

Item No		Quantity	Rate	Amount
	<p><u>SECTION 1 - PRELIMINARIES</u></p> <p><u>BILL NO. 1</u></p> <p><u>PRELIMINARIES</u></p> <p>-----</p> <p><u>BUILDING AGREEMENT AND PRELIMINARIES</u></p> <p>The JBCC Series 2000 Principal Building Agreement (March 2005 edition 4.1) prepared by the Joint Building Contracts Committee shall be the applicable building agreement, amended as hereinafter described together with the associated documentation as prepared by the Joint Building Contracts Committee</p> <p>The JBCC Preliminaries (May 2005 edition) published by the Joint Building Contracts Committee for use with the said JBCC Principal Building Agreement shall be deemed to be incorporated in these bills of quantities</p> <p>The Contractor is deemed to have referred to the abovementioned documents for the full intent and meaning of each clause thereof</p> <p>These clauses are hereinafter referred to by clause number and heading only. Where standard clauses or alternatives are not entirely applicable to this contract such modifications, corrections or supplements as will apply are given under each relevant clause heading and such modifications, corrections or supplements shall take precedence notwithstanding anything contrary contained in the abovementioned documents</p> <p>Where any item is not relevant to this specific contract such item is marked N/A, signifying "not applicable"</p> <p>The Bills of Quantities have been drawn up in accordance with the "Standard System of Measuring Building Work Seventh Edition (Revised 2015)" published by The South African Association of Quantity Surveyors</p>			
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The quantities or specifications contained in these bills of quantities are not to be used for the calculation or ordering of materials.

PREAMBLES FOR TRADES

The General Preambles for Trades (2017 edition) as published by The Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said Model Preambles will be entertained

Where Architect's or Engineer's specifications or drawings (where issued) are in conflict with the above Preambles, etc, the Architect's or Engineer's specification and drawings, as the case may be, are to take preference

Where the drawings and Architect's or Engineer's specifications are in conflict, the Contractor is to obtain written clarification from the Principal Agent prior to the closing of tenders

The Contractor's prices for all items throughout these bills of quantities must take account of and include for all of the obligations, requirements and specifications given in the said Model Preambles and in any supplementary preambles

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PRICING OF PRELIMINARIES

If option A as set out in clause B10.3.1 hereinafter is to be used for the adjustment of the preliminaries each item priced is to be allocated to one or more of the three categories "F", "V" or "T" as the case may be below such item, where:

- F - An amount which shall not be varied (Fixed)
- V - An amount which shall be varied in proportion to the contract value as compared with the contract sum (Value)
- T - An amount which shall be varied in proportion to the construction period as compared to the initial construction period excluding revisions to the construction period for which the Contractor is not entitled to adjustment of the contract value in terms of the agreement (Time)

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

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SECTION A: JBCC PRINCIPAL BUILDING AGREEMENT

DEFINITIONS

1 1.0 Definitions and Interpretation

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 Period**" is amended by replacing it with the following:

"**CONSTRUCTION PERIOD**" means the period commencing on the commencement date and ending on the date of practical completion

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

"**INTEREST**" means the interest rates applicable on this contract, whether specifically indicated in the relevant clauses or not, will be in terms of the legislation of the Republic of South Africa, and in particular:

- (a) In respect of interest owed by the **employer**, the interest rate as determined by the Minister of Justice and Constitutional Development, from time to time, in terms of section 1(2) of the Prescribed Rate of Interest Act, 1975 (Act No. 55 of 1975), will apply; and
- (b) in respect of interest owed to the **employer**, the interest 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), will apply.

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Clause 1.6.4 is amended by replacing it with the following:

No clause

F: V: T:
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OBJECTIVE AND PREPARATION

2 2.0 Offer, Acceptance and Performance

F: V: T:
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Item

3 3.0 Documents

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

F: V: T:
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4 4.0 Design Responsibility

F: V: T:
.....

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5 5.0 Employer's Agent

5.1.2 is amended to include clauses 32.6.3, 34.3 and 34.4

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6	<p>6.0 Site Representative</p> <p>F: V: T:</p>			
7	<p>7.0 Compliance with Regulations</p> <p>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</p> <p>See also clause C10 of Section C - Specific Preliminaries</p> <p>F: V: T:</p>			
8	<p>8.0 Works Risk</p> <p>F: V: T:</p>			
9	<p>9.0 Indemnities</p> <p>F: V: T:</p>			
10	<p>10.0 WORKS INSURANCES</p> <p>Clause 10.0 is amended by the addition of the following clauses:</p>			
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10.5 Damage to the Works

- (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
- (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**
- (c) The **employer** shall carry the risk of damage to or destruction of the **works** and material paid for by the **employer** that is the result of the excepted risks as set out in 10.6
- (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

10.6 Injury to Persons or loss of or damage to Properties

- (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 neglect of any person for whose actions the **employer** is legally liable

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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 neglect 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 and will remain adequately insured or insured 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**

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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

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

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

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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

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

F: V: T:
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11 11.0 Liability Insurances

F: V: T:
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12 12.0 Effecting Insurances

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13 13.0 *No clause*

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N/A

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14 **14.0 SECURITY**

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 submitted by the **contractor** to the **employer** will be as 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:

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**

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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**

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**

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**

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**

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

14.4 Where **security** as a variable construction guarantee of ten percent (10%) of the **contract sum** (excluding VAT) has been selected:

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**

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

14.4.3 The **employer** shall return the variable construction guarantee to the **contractor** within fourteen (14) **calendar days** of it expiring

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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

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:

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)

14.5.2 The fixed construction guarantee shall come into force on the date of issue and shall expire on the date of **practical completion**

14.5.3 The **employer** shall return the fixed construction guarantee to the **contractor** within fourteen (14) **calendar days** of it expiring

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**

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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

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EXECUTION

15 **15.0 PREPARATION FOR AND EXECUTION OF THE WORKS**

Clause 15.1.1 is amended by replacing it with:

No Clause

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 15.1.2 and 15.1.4

F: V: T:
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Item

16 **16.0 Access to the Works**

F: V: T:
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Item

17 **17.0 Contract Instructions**

F: V: T:
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Item

18 **18.0 Setting out of the Works**

F: V: T:
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19 **19.0 Assignment**

F: V: T:
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Construction of Water, Sanitation and Fencing
Tshilwavisuku Primary School

20	<p>20.0 Nominated Subcontractors</p> <p>20.1.3 is amended by replacing it with the following:</p> <p>Note: See item B9.1 hereinafter for adjustment of attendance on nominated subcontractors executing work allowed for under provisional sums</p> <p>F: V: T:</p>	Item		
21	<p>21.0 Selected Subcontractors</p> <p>21 is amended by replacing it with:</p> <p>No Clause</p> <p>F: V: T:</p>	N/A		
22	<p>22.0 Employer's Direct Contractors</p> <p>F: V: T:</p>	Item		
23	<p>23.0 Contractor's Domestic Subcontractors</p> <p>F: V: T:</p>	Item		
<u>COMPLETION</u>				
24	<p>24.0 Practical Completion</p> <p>F: V: T:</p>	Item		
25	<p>25.0 Work's Completion</p> <p>F: V: T:</p>	Item		
26	<p>26.0 Final Completion</p> <p>F: V: T:</p>	Item		
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- 27 27.0 Latent Defects Liability Period
F: V: T:
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- 28 28.0 Sectional Completion
F: V: T:
.....
- 29 29.0 Revision of Date for Practical Completion
F: V: T:
.....
- 30 30.0 Penalty for Noncompletion
F: V: T:
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PAYMENT

31 **31.0 INTERIM PAYMENT TO THE CONTRACTOR**

31.8 is amended by replacing it with the following two alternative clauses:

Alternative A

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:

31.8(A).1 Ninety-five per cent (95%) of such value in interim **payment certificates** issued up to the date of **practical completion**

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**

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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

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**

Alternative B

31.8(B) Where **security** is a payment reduction in terms of 14.7 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:

31.8(B).1 Ninety per cent (90%) of such value in interim **payment certificates** issued up to the date of **practical completion**

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**

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

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**

Clause 31.12 is amended by deleting the following:

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Payment shall be subject to the **employer** giving the **contractor** a tax invoice for the amount due

F: V: T:
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32 32.0 Adjustment to the Contract Value

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:

"due to no fault of the **contractor**"

F: V: T:
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33 **33.0 RECOVERY OF EXPENSE AND LOSS**

Clause 33.2 is amended by adding the following clauses:

33.2.9 the **contractor's** failure or neglect to commence with the **works** on the dates prescribed in the contract

33.2.10 the **contractor's** failure or neglect to proceed with the **works** in terms of the contract

33.2.11 the **contractor's** failure or neglect for any reason to complete the **works** in accordance with the contract

33.2.12 the **contractor's** refusal or neglect to comply strictly with any of the conditions of contract or any **contract instructions** and/or orders in writing given in terms of the contract

33.2.13 the **contractor's** estate being sequestrated, liquidated or surrendered in terms of the insolvency laws in force within the Republic of South Africa

F: V: T:
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34 34.0 Final Account and Final Payment

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”

F: V: T:
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Item

35 35.0 Payment to other Parties

F: V: T:
.....

Item

CANCELLATION

36.0 CANCELLATION BY EMPLOYER - CONTRACTOR’S DEFAULT

36.3 is amended by removing the reference to “No clause” and replacing the words “**principal agent**” with “**employer**”

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:
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36 **37.0 CANCELLATION BY EMPLOYER - LOSS AND DAMAGE**

37.0 is amended by the addition of the following clause:

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:
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37 **38.0 CANCELLATION BY CONTRACTOR - EMPLOYER'S DEFAULT**

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:
.....

38 39.0 Cancellation - Cessation of the Works

F: V: T:
.....

Item

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39	<p>40.0 Dispute Settlement</p> <p>40.2.2 is amended by replacing “one (1) year” with “three (3) years”</p> <p>40.6 is amended by removing the reference to:</p> <p>No clause</p> <p>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 cost 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		
40	<p>41.0 State Clauses</p> <p>F: V: T:</p> <p><u>CONTRACT VARIABLES</u></p> <p><u>THE SCHEDULE (DPW04EC)</u></p>	Item		
41	<p>42.0 E-TENDER INFORMATION</p> <p>Tenderers are referred to section "C1.2 Contract Data" on page 56 for variables pertaining to this contract</p> <p>F: V: T:</p>	Item		
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SECTION B: JBCC PRELIMINARIES

1.0 DEFINITIONS AND INTERPRETATION

42 1.1 Definitions and interpretation
F: V: T:
.....

Item

2.0 DOCUMENTS

43 2.1 Checking of documents
F: V: T:
.....

Item

44 2.2* Provisional bills of quantities
F: V: T:
.....

Item

45 2.3* Availability of construction documentation
F: V: T:
.....

Item

46 2.4* Interests of agents
F: V: T:
.....

Item

47 2.5 Priced documents
F: V: T:
.....

Item

48 2.6 Tender submission

Clause 2.6 is amended by replacing "JBCC Form of
Tender" with "Form of Offer and
Acceptance (DPW07)"

F: V: T:
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3.0 THE SITE

49 3.*1 Defined works area
F: V: T:
.....

Item

50 3.2* Geotechnical investigation
F: V: T:
.....

Item

51 3.3 Inspection of the site

Tenderers shall complete the Site Inspection Certificate (DPW16 EC) included in the tender documents and return the same with the tender submission.

F: V: T:
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Item

52 3.4* Existing premises occupied
F: V: T:
.....

Item

53 3.5* Previous work - dimensional accuracy
F: V: T:
.....

Item

54 3.6 Previous work - defects
F: V: T:
.....

Item

55 3.7* Services - known
F: V: T:
.....

Item

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56	3.8 Services - unknown F: V: T:	Item		
57	3.9* Protection of trees F: V: T:	Item		
58	3.10 Articles of value F: V: T:	Item		
59	3.11* Inspection of adjoining properties F: V: T:	Item		
<u>4.0 MANAGEMENT OF CONTRACT</u>				
60	4.1 Management of the works F: V: T:	Item		
61	4.2 Programme for the works F: V: T:	Item		
62	4.3 Progress meetings F: V: T:	Item		
63	4.4 Technical meetings F: V: T:	Item		
64	4.5 Labour and plant records F: V: T:	Item		
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5.0 SAMPLES, SHOP DRAWINGS AND MANUFACTURERS' INSTRUCTIONS

65 5.1 Samples of materials
F: V: T:
.....

Item

66 5.2 Workmanship samples
F: T: V:
.....

Item

67 5.3 Shop drawings
F: V: T:
.....

Item

68 5.4 Compliance with manufacturers' instructions
F: T: V:
.....

Item

6.0 TEMPORARY WORKS AND PLANT

69 6.1 Deposits and fees
F: V: T:
.....

Item

70 6.2* Enclosure of the works
F: V: T:
.....

Item

71 6.3 Advertising
F: V: T:
.....

Item

72 6.4* Plant, equipment, sheds and offices
F: V: T:
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Item

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73 6.5* Main notice board
F: V: T:
.....

Item

74 6.6* Subcontractors' notice board
F: V: T:
.....

Item

7.0 TEMPORARY SERVICES

75 7.1 Location
F: V: T:
.....

Item

76 7.2& Water
F: V: T:
.....

Item

77 7.3& Electricity
F: V: T:
.....

Item

78 7.4& Telecommunication facilities
F: V: T:
.....

Item

79 7.5& Ablution facilities
F: V: T:
.....

Item

8.0 PRIME COST AMOUNTS

80 8.1 Responsibility for prime cost amounts
F: V: T:
.....

Item

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9.0 ATTENDANCE ON N/S SUBCONTRACTORS

81 9.1 General attendance
The schedule rates providing for attendance on **nominated subcontractors** and other **contractors**, will be adjusted only if the scope of the work has changed

F: V: T:
.....

Item

82 9.2* Special attendance

F: V: T:
.....

Item

83 9.3 Commissioning - fuel, water and electricity

F: V: T:
.....

Item

10.0 FINANCIAL ASPECTS

84 10.1 Statutory taxes, duties and levies

F: V: T:
.....

Item

85 10.2 & Payment for preliminaries

F: V: T:
.....

Item

86 10.3 & Adjustment of preliminaries

F: V: T:
.....

Item

87 10.4 Payment certificate cash flow

F: V: T:
.....

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11.0 GENERAL

88 11.1* Protection of the works

F: V: T:
.....

Item

89 11.2* Protection / isolation of existing / sectionally occupied works

F: V: T:
.....

Item

90 11.3 Security of the works

F: V: T:
.....

Item

91 11.4 Notice before covering work

F: V: T:
.....

Item

92 11.5* Disturbance

F: V: T:
.....

Item

93 11.6* Environmental disturbance

F: V: T:
.....

Item

94 11.7 Works cleaning and clearing

F: V: T:
.....

Item

95 11.8 Vermin

F: V: T:
.....

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96	11.9 Overhand work F: V: T:	Item	
97	11.10 Instruction manuals and guarantees F: V: T:	Item	
98	11.11 As built information F: V: T:	Item	
99	11.12 Tenant installations F: V: T:	Item	
<u>12.0 SCHEDULE OF VARIABLES</u>			
12.1 PRE-TENDER INFORMATION			
12.1.1 Provisional bills of quantities [2.2]			
YES			
12.1.2 Availability of construction documentation [2.3]			
YES			
12.1.3 Interests of agents [2.4]			
N/A			
12.1.4 Defined works area [3.1]			
Give details and/or refer Architect's site plan drawing no where available			
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<p>12.1.5 Geotechnical Investigation [3.2] Geotechnical investigation report where available</p> <p>12.1.6 Existing premises occupied [3.4] The existing buildings on the site is occupied by school learners and staff</p> <p>12.1.7 Previous work - dimensional accuracy [3.5] N/A</p> <p>12.1.8 Previous work - defects [3.6] N/A</p> <p>12.1.9 Services - known [3.7] Not known</p> <p>12.1.10 Protection of trees [3.9] Trees not being removed must be protected.</p> <p>12.1.11 Inspection of adjoining properties [3.11] This also applies to roads and services, etc.</p> <p>12.1.12 Enclosure of the works [6.2] No specific requirements</p> <p>12.1.13 Offices [6.4.3] The Contractor shall provide, maintain and remove on completion of the works an office for the exclusive use of the Principal Agent, minimum size 6 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 style="text-align: center;">Carried to Collection</p> <p>Section No. 1 Preliminaries Bill No. 1 PRELIMINARIES Diatho Consulting (PTY) LTD</p>		<p style="text-align: center;">R</p>	

12.1.14 Main notice board [6.5]

Provide ONE (1) noticeboards, eg:

The Contractor shall provide, erect where directed, maintain and remove on completion of the works a notice board size 3 x 3m, constructed of suitable boarding with flat smooth surface and with edging bead 19mm thick round outer edges and projecting 12mm from face of boarding and rounded on front edge. 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 ivory white and the bead and 12mm wide dividing lines dark green. All wording shall be inscribed in dark green as per the coat of arms for SA. All wording shall be inscribed in dark green painted "sans serif" lettering

12.1.15 Subcontractors notice board [6.6]

NO

12.1.16 Water [7.2]

Option A (by contractor)

12.1.17 Electricity [7.3]

Option A (by contractor)

12.1.18 Telecommunications [7.4]

Telephone - YES

Facsimile - YES

Email - YES

12.1.19 Ablution facilities [7.5]

Option A (by contractor)

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12.1.20 Protection of existing/sectionally occupied works [11.2]

Protection is required

YES

12.1.21 Special attendance [9.2]

N/A

12.1.22 Protection of the works [11.1]

No specific requirements

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12.1.23 Disturbance [11.5]

The Contractor shall be responsible for and take all precautions in controlling all forms of pollution during the contract period due to noise, artificial light, wind-blown sand, dust, etc in the dry season and deposits of mud etc in the wet season by whatever means necessary and daily removal of deposits etc, all to the satisfaction of the Principal Agent and any costs, claims, etc will be for the Contractor's account

The surrounding buildings will be occupied and functioning during these works and the Contractor is to ensure that the works are carried out with as little mess and noise as possible and with a minimum of disturbance to adjoining and close buildings and properties and their occupants. The Contractor is to make use of appropriate plant and methods of execution which result in the least possible noise factors. All machinery shall be fully muffled

The Contractor shall keep the site, structures and materials well watered during the operations to prevent dust and shall provide, erect and maintain all temporary tarpaulins, dust and weatherproof screens, barriers and temporary plumbing that may be necessary during the progress of the works

The Contractor shall ensure that the functioning of the existing School is not disturbed or disrupted, except where special arrangements are made with the Principal Agent

The Contractor may not carry out construction operations outside of normal working times without the permission of the Principal Agent

12.1.24 Environmental disturbance [11.6]

No specific requirements

12.2 POST-TENDER INFORMATION

12.2.1 Payment of preliminaries

[10.2] Option A or B (post tender)

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12.2.2 Adjustment of preliminaries
[10.3] Option A or B (post tender)
12.2.3 Additional agreed preliminaries items
Details: To be agreed post tender where relevant

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SECTION C: SPECIFIC PRELIMINARIES

Section C contains specific preliminary items which apply to this contract except where N/A (Not Applicable) appears against an item

C1: CONFIDENTIALITY

100 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

Should any part of the drawings not be clearly intelligible to the tenderer he shall, before submitting his tender, obtain clarification in writing from the **principal agent**

F: V: T:
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Item

C2: TRADE NAMES

101 Wherever a trade name for any product has been described in the **bills of quantities**, 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

If prior written approval for an alternative product is not obtained, it shall be deemed that the tenderer the product described has been tendered for

F: V: T:
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C3: IMPORTED MATERIALS

102 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.

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)

F: V: T:
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Item

C4: SECURITY CHECK OF PERSONNEL

103 The **principal agent** may require the **contractor** to have his personnel and workmen, or a certain number of them, security classified

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**

F: V: T:
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Item

C5: CONTRACT INSTRUCTIONS

104 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

F: V: T:
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C6: SITE LEVELS

105 Before commencement of the works the Contractor shall carry out and provide the Principal Agent for approval a survey of the existing site levels in sufficient detail to enable the preparation of a final account

F: V: T:
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Item

C7: UNAUTHORISED PERSONS ON SITE

106 The Contractor shall not permit unauthorised persons onto and workmen to lodge on the site

F: V: T:
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Item

C8: PLANT AND LABOUR RECORD

107 At the end of each week the Contractor shall provide the Principal Agent with a written record, in schedule form, reflecting the number and description of tradesmen and labourers employed by him and all subcontractors on the works each day and the number, type and capacity of all plant, excluding hand tools, currently used on the works

F: V: T:
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Item

C9: USE OF LOCAL LABOUR FROM THE EMPLOYER'S AREAS OF OPERATION

108 It is a requirement of the contract that the work be executed in such a manner as to maximise the use of local labour from the Employer's areas of operation in order to provide the local community with employment opportunities.

The tenderer is to identify all activities for which it is intended to employ workers from the local community and full details thereof are to be provided in the tender documentation

The total value of the work that is to be of a

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local labour nature may be a consideration in the adjudication process. Once a tender is accepted the activities and number of persons stated in the above-mentioned schedule shall become the minimum contractual commitment. In applying the principles set out above, it is a specific requirement of this tender that the successful tenderer employs, in consultation with the Employer's representative, unemployed persons from the ranks of the local communities and the immediate surroundings, who possess the appropriate skills required for a contract of this nature

- In order to achieve the recruitment of local labour, the Employer will establish, a database of unemployed persons, indicating their specialised training, previous experience and employment, etc. The successful tenderer will be required to directly employ suitable persons recruited from the employer's database and ensure that all legislative requirements regarding their employment are complied with and provide the Employer with the necessary documentary proof, if required

- The Contractor is required to produce weekly records suitably detailed to enable the Employer's representative to monitor the achievement of the required local labour percentages. The Contractor is required to provide the Employer's database for the purposes of assessing skills transfer from informal skills training

- The Contractor is required to provide informal skills training so that the required standard of workmanship is maintained

- Any difficulty experienced by the tenderer/Contractor in the procurement of the required percentages of local labour is to be referred immediately to the Employer's representative

- In respect to "Target Labour", the minimum rate for any and all workers contracted for this project shall be R120 per day

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Item

C10: COMMUNITY LIASON OFFICER

109

It is a requirement of this Contract that a Community Liaison officer (CLO) be appointed for the area represented by the Tender. The function of the CLO shall be to represent the local community in matters concerning the use of local labour on the works and to assist with and facilitate communication between the Contractor, the Engineer and the local communities. The period of appointment of the CLO shall be as stated in the Contract for Temporary Employment as a Community Liaison officer referred to below. It must be noted that the date of commencement of temporary employment of the CLO shall be no later than the date of commencement of the Contract. The identification of the approved CLO to be appointed by the Contractor under the Contract shall be resolved by the Contractor, the particular Ward Councillors in collaboration with the Local Communities.

It will be required, therefore, that the successful Tenderer (i.e. the Contractor) enter into a contract for the employment of the above-mentioned CLO, the parties to which will be the Contractor, the RDP/Development Forum and the CLO. To this end a specimen Form of Contract for the Temporary Employment as a Community Liaison Officer is included in this document; this Form of Contract sets out, inter alia, the agreement between the parties, the duties and conditions of employment of the CLO (including the rate of remuneration to be paid).

As said contract will be between the Contractor and the CLO, all costs involved shall be borne by the Contractor and the tender shall be deemed to include for this.

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C11: GUARANTEES

110

Where guarantees are called for, the Contractor shall obtain a written guarantee, addressed to the Employer, from the firm supplying the materials and/or doing the work and shall deliver same to the Principal Agent no later than the works completion date.

The guarantee shall state that workmanship, materials and installation are guaranteed for a specified period from the final completion dated 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 from the Principal Agent to do so. This guarantee 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.

The Principal Agent shall be the sole judge of the cause responsible for defect of the works and his decision shall be final and binding in terms of clause 40.2 of the agreement

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C12: WARRANTIES FOR MATERIAL AND WORKMANSHIP

111

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 certified practical 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

F: V: T:

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Item

C13: OVERTIME

112

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 execution thereof, that costs for such overtime are to be borne by the Employer

F: V: T:

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C14: CO-OPERATION OF CONTRACTOR FOR COST MANAGEMENT

113

It is specifically agreed that the Contractor accepts the obligation of assisting the agents in implementing proper cost management on this project. The Contractor will be advised by the Principal Agent of all cost management procedures which will be implemented to ensure that the final account does not exceed the budget

F: V: T:

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Item

C15: FINANCIAL INVESTIGATION

114

Tenderers must be prepared to furnish the following documentation at own cost within seven (7) days of being called upon to do so:

- Audited financial statements for the past three financial years plus a certified financial statement covering the period from the end of the last financial year to date. If audited statements are not readily available provisional certified statements must be submitted

- A resolution of the board of directors authorising the signatory to certify such statements

- An extract of the relevant memorandum and article(s) of association from which it is clear that the company is empowered to issue such statement

- A list of all major shareholders indicating the percentage shareholding of each

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C16:REINSTATEMENT OF DAMAGED AREAS ON THE SITE OR EMPLOYERS' PROPERTIES IN GENERAL CAUSED BY CONSTRUCTION OPERATIONS, ETC.

115

Before commencing the works, the Contractor shall arrange with the Principal Agent to inspect, among others, existing buildings, structures, roads, pavings, kerbs, channels and fences on the site or Employers' properties in general

The Contractor shall note in writing, all conditions that the works could affect and copy the Principal Agent accordingly. The Contractor should pay particular attention to cracks, defects and existing levels related to structures, roads, pavings, kerbs, channels and fences, which later could be claimed to have been caused or disturbed by the construction operations

Where instructed by the Principal Agent, levels and photographs shall be taken by the Contractor and the cost thereof shall be for the Employer's account. Certified copies shall be lodged with the Principal Agent

The Contractor will be held responsible for maintaining the above in its present condition during execution of the works and will be liable for all costs relating to the repairing or replacing of damaged areas caused by the construction operations

F: V: T:

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Item

SUMMARY OF CATEGORIES

Category : Fixed R.....

Category : Value R.....

Category : Time R.....

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Item No		Quantity	Rate	Amount
	<p><u>SECTION NO. 2</u></p> <p><u>BILL NO.1</u></p> <p><u>DEMOLITIONS (PROVISIONAL)</u></p> <p>-----</p> <p><u>PREAMBLES</u></p> <p>The General Preambles for Trades (2017 edition), as published by the Association of South African Quantity Surveyors, shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items, fully described in the said General Preambles, will be entertained</p> <p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>View Site:</u></p> <p>Before submitting his tender, the Contractor shall visit the site and satisfy himself as to the nature and extent of the work to be done and the value of the materials contained in the buildings or portions of the buildings to be demolished.</p> <p>No claim for any variations of the contract sum in respect of the nature and extent of the work or of inferior or damaged materials will be entertained</p> <p><u>Old materials to become property of the Contractor:</u></p> <p>Old materials from demolitions, except where described as to be re-used or handed over, become the property of the Contractor, who must allow credit for same in the last item of the "Demolitions" trade</p>			
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	<p>Section No. 2 Demolitions Bill No. 1 DEMOLITIONS Diatho Consulting (PTY) LTD</p>			

Old materials to be re-used:

None of the old materials are to be used for new work, except where specifically described as being set aside for re-use

Old materials, debris, etc to be carted away:

All old materials from the demolitions, except where described as to be re-used or handed over, as well as all rubbish, debris, etc must be regularly carted from the site and not be allowed to accumulate on or around the site

Handing over of materials:

Where certain materials or articles from demolitions are described as to be "handed over to the Employer", it shall be taken to mean "handed over by the Contractor to the Principal Agent" and such materials or articles shall be properly stored by the Contractor until handing over thereof and shall include all necessary transport

The Contractor must obtain an official receipt from the Principal Agent listing the materials or articles and dates of handing over

Should the Contractor fail to submit the receipt when requested to do so, it shall be deemed that the materials or articles are still in his possession and he will be held liable to the Employer for the full replacement value thereof, which amount will be deducted from any monies due to the Contractor

Explosives:

No explosives whatsoever may be used for demolition purposes, unless otherwise stated

Carried to Collection

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Section No. 2
Demolitions
Bill No. 1
DEMOLITIONS
Diatho Consulting (PTY) LTD

General:

The Contractor shall carry out the whole of the works with as little mess and noise as possible and with a minimum of disturbance to adjoining premises and their tenants. He shall provide proper protection and provide, erect and remove when directed, any temporary tarpaulins that may be necessary during the progress of the works, all to the satisfaction of the Principal Agent

Water supply pipes and other piping that may be encountered and found necessary to disconnect or cut, shall be effectually stopped off or grubbed up and removed, and any new connections that may be necessary shall be made with proper fittings, to the satisfaction of the Principal Agent

Hazardous materials:

Demolitions of buildings, services, external works, site services, etc are to include for the safe removal and disposal of asbestos or asbestos products or other hazardous materials by approved **Registered Specialists**

BARRICADES, SCREENS, ROOFS, ETC.

Temporary barriers, screens, roofs, etc including removal:

1 "Joluka Orange/ Yellow" or similar approved safety barrier netting 1500mm high including suitable timber framing, corners, ends, etc

m 184

REMOVAL OF EXISTING WORK

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Section No. 2
Demolitions
Bill No. 1
DEMOLITIONS
Diatho Consulting (PTY) LTD

DEMOLITIONS, ETC

DEMOLISH EXISTING TOILET STRUCTURES

2 Demolish existing pit toilet structure overall size 3000 x 1800 x 3000mm high including desludging waste to municipality waste site, hacking and removing foundations, concrete surface beds, walls, doors, windows, door frames, ironmongery, zink, plumbing fittings complete, backfilling, compacting and clear debris and etc. Service Provider to submit relevant and valid permit of disposal to the municipal waste and all rubble's to be carted away from site.

No

2

CHEMICAL TOILETS RENTALS

The following is for the rental of chemical toilets and tenderer to allow for establishment and deestablishment of facilities and rentals during construction:

NOTE: Failure to complete new toilet blocks within the stipulated duration of contract due to contractor's default, additional months will be paid by the contractor

3 Temporary chemical toilets (10No) for a period of original construction (site handover date to original practical completion date) up to approved extension of time including all servicing necessary as per standards. All servicing of the temporary chemical toilets on late completion of works by contractor till actual practical completion date, all costs will be on the contractor's account.

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Section No. 2
Demolitions
Bill No. 1
DEMOLITIONS
Diatho Consulting (PTY) LTD

Construction of Water, Sanitation and Fencing
Tshilwavisuku Primary School

Section No. 2

Bill No. 1

DEMOLITIONS

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DEMOLITIONS

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Item No		Quantity	Rate	Amount
	<p><u>SECTION NO. 3</u></p> <p><u>BILL NO.1</u></p> <p><u>ALTERATIONS (PROVISIONAL)</u></p> <p>-----</p> <p><u>PREAMBLES</u></p> <p>The General Preambles for Trades (2017 edition), as published by the Association of South African Quantity Surveyors, shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items, fully described in the said General Preambles, will be entertained</p> <p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>View site:</u></p> <p>Before submitting his tender, the Contractor shall visit the site and satisfy himself as to the nature and extent of the work to be done and the value of the materials contained in the buildings or portions of the buildings to be demolished.</p> <p>No claim for any variations of the contract sum in respect of the nature and extent of the work or of inferior or damaged materials will be entertained</p> <p><u>Old materials to become property of the Contractor:</u></p> <p>Old materials from alterations, except where described as to be re-used or handed over, become the property of the Contractor, who must allow credit for same in the last item of the "Alterations" trade</p> <p style="text-align: right;">Carried to Collection</p> <p>Section No. 3 Alterations to 6 x 4 Enviro-loo Learners Ablutions Bill No. 1 ALTERATIONS Diatho Consulting (PTY) LTD</p>			R

Old materials to be carted away:

Old materials from the alterations, except where described as to be re-used or handed over, as well as all rubbish, etc must be regularly carted from the site and not be allowed to accumulate on or around the site

Old materials to be re-used:

None of the old materials are to be used for new work, except where specifically described as being set aside for re-use

Handing over of materials:

Where certain materials or articles from demolitions or alterations are described as to be "handed over to the Employer", it shall be taken to mean "handed over by the Contractor to the Principal Agent" and such materials or articles shall be properly stored by the Contractor until handing over thereof and shall include all necessary transport

The Contractor must obtain an official receipt from the Principal Agent listing the materials or articles and dates of handing over

Should the Contractor fail to submit the receipt when requested to do so, it shall be deemed that the materials or articles are still in his possession and he will be held liable to the Employer for the full replacement value thereof, which amount will be deducted from any monies due to the Contractor

Explosives:

No explosives whatsoever may be used for demolition purposes, unless otherwise stated

Carried to Collection

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Section No. 3
Alterations to 6 x 4 Enviro-loo Learners Ablutions
Bill No. 1
ALTERATIONS
Diatho Consulting (PTY) LTD

GENERAL

The contractor shall carry out the whole of the work with as little mess and noise as possible and with a minimum of disturbance to adjoining premises and their tenants. He shall provide proper protection and provide and erect any temporary tarpaulins and temporary plumbing that may be necessary during the progress of the works, all to the satisfaction of the Architect, and remove when directed.

Any water supplies pipes and other piping that may be met with and found necessary to disconnect or cut, shall be effectually stopped or grubbed up and removed, and any new connections that may be necessary shall be made with proper fittings, to the satisfaction of the Architect.

Doors, fanlights, fittings, frames, linings, etc shall be thoroughly overhauled before re-fixing including taking off, easing and re-hanging, cramping up, re-wedging as required and making good cramps, dowels, etc and easing, oiling, adjusting and repairing ironmongery if necessary, replacing any glass damaged in removal or subsequently and stopping up all nail and screw holes with tinted wood to match timber.

Where doors, windows, etc are described as taken out this shall be understood to include for removal of all beads, architraves, ironmongery, etc and doors which are re-fixed are to be provided with new architraves (elsewhere measured).

Prices for taking out and removing doors and frames shall include for removing door stops, cabin locks, etc and making good to match existing.

With regard to building up openings in existing walls, cement screeds and pavings, granolithic, etc, shall be levelled and prepared for raising of brickwork.

Allow for making good all existing plastered walls where damaged by furniture, etc, and stopping up all screw and holes before painting.

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Alterations to 6 x 4 Enviro-loo Learners Ablutions
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ALTERATIONS
Diatho Consulting (PTY) LTD

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Making good finishes shall be deemed to include making good of the brick and concrete surfaces onto which new finishes are applied, where necessary.

The contractor will be required to take all dimensions affecting existing building on the site and he will be held solely responsible for the accuracy of all such dimensions.

Hazardous materials:

Demolitions of buildings, services, external works, site services, etc are to include for the safe removal and disposal of asbestos or asbestos products or other hazardous materials by approved Registered Specialists

REMOVAL OF EXISTING WORK

Carefully taking out and handing over to the Employer doors, windows, etc including taking out and removing thresholds, sills, etc from brickwork and preparing openings to receive new similar doors, windows, etc (elsewhere measured) and making good cement plaster on both sides and into reveals:

1	Timber single door and frame not exceeding 2,5m ²	No	30
	<u>Taking out/off and later replacing with similar ironmongery:</u>		
2	Window stays	No	10
3	Window handles	No	10
	<u>Taking out/off and removing glass and mirrors:</u>		
4	Glass panes not exceeding 0,1m ² from steel windows with putty, including cleaning out rebates and preparing for new glass	m2	5

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Section No. 3
Alterations to 6 x 4 Enviro-loo Learners Ablutions
Bill No. 1
ALTERATIONS
Diatho Consulting (PTY) LTD

GENERAL REPAIRWORK

Repairwork to existing steel palisade fence, etc including cleaning down of all rust, scale, dirt, oil, etc degreasing, washing down with suitable detergent and removing all existing paint, contaminants, etc to bare metal surface, realigning all moving parts, replacing of damaged or missing palisades, screws, nuts, etc, lubricating where necessary and leaving in complete working order:

5	Palisade fence 1800mm high	m	201
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Spot priming bare metal surfaces, one coat alkyd based universal undercoat and two coats superior quality universal enamel paint, on work in poor condition:

6	Palisade fence	m2	2 612
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Section No. 3
Alterations to 6 x 4 Enviro-loo Learners Ablutions
Bill No. 1
ALTERATIONS
Diatho Consulting (PTY) LTD

Construction of Water, Sanitation and Fencing
Tshilwavisuku Primary School

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<p><u>SECTION NO. 3</u></p>			
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<p><u>CONCRETE, FORMWORK AND REINFORCEMENT</u></p>			
<p><u>PREAMBLES</u></p>			
<p>The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p>			
<p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles</p>			
<p><u>SUPPLEMENTARY PREAMBLES</u></p>			
<p><u>Cost of tests:</u></p>			
<p>The costs of making, storing and testing of concrete test cubes as required under clause 7 "Tests" of SANS 1200 G shall include the cost of providing cube moulds necessary for the purpose, for testing costs and for submitting reports on the tests to the Principal Agent.</p>			
<p>The testing shall be undertaken by an independent firm or institution nominated by the Contractor to the approval of the Principal Agent. (Test cubes are measured separately)</p>			
<p>Carried to Collection</p>			
<p>Section No. 3 Alterations to 6 x 4 Enviro-loo Learners Ablutions Bill No. 2 CONCRETE, FORMWORK AND REINFORCEMENT Diatho Consulting (PTY) LTD</p>			
			R

Breeze concrete:

Breeze concrete shall consist of twelve parts clean dry furnace ash, free from coal or other foreign matter, to one part cement (1:12); the ash graded up to particles which will pass a 16,5mm ring from a minimum which fails to pass a 4,75mm mesh. The finer materials from the screening are to be first mixed with the cement into a mortar and the ash added afterwards and thoroughly incorporated

Lightweight concrete:

Lightweight concrete shall have a density of 600kg/m³ for the top 50mm and 400kg/m³ for the remaining thickness. The minimum thickness at outlets, channels, etc shall be 50mm

Waterproof concrete:

"Waterproof concrete" shall have the same properties as normal concrete, but the following shall be modified to make the the concrete more water-tight:

1. a cement/water ratio of minimum 1.9 and maximum 2.1
2. minimum OPC content of 300kg/m³
3. Polypropolene micro fibres added to concrete at rate of 182 million per m³

Formwork:

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

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Bill No. 2
CONCRETE, FORMWORK AND REINFORCEMENT
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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

REINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES

25MPa/19mm concrete:

Surface beds cast in panels	m3	18
Surface beds cast in panels on waterproofing	m3	
Aprons cast in panels	m3	16
Ramps	m3	4

TEST BLOCKS

1	Making and testing 150 x 150 x 150mm concrete strength test cube (Provisional)	Sets	1.0
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CONCRETE SUNDRIES

Finishing top surfaces of concrete smooth with a steel trowel:

2	Surface beds, slabs, etc	m2	120
3	Surface beds, slabs, etc to falls	m2	16

Finishing top surfaces of concrete smooth with a wood float:

4	Ramps to falls	m2	16
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Alterations to 6 x 4 Enviro-loo Learners Ablutions
Bill No. 2
CONCRETE, FORMWORK AND REINFORCEMENT
Diatho Consulting (PTY) LTD

ROUGH FORMWORK (DEGREE OF ACCURACY III)

Rough formwork to sides:

5	Edges, risers, ends and reveals not exceeding 300mm high or wide	m	60
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MOVEMENT JOINTS, ETC

Expansion joints with 10mm softboard between vertical concrete and brick surfaces:

6	Not exceeding 300mm high to edges of surface beds	m	30
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REINFORCEMENT (PROVISIONAL)

Fabric reinforcement:

7	Type 193 fabric reinforcement in concrete surface beds, slabs, etc	m2	120
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Diatho Consulting (PTY) LTD

Construction of Water, Sanitation and Fencing
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CONCRETE, FORMWORK AND REINFORCEMENT

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Item No		Quantity	Rate	Amount
	<p><u>SECTION NO. 3</u></p> <p><u>BILL NO.3</u></p> <p><u>WATERPROOFING</u></p> <p>-----</p> <p><u>PREAMBLES</u></p> <p>The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p> <p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Waterproofing:</u></p> <p>Waterproofing of roofs, basements, etc shall be laid under a ten year guarantee. Waterproofing to roofs shall be laid to even falls to outlets, etc with necessary ridges, hips and valleys. Descriptions of sheet or membrane waterproofing shall be deemed to include additional labour to turn-ups and turn-downs</p> <p>-----</p>			
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	<p>Section No. 3 Alterations to 6 x 4 Enviro-loo Learners Ablutions Bill No. 3 WATERPROOFING Diatho Consulting (PTY) LTD</p>		R	

DAMPPROOFING OF WALLS AND FLOORS

One layer 250 micron green polyethylene waterproof sheeting (SANS 952-1985 type C) sealed at laps with PVC self-adhesive tape:

1	Under surface beds	m2	120
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Bill No. 3
WATERPROOFING
Diatho Consulting (PTY) LTD

Construction of Water, Sanitation and Fencing
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WATERPROOFING

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WATERPROOFING

Diatho Consulting (PTY) LTD

Item No		Quantity	Rate	Amount
	<p><u>SECTION NO. 3</u></p> <p><u>BILL NO.4</u></p> <p><u>CARPENTRY AND JOINERY</u></p> <p>-----</p> <p><u>PREAMBLES</u></p> <p>The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p> <p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Fixing:</u></p> <p>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" shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 500mm centres, and where described as "bolted", the bolts have been given separately elsewhere</p> <p><u>Joinery:</u></p> <p>Descriptions of frames shall be deemed to include frames, transomes, rails, etc</p>			
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	<p>Section No. 3 Alterations to 6 x 4 Enviro-loo Learners Ablutions Bill No. 4 CARPENTRY AND JOINERY Diatho Consulting (PTY) LTD</p>			

Descriptions of hardwood joinery shall be deemed to include sinking and pelleting heads and nuts of bolts

Particle board

All particle board shall comply with SANS 50312 having the required marking as per SANS 50312/EN 312

Decorative thermosetting plastic laminate covering:

Laminate covering shall be glued under pressure and edge strips of same shall be butt jointed at junctions with adjacent similar finish

Sizes:

Sizes are nominal and the Contractor shall make allowance in his prices for minor variances in stated finished sizes of timber doors, door members, door frames, architraves, etc

Prices

Prices for all joinery work are to include for general framing, housing and notching, arris rounded angles, glueing, blocking, planting on, screwing, adhesives, dowels, pellets, cross tongues, screws and nails and setting up complete and also for all square cutting and waste. Tops shall be secured with metal or hardwood buttons.

DOORS, ETC

Wrought meranti doors hung to steel frames:

1 44mm Framed batten door 813 x 2032mm high of 44 x 150mm top rail and stiles, 22 x 150mm middle ledge and braces and 22 x 220mm bottom rail filled in with 22mm V-jointed one side boarding including 150mm undercut (D2)

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CARPENTRY AND JOINERY
Diatho Consulting (PTY) LTD

Construction of Water, Sanitation and Fencing
Tshilwavisuku Primary School

2 44mm Framed batten door 813 x 2032mm high of 44 x 150mm top rail and stiles, 22 x 150mm middle ledge and braces and 22 x 220mm bottom rail filled in with 22mm V-jointed one side boarding and including weatherboard (D1)

No

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CARPENTRY AND JOINERY

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	<p><u>SECTION NO. 3</u></p> <p><u>BILL NO.5</u></p> <p><u>IRONMONGERY</u></p> <p>-----</p> <p><u>PREAMBLES</u></p> <p>The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p> <p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Proprietary items:</u></p> <p>Where applicable, the manufacturers' names or product catalogue titles are given in sub-headings preceding the items</p> <p>Note that the manufacturers names specified in this trade are for the purposes of competitive pricing.</p> <p>Prices are to be based on the specific products/articles specified.</p> <p>On request, returnable samples are to be provided to the Project Manager for consideration</p>			
	Carried to Collection			
	<p>Section No. 3 Alterations to 6 x 4 Enviro-loo Learners Ablutions Bill No. 5 IRONMONGERY Diatho Consulting (PTY) LTD</p>		R	

Locks:

Notwithstanding Clause 2, Item 3 of the "Ironmongery" trade of the Standard System (7th Edition, 2015) of Measuring Building Work, descriptions of locks shall be deemed to include two keys per lock

Finishes to ironmongery:

Where applicable, finishes to ironmongery are indicated by suffixes in accordance with the following list:

- BS Satin bronze lacquered
- CH Chromium plated
- SC Satin chromium plated
- SE Silver enamelled
- GE Grey enamelled
- AN Anodised natural
- AS Anodised silver
- AB Anodised bronze
- AG Anodised gold
- ABL Anodised black
- PB Polished brass
- PL Polished and lacquered
- PT Epoxy coated
- SD Sanded
- BBS Brushed stainless steel

CATCHES, CABIN HOOKS, ETC

1	150mm Cabin hook and eye including 70 x 70 x 20mm chamfered hardwood block twice oiled and plugged	No	24	
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LOCKS

Approved:

2	Four lever lockset	No	6	
3	Indicator lockset	No	24	

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Alterations to 6 x 4 Enviro-loo Learners Ablutions
Bill No. 5
IRONMONGERY
Diatho Consulting (PTY) LTD

PUSH PLATES AND KICK PLATES**"Union Assa Abloy" or similar approved:****1.2mm Thick satin finished "Union" stainless steel plates countersunk screwed along edges at not exceeding 200mm centres**

4	200 x 800mm Type "SS5089-200W" kicking plate	No	6
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DOOR CLOSERS**"Dorma" or similar approved:**

5	"Dorma" TS73N/EN3-4 parallel arm door closer delayed closing-push side fitting.	No	3
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SUNDRIES

6	25mm Diameter wall mounted door stop plugged	No	30
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BATHROOM FITTINGS**"Kimberley-Clark" or similar approved:**

7	"Ref. SQ2 code 405607B" white lockable toilet roll holder	No	24
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8	Brushed stainless steel body, rust resistant, she bin, approximately 330 x 280 x 180mm etc	No	13
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Alterations to 6 x 4 Enviro-loo Learners Ablutions

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IRONMONGERY

Diatho Consulting (PTY) LTD

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IRONMONGERY

Diatho Consulting (PTY) LTD

Item No	Quantity	Rate	Amount
<p><u>SECTION NO. 3</u></p>			
<p><u>BILL NO.6</u></p>			
<p><u>METALWORK</u></p>			
<p><u>PREAMBLES</u></p>			
<p>The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p>			
<p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles</p>			
<p><u>SUPPLEMENTARY PREAMBLES</u></p>			
<p><u>Descriptions of bolts, anchors, etc:</u></p>			
<p>Descriptions of bolts shall be deemed to include nuts and washers</p>			
<p>Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork or concrete</p>			
<p>Items described as "holed for bolt(s)" shall be deemed to exclude the bolts, unless otherwise described</p>			
<p>Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 600mm centres</p>			
<p>Carried to Collection</p>			
<p>Section No. 3 Alterations to 6 x 4 Enviro-loo Learners Ablutions Bill No. 6 METALWORK Diatho Consulting (PTY) LTD</p>			R

Fixing:

Unless otherwise described, descriptions of items shall be deemed to include for fixing to brickwork or concrete

Where items are described as "bolted", the bolts are measured elsewhere as stated in clause N.7 of the Model Preambles

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Alterations to 6 x 4 Enviro-loo Learners Ablutions
Bill No. 6
METALWORK
Diatho Consulting (PTY) LTD

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STEEL GATES, SCREENS, ETC

Welded screens and gates, to walls:

1 Single gate and frame 813 x 2032mm high of 25 x 25 x 2mm hollow section frame and 25 x 25 x 2mm hollow section horizontal middle rail filled in with 12 x 12mm square section vertical rails at 75mm centers and fitted with a pair of suitable hinges welded to frame and with locking mechanism for padlock all in and including outer frame of 25 x 25 x 2mm hollow section welded frame bolted to brickwork

No

PRESSED STEEL DOOR FRAMES

1,2mm Double rebated frames suitable for one brick walls:

2 Frame for door size 813 x 2032mm high

No

SUNDRY STEELWORK

Corner protectors:

3 50 x 50 x 4mm Angle section fixed to edge of floor

m

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Section No. 3
Alterations to 6 x 4 Enviro-loo Learners Ablutions
Bill No. 6
METALWORK
Diatho Consulting (PTY) LTD

Construction of Water, Sanitation and Fencing
Tshilwavisuku Primary School

Section No. 3

Bill No. 6

METALWORK

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Alterations to 6 x 4 Enviro-loo Learners Ablutions

Bill No. 6

METALWORK

Diatho Consulting (PTY) LTD

Item No	Quantity	Rate	Amount
<p><u>SECTION NO. 3</u></p> <p><u>BILL NO.7</u></p> <p><u>PLASTERING</u></p> <p>-----</p> <p><u>PREAMBLES</u></p> <p>The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p> <p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Moisture tests:</u></p> <p>Before any finishes, coverings, etc are applied to screeds, plastering, etc or any other in-situ finish, moisture tests are to be carried out to the complete satisfaction of the Project Manager to ensure that these surfaces have the correct moisture content for the finish to be applied</p> <p><u>Labours, etc</u></p> <p>Labours such as fair, rounded and chamfered edges, trowel cuts, throats, V-joints, angles, etc shall be deemed to be included in the descriptions</p>			
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<p>Section No. 3 Alterations to 6 x 4 Enviro-loo Learners Ablutions Bill No. 7 PLASTERING Diatho Consulting (PTY) LTD</p>			

Sample Panels

A sample panel size 1m x1m, of each of the various plaster type wall and floor finishes in this contract, shall be prepared for the approval of the Project Manager and the cost of the sample panel(s) shall be deemed to be included in the overall costs of the relevant wall and floor finishes

GRANOLITHIC

Method:

The method to be used shall be either the monolithic method or the bonded method

Preparation:

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

Mix:

Unless otherwise described, granolithic shall attain a compressive strength of at least 41MPa. The coarse aggregate shall comply with SANS 1083 and shall generally be capable of passing a 10mm mesh sieve. Where the thickness of the granolithic exceeds 25mm, the size of the coarse aggregate shall be increased to the maximum size compatible with the thickness of the granolithic

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PLASTERING
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Panels:

Granolithic shall be laid in panels not exceeding 14m² for monolithic finishes, not exceeding 9,5m² for bonded finishes and not exceeding 6m² for all external granolithic. Wherever possible, panels shall be square but at no time should the length of the panel exceed 1,5 times its width

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

Laying:

Monolithic granolithic shall be applied to the partially set slab and thoroughly compacted and lightly wood floated to the required levels

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

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

Curing, seasoning and protection:

Granolithic shall be covered with clean hessian with waterproof building foil over and kept wet for at least seven days after laying

Colour:

Coloured granolithic shall be tinted with an approved colouring pigment mixed into a true and even colour

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Diatho Consulting (PTY) LTD

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TINTED WHITE CEMENT SCREEDS

Tinted screed shall be composed of one bag White Portland Cement and two wheelbarrows "Malmesbury" sand. Surfaces shall be finished with a steel trowel to leave a smooth finish and coated with two coats "Earthcote S.I. Floorcote" two-pack polyurethane floor sealer applied as per the manufacturer's recommendations

NOTE: Tinted screeds are to be strengthened with "Primal Eccos" acrylic polymer (15% of the water volume is to be substituted with the acrylic polymer during the mixing process)

Coarse sand is to be used for these screeds

All tinting, finishing, strengthening, etc are to be mixed, applied, etc strictly in accordance with the manufacturer's instructions

CEMENT PLASTER

Unless otherwise described, cement plaster shall be taken to mean Class 1 cement plaster i.e. 1:4 cement:sand plaster (common cement)

FLOOR AND WALL SEALERS

Minimum two coats approved epoxy coat, on concrete:

1	On screed	m2	49	
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Alterations to 6 x 4 Enviro-loo Learners Ablutions
Bill No. 7
PLASTERING
Diatho Consulting (PTY) LTD

Construction of Water, Sanitation and Fencing
Tshilwavisuku Primary School

Section No. 3

Bill No. 7

PLASTERING

COLLECTION

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Bill No. 7

PLASTERING

Diatho Consulting (PTY) LTD

Item No	Quantity	Rate	Amount
<u>SECTION NO. 3</u>			
<u>BILL NO.8</u>			
<u>PLUMBING AND DRAINAGE (PROVISIONAL)</u>			
<u>PREAMBLES</u>			
<p>The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p>			
<p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles</p>			
<u>SUPPLEMENTARY PREAMBLES</u>			
<u>Wire gratings:</u>			
<p>Descriptions of gutter outlets, etc shall be deemed to include wire balloon gratings</p>			
<u>Stormwater channels:</u>			
<p>Descriptions of channels shall be deemed to include necessary excavation, surface preparation, compaction, etc and disposal of surplus material on site</p>			
Carried to Collection			
<p>Section No. 3 Alterations to 6 x 4 Enviro-loo Learners Ablutions Bill No. 8 PLUMBING AND DRAINAGE Diatho Consulting (PTY) LTD</p>			
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French drains:

Descriptions of french drains shall be deemed to include excavation, stone filling graded from 300mm diameter at bottom to 75mm diameter at top, approved geofabric filter blanket over stone, 300mm earthfilling over and disposal of surplus material on site

Septic tanks:

Descriptions of proprietary type septic tanks shall be deemed to include excavation, bedding and jointing, concrete base slabs, jointing to drains and backfilling, compaction, etc all in accordance with the manufacturer's instructions and disposal of surplus material on site

Stainless steel basins, sinks, wash troughs, urinals, etc:

Stainless steel for economy basins, domestic sinks and worktops shall be Type 430 (17/0)

Stainless steel for urinals, basins, quality sinks, wash troughs, institutional equipment, etc shall be Type 304 (18/8)

Stainless steel for laboratory sinks, photographic equipment, etc shall be Type 316 (18/8)

Units shall have standard aprons on all exposed edges and tiling keys against walls where applicable

Sealing of edges:

Outer edges of sinks, basins, baths, urinals, etc are to be sealed against adjacent surfaces with approved mildew resistant silicone sealant and prices must include therefor

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Alterations to 6 x 4 Enviro-loo Learners Ablutions
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PLUMBING AND DRAINAGE
Diatho Consulting (PTY) LTD

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uPVC pipes and fittings:

Sewer and drainage pipes and fittings shall be jointed and sealed with butyl rubber rings

Soil, waste and vent pipes and fittings shall be solvent weld jointed or sealed with butyl rubber rings

uPVC pressure pipes and fittings:

Pipes of 50mm diameter and smaller shall be plain ended with solvent welded uPVC loose sockets and fittings

Pipes of 63mm diameter and greater shall have sockets and spigots with push-in type integral rubber ring joints. Bends shall be uPVC and all other fittings shall be cast iron, all with similar push-in type joints

High density polyethylene (HDPE) pipes and fittings:

Pipes shall be type IV and of the class specified with "Plasson" or "Alprene" compression fittings

"Polycop" polypropylene pipes:

Polypropylene pipes 54mm diameter and smaller shall be seamless copper coloured Class 16 pipes jointed with "Fast-fuse" heat welded thermoplastic or where so described "Polylock" compression fittings

Pipes shall be firmly fixed to walls, etc with coloured nylon snap-in pipe clips with provision for accommodating thermal movement and jointed and fixed strictly in accordance with the manufacturer's instructions

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Alterations to 6 x 4 Enviro-loo Learners Ablutions
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PLUMBING AND DRAINAGE
Diatho Consulting (PTY) LTD

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Copper pipes:

Pipes shall be hard drawn and half-hard "Maksal" pipes of the class described. Class 0 (thin walled hard drawn) pipes shall not be bent. Class 1 (thin walled half-hard), Class 2 (half-hard) and Class 3 (heavy walled half-hard) pipes shall only be bent with benders with inner and outer formers. Fittings to copper waste, vent and anti-syphon pipes, capillary solder fittings and compression fittings shall be "Cobra Watertech" type. Capillary solder fittings shall comply with ISO 2016. Only compression fittings shall be used in walls or in ground

Copper pipes are to be installed in accordance with the latest revision of the Code of Practice for Copper Plumbing soldering techniques. Flux, solder, etc to be strictly in accordance with the manufacturer's requirements with special attention to copper flux composition

Reducing fittings:

Where fittings have reducing ends or branches they are described as "reducing". In the case of pipes with diameters not exceeding 60mm, only the largest end or branch size is given. Should the Contractor wish to use other fittings and bushes or reducers he may do so on the understanding that no claim in this regard will be entertained. In the case of pipes with diameters exceeding 60mm, all sizes are given and no claims for extra bushes, reducers, etc will be entertained

Fixing of pipes:

Unless specifically otherwise stated, descriptions of pipes shall be deemed to include fixing to walls, etc casting in, building in or suspending not exceeding 1m below suspension level

Paper wrapping to pipes:

Pipes chased into brickwork must be wrapped with two layers of stout brown paper tied with wire. Rates are to include for wrapping around joints and fittings

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Disinfection of water pipework:

Water pipework is to be disinfected at completion in accordance with SANS 1200L (provision for disinfection elsewhere)

"Densyl" petrolatum anti-corrosion tape as manufactured by Denso SA (Pty) Ltd.:

Pipes to be taped shall be coated with the appropriate primer and the tape shall be applied in the appropriate widths and with suitable overlaps

Couplings and fittings to pipes shall be taped in strict accordance with the manufacturer's instructions including mastic, tape, "Layflat" sheeting, securing of same, etc

Prices for wrapping of pipes shall include for all work as described to couplings in the length

Laying, backfilling, bedding, etc of pipes:

Pipes shall be laid and bedded in accordance with manufacturers' instructions and trenches shall be carefully backfilled

Where no manufacturers' instructions exist, pipes shall be laid in accordance with Clauses 5.1 and 5.2 of each of the following:

- SANS 1200L : Medium-pressure pipelines
- SANS 1200LD : Sewers
- SANS 1200LE : Stormwater drainage

Pipe trenches, etc shall be backfilled in accordance with Clauses 3, 5.5, 5.6, 5.7 and 7 of SANS 1200DB : Earthworks (Pipe trenches)

Pipes shall be bedded in accordance with Clauses 3.1 to 3.4.1, 5.1 to 5.3 and 7 of SANS 1200LB : Bedding (Pipes)

Unless otherwise described, bedding of rigid pipes shall be Class B bedding

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General:

Descriptions of cast iron roof outlets shall be deemed to include joints to pipes and casting into concrete (adaptors for joints to PVC pipes, etc are given separately)

Descriptions of overflow pipes where measured in number, shall be deemed to include joints to cisterns and splay cut ends

Descriptions of pipes laid in and including trenches and of inspection chambers, catchpits, etc shall be deemed to include excavation, bedding, backfilling, compaction to a minimum of 98% Mod AASHTO density and disposal of surplus material on site

Descriptions of service pipes and flexible connecting pipes shall be deemed to include connections to taps, cisterns, etc and to steel pipes (adaptors for connections to copper pipes, etc are given separately)

Descriptions of WC pans, slop hoppers, etc shall be deemed to include for joints to soil pipes (pan connectors are separately measured) and shall have straight or side outlets and "P" or "S" traps as necessary

Description of waste unions shall be deemed to include rubber or vulcanite plugs and chains fixed to fittings.

As-built drawings:

Where required, the Contractor shall prepare an updated set of as-built drawings. At completion of the contract the Contractor shall hand these drawings to the Project Manager for reproducing onto the originals for handing over to the Employer (provision for allowance of as-built drawings elsewhere)

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Alterations to 6 x 4 Enviro-loo Learners Ablutions
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Proprietary items:

Where applicable, the manufacturers' names or product catalogue titles are given in sub-headings preceding the items

Note that the manufacturers names specified in this trade are for the purposes of competitive pricing.

Prices are to be based on the specific products/articles specified.

On request, returnable samples are to be provided to the Project Manager for consideration

SANITARY FITTINGS

"Vaal" or similar approved:

1	455 x 290mm "Hibiscus" 7050 wash hand basin bolted to wall	No	16	
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2	Flat back urinal overall size 295 x 315 x 415mm high with 40mm chromium plated domical grating (Code 878720) and top inlet spreader (Code 8543) with two hanger brackets with flushmaster junior (Code 812720) hung to wall	No	8	
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Supply and install "Enviroloo systems" or similar approved:

3	"Enviro Loo System FG-1040 STDCA/A Standard" strictly in accordance with manufacturers instructions, unit comprising of top unit and two x louvered inlets (PL.1), drying plate (PL.2), two x air inlets (PL.3), toilet pan, seat and lid (PL.4), 3500mm long outlet vent pipe (PL.5), ventilation extraction unit (PL.6) fixed to wall with vent wall bracket (PL.7), 1 bag mounting screws and organic starter, enzyme and toilet cleaner (PL.8) including all necessary interconnector piping between multiple tanks, emergency outlet piping, etc	No	23	
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**Construction of Water, Sanitation and Fencing
Tshilwavisuku Primary School**

4	"Enviro Loo Urinal Evaporative Tank System code FG-862B " strictly in accordance with manufacturers instructions, unit comprising of urinal evaporative tank (PL.1), urinal bowl (PL.5), 3500mm long outlet vent pipe (PL.3), ventilation extraction unit (PL.3) fixed to wall with vent wall bracket (PL.4), 1 bag mounting screws and organic starter, enzyme and toilet cleaner (PL.8) including all necessary piping, traps, etc	No	9		
	<u>Precast concrete wash trough:</u>				
5	Standard SABS approved Pre-Cast Concrete Double Wash Trough, 1080 x 650 x 850mm high with support legs fitted with standard 3/4 Brass Garden Taps, including all necessary pipework including soak away approximately 10 meters away from the wash trough, sized at 1000 x 1000 x 1000mm covered with "bidim" complete etc	No	6		
	<u>TRAPS, ETC</u>				
	<u>"Cobra Watertech" or similar approved:</u>				
6	50mm Code 365 CP bottle trap	No	9		
	<u>TAPS, VALVES, ETC</u>				
	<u>"Cobra Watertech" or similar approved:</u>				
7	19mm chrome plated push button taps to wash troughs	No	6		
8	15mm Code 232/350 FCP angle regulating valve and flexible connection pipe	No	23		
9	15mm Code 503-21CP elbow action pillar tap	No	16		
	<u>SANITARY PLUMBING</u>				
	<u>uPVC pipes:</u>				
10	50mm Pipes	m	100		
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	Section No. 3 Alterations to 6 x 4 Enviro-loo Learners Ablutions Bill No. 8 PLUMBING AND DRAINAGE Diatho Consulting (PTY) LTD				R

**Construction of Water, Sanitation and Fencing
Tshilwavisuku Primary School**

11	110mm Pipes	m	100		
12	50mm Diameter pipe laid in and including trenches not exceeding 1m deep	m	103		
13	Ditto, but 110mm diameter	m	103		
	<u>Extra over uPVC pipes for fittings:</u>				
14	50mm Bend	No	12		
15	50mm Junction	No	10		
16	50mm Junction with cleaning eye and lid	No	10		
17	110mm Straight pan connector	No	5		
18	110mm Bend	No	20		
19	110mm Junction	No	10		
20	110mm Reducing junction	No	10		
21	110mm Access bend	No	10		
22	110mm Double junction	No	10		
23	110mm "GI Two-way" vent valve	No	5		
	<u>Testing:</u>				
24	Testing waste pipe system			Item	
	<u>WATER SUPPLIES</u>				
	<u>Class 16 uPVC pressure pipes with solvent welded joints:</u>				
25	32mm Pipes laid in and including trenches not exceeding 1m deep	m	20		
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	Section No. 3 Alterations to 6 x 4 Enviro-loo Learners Ablutions Bill No. 8 PLUMBING AND DRAINAGE Diatho Consulting (PTY) LTD				

Construction of Water, Sanitation and Fencing
Tshilwavisuku Primary School

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PLUMBING AND DRAINAGE

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Alterations to 6 x 4 Enviro-loo Learners Ablutions

Bill No. 8

PLUMBING AND DRAINAGE

Diatho Consulting (PTY) LTD

Item No	Quantity	Rate	Amount
<p><u>SECTION NO. 3</u></p>			
<p><u>BILL NO.9</u></p>			
<p><u>GLAZING</u></p>			
<p>-----</p>			
<p><u>PREAMBLES</u></p>			
<p>The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p>			
<p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles</p>			
<p><u>SUPPLEMENTARY PREAMBLES</u></p>			
<p><u>Float glass:</u></p>			
<p>The term "float glass" is used for monolithic annealed glass</p>			
<p><u>Laminated glass:</u></p>			
<p>Laminated glass to have polyvinyl butyral (PVB) interlayer(s)</p>			
<p>-----</p>			
<p><u>GLAZING TO STEEL WITH PUTTY</u></p>			
<p>Carried to Collection</p>			
<p>Section No. 3 Alterations to 6 x 4 Enviro-loo Learners Ablutions Bill No. 9 GLAZING Diatho Consulting (PTY) LTD</p>			
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6,38mm Obscure safety glass:

1 Panes not exceeding 0,1m²

m2

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Alterations to 6 x 4 Enviro-loo Learners Ablutions
Bill No. 9
GLAZING
Diatho Consulting (PTY) LTD

Construction of Water, Sanitation and Fencing
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GLAZING

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Bill No. 9

GLAZING

Diatho Consulting (PTY) LTD

Item No	Quantity	Rate	Amount
<p><u>SECTION NO. 3</u></p> <p><u>BILL NO.10</u></p> <p><u>PAINTWORK</u></p> <p style="text-align: center;">-----</p> <p><u>PREAMBLES</u></p> <p>The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p> <p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>PREPARATORY WORK TO EXISTING WORK</u></p> <p><u>Previously painted plastered surfaces:</u></p> <p>Surfaces shall be thoroughly washed down and allowed to dry completely before any paint is applied. Blistered or peeling paint shall be completely removed and minor cracks shall be opened, filled with a suitable filler and finished smooth</p> <p><u>Previously painted metal surfaces:</u></p> <p>Surfaces shall be thoroughly rubbed and cleaned down. Blistered or peeling paint shall be completely removed down to bare metal</p>			
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<p>Section No. 3 Alterations to 6 x 4 Enviro-loo Learners Ablutions Bill No. 10 PAINTWORK Diatho Consulting (PTY) LTD</p>			

Previously painted wood surfaces:

Surfaces shall be thoroughly cleaned down. Blistered or peeling paint shall be completely removed and cracks and crevices shall be primed, filled with suitable filler and finished smooth

PAINT SPECIFICATIONS

All painting shall be done in accordance with "Plascon", etc specifications, unless otherwise described

COLOURS

When staining timber, the resultant colour or shade must be to the complete satisfaction of the Project Manager before any overcoating or preservative is applied

Paintwork is classified in the following different colour groups: "White", "Pastel", "Deep" and "Transparent" in accordance with the "Natural Colour System" (NCS) adopted by the SA National Standards
Unless otherwise described, all paintwork shall be deemed to be classified in the "White" colour group

PAINTWORK, ETC TO NEW WORK

ON WOOD SURFACES

One coat primer, one coat alkyd based universal undercoat and two coats superior quality universal enamel paint, on:

1	Doors	m2	107
2	Extra over for paintwork in the "Pastel" colour group	m2	107

PAINTWORK, ETC TO PREVIOUSLY PAINTED WORK

ON FIBRE-CEMENT BOARD SURFACES

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PAINTWORK
Diatho Consulting (PTY) LTD

One coat extremely durable UV-resistant washable
pure acrylic paint, on work in sound condition:

3 Fascias and barge boards

m2

36

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Alterations to 6 x 4 Enviro-loo Learners Ablutions
Bill No. 10
PAINTWORK
Diatho Consulting (PTY) LTD

Construction of Water, Sanitation and Fencing
Tshilwavisuku Primary School

Section No. 3

Bill No. 10

PAINTWORK

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Bill No. 10

PAINTWORK

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1	ALTERATIONS	58	
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Item No	Quantity	Rate	Amount
<p><u>SECTION NO. 4</u></p>			
<p><u>BILL NO.1</u></p>			
<p><u>EARTHWORKS (PROVISIONAL)</u></p> <p>-----</p>			
<p><u>PREAMBLES</u></p>			
<p>The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be included in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p>			
<p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles</p>			
<p><u>SUPPLEMENTARY PREAMBLES</u></p>			
<p><u>Nature of ground</u></p>			
<p>The nature of the ground is assumed to be loose sandy material, therefore "earth", but possibly interspersed with "hard rock" or "soft rock".</p>			
<p>The nature of the ground is assumed to be gravel, therefore "earth", but possibly interspersed with "soft rock".</p>			
<p>The nature of the ground is assumed to be silty clay with loose river boulders varying in size up to approximately 450mm diameter, therefore "earth", but possibly interspersed with "hard rock".</p>			
<p>Carried to Collection</p>			
<p>Section No. 4 SFD4 Female Educators Ablutions & Disabled Bill No. 1 EARTHWORKS Diatho Consulting (PTY) LTD</p>			
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Trial holes indicate that the nature of the ground is silty clay to a depth of approximately 500mm with fine to medium loose sandy material below, therefore "earth". The trial holes also indicate that the water table is at a maximum depth of approximately 1000mm.

A soils investigation has been carried out on site by the engineer and the report is annexed to these bills of quantities. Descriptions of excavations shall be deemed to include all ground conditions classifiable as "earth" described in the above report and where conditions of a more difficult character are indicated these are separately measured

Subterranean water:

No subterranean water is expected

Should the Contractor however, encounter any subterranean water on the site, he shall immediately notify the Principal Agent thereof and submit recommendations for keeping the works free from subterranean water together with all costs involved therewith

Excavation for working space in rock:

Notwithstanding clause 10 measurement rule 27 of the Standard System of Measuring Building Work, excavation for working space in material of a more different character (e.g. soft or hard rock) will be measured in cubic metres to the extent executed and given as "extra over" bulk excavation or trench and hole excavation as the case may be

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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Filling

Notwithstanding the reference to prescribed multiple handling in clause 1 page 10 of the Standard System (7th Edition, 2015) of Measuring Building Work, prices for filling and backfilling shall include for all selection and any multiple handling of material

Testing:

Prices for backfilling to trenches and holes only are to include for all necessary density tests in accordance with SANS 1200D

EXCAVATIONS, FILLING, ETC

EXCAVATIONS, ETC

Excavation in earth not exceeding 2m deep:

1	Reduced levels under floors	m3	3
2	Trenches	m3	9
3	Trenches and holes for thickening under surface beds, etc	m3	1

Extra over trench and hole excavations in earth for excavation in:

4	Soft rock	m3	1
5	Hard rock	m3	0.4

Extra over all excavations for carting away:

6	Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor	m3	10
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Risk of collapse of excavations:

7	Sides of trench and hole excavations not exceeding 1,5m deep	m2	25
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<p><u>PREAMBLES</u></p>			
<p>The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p>			
<p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles</p>			
<p><u>SUPPLEMENTARY PREAMBLES</u></p>			
<p><u>Cost of tests:</u></p>			
<p><u>Breeze concrete:</u></p>			
<p>Breeze concrete shall consist of twelve parts clean dry furnace ash, free from coal or other foreign matter, to one part cement (1:12); the ash graded up to particles which will pass a 16,5mm ring from a minimum which fails to pass a 4,75mm mesh. The finer materials from the screening are to be first mixed with the cement into a mortar and the ash added afterwards and thoroughly incorporated</p>			
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Lightweight concrete:

Lightweight concrete shall have a density of 600kg/m³ for the top 50mm and 400kg/m³ for the remaining thickness. The minimum thickness at outlets, channels, etc shall be 50mm

Waterproof concrete:

"Waterproof concrete" shall have the same properties as normal concrete, but the following shall be modified to make the the concrete more water-tight:

1. a cement/water ratio of minimum 1.9 and maximum 2.1
2. minimum OPC content of 300kg/m³
3. Polypropolene micro fibres added to concrete at rate of 182 million per m³

Formwork:

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

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**UNREINFORCED CONCRETE CAST AGAINST
EXCAVATED SURFACES**

15MPa/19mm concrete:

1	Surface blinding under footings and bases	m3	1
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**REINFORCED CONCRETE CAST AGAINST
EXCAVATED SURFACES****30MPa/19mm concrete:**

Strip footings	m3	3
Surface beds on waterproofing	m3	3

TEST BLOCKS

2	Making and testing 150 x 150 x 150mm concrete strength test cube (Provisional)	No	2
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CONCRETE SUNDRIES**Finishing top surfaces of concrete smooth with a steel trowel:**

3	Surface beds, slabs, etc	m2	22
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ROUGH FORMWORK (DEGREE OF ACCURACY III)**Rough formwork to sides:**

4	Edges, risers, ends and reveals not exceeding 300mm high or wide	m	42
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MOVEMENT JOINTS, ETC**Expansion joints with 10mm softboard between vertical concrete and brick surfaces:**

5	Not exceeding 300mm high to edges of surface beds	m	49
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Saw-cut joints:

6	6 x 10mm Saw-cut joints in top of concrete	m	73
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REINFORCEMENT (PROVISIONAL)

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Mild steel reinforcement to structural concrete work:

7	Mild steel bar reinforcement (8 to 40mm diameter bars)	t	0.08
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High tensile steel reinforcement to structural concrete work:

8	High tensile steel bar reinforcement (8 to 40mm diameter bars)	t	0.19
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Fabric reinforcement:

9	Type 395 fabric reinforcement in concrete surface beds, slabs, etc	m2	22
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<p>-----</p> <p><u>PREAMBLES</u></p> <p>The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p> <p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>BRICKWORK</u></p> <p><u>General:</u></p> <p>Non-load bearing brickwork is to be built to full height less 20mm gap next to the ceiling and is to be left for 14 days before grouting up in 1:3 cement mortar.</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>			
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Hollow walls:

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

Bagged and sealed walls:

Walls in two skins described as "bagged and sealed" shall be deemed to include having the outer face of the inner skin bagged with 1:6 cement and sand mixture and sealed with two coats bitumen emulsion waterproofing coating

Face bricks :

Bricks shall be ordered timeously to obtain uniformity in size and colour

All face brickwork shall be regularly cleaned down as the work proceeds and shall be protected as necessary by an approved method

Pointing:

Descriptions of recessed pointing to fair face brickwork and face brickwork shall be deemed to include smooth floated square recessed, hollow recessed, weathered pointing, etc

FOUNDATIONS (PROVISIONAL)

Brickwork of NFP bricks (14 MPa nominal compressive strength) in class 1 mortar:

1	One brick walls	m2	11
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2,5mm Brickwork reinforcement:

2	150mm Wide reinforcement built in horizontally	m	62
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FACE BRICKWORK

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	<u>Face bricks (Allow a Prime Cost Amount of R5 500.00/1000 bricks delivered to site excluding VAT) pointed with flush horizontal and vertical joints</u>			
3	Extra over brickwork for face brickwork	m2	4	
	<u>SUPERSTRUCTURE</u>			
	<u>Brickwork of NFX bricks (14 MPa nominal compressive strength) in class II mortar in loadbearing walls etc:</u>			
4	One brick walls	m2	58	
	<u>BRICKWORK SUNDRIES</u>			
	<u>Joint forming material in movement joints:</u>			
5	12mm Fibre board built in vertically through brick walls	m	52	
	<u>2,5mm Brickwork reinforcement:</u>			
6	75mm Wide reinforcement built in horizontally	m	68	
7	150mm Wide reinforcement built in horizontally	m	192	
	<u>Prestressed fabricated concrete lintels, including necessary temporary supports:</u>			
8	110 x 75mm Lintels in lengths not exceeding 3m long	m	30	
	<u>FACE BRICKWORK</u>			
	<u>Face bricks (Allow a Prime Cost Amount of R5 500.00/1000 bricks delivered to site excluding VAT) pointed with flush horizontal and vertical joints</u>			
9	Half brick wall faced on both sides	m2	16	
10	Extra over brickwork for face brickwork	m2	116	
11	Extra over brickwork for brick-on-edge header course lintel pointed on face and 120mm soffit	m	7	
12	Fair raking cutting	m	10	
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13	<p><u>Brick-on-edge header course coping, sills, etc. of face</u> <u>bricks (Allow a Prime Cost Amount of R5 500.00/1000 bricks delivered to site excluding VAT)</u> <u>pointed with recessed joints on all exposed faces</u></p> <p>150mm Wide sills set sloping and slightly projecting</p> <p style="text-align: right;">Carried to Collection</p> <p>Section No. 4 SFD4 Female Educators Ablutions & Disabled Bill No. 3 MASONRY Diatho Consulting (PTY) LTD</p>	m	6		
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DAMPPROOFING OF WALLS AND FLOORS**One layer 375 micron embossed polyethylene dampproof course (SANS 952-1985 type B):**

1	In walls	m2	60
2	In walls vertically at reveals	m2	3

One layer 250 micron green polyethylene waterproof sheeting (SANS 952-1985 type C) sealed at laps with PVC self-adhesive tape:

3	Under surface beds	m2	27
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JOINT SEALANTS ETC**Two- part grey polysulphide sealing compound including backing cord, bond breaker, primer, etc**

4	6 x 10mm In saw cut joints in floors	m	73
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White silicone sealing compound including backing cord, bond breaker, primer, etc

5	6 x 10mm In expansion joints in floors, including raking out expansion joint filler as necessary [LI]	m	49
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<p><u>ROOF COVERINGS</u></p>			

<p><u>PREAMBLES</u></p>			
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<p><u>SUPPLEMENTARY PREAMBLES</u></p>			
<p>Profiled metal roof sheeting and accessories shall be supplied with a 10 year guarantee and be installed by an approved installer</p>			
<p>All fixing holes shall be drilled and not punched</p>			
<p>Roof covering accessories shall be manufactured from the same material as used for roof covering</p>			

<p><u>PROFILED METAL SHEETING AND ACCESSORIES</u></p>			
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0,6 mm "Klip-Lok 406" or similar approved light industrial Z275 spelter galvanised steel sheeting, with "Classicoat" finish one side and half coat "Classicoat Grey" other side, and accessories fixed to timber purlins or rails at approximately 1500mm centres:

1	Roof coverings with pitch not exceeding 25 degrees	m2	36
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Accessories:

2	Apex flashings 462mm girth	m	7
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ROOF AND WALL INSULATION

"Sisalation 405" or similar approved residential grade aluminium foil based insulation:

3	Insulation sheeting laid taut over purlins at approximately 1000mm centres and fixed concurrent with roof covering with minimum 150mm stapled laps, including galvanised steel straining wires at not exceeding 400mm centres and double-sided tape at edges where required	m2	36
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<u>CARPENTRY AND JOINERY</u>			

<u>PREAMBLES</u>			
<p>The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p>			
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<u>SUPPLEMENTARY PREAMBLES</u>			
<u>Fixing:</u>			
<p>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" shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 500mm centres, and where described as "bolted", the bolts have been given separately elsewhere</p>			
<u>Joinery:</u>			
<p>Descriptions of frames shall be deemed to include frames, transomes, rails, etc</p>			
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Descriptions of hardwood joinery shall be deemed to include sinking and pelleting heads and nuts of bolts

Particle board

All particle board shall comply with SANS 50312 having the required marking as per SANS 50312/EN 312

Decorative thermosetting plastic laminate covering:

Laminate covering shall be glued under pressure and edge strips of same shall be butt jointed at junctions with adjacent similar finish

Sizes:

Sizes are nominal and the Contractor shall make allowance in his prices for minor variances in stated finished sizes of timber doors, door members, door frames, architraves, etc

Prices

Prices for all joinery work are to include for general framing, housing and notching, arris rounded angles, glueing, blocking, planting on, screwing, adhesives, dowels, pellets, cross tongues, screws and nails and setting up complete and also for all square cutting and waste. Tops shall be secured with metal or hardwood buttons.

ROOFS, ETC

Sawn softwood grade 5:

1	38 x 114mm Wall plates bolted	m	14
2	38 x 114mm Rafters in lengths exceeding 3,9m and not exceeding 6,6m	m	46
3	50 x 76mm Purlins	m	46

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EAVES, VERGES, ETC**Medium density plain fibre-cement fascias and barge boards:**

4	19 x 235mm Fascias and barge boards, including aluminium H-profile jointing strips	m	17		
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DOORS, ETC**Solid chipcore flush doors with hardwood veneer, hung to steel frames:**

5	40mm Door 914 x 2032mm high (D3)	No	1		
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Wrought meranti doors hung to steel frames:

6	44mm Framed batten door 813 x 2032mm high of 44 x 150mm top rail and stiles, 22 x 150mm middle ledge and braces and 22 x 220mm bottom rail filled in with 22mm V-jointed one side boarding including 150mm undercut (D2)	No	4		
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7	44mm Framed batten door 813 x 2032mm high of 44 x 150mm top rail and stiles, 22 x 150mm middle ledge and braces and 22 x 220mm bottom rail filled in with 22mm V-jointed one side boarding and including weatherboard (D1)	No	1		
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<p><u>PREAMBLES</u></p>			
<p>The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p>			
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<p><u>SUPPLEMENTARY PREAMBLES</u></p>			
<p><u>Proprietary items:</u></p>			
<p>Where applicable, the manufacturers' names or product catalogue titles are given in sub-headings preceding the items</p>			
<p>Note that the manufacturers names specified in this trade are for the purposes of competitive pricing.</p>			
<p>Prices are to be based on the specific products/articles specified.</p>			
<p>On request, returnable samples are to be provided to the Project Manager for consideration</p>			
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Locks:

Notwithstanding Clause 2, Item 3 of the "Ironmongery" trade of the Standard System (7th Edition, 2015) of Measuring Building Work, descriptions of locks shall be deemed to include two keys per lock

Finishes to ironmongery:

Where applicable, finishes to ironmongery are indicated by suffixes in accordance with the following list:

- BS Satin bronze lacquered
- CH Chromium plated
- SC Satin chromium plated
- SE Silver enamelled
- GE Grey enamelled
- AN Anodised natural
- AS Anodised silver
- AB Anodised bronze
- AG Anodised gold
- ABL Anodised black
- PB Polished brass
- PL Polished and lacquered
- PT Epoxy coated
- SD Sanded
- BBS Brushed stainless steel

CATCHES, CABIN HOOKS, ETC

1	150mm Cabin hook and eye including 70 x 70 x 20mm chamfered hardwood block twice oiled and plugged	No	4	
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LOCKS

"Union Assa Abloy" or similar approved:

2	50mm Brass padlock	No	2	
3	Four lever lockset	No	2	
4	"Ref. CZ80941SC" Indicator bolt	No	4	

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HANDLES**"Union Assa Abloy" or similar approved:**

5	ASSA ABLOY Anodised Silver straight pull handle (Code: AL5515-300BBAS) with 300mm fixing centres	Pairs	2.0		
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PUSH PLATES AND KICK PLATES**"Union Assa Abloy" or similar approved:****1.2mm Thick satin finished "Union" stainless steel plates countersunk screwed along edges at not exceeding 200mm centres**

6	200 x 800mm Type "SS5089-200W" kicking plate	No	10		
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DOOR CLOSERS**"Dorma" or similar approved:**

7	"Dorma" TS73N/EN3-4 parallel arm door closer delayed closing-push side fitting	No	1		
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LETTERS, NAMEPLATES, ETC**"Dorma" or similar approved:**

8	DSS-131 Engraved "Female" information sign, plugged	No	1		
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9	DSS-133 Engraved "Disabled" information sign, plugged	No	1		
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SUNDRIES

10	25mm Diameter wall mounted door stop plugged	No	6		
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"Vaal Paragon" or similar approved

11	32mm Type 9 back grab rail 800mm long plugged	No	1
12	32mm Type 8 side grab rail 900mm girth plugged	No	1

"Kimberley-Clark" or similar approved:

13	"Ref. SQ2 code 405607B" white lockable toilet roll holder	No	5
14	Brushed stainless steel body, rust resistant, she bin, approximately 330 x 280 x 180mm etc	No	5

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Bill No. 7

IRONMONGERY

Diatho Consulting (PTY) LTD

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<p><u>SECTION NO. 4</u></p>			
<p><u>BILL NO.8</u></p>			
<p><u>METALWORK</u></p>			
<p><u>PREAMBLES</u></p>			
<p>The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p>			
<p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles</p>			
<p><u>SUPPLEMENTARY PREAMBLES</u></p>			
<p><u>Descriptions of bolts, anchors, etc:</u></p>			
<p>Descriptions of bolts shall be deemed to include nuts and washers</p>			
<p>Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork or concrete</p>			
<p>Items described as "holed for bolt(s)" shall be deemed to exclude the bolts, unless otherwise described</p>			
<p>Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 600mm centres</p>			
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Fixing:

Unless otherwise described, descriptions of items shall be deemed to include for fixing to brickwork or concrete

Where items are described as "bolted", the bolts are measured elsewhere as stated in clause N.7 of the Model Preambles

References:

References in descriptions of windows, doors, gates, etc refer to the respective types of windows, doors, etc detailed in the Architect's window schedules numbered

- 21111/FSPS/S005

and bound into the back of these bills of quantities

Tenderers are to price the following items in conjunction with the above Architect's drawings, etc and no claim arising from brevity of descriptions in these bills of quantities, of items shown on the Architect's drawings, etc shall be entertained

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STEEL GATES, SCREENS, ETC**Welded screens and gates, to brickwalls:**

1	Single gate and frame size to fit standard door, size 813 x 2032mm high	No	2
---	---	----	---

PRESSED STEEL DOOR FRAMES**1,6mm Double rebated frames suitable for half brick walls:**

2	Frame for door size 813 x 2032mm high	No	4
---	---------------------------------------	----	---

1,6mm Double rebated frames suitable for one brick walls:

3	Frame for door size 813 x 2032mm high	No	1
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4	Frame for door size 914 x 2032mm high	No	1
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STEEL WINDOWS, DOORS, ETC**Standard windows:**

5	Window type NE1, 533 x 654mm high (N1)	No	5
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6	Window type NE7, 1022 x 654mm high (N2)	No	3
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<p><u>BILL NO.9</u></p>			
<p><u>PLASTERING</u></p> <p>-----</p>			
<p><u>PREAMBLES</u></p>			
<p>The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p>			
<p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles</p>			
<p><u>SUPPLEMENTARY PREAMBLES</u></p>			
<p><u>Moisture tests:</u></p>			
<p>Before any finishes, coverings, etc are applied to screeds, plastering, etc or any other in-situ finish, moisture tests are to be carried out to the complete satisfaction of the Project Manager to ensure that these surfaces have the correct moisture content for the finish to be applied</p>			
<p><u>Labours, etc</u></p>			
<p>Labours such as fair, rounded and chamfered edges, trowel cuts, throats, V-joints, angles, etc shall be deemed to be included in the descriptions</p>			
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Sample Panels

A sample panel size 1m x1m, of each of the various plaster type wall and floor finishes in this contract, shall be prepared for the approval of the Project Manager and the cost of the sample panel(s) shall be deemed to be included in the overall costs of the relevant wall and floor finishes

GRANOLITHIC

Method:

The method to be used shall be either the monolithic method or the bonded method

Preparation:

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

Mix:

Unless otherwise described, granolithic shall attain a compressive strength of at least 41MPa. The coarse aggregate shall comply with SANS 1083 and shall generally be capable of passing a 10mm mesh sieve. Where the thickness of the granolithic exceeds 25mm, the size of the coarse aggregate shall be increased to the maximum size compatible with the thickness of the granolithic

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Panels:

Granolithic shall be laid in panels not exceeding 14m² for monolithic finishes, not exceeding 9,5m² for bonded finishes and not exceeding 6m² for all external granolithic. Wherever possible, panels shall be square but at no time should the length of the panel exceed 1,5 times its width

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

Laying:

Monolithic granolithic shall be applied to the partially set slab and thoroughly compacted and lightly wood floated to the required levels

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

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

Curing, seasoning and protection:

Granolithic shall be covered with clean hessian with waterproof building foil over and kept wet for at least seven days after laying

Colour:

Coloured granolithic shall be tinted with an approved colouring pigment mixed into a true and even colour

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TINTED WHITE CEMENT SCREEDS

Tinted screed shall be composed of one bag White Portland Cement and two wheelbarrows "Malmesbury" sand. Surfaces shall be finished with a steel trowel to leave a smooth finish and coated with two coats "Earthcote S.I. Floorcote" two-pack polyurethane floor sealer applied as per the manufacturer's recommendations

NOTE: Tinted screeds are to be strengthened with "Primal Eccos" acrylic polymer (15% of the water volume is to be substituted with the acrylic polymer during the mixing process)

Coarse sand is to be used for these screeds

All tinting, finishing, strengthening, etc are to be mixed, applied, etc strictly in accordance with the manufacturer's instructions

CEMENT PLASTER

Unless otherwise described, cement plaster shall be taken to mean Class 1 cement plaster i.e. 1:4 cement:sand plaster (common cement)

CEMENT SCREEDS TO CONCRETE

Cement screeds steel trowelled, on concrete:

1	30mm Thick to floors	m2	22
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FLOOR AND WALL SEALERS

Minimum two coats approved epoxy coat, on concrete:

2	On screed	m2	22
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<p><u>BILL NO.10</u></p>			
<p><u>PLUMBING AND DRAINAGE (PROVISIONAL)</u></p>			
<p><u>PREAMBLES</u></p>			
<p>The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p>			
<p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles</p>			
<p><u>SUPPLEMENTARY PREAMBLES</u></p>			
<p><u>Wire gratings:</u></p>			
<p>Descriptions of gutter outlets, etc shall be deemed to include wire balloon gratings</p>			
<p><u>Stormwater channels:</u></p>			
<p>Descriptions of channels shall be deemed to include necessary excavation, surface preparation, compaction, etc and disposal of surplus material on site</p>			
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French drains:

Descriptions of french drains shall be deemed to include excavation, stone filling graded from 300mm diameter at bottom to 75mm diameter at top, approved geofabric filter blanket over stone, 300mm earthfilling over and disposal of surplus material on site

Septic tanks:

Descriptions of proprietary type septic tanks shall be deemed to include excavation, bedding and jointing, concrete base slabs, jointing to drains and backfilling, compaction, etc all in accordance with the manufacturer's instructions and disposal of surplus material on site

Stainless steel basins, sinks, wash troughs, urinals, etc:

Stainless steel for economy basins, domestic sinks and worktops shall be Type 430 (17/0)

Stainless steel for urinals, basins, quality sinks, wash troughs, institutional equipment, etc shall be Type 304 (18/8)

Stainless steel for laboratory sinks, photographic equipment, etc shall be Type 316 (18/8)

Units shall have standard aprons on all exposed edges and tiling keys against walls where applicable

Sealing of edges:

Outer edges of sinks, basins, baths, urinals, etc are to be sealed against adjacent surfaces with approved mildew resistant silicone sealant and prices must include therefor

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uPVC pipes and fittings:

Sewer and drainage pipes and fittings shall be jointed and sealed with butyl rubber rings

Soil, waste and vent pipes and fittings shall be solvent weld jointed or sealed with butyl rubber rings

uPVC pressure pipes and fittings:

Pipes of 50mm diameter and smaller shall be plain ended with solvent welded uPVC loose sockets and fittings

Pipes of 63mm diameter and greater shall have sockets and spigots with push-in type integral rubber ring joints. Bends shall be uPVC and all other fittings shall be cast iron, all with similar push-in type joints

High density polyethylene (HDPE) pipes and fittings:

Pipes shall be type IV and of the class specified with "Plasson" or "Alprene" compression fittings

"Polycop" polypropylene pipes:

Polypropylene pipes 54mm diameter and smaller shall be seamless copper coloured Class 16 pipes jointed with "Fast-fuse" heat welded thermoplastic or where so described "Polylock" compression fittings

Pipes shall be firmly fixed to walls, etc with coloured nylon snap-in pipe clips with provision for accommodating thermal movement and jointed and fixed strictly in accordance with the manufacturer's instructions

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Copper pipes:

Pipes shall be hard drawn and half-hard "Maksal" pipes of the class described. Class 0 (thin walled hard drawn) pipes shall not be bent. Class 1 (thin walled half-hard), Class 2 (half-hard) and Class 3 (heavy walled half-hard) pipes shall only be bent with benders with inner and outer formers. Fittings to copper waste, vent and anti-syphon pipes, capillary solder fittings and compression fittings shall be "Cobra Watertech" type. Capillary solder fittings shall comply with ISO 2016. Only compression fittings shall be used in walls or in ground

Copper pipes are to be installed in accordance with the latest revision of the Code of Practice for Copper Plumbing soldering techniques. Flux, solder, etc to be strictly in accordance with the manufacturer's requirements with special attention to copper flux composition

Reducing fittings:

Where fittings have reducing ends or branches they are described as "reducing". In the case of pipes with diameters not exceeding 60mm, only the largest end or branch size is given. Should the Contractor wish to use other fittings and bushes or reducers he may do so on the understanding that no claim in this regard will be entertained. In the case of pipes with diameters exceeding 60mm, all sizes are given and no claims for extra bushes, reducers, etc will be entertained

Fixing of pipes:

Unless specifically otherwise stated, descriptions of pipes shall be deemed to include fixing to walls, etc casting in, building in or suspending not exceeding 1m below suspension level

Paper wrapping to pipes:

Pipes chased into brickwork must be wrapped with two layers of stout brown paper tied with wire. Rates are to include for wrapping around joints and fittings

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Disinfection of water pipework:

Water pipework is to be disinfected at completion in accordance with SANS 1200L (provision for disinfection elsewhere)

"Densyl" petrolatum anti-corrosion tape as manufactured by Denso SA (Pty) Ltd.:

Pipes to be taped shall be coated with the appropriate primer and the tape shall be applied in the appropriate widths and with suitable overlaps

Couplings and fittings to pipes shall be taped in strict accordance with the manufacturer's instructions including mastic, tape, "Layflat" sheeting, securing of same, etc

Prices for wrapping of pipes shall include for all work as described to couplings in the length

Laying, backfilling, bedding, etc of pipes:

Pipes shall be laid and bedded in accordance with manufacturers' instructions and trenches shall be carefully backfilled

Where no manufacturers' instructions exist, pipes shall be laid in accordance with Clauses 5.1 and 5.2 of each of the following:

- SANS 1200L : Medium-pressure pipelines
- SANS 1200LD : Sewers
- SANS 1200LE : Stormwater drainage

Pipe trenches, etc shall be backfilled in accordance with Clauses 3, 5.5, 5.6, 5.7 and 7 of SANS 1200DB : Earthworks (Pipe trenches)

Pipes shall be bedded in accordance with Clauses 3.1 to 3.4.1, 5.1 to 5.3 and 7 of SANS 1200LB : Bedding (Pipes)

Unless otherwise described, bedding of rigid pipes shall be Class B bedding

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General:

Descriptions of cast iron roof outlets shall be deemed to include joints to pipes and casting into concrete (adaptors for joints to PVC pipes, etc are given separately)

Descriptions of overflow pipes where measured in number, shall be deemed to include joints to cisterns and splay cut ends

Descriptions of pipes laid in and including trenches and of inspection chambers, catchpits, etc shall be deemed to include excavation, bedding, backfilling, compaction to a minimum of 98% Mod AASHTO density and disposal of surplus material on site

Descriptions of service pipes and flexible connecting pipes shall be deemed to include connections to taps, cisterns, etc and to steel pipes (adaptors for connections to copper pipes, etc are given separately)

Descriptions of WC pans, slop hoppers, etc shall be deemed to include for joints to soil pipes (pan connectors are separately measured) and shall have straight or side outlets and "P" or "S" traps as necessary

Description of waste unions shall be deemed to include rubber or vulcanite plugs and chains fixed to fittings.

As-built drawings:

Where required, the Contractor shall prepare an updated set of as-built drawings. At completion of the contract the Contractor shall hand these drawings to the Project Manager for reproducing onto the originals for handing over to the Employer (provision for allowance of as-built drawings elsewhere)

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Proprietary items:

Where applicable, the manufacturers' names or product catalogue titles are given in sub-headings preceding the items

Note that the manufacturers names specified in this trade are for the purposes of competitive pricing.

Prices are to be based on the specific products/articles specified.

On request, returnable samples are to be provided to the Project Manager for consideration

RAINWATER DISPOSAL

0,6mm Galvanised sheet steel gutters and rainwater pipes with powder coated finish on outside to match roof sheeting colour:

1	150 x150mm Box gutters	m	7
2	100 x 75mm Rainwater pipes	m	5
3	Extra over gutter for stopped end	No	2
4	Extra over gutter for outlet for 100 x 75mm pipe	No	2
5	Extra over rainwater pipe for bend	No	2
6	Extra over rainwater pipe for shoe	No	2
7	Extra over rainwater pipe for eaves or plinth offset	No	2

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SANITARY FITTINGS**"Vaal" or similar approved:**

8	455 x 290mm "Hibiscus" 7050 wash hand basin bolted to wall	No	6
9	"Daisy Elite" 772403 close-coupled WC suite comprising pan with double flap heavy duty thermoset seat (Code: 8531Z0) and matching 9 litre cistern	No	4
10	"Pearl Paraplegic" 7300SC paraplegic WC suite with lid, fittings, purpose made CP side flush lever and purpose made double flap white epoxy painted wooden seat	No	1

TRAPS, ETC**"Cobra Watertech" or similar approved:**

11	50mm Code 365 CP bottle trap	No	6
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TAPS, VALVES, ETC**"Cobra Watertech" or similar approved:**

12	15mm Code 232/350 FCP angle regulating valve and flexible connection pipe	No	11
13	15mm Code FPT2A1RO-OGP01 "Roma" basin tap with waste union	No	5
14	15mm Code 503-21CP elbow action pillar tap	No	1

SANITARY PLUMBING**uPVC pipes:**

15	50mm Pipes	m	30
16	110mm Pipes	m	25

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17	50mm Diameter pipe laid in and including trenches not exceeding 1m deep	m	39		
18	Ditto, but 110mm diameter	m	33		
	<u>Extra over uPVC pipes for fittings:</u>				
19	50mm Bend	No	12		
20	50mm Junction	No	12		
21	50mm Junction with cleaning eye and lid	No	12		
22	110mm Straight pan connector	No	5		
23	110mm Bend	No	10		
24	110mm Junction	No	10		
25	110mm Reducing junction	No	15		
26	110mm Access bend	No	5		
27	110mm Double junction	No	15		
28	110mm "GI Two-way" vent valve	No	5		
	<u>Testing:</u>				
29	Testing waste pipe system			Item	
	<u>WATER SUPPLIES</u>				
	<u>Class 1 copper pipes with capillary couplings:</u>				
30	15mm Pipe fixed to walls, in chases, etc	m	33		
31	Ditto, but 22mm diameter	m	55		
	<u>Extra over Class 1 copper pipes for capillary fittings:</u>				
32	15mm Fittings	No	55		
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6,38mm Obscure safety glass:

1 Panes not exceeding 0,1m²

m2

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GLAZING
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GLAZING

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<p><u>SECTION NO. 4</u></p>			
<p><u>BILL NO.12</u></p>			
<p><u>PAINTWORK</u></p>			
<p>-----</p>			
<p><u>PREAMBLES</u></p>			
<p>The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p>			
<p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles</p>			
<p><u>SUPPLEMENTARY PREAMBLES</u></p>			
<p><u>PREPARATORY WORK TO EXISTING WORK</u></p>			
<p><u>Previously painted plastered surfaces:</u></p>			
<p>Surfaces shall be thoroughly washed down and allowed to dry completely before any paint is applied. Blistered or peeling paint shall be completely removed and minor cracks shall be opened, filled with a suitable filler and finished smooth</p>			
<p><u>Previously painted metal surfaces:</u></p>			
<p>Surfaces shall be thoroughly rubbed and cleaned down. Blistered or peeling paint shall be completely removed down to bare metal</p>			
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Previously painted wood surfaces:

Surfaces shall be thoroughly cleaned down. Blistered or peeling paint shall be completely removed and cracks and crevices shall be primed, filled with suitable filler and finished smooth

PAINT SPECIFICATIONS

All painting shall be done in accordance with "Plascon", etc specifications, unless otherwise described

COLOURS

When staining timber, the resultant colour or shade must be to the complete satisfaction of the Project Manager before any overcoating or preservative is applied

Paintwork is classified in the following different colour groups: "White", "Pastel", "Deep" and "Transparent" in accordance with the "Natural Colour System" (NCS) adopted by the SA National Standards
Unless otherwise described, all paintwork shall be deemed to be classified in the "White" colour group

PAINTWORK, ETC TO NEW WORK

ON FIBRE-CEMENT BOARD SURFACES

One coat alkali resistant primer and two coats superior quality acrylic emulsion paint for interior and exterior use, on:

1	Fascias and barge boards, including priming metal jointing strips	m2
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METAL SURFACES WITH

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PAINTWORK
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One coat alkyd based zinc phosphate primer and two coats premium quality polyurethane enamel paint, on steel:

2	Door frames	m2	11
3	Windows	m2	7
4	Gates, grilles, burglar screens, balustrades, etc (both sides measured over the full flat area)	m2	7
5	Extra over for paintwork in the "Deep" colour group	m2	26

ON WOOD SURFACES**One coat primer, one coat alkyd based universal undercoat and two coats superior quality universal enamel paint, on:**

6	Doors	m2	21
7	Roof timbers at eaves and verges	m2	30
8	Extra over for paintwork in the "Deep" colour group	m2	51

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PAINTWORK

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<p><u>SECTION NO. 5</u></p>			
<p><u>BILL NO.1</u></p>			
<p><u>EARTHWORKS (PROVISIONAL)</u></p> <p>-----</p>			
<p><u>PREAMBLES</u></p>			
<p>The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be included in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p>			
<p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles</p>			
<p><u>SUPPLEMENTARY PREAMBLES</u></p>			
<p><u>Nature of ground</u></p>			
<p>The nature of the ground is assumed to be loose sandy material, therefore "earth", but possibly interspersed with "hard rock" or "soft rock".</p>			
<p>The nature of the ground is assumed to be gravel, therefore "earth", but possibly interspersed with "soft rock".</p>			
<p>The nature of the ground is assumed to be silty clay with loose river boulders varying in size up to approximately 450mm diameter, therefore "earth", but possibly interspersed with "hard rock".</p>			
<p>Carried to Collection</p>			
<p>Section No. 5 SF5 Female Educator Ablutions Bill No. 1 EARTHWORKS Diatho Consulting (PTY) LTD</p>			
			R

Trial holes indicate that the nature of the ground is silty clay to a depth of approximately 500mm with fine to medium loose sandy material below, therefore "earth". The trial holes also indicate that the water table is at a maximum depth of approximately 1000mm.

A soils investigation has been carried out on site by the engineer and the report is annexed to these bills of quantities. Descriptions of excavations shall be deemed to include all ground conditions classifiable as "earth" described in the above report and where conditions of a more difficult character are indicated these are separately measured

Subterranean water:

No subterranean water is expected

Should the Contractor however, encounter any subterranean water on the site, he shall immediately notify the Principal Agent thereof and submit recommendations for keeping the works free from subterranean water together with all costs involved therewith

Excavation for working space in rock:

Notwithstanding clause 10 measurement rule 27 of the Standard System of Measuring Building Work, excavation for working space in material of a more different character (e.g. soft or hard rock) will be measured in cubic metres to the extent executed and given as "extra over" bulk excavation or trench and hole excavation as the case may be

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

Carried to Collection

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Bill No. 1
EARTHWORKS
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Filling

Notwithstanding the reference to prescribed multiple handling in clause 1 page 10 of the Standard System (7th Edition, 2015) of Measuring Building Work, prices for filling and backfilling shall include for all selection and any multiple handling of material

Testing:

Prices for backfilling to trenches and holes only are to include for all necessary density tests in accordance with SANS 1200D

EXCAVATIONS, FILLING, ETC

EXCAVATIONS, ETC

Excavation in earth not exceeding 2m deep:

1	Reduced levels under floors	m3	2
2	Trenches	m3	9
3	Trenches and holes for thickening under surface beds, etc	m3	1

Extra over trench and hole excavations in earth for excavation in:

4	Soft rock	m3	1
5	Hard rock	m3	0.4

Extra over all excavations for carting away:

6	Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor	m3	9
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Risk of collapse of excavations:

7	Sides of trench and hole excavations not exceeding 1,5m deep	m2	24
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Keeping excavations free of water:

- 8 Keeping excavations free of all water other than
subterranean water

Item

FILLING ETC**Earth filling obtained from the excavations and/or
prescribed stock piles on site, compacted to 93%
Mod AASHTO density:**

- 9 Backfilling to trenches, holes, etc

m3

3

**G5 filling material supplied by the contractor,
compacted to 95% Mod AASHTO density:**

- 10 Under floors, steps, pavings, etc

m3

2

Compaction of surfaces:

- 11 Compaction of ground surface under floors etc including
scarifying for a depth of 150mm, breaking down
oversize material, adding suitable material where
necessary and compacting to 91% Mod AASHTO
density

m2

22

Prescribed density tests on filling:

- 12 "Modified AASHTO Density" test

No

8

SOIL POISONING**Soil insecticide in accordance with SANS 5859:**

- 13 Soil insecticide (protection against termites) applied as
specified under floors, etc including forming and
poisoning shallow furrows against foundation walls, etc
filling in furrows and ramming

m2

22

- 14 To bottoms and sides of trenches, etc

m2

26

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Section No. 5
SF5 Female Educator Ablutions
Bill No. 1
EARTHWORKS
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Construction of Water, Sanitation and Fencing
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EARTHWORKS

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Item No	Quantity	Rate	Amount
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<p><u>BILL NO.2</u></p>			
<p><u>CONCRETE, FORMWORK AND REINFORCEMENT</u></p>			
<p><u>PREAMBLES</u></p>			
<p>The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p>			
<p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles</p>			
<p><u>SUPPLEMENTARY PREAMBLES</u></p>			
<p><u>Cost of tests:</u></p>			
<p><u>Breeze concrete:</u></p>			
<p>Breeze concrete shall consist of twelve parts clean dry furnace ash, free from coal or other foreign matter, to one part cement (1:12); the ash graded up to particles which will pass a 16,5mm ring from a minimum which fails to pass a 4,75mm mesh. The finer materials from the screening are to be first mixed with the cement into a mortar and the ash added afterwards and thoroughly incorporated</p>			
<p>Carried to Collection</p>			
<p>Section No. 5 SF5 Female Educator Ablutions Bill No. 2 CONCRETE, FORMWORK AND REINFORCEMENT Diatho Consulting (PTY) LTD</p>			
		R	

Lightweight concrete:

Lightweight concrete shall have a density of 600kg/m³ for the top 50mm and 400kg/m³ for the remaining thickness. The minimum thickness at outlets, channels, etc shall be 50mm

Waterproof concrete:

"Waterproof concrete" shall have the same properties as normal concrete, but the following shall be modified to make the the concrete more water-tight:

1. a cement/water ratio of minimum 1.9 and maximum 2.1
2. minimum OPC content of 300kg/m³
3. Polypropolene micro fibres added to concrete at rate of 182 million per m³

Formwork:

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

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CONCRETE, FORMWORK AND REINFORCEMENT
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**UNREINFORCED CONCRETE CAST AGAINST
EXCAVATED SURFACES**

15MPa/19mm concrete:

1	Surface blinding under footings and bases	m3	1
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CONCRETE, FORMWORK AND REINFORCEMENT
Diatho Consulting (PTY) LTD

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**REINFORCED CONCRETE CAST AGAINST
EXCAVATED SURFACES****30MPa/19mm concrete:**

Strip footings	m3	3
Surface beds on waterproofing	m3	3

TEST BLOCKS

2	Making and testing 150 x 150 x 150mm concrete strength test cube (Provisional)	No	2
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CONCRETE SUNDRIES**Finishing top surfaces of concrete smooth with a steel trowel:**

3	Surface beds, slabs, etc	m2	16
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ROUGH FORMWORK (DEGREE OF ACCURACY III)**Rough formwork to sides:**

4	Edges, risers, ends and reveals not exceeding 300mm high or wide	m	41
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MOVEMENT JOINTS, ETC**Expansion joints with 10mm softboard between vertical concrete and brick surfaces:**

5	Not exceeding 300mm high to edges of surface beds	m	41
---	---	---	----

Saw-cut joints:

6	6 x 10mm Saw-cut joints in top of concrete	m	49
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REINFORCEMENT (PROVISIONAL)

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<u>Mild steel reinforcement to structural concrete work:</u>				
7	Mild steel bar reinforcement (8 to 40mm diameter bars)	t	0.08	
<u>High tensile steel reinforcement to structural concrete work:</u>				
8	High tensile steel bar reinforcement (8 to 40mm diameter bars)	t	0.18	
<u>Fabric reinforcement:</u>				
9	Type 395 fabric reinforcement in concrete surface beds, slabs, etc	m2	16	
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Tshilwavisuku Primary School

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CONCRETE, FORMWORK AND REINFORCEMENT

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CONCRETE, FORMWORK AND REINFORCEMENT

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Item No	Quantity	Rate	Amount
<p><u>SECTION NO. 5</u></p>			
<p><u>BILL NO.3</u></p>			
<p><u>MASONRY</u></p>			
<p>-----</p> <p><u>PREAMBLES</u></p> <p>The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p> <p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>BRICKWORK</u></p> <p><u>General:</u></p> <p>Non-load bearing brickwork is to be built to full height less 20mm gap next to the ceiling and is to be left for 14 days before grouting up in 1:3 cement mortar.</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>Carried to Collection</p>			
<p>Section No. 5 SF5 Female Educator Ablutions Bill No. 3 MASONRY Diatho Consulting (PTY) LTD</p>			
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Hollow walls:

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

Bagged and sealed walls:

Walls in two skins described as "bagged and sealed" shall be deemed to include having the outer face of the inner skin bagged with 1:6 cement and sand mixture and sealed with two coats bitumen emulsion waterproofing coating

Face bricks :

Bricks shall be ordered timeously to obtain uniformity in size and colour

All face brickwork shall be regularly cleaned down as the work proceeds and shall be protected as necessary by an approved method

Pointing:

Descriptions of recessed pointing to fair face brickwork and face brickwork shall be deemed to include smooth floated square recessed, hollow recessed, weathered pointing, etc

FOUNDATIONS (PROVISIONAL)

Brickwork of NFP bricks (14 MPa nominal compressive strength) in class 1 mortar:

1	One brick walls	m2	10
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2,5mm Brickwork reinforcement:

2	150mm Wide reinforcement built in horizontally	m	120
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FACE BRICKWORK

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MASONRY
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	<u>Face bricks (Allow a Prime Cost Amount of R5 500.00/1000 bricks delivered to site excluding VAT) pointed with flush horizontal and vertical joints</u>			
3	Extra over brickwork for face brickwork	m2	3	
	<u>SUPERSTRUCTURE</u>			
	<u>Brickwork of NFX bricks (14 MPa nominal compressive strength) in class II mortar in loadbearing walls etc:</u>			
4	One brick walls	m2	57	
	<u>BRICKWORK SUNDRIES</u>			
	<u>Joint forming material in movement joints:</u>			
5	12mm Fibre board built in vertically through brick walls	m	51	
	<u>2,5mm Brickwork reinforcement:</u>			
6	75mm Wide reinforcement built in horizontally	m	87	
7	150mm Wide reinforcement built in horizontally	m	187	
	<u>Prestressed fabricated concrete lintels, including necessary temporary supports:</u>			
8	110 x 75mm Lintels in lengths not exceeding 3m long	m	32	
	<u>FACE BRICKWORK</u>			
	<u>Face bricks (Allow a Prime Cost Amount of R5 500.00/1000 bricks delivered to site excluding VAT) pointed with flush horizontal and vertical joints</u>			
9	Half brick wall faced on both sides	m2	21	
10	Extra over brickwork for face brickwork	m2	113	
11	Extra over brickwork for brick-on-edge header course lintel pointed on face and 120mm soffit	m	7	
12	Fair raking cutting	m	10	
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13	<p><u>Brick-on-edge header course coping, sills, etc. of face</u> <u>bricks (Allow a Prime Cost Amount of R5 500.00/1000 bricks delivered to site excluding VAT)</u> <u>pointed with recessed joints on all exposed faces</u></p> <p>150mm Wide sills set sloping and slightly projecting</p>	m	6		
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MASONRY

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Item No	Quantity	Rate	Amount
<p><u>SECTION NO. 5</u></p>			
<p><u>BILL NO.4</u></p>			
<p><u>WATERPROOFING</u></p>			

<p><u>PREAMBLES</u></p>			
<p>The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p>			
<p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles</p>			
<p><u>SUPPLEMENTARY PREAMBLES</u></p>			
<p><u>Waterproofing:</u></p>			
<p>Waterproofing of roofs, basements, etc shall be laid under a ten year guarantee. Waterproofing to roofs shall be laid to even falls to outlets, etc with necessary ridges, hips and valleys. Descriptions of sheet or membrane waterproofing shall be deemed to include additional labour to turn-ups and turn-downs</p>			

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<p>Section No. 5 SF5 Female Educator Ablutions Bill No. 4 WATERPROOFING Diatho Consulting (PTY) LTD</p>			

DAMPPROOFING OF WALLS AND FLOORS**One layer 375 micron embossed polyethylene dampproof course (SANS 952-1985 type B):**

1	In walls	m2	242
2	In walls vertically at reveals	m2	4

One layer 250 micron green polyethylene waterproof sheeting (SANS 952-1985 type C) sealed at laps with PVC self-adhesive tape:

3	Under surface beds	m2	20
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JOINT SEALANTS ETC**Two- part grey polysulphide sealing compound including backing cord, bond breaker, primer, etc**

4	6 x 10mm In saw cut joints in floors	m	49
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White silicone sealing compound including backing cord, bond breaker, primer, etc

5	6 x 10mm In expansion joints in floors, including raking out expansion joint filler as necessary [LI]	m	41
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WATERPROOFING
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WATERPROOFING

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WATERPROOFING

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Item No	Quantity	Rate	Amount
<u>SECTION NO. 5</u>			
<u>BILL NO.5</u>			
<u>ROOF COVERINGS</u>			

<u>PREAMBLES</u>			
<p>The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p>			
<p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles</p>			
<u>SUPPLEMENTARY PREAMBLES</u>			
<p>Profiled metal roof sheeting and accessories shall be supplied with a 10 year guarantee and be installed by an approved installer</p>			
<p>All fixing holes shall be drilled and not punched</p>			
<p>Roof covering accessories shall be manufactured from the same material as used for roof covering</p>			

<u>PROFILED METAL SHEETING AND ACCESSORIES</u>			
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0,6 mm "Klip-Lok 406" or similar approved light industrial Z275 spelter galvanised steel sheeting, with "Classicoat" finish one side and half coat "Classicoat Grey" other side, and accessories fixed to timber purlins or rails at approximately 1500mm centres:

1	Roof coverings with pitch not exceeding 25 degrees	m2	29
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Accessories:

2	Apex flashings 462mm girth	m	6
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ROOF AND WALL INSULATION

"Sisalation 405" or similar approved residential grade aluminium foil based insulation:

3	Insulation sheeting laid taut over purlins at approximately 1000mm centres and fixed concurrent with roof covering with minimum 150mm stapled laps, including galvanised steel straining wires at not exceeding 400mm centres and double-sided tape at edges where required	m2	29
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ROOF COVERINGS
Diatho Consulting (PTY) LTD

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ROOF COVERINGS

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Item No	Quantity	Rate	Amount
<u>SECTION NO. 5</u>			
<u>BILL NO.6</u>			
<u>CARPENTRY AND JOINERY</u>			

<u>PREAMBLES</u>			
<p>The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p>			
<p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles</p>			
<u>SUPPLEMENTARY PREAMBLES</u>			
<u>Fixing:</u>			
<p>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" shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 500mm centres, and where described as "bolted", the bolts have been given separately elsewhere</p>			
<u>Joinery:</u>			
<p>Descriptions of frames shall be deemed to include frames, transomes, rails, etc</p>			
Carried to Collection			
<p>Section No. 5 SF5 Female Educator Ablutions Bill No. 6 CARPENTRY AND JOINERY Diatho Consulting (PTY) LTD</p>			
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Descriptions of hardwood joinery shall be deemed to include sinking and pelleting heads and nuts of bolts

Particle board

All particle board shall comply with SANS 50312 having the required marking as per SANS 50312/EN 312

Decorative thermosetting plastic laminate covering:

Laminate covering shall be glued under pressure and edge strips of same shall be butt jointed at junctions with adjacent similar finish

Sizes:

Sizes are nominal and the Contractor shall make allowance in his prices for minor variances in stated finished sizes of timber doors, door members, door frames, architraves, etc

Prices

Prices for all joinery work are to include for general framing, housing and notching, arris rounded angles, glueing, blocking, planting on, screwing, adhesives, dowels, pellets, cross tongues, screws and nails and setting up complete and also for all square cutting and waste. Tops shall be secured with metal or hardwood buttons.

ROOFS, ETC

Sawn softwood grade 5:

1	38 x 114mm Wall plates bolted	m	12
2	38 x 114mm Rafters in lengths exceeding 3,9m and not exceeding 6,6m	m	39
3	50 x 76mm Purlins	m	39

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CARPENTRY AND JOINERY
Diatho Consulting (PTY) LTD

EAVES, VERGES, ETC

Medium density plain fibre-cement fascias and barge boards:

4	19 x 235mm Fascias and barge boards, including aluminium H-profile jointing strips	m	16
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DOORS, ETC

Wrought meranti doors hung to steel frames:

5	44mm Framed batten door 813 x 2032mm high of 44 x 150mm top rail and stiles, 22 x 150mm middle ledge and braces and 22 x 220mm bottom rail filled in with 22mm V-jointed one side boarding including 150mm undercut (D2)	No	5
6	44mm Framed batten door 813 x 2032mm high of 44 x 150mm top rail and stiles, 22 x 150mm middle ledge and braces and 22 x 220mm bottom rail filled in with 22mm V-jointed one side boarding and including weatherboard (D1)	No	2

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CARPENTRY AND JOINERY
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CARPENTRY AND JOINERY

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CARPENTRY AND JOINERY

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<u>SECTION NO. 5</u>			
<u>BILL NO.7</u>			
<u>IRONMONGERY</u>			

<u>PREAMBLES</u>			
<p>The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p>			
<p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles</p>			
<u>SUPPLEMENTARY PREAMBLES</u>			
<u>Proprietary items:</u>			
<p>Where applicable, the manufacturers' names or product catalogue titles are given in sub-headings preceding the items</p>			
<p>Note that the manufacturers names specified in this trade are for the purposes of competitive pricing.</p>			
<p>Prices are to be based on the specific products/articles specified.</p>			
<p>On request, returnable samples are to be provided to the Project Manager for consideration</p>			
Carried to Collection			
<p>Section No. 5 SF5 Female Educator Ablutions Bill No. 7 IRONMONGERY Diatho Consulting (PTY) LTD</p>			R

Locks:

Notwithstanding Clause 2, Item 3 of the "Ironmongery" trade of the Standard System (7th Edition, 2015) of Measuring Building Work, descriptions of locks shall be deemed to include two keys per lock

Finishes to ironmongery:

Where applicable, finishes to ironmongery are indicated by suffixes in accordance with the following list:

- BS Satin bronze lacquered
- CH Chromium plated
- SC Satin chromium plated
- SE Silver enamelled
- GE Grey enamelled
- AN Anodised natural
- AS Anodised silver
- AB Anodised bronze
- AG Anodised gold
- ABL Anodised black
- PB Polished brass
- PL Polished and lacquered
- PT Epoxy coated
- SD Sanded
- BBS Brushed stainless steel

CATCHES, CABIN HOOKS, ETC

1	150mm Cabin hook and eye including 70 x 70 x 20mm chamfered hardwood block twice oiled and plugged	No	5
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LOCKS

"Union Assa Abloy" or similar approved:

2	50mm Brass padlock	No	2
3	Four lever lockset	No	2
4	"Ref. CZ80941SC" Indicator bolt	No	5

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HANDLES**"Union Assa Abloy" or similar approved:**

5	ASSA ABLOY Anodised Silver straight pull handle (Code: AL5515-300BBAS) with 300mm fixing centres	Pairs	2.0		
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PUSH PLATES AND KICK PLATES**"Union Assa Abloy" or similar approved:****1.2mm Thick satin finished "Union" stainless steel plates countersunk screwed along edges at not exceeding 200mm centres**

6	200 x 800mm Type "SS5089-200W" kicking plate	No	14		
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LETTERS, NAMEPLATES, ETC**"Dorma" or similar approved:**

7	DSS-131 Engraved "Female" information sign, plugged	No	2		
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SUNDRIES

8	25mm Diameter wall mounted door stop plugged	No	7		
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BATHROOM FITTINGS**"Kimberley-Clark" or similar approved:**

9	"Ref. SQ2 code 405607B" white lockable toilet roll holder	No	5		
10	Brushed stainless steel body, rust resistant, she bin, approximately 330 x 280 x 180mm etc	No	5		

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<p><u>SECTION NO. 5</u></p>			
<p><u>BILL NO.8</u></p>			
<p><u>METALWORK</u></p>			
<p>-----</p> <p><u>PREAMBLES</u></p> <p>The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p> <p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Descriptions of bolts, anchors, etc:</u></p> <p>Descriptions of bolts shall be deemed to include nuts and washers</p> <p>Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork or concrete</p> <p>Items described as "holed for bolt(s)" shall be deemed to exclude the bolts, unless otherwise described</p> <p>Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 600mm centres</p>			
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Fixing:

Unless otherwise described, descriptions of items shall be deemed to include for fixing to brickwork or concrete

Where items are described as "bolted", the bolts are measured elsewhere as stated in clause N.7 of the Model Preambles

References:

References in descriptions of windows, doors, gates, etc refer to the respective types of windows, doors, etc detailed in the Architect's window schedules numbered

- 21111/FSPS/S005

and bound into the back of these bills of quantities

Tenderers are to price the following items in conjunction with the above Architect's drawings, etc and no claim arising from brevity of descriptions in these bills of quantities, of items shown on the Architect's drawings, etc shall be entertained

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STEEL GATES, SCREENS, ETC**Welded screens and gates, to brickwalls:**

1	Single gate and frame size to fit standard door, size 813 x 2032mm high	No	2
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PRESSED STEEL DOOR FRAMES**1,6mm Double rebated frames suitable for half brick walls:**

2	Frame for door size 813 x 2032mm high	No	5
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1,6mm Double rebated frames suitable for one brick walls:

3	Frame for door size 813 x 2032mm high	No	2
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STEEL WINDOWS, DOORS, ETC**Standard windows:**

4	Window type NE1, 533 x 654mm high (N1)	No	5
5	Window type NE7, 1022 x 654mm high (N2)	No	4

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<p><u>SECTION NO. 5</u></p>			
<p><u>BILL NO.9</u></p>			
<p><u>PLASTERING</u></p> <p>-----</p>			
<p><u>PREAMBLES</u></p>			
<p>The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p>			
<p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles</p>			
<p><u>SUPPLEMENTARY PREAMBLES</u></p>			
<p><u>Moisture tests:</u></p>			
<p>Before any finishes, coverings, etc are applied to screeds, plastering, etc or any other in-situ finish, moisture tests are to be carried out to the complete satisfaction of the Project Manager to ensure that these surfaces have the correct moisture content for the finish to be applied</p>			
<p><u>Labours, etc</u></p>			
<p>Labours such as fair, rounded and chamfered edges, trowel cuts, throats, V-joints, angles, etc shall be deemed to be included in the descriptions</p>			
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Sample Panels

A sample panel size 1m x1m, of each of the various plaster type wall and floor finishes in this contract, shall be prepared for the approval of the Project Manager and the cost of the sample panel(s) shall be deemed to be included in the overall costs of the relevant wall and floor finishes

GRANOLITHIC

Method:

The method to be used shall be either the monolithic method or the bonded method

Preparation:

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

Mix:

Unless otherwise described, granolithic shall attain a compressive strength of at least 41MPa. The coarse aggregate shall comply with SANS 1083 and shall generally be capable of passing a 10mm mesh sieve. Where the thickness of the granolithic exceeds 25mm, the size of the coarse aggregate shall be increased to the maximum size compatible with the thickness of the granolithic

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Panels:

Granolithic shall be laid in panels not exceeding 14m² for monolithic finishes, not exceeding 9,5m² for bonded finishes and not exceeding 6m² for all external granolithic. Wherever possible, panels shall be square but at no time should the length of the panel exceed 1,5 times its width

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

Laying:

Monolithic granolithic shall be applied to the partially set slab and thoroughly compacted and lightly wood floated to the required levels

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

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

Curing, seasoning and protection:

Granolithic shall be covered with clean hessian with waterproof building foil over and kept wet for at least seven days after laying

Colour:

Coloured granolithic shall be tinted with an approved colouring pigment mixed into a true and even colour

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TINTED WHITE CEMENT SCREEDS

Tinted screed shall be composed of one bag White Portland Cement and two wheelbarrows "Malmesbury" sand. Surfaces shall be finished with a steel trowel to leave a smooth finish and coated with two coats "Earthcote S.I. Floorcote" two-pack polyurethane floor sealer applied as per the manufacturer's recommendations

NOTE: Tinted screeds are to be strengthened with "Primal Eccos" acrylic polymer (15% of the water volume is to be substituted with the acrylic polymer during the mixing process)

Coarse sand is to be used for these screeds

All tinting, finishing, strengthening, etc are to be mixed, applied, etc strictly in accordance with the manufacturer's instructions

CEMENT PLASTER

Unless otherwise described, cement plaster shall be taken to mean Class 1 cement plaster i.e. 1:4 cement:sand plaster (common cement)

CEMENT SCREEDS TO CONCRETE

Cement screeds steel trowelled, on concrete:

1	30mm Thick to floors	m2	16
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FLOOR AND WALL SEALERS

Minimum two coats approved epoxy coat, on concrete:

2	On screed	m2	16
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PLASTERING

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<p><u>BILL NO.10</u></p>			
<p><u>PLUMBING AND DRAINAGE (PROVISIONAL)</u></p>			
<p><u>PREAMBLES</u></p>			
<p>The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p>			
<p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles</p>			
<p><u>SUPPLEMENTARY PREAMBLES</u></p>			
<p><u>Wire gratings:</u></p>			
<p>Descriptions of gutter outlets, etc shall be deemed to include wire balloon gratings</p>			
<p><u>Stormwater channels:</u></p>			
<p>Descriptions of channels shall be deemed to include necessary excavation, surface preparation, compaction, etc and disposal of surplus material on site</p>			
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French drains:

Descriptions of french drains shall be deemed to include excavation, stone filling graded from 300mm diameter at bottom to 75mm diameter at top, approved geofabric filter blanket over stone, 300mm earthfilling over and disposal of surplus material on site

Septic tanks:

Descriptions of proprietary type septic tanks shall be deemed to include excavation, bedding and jointing, concrete base slabs, jointing to drains and backfilling, compaction, etc all in accordance with the manufacturer's instructions and disposal of surplus material on site

Stainless steel basins, sinks, wash troughs, urinals, etc:

Stainless steel for economy basins, domestic sinks and worktops shall be Type 430 (17/0)

Stainless steel for urinals, basins, quality sinks, wash troughs, institutional equipment, etc shall be Type 304 (18/8)

Stainless steel for laboratory sinks, photographic equipment, etc shall be Type 316 (18/8)

Units shall have standard aprons on all exposed edges and tiling keys against walls where applicable

Sealing of edges:

Outer edges of sinks, basins, baths, urinals, etc are to be sealed against adjacent surfaces with approved mildew resistant silicone sealant and prices must include therefor

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uPVC pipes and fittings:

Sewer and drainage pipes and fittings shall be jointed and sealed with butyl rubber rings

Soil, waste and vent pipes and fittings shall be solvent weld jointed or sealed with butyl rubber rings

uPVC pressure pipes and fittings:

Pipes of 50mm diameter and smaller shall be plain ended with solvent welded uPVC loose sockets and fittings

Pipes of 63mm diameter and greater shall have sockets and spigots with push-in type integral rubber ring joints. Bends shall be uPVC and all other fittings shall be cast iron, all with similar push-in type joints

High density polyethylene (HDPE) pipes and fittings:

Pipes shall be type IV and of the class specified with "Plasson" or "Alprene" compression fittings

"Polycop" polypropylene pipes:

Polypropylene pipes 54mm diameter and smaller shall be seamless copper coloured Class 16 pipes jointed with "Fast-fuse" heat welded thermoplastic or where so described "Polylock" compression fittings

Pipes shall be firmly fixed to walls, etc with coloured nylon snap-in pipe clips with provision for accommodating thermal movement and jointed and fixed strictly in accordance with the manufacturer's instructions

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Copper pipes:

Pipes shall be hard drawn and half-hard "Maksal" pipes of the class described. Class 0 (thin walled hard drawn) pipes shall not be bent. Class 1 (thin walled half-hard), Class 2 (half-hard) and Class 3 (heavy walled half-hard) pipes shall only be bent with benders with inner and outer formers. Fittings to copper waste, vent and anti-syphon pipes, capillary solder fittings and compression fittings shall be "Cobra Watertech" type. Capillary solder fittings shall comply with ISO 2016. Only compression fittings shall be used in walls or in ground

Copper pipes are to be installed in accordance with the latest revision of the Code of Practice for Copper Plumbing soldering techniques. Flux, solder, etc to be strictly in accordance with the manufacturer's requirements with special attention to copper flux composition

Reducing fittings:

Where fittings have reducing ends or branches they are described as "reducing". In the case of pipes with diameters not exceeding 60mm, only the largest end or branch size is given. Should the Contractor wish to use other fittings and bushes or reducers he may do so on the understanding that no claim in this regard will be entertained. In the case of pipes with diameters exceeding 60mm, all sizes are given and no claims for extra bushes, reducers, etc will be entertained

Fixing of pipes:

Unless specifically otherwise stated, descriptions of pipes shall be deemed to include fixing to walls, etc casting in, building in or suspending not exceeding 1m below suspension level

Paper wrapping to pipes:

Pipes chased into brickwork must be wrapped with two layers of stout brown paper tied with wire. Rates are to include for wrapping around joints and fittings

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Disinfection of water pipework:

Water pipework is to be disinfected at completion in accordance with SANS 1200L (provision for disinfection elsewhere)

"Densyl" petrolatum anti-corrosion tape as manufactured by Denso SA (Pty) Ltd.:

Pipes to be taped shall be coated with the appropriate primer and the tape shall be applied in the appropriate widths and with suitable overlaps

Couplings and fittings to pipes shall be taped in strict accordance with the manufacturer's instructions including mastic, tape, "Layflat" sheeting, securing of same, etc

Prices for wrapping of pipes shall include for all work as described to couplings in the length

Laying, backfilling, bedding, etc of pipes:

Pipes shall be laid and bedded in accordance with manufacturers' instructions and trenches shall be carefully backfilled

Where no manufacturers' instructions exist, pipes shall be laid in accordance with Clauses 5.1 and 5.2 of each of the following:

- SANS 1200L : Medium-pressure pipelines
- SANS 1200LD : Sewers
- SANS 1200LE : Stormwater drainage

Pipe trenches, etc shall be backfilled in accordance with Clauses 3, 5.5, 5.6, 5.7 and 7 of SANS 1200DB : Earthworks (Pipe trenches)

Pipes shall be bedded in accordance with Clauses 3.1 to 3.4.1, 5.1 to 5.3 and 7 of SANS 1200LB : Bedding (Pipes)

Unless otherwise described, bedding of rigid pipes shall be Class B bedding

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General:

Descriptions of cast iron roof outlets shall be deemed to include joints to pipes and casting into concrete (adaptors for joints to PVC pipes, etc are given separately)

Descriptions of overflow pipes where measured in number, shall be deemed to include joints to cisterns and splay cut ends

Descriptions of pipes laid in and including trenches and of inspection chambers, catchpits, etc shall be deemed to include excavation, bedding, backfilling, compaction to a minimum of 98% Mod AASHTO density and disposal of surplus material on site

Descriptions of service pipes and flexible connecting pipes shall be deemed to include connections to taps, cisterns, etc and to steel pipes (adaptors for connections to copper pipes, etc are given separately)

Descriptions of WC pans, slop hoppers, etc shall be deemed to include for joints to soil pipes (pan connectors are separately measured) and shall have straight or side outlets and "P" or "S" traps as necessary

Description of waste unions shall be deemed to include rubber or vulcanite plugs and chains fixed to fittings.

As-built drawings:

Where required, the Contractor shall prepare an updated set of as-built drawings. At completion of the contract the Contractor shall hand these drawings to the Project Manager for reproducing onto the originals for handing over to the Employer (provision for allowance of as-built drawings elsewhere)

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Proprietary items:

Where applicable, the manufacturers' names or product catalogue titles are given in sub-headings preceding the items

Note that the manufacturers names specified in this trade are for the purposes of competitive pricing.

Prices are to be based on the specific products/articles specified.

On request, returnable samples are to be provided to the Project Manager for consideration

RAINWATER DISPOSAL**0,6mm Galvanised sheet steel gutters and rainwater pipes with powder coated finish on outside to match roof sheeting colour:**

1	150 x150mm Box gutters	m	29
2	100 x 75mm Rainwater pipes	m	10
3	Extra over gutter for stopped end	No	2
4	Extra over gutter for outlet for 100 x 75mm pipe	No	2
5	Extra over rainwater pipe for bend	No	2
6	Extra over rainwater pipe for shoe	No	2
7	Extra over rainwater pipe for eaves or plinth offset	No	2

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SANITARY FITTINGS**"Vaal" or similar approved:**

8	455 x 290mm "Hibiscus" 7050 wash hand basin bolted to wall	No	5
9	"Daisy Elite" 772403 close-coupled WC suite comprising pan with double flap heavy duty thermoset seat (Code: 8531Z0) and matching 9 litre cistern	No	5

TRAPS, ETC**"Cobra Watertech" or similar approved:**

10	50mm Code 365 CP bottle trap	No	5
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TAPS, VALVES, ETC**"Cobra Watertech" or similar approved:**

11	15mm Code 232/350 FCP angle regulating valve and flexible connection pipe	No	10
12	15mm Code FPT2A1RO-OGP01 "Roma" basin tap with waste union	No	5

SANITARY PLUMBING**uPVC pipes:**

13	50mm Pipes	m	25
14	110mm Pipes	m	25
15	50mm Diameter pipe laid in and including trenches not exceeding 1m deep	m	33
16	Ditto, but 110mm diameter	m	33

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Extra over uPVC pipes for fittings:

17	50mm Bend	No	10
18	50mm Junction	No	10
19	50mm Junction with cleaning eye and lid	No	10
20	110mm Straight pan connector	No	5
21	110mm Bend	No	10
22	110mm Junction	No	10
23	110mm Reducing junction	No	10
24	110mm Access bend	No	5
25	110mm Double junction	No	5
26	110mm "GI Two-way" vent valve	No	5

Testing:

27	Testing waste pipe system		Item
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WATER SUPPLIES**Class 1 copper pipes with capillary couplings:**

28	15mm Pipe fixed to walls, in chases, etc	m	30
29	Ditto, but 22mm diameter	m	50

Extra over Class 1 copper pipes for capillary fittings:

30	15mm Fittings	No	50
31	22mm Fittings	No	50

Testing:

32	Testing water pipe system		Item
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<p><u>GLAZING</u></p>			
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<p><u>PREAMBLES</u></p>			
<p>The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p>			
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<p><u>SUPPLEMENTARY PREAMBLES</u></p>			
<p><u>Float glass:</u></p>			
<p>The term "float glass" is used for monolithic annealed glass</p>			
<p><u>Laminated glass:</u></p>			
<p>Laminated glass to have polyvinyl butyral (PVB) interlayer(s)</p>			
<p>-----</p>			
<p><u>GLAZING TO STEEL WITH PUTTY</u></p>			
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6,38mm Obscure safety glass:

1 Panes not exceeding 0,1m²

m2

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GLAZING

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Previously painted wood surfaces:

Surfaces shall be thoroughly cleaned down. Blistered or peeling paint shall be completely removed and cracks and crevices shall be primed, filled with suitable filler and finished smooth

PAINT SPECIFICATIONS

All painting shall be done in accordance with "Plascon", etc specifications, unless otherwise described

COLOURS

When staining timber, the resultant colour or shade must be to the complete satisfaction of the Project Manager before any overcoating or preservative is applied

Paintwork is classified in the following different colour groups: "White", "Pastel", "Deep" and "Transparent" in accordance with the "Natural Colour System" (NCS) adopted by the SA National Standards
Unless otherwise described, all paintwork shall be deemed to be classified in the "White" colour group

PAINTWORK, ETC TO NEW WORK

ON FIBRE-CEMENT BOARD SURFACES

One coat alkali resistant primer and two coats superior quality acrylic emulsion paint for interior and exterior use, on:

1 Fascias and barge boards, including priming metal jointing strips m2

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METAL SURFACES WITH

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One coat alkyd based zinc phosphate primer and two coats premium quality polyurethane enamel paint, on steel:

2	Door frames	m2	13
3	Windows	m2	7
4	Gates, grilles, burglar screens, balustrades, etc (both sides measured over the full flat area)	m2	7
5	Extra over for paintwork in the "Deep" colour group	m2	27

ON WOOD SURFACES**One coat primer, one coat alkyd based universal undercoat and two coats superior quality universal enamel paint, on:**

6	Doors	m2	25
7	Roof timbers at eaves and verges	m2	25
8	Extra over for paintwork in the "Deep" colour group	m2	50

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SF5 Female Educator Ablutions
Bill No. 12
PAINTWORK
Diatho Consulting (PTY) LTD

Construction of Water, Sanitation and Fencing
Tshilwavisuku Primary School

Section No. 5

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PAINTWORK

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SECTION SUMMARY - SF5 Female Educator Ablutions

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	<p><u>SECTION NO. 6</u></p> <p><u>BILL NO.1</u></p> <p><u>EARTHWORKS (PROVISIONAL)</u></p> <p>-----</p> <p><u>PREAMBLES</u></p> <p>The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be included in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p> <p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Nature of ground</u></p> <p>The nature of the ground is assumed to be loose sandy material, therefore "earth", but possibly interspersed with "hard rock" or "soft rock".</p> <p>The nature of the ground is assumed to be gravel, therefore "earth", but possibly interspersed with "soft rock".</p> <p>The nature of the ground is assumed to be silty clay with loose river boulders varying in size up to approximately 450mm diameter, therefore "earth", but possibly interspersed with "hard rock".</p>			
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	<p>Section No. 6 GR7 Grade R Unisex Ablutions Bill No. 1 EARTHWORKS Diatho Consulting (PTY) LTD</p>			

Trial holes indicate that the nature of the ground is silty clay to a depth of approximately 500mm with fine to medium loose sandy material below, therefore "earth". The trial holes also indicate that the water table is at a maximum depth of approximately 1000mm.

A soils investigation has been carried out on site by the engineer and the report is annexed to these bills of quantities. Descriptions of excavations shall be deemed to include all ground conditions classifiable as "earth" described in the above report and where conditions of a more difficult character are indicated these are separately measured

Subterranean water:

No subterranean water is expected

Should the Contractor however, encounter any subterranean water on the site, he shall immediately notify the Principal Agent thereof and submit recommendations for keeping the works free from subterranean water together with all costs involved therewith

Excavation for working space in rock:

Notwithstanding clause 10 measurement rule 27 of the Standard System of Measuring Building Work, excavation for working space in material of a more different character (e.g. soft or hard rock) will be measured in cubic metres to the extent executed and given as "extra over" bulk excavation or trench and hole excavation as the case may be

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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EARTHWORKS
Diatho Consulting (PTY) LTD

Filling

Notwithstanding the reference to prescribed multiple handling in clause 1 page 10 of the Standard System (7th Edition, 2015) of Measuring Building Work, prices for filling and backfilling shall include for all selection and any multiple handling of material

Testing:

Prices for backfilling to trenches and holes only are to include for all necessary density tests in accordance with SANS 1200D

EXCAVATIONS, FILLING, ETC**EXCAVATIONS, ETC****Excavation in earth not exceeding 2m deep:**

1	Reduced levels under floors	m3	3
2	Trenches	m3	9
3	Trenches and holes for thickening under surface beds, etc	m3	2

Extra over trench and hole excavations in earth for excavation in:

4	Soft rock	m3	1
5	Hard rock	m3	0.5

Extra over all excavations for carting away:

6	Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor	m3	12
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Risk of collapse of excavations:

7	Sides of trench and hole excavations not exceeding 1,5m deep	m2	27
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EARTHWORKS

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Diatho Consulting (PTY) LTD

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<u>SECTION NO. 6</u>			
<u>BILL NO.2</u>			
<u>CONCRETE, FORMWORK AND REINFORCEMENT</u>			

<u>PREAMBLES</u>			
<p>The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p>			
<p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles</p>			
<u>SUPPLEMENTARY PREAMBLES</u>			
<u>Cost of tests:</u>			
<u>Breeze concrete:</u>			
<p>Breeze concrete shall consist of twelve parts clean dry furnace ash, free from coal or other foreign matter, to one part cement (1:12); the ash graded up to particles which will pass a 16,5mm ring from a minimum which fails to pass a 4,75mm mesh. The finer materials from the screening are to be first mixed with the cement into a mortar and the ash added afterwards and thoroughly incorporated</p>			
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<p>Section No. 6 GR7 Grade R Unisex Ablutions Bill No. 2 CONCRETE, FORMWORK AND REINFORCEMENT Diatho Consulting (PTY) LTD</p>			
		R	

Lightweight concrete:

Lightweight concrete shall have a density of 600kg/m³ for the top 50mm and 400kg/m³ for the remaining thickness. The minimum thickness at outlets, channels, etc shall be 50mm

Waterproof concrete:

"Waterproof concrete" shall have the same properties as normal concrete, but the following shall be modified to make the the concrete more water-tight:

1. a cement/water ratio of minimum 1.9 and maximum 2.1
2. minimum OPC content of 300kg/m³
3. Polypropolene micro fibres added to concrete at rate of 182 million per m³

Formwork:

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

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CONCRETE, FORMWORK AND REINFORCEMENT
Diatho Consulting (PTY) LTD

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UNREINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES**15MPa/19mm concrete:**

1	Surface blinding under footings and bases	m3	1
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REINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES**30MPa/19mm concrete:**

	Strip footings	m3	4
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	Surface beds on waterproofing	m3	4
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TEST BLOCKS

2	Making and testing 150 x 150 x 150mm concrete strength test cube (Provisional)	No	8
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CONCRETE SUNDRIES**Finishing top surfaces of concrete smooth with a steel trowel:**

3	Surface beds, slabs, etc	m2	23
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ROUGH FORMWORK (DEGREE OF ACCURACY III)**Rough formwork to sides:**

4	Edges, risers, ends and reveals not exceeding 300mm high or wide	m	45
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MOVEMENT JOINTS, ETC**Expansion joints with 10mm softboard between vertical concrete and brick surfaces:**

5	Not exceeding 300mm high to edges of surface beds	m	57
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Diatho Consulting (PTY) LTD

Construction of Water, Sanitation and Fencing
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CONCRETE, FORMWORK AND REINFORCEMENT

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CONCRETE, FORMWORK AND REINFORCEMENT

Diatho Consulting (PTY) LTD

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	<p>Section No. 6 GR7 Grade R Unisex Ablutions Bill No. 3 MASONRY Diatho Consulting (PTY) LTD</p>			

Hollow walls:

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

Bagged and sealed walls:

Walls in two skins described as "bagged and sealed" shall be deemed to include having the outer face of the inner skin bagged with 1:6 cement and sand mixture and sealed with two coats bitumen emulsion waterproofing coating

Face bricks :

Bricks shall be ordered timeously to obtain uniformity in size and colour

All face brickwork shall be regularly cleaned down as the work proceeds and shall be protected as necessary by an approved method

Pointing:

Descriptions of recessed pointing to fair face brickwork and face brickwork shall be deemed to include smooth floated square recessed, hollow recessed, weathered pointing, etc

FOUNDATIONS (PROVISIONAL)

Brickwork of NFP bricks (14 MPa nominal compressive strength) in class 1 mortar:

1	One brick walls	m2	11
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2,5mm Brickwork reinforcement:

2	150mm Wide reinforcement built in horizontally	m	131
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FACE BRICKWORK

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Diatho Consulting (PTY) LTD

	<u>Face bricks (Allow a Prime Cost Amount of R5 500.00/1000 bricks delivered to site excluding VAT) pointed with flush horizontal and vertical joints</u>			
3	Extra over brickwork for face brickwork	m2	4	
	<u>SUPERSTRUCTURE</u>			
	<u>Brickwork of NFX bricks (14 MPa nominal compressive strength) in class II mortar in loadbearing walls etc:</u>			
4	One brick walls	m2	64	
	<u>BRICKWORK SUNDRIES</u>			
	<u>Joint forming material in movement joints:</u>			
5	12mm Fibre board built in vertically through brick walls	m	14	
	<u>2,5mm Brickwork reinforcement:</u>			
6	75mm Wide reinforcement built in horizontally	m	128	
7	150mm Wide reinforcement built in horizontally	m	205	
	<u>Prestressed fabricated concrete lintels, including necessary temporary supports:</u>			
8	110 x 75mm Lintels in lengths not exceeding 3m long	m	28	
	<u>FACE BRICKWORK</u>			
	<u>Face bricks (Allow a Prime Cost Amount of R5 500.00/1000 bricks delivered to site excluding VAT) pointed with flush horizontal and vertical joints</u>			
9	Half brick wall faced on both sides	m2	31	
10	Extra over brickwork for face brickwork	m2	127	
11	Extra over brickwork for brick-on-edge header course lintel pointed on face and 120mm soffit	m	8	
12	Fair raking cutting	m	8	
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13	<p><u>Brick-on-edge header course coping, sills, etc. of face</u> <u>bricks (Allow a Prime Cost Amount of R5 500.00/1000 bricks delivered to site excluding VAT)</u> <u>pointed with recessed joints on all exposed faces</u></p> <p>150mm Wide sills set sloping and slightly projecting</p>	m	7			
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Construction of Water, Sanitation and Fencing
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<p><u>SECTION NO. 6</u></p>			
<p><u>BILL NO.4</u></p>			
<p><u>WATERPROOFING</u></p>			

<p><u>PREAMBLES</u></p>			
<p>The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p>			
<p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles</p>			
<p><u>SUPPLEMENTARY PREAMBLES</u></p>			
<p><u>Waterproofing:</u></p>			
<p>Waterproofing of roofs, basements, etc shall be laid under a ten year guarantee. Waterproofing to roofs shall be laid to even falls to outlets, etc with necessary ridges, hips and valleys. Descriptions of sheet or membrane waterproofing shall be deemed to include additional labour to turn-ups and turn-downs</p>			

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<p>Section No. 6 GR7 Grade R Unisex Ablutions Bill No. 4 WATERPROOFING Diatho Consulting (PTY) LTD</p>			

DAMPPROOFING OF WALLS AND FLOORS**One layer 375 micron embossed polyethylene dampproof course (SANS 952-1985 type B):**

1	In walls	m2	64
2	In walls vertically at reveals	m2	4

One layer 250 micron green polyethylene waterproof sheeting (SANS 952-1985 type C) sealed at laps with PVC self-adhesive tape:

3	Under surface beds	m2	27
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JOINT SEALANTS ETC**Two- part grey polysulphide sealing compound including backing cord, bond breaker, primer, etc**

4	6 x 10mm In saw cut joints in floors	m	68
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White silicone sealing compound including backing cord, bond breaker, primer, etc

5	6 x 10mm In expansion joints in floors, including raking out expansion joint filler as necessary [LI]	m	57
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WATERPROOFING
Diatho Consulting (PTY) LTD

Construction of Water, Sanitation and Fencing
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WATERPROOFING

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<p><u>BILL NO.5</u></p>			
<p><u>ROOF COVERINGS</u></p>			

<p><u>PREAMBLES</u></p>			
<p>The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p>			
<p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles</p>			
<p><u>SUPPLEMENTARY PREAMBLES</u></p>			
<p>Profiled metal roof sheeting and accessories shall be supplied with a 10 year guarantee and be installed by an approved installer</p>			
<p>All fixing holes shall be drilled and not punched</p>			
<p>Roof covering accessories shall be manufactured from the same material as used for roof covering</p>			

<p><u>PROFILED METAL SHEETING AND ACCESSORIES</u></p>			
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<p>Section No. 6 GR7 Grade R Unisex Ablutions Bill No. 5 ROOF COVERINGS Diatho Consulting (PTY) LTD</p>			

0,6 mm "Klip-Lok 406" or similar approved light industrial Z275 spelter galvanised steel sheeting, with "Classicoat" finish one side and half coat "Classicoat Grey" other side, and accessories fixed to timber purlins or rails at approximately 1500mm centres:

1	Roof coverings with pitch not exceeding 25 degrees	m2	39
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Accessories:

2	Apex flashings 462mm girth	m	8
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ROOF AND WALL INSULATION

"Sisalation 405" or similar approved residential grade aluminium foil based insulation:

3	Insulation sheeting laid taut over purlins at approximately 1000mm centres and fixed concurrent with roof covering with minimum 150mm stapled laps, including galvanised steel straining wires at not exceeding 400mm centres and double-sided tape at edges where required	m2	39
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ROOF COVERINGS
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ROOF COVERINGS

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<p><u>SECTION NO. 6</u></p> <p><u>BILL NO.6</u></p> <p><u>CARPENTRY AND JOINERY</u></p> <p style="text-align: center;">-----</p> <p><u>PREAMBLES</u></p> <p>The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p> <p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Fixing:</u></p> <p>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" shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 500mm centres, and where described as "bolted", the bolts have been given separately elsewhere</p> <p><u>Joinery:</u></p> <p>Descriptions of frames shall be deemed to include frames, transomes, rails, etc</p>			
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<p>Section No. 6 GR7 Grade R Unisex Ablutions Bill No. 6 CARPENTRY AND JOINERY Diatho Consulting (PTY) LTD</p>			

Descriptions of hardwood joinery shall be deemed to include sinking and pelleting heads and nuts of bolts

Particle board

All particle board shall comply with SANS 50312 having the required marking as per SANS 50312/EN 312

Decorative thermosetting plastic laminate covering:

Laminate covering shall be glued under pressure and edge strips of same shall be butt jointed at junctions with adjacent similar finish

Sizes:

Sizes are nominal and the Contractor shall make allowance in his prices for minor variances in stated finished sizes of timber doors, door members, door frames, architraves, etc

Prices

Prices for all joinery work are to include for general framing, housing and notching, arris rounded angles, glueing, blocking, planting on, screwing, adhesives, dowels, pellets, cross tongues, screws and nails and setting up complete and also for all square cutting and waste. Tops shall be secured with metal or hardwood buttons.

ROOFS, ETC

Sawn softwood grade 5:

1	38 x 114mm Wall plates bolted	m	18
2	38 x 114mm Rafters in lengths exceeding 3,9m and not exceeding 6,6m	m	58
3	50 x 76mm Purlins	m	60

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CARPENTRY AND JOINERY
Diatho Consulting (PTY) LTD

EAVES, VERGES, ETC

Medium density plain fibre-cement fascias and barge boards:

4	19 x 235mm Fascias and barge boards, including aluminium H-profile jointing strips	m	18
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DOORS, ETC

Wrought meranti doors hung to steel frames:

5	44mm Framed batten door 813 x 2032mm high of 44 x 150mm top rail and stiles, 22 x 150mm middle ledge and braces and 22 x 220mm bottom rail filled in with 22mm V-jointed one side boarding including 150mm undercut (D2)	No	7
6	44mm Framed batten door 813 x 2032mm high of 44 x 150mm top rail and stiles, 22 x 150mm middle ledge and braces and 22 x 220mm bottom rail filled in with 22mm V-jointed one side boarding and including weatherboard (D1)	No	1

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CARPENTRY AND JOINERY
Diatho Consulting (PTY) LTD

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CARPENTRY AND JOINERY

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<u>SECTION NO. 6</u>			
<u>BILL NO.7</u>			
<u>IRONMONGERY</u>			

<u>PREAMBLES</u>			
<p>The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p>			
<p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles</p>			
<u>SUPPLEMENTARY PREAMBLES</u>			
<u>Proprietary items:</u>			
<p>Where applicable, the manufacturers' names or product catalogue titles are given in sub-headings preceding the items</p>			
<p>Note that the manufacturers names specified in this trade are for the purposes of competitive pricing.</p>			
<p>Prices are to be based on the specific products/articles specified.</p>			
<p>On request, returnable samples are to be provided to the Project Manager for consideration</p>			
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<p>Section No. 6 GR7 Grade R Unisex Ablutions Bill No. 7 IRONMONGERY Diatho Consulting (PTY) LTD</p>		R	

Locks:

Notwithstanding Clause 2, Item 3 of the "Ironmongery" trade of the Standard System (7th Edition, 2015) of Measuring Building Work, descriptions of locks shall be deemed to include two keys per lock

Finishes to ironmongery:

Where applicable, finishes to ironmongery are indicated by suffixes in accordance with the following list:

- BS Satin bronze lacquered
- CH Chromium plated
- SC Satin chromium plated
- SE Silver enamelled
- GE Grey enamelled
- AN Anodised natural
- AS Anodised silver
- AB Anodised bronze
- AG Anodised gold
- ABL Anodised black
- PB Polished brass
- PL Polished and lacquered
- PT Epoxy coated
- SD Sanded
- BBS Brushed stainless steel

CATCHES, CABIN HOOKS, ETC

1	150mm Cabin hook and eye including 70 x 70 x 20mm chamfered hardwood block twice oiled and plugged	No	7	
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LOCKS

"Union Assa Abloy" or similar approved:

2	50mm Brass padlock	No	1	
3	Four lever lockset	No	1	
4	"Ref. CZ80941SC" Indicator bolt	No	7	

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Section No. 6
GR7 Grade R Unisex Ablutions
Bill No. 7
IRONMONGERY
Diatho Consulting (PTY) LTD

HANDLES**"Union Assa Abloy" or similar approved:**

5	ASSA ABLOY Anodised Silver straight pull handle (Code: AL5515-300BBAS) with 300mm fixing centres	Pairs	1.0		
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PUSH PLATES AND KICK PLATES**"Union Assa Abloy" or similar approved:****1.2mm Thick satin finished "Union" stainless steel plates countersunk screwed along edges at not exceeding 200mm centres**

6	200 x 800mm Type "SS5089-200W" kicking plate	No	16		
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LETTERS, NAMEPLATES, ETC**"Dorma" or similar approved:**

7	DSS-131 Engraved "Female" information sign, plugged	No	1		
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SUNDRIES

8	25mm Diameter wall mounted door stop plugged	No	8		
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BATHROOM FITTINGS**"Kimberley-Clark" or similar approved:**

9	"Ref. SQ2 code 405607B" white lockable toilet roll holder	No	7		
10	Brushed stainless steel body, rust resistant, she bin, approximately 330 x 280 x 180mm etc	No	7		

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GR7 Grade R Unisex Ablutions
Bill No. 7
IRONMONGERY
Diatho Consulting (PTY) LTD

Construction of Water, Sanitation and Fencing
Tshilwavisuku Primary School

Section No. 6

Bill No. 7

IRONMONGERY

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	<p>Section No. 6 GR7 Grade R Unisex Ablutions Bill No. 8 METALWORK Diatho Consulting (PTY) LTD</p>			

Fixing:

Unless otherwise described, descriptions of items shall be deemed to include for fixing to brickwork or concrete

Where items are described as "bolted", the bolts are measured elsewhere as stated in clause N.7 of the Model Preambles

References:

References in descriptions of windows, doors, gates, etc refer to the respective types of windows, doors, etc detailed in the Architect's window schedules numbered

- 21111/FSPS/S003

and bound into the back of these bills of quantities

Tenderers are to price the following items in conjunction with the above Architect's drawings, etc and no claim arising from brevity of descriptions in these bills of quantities, of items shown on the Architect's drawings, etc shall be entertained

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STEEL GATES, SCREENS, ETC**Welded screens and gates, to brickwalls:**

1	Single gate and frame size to fit standard door, size 813 x 2032mm high	No	1
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PRESSED STEEL DOOR FRAMES**1,6mm Double rebated frames suitable for half brick walls:**

2	Frame for door size 813 x 2032mm high	No	7
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1,6mm Double rebated frames suitable for one brick walls:

3	Frame for door size 813 x 2032mm high	No	1
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STEEL WINDOWS, DOORS, ETC**Standard windows:**

4	Window type NE1, 533 x 654mm high (N1)	No	7
5	Window type NE7, 1022 x 654mm high (N2)	No	3

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METALWORK

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Sample Panels

A sample panel size 1m x1m, of each of the various plaster type wall and floor finishes in this contract, shall be prepared for the approval of the Project Manager and the cost of the sample panel(s) shall be deemed to be included in the overall costs of the relevant wall and floor finishes

GRANOLITHIC

Method:

The method to be used shall be either the monolithic method or the bonded method

Preparation:

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

Mix:

Unless otherwise described, granolithic shall attain a compressive strength of at least 41MPa. The coarse aggregate shall comply with SANS 1083 and shall generally be capable of passing a 10mm mesh sieve. Where the thickness of the granolithic exceeds 25mm, the size of the coarse aggregate shall be increased to the maximum size compatible with the thickness of the granolithic

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Panels:

Granolithic shall be laid in panels not exceeding 14m² for monolithic finishes, not exceeding 9,5m² for bonded finishes and not exceeding 6m² for all external granolithic. Wherever possible, panels shall be square but at no time should the length of the panel exceed 1,5 times its width

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

Laying:

Monolithic granolithic shall be applied to the partially set slab and thoroughly compacted and lightly wood floated to the required levels

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 throughly compacted and lightly wood floated to the required levels

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

Curing, seasoning and protection:

Granolithic shall be covered with clean hessian with waterproof building foil over and kept wet for at least seven days after laying

Colour:

Coloured granolithic shall be tinted with an approved colouring pigment mixed into a true and even colour

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TINTED WHITE CEMENT SCREEDS

Tinted screed shall be composed of one bag White Portland Cement and two wheelbarrows "Malmesbury" sand. Surfaces shall be finished with a steel trowel to leave a smooth finish and coated with two coats "Earthcote S.I. Floorcote" two-pack polyurethane floor sealer applied as per the manufacturer's recommendations

NOTE: Tinted screeds are to be strengthened with "Primal Eccos" acrylic polymer (15% of the water volume is to be substituted with the acrylic polymer during the mixing process)

Coarse sand is to be used for these screeds

All tinting, finishing, strengthening, etc are to be mixed, applied, etc strictly in accordance with the manufacturer's instructions

CEMENT PLASTER

Unless otherwise described, cement plaster shall be taken to mean Class 1 cement plaster i.e. 1:4 cement:sand plaster (common cement)

CEMENT SCREEDS TO CONCRETE

Cement screeds steel trowelled, on concrete:

1	30mm Thick to floors	m2	23
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SPECIAL FLOOR COATING

Minimum two coats approved epoxy coat, on concrete:

2	On screed	m2	23
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PLASTERING

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<p><u>BILL NO.10</u></p>			
<p><u>PLUMBING AND DRAINAGE (PROVISIONAL)</u></p>			
<p><u>PREAMBLES</u></p>			
<p>The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p>			
<p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles</p>			
<p><u>SUPPLEMENTARY PREAMBLES</u></p>			
<p><u>Wire gratings:</u></p>			
<p>Descriptions of gutter outlets, etc shall be deemed to include wire balloon gratings</p>			
<p><u>Stormwater channels:</u></p>			
<p>Descriptions of channels shall be deemed to include necessary excavation, surface preparation, compaction, etc and disposal of surplus material on site</p>			
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French drains:

Descriptions of french drains shall be deemed to include excavation, stone filling graded from 300mm diameter at bottom to 75mm diameter at top, approved geofabric filter blanket over stone, 300mm earthfilling over and disposal of surplus material on site

Septic tanks:

Descriptions of proprietary type septic tanks shall be deemed to include excavation, bedding and jointing, concrete base slabs, jointing to drains and backfilling, compaction, etc all in accordance with the manufacturer's instructions and disposal of surplus material on site

Stainless steel basins, sinks, wash troughs, urinals, etc:

Stainless steel for economy basins, domestic sinks and worktops shall be Type 430 (17/0)

Stainless steel for urinals, basins, quality sinks, wash troughs, institutional equipment, etc shall be Type 304 (18/8)

Stainless steel for laboratory sinks, photographic equipment, etc shall be Type 316 (18/8)

Units shall have standard aprons on all exposed edges and tiling keys against walls where applicable

Sealing of edges:

Outer edges of sinks, basins, baths, urinals, etc are to be sealed against adjacent surfaces with approved mildew resistant silicone sealant and prices must include therefor

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PLUMBING AND DRAINAGE
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uPVC pipes and fittings:

Sewer and drainage pipes and fittings shall be jointed and sealed with butyl rubber rings

Soil, waste and vent pipes and fittings shall be solvent weld jointed or sealed with butyl rubber rings

uPVC pressure pipes and fittings:

Pipes of 50mm diameter and smaller shall be plain ended with solvent welded uPVC loose sockets and fittings

Pipes of 63mm diameter and greater shall have sockets and spigots with push-in type integral rubber ring joints. Bends shall be uPVC and all other fittings shall be cast iron, all with similar push-in type joints

High density polyethylene (HDPE) pipes and fittings:

Pipes shall be type IV and of the class specified with "Plasson" or "Alprene" compression fittings

"Polycop" polypropylene pipes:

Polypropylene pipes 54mm diameter and smaller shall be seamless copper coloured Class 16 pipes jointed with "Fast-fuse" heat welded thermoplastic or where so described "Polylock" compression fittings

Pipes shall be firmly fixed to walls, etc with coloured nylon snap-in pipe clips with provision for accommodating thermal movement and jointed and fixed strictly in accordance with the manufacturer's instructions

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Copper pipes:

Pipes shall be hard drawn and half-hard "Maksal" pipes of the class described. Class 0 (thin walled hard drawn) pipes shall not be bent. Class 1 (thin walled half-hard), Class 2 (half-hard) and Class 3 (heavy walled half-hard) pipes shall only be bent with benders with inner and outer formers. Fittings to copper waste, vent and anti-syphon pipes, capillary solder fittings and compression fittings shall be "Cobra Watertech" type. Capillary solder fittings shall comply with ISO 2016. Only compression fittings shall be used in walls or in ground

Copper pipes are to be installed in accordance with the latest revision of the Code of Practice for Copper Plumbing soldering techniques. Flux, solder, etc to be strictly in accordance with the manufacturer's requirements with special attention to copper flux composition

Reducing fittings:

Where fittings have reducing ends or branches they are described as "reducing". In the case of pipes with diameters not exceeding 60mm, only the largest end or branch size is given. Should the Contractor wish to use other fittings and bushes or reducers he may do so on the understanding that no claim in this regard will be entertained. In the case of pipes with diameters exceeding 60mm, all sizes are given and no claims for extra bushes, reducers, etc will be entertained

Fixing of pipes:

Unless specifically otherwise stated, descriptions of pipes shall be deemed to include fixing to walls, etc casting in, building in or suspending not exceeding 1m below suspension level

Paper wrapping to pipes:

Pipes chased into brickwork must be wrapped with two layers of stout brown paper tied with wire. Rates are to include for wrapping around joints and fittings

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Disinfection of water pipework:

Water pipework is to be disinfected at completion in accordance with SANS 1200L (provision for disinfection elsewhere)

"Densyl" petrolatum anti-corrosion tape as manufactured by Denso SA (Pty) Ltd.:

Pipes to be taped shall be coated with the appropriate primer and the tape shall be applied in the appropriate widths and with suitable overlaps

Couplings and fittings to pipes shall be taped in strict accordance with the manufacturer's instructions including mastic, tape, "Layflat" sheeting, securing of same, etc

Prices for wrapping of pipes shall include for all work as described to couplings in the length

Laying, backfilling, bedding, etc of pipes:

Pipes shall be laid and bedded in accordance with manufacturers' instructions and trenches shall be carefully backfilled

Where no manufacturers' instructions exist, pipes shall be laid in accordance with Clauses 5.1 and 5.2 of each of the following:

- SANS 1200L : Medium-pressure pipelines
- SANS 1200LD : Sewers
- SANS 1200LE : Stormwater drainage

Pipe trenches, etc shall be backfilled in accordance with Clauses 3, 5.5, 5.6, 5.7 and 7 of SANS 1200DB : Earthworks (Pipe trenches)

Pipes shall be bedded in accordance with Clauses 3.1 to 3.4.1, 5.1 to 5.3 and 7 of SANS 1200LB : Bedding (Pipes)

Unless otherwise described, bedding of rigid pipes shall be Class B bedding

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General:

Descriptions of cast iron roof outlets shall be deemed to include joints to pipes and casting into concrete (adaptors for joints to PVC pipes, etc are given separately)

Descriptions of overflow pipes where measured in number, shall be deemed to include joints to cisterns and splay cut ends

Descriptions of pipes laid in and including trenches and of inspection chambers, catchpits, etc shall be deemed to include excavation, bedding, backfilling, compaction to a minimum of 98% Mod AASHTO density and disposal of surplus material on site

Descriptions of service pipes and flexible connecting pipes shall be deemed to include connections to taps, cisterns, etc and to steel pipes (adaptors for connections to copper pipes, etc are given separately)

Descriptions of WC pans, slop hoppers, etc shall be deemed to include for joints to soil pipes (pan connectors are separately measured) and shall have straight or side outlets and "P" or "S" traps as necessary

Description of waste unions shall be deemed to include rubber or vulcanite plugs and chains fixed to fittings.

As-built drawings:

Where required, the Contractor shall prepare an updated set of as-built drawings. At completion of the contract the Contractor shall hand these drawings to the Project Manager for reproducing onto the originals for handing over to the Employer (provision for allowance of as-built drawings elsewhere)

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Proprietary items:

Where applicable, the manufacturers' names or product catalogue titles are given in sub-headings preceding the items

Note that the manufacturers names specified in this trade are for the purposes of competitive pricing.

Prices are to be based on the specific products/articles specified.

On request, returnable samples are to be provided to the Project Manager for consideration

RAINWATER DISPOSAL

0,6mm Galvanised sheet steel gutters and rainwater pipes with powder coated finish on outside to match roof sheeting colour:

1	150 x150mm Box gutters	m	8
2	100 x 75mm Rainwater pipes	m	3
3	Extra over gutter for stopped end	No	2
4	Extra over gutter for outlet for 100 x 75mm pipe	No	2
5	Extra over rainwater pipe for bend	No	2
6	Extra over rainwater pipe for shoe	No	2
7	Extra over rainwater pipe for eaves or plinth offset	No	2

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Tshilwavisuku Primary School**

SANITARY FITTINGS**"Vaal" or similar approved:**

8	455 x 290mm "Hibiscus" 7050 wash hand basin bolted to wall	No	5
9	"Daisy Elite" 772403 close-coupled WC suite comprising pan with double flap heavy duty thermoset seat (Code: 8531Z0) and matching 9 litre cistern	No	7

TRAPS, ETC**"Cobra Watertech" or similar approved:**

10	50mm Code 365 CP bottle trap	No	5
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TAPS, VALVES, ETC**"Cobra Watertech" or similar approved:**

11	15mm Code 232/350 FCP angle regulating valve and flexible connection pipe	No	17
12	15mm Code FPT2A1RO-OGP01 "Roma" basin tap with waste union	No	5

SANITARY PLUMBING**uPVC pipes:**

13	50mm Pipes	m	10
14	110mm Pipes	m	35
15	50mm Diameter pipe laid in and including trenches not exceeding 1m deep	m	10
16	Ditto, but 110mm diameter	m	46

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**Construction of Water, Sanitation and Fencing
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Extra over uPVC pipes for fittings:

17	50mm Bend	No	5
18	50mm Junction	No	5
19	50mm Junction with cleaning eye and lid	No	5
20	110mm Straight pan connector	No	7
21	110mm Bend	No	14
22	110mm Junction	No	14
23	110mm Reducing junction	No	21
24	110mm Access bend	No	7
25	110mm Double junction	No	7
26	110mm "GI Two-way" vent valve	No	7

Testing:

27	Testing waste pipe system		Item
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WATER SUPPLIES**Class 1 copper pipes with capillary couplings:**

28	15mm Pipe fixed to walls, in chases, etc	m	60
29	Ditto, but 22mm diameter	m	120

Extra over Class 1 copper pipes for capillary fittings:

30	15mm Fittings	No	24
31	22mm Fittings	No	48

Testing:

32	Testing water pipe system		Item
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<u>BILL NO.11</u>			
<u>GLAZING</u>			

<u>PREAMBLES</u>			
<p>The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p> <p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles</p>			
<u>SUPPLEMENTARY PREAMBLES</u>			
<u>Float glass:</u>			
<p>The term "float glass" is used for monolithic annealed glass</p>			
<u>Laminated glass:</u>			
<p>Laminated glass to have polyvinyl butyral (PVB) interlayer(s)</p>			

<u>GLAZING TO STEEL WITH PUTTY</u>			
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6,38mm Obscure safety glass:

1 Panes not exceeding 0,1m²

m2

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GLAZING

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<p><u>BILL NO.12</u></p>			
<p><u>PAINTWORK</u></p>			
<p>-----</p>			
<p><u>PREAMBLES</u></p>			
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<p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles</p>			
<p><u>SUPPLEMENTARY PREAMBLES</u></p>			
<p><u>PREPARATORY WORK TO EXISTING WORK</u></p>			
<p><u>Previously painted plastered surfaces:</u></p>			
<p>Surfaces shall be thoroughly washed down and allowed to dry completely before any paint is applied. Blistered or peeling paint shall be completely removed and minor cracks shall be opened, filled with a suitable filler and finished smooth</p>			
<p><u>Previously painted metal surfaces:</u></p>			
<p>Surfaces shall be thoroughly rubbed and cleaned down. Blistered or peeling paint shall be completely removed down to bare metal</p>			
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Previously painted wood surfaces:

Surfaces shall be thoroughly cleaned down. Blistered or peeling paint shall be completely removed and cracks and crevices shall be primed, filled with suitable filler and finished smooth

PAINT SPECIFICATIONS

All painting shall be done in accordance with "Plascon", etc specifications, unless otherwise described

COLOURS

When staining timber, the resultant colour or shade must be to the complete satisfaction of the Project Manager before any overcoating or preservative is applied

Paintwork is classified in the following different colour groups: "White", "Pastel", "Deep" and "Transparent" in accordance with the "Natural Colour System" (NCS) adopted by the SA National Standards
Unless otherwise described, all paintwork shall be deemed to be classified in the "White" colour group

PAINTWORK, ETC TO NEW WORK

ON FIBRE-CEMENT BOARD SURFACES

One coat alkali resistant primer and two coats superior quality acrylic emulsion paint for interior and exterior use, on:

1	Fascias and barge boards, including priming metal jointing strips	m2
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METAL SURFACES WITH

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PAINTWORK
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One coat alkyd based zinc phosphate primer and two coats premium quality polyurethane enamel paint, on steel:

2	Door frames	m2	15
3	Windows	m2	9
4	Gates, grilles, burglar screens, balustrades, etc (both sides measured over the full flat area)	m2	3
5	Extra over for paintwork in the "Deep" colour group	m2	27

ON WOOD SURFACES**One coat primer, one coat alkyd based universal undercoat and two coats superior quality universal enamel paint, on:**

6	Doors	m2	29
7	Roof timbers at eaves and verges	m2	38
8	Extra over for paintwork in the "Deep" colour group	m2	67

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PAINTWORK

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Section No. 6
GR7 Grade R Unisex Ablutions
Bill No. 12
PAINTWORK
Diatho Consulting (PTY) LTD

SECTION SUMMARY - GR7 Grade R Unisex Ablutions

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Item No	Quantity	Rate	Amount
<u>SECTION NO. 7</u>			
<u>BILL NO.1</u>			
<u>EARTHWORKS (PROVISIONAL)</u>			

<u>PREAMBLES</u>			
<p>The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be included in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p>			
<p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles</p>			
<u>SUPPLEMENTARY PREAMBLES</u>			
<u>Nature of ground</u>			
<p>The nature of the ground is assumed to be loose sandy material, therefore "earth", but possibly interspersed with "hard rock" or "soft rock".</p>			
<p>The nature of the ground is assumed to be gravel, therefore "earth", but possibly interspersed with "soft rock".</p>			
<p>The nature of the ground is assumed to be silty clay with loose river boulders varying in size up to approximately 450mm diameter, therefore "earth", but possibly interspersed with "hard rock".</p>			
Carried to Collection			
<p>Section No. 7 SM2 + 2UR Male Educators Ablutions Bill No. 1 EARTHWORKS Diatho Consulting (PTY) LTD</p>			R

Trial holes indicate that the nature of the ground is silty clay to a depth of approximately 500mm with fine to medium loose sandy material below, therefore "earth". The trial holes also indicate that the water table is at a maximum depth of approximately 1000mm.

A soils investigation has been carried out on site by the engineer and the report is annexed to these bills of quantities. Descriptions of excavations shall be deemed to include all ground conditions classifiable as "earth" described in the above report and where conditions of a more difficult character are indicated these are separately measured

Subterranean water:

No subterranean water is expected

Should the Contractor however, encounter any subterranean water on the site, he shall immediately notify the Principal Agent thereof and submit recommendations for keeping the works free from subterranean water together with all costs involved therewith

Excavation for working space in rock:

Notwithstanding clause 10 measurement rule 27 of the Standard System of Measuring Building Work, excavation for working space in material of a more different character (e.g. soft or hard rock) will be measured in cubic metres to the extent executed and given as "extra over" bulk excavation or trench and hole excavation as the case may be

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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EARTHWORKS
Diatho Consulting (PTY) LTD

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Filling

Notwithstanding the reference to prescribed multiple handling in clause 1 page 10 of the Standard System (7th Edition, 2015) of Measuring Building Work, prices for filling and backfilling shall include for all selection and any multiple handling of material

Testing:

Prices for backfilling to trenches and holes only are to include for all necessary density tests in accordance with SANS 1200D

EXCAVATIONS, FILLING, ETC

EXCAVATIONS, ETC

Excavation in earth not exceeding 2m deep:

1	Reduced levels under floors	m3	2
2	Trenches	m3	7
3	Trenches and holes for thickening under surface beds, etc	m3	1

Extra over trench and hole excavations in earth for excavation in:

4	Soft rock	m3	1
5	Hard rock	m3	0.3

Extra over all excavations for carting away:

6	Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor	m3	7
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Risk of collapse of excavations:

7	Sides of trench and hole excavations not exceeding 1,5m deep	m2	19
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Diatho Consulting (PTY) LTD

Keeping excavations free of water:

- 8 Keeping excavations free of all water other than
subterranean water

Item

FILLING ETC**Earth filling obtained from the excavations and/or
prescribed stock piles on site, compacted to 93%
Mod AASHTO density:**

- 9 Backfilling to trenches, holes, etc

m3

2

**G5 filling material supplied by the contractor,
compacted to 95% Mod AASHTO density:**

- 10 Under floors, steps, pavings, etc

m3

2

Compaction of surfaces:

- 11 Compaction of ground surface under floors etc including
scarifying for a depth of 150mm, breaking down
oversize material, adding suitable material where
necessary and compacting to 91% Mod AASHTO
density

m2

17

Prescribed density tests on filling:

- 12 "Modified AASHTO Density" test

No

2

SOIL POISONING**Soil insecticide in accordance with SANS 5859:**

- 13 Soil insecticide (protection against termites) applied as
specified under floors, etc including forming and
poisoning shallow furrows against foundation walls, etc
filling in furrows and ramming

m2

14

- 14 To bottoms and sides of trenches, etc

m2

30

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Section No. 7
SM2 + 2UR Male Educators Ablutions
Bill No. 1
EARTHWORKS
Diatho Consulting (PTY) LTD

Construction of Water, Sanitation and Fencing
Tshilwavisuku Primary School

Section No. 7

Bill No. 1

EARTHWORKS

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EARTHWORKS

Diatho Consulting (PTY) LTD

Item No	Quantity	Rate	Amount
<p><u>SECTION NO. 7</u></p>			
<p><u>BILL NO.2</u></p>			
<p><u>CONCRETE, FORMWORK AND REINFORCEMENT</u></p>			
<p>----- <u>PREAMBLES</u></p>			
<p>The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p>			
<p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles</p>			
<p><u>SUPPLEMENTARY PREAMBLES</u></p>			
<p><u>Cost of tests:</u></p>			
<p><u>Breeze concrete:</u></p>			
<p>Breeze concrete shall consist of twelve parts clean dry furnace ash, free from coal or other foreign matter, to one part cement (1:12); the ash graded up to particles which will pass a 16,5mm ring from a minimum which fails to pass a 4,75mm mesh. The finer materials from the screening are to be first mixed with the cement into a mortar and the ash added afterwards and thoroughly incorporated</p>			
<p style="text-align: right;">Carried to Collection</p>			
<p>Section No. 7 SM2 + 2UR Male Educators Ablutions Bill No. 2 CONCRETE, FORMWORK AND REINFORCEMENT Diatho Consulting (PTY) LTD</p>			
			R

Lightweight concrete:

Lightweight concrete shall have a density of 600kg/m³ for the top 50mm and 400kg/m³ for the remaining thickness. The minimum thickness at outlets, channels, etc shall be 50mm

Waterproof concrete:

"Waterproof concrete" shall have the same properties as normal concrete, but the following shall be modified to make the the concrete more water-tight:

1. a cement/water ratio of minimum 1.9 and maximum 2.1
2. minimum OPC content of 300kg/m³
3. Polypropolene micro fibres added to concrete at rate of 182 million per m³

Formwork:

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

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Bill No. 2
CONCRETE, FORMWORK AND REINFORCEMENT
Diatho Consulting (PTY) LTD

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**UNREINFORCED CONCRETE CAST AGAINST
EXCAVATED SURFACES****15MPa/19mm concrete:**

1	Surface blinding under footings and bases	m3	1
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**REINFORCED CONCRETE CAST AGAINST
EXCAVATED SURFACES****30MPa/19mm concrete:**

	Strip footings	m3	3
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	Surface beds on waterproofing	m3	2
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TEST BLOCKS

2	Making and testing 150 x 150 x 150mm concrete strength test cube (Provisional)	No	1
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CONCRETE SUNDRIES**Finishing top surfaces of concrete smooth with a
steel trowel:**

3	Surface beds, slabs, etc	m2	14
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**ROUGH FORMWORK (DEGREE OF ACCURACY
III)****Rough formwork to sides:**

4	Edges, risers, ends and reveals not exceeding 300mm high or wide	m	31
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MOVEMENT JOINTS, ETC**Expansion joints with 10mm softboard between
vertical concrete and brick surfaces:**

5	Not exceeding 300mm high to edges of surface beds	m	28
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CONCRETE, FORMWORK AND REINFORCEMENT
Diatho Consulting (PTY) LTD

Construction of Water, Sanitation and Fencing
Tshilwavisuku Primary School

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CONCRETE, FORMWORK AND REINFORCEMENT

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CONCRETE, FORMWORK AND REINFORCEMENT

Diatho Consulting (PTY) LTD

Item No		Quantity	Rate	Amount
	<p><u>SECTION NO. 7</u></p> <p><u>BILL NO.3</u></p> <p><u>MASONRY</u></p> <p>-----</p> <p><u>PREAMBLES</u></p> <p>The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p> <p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>BRICKWORK</u></p> <p><u>General:</u></p> <p>Non-load bearing brickwork is to be built to full height less 20mm gap next to the ceiling and is to be left for 14 days before grouting up in 1:3 cement mortar.</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>			
	Carried to Collection			
	<p>Section No. 7 SM2 + 2UR Male Educators Ablutions Bill No. 3 MASONRY Diatho Consulting (PTY) LTD</p>		R	

Hollow walls:

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

Bagged and sealed walls:

Walls in two skins described as "bagged and sealed" shall be deemed to include having the outer face of the inner skin bagged with 1:6 cement and sand mixture and sealed with two coats bitumen emulsion waterproofing coating

Face bricks :

Bricks shall be ordered timeously to obtain uniformity in size and colour

All face brickwork shall be regularly cleaned down as the work proceeds and shall be protected as necessary by an approved method

Pointing:

Descriptions of recessed pointing to fair face brickwork and face brickwork shall be deemed to include smooth floated square recessed, hollow recessed, weathered pointing, etc

FOUNDATIONS (PROVISIONAL)

Brickwork of NFP bricks (14 MPa nominal compressive strength) in class 1 mortar:

1	One brick walls	m2	8
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2,5mm Brickwork reinforcement:

2	150mm Wide reinforcement built in horizontally	m	46
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FACE BRICKWORK

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MASONRY
Diatho Consulting (PTY) LTD

	<u>Face bricks (Allow a Prime Cost Amount of R5 500.00/1000 bricks delivered to site excluding VAT) pointed with flush horizontal and vertical joints</u>			
3	Extra over brickwork for face brickwork	m2	3	
	<u>SUPERSTRUCTURE</u>			
	<u>Brickwork of NFX bricks (14 MPa nominal compressive strength) in class II mortar in loadbearing walls etc:</u>			
4	One brick walls	m2	43	
	<u>BRICKWORK SUNDRIES</u>			
	<u>Joint forming material in movement joints:</u>			
5	12mm Fibre board built in vertically through brick walls	m	39	
	<u>2,5mm Brickwork reinforcement:</u>			
6	75mm Wide reinforcement built in horizontally	m	45	
7	150mm Wide reinforcement built in horizontally	m	143	
	<u>Prestressed fabricated concrete lintels, including necessary temporary supports:</u>			
8	110 x 75mm Lintels in lengths not exceeding 3m long	m	19	
	<u>FACE BRICKWORK</u>			
	<u>Face bricks (Allow a Prime Cost Amount of R5 500.00/1000 bricks delivered to site excluding VAT) pointed with flush horizontal and vertical joints</u>			
9	Half brick wall faced on both sides	m2	12	
10	Extra over brickwork for face brickwork	m2	86	
11	Extra over brickwork for brick-on-edge header course lintel pointed on face and 120mm soffit	m	7	
12	Fair raking cutting	m	10	
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13	<p><u>Brick-on-edge header course coping, sills, etc. of face</u> <u>bricks (Allow a Prime Cost Amount of R5 500.00/1000 bricks delivered to site excluding VAT)</u> <u>pointed with recessed joints on all exposed faces</u></p> <p>150mm Wide sills set sloping and slightly projecting</p>	m	4	
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<p>Section No. 7 SM2 + 2UR Male Educators Ablutions Bill No. 3 MASONRY Diatho Consulting (PTY) LTD</p>				

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<p><u>SECTION NO. 7</u></p>			
<p><u>BILL NO.4</u></p>			
<p><u>WATERPROOFING</u></p>			

<p><u>PREAMBLES</u></p>			
<p>The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p>			
<p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles</p>			
<p><u>SUPPLEMENTARY PREAMBLES</u></p>			
<p><u>Waterproofing:</u></p>			
<p>Waterproofing of roofs, basements, etc shall be laid under a ten year guarantee. Waterproofing to roofs shall be laid to even falls to outlets, etc with necessary ridges, hips and valleys. Descriptions of sheet or membrane waterproofing shall be deemed to include additional labour to turn-ups and turn-downs</p>			

<p>Carried to Collection</p>			R
<p>Section No. 7 SM2 + 2UR Male Educators Ablutions Bill No. 4 WATERPROOFING Diatho Consulting (PTY) LTD</p>			

DAMPPROOFING OF WALLS AND FLOORS

One layer 375 micron embossed polyethylene dampproof course (SANS 952-1985 type B):

1	In walls	m2	45
2	In walls vertically at reveals	m2	4

One layer 250 micron green polyethylene waterproof sheeting (SANS 952-1985 type C) sealed at laps with PVC self-adhesive tape:

3	Under surface beds	m2	14
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JOINT SEALANTS ETC

Two- part grey polysulphide sealing compound including backing cord, bond breaker, primer, etc

4	6 x 10mm In saw cut joints in floors	m	34
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White silicone sealing compound including backing cord, bond breaker, primer, etc

5	6 x 10mm In expansion joints in floors, including raking out expansion joint filler as necessary [LI]	m	28
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WATERPROOFING
Diatho Consulting (PTY) LTD

Construction of Water, Sanitation and Fencing
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WATERPROOFING

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WATERPROOFING
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Item No		Quantity	Rate	Amount
	<p><u>SECTION NO. 7</u></p> <p><u>BILL NO.5</u></p> <p><u>ROOF COVERINGS</u></p> <p>-----</p> <p><u>PREAMBLES</u></p> <p>The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p> <p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p>Profiled metal roof sheeting and accessories shall be supplied with a 10 year guarantee and be installed by an approved installer</p> <p>All fixing holes shall be drilled and not punched</p> <p>Roof covering accessories shall be manufactured from the same material as used for roof covering</p> <p>-----</p> <p><u>PROFILED METAL SHEETING AND ACCESSORIES</u></p>			
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	<p>Section No. 7 SM2 + 2UR Male Educators Ablutions Bill No. 5 ROOF COVERINGS Diatho Consulting (PTY) LTD</p>		R	

0,6 mm "Klip-Lok 406" or similar approved light industrial Z275 spelter galvanised steel sheeting, with "Classicoat" finish one side and half coat "Classicoat Grey" other side, and accessories fixed to timber purlins or rails at approximately 1500mm centres:

1	Roof coverings with pitch not exceeding 25 degrees	m2	24
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Accessories:

2	Apex flashings 462mm girth	m	5
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ROOF AND WALL INSULATION

"Sisalation 405" or similar approved residential grade aluminium foil based insulation:

3	Insulation sheeting laid taut over purlins at approximately 1000mm centres and fixed concurrent with roof covering with minimum 150mm stapled laps, including galvanised steel straining wires at not exceeding 400mm centres and double-sided tape at edges where required	m2	24
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Bill No. 5
ROOF COVERINGS
Diatho Consulting (PTY) LTD

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ROOF COVERINGS

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ROOF COVERINGS

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Item No		Quantity	Rate	Amount
	<p><u>SECTION NO. 7</u></p> <p><u>BILL NO.6</u></p> <p><u>CARPENTRY AND JOINERY</u></p> <p>-----</p> <p><u>PREAMBLES</u></p> <p>The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p> <p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Fixing:</u></p> <p>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" shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 500mm centres, and where described as "bolted", the bolts have been given separately elsewhere</p> <p><u>Joinery:</u></p> <p>Descriptions of frames shall be deemed to include frames, transomes, rails, etc</p>			
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	<p>Section No. 7 SM2 + 2UR Male Educators Ablutions Bill No. 6 CARPENTRY AND JOINERY Diatho Consulting (PTY) LTD</p>		R	

Descriptions of hardwood joinery shall be deemed to include sinking and pelleting heads and nuts of bolts

Particle board

All particle board shall comply with SANS 50312 having the required marking as per SANS 50312/EN 312

Decorative thermosetting plastic laminate covering:

Laminate covering shall be glued under pressure and edge strips of same shall be butt jointed at junctions with adjacent similar finish

Sizes:

Sizes are nominal and the Contractor shall make allowance in his prices for minor variances in stated finished sizes of timber doors, door members, door frames, architraves, etc

Prices

Prices for all joinery work are to include for general framing, housing and notching, arris rounded angles, glueing, blocking, planting on, screwing, adhesives, dowels, pellets, cross tongues, screws and nails and setting up complete and also for all square cutting and waste. Tops shall be secured with metal or hardwood buttons.

ROOFS, ETC

Sawn softwood grade 5:

1	38 x 114mm Wall plates bolted	m	14
2	38 x 114mm Rafters in lengths exceeding 3,9m and not exceeding 6,6m	m	45
3	50 x 76mm Purlins	m	46

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CARPENTRY AND JOINERY
Diatho Consulting (PTY) LTD

EAVES, VERGES, ETC

Medium density plain fibre-cement fascias and barge boards:

4	19 x 235mm Fascias and barge boards, including aluminium H-profile jointing strips	m	15
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DOORS, ETC

Wrought meranti doors hung to steel frames:

5	44mm Framed batten door 813 x 2032mm high of 44 x 150mm top rail and stiles, 22 x 150mm middle ledge and braces and 22 x 220mm bottom rail filled in with 22mm V-jointed one side boarding including 150mm undercut (D2)	No	2
6	44mm Framed batten door 813 x 2032mm high of 44 x 150mm top rail and stiles, 22 x 150mm middle ledge and braces and 22 x 220mm bottom rail filled in with 22mm V-jointed one side boarding and including weatherboard (D1)	No	2

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CARPENTRY AND JOINERY
Diatho Consulting (PTY) LTD

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CARPENTRY AND JOINERY

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CARPENTRY AND JOINERY

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<p><u>BILL NO.7</u></p>			
<p><u>IRONMONGERY</u></p>			
<p><u>PREAMBLES</u></p>			
<p>The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p>			
<p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles</p>			
<p><u>SUPPLEMENTARY PREAMBLES</u></p>			
<p><u>Proprietary items:</u></p>			
<p>Where applicable, the manufacturers' names or product catalogue titles are given in sub-headings preceding the items</p>			
<p>Note that the manufacturers names specified in this trade are for the purposes of competitive pricing.</p>			
<p>Prices are to be based on the specific products/articles specified.</p>			
<p>On request, returnable samples are to be provided to the Project Manager for consideration</p>			
<p>Carried to Collection</p>			
<p>Section No. 7 SM2 + 2UR Male Educators Ablutions Bill No. 7 IRONMONGERY Diatho Consulting (PTY) LTD</p>			
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Locks:

Notwithstanding Clause 2, Item 3 of the "Ironmongery" trade of the Standard System (7th Edition, 2015) of Measuring Building Work, descriptions of locks shall be deemed to include two keys per lock

Finishes to ironmongery:

Where applicable, finishes to ironmongery are indicated by suffixes in accordance with the following list:

- BS Satin bronze lacquered
- CH Chromium plated
- SC Satin chromium plated
- SE Silver enamelled
- GE Grey enamelled
- AN Anodised natural
- AS Anodised silver
- AB Anodised bronze
- AG Anodised gold
- ABL Anodised black
- PB Polished brass
- PL Polished and lacquered
- PT Epoxy coated
- SD Sanded
- BBS Brushed stainless steel

CATCHES, CABIN HOOKS, ETC

1	150mm Cabin hook and eye including 70 x 70 x 20mm chamfered hardwood block twice oiled and plugged	No	2
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LOCKS

"Union Assa Abloy" or similar approved:

2	50mm Brass padlock	No	2
3	Four lever lockset	No	2
4	"Ref. CZ80941SC" Indicator bolt	No	2

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HANDLES**"Union Assa Abloy" or similar approved:**

5	ASSA ABLOY Anodised Silver straight pull handle (Code: AL5515-300BBAS) with 300mm fixing centres	Pairs	2.0		
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PUSH PLATES AND KICK PLATES**"Union Assa Abloy" or similar approved:****1.2mm Thick satin finished "Union" stainless steel plates countersunk screwed along edges at not exceeding 200mm centres**

6	200 x 800mm Type "SS5089-200W" kicking plate	No	8		
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LETTERS, NAMEPLATES, ETC**"Dorma" or similar approved:**

7	DSS-130 Engraved "Male" information sign	No	2		
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SUNDRIES

8	25mm Diameter wall mounted door stop plugged	No	4		
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BATHROOM FITTINGS**"Kimberley-Clark" or similar approved:**

9	"Ref. SQ2 code 405607B" white lockable toilet roll holder	No	2		
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IRONMONGERY

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	<p><u>SECTION NO. 7</u></p> <p><u>BILL NO.8</u></p> <p><u>METALWORK</u></p> <p>-----</p> <p><u>PREAMBLES</u></p> <p>The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p> <p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Descriptions of bolts, anchors, etc:</u></p> <p>Descriptions of bolts shall be deemed to include nuts and washers</p> <p>Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork or concrete</p> <p>Items described as "holed for bolt(s)" shall be deemed to exclude the bolts, unless otherwise described</p> <p>Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 600mm centres</p>			
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	<p>Section No. 7 SM2 + 2UR Male Educators Ablutions Bill No. 8 METALWORK Diatho Consulting (PTY) LTD</p>		R	

Fixing:

Unless otherwise described, descriptions of items shall be deemed to include for fixing to brickwork or concrete

Where items are described as "bolted", the bolts are measured elsewhere as stated in clause N.7 of the Model Preambles

References:

References in descriptions of windows, doors, gates, etc refer to the respective types of windows, doors, etc detailed in the Architect's window schedules numbered

- 21111/FSPS/S001

and bound into the back of these bills of quantities

Tenderers are to price the following items in conjunction with the above Architect's drawings, etc and no claim arising from brevity of descriptions in these bills of quantities, of items shown on the Architect's drawings, etc shall be entertained

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STEEL GATES, SCREENS, ETC**Welded screens and gates, to brickwalls:**

1	Single gate and frame size to fit standard door, size 813 x 2032mm high	No	2
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PRESSED STEEL DOOR FRAMES**1,6mm Double rebated frames suitable for half brick walls:**

2	Frame for door size 813 x 2032mm high	No	2
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1,6mm Double rebated frames suitable for one brick walls:

3	Frame for door size 813 x 2032mm high	No	2
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STEEL WINDOWS, DOORS, ETC**Standard windows:**

4	Window type NE1, 533 x 654mm high (N1)	No	3
5	Window type NE7, 1022 x 654mm high (N2)	No	2

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METALWORK

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<p><u>SECTION NO. 7</u></p>			
<p><u>BILL NO.9</u></p>			
<p><u>PLASTERING</u></p> <p>-----</p>			
<p><u>PREAMBLES</u></p>			
<p>The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p>			
<p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles</p>			
<p><u>SUPPLEMENTARY PREAMBLES</u></p>			
<p><u>Moisture tests:</u></p>			
<p>Before any finishes, coverings, etc are applied to screeds, plastering, etc or any other in-situ finish, moisture tests are to be carried out to the complete satisfaction of the Project Manager to ensure that these surfaces have the correct moisture content for the finish to be applied</p>			
<p><u>Labours, etc</u></p>			
<p>Labours such as fair, rounded and chamfered edges, trowel cuts, throats, V-joints, angles, etc shall be deemed to be included in the descriptions</p>			
<p style="text-align: right;">Carried to Collection</p>			
<p>Section No. 7 SM2 + 2UR Male Educators Ablutions Bill No. 9 PLASTERING Diatho Consulting (PTY) LTD</p>			
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Sample Panels

A sample panel size 1m x1m, of each of the various plaster type wall and floor finishes in this contract, shall be prepared for the approval of the Project Manager and the cost of the sample panel(s) shall be deemed to be included in the overall costs of the relevant wall and floor finishes

GRANOLITHIC

Method:

The method to be used shall be either the monolithic method or the bonded method

Preparation:

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

Mix:

Unless otherwise described, granolithic shall attain a compressive strength of at least 41MPa. The coarse aggregate shall comply with SANS 1083 and shall generally be capable of passing a 10mm mesh sieve. Where the thickness of the granolithic exceeds 25mm, the size of the coarse aggregate shall be increased to the maximum size compatible with the thickness of the granolithic

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Panels:

Granolithic shall be laid in panels not exceeding 14m² for monolithic finishes, not exceeding 9,5m² for bonded finishes and not exceeding 6m² for all external granolithic. Wherever possible, panels shall be square but at no time should the length of the panel exceed 1,5 times its width

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

Laying:

Monolithic granolithic shall be applied to the partially set slab and thoroughly compacted and lightly wood floated to the required levels

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

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

Curing, seasoning and protection:

Granolithic shall be covered with clean hessian with waterproof building foil over and kept wet for at least seven days after laying

Colour:

Coloured granolithic shall be tinted with an approved colouring pigment mixed into a true and even colour

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TINTED WHITE CEMENT SCREEDS

Tinted screed shall be composed of one bag White Portland Cement and two wheelbarrows "Malmesbury" sand. Surfaces shall be finished with a steel trowel to leave a smooth finish and coated with two coats "Earthcote S.I. Floorcote" two-pack polyurethane floor sealer applied as per the manufacturer's recommendations

NOTE: Tinted screeds are to be strengthened with "Primal Eccos" acrylic polymer (15% of the water volume is to be substituted with the acrylic polymer during the mixing process)

Coarse sand is to be used for these screeds

All tinting, finishing, strengthening, etc are to be mixed, applied, etc strictly in accordance with the manufacturer's instructions

CEMENT PLASTER

Unless otherwise described, cement plaster shall be taken to mean Class 1 cement plaster i.e. 1:4 cement:sand plaster (common cement)

CEMENT SCREEDS TO CONCRETE

Cement screeds steel trowelled, on concrete:

1	30mm Thick to floors	m2	14
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FLOOR AND WALL SEALERS

Minimum two coats approved epoxy coat, on concrete:

2	On screed	m2	14
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PLASTERING

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<u>BILL NO.10</u>			
<u>PLUMBING AND DRAINAGE (PROVISIONAL)</u>			
<u>PREAMBLES</u>			
<p>The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p>			
<p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles</p>			
<u>SUPPLEMENTARY PREAMBLES</u>			
<u>Wire gratings:</u>			
<p>Descriptions of gutter outlets, etc shall be deemed to include wire balloon gratings</p>			
<u>Stormwater channels:</u>			
<p>Descriptions of channels shall be deemed to include necessary excavation, surface preparation, compaction, etc and disposal of surplus material on site</p>			
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French drains:

Descriptions of french drains shall be deemed to include excavation, stone filling graded from 300mm diameter at bottom to 75mm diameter at top, approved geofabric filter blanket over stone, 300mm earthfilling over and disposal of surplus material on site

Septic tanks:

Descriptions of proprietary type septic tanks shall be deemed to include excavation, bedding and jointing, concrete base slabs, jointing to drains and backfilling, compaction, etc all in accordance with the manufacturer's instructions and disposal of surplus material on site

Stainless steel basins, sinks, wash troughs, urinals, etc:

Stainless steel for economy basins, domestic sinks and worktops shall be Type 430 (17/0)

Stainless steel for urinals, basins, quality sinks, wash troughs, institutional equipment, etc shall be Type 304 (18/8)

Stainless steel for laboratory sinks, photographic equipment, etc shall be Type 316 (18/8)

Units shall have standard aprons on all exposed edges and tiling keys against walls where applicable

Sealing of edges:

Outer edges of sinks, basins, baths, urinals, etc are to be sealed against adjacent surfaces with approved mildew resistant silicone sealant and prices must include therefor

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PLUMBING AND DRAINAGE
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uPVC pipes and fittings:

Sewer and drainage pipes and fittings shall be jointed and sealed with butyl rubber rings

Soil, waste and vent pipes and fittings shall be solvent weld jointed or sealed with butyl rubber rings

uPVC pressure pipes and fittings:

Pipes of 50mm diameter and smaller shall be plain ended with solvent welded uPVC loose sockets and fittings

Pipes of 63mm diameter and greater shall have sockets and spigots with push-in type integral rubber ring joints. Bends shall be uPVC and all other fittings shall be cast iron, all with similar push-in type joints

High density polyethylene (HDPE) pipes and fittings:

Pipes shall be type IV and of the class specified with "Plasson" or "Alprene" compression fittings

"Polycop" polypropylene pipes:

Polypropylene pipes 54mm diameter and smaller shall be seamless copper coloured Class 16 pipes jointed with "Fast-fuse" heat welded thermoplastic or where so described "Polylock" compression fittings

Pipes shall be firmly fixed to walls, etc with coloured nylon snap-in pipe clips with provision for accommodating thermal movement and jointed and fixed strictly in accordance with the manufacturer's instructions

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Copper pipes:

Pipes shall be hard drawn and half-hard "Maksal" pipes of the class described. Class 0 (thin walled hard drawn) pipes shall not be bent. Class 1 (thin walled half-hard), Class 2 (half-hard) and Class 3 (heavy walled half-hard) pipes shall only be bent with benders with inner and outer formers. Fittings to copper waste, vent and anti-syphon pipes, capillary solder fittings and compression fittings shall be "Cobra Watertech" type. Capillary solder fittings shall comply with ISO 2016. Only compression fittings shall be used in walls or in ground

Copper pipes are to be installed in accordance with the latest revision of the Code of Practice for Copper Plumbing soldering techniques. Flux, solder, etc to be strictly in accordance with the manufacturer's requirements with special attention to copper flux composition

Reducing fittings:

Where fittings have reducing ends or branches they are described as "reducing". In the case of pipes with diameters not exceeding 60mm, only the largest end or branch size is given. Should the Contractor wish to use other fittings and bushes or reducers he may do so on the understanding that no claim in this regard will be entertained. In the case of pipes with diameters exceeding 60mm, all sizes are given and no claims for extra bushes, reducers, etc will be entertained

Fixing of pipes:

Unless specifically otherwise stated, descriptions of pipes shall be deemed to include fixing to walls, etc casting in, building in or suspending not exceeding 1m below suspension level

Paper wrapping to pipes:

Pipes chased into brickwork must be wrapped with two layers of stout brown paper tied with wire. Rates are to include for wrapping around joints and fittings

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Disinfection of water pipework:

Water pipework is to be disinfected at completion in accordance with SANS 1200L (provision for disinfection elsewhere)

"Densyl" petrolatum anti-corrosion tape as manufactured by Denso SA (Pty) Ltd.:

Pipes to be taped shall be coated with the appropriate primer and the tape shall be applied in the appropriate widths and with suitable overlaps

Couplings and fittings to pipes shall be taped in strict accordance with the manufacturer's instructions including mastic, tape, "Layflat" sheeting, securing of same, etc

Prices for wrapping of pipes shall include for all work as described to couplings in the length

Laying, backfilling, bedding, etc of pipes:

Pipes shall be laid and bedded in accordance with manufacturers' instructions and trenches shall be carefully backfilled

Where no manufacturers' instructions exist, pipes shall be laid in accordance with Clauses 5.1 and 5.2 of each of the following:

- SANS 1200L : Medium-pressure pipelines
- SANS 1200LD : Sewers
- SANS 1200LE : Stormwater drainage

Pipe trenches, etc shall be backfilled in accordance with Clauses 3, 5.5, 5.6, 5.7 and 7 of SANS 1200DB : Earthworks (Pipe trenches)

Pipes shall be bedded in accordance with Clauses 3.1 to 3.4.1, 5.1 to 5.3 and 7 of SANS 1200LB : Bedding (Pipes)

Unless otherwise described, bedding of rigid pipes shall be Class B bedding

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General:

Descriptions of cast iron roof outlets shall be deemed to include joints to pipes and casting into concrete (adaptors for joints to PVC pipes, etc are given separately)

Descriptions of overflow pipes where measured in number, shall be deemed to include joints to cisterns and splay cut ends

Descriptions of pipes laid in and including trenches and of inspection chambers, catchpits, etc shall be deemed to include excavation, bedding, backfilling, compaction to a minimum of 98% Mod AASHTO density and disposal of surplus material on site

Descriptions of service pipes and flexible connecting pipes shall be deemed to include connections to taps, cisterns, etc and to steel pipes (adaptors for connections to copper pipes, etc are given separately)

Descriptions of WC pans, slop hoppers, etc shall be deemed to include for joints to soil pipes (pan connectors are separately measured) and shall have straight or side outlets and "P" or "S" traps as necessary

Description of waste unions shall be deemed to include rubber or vulcanite plugs and chains fixed to fittings.

As-built drawings:

Where required, the Contractor shall prepare an updated set of as-built drawings. At completion of the contract the Contractor shall hand these drawings to the Project Manager for reproducing onto the originals for handing over to the Employer (provision for allowance of as-built drawings elsewhere)

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Proprietary items:

Where applicable, the manufacturers' names or product catalogue titles are given in sub-headings preceding the items

Note that the manufacturers names specified in this trade are for the purposes of competitive pricing.

Prices are to be based on the specific products/articles specified.

On request, returnable samples are to be provided to the Project Manager for consideration

RAINWATER DISPOSAL**0,6mm Galvanised sheet steel gutters and rainwater pipes with powder coated finish on outside to match roof sheeting colour:**

1	150 x150mm Box gutters	m	5		
2	100 x 75mm Rainwater pipes	m	5		
3	Extra over gutter for stopped end	No	2		
4	Extra over gutter for outlet for 100 x 75mm pipe	No	2		
5	Extra over rainwater pipe for bend	No	2		
6	Extra over rainwater pipe for shoe	No	2		
7	Extra over rainwater pipe for eaves or plinth offset	No	2		

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**Construction of Water, Sanitation and Fencing
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SANITARY FITTINGS**"Vaal" or similar approved:**

8	455 x 290mm "Hibiscus" 7050 wash hand basin bolted to wall	No	3
9	"Daisy Elite" 772403 close-coupled WC suite comprising pan with double flap heavy duty thermoset seat (Code: 8531Z0) and matching 9 litre cistern	No	2
10	Flat back urinal overall size 295 x 315 x 415mm high with 40mm chromium plated domical grating (Code 878720) and top inlet spreader (Code 8543) with two hanger brackets with flushmaster junior (Code 812720) hung to wall	No	3

TRAPS, ETC**"Cobra Watertech" or similar approved:**

11	50mm Code 365 CP bottle trap	No	3
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TAPS, VALVES, ETC**"Cobra Watertech" or similar approved:**

12	15mm Code 232/350 FCP angle regulating valve and flexible connection pipe	No	8
13	15mm Code FPT2A1RO-OGP01 "Roma" basin tap with waste union	No	3

SANITARY PLUMBING**uPVC pipes:**

14	50mm Pipes	m	40
15	110mm Pipes	m	10

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16	50mm Diameter pipe laid in and including trenches not exceeding 1m deep	m	120		
17	Ditto, but 110mm diameter	m	30		
	<u>Extra over uPVC pipes for fittings:</u>				
18	50mm Bend	No	16		
19	50mm Junction	No	16		
20	50mm Junction with cleaning eye and lid	No	16		
21	110mm Straight pan connector	No	2		
22	110mm Bend	No	4		
23	110mm Junction	No	4		
24	110mm Reducing junction	No	6		
25	110mm Access bend	No	2		
26	110mm Double junction	No	6		
27	110mm "GI Two-way" vent valve	No	2		
	<u>Testing:</u>				
28	Testing waste pipe system			Item	
	<u>WATER SUPPLIES</u>				
	<u>Class 1 copper pipes with capillary couplings:</u>				
29	15mm Pipe fixed to walls, in chases, etc	m	24		
30	Ditto, but 22mm diameter	m	40		
	<u>Extra over Class 1 copper pipes for capillary fittings:</u>				
31	15mm Fittings	No	40		
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32 22mm Fittings

No

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Testing:

33 Testing water pipe system

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<p><u>SECTION NO. 7</u></p>			
<p><u>BILL NO.11</u></p>			
<p><u>GLAZING</u></p>			

<p><u>PREAMBLES</u></p>			
<p>The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p>			
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<p><u>SUPPLEMENTARY PREAMBLES</u></p>			
<p><u>Float glass:</u></p>			
<p>The term "float glass" is used for monolithic annealed glass</p>			
<p><u>Laminated glass:</u></p>			
<p>Laminated glass to have polyvinyl butyral (PVB) interlayer(s)</p>			

<p><u>GLAZING TO STEEL WITH PUTTY</u></p>			
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6,38mm Obscure safety glass:

1 Panes not exceeding 0,1m²

m2

2

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GLAZING
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GLAZING

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GLAZING

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<p><u>SECTION NO. 7</u></p>			
<p><u>BILL NO.12</u></p>			
<p><u>PAINTWORK</u></p>			
<p>-----</p>			
<p><u>PREAMBLES</u></p>			
<p>The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p>			
<p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles</p>			
<p><u>SUPPLEMENTARY PREAMBLES</u></p>			
<p><u>PREPARATORY WORK TO EXISTING WORK</u></p>			
<p><u>Previously painted plastered surfaces:</u></p>			
<p>Surfaces shall be thoroughly washed down and allowed to dry completely before any paint is applied. Blistered or peeling paint shall be completely removed and minor cracks shall be opened, filled with a suitable filler and finished smooth</p>			
<p><u>Previously painted metal surfaces:</u></p>			
<p>Surfaces shall be thoroughly rubbed and cleaned down. Blistered or peeling paint shall be completely removed down to bare metal</p>			
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Previously painted wood surfaces:

Surfaces shall be thoroughly cleaned down. Blistered or peeling paint shall be completely removed and cracks and crevices shall be primed, filled with suitable filler and finished smooth

PAINT SPECIFICATIONS

All painting shall be done in accordance with "Plascon", etc specifications, unless otherwise described

COLOURS

When staining timber, the resultant colour or shade must be to the complete satisfaction of the Project Manager before any overcoating or preservative is applied

Paintwork is classified in the following different colour groups: "White", "Pastel", "Deep" and "Transparent" in accordance with the "Natural Colour System" (NCS) adopted by the SA National Standards
Unless otherwise described, all paintwork shall be deemed to be classified in the "White" colour group

PAINTWORK, ETC TO NEW WORK

ON FIBRE-CEMENT BOARD SURFACES

One coat alkali resistant primer and two coats superior quality acrylic emulsion paint for interior and exterior use, on:

1	Fascias and barge boards, including priming metal jointing strips	m2
---	---	----

4

METAL SURFACES WITH

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One coat alkyd based zinc phosphate primer and two coats premium quality polyurethane enamel paint, on steel:

2	Door frames	m2	7
3	Windows	m2	5
4	Gates, grilles, burglar screens, balustrades, etc (both sides measured over the full flat area)	m2	7
5	Extra over for paintwork in the "Deep" colour group	m2	19

ON WOOD SURFACES**One coat primer, one coat alkyd based universal undercoat and two coats superior quality universal enamel paint, on:**

6	Doors	m2	14
7	Roof timbers at eaves and verges	m2	29
8	Extra over for paintwork in the "Deep" colour group	m2	44

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Construction of Water, Sanitation and Fencing
Tshilwavisuku Primary School

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SM2 + 2UR Male Educators Ablutions

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Construction of Water, Sanitation and Fencing
Tshilwavisuku Primary School

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	<p><u>SECTION NO. 8</u></p> <p><u>BILL NO.1</u></p> <p><u>EARTHWORKS (PROVISIONAL)</u></p> <p>-----</p> <p><u>PREAMBLES</u></p> <p>The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be included in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p> <p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Nature of ground</u></p> <p>The nature of the ground is assumed to be loose sandy material, therefore "earth", but possibly interspersed with "hard rock" or "soft rock".</p> <p>The nature of the ground is assumed to be gravel, therefore "earth", but possibly interspersed with "soft rock".</p> <p>The nature of the ground is assumed to be silty clay with loose river boulders varying in size up to approximately 450mm diameter, therefore "earth", but possibly interspersed with "hard rock".</p>			
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Trial holes indicate that the nature of the ground is silty clay to a depth of approximately 500mm with fine to medium loose sandy material below, therefore "earth". The trial holes also indicate that the water table is at a maximum depth of approximately 1000mm.

A soils investigation has been carried out on site by the engineer and the report is annexed to these bills of quantities. Descriptions of excavations shall be deemed to include all ground conditions classifiable as "earth" described in the above report and where conditions of a more difficult character are indicated these are separately measured

Subterranean water:

No subterranean water is expected

Should the Contractor however, encounter any subterranean water on the site, he shall immediately notify the Principal Agent thereof and submit recommendations for keeping the works free from subterranean water together with all costs involved therewith

Excavation for working space in rock:

Notwithstanding clause 10 measurement rule 27 of the Standard System of Measuring Building Work, excavation for working space in material of a more different character (e.g. soft or hard rock) will be measured in cubic metres to the extent executed and given as "extra over" bulk excavation or trench and hole excavation as the case may be

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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EARTHWORKS
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Filling

Notwithstanding the reference to prescribed multiple handling in clause 1 page 10 of the Standard System (7th Edition, 2015) of Measuring Building Work, prices for filling and backfilling shall include for all selection and any multiple handling of material

Testing:

Prices for backfilling to trenches and holes only are to include for all necessary density tests in accordance with SANS 1200D

EXCAVATIONS, FILLING, ETC

EXCAVATIONS, ETC

Excavation in earth not exceeding 2m deep:

1	Reduced levels under floors	m3	4
2	Trenches	m3	11
3	Trenches and holes for thickening under surface beds, etc	m3	1

Extra over trench and hole excavations in earth for excavation in:

4	Soft rock	m3	1
5	Hard rock	m3	1

Extra over all excavations for carting away:

6	Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor	m3	12
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Risk of collapse of excavations:

7	Sides of trench and hole excavations not exceeding 1,5m deep	m2	30
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Keeping excavations free of water:

- 8 Keeping excavations free of all water other than subterranean water

Item

FILLING ETC**Earth filling obtained from the excavations and/or prescribed stock piles on site, compacted to 93% Mod AASHTO density:**

- 9 Backfilling to trenches, holes, etc

m3

4

G5 filling material supplied by the contractor, compacted to 95% Mod AASHTO density:

- 10 Under floors, steps, pavings, etc

m3

4

Compaction of surfaces:

- 11 Compaction of ground surface under floors etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 91% Mod AASHTO density

m2

29

Prescribed density tests on filling:

- 12 "Modified AASHTO Density" test

No

13

SOIL POISONING**Soil insecticide in accordance with SANS 5859:**

- 13 Soil insecticide (protection against termites) applied as specified under floors, etc including forming and poisoning shallow furrows against foundation walls, etc filling in furrows and ramming

m2

29

- 14 To bottoms and sides of trenches, etc

m2

48

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<u>BILL NO.2</u>			
<u>CONCRETE, FORMWORK AND REINFORCEMENT</u>			

<u>PREAMBLES</u>			
<p>The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p>			
<p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles</p>			
<u>SUPPLEMENTARY PREAMBLES</u>			
<u>Cost of tests:</u>			
<u>Breeze concrete:</u>			
<p>Breeze concrete shall consist of twelve parts clean dry furnace ash, free from coal or other foreign matter, to one part cement (1:12); the ash graded up to particles which will pass a 16,5mm ring from a minimum which fails to pass a 4,75mm mesh. The finer materials from the screening are to be first mixed with the cement into a mortar and the ash added afterwards and thoroughly incorporated</p>			
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<p>Section No. 8 GRD5 Grade R Unisex & Disabled Bill No. 2 CONCRETE, FORMWORK AND REINFORCEMENT Diatho Consulting (PTY) LTD</p>			R

Lightweight concrete:

Lightweight concrete shall have a density of 600kg/m³ for the top 50mm and 400kg/m³ for the remaining thickness. The minimum thickness at outlets, channels, etc shall be 50mm

Waterproof concrete:

"Waterproof concrete" shall have the same properties as normal concrete, but the following shall be modified to make the the concrete more water-tight:

1. a cement/water ratio of minimum 1.9 and maximum 2.1
2. minimum OPC content of 300kg/m³
3. Polypropolene micro fibres added to concrete at rate of 182 million per m³

Formwork:

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

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UNREINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES**15MPa/19mm concrete:**

1	Surface blinding under footings and bases	m3	1
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REINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES**30MPa/19mm concrete:**

	Strip footings	m3	4
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	Surface beds on waterproofing	m3	3
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TEST BLOCKS

2	Making and testing 150 x 150 x 150mm concrete strength test cube (Provisional)	No	2
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CONCRETE SUNDRIES**Finishing top surfaces of concrete smooth with a steel trowel:**

3	Surface beds, slabs, etc	m2	25
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ROUGH FORMWORK (DEGREE OF ACCURACY III)**Rough formwork to sides:**

4	Edges, risers, ends and reveals not exceeding 300mm high or wide	m	51
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MOVEMENT JOINTS, ETC**Expansion joints with 10mm softboard between vertical concrete and brick surfaces:**

5	Not exceeding 300mm high to edges of surface beds	m	56
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<u>Saw-cut joints:</u>				
6	6 x 10mm Saw-cut joints in top of concrete	m	67	
<u>REINFORCEMENT (PROVISIONAL)</u>				
<u>Mild steel reinforcement to structural concrete work:</u>				
7	Mild steel bar reinforcement (8 to 40mm diameter bars)	t	0.10	
<u>High tensile steel reinforcement to structural concrete work:</u>				
8	High tensile steel bar reinforcement (8 to 40mm diameter bars)	t	0.23	
<u>Fabric reinforcement:</u>				
9	Type 395 fabric reinforcement in concrete surface beds, slabs, etc	m2	25	
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CONCRETE, FORMWORK AND REINFORCEMENT

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Hollow walls:

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

Bagged and sealed walls:

Walls in two skins described as "bagged and sealed" shall be deemed to include having the outer face of the inner skin bagged with 1:6 cement and sand mixture and sealed with two coats bitumen emulsion waterproofing coating

Face bricks :

Bricks shall be ordered timeously to obtain uniformity in size and colour

All face brickwork shall be regularly cleaned down as the work proceeds and shall be protected as necessary by an approved method

Pointing:

Descriptions of recessed pointing to fair face brickwork and face brickwork shall be deemed to include smooth floated square recessed, hollow recessed, weathered pointing, etc

FOUNDATIONS (PROVISIONAL)

Brickwork of NFP bricks (14 MPa nominal compressive strength) in class 1 mortar:

1	One brick walls	m2	13
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2,5mm Brickwork reinforcement:

2	150mm Wide reinforcement built in horizontally	m	149
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FACE BRICKWORK

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	<u>Face bricks (Allow a Prime Cost Amount of R5 500.00/1000 bricks delivered to site excluding VAT) pointed with flush horizontal and vertical joints</u>			
3	Extra over brickwork for face brickwork	m2	4	
	<u>SUPERSTRUCTURE</u>			
	<u>Brickwork of NFX bricks (14 MPa nominal compressive strength) in class II mortar in loadbearing walls etc:</u>			
4	One brick walls	m2	72	
	<u>BRICKWORK SUNDRIES</u>			
	<u>Joint forming material in movement joints:</u>			
5	12mm Fibre board built in vertically through brick walls	m	63	
	<u>2,5mm Brickwork reinforcement:</u>			
6	75mm Wide reinforcement built in horizontally	m	62	
7	150mm Wide reinforcement built in horizontally	m	233	
	<u>Prestressed fabricated concrete lintels, including necessary temporary supports:</u>			
8	110 x 75mm Lintels in lengths not exceeding 3m long	m	28	
	<u>FACE BRICKWORK</u>			
	<u>Face bricks (Allow a Prime Cost Amount of R5 500.00/1000 bricks delivered to site excluding VAT) pointed with flush horizontal and vertical joints</u>			
9	Half brick wall faced on both sides	m2	12	
10	Extra over brickwork for face brickwork	m2	143	
11	Extra over brickwork for brick-on-edge header course lintel pointed on face and 120mm soffit	m	8	
12	Fair raking cutting	m	10	
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13	<p><u>Brick-on-edge header course coping, sills, etc. of face</u> <u>bricks (Allow a Prime Cost Amount of R5 500.00/1000 bricks delivered to site excluding VAT)</u> <u>pointed with recessed joints on all exposed faces</u></p> <p>150mm Wide sills set sloping and slightly projecting</p> <p>m</p> <p>6</p> <p>Carried to Collection</p> <p>Section No. 8 GRD5 Grade R Unisex & Disabled Bill No. 3 MASONRY Diatho Consulting (PTY) LTD</p>		6	R
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<p><u>BILL NO.4</u></p>			
<p><u>WATERPROOFING</u></p>			

<p><u>PREAMBLES</u></p>			
<p>The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p>			
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<p><u>SUPPLEMENTARY PREAMBLES</u></p>			
<p><u>Waterproofing:</u></p>			
<p>Waterproofing of roofs, basements, etc shall be laid under a ten year guarantee. Waterproofing to roofs shall be laid to even falls to outlets, etc with necessary ridges, hips and valleys. Descriptions of sheet or membrane waterproofing shall be deemed to include additional labour to turn-ups and turn-downs</p>			

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DAMPPROOFING OF WALLS AND FLOORS

One layer 375 micron embossed polyethylene dampproof course (SANS 952-1985 type B):

1	In walls	m2	72
2	In walls vertically at reveals	m2	5

One layer 250 micron green polyethylene waterproof sheeting (SANS 952-1985 type C) sealed at laps with PVC self-adhesive tape:

3	Under surface beds	m2	30
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JOINT SEALANTS ETC

Two- part grey polysulphide sealing compound including backing cord, bond breaker, primer, etc

4	6 x 10mm In saw cut joints in floors	m	67
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White silicone sealing compound including backing cord, bond breaker, primer, etc

5	6 x 10mm In expansion joints in floors, including raking out expansion joint filler as necessary [LI]	m	56
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WATERPROOFING

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<p><u>SECTION NO. 8</u></p>			
<p><u>BILL NO.5</u></p>			
<p><u>ROOF COVERINGS</u></p>			

<p><u>PREAMBLES</u></p>			
<p>The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p>			
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<p><u>SUPPLEMENTARY PREAMBLES</u></p>			
<p>Profiled metal roof sheeting and accessories shall be supplied with a 10 year guarantee and be installed by an approved installer</p>			
<p>All fixing holes shall be drilled and not punched</p>			
<p>Roof covering accessories shall be manufactured from the same material as used for roof covering</p>			

<p><u>PROFILED METAL SHEETING AND ACCESSORIES</u></p>			
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0,6 mm "Klip-Lok 406" or similar approved light industrial Z275 spelter galvanised steel sheeting, with "Classicoat" finish one side and half coat "Classicoat Grey" other side, and accessories fixed to timber purlins or rails at approximately 1500mm centres:

1 Roof coverings with pitch not exceeding 25 degrees m2 40

Accessories:

2 Apex flashings 462mm girth m 8

ROOF AND WALL INSULATION

"Sisalation 405" or similar approved residential grade aluminium foil based insulation:

3 Insulation sheeting laid taut over purlins at approximately 1000mm centres and fixed concurrent with roof covering with minimum 150mm stapled laps, including galvanised steel straining wires at not exceeding 400mm centres and double-sided tape at edges where required m2 40

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Diatho Consulting (PTY) LTD

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ROOF COVERINGS

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<p><u>BILL NO.6</u></p>			
<p><u>CARPENTRY AND JOINERY</u></p>			

<p><u>PREAMBLES</u></p>			
<p>The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p>			
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<p><u>SUPPLEMENTARY PREAMBLES</u></p>			
<p><u>Fixing:</u></p>			
<p>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" shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 500mm centres, and where described as "bolted", the bolts have been given separately elsewhere</p>			
<p><u>Joinery:</u></p>			
<p>Descriptions of frames shall be deemed to include frames, transomes, rails, etc</p>			
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Descriptions of hardwood joinery shall be deemed to include sinking and pelleting heads and nuts of bolts

Particle board

All particle board shall comply with SANS 50312 having the required marking as per SANS 50312/EN 312

Decorative thermosetting plastic laminate covering:

Laminate covering shall be glued under pressure and edge strips of same shall be butt jointed at junctions with adjacent similar finish

Sizes:

Sizes are nominal and the Contractor shall make allowance in his prices for minor variances in stated finished sizes of timber doors, door members, door frames, architraves, etc

Prices

Prices for all joinery work are to include for general framing, housing and notching, arris rounded angles, glueing, blocking, planting on, screwing, adhesives, dowels, pellets, cross tongues, screws and nails and setting up complete and also for all square cutting and waste. Tops shall be secured with metal or hardwood buttons.

ROOFS, ETC

Sawn softwood grade 5:

1	38 x 114mm Wall plates bolted	m	16
2	38 x 114mm Rafters in lengths exceeding 3,9m and not exceeding 6,6m	m	52
3	50 x 76mm Purlins	m	53

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CARPENTRY AND JOINERY
Diatho Consulting (PTY) LTD

EAVES, VERGES, ETC

Medium density plain fibre-cement fascias and barge boards:

4	19 x 235mm Fascias and barge boards, including aluminium H-profile jointing strips	m	18
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DOORS, ETC

Solid chipcore flush doors with hardwood veneer, hung to steel frames:

5	40mm Door 914 x 2032mm high (D3)	No	1
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Wrought meranti doors hung to steel frames:

6	44mm Framed batten door 813 x 2032mm high of 44 x 150mm top rail and stiles, 22 x 150mm middle ledge and braces and 22 x 220mm bottom rail filled in with 22mm V-jointed one side boarding including 150mm undercut (D2)	No	5
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7	44mm Framed batten door 813 x 2032mm high of 44 x 150mm top rail and stiles, 22 x 150mm middle ledge and braces and 22 x 220mm bottom rail filled in with 22mm V-jointed one side boarding and including weatherboard (D1)	No	1
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CARPENTRY AND JOINERY
Diatho Consulting (PTY) LTD

Item No		Quantity	Rate	Amount
	<p><u>SECTION NO. 8</u></p> <p><u>BILL NO.7</u></p> <p><u>IRONMONGERY</u></p> <p>-----</p> <p><u>PREAMBLES</u></p> <p>The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p> <p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Proprietary items:</u></p> <p>Where applicable, the manufacturers' names or product catalogue titles are given in sub-headings preceding the items</p> <p>Note that the manufacturers names specified in this trade are for the purposes of competitive pricing.</p> <p>Prices are to be based on the specific products/articles specified.</p> <p>On request, returnable samples are to be provided to the Project Manager for consideration</p>			
	Carried to Collection			R
	<p>Section No. 8 GRD5 Grade R Unisex & Disabled Bill No. 7 IRONMONGERY Diatho Consulting (PTY) LTD</p>			

Locks:

Notwithstanding Clause 2, Item 3 of the "Ironmongery" trade of the Standard System (7th Edition, 2015) of Measuring Building Work, descriptions of locks shall be deemed to include two keys per lock

Finishes to ironmongery:

Where applicable, finishes to ironmongery are indicated by suffixes in accordance with the following list:

- BS Satin bronze lacquered
- CH Chromium plated
- SC Satin chromium plated
- SE Silver enamelled
- GE Grey enamelled
- AN Anodised natural
- AS Anodised silver
- AB Anodised bronze
- AG Anodised gold
- ABL Anodised black
- PB Polished brass
- PL Polished and lacquered
- PT Epoxy coated
- SD Sanded
- BBS Brushed stainless steel

CATCHES, CABIN HOOKS, ETC

1	150mm Cabin hook and eye including 70 x 70 x 20mm chamfered hardwood block twice oiled and plugged	No	5
---	--	----	---

LOCKS

"Union Assa Abloy" or similar approved:

2	50mm Brass padlock	No	2
3	Four lever lockset	No	2
4	"Ref. CZ80941SC" Indicator bolt	No	5

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IRONMONGERY
Diatho Consulting (PTY) LTD

HANDLES**"Union Assa Abloy" or similar approved:**

5	ASSA ABLOY Anodised Silver straight pull handle (Code: AL5515-300BBAS) with 300mm fixing centres	Pairs	2.0		
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PUSH PLATES AND KICK PLATES**"Union Assa Abloy" or similar approved:****1.2mm Thick satin finished "Union" stainless steel plates countersunk screwed along edges at not exceeding 200mm centres**

6	200 x 800mm Type "SS5089-200W" kicking plate	No	14		
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DOOR CLOSERS**"Dorma" or similar approved:**

7	"Dorma" TS73N/EN3-4 parallel arm door closer delayed closing-push side fitting.	No	1		
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LETTERS, NAMEPLATES, ETC**"Dorma" or similar approved:**

8	DSS-132 Engraved "Female/ Male" information sign, plugged	No	1		
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9	DSS-133 Engraved "Disabled" information sign, plugged	No	1		
---	---	----	---	--	--

SUNDRIES

10	25mm Diameter wall mounted door stop plugged	No	7		
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BATHROOM FITTINGS**Carried to Collection**

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Construction of Water, Sanitation and Fencing
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"Vaal Paragon" or similar approved

11 32mm Type 9 back grab rail 800mm long plugged

No 1

12 32mm Type 8 side grab rail 900mm girth plugged

No 1

"Kimberley-Clark" or similar approved:

13 "Ref. SQ2 code 405607B" white lockable toilet roll holder

No 6

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IRONMONGERY

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Item No		Quantity	Rate	Amount
	<p><u>SECTION NO. 8</u></p> <p><u>BILL NO.8</u></p> <p><u>METALWORK</u></p> <p>-----</p> <p><u>PREAMBLES</u></p> <p>The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p> <p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Descriptions of bolts, anchors, etc:</u></p> <p>Descriptions of bolts shall be deemed to include nuts and washers</p> <p>Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork or concrete</p> <p>Items described as "holed for bolt(s)" shall be deemed to exclude the bolts, unless otherwise described</p> <p>Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 600mm centres</p>			
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	<p>Section No. 8 GRD5 Grade R Unisex & Disabled Bill No. 8 METALWORK Diatho Consulting (PTY) LTD</p>		R	

Fixing:

Unless otherwise described, descriptions of items shall be deemed to include for fixing to brickwork or concrete

Where items are described as "bolted", the bolts are measured elsewhere as stated in clause N.7 of the Model Preambles

References:

References in descriptions of windows, doors, gates, etc refer to the respective types of windows, doors, etc detailed in the Architect's window schedules numbered

- 21111/FSPS/S005

and bound into the back of these bills of quantities

Tenderers are to price the following items in conjunction with the above Architect's drawings, etc and no claim arising from brevity of descriptions in these bills of quantities, of items shown on the Architect's drawings, etc shall be entertained

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STEEL GATES, SCREENS, ETC**Welded screens and gates, to brickwalls:**

1	Single gate and frame size to fit standard door, size 813 x 2032mm high	No	2
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PRESSED STEEL DOOR FRAMES**1,6mm Double rebated frames suitable for half brick walls:**

2	Frame for door size 813 x 2032mm high	No	5
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1,6mm Double rebated frames suitable for one brick walls:

3	Frame for door size 813 x 2032mm high	No	1
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4	Frame for door size 914 x 2032mm high	No	1
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STEEL WINDOWS, DOORS, ETC**Standard windows:**

5	Window type NE1, 533 x 654mm high (N1)	No	6
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6	Window type NE7, 1022 x 654mm high (N2)	No	4
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METALWORK
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Construction of Water, Sanitation and Fencing
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METALWORK

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Item No	Quantity	Rate	Amount
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<p><u>BILL NO.9</u></p>			
<p><u>PLASTERING</u></p> <p>-----</p>			
<p><u>PREAMBLES</u></p>			
<p>The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p>			
<p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles</p>			
<p><u>SUPPLEMENTARY PREAMBLES</u></p>			
<p><u>Moisture tests:</u></p>			
<p>Before any finishes, coverings, etc are applied to screeds, plastering, etc or any other in-situ finish, moisture tests are to be carried out to the complete satisfaction of the Project Manager to ensure that these surfaces have the correct moisture content for the finish to be applied</p>			
<p><u>Labours, etc</u></p>			
<p>Labours such as fair, rounded and chamfered edges, trowel cuts, throats, V-joints, angles, etc shall be deemed to be included in the descriptions</p>			
<p>Carried to Collection</p>			
<p>Section No. 8 GRD5 Grade R Unisex & Disabled Bill No. 9 PLASTERING Diatho Consulting (PTY) LTD</p>			R

Sample Panels

A sample panel size 1m x1m, of each of the various plaster type wall and floor finishes in this contract, shall be prepared for the approval of the Project Manager and the cost of the sample panel(s) shall be deemed to be included in the overall costs of the relevant wall and floor finishes

GRANOLITHIC

Method:

The method to be used shall be either the monolithic method or the bonded method

Preparation:

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

Mix:

Unless otherwise described, granolithic shall attain a compressive strength of at least 41MPa. The coarse aggregate shall comply with SANS 1083 and shall generally be capable of passing a 10mm mesh sieve. Where the thickness of the granolithic exceeds 25mm, the size of the coarse aggregate shall be increased to the maximum size compatible with the thickness of the granolithic

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Diatho Consulting (PTY) LTD

Panels:

Granolithic shall be laid in panels not exceeding 14m² for monolithic finishes, not exceeding 9,5m² for bonded finishes and not exceeding 6m² for all external granolithic. Wherever possible, panels shall be square but at no time should the length of the panel exceed 1,5 times its width

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

Laying:

Monolithic granolithic shall be applied to the partially set slab and thoroughly compacted and lightly wood floated to the required levels

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

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

Curing, seasoning and protection:

Granolithic shall be covered with clean hessian with waterproof building foil over and kept wet for at least seven days after laying

Colour:

Coloured granolithic shall be tinted with an approved colouring pigment mixed into a true and even colour

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TINTED WHITE CEMENT SCREEDS

Tinted screed shall be composed of one bag White Portland Cement and two wheelbarrows "Malmesbury" sand. Surfaces shall be finished with a steel trowel to leave a smooth finish and coated with two coats "Earthcote S.I. Floorcote" two-pack polyurethane floor sealer applied as per the manufacturer's recommendations

NOTE: Tinted screeds are to be strengthened with "Primal Eccos" acrylic polymer (15% of the water volume is to be substituted with the acrylic polymer during the mixing process)

Coarse sand is to be used for these screeds

All tinting, finishing, strengthening, etc are to be mixed, applied, etc strictly in accordance with the manufacturer's instructions

CEMENT PLASTER

Unless otherwise described, cement plaster shall be taken to mean Class 1 cement plaster i.e. 1:4 cement:sand plaster (common cement)

CEMENT SCREEDS TO CONCRETE

Cement screeds steel trowelled, on concrete:

1	30mm Thick to floors	m2	25
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FLOOR AND WALL SEALERS

Minimum two coats approved epoxy coat, on concrete:

2	On screed	m2	25
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Construction of Water, Sanitation and Fencing
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PLASTERING

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<u>SECTION NO. 8</u>			
<u>BILL NO.10</u>			
<u>PLUMBING AND DRAINAGE (PROVISIONAL)</u>			

<u>PREAMBLES</u>			
<p>The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p>			
<p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles</p>			
<u>SUPPLEMENTARY PREAMBLES</u>			
<u>Wire gratings:</u>			
<p>Descriptions of gutter outlets, etc shall be deemed to include wire balloon gratings</p>			
<u>Stormwater channels:</u>			
<p>Descriptions of channels shall be deemed to include necessary excavation, surface preparation, compaction, etc and disposal of surplus material on site</p>			
Carried to Collection			
<p>Section No. 8 GRD5 Grade R Unisex & Disabled Bill No. 10 PLUMBING AND DRAINAGE Diatho Consulting (PTY) LTD</p>			R

French drains:

Descriptions of french drains shall be deemed to include excavation, stone filling graded from 300mm diameter at bottom to 75mm diameter at top, approved geofabric filter blanket over stone, 300mm earthfilling over and disposal of surplus material on site

Septic tanks:

Descriptions of proprietary type septic tanks shall be deemed to include excavation, bedding and jointing, concrete base slabs, jointing to drains and backfilling, compaction, etc all in accordance with the manufacturer's instructions and disposal of surplus material on site

Stainless steel basins, sinks, wash troughs, urinals, etc:

Stainless steel for economy basins, domestic sinks and worktops shall be Type 430 (17/0)

Stainless steel for urinals, basins, quality sinks, wash troughs, institutional equipment, etc shall be Type 304 (18/8)

Stainless steel for laboratory sinks, photographic equipment, etc shall be Type 316 (18/8)

Units shall have standard aprons on all exposed edges and tiling keys against walls where applicable

Sealing of edges:

Outer edges of sinks, basins, baths, urinals, etc are to be sealed against adjacent surfaces with approved mildew resistant silicone sealant and prices must include therefor

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PLUMBING AND DRAINAGE
Diatho Consulting (PTY) LTD

uPVC pipes and fittings:

Sewer and drainage pipes and fittings shall be jointed and sealed with butyl rubber rings

Soil, waste and vent pipes and fittings shall be solvent weld jointed or sealed with butyl rubber rings

uPVC pressure pipes and fittings:

Pipes of 50mm diameter and smaller shall be plain ended with solvent welded uPVC loose sockets and fittings

Pipes of 63mm diameter and greater shall have sockets and spigots with push-in type integral rubber ring joints. Bends shall be uPVC and all other fittings shall be cast iron, all with similar push-in type joints

High density polyethylene (HDPE) pipes and fittings:

Pipes shall be type IV and of the class specified with "Plasson" or "Alprene" compression fittings

"Polycop" polypropylene pipes:

Polypropylene pipes 54mm diameter and smaller shall be seamless copper coloured Class 16 pipes jointed with "Fast-fuse" heat welded thermoplastic or where so described "Polylock" compression fittings

Pipes shall be firmly fixed to walls, etc with coloured nylon snap-in pipe clips with provision for accommodating thermal movement and jointed and fixed strictly in accordance with the manufacturer's instructions

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Copper pipes:

Pipes shall be hard drawn and half-hard "Maksal" pipes of the class described. Class 0 (thin walled hard drawn) pipes shall not be bent. Class 1 (thin walled half-hard), Class 2 (half-hard) and Class 3 (heavy walled half-hard) pipes shall only be bent with benders with inner and outer formers. Fittings to copper waste, vent and anti-syphon pipes, capillary solder fittings and compression fittings shall be "Cobra Watertech" type. Capillary solder fittings shall comply with ISO 2016. Only compression fittings shall be used in walls or in ground

Copper pipes are to be installed in accordance with the latest revision of the Code of Practice for Copper Plumbing soldering techniques. Flux, solder, etc to be strictly in accordance with the manufacturer's requirements with special attention to copper flux composition

Reducing fittings:

Where fittings have reducing ends or branches they are described as "reducing". In the case of pipes with diameters not exceeding 60mm, only the largest end or branch size is given. Should the Contractor wish to use other fittings and bushes or reducers he may do so on the understanding that no claim in this regard will be entertained. In the case of pipes with diameters exceeding 60mm, all sizes are given and no claims for extra bushes, reducers, etc will be entertained

Fixing of pipes:

Unless specifically otherwise stated, descriptions of pipes shall be deemed to include fixing to walls, etc casting in, building in or suspending not exceeding 1m below suspension level

Paper wrapping to pipes:

Pipes chased into brickwork must be wrapped with two layers of stout brown paper tied with wire. Rates are to include for wrapping around joints and fittings

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Disinfection of water pipework:

Water pipework is to be disinfected at completion in accordance with SANS 1200L (provision for disinfection elsewhere)

"Densyl" petrolatum anti-corrosion tape as manufactured by Denso SA (Pty) Ltd.:

Pipes to be taped shall be coated with the appropriate primer and the tape shall be applied in the appropriate widths and with suitable overlaps

Couplings and fittings to pipes shall be taped in strict accordance with the manufacturer's instructions including mastic, tape, "Layflat" sheeting, securing of same, etc

Prices for wrapping of pipes shall include for all work as described to couplings in the length

Laying, backfilling, bedding, etc of pipes:

Pipes shall be laid and bedded in accordance with manufacturers' instructions and trenches shall be carefully backfilled

Where no manufacturers' instructions exist, pipes shall be laid in accordance with Clauses 5.1 and 5.2 of each of the following:

- SANS 1200L : Medium-pressure pipelines
- SANS 1200LD : Sewers
- SANS 1200LE : Stormwater drainage

Pipe trenches, etc shall be backfilled in accordance with Clauses 3, 5.5, 5.6, 5.7 and 7 of SANS 1200DB : Earthworks (Pipe trenches)

Pipes shall be bedded in accordance with Clauses 3.1 to 3.4.1, 5.1 to 5.3 and 7 of SANS 1200LB : Bedding (Pipes)

Unless otherwise described, bedding of rigid pipes shall be Class B bedding

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General:

Descriptions of cast iron roof outlets shall be deemed to include joints to pipes and casting into concrete (adaptors for joints to PVC pipes, etc are given separately)

Descriptions of overflow pipes where measured in number, shall be deemed to include joints to cisterns and splay cut ends

Descriptions of pipes laid in and including trenches and of inspection chambers, catchpits, etc shall be deemed to include excavation, bedding, backfilling, compaction to a minimum of 98% Mod AASHTO density and disposal of surplus material on site

Descriptions of service pipes and flexible connecting pipes shall be deemed to include connections to taps, cisterns, etc and to steel pipes (adaptors for connections to copper pipes, etc are given separately)

Descriptions of WC pans, slop hoppers, etc shall be deemed to include for joints to soil pipes (pan connectors are separately measured) and shall have straight or side outlets and "P" or "S" traps as necessary

Description of waste unions shall be deemed to include rubber or vulcanite plugs and chains fixed to fittings.

As-built drawings:

Where required, the Contractor shall prepare an updated set of as-built drawings. At completion of the contract the Contractor shall hand these drawings to the Project Manager for reproducing onto the originals for handing over to the Employer (provision for allowance of as-built drawings elsewhere)

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Proprietary items:

Where applicable, the manufacturers' names or product catalogue titles are given in sub-headings preceding the items

Note that the manufacturers names specified in this trade are for the purposes of competitive pricing.

Prices are to be based on the specific products/articles specified.

On request, returnable samples are to be provided to the Project Manager for consideration

RAINWATER DISPOSAL

0,6mm Galvanised sheet steel gutters and rainwater pipes with powder coated finish on outside to match roof sheeting colour:

1	150 x150mm Box gutters	m	8
2	100 x 75mm Rainwater pipes	m	3
3	Extra over gutter for stopped end	No	2
4	Extra over gutter for outlet for 100 x 75mm pipe	No	3
5	Extra over rainwater pipe for bend	No	3
6	Extra over rainwater pipe for shoe	No	3
7	Extra over rainwater pipe for eaves or plinth offset	No	3

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SANITARY FITTINGS**"Vaal" or similar approved:**

8	455 x 290mm "Hibiscus" 7050 wash hand basin bolted to wall	No	5
9	Junior vitreous china low level suite colour White (Code: 751358), comprising 104° outlet washdown pan (Code: 751301) with matching 9 litre front single flush cistern (Code: 7109DP) including lid, fittings and flushpipe and Junior double flap wooden seat (Code: 8518Z0).	No	5
10	"Pearl Paraplegic" 7300SC paraplegic WC suite with lid, fittings, purpose made CP side flush lever and purpose made double flap white epoxy painted wooden seat	No	1

TRAPS, ETC**"Cobra Watertech" or similar approved:**

11	50mm Code 365 CP bottle trap	No	5
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TAPS, VALVES, ETC**"Cobra Watertech" or similar approved:**

12	15mm Code 232/350 FCP angle regulating valve and flexible connection pipe	No	11
13	15mm Code FPT2A1RO-OGP01 "Roma" basin tap with waste union	No	4
14	15mm Code 503-21CP elbow action pillar tap	No	1

SANITARY PLUMBING**uPVC pipes:**

15	50mm Pipes	m	25
16	110mm Pipes	m	30

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17	50mm Diameter pipe laid in and including trenches not exceeding 1m deep	m	33		
18	Ditto, but 110mm diameter	m	39		
	<u>Extra over uPVC pipes for fittings:</u>				
19	50mm Bend	No	10		
20	50mm Junction	No	10		
21	50mm Junction with cleaning eye and lid	No	10		
22	110mm Straight pan connector	No	6		
23	110mm Bend	No	12		
24	110mm Junction	No	12		
25	110mm Reducing junction	No	18		
26	110mm Access bend	No	6		
27	110mm Double junction	No	6		
28	110mm "GI Two-way" vent valve	No	6		
	<u>Testing:</u>				
29	Testing waste pipe system			Item	
	<u>WATER SUPPLIES</u>				
	<u>Class 1 copper pipes with capillary couplings:</u>				
30	15mm Pipe fixed to walls, in chases, etc	m	33		
31	Ditto, but 22mm diameter	m	55		
	<u>Extra over Class 1 copper pipes for capillary fittings:</u>				
32	15mm Fittings	No	55		
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Construction of Water, Sanitation and Fencing
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33 22mm Fittings

No

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Testing:

34 Testing water pipe system

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<p><u>SECTION NO. 8</u></p>			
<p><u>BILL NO.11</u></p>			
<p><u>GLAZING</u></p>			

<p><u>PREAMBLES</u></p>			
<p>The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p>			
<p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles</p>			
<p><u>SUPPLEMENTARY PREAMBLES</u></p>			
<p><u>Float glass:</u></p>			
<p>The term "float glass" is used for monolithic annealed glass</p>			
<p><u>Laminated glass:</u></p>			
<p>Laminated glass to have polyvinyl butyral (PVB) interlayer(s)</p>			

<p><u>GLAZING TO STEEL WITH PUTTY</u></p>			
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<p>Section No. 8 GRD5 Grade R Unisex & Disabled Bill No. 11 GLAZING Diatho Consulting (PTY) LTD</p>			

6,38mm Obscure safety glass:

1 Panes not exceeding 0,1m²

m2

4

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Bill No. 11
GLAZING
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Construction of Water, Sanitation and Fencing
Tshilwavisuku Primary School

Section No. 8

Bill No. 11

GLAZING

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	<p><u>SECTION NO. 8</u></p> <p><u>BILL NO.12</u></p> <p><u>PAINTWORK</u></p> <p>-----</p> <p><u>PREAMBLES</u></p> <p>The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p> <p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>PREPARATORY WORK TO EXISTING WORK</u></p> <p><u>Previously painted plastered surfaces:</u></p> <p>Surfaces shall be thoroughly washed down and allowed to dry completely before any paint is applied. Blistered or peeling paint shall be completely removed and minor cracks shall be opened, filled with a suitable filler and finished smooth</p> <p><u>Previously painted metal surfaces:</u></p> <p>Surfaces shall be thoroughly rubbed and cleaned down. Blistered or peeling paint shall be completely removed down to bare metal</p> <p style="text-align: right;">Carried to Collection</p> <p>Section No. 8 GRD5 Grade R Unisex & Disabled Bill No. 12 PAINTWORK Diatho Consulting (PTY) LTD</p>			
			R	

Previously painted wood surfaces:

Surfaces shall be thoroughly cleaned down. Blistered or peeling paint shall be completely removed and cracks and crevices shall be primed, filled with suitable filler and finished smooth

PAINT SPECIFICATIONS

All painting shall be done in accordance with "Plascon", etc specifications, unless otherwise described

COLOURS

When staining timber, the resultant colour or shade must be to the complete satisfaction of the Project Manager before any overcoating or preservative is applied

Paintwork is classified in the following different colour groups: "White", "Pastel", "Deep" and "Transparent" in accordance with the "Natural Colour System" (NCS) adopted by the SA National Standards
Unless otherwise described, all paintwork shall be deemed to be classified in the "White" colour group

PAINTWORK, ETC TO NEW WORK

ON FIBRE-CEMENT BOARD SURFACES

One coat alkali resistant primer and two coats superior quality acrylic emulsion paint for interior and exterior use, on:

1 Fascias and barge boards, including priming metal jointing strips

m2

5

METAL SURFACES WITH

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PAINTWORK
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One coat alkyd based zinc phosphate primer and two coats premium quality polyurethane enamel paint, on steel:

2	Door frames	m2	13
3	Windows	m2	8
4	Gates, grilles, burglar screens, balustrades, etc (both sides measured over the full flat area)	m2	7
5	Extra over for paintwork in the "Deep" colour group	m2	28

ON WOOD SURFACES**One coat primer, one coat alkyd based universal undercoat and two coats superior quality universal enamel paint, on:**

6	Doors	m2	25
7	Roof timbers at eaves and verges	m2	34
8	Extra over for paintwork in the "Deep" colour group	m2	146

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Construction of Water, Sanitation and Fencing
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PAINTWORK

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Construction of Water, Sanitation and Fencing
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	<p><u>SECTION NO. 9</u></p> <p><u>BILL NO.1</u></p> <p><u>EXTERNAL WORK (PROVISIONAL)</u></p> <p><u>(ALL TRADES)</u></p> <p>-----</p> <p><u>PREAMBLES</u></p> <p>The Model Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p> <p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles</p> <p>Labour Intensive Methods:</p> <p>The contractor will be required to use labour intensive for items which have been marked with the letters [LI] in the Scope of Work.</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Nature of ground:</u></p> <p>The nature of the ground is assumed to be loose sandy material, therefore "earth", but possibly interspersed with "soft rock" or "hard rock"</p>			
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The nature of the ground is assumed to be gravel, therefore "earth", but possibly interspersed with "soft rock" or "hard rock"

The nature of the ground is assumed to be silty clay with loose river boulders varying in size up to approximately 450mm diameter, all of which will be deemed as "earth", but possibly interspersed with "hard rock"

Trial holes indicate that the nature of the ground is silty clay to a depth of approximately 500mm with fine to medium loose sandy material below, therefore "earth"

A soils investigation has been carried out on the site by the Engineer and the report is annexed to these bills of quantities. The soils report indicates that the ground varies between transported soils at surface comprising gravel layers of varying thickness and interspersed with clay, and weathered shales varying from very soft rock to medium hard rock consistency, all of which will be deemed as "earth". All very hard unweathered shale, ironstone, etc the removal of which necessitates the use of explosives or heavy duty hydraulic percussion hammers (peckers), will be classified as "hard rock"

Should the Contractor encounter any "soft" or "hard" rock in the excavations, he shall immediately notify the Engineer who shall be the sole arbiter as to what constitutes "soft" or "hard" rock for final account purposes

Subterranean water:

No subterranean water is expected

Excavation for working space in rock:

Notwithstanding clause 11 of the Standard System of Measuring Building Work, excavation for working space in rock will be measured in cubic metres to the extent executed and given as "extra over" bulk excavation or trench and hole excavation as the case may be

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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

Filling:

Notwithstanding the reference to prescribed multiple handling in Clause 1 of the Standard System of Measuring Building Work, prices for filling and backfilling shall include for all selection and any necessary multiple handling of material

Testing:

Prices for backfilling to trenches and holes only are to include for all necessary density tests in accordance with SANS 1200D

Maintenance period:

The maintenance period to civil works such as roads, parking and related earthworks shall be twelve calendar months

SITE CLEARANCE, ETC

Site clearance:

1	Digging up and removing rubbish, debris, vegetation, hedges, shrubs, bush, etc and trees not exceeding 200mm girth	m2	651
2	Stripping average 150mm thick layer of top soil and depositing material in prescribed stock piles on site	m2	651

REMOVAL OF TREES, ETC

3	Tree stump exceeding 200mm and not exceeding 500mm girth	No	7
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EXTERNAL WORKS
Diatho Consulting (PTY) LTD

PAVINGS, ETC

SUPPLEMENTARY PREAMBLES

Testing of material and filling:

Descriptions of earth filling, compaction, etc shall be deemed to include for all necessary testing required in accordance with the SABS 1200 series

EARTHWORKS

Excavation in earth not exceeding 2m deep:

4	Over site under paving etc to reduce levels and dispose in prescribed stock piles on site	m3	110	
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Extra over all excavations for carting away:

5	Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor	m3	110	
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Compaction of surfaces:

6	Rip and re-compact in-situ materials to a depth of 150mm, breaking down over size material and reconsolidate to 93% modified AASHTO density	m2	245	
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Keeping excavations free of water:

7	Keeping excavations free of all water other than subterranean water			Item
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C4 filling supplied and carted on by the Contractor, stabilised with 2.5% OPC cement compacted in layers not exceeding 150mm to 97% Mod. AASHTO density

8	Sub-base under roads	m3	37	
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Earth filling from commercial sources supplied by the Contractor under parking areas, roadways, etc:

9	Sub-base course of G7 material compacted to 93% Mod AASHTO density	m3	37	
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**Construction of Water, Sanitation and Fencing
Tshilwavisuku Primary School**

10	Base course stabilised G7 material with CEM II 32.5 BV compacted to 97% Mod AASHTO density	m3	37		
	<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/m2:</u>				
11	Under paving, etc	m2	245		
	<u>PRECAST CONCRETE</u>				
	<u>Paving of 200 x 100 x 60mm "Type S-A" precast concrete paving bricks with butt joints, on 20mm thick river sand bed with sand-and-cement mixture swept into joints and hosed down, including preparation of ground or filling:</u>				
12	Paving in herringbone bond pattern to falls	m2	245		
	<u>Precast concrete finished smooth on exposed surfaces, including bedding, jointing and pointing:</u>				
13	150 x 300mm High kerbs (SANS 927 fig 8) with 150 x 150 x 300mm unreinforced concrete haunching at back of each joint, including excavation, backfilling, etc	m	164		

	<u>RAMPS</u>				
	<u>EARTHWORKS</u>				
	<u>Excavation in earth not exceeding 2m deep:</u>				
14	Reduced levels under floors	m3	3		
	<u>Extra over all excavations for carting away:</u>				
15	Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor	m3	3		

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	<u>Smooth formwork to sides:</u>				
22	Sloping outer edges of ramps approximately 450mm high extreme	m	20		
	<u>REINFORCEMENT</u>				
	<u>Fabric reinforcement:</u>				
23	Type 395 fabric reinforcement in concrete surface beds, slabs, etc	m2	23		

	<u>APRONS</u>				
	<u>EARTHWORKS</u>				
	<u>Excavation in earth not exceeding 2m deep:</u>				
24	Reduced levels under floors	m3	31		
	<u>Extra over all excavations for carting away:</u>				
25	Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor	m3	31		
	<u>G7 filling material supplied by the contractor, compacted to 95% Mod AASHTO density:</u>				
26	Under floors, steps, pavings, etc	m3	31		
	<u>Compaction of surfaces:</u>				
27	Compaction of ground surface under floors etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 91% Mod AASHTO density	m2	209		
	<u>Prescribed density tests on filling:</u>				
28	"Modified AASHTO Density" test	No	70		
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	<u>Soil insecticide in accordance with SANS 5859:</u>			
29	Soil insecticide (protection against termites) applied as specified to bottoms and sides of trenches, etc including forming and poisoning shallow furrows against foundation walls, etc filling in furrows and ramming	m2	209	
	<u>CONCRETE WORK</u>			
	<u>25MPa/19mm reinforced concrete:</u>			
	Aprons	m3	31	
	<u>Test cubes</u>			
30	Making and testing 150 x 150 x 150mm concrete strength test cube (Provisional)	No	10	
	<u>Finishing top surfaces of concrete smooth with a steel trowel:</u>			
31	Surface beds, slabs, etc to falls	m2	209	
	<u>REINFORCEMENT</u>			
	<u>Fabric reinforcement:</u>			
32	Type 395 fabric reinforcement in concrete surface beds, slabs, etc	m2	209	

	<u>THE FOLLOWING IN RAINWATER STORAGE TANK STRUCTURES:</u>			
	<u>EXCAVATIONS, ETC</u>			
	<u>Excavation in earth not exceeding 2m deep:</u>			
33	Trenches	m3	19	
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	<u>Clean surface and allow to dry completely, prime and apply one coat Gloss Enamel (Traffic Green as specified by the LDOE) NO BRUSH PAINTING</u>			
46	On palisade fencing (Measured over the full area of both sides)	m2	2 088	
	<u>NEW PALISADE FENCING</u>			
	<u>FENCING AROUND GRADE R FACILITIES</u>			
	<u>Steel palisade fencing, gates, etc including prepare and apply one priming coat and two coats high gloss enamel Traffic Green paint using compressor spay gun on metal stays, gates, framing and etc</u>			
47	1800mm High palisade fencing comprising of 40 x40 x 2mm angle iron welded flash with the back of the post 300mm from top of paling and 300mm from bottom of paling (350mm from ground level), 21 palings per panel consist of 30 x 30 x 2mm x 1 800mm High steel angle iron inserted and firmly welded to the bearers at 133mm centre to centre with "Devil Fork" on top and dove tail at the bottom welded to 76 x 76 x 2mm steel tubing posts 2 400mm long/ high with closing pyramid caps on top and M12 anti vandal nuts and bolts and posts set and cast into and including 300 x 300 x 600mm deep concrete base at 3 000mm centres.	m	675	
48	1500mm Wide x 1800mm High Swing gate comprising of 40 x40 x 2mm angle iron palings welded to a 50 x 25 x 1.6mm rectangular tubing bearer frame, palings are to be placed 133mm apart each other centre to centre and 2 No x 75mm x 75mm x 2mm steel square tubing posts at each side of the gate opening with closing pyramid caps on top and planted into concrete footing 450 x 450 x 600mm deep including excavations, backfilling and locking mechanism.	No	1	
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Construction of Water, Sanitation and Fencing
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<u>BILL NO.2</u>			
<u>SITE SERVICES (PROVISIONAL)</u>			
<u>(ALL TRADES)</u>			

<u>PREAMBLES</u>			
<p>The General Preambles for Trades (2017 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p>			
<p>The following "Supplementary Preambles" are incorporated in this bill to satisfy the requirements of the project and shall take precedence over the provisions of the said General Preambles</p>			
<u>SUPPLEMENTARY PREAMBLES</u>			
<u>Stormwater channels:</u>			
<p>Descriptions of channels shall be deemed to include necessary excavation, surface preparation, compaction, etc and disposal of surplus material on site</p>			
<u>French drains:</u>			
<p>Descriptions of french drains shall be deemed to include excavation, stone filling graded from 300mm diameter at bottom to 75mm diameter at top, approved geofabric filter blanket over stone, 300mm earthfilling over and disposal of surplus material on site</p>			
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<p>Section No. 9 Site Works Bill No. 2 SITE SERVICES Diatho Consulting (PTY) LTD</p>			

Septic tanks:

Descriptions of proprietary type septic tanks shall be deemed to include excavation, bedding and jointing, concrete base slabs, jointing to drains and backfilling, compaction, etc all in accordance with the manufacturer's instructions and disposal of surplus material on site

uPVC pipes and fittings:

Sewer and drainage pipes and fittings shall be jointed and sealed with butyl rubber rings

Soil, waste and vent pipes and fittings shall be solvent weld jointed or sealed with butyl rubber rings

uPVC pressure pipes and fittings:

Pipes of 50mm diameter and smaller shall be plain ended with solvent welded uPVC loose sockets and fittings

Pipes of 63mm diameter and greater shall have sockets and spigots with push-in type integral rubber ring joints. Bends shall be uPVC and all other fittings shall be cast iron, all with similar push-in type joints

High density polyethylene (HDPE) pipes and fittings:

Pipes shall be type IV and of the class specified with "Plasson" or "Alprene" compression fittings

"Polycop" polypropylene pipes:

Polypropylene pipes 54mm diameter and smaller shall be seamless copper coloured Class 16 pipes jointed with "Fast-fuse" heat welded thermoplastic or where so described "Polylock" compression fittings

Pipes shall be firmly fixed to walls, etc with coloured nylon snap-in pipe clips with provision for accommodating thermal movement and jointed and fixed strictly in accordance with the manufacturer's instructions

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Copper pipes:

Pipes shall be hard drawn and half-hard "Maksal" pipes of the class described. Class 0 (thin walled hard drawn) pipes shall not be bent. Class 1 (thin walled half-hard), Class 2 (half-hard) and Class 3 (heavy walled half-hard) pipes shall only be bent with benders with inner and outer formers. Fittings to copper waste, vent and anti-syphon pipes, capillary solder fittings and compression fittings shall be "Cobra Watertech" type. Capillary solder fittings shall comply with ISO 2016

Copper pipes are to be installed in accordance with the latest revision of the Code of Practice for Copper Plumbing soldering techniques. Flux, solder, etc to be strictly in accordance with the manufacturer's requirements with special attention to copper flux composition

Reducing fittings:

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

Disinfection of water pipework:

Water pipework is to be disinfected at completion in accordance with SABS 1200L (provision for disinfection elsewhere)

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SITE SERVICES
Diatho Consulting (PTY) LTD

"Densyl" petrolatum anti-corrosion tape as manufactured by Denso SA (Pty) Ltd.:

Pipes to be taped shall be coated with the appropriate primer and the tape shall be applied in the appropriate widths and with suitable overlaps

Couplings and fittings to pipes shall be taped in strict accordance with the manufacturer's instructions including mastic, tape, "Layflat" sheeting, securing of same, etc

Prices for wrapping of pipes shall include for all work as described to couplings in the length

Laying, backfilling, bedding, etc of pipes:

Pipes shall be laid and bedded in accordance with manufacturers' instructions and trenches shall be carefully backfilled

Where no manufacturers' instructions exist, pipes shall be laid in accordance with Clauses 5.1 and 5.2 of each of the following:

SABS 1200L : Medium-pressure pipelines

SABS 1200LD : Sewers

SABS 1200LE: Stormwater drainage

Pipe trenches, etc shall be backfilled in accordance with Clauses 3, 5.5, 5.6, 5.7 and 7 of SABS 1200DB : Earthworks (Pipe trenches)

Pipes shall be bedded in accordance with Clauses 3.1 to 3.4.1, 5.1 to 5.3 and 7 of SABS 1200LB : Bedding (Pipes)

Unless otherwise described, bedding of rigid pipes shall be Class B bedding

General:

Descriptions of pipes laid in and including trenches and of inspection chambers, catchpits, etc shall be deemed to include excavation, bedding, backfilling, compaction to a minimum of 98% Mod AASHTO density and disposal of surplus material on site

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Diatho Consulting (PTY) LTD

Descriptions of service pipes and flexible connecting pipes shall be deemed to include connections to taps, cisterns, etc and to steel pipes (adaptors for connections to copper pipes, etc are given separately)

STORMWATER MANAGEMENT:

STORMWATER CHANNELS:

EARTHWORKS

Excavation in earth not exceeding 2m deep:

1	Reduced levels stormwater channels	m3	37
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Extra over all excavations for carting away:

2	Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor	m3	37
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G7 filling material supplied by the contractor, compacted to 95% Mod AASHTO density:

3	Under stormwater channels, etc	m3	37
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Compaction of surfaces:

4	Compaction of ground surface under stormwater channels etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 91% Mod AASHTO density	m2	245
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Prescribed density tests on filling:

5	"Modified AASHTO Density" test	No	2
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Diatho Consulting (PTY) LTD

<u>Soil insecticide in accordance with SANS 5859:</u>				
6	Soil insecticide (protection against termites) applied as specified to bottoms and sides of trenches, etc including forming and poisoning shallow furrows against foundation walls, etc filling in furrows and ramming	m2	245	
<u>CONCRETE WORK</u>				
7	25Mpa/19mm Mass concrete in V-shaped channel 700mm wide x 75mm thick cast in 2 000mm intervals with rounded salient edges and finished on exposed surfaces with 2:1 cement mortar, with and including one layer of ref.193 mesh reinforcement, laid to falls in panels not exceeding 2,0m long with 12mm bitumen impregnated soft board movement joints with exposed edges raked out for a depth of 10mm and filled with bituminous compound including all necessary excavations, form work, backfilling, clearing, levelling and etc.	m	164	
8	Extra for fair open end	No	55	
9	Extra for fair stopped end	No	55	
10	Extra for angle intersection	No	55	
<u>Test cubes</u>				
11	Making and testing 150 x 150 x 150mm concrete strength test cube (Provisional)	No	6	
<u>Finishing top surfaces of concrete smooth with a steel trowel:</u>				
12	Stormwater channels to falls	m2	245	
<u>RETAINING WALLS:</u>				
<u>EXCAVATIONS, ETC</u>				
<u>Excavation in earth not exceeding 2m deep:</u>				
13	Trenches	m3	5	
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	<u>Extra over trench and hole excavations in earth for excavation in:</u>				
14	Soft rock	m3	0.5		
15	Hard rock	m3	0.2		
	<u>Extra over all excavations for carting away:</u>				
16	Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor	m3	7		
	<u>Risk of collapse of excavations:</u>				
17	Sides of trench and hole excavations not exceeding 1,5m deep	m2	32		
	<u>Keeping excavations free of water:</u>				
18	Keeping excavations free of all water other than subterranean water			Item	
	<u>UNREINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES</u>				
	<u>25MPa/19mm concrete:</u>				
	Strip footings	m3	4		
	<u>TEST BLOCKS</u>				
19	Making and testing 150 x 150 x 150mm concrete strength test cube (Provisional)	No	1		
	<u>MASONRY</u>				
	<u>Brickwork of NFX bricks (14 MPa nominal compressive strength) in class II mortar in loadbearing walls etc:</u>				
20	One brick walls	m2	10		
	<u>2,5mm Brickwork reinforcement:</u>				
21	150mm Wide reinforcement built in horizontally	m	59		
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FACE BRICKWORK

Face bricks (Allow a Prime Cost Amount of R5 500.00/1000 bricks delivered to site excluding VAT) pointed with flush horizontal and vertical joints

22 Extra over brickwork for face brickwork m2 20

Brick-on-edge header course coping, sills, etc. of face bricks (Allow a Prime Cost Amount of R5 500.00/1000 bricks delivered to site excluding VAT) pointed with recessed joints on all exposed faces

23 220mm Copings on top of one brick walls m 20

THE FOLLOWING IN SEPTIC TANK:**EARTHWORKS**

Excavation in earth exceeding 2m and not exceeding 4m deep:

24 Septic tank pit m3 140

Extra over trench and hole excavations in earth for excavation in:

25 Soft rock m3 14

26 Hard rock m3 7

Extra over all excavations for carting away:

27 Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor m3 125

Risk of collapse of excavations:

28 Sides of trench and hole excavations not exceeding 1,5m deep m2 80

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Keeping excavations free of water:

29 Keeping excavations free of all water other than
subterranean water

Item

**Earth filling obtained from the excavations and/or
prescribed stock piles on site, compacted to 93%
Mod AASHTO density:**

30 Backfilling to trenches, holes, etc

m3

15

Compaction of surfaces:

31 Compaction of ground surface under floors etc including
scarifying for a depth of 150mm, breaking down
oversize material, adding suitable material where
necessary and compacting to 91% Mod AASHTO
density

m2

80

Prescribed density tests on filling:

32 "Modified AASHTO Density" test

No

5

Soil insecticide in accordance with SANS 5859:

33 Soil insecticide (protection against termites) applied as
specified to bottoms and sides of trenches, etc
including forming and poisoning shallow furrows against
foundation walls, etc filling in furrows and ramming

m2

80

CONCRETE WORK**15MPa/19mm unreinforced concrete:**

34 Surface blinding under footings and bases

m3

15

25MPa/19mm reinforced concrete:

Mass concrete to bottoms

m3

20

Slabs

m3

15

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Brickwork of NFP bricks in class II mortar

43	Half brick walls	m2	17
44	Extra over uPVC piping for 110mm junction	No	20
45	One brick walls	m2	70
46	Extra over uPVC piping for 110mm stop end	No	10
47	110mm uPVC cleaning eye fixed to 110mm uPVC drain pipe, including 350 x 350 x 75mm thick in-situ 15 MPa/19mm mass concrete surround, the whole finished smooth on all exposed faces with exposed angles rounded, including all necessary excavations, formwork, backfilling, etc.	No	2

BRICKWORK SUNDRIES:**Bagging of 1:3 cement and sand mixture**

48	Outer face of external brick wall	m2	350
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2,5mm Brickwork reinforcement:

49	75mm Wide reinforcement built in horizontally	m	44
50	150mm Wide reinforcement built in horizontally	m	206

One layer 250 micron green polyethylene waterproof sheeting (SANS 952-1985 type C) sealed at laps with PVC self-adhesive tape:

51	Under surface beds	m2	50
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SPECIAL FLOOR COATING

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	<u>Prepare all surfaces as necessary, prime with "Flowprime" primer and apply 6mm thick anti-slip "Flowcrete Flowfresh HF" or similar approved heavy duty chemical resistant antimicrobial treated polyurethane resin floor screed of approved colour and applied by an approved specialist, on:</u>				
52	On internal plastered walls	m2	88		
	<u>INTERNAL PLASTER</u>				
	<u>Cement plaster steel trowelled, on brickwork:</u>				
53	On walls	m2	88		

	<u>THE FOLLOWING IN PREFABRICATED STEEL TANK:</u>				
	<u>EARTHWORKS</u>				
	<u>SITE PREPARATION</u>				
54	Remove topsoil to nominal depth 150mm, stockpile and maintain	m2	25		
	<u>BULK EXCAVATION - TANK BASE</u>				
	b) <u>Extra-over for:</u>				
55	Intermediate excavation	m3	3		
56	Hard rock excavation	m3	5		
	<u>RESTRICTED EXCAVATIONS</u>				
57	Excavate for restricted foundations, footings and trenches in all materials and use for backfill or embankment or dispose.	m3	25		
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EARTHWORKS (ROADS, SUBGRADE)

58	Rip and re-compact insitu to 90% MOD AASHTO	m3	1
59	Geotechnical grid (Traix TX170)	m2	1
60	Backfill 500mm with course insitu material in 150mm layers.	m3	5

PREFABRICATED TANK

61	Supply, handle, install, erect hot dipped galvanised 70KI Prefabricated steel tank. 4,88m length x 4.88m width x 2.44m deep. Including lockable access manhole with built-in screened vent. Internal and external ladder, a level indicator, as well as all fittings required for installation. And the supply, handling, installation, and erection of hot dipped galvanised steel support structures 6m high, including an access ladder with safety cage. As well as all standard fittings required for installation and walkway around tank base with rails	No	1
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CONCRETE

62	Binding layer in 15MPa concrete (50mm thick)	m2	1
63	Shutter rough	m2	25
64	25 MPa in Strip Footing	m3	23

SCHEDULED REINFORCEMENT

65	Steel bars	t	3.00
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UNFORMED SURFACE FINISHES

66	Steel float	m2	25
67	M20 Bolts cast in complete with washer plate and nuts, all galvanised.	No	16

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PIPES

Supply, lay, bed, test, disinfect flanged pipes complete with couplings for Class 16 mild steel pipes of the following diameter: (All material including fittings to be SABS approved)

68	1. 65 mm diameter	m	18
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69	3. 80 mm diameter	m	12
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Supply, handle, lay, disinfect, bed in flexible pipe bedding and test uPVC class 16 pipes complete with spigot and socket joints.(All material including fittings to be SABS approved)

70	1. 75 mm diamete	m	12
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71	2. 90 mm diameter	m	12
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SPECIALS AND FITTINGS

Extra-over 8.2.1 for supplying, laying, bedding, jointing and testing of the following fittings for use on Steel pipes

90 degree bends

72	1. 75mm	No	4
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73	2. 90mm	No	8
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Equal Tee

74	1. 100mm x 100mm	No	2
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Extra-over 8.2.1 for supplying, laying, bedding, jointing and testing of the following fittings for use on uPVC pipes

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	<u>90 degree bends</u>				
75	1. 75mm	No	1		
76	2. 90mm	No	1		
	<u>11.25 degree Bends</u>				
77	1. 75mm	No	1		
78	2. 90mm	No	1		
	<u>22.5 degree Bends</u>				
79	1. 75mm	No	1		
80	2. 90mm	No	1		
	<u>45 degree Bends</u>				
81	1. 75mm	No	1		
82	2. 90mm	No	1		
	<u>Flange adaptors</u>				
83	1. 110mm	No	4		
	<u>Extra over Item 8.2.1 for supplying, fixing and bedding of valves; Class 16:</u>				
	<u>Viking Johnson/Klamflex flanged adaptors PN 16</u>				
84	1. 100mm	No	2		
85	ND100 AVK Dismantling joint PN16 or similar approved	No	4		
86	ND100 flanged cosmos Meinecke WPD bulk meter with digital output or similar approved; Class 16	No	1		
87	ND100 flanged Bermad 70F Y-Pattern strainer or similar approved; Class 16	No	2		
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88	ND100 flanged ball valve; Class 16	No	1		
89	Steel Plinths	No	4		
90	DN25 automatic air release valve, Vent O Mat or similar approved brand as per inlet chamber detail; Class 25	No	2		
91	ND25 brass fullway gate valve to sabs 776 Class 10	No	2		
92	ND25 galvanised barrel nipple PN16	No	2		
93	ND100 In line tee with outlet diameter as specified in the nodal descriptions and reduced to 25bsp female end connection PN16	No	2		
94	ND100 mm, 150mm long double flanged pipe, PN 16 to SANS standard	No	2		
95	ND100 mm, 600mm long double flanged pipe, PN 16 to SANS standard	No	2		
96	ND100 flanged Vosa Series 7354 Equilibrium float valve or similar approved; Class 16	No	1		
97	DN100 flanged mild steel flanged sweep tee; flanges drilled according to SANS 1123 table 16	No	1		
98	DN100 Blank flange with 20 mm hole drilled onto it and 25 mm nipple welded onto it; nipple to be male threaded on one end.	No	1		
99	DN25 Female threaded ball valve, PN16	No	1		
100	DN25 Nipple, one end male and one end female threaded	No	1		
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101	DN25 automatic air release valve, Vent O Mat or similar approved brand as per tank inlet detail; Class 25	No	1		
102	ND100 mm, 240mm long double flanged pipe, PN 16 to SANS standard	No	1		
103	ND150 mild steel pipe, PN 16,6m long,one end flanged as per detail drawing 14491-D-C-WAT-D05, actual length of pipe to be confirmed on site confirmed on site	No	1		
	<u>Isolating valves</u>				
	Extra-over item 6.13 for the supplying, installing cutting in and testing flanged Class 16 anti-clockwise closing non rising spindle resilient seal gate valves for steel pipes as shown on detailed drawings for pipe diameters				
104	1. 100 mm diameter	No	5		
105	2. 150 mm	No	1		
	<u>CHAMBERS</u>				
106	Construct concrete inlet and outlet chamber Type 1 complete with step irons, and frames as per detailed drawings, up to 2.0m depth.	No	1		
107	Construct scour valve chamber Type 4, complete with stepirons, frames and and scour wing wall structure as per detailed drawings up to 2.5m depth.	No	1		
	<u>SUNDRIES</u>				
108	Thrust blocks and pedestals class 25/19 concrete	m3	5		
	<u>THE FOLLOWING IN UPGRADING OF EXISTING BOREHOLE:</u>				
109	Allow the Amount of R 150 000.00(One Hundred and fifty Thousand Rand) NET for upgrading of existing Borehole to be executed by Specialist			Item	150 000.00
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110	Profit and attendance for the above		Item	
	<u>NEW BOREHOLE</u>			
111	Allow the Amount of R 250 000.00 (Two Hundred Fifty Thousand Rand) NET for Borehole to be executed by Specialist		Item	250 000.00
112	Profit and attendance for the above		Item	
	<u>WATER TREATMENT PLANT</u>			
113	Allow the Amount of R 250 000.00(Two Hundred and Fifty Thousand Rand) NET for Water treatment to be executed by Specialist		Item	250 000.00
114	Profit and attendance for the above		Item	
	<u>WATER STORAGE TANKS:</u>			
	<u>"Jojo" or similar approved Type SG1 polyethylene drinking water tanks with black lining internally, complete with tank connector at the bottom, inlet and over-flow on top or (side) with a 40mm fitting (female) and 430mm diameter lid with e-clips on top of the tank:</u>			
115	5250 Litre vertical tank (colour green) size 1800mm diameter x 2300mm high overall, the tank securely bolted in position to top of reinforced concrete base (base elsewhere measured)	No	7	
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SUNDRY SANITARY FITTINGS

116 Drinking fountain @ 1000mm high - 1000mm diameter precast pipe on 1400 x 1400 x 200mm thick 20MPa/19mm mass concrete footings including any necessary excavation, filling, reinforcement, top finished with 100mm thick 20MPa/19mm mass concrete slab graded to falls to 100mm dia upvc outlet (water outlet elsewhere), with wood float finish and fitted with and including 20mm diameter galvanised mild steel pipe 2,3m long including three bends, three tees, three reducers, four 22mm chromium plated Walcro 109 foundation demand tap for hold open application and one 20mm dia hose-bib-tap RB with lockshield and loose key and hose union complete with and including all plumbing work as per detail 923-S2-101-wd-106

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	Allow the sum of 10% (ten percent) of the above sub total for Contingencies to be spent as the Principal Agent may direct and to be deducted in whole or in part if not required		R
	SUB TOTAL		R
	Value Added Tax [15%]		R
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