

C 2.2 BILLS OF QUANTITIES

BILLS OF QUANTITIES

FOR

**Construction of 300 Seater Exam Hall at the Tsolo Agricultural and Rural
Development Institute**

FOR

Department of Rural Development & Agrarian Reform

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SECTION 1

PRELIMINARIES

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PRELIMINARIES

MEANING OF TERMS "TENDER / TENDERER"

Any reference to the words "Tender" or "Tenderer" herein and/or in any other documentation shall be construed to have the same meaning as the words "Bid" or "Bidder"

PRELIMINARIES

The JBCC Preliminaries Code 2103, May 2005 edition for use with the JBCC Principal Building Agreement Edition 4.1 Code 2101, March 2005 is taken to be incorporated herein. The tenderer is deemed to have referred to these documents for the full intent and meaning of each clause. These clauses are referred to by number and heading only. Where standard clauses or options are not applicable to the contract such modifications or corrections as are necessary are given under each relevant clause. Where an item is not relevant to this specific contract such item is marked "N/A" signifying "Not Applicable".

PRICING OF PRELIMINARIES

Should Option A, as set out in clause B10.3.1 hereinafter be used for the adjustment of preliminaries then each item priced is to be allocated to one or more of the three categories Fixed, Value Related or Time Related and the respective amounts entered in the spaces provided under each item

Items not priced in these Preliminaries shall be deemed to be included elsewhere in these Bills of Quantities.

SECTION A: JBCC PRINCIPAL BUILDING AGREEMENT

DEFINITIONS

1 **A1 DEFINITIONS AND INTERPRETATION**

Clause 1.0

Clause 1.1 Definition of "**Commencement Date**" is added:

"**COMMENCEMENT DATE**" means the date that the **agreement**, made in terms of the Form of Offer and Acceptance, comes into effect

Clause 1.1 Definition of "**Construction Guarantee**" is amended by replacing it with the following:

"**CONSTRUCTION GUARANTEE**" means a guarantee at call obtained by the **contractor** from an institution approved by the **employer** in terms of the **employer's** construction guarantee form as selected in the **schedule**

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<p>Clause 1.1 Definition of “Construction Period” is amended by replacing it with the following:</p> <p>“CONSTRUCTION PERIOD” means the period commencing on the commencement date and ending on the date of practical completion</p> <p>Clause 1.1 Definition of “Corrupt Practice” is added:</p> <p>“CORRUPT PRACTICE” means the offering, giving, receiving or soliciting of anything of value to influence the action of a public official in the procurement process or in contract execution.</p> <p>Clause 1.1 Definition of “Fraudulent Practice” is added:</p> <p>“FRAUDULENT PRACTICE” means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of any tenderer and includes collusive practice among tenderers (prior to or after the tender submission) designed to establish tender prices at artificial non-competitive levels and to deprive the tenderer of the benefits of free and open competition.</p> <p>Clause 1.1 Definition of “Interest” is amended by replacing it with the following:</p> <p>“INTEREST” means the interest rates applicable on this contract, whether specifically indicated in the relevant clauses or not, will be the rate as determined by the Minister of Finance, from time to time, in terms of section 80(1)(b) of the Public Finance Management Act, 1999 (Act No. 1 of 1999).</p> <p>Clause 1.1 Definition of “Principal Agent” is amended by replacing it with the following:</p> <p>“PRINCIPAL AGENT” means the person or entity appointed by the employer and named in the schedule. In the event of a principal agent not being appointed, then all the duties and obligations of a principal agent as detailed in the agreement shall be fulfilled by a representative of the employer as named in the schedule</p> <p>Clause 1.1 Definition of “Security” is amended by replacing it with the following:</p> <p>“SECURITY” means the form of security provided by the employer or contractor, as stated in the schedule, from which the contractor or employer may recover expense or loss</p> <p>Clause 1.6 is amended by replacing the words “prepaid registered post, telefax or e-mail” with “prepaid registered post or telefax”</p> <p>Clause 1.6.4 is amended by replacing it with the following:</p> <p>No clause</p> <p>F: V: T:</p>	
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<u>OBJECTIVE AND PREPARATION</u>		
2	A2 OFFER, ACCEPTANCE AND PERFORMANCE	
	Clause 2.0	Item
	F: V: T:	
3	A3 DOCUMENTS	
	Clause 3.0	
	Clause 3.2.1 is amended by replacing "14.1" with "14.0"	
	Clause 3.7 is amended by the addition of the following:	
	The contractor shall supply and keep a copy of the JBCC Series 2000 Principal Building Agreement and Preliminaries applicable to this contract on the site , to which the employer , principal agent and agents shall have access at all times	
	Clause 3.10 is amended by replacing the second reference to " principal agent " with the word " employer "	Item
	F: V: T:	
4	A4 DESIGN RESPONSIBILITY	
	Clause 4.0	
	Clause 4.3 is amended by replacing it with the following:	
	No clause	Item
	F: V: T:	
5	A5 EMPLOYER'S AGENTS	
	Clause 5.0	
	Clause 5.1.2 is amended to include clauses 32.6.3, 34.3, 34.4 and 38.5.8	Item
	F: V: T:	
6	A6 SITE REPRESENTATIVE	
	Clause 6.0	Item
	F: V: T:	
7	A7 COMPLIANCE WITH REGULATIONS	
	Clause 7.0	
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Note: The provisions herein include *inter alia*, compliance with all the requirements set out in the Construction Regulations, 2003 issued under the Occupational Health and Safety Act, 1993 (Act No 85 of 1993), and in particular with Regulation 5(1) requiring the compilation of a health and safety plan, as well as Regulation 6(1) requiring the appointment of a construction supervisor

Note: A separate section has been included in the BOQ document for the **Contractor** to have the opportunity to price for all the requirements of the Occupational Health and Safety Act, Construction Regulations and Health and Safety Specification.

F: V: T:

8 A8 WORKS RISK

Item

Clause 8.0

Item

F: V: T:

9 A9 INDEMNITIES

Clause 9.0

Item

F: V: T:

The **contractor** shall be liable for and hereby indemnifies and holds harmless the **employer** against any liability, loss, claim or proceeding arising at any time during the period of the contract whether arising in common law or by statute, consequent upon personal injuries to or the death of any person whomsoever resulting from, arising out of or caused by a catastrophic ground movement as mentioned above

The **contractor** shall be liable for and hereby indemnifies the **employer** against any and all liability, loss, claim or proceeding consequent upon loss of or damage to any moveable or immovable or personal property or property contiguous to the **site**, whether belonging to or under the control of the **employer** or any other body or person whomsoever arising out of or caused by a catastrophic ground movement, as mentioned above, which occurred during the period of the contract

10.7.3 It is the responsibility of the **contractor** to ensure that he has adequate insurance to cover his risk and liability as mentioned in 10.7.1 and 10.7.2. Without limiting the **contractor's** obligations in terms of the contract, the **contractor** shall, within twenty-one (21) **calendar days** of the **commencement date** but before commencement of the **works**, submit to the **employer** proof of such insurance policy, if requested to do so

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10	<p>10.7.4 The employer shall be entitled to recover any and all losses and/or damages of whatever nature suffered or incurred consequent upon the contractor's default of his obligations as set out in 10.7.1; 10.7.2 and 10.7.3. Such losses or damages may be recovered from the contractor or by deducting the same from any amounts still due under this contract or under any other contract presently or hereafter existing between the employer and the contractor and for this purpose all these contracts shall be considered one indivisible whole</p> <p>F: V: T:</p> <p>A10 WORKS INSURANCES</p> <p>Clause 10.0</p> <p>Clause 10.0 is amended by the addition of the following clauses:</p> <p>10.5 Damage to the Works</p> <p>(a) Without in any way limiting the contractor's obligations in terms of the contract, the contractor shall bear the full risk of damage to and/or destruction of the works by whatever cause during construction of the works and hereby indemnifies and holds harmless the employer against any such damage. The contractor shall take such precautions and security measures and other steps for the protection and security of the works as the contractor may deem necessary</p> <p>(b) The contractor shall at all times proceed immediately to remove or dispose of any debris arising from damage to or destruction of the works and to rebuild, restore, replace and/or repair the works</p> <p>(c) The employer shall carry the risk of damage to or destruction of the works and materials paid for by the employer that is the result of the excepted risks as set out in 10.6</p> <p>(d) Where the employer bears the risk in terms of this contract, the contractor shall, if requested to do so, reinstate any damage or destroyed portions of the works and the costs of such reinstatement shall be measured and valued in terms of 32.0 hereof</p> <p>10.6 Injury to Persons or loss of or damage to Properties</p> <p>(a) The contractor shall be liable for and hereby indemnifies the employer against any liability, loss, claim or proceeding whether arising in common law or by statute, consequent upon personal injuries to or the death of any person whomsoever arising out of or in the course of or caused by the execution of the works unless due to any act or negligence of any person for whose actions the employer is legally liable</p>	
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(b) The **contractor** shall be liable for and hereby indemnifies the **employer** against any liability, loss, claim or proceeding consequent upon loss of or damage to any moveable or immovable or personal property or property contiguous to the **site**, whether belonging to or under the control of the **employer** or any other body or person, arising out of or in the course of or by reason of the execution of the **works** unless due to any act or negligence of any person for whose actions the **employer** is legally liable

(c) The **contractor** shall, upon receiving a **contract instruction** from the **principal agent**, cause the same to be made good in a perfect and workmanlike manner at his own cost and in default thereof the **employer** shall be entitled to cause it to be made good and to recover the cost thereof from the **contractor** or to deduct the same from amounts due to the **contractor**

(d) The **contractor** shall be responsible for the protection and safety of such portions of the premises placed under his control by the **employer** for the purpose of executing the **works** until the issue of the **certificate of practical completion**

(e) Where the execution of the **works** involves the risk of removal of or interference with support to adjoining properties including land or structures or any structures to be altered or added to, the **contractor** shall obtain adequate insurance and will remain adequately insured or insured to the specific limit stated in the contract against the death of or injury to persons or damage to such property consequent on such removal or interference with the support until such portion of the **works** has been completed

(f) The **contractor** shall at all times proceed immediately at his own cost to remove or dispose of any debris and to rebuild, restore, replace and/or repair such property and to execute the **works**

10.7 High risk insurance

In the event of the project being executed in a geological area classified as a "High Risk Area", that is an area which is subject to highly unstable subsurface conditions that might result in catastrophic ground movement evident by sinkhole or doline formation the following will apply:

10.7.1 Damage to the works

The **contractor** shall, from the **commencement date** of the **works** until the date of the **certificate of practical completion** bear the full risk of and hereby indemnifies and holds harmless the **employer** against any damage to and/or destruction of the **works** consequent upon a catastrophic ground movement as mentioned above. The **contractor** shall take such precautions and security measures and other steps for the protection of the **works** as he may deem necessary

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	When so instructed to do so by the principal agent , the contractor shall proceed immediately to remove and/or dispose of any debris arising from damage to or destruction of the works and to rebuild, restore, replace and/or repair the works , at the contractor's own costs	
	10.7.2 Injury to persons or loss of or damage to property	
11	A11 LIABILITY INSURANCES	
	Clause 11.0	Item
	F: V: T:	
12	A12 EFFECTING INSURANCES	
	Clause 12.0	Item
	F: V: T:	
13	A13 No Clause	Item
	F: V: T:	
14	A14 SECURITY	
	Clause 14.0	
	Clauses 14.1 - 14.8 are amended by replacing them with the following:	
	14.1 In respect of contracts with a contract sum up to R1 million, the security to be provided by the contractor to the employer will be a payment reduction of five per cent (5%) of the value certified in the payment certificate (excluding VAT)	
	14.1.1 The payment reduction of the value certified in a payment certificate shall be mutatis mutandi in terms of 31.8(A)	
	14.1.2 The employer shall be entitled to recover expense and loss from the payment reduction in terms of 33.0 provided that the employer complies with the provisions of 33.4 in which event the employer's entitlement shall take precedence over his obligations to refund the payment reduction security or portions thereof to the contractor	
	14.2 In respect of contracts with a contract sum above R1 million, the contractor shall have the right to select the security to be provided in terms of 14.3, 14.4, 14.5, 14.6, or 14.7 as stated in the schedule. Such security shall be provided to the employer within twenty-one (21) calendar days from commencement date. Should the contractor fail to select the security to be provided or should the contractor fail to provide the employer with the selected security within twenty-one (21) calendar days from commencement date, the security in terms of 14.7 shall be deemed to have been selected.	
	14.3 Where security as a cash deposit of ten per cent (10%) of the contract sum (excluding VAT) has been selected:	
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<p>14.3.1 The contractor shall furnish the employer with a cash deposit equal in value to ten per cent (10%) of the contract sum (excluding VAT) within twenty-one (21) calendar days from commencement date</p>	
<p>14.3.2 Within twenty-one (21) calendar days of the date of practical completion of the works the employer shall reduce the cash deposit to an amount equal to three per cent (3%) of the contract value (excluding VAT), and refund the balance to the contractor</p>	
<p>14.3.3 Within twenty-one (21) calendar days of the date of final completion of the works the employer shall reduce the cash deposit to an amount equal to one per cent (1%) of the contract value (excluding VAT) and refund the balance to the contractor</p>	
<p>14.3.4 On the date of payment of the amount in the final payment certificate, the employer shall refund the remainder of the cash deposit to the contractor</p>	
<p>14.3.5 The employer shall be entitled to recover expense and loss from the cash deposit in terms of 33.0 provided that the employer complies with the provisions of 33.4 in which event the employer's entitlement shall take precedence over his obligations to refund the cash deposit security or portions thereof to the contractor</p>	
<p>14.3.6 The parties expressly agree that neither the employer nor the contractor shall be entitled to cede the rights to the deposit to any third party</p>	
<p>14.4 Where security as a variable construction guarantee of ten per cent (10%) of the contract sum (excluding VAT) has been selected:</p>	
<p>14.4.1 The contractor shall furnish the employer with an acceptable variable construction guarantee equal in value to ten per cent (10%) of the contract sum (excluding VAT) within twenty-one (21) calendar days from commencement date</p>	
<p>14.4.2 The variable construction guarantee shall reduce and expire in terms of the Variable Construction Guarantee form included in the invitation to tender</p>	
<p>14.4.3 The employer shall return the variable construction guarantee to the contractor within fourteen (14) calendar days of it expiring</p>	
<p>14.4.4 Where the employer has a right of recovery against the contractor in terms of 33.0, the employer shall issue a written demand in terms of the variable construction guarantee</p>	
<p>14.5 Where security as a fixed construction guarantee of five per cent (5%) of the contract sum (excluding VAT) and a five per cent (5%) payment reduction of the value certified in the payment certificate (excluding VAT) has been selected:</p>	
<p>14.5.1 The contractor shall furnish a fixed construction guarantee to the employer equal in value to five per cent (5%) of the contract sum (excluding VAT)</p>	
<p>14.5.2 The fixed construction guarantee shall come into force on the date of issue and shall expire on the date of the last certificate of practical completion</p>	
<p>14.5.3 The employer shall return the fixed construction guarantee to the contractor within fourteen (14) calendar days of it expiring</p>	
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14.5.4 The payment reduction of the value certified in a payment certificate shall be in terms of 31.8 (A) and 34.8

14.5.5 Where the employer has a right of recovery against the contractor in terms of 33.0, the employer shall be entitled to issue a written demand in terms of the fixed construction guarantee or may recover from the payment reduction or may do both

14.6 Where security as a cash deposit of five per cent (5%) of the contract sum (excluding VAT) and a payment reduction of five per cent (5%) of the value certified in the payment certificate (excluding VAT) has been selected:

14.6.1 The contractor shall furnish the employer with a cash deposit equal in value to five per cent (5%) of the contract sum (excluding VAT) within twenty-one (21) calendar days from commencement date

14.6.2 Within twenty-one (21) calendar days of the date of practical completion of the works the employer shall refund the cash deposit in total to the contractor

14.6.3 The payment reduction of the value certified in a payment certificate shall be mutatis mutandi in terms of 31.8(A)

14.6.4 Where the employer has a right of recovery against the contractor in terms of 33.0, the employer may issue a written notice in terms of 33.4 or may recover from the payment reduction or may do both

14.7 Where security as a payment reduction of ten per cent (10%) of the value certified in the payment certificate (excluding VAT) has been selected:

14.7.1 The payment reduction of the value certified in a payment certificate shall be mutatis mutandi in terms of 31.8(B)

14.7.2 The employer shall be entitled to recover expense and loss from the payment reduction in terms of 33.0 provided that the employer complies with the provisions of 33.4 in which event the employer's entitlement shall take precedence over his obligations to refund the payment reduction or portions thereof to the contractor

14.8 Payments made by the guarantor to the employer in terms of the fixed or variable construction guarantee shall not prejudice the rights of the employer or contractor in terms of this agreement

14.9 Should the contractor fail to furnish the security in terms of 14.2, the employer, in his sole discretion and without notification to the contractor, is entitled to change the contractor's selected form of security to that of a ten per cent (10%) payment reduction of the value certified in the payment certificate (excluding VAT), whereafter 14.7 shall be applicable

F: V: T:

EXECUTION

15 A15 PREPARATION FOR AND EXECUTION OF THE WORKS

Clause 15.0

Clause 15.1.1 is amended by replacing it with:

No clause

Clause 15.1.2 is amended by replacing it with:

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	The security selected in terms of 14.0	
	Clause 15.1 is amended by the addition of the following clause:	
	15.1.4 An acceptable health and safety plan, required in terms of the Occupational Health and Safety Act, 1993 (Act 85 of 1993), within twenty-one (21) calendar days of commencement date	
	Clause 15.2.1 is amended by replacing it with the following clause:	
	Give the contractor possession of the site within ten (10) working days of the contractor complying with the terms of 15.1.4	Item
	F: V: T:	
16	A16 ACCESS TO THE WORKS	
	Clause 16.0	Item
	F: V: T:	
17	A17 CONTRACT INSTRUCTIONS	
	Clause 17.0	
	Clause 17.1.11 is amended by deleting the words “and the appointment of nominated and selected subcontractors”	Item
	F: V: T:	
18	A18 SETTING OUT OF THE WORKS	
	Clause 18.0	Item
	F: V: T:	
19	A19 ASSIGNMENT	
	Clause 19.0	Item
	F: V: T:	
20	A20 NOMINATED SUB-CONTRACTORS	
	Clause 20.0	
	Clause 20.1.3 is amended by replacing it with the following:	
	No clause	
	Note: See item B9.1 hereinafter for adjustment of attendance on nominated subcontractors executing work allowed for under provisional sums	Item
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21	<p>A21 SELECTED SUB-CONTRACTORS</p> <p>Clause 21.0</p> <p>Clause 21 is amended by replacing it with:</p> <p>No clause</p> <p>F: V: T:</p>	Item
22	<p>A22 EMPLOYER'S DIRECT CONTRACTORS</p> <p>Clause 22.0</p> <p>F: V: T:</p>	Item
23	<p>A23 CONTRACTOR'S DOMESTIC SUB-CONTRACTORS</p> <p>Clause 23.0</p> <p>F: V: T:</p>	Item
<u>COMPLETION</u>		
24	<p>A24 PRACTICAL COMPLETION</p> <p>Clause 24.0</p> <p>F: V: T:</p>	Item
25	<p>A25 WORKS COMPLETION</p> <p>Clause 25.0</p> <p>F: V: T:</p>	Item
26	<p>A26 FINAL COMPLETION</p> <p>Clause 26.0</p> <p>Clause 26.1.2 is amended by inserting “#” next to 26.1.2</p> <p>F: V: T:</p>	Item
27	<p>A27 LATENT DEFECTS LIABILITY PERIOD</p> <p>Clause 27.0</p> <p>F: V: T:</p>	Item
28	<p>A28 SECTIONAL COMPLETION</p> <p>Clause 28.0</p> <p>F: V: T:</p>	Item
29	<p>A29 REVISION OF DATE FOR PRACTICAL COMPLETION</p> <p>Clause 29.0</p> <p>Clause 29.2.5 is amended by replacing it with:</p> <p>No clause</p> <p>F: V: T:</p>	Item
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30	<p>A30 PENALTY FOR NON-COMPLETION</p> <p>Clause 30.0</p> <p>F: V: T:</p> <p><u>PAYMENT</u></p>	Item
31	<p>A31 INTERIM PAYMENT TO THE CONTRACTOR</p> <p>Clause 31.0</p> <p>Clause 31.5.2 is amended by replacing “14.7.1” with “14.0”</p> <p>Clause 31.8 is amended by replacing it with the following two alternative clauses:</p> <p>Alternative A</p> <p>31.8(A) Where a security is selected in terms of 14.1; 14.5 or 14.6, the value of the works in terms of 31.4.1 and materials and goods in terms of 31.4.2 shall be certified in full. The value certified shall be subject to the following percentage adjustments:</p> <p>31.8(A).1 Ninety-five per cent (95%) of such value in interim payment certificates issued up to the date of practical completion</p> <p>31.8(A).2 Ninety-seven per cent (97%) of such value in interim payment certificates issued on the date of practical completion and up to but excluding the date of final completion</p> <p>31.8(A).3 Ninety-nine per cent (99%) of such value in interim payment certificates issued on the date of final completion and up to but excluding the final payment certificate in terms of 34.6</p> <p>31.8(A).4 One hundred per cent (100%) of such value in the final payment certificate in terms of 34.6 except where the amount certified is in favour of the employer. In such an event the payment reduction shall remain at the adjustment level applicable to the final payment certificate</p> <p>Alternative B</p> <p>31.8(B) Where security as a payment reduction in terms of 14.7 has been selected, the value of the works in terms of 31.4.1 and materials and goods in terms of 31.4.2 shall be certified in full. The value certified shall be subject to the following percentage adjustments:</p> <p>31.8(B).1 Ninety per cent (90%) of such value in interim payment certificates issued up to the date of practical completion</p> <p>31.8(B).2 Ninety-seven per cent (97%) of such value in interim payment certificates issued on the date of practical completion and up to but excluding the date of final completion</p>	
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	<p>31.8(B).3 Ninety-nine per cent (99%) of such value in interim payment certificates issued on the date of final completion and up to but excluding the final payment certificate in terms of 34.6</p> <p>31.8(B).4 One hundred per cent (100%) of such value in the final payment certificate in terms of 34.6 except where the amount certified is in favour of the employer. In such an event the payment reduction shall remain at the adjustment level applicable to the final payment certificate</p> <p>Clause 31.12 is amended by deleting the following:</p> <p>Payment shall be subject to the employer giving the contractor a tax invoice for the amount due</p> <p>F: V: T:</p>	Item
32	<p>A32 ADJUSTMENT TO THE CONTRACT VALUE</p> <p>Clause 32.0</p> <p>Clauses 32.5.1, 32.5.4 and 32.5.7 are amended by the addition of the following at the end of the sentence:</p> <p>"due to no fault of the contractor"</p> <p>F: V: T:</p>	Item
33	<p>A33 RECOVERY OF EXPENSE AND LOSS</p> <p>Clause 33.0</p> <p>F: V: T:</p>	Item
34	<p>A34 FINAL ACCOUNT AND FINAL PAYMENT</p> <p>Clause 34.0</p> <p>Clause 34.1 is amended by removing “#” next to 34.1</p> <p>Clause 34.2 is amended by inserting “#” next to 34.2</p> <p>Clause 34.8 is amended by deleting the words “where security as a fixed construction guarantee in terms of 14.4 has been selected or where payment reduction has been applied in terms of 14.7.1”</p> <p>Clause 34.13 is amended by replacing “seven (7) calendar days” with “twenty-one (21) calendar days” and deleting the words “subject to the employer giving the contractor a tax invoice for the amount due”</p> <p>F: V: T:</p>	Item
35	<p>A35 PAYMENT TO OTHER PARTIES</p> <p>Clause 35.0</p> <p>F: V: T:</p>	Item
36	<p><u>CANCELLATION</u></p> <p>A36 CANCELLATION BY EMPLOYER – CONTRACTOR’S DEFAULT</p> <p>Clause 36.0</p>	
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	<p>Clause 36.1 is amended by the addition of the following clauses: 36.1.3 refuses or neglects to comply strictly with any of the conditions of contract 36.1.4 estate being sequestrated, liquidated or surrendered in terms of the insolvency laws in force within the Republic of South Africa 36.1.5 in the judgement of the employer, has engaged in corrupt or fraudulent practices in competing for or in executing the contract Clause 36.3 is amended by removing the reference to “No clause” and replacing the words “principal agent” with “employer”</p> <p>Clause 36.0 is amended by the addition of the following clause: 36.7 Notwithstanding any clause to the contrary, on cancellation of this agreement either by the employer or the contractor; or for any reason whatsoever, the contractor shall on written instruction, discontinue with the works on a date stated and withdraw himself from the site. The contractor shall not be entitled to refuse to withdraw from the works on the grounds of any lien or right of retention or on the grounds of any other right whatsoever F: V: T:</p> <p>37.5 Notwithstanding any clause to the contrary, on cancellation of this agreement either by the employer or the contractor; or for any reason whatsoever, the contractor shall on written instruction, discontinue with the works on a date stated and withdraw himself from the site. The contractor shall not be entitled to refuse to withdraw from the works on the grounds of any lien or right of retention or on the grounds of any other right whatsoever F: V: T:</p>	Item
37	<p>A37 CANCELLATION BY EMPLOYER – LOSS AND DAMAGE</p> <p>Clause 37.0 Clause 37.0 is amended by the addition of the following clause: Clause 37.3.5 is amended by replacing “ninety (90)” with “one-hundred and twenty (120)”</p>	Item
38	<p>A38 CANCELLATION BY CONTRACTOR – EMPLOYER'S DEFAULT</p> <p>Clause 38.0 Clause 38.5.4 is amended by replacing “ninety (90)” with “one-hundred and twenty (120)” Clause 38.0 is amended by the addition of the following clause: 38.7 Notwithstanding any clause to the contrary, on cancellation of this agreement either by the employer or the contractor; or for any reason whatsoever, the contractor shall on written instruction, discontinue with the works on a date stated and withdraw himself from the site. The contractor shall not be entitled to refuse to withdraw from the works on the grounds of any lien or right of retention or on the grounds of any other right whatsoever F: V: T:</p>	Item
	Carried To Section Summary	R
	<p>Section No. 1 Bill No. 1 Preliminaries</p>	

		Amount
39	<p>A39 CANCELLATION – CESSATION OF THE WORKS</p> <p>Clause 39.0</p> <p>Clause 39.3.5 is amended by the addition of the following at the end of the sentence: “within one hundred and twenty (120) working days of completion of such a report”</p> <p>F: V: T:</p> <p><u>DISPUTE</u></p>	Item
40	<p>A40 DISPUTE SETTLEMENT</p> <p>Clause 40.0</p> <p>Clause 40.2.2 is amended by replacing “one (1) year” with “three (3) years”</p> <p>Clause 40.6 is amended by removing the reference to:</p> <p>No clause</p> <p>Clause 40.7.1 is amended by replacing “(10)” with “(15)” and by the addition of the following:</p> <p>Whether or not mediation resolves the dispute, the parties shall bear their own costs concerning the mediation and equally share the costs of the mediator and related costs</p> <p>F: V: T:</p> <p><u>SUBSTITUTE PROVISIONS</u></p>	Item
41	<p>A41 STATE CLAUSES</p> <p>Clause 41.0</p> <p>F: V: T:</p> <p><u>CONTRACT VARIABLES</u></p> <p><u>THE SCHEDULE OF CONTRACT VARIABLES</u></p>	Item
42	<p>A42 THE SCHEDULE - PRE-TENDER INFORMATION</p> <p>Clause 42.0</p> <p>Tenderers are referred to the document C1.2 Contract Data for variables pertaining to this contract</p> <p>F: V: T:</p> <p><u>SECTION B: JBCC PRELIMINARIES</u></p> <p><u>B1.0 DEFINITIONS AND INTERPRETATION</u></p>	Item
43	<p>B1.1 Definitions and interpretation</p> <p>See also clause A1.0 of Section A for additional and/or amended definitions which shall apply equally to this Section</p> <p>F: V: T:</p>	Item
Carried To Section Summary		R
<p>Section No. 1</p> <p>Bill No. 1</p> <p>Preliminaries</p>		

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<u>B2.0 DOCUMENTS</u>		
44	B2.1 Checking of documents F: V: T:	Item
45	B 2.2 Provisional bills of quantities F: V: T:	Item
46	B2.3 Availability of construction documentation F: V: T:	Item
47	B2.4 Interests of agents F: V: T:	Item
48	B2.5 Priced documents F: V: T:	Item
49	B2.6 Tender submission Clause 2.6 is amended by replacing “JBCC Form of Tender” with “Form of Offer and Acceptance” F: V: T:	Item
<u>B3.0 THE SITE</u>		
50	B3.1 Defined works area F: V: T:	Item
51	B3.2 Geotechnical investigation F: V: T:	Item
52	B3.3 Inspection of the site Tenderers shall complete the Site Inspection Certificate included in the tender documents and return the same with the tender submission. F: V: T:	Item
53	B3.4 Existing premises occupied F: V: T:	Item
54	B3.5 Previous work - dimensional accuracy F: V: T:	Item
55	B3.6 Previous work - defects F: V: T:	Item
56	B3.7 Services - known F: V: T:	Item
57	B3.8 Services - unknown F: V: T:	Item
58	B3.9 Protection of trees F: V: T:	Item
59	B3.10 Articles of value F: V: T:	Item
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60	B3.11 Inspection of adjoining properties, etc. F: V: T:	Item
	<u>B4.0 MANAGEMENT OF CONTRACT</u>	
61	B4.1 Management of the works F: V: T:	Item
62	B4.2 Programme for the works F: V: T:	Item
63	B4.3 Progress meetings F: V: T:	Item
64	B4.4 Technical meetings F: V: T:	Item
65	B4.5 Labour and Plant records F: V: T:	Item
	<u>B5.0 SAMPLES, SHOP DRAWINGS AND MANUFACTURERS' INSTRUCTIONS</u>	
66	B5.1 Samples of materials F: V: T:	Item
67	B5.2 Workmanship samples F: V: T:	Item
68	B5.3 Shop drawings F: V: T:	Item
69	B5.4 Compliance with manufacturers instruction F: V: T:	Item
	<u>B6.0 TEMPORARY WORKS AND PLANT</u>	
70	B6.1 Deposits and fees F: V: T:	Item
71	B6.2 Enclosure of the works F: V: T:	Item
72	B6.3 Advertising F: V: T:	Item
73	B6.4 Plant, equipment, sheds and offices F: V: T:	Item
74	B6.5 Main notice board F: V: T:	Item
75	B6.6 Subcontractors notice board F: V: T:	Item
	<u>B7.0 TEMPORARY SERVICES</u>	
76	B7.1 Location F: V: T:	Item
	Carried To Section Summary	R
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		Amount
77	B7.2 Water F: V: T:	Item
78	B7.3 Electricity F: V: T:	Item
79	B7.4 Telecommunication facilities F: V: T:	Item
80	B7.5 Ablution facilities F: V: T:	Item
<u>B8.0 PRIME COST AMOUNTS</u>		
81	B8.1 Responsibility for prime cost amounts F: V: T:	Item
<u>B9.0 ATTENDANCE ON N/S SUBCONTRACTORS</u>		
82	B9.1 General attendance F: V: T:	Item
83	B9.2 Special attendance F: V: T:	Item
84	B9.3 Commissioning - fuel, water and electricity F: V: T:	Item
<u>B10.0 FINANCIAL ASPECTS</u>		
85	B10.1 Statutory taxes, duties and levies F: V: T:	Item
86	B10.2 Payment of preliminaries F: V: T:	Item
87	B10.3 Adjustment of preliminaries Clauses B10.3.1 and B10.3.2 are amended by replacing “within fifteen (15) working days of taking possession of the site ” with “when submitting his priced bills of quantities / lump sum document ” F: V: T:	Item
88	B10.4 Payment certificate cash flow F: V: T:	Item
<u>B11.0 GENERAL</u>		
89	B11.1 Protection of the works F: V: T:	Item
90	B11.2 Protection/isolation of existing/sectionally occupied works F: V: T:	Item
91	B11.3 Security of the works F: V: T:	Item
92	B11.4 Notice before covering work F: V: T:	Item
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		Amount
93	B11.5 Disturbance F: V: T:	Item
94	B11.6 Environmental Disturbance F: V: T:	Item
95	B11.7 Works cleaning and clearing F: V: T:	Item
96	B11.8 Vermin F: V: T:	Item
97	B11.9 Overhand work F: V: T:	Item
98	B11.10 Instruction manuals and guarantees F: V: T:	Item
99	B11.11 As built information F: V: T:	Item
100	B11.12 Tenant installations F: V: T:	Item
<u>B12 SCHEDULE OF VARIABLES</u>		
101	B12.1 Schedule of variables - Pre-tender information F: V: T:	Item
102	B12.1 Schedule of variables - Pre-tender information This schedule contains all variables referred to in this document and is divided into pre-tender and post-tender categories. The pre-tender category must be completed in full and included in the tender documents. Both the pre-tender and post-tender categories form part of these Preliminaries . Spaces requiring information must be filled in, shown as “not applicable” or deleted and not left blank. Where choices are offered, the non-applicable items are to be deleted. Where insufficient space is provided the information should be annexed hereto and cross-referenced to the applicable clause of the schedule . Key cross reference clauses are italicised in <i>[]</i> brackets F: V: T:	Item
12.1 PRE-TENDER INFORMATION		
12.1.1 Provisional bills of quantities		
[2.2] The quantities are provisional (yes/no) NO		
12.1.2 Availability of construction documentation		
[2.3] Construction documentation is complete (yes/no) NO		
12.1.3 Interests of agents		
[2.4] Details: To be advised		
12.1.4 Defined works area		
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<p>[3.1] Details: The site is on the existing Tsolo Agricultural and Rural Development Institute, Farm No: 61, Tsolo.</p>	
<p>12.1.5 Geotechnical investigation</p>	
<p>[3.2] Details: N/A - NONE</p>	
<p>12.1.6 Existing premises occupied</p>	
<p>[3.4] Specific requirements: The site is on the existing campus with other surrounding buildings which are occupied and will need to remain occupied and in operation during construction. There are no buildings on the specific site.</p>	
<p>12.1.7 Previous work – dimensional accuracy</p>	
<p>[3.5] Details: N/A</p>	
<p>12.1.8 Previous work – defects</p>	
<p>[3.6] Details: N/A</p>	
<p>12.19. Service – known</p>	
<p>[3.7] Details:</p>	
<p>Should the contractor encounter any existing services such as underground cables, pipes or sewer during the execution of the works he shall notify the principal agent immediately and suspend all affected work in the immediate vicinity until instruction to proceed has been given by the principal agent.</p>	
<p>12.1.10 Protection of trees</p>	
<p>[3.9] Specific requirements:</p>	
<p>All trees on the site outside of the position of the proposed structure must be protected.</p>	
<p>12.1.11 Inspection of adjoining properties</p>	
<p>[3.11] Specific requirements:</p>	
<p>The contractor must inspect adjoining properties and immediately bring to the notice of the Principal Agent of any consequences that may arise from the building works.</p>	
<p>12.1.12 Enclosure of the works</p>	
<p>[6.2] Specific requirements:</p>	
<p>The contractor shall enclose the works as required by the Occupational Health and Safety Act and prevent any unauthorised access to the site.</p>	
<p>12.1.13 Offices</p>	
<p>[6.4.3] Specific requirements:</p>	
<p>Carried To Section Summary</p>	<p>R</p>
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	Amount
<p>The contractor shall provide, maintain and remove on completion of the works an office for the exclusive use of the principal agent, minimum size 4 x 3 x 3m high internally, suitably insulated and ventilated, provided with electric lighting and fitted with boarded floor, desk, chair, drawing stool, drawing board and lock-up drawers for drawings. The office shall be kept clean and fit for use at all times.</p>	
<p>12.1.14 Main notice board</p>	
<p>[6.5] Specific requirements:</p>	
<p>The contractor shall provide, erect where directed, maintain and remove on completion of the works a notice board size 3000 x 3420mmm constructed of suitable boarding with flat smooth surface and with edging bead 40mm thick all round.</p>	
<p>The board shall be securely fixed to hoarding where hoarding is provided, or fixed to and including a suitable supporting structure of timber or tubular posts and braces. The board is to be painted EPWP "orange" with 40mm wide white dividing lines. All wording shall be inscribed in black painted sans serif lettering. (Proof to be sent to Client for approval).</p>	
<p>Sub-contractor's individual boards will be allowed on the site subject to the written approval of the Representative/Agent.</p>	
<p>12.1.15 Subcontractors' notice board</p>	
<p>6.6] Specific requirements: (yes/no) NO</p>	
<p>12.1.16 Water</p>	
<p>[7.2] Option A (by contractor) (yes/no) YES</p>	
<p>Option B (by employer – free of charge) (yes/no) NO</p>	
<p>Option C (by employer – metered) (yes/no) NO</p>	
<p>12.1.17 Electricity</p>	
<p>[7.3] Option A (by contractor) (yes/no) YES</p>	
<p>Option B (by employer – free of charge) (yes/no) NO</p>	
<p>Option C (by employer – metered) (yes/no) NO</p>	
<p>12.1.18 Telecommunications</p>	
<p>[7.4] Telephone (yes/no) YES</p>	
<p>Facsimile (yes/no) NO</p>	
<p>E-mail (yes/no) YES</p>	
<p>12.1.19 Ablution facilities</p>	
<p>[7.5] Option A (by contractor) (yes/no) YES</p>	
<p>Option B (by employer) (yes/no) NO</p>	
<p>12.1.20 Protection of existing/sectionally occupied works</p>	
<p>[11.2] Protection is required (Only when existing buildings) (yes/no) NO</p>	
<p>Carried To Section Summary</p>	
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12.1.21 Special attendance

[9.2] Electrical Subcontractor (1) details: Site Meetings

Mechanical Subcontractor (2) details: Site Meetings

12.1.22 Protection of the works

[11.1] Specific requirements:

The contractor shall protect the works for the duration of the contract.

12.1.23 Disturbance

[11.5] Specific requirements:

The contractor shall keep the site, structures, etc well watered during operations to prevent dust and shall provide and erect and remove on completion of the works all necessary temporary dust screens all to the satisfaction of the principal agent

12.1.24 Environmental disturbance

[11.6] Specific requirements: N/A - NONE

12.2 POST-TENDER INFORMATION

12.2.1 Payment of preliminaries

[10.2] Option A (prorated) (yes/no) -

Option B (calculated) (yes/no) -

12.2.2 Adjustment of preliminaries

[10.3] Option A (three categories) (yes/no) -

Option B (detailed breakdown) (yes/no) -

12.2.3 Additional agreed preliminaries items

Details: EPWP requirements as per form C3.5 of the tender documentation.

SCHEDULE OF SUPPLEMENTARY INFORMATION

NOTE:

The information listed below is in respect of certain clauses in the Preliminaries, requiring the supplementary information :

Amount of insurance against injury to person or property in respect of any single occurrence - **R 5 million**

Amount of insurance against removal of support to adjoining properties in respect of any single occurrence - **Not specifically prescribed**

Contract Price Adjustment Provisions (CPAP): - **YES - Contract Price Adjustment is applicable**

Contract period - **12 (Twelve) Months**

The date for site handover :- **TBA**

Amount of penalty per day on which the completion of the works may be in arrear:

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	<p>R2.75c per R100 of contract value per calendar day (Excluding VAT)</p> <p>Contract drawing numbers: Refer to Attached Set of Tender Drawings for all Disciplines under Volume 4</p> <p>Specification of materials and methods to be used: - PW 371, Fourth Revision, October 1993</p> <p>Edition of Standard System of measuring building work: Seventh Edition including the latest amendments</p> <p><u>SECTION C: SPECIFIC PRELIMINARIES</u></p> <p>Section C contains specific preliminary items which apply to this contract except where N/A (Not Applicable) appears against an item</p> <p><u>C1 CONTRACT DRAWINGS</u></p> <p>103 The drawings issued with the tender documents do not comprise the complete set but serve as a guide only for tendering purposes and for indicating the scope of the work to enable the tenderer to acquaint himself with the nature and extent of the works and the manner in which they are to be executed.</p> <p>Should any part of the drawings not be clearly understood by the tenderer he shall, before submitting his tender, obtain clarification in writing from the principal agent.</p> <p>F: V: T:</p>	Item
	<p><u>C2 GENERAL PREAMBLES</u></p> <p>104 The document "Specification of Materials and Methods to be used (PW371-A)" is obtainable on the Department's website (http://www.publicworks.gov.za/ under "Consultants Guidelines"), and shall be read in conjunction with the bills of quantities / lump sum document and be referred to for the full descriptions of work to be done and materials to be used</p> <p>F: V: T:</p>	Item
	<p><u>C3 TRADE NAMES</u></p> <p>105 Wherever a trade name for any product has been described in the bills of quantities / lump sum document, the tenderer's attention is drawn to the fact that any other product of equal quality may be used subject to the written approval of the principal agent being obtained prior to the closing date for submission of tenders</p> <p>If prior written approval for an alternative product is not obtained, the product described shall be deemed to have been tendered for</p> <p>F: V: T:</p>	Item
	<p><u>C4 IMPORTED MATERIALS AND EQUIPMENT</u></p> <p>106 Where imported items are listed in the tender documents, the tenderer shall provide all the information called for, failing which the price of any such item, materials or equipment shall be excluded from currency fluctuations. (refer to Schedule of Imported Materials and Equipment DPW-23(EC) to be completed by tenderer)</p>	
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		Amount
	<p>Notwithstanding any provisions elsewhere regarding the adjustment of contract prices, the price of any item, material or equipment listed in terms of this clause shall be excluded from the Contract Price Adjustment Provisions (if applicable)</p> <p>F: V: T:</p> <p><u>C5 VIEWING THE SITE IN SECURITY AREAS</u></p>	Item
107	<p>The site is situated in a security area and the tenderer must arrange with the unit commander or other responsible officer to obtain permission to enter the site for tendering purposes</p> <p>F: V: T:</p> <p><u>C6 COMMENCEMENT OF WORKS IN SECURITY AREAS</u></p>	Item N/A
108	<p>As the works falls within a security area the contractor must give the unit commander or other responsible officer notice before commencement of the works. Should the contractor fail to make such arrangements, admission to the site may be refused and any additional costs will be for the contractor's account</p> <p>F: V: T:</p> <p><u>C7 ENTRANCE PERMITS TO SECURITY AREAS</u></p>	Item N/A
109	<p>As the works falls within a security area the contractor shall obtain entrance permits for his personnel and workmen entering the area and shall comply with all regulations and instructions which may be issued from time to time regarding the protection of persons and property under the control of the Defence Force, Police or chief security officer</p> <p>F: V: T:</p> <p><u>C8 SECURITY CHECK OF PERSONNEL</u></p>	Item N/A
110	<p>The principal agent may require the contractor to have his personnel and workmen, or a certain number of them, security classified</p> <p>In the event of the principal agent requesting the removal of a person or persons from the works for security reasons, the contractor shall do so forthwith and shall thereafter ensure that such person or persons are denied access to the works and the site and/or to any document or information relating to the works</p> <p>F: V: T:</p> <p><u>C9 PROHIBITION ON TAKING OF PHOTOGRAPHS</u></p>	Item N/A
111	<p>In terms of article 119 of the Defence Act, 44 of 1957, it is prohibited to sketch or to take photographs of any military site or installation or any building or civil works thereon or to be in possession of a camera or other apparatus used for taking of photographs except when authorized thereto by or on behalf of the Minister</p> <p>The same prohibition is also applicable to all correctional institutions in terms of article 44.1(e) of the Correctional Services Act 8 of 1959</p> <p>F: V: T:</p>	Item N/A
	Carried To Section Summary	R
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		Amount
<u>C10 HIV/AIDS AWARENESS</u>		
<p>It is required of the contractor to thoroughly study the HIV/AIDS Specification (PW 1544) of the Department that must be read together with and is deemed to be incorporated under this Section of the bills of quantities / lump sum document. Provision for pricing of HIV/AIDS awareness is made under items C10.1 to C10.5 hereafter and it is explicitly pointed out that all requirements of the aforementioned specification are deemed to be priced hereunder, as the said items represent the only method of measurement and no additional items or extras to the contract in this regard shall be entertained.</p> <p>The contractor must take note that compliance with the HIV/AIDS Specification is compulsory. In the event of partial or total non-compliance, the principal agent, notwithstanding the provisions of clause A 31.0 of Section A or any other clause to the contrary, reserves the right to delay issuing any progress payment certificate until the contractor provides satisfactory proof of compliance. The contractor shall not be entitled to any compensation of whatsoever nature, including interest, due to such delay of payment.</p>		
112	<p>C10.1 AWARENESS CHAMPION</p> <p>Selection, appointment, briefing and making available of an Awareness Champion including provision of all relevant services, all in accordance with the HIV/AIDS Specification</p> <p>F: V: T:</p>	Item
113	<p>C10.2 AWARENESS WORKSHOPS</p> <p>Selection and appointment of a competent Service Provider approved by the principal agent, provision of a Service Provider Workshop Plan and a suitable venue, conducting of awareness workshops by means of traditional and/or modern multi-media techniques, including follow-up courses, making available all tuition material and performing assessment procedures, all in accordance with the HIV/AIDS Specification</p> <p>F: V: T:</p>	Item
114	<p>C10.3 POSTERS, BOOKLETS, VIDEOS, ETC.</p> <p>Provision, displaying, maintaining and replacing when necessary of four plastic laminated posters, booklets and educational videos, etc. for the duration of the construction period, all in accordance with the HIV/AIDS Specification</p> <p>F: V: T:</p>	Item
115	<p>C10.4 ACCESS TO CONDOMS</p>	
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		Amount
	<p>Provision and maintenance of condom dispensers fixed in position, including male and female condoms, replenishing male and female condoms on a daily basis as required for the duration of the construction period, all in accordance with the HIV/AIDS Specification</p> <p>F: V: T:</p>	Item
116	<p>C10.5 MONITORING</p> <p>Monitoring HIV/AIDS awareness of workers, providing the principal agent with access to information including making available all reports, thoroughly completed and reflecting the correct information, for the duration of the construction period and close out, all in accordance with the HIV/AIDS Specification</p> <p>F: V: T:</p>	Item
	<p><u>C11 OCCUPATIONAL HEALTH AND SAFETY ACT</u></p>	
117	<p>The contractor shall comply with all the requirements set out in the Construction Regulations, 2003 issued under the Occupational Health and Safety Act, 1993 (Act No 85 of 1993).</p> <p>It is required of the contractor to thoroughly study the Health and Safety Specification that must be read together with and is deemed to be incorporated under this Section of the bills of quantities / lump sum document.</p> <p>The contractor must take note that compliance with the Occupational Health and Safety Act, Construction Regulations and Health and Safety Specification is compulsory. In the event of partial or total non-compliance, the principal agent, notwithstanding the provisions of clause A31.0 of Section A or any other clause to the contrary, reserves the right to delay issuing any progress payment certificate until the contractor provides satisfactory proof of compliance. The contractor shall not be entitled to any compensation of whatsoever nature, including interest, due to such delay of payment.</p> <p>Provision for pricing of the Occupational Health and Safety Act, Construction Regulations and Health and Safety Specification is made under this clause and it is explicitly pointed out that all requirements of the aforementioned are deemed to be priced hereunder and no additional claims in this regard shall be entertained.</p> <p>Note: A separate section has been included in the BOQ document for the contractor to have the opportunity to price for all the requirements of the Occupational Health and Safety Act, Construction Regulations and Health and Safety Specification</p> <p>F: V: T:</p>	Item
	<p><u>C12 EMPLOYMENT AND TRAINING OF YOUTH WORKERS ON THE EXPANDED PUBLIC WORKS PROGRAMME (EPWP) Infrastructure Projects: NATIONAL YOUTH SERVICE (NYS)</u></p>	
118	<p>The Contractor shall comply with Additional Specification SL: Employment and Training of Youth Workers on the Expanded Public Works Programme (EPWP) Infrastructure Projects: National Youth Service (NYS) as attached to these Bills of Quantities.</p>	
	Carried To Section Summary	R
	<p>Section No. 1 Bill No. 1 Preliminaries</p>	

		Amount
	<p>The Contractor shall identify a minimum number of youth workers as indicated, from a priority list and employ them at the statutory labour rates for a minimum period of 6 months and train them as per Specification SL.</p> <p>The Contractor shall liaise and co-ordinate with the Service Provider in providing the priority list and the selection of youth workers and with the employment and training of the identified youth workers.</p> <p>The Contractor shall avail the services of an adequately qualified foreman specifically for the EPWP-NYS youth workers to act as their construction supervisor. This foreman will be responsible for continuously monitoring the progress of the youth workers and to address questions and issues that may arise from the youth workers.</p> <p>A separate provisional allowance item, subject to re-measurement, has been scheduled in the Provisional Allowances section of this bill to cover the direct costs associated with training.</p> <p>F: V: T:</p> <p><u>C13 SITE INSTRUCTION</u></p>	Item
119	<p>Contract Instructions issued on site are to be recorded in triplicate in a site instruction book which is to be maintained on site by the contractor at all times.</p> <p>F: V: T:</p> <p><u>C14 WARRANTIES FOR MATERIAL AND WORKMANSHIP</u></p>	Item
120	<p>Where warranties for materials and/or workmanship are called for, the contractor shall obtain a written warranty, addressed to the employer, from the firm supplying the materials and/or doing the work and shall deliver same to the principal agent on the final completion of the contract. The warranty shall state that workmanship, materials and installation are warranted for a specified period from the date of final completion and that any defects that may arise during the specified period shall be made good at the expense of the firm supplying the materials and/or doing the work, upon written notice to do so. The warranty will not be enforced if the work is damaged by defects in the construction of the building in which case the responsibility for replacement shall rest entirely with the contractor</p> <p>F: V: T:</p> <p><u>C15 CO-OPERATION OF THE CONTRACTOR FOR COST MANAGEMENT</u></p>	Item
121	<p>It is specifically agreed that the contractor accepts the obligation of assisting the principal agent in implementing proper cost management. The contractor will be advised by the principal agent of all cost management procedures which will be implemented to ensure that the final building cost does not exceed the budget. The principal agent undertakes to make available to the contractor all budgetary allowances and cost assessments/reports to enable the proper procedure to be implemented and the contractor shall attend all cost plan review and cost management meetings. The contractor undertakes to extend these procedures, as necessary, to all subcontractors</p> <p>F: V: T:</p>	Item
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		Amount
<u>C16 PROPPING OF FLOORS BELOW</u>		
122	<p>The contractor is advised that propping of floors below may be required if he wishes to use any areas of completed suspended reinforced concrete slabs for vehicle access, storage of materials and goods and location of plant, scaffolding, etc. The location of these areas and any necessary propping shall be approved by the principal agent and the cost thereof shall be borne by the contractor</p> <p>F: V: T:</p>	Item
<u>C17 TESTING OF WINDOWS FOR WATER TIGHTNESS</u>		
123	<p>Each window shall be tested for water tightness with water sprayed on using adequate pressure. If in the opinion of the principal agent, the pressure proves to be inadequate, then the pressure shall be boosted by means of compressed air or other approved means</p> <p>F: V: T:</p>	Item
<u>C18 TESTING OF FLAT ROOF WATERPROOFING FOR WATER TIGHTNESS</u>		
124	<p>Flat roof waterproof areas shall be prepared with small sand dykes around them of a size and enclosing an area approved by the principal agent, flooded with water and kept 'ponded' for at least 36 hours as a test to ensure the water tightness of the waterproofing and before any further construction work is carried out above the waterproofing.</p> <p>F: V: T:</p>	Item
<u>C19 PROPRIETARY BRANDED PRODUCTS</u>		
125	<p>The contractor shall take delivery of, handle, store, use, apply and/or fix all proprietary branded products in strict accordance with the manufacturer's instructions after consultation with the manufacturer's authorised representative.</p> <p>F: V: T:</p>	Item
<u>C20 CONTRACTORS RESPONSIBILITY</u>		
126	<p>The Employer, the Principal Agent and the other professional consultants shall not be responsible for any act or omission on the part of the Contractor which may result in any patent or latent defects, in materials or workmanship, breach or neglect of any local regulations. The Contractor shall at times be responsible for any such neglect, deviation or wrong act, whether the same is discovered before or after the final certificate, or any other Certificate, has been approved.</p> <p>F: V: T:</p>	Item
<u>C21 OVERTIME</u>		
127	<p>Should overtime be required to be worked for any reason whatsoever, the costs of such overtime are to be borne by the contractor unless the principal agent has specifically authorised in writing, prior to the execution thereof, that costs for such overtime are to be borne by the employer.</p> <p>F: V: T:</p>	Item
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<u>C22 AS BUILT DRAWINGS</u>		
128	<p>The position of construction breaks and the extend of individual concrete pours are to be recorded by the contractor on the structural engineer's drawings and are to be submitted to the principal agent and the structural engineer for their records.</p> <p>F: V: T:</p>	Item
<u>C23 SPECIAL WORKS/DIRECT CONTRACTS</u>		
129	<p>The Employer and tenants shall have the right to employ other Contractors (hereinafter referred to as 'Direct Contractors') to execute any special or other Works whether contained in this Contract or not, concurrently with the work being executed under this contract.</p> <p>The Contractor shall not be entitled to any percentage, profit or discount on the value of any work executed by 'Direct Contractor's and reflected as 'Provisional Sums' but shall nevertheless allow these direct Contractors and Employers employees to have access to the Works, allocate reasonable space for the storage of their materials, tools and equipment, and co-ordinate the work of such Direct Contractors as necessary, all to the satisfaction of the Architect. The Contractor shall also allow Direct Contractors, etc., to use, free of charge, the latrine accommodation and water and power supply on the site, and shall not in any way hinder or prevent the execution of their work.</p> <p>F: V: T:</p>	Item
<u>C24 GUARANTEES AND MAINTENANCE MANUALS</u>		
130	<p>The Contractor shall obtain and hand over to the Principal Agent on Practical Completion, all relevant guarantees, any operating and maintenance instruction manuals, data or instructions required by the Principal Agent or provided by manufacturer's, suppliers or Sub-Contractors.</p> <p>The Contractor shall ensure that all warranties and guarantees received are fully ceded to the Employer on Final Completion, failing which the release of the Construction Guarantee will be withheld until this is satisfactorily completed.</p> <p>F: V: T:</p>	Item
<u>C25 MEDIA RELEASES</u>		
131	<p>All rights of publication of articles in the media, together with any advertising relating to, or in any way connected with this project shall vest in the Employer. The Contractor, together with his Sub-Contractor shall not, without the written consent of the Principal Agent, cause any statement or advertisement to be printed, screened or aired by the media.</p> <p>F: V: T:</p>	Item
<u>C26 COST OF CLAIM</u>		
132	<p>All costs incurred by the Contractor in the preparation of claims to the satisfaction of the Principal Agent and/or Quantity Surveyor shall be borne by the Contractor.</p> <p>F: V: T:</p>	Item
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<u>C27 TENDER SUM TO BE FULLY INCLUSIVE</u>		
133	<p>The Tender Sum is deemed to be the fully inclusive price for the finished work described and is deemed to include inter alia for:</p> <p>The supply of all materials.</p> <p>Labour of every description including additional costs incurred in working overtime, weekends, public holidays, etc., to meet the stipulated programme dates.</p> <p>All making, transport, conveying, cartage, carriage and delivery, etc.</p> <p>Taking delivery, unloading, storing, unpacking, hoisting or lowering, settings fixing and building into positions, cutting and waste, templates, patterns and models.</p> <p>Provision and maintenance of all plant equipment, machines trucks and other vehicles, tackle, tools, staging, sheds, stores and temporary works necessary for the due and proper performance of the Contract Works, establishment charges and all fuel, operating costs and depreciation pertaining to plant, equipment, etc.</p> <p>All applicable import taxes and duties.</p> <p>Overheads and profit.</p> <p>All obligations arising out of the Bills of Quantities, and all costs and charges deemed necessary for complying with the terms and conditions herein.</p> <p>All charges required by the Contractor in connection with Preliminary and General, site establishment and the like.</p> <p>F: V: T:</p>	Item
<u>C28 REMOVAL AND MAKING GOOD OF TEMPORARY WORK, ETC, ON COMPLETION</u>		
134	<p>The Contractor shall remove all (except where specifically stated otherwise) temporary Works, roads, services and the like used for this Contract and shall make good to the entire satisfaction of the Principal Agent any damage resulting therefrom.</p> <p>F: V: T:</p>	Item
<u>C29 LOCATION OF TEMPORARY BUILDINGS AND TEMPORARY SERVICES</u>		
135	<p>The Contractor shall provide all necessary temporary works, including temporary roads, tracks, crossings, hardstanding and services, hoardings, dust screens, tunnelling, etc., required for his own and Sub-Contractors use during the construction and maintenance period.</p> <p>There is no guarantee given or implied that Site conditions will be such that the Contractor will be able to erect such temporary works, roads, hardhats, offices, stores and temporary accommodation within the site boundaries and it shall be the Contractor's responsibility to adopt whatever measures he deems necessary in this regard and to obtain all necessary permission and pay all costs in connection therewith.</p> <p>F: V: T:</p>	Item
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<u>C30 MAKING GOOD</u>		
136	<p>All materials and workmanship in building up, making good, etc., are to match existing and where new materials abutt existing, they are to be neatly jointed to same.</p> <p>'Making good' existing work where disturbed or damaged shall mean the provision of the necessary new material to match existing and the necessary workmanship so that a complete restoration is achieved to the satisfaction of the Principal Agent.</p> <p>'Making good' where abutting walls, etc., are removed, shall mean the provision of the necessary material and workmanship in filling the gaps to match surrounding finishes so that a complete and perfect surface, continuous with surrounding surfaces and matching of same, is obtained to the Principal Agent's satisfaction.</p> <p>F: V: T:</p>	Item
<u>C31 STANDARD OF WORKMANSHIP AND MATERIALS</u>		
137	<p>In the absence of detailed specifications for any item or items, National Building Regulations, the latest applicable South African Bureau of Standards Specification, or where such does not exist, then the latest applicable British Standard Specification shall apply.</p> <p>F: V: T:</p>	Item
<u>C32 COMMODITIES TO BE NEW</u>		
138	<p>All commodities, goods, articles or materials throughout the building are to be new except where re-use of existing is specified and are to be handled, stored, used, and/or fixed with care to ensure that they are in perfect condition when incorporated into the Works and thereafter properly protected so as to ensure that they are likewise in perfect condition when handed over at completion of the Work.</p> <p>F: V: T:</p>	Item
<u>C33 SHOP DRAWINGS</u>		
139	<p>The term 'shop drawings' shall mean drawings, layout drawings, diagrams, illustrations, schedules, performance charts, brochures, operating manuals and other data which are prepared by the Contractor or any Sub-Contractor, manufacturer, supplier or distributor and which illustrate the specified portion of the work. The Contractor shall ensure that all shop drawings required for the Works in terms of this Contract, all Selected/Nominated Sub-Contracts and/or any Principal Agent's instruction, are prepared and submitted timeously in accordance with the following procedure:</p> <p>A) Three prints of shop drawings of all fabricated work, working or setting out drawings, shop details and schedules shall be submitted to the Principal Agent, for approval. Such work shall not be carried out until such approval has been given.</p> <p>B) Shop drawings shall be submitted to the Principal Agent for approval at least two weeks prior to the date on which such approval is required in order to comply with the Contract Programme.</p>	
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	<p>C) 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 Agents instructions shall not constitute grounds for any claims for delay, extension of time and the like.</p> <p>D) When the Principal Agent advises that shop drawings have been approved, the original transparencies of such drawings shall immediately be submitted to the Principal Agent so that the Principal Agents stamp of approval may be appended thereto. Thereafter, four prints of the approved shop drawings, setting out drawings and schedules shall be furnished to the Principal Agent. As many prints of the approved shop drawings and schedules as required shall also be furnished to the Works. No work shall be performed in accordance with drawings and/or catalogues not stamped with the Principal Agents approval.</p> <p>E) The Contractor, Sub-Contractor or Supplier, as the case may be, shall be responsible for ensuring that all dimensions affecting shop drawings conform to the dimensions of built work.</p> <p>F) The Principal Agents approval of shop drawings is limited to checking conformity with specification and shall not relieve the Contractor, Sub-Contractor or Supplier of his responsibility for design, erection or installation fit, nor does it vary his contractual or delictual obligations and liabilities.</p> <p>G) Should the Contractor, Sub-Contractor or Supplier 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 Architects directive.</p> <p>H) One copy of the final approved set of 'Shop Drawings' is to be submitted to the Quantity Surveyors for purposes of valuation remeasurement.</p> <p>F: V: T:</p> <p><u>C34 MODE OF PROCEDURE</u></p>	Item
140	<p>Notwithstanding anything to the contrary contained herein the Principal Agent at all times reserves the right to direct the order in which the various parts of the Contract are to be executed. The Contractor shall give priority to any individual section or portion of the Works that, in the opinion of the Principal Agent, requires to be expedited.</p> <p>Should it appear, in the Principal Agent's opinion, that work in any area is not being executed in accordance with the requirements of the Contract Programme, the Contractor shall provide additional manpower and resources and shall work additional overtime and do everything else required to bring the work back to programme to the satisfaction of the Principal Agent and to the Contractor's cost.</p> <p>F: V: T:</p>	Item
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<u>C35 UNAUTHORIZED PERSONS/WORKMEN ON PREMISES</u>		
141	<p>The Contractor shall at all times strictly exclude all unauthorized persons from the Works and the Site, and shall set up notice boards to that effect.</p> <p>No workmen or labourers (except security guards) are to be allowed under any circumstances to sleep or deposit any kit on the premises. The Contractor must provide any necessary independent shelter or shed required for any labour or watchmen on site, to the approval of the Employer.</p> <p>F: V: T:</p>	Item
<u>C36 METHOD STATEMENT</u>		
142	<p>The Tenderer shall produce, when required to do so by the Principal Agent, a Method Statement outlining the methods of construction and labour and plant resources that he proposes to use in the execution of the Works. Any approval given or observation made by the Principal Agent shall not relieve the Contractor of his sole responsibility to adopt the methods of construction and to provide the labour and plant resources necessary for the due and proper timeous execution of the Works.</p> <p>F: V: T:</p>	Item
<u>C37 SAFETY HELMETS</u>		
143	<p>The Contractor shall take all necessary steps to ensure that all workmen employed on the Works comply with regulations regarding the wearing of safety helmets and shall provide safety helmets for authorized site visitors. The Contractor shall erect notice boards warning all workmen and visitors to wear safety helmets on or about the Works.</p> <p>F: V: T:</p>	Item
<u>C38 ENCROACHMENT</u>		
144	<p>During the course of the building operations, the Contractor shall be held entirely responsible for any encroachment onto any adjoining properties, buildings, etc., or servitudes and the cost of any remedial measures as required by the Principal Agent shall be borne by the Contractor.</p> <p>F: V: T:</p>	Item
<u>C39 SCAFFOLDING</u>		
145	<p>In accordance with the 7th Edition of the Standard System of Measurement, no special scaffolding has been measured. The Tenderer is advised to visit the site and to study the drawings to assess any special requirements he may deem necessary for the Works. The Tenderer is to price against this item in respect of any special scaffolding and temporary propping requirements for the Works.</p> <p>F: V: T:</p>	Item
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<u>C40 ENVIRONMENTAL PLAN</u>		
146	<p>The Contractor shall for the duration of this contract be deemed to be the mandatory of the Council for the purposes of the Environmental Management Plan and he shall prior to taking occupation of the site satisfy Council by means of written representations that he has fully complied with the relevant requirements of the said Act. The Contractor is referred to the Environmental Management Plan Document appended to the back of this Bills of Quantities.</p> <p>F: V: T:</p>	Item
<u>C41 LOCAL LABOUR</u>		
147	<p>The extend of usage of local labour will be as set out in the Scope of Works. The contractor is to make every effort to make use of local labour for the contract.</p> <p>F: V: T:</p>	Item
<u>C42 CONTRACTORS REPORTS / LABOUR RECORDS / PLANT RECORDS</u>		
148	<p>Monthly the contractor shall provide the principal agent with a written record, in an approved schedule form, reflecting the number and description of tradesmen and labourers employed by him and all subcontractors on the works each day as well as the number, type and capacity of all plant, excluding hand tools, currently used on the works.</p> <p>The contractor shall maintain records on a daily basis of all persons employed on the site as well as all plant on the site.</p> <p>The Contractor is required to furnish the Employer with a detailed report in a required format on a monthly basis and is to make provision under this item for completing the reports on a monthly basis.</p> <p>F: V: T:</p>	Item
<u>C43 ACCELARATION OF WORKS</u>		
149	<p>The contractor is advised that for the duration of the contract every alternative weekend will be regarded as a seven day week in order to accelarate the works. The contractor must make due allowance for this in his pricing.</p> <p>F: V: T:</p>	Item N/A
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SECTION NO. 2

BUILDING WORKS

BILL NO. 1

EARTHWORKS (PROVISIONAL)

PREAMBLES

For Preambles refer to "Department of Public Works: Specification of Materials and Methods to be used - PW371-A" which shall be read in conjunction with and shall apply to all items in these Bills of Quantities.

SUPPLEMENTARY PREAMBLES

Items, materials or methods to be used specified by trade names or catalogue numbers are only an indication of the quality required. Items, materials or methods of similar quality may be used with prior approval from the Architect/Engineer.

Nature of ground:

The Tenderer must acquaint himself with the nature of the material to be excavated.

The nature of the ground is assumed to be loose fine to medium sandy material, therefore earth, but possibly interspersed with hard rock or soft rock.

In most areas the nature of the ground is assumed to be well compacted filling as a result of platforms created under Bulk Earthworks, therefore 'earth'.

Subterranean Water:

No information regarding subterranean water is available. The Tenderer must acquaint himself of the presence and depth of the subterranean water and allow therefore in his price.

The Contractor shall allow for removing seepage and other water from subterranean sources from the excavations by pumping, baling or otherwise.

Accurate records of all such dewatering shall be kept to determine the total volume of water so removed and a clear distinction shall be made between water from subterranean sources and other water.

Carting away of excavated material:

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.

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Bill No. 1
Earthworks (provisional)

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	Unit	Quantity	Rate	Amount
<u>Density Testing :</u>				
Prices for filling are to include for all necessary density and other tests.				
Rates of filling, etc shall include for all density and soil type testing to prove that the specified compaction is achieved.				
When additional testing is done on instruction of the Architect/Engineer and these tests are successful, they will be paid for additionally.				
<u>EARTHWORKS (PROVISIONAL)</u>				
<u>EXCAVATION OTHER THAN BULK</u>				
<u>Excavation in earth not exceeding 2m deep</u>				
1				
	m ³	173		
2				
	m ³	70		
<u>Extra over excavations other than bulk in earth for excavation in:</u>				
3				
	m ³	12		
4				
	m ³	6		
<u>Risk of collapse of excavations other than bulk:</u>				
5				
	m ²	568		
<u>CARTING AWAY.</u>				
<u>Extra over all excavations for loading, carting and dumping surplus excavated material (no allowance made for increase in bulk):</u>				
6				
	m ³	243		
7				
	m ³	116		
<u>EARTH FILLING, ETC.</u>				
<u>Filling with selected material from the excavations compacted to a density of at least 93% Mod. AASHTO maximum density:</u>				
8				
	m ³	121		
9				
	m ³	6		
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Earthworks (provisional)				

	Unit	Quantity	Rate	Amount
<u>Filling with approved G7 material supplied and carted onto site by the Contractor, compacted to a density of at least 93% Mod. AASHTO maximum density:</u>				
10	m ³	250		
11	m ³	44		
<u>Filling with approved G5 material supplied and carted onto site by the Contractor, compacted to a density of at least 95% Mod. AASHTO maximum density:</u>				
12	m ³	124		
<u>Coarse river sand filling compacted to 95% Mod. AASHTO maximum density:</u>				
13	m ²	742		
<u>Selected topsoil filling obtained from the excavations and/or prescribed stock piles on site, lightly consolidated :</u>				
14	m ³	4		
<u>Surface Preparation:</u>				
15	m ²	1 032		
<u>KEEPING EXCAVATIONS FREE OF WATER</u>				
<u>Keeping excavations free of water:</u>				
16	Item			
<u>WEED KILLERS, INSECTICIDES, ETC</u>				
<u>Weedkiller (active ingredients metalaclor 102,8 g/l, terbitilasien 248,6 g/l and atrasiem 248,6 g/l) mixed in the proportion of 100 ml weedkiller to 100 l water and applied at a rate of 10 l/m</u>				
17	m ²	290		
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Earthworks (provisional)				

	Unit	Quantity	Rate	Amount
<u>Approved brand of anti-termite soil poison applied by a Registered Pest Control company and guaranteed against termite infestation for ten years:</u>				
18				
18	m ²	742		
19	m ²	811		
<u>TESTS</u>				
Rates of filling, etc shall include for all density and soil type testing to prove that the specified compaction is achieved.				
When additional testing is done on instruction of the Architect/Engineer and these tests are successful, they will be paid for additionally.				
<u>Prescribed tests to determine degree of compaction or other properties of ground or filling</u>				
20	No	15		
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	Unit	Quantity	Rate	Amount
<p><u>SECTION NO. 2</u> <u>BUILDING WORKS</u> <u>BILL NO. 2</u> <u>CONCRETE, FORMWORK AND REINFORCEMENT</u></p> <p><u>PREAMBLES</u> For Preambles refer to "Department of Public Works: Specification of Materials and Methods to be used - PW371-A" which shall be read in conjunction with and shall apply to all items in these Bills of Quantities.</p> <p><u>SUPPLEMENTARY PREAMBLES</u> Items, materials or methods to be used specified by trade names or catalogue numbers are only an indication of the quality required. Items, materials or methods of similar quality may be used with prior approval from the Architect/Engineer.</p> <p><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 Architect/Engineer. The testing shall be undertaken by an independent firm or institution nominated by the Contractor to the approval of the Architect/Engineer. (Test cubes are measured separately).</p> <p><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. 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 Formwork to soffits of solid slabs etc shall be deemed to be to slabs not exceeding 250mm thick unless otherwise described 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 style="text-align: right;">Carried to Collection</p> <p>Section No. 2 Bill No. 2 Concrete, Formwork And Reinforcement</p>			R	

	Unit	Quantity	Rate	Amount
<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>				
<u>CONCRETE, FORMWORK AND REINFORCEMENT</u>				
<u>UNREINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES</u>				
<u>15Mpa/19mm Concrete:</u>				
1				
	m ³	12		
<u>REINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES</u>				
<u>25Mpa/19mm Concrete:</u>				
2				
	m ³	53		
3				
	m ³	28		
4				
	m ³	1		
5				
	m ³	2		
6				
	m ³	73		
<u>REINFORCED CONCRETE CAST ON/IN FORMWORK</u>				
<u>30MPa/19mm concrete</u>				
7				
	m ³	2		
8				
	m ³	11		
9				
	m ³	1		
10				
	m ³	1		
11				
	m ³	3		
12				
	m ³	3		
13				
	m ³	1		
14				
	m ³	23		
<u>TEST BLOCKS</u>				
<u>Test blocks:</u>				
15				
	Sets	25		
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Concrete, Formwork And Reinforcement				

	Unit	Quantity	Rate	Amount
<u>FINISHING TOP SURFACE OF CONCRETE</u>				
<u>Finishing top surfaces of concrete smooth with a wood float (Class U2):</u>				
16				
Surface beds, slabs, bases, etc to falls to rainwater tank plinth.	m ²	18		
<u>Finishing top surfaces of concrete smooth with a power float :</u>				
17				
Surface beds, slabs, etc (Provisional).	m ²	639		
<u>GROUTING</u>				
<u>25MPa non-shrink grout :</u>				
18				
Bedding approximately 15mm thick under 315 x 240mm base plate including chamfered edges all round.	No	12		
19				
Bedding approximately 20mm thick under 210 x 100mm base plate including chamfered edges all round.	No	2		
20				
Bedding approximately 20mm thick behind 1700 x 262mm base plate including chamfered edges all round.	No	2		
21				
Bedding approximately 20mm thick under 1700 x 455mm base plate including chamfered edges all round.	No	2		
<u>ROUGH FORMWORK (DEGREE OF ACCURACY II)</u>				
<u>Rough Formwork to Sides:</u>				
22				
Rectangular columns in foundations (Provisional)	m ²	18		
23				
Rectangular columns	m ²	115		
24				
Rectangular columns in framework to doorway	m ²	6		
25				
Wall beams	m ²	22		
26				
Inverted/upstand beams	m ²	27		
27				
Downstand beams	m ²	4		
28				
Edges, risers, ends and reveals not exceeding 300mm high or wide.	m	65		
<u>Rough formwork to soffits</u>				
29				
Slabs in bench seats propped up not exceeding 1.5m high	m ²	10		
30				
Slabs propped up exceeding 1.5m and not exceeding 3.5m high	m ²	101		
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Concrete, Formwork And Reinforcement				

	Unit	Quantity	Rate	Amount
<u>Rough formwork to sides and soffits</u>				
31	Lintol beams propped up exceeding 1,5m and not exceeding 3.5m high	m ²	5	
32	Beams propped up exceeding 1,5m and not exceeding 3.5m high	m ²	28	
<u>Boxing in rough formwork to form</u>				
33	50 x 50mm Chamfers along top or bottom edges. (Provisional).	m	12	
34	50 x 50mm Vertical chamfers at corners. (Provisional).	m	134	
<u>MOVEMENT JOINTS ETC</u>				
<u>Two layers of 3-ply malthoid in slip joints between horizontal concrete and brick surfaces including cement mortar bed.</u>				
35	Not exceeding 300mm wide	m	122	
<u>Isolation joints with 10mm Thick 'Sondor' or equally approved jointex joint between horizontal concrete and brick surfaces</u>				
36	10mm Joints not exceeding 300mm high.	m	281	
37	10mm Joints not exceeding 300mm high at rainwater plinths	m	12	
<u>Horizontal joggle construction joints through concrete including thick cement slurry or bitumen paint to one face to form bond breaker.</u>				
38	Surface beds not exceeding 300mm thick.	m	147	
<u>Saw cut joints:</u>				
39	3 x 25mm Saw cut joints in top of concrete surface beds to saw cut joints.	m	433	
40	3 x 25mm Saw cut joints in top of concrete surface beds to construction joints.	m	147	
<u>REINFORCEMENT, ETC. (PROVISIONAL)</u>				
<u>Mild steel reinforcement to structural concrete work :</u>				
41	R8mm Diameter bars	Tonnes	2,33	
42	R10mm Diameter bars	Tonnes	2,33	
<u>High tensile steel reinforcement to structural concrete work :</u>				
43	Y10mm Diameter bars	Tonnes	2,33	
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	Unit	Quantity	Rate	Amount
44 Y12mm Diameter bars	Tonnes	2,33		
45 Y16mm Diameter bars	Tonnes	2,33		
<u>Fabric reinforcement:</u>				
46 Mesh Ref. No. 193 fabric reinforcement in concrete surface beds, slabs, etc.	m ²	26		
47 Mesh Ref. No. 245 fabric reinforcement in concrete surface beds, slabs, etc.	m ²	728		
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	Unit	Quantity	Rate	Amount
<p><u>SECTION NO. 2</u></p>				
<p><u>BUILDING WORKS</u></p>				
<p><u>BILL NO. 3</u></p>				
<p><u>MASONRY</u></p>				
<p><u>PREAMBLES</u></p>				
<p>For Preambles refer to "Department of Public Works: Specification of Materials and Methods to be used - PW371-A" which shall be read in conjunction with and shall apply to all items in these Bills of Quantities.</p>				
<p><u>SUPPLEMENTARY PREAMBLES</u></p>				
<p>Items, materials or methods to be used specified by trade names or catalogue numbers are only an indication of the quality required. Items, materials or methods of similar quality may be used with prior approval from the Architect/Engineer.</p>				
<p><u>BRICKWORK</u></p>				
<p><u>Cement Mortar</u></p>				
<p>Unless otherwise described, all brickwork shall be built in 1:5 cement mortar</p>				
<p><u>Sizes in descriptions:</u></p>				
<p>Where sizes in descriptions are given in brick units, 'one brick' shall represent the length and 'half brick' the width of a brick.</p>				
<p><u>Hollow walls etc</u></p>				
<p>Descriptions of hollow walls shall be deemed to include leaving every fifth perpend of the bottom course of the external skin open as a weep hole and galvanised butterfly wire ties at 5 per square meter.</p>				
<p>Descriptions of hollow walls to receive concrete filled cavities shall be deemed to include building up brickwork in increments not exceeding 1m high or as otherwise instructed by Engineer, filling cavity with concrete infill, before raising brickwork further.</p>				
<p>Walls in two skins described as 'bagged and sealed' shall be deemed to include having the outer face of the inner skin bagged with 1:6 cement and sand mixture and sealed with two coats 'Brixéal' bitumen emulsion waterproofing coating.</p>				
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	Unit	Quantity	Rate	Amount
<u>Brick reinforcement</u>				
Descriptions of brickwork shall be deemed to include for steel reinforcing fabric as specified every fourth course in superstructure and every course in foundations. Additional reinforcement in lintols, etc. are measured seperately				
<u>Face bricks</u>				
Bricks shall be ordered timeously to obtain uniformity in size and colour.				
<u>Pointing:</u>				
Descriptions of recessed pointing to fair face brickwork and face brickwork shall be deemed to include square recessed, hollow recessed, weathered pointing, etc.				
<u>Samples:</u>				
Samples of all masonry building units, except those for walls described as 'load bearing', shall consist of a minimum of 6 units. Samples of building units to be used in walls described as 'load bearing' shall consist of 30 units from every 30 000 units delivered to site.				
Rates for brickwork, faced brickwork,etc shall include for all required samples.				
<u>Brickwork:</u>				
All brickwork to comply with SANS 10164 Part 1-1980 or the latest revision.				
<u>BRICKWORK IN FOUNDATIONS (PROVISIONAL)</u>				
<u>Brickwork of NFX bricks (14 MPa nominal compressive strength) in Class I mortar:</u>				
1		One brick walls.	m ²	172
2		One brick walls in planter boxes and bench seating.	m ²	24
<u>BRICKWORK IN SUPERSTRUCTURE</u>				
<u>Brickwork of NFP bricks in class II mortar:</u>				
3		Half brick walls in beamfilling.	m ²	7
4		One brick walls.	m ²	202
5		One brick walls in internal gable fire walls above concrete beam.	m ²	29
6		One brick walls in rainwater tank plinths.	m ²	7
7		One brick walls in planter boxes and bench seating.	m ²	21
8		One brick walls of two half brick skins bagged and sealed.	m ²	458
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		Unit	Quantity	Rate	Amount
9	350mm Brick walls of three half brick skins bagged and sealed.	m ²	12		
	<u>BRICKWORK SUNDRIES</u>				
	<u>Joint forming material in movement joints:</u>				
10	10mm Bitumen impregnated fibre board built in vertically between brick skins and concrete.	m ²	20		
11	10mm Bitumen impregnated fibre board built in vertically between brick skins and concrete in foundations. (Provisional).	m ²	11		
	<u>Brickwork reinforcement:</u>				
12	75mm Wide reinforcement built in horizontally.	m	21		
13	230mm Wide reinforcement built in horizontally.	m	2 187		
14	230mm Wide reinforcement built in horizontally in foundations. (Provisional).	m	784		
	<u>Turning pieces:</u>				
15	220mm Wide turning piece to lintels etc.	m	4		
	<u>Prestressed fabricated concrete lintels including necessary temporary supports :</u>				
16	75 x 110mm Lintels in lengths not exceeding 3m	m	88		
17	75 x 110mm Lintels in lengths exceeding 4,5m and not exceeding 6m	m	23		
	<u>Galvanised hoop iron cramps, ties, etc:</u>				
18	30 x 1,6mm Wall tie 500mm long with one end shot pinned to concrete and other end built into brickwork	No	250		
19	30 x 1,6mm Wall tie 500mm long with one end shot pinned to concrete and other end built into brickwork in foundations	No	135		
20	30 x 1,6mm Roof tie 1,6m long with one end fixed to timber and other end built into brickwork.	No	54		
	<u>Bagging of 1:3 cement and sand mixture</u>				
21	On brick walls to inside of planter boxes, etc.	m ²	19		
22	On brick walls at rainwater tanks to receive waterproofing (elsewhere).	m ²	7		
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	Unit	Quantity	Rate	Amount
<u>FACE BRICKWORK</u>				
<u>Corobrick Midrand 27-40Mpa Firelight Imperial FBX Clay satin face bricks (or equally approved), size 222 x 106 x 73mm, manufactured in accordance with 227:2007, bedded and jointed in Class II mortar and pointed with recessed horizontal and vertical joints, suitable for exposure zones 1-4 :</u>				
23	m ²	46		
24	m ²	236		
25	m ²	18		
26	m	5		
27	m	9		
<u>FACE BRICKWORK COPINGS, SILLS, ETC.</u>				
<u>Brick-on-edge header course copings, sills, etc of Selected Face Bricks as before, pointed with recessed joints on all exposed faces:</u>				
28	m	64		
<u>NUTEC-CEMENT/FIBRE-CEMENT WINDOW SILLS</u>				
<u>'Everite Nutec' (or equally approved) window sills in single lengths not exceeding 3.6m, bedded in class I mortar including fixing lugs screwed to underside with self tapping screws:</u>				
29	m	64		
<u>PAVING ETC</u>				
Paving shall be laid in accordance with SANS 1200 MJ, SANS 1058 and the Concrete Masonry Associations specifications and manuals.				
Paving shall be laid to Stack Bond pattern on 25mm thick (thickness after final compaction) clean river sand (preparation of ground or filling elsewhere), laid with a minimum longitudinal fall of 1% on a transverse fall of at least 2%.				
Clean fine jointing sand shall be swept and vibrated into joints between paving at completion and paving is to be inspected and re-sanded after three (3) months.				
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	Unit	Quantity	Rate	Amount
<p><u>'Corobrik (KwaZulu Natal) Flagstone Charcoal S-C concrete paving bricks (or equally approved), manufactured in accordance SANS 1058.</u></p> <p><u>Paving of 440 x 440 x 40mm thick concrete paving bricks with butt joints on 25mm thick river sand bed with sand-and-cement mixture swept into joints and hosed down, including preparation of ground or filling (Filling elsewhere measured) :</u></p>				
30	m ²	290		
31	m	140		
<p><u>Precast concrete edging/kerbing finished smooth on exposed surfaces including bedding, jointing and pointing, etc.</u></p>				
32	m	140		
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<u>BUILDING WORKS</u>				
<u>BILL NO. 4</u>				
<u>WATERPROOFING</u>				
<u>PREAMBLES</u>				
For Preambles refer to "Department of Public Works: Specification of Materials and Methods to be used - PW371-A" which shall be read in conjunction with and shall apply to all items in these Bills of Quantities.				
<u>SUPPLEMENTARY PREAMBLES</u>				
Items, materials or methods to be used specified by trade names or catalogue numbers are only an indication of the quality required. Items, materials or methods of similar quality may be used with prior approval from the Architect/Engineer.				
<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				
Waterproofing is to be laid in strict accordance with the manufacturers Code of Practice and by an Approved Contractor.				
Preparation of substrata:				
Screeded roof surfaces shall be firm, dry and clean. Corners shall be coved or arris rounded. All surfaces to receive waterproofing are to be fully primed with a solvent based bitumen primer.				
Timber boarded roof surfaces shall be dry, clean and even. All internal angles are to receive a timber triangular fillet. Corners and edges shall be arris rounded.				
<u>DAMP PROOFING OF WALLS AND FLOORS</u>				
<u>One layer of 375 micron Consol Plastics Brikgrip DPC embossed damp proof course:</u>				
1	In walls.	m ²	70	
<u>One layer of 250 micron Consol Plastics Gunplas USB Green waterproof sheeting sealed at laps with Gunplas Pressure Sensitive Tape:</u>				
2	Under surface beds.	m ²	728	
3	Under surface beds at rainwater tank plinths.	m ²	14	
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Waterproofing				

	Unit	Quantity	Rate	Amount
<u>One layer 375 micron orange polyethylene waterproof sheeting (SANS 952-1985 type A) sealed at laps with PVC self-adhesive tape :</u>				
4	Vertically to walls at rainwater tank plinths.	m ²	7	
<u>'ABE Dura flex' or equally approved liquid application with ecofelt. All surfaces to be free from oil, grease, wax, dirt or any other form of foreign matter that might affect adhesion. Mix using a mechanical mixer until homogeneous and free of lumps. Apply three coats dura.@flex with alternate coats at right angles to each other using a brush, squeegee, trowel or spray with an overcoating time of 16 hours, all in accordance with manufacturer's recommendations.</u>				
5	On concrete floors to bottom of planter boxes.	m ²	9	
6	On bagged brick walls to planter boxes.	m ²	19	
7	On bagged brick walls at rainwater tank plinths.	m ²	7	
<u>WATERPROOFING TO ROOFS ETC</u>				
<u>'ABE Dura flex' or equally approved liquid application with ecofelt. All surfaces to be free from oil, grease, wax, dirt or any other form of foreign matter that might affect adhesion. Mix using a mechanical mixer until homogeneous and free of lumps. Apply three coats dura.@flex with alternate coats at right angles to each other using a brush, squeegee, trowel or spray with an overcoating time of 16 hours, all in accordance with manufacturer's recommendations.</u>				
8	On balcony floors to receive tiles (elsewhere measured).	m ²	53	
9	On tops and sides of upstand plastered beams.	m ²	23	
10	Dressing and sealing into 75mm internal diameter outlet , including additional membrane	No	2	
<u>FLASHINGS ETC.</u>				
<u>Prepare, prime and apply Geoflex or equally approved and mat fabric and two coats Geoflex liquid plastic flashing compound at 2 l/m2 :</u>				
11	Parapet walls (Provisional).	m ²	14	
12	Bandage flashing 500mm wide (Provisional.	m	24	
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	Unit	Quantity	Rate	Amount
<u>JOINT SEALANTS ETC</u>				
<u>Approved silicone or equally approved sealing compound :</u>				
13	In pointing joints around timber frames and face brick walls externally.	m	12	
<u>Approved two-part polyurethane sealing compound including backing cord, bond breaker, primer, etc</u>				
14	3 x 25mm In saw cut joints in floors.	m	580	
15	10 x 10mm In isolation expansion joints in floors including raking out expansion joint filler as necessary.	m	293	
16	10 x 10mm In vertical expansion joints including raking out expansion joint filler as necessary	m	124	
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<p><u>SECTION NO. 2</u> <u>BUILDING WORKS</u> <u>BILL NO. 5</u> <u>ROOF COVERINGS</u></p> <p><u>PREAMBLES</u> For Preambles refer to "Department of Public Works: Specification of Materials and Methods to be used - PW371-A" which shall be read in conjunction with and shall apply to all items in these Bills of Quantities.</p> <p><u>SUPPLEMENTARY PREAMBLES</u> Items, materials or methods to be used specified by trade names or catalogue numbers are only an indication of the quality required. Items, materials or methods of similar quality may be used with prior approval from the Architect/Engineer.</p> <p><u>PROFILED METAL SHEETING AND ACCESSORIES</u></p> <p><u>Notes:</u> The following roof sheeting systems are to be manufactured and/or supplied and installed in strict accordance with the Manufacturer's and/or Supplier's specifications. Fixing of all roof sheeting is to be in accordance with the Manufacturer's approved Instruction Book.</p> <p><u>Sheeting :</u> The roof sheeting shall be interlocking concealed-fix roll-formed in continuous lengths and cut to length by a pneumatic cut-off process from certified Galvanised 0.58mm steel. Galvanized steel shall be certified and comply with ASTM A 653 SG 550 (3T) and be finished as described. A certificate verifying compliance shall be issued by the manufacturer. The profile shall be roll-formed with three ribs at centres not exceeding 203mm and a cover width not exceeding 406mm. These will include a male and a female rib. When interlocked, the minimum sheet depth shall be 48mm. Each trough shall incorporate two stiffener ribs. Contractor to ensure that the roof sheeting is to be turned up at ridges to form a dam and turned down at gutters to form a drip. Ensure that the female overlap is not facing in the direction of the prevailing wind and ensure that overlapping sheets are positively locked into position.</p>				
<p style="text-align: right;">Carried to Collection</p> <p>Section No. 2 Bill No. 5 Roof Coverings</p>			R	

	Unit	Quantity	Rate	Amount
<p>Fixing :</p> <p>The sheets shall be fixed to every purlin by means of patented D1 Starting clips, D2 Duplex clips and D3 Finishing clips which will securely hold the sheets in position and lock-in both the sidelap and centre rib. The D1, D2 and D3 clips shall be manufactured from Galvanized steel and shall be fixed to the steel purlin with the appropriate self-drilling/tapping screws or with ZAP no 10x45mm Waferhead screws type 17 to timber purlins.</p> <p>Flashings :</p> <p>Flashings specifications shall be to the manufacturers standards and fixed to the sheeting with S1 brackets or, sliding brackets at apex where roof sheets are 30m or longer, to obviate any direct fixing perforations. Prior to flashings being fixed, all troughs at the apex shall be stop-ended to the full depth of the sheet in order to prevent any penetration of wind-driven water. The trough shall be lipped at the eaves end to form a drip. Transverse flashing flanges shall be notched to the sheet profile where necessary. All these operations must be performed with special tools available from the manufacturer.</p> <p>Erection, safety, handling and storage:</p> <p>Every precaution shall be taken to prevent damage to roof sheets, cladding, etc., during all stages of construction. Duck boards should be used when necessary to protect the sheeting from damage. Sheeting which has become deformed or damaged in any way, shall be replaced.</p> <p>Care shall be taken to ensure that no sheeting or flashing will be cut with abrasive disc on roof surfaces in order to prevent steel particles from penetrating coated surfaces.</p> <p>Sheetings should be suitably supported, clear of the ground, under well ventilated cover, away from risk of damage from building operations, contact with cement, dust, lime and abrasive dust, until required to be installed.</p> <p>The contractor shall exercise special care when handling long length sheeting, particularly in windy conditions. Should work be interrupted for any reason, all loose sheeting and incomplete sections must be adequately secured against possible movement by wind and gravity.</p>				
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	Unit	Quantity	Rate	Amount
<p>The contractor shall ensure that all materials used on site for roofing/cladding, etc are transported, handled and stored in accordance with the manufacturer's recommendations. Material damaged shall be rejected and replaced with undamaged material at the contractor's expense. Repair of damaged material will not generally be permitted. Rates are to include for preventing damage and protecting sheets through all stages of construction.</p> <p><u>Protrusion through sheeted surfaces :</u></p> <p>Protrusions such as pipes, ducts and the like, shall be adequately flashed where they pass through the sheeting surface. Where ribs have to be cut away to permit penetration, additional framing is to be installed as required to support the sheeting. Depending on the position of the penetration through the roof, special attention shall be given to back flashing the sheeting to the ridge or point of water entry. In all cases, all cutting and flashings shall be so arranged that adequate provision is made for the drainage of all troughs and corrugations.</p> <p><u>Guarantee :</u></p> <p>The manufacturer shall comply with ISO 9001:2008 Quality Management System. The standing seam concealed fix 406 sheeting shall be laid in strict accordance with the manufacturer's specifications by an approved contractor.</p> <p>A written and approved five year guarantee of site-workmanship and watertightness shall be issued after final inspection and approval of concealed-fix roofing, cladding, etc., by the Manufacturer on condition that the sheeting was laid by an approved contractor.</p> <p><u>Cleaning of roof, etc:</u></p> <p>All debris, swarf, etc. arising from the fixing of the cladding shall be removed from the sheeting as the fixing progresses. In addition, off-cuts of insulation, surplus fasteners and sealants, mandrels from pop rivets, off-cuts of flashings and sheeting, surplus flashing, food packaging, cartons, bottles, cans, etc shall not be left on the roof or in the gutters.</p> <p>Care shall be taken to ensure that no such material enters, blocks or partially impedes the flow of water into the outlets, down pipes, etc.</p>				
<p style="text-align: right;">Carried to Collection</p> <p>Section No. 2 Bill No. 5 Roof Coverings</p>			R	

	Unit	Quantity	Rate	Amount
<u>PROFILED METAL SHEETING AND ACCESSORIES</u>				
<u>'Global Roofing Solutions' 0.58mm Thick 406mm cover Brownbuilt profile (or equally approved) Chromadek Z200 spelter ISQ550 ArcelorMittal brand C3 medium corrosion risk, profiled steel roofing sheets in single lengths with Dark Dolphin colour finish on top side and standard Pebble Grey backing coat finish on reverse side, fixed to steel intermediate purlins at max 1800mm centres and eaves and ridge purlins at max 1500mm centres using Duplex clips fixed with 10No. 16 x 16mm long self drilling wafer head PH2 screws, No. 3 drill point fasteners, all in accordance with the manufacturers specifications and recommendations.</u>				
1				
1	m ²	660		
2				
2	m ²	114		
<u>'Global Roofing Solutions' 0.58mm Thick 406mm cover Brownbuilt profile (or equally approved) Chromadek Z200 spelter ISQ550 ArcelorMittal brand C3 medium corrosion risk, profiled steel roofing sheets in single lengths with Dark Dolphin colour finish on top side and standard Pebble Grey backing coat finish on reverse side, fixed to steel roof eaves truss framework using Duplex clips fixed with 10No. 16 x 16mm long self drilling wafer head PH2 screws, No. 3 drill point fasteners, all in accordance with the manufacturers specifications and recommendations.</u>				
3				
3	m ²	60		
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	Unit	Quantity	Rate	Amount
<p><u>'Global Roofing Solutions' 0.58mm Thick 406mm cover Brownbuilt profile (or equally approved) Chromadek Z200 spelter ISQ550 ArcelorMittal brand C3 medium corrosion risk, profiled steel vertical cladding roofing sheets in single lengths with Dark Dolphin colour finish on top side and standard Pebble Grey backing coat finish on reverse side, a 15mm gap to be provided between exterior brickwall and side cladding and cladding is fixed to the exterior brickwork wall with Hilti M8x80mm long "HUS3-H screw anchors – galvanized (or similar approved) with a minimum concrete / brickwork embedment depth of 60mm. Fixing bolts every 300mm in both directions. Off-set achieved with steel spacer plates or shims, all done in accordance with manufacturers specifications and recommendations.</u></p>				
4	Side cladding.	m ²	46	
<p><u>'Global Roofing Solutions' 0,58mm Thick to suit Brownbuilt profile (or equally approved) galvanised steel Z200 steel sheet accessories to preceding roof coverings roll-formed in continuous lengths with Chromadek Dark Dolphin colour one side and standard Pebble Grey backing coat to other side and fitted in strict accordance with manufacturers specifications and recommendations.</u></p>				
5	Ridge cap 550mm girth 3 times bent and notched on site to suit roof profile.	m	32	
6	Gable trim/Barge flash 550mm girth, 3 times bent.	m	41	
7	Headwall flash 375mm girth, 2 times bent and notched on site to suit roof profile.	m	38	
8	Sidewall flash 375mm girth, 2 times bent.	m	24	
9	Counter flash 185mm girth, 2 times bent.	m	62	
10	Counter flash 185mm girth, 2 times bent around roof ridge ventilators.	m	71	
11	Drip flash 231mm girth, 3 times bent.	m	63	
12	Door jamb / window jamb flash 308mm girth, 3 times bent.	m	13	
13	Broad flute closers to suit profile.	m	204	
14	Broad flute closers to suit profile, around roof ridge ventilators.	m	43	
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	Unit	Quantity	Rate	Amount
<u>ROOF AND WALL INSULATION</u>				
<u>'Isover' (or equally approved) 100mm Thick Factorylite non-combustible light weight fibreglass Glasswool thermal blanket roof insulation with reinforced foil facing (Code: 12089), nominal density 12kg/m3, R-value 2.56m2 K/W and a thermal conductivity of 0.039 W/m2/K.</u>				
15				
100mm Thick Insulation blanket laid taut over purlins and fixed concurrent with the roof covering with stapled longitudinal flap joints, including galvanised steel straining wires at not exceeding 300mm centres and tieddown top and bottom after tensioning with and including galvanised hoop iron ties, all in accordance with manufacturers recommendations.	m ²	774		
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2	38 x 114mm Backing pieces fixed to purlins at approximately 1200mm centres with galvanised steel 'Trip-L-Grip' brackets to receive barge boards (elsewhere measured). (Provisional).	m	41		
3	38 x 114mm Backing piece fixed to end of rafters at approximately 1200mm centres with galvanised steel 'Trip-L-Grip' brackets to receive fascia boards (elsewhere measured).	m	38		
4	50 x 76mm Purlins.	m	238		
5	50 x 228mm Rafters.	m	164		
<u>Roof Sundries :</u>					
6	50 x 1.6mm 90 Degree Eco truss hanger bracket, bolted to wall with and including 2 x anchor bolts, to receive timber rafters (elsewhere measured).	No	54		
<u>EAVES, VERGES, ETC</u>					
<u>Fibre Cement medium density plain ungrooved fascias and barge boards:</u>					
7	10 x 225mm Plain fascia boards, including PVC H-profile jointing strips and corner jointers, twice screwed on with 12x40mm countersunk brass screws at 900mm centres.	m	38		
8	80 x 275mm Socketless barge board, butt jointed and with PVC H-profile joiners and corner joiners, twice screwed on.	m	41		
<u>SKIRTINGS</u>					
<u>'Supreme Mouldings' or equally approved :</u>					
9	21 x 150mm High ERP010-D profiled skirtings with Polmethyl Methacrylate wear layer, fixed to walls with approved adhesive, all in accordance with the manufacturers specifications and recommendations.	m	133		
<u>WROUGHT HARDWOOD DOORS, ETC.</u>					
All glazing is elsewhere measured.					
All doors are to be pre-treated with a linseed oil based transit stabilizing sealer.					
<u>'Swartland Cape Culture' (or equally approved) 10 Year Guarantee Hardwood Doors hung to timber frames:</u>					
10	44mm Type MDF Horizontal (MDFHRZH10) slatted heavy duty hardwood interior door, size 813 x 2032mm high. (See Architects Door Schedule - D 02).	No	3		
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		Unit	Quantity	Rate	Amount
11	44mm Type MDF Horizontal (MDFHRZH10) slatted heavy duty hardwood interior door, size 913 x 2032mm high. (See Architects Door Schedule - D 03).	No	1		
12	44mm Type MDF Horizontal (MDFHRZH10) slatted heavy duty hardwood interior door, size 813 x 2032mm high with 180 x 880mm high framed opening viewing panel fitted with and including wrought timber glazing beads on both sides (glazing elsewhere measured). (See Architects Door Schedule - D 04).	No	2		
13	44mm Type SD30 Horizontal slatted hardwood double door in two equal leaves with rebated meeting stiles, fitted with composite gaskets to prevent drafts, size 1612 x 2032mm high with 180 x 880mm high framed opening viewing panels to each leaf, fitted with and including wrought timber glazing beads on both sides (glazing elsewhere measured). (See Architects Door Schedule - D 01).	No	5		
14	Extra over for 500 x 300mm high framed opening in slatted doors for aluminium louvre unit (louvre unit elsewhere measured). (Provisional).	No	6		
<u>FRAMED FRAMES ETC</u>					
All door frame profiles are to be manufactured according to SABS specification No. 1129 of 1977.					
All door frames are to be pre-treated with a linseed oil based transit stabilizing sealer.					
<u>'Swartland Cape Culture' (or equally approved) 10 Year Guarantee Hardwood timber door frames constructed from solid laminated wood and fitted with and including composite gaskets to prevent drafts :</u>					
15	SK1 86 x 76mm Heavy duty rebated door frame with 44mm rebate, size 923 x 2114mm high, plugged and screwed to wall.	No	5		
16	SK1 86 x 76mm Heavy duty rebated door frame with 44mm rebate, size 1023 x 2114mm high, plugged and screwed to wall.	No	1		
17	SK3 86 x 76mm Heavy duty rebated double door frame with 44mm rebate, size 1722 x 2114mm high, plugged and screwed to wall.	No	5		
<u>TIMBER STAGE FLOORS</u>					
The following in timber stage floors (Refer to Engineers Drawing Timber Stage - Layout and Details No D34435S-220-01 Rev B) :					
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		Unit	Quantity	Rate	Amount
	<u>Grade 5 SABS approved Structural laminated timber members in structural supporting joists :</u>				
18	75 x 110mm High laminated timber beams in lengths not exceeding 2,4m, twice holed and bolted to brickwall with M10 x 130mm long galvanised 'HUS3-H screw anchors at 300mm centres, embedded to a min depth of 55mm into brickwork, (bolts elsewhere measured).	m	13		
19	75 x 421mm High laminated timber beams in lengths not exceeding 2,4m, resting on concrete surface bed and fixed to concrete with and including 70 x 70 x 6mm galvanised mild steel angle cleat 60mm long at 250mm centres for full length of timber beams and cleats twice holed and bolted to concrete surface bed with M10 x 130mm long galvanised 'HUS3-H screw anchors (elsewhere measured) and bolted to timber beam with galvanised M10 (Grade 4.8) bolts (elsewhere measured).	m	36		
20	75 x 421mm High extreme profiled laminated timber beams cut to take shape of steps profile in lengths not exceeding 2,4m at steps, resting on concrete surface bed and fixed to concrete with and including 70 x 70 x 6mm galvanised mild steel angle cleat 60mm long at 250mm centres for full length of timber beams and cleats twice holed and bolted to concrete surface bed with M10 x 130mm long galvanised 'HUS3-H screw anchors (elsewhere measured) and bolted to timber beam with galvanised M10 (Grade 4.8) bolts (elsewhere measured).	m	1		
21	75 x 480mm High laminated timber beams in lengths not exceeding 2,4m at steps, resting on concrete surface bed and fixed to concrete with and including 70 x 70 x 6mm galvanised mild steel angle cleat 60mm long at 250mm centres for full length of timber beams and cleats twice holed and bolted to concrete surface bed with M10 x 130mm long galvanised 'HUS3-H screw anchors (elsewhere measured) and bolted to timber beam with galvanised M10 (Grade 4.8) bolts (elsewhere measured).	m	1		
	<u>'Getzner' or equally approved Sylomer pads for vibration absorption :</u>				
22	40mm 'Getzner' or equally approved Sylomer pad layer for absorption of vibration, laid to top of timber beam joists to receive shutterboard (elsewhere) and floor boards (elsewhere) over, and fixed all together with stage flooring with and including suitable concealed nails as per manufacturers instructions and specifications, at equal recommended centres.	m ²	29		
	Carried to Collection				
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	Unit	Quantity	Rate	Amount
<p>The references given in the descriptions are to the respective types of fittings detailed on the Architect's drawings as numbered and annexed to these Bills of Quantities for tender purposes.</p> <p><u>Kitchen Cupboards and Worktops, etc.</u></p> <p>Kitchen Cupboards Specifications:</p> <p>Kitchen Tops</p> <p>32mm Rustenburg Granite fixed with silicone and polished edges</p> <p>Faces of Cupboards & Drawers</p> <p>PG Bison or equally approved 16mm thick MelaWood® in Verzasca Oak™Linear™, manufactured in accordance with SANS 1763:1998, constructed using 1830mm wide BisonBord® boards in accordance with the approved shop drawings.</p> <ul style="list-style-type: none"> • 2mm Heavy duty impact edging <p>Carcasses</p> <p>PG Bison or equally approved 16mm thick MelaWood® in Folkstone Grey™Peen™, manufactured in accordance with SANS 1763:1998, constructed using 1830mm wide BisonBord® boards in accordance with the approved shop drawings.</p> <p>Kick Plate</p> <p>100x 20mm Meranti Kickplate with 1mm Brushed Stainless Steel 204 cover.</p> <p>Hinges</p> <p>GRASS® Nexis or equally approved Click-on 110° opening angle screw-in hinge in nickel plated (Item No: 146.322.53.0815) with 2D-cross mounting plate with 2 point fixing (Item No: 314.493.71.0215) and plain hinge cover cap, fixed with 3,5 x 15mm nickel plated chipboard screws including Soft Close closing mechanism (Item No: 924.200.40.0215).</p> <p>Drawer Runners</p> <p>500mm Heavy Duty bearing drawer runners with soft closers.</p> <p>Handles</p> <p>170mm Brushed Satin Nickel bar handles SKU#8373</p>				
<p>Section No. 2 Bill No. 6 Carpentry And Joinery</p>			<p>Carried to Collection</p>	<p>R</p>

	Unit	Quantity	Rate	Amount
<u>Kitchen Cupboards, etc.</u>				
37	Kitchen Floor Cupboard Unit type complete at Surverey Hatch, size 1950 x 600 x 900mm high with six (6) equal size open shelves, with and including 32mm Granite worktop 900mm wide with overhang to hatch, cut out around brickwalls to form serverey hatch on same level, and 16mm melawood sides, bottom, division, shelf, back and dividing framework, etc,. Including all ironmongery, brackets, skirtings, blocking pieces, edging, etc, - All in accordance with the Architects Kitchen Joinery Schedule/Drawing No: A.02.1.	No	1	
38	Kitchen Floor Cupboard Unit type complete at Surverey Hatch, size 3370 x 600 x 900mm high with twelve (12) equal size open shelves, with and including 32mm Granite worktop 900mm wide with overhang to hatch, cut out around brickwalls to form serverey hatch on same level, and 16mm melawood sides, bottom, division, shelf, back and dividing framework, etc,. Including all ironmongery, brackets, skirtings, blocking pieces, edging, etc, - All in accordance with the Architects Kitchen Joinery Schedule/Drawing No: A.02.1.	No	1	
39	Kitchen Floor Cupboard Unit type complete, size 3000 x 600 x 900mm high with three (3) cupboard doors, one (1) trash drawer and four (4) drawers, with and including 32mm Granite worktop, with cut out in top for 1500 x 535mm wide double centre bowl drop on sink (sink elsewhere measured), and 16mm melawood sides, bottom, division, shelf, back and hinged doors, dividing framework, etc,. Including all ironmongery, brackets, runners, rails, skirtings, blocking pieces, edging, etc, - All in accordance with the Architects Kitchen Joinery Schedule/Drawing No: A.02.1.	No	1	
40	L-Shaped Kitchen Floor Cupboard Corner Unit type complete, size 3200 x 600 x 900mm high and 1350 x 600 x 900mm high respectively, with four (4) cupboard doors and two (2) sets of four (4) drawers (8 Drawers total), with and including 32mm Granite worktop and 16mm melawood sides, bottom, division, shelf, back and hinged doors, dividing framework, etc,. Including all ironmongery, brackets, runners, rails, skirtings, blocking pieces, edging, etc, - All in accordance with the Architects Kitchen Joinery Schedule/Drawing No: A.02.1.	No	1	
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	Unit	Quantity	Rate	Amount
<u>Ablution Vanity Tops, etc.</u>				
41				
32mm 'Rustenburg' granite floating vanity top 600mm wide with polished edges, with and including 150mm downstand to front elevation, vanity supported on approved concealed steel support brackets at required centres, including cut outs for waste from lay-on basins and silicone sealer between vanity top and wall.	m	7		
<u>STORAGE SHELVING, ETC.</u>				
<u>Supply and fit wall mounted timber and steel shelving complete, consisting of 1820mm long wall bands (code WB1820) with standard epoxy powder coated finish fitted vertically at approximately 670mm centres, fitted as per manufacturers specifications, complete with heavy duty brackets (code WBR 300) for wood shelves and fit six (6) rows of 22mm thick x 380mm wide SAP Lamboard Laminated pine shelving with and including preparation and finish with two coats high quality polyurethane varnish, sanding lightly between coats and shelves screwed to brackets from below :</u>				
42				
Steel shelving with six rows of 22mm x 380mm wide laminated SAP timber board shelving on wall bands and brackets, approximately 1916mm high, including finish, fixed to walls. (Provisional).	m	14		
<u>FURNITURE AND FITTINGS, ETC. (PROVISIONAL)</u>				
<u>'Cecil Nurse' or equally approved Furniture & Fittings, etc.</u>				
43				
'La Mia' side chair without arms with upholstered seat, epoxy coated 'Grey' metal frame with matching injection moulded polypropylene seat & back (Code LM06GRCOM), with and including upholstered seat in 'Loomcraft' contract mega cloth (Code SPELNLL3168), chair size 520mm wide x 540mm deep x 810mm high. (Provisional).	No	300		
44				
'Breaking News' rectangular table/desk with 16mm Top including modesty panel (Code BN750BLKME), in colour 'Mondega Elm' with black painted legs, size 750mm wide x 500mm deep x 700mm high. (Provisional).	No	300		
45				
'Cube Quilted' double seater couch with 'Black Leather-Look' upholstery diamond double-needle stitching detail to seat and back, flanked by shelter-style arms that provide a comforting embrace, set on simple chrome metal T-legs (Code CBQ02BLK), size 1400mm wide x 700mm deep x 795mm high. (Provisional).	No	4		
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<p><u>SECTION NO. 2</u> <u>BUILDING WORKS</u> <u>BILL NO. 7</u> <u>CEILINGS PARTITIONS AND ACCESS FLOORING</u></p> <p><u>PREAMBLES</u> For Preambles refer to "Department of Public Works: Specification of Materials and Methods to be used - PW371-A" which shall be read in conjunction with and shall apply to all items in these Bills of Quantities.</p> <p><u>SUPPLEMENTARY PREAMBLES</u> Items, materials or methods to be used specified by trade names or catalogue numbers are only an indication of the quality required. Items, materials or methods of similar quality may be used with prior approval from the Architect/Engineer.</p> <p><u>CEILINGS, PARTITIONS AND ACCESS FLOORING</u></p> <p><u>Ceilings :</u> Unless otherwise described ceilings shall be deemed to be horizontal.</p> <p><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</p> <p>Items described as plugged and screwed shall be deemed to include screwing to fibre, plastic or metal plugs at centres not exceeding 600mm, and where described as bolted the bolts have been given elsewhere.</p> <p><u>Steel components :</u> All steel components for ceilings, partitions, etc are to be galvanised in accordance with SANS 121</p> <p><u>Descriptions:</u> Boards must be stacked on a level surface in a dry place on a timber platform. Boards must be carried on edge. 'Nutec' ceiling boards shall be secured to timber bracing with 32 x 2.5mm galvanized serrated nails at centres not exceeding 150mm. Skimming of plasterboard ceilings must be plastered the same day that the plasterboard has been erected.</p> <p style="text-align: right;">Carried to Collection</p>				
<p>Section No. 2 Bill No. 7 Ceilings Partitions And Access Flooring</p>			R	

	Unit	Quantity	Rate	Amount
<u>SUSPENDED CEILINGS</u>				
Proprietary suspended ceilings, hangers, suspension grids, lay-in panels, etc are to be strictly in accordance with the manufacturers' recommendations.				
Electrical light fittings, diffusers, panels etc are generally lay-in units of the same dimensions as the suspension grid described and allowance must be made in the rates accordingly for their support inclusive of any flexibility in setting out that may be required (ceiling panels have not been deducted and pricing is to take cognisance thereof).				
<u>Skimmed Ceiling System with Concealed Ceiling Grid :</u>				
<u>1 Layer Gyproc RhinoBoard® 12.5mm fixed to Gypframe, (or equally approved). UltraSTEEL® Branderling installed at maximum 600mm centres. Fix Gyproc RhinoBoard® using Gyproc Sharp-point Screws 25mm at maximum 150mm centres. All joints shall be staggered. Apply Gyproc RhinoTape® to all joints and skim the entire ceiling using Gyproc RhinoLite® CreteStone® to a smooth polished surface. Ceiling grid consisting of Gyproc Suspension Brackets fixed to tie beam/joist using one line of 2 Gyproc Sharp-point Screws 35mm. Install Gyproc Galvanised Steel Angle 25mm x 25mm at ceiling level to the wall running perpendicular to the direction of steel banderling. Install Gypframe. UltraSTEEL® Branderling onto the suspension brackets. Fix steel banderling to the galvanised steel angle using Gyproc Wafer-head Tek Screws 13mm. Gyproc RhinoArt Cornice (elsewhere measured).</u>				
1				
Sloping ceilings suspended not exceeding 1m below steel purlins at 1400mm centres between rafter trusses at 6m centres.				
	m ²	280		
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Ceilings Partitions And Access Flooring				
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	Unit	Quantity	Rate	Amount
<p><u>Acoustic Ceiling System with Concealed Ceiling Grid :</u></p> <p><u>1 Layer Gyproc Acoustic Ceiling System (Boards) Gyptone. Rigitone® 8-15-20 Super (or equally approved) fixed to Gypframe./DONN ceiling grid using Gyproc Sharp-point Screws 25mm at maximum 150mm centres. Finish the joints and spot the screw heads using Rigitone® Vario Joint Filler. Gypframe./DONN T37K Main Tees (0.4mm thickness, Z150 galv coating, locally manufactured, recycled content, ISO 9001 & 14001 certification) at 1200mm centres and Gypframe./DONN T32K Cross Tees at 300mm centres. Where required, install additional cross tees. Gypframe./DONN T37K Main Tees suspended using Gyproc Galvanised Steel Angle 25mm x 25mm at 1200mm centres. Gyproc RhinoArt Cornice (elsewhere measured).</u></p>				
2	m ²	147		
<p><u>1 Layer Gyproc Acoustic Ceiling System (Boards) Gyptone. BIG Line 6 (with Activ'Air®) fixed to Gypframe./DONN ceiling grid. Fix Gyptone. boards using Gyproc Sharp-point Screws 25mm at maximum 150mm centres. Apply Gyproc RhinoTape® to all joints. Jointed finish and covering of the screw heads is done using Gyproc RhinoGlide®. Ceiling grid consisting of Gypframe./DONN T37K Main Tees at 1200mm centres and Gypframe./DONN T32K Cross Tees at 600mm centres. Gypframe./DONN T37K Main Tees suspended using Gyproc Galvanised Steel Angle 25mm x 25mm at 1200mm centres. Fix galvanised steel angles to Gypframe./DONN T37K Main Tees using Gyproc Wafer Head Tek Screws 13mm. Gyproc RhinoArt Cornice (elsewhere measured).</u></p>				
3	m ²	246		
4	m ²	14		
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	Unit	Quantity	Rate	Amount
<u>Exposed Ceiling System with Exposed Ceiling Grid :</u>				
<u>Lay Gyproc Gyprex® White 1200mm x 600mm ceiling tile into the Gypframe./DONN ceiling grid. Ceiling grid consisting of Gyproc/DONN Wall Angle (SM25/M6) fixed to the perimeter wall using fixings at 300mm centres. Space Gypframe./ DONN Main Tees T38 FR at 1200mm centres. Suspend main tees using Gyproc Pre-stretched Galvanised Hanger wire 2.5mm thick or Gyproc hanger strap 19mm at 1200mm centres. Gyproc Pre-stretched Galvanised Hanger wire shall be put through the main tees hole and would wind 3 times around itself. 2 steel pop-rivets or one Gyproc Wafer-head Tek screw 13mm shall be used to fix the hanger strap to the main tees web. Install Gypframe./DONN Cross Tees T38V/T32V (1200 long) at 600mm centres to create a 1200mm x 600mm ceiling grid. Main tee should be fixed to the wall using angle cleats.</u>				
5	Ceilings suspended not exceeding 1m below timber purlins at 1100mm centres (rafter trusses at 1m centres).	m ²	88	
6	Ceilings suspended not exceeding 1m below concrete soffits.	m ²	62	
<u>Cornices, perimeter trims, etc to suspended ceilings :</u>				
7	Gyproc RhinoArt Cove fixed Gyproc RhinoBed® or Gyproc RhinoArt Cornice fixed using Gyproc RhinoArt adhesive, (or equally approved).	m	210	
8	Type SM25 pre-painted recessed wall angles, plugged.	m	229	
<u>DRYWALL PARTITIONS</u>				
Partitions consisting of 146mm galvanised steel studs at 610mm centres as vertical support secured in matching galvanised steel floor and ceiling channels, clad on one or both sides as described, including additional studs as necessary at abutments, ends, etc. Board cladding shall be fixed and jointed in strict accordance with the manufacturer's instructions.				
Paint or varnish finishes are given separately.				
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	Unit	Quantity	Rate	Amount
<p><u>'Gyproc' or equally approved Sound Resistant Wall System UltraSTEEL® Stud Drywall, consisting of stud and track system with 146 x 50mm (1 resilient bar) Gypframe™ Drywall UltraSTEEL® studs at recommended centres, friction fitted into head track and floor track with 102mm Isover Cavitybatt/Cavitylite (14kg/m³) insulation inserted into cavity of partitioning and clad on both sides with 12.5mm Gyproc Rhinoboard SoundBloc, with all external angles to have Gypframe™ Corner Beads attached and all joints to be covered with Gyproc RhinoTape®. Wall surface to be finished with minimum 3mm thick RhinoLite® Multipurpose, all in accordance with the manufacturer's recommendations.</u></p>				
9	m	60		
10	No	4		
11	No	16		
<p><u>TOILET CUBICLES AND PARTITIONS</u></p> <p><u>Supply and install Pelican Systems T1 Toilet Partition System (or equally approved) comprising of 16mm thick particle board panels, laminated both sides with Melawood or Formica (Colour to be later determined by Architect), edged all round with 22 x 22mm lipped channel and fixed into position by means of full height vertical aluminium receiving channels fixed to the abutting wall, floor or pilaster. Pilasters and end partitions are stabilized by a continuous 25 x 25mm aluminium transom section over doors and supplied with a complete set of standard ironmongery comprising of indicator bolts, hat and coat hooks, door stops, toilet roll holders and rubber buffers. Aluminium surrounds, receiving channels and transom sections shall be natural anodised. Note: Door hinges are to be falling butt hinges (Door to move to open position if left open).</u></p>				
12	No	2		
13	No	6		
14	No	4		
15	No	6		
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Ceilings Partitions And Access Flooring

	Unit	Quantity	Rate	Amount
<p><u>Polyflor 3.7mm thick Silentflor PUR Heterogeneous vinyl floor sheeting with a 0.65mm clear wear layer colour Honey Oak (Colour code: 9959), (or equally approved), laid in an approved adhesive spread with a notched trowel on suitably prepared steel surfaces, with joints welded with a fully flexible coloured Polyflor welding rod to provide a smooth, hygienic sealed finish and rolled with 68kg articulated floor roller, all in accordance with manufacturer's recommendations.</u></p>				
2	m ²	19		
<p><u>WALL LININGS, ETC</u></p>				
<p><u>Belgotex Conqueror (or equally approved) colour Sword, heavy residential (SABS location grade: 3) Stainproof Miracle Fibre (Polypropylene) 5mm thick, level-loop pile MiracleBac® woven polypropylene backed SABS Class 2 fire rating broadloom carpet sheeting laid on and including Orange undercushion, with approved adhesive, all in accordance with the manufacturers recommendations.</u></p>				
3	m ²	138		
4	m	33		
<p><u>EDGE TRIMS, NOSINGS, JOINT COVERS, ETC</u></p>				
<p><u>Stainless steel edge trims, nosings, etc</u></p>				
5	m	47		
<p><u>'Polyflor' or equally approved structural movement joints and covers:</u></p>				
6	m	147		
<p><u>POLISH, SEALERS, ETC</u></p>				
<p><u>Polish, sealers, etc :</u></p>				
7	m ²	583		
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	Unit	Quantity	Rate	Amount
<u>MATS (PROVISIONAL)</u>				
<u>'Mat-lok Aluguard' or equally approved single sided barrier mat :</u>				
8	No	1		
Door mat size 1800 x 1200 x 12mm gauge, heel-proof, closed construction barrier mat consisting of electrostatic, buffed-nylon tyre-rubber strips, inserted and fixed into modular natural anodised aluminium scraper sections, fixed with nail-in-anchors in sunken AMF31/31 aluminium mat surround (elsewhere measured). (Provisional)				
<u>'Decramat' or equally approved Mat-well Frame :</u>				
9	No	1		
Mat surround size 1800 x 1200mm formed of natural anodised aluminium pre-formed matwell frame AMF31/31, complete with mitred edges and corner connectors, bedded into screed. (Provisional)				
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Floor Coverings, Wall Linings, Etc

	Unit	Quantity	Rate	Amount
<u>SECTION NO. 2</u>				
<u>BUILDING WORKS</u>				
<u>BILL NO. 9</u>				
<u>IRONMONGERY</u>				
<u>PREAMBLES</u>				
For Preambles refer to "Department of Public Works: Specification of Materials and Methods to be used - PW371-A" which shall be read in conjunction with and shall apply to all items in these Bills of Quantities.				
<u>SUPPLEMENTARY PREAMBLES</u>				
Items, materials or methods to be used specified by trade names or catalogue numbers are only an indication of the quality required. Items, materials or methods of similar quality may be used with prior approval from the Architect/Engineer.				
<u>Finishes to ironmongery:</u>				
Where applicable finishes to ironmongery are indicated by suffixes in accordance with the following list: BS Satin bronze lacquered : CH Chromium plated : SC Satin chromium plated : SE Silver enamelled : GE Grey enamelled : AS Anodised silver : AB Anodised bronze : AG Anodised gold : ABL Anodised black : PB Polished brass : PL Polished and lacquered : PT Epoxy coated.				
<u>Fixing:</u>				
Items described as plugged shall be deemed to include screwing to fibre, plastic or metal plugs in brickwork or concrete.				
<u>HINGES, FLOOR SPRING HINGES, BOLTS, PANIC BOLTS, ETC</u>				
<u>Approved hinges, floor springs, bolts, panic bolts, etc.:</u>				
1		2040 200mm Aluminium sinkless hinge, centre pin, Anodised.	No	6
2		DBB-SS-009 102x75x3mm Stainless steel two ball bearing butt hinge.	Pairs	24
3		DFB-SC-180 Satin chrome 153mm manual flush bolt with heel.	No	10
4		DPS-SS-032 Stainless steel dust proof strike.	No	5
5		PHA2 S SD Two point locking panic bar - Single door - Door leaf 1000mm wide x 2270mm high (2201.2104.PHX02.PHX04).	Sets	3
Carried to Collection			R	
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Ironmongery				

	Unit	Quantity	Rate	Amount
<u>LOCKS</u>				
<u>Approved locks, locksets, etc. :</u>				
6	'Yale' or equally approved 51mm 'All Weather' 5 pin plastic covered external padlock and 3 keys.	No	3	
7	DCE-002 S.S Stainless steel round cylinder escutcheon.	Pairs	4	
8	D038R NP Nickel plated rebate conversion kit for Euro profile locks D036S, D037D	No	5	
9	DSC104301 MK (43mm) Satin Nickel 43mm Five pin Euro-profile Single cylinder, Master Keyed.	No	3	
10	DDC106601 MK (66mm) Satin Nickel 66mm Five pin Euro-profile Double cylinder, Master Keyed.	No	2	
11	DKC106601 MK (66mm) Satin Nickel 66mm Five pin Euro-profile knob cylinder, Master Keyed.	No	4	
12	D036S SS Stainless steel Cylinder sash lock, case dimensions 116.5mm high x 78mm deep, with forend dimensions 168mm high x 22mm wide and backset 57mm. Centres 61mm.	No	5	
13	D037D SS Stainless steel Cylinder deadlock, case dimensions 116.5mm high x 78mm deep, with forend dimensions 168mm high x 22mm wide and backset 57mm.	No	3	
14	DMWC-SS-008 Stainless steel bathroom deadlock, case dimensions 38mm high x 76mm deep, with forend dimensions 78mm high x 22.5mm wide and backset 55mm.	No	1	
15	DWC-005 Stainless steel bathroom WC indicator (Red & White) and turn knob.	Sets	8	
16	DWC-006 Stainless steel disabled WC indicator (Red & White) and turn knob for physically impaired.	Sets	1	
17	PHT3901 Satin Nickel Exterior access lock with lever handle (Cylinder not included).	No	1	
<u>CATCHES, CABIN HOOKS, ETC</u>				
<u>Catches, cabin hooks, etc</u>				
18	200mm 166 SC on brass cabin hook and eye, fixed to and including 100 x 100 x 75mm thick meranti block with chamfered edges, finished with and including clear varnish and twice bolted to wall with and including 6 x 80mm Rawlbolts.	No	7	
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Ironmongery				

	Unit	Quantity	Rate	Amount
<u>HANDLES, FLUSH PULLS, ETC</u>				
<u>Handles, flush pulls, etc :</u>				
19	TH120 Latch S.S Stainless steel lever handle set on rose - Latch	Sets	1	
20	Ref TH120 Cyl S.S Stainless steel lever handle set on rose with cylinder escutcheons	Sets	4	
21	DPH301B Stainless steel 325x25mm Straight tubular pull handle flange fixing.	No	2	
22	DPH210 BTB Stainless steel 300x30mm Straight tubular pull handle BTB (BTB fixing sets included).	Pairs	2	
23	DPH206 BTB Stainless steel 400x30mm Offset tubular pull handle BTB (BTB fixing sets included)(Pull handle complies with BS 8424.Grade 3 - Heavy Duty).	Pairs	6	
<u>PUSH PLATES AND KICKING PLATES</u>				
<u>Push plates and kick plates :</u>				
24	DPP-430-BL-SF 150x300 - Grade 430 Brushed stainless steel blank push plate size 150mm x 300mm x 1,2mm thick, drilled and countersunk for stainless steel screw fixing to doors.	No	2	
25	DKP-430-SF 200 - Grade 430 Brushed stainless steel kick plate 200mm x 813mm x 1,2mm thick, finished size to be checked on site, drilled and countersunk for stainless steel screw fixing to doors.	No	4	
<u>DOOR CLOSERS</u>				
<u>Approved door closers:</u>				
26	TS90-SL - EN 3/4 Cam action slide channel NON HOLD OPEN door closer, hydraulic speed control, Pull side - leaf or transom fixing; Push side - leaf or transom fixing, EN3 850-950, EN4 950-1100. Colour Silver.	No	2	
27	TS73V PA DC-PAB-SL EN2-4 parallel arm DELAYED ACTION door closer, push side fitting (parallel arm bracket included) EN2 750-850, EN3 850-950, EN4 950-1100, colour silver.	No	1	
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		Unit	Quantity	Rate	Amount
28	TS91B HO-SL MECHANICAL HOLD OPEN Cam action slide channel door closer, Max door width 950mm, Closing Force EN 3, hydraulic speed control, Pull-side door leaf fixing (Standard), Push side transom fixing. Door closer compliant with EN 1154. Door closer is CERTI FIRE approved (Certificate No. CF 119) for door types ITT 120, MM/IMM 240, Certified manufacturer to ISO 9001. Colour Silver.	No	4		
29	TS83 PA with Parallel arm bracket - EN 3-6 Parallel Arm NON HOLD OPEN door closer, adjustable strength, hydraulic speed control, Push side fixing (Parallel arm bracket included) EN3 850-950, EN4 950-1100, EN5 1100-1250, EN6 1250-1400. Door closer tested to EN 1154. Approved to AS1905 Part 1 Fire Resistant doors, Certified manufacturer to ISO 9001. Colour Silver.	No	1		
<u>LETTERS, NAMEPLATES, ETC.</u>					
<u>Door Signage:</u>					
30	DSS-130M "MALE" stainless steel information sign size 150x150mm, fixed to doors with stainless steel self tapping screws.	No	1		
31	DSS-131F "FEMALE" stainless steel information sign size 150x150mm, fixed to doors with stainless steel self tapping screws.	No	1		
32	DSS-133P "DISABLED PERSONS" stainless steel information sign size 150x150mm, fixed to doors with stainless steel self tapping screws.	No	1		
<u>PHOTOLUMINESCENT SIGNS</u>					
<u>SABS approved wall mounted / Ceiling mounted emergency photoluminescent statutory fire signs to SANS 1186, size 290 x 290mm, Framed and Single Sided :</u>					
33	290 x 290mm 'NO SMOKING' natural anodised sign with one pictogram fixed to wall.	No	2		
34	290 x 290mm 'FIRE BLANKET' photo luminescent sign, with one pictogram, single sided, framed and wall mounted.	No	1		
35	290 x 290mm 'EXIT' photo luminescent sign, with one pictogram, single sided, framed and wall mounted.	No	4		
36	380 x 290mm 'FIRE EXIT - KEEP CLEAR' photo luminescent sign, with one pictogram, single sided, framed and wall mounted.	No	4		
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		Unit	Quantity	Rate	Amount
37	580 x 290mm 'RUNNING MAN & DOWNWARD ARROW' photo luminescent sign, with two pictograms, single sided, framed and wall mounted.	No	2		
38	580 x 290mm 'RUNNING MAN & SIDEWARD ARROW LEFT' photo luminescent sign, with two pictograms, single sided, framed and wall mounted.	No	2		
39	580 x 290mm 'RUNNING MAN & SIDEWARD ARROW RIGHT' photo luminescent sign, with two pictograms, single sided, framed and wall mounted.	No	2		
40	580 x 290mm 'FIRE EXTINGUISHER & DOWNWARD ARROW' photo luminescent sign, with two pictograms, single sided, framed and wall mounted.	No	2		
41	870 x 290mm 'FIRE HOSE REEL, EXTINGUISHER & DOWNWARD ARROW' photo luminescent sign, with three pictograms, single sided, framed and wall mounted.	No	2		
42	190 x 190mm 'ELECTRIC SHOCK HAZARD (EL1)' brushed stainless steel sign, with one pictogram, single sided, mounted to wall above DB board and other electrical hazards.	No	1		
	<u>Signarama or equally approved ceiling mounted suspended double sided signs with curv display, finished in silver anodised aluminium with convex frame, silver anodised aluminium end caps and clear non glare lens, supplied and installed to manufacturers specifications and instructions.</u>				
43	1000 x 200mm High 'RESTROOMS' Sign with three pictograms (Male, Female & Disabled)	No	1		
44	1000 x 200mm High 'KITCHEN' Sign with one pictogram (Knife, Fork & Spoon)	No	1		
	<u>BATHROOM FITTINGS</u>				
	<u>Bathroom Fittings:</u>				
45	'Kimberly Clarke' or equally approved Professional type MR2 surface mounted Satin finish stainless steel toilet tissue dispenser, White (Code: SA426130), overall size 130 x 135 x 256mm high, installed by manufacturers installation team, complete.	No	9		
46	'Kimberly Clarke' or equally approved Professional Aqua hand cleanser dispenser, stainless steel (Code:6983000), overall size 150 x 130 x 250mm high, installed by manufacturers installation team, complete.	No	8		
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		Unit	Quantity	Rate	Amount
47	'Kimberly Clarke' or equally approved Professional 'Reflex' Hands Free rolled towel dispenser, stainless steel (Code: SA426125), overall size 315 x 260 x 365mm high, installed by manufacturers installation team, complete.	No	5		
48	'Kimberly Clarke' or equally approved Disposer wall mounted general waste bin, stainless steel (code: SA426135), overall size 345 x 290 x 390mm high, installed as per manufacturer, complete.	No	5		
49	Sanitary wall bin small (code: DIS-BINNS-051), plugged and screwed to wall with stainless steel screws, as per manufacturer, complete.	No	6		
50	Chrome plated toilet brush set (code: AC-0913-100) size 155 x 120 x 375mm high, plugged.	No	9		
	<u>Grab Rails:</u>				
51	'Franke' CNTX700A or equally approved 32mm Diameter satin finished Grade 304 stainless steel angle bar (Code: 359877), size 618 x 95 x 256mm with Franke fine grip surface, plugged and screwed to walls with stainless steel screws.	No	1		
52	'Franke' CNTXBR or equally approved 32mm Diameter satin finished Grade 304 stainless steel cistern back rail (Code: 359912), size 750 x 260mm with Franke fine grip surface, plugged and screwed to walls with stainless steel screws.	No	1		
	<u>SUNDRIES</u>				
	<u>Approved door stops, coat hooks, etc. :</u>				
53	DDS-SS-017 Stainless steel floor mounted door stop plugged.	No	8		
54	DDS-SS-021 Stainless steel floor mounted door stop plugged.	No	1		
	<u>VENETIAN BLINDS (PROVISIONAL)</u>				
	<u>Supply and fit aluminium venetian blind, colour to Principal Agent later specification, with 16 x 0,21mm thick slats including 25 x 25mm high matching aluminium powder coated top and bottom tracks with stainless steel separator pins, cordlock and roller pins, blinds to be fitted inside reveal to concrete lintol:</u>				
55	Venetian blinds to suit window opening size 1600 x 450mm high. (W3)	No	1		
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		Unit	Quantity	Rate	Amount
56	Venetian blinds to suit window opening size 2400 x 450mm high. (W2)	No	2		
57	Venetian blinds to suit window opening size 800 x 1600mm high. (W3)	No	1		
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<p><u>SECTION NO. 2</u> <u>BUILDING WORKS</u> <u>BILL NO. 10</u> <u>STRUCTURAL STEELWORK</u></p> <p><u>PREAMBLES</u> For Preambles refer to "Department of Public Works: Specification of Materials and Methods to be used - PW371-A" which shall be read in conjunction with and shall apply to all items in these Bills of Quantities.</p> <p><u>SUPPLEMENTARY PREAMBLES</u> Items, materials or methods to be used specified by trade names or catalogue numbers are only an indication of the quality required. Items, materials or methods of similar quality may be used with prior approval from the Architect/Engineer.</p> <p><u>Descriptions</u> Descriptions of bolts shall be deemed to include nuts and washers Descriptions of L-shaped and U-shaped anchor bolts shall be deemed to include bending, threading, nuts and washers and embedding in concrete Descriptions of columns and beams shall be deemed to include flat section base, top, bearer and connection plates 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>NOTE: All structural steelwork to be fabricated and erected in accordance with SABS 0162 - 1984 and SABS 1200H - 1983. Dimensions and levels to be verified on site prior to manufacture. Any discrepancies found during site measure to be reported to and resolved by the Engineer prior to manufacture. All structural steel elements must be inspected by the Engineer prior to transporting to site. All bolts must be galvanised grade 8.8 unless otherwise specified by the Engineer. Bolts shall not have threads within the shear planes. All holes to be drilled at standard backmark. Baseplates to be properly grouted up and painted prior to backfilling being done. All box or circular section ends to be closed with 14mm plates. Where packer plates are used, longer bolts must be used to ensure that sufficient length of thread is taken up by the nuts.</p>				
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	Unit	Quantity	Rate	Amount
<p>All welds to be 6mm continuous fillet or the weld throat thickness to be the thickness of the thinnest of the two parent metals. All structural steel members to be of grade 350W. Purlins and girts to be pre-galvanised.</p> <p>All structural steelwork inclusive of bolts, nuts, washers, plates, connections, etc., other than purlins & girts to be hot dipped galvanised in accordance with SANS 121 or ISO 1461 All hot dipped members to be drilled, cut, welded, etc., prior to galvanising. Prices to include for preparation of shop drawings for approval of the Engineer prior to manufacture. A minimum of 7 days must be allowed for checking of shop drawings. Only structural sizes, connections and splices will be checked. Final dimensions and fitting of members shall remain the contractors responsibility. Prices to include for fabrication, cutting, drilling, bending, welding, etc., delivery to site, and hoisting up and erecting into position. The contractor is responsible for stabilising the structure and maintaining it in the correct position during erection.</p> <p>All purlins and girt cleat holes are to be 14mm Dia for M12 black bolts of grade 4.8. Fixing holes are to be on purlins. All purlin splices are to be fixed staggered and purlins are to be continuous over at least two spans. Purlins are to be fixed to cleats with two bolts at continuous connection and two bolts at purlin or cleat end.</p> <p>Note: The following restrictions are applicable on ground floor slab during construction and erection of structural steel. 0-7 days: Concrete curing; no loading on ground floor slab permitted. 7-14 days: Light foot traffic permitted. 14-28 days: Light vehicles<5 ton.28+ days: Maximum gross crane load during construction = 25 ton (excludes lifting load). Crane outrigger base footings to be on double cross layer of 50 x 228mm timber spreader supports over and area of 1,00 x 1,00m or similar approved by the Engineer to avert damage to concrete ground floor slab. Only tyre cranes permitted on slab.</p> <p>Structural steelwork shall be completed by the Manufacturer - cleaned, hot-dipped galvanised in workshop before transportation to site.</p> <p>Structural steelwork shall be completed by the Manufacturer - cleaned and painted with specified primer in workshop before transportation to site ONLY if specified in the Engineering Structural Steel drawings.</p>				
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	Unit	Quantity	Rate	Amount
<u>STRUCTURAL STEELWORK</u>				
The following structural steelwork to roofs must be read in conjunction with Engineers Steel Roof Layout Drawing No D34435S-210-01 Rev A and Steel Roof Sections and Details Drawing D34435S-211-01 Rev A.				
<u>GALVANISED STEEL COLUMNS AND BEAMS</u>				
<u>Welded columns in single lengths with flat base, cap, bearer and connection plates, bolted to concrete :</u>				
1		203 x 203mm x 46kg/m H-section columns including 315 x 240 x 20mm thick base plate with 4 No holes for M16 holding down anchor bolts, column fully welded to rafter and including 10mm stiffener plates to both sides of columns. (12 No Columns).		
	Tonnes			0,62
2		70 x 70 x 6mm Equal angle cleats back to back 115mm long, fully welded to steel rafter columns, to receive CFLC eaves truss chord plate (elsewhere), 4 times holed to receive M12 bolts (elsewhere measured).		
	Kg			37
<u>Welded beams in single lengths with flat bearer and connection plates, bolted to steel :</u>				
3		356 x 171mm x 45kg/m I-section roof beams/rafters fully welded to H columns (elsewhere) one side and connected at apex to other rafter with and including connection plates size 707 x 190 x 20mm thick eight times holes, including haunch's at apex and at column connection cut from 356 x 171mm x 45kg/m I-Section beam rafter and stiffeners. (24 No Rafters).		
	Tonnes			6,48
4		70 x 70 x 6mm Equal angle cleats back to back 165mm long, fully welded to steel rafter beams to receive CFLC purlins (elsewhere), 4 times holed to receive M12 bolts (elsewhere measured).		
	Kg			208
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	Unit	Quantity	Rate	Amount
<u>GALVANISED STEEL TRUSSES</u>				
<u>Welded roof trusses of angle rafters, tie beams, rails, struts, braces, cleats, etc and flat bearer, gusset and connection plates, bolted and welded to steel :</u>				
5				
Lattice eaves trusses in sections spanning between steel rafters and bolted together at rafters/columns, each eaves truss approximately 6000mm long x 730mm high extreme, with each eaves truss consisting of 125 x 75 x 20 x 3mm Cold Formed Lipped Channels (CFLC) top chord, bottom chord, vertical bracing and diagonal bracing, with all bracing members fully welded to top and bottom chords. Trusses to be constructed using ungalvanised CFLC members and then all complete trusses to be hot dipped galvanised after fabrication. (10 No Eaves Trusses). See Engineers Steel Roof Drawing for Sections & Details - D34435S-211-01 Rev A).		Tonnes	1,64	
6				
67.5 x 125 x 6mm Thick plate fully welded to steel eaves truss top and bottom chords where two trusses meet for fixing to back to back angles on columns (elsewhere), 4 times holed to receive M12 bolts (elsewhere measured).		Kg	14	
7				
140 x 125 x 6mm Thick plate fully welded to steel eaves truss top and bottom chords on end trusses for fixing to back to back angles on columns (elsewhere), 4 times holed to receive M12 bolts (elsewhere measured).		Kg	7	
8				
125 x 75 x 4mm Thick closure plate fully welded to steel eaves truss top and bottom chords on end trusses.		Kg	3	
<u>GALVANISED STEEL PURLINS, GIRTS, BRACING, ETC</u>				
<u>Purlins and girts, bolted to steel</u>				
9				
175 x 75 x 20 x 2,5mm Thick Cold-Formed Lipped Channels (CFLC) in purlins bolted to steel rafter beams at approximately 1385mm centres, continuous over 2 bays and staggered, fixed to steel rafters with 70 x 70 x 6mm back to back angle cleats 165mm long (elsewhere measured).		Tonnes	3,46	
<u>Welded bracing, anti-sag rails, etc with flat connection/gusset plates, etc, bolted to steel</u>				
10				
50 x 50 x 3mm Thick Equal Angle sag bars, fixed to purlins each end with and including 50 x 50 x 3mm angle 145mm long welded to both ends of sag bar in vertical direction, twice holed for M12 bolts (elsewhere measured).		Tonnes	0,29	
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		Unit	Quantity	Rate	Amount
11	50 x 50 x 3mm Thick Equal Angle diagonal sag bars, fixed to purlins and rafter beams each end with and including 50 x 50 x 3mm angle 145mm long welded to both ends of sag bar in vertical direction, twice holed for M12 bolts (elsewhere measured).	Tonnes	0,17		
12	70 x 70 x 6mm Thick Equal Angle cross bracing, fixed to gusset plates (elsewhere measured) on rafter beams and angles twice holed at connections to receive 2 M16 bolts (elsewhere measured) at each end.	Tonnes	0,42		
13	230 x 300 x 8mm Thick Gusset plate fully welded to bottom of top flange of steel rafter beams to receive cross bracing (elsewhere) and plates 4 times holed to receive M16 bolts (elsewhere measured).	Kg	61		
<u>GALVANISED STEEL GUTTERS</u>					
<u>0.80mm Thick welded plate gutters, galvanised steel Z200 steel sheet accessories to match roof coverings, roll-formed in continuous lengths with Chromadek Dark Dolphin colour one side and standard Pebble Grey backing coat to other side and fitted in strict accordance with the manufacturers specifications and recommendations.</u>					
14	Eaves U- shaped box gutters 665mm girth, 3 times bent along length including necessary collared and sealed expansion joints fitted to top of eaves truss and H-Beam columns (elsewhere), including lapping under roof sheeting and fixing to purlins. - See Engineers Steel Roof Drawing for Sections & Details - D34435S-211-01 Rev A).	m	64		
15	Extra over box gutter for stopped end.	No	4		
16	Extra over box gutter for outlet for 160mm diameter pipe.	No	4		
<u>BOLTS, FASTENERS, ETC</u>					
<u>Galvanised Bolts, etc. :</u>					
17	M12 High tensile galvanised bolts (Grade 8.8)	No	860		
18	M16 High tensile galvanised bolts (Grade 8.8)	No	96		
<u>Galvanised Anchors, etc. :</u>					
19	M16mm Diameter U-shaped galvanised threaded anchor bolt (Grade 8.8) approximately 1120mm girth embedded in top of concrete columns.	No	24		
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<p><u>SECTION NO. 2</u> <u>BUILDING WORKS</u> <u>BILL NO. 11</u> <u>METALWORK</u></p> <p><u>PREAMBLES</u> For Preambles refer to "Department of Public Works: Specification of Materials and Methods to be used - PW371-A" which shall be read in conjunction with and shall apply to all items in these Bills of Quantities.</p> <p><u>SUPPLEMENTARY PREAMBLES</u> Items, materials or methods to be used specified by trade names or catalogue numbers are only an indication of the quality required. Items, materials or methods of similar quality may be used with prior approval from the Architect/Engineer.</p> <p><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. Items described as plugged shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 600mm centres</p> <p><u>Note :</u> Also refer to Supplementary Preambles under Structural Steelwork Bill for clauses relevant to structural metalwork, such as steel stairs, under these bills of quantites.</p>				
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	Unit	Quantity	Rate	Amount
<u>GALVANISED STEEL STAIRS</u>				
<u>The following in 2 No galvanised welded single flight stairs with landing, excluding balustrades, each stair size 5957 x 1700mm on plan x 3000mm high overall, bolted to concrete surface bed at bottom end and downstand concrete beam top end with stringer on one side bolted to brickwall. Balustrading is elsewhere measured. (See Engineers Steel Stairs Drawing for Layout & Details - D34435S-210-03 Rev A)</u>				
1	No	2		
80 x 80 x 4mm Galvanised SHS column posts 1490mm high overall, including 210 x 100 x 10mm thick galvanised base plate with 2 No holes for M16 chemical anchor holding down bolts (elsewhere measured) and twice holed at top to receive two M16 bolts (elsewhere measured).				
2	Kg	603		
250 x 100 x 4mm Thick Galvanised RHS stringers to both sides of staircases.				
3	Kg	247		
40 x 40 x 4mm Thick Galvanised equal leg supporting angles fully welded to stringers in treads and risers, to receive 'Vastrap' plate (elsewhere measured).				
4	Kg	13		
40 x 40 x 4mm Thick Galvanised equal leg supporting angles approximately 440mm long, fully welded to stringers at landings, to receive 'Vastrap' plate (elsewhere measured).				
5	No	2		
60 x 60 x 6mm Thick Galvanised equal leg angles 140mm long fully welded to stringer at landings one side and other side twice holed to receive 80x80x4mm SHS column (elsewhere measured).				
6	No	6		
65 x 50 x 6mm Thick Galvanised unequal leg angle 400mm long fully welded to stringer one side and other side three times holed to receive chemical anchors to brickwork (anchors elsewhere measured).				
7	No	2		
1700 x 262 x 12mm Thick Galvanised mild steel baseplate fully welded to stringers at ends and 7 times holed to receive M16 chemical anchoring rods for fixing to concrete beam at 1st floor slab (chemical anchor rods elsewhere measured) and exposed end of rods to be grinded flush with baseplate and welded all around.				
8	No	2		
1700 x 455 x 10mm Thick Galvanised mild steel baseplate fully welded to stringers at bottom ends and 5 times holed to receive M16 chemical anchor bolts for fixing to concrete surface bed (chemical anchor bolts elsewhere measured).				
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		Unit	Quantity	Rate	Amount
9	4,5mm Thick 'Vastrap' mild steel chequer plate welded horizontally to supporting angles, both sides, (angles elsewhere measured) for continuous stair treads, with ribs on plate facing downwards.	m ²	14		
10	4,5mm Thick 'Vastrap' mild steel chequer plate welded vertically to supporting angles, both sides, (angles elsewhere measured) for continuous stair risers, with ribs on plate facing downwards.	m ²	11		
11	4,5mm Thick 'Vastrap' mild steel chequer plate welded to supporting angles, both sides, (angles elsewhere measured) on continuous stair landings, with ribs on plate facing downwards.	m ²	5		
12	M16 Galvanised Grade 8.8 bolts.	No	4		
13	M16 Galvanised chemical anchor bolt into brickwork.	No	18		
14	M16 Galvanised chemical anchor bolt 130mm long into concrete.	No	14		
15	M16 Galvanised chemical anchor rods 160mm long into concrete and exposed end grinded flush.	No	14		
<u>GALVANISED STEEL GATES, SCREENS, ETC</u>					
<u>Welded galvanised steel hinged pedestrian gate to brickwork :</u>					
16	Single hinged pedestrian gate to service ducts to match double sliding gate detail, complete in single leaf, to suit opening size 870 x 2100mm high overall, consisting of 60 x 60 x 4mm SHS frame and 60 x 60 x 4mm SHS middle rail, with 30 x 30 x 3mm equal angles fully welded vertically to SHS framework to support fibre cement fascade infill, gate filled in with 'Everite Nutec Vermont' or equally approved external building planks size 770 x 150 x 9mm thick in cladding panels with a minimum gap of 30mm fixed to steel framing at 600mm centres using exposed 8 x 35mm self tapping galvanised screws and gate fitted with and including a suitable locking mechanism to lock gate in closed position, two galvanised gate hinges each 2 times holed for bolting to brickwork with M12 chemical anchors (elsewhere measured).	No	2		
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	Unit	Quantity	Rate	Amount
<p><u>ALUMINIUM WINDOWS.</u></p> <p>Aluminium windows, etc., are to be constructed and installed in accordance with the guidelines of The Association of Architectural Aluminium Manufactures of South Africa (AAAMSA). These frames cannot be built in and openings must be prepared by the Contractor for the aluminium frame to be fixed into, where after the plaster can be finished up against the frame. All dimensions to be checked and verified on site prior to manufacture.</p> <p>Unless otherwise stated ironmongery is to be the manufacturer's standard corrosion resistant ironmongery for the particular product range.</p> <p>Glazing is to be carried out in strict accordance with the SANS 0137/2000 Code of Practice: "The Installation of Glazing in Buildings" and where required, safety glazing materials must conform to SANS 1263.</p> <p>All opening sashes must be weather and draught proofed using wool pile, vinyl, etc. seals and the perimeter frames sealed to the structure using manufacturer approved sealants.</p> <p>All aluminium is to be protected after manufacture by removable PVC tape or other approved application. The protection is to be removed only when authorised by the Architect.</p> <p>Any component damaged in any way prior to the completion of the building is to be replaced with new. 'Touching up' of decorative finishes will not be permitted.</p>				
<p>Section No. 2 Bill No. 11 Metalwork</p>				<p style="text-align: right;">Carried to Collection</p> <p style="text-align: right;">R</p>

	Unit	Quantity	Rate	Amount
30 Aluminium top hung windows size 2400 x 450mm high overall, consisting of three equal top hung opening sections, all glazed with 6,35mm GSA SmartGlass IntruderprufeNS Clear laminated safety glass and opening sections all to receive burglar proofing, all as per Architects Window Schedule Detail - W02.	No	2		
31 Aluminium top hung windows size 2400 x 450mm high overall, consisting of three equal top hung opening sections and one larger fixed pane section size 800 x 1140mm high below left end opening section, all glazed with 6,35mm GSA SmartGlass IntruderprufeNS Clear laminated safety glass and opening sections all to receive burglar proofing, all as per Architects Window Schedule Detail - W03.	No	1		
32 Aluminium fixed windows size 5400 x 1590mm high overall, consisting of six equal fixed top sections and two larger fixed pane sections both size 900 x 1140mm high below left and right end fixed sections, all glazed with 6,35mm GSA SmartGlass IntruderprufeNS obscure laminated safety glass, all as per Architects Window Schedule Detail - W04.	No	2		
<u>ALUMINIUM DOORS, ETC.</u>				
Aluminium doors and shopfronts, etc., are to be constructed and installed in accordance with the guidelines of The Association of Architectural Aluminium Manufactures of South Africa (AAAMSA).				
Unless otherwise stated ironmongery is to be the manufacturer's standard corrosion resistant ironmongery for the particular product range.				
Glazing is to be carried out in strict accordance with the SANS 0137/2000 code of Practice: "The Installation of Glazing in Buildings" and where required, safety glazing materials must conform to SANS 1263 and AAAMSA selection guide for safety glazing materials.				
All opening sashes must be weather and draught proofed using wool pile, vinyl, etc. seals and the perimeter frames sealed to the structure using manufacturer approved sealants.				
All aluminium is to be protected after manufacture by removable PVC tape or other approved application. The protection is to be removed only when authorised by the Architect. Any component damaged in any way prior to the completion of the building is to be replaced with new. 'Touching up' of decorative finishes will not be permitted.				
A certificate of conformance with SANS 999 is required.				
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<p>Descriptions in the bills of quantities are to be read in conjunction with the Architects Door and Shopfront Schedules and Details attached. The references given in the descriptions are to the respective types of doors detailed on the Architect's schedules annexed to these Bills of Quantities for tender purposes.</p> <p><u>'Wispeco' or equally approved purpose made Cealco CLIP 44 epoxy powder coated aluminium hinged doors, with R4 (85mm) bottom rail and frames with 25 micron Natural Anodised aluminium protective coating, etc. including hinges with nylon bushes, clip on glazing beads with gasket seals, locksets, handles, bolts, etc., plugged to brickwork or concrete :</u></p>				
33	No	1		
<p>Single glazed aluminium door and frame, to fit opening size 900 x 2100mm high, glazed door with two unequal glass panes with one dividing transom, door glazed with and including 6,35mm PG Smartglass SolarVue PVB laminated safety glass, Grey HL, door fitted with approved standard ironmongery, lockset and handles, all as per attached Architects Door Schedule Detail - D05.</p>				
34	No	2		
<p>Double glazed aluminium door and frame, to fit opening size overall 1800 x 2100mm high, double glazed door in two equal leaves, each leaf with two unequal glass panes with one dividing transom, door glazed with and including 6,35mm PG Smartglass SolarVue PVB laminated safety glass, Grey HL, doors fitted with approved standard ironmongery, lockset and handles, all as per attached Architects Door Schedule Detail - D09.</p>				
<p><u>POWDER COATED ALUMINIUM SHOPFRONTS</u></p> <p>All work is to be executed in strict compliance with the Manufacturer and any other drawings, specifications, etc., issued by the manufacturer. Only specialist contractors approved by the manufacturer may be employed in the preparation and installation of the shop fronts and its ancillary components, e.g. sealant application, glazing.</p> <p>Sealants between aluminium components and between aluminium components and surrounding structures are to be two part polyurethane flexible sealants in accordance with SABS 1077.</p> <p>Silicone sealants for glazing are to be approved and selected and used in strict accordance with the manufacturer's instructions.</p> <p>Santoprene seals to mullions, transoms, etc., are to be Santoprene type G-25067 vent seals.</p>				
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	Unit	Quantity	Rate	Amount
<p>Gasket seals for glazing are to be santoprene seals as recommended by the manufacturer.</p> <p>All glass and glazing is to be in accordance with SABS 0137.</p> <p>All junctions between mullions, transoms, etc., are to be mastic sealed.</p> <p>All contact surfaces between sub-frames, frames, cills, etc., and the enclosing structure are to be mastic pointed.</p> <p>All fixings are to be of aluminium or stainless steel. All fixing screws are to be stainless steel.</p> <p>Items described as plugged are to be stainless steel screwed into plastic plugs.</p> <p>Aluminium Shopfront System consisting of frames to be 60-80um Powder Coated Aluminium sections, constructed and installed according to the guidelines of The Association of Architectural Aluminium Manufactures of South Africa (AAASA). Glazing is to be carried out in strict accordance with the SABS 0137/2000 Code of Practice: "The Installation of Glazing in Buildings" and where required, safety glazing materials must conform to SABS 1263. Drawings of all sections and fixing details to be used to be submitted for approval and all dimensions are to be verified on site prior to manufacture. All shopfronts and windows need to be weatherproofed and sealed where necessary and all aluminium is to be protected during installation and for the duration of construction work by removable PVC tape. All ironmongery to be as specified by the manufacturer.</p> <p>Descriptions in the bills of quantities are to be read in conjunction with the Architects Shopfront Schedules, Door Schedules and Details attached. The references given in the descriptions are to the respective types of Shopfronts and Doors detailed on the Architect's schedules annexed to these Bills of Quantities for tender purposes.</p>				
<p style="text-align: right;">Carried to Collection</p> <p>Section No. 2 Bill No. 11 Metalwork</p>			R	

	Unit	Quantity	Rate	Amount
<p><u>'SHEERLINE CLIP 44' or equally approved Aluminium Shopfront System, with R4 (85mm) bottom rail, as manufactured and supplied by 'Sheerline' or equally approved Aluminium Systems, complete with sub frames (with 25 micron Natural Anodised Aluminium protective coating), ironmongery, glass, sealing, etc. and fixing to brickwork or concrete :</u></p>				
35	Aluminium Shopfront SF 01 size 24649 x 3684mm high overall, fitted between concrete columns and brickwork, consisting of seventeen (17) unequal top hung opening and fixed sections at high level, with aluminium doors to both bottom ends (doors elsewhere measured), all shopfronts glazed with 6.35mm GSA Smartglass Solarshield S30 Grey Laminated Safety Glass. (Refer to Architects Shopfront Schedule SF 01).	No	1	
36	Aluminium Shopfront SF 02 size 24649 x 3684mm high overall, fitted between concrete columns and brickwork, consisting of seventeen (17) unequal top hung opening and fixed sections at high level, with fixed shopfront sections to one bottom end and aluminium double doors to other bottom end (doors elsewhere measured), all shopfronts glazed with 6.35mm GSA Smartglass Solarshield S30 Grey Laminated Safety Glass. (Refer to Architects Shopfront Schedule SF 02).	No	1	
37	Aluminium Raking Shopfront SF 03 size 20448mm long overall with two ends 3794mm high and raking shopfront sections to gable end above, fitted between concrete columns and brickwork, consisting of eighteen (18) unequal fixed sections at high level to gable and with four equal fixed shopfront sections to both bottom ends, each size 1379 x 3794mm high, with all shopfronts glazed with 6.35mm GSA Smartglass Solarshield S30 Grey Laminated Safety Glass. (Refer to Architects Shopfront Schedule SF 03).	No	1	
38	Aluminium Raking Shopfront SF 04 size 20456mm long overall with two ends 3293mm high and raking shopfront sections to second gable end above, fitted between concrete columns and brickwork, consisting of twenty four (24) unequal fixed sections at high level to gable and with two equal fixed shopfront sections to both bottom ends, with all shopfronts glazed with 6.35mm GSA Smartglass Solarshield S30 Grey Laminated Safety Glass. (Refer to Architects Shopfront Schedule SF 04).	No	1	
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<p><u>SECTION NO. 2</u> <u>BUILDING WORKS</u> <u>BILL NO. 12</u> <u>PLASTERING</u></p> <p><u>PREAMBLES</u> For Preambles refer to "Department of Public Works: Specification of Materials and Methods to be used - PW371-A" which shall be read in conjunction with and shall apply to all items in these Bills of Quantities.</p> <p><u>SUPPLEMENTARY PREAMBLES</u> Items, materials or methods to be used specified by trade names or catalogue numbers are only an indication of the quality required. Items, materials or methods of similar quality may be used with prior approval from the Architect/Engineer.</p> <p><u>Preparation of surfaces to receive screeds, plaster, etc. :</u> Surfaces shall be dry and clean, free of dust, sand, grit and flaking particles, laitance and loose matter, contaminants such as oil, grease, etc. Surfaces shall have a moisture content not exceeding 4%. All free standing water to be removed prior to application of primers or compounds. Absorbent surfaces to be thoroughly pre-soaked in fresh water. Oil, grease, animal fats, etc. to be removed with suitable product to be applied in strict accordance with the manufacturer's instructions. Once clean, surfaces to be profiled mechanically (scabbling, blasting, scarifying, chipping or grinding) or by means of acid etching in strict accordance with the manufacturer's instructions.</p> <p>All floors should be level and free of all material as per SANS10155 and all existing screeds should be tested for satisfactory levelness using a level light meter.</p> <p>As a general rule, a maximum deviation of not more than 3mm over an area of 3m is a good guide and will give a quality level floor, with the deviation not being too close together and too frequent.</p> <p>Where the screed does not conform to these requirements then a self levelling screed is to be applied and the rates are to include for the testing of the existing screeds as described above.</p> <p><u>V-Grooves to plaster :</u> V-Grooves are deemed to be included and are to be provided in plaster where it meets with concrete columns, slabs or beams.</p>				
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<p>Section No. 2 Bill No. 12 Plastering</p>				

	Unit	Quantity	Rate	Amount
<p><u>GRANOLITHIC:</u></p> <p><u>Method :</u> The method to be used shall be either the monolithic method or the bonded method.</p> <p><u>Preparation :</u> For granolithic applied monolithically, the concrete floor shall be swept clean after bleeding of the concrete has ceased and the slab has begun to stiffen; any remaining bleed water shall be removed and the granolithic applied immediately thereafter. For granolithic to be bonded to the floor slab after it has hardened, the slab surface shall be hacked (preferably by mechanical means) until all laitance, dirt, oil, etc is dislodged and swept clean of all loose matter. The slab shall then be wetted and kept damp for at least six hours before applying the granolithic</p> <p><u>Mix :</u> Granolithic shall attain a compressive strength of at least 41MPa. The coarse aggregate shall comply with SANS 1083 and shall generally be capable of passing a 10mm mesh sieve. Where the thickness of the granolithic exceeds 25mm, the size of the coarse aggregate shall be increased to the maximum size compatible with the thickness of the granolithic.</p> <p><u>Panels :</u> Granolithic shall be laid in panels not exceeding 14m for monolithic finishes, not exceeding 9,5m for bonded finishes and not exceeding 6m for all external granolithic. Wherever possible, panels shall be square but at no time should the length of the panel exceed 1,5 times its width.</p> <p>Where possible joints between panels shall be positioned over joints in the floor slab and shall be at least 3mm wide through the full thickness of the finish, separated by strips of wood or fibreboard and finished with V-joints.</p> <p><u>Laying :</u> Monolithic granolithic shall be applied to the partially set slab and thoroughly compacted and lightly wood floated to the required levels.</p> <p>Bonded granolithic shall be applied to the slab after applying a 1:1 sand-and-cement slurry brushed over the surface and allowed to partially set before applying the granolithic. The granolithic shall be thoroughly compacted and lightly wood floated to the required levels.</p>				
<p style="text-align: right;">Carried to Collection</p> <p>Section No. 2 Bill No. 12 Plastering</p>			R	

	Unit	Quantity	Rate	Amount
<p>After wood floating, the monolithic and bonded granolithic shall remain undisturbed until bleeding has ceased and the surface has stiffened. Any remaining bleed water and laitance shall then be removed and the surface steel trowelled or power floated.</p> <p><u>Curing, seasoning and protection</u></p> <p>Granolithic shall be covered with clean hessian with waterproof building foil over and kept wet for at least seven days after laying.</p> <p><u>GRANOLITHIC</u></p> <p><u>Untinted granolithic, on concrete :</u></p> <p>1 25mm Thick on floors and landings. m² 62</p> <p>2 25mm Thick on concrete benches. m² 12</p> <p>3 Grano skirtings 20mm thick x 100mm high with 30mm radius cove to receive epoxy coating (elsewhere measured). m 48</p> <p><u>SCREEDS</u></p> <p><u>Screeds on concrete:</u></p> <p>4 25mm Thick on floors and landings. m² 714</p> <p>5 Average 25mm thick on external balconies with upper surface to slight falls. m² 53</p> <p><u>SELF LEVELLING SCREEDS</u></p> <p><u>Self levelling screeds on concrete/screeded surfaces :</u></p> <p><u>All surfaces must be clean, mechanically sound and free of laitance, dust, grease and oil with vacuum abrasive blast cleaning being the preferred method of surface preparation. Wet grinding followed by vacuuming may also be used. All holes in the concrete or screed which are deeper than 40mm should be repaired before priming. Concrete surfaces should be prepared as above and primed with Isocrete Acrylic Primer or Isocrete Aqualock DPM (where required if floor slab is above 75% RH) and apply a.b.e Construction Chemicals Isocrete 4000 (or equally approved) cement-based screed, all in accordance with the manufacturers specifications and instructions.</u></p> <p>6 3mm Thick on floors and landings. m² 578</p>				
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	Unit	Quantity	Rate	Amount
<u>EPOXY SCREEDS</u>				
<u>Chemical Resistant Epoxy Screed :</u>				
<u>All surfaces must be clean, mechanically sound and free of laitance, dust, grease and oil with vacuum abrasive blast cleaning being the preferred method of surface preparation. Wet grinding followed by vacuuming may also be used. All holes in the concrete or screed which are deeper than 40mm should be repaired before priming. Concrete surfaces should be prepared as above and apply a.b.e. Construction Chemicals (or equally approved) Medium Sea Grey G24 abe screed chemical resistant epoxy screed and comprising a clear resin and activator blended with a pre-packed graded aggregate and a colour pigment including abecote 436 sealer, applied strictly as directed , all in accordance with the manufacturers specifications and instructions.</u>				
7	m ²	62		
8	m	48		
<u>INTERNAL PLASTER</u>				
<u>Cement plaster on brickwork :</u>				
9	m ²	924		
10	m ²	31		
<u>Cement plaster on concrete :</u>				
11	m ²	11		
12	m ²	94		
13	m ²	19		
14	m ²	20		
15	m ²	4		
16	m ²	48		
17	m ²	6		
<u>EXTERNAL PLASTER</u>				
<u>Cement plaster on brickwork :</u>				
18	m ²	3		
19	m ²	252		
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	Unit	Quantity	Rate	Amount
20 On narrow widths.	m ²	12		
<u>Cement plaster on concrete :</u>				
21 On walls and wall beams.	m ²	11		
22 On beams.	m ²	14		
23 On upstand / inverted beams.	m ²	20		
24 On concrete ceilings.	m ²	53		
25 On narrow widths.	m ²	7		
<u>CORNER PROTECTORS, DIVIDING STRIPS, ETC</u>				
<u>Corner protectors, dividing strips, etc.:</u>				
26 3 x 57mm Flat section brass dividing strips between different floor finishes at external doors.	m	10		
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<p><u>SECTION NO. 2</u> <u>BUILDING WORKS</u> <u>BILL NO. 13</u> <u>TILING</u></p> <p><u>PREAMBLES</u> For Preambles refer to "Department of Public Works: Specification of Materials and Methods to be used - PW371-A" which shall be read in conjunction with and shall apply to all items in these Bills of Quantities.</p> <p><u>SUPPLEMENTARY PREAMBLES</u> Items, materials or methods to be used specified by trade names or catalogue numbers are only an indication of the quality required. Items, materials or methods of similar quality may be used with prior approval from the Architect/Engineer.</p> <p><u>Patterns</u> Unless otherwise described, tiles shall be laid with continuous joints in both directions.</p> <p><u>Fixing</u> Unless described as fixed with adhesive to plaster (plaster elsewhere) descriptions of tiling on brick or concrete walls, columns, etc shall be deemed to include 1:4 cement plaster backing and descriptions of tiling on concrete floors etc shall be deemed to include 1:3 plaster bedding Tiling described as fixed with adhesive on power floated concrete shall be deemed to include for approved tiling key-coat Ceramic, porcelain, marble and granite tiles are to be fixed and grouted with suitable adhesives and grouts as recommended by the manufacturer of the tiles</p> <p><u>Preparation of surfaces:</u> The area to be tiled is to be wood floated. If tiling onto critical surfaces prime with approved primer or use new generation flexible one part adhesives which enables application directly onto critical surfaces. Surfaces must be firm and free of dust, mould, oil, grease, wax polish and organic growth. Organic growth must be removed and the spores killed with an effective fungicide such as a household bleaching solution. On both walls and floors there are minimum curing periods for walls and concrete floors as well as screeds and plasters and they are as follows:</p>				
<p style="text-align: right;">Carried to Collection</p> <p>Section No. 2 Bill No. 13 Tiling</p>			R	

	Unit	Quantity	Rate	Amount
<p>* New concrete floors require 6 weeks curing time before direct bedding</p> <p>* New brick walls require 6 weeks curing time before direct bedding</p> <p>* New concrete floors require 4 weeks curing time before screeding and the screed another 4 weeks before tiling can commence</p> <p>* New brick walls require 4 weeks curing time before plastering and the plaster another 2 weeks before tiling can commence</p>				
CERAMIC WALL TILING				
<p><u>'Union' Tiles Lin hard body ceramic wall tiles (Code: 1LINCARLIG30X60), or equally approved, size 300 x 600mm, fixed to internal wall plaster backing (elsewhere measured) with TAL or equally approved professional tile adhesive with flush pointed joints continuous in both directions and grouted with TAL or equally approved tinted tile grout, with excess grout on the surface to be cleaned with water as the work proceeds.</u></p>				
1	On walls.	m ²	146	
2	On narrow widths.	m ²	10	
PORCELAIN FLOOR TILING				
<p><u>'Union' Tiles porcelain floor tiles (Code: UNM129600), or equally approved, size 600 x 600mm, fixed to internal floor screed (elsewhere measured) with TAL or equally approved professional tile adhesive with flush pointed joints continuous in both directions and grouted with TAL or equally approved tinted tile grout, with excess grout on the surface to be cleaned with water as the work proceeds.</u></p>				
3	On floors and landings.	m ²	137	
4	Skirtings 100mm high of cut tiles.	m	100	
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<p><u>SECTION NO. 2</u> <u>BUILDING WORKS</u> <u>BILL NO. 14</u> <u>PLUMBING AND DRAINAGE (PROVISIONAL)</u></p> <p><u>PREAMBLES</u> For Preambles refer to "Department of Public Works: Specification of Materials and Methods to be used - PW371-A" which shall be read in conjunction with and shall apply to all items in these Bills of Quantities.</p> <p><u>SUPPLEMENTARY PREAMBLES</u> Items, materials or methods to be used specified by trade names or catalogue numbers are only an indication of the quality required. Items, materials or methods of similar quality may be used with prior approval from the Architect/Engineer.</p> <p><u>'Polycop' polypropylene pipes:</u> Polypropylene pipes 54mm diameter and under shall be seamless copper coloured class 16 pipes jointed with 'Fast-fuse' heat welded thermoplastic or brass compression fittings as designed for use with copper pipes as stated. Pipes shall be firmly fixed to walls etc with coloured nylon snap-in pipe clips with provision for accommodating thermal movement and jointed and fixed strictly in accordance with the manufacturer's All pipe diameters are nominal external.</p> <p><u>uPVC pressure pipes and fittings:</u> Pipes for water supply shall be of the class stated. Pipes of 40mm diameter and smaller shall be plain ended with solvent welded uPVC loose sockets and fittings. Pipes of 50mm diameter and greater shall have sockets and spigots with push-in type integral rubber ring joints. Bends shall be uPVC and all other fittings shall be cast iron, all with similar push-in type joints.</p>				
<p style="text-align: right;">Carried to Collection</p> <p>Section No. 2 Bill No. 14 Plumbing And Drainage (provisional)</p>			R	

	Unit	Quantity	Rate	Amount
<p><u>Copper pipes:</u></p> <p>Pipes shall be hard drawn and half-hard pipes of the class stated. Class 0 (thin walled hard drawn) pipes shall not be bent. Class 1 (thin walled half-hard), class 2 (half-hard) and class 3 (heavy walled half-hard) pipes shall only be bent with benders with inner and outer formers. Fittings to copper waste, vent and anti-syphon pipes, capillary solder fittings and compression fittings shall be 'Cobra Watertech' type. Capillary solder fittings shall comply with ISO 2016. Only compression fittings shall be used in walls or in ground.</p> <p><u>Fixing of pipes, fittings, etc :</u></p> <p>Unless specifically otherwise stated, descriptions of pipes shall be deemed to include for fixing to walls etc. casting in, building in or suspending not exceeding 1m below suspension level</p> <p>Descriptions of wall mounted, floor standing, drop-in, etc type sanitary fittings shall be deemed to include fixing in position and all fixing accessories.</p> <p>Descriptions of proprietary items shall include fixing in position and all fixing accessories as specified by the manufacturer.</p> <p><u>Chasing :</u></p> <p>Chasing pipes into new walls shall be regarded as "building in" and is not measured seperately. The cost of chasing and making good shall be included in the rates for the pipes.</p> <p><u>Reducing fittings:</u></p> <p>Where fittings have reducing ends or branches they are described as 'reducing'. In the case of pipes with diameters not exceeding 60mm only the largest end or branch size is given. Should the Contractor wish to use other fittings and bushes or reducers he may do so on the understanding that no claim in this regard will be entertained. In the case of pipes with diameters exceeding 60mm all sizes are given and no claim for extra bushes, reducers, etc will be entertained.</p> <p><u>Wire gratings:</u></p> <p>Descriptions of gutter outlets etc shall be deemed to include wire balloon gratings.</p> <p><u>Exposed concrete surfaces:</u></p> <p>Exposed surfaces of concrete stormwater channels, cover slabs, inspection eye marker slabs, gully tops, cleaning eye tops, catchpits, inspection chambers, etc shall be finished smooth with plaster.</p>				
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<p>Section No. 2 Bill No. 14 Plumbing And Drainage (provisional)</p>				

	Unit	Quantity	Rate	Amount
<p><u>Excavations:</u></p> <p>No claim for rock excavation will be entertained unless the Contractor has timeously notified the quantity surveyor thereof prior to backfilling.</p> <p>'Soft rock' and 'hard rock' shall be as defined in 'Earthworks'.</p> <p><u>Laying, backfilling, bedding, etc of pipes:</u></p> <p>Pipes shall be laid and bedded and trenches shall be carefully backfilled in accordance with manufacturers' instructions.</p> <p>Where no manufacturers' instructions exist pipes shall be laid in accordance with clauses 5.1 and 5.2 of each of the following: SABS 1200 L : Medium pressure pipelines LD : Sewers LE : Stormwater drainage Pipe trenches etc shall be backfilled in accordance with clause 3, 5.5, 5.6, 5.7 and 7 of SABS 1200 DB : Earthworks (Pipe trenches). Pipes shall be bedded in accordance with clauses 3.1 to 3.4.1, 5.1 to 5.3 and 7 of SABS 1200 LB : Bedding (Pipes)</p> <p>Unless otherwise described bedding of rigid pipes shall be class B bedding.</p> <p><u>Flush pans:</u></p> <p>Flush pans shall have straight or side outlets and 'P' or 'S' traps as necessary.</p> <p><u>Stainless steel basins, sinks, wash troughs, urinals, etc:</u></p> <p>Units shall have standard aprons on all exposed edges and tiling keys against walls where applicable.</p> <p>Prices for sinks are to include for preparing the worktop to receive the fitting and for securely fixing sinks to worktops using the clips provided. The Contractor is to provide worktop manufacturers with details of cut outs ensure that the cut openings are sufficiently accurate to provide proper engagement for these clips.</p> <p><u>Waste unions:</u></p> <p>Descriptions of waste unions shall be deemed to include rubber or vulcanite plugs and chains fixed to fittings.</p> <p><u>General:</u></p> <p>All screw and bolt fixings for sanitary ware are to be stainless steel or chromium plate on brass.</p> <p>Prices for sanitary fittings are to include for the application of white anti-fungal silicone sealant between the fittings and abutting wall and floor finishes, vanity tops, bathroom fittings, etc.</p>				
Carried to Collection			R	
<p>Section No. 2 Bill No. 14 Plumbing And Drainage (provisional)</p>				

	Unit	Quantity	Rate	Amount
<u>RAINWATER DISPOSAL</u>				
<u>0.60mm Thick Approved seamless aluminium watertight gutters and rainwater accessories, with factory coated finish (colour to match roof sheeting to approval), installed complete as per manufacturers specifications and recommendations:</u>				
1				
125 x 85mm Ogee seamless aluminium eaves gutters, complete with braces and clips at 600mm centres in concealed fix.	m	38		
2	No	8		
Extra over eaves gutter for stopped end.				
3	No	6		
Extra over 125 x 85mm eaves gutter for outlet for 75 x 50mm downpipes.				
4				
75 x 50mm Rectangular aluminium rainwater downpipes, fixed to walls with holderbats at 1000mm centres.	m	19		
5	No	6		
Extra over 75 x 50mm rectangular rainwater pipe for shoe.				
6				
450 x 250 x 350mm Deep rainwater header box / hopper box with outlet for 160mm diameter pipe, fixed to steel cladding and steelwork.	No	4		
<u>uPVC rainwater pipes :</u>				
7				
160mm Diameter rainwater downpipes, fixed to walls or cladding with holderbats at 1000mm centres.	m	15		
8				
160mm Diameter rainwater downpipes, fitted into rainwater tanks.	m	6		
9	No	2		
Extra over rainwater pipe for swan-neck.				
10	No	2		
Extra over 160mm diameter rainwater pipe for shoe.				
<u>Approved 'Fulbore' cast iron outlets, including stainless steel gratings, etc.</u>				
11				
50mm Side outlet, complete, cast into concrete balcony upstand beams.	No	4		
12				
75mm Vertical outlet, complete, cast into concrete balcony slabs.	No	2		
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	Unit	Quantity	Rate	Amount
<u>'Geberit' or equally approved vitreous china urinals :</u>				
18	'Geberit Selnova' or equally approved 360 x 370 x 610mm white vitreous china wall mounted rear inlet and outlet concealed control urinal with flush rim, hidden trap and hidden fastening with Kerafix fastening material for urinals, for operating with automatic water-saving flush and connecting to concealed urinal flush controls (elsewhere measured), fixed to brickwall.	No	6	
19	'Geberit' or equally approved white vitreous china wall mounted urinal division, size 400 x 700mm high, including approved fastening material and fixed to brickwork.	No	6	
<u>STAINLESS STEEL RACKS, TABLES, ETC.</u>				
<u>'Franke model T' or equally approved table manufactured from grade 304 stainless steel 1.2mm thick with a 50x10mm turndown all round. The underside sprayed with vermin proof bitumastic sound deadening and supported with a 30x30x3mm framework and galvanised mild steel backing sheet. Unit fixed 900mm high from the top of the front apron to the finish floor level with and including anchor bolts.</u>				
20	Stainless steel table size 1500 x 650mm wide. (Provisional).	No	1	
21	Stainless steel table size 1850 x 650mm wide. (Provisional).	No	1	
22	Solid Shelves manufactured from grade 304 stainless steel 1.2mm thick shelf designed to fit over the cross braces on the legs of table, size 1500 x 420mm wide.	No	1	
23	Slatted Shelves manufactured from 22mm diameter grade 304 stainless steel tubing. Under shelf designed to fit over the cross braces on the legs of table, size 1850 x 420mm wide.	No	1	
<u>WASTE UNIONS ETC</u>				
<u>Waste unions, etc:</u>				
24	32mm 'Geberit' or equally approved waste outlet with free outlet and valve cover.	No	10	
25	32mm 'Geberit' or equally approved waste outlet with free outlet screen.	No	10	
26	38mm Chrome plated heavy pattern slotted sink waste union with flange, shank, slotted with back nut plug, chain and stay.	No	2	
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		Unit	Quantity	Rate	Amount
<u>TRAPS ETC</u>					
<u>Traps, etc.:</u>					
27	40 x 50mm Rubber double bowl sink reseal P or S trap combination.	No	1		
28	'Geberit' or equally approved 40mm Bright chrome plated bottle trap with dip tube for washbasins, with horizontal outlet.	No	1		
29	'Geberit' or equally approved 50-56mm Bright chrome plated set of bottle trap for washbasins, with horizontal outlet, for concealed installation, including 32mm connection bend, cover plate, in-wall cabinet, concealed trap, seals, protection box and fastening material.	No	9		
30	'Geberit' or equally approved 50mm Diameter white urinal trap, horizontal rear outlet.	No	6		
<u>TAPS, VALVES, ETC</u>					
<u>Stopcocks, Stoptaps, Gate valves, Check valves, Strainers, etc:</u>					
31	15 x 10mm Code 232/10 Chrome plated angle regulating valve with adaptor nut and ring, including 10mm Diameter x 350mm long chrome plated supply tube and capnut (code C-232PIPE), to basins and sink.	No	11		
32	15mm Rough brass CxC 'Copcal' capillary type underwall stoptap (code 133-15), in line for supply to cisterns.	No	9		
33	15mm Chrome plated fullway ballcock with plastic coated plated steel lever handle.	No	2		
34	22mm Chrome plated fullway ballcock with plastic coated plated steel lever handle.	No	2		
35	22mm 1003/125RB fullway gate valve.	No	2		
<u>Crutch handle, elbow action and lockshield bibtaps:</u>					
36	20mm Rough brass hose crutch handle bibtap with 20mm BSP hose union to standpipes or gulleys.	No	3		
<u>Mixer fittings:</u>					
37	'Hansgrohe' Décor or equally approved chrome single lever basin mixer with 10mm flexible connection tubes (Code 31730000) to wash hand basins.	No	9		
Carried to Collection					
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		Unit	Quantity	Rate	Amount
38	'Hansgrohe' Talis Care or equally approved chrome single lever basin mixer with extra long handle and 10mm flexible connection tubes (Code 32035000) to disabled wash hand basins.	No	1		
39	'Hansgrohe Décor' or equally approved chrome single lever wall mounted kitchen sink mixer (Code 31825000).	No	1		
<u>Toilet and urinal flushvalves and built in cisterns:</u>					
40	'Geberit' or equally approved installation set with flush pipe, for manual urinal flush control, universal, for concealed installation in solid construction, including protection box with cover, water supply connection, concealed housing, stop valve with throttle, conduit pipe, terminal and 32mm flush pipe, with and including urinal flush control with pneumatic flush actuation, actuation plate Type 10 in stainless steel finish, complete all in accordance with manufacturers instructions and specifications.	No	6		
41	'Geberit' Kombifix element or equally approved 8cm Sigma concealed cistern for wall hung WC (elsewhere measured), height 109cm, front actuated with and including Sigma 10 'Stop & Go flush' screwable actuator in stainless steel finish, including flush pipe and pan connector, water supply connection with angle stop valve, protection cover for service opening and protection cover for flush pipe, fixed with included fastening materials inside solid wall, complete all in accordance with manufacturers instructions and specifications.	No	9		
<u>Pressure reducing valves, vacuum breakers, etc.:</u>					
42	22mm 600kPa Mono pressure control valve (code KH3.116).	No	1		
43	22mm Vacuum breaker (code KHN4.200CX).	No	2		
<u>SANITARY PLUMBING</u>					
<u>uPVC (SANS 967) pipes:</u>					
44	40mm Pipes.	m	15		
45	50mm Pipes.	m	14		
46	110mm Pipes	m	14		
47	40mm Pipes laid in and including trenches not exceeding 1m deep under surface beds.	m	4		
48	50mm Pipes laid in and including trenches not exceeding 1m deep under surface beds.	m	2		
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	Unit	Quantity	Rate	Amount
49 110mm Pipes laid in and including trenches not exceeding 1m deep under surface beds.	m	5		
<u>Extra over uPVC pipes for fittings (SANS 967):</u>				
50 50mm Reducer.	No	16		
51 110mm Reducer.	No	6		
52 40mm Bend.	No	10		
53 50mm Bend.	No	7		
54 110mm Bend.	No	5		
55 40mm Access bend.	No	10		
56 50mm Access bend.	No	7		
57 110mm Access bend.	No	5		
58 50mm Junction.	No	4		
59 110mm Junction.	No	5		
60 50mm Access junction.	No	2		
61 110mm Access junction.	No	5		
62 110mm Access reducing junction.	No	2		
63 110mm Pan connector	No	9		
64 110mm Two-way' vent valve.	No	5		
<u>Sundries:</u>				
65 Testing waste pipe systems, complete.	Item			
<u>WATER SUPPLIES</u>				
<u>Polycop' polypropylene pipes with and including compression fittings:</u>				
66 15mm Pipes laid in trenches not exceeding 2m deep, including excavation in all materials, bedding, backfilling, compaction and disposing of surplus excavated material.	m	4		
67 22mm Pipes laid in trenches not exceeding 2m deep, including excavation in all materials, bedding, backfilling, compaction and disposing of surplus excavated material.	m	8		
68 15mm Pipes.	m	24		
69 22mm Pipes.	m	10		
Carried to Collection			R	
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	Unit	Quantity	Rate	Amount
<u>Class 2 copper pipes :</u>				
70	m	26		
71	m	11		
72	m	5		
<u>Extra over Class 2 copper pipes for capillary fittings</u>				
73	No	36		
74	No	25		
<u>Extra over Class 2 copper pipes for brass compression fittings</u>				
75	No	42		
76	No	25		
<u>TESTING</u>				
<u>Testing:</u>				
77	Item			
<u>ELECTRIC WATER HEATERS</u>				
<u>'Approved' Geysers (SABS 151:1992), to be compatible with heat pump installations, where required :</u>				
78	No	1		
<u>'Approved' polyethylene geyser trays (SABS 1848:2000):</u>				
79	No	1		
<u>WATER BOILERS AND CHILLERS</u>				
<u>Water boilers and water chillers:</u>				
80	No	1		
Carried to Collection			R	
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	Unit	Quantity	Rate	Amount
<u>FIRE APPLIANCES ETC.</u>				
<u>Fire Extinguishers to SANS 10400-T :</u>				
81				
1,2 x 1,8m SABS approved fire blanket including mounting bracket and backboard plugged and screwed to wall.	No	1		
82				
4,5kg DCP hand held fire extinguisher including mounting bracket and backboard plugged and screwed to wall.	No	3		
83				
5kg Carbon dioxide CO2 hand held fire extinguisher including mounting bracket and backboard plugged and screwed to wall.	No	1		
84				
9kg DCP hand held fire extinguisher including mounting bracket and backboard plugged and screwed to wall.	No	1		
<u>Fire Hose Reels to SANS 10400-T :</u>				
85				
Fire hose reel complete with 30m rubber hose, pressure gauge, chromium plated stopcock/ball valve, fire hose reel combined nozzle stop cock shut-off nozzle and wall bracket mounted to wall as per manufacturers instructions and to Engineering fire drawing specifications.	No	2		
<u>WATER SUPPLIES TO FIRE APPLIANCES</u>				
<u>SABS62 Medium Grade Hot Dipped Galvanised Steel Pipes :</u>				
86				
25DN GMS pipes.	m	6		
87				
25DN GMS Pipes laid underground with and including two layers of Densowrap or equally approved up to 100mm above floor level.	m	38		
<u>Extra over SABS62 Medium Grade Hot Dipped Galvanised Steel pipes for compression fittings:</u>				
88				
25DN Elbow.	No	10		
89				
25DN Union connector	No	5		
90				
25DN Coupling reducer	No	2		
<u>Testing</u>				
91				
Testing fire water pipe system, complete	Item			
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Plumbing And Drainage (provisional)				

	Unit	Quantity	Rate	Amount
<u>WATER STORAGE TANKS, ETC</u>				
<u>JOJO or equally approved SABS and ECO approved Polyethylene (LLDPE) drinking water tanks with 10 year guarantee :</u>				
92				
10 000 Litre Slimline Cloudy Grey circular water tank, complete with 15mm plastic tap, clip on lid, outlet and overflow, mounted on top of concrete plinth base and tied down as instructed by manufacturer (concrete base elsewhere measured).	No	2		
Carried to Collection				
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PLUMBING AND DRAINAGE (PROVISIONAL)

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Plumbing And Drainage (provisional)

	Unit	Quantity	Rate	Amount
<p><u>SECTION NO. 2</u> <u>BUILDING WORKS</u> <u>BILL NO. 15</u> <u>GLAZING</u></p> <p><u>PREAMBLES</u> For Preambles refer to "Department of Public Works: Specification of Materials and Methods to be used - PW371-A" which shall be read in conjunction with and shall apply to all items in these Bills of Quantities.</p> <p><u>SUPPLEMENTARY PREAMBLES</u> Items, materials or methods to be used specified by trade names or catalogue numbers are only an indication of the quality required. Items, materials or methods of similar quality may be used with prior approval from the Architect/Engineer.</p> <p>Safety glazing to comply with SANS 1263 Part 1, 2 or 3 with name of the manufacturer permanently marked on each sheet visible after glazing, glazed in accordance with NBR N schedule 1 and SABS 0137.</p> <p><u>GLAZING TO WOOD WITH PINNED-ON BEADS (BEADS ELSEWHERE)</u> <u>6,35mm 'GSA Smartglass Intruderprufe' or equally approved normal strength (N.S.) Clear laminated safety glass :</u></p>				
1	m ²	2		
<p><u>TOPS, SHELVES, DOORS, MIRRORS, ETC.</u> <u>6mm Silvered float glass copper free mirrors with 10 mm bevelled and polished edges holed for and fixed with chromium plated dome capped mirror screws with rubber buffers to plugs in brickwork or concrete:</u></p>				
2	No	10		
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Glazing				
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	Unit	Quantity	Rate	Amount
2 Projecting columns.	m ²	94		
3 Ceilings and beams.	m ²	21		
<u>ON NEW EXTERNAL FLOATED PLASTER SURFACES</u>				
<u>'Plascon Wall & All' or equally approved paint to exterior new cement plaster, surface to be dry, sound and clean and cured for a minimum of 14 days, with a moisture content measured with a Doser Hygrometer (or equivalent), of BD 2 scale - 8% or less. Prime with one coat Plascon Plaster Primer (UC56) with an overcoating time of 16 hours and finish with two coats Wall & All (WAA 1) with 2 hours drying time between coats, for a maintenance cycle of 10 years in a C3 - industrial environment, for exterior use :</u>				
4 Walls and beams.	m ²	251		
5 Upstand beams.	m ²	23		
6 Ceilings and beams.	m ²	3		
<u>ON NEW FAIR FACED BRICKWORK</u>				
<u>Prepare surfaces and remove all loose material, builder's plaster etc with weak spirits of salts (or any other suitable means), wash, dry and apply three coats of Approved Brick / Stone sealer':</u>				
7 On facebrick walls externally. (Provisional).	m ²	254		
<u>ON NEW PLASTERBOARD SURFACES</u>				
<u>'Plascon Cashmere' or equally approved paint to interior new plasterboard, surface to be dry, sound and free of dirt and loose particles. Wipe down with a damp cloth and allow to dry completely. Prime with one coat Professional Water Based Gypsum Sealer (PGS1) with an overcoating time of 1 hour and finish with two coats Cashmere (CAS 1) with 2 hours drying time between coats, for a maintenance cycle of 10 years in a C1 - inland environment.</u>				
8 Skimmed sloping ceilings and cornices, between steel rafters.	m ²	280		
9 Skimmed partition walls at internal eaves closures.	m ²	45		
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Paintwork				

	Unit	Quantity	Rate	Amount
<u>ON NEW FIBRE-CEMENT BOARD SURFACES</u>				
<u>'Plascon Velvaglio' or equally approved polyurethane enamel paint to new fibre-cement, surface to be dry, sound and clean. Prime with one coat Plascon Plaster Primer (UC56) with an overcoating time of 16 hours and finish with two coats Velvaglio Polyurethane Enamel (VLO) with 2 hours drying time between coats, for a maintenance cycle of 10 years in a C3 - industrial environment, for interior/exterior use :</u>				
10	m	79		
11	m	64		
12	m ²	31		
<u>ON NEW METAL SURFACES</u>				
<u>'Plascon Velvaglio' or equally approved polyurethane enamel paint to new metal, surface to be dry, sound and clean. Clean and degrease with Plascon Aquasolve Degreaser GR1, rinse and prime with one coat Plascon Galvogrip Metal Primer, one coat Plascon Merit Universal Undercoat and finish with two coats Plascon Velvaglio Polyurethane Enamel (VLO) with 2 hours drying time between coats, for a maintenance cycle of 10 years in a C3 - industrial environment, for interior/exterior use to galvanised steel :</u>				
13	m ²	7		
14	m ²	168		
15	m ²	37		
16	m ²	1		
17	m	6		
<u>ON NEW WOOD SURFACES</u>				
<u>Two coats oil wood primer</u>				
18	m	61		
Carried to Collection			R	
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Paintwork				

	Unit	Quantity	Rate	Amount
<p><u>'Plascon Velvagio' or equally approved Polyurethane enamel paint to new wood, surface to be dry, sound and clean, wash knots and resinous areas with Lacquer Thinners (LS 1) and coat with Woodcare Knot Seal (PK2) and apply one coat of Plascon Woodcare Pretreatment (WWP 1), overcoated within 48 hours with a moisture content, measured with a Doser Hygrometer (or equivalent), of BD 2 scale (A1-A5) < 14% or less. Prime with one coat Wood Primer (UC 2) with an overcoating time of 16 hours and finish with two coats Velvagio Satin (VLO) with 16 hours drying time between coats, for a maintenance cycle of 3 years in a C5 - coastal/marine environment, for interior / exterior use to new wood :</u></p>				
19	Interior / Exterior slatted grooved doors.	m ²	59	
20	Door frames, etc.	m ²	15	
21	Exterior roof timbers at eaves and verges.	m ²	6	
22	Skirtings, rails, etc not exceeding 300mm girth.	m	133	
<p><u>Prepare surfaces, sand, clean and apply three coats superior quality polyurethane suede varnish, with light sanding between coats :</u></p>				
23	Stage flooring and steps.	m ²	32	
24	Vertical floor boarding to front of stage.	m ²	5	
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PAINTWORK
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SECTION 3

EXTERNAL WORKS
(PROVISIONAL)

	Unit	Quantity	Rate	Amount
<p><u>SECTION NO. 3</u> <u>EXTERNAL WORKS (PROVISIONAL)</u> <u>BILL NO. 1</u> <u>SITE CLEARANCE AND BULK EARTHWORKS</u></p> <p><u>PREAMBLES</u> For Preambles refer to "Department of Public Works: Specification of Materials and Methods to be used - PW371-A" which shall be read in conjunction with and shall apply to all items in these Bills of Quantities.</p> <p><u>SUPPLEMENTARY PREAMBLES</u> Items, materials or methods to be used specified by trade names or catalogue numbers are only an indication of the quality required. Items, materials or methods of similar quality may be used with prior approval from the Architect/Engineer.</p> <p><u>Note :</u> All Earthworks shall be done in accordance with the SANS 1200 specifications.</p> <p><u>Nature of ground:</u> The Tenderer must acquaint himself with the nature of the material to be excavated. The nature of the ground is assumed to be loose fine to medium sandy material, therefore earth, but possibly interspersed with hard rock or soft rock.</p> <p><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.</p> <p><u>Dewatering of Excavations</u> The Contractor shall allow for removing seepage and other water from subterranean sources from the excavations by pumping , baling or otherwise. Accurate records of all such dewatering shall be kept to determine the total volume of water so removed and a clear distinction shall be made between water from subterranean sources and other water.</p> <p><u>Density testing on filling</u> Rates of filling, etc shall include for all density and soil type testing to prove that the specified compaction is achieved</p>				
<p style="text-align: right;">Carried to Collection</p> <p>Section No. 3 Bill No. 1 Site Clearance And Bulk Earthworks</p>			R	

	Unit	Quantity	Rate	Amount
<p>When additional testing is done on instruction of the Architect and these tests are successful, they will be paid for additionally.</p> <p><u>Old materials to become the property of the Contractor :</u></p> <p>Old materials from the demolitions, except where described to be re-used or handed over, become the property of the Contractor who must allow credit for the same in these Bills of Quantities.</p> <p><u>Old materials to be carted away:</u></p> <p>Old materials from demolitions except where described to be re-used or handed over, as well as all rubbish, etc., must be regularly carted from the site and not to be allowed to accumulate on or around the site.</p> <p><u>Old materials not to be re-used :</u></p> <p>None of the old materials are to be used for new work except where specifically described being set aside for re-use.</p> <p><u>Handing over of materials :</u></p> <p>Where certain materials or articles from demolitions or articles are described as to be handed over by the Contractor to the Regional Representative or Representative/Agent, such materials or articles shall be properly stored by the Contractor, untill handing over thereof. The Contractor must obtain an official receipt listing the materials or articles and dates of handing over. If the Contractor fails to submit the receipt when requested, it shall be deemed that the materials or articles are still in his possession and he will be held liable to the Client for the full replacement value thereof, which amount will be deducted from any monies due to the Contractor.</p> <p><u>General :</u></p> <p>Before starting work, the Contractor shall carry out a thorough survey and examination of the buildings or structures to be demolished and satisfy themselves as to the nature and requirements of the contract. The Contractor is to locate and mark the positions of existing services affected by the demolitions. No extra's will be allowed due to the Contractor's failure to carry out the above.</p> <p>Burning of materials arising from the demolitions will not be permitted on site.</p> <p>All sizes given for demolitions are approximate and are to be confirmed on site.</p>				
<p style="text-align: right;">Carried to Collection</p> <p>Section No. 3 Bill No. 1 Site Clearance And Bulk Earthworks</p>			R	

	Unit	Quantity	Rate	Amount
<u>DEMOLITIONS. ETC.</u>				
<u>Breaking up and removing :</u>				
1	150mm Thick reinforced concrete surface beds, paving, etc on site.	m ²	26	
<u>SITE CLEARANCE, ETC.</u>				
<u>Site clearance, etc.:</u>				
2	Allow for clearing the area of the site to be built upon of all grass, weeds, shrubs, trees with trunks not exceeding 200mm girth, debris, etc., including grubbing up all roots, scoffling up as required and cart away all vegetation and debris.	m ²	1 890	
3	Strip topsoil layer average 150mm thick and stockpile on site.	m ³	284	
<u>REMOVAL OF TREES, ETC.</u>				
<u>Taking out and removing, grubbing up roots and filling in holes:</u>				
4	Tree stump exceeding 200mm and not exceeding 500mm girth.	No	1	
5	Tree stump exceeding 500mm and not exceeding 1000mm girth.	No	1	
<u>Cut down and remove, grub up roots and fill in holes:</u>				
6	Tree exceeding 500mm and not exceeding 1000mm girth.	No	1	
7	Tree exceeding 1000mm and not exceeding 1500mm girth.	No	1	
8	Tree exceeding 1500mm and not exceeding 2000mm girth.	No	1	
9	Tree exceeding 2000mm and not exceeding 2500mm girth.	No	1	
<u>BULK EXCAVATION</u>				
<u>Open face excavation in earth over sloping site:</u>				
10	Open face excavation over sloping site to reduce levels for platforms including spreading and levelling in areas of fill and depositing excavated material over site including haulage not exceeding 1 km from perimeter of excavations.	m ³	257	
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Site Clearance And Bulk Earthworks				

	Unit	Quantity	Rate	Amount
<u>Extra over bulk excavation in earth for excavation in:</u>				
11	Soft rock	m ³	30	
12	Hard rock	m ³	15	
<u>CARTING AWAY.</u>				
<u>Extra over all excavations for loading, carting and dumping surplus excavated material (no allowance made for increase in bulk):</u>				
13	In spoil heaps where directed on site.	m ³	257	
14	Off site to a dumping site to be found by the Contractor.	m ³	141	
<u>COMPACTION OF SURFACES</u>				
<u>Compaction of surfaces:</u>				
15	In - place treatment of existing or filled material by ripping, scarifying for a depth of 150mm, breaking down oversize material, stabilizing soil with and including 4% lime mixed evenly into fill material and compacting to 90% Mod AASHTO density.	m ²	1 890	
<u>EARTH FILLING, ETC.</u>				
<u>Filling with material from the excavations, cut to fill, spread and levelled and compacted to a density of at least 93% Mod. AASHTO maximum density:</u>				
16	Over site for platforms.	m ³	116	
<u>Filling with approved G5 sub-base quality material carted onto site by the Contractor, compacted to a density of at least 93% Mod. AASHTO maximum density in 150mm layers:</u>				
17	Over site for platforms.	m ³	129	
<u>KEEPING EXCAVATIONS FREE OF WATER</u>				
<u>Keeping excavations free of water:</u>				
18	Keeping excavations free of all water other than subterranean water.	Item		
<u>TESTS</u>				
Rates of filling, etc shall include for all density and soil type testing to prove that the specified compaction is achieved.				
When additional testing is done on instruction of the Architect and these tests are successful, they will be paid for additionally.				
Carried to Collection				
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	Unit	Quantity	Rate	Amount
<u>Prescribed density tests on filling:</u>				
19	No	5		
20	No	5		
21	No	5		
<u>GRASSING, ETC.</u>				
<u>Ground preparation:</u>				
22	m ²	655		
<u>Topsoil, compost, lime and fertilizer:</u>				
23	m ²	655		
<u>Fertilizing:</u>				
24	m ²	655		
<u>Grassing of Kikuyu grass or equally approved roots in rows over site:</u>				
25	m ²	655		
<u>Maintenance:</u>				
26	Item			
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Bill No. 1

Site Clearance And Bulk Earthworks

	Unit	Quantity	Rate	Amount
<p><u>SECTION NO. 3</u> <u>EXTERNAL WORKS (PROVISIONAL)</u> <u>BILL NO. 2</u> <u>ROADWORKS AND PARKING AREAS</u></p> <p><u>PREAMBLES</u> For Preambles refer to "Department of Public Works: Specification of Materials and Methods to be used - PW371-A" which shall be read in conjunction with and shall apply to all items in these Bills of Quantities.</p> <p><u>SUPPLEMENTARY PREAMBLES</u> Items, materials or methods to be used specified by trade names or catalogue numbers are only an indication of the quality required. Items, materials or methods of similar quality may be used with prior approval from the Architect/Engineer.</p> <p><u>Nature of ground:</u> The Tenderer must acquaint himself with the nature of the material to be excavated. The nature of the ground is assumed to be loose fine to medium sandy material, therefore earth, but possibly interspersed with hard rock or soft rock.</p> <p><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.</p> <p><u>Dewatering of Excavations</u> The Contractor shall allow for removing seepage and other water from subterranean sources from the excavations by pumping , baling or otherwise. Accurate records of all such dewatering shall be kept to determine the total volume of water so removed and a clear distinction shall be made between water from subterranean sources and other water.</p> <p><u>Density testing on filling</u> Rates of filling, etc shall include for all density and soil type testing to prove that the specified compaction is achieved When additional testing is done on instruction of the Architect/Engineer and these tests are successful, they will be paid for additionally.</p>				
<p style="text-align: right;">Carried to Collection</p> <p>Section No. 3 Bill No. 2 Roadworks And Parking Areas</p>			R	

	Unit	Quantity	Rate	Amount
Note:				
All Earthworks shall be done in accordance with the SANS 1200 specifications.				
Refer to the relevant sections in SANS 1200 Mk for the specification of roadworks which will apply in this Bill.				
<u>ROADWORKS, ETC.</u>				
<u>SITE CLEARANCE, ETC.</u>				
<u>Site clearance, etc.:</u>				
1				
Allow for clearing the area of the site to be built upon of all grass, weeds, shrubs, trees with trunks not exceeding 200mm girth, debris, etc., including grubbing up all roots, scoffling up as required and cart away all vegetation and debris.				
	m ²	850		
2				
Strip topsoil layer average 150mm thick and stockpile on site.				
	m ³	128		
<u>EXCAVATIONS, ETC.</u>				
<u>Open face excavation in earth over sloping site:</u>				
3				
Open face excavation under roads and parking areas to reduce levels including spreading and levelling in areas of fill and depositing excavated material over site including haulage not exceeding 1 km from perimeter of excavations .				
	m ³	260		
<u>Extra over open face excavation in earth for excavation in:</u>				
4				
Soft rock				
	m ³	30		
5				
Hard rock				
	m ³	15		
<u>CARTING AWAY.</u>				
<u>Extra over all excavations for loading, carting and dumping surplus excavated material (no allowance made for increase in bulk):</u>				
6				
In spoil heaps where directed on site.				
	m ³	260		
7				
Off site to a dumping site to be found by the Contractor.				
	m ³	190		
<u>COMPACTION OF SURFACES</u>				
<u>Compaction of surfaces:</u>				
8				
In - place treatment of existing cut or filled material by ripping, scarifying for a depth of 150mm, breaking down oversize material and compacting to 90% Mod AASHTO density:				
	m ²	850		
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	Unit	Quantity	Rate	Amount
<u>EARTH FILLING, ETC.</u>				
<u>Filling with selected excavated material from excavations on the site, cut to fill, spread and levelled and compacted to a density of at least 93% Mod. AASHTO maximum density in 150mm layers:</u>				
9	m ³	70		
10	m ³	33		
<u>Filling with approved G7 Sub-Base Course material (SABS 1200) supplied and carted onto site by the Contractor, under roadways and parking, and compacted to a density of at least 93% Mod. AASHTO maximum density:</u>				
11	m ³	149		
<u>Filling with approved G5 Sub-Base Course material (SABS 1200) supplied and carted onto site by the Contractor, under roadways and parking, and compacted to a density of at least 95% Mod. AASHTO maximum density:</u>				
12	m ³	149		
<u>KEEPING EXCAVATIONS FREE OF WATER</u>				
<u>Keeping excavations free of water:</u>				
13	Item			
<u>TESTS</u>				
<u>Note:</u>				
Control testing to be undertaken by the Contractor will be required to prove that the works have been executed in accordance with the Specification and Drawings.				
The Engineer will execute a certain number of check tests to monitor the control testing results submitted by the Contractor. Payment for these check tests will be made from the Provisional quantity allowed in the Bill of Quantities, if they are succesful.				
Rates of filling, etc shall include for all density and soil type testing to prove that the specified compaction is achieved.				
When additional testing is done on instruction of the Architect and these tests are successful, they will be paid for additionally.				
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	Unit	Quantity	Rate	Amount
<u>Prescribed density tests on filling:</u>				
14	No	5		
15	No	5		
16	No	5		
17	No	5		
18	No	10		
<u>SOIL POISONING</u>				
<u>Approved brand of weedkiller mixed and applied strictly in accordance with the manufacturer's instructions :</u>				
19	m ²	975		
<u>BOND AND INTERLOCKING CONCRETE BLOCK PAVERS</u>				
Block paving to be manufactured in accordance with SABS Specification 1058 to the following compressive strength:				
Class 25 or 35MPa or as specified by the Engineer.				
Paving to be laid in accordance with SANS 1200MJ, SABS 1058 and the Concrete Manufacturers Association's specifications.				
Clean dry bedding sand complying with SANS 1200D to be laid under paving.				
Clean dry jointing sand complying with SANS 1200MJ is to be swept into joints between roadstones.				
Paving to be installed with a minimum longitudinal fall of 1% and a transverse fall of at least 2%.				
All block paving to be inspected and resanded after 3 months.				
<u>'Inca' or equally approved paving of 80mm thick Type S-A approved Precast Concrete 'Weathered Charcoal' coloured interlocking paving blocks, size 200 x 100 x 80mm Thick, laid in herringbone pattern on and including 25mm thick compacted river sand bed with fine dry filler jointing sand swept and vibrated into joints all laid on subgrade (elsewhere measured conforming to SABS 1200D degree of accuracy I :</u>				
20	m ²	975		
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	Unit	Quantity	Rate	Amount
21 Fair circular cutting and waste to paving.	m	25		
<u>CONCRETE EDGE BEAM, ETC.</u>				
<u>Excavation not exceeding 2m deep:</u>				
22 For edge beam to roadways.	m ³	1		
<u>Extra over all excavations for carting away</u>				
23 Surplus material from excavations to a dumping site to be located by the contractor.	m ³	1		
<u>30MPa/19mm Reinforced concrete:</u>				
24 In edge beams to roadways.	m ³	1		
<u>Finishing top surfaces of concrete with a wood float:</u>				
25 Top of edge beams.	m ²	4		
<u>Rough formwork:</u>				
26 Edges not exceeding 300mm high.	m	26		
<u>Fabric reinforcement :</u>				
27 Type 193 fabric reinforcement in concrete edge beams, etc.	m ²	4		
<u>KERBING CHANNELS, ETC.</u>				
<u>Precast concrete kerbing finished smooth on exposed surfaces including bedding, jointing and pointing, etc.</u>				
28 Standard Kerb (SABS 927-1969 Fig 3) 150 x 300mm high overall laid upright on and including 200 x 50mm thick unreinforced 15/19Mpa concrete bedding, with 150 x 300mm unreinforced concrete haunching at back of each joint in kerbing, including all excavation, backfilling, etc.	m	195		
29 Ditto but circular on plan not exceeding 4m radius formed with short lengths of straight kerbing including all excavations, backfilling, etc.	m	4		
30 Ditto but circular on plan exceeding 4m radius.	m	21		
31 Standard Channel (SABS 927-1969 Fig 14) 300 x 125mm high overall laid horizontally to falls at edge of paved roadways and laid together with Fig 3 kerbing (elsewhere measured) to form water channel, including all excavation, backfilling, etc. (Provisional).	m	115		
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<p><u>SECTION NO. 3</u> <u>EXTERNAL WORKS (PROVISIONAL)</u> <u>BILL NO. 3</u> <u>STORMWATER DRAINAGE</u></p> <p><u>PREAMBLES</u> For Preambles refer to "Department of Public Works: Specification of Materials and Methods to be used - PW371-A" which shall be read in conjunction with and shall apply to all items in these Bills of Quantities.</p> <p><u>SUPPLEMENTARY PREAMBLES</u> Items, materials or methods to be used specified by trade names or catalogue numbers are only an indication of the quality required. Items, materials or methods of similar quality may be used with prior approval from the Architect/Engineer.</p> <p><u>Note:</u> All Stormwater Drainage shall be done in accordance with the SANS 1200 DB, LB and LE specifications. All plastic pipe diameters are nominal external. All pipes shall be jointed and fixed strictly in accordance with the manufacturers instructions.</p> <p><u>uPVC pipes and fittings:</u> Soil, waste and vent pipes and fittings shall be solvent weld jointed.</p> <p><u>Concrete pipes:</u> Pipes shall be jointed with ogee joints with rubber collars or socket and spigot joints with rubber rings.</p> <p><u>Exposed concrete surfaces:</u> Exposed surfaces of concrete stormwater channels, cover slabs, inspection eye marker slabs, gully tops, cleaning eye tops, catchpits, inspection chambers, etc shall be finished smooth with plaster.</p> <p><u>Excavations:</u> No claim for rock excavation will be entertained unless the Contractor has timeously notified the quantity surveyor thereof prior to backfilling. 'Soft rock' and 'hard rock' shall be as defined in 'Earthworks'.</p>				
<p style="text-align: right;">Carried to Collection</p> <p>Section No. 3 Bill No. 3 Stormwater Drainage</p>			R	

	Unit	Quantity	Rate	Amount
7				
600mm Diameter Type D Pipes laid in and including trenches exceeding 1m not exceeding 2m deep including 100mm selected grandular material bedding below and 300mm selected fill material above pipe	m	41		
8				
Ditto, but exceeding 2m not exceeding 3m deep.	m	21		
<u>Sumps, catchpits, inspection chambers, manholes etc (gratings and covers elsewhere):</u>				
9				
Excavate for and build stormwater catchpit complete exceeding 1000mm not exceeding 2000mm deep to form inlet to stormwater reticulation size 1150 x 1150mm wide overall including 150mm thick 20/19Mpa concrete bottom base with mesh 193 centrally, 220mm brickwork in stocks size 850 x 850mm overall, with 10mm internal plaster, benching to bottom of pit, building in 200mm diameter stormwater pipe and 150mm thick 20/19Mpa concrete cover slab over with mesh 193 centrally, slab to receive 450 x 450mm square dished grating (elsewhere measured) and including all formwork, reinforcement, backfilling, compaction etc . (See Stormwater Catchpit Detail as per Engineering Standard Details Drawing 34435-DET-1 - Stormwater Catchpit Detail).	No	5		
10				
Ditto, but exceeding 2000mm not exceeding 3000mm deep.	No	3		
11				
Excavate for and build stormwater catchpit/grid inlet to roadways complete exceeding 1000mm deep not exceeding 2000mm deep to form inlet to stormwater reticulation at roadway size 1900 x 1560mm wide overall, including 150mm thick 25/19Mpa concrete bottom base with mesh 245 centrally, 230mm brickwork in stocks size 1600 x 1260mm overall, with 10mm internal plaster, benching to bottom of pit, building in 300mm/450mm or 600mm diameter concrete stormwater pipe to two sides and 150mm thick 25/19Mpa reinforced concrete cover slab over to receive two (2) Table 8 rectangular curved gully gratings and frames to SABS 1115 (elsewhere measured) all built into slab with and including two 1m long inlet kerbs built in and all including all excavations, formwork, reinforcement, backfilling, compaction etc . (See Stormwater Grid Inlet Detail as per Engineering Standard Details Drawing 34435-DET-1 - Stormwater Grid Inlet Detail).	No	5		
12				
Ditto, but exceeding 2000mm not exceeding 3000mm deep.	No	4		
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	Unit	Quantity	Rate	Amount
<u>Gratings, covers, etc:</u>				
13				
13	No	8		
14	No	18		
<u>STORMWATER HEADWALLS, OUTLETS, ETC.</u>				
<u>The following in Stormwater Headwalls / Outlets, etc : (See Stormwater Outlet & Headwall Detail as per Engineering Standard Details Drawing 34435-DET-1 - Stormwater Outlet & Headwall Detail).</u>				
15	m ³	1		
16	m ³	1		
17	m ²	2		
18	m ²	5		
19	m ³	1		
20	m ³	1		
21	m ³	1		
22	m ²	8		
23	m ²	2		
24	Tonnes	0,24		
<u>GABIONS, ETC.</u>				
<u>Excavation in earth not exceeding 2m deep:</u>				
25	m ³	1		
<u>Extra over all excavations for loading, carting and dumping surplus excavated material (no allowance made for increase in bulk):</u>				
26	m ³	1		
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<p><u>SECTION NO. 3</u> <u>EXTERNAL WORKS (PROVISIONAL)</u> <u>BILL NO. 4</u> <u>SOIL DRAINAGE AND SEWER RETICULATION</u></p> <p><u>PREAMBLES</u> For Preambles refer to "Department of Public Works: Specification of Materials and Methods to be used - PW371-A" which shall be read in conjunction with and shall apply to all items in these Bills of Quantities.</p> <p><u>SUPPLEMENTARY PREAMBLES</u> Items, materials or methods to be used specified by trade names or catalogue numbers are only an indication of the quality required. Items, materials or methods of similar quality may be used with prior approval from the Architect/Engineer.</p> <p><u>Note:</u> All plastic pipe diameters are nominal external. All pipes shall be jointed and fixed strictly in accordance with the manufacturers instructions.</p> <p><u>uPVC pipes and fittings:</u> Sewer and drainage pipes and fittings shall be jointed and sealed with butyl rubber rings. Soil, waste and vent pipes and fittings shall be solvent weld jointed.</p> <p><u>uPVC pressure pipes and fittings:</u> All pipes shall be of the class stated. Pipes of 40mm diameter and smaller shall be plain ended with solvent welded uPVC loose sockets and fittings. Pipes of 50mm diameter and greater shall have sockets and spigots with push-in type integral rubber ring joints. Bends shall be uPVC and all other fittings shall be cast iron, all with similar push-in type joints.</p> <p><u>Exposed concrete surfaces:</u> Exposed surfaces of concrete stormwater channels, cover slabs, inspection eye marker slabs, gully tops, cleaning eye tops, catchpits, inspection chambers, etc shall be finished smooth with plaster.</p> <p><u>Excavations:</u> No claim for rock excavation will be entertained unless the Contractor has timeously notified the quantity surveyor thereof prior to backfilling.</p>				
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	Unit	Quantity	Rate	Amount
<p>'Soft rock' and 'hard rock' shall be as defined in 'Earthworks'.</p> <p><u>Laying, backfilling, bedding, etc of pipes:</u></p> <p>Pipes shall be laid and bedded and trenches shall be carefully backfilled in accordance with manufacturers' instructions.</p> <p>Where no manufacturers' instructions exist pipes shall be laid in accordance with clauses 5.1 and 5.2 of each of the following: SANS 1200 L : Medium pressure pipelines LD : Sewers LE : Stormwater drainage Pipe trenches etc shall be backfilled in accordance with clause 3, 5.5, 5.6, 5.7 and 7 of SANS 1200.</p> <p><u>SOIL DRAINAGE, SEWER RETICULATION, ETC.</u></p> <p><u>EXISTING SEWER RETICULATION</u></p> <p><u>Cleaning of existing sewer reticulation pipeline and manholes:</u></p>				
1	m	65		
<p>Cleaning of existing 110mm or 160mm diameter uPVC sewer reticulation pipeline, by hand, winching or high pressure jetting, to get pipeline into full working condition and all to Engineers approval.</p>				
2	No	2		
<p>Cleaning of existing 1000 x 1000mm x approximately 2m deep sewer manhole, by hand or other means, to get manhole into full working condition and all to Engineers approval.</p> <p><u>Removal of existing sewer reticulation pipeline and manholes:</u></p>				
3	m	40		
<p>Locate and remove existing 110mm or 160mm diameter uPVC sewer pipeline to be replaced by new re-routed pipeline, not exceeding 2m deep, including excavations, backfilling with suitable material, carting away surplus material to dump site by contractor and compacting to required density, etc.</p>				
4	No	1		
<p>Locate, break up and remove existing sewer manhole approximate size 1m x 1m not exceeding 2m deep, including excavations, removal of brick structure and concrete base and slab, carting away material to a dump site by contractor, backfilling with suitable material and compacting to required density, etc.</p> <p><u>NEW SEWER RETICULATION</u></p> <p><u>uPVC Class 34 sewer pipes:</u></p>				
5	m	5		
<p>110mm Pipes vertically or ramped to cleaning eyes etc (no excavation).</p>				
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	Unit	Quantity	Rate	Amount
6 110mm Pipes laid in and including trenches not exceeding 1m deep.	m	20		
7 110mm Pipes laid in and including trenches exceeding 1m not exceeding 2m deep.	m	43		
8 160mm Pipes laid in and including trenches not exceeding 1m deep.	m	10		
9 160mm Pipes laid in and including trenches exceeding 1m deep and not exceeding 2m deep.	m	58		
<u>Extra over uPVC Class 34 pipes for fittings:</u>				
10 110mm Bend.	No	5		
11 110mm Access Bend.	No	3		
12 110mm Junction.	No	2		
13 110mm Access junction.	No	3		
14 110mm Access double junction.	No	2		
15 160 x 110mm Y Junction.	No	2		
16 160mm Bend.	No	2		
17 160mm Tee.	No	2		
<u>Gulleys:</u>				
18 Precast concrete dished gully surround including 110mm 'P' trap PVC gully head and grating, complete, not exceeding 1000mm deep.	No	3		
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<p><u>SECTION NO. 3</u> <u>EXTERNAL WORKS (PROVISIONAL)</u> <u>BILL NO. 5</u> <u>WATER AND FIRE RETICULATION</u></p> <p><u>PREAMBLES</u> For Preambles refer to "Department of Public Works: Specification of Materials and Methods to be used - PW371-A" which shall be read in conjunction with and shall apply to all items in these Bills of Quantities.</p> <p><u>SUPPLEMENTARY PREAMBLES</u> Items, materials or methods to be used specified by trade names or catalogue numbers are only an indication of the quality required. Items, materials or methods of similar quality may be used with prior approval from the Architect/Engineer.</p> <p><u>uPVC pressure pipes and fittings:</u> Pipes for water supply shall be of the class stated. Pipes of 50mm diameter and greater shall be to SABS 966 and shall have sockets and spigots with push-in type integral rubber ring joints. Bends shall be uPVC and all other fittings shall be cast iron or cast steel as recommended by the manufacturer of the pipe, all with similar push-in type joints.</p> <p><u>Reducing fittings:</u> Where fittings have reducing ends or branches they are described as 'reducing'. In the case of pipes with diameters not exceeding 60mm only the largest end or branch size is given. Should the Contractor wish to use other fittings and bushes or reducers he may do so on the understanding that no claim in this regard will be entertained. In the case of pipes with diameters exceeding 60mm all sizes are given and no claim for extra bushes, reducers, etc will be entertained.</p> <p><u>Corrosion Protection:</u> External protection of all underground steel pipes, flanges, joints and couplings shall be by means of a 300 micron layer of coaltar epoxy of an approved make. External protection of all above ground steel pipes, flanges, joints and couplings shall be by means of a zinc coating. The finished surface shall be clean and uniform any excess being removed. The zinc deposit shall exceed 0.735 kg/m³.</p> <p><u>Joints, Bolts, Nuts and Washers:</u> "Bolts, nuts and washers shall be treated as follows:</p>				
<p style="text-align: right;">Carried to Collection</p> <p>Section No. 3 Bill No. 5 Water And Fire Reticulation</p>			R	

	Unit	Quantity	Rate	Amount
<p>Bolts and nuts shall be cadmium plated to BS 1706 and shall conform to grade 4.6 of SABS 135 and BS 916.</p> <p>Plain and tapered washers for use with mild steel bolts and nuts shall comply with BS 4320 and will be electro-galvanised to BS 1706.</p> <p>Plain and tapered washers for use with high tensile steel bolts and nuts shall be case hardened with a minimum hardness of Rockwell C-35.</p> <p><u>Corrosive Soil:</u></p> <p>All buried steel pipework and connections to be "DENSO" wrapped.</p> <p>"Fittings and joints shall be protected with 'Denso Tape' or similar approved material.</p> <p>After the joints and fittings have been tested, they shall be liberally and completely coated with 'Denso Paste' and immediately thereafter wrapped with 'Denso Tape'. Wrapping shall commence at a point at least 50mm beyond the opposite side of the joint or fitting. An overlap of at least 25mm shall be given on each turn.</p> <p>Care shall be taken to smooth down the tape so as to avoid air pockets and gaps through which water could penetrate. Any turned or damaged tape shall be replaced or patched to the satisfaction of the Engineer's Representative. The Contractor shall ensure that the wrapping is not damaged during backfilling.</p> <p><u>Galvanising:</u></p> <p>"Galvanised steel pipework, fittings, specials etc. Shall comply with SABS 934 and 763 and be entirely coated with zinc after fabrication by complete immersion in a zinc bath. The finished surface shall be clean and uniform and any excess being removed. The zinc deposit shall exceed the following.</p> <p>Coastal areas 0.735 kg/m³</p> <p>Inland areas 0.400 kg/m³</p> <p>"Coastal areas' shall apply to this contract."</p> <p><u>Pipeline Markers</u></p> <p>Where so instructed by the Engineer or as shown on the drawings, the Contractor shall erect pipeline markers. These markers will be precast concrete units manufactured out of 25 Mpa concrete to the dimensions shown on the drawings and shall comply with SABS 1200 GA Concrete.</p> <p>All markers to receive one primer coat followed by two coats of enamel based paint, colour blue, once erected.</p>				
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	Unit	Quantity	Rate	Amount
<p>Markers are to be erected 300mm off the edge of the pipe trench to the left of the trench and at right angles to the trench centre line at the points as indicated on the pipe longsections.</p> <p>At bends the marker will be erected at the P.I. Point of these 300 mm offset lines.</p> <p><u>Depth and Cover:</u></p> <p>Depth of excavation for pipe trenches shall be as per the drawing. The minimum required cover to the top of collars shall be 600mm.</p> <p><u>Testing:</u></p> <p>General</p> <p>Pipes shall be tested in convenient lengths not exceeding 500m per each test.</p> <p>Testing of Valves</p> <p>All valves shall be pressure tested according to SABS 664 or other applicable code at the appropriate test pressure.</p> <p>No separate payment shall be made for testing of valves and hydrants and the scheduled rates for the supply and installation of valves shall include for all costs in respect of testing.</p> <p><u>Disinfecting:</u></p> <p>All pipes are to be disinfected to a free chlorine count of 8 parts per million.</p> <p>No separate payment shall be made for disinfecting pipes and scheduled rates for piping shall include for all costs in respect of disinfecting.</p> <p><u>Excavations:</u></p> <p>No claim for rock excavation will be entertained unless the Contractor has timeously notified the quantity surveyor thereof prior to backfilling.</p> <p>'Soft rock' and 'hard rock' shall be as defined in 'Earthworks'.</p> <p><u>Laying, backfilling, bedding, etc of pipes:</u></p> <p>Pipes shall be laid and bedded and trenches shall be carefully backfilled in accordance with manufacturers' and Engineers instructions.</p> <p>Where no manufacturers' instructions exist pipes shall be laid in accordance with clauses 5.1 and 5.2 of each of the following: SANS 1200 L : Medium pressure pipelines LD : Sewers LE : Stormwater drainage Pipe trenches etc shall be backfilled in accordance with clause 3, 5.5, 5.6, 5.7 and 7 of SANS 1200.</p>				
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	Unit	Quantity	Rate	Amount
<u>WATER AND FIRE SUPPLIES, ETC.</u>				
<u>HDPE WATER PIPES</u>				
<u>Class 10 HDPE water pipes :</u>				
1	m	20		
2	m	6		
<u>Extra over Class 10 HDPE pipes for HDPE pressure fittings :</u>				
3	No	3		
4	No	6		
5	No	3		
6	No	1		
<u>UPVC PRESSURE WATER PIPES</u>				
<u>Class 9 uPVC pressure water pipes with flexible couplings:</u>				
7	m	30		
8	m	5		
<u>Extra over Class 9 uPVC pressure pipes for solvent welded pressure fittings:</u>				
9	No	2		
<u>Extra over Class 9 uPVC pressure pipes for cast iron pressure fittings:</u>				
10	No	3		
11	No	2		
12	No	1		
13	No	1		
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	Unit	Quantity	Rate	Amount
<u>WATER METER AND PIPE FITTINGS</u>				
<u>80mm Diameter water meter and pipe fittings installation within and around the meter chamber, all in accordance with Engineers Drawing No 34435-CIV-2 - Water Meter & Isolating Valve Detail :</u>				
14	No	2		
15	No	1		
16	No	2		
17	No	2		
18	No	1		
19	No	2		
20	No	1		
21	No	1		
22	No	1		
23	No	1		
24	No	1		
25	No	1		
26	No	3		
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		Unit	Quantity	Rate	Amount
27	Water Meter Chamber/Manhole for water meter and isolating valve, size 2490 x 1340mm wide overall x 1100mm deep, formed of 220mm brick wall sides in 1:3 cement mortar with and including brickforce every second course all round on and including 150mm thick 25/19Mpa concrete base with and including mesh ref 245 placed centrally, rendered internally in 1:5 cement plaster 10mm thick and with 150mm thick 30/19Mpa reinforced concrete surround slab on top including all reinforcing, rebated for and fitted with and including 2 Off Type 1B manhole covers and frames complete with locking devices as per Municipal details, all in accordance with SABS 558, bedded in 1:3 cement mortar and sealed in tallow including all necessary channels and fittings, excavations, filling, formwork, holes through sides for pipes, concrete encasing around pipes through side of manhole, etc. (See 80mm Water Meter Installation Details as per Engineering Standard Details Drawing 34435-CIV-2 - Water Meter & Isolating Valve Chamber Details).	No	1		
28	Extra for 200mm Diameter drain to water meter manhole base with 13mm No-fines concrete.	No	1		
<u>ISOLATION VALVES AND FITTINGS</u>					
<u>'Valves, etc':</u>					
<u>Note:</u>					
All valves shall be coated and lined by means of a powder (sintered) epoxy coating with a dry film thickness of at least 250 micron without holidays.					
All valves, connecting pipe specials and fittings that show any surface corrosion shall be cleaned and protected to the Engineer's satisfaction.					
Sluice Valves shall be the resilient seal type water works pattern gate valve able to operate successfully under a maximum unbalanced static pressure of 1.6MPa. The valve body and other components shall comply with SABS 664/665, the valve shall be of the nonrising spindle type with clockwise closing and generally plain ended for installation in uPVC pipe lines.					
Valves shall all be provided with spindle caps for use with keys unless stated or indicated to the contrary.					
The valve gate shall be covered with a Nitrile rubber resilient seal. Spindles shall be manufactured from heat treated stainless steel grade 420S29, bonnet and gate shall be manufactured out of Spheroidal Graphite Iron Grade 420/12.					
All graphite iron and steel surfaces to be epoxy powder coated.					
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	Unit	Quantity	Rate	Amount
<u>Valves, etc.</u>				
29	No	3		
50mm Diameter RSV flanged cast iron gate valve Class 16 Right hand closing including installation on concrete support pad, joints, including cutting pipes where necessary.				
<u>Valve Chambers, etc.</u>				
30	No	3		
Valve chambers for Isolating Gate Valves size 810 x 810mm overall not exceeding 1m deep, consisting of SABS 558 Type 3A cast iron valve cover size 100 x 230 x 300mm, on 230mm brick footing on well compacted filling and corbelled 115mm brickwork with mortar, including excavations, backfilling, carting away surplus material, etc. - (See Isolating Valve Details as per Engineering Standard Details Drawing 34435-CIV-2 - Water Meter & Isolating Valve Chamber Details).				
<u>PIPE SLEEVES UNDER ROAD FOR WATER SUPPLY</u>				
<u>Class 16 mPVC sleeve pipes:</u>				
31	m	6		
110mm Pipe sleeve, for 75mm pipes, laid in and including trenches not exceeding 2m deep across roads (trenches measured elsewhere under water pipes).				
<u>FIRE HYDRANTS, ETC.</u>				
<u>Fire Hydrants, etc:</u>				
32	No	1		
80mm Diameter Fire Hydrant complete, including 80 x 65mm Brass right angle shielded spindle fire hydrant Woodlands type valve with cap and chain, 80 x 63mm diameter brass reducer and transition coupler with brass male thread and brass reducer bush to suit fire hydrant, 80mm tapered thread for B.S.P, including 80mm diameter galvanised pipework approximately 1500mm high with 80mm diameter galvanised long radius bend, approximately 1000mm long 80mm diameter pipework in ground Denso wrapped and fitted to main pipeline with hydrant tee (elsewhere measured), fitted to or encased in concrete hydrant pedestal (elsewhere measured), all as per SABS 1128-2/SANS 1128-2. - (See Fire Hydrant Details as per Engineering Standard Details Drawing 34435-DET-1 - Fire Hydrant).				
33	No	3		
Extra for supplying hydrant keys to suit.				
Carried to Collection			R	
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Bill No. 5				
Water And Fire Reticulation				

	Unit	Quantity	Rate	Amount
<u>Fire hydrant pedestals:</u>				
34				
Reinforced concrete 25Mpa/19mm hydrant pedestal 700mm high above ground, cast around vertical 80mm diameter galvanised water pipe with bottom 1000mm minimum below ground level, 440 x 440mm square at base and tapering to octagonal shaped top 240 x 240mm overall including all necessary excavation, smooth off shutter formwork, concrete, 4 x Y12 reinforcing bars vertically, finished smooth off shutter and painted two coats of approved golden yellow B.S.S. 356 paint to exposed surfaces. - (See Fire Hydrant Details as per Engineering Standard Details Drawing 34435-DET-1 - Fire Hydrant).	No	1		
<u>SUNDRIES</u>				
<u>Sundries:</u>				
35				
Extra over excavation in earth for pipe trenches, manholes, etc for excavation in soft rock.	m ³	4		
36				
Extra over excavation in earth for pipe trenches, manholes, etc for excavation in hard rock.	m ³	2		
37				
Extra over backfilling to drain pipe trenches, manholes, etc for selected approved imported earth backfilling, supplied by the Contractor.	m ³	6		
38				
Extra over excavation for pipe trenches, manholes, etc for carting away surplus material (where imported filling used) to a dumping site to be located by the Contractor.	m ³	6		
39				
Standard 200 x 200 x 40mm Thick 25/13Mpa precast concrete pipeline route markers complete with 150 x 150mm recessed section for and including 35 x 50mm High pipeline lable lettering, marker set level in ground, to route of underground pipes, including all excavations, backfilling, carting away, etc. and painted above ground with one coat primer and two coats enamel based paint once erected. - (See Pipeline Marker Set in Concrete Surface Details as per Engineering Standard Details Drawing 34435-CIV-2 - Water Meter & Isolating Valve Chamber Details).	No	10		
40				
Supply of valve key with 1200mm extension.	No	3		
41				
15Mpa Concrete encasement to pipes or thrustblocks including formwork, etc.	m ³	1		
42				
Locating, exposing and cutting into existing 75mm class 19 uPVC water reticulation main line and connecting new 75mm uPVC pipe line including making good, etc.	Item			
Carried to Collection			R	
Section No. 3				
Bill No. 5				
Water And Fire Reticulation				

	Unit	Quantity	Rate	Amount
<u>TESTING</u>				
<u>Testing:</u>				
43 Testing complete water and fire pipe line systems.	Item			
Section No. 3 Bill No. 5 Water And Fire Reticulation			Carried to Collection	R

BILL NO. 5
WATER AND FIRE RETICULATION
COLLECTION

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Section No. 3
Bill No. 5
Water And Fire Reticulation

SECTION NO. 3

EXTERNAL WORKS (PROVISIONAL)

SECTION SUMMARY

Bill No.

- 1 SITE CLEARANCE AND BULK EARTHWORKS
- 2 ROADWORKS AND PARKING AREAS
- 3 STORMWATER DRAINAGE
- 4 SOIL DRAINAGE AND SEWER RETICULATION
- 5 WATER AND FIRE RETICULATION

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Section No. 3
SECTION SUMMARY

SECTION 4

ELECTRICAL WORKS
(PROVISIONAL)

	Unit	Quantity	Rate	Amount
<p><u>SECTION NO. 4</u> <u>ELECTRICAL WORKS (PROVISIONAL)</u> <u>BILL NO. 1</u> <u>LV DISTRIBUTION BOARDS</u></p> <p><u>PREAMBLES</u> For Preambles refer to "Department of Public Works: Specification of Materials and Methods to be used - PW371-A" which shall be read in conjunction with and shall apply to all items in these Bills of Quantities.</p> <p><u>SUPPLEMENTARY PREAMBLES</u> The Specification for Comprehensive Services Incorporating Electrical Installations document attached under the Drawings and Specifications Section of these Bills of Quantities covers the complete Electrical Installation for the project and forms the total scope of work under the Electrical Contract. It shall be used in conjunction with the Standard Electrical Specification which has the following Sections: Section A: Preamble to Standard Specifications Section B: Installation Specifications Section C: Quality Specification from the Department of Public Works for Materials and Equipment of Electrical Installations.</p> <p>The following bill of quantities must be read in conjunction with the foregoing specifications as well as the attached Electrical Engineer's drawings and Specifications. Contractors attention is specifically drawn to the guarantee against defects, servicing and maintenance period and the testing and commissioning clauses, which is applicable to the whole installation. The contractor has to allow for these costs in his/her unit rates.</p> <p>Although shortened descriptions had been used in this bill, the Contractor must carefully read the specifications to acquaint themselves with the full description and specifications of the equipment.</p> <p>Items, materials or methods to be used specified by trade names or catalogue numbers are only an indication of the quality required. Items, materials or methods of similar quality may be used with prior approval from the Architect/Engineer.</p>				
<p style="text-align: right;">Carried to Collection</p> <p>Section No. 4 Bill No. 1 Lv Distribution Boards</p>			R	

	Unit	Quantity	Rate	Amount
<p><u>Compliance, Preliminaries, etc.</u></p>				
<p>The Electrical Contractor responsible for the works is to note that the works will be done as a Domestic sub-contract to the Main Contractor. There is no separate preliminaries and compliance Bill for the sub-contractor and the Electrical Sub-Contractor is therefore to make provision in their tendered rates for all necessary Preliminaries and Compliance items applicable to this scope of works, including but not limited to :</p>				
<p>1) Provision of a Sub-Contract Construction Guarantee</p>				
<p>2) Provision of an Advanced Payment Guarantee for materials on/off site</p>				
<p>3) Provision of Contract Works, Special, Supplementary, Public Liability Insurances, etc.</p>				
<p>4) Allowance for compliance with Construction Regulations, OH&S Specification & Act</p>				
<p>5) Allowance for compliance with Construction Regulations - Construction Environment Management Plan</p>				
<p>6) Allow for Warranty of the Sub-contract works for defects liability period</p>				
<p>7) Allow for servicing & routine maintenance of Sub-contract works for defects liability period</p>				
<p>8) Allow for provision of all applicable Test Certificates and/or Compliance Certificates</p>				
<p>9) Other contractual items not listed above</p>				
<p>10) Project Supervision</p>				
<p>11) Project Administration</p>				
<p>12) Other Overheads (Travel, Accommodation)</p>				
<p>13) Provision of Programme for sub-contract works</p>				
<p>14) Completion of necessary commencement, compliance and completion forms</p>				
<p>15) Providing a 'Master Installation Electrician' for overseeing electrical installations</p>				
<p>16) Provision of all necessary forms of access, ie scaffolding, cherry pickers, etc.</p>				
<p>17) Carrying out all testing of the complete sub-contract works and commissioning thereof</p>				
<p>18) Training of Clients representative at practical completion</p>				
<p>19) Training of Clients representative at end of defects liability period</p>				
<p style="text-align: right;">Carried to Collection</p>			R	
<p>Section No. 4</p>				
<p>Bill No. 1</p>				
<p>Lv Distribution Boards</p>				

BILL NO. 1
LV DISTRIBUTION BOARDS
COLLECTION

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Section No. 4
Bill No. 1
Lv Distribution Boards

	Unit	Quantity	Rate	Amount
<p><u>SECTION NO. 4</u> <u>ELECTRICAL WORKS (PROVISIONAL)</u> <u>BILL NO. 2</u> <u>MAINS CABLES & SUBMAINS WIRING</u></p> <p><u>PREAMBLES</u> For Preambles refer to "Department of Public Works: Specification of Materials and Methods to be used - PW371-A" which shall be read in conjunction with and shall apply to all items in these Bills of Quantities.</p> <p><u>SUPPLEMENTARY PREAMBLES</u> The Specification for Comprehensive Services Incorporating Electrical Installations document attached under the Drawings and Specifications Section of these Bills of Quantities covers the complete Electrical Installation for the project and forms the total scope of work under the Electrical Contract. It shall be used in conjunction with the Standard Electrical Specification which has the following Sections: Section A: Preamble to Standard Specifications Section B: Installation Specifications Section C: Quality Specification from the Department of Public Works for Materials and Equipment of Electrical Installations.</p> <p>The following bill of quantities must be read in conjunction with the foregoing specifications as well as the attached Electrical Engineer's drawings and Specifications. Contractors attention is specifically drawn to the guarantee against defects, servicing and maintenance period and the testing and commissioning clauses, which is applicable to the whole installation. The contractor has to allow for these costs in his/her unit rates.</p> <p>Although shortened descriptions had been used in this bill, the Contractor must carefully read the specifications to acquaint themselves with the full description and specifications of the equipment.</p> <p>Items, materials or methods to be used specified by trade names or catalogue numbers are only an indication of the quality required. Items, materials or methods of similar quality may be used with prior approval from the Architect/Engineer.</p>				
<p style="text-align: right;">Carried to Collection</p> <p>Section No. 4 Bill No. 2 Mains Cables & Submains Wiring</p>			R	

	Unit	Quantity	Rate	Amount
<p><u>Compliance, Preliminaries, etc.</u></p>				
<p>The Electrical Contractor responsible for the works is to note that the works will be done as a Domestic sub-contract to the Main Contractor. There is no separate preliminaries and compliance Bill for the sub-contractor and the Electrical Sub-Contractor is therefore to make provision in their tendered rates for all necessary Preliminaries and Compliance items applicable to this scope of works, including but not limited to :</p>				
<p>1) Provision of a Sub-Contract Construction Guarantee</p>				
<p>2) Provision of an Advanced Payment Guarantee for materials on/off site</p>				
<p>3) Provision of Contract Works, Special, Supplementary, Public Liability Insurances, etc.</p>				
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<p>5) Allowance for compliance with Construction Regulations - Construction Environment Management Plan</p>				
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<p>7) Allow for servicing & routine maintenance of Sub-contract works for defects liability period</p>				
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<p>9) Other contractual items not listed above</p>				
<p>10) Project Supervision</p>				
<p>11) Project Administration</p>				
<p>12) Other Overheads (Travel, Accommodation)</p>				
<p>13) Provision of Programme for sub-contract works</p>				
<p>14) Completion of necessary commencement, compliance and completion forms</p>				
<p>15) Providing a 'Master Installation Electrician' for overseeing electrical installations</p>				
<p>16) Provision of all necessary forms of access, ie scaffolding, cherry pickers, etc.</p>				
<p>17) Carrying out all testing of the complete sub-contract works and commissioning thereof</p>				
<p>18) Training of Clients representative at practical completion</p>				
<p>19) Training of Clients representative at end of defects liability period</p>				
<p style="text-align: right;">Carried to Collection</p>			R	
<p>Section No. 4</p>				
<p>Bill No. 2</p>				
<p>Mains Cables & Submains Wiring</p>				

	Unit	Quantity	Rate	Amount
20) 2 Year Service during Guarantee period				
21) Provision of record drawings				
22) Provision of operating and maintenance manuals				
<u>MAINS CABLES & SUB-MAINS WIRING</u>				
<u>PVC PVC SWA PVC CABLES</u>				
<u>The supply and Installation of cables, drawn through horizontal ducting, cable sleeves in trenches (sleeves and trenches elsewhere measured) or laid on cable tray racks and fixed at 1,5m centres (cable racks measured elsewhere).</u>				
1 Supply and install 4mm ² 1-Phase 2-Core + ECC SWA CU cable compatible with SANS 1507-3.	m	45		
2 Supply and install 6mm ² 1-Phase 2-Core + ECC SWA CU cable compatible with SANS 1507-3.	m	231		
3 Supply and install 10mm ² 3-Phase 4-Core + ECC SWA CU cable compatible with SANS 1507-3.	m	110		
<u>CABLE TERMINATIONS</u>				
<u>Termination and connection of cables :</u>				
4 Supply and install cable terminations set for 6mm ² 3 Core Cu cable.	No	8		
5 Supply and install cable terminations set for 10mm ² 5 Core Cu cable.	No	2		
<u>CABLE TRAYS</u>				
<u>Supply and Installation of galvanised perforated heavy duty cable tray complete, including short lengths and fixed in ducts, complete with fixing brackets, droppers, bends, tee pieces, and all other ancillary accessories.</u>				
6 50mm Wide light duty cable tray.	m	22		
<u>CABLE SLEEVES</u>				
7 Supply and install M110 PVC Sleeves for DB's	m	110		
<u>TRENCHING AND CHASING</u>				
8 Chasing 50mm wide x 40mm deep, and make good.	m	76		
9 Trenching for Power M110 PVC- 100mm wide x 500mm deep, including bedding soil and backfill, carting away, etc.	m	110		
10 Supply and install 600mm x 600mm electrical manhole, complete.	No	4		
Carried to Collection			R	
Section No. 4				
Bill No. 2				
Mains Cables & Submains Wiring				

BILL NO. 2
MAINS CABLES & SUBMAINS WIRING
COLLECTION

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Section No. 4

Bill No. 2

Mains Cables & Submains Wiring

	Unit	Quantity	Rate	Amount
<p><u>SECTION NO. 4</u> <u>ELECTRICAL WORKS (PROVISIONAL)</u> <u>BILL NO. 3</u> <u>GENERAL LIGHTING</u></p> <p><u>PREAMBLES</u> For Preambles refer to "Department of Public Works: Specification of Materials and Methods to be used - PW371-A" which shall be read in conjunction with and shall apply to all items in these Bills of Quantities.</p> <p><u>SUPPLEMENTARY PREAMBLES</u> The Specification for Comprehensive Services Incorporating Electrical Installations document attached under the Drawings and Specifications Section of these Bills of Quantities covers the complete Electrical Installation for the project and forms the total scope of work under the Electrical Contract. It shall be used in conjunction with the Standard Electrical Specification which has the following Sections: Section A: Preamble to Standard Specifications Section B: Installation Specifications Section C: Quality Specification from the Department of Public Works for Materials and Equipment of Electrical Installations.</p> <p>The following bill of quantities must be read in conjunction with the foregoing specifications as well as the attached Electrical Engineer's drawings and Specifications. Contractors attention is specifically drawn to the guarantee against defects, servicing and maintenance period and the testing and commissioning clauses, which is applicable to the whole installation. The contractor has to allow for these costs in his/her unit rates.</p> <p>Although shortened descriptions had been used in this bill, the Contractor must carefully read the specifications to acquaint themselves with the full description and specifications of the equipment.</p> <p>Items, materials or methods to be used specified by trade names or catalogue numbers are only an indication of the quality required. Items, materials or methods of similar quality may be used with prior approval from the Architect/Engineer.</p>				
<p style="text-align: right;">Carried to Collection</p> <p>Section No. 4 Bill No. 3 General Lighting</p>			R	

	Unit	Quantity	Rate	Amount
<p><u>Compliance, Preliminaries, etc.</u></p>				
<p>The Electrical Contractor responsible for the works is to note that the works will be done as a Domestic sub-contract to the Main Contractor. There is no separate preliminaries and compliance Bill for the sub-contractor and the Electrical Sub-Contractor is therefore to make provision in their tendered rates for all necessary Preliminaries and Compliance items applicable to this scope of works, including but not limited to :</p>				
<p>1) Provision of a Sub-Contract Construction Guarantee</p>				
<p>2) Provision of an Advanced Payment Guarantee for materials on/off site</p>				
<p>3) Provision of Contract Works, Special, Supplementary, Public Liability Insurances, etc.</p>				
<p>4) Allowance for compliance with Construction Regulations, OH&S Specification & Act</p>				
<p>5) Allowance for compliance with Construction Regulations - Construction Environment Management Plan</p>				
<p>6) Allow for Warranty of the Sub-contract works for defects liability period</p>				
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<p>8) Allow for provision of all applicable Test Certificates and/or Compliance Certificates</p>				
<p>9) Other contractual items not listed above</p>				
<p>10) Project Supervision</p>				
<p>11) Project Administration</p>				
<p>12) Other Overheads (Travel, Accommodation)</p>				
<p>13) Provision of Programme for sub-contract works</p>				
<p>14) Completion of necessary commencement, compliance and completion forms</p>				
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<p>16) Provision of all necessary forms of access, ie scaffolding, cherry pickers, etc.</p>				
<p>17) Carrying out all testing of the complete sub-contract works and commissioning thereof</p>				
<p>18) Training of Clients representative at practical completion</p>				
<p>19) Training of Clients representative at end of defects liability period</p>				
<p>Carried to Collection</p>			R	
<p>Section No. 4</p>				
<p>Bill No. 3</p>				
<p>General Lighting</p>				

	Unit	Quantity	Rate	Amount
20) 2 Year Service during Guarantee period				
21) Provision of record drawings				
22) Provision of operating and maintenance manuals				
<u>GENERAL LIGHTING</u>				
<u>CONDUITS, ETC.</u>				
<u>Supply and Installation of M20 PVC conduits including cutting, draw boxes and fixing materials cast in concrete, on surface, in roof space, built into brickwork, dry walls, fitted to trusses, etc. All conduit and accessories to be M20 PVC.</u>				
1 M20 PVC conduit complete with elbows, junction boxes, clamps and fittings.	m	661		
<u>CONDUCTORS</u>				
<u>Supply and Installation of PVC insulated single core stranded copper conductors drawn into conduits :</u>				
2 2,5mm ² GP wire.	m	1 888		
<u>LIGHT SWITCHES, EQUIPMENT AND CONTROL GEAR</u>				
<u>Supply and installation of equipment and control gear :</u>				
3 1-lever 1-way switch, 100x50mm with cover plate, white	No	6		
4 3-lever 1-way switch, 100x50mm with cover plate, white	No	1		
5 2-lever 2way switch, 100x50mm with cover plate, white	No	2		
6 DALI dimmer switch, 100x50mm with cover plate, white	No	6		
7 5A plugs for light fitting	No	30		
8 4x2 PVC boxes complete with fittings	No	9		
9 Supply and installation of Daylight photo sensors, for the control of outdoor lighting circuits. Switch LS10C Photo sensor-10A, IP56, or similar.	No	3		
10 Supply and installation of Passive infrared Occupancy sensors complete with power packs and auxiliary relays, for control of lighting circuits	No	5		
11 Powdercoated Galvanised Steel pole 114/76mm with spigot	No	5		
12 3m 3 Phase Track Black	No	2		
13 2m 3 Phase Track Black	No	1		
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Section No. 4				
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BILL NO. 3
GENERAL LIGHTING
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Section No. 4
Bill No. 3
General Lighting

	Unit	Quantity	Rate	Amount
<p><u>SECTION NO. 4</u></p>				
<p><u>ELECTRICAL WORKS (PROVISIONAL)</u></p>				
<p><u>BILL NO. 4</u></p>				
<p><u>LUMINAIRES</u></p>				
<p><u>PREAMBLES</u></p>				
<p>For Preambles refer to "Department of Public Works: Specification of Materials and Methods to be used - PW371-A" which shall be read in conjunction with and shall apply to all items in these Bills of Quantities.</p>				
<p><u>SUPPLEMENTARY PREAMBLES</u></p>				
<p>The Specification for Comprehensive Services Incorporating Electrical Installations document attached under the Drawings and Specifications Section of these Bills of Quantities covers the complete Electrical Installation for the project and forms the total scope of work under the Electrical Contract. It shall be used in conjunction with the Standard Electrical Specification which has the following Sections:</p>				
<p>Section A: Preamble to Standard Specifications</p>				
<p>Section B: Installation Specifications</p>				
<p>Section C: Quality Specification from the Department of Public Works for Materials and Equipment of Electrical Installations.</p>				
<p>The following bill of quantities must be read in conjunction with the foregoing specifications as well as the attached Electrical Engineer's drawings and Specifications. Contractors attention is specifically drawn to the guarantee against defects, servicing and maintenance period and the testing and commissioning clauses, which is applicable to the whole installation. The contractor has to allow for these costs in his/her unit rates.</p>				
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<p style="text-align: right;">Carried to Collection</p>				
<p>Section No. 4</p>				
<p>Bill No. 4</p>				
<p>Luminaires</p>				
<p style="text-align: right;">190</p>				

	Unit	Quantity	Rate	Amount
<p><u>Compliance, Preliminaries, etc.</u></p>				
<p>The Electrical Contractor responsible for the works is to note that the works will be done as a Domestic sub-contract to the Main Contractor. There is no separate preliminaries and compliance Bill for the sub-contractor and the Electrical Sub-Contractor is therefore to make provision in their tendered rates for all necessary Preliminaries and Compliance items applicable to this scope of works, including but not limited to :</p>				
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<p>16) Provision of all necessary forms of access, ie scaffolding, cherry pickers, etc.</p>				
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<p style="text-align: right;">Carried to Collection</p>			R	
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<p>Bill No. 4</p>				
<p>Luminaires</p>				

BILL NO. 4
LUMINAIRES
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Section No. 4
Bill No. 4
Luminaires

	Unit	Quantity	Rate	Amount
<p><u>SECTION NO. 4</u> <u>ELECTRICAL WORKS (PROVISIONAL)</u> <u>BILL NO. 5</u> <u>POWER</u></p> <p><u>PREAMBLES</u> For Preambles refer to "Department of Public Works: Specification of Materials and Methods to be used - PW371-A" which shall be read in conjunction with and shall apply to all items in these Bills of Quantities.</p> <p><u>SUPPLEMENTARY PREAMBLES</u> The Specification for Comprehensive Services Incorporating Electrical Installations document attached under the Drawings and Specifications Section of these Bills of Quantities covers the complete Electrical Installation for the project and forms the total scope of work under the Electrical Contract. It shall be used in conjunction with the Standard Electrical Specification which has the following Sections: Section A: Preamble to Standard Specifications Section B: Installation Specifications Section C: Quality Specification from the Department of Public Works for Materials and Equipment of Electrical Installations.</p> <p>The following bill of quantities must be read in conjunction with the foregoing specifications as well as the attached Electrical Engineer's drawings and Specifications. Contractors attention is specifically drawn to the guarantee against defects, servicing and maintenance period and the testing and commissioning clauses, which is applicable to the whole installation. The contractor has to allow for these costs in his/her unit rates.</p> <p>Although shortened descriptions had been used in this bill, the Contractor must carefully read the specifications to acquaint themselves with the full description and specifications of the equipment.</p> <p>Items, materials or methods to be used specified by trade names or catalogue numbers are only an indication of the quality required. Items, materials or methods of similar quality may be used with prior approval from the Architect/Engineer.</p>				
<p style="text-align: right;">Carried to Collection</p> <p>Section No. 4 Bill No. 5 Power</p>			R	

	Unit	Quantity	Rate	Amount
<p><u>Compliance, Preliminaries, etc.</u></p>				
<p>The Electrical Contractor responsible for the works is to note that the works will be done as a Domestic sub-contract to the Main Contractor. There is no separate preliminaries and compliance Bill for the sub-contractor and the Electrical Sub-Contractor is therefore to make provision in their tendered rates for all necessary Preliminaries and Compliance items applicable to this scope of works, including but not limited to :</p>				
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<p>11) Project Administration</p>				
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<p style="text-align: right;">Carried to Collection</p>			R	
<p>Section No. 4 Bill No. 5 Power</p>				

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COLLECTION

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Bill No. 5
Power

	Unit	Quantity	Rate	Amount
<p><u>SECTION NO. 4</u></p>				
<p><u>ELECTRICAL WORKS (PROVISIONAL)</u></p>				
<p><u>BILL NO. 6</u></p>				
<p><u>LIGHTNING PROTECTION</u></p>				
<p><u>PREAMBLES</u></p>				
<p>For Preambles refer to "Department of Public Works: Specification of Materials and Methods to be used - PW371-A" which shall be read in conjunction with and shall apply to all items in these Bills of Quantities.</p>				
<p><u>SUPPLEMENTARY PREAMBLES</u></p>				
<p>The Specification for Comprehensive Services Incorporating Electrical Installations document attached under the Drawings and Specifications Section of these Bills of Quantities covers the complete Electrical Installation for the project and forms the total scope of work under the Electrical Contract. It shall be used in conjunction with the Standard Electrical Specification which has the following Sections:</p>				
<p>Section A: Preamble to Standard Specifications</p>				
<p>Section B: Installation Specifications</p>				
<p>Section C: Quality Specification from the Department of Public Works for Materials and Equipment of Electrical Installations.</p>				
<p>The following bill of quantities must be read in conjunction with the foregoing specifications as well as the attached Electrical Engineer's drawings and Specifications. Contractors attention is specifically drawn to the guarantee against defects, servicing and maintenance period and the testing and commissioning clauses, which is applicable to the whole installation. The contractor has to allow for these costs in his/her unit rates.</p>				
<p>Although shortened descriptions had been used in this bill, the Contractor must carefully read the specifications to acquaint themselves with the full description and specifications of the equipment.</p>				
<p>Items, materials or methods to be used specified by trade names or catalogue numbers are only an indication of the quality required. Items, materials or methods of similar quality may be used with prior approval from the Architect/Engineer.</p>				
<p style="text-align: right;">Carried to Collection</p>				
<p>Section No. 4</p>				
<p>Bill No. 6</p>				
<p>Lightning Protection</p>				
<p style="text-align: center;">198</p>				

	Unit	Quantity	Rate	Amount
<p><u>Compliance, Preliminaries, etc.</u></p>				
<p>The Electrical Contractor responsible for the works is to note that the works will be done as a Domestic sub-contract to the Main Contractor. There is no separate preliminaries and compliance Bill for the sub-contractor and the Electrical Sub-Contractor is therefore to make provision in their tendered rates for all necessary Preliminaries and Compliance items applicable to this scope of works, including but not limited to :</p>				
<p>1) Provision of a Sub-Contract Construction Guarantee</p>				
<p>2) Provision of an Advanced Payment Guarantee for materials on/off site</p>				
<p>3) Provision of Contract Works, Special, Supplementary, Public Liability Insurances, etc.</p>				
<p>4) Allowance for compliance with Construction Regulations, OH&S Specification & Act</p>				
<p>5) Allowance for compliance with Construction Regulations - Construction Environment Management Plan</p>				
<p>6) Allow for Warranty of the Sub-contract works for defects liability period</p>				
<p>7) Allow for servicing & routine maintenance of Sub-contract works for defects liability period</p>				
<p>8) Allow for provision of all applicable Test Certificates and/or Compliance Certificates</p>				
<p>9) Other contractual items not listed above</p>				
<p>10) Project Supervision</p>				
<p>11) Project Administration</p>				
<p>12) Other Overheads (Travel, Accommodation)</p>				
<p>13) Provision of Programme for sub-contract works</p>				
<p>14) Completion of necessary commencement, compliance and completion forms</p>				
<p>15) Providing a 'Master Installation Electrician' for overseeing electrical installations</p>				
<p>16) Provision of all necessary forms of access, ie scaffolding, cherry pickers, etc.</p>				
<p>17) Carrying out all testing of the complete sub-contract works and commissioning thereof</p>				
<p>18) Training of Clients representative at practical completion</p>				
<p>19) Training of Clients representative at end of defects liability period</p>				
<p style="text-align: right;">Carried to Collection</p>			R	
<p>Section No. 4</p>				
<p>Bill No. 6</p>				
<p>Lightning Protection</p>				

	Unit	Quantity	Rate	Amount
20) 2 Year Service during Guarantee period				
21) Provision of record drawings				
22) Provision of operating and maintenance manuals				
<u>LIGHTNING PROTECTION, ETC.</u>				
Note: The following bill of quantities must be read in conjunction with the foregoing specifications as well as the attached Electrical Engineer's drawings and Specifications.				
Down conductors are not to be installed inside the gutters.				
Lightning Protection System earthing must be bonded to the fixed electrical installation.				
<u>Lightning Protection System to SANS Code of Practice 10313 as amended used in conjunction with SANS 62305 and all other applicable standards. The Contractor to employ a lightning protection specialist for the complete installation and testing of the system for building and lightning structures, complete, as per the items measured in this bill of quantities and in accordance with the attached detailed specification.</u>				
1	No	9		
2	No	9		
3	m	78		
4	m	137		
5	m	156		
6	No	42		
7	m	137		
<u>SUNDRIES</u>				
<u>Testing & Installation Safety Report :</u>				
8	Item			
9	Item			
10	Item			
Carried to Collection			R	
Section No. 4				
Bill No. 6				
Lightning Protection				

BILL NO. 6
LIGHTNING PROTECTION
COLLECTION

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Amount

Carried To Section Summary

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Section No. 4
Bill No. 6
Lightning Protection

	Unit	Quantity	Rate	Amount
<p><u>SECTION NO. 4</u></p>				
<p><u>ELECTRICAL WORKS (PROVISIONAL)</u></p>				
<p><u>BILL NO. 7</u></p>				
<p><u>FIRE DETECTION</u></p>				
<p><u>PREAMBLES</u></p>				
<p>For Preambles refer to "Department of Public Works: Specification of Materials and Methods to be used - PW371-A" which shall be read in conjunction with and shall apply to all items in these Bills of Quantities.</p>				
<p><u>SUPPLEMENTARY PREAMBLES</u></p>				
<p>The Specification for Comprehensive Services Incorporating Electrical Installations document attached under the Drawings and Specifications Section of these Bills of Quantities covers the complete Electrical Installation for the project and forms the total scope of work under the Electrical Contract. It shall be used in conjunction with the Standard Electrical Specification which has the following Sections:</p>				
<p>Section A: Preamble to Standard Specifications</p>				
<p>Section B: Installation Specifications</p>				
<p>Section C: Quality Specification from the Department of Public Works for Materials and Equipment of Electrical Installations.</p>				
<p>The following bill of quantities must be read in conjunction with the foregoing specifications as well as the attached Electrical Engineer's drawings and Specifications. Contractors attention is specifically drawn to the guarantee against defects, servicing and maintenance period and the testing and commissioning clauses, which is applicable to the whole installation. The contractor has to allow for these costs in his/her unit rates.</p>				
<p>Although shortened descriptions had been used in this bill, the Contractor must carefully read the specifications to acquaint themselves with the full description and specifications of the equipment.</p>				
<p>Items, materials or methods to be used specified by trade names or catalogue numbers are only an indication of the quality required. Items, materials or methods of similar quality may be used with prior approval from the Architect/Engineer.</p>				
<p style="text-align: right;">Carried to Collection</p>				
<p>Section No. 4</p>				
<p>Bill No. 7</p>				
<p>Fire Detection</p>				
<p style="text-align: center;">202</p>				

	Unit	Quantity	Rate	Amount
<p><u>Compliance, Preliminaries, etc.</u></p>				
<p>The Electrical Contractor responsible for the works is to note that the works will be done as a Domestic sub-contract to the Main Contractor. There is no separate preliminaries and compliance Bill for the sub-contractor and the Electrical Sub-Contractor is therefore to make provision in their tendered rates for all necessary Preliminaries and Compliance items applicable to this scope of works, including but not limited to :</p>				
<p>1) Provision of a Sub-Contract Construction Guarantee</p>				
<p>2) Provision of an Advanced Payment Guarantee for materials on/off site</p>				
<p>3) Provision of Contract Works, Special, Supplementary, Public Liability Insurances, etc.</p>				
<p>4) Allowance for compliance with Construction Regulations, OH&S Specification & Act</p>				
<p>5) Allowance for compliance with Construction Regulations - Construction Environment Management Plan</p>				
<p>6) Allow for Warranty of the Sub-contract works for defects liability period</p>				
<p>7) Allow for servicing & routine maintenance of Sub-contract works for defects liability period</p>				
<p>8) Allow for provision of all applicable Test Certificates and/or Compliance Certificates</p>				
<p>9) Other contractual items not listed above</p>				
<p>10) Project Supervision</p>				
<p>11) Project Administration</p>				
<p>12) Other Overheads (Travel, Accommodation)</p>				
<p>13) Provision of Programme for sub-contract works</p>				
<p>14) Completion of necessary commencement, compliance and completion forms</p>				
<p>15) Providing a 'Master Installation Electrician' for overseeing electrical installations</p>				
<p>16) Provision of all necessary forms of access, ie scaffolding, cherry pickers, etc.</p>				
<p>17) Carrying out all testing of the complete sub-contract works and commissioning thereof</p>				
<p>18) Training of Clients representative at practical completion</p>				
<p>19) Training of Clients representative at end of defects liability period</p>				
<p style="text-align: right;">Carried to Collection</p>			R	
<p>Section No. 4 Bill No. 7 Fire Detection</p>				

BILL NO. 7
FIRE DETECTION
COLLECTION

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Section No. 4
Bill No. 7
Fire Detection

	Unit	Quantity	Rate	Amount
<p><u>SECTION NO. 4</u> <u>ELECTRICAL WORKS (PROVISIONAL)</u> <u>BILL NO. 8</u> <u>POWER SUPPLY</u></p> <p><u>PREAMBLES</u> For Preambles refer to "Department of Public Works: Specification of Materials and Methods to be used - PW371-A" which shall be read in conjunction with and shall apply to all items in these Bills of Quantities.</p> <p><u>SUPPLEMENTARY PREAMBLES</u> The Specification for Comprehensive Services Incorporating Electrical Installations document attached under the Drawings and Specifications Section of these Bills of Quantities covers the complete Electrical Installation for the project and forms the total scope of work under the Electrical Contract. It shall be used in conjunction with the Standard Electrical Specification which has the following Sections: Section A: Preamble to Standard Specifications Section B: Installation Specifications Section C: Quality Specification from the Department of Public Works for Materials and Equipment of Electrical Installations.</p> <p>The following bill of quantities must be read in conjunction with the foregoing specifications as well as the attached Electrical Engineer's drawings and Specifications. Contractors attention is specifically drawn to the guarantee against defects, servicing and maintenance period and the testing and commissioning clauses, which is applicable to the whole installation. The contractor has to allow for these costs in his/her unit rates.</p> <p>Although shortened descriptions had been used in this bill, the Contractor must carefully read the specifications to acquaint themselves with the full description and specifications of the equipment.</p> <p>Items, materials or methods to be used specified by trade names or catalogue numbers are only an indication of the quality required. Items, materials or methods of similar quality may be used with prior approval from the Architect/Engineer.</p>				
<p style="text-align: right;">Carried to Collection</p> <p>Section No. 4 Bill No. 8 Power Supply</p>			R	

	Unit	Quantity	Rate	Amount
<p><u>Compliance, Preliminaries, etc.</u></p>				
<p>The Electrical Contractor responsible for the works is to note that the works will be done as a Domestic sub-contract to the Main Contractor. There is no separate preliminaries and compliance Bill for the sub-contractor and the Electrical Sub-Contractor is therefore to make provision in their tendered rates for all necessary Preliminaries and Compliance items applicable to this scope of works, including but not limited to :</p>				
<p>1) Provision of a Sub-Contract Construction Guarantee</p>				
<p>2) Provision of an Advanced Payment Guarantee for materials on/off site</p>				
<p>3) Provision of Contract Works, Special, Supplementary, Public Liability Insurances, etc.</p>				
<p>4) Allowance for compliance with Construction Regulations, OH&S Specification & Act</p>				
<p>5) Allowance for compliance with Construction Regulations - Construction Environment Management Plan</p>				
<p>6) Allow for Warranty of the Sub-contract works for defects liability period</p>				
<p>7) Allow for servicing & routine maintenance of Sub-contract works for defects liability period</p>				
<p>8) Allow for provision of all applicable Test Certificates and/or Compliance Certificates</p>				
<p>9) Other contractual items not listed above</p>				
<p>10) Project Supervision</p>				
<p>11) Project Administration</p>				
<p>12) Other Overheads (Travel, Accommodation)</p>				
<p>13) Provision of Programme for sub-contract works</p>				
<p>14) Completion of necessary commencement, compliance and completion forms</p>				
<p>15) Providing a 'Master Installation Electrician' for overseeing electrical installations</p>				
<p>16) Provision of all necessary forms of access, ie scaffolding, cherry pickers, etc.</p>				
<p>17) Carrying out all testing of the complete sub-contract works and commissioning thereof</p>				
<p>18) Training of Clients representative at practical completion</p>				
<p>19) Training of Clients representative at end of defects liability period</p>				
<p style="text-align: right;">Carried to Collection</p>			R	
<p>Section No. 4 Bill No. 8 Power Supply</p>				

	Unit	Quantity	Rate	Amount
20) 2 Year Service during Guarantee period				
21) Provision of record drawings				
22) Provision of operating and maintenance manuals				
<u>POWER SUPPLY</u>				
<u>The following in Power Supply :</u>				
1 25kVA Three phase transformer	No	1		
2 7kVA Solar Supply	No	1		
3 8600W 1 Phase Hybrid Bi-Directional Solar Inverter Built in MPPT[Goodwe]	No	1		
4 3,5kW HV Li-ion Battery pack [Pylontech]	No	4		
5 BMS FC0500 for HV Battery pack [Pylontech]	No	1		
6 325W PV Panel Solar Black	No	40		
7 DC Fuse; Earth Leakage; Surge Arrestor; Earth Spike	No	1		
8 PV mounting rails + clamps	No	1		
9 PV Connectors; 4mm Black & Red Cable; 10mm Black & Red & Earth Cable ;Cable Clips	No	1		
10 Nuts & Bolts; Isulation tapes etc	No	1		
<u>TESTING AND COMMISSIONING OF POWER SUPPLY</u>				
<u>Testing and Commissioning, etc. :</u>				
11 Testing and commissioning of the entire power supply installation, complete.	Item			
12 Provision of three sets of operating and maintenance manuals as required.	Item			
13 Provision of 'As-built' drawings, manuals, etc.	Item			
<u>SUNDRIES</u>				
<u>Sundries :</u>				
14 Comprehensive servicing and maintenance during the 12-month guarantee period.	Item			
15 Workshop drawings and equipment schedule submittals for approval prior to ordering for all units.	Item			
16 Training of staff on correct operation of power supply as required.	Item			
Carried to Collection			R	
Section No. 4				
Bill No. 8				
Power Supply				

	Unit	Quantity	Rate	Amount
<p><u>SECTION NO. 4</u></p>				
<p><u>ELECTRICAL WORKS (PROVISIONAL)</u></p>				
<p><u>BILL NO. 9</u></p>				
<p><u>MISCELLANEOUS ITEMS</u></p>				
<p><u>PREAMBLES</u></p>				
<p>For Preambles refer to "Department of Public Works: Specification of Materials and Methods to be used - PW371-A" which shall be read in conjunction with and shall apply to all items in these Bills of Quantities.</p>				
<p><u>SUPPLEMENTARY PREAMBLES</u></p>				
<p>The Specification for Comprehensive Services Incorporating Electrical Installations document attached under the Drawings and Specifications Section of these Bills of Quantities covers the complete Electrical Installation for the project and forms the total scope of work under the Electrical Contract. It shall be used in conjunction with the Standard Electrical Specification which has the following Sections:</p>				
<p>Section A: Preamble to Standard Specifications</p>				
<p>Section B: Installation Specifications</p>				
<p>Section C: Quality Specification from the Department of Public Works for Materials and Equipment of Electrical Installations.</p>				
<p>The following bill of quantities must be read in conjunction with the foregoing specifications as well as the attached Electrical Engineer's drawings and Specifications. Contractors attention is specifically drawn to the guarantee against defects, servicing and maintenance period and the testing and commissioning clauses, which is applicable to the whole installation. The contractor has to allow for these costs in his/her unit rates.</p>				
<p>Although shortened descriptions had been used in this bill, the Contractor must carefully read the specifications to acquaint themselves with the full description and specifications of the equipment.</p>				
<p>Items, materials or methods to be used specified by trade names or catalogue numbers are only an indication of the quality required. Items, materials or methods of similar quality may be used with prior approval from the Architect/Engineer.</p>				
<p style="text-align: right;">Carried to Collection</p>				
<p>Section No. 4</p>				
<p>Bill No. 9</p>				
<p>Miscellaneous Items</p>				
<p style="text-align: center;">212</p>				

	Unit	Quantity	Rate	Amount
<p><u>Compliance, Preliminaries, etc.</u></p>				
<p>The Electrical Contractor responsible for the works is to note that the works will be done as a Domestic sub-contract to the Main Contractor. There is no separate preliminaries and compliance Bill for the sub-contractor and the Electrical Sub-Contractor is therefore to make provision in their tendered rates for all necessary Preliminaries and Compliance items applicable to this scope of works, including but not limited to :</p>				
<p>1) Provision of a Sub-Contract Construction Guarantee</p>				
<p>2) Provision of an Advanced Payment Guarantee for materials on/off site</p>				
<p>3) Provision of Contract Works, Special, Supplementary, Public Liability Insurances, etc.</p>				
<p>4) Allowance for compliance with Construction Regulations, OH&S Specification & Act</p>				
<p>5) Allowance for compliance with Construction Regulations - Construction Environment Management Plan</p>				
<p>6) Allow for Warranty of the Sub-contract works for defects liability period</p>				
<p>7) Allow for servicing & routine maintenance of Sub-contract works for defects liability period</p>				
<p>8) Allow for provision of all applicable Test Certificates and/or Compliance Certificates</p>				
<p>9) Other contractual items not listed above</p>				
<p>10) Project Supervision</p>				
<p>11) Project Administration</p>				
<p>12) Other Overheads (Travel, Accommodation)</p>				
<p>13) Provision of Programme for sub-contract works</p>				
<p>14) Completion of necessary commencement, compliance and completion forms</p>				
<p>15) Providing a 'Master Installation Electrician' for overseeing electrical installations</p>				
<p>16) Provision of all necessary forms of access, ie scaffolding, cherry pickers, etc.</p>				
<p>17) Carrying out all testing of the complete sub-contract works and commissioning thereof</p>				
<p>18) Training of Clients representative at practical completion</p>				
<p>19) Training of Clients representative at end of defects liability period</p>				
<p style="text-align: right;">Carried to Collection</p>			R	
<p>Section No. 4</p>				
<p>Bill No. 9</p>				
<p>Miscellaneous Items</p>				

	Unit	Quantity	Rate	Amount
<u>HOUSEKEEPING, LABELS, ETC.</u>				
<u>Housekeeping Labels, etc. :</u>				
7	Item			
Coding and labelling of all plant and equipment and wiring, etc.				
<u>'AS-BUILT' DRAWINGS</u>				
<u>Supply "AS-BUILT" drawings to the Electrical Engineer at First Delivery/Practical Completion, including recording of all as-built information during the course of the contract.</u>				
8	Item			
Record and supply 'AS-BUILT' drawings to Electrical Engineer at Practical Completion.				
<u>EARTHING, ETC</u>				
<u>Complete earthing of installation, including all bonding of water pipes, HWC, etc. New copper earth spikes & all other consumables, and including submission of earth test certificates all in accordance with detailed specification.</u>				
9	Item			
Provide for the Earthing of the building to wiring code including water mains, etc.				
<u>TESTING AND COMMISSIONING</u>				
<u>Complete testing of the installation for compliance with SABS 0142 & submission of Certificate of Compliance for every distribution panel that forms part of the installation and the entire installation.</u>				
10	Item			
Testing of the complete installation in terms of the regulations.				
11	Item			
Provide Certificate of Compliance for the entire installation.				
Carried to Collection				
Section No. 4				
Bill No. 9				
Miscellaneous Items				
			R	

BILL NO. 9
MISCELLANEOUS ITEMS
COLLECTION

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Section No. 4
Bill No. 9
Miscellaneous Items

SECTION NO. 4

ELECTRICAL WORKS (PROVISIONAL)

SECTION SUMMARY

Bill No.

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Amount

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Section No. 4
SECTION SUMMARY

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SECTION 5

**MECHANICAL WORKS
(PROVISIONAL)**

	Unit	Quantity	Rate	Amount
<p><u>SECTION NO. 5</u> <u>MECHANICAL WORKS (PROVISIONAL)</u> <u>BILL NO. 1</u> <u>HEATING, VENTILATION AND AIRCONDITIONING</u></p> <p><u>PREAMBLES</u> For Preambles refer to "Department of Public Works: Specification of Materials and Methods to be used - PW371-A" which shall be read in conjunction with and shall apply to all items in these Bills of Quantities.</p> <p><u>SUPPLEMENTARY PREAMBLES</u> The Specification for Comprehensive Services Incorporating Electrical Installations document attached under the Drawings and Specifications Section of these Bills of Quantities covers the complete Electrical Installation for the project and forms the total scope of work under the Electrical Contract. It shall be used in conjunction with the Standard Electrical Specification which has the following Sections: Section A: Preamble to Standard Specifications Section B: Installation Specifications Section C: Quality Specification from the Department of Public Works for Materials and Equipment of Electrical Installations.</p> <p>The following bill of quantities must be read in conjunction with the foregoing specifications as well as the attached Mechanical Engineer's drawings and Specifications. Tenderer's attention is specifically drawn to the guarantee against defects, servicing and maintenance period and the testing and commissioning clauses, which is applicable to the whole of the heating, ventilation and air conditioning installation. The contractor has to allow for these costs in his/her unit rates.</p> <p>All equipment as measured shall be deemed to be complete as described in the specifications and include fixing on mounting brackets if so required, connection to water supplies, waste and or overflow pipe work, etc.</p> <p>Every system supplied and installed under the Airconditioning shall be guaranteed for at least one (1) year from the date of Practical Completion against breakdown and/or faulty workmanship and shall be replaced free of charge, irrespective of the manufacturers or suppliers guarantee. All repair and replacement costs shall be borne by the Contractor.</p> <p>Electrical work shall be carried out in accordance with SABS 0142 code of practice as described.</p>				
<p style="text-align: right;">Carried to Collection</p> <p>Section No. 5 Bill No. 1 Heating, Ventilation And Airconditioning</p>			R	

	Unit	Quantity	Rate	Amount
<p>Anti-vibration mountings, supports, hangers, brackets and accessories are to be used where required to the satisfaction of the Engineer.</p> <p>Rates are to include for condensate drainage piping from evaporator unit to drains including any necessary PVC sleeves through walls.</p> <p>Although shortened descriptions had been used in this bill, tenderers must carefully read the specifications to acquaint themselves with the full description and specifications of the equipment.</p> <p>Where brand or trade names are referred to in this bill of quantities, these shall indicate the quality and type of material or fitting required and no substitution of materials so specified will be permitted unless the prior authority of the Engineer has been obtained in writing.</p> <p>Items, materials or methods to be used specified by trade names or catalogue numbers are only an indication of the quality required. Items, materials or methods of similar quality may be used with prior approval from the Architect/Engineer.</p> <p>The Mechanical Contractor responsible for the works must have the following pre-qualifications:</p> <ol style="list-style-type: none"> 1) Trade Tested 2) Must have experience in Ventilation Installations 3) Must be an Accredited Grade 1ME Contractor <p><i>Note : The Work shall at all times, for the duration of the sub-contract, be carried out under the supervision of a competent representative of the AC&V Sub-contractor in terms of the Occupational Health and Safety Act No. 85 of 1993, as amended.</i></p> <p><u>Compliance, Preliminaries, etc.</u></p> <p>The Mechanical Contractor responsible for the works is to note that the works will be done as a Domestic sub-contract to the Main Contractor. There is no separate preliminaries and compliance Bill for the sub-contractor and the Mechanical Sub-Contractor is therefore to make provision in their tendered rates for all necessary Preliminaries and Compliance items applicable to this scope of works, including but not limited to :</p> <ol style="list-style-type: none"> 1) Provision of a Sub-Contract Construction Guarantee 2) Provision of an Advanced Payment Guarantee for materials on/off site 3) Provision of Contract Works, Special, Supplementary, Public Liability Insurances, etc. 				
<p style="text-align: right;">Carried to Collection</p> <p>Section No. 5 Bill No. 1 Heating, Ventilation And Airconditioning</p>			R	

	Unit	Quantity	Rate	Amount
<u>FANS, ETC.</u>				
<u>Fans - EAF-01 & EAF-02 :</u>				
1	No	2		
Ø315 AXIAL AIR FAN COMPLETE WITH 2 x 1.5 D podded attenuators & speed controller, duty @ 500L/s, 150 Pa static pressure & 2880rpm				
<u>DUCTING</u>				
<u>Galvanised ducting for low pressure ducting. (Air passage sizes indicated on tender drawings for measurement).</u>				
2	Item			
Ducting to include all riser ducts, elbows, transformations, square to round pieces, shoes, spigots, set-up and set-down pieces where required.				
<u>WEATHER LOUVRES / DISC VALVES</u>				
<u>Weather Louvres / Disc Valves :</u>				
3	No	2		
Weather Louvres 400 x 350mm, Natural anodised c/w plenum box and filter.				
4	No	4		
Weather louvers complete with vermin screen, burgular bars and viledon filter size: 500 x 500mm				
5	No	1		
250 x 200mm Extract grille complete with apposed blade damper, colour: White				
6	No	11		
Ø200 Disc valve.				
<u>DOOR GRILLES</u>				
<u>Door Grilles :</u>				
7	No	8		
500 x 300mm Naturally anodised door grille, fitted to timber doors.				
<u>ROOF RIDGE VENTILATORS</u>				
<u>'Curvent' or equally approved roof ridge ventilators :</u>				
8	No	9		
Supply and installation, complete of 'Curvent' or equally approved FK 750 RC ridge ventilator into roof sheeting at ridge.				
<u>TESTING AND COMMISSIONING OF VENTILATION INSTALLATION</u>				
<u>Testing and Commissioning, etc. :</u>				
9	Item			
Testing and commissioning of the entire installation, complete.				
10	Item			
Provision of three sets of operating and maintenance manuals as required.				
Carried to Collection				
Section No. 5				
Bill No. 1				
Heating, Ventilation And Airconditioning				
			R	

	Unit	Quantity	Rate	Amount
11 Provision of 'As-built' drawings, manuals, etc.	Item			
12 Comprehensive servicing and maintenance during the 12-month guarantee period.	Item			
<u>SUNDRIES</u>				
<u>Sundries :</u>				
13 Workshop drawings and equipment schedule submittals for approval prior to ordering for all units.	Item			
14 Training of staff on correct operation of units as required.	Item			
<u>BUILDERS WORKS IN CONNECTION WITH MECHANICAL INSTALLATIONS</u>				
<u>Approved SAP timber frames in boxing for openings through brickwork/concrete in builders works for Mechanical Installations :</u>				
15 Timber frame for opening size 250 x 250mm through one brick wall.	No	2		
16 Timber frame for opening size 350 x 350mm through one brick wall.	No	2		
17 Timber frame for opening size 400 x 400mm through one brick wall.	No	1		
18 Timber frame for opening size 450 x 400mm through one brick wall.	No	2		
Carried to Collection				
Section No. 5				
Bill No. 1				
Heating, Ventilation And Airconditioning				
			R	

BILL NO. 1
HEATING, VENTILATION AND AIRCONDITIONING
COLLECTION

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Section No. 5

Bill No. 1

Heating, Ventilation And Airconditioning

Amount

SECTION NO. 5

MECHANICAL WORKS (PROVISIONAL)

SECTION SUMMARY

Bill No.

1

HEATING, VENTILATION AND AIRCONDITIONING

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Section No. 5
SECTION SUMMARY

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SECTION 6

OCCUPATIONAL HEALTH AND SAFETY

	Unit	Quantity	Rate	Amount
<u>SECTION NO. 6</u>				
<u>OCCUPATIONAL HEALTH AND SAFETY</u>				
<u>BILL NO. 1</u>				
<u>OCCUPATIONAL HEALTH AND SAFETY</u>				
<u>PRICING OF OCCUPATIONAL HEALTH AND SAFETY</u>				
The Contractor is to take note of and carefully price all Occupational Health and Safety items listed in the Bill below.				
<p>Note: While every effort has been made with the provisions herein to include <i>inter alia</i>, compliance with all the requirements set out in the Construction Regulations, 2003 issued under the Occupational Health and Safety Act, 1993 (Act No 85 of 1993), and in particular with Regulation 5(1) requiring the compilation of a health and safety plan, as well as Regulation 6(1) requiring the appointment of a construction supervisor, the Contractor is to carefully take note of any obvious omissions and duly make provision for these accordingly in their pricing of this section and the relevant Preliminaries item.</p> <p>Note: Also refer to the relevant item under Preliminaries in the BOQ document which refers to the Occupational Health and Safety Act, Construction Regulations and Health and Safety Specification.</p> <p>This Bill must be read in conjunction with the Project Health & Safety Specification attached together with these bills of quantities and reference should be made to Annexure D (BOQ) which forms part of this specification and which items are included in this bills of quantities for pricing purposes.</p>				
<u>OCCUPATIONAL HEALTH AND SAFETY</u>				
1	Item			
Preparation of the Contractor's site specific Health and Safety Plan including Covid-19 Management.				
2	Item			
Principal Contractor's initial obligations in respect of the Occupational Health and Safety Act and Construction Regulations / Disaster Management Act, of 2002.				
3	Months	12		
Principal Contractor's time related obligations in respect of the Occupational Health and Safety Act and Construction Regulations.				
<u>Provision of Personal Protective Equipment (PPE) :</u>				
4	Item			
Reflective vests.				
5	Item			
Hard hats.				
6	Item			
Protective foot wear.				
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Section No. 6				
Bill No. 1				
Occupational Health And Safety				

	Unit	Quantity	Rate	Amount
7 Earplugs	Item			
8 Dust masks	Item			
9 Gloves	Item			
10 High visibility overalls to SARTSM Chapter 13 Level 3. All overalls must be orange with EPWP (30 centimetres) letters on the back of the jacket and company logo on the heart pocket.	Item			
11 Ear Defenders SABS approved	Item			
12 Overalls	Item			
13 3 Layer material Face Masks	Item			
14 Face Shields	Item			
15 Latex gloves	Item			
16 Induction Training for Covid-19	Item			
17 Safety Goggles for Screening person	Item			
<u>Safety Officers, etc. :</u>				
18 Provision of full time Construction Health and Safety Officer registered with SACPCMP	Months	12		
19 Covid-19 Compliance Officer	Months	12		
<u>Cost of Medical Certificates and Medical Surveillance :</u>				
20 Initial (baseline) medical examinations.	Item			
21 Periodic and exit examinations.	Item			
22 Contractor's charges to allow for handling costs and profit in respect of above sub items for medical examinations.	Item			
23 Screening for Employees with COVID-19 Symptoms	Item			
24 Induction training including Covid-19	Item			
25 Provision of First Aid Boxes to GSR requirements.	Item			
<u>Noise Monitoring :</u>				
26 Establishment of noise zones (plant)	Item			
27 Audiograms (Personnel)	Item			
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Section No. 6				
Bill No. 1				
Occupational Health And Safety				

	Unit	Quantity	Rate	Amount
<u>Health and Safety File :</u>				
28	Item			
<u>Additional Covid-19 Requirements :</u>				
29	Item			
30	Item			
31	Item			
32	Item			
33	Item			
34	Item			
35	Item			
36	Item			
37	Item			
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Bill No. 1				
Occupational Health And Safety				

BILL NO. 1
OCCUPATIONAL HEALTH AND SAFETY
COLLECTION

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Bill No. 1
Occupational Health And Safety

Amount

SECTION NO. 6

OCCUPATIONAL HEALTH AND SAFETY

SECTION SUMMARY

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OCCUPATIONAL HEALTH AND SAFETY

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SECTION 7

PROVISIONAL SUMS AND ALLOWANCES

SECTION NO. 7

PROVISIONAL SUMS AND ALLOWANCES

PROVISIONAL SUMS AND ALLOWANCES

The following Nominated/Selected Sub-Contract amounts are for work to be carried out by Nominated or Selected Sub-Contractors in terms of the Conditions of Contract :

General

Work for which budgetary allowances are provided will be measured and valued in accordance with the relevant building agreement/building contract and deducted in whole or in part if not required without any compensation for loss of profit on the said allowances

Prime cost amounts and provisional sums are net. Prime cost amounts shall include for delivery to site of all articles concerned. Provisional sums are for material and equipment supplied and installed complete by firms of specialists.

NOTE: The Tenderers attention is drawn to the fact that unless otherwise described all Provisional Amounts stated are NETT and do not include any builders discount.

Profit on Nominated/Selected Subcontractors :

Where stated, the contractor may allow for profit if required

General Attendance on Nominated/Selected Subcontractors :

The item 'attendance' which follows each provisional sum for nominated/selected subcontractors' work, shall be deemed to cover all the contractor's costs incurred in providing free of charge to the nominated/selected subcontractors the contractor's duties as described in clause 12.2 of the JBCC N/S Subcontract Agreement.

Builder's Work :

Builder's work in connection with specialist services is given elsewhere in these bills of quantities

NOMINATED / SELECTED SUB-CONTRACTORS

SIGNAGE

Signage :

- 1 Provide the amount of R 15 000.00 (Fifteen Thousand Rands) for Internal and External Signage, not measured, to later specification, executed complete.
- 2 Profit on above item, if required.
- 3 Attend upon the firm executing the installation and make good.

Item	15 000 00
Item	
Item	

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Section No. 7

Bill No. 1

Provisional Sums And Allowances

		Amount
<u>LANDSCAPING</u>		
<u>Landscaping :</u>		
4	Provide the amount of R 25 000.00 (Twenty Five Thousand Rands) for Landscaping to later specification, executed complete.	Item 25 000 00
5	Profit on above item, if required.	Item
6	Attend upon the firm executing the installation and make good.	Item
<u>ELECTRICAL, ELECTRONIC AND MECHANICAL INSTALLATIONS</u>		
<u>AUDIO SYSTEM</u>		
<u>Audio System :</u>		
7	Provide the amount of R 180 000.00 (One Hundred and Eighty Thousand Rands) for Audio System Installations to later specification, by Specialist, executed complete.	Item 180 000 00
8	Profit on above item, if required.	Item
9	Attend upon the firm executing the installation and make good.	Item
<u>HIGH LEVEL WINDOW ACTUATORS</u>		
<u>High Level Window Actuators :</u>		
10	Provide the amount of R 120 000.00 (One Hundred and Twenty Thousand Rands) for High Level Window Actuator Installations to later specification, by Specialist, executed complete.	Item 120 000 00
11	Profit on above item, if required.	Item
12	Attend upon the firm executing the installation and make good.	Item
<u>BUDGETARY ALLOWANCES</u>		
<u>The following budgetary allowances are for work to be executed by the Contractor and paid for in terms of the Conditions of Contract (work is to be remeasured at Bill rates where-ever possible).</u>		
<u>Sundry Builders Works :</u>		
13	Provide the amount of R 25 000.00 (Twenty Five Thousand Rand) for Sundry Builders Work to all trades, executed complete.	Item 25 000 00
<u>Locate, Expose, Re-route and Maintain Existing Services :</u>		
14	Provide the amount of R 15 000.00 (Fifteen Thousand Rands) to Locate and Expose Existing Services, Re-route and Maintain where necessary.	Item 15 000 00
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Provisional Sums And Allowances		

MONETARY ALLOWANCES

The following monetary provisions are to be omitted from the contract sum and used as directed below.

Contingency Allowance :

- 15 Provide the amount of R 980 000.00 (Nine Hundred and Eighty Thousand Rand) for a Contingency Allowance to be used for by the Principal Agent / Project Manager and approved by the Client, in terms of the Principal Building Agreement.

Item 980 000 00

CPAP / Escalation Allowance :

- 16 Provide the amount of R 820 000.00 (Eight Hundred and Twenty Thousand Rand) for CPAP / Escalation to be used for Contract Price Adjustment Provisions in terms of the Principal Building Agreement.

Item 820 000 00

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Bill No. 1

Provisional Sums And Allowances

SECTION NO. 7

PROVISIONAL SUMS AND ALLOWANCES

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6	OCCUPATIONAL HEALTH AND SAFETY	229
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	SubTotal excluding Value Added Tax	
	ADD VAT @ 15%:	
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