SECTION NO. 2</u>			
<u>BILL NO. 1</u>			
The Tenderer is referred to the relevant Clauses in the separate document General Preambles for Trades (2017 Edition)			
<u>ALTERATIONS (PROVISIONAL)</u>			
<u>(CPAP WORK GROUP NO. 102 UNLESS OTHERWISE STATED)</u>			
<u>NOTES</u>			
The materials to be used and the work to be done are to be similar and equal to the new work contained in all the subsequent Bills			
Unless otherwise described, the preambles and full descriptions of the items appearing in all the subsequent Bills are to apply equally to this Bill			
Items described as to be re-used or to be handed over to the Client are to be carefully dismantled where necessary and stacked on site where directed, and the Contractor will be responsible for their removal and storage until required, and shall make good all items missing, damaged or broken at his own expense			
Unless otherwise described, no materials from the alterations shall be re-used in any new work without the written approval of the client, with the exception of facing bricks required in filling to openings, etc., which may be re-used if free of cracks and chips and properly cleaned of all mortar			
The Contractor is to take all dimensions affecting the existing buildings on the site as he will be solely responsible for all new work being to the correct sizes. The client is to be notified immediately of any discrepancies between the drawings and the existing work and all work affected by these discrepancies is to be suspended until such time as the client shall authorise its continuance			
Carried Forward		R	
Section No. 2 Bill No. 1 Alterations (Provisional)			

Brought Forward			R
<p>Prices are to include for carting away from site all materials not specifically mentioned as being stored on site for re-use or handed over to the client and all rubbish, debris, etc., arising from the alterations, etc., and for making good all work damaged or disturbed to the approval of the client</p> <p>Tenderers are to include in pricing for the statutory requirements with regard to the demolition and disposal of asbestos cement material arising from the works</p> <p>The Contractor to acknowledge that sequencing of the work will be necessary to accommodate the operational aspects of the building. The Contractor to accordingly factor the above requirement in the construction programme and pricing</p> <p><u>REMOVAL OF EXISTING WORK</u></p> <p><u>Breaking up and removing reinforced concrete, including cutting off and removing reinforcement including carting away material off site</u></p>			
1	150mm reinforced concrete surface beds	m3	15
<p><u>Breaking down and removing brickwork, etc. and cart away rubble from site</u></p>			
2	One and half brick wall	m2	75
3	One brick wall	m2	110
4	Half brick wall	m2	90
<p><u>Taking out and removing doors, windows, etc., from brickwork to be demolished including carting away material off site</u></p>			
5	Timber single door and steel frame approximate overall size 900 x 2100mm high	No	6
6	Timber double door and steel frame approximate overall size 1600 x 2100mm high	No	5
Carried Forward			R
<p>Section No. 2 Bill No. 1 Alterations (Provisional)</p>			

UPGRADES TO ROADS TESTING MATERIAL LABORATORY - CSIR

Brought Forward				R
<u>Hacking up/off and removing granolithic, screeds, plaster, etc from concrete or brickwork and preparing surfaces for new screeds, plaster, etc (elsewhere measured)</u>				
7	25mm Screed from floors	m2	1 568	
8	Internal plaster from walls	m2	150	
9	Scabble existing concrete floors to receive new finish (new finish elsewhere measured)	m2	1 568	
<u>Hacking up/off and removing epoxy screed, waterproofing and cart away rubble from site and preparing floor surfaces for new screed (elsewhere measured)</u>				
10	Epoxy screed	m2	394	
11	Coved epoxy screed skirting	m	341	
<u>Hacking up and removing vinyl floor coverings, carpets, etc. including removing mortar bed or adhesive from concrete or brickwork and preparing surfaces for new screed, plaster, etc. (elsewhere measured)</u>				
12	Vinyl tile floor covering, skirting, etc.	m2	489	
<u>Taking out and removing piping, sanitary fittings, etc. including disconnecting piping and stopping off fittings and making good floor and wall finishes (new tiling and paintwork elsewhere measured) and remove all fittings from site</u>				
13	Ceramic wash hand basin including short lengths of piping, fittings, etc	No	5	
14	Cast iron pipes along passages internally to replace with new PVC pipes (Elsewhere measured)	m	200	
<u>Removal of Mechanical works</u>				
15	HVAC duct and cartaway from site	m	90	
<u>REPAIRS AND PREPARATORY WORK TO EXISTING SERVICES</u>				
Carried Forward				R
Section No. 2 Bill No. 1 Alterations (Provisional)				

Brought Forward			R
<u>Repairs to structural cracks, etc</u>			
16	Rake out existing major structural cracks in blockwork, remove all debris/loose material including embedding steel rods, cutting or drilling slots (60mm deep) in blockwork at 250mm centres to embed 8mm mild steel bars fixed between mortar joints with injected epoxy resin	m	250
<u>CUTTING THROUGH FLOORS</u>			
<u>Saw cut existing surface bed</u>			
17	150mm Thick reinforced concrete surface bed for 1500 x 1000mm wide concrete base and making good concrete surface on both sides	m	10
<u>PREPARATORY WORK TO EXISTING SURFACES</u>			
<u>Preparatory work to existing surfaces</u>			
18	Making good to walls where brickwall removed	m2	70
<u>MAKING GOOD EXISTING FINISHES, ETC.</u>			
<u>Making good plaster</u>			
19	Making good wall plaster finish where brick walls removed	m2	70
<u>Making good screed</u>			
20	Floors where brick walls removed	m2	50
<u>Making good soffit slab</u>			
21	Slab soffit finish where brickwork removed	m2	45
<u>OPENINGS THROUGH EXISTING WALLS ETC</u>			
Carried Forward			R
Section No. 2 Bill No. 1 Alterations (Provisional)			

UPGRADES TO ROADS TESTING MATERIAL LABORATORY - CSIR

Brought Forward			R
<u>Breaking out for and forming openings through brick walls for new doors and frames including necessary precast concrete lintels and making good plaster on one side and into reveals and face brickwork on other side and into reveals and with concrete thresholds with steel trowelled finish (new doors and frames and making good paintwork elsewhere)</u>			
22	Opening for door with timber frame 2130 x 2100mm high overall through one brick wall	No 2	
23	Opening for door with steel frame 1015 x 2100mm high overall through one brick wall	No 10	
24	Opening for door with steel frame 913 x 2100mm high overall through half brick wall	No 2	
<u>BUILDING UP OPENINGS</u>			
<u>M190 blocks in class II mortar in building up openings</u>			
25	M190 block walls	m2 15	
<u>BUDGETARY ALLOWANCES</u>			
26	Provision for protection of existing equipment from dust and damage during construction	Item	100 000.00
27	Provision for concrete spalling repairs	Item	100 000.00
28	Provision for Material testing as recommended by structural Engineer	Item	50 000.00
29	Provision for repairs to control joints	Item	50 000.00
Carried to Final Summary			R
Section No. 2			
Bill No. 1			
Alterations (Provisional)			

Item No		Quantity	Rate	Amount
	<u>SECTION NO. 3</u>			
	<u>BILL NO. 1</u>			
	The Tenderer is referred to the relevant Clauses in the separate document Model Preambles for Trades (2008 Edition).			
	<u>EARTHWORKS (PROVISIONAL)</u>			
	<u>(CPAP WORK GROUP NO. 104 UNLESS OTHERWISE STATED)</u>			
	<u>SUPPLEMENTARY PREAMBLES</u>			
	<u>Nature of ground</u>			
	A soils investigation has been carried out on the site by the Engineer and the report is annexed to these Bills of Quantities			
	<u>Working space</u>			
	Working space for formwork will only be paid for where specifically required and instructed in writing by the Engineer.			
	In the case of column base and pile cap excavations, where the dimensions between the column face and the excavation face is less than 500mm, working space has been measured for the width of the column face from the commencing level of excavation to the top of the column base or pile cap only where the top of the column base or pile cap exceeds 1.5m below the commencing level of excavation.			
	No separate item for working space is provided or will be considered where the face of the measured excavation is 750mm or more away from the finished face of the structure. Separate items for working space for the building of brick foundation walls on ordinary concrete wall footings will not be considered.			
	Carried Forward		R	
	Section No. 3 Bill No. 1 Earthworks			

Brought Forward			R
<u>Carting away of excavated material</u>			
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			
<u>Filling</u>			
Notwithstanding the reference to prescribed multiple handling in clause 1 page 6 of the Standard System of Measuring Building Work, prices for filling and backfilling shall include for all selection and any necessary multiple handling of material			
<u>EXCAVATION, FILLING, ETC OTHER THAN BULK</u>			
<u>Excavation in earth not exceeding 2m deep</u>			
1	Trenches for staircase plinths	m3	4
<u>Extra over all excavations for carting away</u>			
2	Surplus material from excavations and/or stock piles on site, to a dumping site to be located by the contractor	m3	1
<u>Risk of collapse of excavations</u>			
3	Sides of trench and hole excavations not exceeding 1,5m deep	m2	10
<u>Earth filling obtained from the excavations and/or prescribed stock piles on site, compacted to 95% Mod AASHTO density</u>			
4	Backfilling to trenches, holes, etc.	m3	3
<u>Imported G2 filling supplied by the contractor compacted to 98% Mod AASHTO density</u>			
5	Under floors, steps, pavings, etc.	m3	15
<u>Imported G7 filling supplied by the contractor compacted to 95% Mod AASHTO density</u>			
6	Under floors, steps, pavings, etc.	m3	20
Carried Forward			R
Section No. 3 Bill No. 1 Earthworks			

Brought Forward			R
<u>Imported G7 filling supplied by the contractor compacted to 98% Mod AASHTO density</u>			
7	Under floors to make up levels, etc.	m3	5
<u>Compaction of surfaces</u>			
8	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 98% Mod AASHTO density	m2	45
<u>Prescribed density tests on filling</u>			
9	"Modified AASHTO Density" test	No	5
10	"Field Density" test including "Optimum Moisture Content" (four readings per test)	No	5
<u>SOIL POISONING</u>			
<u>Soil insecticide in accordance with SANS 5859</u>			
11	Under floors etc including forming and poisoning shallow furrows against foundation walls etc. filling in furrows and ramming	m2	5
Carried Forward to Summary of Section No. 3			R
Section No. 3			
Bill No. 1			
Earthworks			

Item No		Quantity	Rate	Amount
	<u>SECTION NO. 3</u>			
	<u>BILL NO. 2</u>			
	The Tenderer is referred to the relevant Clauses in the separate document Model Preambles for Trades (2017 Edition).			
	<u>CONCRETE, FORM WORK AND REINFORCEMENT</u>			
	<u>(CPAP WORK GROUP NO. 110 UNLESS OTHERWISE STATED)</u>			
	<u>SUPPLEMENTARY PREAMBLES</u>			
	<u>Curing</u>			
	All concrete is to be effectively cured. Footings and bases are to be kept wet for 7 days. Columns are to be wrapped in plastic for 7 days. Slabs are to be covered with plastic for 7 days.			
	<u>Cost of tests</u>			
	The costs of making, storing and testing of concrete test cubes as required under clause 7 "Tests" of SABS 1200 G shall include the cost of providing cube moulds necessary for the purpose, for testing costs and for submitting reports on the tests to the principal agent. The testing shall be undertaken by an independent firm or institution nominated by the contractor to the approval of the principal agent. (Test cubes are measured separately)			
	<u>Formwork</u>			
	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			
	Carried Forward		R	
	Section No. 3 Bill No. 2 Concrete, Formwork and Reinforcement			

Brought Forward			R
<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>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>Reinforcement</u></p> <p>Steel bar reinforcement to comply with SANS 920 and cut and bent in accordance with SANS 82.</p> <p>Welded steel fabric shall comply to SANS 1024 manufactured from plain hard drawn mild steel wire.</p> <p><u>REINFORCED CONCRETE</u></p> <p><u>25MPa/19mm concrete</u></p>			
1	Bases	m3	1
<u>30MPa/19mm concrete</u>			
2	Surface beds	m3	15
3	Slabs including beams and inverted beams	m3	13
4	Columns in foundations	m3	1
<u>TEST BLOCKS</u>			
5	Making and testing 150 x 150 x 150mm concrete strength test cube (Provisional)	No	4
Carried Forward			R
Section No. 3 Bill No. 2 Concrete, Formwork and Reinforcement			

Brought Forward			R
<u>CONCRETE SUNDRIES</u>			
<u>Power Float Finish</u>			
6	Surface beds, slabs, etc.	m2	55
<u>Structural epoxy adhesive</u>			
7	Apply non-sag epoxy adhesive, grouted into existing blockwork, 10mm deep x 8mm wide to secure rebar (elsewhere measured)	m	250
<u>FORMWORK</u>			
<u>(CPAP WORK GROUP NO. 111 UNLESS OTHERWISE STATED)</u>			
<u>ROUGH FORMWORK CLASS F1 ORDINARY FINISH</u>			
<u>Rough formwork to sides</u>			
8	Bases (Provisional)	m2	10
9	Edges not exceeding 300mm high	m	10
<u>Rough formwork to soffits Class 1 Ordinary Finish</u>			
10	Slabs not exceeding 250mm thick propped up exceeding 1,5m and not exceeding 3,5m high	m2	15
<u>MOVEMENT JOINTS, ETC.</u>			
<u>Saw-cut joints</u>			
11	3 x 45mm Saw-cut joints including reaming out 8 x 35mm in top of concrete	m	15
<u>Expansion joints with 10mm polystyrene between vertical concrete surfaces</u>			
12	10mm Joints exceeding 300mm high	m	120
<u>10mm Isolation joints between vertical concrete and brick surfaces</u>			
13	Not exceeding 300mm high	m	25
Carried Forward			R
Section No. 3 Bill No. 2 Concrete, Formwork and Reinforcement			

Brought Forward			R
<u>REINFORCEMENT</u>			
<u>(CPAP WORK GROUP NO. 114)</u>			
<u>High tensile steel reinforcement to structural concrete work</u>			
14	Bars of varying diameter	t	4.00
<u>Fabric reinforcement</u>			
15	Type 193 fabric reinforcement in concrete surface beds, slabs, etc.	m2	5
16	Type 245 fabric reinforcement in concrete surface beds, slabs, etc.	m2	80
Carried Forward to Summary of Section No. 3			R
Section No. 3			
Bill No. 2			
Concrete, Formwork and Reinforcement			

Brought Forward			R
<u>BLOCKWORK</u>			
<u>M190 Blockwork in Class II mortar</u>			
1	M190 Block walls	m2	395
<u>Galvanised brickwork reinforcement</u>			
2	150mm Wide reinforcement built in horizontally	m	505
<u>BRICKWORK SUNDRIES</u>			
<u>Prestressed fabricated concrete lintels including necessary temporary supports</u>			
3	110 x 75mm Lintels in lengths not exceeding 3m	m	71
<u>Turning pieces to lintels, etc.</u>			
4	110mm Wide turning piece to lintels, etc.	m	71
<u>Galvanised steel straps, etc.</u>			
5	30 x 1,2mm Thick galvanised steel straps 800mm long with one end built into brickwork and the other end fixed with 'Hilti' drive pin or equally approved shot fired into existing brick wall	No	384
Carried Forward to Summary of Section No. 3			R
Section No. 3			
Bill No. 3			
Masonry			

Item No		Quantity	Rate	Amount
	<u>SECTION NO. 3</u>			
	<u>BILL NO. 4</u>			
	The Tenderer is referred to the relevant Clauses in the separate document General Preambles for Trades (2017 Edition)			
	<u>WATERPROOFING</u>			
	<u>(CPAP WORK GROUP NO. 120 UNLESS OTHERWISE STATED)</u>			
	<u>SUPPLEMENTARY PREAMBLES</u>			
	<u>Waterproofing</u>			
	Waterproofing of roofs, basements, etc shall be laid under a ten year guarantee. Waterproofing to roofs shall be laid to even falls to outlets etc with necessary ridges, hips and valleys. Descriptions of sheet or membrane waterproofing shall be deemed to include additional labour to turn-ups and turn-downs			
	<u>DAMPPROOFING OF WALLS AND FLOORS</u>			
	<u>Approved one layer of 250 micron Gunplas USB Green DPM and adhesive tape</u>			
1	Under surface beds	m2	55	
	<u>JOINT SEALANTS, ETC.</u>			
	<u>One-part 'Dow Corning 813C' or other equal approved silicone sealant</u>			
2	8 x 13mm In saw cut joints in floors	m	15	
3	10 x 10mm In expansion joints in floors	m	10	
4	10 x 10mm In expansion joints in walls	m	250	
	<u>Approved silicone sealant including bond breaking, primer, etc.</u>			
5	In 10mm joints not exceeding 300mm high	m	25	
	Carried Forward			
	Section No. 3 Bill No. 4 Waterproofing			
			R	

Item No		Quantity	Rate	Amount
	<u>SECTION NO. 3</u>			
	<u>BILL NO. 5</u>			
	The Tenderer is referred to the relevant Clauses in the separate document General Preambles for Trades (2017 Edition)			
	<u>CARPENTRY AND JOINERY</u>			
	<u>(CPAP WORK GROUP NO. 126 UNLESS OTHERWISE STATED)</u>			
	<u>SUPPLEMENTARY PREAMBLES</u>			
	<u>Fixing</u>			
	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 elsewhere			
	<u>Joinery</u>			
	The following fittings have been measured as complete units i.e. the components of the units have not been separately measured. The descriptions, therefore, of such units shall be deemed to include all components, assembling, housing, notching, glueing, blocking, planting on and screwing with countersunk screws, edge strips, soft and hard wood, decorative plastic finish, formica, post-forming, glass, ironmongery, metalwork, paint or varnish finishes, etc. In addition rates for items must include for <u>all</u> cupboards, shelving, worktops, etc. applicable to the designated room as shown on the relevant attached drawings			
	Carried Forward		R	
	Section No. 3 Bill No. 5 Carpentry and Joinery			

Brought Forward			R
<p>Rates are to include for securely fixing the units in position with necessary nylon anchors, etc., or suitable fasteners when fixing to drywall partitions and for touching up and making good to any damaged paintwork or parts after the units have been installed.</p> <p><u>DOORS, ETC</u></p> <p><u>Solid-core flush panel masonite doors hung to double rebated galvanized mild steel frames (elsewhere measured)</u></p>			
1	44mm Solid core flush panel masonite single leaf timber door size 810 x 2032mm high (Refer Door Schedule WD-403 - Door Type: TD-01)	No	10
2	44mm Solid core flush panel masonite single leaf timber door size 915 x 2032mm high (Refer Door Schedule WD-403 - Door Type: TD-02)	No	2
3	44mm Solid core flush panel masonite double leaf timber door size 1810 x 2032mm high (Refer Door Schedule WD-403 - Door Type: TD-03)	No	15
4	44mm Solid core flush panel masonite double leaf timber door size 1510 x 2032mm high (Refer Door Schedule WD-403 - Door Type: TD-04)	No	1
<u>FIRE DOORS, ETC.</u>			
<p><u>PELICAN SYSTEM'S Pyropanel or other equal approved fire door Class B installed in strict accordance with the manufacturers instructions and in compliance with SANS 1253:2003 with a 120 minute fire rating, with 3,6mm treated commercial ply suitable for painting on both sides, including intumescent strip to top of door, hardwood edges and 1,6mm thick hot dipped galvanised steel frame</u></p>			
5	'Ifuba Pyropanel' or equally approved Class B fire single leaf door (2 hour fire rated) size 810 x 2032mm high including ironmongery (Refer Door Schedule WD-403 - Door Type: FD-01)	No	1
6	'Ifuba Pyropanel' or equally approved Class B fire double leaf door (2 hour fire rated) size 1810 x 2032mm high including ironmongery (Refer Door Schedule WD-403 - Door Type: FD-03)	No	2
Carried Forward			R
<p>Section No. 3 Bill No. 5 Carpentry and Joinery</p>			

Brought Forward			R
7	Solid core flush panel single leaf fire door size 810 x 2032mm high including ironmongery (Refer Door Schedule WD-403 - Door Type: FE-01)	No	4
<u>FITTINGS</u>			
<u>General</u>			
The following cupboard locker fittings have been given as complete units i.e. the components of the units have not been given separately. Descriptions of such units shall, therefore, be deemed to include all components, assembling, housing, notching, glueing, blocking, planting-on and screwing with countersunk screws, edge strips, thermosetting plastic laminate, glass, ironmongery, metalwork, paint or varnish finishes, etc. Prices are to include for all necessary filler pieces against walls etc.			
<u>WORKTOPS, ETC</u>			
<u>16mm Saligna timber worktop</u>			
8	Worktop size 3500 x 760mm wide x 900mm high with 6mm solid surface on 16mm Supadwood backboard, with 95mm exposed edges all round, 75 x 75mm Hardwood posts with 38 x 78mm support structure to specialist detail as shown, Colour : STEEL ST023. Manufactured and installed as per JNRY - 01a.	No	3
9	Worktop size 2295 x 760mm wide x 900mm high with 6mm solid surface on 16mm Supadwood backboard, with 50mm edges finished with straight edges all round. 75 x 75mm Hardwood posts with 38 x 78mm support structure to specialist detail as shown, Colour : STEEL ST023. Manufactured and installed as per JNRY - 01b.	No	1
10	Worktop size 6800 x 600mm wide x 900mm high with 6mm solid surface on 16mm Supadwood backboard, with 95mm edges finished with straight edges all round. 75 x 75mm Hardwood posts with 38 x 78mm support structure to specialist detail as shown, Colour : STEEL ST023. Manufactured and installed as per JNRY - 01c.	No	2
11	Worktop size 5350 x 425mm wide x 2600mm high with 6mm solid surface on 16mm Supadwood backboard, with straight leading edge on support bracket. 75 x 75mm Hardwood posts with 38 x 78mm support structure to specialist detail as shown, Colour : STEEL ST023. Manufactured and installed as per JNRY - 01c.	No	1
Carried Forward			R
Section No. 3 Bill No. 5 Carpentry and Joinery			

UPGRADES TO ROADS TESTING MATERIAL LABORATORY - CSIR

Brought Forward			R
12	Worktop size 4500 x 600mm wide x 900mm high with 6mm solid surface on 16mm Supadwood backboard, with 95mm edges finished with straight edges all round. 75 x 75mm Hardwood posts with 38 x 78mm support structure to specialist detail as shown, Colour : STEEL ST023. Manufactured and installed as per JNRY - 01c.	No	1
<u>SHELVES, ETC</u>			
<u>Powder coated 'Grey' adjustable steel shelving with double slotted wall band mounted to wall</u>			
13	Adjustable steel shelving unit size 2600mm x 900mm wide x 1800mm high complete with 6 shelves division at equal centres manufactured and installed in accordance with drawing numbers S550/WD_420; S550/WD_502 - JNRY-03a	No	17
14	Adjustable steel shelving unit size 1000mm x 400mm wide x 2135mm high complete with 6 shelves division at equal centres manufactured and installed in accordance with drawing numbers S550/WD_420; S550/WD_502 - JNRY-03b.	No	6
15	Custom-built 5900 x 600 x 2100mm high Mecalux Mild steel cantilever racking, Cantilever arms to be height adjustable manufactured and installed in accordance with drawing numbers S550/WD_420; S550/WD_502 - JNRY-04	No	1
Carried Forward			R
Section No. 3 Bill No. 5 Carpentry and Joinery			

Brought Forward			R
<u>BUILT IN CUPBOARD UNITS</u>			
<u>Kitchen timber floor cupboard as detailed on Drawing No. S550-WD 502 Revision 1 and Drawing No. S550-WD 420 Revision 02</u>			
16	Sink floor cupboard 3065 x 600mm wide x 900mm high built to suit sink unit, formed of 6mm solid surface on 16mm Supawood backboard with 50mm edges finished with straight edges all round (Worktop and sink elsewhere measured) manufactured and installed in accordance with drawing number S550/WD_420; S550/WD_502 - JNRY-02a	No	1
17	Sink floor cupboard 3090 x 600mm wide x 900mm high built to suit sink unit, formed of 6mm solid surface on 16mm Supawood backboard with 50mm edges finished with straight edges all round (Worktop and sink elsewhere measured) manufactured and installed in accordance with drawing number S550/WD_420; S550/WD_502 - JNRY-02a	No	1
<u>16mm Supawood backboard including hinges, including fixing with stainless steel screws, Cupboard fixed to wall.</u>			
18	16mm supawood backboard worktop to sink cupboard size 600mm wide x 3065mm long with cut out for drop-in sink (sink elsewhere measured) manufactured and installed in accordance with drawing number S550/WD_420; S550/WD_502 - JNRY-02a.	No	1
19	16mm supawood backboard worktop to sink cupboard size 600mm wide x 3090mm long with cut out for drop-in sink (sink elsewhere measured) manufactured and installed in accordance with drawing number S550/WD_420; S550/WD_502 - JNRY-02a.	No	1
Carried Forward to Summary of Section No. 3			R
Section No. 3			
Bill No. 5			
Carpentry and Joinery			

Item No	Quantity	Rate	Amount
<p><u>SECTION NO. 3</u></p> <p><u>BILL NO. 6</u></p> <p>The Tenderer is referred to the relevant Clauses in the separate document General Preambles for Trades (2017 Edition)</p> <p><u>CEILINGS, PARTITIONS AND ACCESS FLOORING</u></p> <p><u>(CPAP WORK GROUP NO. 129 UNLESS OTHERWISE STATED)</u></p> <p><u>Note:</u></p> <p>The Contractor shall allow for any necessary cross bracing, hangers, supports, etc., to the Architect's approval in order to achieve structural stability of the ceiling installation</p> <p>Where applicable, samples of materials, mock-ups, etc., may be called for by the Architect for approval and shall be provided at no extra cost as rates will be deemed to include for this</p> <p>All ceiling installations executed must be done in accordance with the manufacturer's written instructions</p> <p>The Contractor must allow for the design, supply and installation of the suspension system, if required, and accordingly, must take cognisance of possible truss and purlin centres when designing the ceiling framework, hangers, cross bracing, additional supports, etc., as no claims for extras will be entertained</p> <p>The Contractor must allow for additional supports around light fittings, etc</p> <p><u>CEILINGS, ETC</u></p> <p><u>SUSPENDED CEILINGS</u></p> <p>The following suspended ceiling grid systems and ceiling tiles are to be manufactured, supplied by and installed by an approved applicator in strict accordance with the manufacturer/suppliers specifications</p>			
<p>Carried Forward</p> <p>Section No. 3 Bill No. 6 Ceilings Partitions and Access Flooring</p>		R	

Brought Forward			R
Electrical light fittings, diffusers, panels, etc. generally are "lay in" units of the same dimensions as the suspension grid described and allowance must be made 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)			
<u>'Owa Acoustic Castellation Premium" or other equally approved 600 x 1200 x 15mm thick biologically absorbable mineral ceiling tiles with square edge and white painted finish laid on fire rated OQSconstruct S3 exposed demountable T24 suspension system, comprising galvanised main tees, hangers at centres not exceeding 1200mm all in accordance to manufactures instructions and to Architects approval</u>			
1	Ceilings suspended not exceeding 1m below concrete soffits, CS-03.	m2	46
2	Extra over ceiling for opening for 600 x 1200mm light fitting	No	8
3	Extra over ceiling for opening for 595 x 595mm ventilation grille/air conditioning diffuser	No	6
<u>Custom sized 'Live Acoustic LRB-5490 60mm thick horizontal acoustic poly fibre ceiling baffle' or other equally approved suspended by stainless steel cable system class A fire rated (ASTM E84) strictly to manufacturer's details and colour to Architect's approval.</u>			
4	Ceilings suspended not exceeding 1m below concrete soffits, CS-02.	m2	55
5	Extra over ceiling for opening for light fittings in various sizes to suit panel size.	No	10
Carried Forward			R
Section No. 3 Bill No. 6 Ceilings Partitions and Access Flooring			

Brought Forward			R
<u>9mm CAPCO Tapered edge standard Gypsum plasterboard ceiling (SANS 266 Compliant) fixed to branderling at 150mm centres with 32mm grabber screws stopped with jointing compound. All board joints to be finished with 50mm self-adhesive glass fibre tape and skimmed to a smooth continuous finish.</u>			
6	Ceilings including 38 x 50mm sawn softwood branderling at 150mm centres, CS-01	m2	17
7	Extra over ceiling for 635 x 635mm trap door including rebated framing cross branders covered with ceiling board and fitted flush in opening	No	3
8	Extra over ceiling for opening for 600 x 1200mm light fitting	No	4
9	Extra over ceiling for opening for 595 x 595mm ventilation grille/air conditioning diffuser	No	2
<u>CORNICES, TRIMS, ETC</u>			
<u>25mm CAPCO Shadowline or equal and aproved cornices, perimeter trims, etc to suspended ceilings</u>			
10	25mm CAPCO shadowline cornice	m	40
11	25mm Shadowline trim	m	47
Carried Forward to Summary of Section No. 3 Section No. 3 Bill No. 6 Ceilings Partitions and Access Flooring			R

Item No	Quantity	Rate	Amount
<u>SECTION NO. 3</u>			
<u>BILL NO. 7</u>			
The Tenderer is referred to the relevant Clauses in the separate document Model Preambles for Trades (2017 Edition)			
<u>FLOOR COVERINGS, WALL LININGS, ETC</u>			
<u>(CPAP WORK GROUP NO. 130 UNLESS OTHERWISE STATED)</u>			
<u>SUPPLEMENTARY PREAMBLES</u>			
<u>Fixing</u>			
Floor coverings, wall linings, etc shall, where applicable, be fixed with adhesive as recommended by the manufacturers of the flooring, linings, etc			
<u>VINYL FLOOR COVERINGS</u>			
<u>Approved Polyflor Expona Commercial Wood PUR 2.5mm thickness hetrogeneous vinyl tile with polyurethane reinforcement, colour to Architect's approval laid in an approved adhesive, all in accordance with manufacturer's recommendations</u>			
1	On floors. m2	25	
<u>SKIRTINGS, NOSINGS, ETC.</u>			
<u>Approved Polyflor Expona Commercial Wood PUR 2.5mm thickness hetrogeneous vinyl.</u>			
2	150mm Continuous vinyl hospital cove including Gradus top and chamfer trims m	30	
Carried Forward			R
Section No. 3 Bill No. 7 Floor Coverings, etc.			

Brought Forward		R
<u>POLISH, SEALERS, ETC.</u>		
<u>Strip and seal</u>		
3	The newly laid floor must, after 72 hours, be stripped using an approved stripper, scrubbed using a diluted solution rinse and then sealed with 3 coats Silk Matt or Gloss Sealer, all in accordance with the manufacturer's recommendations	m2
		16
Carried Forward to Summary of Section No. 3		R
Section No. 3		
Bill No. 7		
Floor Coverings, etc.		

UPGRADES TO ROADS TESTING MATERIAL LABORATORY - CSIR

Brought Forward			R
<u>Approved locksets</u>			
5	"Dormakaba" D032D SS Stainless steel bathroom deadlock. Case size 102H X 78D. Forend size 155H X 22W. Backset 57mm.	No	1
6	"Dormakaba" D036S SS Stainless steel Sash lock. Case size (mm) 116.5H X 78D. Forend size (mm) 168H X 22W. Backset 57mm. Centres 61mm.	No	12
7	"Dormakaba" D037D SS Stainless steel Cylinder deadlock. Case size 116.5H X 78D. Forend size 168H X 22W. Backset 57mm.	No	12
8	"Dormakaba" D02935 SS Stainless steel narrow stile hook lock operating with European profile cylinder. Case size (mm) 116.5H X 78D. Forend size (mm) 290H X 22W. Backset 57mm.	No	6
9	"Dormakaba" D02735 SS Stainless steel narrow stile dead lock operating with European profile cylinder. Case size (mm) 174H X 52D. Forend size (mm) 238H X 22W. Backset 35mm.	No	4
10	"Dormakaba" DHK204101 Satin Nickel 41mm Europrofile half Knob Cylinder.	No	2
<u>HANDLES</u>			
<u>"Domakaba" or equal approved handles</u>			
11	"Dormakaba" TH125 Cyl S.S Stainless steel Lever handle on rose with cylinder escutcheons.	Sets	12.0
12	"Dormakaba" DPH301A BTB Stainless steel 325 x 25mm straight tubular pull handle BTB (BTB Fixing sets included).	Pairs	2.0
13	"Dormakaba" DPH301A BT Stainless steel 325 x 25mm straight tubular pull handle BT	No	16
14	"Dormakaba" DFP-SS-025 Stainless steel 120 x 40mm Rectangular flush pull handle.	No	12
15	"Dormakaba" DPH206 BT Stainless steel 400 x 30mm Offset tubular pull handle BT	No	3
Carried Forward			R
Section No. 3 Bill No. 8 Ironmongery			

UPGRADES TO ROADS TESTING MATERIAL LABORATORY - CSIR

	Brought Forward			R
16	"Dormakaba" DPH206 BTB Stainless steel 400 x 30mm Offset tubular pull handle BTB (BTB Fixing sets included).	Pairs	2.0	
	<u>LOCKS</u>			
	<u>"Dormakaba" or equal and approved</u>			
17	"Dormakaba" DWC-005 stainless steel bathroom WC indicator bolt (Red and white) and turnknob	Sets	1.0	
18	"Dormakaba" PHB2 S SD Two point locking panic bar - Single door - door leaf 1000mm wide x 2270mm high (3102. PHX02. PHX04)	Sets	3.0	
19	"Dormakaba" D038R NP Nickel plated rebate conversion kit for Euro profile locks D036S, D037D.	No	12	
20	"Dormakaba" DDC206301 GMK 63mm - 31.5 + 31.5mm Europrofile Nickel plated E-SP 5 Pin double cylinder - Grand master keyed.	No	6	
21	"Dormakaba" DKC206301 GMK 63mm - 31.5 + 31.5mm Europrofile Nickel plated E-SP 5 Pin knob cylinder - Grand master keyed.	No	19	
22	"Dormakaba" DKC208001 GMK 80mm - 40 + 40mm Europrofile Nickel plated E-SP 5 Pin knob cylinder - Grand master keyed.	No	1	
23	"Dormakaba" DSC104001 GMK 40mm 5 pin Euro-profile Nickel plated single cylinder - Grand master keyed.	No	6	
	<u>PUSH PLATES, KICK PLATES, BACK PLATES AND ESCUTCHEONS</u>			
	<u>"Dormakaba" or equal and approved</u>			
24	400mm x 150mm x 1.6mm grade 304 s/s push plate with 6 holes lasered for countersunk fixings.	No	16	
25	400mm x 75mm x 2mm grade 304 s/s back plate with 6 holes lasered for countersunk fixings. 2 only 8mm diameter holes lasered for dormakaba fixings. Bolt to fit through plate and door.	No	20	
	Carried Forward			R
	Section No. 3 Bill No. 8 Ironmongery			

Brought Forward			R
26	300mm x width of door x 2mm grade 304 s/s kick plate with 1 holes lasered every 200mm for countersunk fixings.	No	6
27	1 pair dormakaba DCE-002 S.S stainless steel round cylinder escutcheon.	No	12
28	"Dormakaba" DCE-105 SS Stainless steel narrow stile cylinder Escutcheon.	Pairs	7.0
<u>DOOR CLOSERS</u>			
<u>"Dormakaba" or equal and approved</u>			
29	"Domakaba" EN 3-6 Silver Parallel Arm NON HOLD OPEN Door Closer code TS83 PA.	No	3
30	"Domakaba" EN 2-4 Regular Arm NON HOLD OPEN Door Closer code TS73V - SL.	No	2
31	"Domakaba" EN 2-4 Regular Arm HOLD OPEN Door Closer code TS73V HO - SL.	No	11
32	"Domakaba" EN 2-4 Parallel Arm HOLD OPEN Door Closer code TS73V PA HO - SL.	No	1
33	"Domakaba" Silver NON HOLD OPEN Co-ordinated door closer system code TS92B G-SR.	No	2
34	"Domakaba" Silver MECHANICAL HOLD OPEN Cam action slide channel Door Closer code TS92G HO - AB - SL.	No	1
35	"Domakaba" Silver MECHANICAL HOLD OPEN Cam action slide channel Door Closer code TS93G HO - AB - SL.	No	1
36	"Dormakaba" EM 500A hold-open magnet door closer with test push pushbutton.	No	4
<u>LETTERS, NAMEPLATES, ETC.</u>			
Carried Forward			R
Section No. 3 Bill No. 8 Ironmongery			

UPGRADES TO ROADS TESTING MATERIAL LABORATORY - CSIR

Brought Forward			R
<u>"Dormakaba" or equal and approved</u>			
37	150 x 150mm Stainless steel MALE sign code DSS-130 M.	No	1
38	150 x 150mm Stainless steel FEMALE sign code DSS-131 F.	No	1
39	150 x 150mm Stainless steel DISABLED PERSONS sign code DSS-133 P.	No	2
40	150 X 150mm Stainless steel CLEANER sign code DSS-138 C.	No	2
<u>Standard vista "Black" signage, with 25mm tall lettering, fixed to door by external grade adhesive</u>			
41	300 x 100mm door name plate	No	45
<u>BATHROOM FITTINGS</u>			
<u>Franke or other equally approved</u>			
42	"Franke" Rodan code "FKRODX619 soap dispenser with electronic sensor 140 x 85 x 140mm fixed to wall	No	2
43	"Franke" Rodan code "FKRODX600 electronic paper towel dispenser wall mounted touch free stainless steel surface satin finished 275 x 112 x 355mm.	No	2
44	"Franke" Rodan double toilet paper holder code "FKRODX672 size 144 x 138 x 301mm	No	2
45	"Franke" Rodan code "FKRODX605" wall mounted waste bin size 355 x 168 x 460mm	No	2
46	"ItalCare" SBA130BS brushed stainless steel angled bar grab rail 75 x 320 x 320mm F13C, plugged.	No	2
47	"ItalCare" SBA700BS brushed stainless steel Straight grab rail 32 x 700mm girth F11C, plugged.	No	2
<u>SUNDRIES</u>			
<u>"Dormakaba" or equal and approved</u>			
48	Hat and coat hook stainless steel with a rubber buffer DHC-SS-031B fixed to door	No	1
Carried Forward			R
Section No. 3 Bill No. 8 Ironmongery			

UPGRADES TO ROADS TESTING MATERIAL LABORATORY - CSIR

[illegible]

Item No	Quantity	Rate	Amount
<u>SECTION NO. 3</u>			
<u>BILL NO. 9</u>			
The Tenderer is referred to the relevant clauses in the Standard Preambles To All Trades, the Supplementary Preambles and Notes			
<u>STRUCTURAL STEELWORK</u>			
<u>(CPAP WORK GROUP NO. 134 UNLESS OTHERWISE STATED)</u>			
<u>SUPPLEMENTARY PREAMBLES</u>			
<u>General</u>			
All steelwork is to be in accordance with SANS 1200H, 10120 and 10162. Material is to be Grade 300WA			
All shop drawings are to be approved by the Engineer prior to fabrication			
Connections and welds are to be full strength			
All dimensions and levels are to be checked on site prior to fabrication			
Adequate temporary bracing is to be provided during erection of structural steelwork			
No site cutting, drilling or welding will be permitted without the prior consent of the Engineer			
Carried Forward		R	
Section No. 3 Bill No. 9 Structural steelwork			

<p style="text-align: center;">Brought Forward</p> <p><u>Corrosion Protection</u></p> <p>All steelwork including hot rolled sections, tubular sections, CRLC purlins, bolts/nuts, and holding down bolts to be hot dipped galvanised to SANS 121 (ISO1461)</p> <p>Appropriate size kettles are to be used during galvanising process for all the CRLC purlins to prevent warping of the sections</p> <p><u>All steelwork requiring architectural painted finishes to be prepared as follows:</u></p> <p>Galvanised surface to be cleaned with an approved galvanising cleaner from all grease and dirt.</p> <p>Surface to be thoroughly washed and allowed to dry</p> <p>Apply one coat with an approved galvanising primer to minimum 40-50 DFT.</p> <p>Apply final two coats of Hammerite paint to minimum 100 DFT (Colour to architects detail)</p> <p><u>Descriptions</u></p> <p>Descriptions of structural steelwork shall be deemed to include preparation of shop detail drawings, fabrication and erection, including all welding, holes, blacks bolts, nuts, washers, rivets, packings, etc</p> <p>Descriptions of holding down bolts shall be deemed to include bending, threading, nuts and washers and embedding in concrete</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><u>GALVANISED STEEL STAIRCASE</u></p> <p><u>Galvanised welded columns with flat section fixing plates bolted to concrete</u></p> <p>1 200 PFC support columns including 200 x 75 x 12mm base plate to top and bottom of columns.</p> <p style="text-align: center;">Carried Forward</p> <p>Section No. 3 Bill No. 9 Structural steelwork</p>	<p style="text-align: center;">t</p>	<p style="text-align: center;">0.22</p>	<p style="text-align: center;">R</p>
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Brought Forward			R
<u>Galvanised bearers bolted to concrete</u>			
2	200 PFC Stringer to sides of treads including 200 x 75 x 12mm end plate	t 0.35	
<u>Welded and bolted suspended floor to A/C plant supports</u>			
3	7.6mm under pattern "Vastrap" plate floor panels including "Vastrap" plate to landing	t 0.23	
<u>Galvanised welded beams with flat section fixing plates bolted to existing brick work</u>			
4	180 PFC beam bolted onto sides of stringer at landing	t 0.03	
5	200 PFC beam bolted onto existing brick wall with M16 chemical anchors @ 400 c/c max.	t 0.04	
<u>Galvanised bolts</u>			
6	M12 (8.8) galvanised chemical anchor studs 200mm long	No 52	
7	M16 (8.8) galvanised chemical anchor studs 250mm long	No 8	
8	M20 (8.8) galvanised chemical anchor studs 300mm long	No 16	
<u>HOT DIPPED GALVANISED MILD STEEL RAMP PLATE</u>			
<u>Galvanised mild steel delivery/service ramp, retrofitted to existing step. Surface plate to be mild steel checkered plate with anti - slip coating. Ramp to have max gradient of 1:15.</u>			
9	1200mm wide steel ramp plate.	t 0.85	
Carried Forward to Summary of Section No. 3			R
Section No. 3			
Bill No. 9			
Structural steelwork			

Item No		Quantity	Rate	Amount
	<u>SECTION NO. 3</u>			
	<u>BILL NO. 10</u>			
	The Tenderer is referred to the relevant Clauses in the separate document General Preambles for Trades (2017 Edition)			
	<u>METALWORK</u>			
	<u>(CPAP WORK GROUP NO. 136 UNLESS OTHERWISE STATED)</u>			
	<u>SUPPLEMENTARY PREAMBLES</u>			
	<u>Descriptions</u>			
	Descriptions of bolts shall be deemed to include nuts and washers			
	Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork or concrete			
	Metalwork described as "holed for bolt(s)" shall be deemed to exclude the bolts unless otherwise described			
	<u>STEEL MESH BALUSTRADES</u>			
	<u>Welded balustrading to staircase</u>			
1	Raking balustrades 1040mm high to steel staircase formed with 50mm diameter circular profile steel handrail on two Baluster post 50 x 960 x 12mm with flat mild steel plate fixed together by threaded rod and dome nuts, with posts welded to base plate. Posts to be 1000 c/c. Comprising of WIRETECH 100, 100 x 50mm rectangular opening steel wire mesh, 3mm CTC wire thickening fixed to top and bottom of baluster post by bracket. Handrails to be epoxy power coated with interpon class II power coat.	m	24	
	Carried Forward		R	
	Section No. 3 Bill No. 10 Metalwork			

Brought Forward			R
2	Horizontal balustrades 1040mm high to steel staircase formed with 50mm diameter circular profile steel handrail on two Baluster post 50 x 960 x 12mm with flat mild steel plate fixed together by threaded rod and dome nuts, with posts welded to base plate. Posts to be 1000 c/c. Comprising of WIRETECH 100, 100 x 50mm rectangular opening steel wire mesh, 3mm CTC wire thickening fixed to top and bottom of baluster post by bracket. Handrails to be epoxy power coated with interpon class II power coat.	m	5
<u>HOT DIPPED GALVANISED MILD STEEL DOOR FRAMES</u>			
<u>2mm Thick double rebated sheet metal frames suitable for M190 brick wall including 50 x 50 x 6mm angle irons</u>			
3	Purpose made frame for door size 810 x 2032mm high with purpose made hinges to receive door type TD-01	No	6
4	Purpose made frame for door size 915 x 2032mm high with purpose made hinges to receive door type TD-02	No	2
5	Purpose made frame for double door size 1810 x 2032mm high with purpose made hinges to receive door type TD-03	No	11
6	Pre-approved double rebated galvanized mild steel frame for door type TD-04	No	1
7	Purpose made frame for door size 810 x 2032mm high with purpose made hinges to receive door type FD-01	No	1
8	Purpose made frame for double door size 1810 x 2032mm high with purpose made hinges to receive door type FD-03	No	2
9	Purpose made frame for door size 810 x 2032mm high with purpose made hinges to receive door type FE-01	No	4
<u>POWDER COATED ALUMINIUM WINDOWS, DOORS, ETC.</u>			
The following to be finished with 25 microns powder coated, manufactured and installed in accordance with good building practice and in terms of the latest code of practice with revisions as recommended by the SABS and AAAMSA.			
Carried Forward			R
Section No. 3 Bill No. 10 Metalwork			

<p style="text-align: center;">Brought Forward</p> <p>Items shall be manufactured by an approved specialist who shall provide a sample upon request, for the Representative / Principal Agent's approval.</p> <p>Tenderers are advised to refer to the Architect's window and door schedules attached to these Bills of Quantities for details</p> <p>Tenderers are to note that should there be any doubt or obscurity as to the meaning and intent of any descriptions, the Contractor must have the same rectified and allow for accordingly in his tender. The Contractor is to include in his rates for all that he considers necessary for the proper construction of the windows and doors. No claims whatsoever will be afterwards admitted due to the Contractor having failed to comply with these conditions.</p> <p>Rates shall include for the following:</p> <p>All opening and fixed lights, coupling mullions and transoms, fittings, ironmongery, burglar bars, etc., as required and specified.</p> <p>Complete glazing as described with and including matching aluminium glazing beads and gaskets and glazed in accordance with the manufacturer's written instructions</p> <p>Building in and fixing into preformed openings. Window opening sizes to be verified on site before windows can be manufactured.</p> <p>Suitably protecting all exposed aluminium and glass surfaces with an approved protection tape and plastic sheeting. Such protection is to be removed at completion of the contract and the exposed surfaces cleaned down and left perfect. Under no circumstances will any damage whatsoever to the finished product be acceptable.</p> <p>Silicone pointing with a silicone sealant recommended by AAAMSA on all door / window and structure junctions.</p> <p><u>ALUMINIUM DOORS</u></p>		R	
<p style="text-align: center;">Carried Forward</p> <p>Section No. 3 Bill No. 10 Metalwork</p>		R	

Brought Forward			R
<u>Epoxy powder coated interpon class 1 finish aluminium door with 5mm toughened safety glass and plugged to brickwork or concrete</u>			
10	1800 x 2134mm High 'Jansen Art' or equally approved 15 slim profile glazed aluminium double leaf door with fixed side panel Type GD-01 including 5mm toughened clear safety glass, ironmongery, etc. Refer to drawing No.WD-403	No	4
11	910 x 2032mm High 'Jansen Art' or equally approved 15 slim profile glazed aluminium double leaf door with fixed side panel Type GD-02 including 5mm toughened clear safety glass, ironmongery, etc. Refer to drawing No.WD-403	No	3
12	850 x 2032mm High 'Jansen Art' or equally approved 15 slim profile glazed aluminium double leaf door with fixed side panel Type GD-03 including 5mm toughened clear safety glass, ironmongery, etc. Refer to drawing No.WD-403	No	2
13	1350 x 2032mm High 'Jansen Art' or equally approved 15 slim profile glazed aluminium sliding double leaf door with fixed side panel Type GD-04 including 5mm toughened clear safety glass, ironmongery, etc. Refer to drawing No.WD-403	No	4
14	1460 x 2032mm High 'Jansen Art' or equally approved 15 slim profile glazed aluminium sliding double leaf door with fixed side panel Type GD-05 including 5mm toughened clear safety glass, ironmongery, etc. Refer to drawing No.WD-403	No	1
15	2130 x 2032mm High 'Jansen Art' or equally approved 15 slim profile glazed aluminium double leaf door Type GD-06 including 5mm toughened clear safety glass, ironmongery, etc. Refer to drawing No.WD-403	No	2
16	1625 x 2032mm High 'Jansen Art' or equally approved 15 slim profile glazed aluminium double leaf door Type GD-07 including 5mm toughened clear safety glass, ironmongery, etc. Refer to drawing No.WD-403	No	1
17	1150 x 2405mm High 'Jansen Art' or equally approved 15 slim profile glazed aluminium sliding door Type GD-08 including 5mm toughened clear safety glass, ironmongery, complete with sliding track, etc. Refer to drawing No.WD-403	No	1
Carried Forward			R
Section No. 3 Bill No. 10 Metalwork			

Brought Forward				R
<u>ALUMINIUM SHOPFRONTS</u>				
<u>Epoxy powder coated interpon class 1 finish purpose made glazed aluminium shopfronts, panels, doors, etc to the approval of the Principal Agent as detailed on Shopfront schedules Drawing references. All cost to include frames, frame finishes, glazing, etc complete as per Architects Drawings.</u>				
18	2291 x 2648mm High 'Jansen Art' or equally approved aluminium shopfront type SF-01 with 1460 x 2100 double door including 5mm toughened clear safety glass panels with opaque vinyl at 880mm Height from bottom of shopfront, ironmongery, etc. Refer to drawing No.WD-404	No	1	
19	4792 x 2648mm High 'Jansen Art' or equally approved aluminium shopfront type SF-02 with 6mm toughened clear safety glass panels with opaque vinyl at 880mm Height from bottom of shopfront, ironmongery, etc. Refer to drawing No.WD-404	No	1	
20	5436 x 2648mm High 'Jansen Art' or equally approved aluminium shopfront type SF-03 with 6mm toughened clear safety glass panels with opaque vinyl at 880mm Height from bottom of shopfront, ironmongery, etc. Refer to drawing No.WD-404	No	1	
21	4020 x 2648mm High 'Jansen Art' or equally approved aluminium shopfront type SF-04 with 910 x 2032 single door including 6mm toughened clear safety glass panels with opaque vinyl at 880mm Height from bottom of shopfront, ironmongery, etc. Refer to drawing No.WD-404	No	1	
22	5380 x 2648mm High 'Jansen Art' or equally approved aluminium shopfront type SF-05 with 4No. size 1350 x 2100 sliding double door panels including 6mm toughened clear safety glass panels, ironmongery, etc. Refer to drawing No.WD-404	No	1	
23	7471 x 2648mm High 'Jansen Art' or equally approved aluminium shopfront type SF-06 with 2No. size 910 x 2100 single door panels including 6mm toughened clear safety glass panels with opaque vinyl at 880mm Height from bottom of shopfront, ironmongery, etc. Refer to drawing No.WD-405	No	1	
Carried Forward to Summary of Section No. 3				R
Section No. 3				
Bill No. 10				
Metalwork				

Brought Forward			R
<u>Approved 6mm to 9mm thick 'Vuka Crete HD' solvent free seamless abrasion and impact resistance resin screed including 'Vukacem Watertight membrane' colour to be confirmed by Architect and installation strictly to manufacturer's instructions</u>			
3	On floors.	m2	524
<u>Approved 2mm thick 'Vuka Crete SL' polyurethane screed on tested and approved substrate all strictly to manufacturer's instructions</u>			
4	On floors	m2	896
<u>Approved 4mm thick 'Vuka Flow 400 ESD' polyurethane screed on tested and approved substrate all strictly to manufacturer's instructions</u>			
5	On floors	m2	149
<u>SKIRTINGS, NOSINGS, ETC.</u>			
<u>Vuka crete HD solvent free seamless abrasion and impact resistant resin screed .</u>			
6	75mm Coved turn up in skirting consistency Vuka Coving Mortar to match floor finish	m	291
<u>Vuka crete SL polyurethane screed</u>			
7	75mm Coved turn up in skirting consistency Vuka Coving Mortar to match floor finish	m	742
<u>INTERNAL PLASTER</u>			
<u>One coat cement plaster on brickwork:</u>			
8	Walls	m2	645
9	Narrow widths	m2	68
Carried Forward to Summary of Section No. 3 Section No. 3 Bill No. 11 Plastering			R

Item No		Quantity	Rate	Amount
	<p><u>SECTION NO. 3</u></p> <p><u>BILL NO. 12</u></p> <p>The Tenderer is referred to the relevant Clauses in the separate document General Preambles for Trades (2017 Edition)</p> <p><u>TILING</u></p> <p><u>(CPAP WORK GROUP NO. 144 UNLESS OTHERWISE STATED)</u></p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p>Prime Cost amounts for tiles are NET</p> <p>Rates for tiling, in addition to the PC amount, must include for fixing, adhesive, grout, wastage, profit, etc</p> <p><u>WALL TILING, ETC</u></p> <p><u>100 x 305mm DECOR ELEGANCE BELVAR METRO Ceramic subway tiles, laid onto TAL wall and floor grout. Grout to be mixed and applied as per manufacturer's instruction. Substrate to be adequately prepared, with loose and friable material removed.</u></p>			
1	On walls in patterns	m2	5	
	Carried Forward to Summary of Section No. 3		R	
	Section No. 3			
	Bill No. 12			
	Tiling			

Item No		Unit	Quantity	Rate	Amount
	<u>SECTION 3</u>				
	<u>BILL NO. 13</u>				
	The Tenderer is referred to the relevant Clauses in the separate document General Preambles for Trades (2017 Edition)				
	<u>PLUMBING AND DRAINAGE</u> <u>(PROVISIONAL)</u>				
	<u>(CPAP WORK GROUP NO. 148 UNLESS OTHERWISE STATED)</u>				
	<u>SUPPLEMENTARY PREAMBLES</u>				
	Prices for installation of all taps, valves, etc, shall in all cases be deemed to include for the necessary couplings required for connecting to pipework whether specifically described or not				
	<u>PLUMBING</u>				
	<u>All materials and workmanship shall comply with the relevant SABS specifications</u>				
	<u>SANITARY FITTINGS</u>				
	Prices for sanitary fittings are to include for the application of silicone sealant or equivalent wherever sanitary fittings make contact with wall finishes, floor finishes, vanity tops, bathroom fittings, etc.				
1	Laufen Caprino Siphonic code "LAWHCP44060" urinal including Geberit urinal concealed siphonic trap code GEUS0002 fixed to wall with Laufen Caprino CODE "LAWHCP94060" urinal fixing screws.	No	1		
2	Laufen Pro B White wall hung basin with tap hole 550 x 440 x 160mm code "LAWHPR10951" fixed to wall with basin fixation screws code "BEZB2904"	No	1		
3	Laufen Pro E Liberty White wall hung toilet code "LAWHLB20642P" Including Liberty soft close toilet seat and cover code "LAWHRM96958"	No	2		
	Carried Forward			R	
	Section No. 3 Bill No. 13 Plumbing and Drainage				

UPGRADES TO ROADS TESTING MATERIAL LABORATORY - CSIR

	Brought Forward			R
4	Laufen Pro A white wall hung washbasin Code "LAWHPR18952" with one tap hole 600 x 480 x 170mm.	No	2	
5	Verdi Atlas white floor standing toilet including soft close seat (Including lock nut) code "VE1WH9116V"	No	1	
6	'Geberit' Sigma 80 concealed cistern for floor standing code "GEBA005A" including fastening set.	No	1	
7	'Geberit' Kombifix wall mounted cistern with external overflow code "GEBA004E" including fastening set.	No	2	
8	'Franke' Sirius CBN BLK T/H 560 x 530 x 200 SID610 kitchen sink built into cupboard (Elsewhere measured)	No	2	
	<u>TRAPS, ETC.</u>			
9	Wirquin Teos bottle trap code "WRB032"	No	3	
	<u>TAPS, VALVES, ETC.</u>			
10	'Geberit' Mambo Stainless steel single flush toilet Flush plate code "GEMB001" including fastening set	No	3	
11	RTIC Clinical lever basin single mixer tap, code "TVID02150"	No	2	
12	'Tivoli' (Code: TVKIML33/CH) Molveno or equally approved pillar tap sink mixer	No	2	
13	Concealed self closing push tap with vandal proof cartridge, ball valve and concealed box, made of DZR code "TVIDITT08525/1"	No	1	
14	Idral Self closing push button tap code TVID08210	No	1	
15	Anti Vandal pull up basin waste code "TVC1028/CH"	No	3	
16	Angle valve chrome 15 x 15mm DZR code "TVAC1408/CH"	No	7	
	<u>SANITARY PLUMBING</u>			
	<u>uPVC pipes</u>			
17	50mm Pipes	m	35	
18	110mm Pipes	m	20	
	Carried Forward			R
	Section No. 3			
	Bill No. 13			
	Plumbing and Drainage			

UPGRADES TO ROADS TESTING MATERIAL LABORATORY - CSIR

	Brought Forward			R
19	150mm pipes along the existing floor duct to replace existing (existing elsewhere measured)	m	200	
	<u>Extra over uPVC pipes for fittings</u>			
20	50mm Bend	No	15	
21	110mm Bend	No	10	
22	50mm Access bend	No	7	
23	110mm Access bend	No	4	
24	50mm Junction	No	3	
25	110mm Junction	No	2	
	<u>WATER SUPPLIES</u>			
	<u>Class 0 copper pipes</u>			
26	15mm Pipes	m	25	
27	22mm Pipe	m	15	
	<u>Extra over class 0 copper pipes for capillary fittings</u>			
28	15mm Fittings	No	18	
29	22mm Fittings	No	10	
	<u>TESTING</u>			
30	Allow for testing the whole of the Plumbing system and all fittings to the satisfaction of the Principal Agent/Architect, Engineer and Local Authorities. All defective work is to be taken out and replaced at the contractor's expense and the whole re-tested until acceptable.		Item	
	Carried Forward to Summary of Section No. 3			R
	Section No. 3			
	Bill No. 13			
	Plumbing and Drainage			

Item No		Quantity	Rate	Amount
<u>SECTION NO. 3</u>				
<u>BILL NO. 14</u>				
The Tenderer is referred to the relevant Clauses in the separate document General Preambles for Trades (2017 Edition)				
<u>GLAZING</u>				
<u>(CPAP WORK GROUP NO. 150 UNLESS OTHERWISE STATED)</u>				
<u>MIRRORS, ETC.</u>				
<u>Affirmations "REFITCV93" crystal view rectangular plain Mirror</u>				
1	Mirror size 600x 800mm high with screws	No	3	
Carried Forward to Summary of Section No. 3				R
Section No. 3 Bill No. 14 Glazing				

Item No		Quantity	Rate	Amount
	<u>SECTION 3</u>			
	<u>BILL NO. 15</u>			
	The Tenderer is referred to the relevant Clauses in the separate document General Preambles for Trades (2017 Edition)			
	<u>PAINTWORK</u>			
	<u>(CPAP WORK GROUP NO. 152 UNLESS OTHERWISE STATED)</u>			
	<u>PREPARATORY WORK TO EXISTING WORK</u>			
	<u>Previously painted plastered surfaces</u>			
	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 cracks shall be opened, filled with a suitable filler and finished smooth			
	<u>Previously painted metal surfaces</u>			
	Surfaces shall be thoroughly rubbed and cleaned down. Blistered or peeling paint shall be completely removed down to bare metal			
	<u>Previously painted wood surfaces</u>			
	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			
	<u>PAINTWORK TO PREVIOUSLY PAINTED WORK</u>			
	<u>ON INTERNAL FLOATED PLASTER SURFACES</u>			
	<u>Prepare and brush surface to remove all loose and friable material, contaminants and apply trade alkali resistant plaster primer, allow to dry. Apply two coats MARMOCOTE M180 paint.</u>			
1	On Walls	m2	2 694	
	Carried Forward			R
	Section No. 3 Bill No. 15 Paintwork			

Brought Forward			R
<u>ON CONCRETE SURFACES</u>			
<u>Prepare and brush surface to remove all loose and friable material, contaminants and apply trade alkali resistant plaster primer, allow to dry. Apply two coats MARMOCOTE M180 paint.</u>			
2	On slab soffits	m2	1 417
<u>ON WOOD</u>			
<u>Prepare and sand surface to remove all loose contaminants and apply two coats Plascon velvagio or equal and other approved paint finish</u>			
3	Doors and frames	m2	270
<u>ON METAL SURFACES</u>			
<u>Prepare substrate by removing all looses and flaking paint, dirt, grease and grime. Ensure surface is dry and sound. Apply 2 coats 'Marmaglow PU non-drip Enamel paint', at spread rate of 8-10m2/L. Application to be done by pre-approved installer.</u>			
4	Steel Balustrades	m2	15
5	Steel Roller shutter doors	m2	37
<u>PAINTWORK ETC TO NEW WORK</u>			
<u>ON INTERNAL FLOATED PLASTERED SURFACES</u>			
<u>Prepare and brush surface to remove all loose and friable material, contaminants and apply trade alkali resistant plaster primer, allow to dry. Apply two coats MARMOCOTE M180 paint.</u>			
6	Walls	m2	713
<u>ON WOOD</u>			
<u>Prepare and sand surface to remove all loose contaminants and apply two coats Plascon Velvagio or equal and other approved paint finish</u>			
7	Doors	m2	160
Carried Forward			R
Section No. 3 Bill No. 15 Paintwork			

Brought Forward			R
8	Doors frames	m2	22
<u>ON PLASTER BOARD SURFACES</u>			
<u>Prepare and brush surface to remove all loose contaminants and apply alkali resistant primer, one undercoat and two coats of Trade 65 Matt paint to comply with SABS 634</u>			
9	On ceilings and cornices	m2	25
Carried Forward to Summary of Section No. 3			R
Section No. 3			
Bill No. 15			
Paintwork			

UPGRADES TO ROADS TESTING MATERIAL LABORATORY - CSIR

[illegible]

Item No		Quantity	Rate	Amount
	<u>SECTION NO. 4</u>			
	<u>BILL NO. 1</u>			
	<u>EXTERNAL WORKS</u>			
	<u>COURT YARD (ALL TRADES)</u>			
	<u>ALTERATIONS (PROVISIONAL)</u>			
	<u>(CPAP WORK GROUP NO. 102 UNLESS OTHERWISE STATED)</u>			
	<u>REMOVAL OF EXISTING WORK</u>			
	<u>Taking out and removing doors, windows, etc., from brickwork to be demolished including carting away material off site</u>			
1	Timber double door and steel frame approximate overall size 1600 x 2100mm high	No	1	
	<u>Hacking up/off and removing screed, paving and cart away rubble from site and preparing floor surfaces for new screed (elsewhere measured)</u>			
2	25mm cement screed	m ²	18	
	<u>BUILDING UP OPENINGS</u>			
	<u>M190 blocks in class II mortar in building up openings</u>			
3	M190 block walls	m ²	5	
	<u>PRECAST CONCRETE</u>			
	<u>(CPAP WORK GROUP NO. 112 UNLESS OTHERWISE STATED)</u>			
	<u>PLANTER BENCH, OTTOMAN, ETC</u>			
	Carried Forward			R
	Section No. 4 Bill No. 1 Court Yard (Provisional)			

Brought Forward			R
	<u>Igneous glass fibre reinforced rectangular planter bench, with drip tray to fit planter box. Planter to have natural vegetation.</u>		
4	2500 x 600 x 450mm Planter bench.	No	1
5	Round pebble attoman, with drip tray to fit planter box.	No	2
<u>METAL WORK (PROVISIONAL)</u>			
<u>(CPAP WORK GROUP NO. 136 UNLESS OTHERWISE STATED)</u>			
<u>GALVANISED MILD STEEL GRATING</u>			
6	325mm x 1000mm long Galvanised mild steel RS40 mentis grating laid on 25 x 25mm steel galvanized angle fixed to interior face of existing concrete drainage channel by approved concrete toggle screws.	No	8
<u>PLASTERING (PROVISIONAL)</u>			
<u>(CPAP WORK GROUP NO. 142 UNLESS OTHERWISE STATED)</u>			
<u>SCREEDS</u>			
<u>Cemcrete cretecote cementious screed, laid to fall, finish to be smooth.</u>			
7	Average 50mm thick on floors	m2	10
<u>Cemcrete cretecote cementious screed, laid to fall, finish to be textured.</u>			
8	Average 50mm thick on floors	m2	8
<u>EXTERNAL PLASTER</u>			
<u>Cement plaster wood floated on brickwork</u>			
9	On walls	m2	31
<u>PAINTWORK</u>			
Carried Forward			R
Section No. 4 Bill No. 1 Court Yard (Provisional)			

Brought Forward

R

(CPAP WORK GROUP NO. 152 UNLESS OTHERWISE STATED)

PAINTWORK ETC TO NEW WORK

ON EXTERNAL FLOATED PLASTERED SURFACES

Prepare and brush surface to remove all loose and friable material, contaminants and apply trade alkali resistant plaster primer, allow to dry. Apply two coats MARMOCOTE M180 paint.

10	On walls
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m2

31

Carried Forward to Summary of Section No. 4

R

Section No. 4

Bill No. 1

Court Yard (Provisional)

Item No		Quantity	Rate	Amount
	<u>SECTION NO. 4</u>			
	<u>BILL NO. 2</u>			
	<u>CONCRETE APRONS (ALL TRADES)</u>			
	<u>(PROVISIONAL)</u>			
	The Tenderer is referred to the relevant Clauses in the separate document Model Preambles for Trades (2008 Edition)			
	<u>ALTERATIONS (PROVISIONAL)</u>			
	<u>(CPAP WORK GROUP NO. 102 UNLESS OTHERWISE STATED)</u>			
	<u>REMOVAL OF EXISTING WORK</u>			
	<u>Breaking up and removing reinforced concrete, including cutting off and removing reinforcement</u>			
1	125mm Thick surface beds.	m2	45	
	<u>EARTHWORKS (PROVISIONAL)</u>			
	<u>(CPAP WORK GROUP NO. 104 UNLESS OTHERWISE STATED)</u>			
	<u>COMPACTION</u>			
	<u>Compaction of surfaces</u>			
2	Compaction of ground surfaces 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	m2	45	
	<u>SOIL POISONING</u>			
	<u>Soil insecticide in accordance to SANS 5859</u>			
3	Under floors, etc. including forming and poisoning shallow furrows against foundation walls, etc., filling in furrows and ramming	m2	45	
	Carried Forward			
	Section No. 4			
	Bill No. 2			
	Concrete Apron (Provisional)			
			R	

	Brought Forward			R
	<u>CONCRETE, FORMWORK AND REINFORCEMENT</u>			
	<u>(CPAP WORK GROUP NO. 110 UNLESS OTHERWISE STATED)</u>			
	<u>REINFORCED CONCRETE CAST ON/IN FORMWORK</u>			
	<u>25MPa/19mm Concrete</u>			
4	Surface beds, slabs, etc to falls and currents	m3	6	
	<u>CONCRETE SUNDRIES</u>			
	<u>Finishing top surfaces of concrete with a wood float finish</u>			
5	Concrete channel to falls	m2	45	
	<u>Test blocks</u>			
6	Prepare a set of six concrete cubes each cube size 150 x 150 x 150mm for strength cubes and deliver to an approved laboratory for testing and pay all charges in connection therewith	Sets	1	
	<u>FORMWORK</u>			
	<u>(CPAP WORK GROUP NO. 111 UNLESS OTHERWISE STATED)</u>			
	<u>ROUGH FORMWORK (DEGREE OF ACCURACY II)</u>			
	<u>Rough formwork to sides</u>			
7	Edges, risers, ends and reveals not exceeding 300mm high or wide	m	60	
	<u>MOVEMENT JOINTS, ETC.</u>			
	<u>Expansion joints with 10mm softboard between vertical concrete and brick surfaces</u>			
8	10mm Joints not exceeding 300mm high	m	23	
	Carried Forward			R
	Section No. 4			
	Bill No. 2			
	Concrete Apron (Provisional)			

Brought Forward				R
<u>REINFORCEMENT (PROVISIONAL)</u>				
<u>(CPAP WORK GROUP NO. 114)</u>				
<u>Fabric reinforcement</u>				
9	Type 193 fabric reinforcement in concrete surface beds, slabs, etc	m2	45	
<u>WATERPROOFING</u>				
<u>(CPAP WORK GROUP NO. 120 UNLESS OTHERWISE STATED)</u>				
<u>JOINT SEALANTS, ETC</u>				
<u>"ABE Flexothane" or equal and approved two-part grey polysulphide sealing compound including backing cord, bond breaker, primer, etc</u>				
10	In 10mm joints not exceeding 300mm high	m	23	
Carried Forward to Summary of Section No. 4				R
Section No. 4				
Bill No. 2				
Concrete Apron (Provisional)				

Item No		Quantity	Rate	Amount
	<u>SECTION NO. 4</u>			
	<u>BILL NO. 3</u>			
	<u>EXTERNAL ASPHALT STORE (ALL TRADES)</u>			
	<u>ALTERATIONS (PROVISIONAL)</u>			
	<u>(CPAP WORK GROUP NO. 102 UNLESS OTHERWISE STATED)</u>			
	<u>REMOVAL OF EXISTING WORK</u>			
	<u>Breaking up and removing Asphalt paving, including carting away rubble off-site</u>			
1	50mm Thick Asphalt paving	m2	89	
	<u>EARTHWORKS</u>			
	<u>(CPAP WORK GROUP NO. 104 UNLESS OTHERWISE STATED)</u>			
	<u>EXCAVATION, FILLING, ETC., OTHER THAN BULK</u>			
	<u>Excavation not exceeding 2m deep</u>			
2	Reduce levels under floors	m3	27	
	<u>Extra over all excavations for carting away</u>			
3	Surplus material from excavations and/or stock piles on site to a dumping site to be located by the Contractor	m3	27	
	<u>Imported G2 filling supplied by the contractor compacted to 98% Mod AASHTO density</u>			
4	Under floors, steps, pavings, etc.	m3	13	
	<u>Imported G7 filling supplied by the contractor compacted to 95% Mod AASHTO density</u>			
5	Under floors to make up levels, etc.	m3	13	
	Carried Forward			
	Section No. 4			
	Bill No. 3			
	External Asphalt store			
			R	

Brought Forward			R
<u>Keeping excavations free of water</u>			
6	Keeping excavations free of all water other than subterranean water	Item	
<u>Compaction of surfaces</u>			
7	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	m2	89
<u>SOIL POISONING</u>			
<u>Soil insecticide in accordance with SANS 1165</u>			
8	Under floors, etc., including forming and poisoning shallow furrows against foundation walls, etc., filling in furrows and ramming	m2	89
<u>CONCRETE, FORMWORK AND REINFORCEMENT (PROVISIONAL)</u>			
<u>(CPAP WORK GROUP NO. 110 UNLESS OTHERWISE STATED)</u>			
<u>REINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES</u>			
<u>30MPa/19mm concrete</u>			
9	Surface beds cast on waterproofing	m3	18
<u>TEST BLOCKS</u>			
<u>Test blocks</u>			
10	Making and testing 150 x 150 x 150mm concrete strength test cube (Provisional)	Sets	3.00
<u>CONCRETE SUNDRIES</u>			
<u>Finishing top surfaces of concrete with a wood float finish</u>			
11	Surface beds, slabs, etc.	m2	89
Carried Forward			R
Section No. 4 Bill No. 3 External Asphalt store			

Brought Forward			R
<u>MOVEMENT JOINTS, ETC.</u>			
<u>Saw cut joints joints with 10mm backing cord, bond breaker, primer, etc.</u>			
12	3mm x 10mm Deep saw cut joints in concrete	m	28
<u>10mm Isolation joints between vertical concrete and brick surfaces</u>			
13	Not exceeding 300mm high	m	18
<u>REINFORCEMENT (PROVISIONAL)</u>			
<u>(CPAP WORK GROUP NO. 114)</u>			
<u>Fabric reinforcement</u>			
14	Type 245 fabric reinforcement in concrete surface beds, etc.	m2	89
<u>WATERPROOFING (PROVISIONAL)</u>			
<u>(CPAP WORK GROUP NO. 120 UNLESS OTHERWISE STATED)</u>			
<u>DAMPPROOFING OF WALLS AND FLOORS</u>			
<u>One layer of 250 micron Gunplas USB Green DPM and approved adhesive tape</u>			
15	Under surface beds	m2	89
<u>JOINT SEALANTS, ETC.</u>			
<u>Two-part grey polysulphide sealing compound including backing cord, bond breaker, primer, etc.</u>			
16	3 x 10mm In saw cut joints in floors	m	28
<u>Approved silicone sealant including bond breaking, primer, etc.</u>			
17	In 10mm joints not exceeding 300mm high	m	18
<u>FENCING AND GATES (PROVISIONAL)</u>			
<u>FENCING</u>			
Carried Forward			R
Section No. 4 Bill No. 3 External Asphalt store			

Brought Forward			R
<u>Saligna, hardwood timber fence with slats of varying widths: Slat 1: 10 x 1800 x 20mm, Slat 2; 30 x 1800 x 20mm, Slat 3; 20 x 1800 x 30mm. at 10mm spacings between slats, fixed to pre-galvanised mild steel substructure at top, bottom and centre, on galvanised steel posts at 1200mm centres on concrete anchor base.</u>			
18	1800mm High Fence	m	6
19	2400mm High Fence	m	8
<u>Galvanised steel mesh wire fence, with 100 x 500mm mesh openings, to specialist detail. Finish to be power coated with interpon Class II power coating.</u>			
20	2400mm High Fence	m	12
<u>GATES, ETC.</u>			
<u>Saligna, hardwood timber gate with slats of varying widths at 10mm spacings between slats, fixed to pre-galvanised mild steel horizontal substructure at top, bottom and centre, and 1 vertical galvanised steel posts at centre.</u>			
21	Motorised sliding Gate overall size 4500 x 1800mm High.	No	1
Carried Forward to Summary of Section No. 4 Section No. 4 Bill No. 3 External Asphalt store			R

Brought Forward			R
<p>SANS 1200L : Medium-pressure pipelines SANS 1200LD : Sewers SANS 1200LE : Stormwater drainage</p> <p>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).</p> <p>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).</p> <p>Unless otherwise described bedding of rigid pipes shall be Class B bedding.</p> <p><u>General</u></p> <p>Descriptions of pipes laid in and including trenches and of inspection chambers, catch pits, etc shall be deemed to include excavation, bedding, backfilling, compaction and stockpiling of surplus material on site.</p> <p><u>As built drawings</u></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 Principal Agent for reproducing onto the originals for handing over to the employer</p> <p><u>SOIL DRAINAGE</u></p> <p><u>uPVC pipes Class 34 laid in Class B bedding</u></p>			
1	110mm Pipe in ground including excavation not exceeding 1m deep	m	15
2	110mm Pipe in ground including excavation exceeding 2m deep and not exceeding 3m deep	m	18
<u>Extra over uPVC Class 34 pipes for fittings</u>			
3	110mm Bend	No	2
Carried Forward			R
Section No. 4 Bill No. 4 Soil Drainage (Provisional)			

Brought Forward		R	
<u>Manholes, etc.</u>			
4	Excavate for and construct inspection chamber comprising of 750mm diameter precast concrete rings set on 250mm thick 25Mpa/19mm unreinforced concrete base. The base of the manhole to be dished down to open manhole channel. Manhole to be fitted with 150mm precast concrete cover slab with 550mm dia opening to take cover and frame. All joints between manhole rings to be sealed with approved epoxy sealant. Depth of manhole not exceeding 1.5m deep as per Engineers drawing 540-900 Rev. P1	No	3
<u>Sundries</u>			
5	Cut into side of existing inspection chamber for and connect new 110mm pipe including inserting new channel junction and making good benching, etc.	No	2
<u>Testing</u>			
6	Allow for testing the whole of the soil drainage installation to the satisfaction of the Principal Agent and Local Authorities. All defective work is to be taken out and replaced at the Contractor's expense and the whole re-tested until found satisfactory		Item
<u>As-built drawings</u>			
7	Provision of as-built drawings		Item
Carried Forward to Summary of Section No. 4		R	
Section No. 4			
Bill No. 4			
Soil Drainage (Provisional)			

UPGRADES TO ROADS TESTING MATERIAL LABORATORY - CSIR

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SPECIFICATION FOR THE ELECTRICAL INSTALLATION CSIR & RMT UPDGRADES & REFURBISHMENTS

SECTION FOUR

BILL OF QUANTITIES BUDGET

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BILL OF QUANTITIES

GENERAL NOTES

1. This Bill of Quantities forms part of, and must be read in conjunction with the complete specification and must be submitted, duly completed, on the closing date of tenders.
2. Tenderers must complete the Bill of Quantities and detail the unit rate and total amount of each item.

The "Total" shall constitute the tender price for adjudication.

Tenderers are advised to check their item extension and total additions as arithmetical errors occurring in the priced Bill of Quantities cannot be considered as having an effect on the tender amount.

3. No alteration, erasure or addition is to be made in the text of the Bill of Quantities. Should any alteration, erasure or addition be made it will not be recognised but the original wording of the Bill of Quantities will be adhered to.

The Engineer will check the completed Bill of Quantities and reserves the right to adjust any individual price and to rectify any discrepancy whilst the total tender price as quoted remains unaltered.

4. The quantities given in the Bill for cable, cable markers, earth wire laid with cable, overhead conductors, overhead earth wire and excavations cannot be regarded as exact and are subject to measurement on site after completion of the service and adjustments will be made according to the unit rates given in the Bill.

All other quantities will not be measured on site.

In the event of discrepancies between the drawings, specifications and Bill of Quantities the Engineer shall decide whether the work as executed shall be remeasured on site or whether remeasurement shall be effected from the working drawings only.

5. The Bill of Quantities is to be used for pricing and financial purposes only. The drawings take precedence over the particular (project) specification but should be used in conjunction with these specifications. The Project Specification takes precedence over quality specifications and the Bill of Quantities.

NOTE:

Checking of Cable and Overhead Conductor Lengths. Notwithstanding the fact that lengths of cables and overhead conductors, as given in the Bill of Quantities, have been measured from scaled drawings, the Contractor shall check such lengths on site before ordering the cable as he will not be paid for excess cable after the completion of the service. Any allowance for off-cuts shall be made in the unit rates. The final measurements shall be based on the nett route length of the cables and overhead lines concerned. installed in accordance with the specification. However, the onus is on the Contractor to prove compliance with the specification.

6. The unit prices quoted in the Bill of Quantities shall include for such small materials as are required for the complete installation in accordance with the specification.
7. Bill No. 1 is to be regarded as fixed and will not be adjusted for variations in the final contract value or contract period.

NOTE:

Tenderers may not include the costs of the items of Bill No. 1 in the unit rates for items in the remainder of the Bill of Quantities. Bill No. 1 is to be completed as indicated.

Failure to comply will result in the Engineer arbitrarily adjusting rates to exclude Preliminary and General Costs.

8. Unit prices for the same items in different Bills shall in all cases be the same, and in the case of differences, the Engineer reserves the right to change such unit prices when the completed list is checked, without adjusting the tender price.
9. The total for each page of each Bill is to be carried forward to the collection page at the end of each Bill.
10. P.C., Provisional and Contingency allowances, items and sums shall be expended as directed by the Engineer, and any balance remaining shall be deducted from the amount of the contract sum. Tenderers may not regard any unspent moneys as forming part of the final contract value.

Variation Instruction No. 1 will be issued after award of the contract to omit all P.C., Provisional and Contingency sums/allowances from the contract and authorized contract value.

11. Variation work, as well as the items described above, shall be measured as executed, and paid for according to unit prices in the Bill of Quantities. Where unit prices are not available, the work shall be priced, in conjunction with the Engineer, at current rates.
12. Unless otherwise specified in the Bill of Quantities, all items are to be priced on the basis of supply, delivery, offload, installation, connection, testing and commissioning.

All prices are to be EXCLUSIVE OF V.A.T but inclusive of import duties, surcharges, commissions to third parties, etc., where applicable. The foregoing items, as well as the Contractor's handling, financing and profit mark-up, is not to be separately detailed, and must be included in the cost rates.

13. Unless otherwise stated, all measurements are net, in accordance with the drawings, and no allowance has been made for wastage.
14. The Employer reserves the right to increase or decrease the extent of the contract works, without restraint, on total value of variations issued relevant to any particular item in the Bill of Quantities, by issuing written variation instructions to omit or add, as may be required, the supply and/or installation of any item of equipment or work, whether listed in the Bill of Quantities or not, and without affecting the unit cost rates indicated in the Bill of Quantities or Preliminary and General items.
15. In the event that Tenderers disagree with the measured quantities the tender should be qualified accordingly, listing the items and quantities in question.
16. The unit prices quoted in the Bill of Quantities must include for small installation materials such as nuts, bolts, nails, saddles, screws etc. as are required for the satisfactory complete installation in accordance with the specification.
17. Unless otherwise stated in the Bill, the unit cost rates shall be based on the following:

The rate for conduit boxes and for outlet boxes up to and including 100 x 100 mm shall be the same regardless of the number of entries.

The rate for conduit and outlet boxes shall include for fixing to the conduit with lock and bushnuts as may be required and for fixing to the building structure.

The rate for outlet boxes shall be without covers and draw boxes shall be complete with covers and screws.

The rate for industrial switch and plug units shall include for the relevant enclosure and fixing to conduit and building structure.

The rate for light switches, switch plugs, dimmer units, etc., shall include for screws, cover plates and fuses/breakers where applicable and for connection of wiring thereto.

The rate for conduit up to and including 25 mm diameter shall include all couplings, bends, boxes etc. as may be required.

The rate for luminaires and accessories shall include for connection of the wiring thereto.

18. All measurements are based on the most economical route lengths without any allowance for wastage, threading, jointing or slack.
19. In the case of wiring in conduit, an allowance of 300 mm per wire outlet box position has been made and in the case of cables and wiring entering switchboards, an allowance of 1000 and 2000 mm has been made for termination purposes in sub-distribution and main distribution boards respectively.
20. It should be noted that, notwithstanding anything to the contrary, any items completed or listed in the Bill of Quantities by the Tenderer will not be taken into account, will not be subject to re-measurement, and will not be regarded as a Bill of Quantities item.
21. Where equipment is specified by name, the tenderer must price on this basis. Alternatives may be offered by tenderers but the use of which is subject to written approval by the Engineer.

BILL No. 1 PRELIMINARY AND GENERAL	QTY	UNIT	RATE	TOTAL
<p>The costs for the following items shall not be included in the cost rates for work listed in the rest of the Bill of Quantities.</p> <p>a) Cost for compliance with Main Contractor's preliminary and general items not covered below.</p> <p>b) Contractual requirements as specified, i.e guarantees, insurance, sureties, company's overheads administration etc.</p> <p>c) Contract engineer, administration, supervision, programming and management.</p> <p>d) Establish site accommodation, storage etc.</p> <p>e) Maintain and operate site establishment.</p> <p>f) Remove site establishment on completion and remove all rubbish, foundations, concrete bases, dirt oil spillage, etc, and leave site in condition as found.</p> <p>g) Tools, equipment, plant hire and testing gear/meters as necessary.</p> <p>h) Guarantee and maintainance for the complete Electrical Installation including fittings, materials and workmanship for a period of TWELVE MONTHS after date of completion and handover</p> <p>i) Allow for testing and commissioning the whole of the electrical installation as laid down in the specification and for re-testing as may be required after the making good of all defective work to the satisfaction of the Engineer</p> <p>j) 3 sets of as built drawings showing all conduit routes, draw boxes and positions of outlets etc</p> <p>k) Provision for final testing and Certificate of Compliance to be issued on completion of the project in addition to the detailed testing specified.</p>		<p>Item</p> <p>Item</p> <p>Item</p> <p>Item</p> <p>Item</p> <p>Item</p> <p>Item</p> <p>Item</p> <p>Item</p>		
TOTAL FOR BILL No. 1 CARRIED TO SUMMARY PAGE			R	

Specification For The Electrical Installation

BILL No. 2 GENERAL ITEMS	QTY	UNIT	RATE	
a) Allow to liaise with I.T personnel to establish what existing services can be stripped out.		Item		
b) Allow to liaise with I.T. personnel to for access control and IT and T.		Item		
c) Trace and identify all circuits before de-energising distribution boards/circuits or equipment		Item		
d) Allow for engraved lables to all light switches , switch socket outlets and isolators indicating the DB name and circuit numbers		Item		
e) Earth cable trays and ladders with 10 mm ² Cu PVC cable jumpers across joints, splices, elbows, tees etc.		Item		
f) Liaison with various sub-contractors in regard to final building dimension, access routes, limiting sizes, constraint of equipment etc.		Item		
g) Liaise with builder during construction of penetrations in concrete and brickwork to ensure they are formed in the correct positions		Item		
h) Liaise with relevant sub-contractors in regard to cable entry requirements, phase rotation and control wiring connection facilities required and to be provided in each sub-contractors switchboard for use by the electrical contractor in connecting up		Item		
i) Liaise with the builder during construction of recesses in concrete slabs, beams and columns to ensure they are formed in the correct positions		Item		
<u>LABOUR RATES</u>				
j) Supervisor/Foreman	1	Hour		Rate Only
k) Electrician	1	Hour		Rate Only
l) Apprentice	1	Hour		Rate Only
m) Cable Jointer	1	Hour		Rate Only
n) Labourer	1	Hour		Rate Only
o) Watchman	1	Hour		Rate Only
TOTAL FOR BILL No. 2 CARRIED TO SUMMARY PAGE			R	

Specification For The Electrical Installation

BILL No. 3 L.V CABLING	QTY	UNIT	RATE	TOTAL
Supply the following 600/1000 Volt Cu PVC SWA PVC ECC cables;				
a) 185 mm ² 4 core	23	m		
b) 95 mm ² 4 core	12	m		
c) 35 mm ² 4 core	7	m		
d) 16 mm ² 4 core	9	m		
e) 16 mm ² 2 core	28	m		
f) 6 mm ² 2 core	35	m		
Extra on last to install in cable sleeve, ladder, tray, basket				
g) 185 mm ² 4 core	23	m		
h) 95 mm ² 4 core	12	m		
i) 35 mm ² 4 core	7	m		
j) 16 mm ² 4 core	9	m		
k) 16 mm ² 2 core	28	m		
l) 6 mm ² 2 core	35	m		
Termination inclusive of cable glands, lugs etc.				
m) 185 mm ² 4 core	4	No.		
n) 95 mm ² 4 core	4	No.		
o) 35 mm ² 4 core	6	No.		
p) 16 mm ² 4 core	4	No.		
q) 16 mm ² 2 core	2	No.		
r) 6 mm ² 2 core	8	No.		
Supply and install Scotchcast cable joint for the following PVC SWA PVC ECC cables;				
s) 185 mm ² 4 core	2	No.		
t) 95 mm ² 4 core	2	No.		
u) 50 mm ² 4 core	4	No.		
TOTAL FOR BILL NO. 3 CARRIED TO SUMMARY PAGE			R	

Specification For The Electrical Installation

BILL No. 4 DISTRIBUTION BOARDS	QTY	UNIT	RATE	TOTAL
Supply, delivery and install of the following distribution boards:				
a) Main LV Panel As per single line diagram - Drawing No. 21064_400	1	No.		
b) Extra on last to install	1	No.		
c) Distribution board - 114 As per single line diagram - Drawing No. 21064_401	1	No.		
d) Extra on last to install	1	No.		
e) Distribution board - 150 As per single line diagram - Drawing No. 21064_402	1	No.		
f) Extra on last to install	1	No.		
g) Distribution board - 115 As per single line diagram - Drawing No. 21064_403	1	No.		
h) Extra on last to install	1	No.		
i) Distribution board - 8 As per single line diagram - Drawing No. 21064_404	1	No.		
j) Extra on last to install	1	No.		
k) Distribution board - 113 As per single line diagram - Drawing No. 21064_405	1	No.		
l) Extra on last to install	1	No.		
<u>Make safe and removal of existing Distribution boards:</u>				
m) Floor standing main Distribution board	1	No.		
n) Wall mounted Distribution Board	5	No.		
TOTAL FOR BILL NO. 4 CARRIED TO SUMMARY PAGE			R	

w) BILL No. 5 WIRE-WAYS	QTY	UNIT	RATE	TOTAL
<p>CABLE LADDERS</p> <p>The complete supply, transport to site, and storage of hot galvanised heavy duty cable ladder and offsets as required below:</p> <p>a) 300 mm wide</p> <p>b) 300 mm 90 degree bend</p> <p>c) 300 mm Tee piece</p> <p>d) 300 mm 4-way piece</p> <p>e) 300 mm riser piece</p> <p>f) 600 mm wide</p> <p>g) 600 mm 90 degree bend</p> <p>h) 600 mm Tee piece</p> <p>i) 600 mm 4-way piece</p> <p>j) 600 mm riser piece</p> <p>k) 800 mm wide</p> <p>l) 800 mm 90 degree bend</p> <p>m) 800 mm Tee piece</p> <p>n) 800 mm 4-way piece</p> <p>o) 800 mm riser piece</p> <p>Extra on last to install horizontally (trapeeze) or vertically (P1000 unistrut). Fixings at 1000mm. Installation is to include for all joiner splices, raw bolts and fixing cable ladder to unistrut with bolt fasteners complete with spring washer, fixing bolts etc.</p> <p>p) 300 mm 90 degree bend</p> <p>q) 300 mm Tee piece</p> <p>r) 300 mm 4-way piece</p> <p>s) 300 mm riser piece</p>	<p>22</p> <p>2</p> <p>2</p> <p>1</p> <p>4</p> <p>8</p> <p>2</p> <p>2</p> <p>1</p> <p>2</p> <p>8</p> <p>2</p> <p>2</p> <p>1</p> <p>2</p> <p>2</p> <p>2</p> <p>2</p> <p>2</p>	<p>m</p> <p>No.</p> <p>No.</p> <p>No.</p> <p>No.</p> <p>m</p> <p>No.</p> <p>No.</p> <p>No.</p> <p>No.</p> <p>m</p> <p>No.</p> <p>No.</p> <p>No.</p> <p>No.</p> <p>No.</p> <p>No.</p> <p>No.</p>		
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BILL No. 5 WIRE-WAYS	QTY	UNIT	RATE	TOTAL
a) 600 mm wide	8	m		
b) 600 mm 90 degree bend	4	No.		
c) 600 mm Tee piece	4	No.		
d) 600 mm 4-way piece	2	No.		
e) 600 mm riser piece	6	No.		
f) 800 mm wide	8	m		
g) 800 mm 90 degree bend	4	No.		
h) 800 mm Tee piece	2	No.		
i) 800 mm 4-way piece	2	No.		
j) 800 mm riser piece	2	No.		
CABLE TRAYS				
The complete supply, transport to site, and storage of hot galvanised heavy duty cable tray and offsets as required below:				
k) 300 mm wide	9	m		
l) 300 mm 90 degree bend	2	No.		
m) 300 mm Tee piece	2	No.		
n) 300 mm 4-way piece	1	No.		
o) 300 mm riser piece	1	No.		
Extra on last to install horizontally (trapeeze) or vertically (P1000 unistrut). Fixings at 1000mm. Installation is to include for all joiner splices, raw bolts and fixing cable tray to unistrut with bolt fasteners complete with spring washer, fixing bolts etc.				
p) 300 mm wide	9	m		
q) 300 mm 90 degree bend	2	No.		
r) 300 mm Tee piece	2	No.		
s) 300 mm 4-way piece	1	No.		
t) 300 mm riser piece	1	No.		
CARRIED TO COLLECTION PAGE			R	

BILL No. 5 WIRE-WAYS	QTY	UNIT	RATE	TOTAL
<p>CABLE BASKETS</p> <p>The complete supply, transport to site, and storage of hot galvanised medium duty cable basket and offsets as required below:</p> <p>a) 150 mm wide</p> <p>b) 150 mm 90 degree bend</p> <p>c) 150 mm Tee piece</p> <p>d) 150 mm 4-way piece</p> <p>e) 150 mm riser piece</p> <p>f) 300 mm wide</p> <p>g) 300 mm 90 degree bend</p> <p>h) 300 mm Tee piece</p> <p>i) 300 mm 4-way piece</p> <p>j) 300 mm riser piece</p> <p>Extra on last to install horizontally (trapeeze) or vertically (P1000 unistrut). Fixings at 1000mm. Installation is to include for all joiner splices, raw bolts and fixing cable basket to unistrut with bolt fasteners complete with spring washer, fixing bolts etc.</p> <p>k) 150 mm wide</p> <p>l) 150 mm 90 degree bend</p> <p>m) 150 mm Tee piece</p> <p>n) 150 mm 4-way piece</p> <p>o) 150 mm riser piece</p> <p>p) 300 mm wide</p> <p>q) 300 mm 90 degree bend</p> <p>r) 300 mm Tee piece</p> <p>s) 300 mm 4-way piece</p> <p>t) 300 mm riser piece</p>	<p>160</p> <p>6</p> <p>2</p> <p>2</p> <p>6</p> <p>80</p> <p>6</p> <p>4</p> <p>4</p> <p>6</p> <p>160</p> <p>6</p> <p>2</p> <p>2</p> <p>6</p> <p>80</p> <p>6</p> <p>4</p> <p>4</p> <p>6</p>	<p>m</p> <p>No.</p> <p>No.</p> <p>No.</p> <p>No.</p> <p>m</p> <p>No.</p> <p>No.</p> <p>No.</p> <p>No.</p> <p>m</p> <p>No.</p> <p>No.</p> <p>No.</p> <p>No.</p> <p>No.</p> <p>No.</p> <p>No.</p>		
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Specification For The Electrical Installation

BILL No. 5 WIRE-WAYS	QTY	UNIT	RATE	TOTAL
<p>SLEEVES</p> <p>Supply the following cable sleeves:</p> <p>a) 160mm uPVC sleeves.</p> <p>b) 110mm uPVC sleeves.</p> <p>c) 75mm uPVC sleeves.</p> <p>d) 50mm uPVC sleeves.</p> <p>e) Slow radius bend for 160mm PVC sleeve</p> <p>f) Slow radius bend for 110mm PVC sleeve</p> <p>g) Slow radius bend for 75mm PVC sleeve</p> <p>h) Slow radius bend for 50mm PVC sleeve</p> <p>Extra on last to install the following in trech (trenching measured elsewhere)</p> <p>i) 160mm uPVC sleeves.</p> <p>j) 110mm uPVC sleeves.</p> <p>k) 75mm uPVC sleeves.</p> <p>l) 50mm uPVC sleeves.</p> <p>m) Slow radius bend for 160mm PVC sleeve</p> <p>n) Slow radius bend for 110mm PVC sleeve</p> <p>o) Slow radius bend for 75mm PVC sleeve</p> <p>p) Slow radius bend for 50mm PVC sleeve</p>	<p>11</p> <p>13</p> <p>8</p> <p>9</p> <p>8</p> <p>10</p> <p>6</p> <p>4</p> <p>11</p> <p>13</p> <p>8</p> <p>9</p> <p>8</p> <p>10</p> <p>6</p> <p>4</p>	<p>m</p> <p>m</p> <p>m</p> <p>m</p> <p>No.</p> <p>No.</p> <p>No.</p> <p>No.</p> <p>m</p> <p>m</p> <p>m</p> <p>m</p> <p>No.</p> <p>No.</p> <p>No.</p> <p>No.</p>		
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COLLECTION PAGE for BILL No. 5

TOTAL BROUGHT FORWARD FROM PAGE 4/9	R
TOTAL BROUGHT FORWARD FROM PAGE 4/10	R
TOTAL BROUGHT FORWARD FROM PAGE 4/11	R
TOTAL BROUGHT FORWARD FROM PAGE 4/12	R

TOTAL FOR BILL NO. 5 CARRIED TO SUMMARY PAGE	R
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BILL No. 6 LIGHTING AND SMALL POWER	QTY	UNIT	RATE	TOTAL
Supply and install the following:				
<u>LIGHTING</u>				
a) 25 mm PVC conduit surface mounted	1 045	m		
b) 25 mm PVC conduit cast-in to floor slab	953	m		
c) 25 mm PVC conduit in partition wall	336	m		
<u>PVC insulated 1 000 V grade hard drawn copper wire drawn into trunking/conduit and coloured as per phase</u>				
d) 2.5 mm ²	7 355	m		
e) 2,5 mm ² PVC insulated surfix cable	828	m		
f) Extra on last to terminate inclusive of glands etc.	84	No.		
g) Single lever 1 way 16 amp Crabtree classic or equal and approved light switch in 100 x 50/50 galvanised box inclusive of cover	55	No.		
h) 2 lever 1 way 16 amp Crabtree classic or equal approved light switch or other in 100 x 50/50 galvanised box inclusive of cover	4	No.		
i) Two lever 2 way 16 amp Crabtree classic or equal and approved light switch in 100 x 50/50 galvanised box inclusive of cover	6	No.		
j) Three lever 1 way 16 amp Crabtree classic or equal and approved light switch in 100 x 50/50 galvanised box inclusive of cover	2	No.		
k) Four lever 1 way 16 amp Crabtree classic or equal and approved light switch in 100 x 50/50 galvanised box inclusive of cover	1	No.		
l) 6 amp unswitched socket outlet (yellow)	220	No.		
m) 65mm PVC round box for 25mm conduit	208	No.		
n) 65mm 3 way PVC round draw box	56	No.		
o) 20A Photocell inclusive of bulkhead enclosure	2	No.		
p) Occupancy sensor - Province Lighting (PS-PIR3) or equal and approved flush mounted, white with 360 degree detection angle	6	No.		
CARRIED TO COLLECTION PAGE			R	

BILL No. 6 LIGHTING AND SMALL POWER	QTY	UNIT	RATE	TOTAL
a) Supply and install P9000 trunking complete with cover plate to soffit	380	m		
b) Supply and install P9000 crossover	6	No.		
c) Supply and install P9000 elbow	10	No.		
d) Supply and install P9000 Tee-piece	8	No.		
e) Supply and install P9000 4-way piece	8	No.		
f) Supply and install P9000 end caps	20	No.		
<u>SMALL POWER</u>				
g) 20 mm PVC conduit surface mounted	1 543	m		
h) 20 mm PVC conduit cast-in slab	216	m		
i) 20 mm PVC conduit in partition wall	93	m		
j) 25 mm PVC conduit surface mounted	792	m		
k) 25 mm PVC conduit cast-in to floor slab	542	m		
l) 25 mm PVC conduit in partition wall	143	m		
m) 32 mm PVC conduit surface mounted	332	m		
n) 32 mm PVC conduit cast-in to floor slab	128	m		
o) 32 mm PVC conduit in partition wall	105	m		
<u>PVC insulated 1 000 V grade hard drawn copper wire drawn into trunking/conduit and coloured as per phase</u>				
p) 2.5 mm ²	1 989	m		
q) 4.0 mm ²	3 398	m		
r) 6.0 mm ²	714	m		
s) 2,5 mm ² PVC insulated surfix cable	422	m		
t) Extra on last to terminate inclusive of glands etc.	98	No.		
u) Supply and install single switch socket outlet, with euro combo outlet in 100x100/50 PVC conduit box Crabtree classic or equal and approved	48	No.		
CARRIED TO COLLECTION PAGE			R	

BILL No. 6 LIGHTING AND SMALL POWER	QTY	UNIT	RATE	TOTAL
a) Supply and Install 20A Three pin UPS switch socket outlet installed in power skirting	4	No.		
b) Supply and Install 20A Three pin dedicated switch socket outlet installed in power skirting	36	No.		
c) Supply and Install 20A Three pin normal switch socket outlet in installed in power skirting	36	No.		
d) Supply and Install 20A Three pin euro switch socket outlet in installed in power skirting	36	No.		
e) Blank cover plate	12	No.		
f) 65mm PVC round box for 25mm conduit	43	No.		
g) 100x50/50 PVC conduit boxes for AC controller	36	No.		
h) Supply and install P9000 trunking complete with cover plate to soffit	380	m		
i) Supply and install P9000 crossover	2	No.		
j) Supply and install P9000 elbow	2	No.		
k) Supply and install P9000 Tee-piece	2	No.		
l) Supply and install P9000 end caps	4	No.		
m) Supply and install P9000 4-way piece	1	No.		
n) Supply and install 10A single phase isolator for extraction	8	No.		
o) Supply and install 20A single phase isolators for aircon supply	6	No.		
p) Supply and install 20A single phase isolators for hydroboil	6	No.		
q) Supply and install 20A single phase isolators for hand drier power supplies	4	No.		
r) Supply and install 30A single phase isolators	8	No.		
s) Supply and install 30A single phase weather proof isolator for aircon supply	10	No.		
t) Supply and install 40A single phase weather proof isolator for aircon supply	12	No.		
CARRIED TO COLLECTION PAGE			R	

Specification For The Electrical Installation

BILL No. 6 LIGHTING AND SMALL POWER - GROUND FLOOR	QTY	UNIT	RATE	TOTAL
a) Supply and install 30A three phase isolators for aircon supply	12	No.		
b) Supply and install 40A three phase isolators for aircon supply	8	No.		
c) Supply and install 40A three phase weather proof isolator for aircon supply	10	No.		
d) Supply and install 16A weather proof switch socket outlet	3	No.		
e) Supply and install Cabstrut or equal and approved Corporate connection system complete with: 2 x Normal S.S.O (SANS 164-1) (white / white toggle) 2 x Normal Euro S.S.O (SANS 164-2) (white / white toggle) 2 x Essential S.S.O (SANS 164-1) (white / red toggle) 4 x RJ45 outlets	1	No.		
TELEPHONE AND DATA				
f) Supply and Install Krone RJ 11 telephone outlets installed in power skirting	12	No.		
g) Supply and Install Krone RJ 45 data outlets installed in power skirting inclusive of cradle and cover plate	34	No.		
CARRIED TO COLLECTION PAGE			R	

COLLECTION PAGE for BILL No. 6

TOTAL BROUGHT FORWARD FROM PAGE 4/14	R
TOTAL BROUGHT FORWARD FROM PAGE 4/15	R
TOTAL BROUGHT FORWARD FROM PAGE 4/16	R
TOTAL BROUGHT FORWARD FROM PAGE 4/17	R

TOTAL FOR BILL NO. 6 CARRIED TO SUMMARY PAGE	R
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BILL No. 7 LUMINAIRES	QTY	UNIT	RATE	TOTAL
<u>Supply the following luminaires, inclusive of lamps as per drawing No.</u>				
a) Type A1	6	No.		
b) Type A2	68	No.		
c) Type A3	8	No.		
d) Type B1	4	No.		
e) Type B2	12	No.		
f) Type C	16	No.		
g) Type D	2	No.		
h) Type E1	24	No.		
i) Type E2	24	No.		
<u>Install and connect the following luminaires, inclusive of lamps as per drawing No. 21064_600</u>				
j) Type A1	6	No.		
k) Type A2	68	No.		
l) Type A3	8	No.		
m) Type B1	4	No.		
n) Type B2	12	No.		
o) Type C	16	No.		
p) Type D	2	No.		
q) Type E1	24	No.		
r) Type E2	24	No.		
TOTAL FOR BILL NO. 7 CARRIED TO SUMMARY PAGE			R	

Specification For The Electrical Installation

Revision A
August 2023

BILL No. 9 UPS SYSTEM	QTY	UNIT	RATE	TOTAL
a) Supply, deliver, install, test and commission UPS System as per drawing no. 21064_602	1	No.		
b) Allowance to supply and install remote UPS's alarm panel		Item		
c) Contractor's attendance and mark up	15	%		
d) Supply 100A rotary bypass switch	1	No.		
e) 4 No. UPS services to be conducted at 6, 12, 18 and 24 months for UPS systems as per		Item		
TOTAL FOR BILL No. 9 CARRIED TO SUMMARY			R	

BILL No. 10 EARTHING AND LIGHTNING PROTECTION	QTY	UNIT	RATE	TOTAL
<p>a) Undertake soil resistivity test, witnessed by the Engineer inclusive of submitting a typed test report/certificate</p> <p><u>EARTHING AND BONDING</u></p> <p>b) Allowance for general electrical earthing and bonding in accordance with SABS 0142</p> <p>c) Test and commissioning inclusive of test report</p> <p><u>SOIL RESISTIVITY SURVEY</u></p> <p>d) Allow to survey the site to establish any prevailing conditions and carry out soil resistivity testing in the locations adjacent to each Sub Station. A detailed report indicating test results and requirements to achieve the necessary earth resistance for each area is to be submitted to the Electrical Engineer.</p> <p>e) Resistivity Test survey in earth</p> <p>f) Test report indicating electrode requirements etc. to achieve 1 ohm or less</p> <p><u>EARTH MATS</u></p> <p>g) Supply and install 1,600mm copper clad Earth Electrodes driven into ground at 1,500mm by 1,500 mm spacing including brass termination clamps and 50mm² bare copper conductor interlinking to 2 No. earth grid adjacent earth spike to form an earth grid</p> <p><u>EARTH ELECTRODES</u></p> <p>h) Supply and install additional 1,600 mm copper clad earth electrode driven into the ground including the ferrel</p> <p><u>TRENCHING</u></p> <p>Excavate by hand for cable trench or earth mats including backfill with sifted sand, cable trench 350 mm wide x 600 mm deep x 1 500 mm long</p> <p>i) In earth</p> <p>j) In Shale</p> <p>k) In hard rock</p>	<p>1</p> <p>2</p> <p>8</p> <p>12</p> <p>8</p> <p>6</p> <p>3</p>	<p>Item</p> <p>Item</p> <p>Item</p> <p>No.</p> <p>No.</p> <p>No.</p> <p>No.</p> <p>No.</p> <p>No.</p> <p>No.</p> <p>No.</p>		
TOTAL FOR BILL NO. 10 CARRIED TO SUMMARY PAGE			R	

Specification For The Electrical Installation

BILL No. 11 SMOKE DETECTION AND ALARM (PROVISIONAL)	QTY	UNIT	RATE	TOTAL
<u>SUPPLY, INSTALL, TEST AND COMMISSION SMOKE DETECTION AND FIRE ALARM SYSTEM COMPLETE WITH ALL HARDWARE, SOFTWARE, TERMINATIONS, FIXINGS ETC.</u> <u>ZITON ZP2 OR EQUAL APPROVED SMOKE DETECTION SYSTEM</u> <u>CENTRAL EQUIPMENT</u>				
a) Addressable analogue fire panel complete with batteries (4 - loop)	1	No		
b) Additional Proprietary Comms Network cards for above panels	2	No		
c) Additional Internet Protocol (RJ45) communication cards for above panels	1	No		
d) Programming of fire panels as specified including graphics, to include all devices, zoning, loops and fire condition sequencing, based on 700 devices	1	Item		
e) Allowance to upload Autocad (dwg) drawings as backgrounds for the graphic displays. This includes "cleaning up" of the drawings	15	No		
<u>FIELD EQUIPMENT</u>				
f) Addressable optical detector complete with base on ceiling (white)	56	No.		
g) Addressable optical detector complete with base in ceiling void (white)	3	No.		
h) Addressable heat detector complete with base on concrete soffit below 4 m (white)	2	No.		
i) Addressable rate of rise heat detector complete with base mounted under raised floor	1	No.		
j) Addressable combination smoke and thermal detector complete with base on ceiling (white)	1	No.		
k) Addressable pre-set heat detector complete with base on ceiling	2	No.		
l) Addressable line isolator	5	No.		
m) Addressable line I/O relay complete in junction box	10	No.		
CARRIED TO COLLECTION PAGE			R	

Specification For The Electrical Installation

BILL No. 11 SMOKE DETECTION AND ALARM (PROVISIONAL)	QTY	UNIT	RATE	TOTAL
a) Allowance to connect line relays to override access control mag locks on escape doors, air handling units, elevators, smoke extraction fans etc.	8	No.		
b) Addressable surface mounted call point with resettable element (red)	10	No.		
c) Addressable sounder base complete with cap ceiling (white)	8	No.		
d) Addressable sounder indicator complete with base on ceiling (white/red)	2	No.		
e) Addressable sounder with strobe indicator complete with base on ceiling (white/red)	4	No.		
f) Door hold-open surface mount magnet complete with stainless steel wall mount universable adjustable brackets and emergency release button and door anchor plate (400 N)	2	No.		
g) 24 V AC/DC 250 mA power supply unit connected to main and door magnet located in ceiling void	4	No.		
<u>FIRE INTERCOM SYSTEM (SUPPLY AND INSTALL)</u>				
h) Master Station installed at reception	1	No.		
<u>CABLING</u>				
i) Loop cable 1.5 mm ² 2 core fire resistant (red) cable (PH 120)	2750	m		
j) Terminate the above cable	90	No.		
k) Loop cable 2.5 mm ² 2 core fire resistant cable (PH 120)	212	m		
l) Terminate the above cable	38	No.,		
m) System training with staff		Item		
CARRIED TO COLLECTION PAGE			R	

[illegible]

BILL No. 12 ACCESS CONTROL (PROVISIONAL)	QTY	UNIT	RATE	TOTAL
<u>Supply, install, test and commission Impro Access Portal Basic (or equal and approved) access control and intercom system complete with connectors, adapters, fixings, power sockets, cables, consumables and all material to complete required</u> <u>Control room equipment complete with all power supplies and mounting equipment.</u>				
a) Programming and enrolment station, PC (I7 processor, 8 Gb RAM 500 Gb SSD storage, Windows 10, Office and Acrobat) with 21" monitor, mouse, keyboard etc.	1	No		
b) Biometric fingerprint enrolment reader	1	No		
c) Enrolment camera	1	No		
d) Setup and program access control software for 100 users and 10 No. doors	Item			
<u>Door control complete with all mounting equipment located in IT cupboard</u>				
e) Wall mounted door controller in IP 54 housing complete with 2 No. Wiegand reader modules and power supply	5	No		
f) Biometric fingerprint and Mifare reader - Morpho Access Sigma lite	1	No		
g) 600kg surface mounted monitored maglock with LED	7	No		
h) ZL bracket for maglock	8	No		
i) No touch exit sensor	5	No		
j) Green Breakglass unit with internal buzzer (resettable)	8	No		
<u>Supply and installation of cable and wiring on cable basket in ceiling void or drawn into conduit as specified, including all lables and terminations at both ends.</u>				
k) Category 6 UTP	650	m		
l) Termination of UTP Cat 6	16	No		
m) 8 twisted pair PVC insulated mylar cable. 0.22mm ² stranded tinned copper cores. Aluminium polyester shield and drain.	720	m		
n) Termination of above cable	16	No		
o) 2 core PVC insulated cable. 1mm ² stranded copper cores.	332	m		
p) Termination of above cable	16	No		
TOTAL FOR BILL NO. 12 CARRIED TO SUMMARY PAGE			R	

SUMMARY OF BILLS OF QUANTITIES		
BILL NO 1	- PRELIMINARY AND GENERAL	R
BILL NO 2	- GENERAL ITEMS	R
BILL NO 3	- L.V CABLING	R
BILL NO 4	- DISTRIBUTION BOARDS	R
BILL NO 5	- WIRE-WAYS	R
BILL NO 6	- LIGHTING AND SMALL POWER	R
BILL NO 7	- LUMINAIRES	R
BILL NO 8	- POWER SKIRTING	R
BILL NO 9	- UPS SYSTEM	R
BILL NO 10	- EARTHING AND LIGHTNING PROTECTION	R
BILL NO 11	- SMOKE DETECTION AND ALARM	R
BILL NO 12	- ACCESS CONTROL	R
SUB TOTAL		R
ADD VAT (15%)		R
TOTAL TENDER PRICE - CARRIED TO FORM OF TENDER		R

[illegible]

BILL NO 1: PRELIMINARIES & GENERAL						
DESCRIPTION		UNIT	QTY	RATE		AMOUNT
1.0	Safety file & safety management	Lot	1	R	-	R -
2.0	Rigging	Lot	1	R	-	R -
3.0	On site storage	Lot	1	R	-	R -
4.0	As built drawings	Lot	1	R	-	R -
5.0	O&M manuals	Lot	1	R	-	R -
6.0	Commissioning	Lot	1	R	-	R -
7.0	12 Month maintenance & warrantee (Including all consumables & parts)	Lot	1	R	-	R -
8.0	Contratual management	Lot	1	R	-	R -
9.0	Traveling and transport	Lot	1	R	-	R -
10.0	Construction guarantee (If required)	Lot	1	R	-	R -
BILL 1 TOTAL TO SUMMARY						R -

BILL NO. 2		VENTILATION SYSTEMS			
DESCRIPTION	UNIT	QTY	RATE		AMOUNT
1.0 LOWER GROUND FLOOR EXTRACTION					
1.1 Ablutions extraction system (EAF.01)					
1.1.1 Extract air disc valves (EDV.01) 200dia	QTY	6	R	-	R
1.1.2 Flex ducting 200dia	QTY	15	R	-	R
1.1.3 Uninsulated ducting c/w transformation pieces, plenums, hangers, and all other items required for a full ducting installation as indicated on the drawings.	LOT	1	R	-	R
1.1.4 Axial fan c/w 2x1.5D attenuators, steel plinth, anti vibration mounts, etc. (EAF.01) 450dia	QTY	1	R	-	R
1.1.5 Weather louvre, powder coated (WL01) 450x450	QTY	1	R	-	R
1.1.6 Electrical connection	QTY	1	R	-	R
1.2 Grinder extraction system (EAF.02)					
1.2.1 Extract air grilles (EAG.01) 200x300	QTY	2	R	-	R
1.2.3 Uninsulated ducting c/w transformation pieces, plenums, hangers, and all other items required for a full ducting installation as indicated on the drawings.	LOT	1	R	-	R
1.2.4 Axial fan c/w 2x1.5D attenuators, steel plinth, anti vibration mounts, etc. (EAF.02) 355dia	QTY	1	R	-	R
1.2.5 Weather louvre, powder coated (WL01) 450x450	QTY	1	R	-	R
1.2.6 Electrical connection	QTY	1	R	-	R
1.3 Welding extraction system 1					
1.3.1 Stainless steel extraction HOOD (EH.01) 2800x1400x800	QTY	1	R	-	R
1.3.2 Uninsulated ducting c/w transformation pieces, plenums, hangers, and all other items required for a full ducting installation as indicated on the drawings.	LOT	1	R	-	R
1.3.3 Ducting access hatches - 400x300	QTY	25	R	-	R
1.3.4 Axial fan c/w 2x1.5D attenuators, steel plinth, anti vibration mounts, etc. (EAF.03) 710dia	QTY	1	R	-	R
1.3.5 Electrical connection	QTY	1	R	-	R
1.4 Compaction extraction system (EAF.04)					
1.4.1 Extract air grilles (EAG.01) 200x300	QTY	2	R	-	R
1.4.2 Uninsulated ducting c/w transformation pieces, plenums, hangers, and all other items required for a full ducting installation as indicated on the drawings.	LOT	1	R	-	R
1.4.3 Axial fan c/w 2x1.5D attenuators, steel plinth, anti vibration mounts, etc. (EAF.04) 450dia	QTY	1	R	-	R
1.4.4 Weather louvre, powder coated (WL01) 450x450	QTY	1	R	-	R
1.4.5 Electrical connection	QTY	1	R	-	R
1.5 Smart Mobility extraction system (EAF.05)					
1.5.1 Uninsulated ducting c/w transformation pieces, plenums, hangers, and all other items required for a full ducting installation as indicated on the drawings. From fan in plant room to outside	LOT	1	R	-	R
1.5.2 Axial fan c/w 2x1.5D attenuators, steel plinth, anti vibration mounts, etc. (EAF.05) 560dia	QTY	1	R	-	R
1.5.3 Weather louvre, powder coated (WL01) 600x600	QTY	1	R	-	R
1.5.4 Electrical connection	QTY	1	R	-	R
1.6 Mixing & Casting extraction system (EAF.06)					
1.6.1 Extract air grilles (EAG.01) 200x300	QTY	4	R	-	R
1.6.2 Uninsulated ducting c/w transformation pieces, plenums, hangers, and all other items required for a full ducting installation as indicated on the drawings.	LOT	1	R	-	R
1.6.3 Axial fan c/w 2x1.5D attenuators, steel plinth, anti vibration mounts, etc. (EAF.06) 450dia	QTY	1	R	-	R
1.6.4 Weather louvre, powder coated (WL01) 450x450	QTY	1	R	-	R
1.6.5 Electrical connection	QTY	1	R	-	R

	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
1.7	Welding extraction system 1				
1.7.1	Stainless steel extraction HOOD (EH.02) 2300x1650x800	QTY	1	R	-
1.7.2	Uninsulated ducting c/w transformation pieces, plenums, hangers, and all other items required for a full ducting installation as indicated on the drawings.	LOT	1	R	-
1.7.3	Ducting access hatches - 400x300	QTY	25	R	-
1.7.4	Axial fan c/w 2x1.5D attenuators, steel plinth, anti vibration mounts, etc. (EAF.07) 710dia	QTY	1	R	-
1.7.5	Electrical connection	QTY	1	R	-
1.8	Spray extraction system (EAF.08)				
1.8.1	Stainless steel extraction HOOD (EH.03) size TBC	QTY	1	R	-
1.8.2	Uninsulated ducting c/w transformation pieces, plenums, hangers, and all other items required for a full ducting installation as indicated on the drawings.	LOT	1	R	-
1.8.3	Axial fan c/w 2x1.5D attenuators, steel plinth, anti vibration mounts, etc. (EAF.08) 315dia	QTY	1	R	-
1.8.4	Weather louvre, powder coated (WL.01) 300x300	QTY	1	R	-
1.8.5	Electrical connection	QTY	1	R	-
1.9	Toilet extraction system (EAF.09)				
1.9.1	Wall mounted fan (100dia) c/w 24/7 timer, etc. (EAF.09)	QTY	1	R	-
1.9.2	Electrical connection	QTY	1	R	-
2.0	LOWER GROUND FLOOR FRESH AIR				
2.1	General outside air supply				
2.1.1	Supply air disc valves (DV.01) 150dia	QTY	3	R	-
2.1.2	Supply air disc valves (DV.02) 200dia	QTY	1	R	-
2.1.3	Supply air grilles (SAG.02) 150x200	QTY	2	R	-
2.1.4	Supply air grilles (SAG.03) 150x300	QTY	2	R	-
2.1.5	Uninsulated ducting c/w transformation pieces, plenums, hangers, and all other items required for a full ducting installation as indicated on the drawings.	LOT	1	R	-
2.1.6	Flex ducting. 150dia	QTY	8	R	-
2.1.7	Flex ducting. 200dia	QTY	3	R	-
2.1.8	Axial fan c/w 2x1.5D attenuators, steel plinth, anti vibration mounts, 24/7 timer, etc. (FAF.01) 315dia	QTY	1	R	-
2.1.9	Filter box c/w G4 filter media. 600x300 filter box	QTY	1	R	-
2.1.10	Weather louvre, powder coated (WL01) 600x300	QTY	1	R	-
2.1.11	Electrical connection	QTY	1	R	-
2.1.12	Fire relay	QTY	1	R	-
2.2	Spray make-up air supply				
2.2.1	Supply air grilles (SAG.01) 100x150	QTY	2	R	-
2.2.2	Uninsulated ducting c/w transformation pieces, plenums, hangers, and all other items required for a full ducting installation as indicated on the drawings.	LOT	1	R	-
2.2.3	Inline duct fan (125dia) c/w hangers, 24/7 timer, etc. (FAF.02)	QTY	1	R	-
2.2.4	Filter box c/w G4 filter media. 300x300 filter box	QTY	1	R	-
2.2.5	Weather louvre, powder coated (WL01) 300x300	QTY	1	R	-
2.2.6	Electrical connection	QTY	1	R	-
2.2.7	Fire relay	QTY	1	R	-
2.3	Store ventilation				
2.3.1	Supply air grilles (SAG.01) 100x150	QTY	2	R	-
2.3.2	Uninsulated ducting c/w transformation pieces, plenums, hangers, and all other items required for a full ducting installation as indicated on the drawings.	LOT	1	R	-
2.3.3	Inline duct fan (125dia) c/w hangers, 24/7 timer, etc. (FAF.03)	QTY	1	R	-
2.3.4	Filter box c/w G4 filter media. 300x300 filter box	QTY	1	R	-
2.3.5	Weather louvre, powder coated (WL01) 300x300	QTY	1	R	-
2.3.6	Electrical connection	QTY	1	R	-
2.3.7	Fire relay	QTY	1	R	-

	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
3.0	MEZZANINE FRESH AIR					
3.1	Outside air supply					
3.1.2	Supply air disc valves (DV.02) 200dia	QTY	1	R	-	R -
3.1.5	Uninsulated ducting c/w transformation pieces, plenums, hangers, and all other items required for a full ducting installation as indicated on the drawings.	R			-	R -
3.1.7	Flex ducting. 200dia	LOT	1			
3.1.8	Axial fan c/w 2x1.5D attenuators, steel plinth, anti vibration mounts, 24/7 timer, etc. (FAF.04) 355dia	QTY	3	R	-	R -
3.1.9	Filter box c/w G4 filter media. 600x300 filter box	R			-	R -
3.1.10	Weather louvre, powder coated (WL01) 600x300	QTY	1	R	-	R -
3.1.11	Electrical connection	QTY	1	R	-	R -
3.1.12	Fire relay	QTY	1	R	-	R -
4.0	Miscellaneous	QTY	1	R	-	R -
BILL 2 TOTAL TO SUMMARY					R	-

BILL NO 3:		AIR HANDLING UNITS			
DESCRIPTION		UNIT	QTY	RATE	AMOUNT
1.0	HUMIDITY ROOM				
1.1	AHU.01				
1.1.1	AHU Details to be confirmed once feedback received from suppliers	QTY	1	R	- R
1.2	Ducting				
1.2.1	Ducting to be confirmed once feedback received from suppliers	LOT	1	R	- R
2	Miscellaneous	QTY	1	R	- R
BILL 3 TOTAL TO SUMMARY					R

BILL NO 4: SPLIT TYPE AIR CONDITIONING UNITS					
DESCRIPTION		UNIT	QTY	RATE	AMOUNT
1.0	OFFICES				
1.1	IU.01/OU.01				
1.1.1	Midwall inverter unit (indoor & outdoor unit) c/w wired controller - 2,5 kW	QTY	1	R	- R
1.1.2	Condensate drain pump (3 Year warranty required)	QTY	1	R	- R
1.1.3	Refrigerant Piping C/W Insulation	LOT	1	R	- R
1.1.4	Condensate Drain Piping	LOT	1	R	- R
1.1.5	Outdoor Unit Stand/hanger	QTY	1	R	- R
1.1.6	Electrical connection between indoor and outdoor units	QTY	1	R	- R
1.1.7	Communication cabling between indoor and outdoor units	LOT	1	R	- R
1.1.8	Electrical connection from isolator to the outdoor unit	QTY	1	R	- R
1.1.9	Trunking	QTY	25	R	-
1.2	IU.02/OU.02				
1.2.1	Midwall inverter unit (indoor & outdoor unit) c/w wired controller - 2,5 kW	QTY	1	R	- R
1.2.2	Condensate drain pump (3 Year warranty required)	QTY	1	R	- R
1.2.3	Refrigerant Piping C/W Insulation	LOT	1	R	- R
1.2.4	Condensate Drain Piping	LOT	1	R	- R
1.2.5	Outdoor Unit Stand/hanger	QTY	1	R	- R
1.2.6	Electrical connection between indoor and outdoor units	QTY	1	R	- R
1.2.7	Communication cabling between indoor and outdoor units	LOT	1	R	- R
1.2.8	Electrical connection from isolator to the outdoor unit	QTY	1	R	- R
1.2.9	Trunking	QTY	25	R	-
1.3	IU.03/OU.03				
1.3.1	Midwall inverter unit (indoor & outdoor unit) c/w wired controller - 2,5 kW	QTY	1	R	- R
1.3.2	Condensate drain pump (3 Year warranty required)	QTY	1	R	- R
1.3.3	Refrigerant Piping C/W Insulation	LOT	1	R	- R
1.3.4	Condensate Drain Piping	LOT	1	R	- R
1.3.5	Outdoor Unit Stand/hanger	QTY	1	R	- R
1.3.6	Electrical connection between indoor and outdoor units	QTY	1	R	- R
1.3.7	Communication cabling between indoor and outdoor units	LOT	1	R	- R
1.3.8	Electrical connection from isolator to the outdoor unit	QTY	1	R	- R
1.3.9	Trunking	QTY	25	R	-
2.0	Miscellaneous	QTY	1	R	- R
BILL 4 TOTAL TO SUMMARY					R

BILL NO 5:		MISCELLANEOUS SYSTEMS				
	DESCRIPTION	UNIT	QTY	RATE		AMOUNT
1.0	All items not included in the BOQ but is required for a fully operational system. All items must be listed below separately	QTY	1	R	-	R -
BILL 5 TOTAL TO SUMMARY						R -

SUMMARY OF BILLS			
BILL NO	DESCRIPTION	AMOUNT	
1	PRELIMINARIES AND GENERAL	R	-
2	ROOFTOP PACKAGED UNITS	R	-
3	SPLIT TYPE AIR CONDITIONERS	R	-
4	VENTILATION SYSTEMS	R	-
5	MISCELLANEOUS SYSTEMS	R	-
6	BUDGETARY ALLOWANCE	R	-
7	TOTAL EXCLUDING VAT	R	-
8	PLUS 15% VAT	R	-
9	TOTAL TENDER PRICE	R	-

TENDERERS TO TAKE NOTE THAT THIS IS A FIXED PRICE CONTRACT

TENDERER SIGNATURE:

NAME:

TEL/FAX NO'S:

DATE:

UPGRADES TO ROADS TESTING MATERIAL LABORATORY - CSIR

[illegible]

UPGRADES TO ROADS TESTING MATERIAL LABORATORY - CSIR

[illegible]