

**STRETFORD TRAIN STATION
BILLS OF QUANTITIES**

PART 1

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<p><u>PREAMBLES FOR TRADES</u></p> <p><i>The General Preambles for Trades 2017 published by the Association of South African Quantity Surveyors is designed to support and extend the abbreviated descriptions utilised in these bills of quantities by inter alia referring to SANS construction standards. <u>Where such preambles are not applicable</u> (eg where BS or Euro construction standards are applicable or the design consultants provide other preambles/specifications for insertion), users are to ensure that the abbreviated descriptions when read in conjunction with the Standard System of Measuring Building Work (seventh edition) for works within South Africa or the Standard Method of Measuring Building Work for Africa 2015 (first edition) for works elsewhere in Africa, represent the full description by extending the abbreviated bills of quantities descriptions and/or by inserting appropriate preambles or specifications</i></p> <p><i>Note that the text of the Standard System of Measuring Building Work (seventh edition) and that of the Standard Method of Measuring Building Work for Africa 2015 (first edition) is the same</i></p> <p><i>The latest version of the General Preambles for Trades should be referred to should the General Preambles for Trades 2017 be revised in future</i></p> <p>The General Preambles for Trades 2017 published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p> <p>Supplementary preambles and/or specifications are incorporated in these bills of quantities to satisfy the requirements of this project. Such supplementary preambles and/or specifications shall take precedence over the provisions of the General Preambles</p> <p>The contractor's prices for all items throughout these bills of quantities shall take account of and include where applicable for all of the obligations, requirements and specifications given in the General Preambles and in any supplementary preambles and/or specifications</p>			
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	<p>Items left unpriced will be deemed to be covered in prices against other items throughout these bills of quantities and no claim for any extras arising out of the contractor's omission to price any item will be entertained</p> <p>Prices for all construction equipment, temporary works, services and other items shall include for the supply, maintenance, operating cost and subsequent removal and making good as necessary</p> <p>Abbreviated descriptions</p> <p>The items in these bills of quantities utilise abbreviated descriptions. It is the intention that the abbreviated descriptions be fully described when read with the applicable measuring system and the relevant preambles and/or specifications. However, should the full intent and meaning of any description not be clear, the contractor shall, before submission of his tender, call for a written directive from the principal agent, failing which it shall be assumed that the contractor has allowed in his pricing for materials and workmanship in terms of international best practice</p> <p>Legal status of contractor</p> <p>If the contractor constitutes a joint venture, consortium or other unincorporated grouping of two or more persons then:</p> <ol style="list-style-type: none"> 1. These persons are deemed to be jointly and severally liable to the employer for the performance of this agreement 2. These persons shall notify the employer of their leader who has assigned authority to bind the contractor and each of these persons 3. The contractor shall not alter its composition or legal status without the prior written consent of the employer <p>F:..... V:..... T:.....</p>			
2	Clause 2.0 - Law , regulations and notices		Item	
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	F:..... V:..... T:.....	Item	
3	Clause 3.0 - Offer and acceptance F:..... V:..... T:.....	Item	
4	Clause 4.0 - Cession and assignment F:..... V:..... T:.....	Item	
5	Clause 5.0 - Documents Value Added Tax Provision is made in the summary page of these bills of quantities for the inclusion of Value Added Tax (VAT) Priced document as specification Clause 5.4 is deemed to be deleted The principal agent shall decide which portion of the priced document may be used as a specification of materials and goods or methods, if any ? Electronic issue of drawings All drawings for this project will be issued electronically and the contractor shall be deemed to have received such drawings on the date that such drawings have been dispatched electronically [5.6] F:..... V:..... T:.....	Item	
6	Clause 6.0 - Employer's agents <i>Delegated authority may be dealt with in B 5.0 of the contract data. Insert in the contract data "Refer to Bill No. 1 (Preliminaries)" should it be dealt with in Bill No. 1</i>		
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<p>Delegated authority</p> <p>The authority of the principal agent to issue contract instructions [17.1] and perform duties for specific aspects of the works is delegated to agents as follows [6.2]. This does not preclude the principal agent from issuing such contract instructions: ?</p> <p><i>Add delegated authority as may be required for other relevant consultants not listed hereinafter</i></p> <p>1. <u>Architect</u></p> <p><i>Note that the contract instructions hereinafter are selected from those listed in clause 17.1 of the JBCC PBA</i></p> <p>1.1 Duties [6.2] :</p> <p>The architect is responsible for the architectural design, functional design and quality inspection of the works</p> <p>1.2 Contract instructions [6.2; 17.1] :</p> <p>1.2.1 Rectification of discrepancies, errors in description or quantity or omission of items in the agreement other than in the JBCC Principal Building Agreement</p> <p>1.2.2 Alteration to design, standards or quantity of the works provided that such contract instructions shall not substantially change the scope of the works</p> <p>1.2.3 The site [13.0]</p> <p>1.2.4 Compliance with the law, regulations and bylaws [2.1]</p> <p>1.2.5 Provision and testing of samples of materials and goods and/or of finishes and assemblies of elements of the works</p> <p>1.2.6 Opening up of work for inspection, removal or re-execution [23.2.4; 26.4.2]</p> <p>1.2.7 Removal or re-execution of work</p>	
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2. <u>Quantity surveyor</u>	
2.1 Duties [6.2] :	
The quantity surveyor is responsible for all measurements, valuations, financial assessments and all other quantity surveying and cost control functions of the works	
2.2 Contract instructions [6.2; 17.1] :	
2.2.1 No contract instructions delegated to the quantity surveyor ?	
3. <u>Civil and structural engineer</u>	
<i>Note that the contract instructions hereinafter are selected from those listed in clause 17.1 of the JBCC PBA</i>	
3.1 Duties [6.2] :	
The civil and structural engineer is responsible for all aspects of civil and structural engineering design and quality inspection of the works	
3.2 Contract instructions [6.2; 17.1] :	
3.2.1 Rectification of discrepancies, errors in description or quantity or omission of items in the agreement other than in the JBCC Principal Building Agreement	
3.2.2 Alteration to design, standards or quantity of the works provided that such contract instructions shall not substantially change the scope of the works	
3.2.3 The site [13.0]	
3.2.4 Compliance with the law , regulations and bylaws [2.1]	
3.2.5 Provision and testing of samples of materials and goods and/or of finishes and assemblies of elements of the works	
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3.2.6	Opening up of work for inspection, removal or re-execution [23.2.4; 26.4.2]		
3.2.7	Removal or re-execution of work		
3.2.8	Removal or substitution of any materials and goods		
3.2.9	Protection of the works		
3.2.10	Making good physical loss and repairing damage to the works [23.2.2]		
3.2.11	Rectification of defects [21.2]		
3.2.12	A list for practical completion specifying outstanding or defective work to be rectified to achieve practical completion , a list for completion and a list for final completion specifying outstanding or defective work to be rectified to achieve final completion		
3.2.13	Expenditure of budgetary allowances, prime cost amounts and provisional sums ?		
4.	<u>Mechanical engineer</u>		
	<i>Note that the contract instructions hereinafter are selected from those listed in clause 17.1 of the JBCC PBA</i>		
4.1	Duties [6.2] :		
	The mechanical engineer is responsible for all aspects of mechanical engineering design and quality inspection of the works ? and, where appointed by the employer for quantity surveying services in respect of the mechanical installations, for all measurements, valuations, financial assessments and all other quantity surveying and cost control functions		
4.2	Contract instructions [6.2; 17.1] :		
4.2.1	Rectification of discrepancies, errors in description or quantity or omission of items in the agreement other than in the JBCC Principal Building Agreement		
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4.2.2 Alteration to design, standards or quantity of the works provided that such contract instructions shall not substantially change the scope of the works			
4.2.3 Compliance with the law , regulations and bylaws [2.1]			
4.2.4 Provision and testing of samples of materials and goods and/or of finishes and assemblies of elements of the works			
4.2.5 Opening up of work for inspection, removal or re-execution [23.2.4; 26.4.2]			
4.2.6 Removal or re-execution of work			
4.2.7 Removal or substitution of any materials and goods			
4.2.8 Protection of the works			
4.2.9 Making good physical loss and repairing damage to the works [23.2.2]			
4.2.10 Rectification of defects [21.2]			
4.2.11 A list for practical completion specifying outstanding or defective work to be rectified to achieve practical completion , a list for completion and a list for final completion specifying outstanding or defective work to be rectified to achieve final completion			
4.2.12 Expenditure of budgetary allowances, prime cost amounts and provisional sums ?			
5. <u>Electrical engineer</u>			
<i>Note that the contract instructions hereinafter are selected from those listed in clause 17.1 of the JBCC PBA</i>			
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<p>5.1 Duties [6.2] :</p> <p>The electrical engineer is responsible for all aspects of electrical engineering design and quality inspection of the works ? and, where appointed by the employer for quantity surveying services in respect of the electrical installations, for all measurements, valuations, financial assessments and all other quantity surveying and cost control functions</p> <p>5.2 Contract instructions [6.2; 17.1] :</p> <p>5.2.1 Rectification of discrepancies, errors in description or quantity or omission of items in the agreement other than in the JBCC Principal Building Agreement</p> <p>5.2.2 Alteration to design, standards or quantity of the works provided that such contract instructions shall not substantially change the scope of the works</p> <p>5.2.3 Compliance with the law, regulations and bylaws [2.1]</p> <p>5.2.4 Provision and testing of samples of materials and goods and/or of finishes and assemblies of elements of the works</p> <p>5.2.5 Opening up of work for inspection, removal or re-execution [23.2.4; 26.4.2]</p> <p>5.2.6 Removal or re-execution of work</p> <p>5.2.7 Removal or substitution of any materials and goods</p> <p>5.2.8 Protection of the works</p> <p>5.2.9 Making good physical loss and repairing damage to the works [23.2.2]</p> <p>5.2.10 Rectification of defects [21.2]</p>	
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<p>5.2.11 A list for practical completion specifying outstanding or defective work to be rectified to achieve practical completion, a list for completion and a list for final completion specifying outstanding or defective work to be rectified to achieve final completion</p>	
<p>5.2.12 Expenditure of budgetary allowances, prime cost amounts and provisional sums ?</p>	
<p>6. <u>Wet services engineer</u></p>	
<p><i>Note that the contract instructions hereinafter are selected from those listed in clause 17.1 of the JBCC PBA</i></p>	
<p>6.1 Duties [6.2] :</p>	
<p>The wet services engineer is responsible for all aspects of wet services engineering design and quality inspection of the works</p>	
<p>6.2 Contract instructions [6.2; 17.1] :</p>	
<p>6.2.1 Rectification of discrepancies, errors in description or quantity or omission of items in the agreement other than in the JBCC Principal Building Agreement</p>	
<p>6.2.2 Alteration to design, standards or quantity of the works provided that such contract instructions shall not substantially change the scope of the works</p>	
<p>6.2.3 Compliance with the law, regulations and bylaws [2.1]</p>	
<p>6.2.4 Provision and testing of samples of materials and goods and/or of finishes and assemblies of elements of the works</p>	
<p>6.2.5 Opening up of work for inspection, removal or re-execution [23.2.4; 26.4.2]</p>	
<p>6.2.6 Removal or re-execution of work</p>	
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6.2.7	Removal or substitution of any materials and goods	
6.2.8	Protection of the works	
6.2.9	Making good physical loss and repairing damage to the works [23.2.2]	
6.2.10	Rectification of defects [21.2]	
6.2.11	A list for practical completion specifying outstanding or defective work to be rectified to achieve practical completion , a list for completion and a list for final completion specifying outstanding or defective work to be rectified to achieve final completion	
6.2.12	Expenditure of budgetary allowances , prime cost amounts and provisional sums ?	
7. <u>Fire consultant</u>		
<i>Note that the contract instructions hereinafter are selected from those listed in clause 17.1 of the JBCC PBA</i>		
7.1 Duties [6.2] :		
The fire consultant is responsible for all aspects of rational fire design and quality inspection of the works		
7.2 Contract instructions [6.2; 17.1] :		
7.2.1	Rectification of discrepancies, errors in description or quantity or omission of items in the agreement other than in the JBCC Principal Building Agreement	
7.2.2	Alteration to design, standards or quantity of the works provided that such contract instructions shall not substantially change the scope of the works	
7.2.3	Compliance with the law , regulations and bylaws [2.1]	

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7.2.4	Provision and testing of samples of materials and goods and/or of finishes and assemblies of elements of the works		
7.2.5	Opening up of work for inspection, removal or re-execution [23.2.4; 26.4.2]		
7.2.6	Removal or re-execution of work		
7.2.7	Removal or substitution of any materials and goods		
7.2.8	Protection of the works		
7.2.9	Making good physical loss and repairing damage to the works [23.2.2]		
7.2.10	Rectification of defects [21.2]		
7.2.11	A list for practical completion specifying outstanding or defective work to be rectified to achieve practical completion , a list for completion and a list for final completion specifying outstanding or defective work to be rectified to achieve final completion		
7.2.12	Expenditure of budgetary allowances, prime cost amounts and provisional sums ?		
8.	<u>Health and safety consultant</u>		
8.1	Duties [6.2] :		
	The health and safety consultant is responsible for all aspects of health and safety of the works . Without derogating from the generality thereof, the health and safety consultant will perform the following specific functions and duties in respect of the health and safety aspects of the works . He shall:		
8.1.1	Act as the employer's agent in terms of the Construction Regulations issued in terms of the Occupational Health and Safety Act, 1993 as amended		
8.1.2	Prepare and update the health and safety specification for the works		
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	<p>Extension of waiver of lien</p> <p>The contractor shall ensure that a waiver of lien is included in all subcontracts and that the works executed on the site are kept free of all liens and other encumbrances at all times [11.10]</p> <p>F:..... V:..... T:.....</p> <p>Execution (A12 - A17)</p>		
12	<p>Clause 12.0 - Obligations of the parties</p> <p>Office accommodation</p> <p>The contractor shall provide, maintain and remove on practical completion air conditioned office accommodation with suitable tables and chairs for meetings to be held on the site. Such offices shall be kept clean and fit for use at all times [12.2.18]</p> <p>Notice board</p> <p>The contractor shall erect in a position approved by the principal agent, maintain and remove on practical completion a notice board recommended by the South African Institute of Architects and as approved by the principal agent listing the names and logos of the employer, the contractor and the professional consultants. No subcontractor or supplier notice boards may be erected unless permission is granted by the principal agent for such notice boards to be erected [12.2.18] ?</p> <p>Statutory and other notices</p> <p>The contractor shall submit and/or comply with all statutory and other notices that may be required by any local or other authority in order not to cause any delay to the commencement of the works by the contractor. The contractor shall pay all deposits or fees in this regard</p>	Item	
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	<p>It is, however, specifically recorded that the employer shall be responsible for the timeous approval of building plans by any local or other authorities and the payment of any fees or charges related thereto</p> <p>F:..... V:..... T:.....</p>		Item	
13	<p>Clause 13.0 - Setting out</p> <p>F:..... V:..... T:.....</p>		Item	
14	<p>Clause 14.0 - Nominated subcontractors</p> <p>F:..... V:..... T:.....</p>		Item	
15	<p>Clause 15.0 - Selected subcontractors</p> <p>F:..... V:..... T:.....</p>		Item	
16	<p>Clause 16.0 - Direct contractors</p> <p>Attendance on direct contractors</p> <p>In respect of direct contractors the contractor shall:</p> <ol style="list-style-type: none"> 1. Designate an area for the direct contractor to establish a temporary office and workshop and storage of equipment and materials 2. Allow the use of personnel welfare facilities, where provided 3. Provide water, lighting and single phase electric power to a position within 50m of the place where the direct contract work is to be carried out, other than fuel or power for commissioning of any installation 4. Permit the direct contractor to use erected scaffolding, hoisting facilities, etc provided by the contractor, in common with others having the like right, while it remains erected on the site [16.1] 			
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17	Clause 17.0 - Contract instructions Site instructions Instructions issued on site are to be recorded in a site instruction book which is to be supplied and maintained on site by the contractor F:..... V:..... T:.....			
	<u>Completion (A18 - A24)</u>			
18	Clause 18.0 - Interim completion	N/A		
19	Clause 19.0 - Practical completion F:..... V:..... T:.....	Item		
20	Clause 20.0 - Completion in sections F:..... V:..... T:.....	Item		
21	Clause 21.0 - Defects liability period and final completion F:..... V:..... T:.....	Item		
22	Clause 22.0 - Latent defects liability period F:..... V:..... T:.....	Item		
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23	<p>Clause 23.0 - Revision of the date for practical completion</p> <p>Substitution of materials and goods</p> <p>The removal or substitution of any materials and goods which do not conform to the specification or the contract drawings shall not constitute grounds for the extension of the construction period nor for the adjustment of the contract value [17.1.8; 23.1 & 2]</p> <p>F:..... V:..... T:.....</p>	Item		
24	<p>Clause 24.0 - Penalty for late or non-completion</p> <p>F:..... V:..... T:.....</p> <p>Payment (A25 - A27)</p>	Item		
25	<p>Clause 25.0 - Payment</p> <p>Prices submitted</p> <p>Where prices are submitted by the contractor or subcontractor during the progress of the works in respect of contract instructions or in regard to a claim under the terms of this agreement and notwithstanding the fact that such prices may be used in an interim payment certificate, there is to be no presumption of acceptance. Should the principal agent wish to accept any such prices prior to the issue of the certificate of final completion, it shall be in writing</p> <p>F:..... V:..... T:.....</p>	Item		
26	<p>Clause 26.0 - Adjustment of the contract value and final account</p> <p>Fluctuations in costs</p> <p>All fluctuations in costs, with the exception of fluctuations in the rate of Value Added Tax, shall be for the account of the contractor [26.9.5]</p>			
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27	<p>Tenant installation/user requirements delayed</p> <p>There is a possibility that certain works related to tenant installation/user requirements may have to be delayed and may consequently not be executed prior to practical completion</p> <p>Should the contractor be instructed to do so he shall execute this work under the conditions pertaining to this agreement on the basis that a separate amount for preliminaries appurtenant to this work (if applicable) is agreed to between the contractor and the principal agent and on condition that instruction to proceed with such work is given to him within a period of three (3) calendar months after the date of practical completion of the works</p> <p>The employer reserves the right to omit such work without compensation to the contractor for loss of profit or any other loss which the contractor may suffer as a result of such omission ?</p> <p>Cost of claims</p> <p>All costs incurred by the contractor in the preparation of claims shall be borne by the contractor. This provision shall not preclude an adjudicator or an arbitrator appointed in terms of this agreement [30.6 & 7] from making a determination on costs</p> <p>Claims from subcontractors</p> <p>The contractor shall review, assess and adjudicate any claims received by him from any subcontractor and thereafter submit same to the principal agent with a recommendation in order to assist the principal agent in adjudicating the claim [26.6]</p> <p>F:..... V:..... T:.....</p>	Item	
	<p>Clause 27.0 - Recovery of expense and/or loss</p> <p>F:..... V:..... T:.....</p>	Item	
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	<u>Suspension and termination (A28 - A29)</u>			
28	Clause 28.0 - Suspension by the contractor F:..... V:..... T:.....	Item		
29	Clause 29.0 - Termination F:..... V:..... T:.....	Item		
	<u>Dispute resolution (A30)</u>			
30	Clause 30.0 - Dispute resolution F:..... V:..... T:.....	Item		
31	<u>Agreement</u> The required information of the parties and the amount of the contract sum shall be inserted in the agreement for signature of the agreement by the parties F:..... V:..... T:.....	Item		
32	<u>Contract data</u> Tenderer's selections Before submission of his tender the contractor is to complete the tenderer's selections in the contract data F:..... V:..... T:.....	Item		
	<u>SECTION B: GENERAL PRELIMINARIES</u>			
	<u>Definitions and interpretation (B1)</u>			
33	Clause 1.1 - Definitions F:..... V:..... T:.....	Item		
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34	Clause 1.2 - Interpretation F:..... V:..... T:.....	Item	
	<u>Documents (B2)</u>		
35	Clause 2.1 - Checking of documents F:..... V:..... T:.....	Item	
36	Clause 2.2 - Provisional bills of quantities Multiple procurement These bills of quantities are in multiple procurement format ie the "wet trades" - earthworks, concrete, formwork and reinforcement, precast concrete, masonry, waterproofing and sub-surface drainage - are provisionally (fully?) measured and the subsequent trades are budgetary allowances and/or provisional sums ? F:..... V:..... T:.....	Item	
37	Clause 2.3 - Availability of construction information F:..... V:..... T:.....	Item	
38	Clause 2.4 - Ordering of materials and goods F:..... V:..... T:.....	Item	
	<u>Previous work and adjoining properties (B3)</u>		
39	Clause 3.1 - Previous work - dimensional accuracy F:..... V:..... T:.....	Item	
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	<u>Management of contract (B5)</u>		
48	Clause 5.1 - Management of the works F:..... V:..... T:.....	Item	
49	Clause 5.2 - Progress meetings F:..... V:..... T:.....	Item	
50	Clause 5.3 - Technical meetings F:..... V:..... T:.....	Item	
	<u>Samples, shop drawings and manufacturer's instructions (B6)</u>		
51	Clause 6.1 - Samples of materials F:..... V:..... T:.....	Item	
52	Clause 6.2 - Workmanship samples F:..... V:..... T:.....	Item	
53	Clause 6.3 - Shop drawings F:..... V:..... T:.....	Item	
54	Clause 6.4 - Compliance with manufacturer's instructions F:..... V:..... T:.....	Item	
	<u>Deposits and fees (B7)</u>		
55	Clause 7.1 - Deposits and fees F:..... V:..... T:.....	Item	
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	<u>Temporary services (B8)</u>		
56	Clause 8.1 - Water F:..... V:..... T:.....	Item	
57	Clause 8.2 - Electricity F:..... V:..... T:.....	Item	
58	Clause 8.3 - Ablution and welfare facilities F:..... V:..... T:.....	Item	
59	Clause 8.4 - Communication facilities F:..... V:..... T:.....	Item	
	<u>Prime cost amounts (B9)</u>		
60	Clause 9.1 - Responsibility for prime cost amounts <i>Where details of materials included in prime cost amounts <u>are not</u> readily available and it is therefore not possible for the contractor to price for waste, the relevant prime cost amount shall be inserted in the bills of quantities as a lump sum with the contractor being given the opportunity to separately price his overheads and profit and for taking delivery, etc as called for in this clause 9.1 of the preliminaries. In such case the fixing only or installation only of the relevant materials shall be provisionally measured for the contractor to price and shall be re-measured upon completion</i> <i>Where details of materials for which prime cost amounts are to be allowed <u>are</u> readily available, the quantity surveyor may elect to insert the relevant prime cost amounts in measured items, which measured items shall contain sufficient detail for the contractor to price for fixing and installation, waste, etc</i> F:..... V:..... T:.....	Item	
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<u>Attendance on subcontractors (B10)</u>			
61	Clause 10.1 - General attendance		
	F:..... V:..... T:.....	Item	
62	Clause 10.2 - Special attendance		
	<i>It is important to note that general attendance only requires the contractor to "permit the subcontractor to use erected scaffolding, hoisting facilities, etc provided by the contractor, in common with others having the like right while it remains erected on the site" (refer to 12.2.13 of the JBCC n/s subcontract agreement). Many n/s subcontractors qualify their tenders to exclude scaffolding and/or hoisting facilities. Especially scaffolding could be an expensive item and it may be necessary in order to avoid claims to require the contractor to provide for the extended use of scaffolding for specific subcontracts within a description of "special attendance" in the applicable bill</i>		
	F:..... V:..... T:.....	Item	
<u>General (B11)</u>			
63	Clause 11.1 - Protection of the works		
	F:..... V:..... T:.....	Item	
64	Clause 11.2 - Protection/isolation of existing works and works occupied in sections		
	F:..... V:..... T:.....	Item	
65	Clause 11.3 - Security of the works		
	F:..... V:..... T:.....	Item	
Carried Forward			R
Section No. 1 Bill No. 1 - Preliminary and General			

**STRETFORD TRAIN STATION
BILLS OF QUANTITIES**

	Brought Forward		R
66	<p>Clause 11.4 - Notice before covering work</p> <p>F:..... V:..... T:.....</p>	Item	
67	<p>Clause 11.5 - Disturbance</p> <p>Disturbance</p> <p>All work is to be carried out in such a manner as to cause no unacceptable or unreasonable dust, noise, vibrations, nuisance, inconvenience, annoyance and the like to the public, others, other properties and traffic in so far as they exceed the permissible limitations set by government legislation or by the local authority. Any delays, stoppages and the like arising from or in order to comply with the above will not constitute grounds for an adjustment to the construction period or contract value whatsoever ?</p> <p>F:..... V:..... T:.....</p>	Item	
68	<p>Clause 11.6 - Environmental disturbance</p> <p>Controlling all forms of pollution</p> <p>The contractor shall be responsible for and take all precautions in controlling by whatever means necessary all forms of pollution emanating from the site during the construction period due inter alia to noise, artificial light, wind-blown sand, dust, deposits of mud, etc</p> <p>The contractor is to ensure that all roads which border the site and are used by the contractor during the execution of the works are kept clean and free of any dirt or debris caused by the execution of the works ?</p> <p>Environmental management plan</p> <p>The employer has prepared an environmental management plan (EMP). The contractor shall price opposite this item for compliance with all the requirements of such EMP</p> <p>F:..... V:..... T:.....</p>	Item	
	Carried Forward		R
	<p>Section No. 1 Bill No. 1 - Preliminary and General</p>		

STRET福德 TRAIN STATION
BILLS OF QUANTITIES

	Brought Forward		R
69	Clause 11.7 - Works cleaning and clearing F:..... V:..... T:.....	Item	
70	Clause 11.8 - Vermin F:..... V:..... T:.....	Item	
71	Clause 11.9 - Overhand work F:..... V:..... T:.....	Item	
72	Clause 11.10 - Tenant installations F:..... V:..... T:.....	Item	
73	Clause 11.11 - Advertising F:..... V:..... T:.....	Item	
	<u>SECTION C: SPECIFIC PRELIMINARIES</u>		
74	Warranties for materials and workmanship Where warranties for materials and/or workmanship are called for, the contractor shall obtain a written warranty, addressed to the employer , from the entity supplying the materials and/or executing the work and shall deliver same to the principal agent on final completion of the contract The warranty shall state that workmanship, materials and installation are warranted for a specific period from the date of practical completion and that any defects that may arise during the specified period shall be made good at the expense of the entity supplying the materials and/or doing the work, upon written notice to do so		
	Carried Forward		R
	Section No. 1 Bill No. 1 - Preliminary and General		

**STRET福德 TRAIN STATION
BILLS OF QUANTITIES**

	Brought Forward		R
	<p>The warranty will not be enforced if the work is damaged by defects in the execution of the works, in which case the responsibility for replacement shall rest entirely with the contractor</p> <p>F:..... V:..... T:.....</p>	Item	
75	<p>Overtime</p> <p>Should overtime be required to be worked for any reason whatsoever, the cost of such overtime is to be borne by the contractor unless the principal agent has specifically authorised, prior to execution thereof, that costs for such overtime are to be borne by the employer</p> <p>F:..... V:..... T:.....</p>	Item	
76	<p>Cooperation of the contractor for cost management</p> <p>It is specifically agreed that the contractor accepts the obligation of assisting the principal agent in implementing proper cost management. The contractor will be advised by the principal agent of all cost management procedures which will be implemented to ensure that the contract value does not exceed the budget</p> <p>F:..... V:..... T:.....</p>	Item	
77	<p>Overloading</p> <p>The contractor shall take all necessary steps to ensure that no damage occurs due to overloading of any portion of the works or temporary works eg scaffolding, etc. The contractor shall submit details of his proposed loading, storage, plant erection, etc to the principal agent for approval prior to proceeding with such loading, storing or erecting and shall comply with and pay for the principal agent's requirements in connection with the provision of temporary support work, etc. Any damage caused to the works by overloading shall be made good by the contractor at his sole expense</p> <p>F:..... V:..... T:.....</p>	Item	
	Carried Forward		R
	<p>Section No. 1 Bill No. 1 - Preliminary and General</p>		

**STRETFORD TRAIN STATION
BILLS OF QUANTITIES**

	Brought Forward			R
78	<p>Propping of floors below</p> <p>The contractor is advised that propping of floors below may be required if he wishes to use any areas of completed suspended reinforced concrete slabs for vehicle access, storage of materials and goods and location of plant, scaffolding, etc. The location of these areas and any necessary propping shall be approved by the principal agent and the cost thereof shall be borne by the contractor</p> <p>F:..... V:..... T:.....</p>		Item	
79	<p>Testing of flat roof waterproofing for watertightness</p> <p>Flat roof waterproof areas shall be flooded and kept "ponded" for at least forty eight (48) hours as a test to ensure the watertightness of the waterproofing and before any further construction work is carried out above the waterproofing</p> <p>F:..... V:..... T:.....</p>		Item	
80	<p>Health and safety</p> <p>Without limiting the generality of the provisions of clause 2.0, the contractor's attention is drawn to the provisions of the Construction Regulations issued in terms of the Occupational Health and Safety Act, 1993 as amended. It is specifically stated that the employer shall prepare a documented health and safety specification for the works and that the employer shall ensure that the contractor has made provision for the cost of health and safety measures during the execution of the works. The contractor shall price opposite this item for compliance with the act and the regulations and the reasonable provisions of the aforementioned health and safety specification [2.1]</p>			
	Carried Forward			R
	<p>Section No. 1 Bill No. 1 - Preliminary and General</p>			

**STRET福德 TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward		R	
<p>Health and safety</p> <p>Without limiting the generality of the provisions of clause 2.0, the contractor's attention is drawn to the provisions of the Construction Regulations issued in terms of the Occupational Health and Safety Act, 1993 as amended. It is specifically stated that the employer shall prepare a documented health and safety specification for the works (refer to the relevant specification) and that the employer shall ensure that the contractor has made provision for the cost of health and safety measures during the execution of the works. The contractor shall price opposite this item for compliance with the act and the regulations and the provisions of the aforementioned health and safety specification [2.1]</p> <p>The contractor shall:</p> <ol style="list-style-type: none"> 1. Comply with the health and safety specification for the works 2. Prepare and agree with the health and safety consultant the health and safety plan for the works 3. Cooperate with the health and safety consultant in all respects 4. Manage the compliance of all subcontractors with the regulations and with the health and safety plan and specification 5. Conform to the conditions contained in the employer's health and safety specification 6. Price in accordance with the specifications and pricing conditions contained in the employer's health and safety specification. C2.1 - Pricing Instructions - Item 13 - Pricing Instructions for Health and Safety <p>F:..... V:..... T:.....</p>	Item		
<p style="text-align: right;">Carried Forward</p> <p>Section No. 1 Bill No. 1 - Preliminary and General</p>		R	

**STRET福德 TRAIN STATION
BILLS OF QUANTITIES**

	Brought Forward		R
81	<p>Green star building certification</p> <p><u>User note</u></p> <p><i>Insert the provisions called for by the relevant green star consultant should it be a requirement that the project be submitted for green star certification</i></p> <p>F:..... V:..... T:.....</p>	Item	
82	<p>Broad based black economic empowerment (BBBEE)</p> <p>Tenders submitted will be evaluated taking into account their empowerment rating</p> <p>The employer will be monitoring the broad based black economic empowerment (BBBEE) status of the contractor throughout the execution of the works</p> <p>The contractor is to submit to the principal agent on an annual basis a schedule of spend, split into vendors engaged as subcontractors and suppliers indicating their BBBEE rating including proof of the said rating</p> <p>F:..... V:..... T:.....</p>	Item	
83	<p>Advertising rights</p> <p>The employer may elect to contract with advertising agencies for the erection of advertising hoardings, banners, wraps or the like for the duration of the contract. The contractor shall not prevent such an arrangement and will assist in the facilitation of same. The position and type of advertising structure to be agreed with the principal agent so as not to hinder the contractor in meeting his obligations under this agreement</p> <p>F:..... V:..... T:.....</p>	Item	
	Carried Forward		R
	<p>Section No. 1</p> <p>Bill No. 1 - Preliminary and General</p>		

STRETFORD TRAIN STATION
BILLS OF QUANTITIES

	Brought Forward		R	
84	<p>Confidentiality</p> <p>The contractor undertakes to maintain in confidence any and all information regarding this project and shall obtain appropriate similar undertakings from all subcontractors and suppliers. Such information shall not be used in any way except in connection with the execution of the works</p> <p>No information regarding this project shall be published or disclosed without the prior written consent of the employer</p> <p>F:..... V:..... T:.....</p>	Item		
85	<p>Media releases</p> <p>All rights of publication of articles in the media, together with any advertising relating thereto or in any way connected with this project, shall vest with the employer</p> <p>The contractor together with his subcontractors shall not, without the prior written consent of the employer, cause any statement or advertisement connected with this project to be printed, screened or aired by the media</p> <p>F:..... V:..... T:.....</p>	Item		
	<p>SUMMARY OF CATEGORIES</p> <p>Category : Fixed R.....</p> <p>Category : Value R.....</p> <p>Category : Time R.....</p>			
	Carried to Final Summary		R	
	<p>Section No. 1</p> <p>Bill No. 1 - Preliminary and General</p>			

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STRETFORD TRAIN STATION
BILLS OF QUANTITIES

Brought Forward	R
<p>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</p> <p>Doors, fanlights, fittings, frames, linings, etc which are to be re-used shall be thoroughly overhauled before refixing including taking off, easing and rehanging, cramping up, re-wedging as required and making good cramps, dowels, etc, and easing, oiling, adjusting and repairing ironmongery as necessary, replacing any glass damaged in removal or subsequently and stopping up all nail and screw holes with tinted plastic wood to match timber, unless otherwise described. Re-painting or re-varnishing is given separately</p> <p>Prices for taking out of doors, windows, etc shall include for removal of all beads, architraves, ironmongery, etc</p> <p>Prices for taking out and removing doors and frames shall include for removing door stops, cabin hooks, etc and making good floor and wall finishes to match existing</p> <p>With regard to building up of openings in existing walls, cement screeds and pavings, granolithic, tops of walls, etc, shall be levelled and prepared for raising of brickwork</p> <p>Making good of finishes shall include making good of the brick and concrete surfaces onto which the new finishes are applied, where necessary</p> <p>The contractor will be required to take all dimensions affecting the existing buildings on the site and he will be held solely responsible for the accuracy of all such dimensions where used in the manufacture of new items (doors, windows, fittings, etc)</p>	
<p style="text-align: right;">Carried Forward</p> <p>Section No. 2 Bill No. 1 - Alterations</p>	<p style="text-align: right;">R</p>

**STRETTFORD TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
<u>Salvaging</u>			
The contractor is to note that all removed salvageable building materials are to remain the property of the user client			
All salvaged building materials are to handed over to user client and the remaining building rubble and demolished waste is to be removed from site by the contractor and rates should allow for carting away of such rubble and waste.			
<u>TEMPORARY BARRIERS, SCREENS</u>			
<u>Temporary barriers, screens, etc including removal</u>			
1	Temporary construction site barriers suitable to prevent encroachment of pedestrians and vehicles onto the site [LI]	m	122
<u>REMOVAL OF EXISTING WORK</u>			
<u>Demolish Existing Structures including carting away rubble off site</u>			
2	Demolish existing building complete (Area approx 10m2) including carting away rubble off site [LI]	No	1
3	Demolish existing structures (Area approx 35m2) including carting away rubble off site [LI]	No	2
<u>Breaking up and removing reinforced concrete, including cutting off and removing reinforcement and carting away</u>			
4	85mm Thick surface bed, aprons and slabs [LI]	m2	1,296
5	110mm Thick surface bed [LI]	m2	82
<u>Breaking up and removing brick walls, including carting away rubble off site</u>			
6	Half brick walls [LI]	m2	162
7	One brick walls [LI]	m2	454
Carried Forward			R
Section No. 2 Bill No. 1 - Alterations			

STRETTFORD TRAIN STATION
BILLS OF QUANTITIES

Brought Forward				R
<u>Taking down and removing roofs, floors, etc including carting away rubble off site</u>				
8	Gypsum plasterboard ceilings [LI]	m2	1,523	
9	Existing roof sheeting [LI]	m2	1,927	
10	Prefabricated roof trusses complete including wall plates, permanent bracing, etc. measured on floor plan as per Engineer's detail [LI]	m2	82	
<u>Taking out and removing doors, windows, etc including thresholds, sills, etc (altering or building up openings elsewhere measured)</u>				
11	Timber single door and frame not exceeding 2,5m2 [LI]	No	23	
12	Timber double door and frame exceeding 2,5m2 [LI]	No	4	
13	Glazed steel doors and burglar proofing exceeding 2,5m2 and not exceeding 5m2 [LI]	No	4	
14	Glazed steel window and burglar proofing not exceeding 2,5m2 [LI]	No	25	
15	Glazed steel window and burglar proofing exceeding 2,5m2 and not exceeding 5m2 [LI]	No	2	
<u>Hacking up/off and removing granolithic, screeds, plaster, tiling, etc and preparing floors by scarifying screeds, etc including carting away rubble off site</u>				
16	Ceramic tiles from walls [LI]	m2	51	
17	Ceramic tiles from floors including skirting [LI]	m2	1,523	
<u>Taking out and removing ironmongery and store safely on site</u>				
18	Curtain track fixed to walls not exceeding 2,5m [LI]	No	5	
19	Toilet roll holder [LI]	No	14	
20	Soap holder [LI]	No	3	
21	Liquid soap dispenser([LI]	No	2	
Carried Forward				R
Section No. 2 Bill No. 1 - Alterations				

STRETFORD TRAIN STATION
BILLS OF QUANTITIES

					R
	Brought Forward				
22	Liquid soap bottle holder([LI]	No	2		
23	Paper towel dispenser([LI]	No	1		
24	Hat and coat hooks [LI]	No	10		
25	Notice board not exceeding 2,5m2 [LI]	No	5		
	<u>Taking off/out and removing sundry metalwork and store safely on site</u>				
26	Steel supports and brackets to timber shelving [LI]	m	37		
	<u>Taking out and removing sundry joinery work, etc and hand over to client</u>				
27	Bump rail plugged to wall [LI]	m	15		
28	300 x 220mm High cabinet fixed to walls [LI]	No	2		
	<u>Taking out and removing joinery fittings, etc and hand over to client</u>				
29	Wall cupboard 880 x 550 x 2100mm high [LI]	No	5		
30	Wall cupboard 2000 x 550 x 1000mm high [LI]	No	2		
31	Timber shelving from steel support brackets [LI]	m2	12		
	<u>Taking out and removing piping, sanitary fittings, valves, etc and hand over to client</u>				
32	Water pipes from walls [LI]		Item		
33	Waste pipes from walls [LI]		Item		
34	Stainless steel double bowl wash trough with splash back including all taps and mixers mounted on it [LI]	No	2		
35	WC toilet suite complete [LI]	No	14		
36	Vitreous china wash hand basin[LI]	No	9		
37	Urinal/toilet flush valve[LI]	No	3		
38	Taps, shower arms and mixers[LI]	No	18		
	Carried Forward				R
	Section No. 2				
	Bill No. 1 - Alterations				

STRETFORD TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
39	Instant water heater[LI]	No	1
<u>PLUMBING SUNDRIES</u>			
40	Removing of existing sewer drains, ducts and pipes	Item	
<u>CUTTING THROUGH FLOORS AND CEILINGS</u>			
<u>Sundries</u>			
41	Chasing in plaster and brickwork for pipes, conduits, etc 210mm wide average with and including making good cement plaster, etc	m	27
<u>PREPARATORY WORK TO EXISTING SURFACES</u>			
42	Making good defects in existing screeded floors by chipping, scarifying and applying a self levelling screed in patches to receive new floor coverings (floor coverings elsewhere)[LI]	m2	13
43	Making good cracks in existing brickwork by fixing with expanded metal lathing to receive cement plaster[LI]	m2	13
44	Preparing floors to existing surfaces to receive new finish (elsewhere measured)[LI]	m2	1,526
45	Preparing walls to existing surfaces to receive new finish (elsewhere measured)[LI]	m2	3,164
<u>MAKING GOOD OF FINISHES,</u>			
<u>Making good concrete surface beds, slabs</u>			
46	85mm Surface beds in patches	m2	21
47	Damaged edges to concrete aprons	m2	17
Carried Forward			R
Section No. 2 Bill No. 1 - Alterations			

STRETTFORD TRAIN STATION
BILLS OF QUANTITIES

	Brought Forward			R
	<u>Altering of openings with and including necessary temporary support and building in precast concrete lintels</u>			
48	Alter opening in 230mm brick wall including building up brickwork, necessary precast concrete lintels, making good plaster on both sides, reveals, cutting tooth and bonding brickwork to existing (New window and make good paintwork elsewhere)	No	7	
	<u>Breaking out for and forming plain openings through brick walls, with and including necessary temporary support, building in pre stressed concrete lintels, making good brickwork and cement plaster on both sides (making good paintwork elsewhere)</u>			
49	Opening 990 x 1470mm high through one brick wall	No	2	
50	Opening 815 x 2125mm high through one brick wall	No	1	
	<u>Breaking out for and forming openings through brick walls for new doors and frames, with and including necessary temporary support, building in pre stressed concrete lintels, making good cement plaster on both sides and into reveals and with 20 MPa concrete thresholds with steel trowelled finish (new doors and frames and making good paintwork elsewhere)</u>			
51	Opening for door with steel/aluminium frame 813 x 2100mm high overall through half brick wall	No	2	
52	Opening for door with steel/aluminium frame 813 x 2100mm high overall through one brick wall	No	1	
53	Opening for door with steel/aluminium frame 1100 x 2100mm high overall through 274mm cavity wall	No	1	
	<u>Breaking out for and forming openings through brick walls for new windows, with and including necessary temporary support, building in pre stressed concrete lintels, making good cement plaster on both sides and into reveals (new windows and making good paintwork elsewhere)</u>			
54	Opening for window 1000 x 1500mm high through 274mm cavity wall	No	1	
	Carried Forward			R
	Section No. 2 Bill No. 1 - Alterations			

**STRETFORD TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
<u>Inspect existing roof structure, test for structural integrity and repair where necessary with approved similar timber rafters and battens as per Engineer's recommendations</u>			
55	Existing steel roof structure	m2	3,854
<u>Making good roofs,etc</u>			
56	Roof covering including sealing all water leaks, sanding down and repainting where necessary as pointed out by Architect	m2	1,927
<u>BUDGETARY ALLOWANCES</u>			
<u>STRUCTURAL ASSESSMENTS AND REPAIRS</u>			
57	Allow a budgetary allowance for Concrete Structural Assessments and Repairs	Item	1,750,000.00
Carried to Final Summary			R
Section No. 2			
Bill No. 1 - Alterations			

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**STRETTFORD TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
<u>SITE CLEARANCE</u>			
<u>Site Clearance</u>			
1	Digging up and removal of rubbish, debris, vegetation, hedges, shrubs and trees not exceeding 200mm girth, bush, etc [LI]	m2	193
<u>Remove and grub large trees and tree stumps, of girth around the trunk 1m high above ground level including grubbing of roots, filling of holes and compaction to 90% Mod AASHTO density.</u>			
2	Tree exceeding 200mm and not exceeding 500mm girth	No	1
3	Tree exceeding 500mm and not exceeding 1000mm girth	No	1
<u>Remove topsoil to nominal depth of 150mm and stockpile.</u>			
4	Stripping average 150mm thick layer of top soil and depositing material in prescribed stock piles on site	m2	29
<u>EXCAVATION, FILLING</u>			
<u>Excavation in earth not exceeding 2m deep</u>			
5	Trenches	m3	334
6	Holes	m3	33
<u>Extra over excavations in earth for excavation in</u>			
7	Soft rock	m3	33
8	Hard rock	m3	17
<u>Extra over all excavations for carting away</u>			
9	Surplus material from excavations	m3	198
<u>Risk of collapse of excavations</u>			
10	Side of trenches and holes	m2	739
Carried Forward			R
Section No. 3 Bill No. 1 - Earthworks (Provisional)			

**STRETFORD TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
<u>Keeping excavations free of water</u>			
11	Keeping excavations free of all water	Item	
<u>Earth filling obtained from commercial sources compacted to 98% Mod AASHTO density</u>			
12	Under floors, steps, pavings	m3	53
<u>Earth filling obtained from the excavations and/or prescribed stock piles on site, compacted to 98% Mod AASHTO density</u>			
13	Backfilling to trenches, holes	m3	136
14	Under floors, steps, pavings	m3	53
<u>Compaction of surfaces</u>			
15	Compaction of ground surface under floors	m2	176
<u>Soil insecticide with</u>			
16	Under floors, steps, pavings	m2	176
17	To bottom and sides of trenches	m2	979
Carried Forward to Summary of Section No. 3			R
Section No. 3			
Bill No. 1 - Earthworks (Provisional)			

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**STRET福德 TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
<u>Finishing top surfaces of concrete smooth with a wood float</u>			
8	Surface beds, slabs, etc[LI]	m2	97
<u>Test blocks</u>			
9	150 x150 x 150mm Deep concrete cube test	No	10
<u>Expansion joints with bitumen impregnated soft board between vertical concrete and brick surfaces</u>			
10	10mm Joints not exceeding 300mm high	m	211
<u>Saw-cut joints sealed with two part flexible polyurethane joint sealant</u>			
11	6 x 30mm Saw-cut joints in top of concrete	m	30
<u>SMOOTH AND FAIR FORMWORK (DEGREE OF ACCURACY II)</u>			
<u>Smooth formwork to soffits</u>			
12	Slabs not exceeding 250mm thick propped to a height propped to a height exceeding 3,5m and not exceeding 5m	m2	11
<u>ROUGH FORMWORK (DEGREE OF ACCURACY (III))</u>			
<u>Rough formwork to sides</u>			
13	Edges, risers, ends and reveals not exceeding 300mm high or wide	m	76
<u>REINFORCEMENT</u>			
<u>High tensile steel</u>			
14	Various Diameter bars	t	7.23
<u>Fabric reinforcement</u>			
15	Mesh ref 193 fabric reinforcement in concrete surface beds, slabs, etc	m2	97
Carried Forward to Summary of Section No. 3			R
Section No. 3			
Bill No. 2 - Concrete, Formwork & Reinforcement			

**STRET福德 TRAIN STATION
BILLS OF QUANTITIES**

Item No	Quantity	Rate	Amount
<u>BILL NO. 3</u>			
<u>MASONRY</u>			
<u>PREAMBLES</u>			
For preambles refer to "General Specification of Materials and Methods to be used for Building Contracts" (GP /ASC)			
<u>CPAP ADJUSTMENT</u>			
Unless otherwise stated all items in this bill shall be deemed to fall into Work Group 118 for Contract Price Adjustment Provisions			
<u>Sizes in descriptions</u>			
Where sizes in descriptions are given in brick units, "one brick" shall represent the length and "half brick" the width of a brick			
<u>Hollow walls</u>			
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			
<u>Face bricks</u>			
Bricks shall be ordered timeously to obtain uniformity in size and colour			
<u>Pointing</u>			
Descriptions of recessed pointing to fair face brickwork and face brickwork shall be deemed to include square recessed, hollow recessed, weathered pointing			
Carried Forward			R
Section No. 3 Bill No. 3 - Masonry			

STRETFORD TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>BRICKWORK</u>			
<u>Brickwork of NFX bricks (14 MPa nominal compressive strength) in class II mortar</u>			
<u>FOUNDATIONS (PROVISIONAL)</u>			
1	Half brick walls[LI]	m2	46
2	One brick walls[LI]	m2	245
<u>SUPERSTRUCTURE</u>			
<u>Brickwork of NFP bricks in class II mortar</u>			
3	Half brick walls[LI]	m2	126
4	One brick walls[LI]	m2	668
5	One brick walls in parapets[LI]	m2	10
6	One brick walls in gables[LI]	m2	19
7	One brick walls in beam filling[LI]	m2	28
<u>Brickwork reinforcement</u>			
8	75mm Wide reinforcement	m	912
9	175mm Wide reinforcement	m	5,015
<u>Turning pieces</u>			
10	110mm Wide turning piece to lintels	m	29
11	230mm Wide turning piece to lintels	m	64
<u>Galvanised wire ties etc</u>			
12	4mm Diameter roof tie 2m girth bent double, with one end built into brickwork and other end fixed to timber	No	43
<u>FACEBRICK</u>			
Carried Forward			R
Section No. 3 Bill No. 3 - Masonry			

STRETFORD TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>External facings (PC R11500,00/1 000) pointed with square recessed horizontal and vertical joints:</u>			
13	Extra over brickwork for face brickwork	m2	321
14	Extra over brickwork for brick-on-edge header course lintel pointed on face and 230mm soffit	m	88
<u>External facings (PC R11500,00/1 000) pointed with square recessed horizontal and vertical joints:</u>			
15	Coping on top of one brick wall including fair raking cutting	m	88
16	Extra over brickwork for brick-on-edge header course lintels one course high, pointed on face and soffit	m	41
17	Corobrik FBX 106mm single bullnose solid pointed with recessed vertical and recessed horizontal joints (Colour: to match masonry FBX walls).	m	41
<u>Internal facings to the bottom of windows (PC R5500,00/1 000) pointed with square recessed horizontal and vertical joints:</u>			
18	Extra over brickwork for face brickwork	m2	50
Carried Forward			R
Section No. 3 Bill No. 3 - Masonry			

STRETTFORD TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>SUNDRIES</u>			
<u>Window sill, size 150mm x 15mm thick, manufactured in accordance with SANS 803:2005 and installed below window with window sill lug screwed to underside of sill at 400mm centres, minimum of 75mm from end of window sill and bedded in Class II mortar at end of sills at plaster reveals. Sill to be cut flush with wall face. Sill to be primed according to manufacturer instruction and painted enamel paint to match wall colour, all in accordance with the manufacturer's recommendations.</u>			
19	Internal Sills	m	41
<u>Pre cast concrete sills 215 x 115 x 60mm, pointed with flush joints on all exposed faces</u>			
20	Sills (precast concrete)	m	41
Carried Forward to Summary of Section No. 3			R
Section No. 3			
Bill No. 3 - Masonry			

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STRETFORD TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>FACIAS, BARGE BOARDS, ETC:</u>			
<u>Approved fibre cement fascia & barge boards, size 10 x 300mm to be primed 1 coat and painted 2 coats enamel paint. To be fixed to proper support structure with bolts within a straight line with aluminium joiners on corners and joints. (Colour: according to the architect)</u>			
1	Fibre cement fascia/barge drilled and brass screwed and including steel jointing strips between lengths.	m	176
<u>APPROVED RAILS</u>			
<u>Timber rails</u>			
2	Timber rails to have an elliptical gripping surface profile that is approximately 50 mm wide and 40 mm deep, or a circular profile of diameter not less than 35 mm and not more than 50 mm; to be fixed to the wall at 900mm high from the outdoor FFL and a minimum space of 200mm from the wall	m	24
<u>DOORS, ETC</u>			
<u>Heavy Duty Solid Door</u>			
3	Solid door with (x2) concealed edges, size 1830 x 2083mm (DAE)	No	4
4	Solid door with (x2) concealed edges, size 915 x 2032mm (DAB)	No	6
5	Solid door with (x2) concealed edges, size 815 x 2100mm (D4)	No	12
<u>Medium Duty Semi-Solid Door</u>			
6	Semi-solid door with (x2) concealed edges, size 815 x 2100mm (DAJ)	No	17
<u>JOINERY SUNDRIES</u>			
Carried Forward			R
Section No. 3 Bill No. 5 - Carpentry and Joinery			

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STRETFORD TRAIN STATION
BILLS OF QUANTITIES

Brought Forward		R	
<u>Built-In Cupboard -</u>			
11	Build in cupboard size 2400 x 600 x 2200mm high comprising of sides, division, counter top, bottom, drawers, shelving, runners, handles, hinges, locks, plinth, doors, kick plate, etc. (Refer to Architects drawing No. 400911/S1). [LI]	No	
<u>Built-In Cupboard -</u>			
12	Build in cupboard size 2900 x 380 x 2200mm high comprising of sides, division, counter top, bottom, drawers, shelving, runners, handles, hinges, locks, plinth, doors, kick plate, etc. (Refer to Architects drawing No. 400911/S1). [LI]	No	
<u>Store Shelves -</u>			
13	L shaped store shelving measuring 3980 x 1500mm on plan, 600 x 2200mm high, 420mm deep, 15mm approved grey shelves wall mounted on one side, comprising of support brackets, etc. all to architect's specifications (Refer to Architects drawing No. 400911/S1)	No	
<u>Medicine Cabinet</u>			
14	MEDICINE CABINET: Standard white built in type. Complete with mirrors on door shelves etc size 380 x 610mm. [LI]	No	1
Carried Forward to Summary of Section No. 3		R	
Section No. 3			
Bill No. 5 - Carpentry and Joinery			

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**STRETTFORD TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
<u>ROOF AND WALL INSULATION</u>			
<u>Alububble®, white bubble with foil backing insulation with thermal insulating, dustproofing and fire resistant capabilities complying with SANS 1381-4:2009 and tested to SANS 428. Quality in accordance with requirements of SANS 10400 Building Regulations, installations are to be to manufactures instructions and specifications. Thickness to mechanical engineer's specifications</u>			
2	Insulation blanket laid taut over purlins	m2	3,854
Carried Forward to Summary of Section No. 3			R
Section No. 3			
Bill No. 6 - Roof Coverings, etc.			

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STRET福德 TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>Flush plastered gypsum plasterboard suspended bulkheads</u>			
Bulkheads shall comprise galvanised steel studding of 63,5mm top and bottom tracks with vertical studs at maximum 400mm centres, pop-riveted to the top and bottom tracks with similar additional vertical studs as necessary at abutments, ends, etc and covered as described with plasterboard screwed to studding with drywall screws at maximum 300mm centres. Boards shall be butt jointed and finished with tape and jointing compound and the whole finished with gypsum plaster trowelled to a smooth polished surface to the thickness recommended by the manufacturer.			
Descriptions shall be deemed to include any additional studs at ends and intersections, corner beads, cornices at junctions with ceilings, jointing compound, tape, etc			
<u>SUSPENDED CEILINGS</u>			
<u>1200 x 600 x 15mm thick acoustic ceiling tiles laid on pre-painted tees and adjustable hanger system.</u>			
1	Ceilings suspended not exceeding 1m below timber purlins	m2	171
2	Extra over ceiling for 650 x 650mm trap door complete with trimmers, frame, cross branders, ceiling board, hinges and including all necessary ironmongery	No	10
<u>1200 x 600 x 12,5mm vinyl faced ceiling panels laid on tees and adjustable hanger system.</u>			
3	12.5mm Vinyl Faced Ceiling Panels, face-covered with white embossed vinyl, size 1200 x 600mm, laid on fire rated S3 exposed demountable suspension system including galvanised main tees, cross tees, etc., all suspended with galvanised hangers at centres not exceeding 1200mm, with ceiling perimeter finished with Shadow-line trim plugged at 200mm centres, and all installed to manufacturer's instructions.	m2	238
Carried Forward			R
Section No. 3 Bill No. 7 - Ceilings, Partitions and Access Flooring			

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STRET福德 TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>CPAP ADJUSTMENT</u>			
Unless otherwise stated all items in this bill shall be deemed to fall into Work Group 130 for Contract Price Adjustment Provisions			
<u>FLOOR COVERINGS</u>			
<u>500 x 500mm Loose lay Commercial carpet tiles with backing, to architects approval.</u> <u>Tessellated Installation</u> <u>100% Stainproof Miracle Fibre™ (Polypropylene) structured needle punch SABS Class 3 fire rating grade heavy commercial carpet tiles, size 500 x 500 x 8,5mm thick, all installed by approved installer in accordance with SANS 10186:2010, the code of practice for textile floor coverings.</u>			
1	Carpet floor covering	m2	140
<u>Approved Walk-off mat suitable for interior & exterior covered entrances.</u> <u>Approved Walk-off mat, overall size 4000mm or 3000mm x 12mm consisting of 100% polypropylene course fibre needle felt brushes alternated with soft strips to effectively scrape & dry with anti-slip latex backing glued in recess bedded into screed (by others), installed in accordance with the manufacturer's recommendations. To be vacuum cleaned regularly. Samples required for architect and client's approval.</u>			
2	Walk-off mats	m2	10
<u>SKIRTINGS, NOSINGS, ETC</u>			
<u>"Approved" brushed stainless steel edging strip to be installed all according to the instructions and recommendations of the manufacturer for vinyl floor finish.</u>			
3	Stainless steel edging strip	m	45
Carried Forward			R
Section No. 3 Bill No. 8 - Floor Coverings, Plastic Linings, etc.			

STRETFORD TRAIN STATION
BILLS OF QUANTITIES

Brought Forward				R
<u>"Approved" stainless steel 30 x 9mm high carpet gripper capping strip trim, plugged and counter sunk screwed into cement screed with stainless steel screws all in accordance with the specifications and recommendations of the manufacturers.</u>				
4	Tile to carpet transition strip	m	45	
Carried Forward to Summary of Section No. 3				R
Section No. 3				
Bill No. 8 - Floor Coverings, Plastic Linings, etc.				

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**STRETTFORD TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
<u>LOCKS</u>			
<u>"APPROVED"</u>			
3	Nickel plated 60mm double cylinder master keyed [LI]	No	3
4	Double panic set for rebated double doors [LI]	No	2
5	Stainless Steel Toilet Cubicle Indicator bolt & lock set Grade 304 Stainless Steel indicator bolt (code: fixed to surface with matching stainless steel screws. To comply with SANS 4:2008. Finger pull handle to be fixed to door with tamper proof screws [LI]	No	2
6	Stainless Steel Security Deadlock Grade 304 Stainless steel Security Deadlock with a Deadcase plate in the door frame with Master key functioning. These type lock to be used with Push plates and Pull handles. Double side locking mechanism To comply with SANS 4:2008 [LI]	No	1
7	Stainless Steel cylinder lock 60mm Grade 304 Stainless steel Euro profile Double with 6 pin and Master keyed To comply with SANS 4:2008 [LI]	No	1
8	Stainless Steel Toilet Cubicle Indicator bolt & lock set Grade 304 Stainless Steel disabled indicator bolt, fixed to surface with matching stainless steel screws. To comply with SANS 4:2008. Finger pull handle to be fixed to door with tamper proof screws [LI]	No	1
9	Stainless steel 76mm commercial cylinder sash lock [LI]	No	1
10	Nickel plated 66mm knob cylinder - master keyed [LI]	No	1
11	Single panic bolt complete, Colour:Silver [LI]	No	1
12	Outside access device lever W/O cylinder [LI]	No	1
13	Nickel plated single cylinder - master keyed [LI]	No	1
Carried Forward			R
Section No. 3 Bill No. 9 - Iron Mongery			

R|

R

STRETTFORD TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>DOOR CLOSERS</u>			
<u>"APPROVED"</u>			
14	Door closer clockwise action with a standard guide rail Colour: Silver [LI]	No 1	
15	Door closer with parallel arm bracket [LI]	No 1	
16	Door closer with a clockwise action inclusive of guide rail [LI]	No 1	
17	Door closer with a clockwise action including standard and parallel arm [LI]	No 1	
<u>LETTERS, NAMEPLATES, ETC</u>			
<u>"APPROVED"</u>			
18	160 x 160mm stainless steel ironware outline engraved fire hose reel. [LI]	No 3	
19	160 x 160mm stainless steel ironware outline engraved female sign. [LI]	No 1	
20	160 x 160mm stainless steel ironware outline engraved male sign. [LI]	No 1	
21	160 x 160mm stainless steel ironware outline engraved disabled sign. [LI]	No 1	
22	160 x 160mm stainless steel ironware outline engraved shower sign. [LI]	No 1	
GENERAL NOTES: Colour: Black lettering on white background. Fixing: To be mechanical fastened. Positioning: To be determined site with architect once signage is available on site. Font: Arial Black To be read in conjunction with Fire signage drawing.			
Carried Forward			R
Section No. 3 Bill No. 9 - Iron Mongery			

STRETFORD TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>PUSH PLATES AND KICK PLATES</u>			
<u>"APPROVED"</u>			
23	111 x 19mm thick push plate 160 x 160mm stainless steel back plate [LI]	No 2	
24	1.6mm stainless steel push plate 160 x 160mm [LI]	No 5	
25	1.5mm stainless steel push plate 165 x 165mm [LI]	No 4	
26	1.6mm Stainless steel kick plate [LI]	No 11	
<u>SUNDRIES</u>			
<u>"APPROVED"</u>			
27	Stainless steel cabin hook 150mm [LI]	No 9	
28	Stainless steel floor mounted door stop [LI]	No 6	
29	Floor mounted rubber door stop [LI]	No 5	
30	Stainless steel hat and coat hook with a rubber buffer [LI]	No 2	
31	Nickel plated patent screw 40-55mm [LI]	No 11	
32	Dust keep[LI]	No 11	
Carried Forward			R
Section No. 3 Bill No. 9 - Iron Mongery			

STRETTFORD TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>BATHROOM FITTINGS</u>			
<u>"APPROVED"</u>			
33	"Approved" Grade 304 18/10 stainless steel with "Approved" grip paraplegic grab rails, size 640 x 640 x 96mm deep, plugged and screwed to the wall with stainless steel screws [LI]	No	2
34	"Approved" Grade 304 32mm diameter 18/10 stainless steel grab rails with "Approved" grab 750 x 95mm deep, plugged and screwed to the wall with stainless steel screws [LI]	No	2
<u>"Approved" - Towel hooks</u>			
35	"Approved" chrome towel hook and installed with manufacturer's recommendations [LI]	No	2
<u>Miscellaneous</u>			
36	Toilet roll holder with a prime cost of R900.00 (excl. VAT) fixed to brickwork, concrete or partitioning [LI]	No	12
37	Toilet brush and holder with a prime cost of R190.00 (excl. VAT) [LI]	No	12
38	Stainless steel bin with a prime cost of R900.00 (excl. VAT) [LI]	No	2
39	Stainless steel soap dispenser with a prime cost of R750.00 (excl. VAT) fixed to brickwork, concrete or partitioning [LI]	No	6
40	Stainless steel hand dryer with a prime cost of R4 280.00 (excl. VAT) [LI]	No	2
41	Stainless steel paper towel dispenser, including bin with a prime cost of R4 700.00 (excl. VAT) [LI]	No	6
42	"Approved" stainless steel wall mounted urinal divider with surface satin finished, sheet material thickness 1.5mm and frame of 32mm pipe diameter, with two stainless steel covers for hidden mounting included screws and dowels, complete [LI]	No	3
Carried Forward to Summary of Section No. 3			R
Section No. 3			
Bill No. 9 - Iron Mongery			

**STRETFORD TRAIN STATION
BILLS OF QUANTITIES**

Item No	Quantity	Rate	Amount
<u>BILL NO. 10</u>			
<u>STRUCTURAL STEELWORK</u>			
<u>PREAMBLES</u>			
For preambles refer to "General Specification of Materials and Methods to be used for Building Contracts" (GP /ASC)			
<u>CPAP ADJUSTMENT</u>			
Unless otherwise stated all items in this bill shall be deemed to fall into Work Group 134 for Contract Price Adjustment Provisions			
<u>SUPPLEMENTARY PREAMBLES</u>			
The Structural Steelwork shall be in accordance with the Engineer's "STANDARD SPECIFICATION FOR STRUCTURAL STEEL" appended hereto as " Structural Steel Annexure A ".			
The Contractor is to notify the Principal Agent immediately if a conflict between the Engineer's Specification, Architectural Drawings and/or these Bills of Quantities are found.			
Steelwork are measured to the designed sizes of the components.			
The price for steelwork shall include all rolling margin, distance pieces, packings, additional material in welding and fixing steel members, decorative or protective and temporary aids; these shall be deemed included in the descriptions of the relevant steelwork.			
The price for steelwork shall also include for the preparation of all shop detail drawings as defined in the preables and the Engineering Specification.			
Carried Forward			R
Section No. 3 Bill No. 10 - Structural Steel Work			

**STRETFORD TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward		R	
<p>The price for steelwork shall include all welding, holes, bolts, nuts, washers, rivets, bolting and riveting integral with structural steelwork as well as all required weld and strength testing, these shall be deemed included in the descriptions of the relevant steelwork. The only bolts and anchors measured separately shall be those fixing the steel members to the structural concrete work.</p> <p><u>For clarity</u>; fixing structural steelwork members to each other is deemed included in the description of the steelwork and has thus not been measured separately and should be priced within the steelwork rates.</p> <p>Descriptions of bolts shall be deemed to include nuts and washers. Descriptions of anchor bolts shall be deemed to include bending, threading, nuts and washers and embedding in concrete. Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork or concrete.</p> <p>All structural steelwork rates shall include the factory coat of paint only, all repair-, other- and final paintwork to structural steel members are included under a "Painting" heading in these Structural Steelwork Bills of Quantities.</p> <p>The quantities are provisional and will be re-measured upon completion of the works. The Contractor shall not use these quantities for ordering of materials. The Contractor must immediately notify the Quantity Surveyor if discrepancies are found between the quantities and/or descriptions in these Bills of Quantities and the Contractor's quantities measured from construction drawings and specifications.</p> <p><u>GALVANISED STEEL COLUMNS AND BEAMS</u></p> <p><u>Welded hollow section beams in single lengths with flat bearer and connection plates, bolted to steel</u></p>			
1	125 x 75 x 20 x 2.00mm, 4.71kg/m lipped channels in lengths not exceeding 2m	t	0.64
2	160 x 82 x 16 x 2.00mm, 15.80kg/m I sections in lengths not exceeding 3m	t	1.24
Carried Forward		R	
<p>Section No. 3 Bill No. 10 - Structural Steel Work</p>			

**STRETFORD TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
<u>STEEL PURLINS, GIRTS, BRACING,</u>			
3	100 x 50 x 20 x 2.5mm x 4.32kg/m cold-formed lipped channel purlins	t	0.32
	<u>Welded bracing, anti-sag rails, etc with flat connection plates, bolted to steel</u>		
4	30 x 30 x 3mm angle bracing	t	0.32
	<u>Welded box gutter bearers with flat cleats, bolted to steel</u>		
5	Angle longitudinal bearers	t	0.10
<u>BOLTS, FASTENERS,</u>			
6	High tensile bolts (class 8.8)	t	0.50
<u>PAINTING</u>			
	<u>Touch-up steel primer, one coat 1 universal undercoat to 2 finishing coats high gloss enamel paint</u>		
7	On structural steel columns, beams, etc	t	1.88
8	On steel purlins, girts, etc	t	0.32
9	On angle bracing	t	0.32
Carried Forward to Summary of Section No. 3			R
Section No. 3			
Bill No. 10 - Structural Steel Work			

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<div>Brought Forward</div> <div><div>Construction</div><p>Outer frame to consist of a single part compensating head and jamb and continuous sub-Sill.</p><p>Infill panels are to be constructed from double cavity tubular profiles, forming a wet cavity with drainage slots to allow for transom drainage to the exterior. All glazing rebates to be 25mm. Joints of the infill panels shall be notched and screwed to spigots with No 8 stainless steel screws. Where required, a 111mm or 166mm Split mullion assembly must be used to couple infill panels together, still making allowance for all thermal and dynamic movement. Door panels within the screens to have a 4-edge door rebate with gasket seal all round.</p><div>Installation</div><p>All aluminium work to be done in strict accordance to the manufacturers specifications by a specialist firm. All openings to be checked on site before any materials are ordered or manufacture of window and door frames. Panel-by-panel installation from Inside or from Outside the building. All aluminium frame works to be provided with a continuous silicone seal around all construction openings.</p><div>Hardware</div><p>All sashes to have mechanical Corner Connectors, wind locks and multi-point locking handles. Sashes not to exceed 1700mm wide by 1200mm high as per specification. Friction stay to suit max weight and size of Sash.</p><p>Door hardware shall be compatible with the system and will take cognisance of the finish specification of the applicable area. See Hardware Schedule for door.</p></div>	<div>R</div>
<div>Carried Forward</div> <div>Section No. 3 Bill No. 11 - Metal Work</div>	<div>R</div>

<div>Brought Forward</div> <div><div>Finish</div><div>Sections will be painted in accordance with SABS1578, parts1 & 2. Powercote, and anodised aluminium, should be protected to prevent any damage or stain by cement, etc. All powder coating to be 25 micron thick and shall be executed in strict adherence to sabs 999</div></div> <div><div>Glazing</div><div>Glass thickness should be in accordance with SANS 10400 and deigned by a competent person. Glazing is to be carried out in accordance with SABS 0137, with particular attention to size limitations, packing and setting blocks. Thicknesses from 6-28mm.</div></div> <div><div>Structural Perfomance</div><div>System shall meet or exceed the requirements of SANS613 and the design loading determination by SABS 0160 for this application. Deflection of structural members shall not exceed L/175 or L/240+6mm as applicable.</div></div> <div><div>Thermal Perfomance</div><div>System shall comply with SANS204 in applications where Fenestration makes up more than 15% of Floor area. U-value with Air filled glazing units = 3.36 For U-values below 3.38 use Argon or Krypton gas filled glazing units.</div></div>	<div>R</div>
<div>Carried Forward</div> <div>Section No. 3 Bill No. 11 - Metal Work</div>	<div>R</div>

**STRETFORD TRAIN STATION
BILLS OF QUANTITIES**

	Brought Forward		R
1	Electrical Industrial type full height turnstile with a gate for disabled people and as an emergency exit.	No	2
	Carried Forward		R
Section No. 3 Bill No. 11 - Metal Work			

**STRET福德 TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
	<u>Level G3 bullet resistant Anti-bandit door, complete with 100 x 50 x 3mm gauge mild steel rectangular frame and 25 x 25 x 3mm MS angle rebates, overall size 930 x 2100mm high in powder coating and or galvanised cladding with peep hole, supplied with a 6 pin tumbler key system, mortice dead lock with an additional heavy duty magnetic lock and striker including key switch and surface mounted casing, 6 Amp power supply, push buttons and interlock system, heavy duty aluminium continuous hinge, aluminium slam bar with heavy duty door closer and D-style pull handles. Door to comply to SABS 1658-1996</u>		
2	930 x 2100mm	No	1
	<u>DOOR FRAMES, DOORS, WINDOWS,</u>		
	<u>Standard heavy duty double rebated pressed mild steel doorframe with factory red oxide primer for doorswing and wall thickness as indicated on plan with (x2) coat enamel paint finish over edge (Colour: according to the architect). Frame to accommodate for screeded floor finish.</u>		
3	Frame for door size 815 x 2100mm (DAJ)	No	7
4	Frame for door size 915 x 2032mm (DAB)	No	6
5	Frame for door size 1830 x 2083mm (DAE)	No	4
	<u>ALUMINIUM WINDOWS</u>		
	<u>Purpose made powder coated windows including glazing and ironmongery complete plugged to brickwork or concrete</u>		
6	Top hung casement aluminium windows overall size of 1500 x 1200mm, able to meet the performance requirements of SANSA 613. Mullion to be plugged or screwed to brickwork. Glazing shall be executed strictly in conformance with glass manufacturer's recommendations and SAND 10137:2011 all in accordance with SANS10400 Parts B, N, XA. W1	No	7
Carried Forward			R
Section No. 3 Bill No. 11 - Metal Work			

STRET福德 TRAIN STATION
BILLS OF QUANTITIES

		Brought Forward		R
7	Top hung casement aluminium windows overall size of 2400 x 900mm, able to meet the performance requirements of SANSA 613. Mullion to be plugged or screwed to brickwork. Glazing shall be executed strictly in conformance with glass manufacturer's recommendations and SAND 10137:2011 all in accordance with SANS10400 Parts B, N, XA. W2	No	7	
8	Top hung casement aluminium windows overall size of 600 x 1500mm, able to meet the performance requirements of SANSA 613. Mullion to be plugged or screwed to brickwork. Glazing shall be executed strictly in conformance with glass manufacturer's recommendations and SAND 10137:2011 all in accordance with SANS10400 Parts B, N, XA. W4	No	2	
9	Top hung casement aluminium windows overall size of 1500 x 1500mm, able to meet the performance requirements of SANSA 613. Mullion to be plugged or screwed to brickwork. Glazing shall be executed strictly in conformance with glass manufacturer's recommendations and SAND 10137:2011 all in accordance with SANS10400 Parts B, N, XA. W9	No	10	
10	Top hung casement aluminium windows overall size of 1800 x 1450mm, able to meet the performance requirements of SANSA 613. Mullion to be plugged or screwed to brickwork. Glazing shall be executed strictly in conformance with glass manufacturer's recommendations and SAND 10137:2011 all in accordance with SANS10400 Parts B, N, XA. W10	No	7	
<u>ALUMINIUM SHOPFRONTS</u>				
<u>Purpose made powder coated aluminium shopfronts, doors and frames glazed with 9,52mm laminated safety glass, hinges, sealant, ironmongery, etc. plugged to brickwork or concrete</u>				
11	1800 x 2500mm Custom aluminium shopfront including 900 x 2100 aluminium door complete powdercoated with INTERPON finish according to specialist subcontractor specifications as well as architects approval with a continuous clear silicone seal around all construction openings. (Colour according to the architect). (SF1-01)	No	4	
Carried Forward				R
Section No. 3 Bill No. 11 - Metal Work				

STRETTFORD TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
12	1800 x 2500mm Custom aluminium shopfront including 900 x 2100 aluminium door complete powdercoated with INTERPON finish according to specialist subcontractor specifications as well as architects approval with a continuous clear silicone seal around all construction openings. (Colour according to the architect). (SF1-02)	No	4
13	1920 x 2500mm Custom aluminium shopfront including 900 x 2100 aluminium door complete powdercoated with INTERPON finish according to specialist subcontractor specifications as well as architects approval with a continuous clear silicone seal around all construction openings. (Colour according to the architect). (SF2-01)	No	4
<u>Ticketing office shopfronts (bullet proof)</u>			
14	1810 x 1500mm Custom aluminium shopfront made of bullet resistant glass including transaction window and tray (by specialist) complete, powdercoated with INTERPON finish according to specialist subcontractor specifications as well as architects approval with a continuous clear silicone seal around all construction openings. (Colour according to the architect).	No	12
<u>GALVANISED STEEL HANDRAILS</u>			
<u>Welded handrails to walkways and ramps</u>			
15	Steel Connection 50mm diameter, wall mounted mild steel handrail, to follow line of stair at 1000mm high	m	20
<u>Welded balustrades</u>			
16	Mild steel railings consisting of 1000mm high, 90° 54mm Ø x 2.0mm stanchions spaced at 1600mm centres, with 44mm Ø x 2.0mm hand/knee rails. Top mounted stanchions to be fitted with baseplates pre-drilled with 30 x 18mm slotted holes for fixing to concrete/metal surface, including all necessary bends, closures, ferrules etc. as indicated on drawings	m	12
Carried Forward to Summary of Section No. 3			R
Section No. 3			
Bill No. 11 - Metal Work			

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STRETTFORD TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>WALL TILING</u>			
<u>200mm x 200 White Ceramic approved tiles over all basins and sinks. Or similar approved to be laid in accordance with and to the approval of the material supplier with appropriate tinted grout. "Approved" natural anodised 10mm high Elite aluminium straight edge trim, laid in tile adhesive while wall tiles are being installed or similar approved. Ceramic tiles (min. 10mm thick) PC SUM (R250/M2)</u>			
1	On walls in isolated panels, splashbacks, etc [LI]	m2	110
2	On narrow widths [LI]	m2	11
<u>FLOOR TILING</u>			
<u>600 x 600mm "Approved" dark grey matt with 3mm joints. Fixed with "Approved" Professional adhesive and Light Grey "Approved" Chemical resistant grouting mixed with approved bonding liquid. PC SUM (R400/M2)</u>			
3	On floors [LI]	m2	1,627
<u>Full body porcelain tile skirting (min. 10mm thick) to be laid in accordance with and to the approval of the material supplier at height of 150mm from FFL with stainless steel tile trimming on top PC SUM (R400/M2)</u>			
4	100mm High skirting [LI]	m	1,765
<u>SUNDRIES</u>			
<u>Brushed stainless steel corner tile trimming (to be approved by the architect) for all reveal corners of tiled door- & window openings in tiled walls</u>			
5	Straight edge [LI]	m	20
6	Corner tile trims [LI]	m	20
Carried Forward to Summary of Section No. 3			R
Section No. 3			
Bill No. 13 - Tiling			

**STRET福德 TRAIN STATION
BILLS OF QUANTITIES**

Item No		Quantity	Rate	Amount
	<u>BILL NO. 14</u>			
	<u>PLUMBING AND DRAINAGE (PROVISIONAL)</u>			
	<u>PREAMBLES</u>			
	For preambles refer to "General Specification of Materials and Methods to be used for Building Contracts" (GP /ASC)			
	<u>CPAP ADJUSTMENT</u>			
	Unless otherwise stated all items in this bill shall be deemed to fall into Work Group 146 and 148 for Contract Price Adjustment Provisions			
	<u>SUPPLEMENTARY PREAMBLES</u>			
	<u>Polypropylene pipes:</u>			
	Polypropylene pipes 54mm diameter and under shall be seamless copper coloured class 16 pipes jointed with "Fast-fuse" heat welded thermoplastic or brass compression fittings as designed for use with copper pipes as stated			
	Pipes shall be firmly fixed to walls etc with coloured nylon snap-in pipe clips with provision for accommodating thermal movement and jointed and fixed strictly in accordance with the manufacturer's instructions			
	All pipe diameters are nominal external			
	<u>Polypropylene pipes:</u>			
	Polypropylene pipes 63mm diameter and over shall be class 12 pipes jointed with cast iron "Supraclamp" running joints			
	Fusion welded bends, once or twice mitred as necessary, and tees shall be factory manufactured			
	Fusion welded bends and tees shall include jointing to pipes with PVC rubber ring double Z joint couplers			
	Carried Forward		R	
	Section No. 3			
	Bill No. 14 - Plumbing and Drainage (Provisional)			

STRETFORD TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<p>Branch tees shall include flanged and bolted joints to "Polycop" branch pipes in addition and for brass compression male iron to copper straight couplers</p> <p>Reducers shall include jointing to pipes with PVC rubber ring double Z joint couplers and reducers shall be of sufficient overall length to accommodate same</p> <p>All pipes shall be jointed and fixed strictly in accordance with the manufacturer's instructions</p> <p>All pipe diameters are nominal external</p> <p><u>Vitrified clay pipes:</u></p> <p>Pipes shall rest on solid ground and, where necessary, pockets of sufficient size shall be cut around joints to enable the jointing to be properly performed or, alternatively, pipes shall be bedded full length on and including unreinforced concrete laid in a semi-dry state immediately before pipes are laid</p> <p>Sewer and drainage pipes and fittings shall be jointed and sealed with butyl rubber rings</p> <p><u>uPVC pipes and fittings:</u></p> <p>Soil, waste and vent pipes and fittings shall be solvent weld jointed</p> <p><u>SOIL DRAINAGE</u></p>			
1	110mm Pipe and including excavation not exceeding 1m deep	m	53
<u>Extra over uPVC pipes for fittings</u>			
2	110mm Bend	No	7
3	110mm Access pipe	No	4
4	110mm Access junction	No	2
<u>SUNDRIES</u>			
5	Extra over excavation for excavation in soft rock	m3	5
Carried Forward			R
<p>Section No. 3 Bill No. 14 - Plumbing and Drainage (Provisional)</p>			

STRETTFORD TRAIN STATION
BILLS OF QUANTITIES

	Brought Forward			R
6	Extra over excavation for excavation in hard rock	m3	3	
7	Extra over excavation for carting away surplus material to a dumping site to be located by the contractor	m3	18	
8	Extra over backfilling to pipe trenches	m3	42	
9	100mm Cast iron "Approved" cleaning eye	No	4	
10	Testing drainage pipe system		Item	
<u>RAINWATER DISPOSAL</u>				
<u>Commercial and industrial Square profile aluminium seamless gutter, 0,9mm thick coated internally and externally with ColourTech G4 in colour Marble White including cut and mitred angles covered with a mitre strip externally, stop ends riveted and all sealed on the inside with Dow Corning 813 silicone sealer, secured to fibre cement fascia with 20 x 3mm dual-purpose brackets at 600mm centres using aluminium peeled rivets, including a 50 x 20mm high overflow spiggot, with 78 x 78 x 2mm thick aluminium downpipes in colour Marble White fixed to wall with straps at 1500mm centres using nail plugs, with downpipes riveted and silicone sealed to gutter outlets, including all necessary bends, elbows, shoes etc.</u>				
11	100 x 100mm Eaves gutters	m	35	
12	Extra over square eaves gutter for outlet for 78mm pipe	No	4	
13	78mm diameter galvanised rainwater downpipes	m	12	
14	Extra over round rainwater pipe for bend	No	4	
15	Extra over round rainwater pipe for shoe	No	4	
<u>SANITARY FITTINGS</u>				
<u>"Approved"</u>				
16	Approved 600 x 460mm basin, tap hole with overflow, wall mounted all as per the Architect's specifications	No	2	
Carried Forward				R
Section No. 3 Bill No. 14 - Plumbing and Drainage (Provisional)				

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STRETTFORD TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>SANITARY PLUMBING</u>			
<u>uPVC soil and vent pipes</u>			
24	50mm Pipes including chasing into brickwork	m	84
25	110mm Pipes including chasing into brickwork	m	91
<u>Extra over uPVC soil and vent pipes for fittings</u>			
26	50mm End cap	No	11
27	50mm Bend	No	21
28	50mm Junction	No	9
29	50mm Access bend	No	6
30	50mm Access junction	No	5
31	110mm End cap	No	7
32	110mm Pan connector	No	18
33	110mm Bend	No	14
34	110mm Junction	No	11
35	110mm Reducing junction	No	13
36	110mm Reducing double junction	No	5
37	110mm Access bend	No	3
38	110mm Air vent cowl	No	2
39	110mm Access junction	No	18
40	50mm Stubstack	No	15
Carried Forward			R
Section No. 3			
Bill No. 14 - Plumbing and Drainage (Provisional)			

STRETFORD TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>Precast concrete gulleys</u>			
41	Gulley not exceeding 1m deep to invert comprising 100mm diameter vitrified clay gulley trap and head, fitted with 190mm diameter cast in iron grating, including excavating for, bedding on and encasing in mass concrete and fitted with and including precast gulley top bedded in (3:1) cement mortar	No	2
<u>Testing</u>			
42	Provide all necessary apparatus for testing of waste pipe system	Item	
<u>WATER SUPPLIES</u>			
<u>Class O copper pipes with capillary type soldered joints, including couplers in the running length</u>			
43	15 mm Pipes	m	270
44	22 mm Pipes	m	174
45	28 mm Pipes	m	78
46	35 mm Pipes	m	56
<u>Extra over class 0 copper pipes for capillary fittings</u>			
47	15 mm Fittings	No	270
48	22 mm Fittings	No	174
49	28 mm Fittings	No	39
50	35mm Fittings	No	28
<u>Extra over class 0 copper pipes for conex compression fittings</u>			
51	15 mm Fittings	No	20
52	22mm Fittings	No	20
Carried Forward			R
Section No. 3 Bill No. 14 - Plumbing and Drainage (Provisional)			

STRETFORD TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>Copper overflow and service pipes</u>			
53	22mm Overflow pipe 500mm girth twice bent	No	2
<u>Sundries</u>			
54	500 x 500mm Cast iron stopcock box including brick chamber below not exceeding 500mm deep internally	No	1
<u>ELECTRIC WATER HEATERS</u>			
<u>"Approved" Geyser</u>			
55	"Approved" 450 litre electric geyser reticulated in series, including special contractor's switch, complete as per manufacturer's instructions	No	2
Carried Forward to Summary of Section No. 3			R
Section No. 3			
Bill No. 14 - Plumbing and Drainage (Provisional)			

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**STRETFORD TRAIN STATION
BILLS OF QUANTITIES**

Item No	Quantity	Rate	Amount
<u>BILL NO. 16</u>			
<u>PAINTWORK</u>			
<u>PREAMBLES</u>			
For preambles refer to "General Specification of Materials and Methods to be used for Building Contracts" (GP /ASC)			
<u>CPAP ADJUSTMENT</u>			
Unless otherwise stated all items in this bill shall be deemed to fall into Work Group 152 for Contract Price Adjustment Provisions			
<u>PREPARATORY WORK TO EXISTING WORK</u>			
<u>New plastered walls</u>			
Ensure plastered surface to be clean and dry before painting. New plaster must be given adequate drying time (moisture content must be less than 15%) and treat with plaster primer before the first coat of paint is applied			
<u>Previously painted plastered surfaces</u>			
Surfaces shall be thoroughly washed down and allowed to dry completely before any paint is applied. Blistered or peeling paint shall be completely removed and cracks shall be opened, filled with a suitable filler and finished smooth			
<u>Previously painted metal surfaces</u>			
Surfaces shall be thoroughly rubbed and cleaned down. Blistered or peeling paint shall be completely removed down to bare metal			
<u>Previously painted wood surfaces</u>			
Surfaces shall be thoroughly cleaned down. Blistered or peeling paint shall be completely removed and cracks and crevices shall be primed, filled with suitable filler and finished smooth			
Carried Forward			R
Section No. 3 Bill No. 16 - Paintwork			

STRETFORD TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>Previously painted surfaces to receive epoxy coating</u>			
<u>Previously painted surfaces are to be stripped back to the original firm substrate by abrading, flame treatments or chemical removal, using an approved paint Remover. Once contaminants have been removed the surface is to be acid etched using an approved acid diluted 1:1 with water, applied with plastic watering can at approximately 2m/lt, removing laitance and slightly roughening the surface to give a finish similar to that of fine sandpaper. Rinse the entire surface with clean water and allow to dry; normally if well ventilated.</u>			
<u>ON INTERNAL FLOATED PLASTER SURFACES</u>			
<u>Prepare one coat gypsum & plaster primer & 2 coats of superior low sheen. Final colour: TBC.</u>			
1	Walls	m2	3,348
<u>Prepare one coat gypsum & plaster primer & two coats of a water-based eggshell enamel paint. Final colour: TBC.</u>			
2	On Bathroom & Kitchen Walls	m2	105
<u>ON EXTERNAL FLOATED PLASTER SURFACES</u>			
<u>Prepare one coat of plaster primer and two coats of superior low sheen paint. Colour TBC</u>			
3	On walls	m2	1,949
<u>ON PLASTERBOARD SURFACES</u>			
<u>Prepare one coat gypsum & plaster primer & 2 coats of superior low sheen paint. Final colour: TBC.</u>			
4	Ceilings and cornices, including priming metal cover strips and nailheads	m2	76
Carried Forward			R
Section No. 3 Bill No. 16 - Paintwork			

STRETFORD TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>ON FIBRE-CEMENT BOARD SURFACES</u>			
<u>One coat primer and painted two coats enamel paint.</u>			
5	Fascias and barge boards, including priming metal jointing strips	m2	44
<u>ON METAL SURFACES</u>			
<u>One coat primer and two coats enamel paint finish over edge (Colour: according to the architect).</u>			
6	New rainwater gutters and downpipes	m2	25
7	Gates, grilles, burglar screens, balustrades, etc (both sides measured over the full flat area)	m2	12
8	Rails, bars, pipes, etc	m	20
<u>ON WOOD SURFACES</u>			
<u>One coat primer and two coats enamel paint finish over edge (Colour: according to the architect).</u>			
9	Timber doors and frames	m2	62
Carried Forward to Summary of Section No. 3			R
Section No. 3			
Bill No. 16 - Paintwork			

STRETFORD TRAIN STATION
BILLS OF QUANTITIES

SECTION SUMMARY - Section 3 - Building Works		Page No	Amount	
Bill No				
1	Bill No. 1 - Earthworks (Provisional)	44		
2	Bill No. 2 - Concrete, Formwork & Reinforcement	46		
3	Bill No. 3 - Masonry	50		
4	Bill No. 4 - Waterproofing	51		
5	Bill No. 5 - Carpentry and Joinery	55		
6	Bill No. 6 - Roof Coverings, etc.	57		
7	Bill No. 7 - Ceilings, Partitions and Access Flooring	60		
8	Bill No. 8 - Floor Coverings, Plastic Linings, etc.	63		
9	Bill No. 9 - Iron Mongery	69		
10	Bill No. 10 - Structural Steel Work	72		
11	Bill No. 11 - Metal Work	79		
12	Bill No. 12 - Plastering	81		
13	Bill No. 13 - Tiling	83		
14	Bill No. 14 - Plumbing and Drainage (Provisional)	90		
15	Bill No. 15 - Glazing	91		
16	Bill No. 16 - Paintwork	94		
Carried to Final Summary			R	
Section No. 3				

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**STRETFORD TRAIN STATION
BILLS OF QUANTITIES**

<p style="text-align: right;">Brought Forward</p> <p><u>Profit</u></p> <p>Where listed the contractor may allow for profit if required. The profit will be adjusted in the same ratio as the adjusted value of the subcontract.</p> <p><u>Attendance</u></p> <p>Without in any way limiting the meaning and interpretation, "general attendance" on sub-contractors shall include free of charge to the sub-contractor the following services for the purpose of the relative sub-contract works:</p> <ol style="list-style-type: none"> 1) access to the site and to the places where the work is to be carried out, including the use of any temporary personnel hoists erected by the Contractor for his own use; 2) the provision of water and lighting and of single and/or three phase electric power to a position within 50 metres of the place where work is to be carried out, but excluding water, fuel and power for commissioning of the installation for which the Contractor shall be responsible; 3) the provision of an area for office accommodation, temporary workshops and for the storage of plant and materials; 4) the use of erected scaffolding belonging to the Contractor, in common with others having the like right whilst it so remains erected upon the site; 5) the use of mess rooms, latrine, health and welfare facilities, and the like, where provided; 6) the use of the site telephone (if provided) subject to the payment by the sub-contractor for all his outgoing calls; 7) temporary casing and/or other protection of the work; 8) site security measures; 	<p style="text-align: right;">R</p>
<p style="text-align: right;">Carried Forward</p> <p>Section No. 4 Bill No.1 - Provisional Sums</p>	<p style="text-align: right;">R</p>

**STRETFORD TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward	R
<p>9) hoisting of the sub-contractor's material in loads not exceeding the available hoisting loads of cranes of the contractor;</p> <p>10) repairs and making good in all trades and final cleaning down on completion.</p> <p><u>Fuel, power and water for commissioning plant</u></p> <p>The cost of fuel, power and water for the commissioning of plant shall be borne by the sub-contractor appointed for the relevant sub-contract works in terms of the conditions under which they have/are contracted for the specialist work involved. The contractor shall allow opposite this item or under the relevant attendance items for the recovery of such costs via the installation of the necessary meters, etc.</p> <p><u>Work executed by direct contractors</u></p> <p>Work listed under the heading "Work executed by direct contractors" shall be executed before and during this contract and the tenderer must allow free access to the site for such other contractors.</p> <p>These contractors shall be directly paid by the client and the tenderer must allow for programming in conjunction with them to complete the project successfully within the contract period.</p> <p>The estimated values of these contracts are listed to enable the tenderer to determine the extent of the attendance if required. Profit on these contracts shall not be allowed.</p> <p><u>Budgetary allowances</u></p> <p>Budgetary allowances shall be re-measured and valued on the same pricing structure as the rest of the contract or shall be omitted in full if so required.</p>	
Carried Forward	R
<p>Section No. 4 Bill No.1 - Provisional Sums</p>	

Carried to Final Summary

PART 2

SECTION 5 - CIVIL ENGINEERING WORKS

STRETFORD TRAIN STATION						
Item	Pay Ref	Description	Unit	Qty	Rate	Amount
	SABS 1200 C	SECTION 2: SITE CLEARANCE				
LI	8.2.1	Clear and grub and dispose	ha	0.35		
	8.2.2	Remove and grub large trees and tree stumps of girth and dispose				
LI		(a) Over 1 m and up to and including 2 m	No.			
	8.2.8	Demolish and remove structures/ buildings and dismantle steelwork, etc.				
LI		a) Demolish and dispose of unreinforced concrete paving and base courses	m3			
LI		b) Demolish and dispose of 50mm thick asphalt paved surfaces	m²			
		c) Take up and dispose of 80mm thick block paving	m²			
		d) Demolish and dispose of precast concrete kerbs deemed to be in poor condition and cut to spoil	m			
		e) Demolish and dispose of reinforced concrete paving	m3			
	8.2.9	Transport materials and debris Extra-over for importation of materials from commercial sources or from borrow	m3.km			
		Provision Sum - Scanning of underground services using LMX200 type of GPRS equipment is recommended as it provides unprecedented insights and target confidence to detect traditionally non-locatable subsurface features such as: Non-metallic pipes, Underground Electrical Cable, Concrete storm/sewer systems etc	P.sum	1.00	R 75 000.00	R 75 000.00
		Provision Sum - Dismantle and Removal of existing car ports and store them at designated place as instructed by the Engineer	P.sum		R 120 000.00	R -
SECTION 2: SITE CLEARANCE - TOTAL AMOUNT CARRIED TO SUMMARY						

STRETFORD TRAIN STATION						
Item	Pay Ref	Description	Unit	Qty	Rate	Amount
	SABS 1200 D	SECTION 3: EARTHWORKS				
	8.3.1	Site preparation				
	8.3.1.2	Remove topsoil to nominal depth 150 mm depth), stockpile and maintain	m3	180.00		
	8.3.2	Bulk excavation				
		(a) Excavate in all materials and disposal of spoil at source obtained by contractor in compliance with regulations				
		(1) bulk excavation ≤ 3m deep for Buildings	m3	21.00		
		(b) Extra-over for				
		(1) intermediate excavation	m3	11.00		
		(2) hard rock excavation	m3	8.00		
		(3) boulder excavation class A	m3			
		(a) Excavate in all materials, stockpile and use for embankment or backfill	m3			
		selected material from excavation compacted to min 93% of MOD AASHTO density in 150mm layers				
	8.3.4	Importing of materials				
	8.3.4.1	Extra-over for importation of materials from commercial sources or from borrow pits				
		(b) From commercial sources				
		(ii) 150mm G5 subbase Natural gravel, compacted to minimum 95% of mod AASHTO maximum density	m3	525.00		
		(iv) 150mm G6 subbase Natural gravel, compacted to minimum 93% of mod AASHTO maximum density	m3	525.00		
		(v) 150mm G7 or better subbase Natural gravel, compacted to minimum 93% of mod AASHTO maximum density	m3			
		(vi) Rip & recompact 150mm insitu layer min 93% of MOD AASHTO density	m3	525.00		
Section 3- Earthworks - Total Amount Carried to Summary						

STRETTFORD TRAIN STATION						
WALKWAYS AND COURTYARDS						
Item	Pay Ref	Description	Unit	Qty	Rate	Amount
	SABS 1200 DM	SECTION 39: EARTHWORKS (ROADS, SUBGRADE)				
		Excavating and removing existing bituminous material (except milled material)				
		(b) Material to be disposed of with the average depth of excavation				
		(i) Not exceeding 30mm	m²	3 500.00		
	8.3.3	Treatment of road-bed				
		(1) rip & recompact 150mm insitu layer min 93% of MOD AASHTO density	m3	525.00		
	8.3.7	Cut to spoil				
		(a) Soft excavation	m3	105.00		
		(b) Intermediate excavation	m3	10.50		
		(c) Hard excavation	m3	5.25		
		(d) Boulder excavation class A	m3	2.63		
	PS 3	Watering of temporary deviations for dust control (as per Engineer's instruction)	kl			
SECTION 39: SANS 1200DM - EARTHWORKS (ROADS) - TOTAL AMOUNT CARRIED TO SUMMARY						
	SABS 1200 ME	Extra-over for importation of materials from commercial sources or from borrow SECTION 40: SUBBASE				
		Construct the subbase course/ shoulders/gravel wearing course with material from commercial sources				
	8.3.3	(a) Natural gravel				
		(i) G5 base Natural gravel, compacted to minimum 95% of mod AASHTO maximum density	m3	525.00		
		(ii) Filling with C4 subbase using min. G5 parent material stabilised with ± 3% cement CEM II / III A 32.5N by mass, selected and supplied by the Contractor, deposited, watered and consolidated to 95% modified AASHTO density in 150mm thick sub-base course.	m3			
		PLATFORM PAVEMENT				
		ASPHALT BASE AND SURFACING -PLATFORM Asphalt surfacing				
		Continuously graded hot-mix asphalt using: 50/70 penetratgrade bitumen 20 mm thick medium grade	m2	3 500.00		
SECTION 40: SANS 1200ME: SUBBASE - TOTAL AMOUNT CARRIED TO SUMMARY						

	SABS 1200 MJ	SECTION 41: SEGMENTED PAVING				
	8.2.2	Construction of block paving complete				
LI		60mm Type S-A, class 25 interlocking units - Grey in colour	m²	950.00		
		60mm Type S-A, class 25 interlocking terracotta precast blocks	m²			
		PLATFORM EDGING				
		Tactiles				
LI		300x300x30mm Cement base product with Tac pins from Union Tiles or equal approved, with manufacturer recommended sealant.	m	640.00		
LI		Guidance TGS's SANS 784 Standard Block_400 x 400 x 65mm in pedestrian ramps	m²			
	8.2.3	Cutting units to fit edge restraints				
LI		a) 60mm blocks	m	140.00		
LI	8.2.5	Trial section, not part of permanent work (provisional)	m2			
		Provisional sum for Covered walkway steel frame and Cover sheeting	P. sum			
		Retro-reflective road marking paint: [Provisional Sum]	P. sum	1.00	R 120 000.00	R 120 000.00
SECTION 41: SANS 1200MJ - SEGMENTED PAVING - TOTAL AMOUNT CARRIED TO SUMMARY						
	SABS 1200 MK	SECTION 42: KERBING AND CHANNELLING				
	8.2.1	Concrete kerbing to SANS 927 on sand-cement bedding				
		(d) Fig. 3 kerb grade 25MPa/19 mm concrete for precast kerbs				
		(1) Straight kerbing	m	640.00		
	8.2.7	Trimming of excavations for concrete-lined open drains in				
		(a) Soft material	m2			
		Concrete (Class 25MPa) lined drain 100mm thick and 900 mm wide, 100 mm depth including surface preparation i.e. shape, rip & recompact to min 90% Mod AASHTO density	m			
SECTION 42: SANS 1200MK - KERBING AND CHANNELLING - TOTAL AMOUNT CARRIED TO SUMMARY						

SUMMARY CIVIL WORKS

DESCRIPTION			AMOUNT
SECTION 39: SANS 1200DM: EARTHWORKS (WALKWAYS SUBGRADE)			
SECTION 40: SANS 1200ME: SUBBASE (G5) (WALKWAY)			
SECTION 41: SANS 1200MJ: SEGMENTED PAVING (WALKWAYS)			
SECTION 42: SANS 1200MK: KERBING AND CHANNELLING			
Sub-Total - Bills of Quantities - (Excluding P & Gs)			

STRETFORD TRAIN STATION						
WATER SUPPLY						
Item	Pay Ref	Description	Unit	Qty	Rate	Amount
	SABS 1200 DB	SECTION 15: EARTHWORKS (PIPE TRENCHES)				
	8.3.2	Excavation				
		(a) Excavate in all materials for trenches, backfill, compact and dispose of surplus material				
		(2) Over 125 mm and up to 1200 mm dia pipes for depths				
		Over and up to				
		0,0 m 1,0 m	m3	306		
		1,0 m 2,0 m	m3			
		(b) Extra-over item (a) above for:				
		(1) intermediate excavation	m3	31		
		(2) hard rock excavation	m3	15		
		(c) Excavate and dispose of unsuitable material from trench bottom (provisional)	m3			
		Extra-over for importation of materials from commercial sources or from borrow barrel) with material obtained from trench excavations. To be compacted in 150mm layers to 90% MOD AASHTO density.	m3	300		
Section 15: SANS 1200DB - Earthworks (pipe trenches) - Total Amount Carried to Summary						
	SABS 1200 L	SECTION 16: MEDIUM-PRESSURE PIPELINES				
	8.2.1	Supply, lay, joint, bed and test pipelines complete with couplings. The tests shall include pressure and leakage tests.				
		(a) class 12 uPVC pipes:				
		(b) mPVC Class 16 pipes				
		(1) 50 mm diameter	m			
		(2) 75 mm diameter	m			
		(3) 90 mm diameter	m			
		(4) 110 mm diameter	m	510		
	8.2.2	Extra-over 8.2.1 for the sup- plying, laying, and bedding of specials complete with couplings				
		(a) 45° slow bends	No.	5		
		(b) 90° slow bends	No.	22		
		(c) 100 mm, calibrated flow meter	No.			
		(d) 90 mm, calibrated flow meter	No.			

		(e) Hydrant tees, CI class 12				
		(i) 90mm diameter	No			
		(ii) 110mm diameter	No			
		(f) Hydrants (aboveground type, 90 mm diameter hydrant on 80mm diameter riser,	No			
8.2.3		Extra-over 8.2.1 for the supplying, fixing, and bedding of valves				
		(a) 100 mm gate valve	No.			
		(b) 75 mm gate valve	No.			
8.2.11		Anchor/thrust blocks and pedestals				
		(b) (1) Concrete, grade 25MPa	m3			
8.2.12		Concrete casing -grade 15MPa	m3			
8.2.13		Valve and hydrant chambers, etc.				
		(a) 80mm Air & gate valve complete with chambers	No.			
PS1		Marker post to show pipeline	No			
SECTION 16: SANS 1200DM - MEDIUM-PRESSURE PIPELINES - TOTAL AMOUNT CARRIED TO SUMMARY						
SABS 1200 LB	SECTION 17: BEDDING (PIPES)					
8.2.1		Provision of bedding from trench excavation				
		(a) Selected granular material	m3			
		(b) Selected fill material	m3			
8.2.2		Supply only of bedding by importation				
8.2.2.1		From other necessary excavations (provisional)				
		(a) Selected granular material	m3			
		(b) Selected fill material	m3			
SECTION 17: SANS 1200LB - BEDDING (PIPES) - TOTAL AMOUNT CARRIED TO SUMMARY						

SUMMARY WATER SUPPLY WORKS

DESCRIPTION			AMOUNT
SECTION 15: SANS 1200DB: EARTHWORKS (PIPE TRENCHES: WATER SUPPLY)			
SECTION 16: SANS 1200L: MEDIUM PRESSURE PIPELINES			
SECTION 17: SANS 1200LB: BEDDING (PIPES: WATER SUPPLY)			
Sub-Total - Bills of Quantities - (Excluding P & Gs)			

STRETTFORD TRAIN STATION						
SEWER						
Item	Pay Ref	Description	Unit	Qty	Rate	Amount
	SABS 1200 DE	SECTION 19: EARTHWORKS (PIPE TRENCHES)				
	8.3.2	Excavation				
		(a) Excavate in all materials for trenches, backfill, compact and dispose of surplus material				
		(2) Over 125 mm and up to 1200 mm dia pipes for depths				
		Over and up to				
		0,0 m 1,0 m	m3	210		
		1,0 m 2,0 m	m3	96		
		2,0 m 3,0 m	m3	108		
		(b) Extra-over item (a) above for:				
		(1) intermediate excavation	m3	47		
		(2) hard rock excavation	m3	24		
		(d) The general backfilling of pipe trenches (excluding the backfill around the pipe barrel) with material obtained from trench excavations. To be compacted in 150mm layers to 90% MOD AASHTO density.	m3			
	8.3.3	Excavation ancillaries				
	8.3.3.1	Make up deficiency in backfill				
		Extra-over for importation of materials from commercial sources or from borrow				
		(a) from other necessary excavations on site	m3			
		(c) by importation from commercial or off-site sources selected by the Contractor	m3			
	8.3.4	Particular items				
		(a) Shore trench opposite structure or service	m			
	SABS 1200 LD	SECTION 8: SEWERS				
	8.2.1	Supply, lay, joint, bed and test pipelines. The tests shall include mirror and leakage tests.				
		(a)uPVC Heavy Duty Class 34 to SANS 791				
		(1) 160 mm dia pipes	m	370		
		(2) 200 mm dia pipes	m			
	8.2.3	Manholes				
		Manholes as per dwg _Dia 1050mm - 1200mm complete with type 2A lockable cover and frame for depths				
		Over and up to				
		(1) 0 m 0,5 m	No.			
		(2) 0,5 m 1,0 m	No.			
		(3) 1,0 m 1,5 m	No.	14		
		(4) 1,5 m 2,0 m	No.			

SITE CLEARANCE

8.2.8	Anchor blocks (b) Concrete grade 20MPa including formwork	m3	9		
8.2.9	Marker posts	No.	5		
8.2.10	Permanent plug stoppers	No.			
	Construct rodding eye complete with uPVC replacement cover, cast - in uPVC frame and 160mm dia x 45 deg bend.	No.	12		
8.2.11	Connection to existing sewer Manholes - Tie in and rebuild complete Manholes	No.	2		
8.2.12	Raising or lowering of existing manholes	No.	4		
	TESTING OF SEWERS				
	Random watertightness test of manholes as specified by SANS 1200 LB.	no	4		
	Air test of sewer as described by SANS 1200 LD	m	410		
	CCTV camera inspection of sewer lines up to: 160mm dia	m	410		
	Direct manhole connection into existing Bulk Sewer	no	2		
	STORMWATER CHANNEL				
	Supply and install U-Channel with square grid for u-channel as per SANRAL specification reinforced concrete UCHANNEL:				
	370mm x 408mm x 1200mm U-Channel	m	165		
	370mm x 135mm x 600mm Square Grid for U-Channel	m	210		
	GRID INLET				
	Construct grid inlet, complete with floorslab, benching, walls and grid. Rate should include for all excavation and recompaction to 93% Mod AASHTO density and for cutting of pipes to fit as shown in the drawing for pipes up to:				
	450mm dia	No.	8		
	525mm dia	No.			
	600mm dia	No.			
SECTION 8: SANS 1200 LD - SEWERS - TOTAL AMOUNT CARRIED TO SUMMARY					

SITE CLEARANCE

STRETFORD TRAIN STATION

SUMMARY CIVIL WORKS BILLS OF QUANTITIES

Item	Description	Amount
1	Site clearance	
2	Earthworks	
3	Walkway pavements	
4	Water Supply	
5	Sewer	
	TOTAL	

SECTION 6 - ELECTRICAL WORKS

STRETFORD STATION ELECTRICAL WORKS					
LV RETICULATION					
Item	Description	Unit	Qty	Rate	Amount
	Distribution Boards				
	Refurbish the following distribution boards, including all equipment, complete with all accessories. Installation shall include fixing, accessories and earthing.				
	The price shall include for all fixing materials, circuit terminations, lugs, cable straps and any other items necessary for the complete installation. The price shall also include liaison with the board manufacturer, obtaining shop drawings for approval by the engineer, and the preparation and provision of detailed legend cards, as per the specification.				
1	Main Station Kiosk	Lot	1		
2	Ticket Office - 6 Way	Lot	1		
3	Security Office DB 6 Way	Lot	1		
4	Main Platform Distribution Baords	Lot	1		
5	Platform Distribution Boards	Lot	2		
5	Admin Buildings Distribution Boards	Lot	2		
	Power Cabling				
	Supply and install the following cables laid on cable tray, pulled in a sleeve or in a trench, including all fixings and accessories. The cables shall be 600/1000V/ PVC/SWA/PVC/ECC with copper conductors. Complete with terminations				
6	50mm ² x 4 core ecc cable + 6 Cable Terminations	m	340		
7	35mm ² x 4 core ecc cable + 8 Cable Terminations	m	0		
8	25mm ² x 4 core ecc cable + 4 Cable Terminations	m	56		
9	16mm ² x 4 core ecc cable + 10 Cable Terminations	m	570		
10	Joining Kits PC Sum	Lot	2		
11	110 Flexible Sleeves	m	1200		
12	50mm Flexible Sleeves	5	0		
13	1000 Diameter Manholes	No	3		

STRETFORD STATION ELECTRICAL WORKS					
LIGHTING					
Item	Description	Unit	Qty	Rate	Amount
	LIGHTING				
	All Internal Light Fittings complete with 3m Lead,5Amp Plug and appropriate drivers				
1	16 Amp, single lever light Switch	No	43		
2	5 Amp, 3 pin, unswitched socket outlet to fit deep round conduit boxes	No	180		
3	LED panel Sidelift flicker free driver + PMMA LG + Prisma Diffuser - 4000 Lumens - 600x600 Recessed	No	36		
4	LED panel Sidelift flicker free driver + PMMA LG + Prisma Diffuser - 4000 Lumens - 600x600 Recessed with Battery Backup	No	42		
5	1578mm Surface Mounted fitting 53W LED complete with driver and microwave sensor with 70'000hr operation warranty	No	85		
6	LED panel Sidelift flicker free driver + PMMA LG + Prisma Diffuser - 4000 Lumens - 600x600 Surface Mounted	No	39		
6	Led Industrial Bulkhead fitting with unpainted marine grade high pressure die cast aluminium backing with non discolouring injection moulded high impact acrylic diffuser, IP66. 4370 lm 32W, Neutral white 740 with 10kv surge protection	No	5		
7	LED Pole Top with aluminium Spigot and Cover, high impact Acrylic Protector, IP55 rated, 3506-5219lm output, 37-54W with 142 Efficacy, Neutral white 740, complete with 5m Pole with 2m Stub	No	11		
	18W LED Downlight Recessed in ceiling complete with driver and 5A plug	No	11		
8	Bridge Lighting Solar type 40W LED Street Lamp	No	4		
	132W LED Type Highbay with unpainted marine grade high pressure die cast aluminium backing with non discolouring injection moulded high impact acrylic diffuser Natural White colour rendering, 4m Mountable height	No	0		
9	Exit Sign/Running Man c/w battery backup including lamps	No	7		
10	Photo Electric Cell	No	4		
10	2,5mm ² x 3 (Red, Black & Green) - Housewire	m	7200		
11	25mm diameter PVC conduit	m	4320		
	Total Carried to Summary				

STRETFORD STATION ELECTRICAL WORKS					
SMALL POWER					
Item	Description	Unit	Qty	Rate	Amount
	SMALL POWER				
1	16 Amp, single Switched Socket Outlet - white	No	16		
2	16 Amp, single Switched Socket Outlet - white on Power Skirting	No	36		
3	20 Amp, DP Isolator - complete with conduit to outlet box below	No	7		
	100x100 Steel Wall box chased	No	20		
	100x100 PVC Surface Box Mounted on Wall	No	0		
	100x50 Steel Wall box chased	No	0		
4	4mm ² x 3 (Red, Black & Green) - Housewire	m	2880		
5	25mm diameter PVC conduit	m	288		
6	2 compartment PVC Power Skirting + 5 End caps	m	29		
7	500VA single phase UPS	No	5		
8	To provide the earthing and testing of the electrical installation in accordance with the General Specification, regulations and the requirements of the local authority. All circuits shall be earthed in accordance with the wiring code. Where the earth conductor is joined at the terminal block, the wires shall be soldered together so that removal of the equipment shall not result in an interruption of the earth continuity of the conductors.	Lot	2		
Total Carried to Summary					R -

STRETFORD STATION ELECTRICAL WORKS**SUMMARY**

Item	Description	Amount
1	LV Reticulation	
2	Lighting	
3	Small Power	
	Sub Total Carried to Main Summary	

SECTION 7 - ELECTRONICS & ICT

Item	Description	Unit	Qty	Rate	Amount
1.1	<u>DOOR INTEGRATION</u>				
1.1.1	300kg Maglock complete with Z Bracket.	No	8		
1.1.2	Green Breakglass	No	8		
1.1.3	3A ,24V Power Supply complete with battery back up.	No	8		
1.1.4	Cabling for Access Control System (PH30)	m	265		
1.1.5	Cabling for Access Control System (PH120)	m	45		
1.2	<u>FIRE DETECTION</u>				
1.2.1	Addressable 4 Loop Fire Alarm Panel with Network Card	No	6		
1.2.2	Addressable 2 Loop Repeater Panel with Network Card	No	4		
1.2.3	Program Fire Alarm Panel	No	8		
1.2.4	Addressable Smoke Detector	No	32		
1.2.5	Addressable Sounder	No	4		
1.2.6	Addressable Strobe	No	7		
1.2.7	Addressable Void Smoke Detector + Ceiling mounted LED	No	5		
1.2.8	Addressable Heat Detectors	No	1		
1.2.9	Addressable Manual Call Point (Red Breakglass)	No	5		
1.2.10	Addressable Relay Unit	No	5		
1.2.11	Addressable Interface Unit	No	2		
1.2.12	Fire Door Hold Open Magnets	No	2		
1.2.13	3A 24V Power Supply with battery back up	No	2		
1.2.14	Intergration with Ventilation System	No	1		
1.2.15	PH30 Cable	m	2450		
1.2.16	PH120 Cable	m	65		
1.3	<u>INTERCOMM SYSTEM</u>				
1.3.1	90 Way Intercom Controller Master Station. Must support or drive a minimum of 90 speakers	No	1		
1.3.2	Paging console with Gooseneck microphone	No	1		
1.3.3	Program Preset Timer for optional School Bell System (hardware unit with lcd display, running bell control software)	No	1		
1.3.4	Outdoor Intercom module complete with Horn Speaker (5-30W) & microphone. (IP66)	No	9		
1.3.5	High quality, wall mount, indoor, intercom module complete with Speaker (10W) & microphone. The microphone must be very sensitive, able to clearly pick audio in a class environment when activated with no feedback	No	10		
1.3.6	Intercom Terminal Box: 4U Wall Mount, lockable	No	1		
1.3.7	Intercomm Cabling (PH30) - 2 Core	m	540		
1.3.8	Intercomm Cabling (PH30) - 20 Core	m	310		
1.3.9	Intercomm Cabling (PH120) - 40 Core	m	110		
1.4	<u>INTRUSION DETECTION SYSTEM</u>				
1.4.1	Control Panel. 8 on-board zones. Expandable to 128 hardwired zones. 4PGM On-board outputs expandable to 80. Template Programming. 8 partitions. Connect up to 16 supervised keypads with keypad zones and expansion. 500-event buffer. 500 user codes.	No	2		
1.4.2	Central Master Control and Indication Panel	No	2		
1.4.3	Hard wired Full message LCD Keyboard	No	2		
1.4.4	Wired Panic Button	No	14		
1.4.5	Wireless Panic Button	No	14		
1.4.6	Outdoor Indicator LED Mounted above door (IP66) complete with accessories	No	14		
1.4.7	Communication network module (GSM or /TCPIP)	No	1		
1.4.8	Outdoor 15W, Electric, 12DC, Siren,	No	2		
1.4.9	Power Supply complete with battery backup	No	1		
1.4.10	Dual type (microwave and infrared) detectors	No	12		
1.4.11	Cabling (PH30) - 4 pair twisted screened cable	m	180		
1.4.12	Cabling (PH120) - 20 pair twisted screened cable	m	18		
1.5	<u>INDEPENDENT INTERVAL BELL SOUNDER SYSTEM</u>				
1.5.1	Bell System Control Panel with Timer and Override Function	No	1		
1.5.2	203mm Gong type bell as shown on drawings.	No	3		
1.5.3	Sounder Cabling (PH30)	m	240		
1.6	<u>MISCELLANEOUS</u>				
1.6.1	Sundries (to include termination boxes, screws, heat shrinks and other materials deemed necessary to complete installation)	Item	1		

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Item	Description	Unit	Qty	Rate	Amount
1.1.	<u>ACCESS CONTROL</u>				
1.1.1	Biometric Reader with Tag reader facility	No	12		
1.1.2	Door Controller	No	9		
1.1.3	Access Control Head End	No	3		
1.1.4	Cabling for Access Control System including terminations (CAT 6A FUTP)	m	1440		
1.1.5	5m CAT 6A FUTP Fly Leads	No	18		
1.1.6	Integration with CCTV System	No	1		
1.1.7	Intergration with Fire Alarm System	No	1		
1.2	<u>WIRED NETWORK SYSTEM (DATA)</u>				
1.2.1	Data Points - Cradles and terminations	No	39		
1.2.2	Data Cabling including terminations (CAT 6A FUTP)	m	4500		
1.2.3	5m CAT 6A FUTP Fly leads	No	86		
1.30	<u>TELEPHONE SYSTEM</u>				
1.3.1	IP Telephone PABX including Software and Server	No	2		
1.3.2	Desktop IP Telephones and Power Supply	No	12		
1.3.3	Telephone Points - Cradles and terminations	No	0		
1.3.4	Telephone Cabling including terminations (CAT 6A FUTP)	m	0		
1.3.5	5m CAT 6A FUTP Fly leads	No	23		
1.40	<u>WIRELESS NETWORK (WIFI)</u>				
1.4.1	Wireless LAN Controller with 60 AP License (See Spec). Wireless intrusion prevention system (IPS) capabilities, RF management, QoS, and Layer 3 fast secure roaming. 2 x 10Gigabit Ethernet including Authentication Server (Radius Server/ Active Directory/LDAP)	No	1		
1.4.2	WIFI Access Point	No	5		
1.4.3	WIFI CAT 6A FUTP point - Cradles and terminations	No	6		
1.4.4	WIFI Cabling including terminations (CAT 6A FUTP)	m	432		
1.4.5	5m CAT 6A FUTP Fly leads	No	11		
1.5	<u>CCTV SYSTEM</u>				
1.5.1	Rack Mounted PVR with 1 week storage with capacity for extension and cloud storage	No	1		
1.5.2	Control Equipment including 2 x 50 inch 1920x1080 monitors INCLUDING ALL SOFTWARE AND LICENCES	No	1		
1.5.3	IP, 2x2.0 MegaPixel (1080p) HD Indoor Dome Camera with analytics, 3-9mm lens PoE, Vandal resistant and to IP66.	No	3		
1.5.4	IP, 3x2.0 MegaPixel (1080p) HD Indoor Dome Camera with analytics, 3-9mm lens PoE, Vandal resistant and to IP66.	No	2		
1.5.5	IP, 4x3.0 MegaPixel, WDR Day/Night Camera, 2.8-8mm f/1.3, Pendant Dome Camera, Vandal resistant and to IP66.	No	2		
1.5.6	CCTV CAT 6A FUTP point - Cradles and terminations	No	6		
1.5.7	CCTV Cabling including terminations (CAT 6A FUTP)	m	504		
1.5.8	5m CAT 6A FUTP Fly leads	No	13		
1.6	<u>NETWORK SWITCHES</u>				
1.6.1	8 Port Switch	No	2		
1.6.2	48 Port Switch	No	4		
1.7	<u>CABINETTES</u>				
1.7.1	20u Cabinette	No	2		
1.7.2	43u Cabinette	No	2		
1.7.3	8 port Fibre Patch Panel	No	4		
1.7.4	24 Port Patch Panel	No	8		
1.7.5	48 Port Patch Panel	No	4		
1.7.6	XFP,SFP + Modules	No	80		

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PRASA STRETFORD STATION ELECTRONICS & ICT BOQ

SUMMARY

Item	Description	Amount
1	Electronic	
2	ICT	
	Sub Total Carried to Main Summary	

SECTION 8 - MECHANICAL WORKS

SUMMARY

Item	Description	Total
1	Wet Services	
2	HVAC	
3	Fire Protection	
	Total	

WET SERVICES BOQ

Item	Description	UoM	Qty	Rate	Amount
	Supply and install the following pipes complete with all fittings, bends, reducers, etc				
	HDPE PE 100 class 12.5				
1	Dia 110	m	-		
2	dia 75	m	380.00		
3	dia 40	m	-		
4	dia 32	m	-		
5	dia 25	m	-		
6	dia 20	m	150.00		
	Copper class 1				
7	dia 15	m	-		
8	dia 22	m	-		
9	dia 28	m	-		
10	dia 35	m	-		
11	dia 42	m	-		
12	dia 58	m	-		
13	dia 110	m	-		
14	Insulation of all hot water piping with an insulation with an R-Value of 1	lumpsum	1.00		
	Supply and install the following brass valves				
15	dia 15 angle valves	nr	410.00		
16	dia 15 stop cock	nr	40.00		
17	dia 22 stop cock	nr	80.00		
18	dia 28 stop cock	nr	15.00		
19	dia 75 gate valve	nr	40.00		
20	dia 110 gate valve	nr	15.00		
21	100 mm dia pressure gauge (650kPa range)	nr	4.00		
22	100 mm dia pressure gauge (2500kPa range)	nr	2.00		
23	dia 65 back flow preventor	nr	1.00		
24	dia 110 backflow preventor	nr	1.00		
25	dia 65 non return	nr	4.00		
26	dia 110 non return	nr	4.00		
27	dia 65 strainers	nr	4.00		
	Supply and install the following mechanical equipment as per manufacture's instructions				
28	150lt solar pre-heater complete with flat panel collector and all fittings and valves as per manufacture's instructions	nr	3.00		
29	300lt solar pre-heater complete with flat panel collector and all fittings and valves as per manufacture's instructions	nr	-		
30	150lt geyser with all fittings and valves as per manufacture's instructions	nr	2.00		
	Balance Carried Forward				

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MECHANICAL HVAC BOQ

Item	Description	UoM	Qty	Rate	Amount
	Supply and install the following circular EC fan complete attenuators, support brackets, speed controllers, etc. (the combination fan and silencer selection must be such as to satisfy the specified noise levels)				
1	Fan 1980 l/s @ 400Pa static	nr	1.00		
2	Potentiometer speed controllers	nr	-		
3	Fan 400l/s @ 300Pa static	nr	-		
4	Potentiometer speed controllers	nr	-		
	Supply and install 0.9mm 430 stainless steel (with a no. 4 satin finish) kitchen extraction canopy, complete with all support brackets, studs, accessories, etc				
5	1500l x 1500w x 500h extraction canopy	nr	2.00		
6	500 x 500 inertial filters made of 430 stainless steel (495l/s)	nr	-		
7	Supply and install electric controls for 2 canopies	lumpsum	-		
8	Supply and install dia 450 roof dispersion cowl	nr	-		
9	1900l x 1000w x 500h extraction canopy	nr	-		
	Supply and install the following ducting in accordance to SMACNA complete with spigots, all fittings, flexis, suppotrs, etc.				
10	dia 224	m	10.00		
11	dia 315	m	4.00		
12	325 x 325	m	4.00		
13	250 x 250	m	4.00		
14	375 x 375	m	4.00		
15	dia 400	m	4.00		
16	450 x 425	m	2.00		
17	650 x 650	m	2.00		
18	800 x 400	m	1.00		
19	300 x 300	m	1.00		
20	600 x 300	m	1.00		
	Supply and install the following diffusers. Each diffuser must be selected in accordance with the manufacture's recommendations, to be capable of passing the specified air quantity without creating excessive resistance, noise or local draughts				
	Each diffuser must be provided with an opposed blade volume control damper or adjustable disk type throttling mechanism				
21	600 x 600 face louvre diffuser	nr	7.00		
	Supply and install Aluminium weather louvres				
22	800 x 400 weather louvre	nr	4.00		
23	Supply and install G4 pleated type filters (min 50mm thick) washable type	nr	2.00		
	Supply and instal the following AC units				
24	9000 BTU split Unit	nr	4.00		
	Balance Carried Forward				

	Balance Brought Forward				
	Supply and install the following EC fan complete with attenuators, speed control and all accessories				
25	Fan 100 l/s @ 100Pa pressure	nr	24.00		
	Prelim and General				
26	Fixed Prelim and general	lot	1.00		
27	Duct Pressure testing	lot	1.00		
28	Commissioning of the system to the satisfaction of the client and engineer	lot	1.00		
29	Production of Handover files	copies	3.00		
30	Production of shop drawings	copies	3.00		
31	Production of as-built drawings	copies	3.00		
32	Provision of 12 month maintenance from works completions	month	12.00		
	Total Carried to Summary				

MECHANICAL FIRE BOQ

Item	Description	UoM	Qty	Rate	Amount
	<u>FIRE PROTECTION INSTALLATION</u>				
	Design, manufacture, works testing, supply and delivery to site, moving into position, erection, connecting up, site testing, witness testing, proving to the inspectors, demonstrating to the Employer and maintenance of the complete installation as per conditions of contract and the specification and on drawings.				
1	Fire Hose Reel pump set comprising Electric Duty and Standby pumps: Duty at 1.0 litres/second @ 600kPa. All equipment to be mounted on frame complete with AVMs, pressure vessel and pressure switches as shown on the drawings of the site plan	Item	1.00		
2	Swing Type Fire Hose Reel to comply with SANS 543 Fire hose reels shall be fitted with a 30m long reinforced red rubber hose of internal diameter of 20mm nominal bore, with a 4.8mm internal diameter chromium plated brass nozzle and isolating valve. Fire hose reel pipes above ground shall be colour coded signal red A11.	No.	1.00		
3	Standard Wall Mounted Type Fire Hose Reel to comply with SANS 543 Fire hose reels shall be fitted with a 30m long reinforced red rubber hose of internal diameter of 20mm nominal bore, with a 4.8mm internal diameter chromium plated brass nozzle and isolating valve. Fire hose reel pipes above ground shall be colour coded signal red A11.	No.	4.00		
4	Supply, install, test and commission 80 X 65 mm right angled tamper proof fire hydrant with handwheel opening mechanism with a stand pipe galvanised 100mm pipe and beeled anchor block.	No.	2.00		
5	Supply, install, test and commission Ø65mm Twin Booster fire connection hydrant complete with plastic material dust covers and connection chain, 15mm Pressure Gauge adaptor with ball valve .	No.	1.00		
6	Supply, install, test and commission Ø100mm suction hydrant complete with Storz coupling and plastic cover as per detail 1 on SITE DISTRIBUTION LAYOUT	No.	-		
7	15mm stainless steel glycerine filled pressure gauge with stop cork rated to 2500kPa	No.	1.00		
	Galvanised mild steel pipe treated with galvafruid paint and two coats of firemen red signal paint A11 in accordance with SANS 10140-3 :2003. Pipework to be complete with supports, bends, unions to make a complete installation				
8	25mm	m	170.00		
9	32mm	m	85.00		
10	40mm	m	-		
11	50 mm	m	-		
12	65mm	m	-		
13	80 mm	m	-		
14	100mm	m	60.00		
	GMS Pipework for fittings, as shown on the drawings:				
15	25mm (Tees, reduces, bends , etc)	No.	65.00		
16	32mm (Tees, reduces, bends , etc)	No.	40.00		
17	40mm (Tees, reduces, bends , etc)	No.	-		
18	50mm (Tees, reduces, bends , etc)	No.	-		
19	65mm (Tees, reduces, bends , etc)	No.	-		
	Balance Carried Forward				

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	Description				Amount
	<u>FIRE PROTECTION SUMMARY PAGE</u>				
	Fire Protection				
	Preliminary & General Items				
	Total for Fire Protection Services Sub- Contract				
	TOTAL MECHANICAL SUM CARRIED TO MAIN CONTRACT SUMMARY				

SECTION 9 - EPWP

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SUMMARY

Section No	FINAL SUMMARY	Page No	Amount
	PART 1		
1	Section 1 - Preliminary and General		R
2	Section 2 - Alterations		R
3	Section 3 - Building Works		R
4	Section 4 - Provisional Sums		R
	Sub-total A		R
	PART 2		
5	Civil Engineering Works (Vat excl. Carried over from a separate document Civils Bills of Quantities)	Item	R
6	Electrical Works (Vat excl. Carried over from a separate document Electrical Bills of Quantities)	Item	R
7	Electronics & ICT (Vat excl. Carried over from a separate document Electronics & ICT Bills of Quantities)	Item	R
8	Mechanical Works (Vat excl. Carried over from a separate document Mechanical Bills of Quantities)	Item	R
9	EPWP (Vat excl. Carried over from a separate document EPWP Bills of Quantities)	Item	R
	Sub-total B	Carried to Final Summary	R

**RESIDENCIA TRAIN STATION
BILLS OF QUANTITIES**

PART 1

-1-

Brought Forward	R
<p><u>PREAMBLES FOR TRADES</u></p> <p><i>The General Preambles for Trades 2017 published by the Association of South African Quantity Surveyors is designed to support and extend the abbreviated descriptions utilised in these bills of quantities by inter alia referring to SANS construction standards. <u>Where such preambles are not applicable</u> (eg where BS or Euro construction standards are applicable or the design consultants provide other preambles/specifications for insertion), users are to ensure that the abbreviated descriptions when read in conjunction with the Standard System of Measuring Building Work (seventh edition) for works within South Africa or the Standard Method of Measuring Building Work for Africa 2015 (first edition) for works elsewhere in Africa, represent the full description by extending the abbreviated bills of quantities descriptions and/or by inserting appropriate preambles or specifications</i></p> <p><i>Note that the text of the Standard System of Measuring Building Work (seventh edition) and that of the Standard Method of Measuring Building Work for Africa 2015 (first edition) is the same</i></p> <p><i>The latest version of the General Preambles for Trades should be referred to should the General Preambles for Trades 2017 be revised in future</i></p> <p>The General Preambles for Trades 2017 published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p> <p>Supplementary preambles and/or specifications are incorporated in these bills of quantities to satisfy the requirements of this project. Such supplementary preambles and/or specifications shall take precedence over the provisions of the General Preambles</p> <p>The contractor's prices for all items throughout these bills of quantities shall take account of and include where applicable for all of the obligations, requirements and specifications given in the General Preambles and in any supplementary preambles and/or specifications</p>	
<p>Section No. 1 Bill No. 1</p>	<p>Carried Forward</p> <p>R</p>

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward		R
<u>STRUCTURE OF THIS PRELIMINARIES BILL</u>		
Section A : A recital of the headings of the individual clauses in the aforementioned JBCC Principal Building Agreement		
Section B : A recital of the headings of the individual clauses in the aforementioned JBCC General Preliminaries		
Section C : Any special clauses to meet the particular circumstances of the project		
<u>PRICING OF PRELIMINARIES</u>		
Should the contractor select Option A in the contract data for the adjustment of preliminaries , the amounts entered against the relevant items in these preliminaries are to be divided into one or more of the three categories provided namely fixed (F), value related (V) and time related (T)		
<u>SECTION A: PRINCIPAL BUILDING AGREEMENT</u>		
<u>Interpretation (A1-A7)</u>		
1	Clause 1.0 - Definitions and interpretation	
Pricing of bills of quantities		
The contractor is to allow opposite each item for all costs in connection therewith. All prices to include, unless otherwise stated, for all materials, fabrication, conveyance and delivery, unloading, storing, unpacking, hoisting, labour, setting, fitting and fixing in position, cutting and waste (except where to be measured in accordance with the standard system of measurement), patterns, models and templates, plant, temporary works, returning of packaging, duties, taxes (other than Value Added Tax), imposts, establishment charges, overheads, profit and all other obligations arising out of this agreement . Value Added Tax (VAT) is to be separately stated on the summary page of these bills of quantities		
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	<p>Items left unpriced will be deemed to be covered in prices against other items throughout these bills of quantities and no claim for any extras arising out of the contractor's omission to price any item will be entertained</p> <p>Prices for all construction equipment, temporary works, services and other items shall include for the supply, maintenance, operating cost and subsequent removal and making good as necessary</p> <p>Abbreviated descriptions</p> <p>The items in these bills of quantities utilise abbreviated descriptions. It is the intention that the abbreviated descriptions be fully described when read with the applicable measuring system and the relevant preambles and/or specifications. However, should the full intent and meaning of any description not be clear, the contractor shall, before submission of his tender, call for a written directive from the principal agent, failing which it shall be assumed that the contractor has allowed in his pricing for materials and workmanship in terms of international best practice</p> <p>Legal status of contractor</p> <p>If the contractor constitutes a joint venture, consortium or other unincorporated grouping of two or more persons then:</p> <ol style="list-style-type: none">1. These persons are deemed to be jointly and severally liable to the employer for the performance of this agreement2. These persons shall notify the employer of their leader who has assigned authority to bind the contractor and each of these persons3. The contractor shall not alter its composition or legal status without the prior written consent of the employer <p>F:..... V:..... T:.....</p>			
2	Clause 2.0 - Law , regulations and notices	Item		
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	Brought Forward			R
	F:..... V:..... T:.....	Item		
3	Clause 3.0 - Offer and acceptance F:..... V:..... T:.....	Item		
4	Clause 4.0 - Cession and assignment F:..... V:..... T:.....	Item		
5	Clause 5.0 - Documents Value Added Tax Provision is made in the summary page of these bills of quantities for the inclusion of Value Added Tax (VAT) Priced document as specification Clause 5.4 is deemed to be deleted The principal agent shall decide which portion of the priced document may be used as a specification of materials and goods or methods, if any ? Electronic issue of drawings All drawings for this project will be issued electronically and the contractor shall be deemed to have received such drawings on the date that such drawings have been dispatched electronically [5.6] F:..... V:..... T:.....	Item		
6	Clause 6.0 - Employer's agents <i>Delegated authority may be dealt with in B 5.0 of the contract data. Insert in the contract data "Refer to Bill No. 1 (Preliminaries)" should it be dealt with in Bill No. 1</i>			
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<p>Delegated authority</p> <p>The authority of the principal agent to issue contract instructions [17.1] and perform duties for specific aspects of the works is delegated to agents as follows [6.2]. This does not preclude the principal agent from issuing such contract instructions: ?</p> <p><i>Add delegated authority as may be required for other relevant consultants not listed hereinafter</i></p> <p>1. <u>Architect</u></p> <p><i>Note that the contract instructions hereinafter are selected from those listed in clause 17.1 of the JBCC PBA</i></p> <p>1.1 Duties [6.2] :</p> <p>The architect is responsible for the architectural design, functional design and quality inspection of the works</p> <p>1.2 Contract instructions [6.2; 17.1] :</p> <p>1.2.1 Rectification of discrepancies, errors in description or quantity or omission of items in the agreement other than in the JBCC Principal Building Agreement</p> <p>1.2.2 Alteration to design, standards or quantity of the works provided that such contract instructions shall not substantially change the scope of the works</p> <p>1.2.3 The site [13.0]</p> <p>1.2.4 Compliance with the law, regulations and bylaws [2.1]</p> <p>1.2.5 Provision and testing of samples of materials and goods and/or of finishes and assemblies of elements of the works</p> <p>1.2.6 Opening up of work for inspection, removal or re-execution [23.2.4; 26.4.2]</p> <p>1.2.7 Removal or re-execution of work</p>	
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2. <u>Quantity surveyor</u>	
2.1 Duties [6.2] :	
The quantity surveyor is responsible for all measurements, valuations, financial assessments and all other quantity surveying and cost control functions of the works	
2.2 Contract instructions [6.2; 17.1] :	
2.2.1 No contract instructions delegated to the quantity surveyor ?	
3. <u>Civil and structural engineer</u>	
<i>Note that the contract instructions hereinafter are selected from those listed in clause 17.1 of the JBCC PBA</i>	
3.1 Duties [6.2] :	
The civil and structural engineer is responsible for all aspects of civil and structural engineering design and quality inspection of the works	
3.2 Contract instructions [6.2; 17.1] :	
3.2.1 Rectification of discrepancies, errors in description or quantity or omission of items in the agreement other than in the JBCC Principal Building Agreement	
3.2.2 Alteration to design, standards or quantity of the works provided that such contract instructions shall not substantially change the scope of the works	
3.2.3 The site [13.0]	
3.2.4 Compliance with the law , regulations and bylaws [2.1]	
3.2.5 Provision and testing of samples of materials and goods and/or of finishes and assemblies of elements of the works	
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3.2.6 Opening up of work for inspection, removal or re-execution [23.2.4; 26.4.2]			
3.2.7 Removal or re-execution of work			
3.2.8 Removal or substitution of any materials and goods			
3.2.9 Protection of the works			
3.2.10 Making good physical loss and repairing damage to the works [23.2.2]			
3.2.11 Rectification of defects [21.2]			
3.2.12 A list for practical completion specifying outstanding or defective work to be rectified to achieve practical completion , a list for completion and a list for final completion specifying outstanding or defective work to be rectified to achieve final completion			
3.2.13 Expenditure of budgetary allowances, prime cost amounts and provisional sums ?			
4. <u>Mechanical engineer</u>			
<i>Note that the contract instructions hereinafter are selected from those listed in clause 17.1 of the JBCC PBA</i>			
4.1 Duties [6.2] :			
The mechanical engineer is responsible for all aspects of mechanical engineering design and quality inspection of the works ? and, where appointed by the employer for quantity surveying services in respect of the mechanical installations, for all measurements, valuations, financial assessments and all other quantity surveying and cost control functions			
4.2 Contract instructions [6.2; 17.1] :			
4.2.1 Rectification of discrepancies, errors in description or quantity or omission of items in the agreement other than in the JBCC Principal Building Agreement			
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4.2.2	Alteration to design, standards or quantity of the works provided that such contract instructions shall not substantially change the scope of the works		
4.2.3	Compliance with the law , regulations and bylaws [2.1]		
4.2.4	Provision and testing of samples of materials and goods and/or of finishes and assemblies of elements of the works		
4.2.5	Opening up of work for inspection, removal or re-execution [23.2.4; 26.4.2]		
4.2.6	Removal or re-execution of work		
4.2.7	Removal or substitution of any materials and goods		
4.2.8	Protection of the works		
4.2.9	Making good physical loss and repairing damage to the works [23.2.2]		
4.2.10	Rectification of defects [21.2]		
4.2.11	A list for practical completion specifying outstanding or defective work to be rectified to achieve practical completion , a list for completion and a list for final completion specifying outstanding or defective work to be rectified to achieve final completion		
4.2.12	Expenditure of budgetary allowances, prime cost amounts and provisional sums ?		
5.	<u>Electrical engineer</u>		
<i>Note that the contract instructions hereinafter are selected from those listed in clause 17.1 of the JBCC PBA</i>			
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<p>5.1 Duties [6.2] :</p> <p>The electrical engineer is responsible for all aspects of electrical engineering design and quality inspection of the works ? and, where appointed by the employer for quantity surveying services in respect of the electrical installations, for all measurements, valuations, financial assessments and all other quantity surveying and cost control functions</p> <p>5.2 Contract instructions [6.2; 17.1] :</p> <p>5.2.1 Rectification of discrepancies, errors in description or quantity or omission of items in the agreement other than in the JBCC Principal Building Agreement</p> <p>5.2.2 Alteration to design, standards or quantity of the works provided that such contract instructions shall not substantially change the scope of the works</p> <p>5.2.3 Compliance with the law, regulations and bylaws [2.1]</p> <p>5.2.4 Provision and testing of samples of materials and goods and/or of finishes and assemblies of elements of the works</p> <p>5.2.5 Opening up of work for inspection, removal or re-execution [23.2.4; 26.4.2]</p> <p>5.2.6 Removal or re-execution of work</p> <p>5.2.7 Removal or substitution of any materials and goods</p> <p>5.2.8 Protection of the works</p> <p>5.2.9 Making good physical loss and repairing damage to the works [23.2.2]</p> <p>5.2.10 Rectification of defects [21.2]</p>	
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<p>5.2.11 A list for practical completion specifying outstanding or defective work to be rectified to achieve practical completion, a list for completion and a list for final completion specifying outstanding or defective work to be rectified to achieve final completion</p>			
<p>5.2.12 Expenditure of budgetary allowances, prime cost amounts and provisional sums ?</p>			
<p>6. <u>Wet services engineer</u></p>			
<p><i>Note that the contract instructions hereinafter are selected from those listed in clause 17.1 of the JBCC PBA</i></p>			
<p>6.1 Duties [6.2] :</p>			
<p>The wet services engineer is responsible for all aspects of wet services engineering design and quality inspection of the works</p>			
<p>6.2 Contract instructions [6.2; 17.1] :</p>			
<p>6.2.1 Rectification of discrepancies, errors in description or quantity or omission of items in the agreement other than in the JBCC Principal Building Agreement</p>			
<p>6.2.2 Alteration to design, standards or quantity of the works provided that such contract instructions shall not substantially change the scope of the works</p>			
<p>6.2.3 Compliance with the law, regulations and bylaws [2.1]</p>			
<p>6.2.4 Provision and testing of samples of materials and goods and/or of finishes and assemblies of elements of the works</p>			
<p>6.2.5 Opening up of work for inspection, removal or re-execution [23.2.4; 26.4.2]</p>			
<p>6.2.6 Removal or re-execution of work</p>			
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6.2.7	Removal or substitution of any materials and goods		
6.2.8	Protection of the works		
6.2.9	Making good physical loss and repairing damage to the works [23.2.2]		
6.2.10	Rectification of defects [21.2]		
6.2.11	A list for practical completion specifying outstanding or defective work to be rectified to achieve practical completion , a list for completion and a list for final completion specifying outstanding or defective work to be rectified to achieve final completion		
6.2.12	Expenditure of budgetary allowances, prime cost amounts and provisional sums ?		
7. <u>Fire consultant</u>			
<i>Note that the contract instructions hereinafter are selected from those listed in clause 17.1 of the JBCC PBA</i>			
7.1 Duties [6.2] :			
The fire consultant is responsible for all aspects of rational fire design and quality inspection of the works			
7.2 Contract instructions [6.2; 17.1] :			
7.2.1	Rectification of discrepancies, errors in description or quantity or omission of items in the agreement other than in the JBCC Principal Building Agreement		
7.2.2	Alteration to design, standards or quantity of the works provided that such contract instructions shall not substantially change the scope of the works		
7.2.3	Compliance with the law , regulations and bylaws [2.1]		
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7.2.4	Provision and testing of samples of materials and goods and/or of finishes and assemblies of elements of the works		
7.2.5	Opening up of work for inspection, removal or re-execution [23.2.4; 26.4.2]		
7.2.6	Removal or re-execution of work		
7.2.7	Removal or substitution of any materials and goods		
7.2.8	Protection of the works		
7.2.9	Making good physical loss and repairing damage to the works [23.2.2]		
7.2.10	Rectification of defects [21.2]		
7.2.11	A list for practical completion specifying outstanding or defective work to be rectified to achieve practical completion , a list for completion and a list for final completion specifying outstanding or defective work to be rectified to achieve final completion		
7.2.12	Expenditure of budgetary allowances, prime cost amounts and provisional sums ?		
8.	<u>Health and safety consultant</u>		
8.1	Duties [6.2] :		
	The health and safety consultant is responsible for all aspects of health and safety of the works . Without derogating from the generality thereof, the health and safety consultant will perform the following specific functions and duties in respect of the health and safety aspects of the works . He shall:		
8.1.1	Act as the employer's agent in terms of the Construction Regulations issued in terms of the Occupational Health and Safety Act, 1993 as amended		
8.1.2	Prepare and update the health and safety specification for the works		
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	<p>Extension of waiver of lien</p> <p>The contractor shall ensure that a waiver of lien is included in all subcontracts and that the works executed on the site are kept free of all liens and other encumbrances at all times [11.10]</p> <p>F:..... V:..... T:.....</p> <p><u>Execution (A12 - A17)</u></p>		
12	<p>Clause 12.0 - Obligations of the parties</p> <p>Office accommodation</p> <p>The contractor shall provide, maintain and remove on practical completion air conditioned office accommodation with suitable tables and chairs for meetings to be held on the site. Such offices shall be kept clean and fit for use at all times [12.2.18]</p> <p>Notice board</p> <p>The contractor shall erect in a position approved by the principal agent, maintain and remove on practical completion a notice board recommended by the South African Institute of Architects and as approved by the principal agent listing the names and logos of the employer, the contractor and the professional consultants. No subcontractor or supplier notice boards may be erected unless permission is granted by the principal agent for such notice boards to be erected [12.2.18] ?</p> <p>Statutory and other notices</p> <p>The contractor shall submit and/or comply with all statutory and other notices that may be required by any local or other authority in order not to cause any delay to the commencement of the works by the contractor. The contractor shall pay all deposits or fees in this regard</p>	Item	
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<p>It is, however, specifically recorded that the employer shall be responsible for the timeous approval of building plans by any local or other authorities and the payment of any fees or charges related thereto</p> <p>F:..... V:..... T:.....</p>		Item	
13	<p>Clause 13.0 - Setting out</p> <p>F:..... V:..... T:.....</p>	Item	
14	<p>Clause 14.0 - Nominated subcontractors</p> <p>F:..... V:..... T:.....</p>	Item	
15	<p>Clause 15.0 - Selected subcontractors</p> <p>F:..... V:..... T:.....</p>	Item	
16	<p>Clause 16.0 - Direct contractors</p> <p>Attendance on direct contractors</p> <p>In respect of direct contractors the contractor shall:</p> <ol style="list-style-type: none"> Designate an area for the direct contractor to establish a temporary office and workshop and storage of equipment and materials Allow the use of personnel welfare facilities, where provided Provide water, lighting and single phase electric power to a position within 50m of the place where the direct contract work is to be carried out, other than fuel or power for commissioning of any installation Permit the direct contractor to use erected scaffolding, hoisting facilities, etc provided by the contractor, in common with others having the like right, while it remains erected on the site [16.1] 		
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	Brought Forward		R	
	F:..... V:..... T:.....	Item		
17	Clause 17.0 - Contract instructions Site instructions Instructions issued on site are to be recorded in a site instruction book which is to be supplied and maintained on site by the contractor F:..... V:..... T:.....	Item		
	<u>Completion (A18 - A24)</u>			
18	Clause 18.0 - Interim completion	N/A		
19	Clause 19.0 - Practical completion F:..... V:..... T:.....	Item		
20	Clause 20.0 - Completion in sections F:..... V:..... T:.....	Item		
21	Clause 21.0 - Defects liability period and final completion F:..... V:..... T:.....	Item		
22	Clause 22.0 - Latent defects liability period F:..... V:..... T:.....	Item		
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	Brought Forward			R
23	<p>Clause 23.0 - Revision of the date for practical completion</p> <p>Substitution of materials and goods</p> <p>The removal or substitution of any materials and goods which do not conform to the specification or the contract drawings shall not constitute grounds for the extension of the construction period nor for the adjustment of the contract value [17.1.8; 23.1 & 2]</p> <p>F:..... V:..... T:.....</p>	Item		
24	<p>Clause 24.0 - Penalty for late or non-completion</p> <p>F:..... V:..... T:.....</p> <p>Payment (A25 - A27)</p>	Item		
25	<p>Clause 25.0 - Payment</p> <p>Prices submitted</p> <p>Where prices are submitted by the contractor or subcontractor during the progress of the works in respect of contract instructions or in regard to a claim under the terms of this agreement and notwithstanding the fact that such prices may be used in an interim payment certificate, there is to be no presumption of acceptance. Should the principal agent wish to accept any such prices prior to the issue of the certificate of final completion, it shall be in writing</p> <p>F:..... V:..... T:.....</p>	Item		
26	<p>Clause 26.0 - Adjustment of the contract value and final account</p> <p>Fluctuations in costs</p> <p>All fluctuations in costs, with the exception of fluctuations in the rate of Value Added Tax, shall be for the account of the contractor [26.9.5]</p>			
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27	<p>Tenant installation/user requirements delayed</p> <p>There is a possibility that certain works related to tenant installation/user requirements may have to be delayed and may consequently not be executed prior to practical completion</p> <p>Should the contractor be instructed to do so he shall execute this work under the conditions pertaining to this agreement on the basis that a separate amount for preliminaries appurtenant to this work (if applicable) is agreed to between the contractor and the principal agent and on condition that instruction to proceed with such work is given to him within a period of three (3) calendar months after the date of practical completion of the works</p> <p>The employer reserves the right to omit such work without compensation to the contractor for loss of profit or any other loss which the contractor may suffer as a result of such omission ?</p> <p>Cost of claims</p> <p>All costs incurred by the contractor in the preparation of claims shall be borne by the contractor. This provision shall not preclude an adjudicator or an arbitrator appointed in terms of this agreement [30.6 & 7] from making a determination on costs</p> <p>Claims from subcontractors</p> <p>The contractor shall review, assess and adjudicate any claims received by him from any subcontractor and thereafter submit same to the principal agent with a recommendation in order to assist the principal agent in adjudicating the claim [26.6]</p> <p>F:..... V:..... T:.....</p>	Item	
	<p>Clause 27.0 - Recovery of expense and/or loss</p> <p>F:..... V:..... T:.....</p>	Item	
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	<u>Suspension and termination (A28 - A29)</u>			
28	Clause 28.0 - Suspension by the contractor F:..... V:..... T:.....	Item		
29	Clause 29.0 - Termination F:..... V:..... T:.....	Item		
	<u>Dispute resolution (A30)</u>			
30	Clause 30.0 - Dispute resolution F:..... V:..... T:.....	Item		
31	<u>Agreement</u> The required information of the parties and the amount of the contract sum shall be inserted in the agreement for signature of the agreement by the parties F:..... V:..... T:.....	Item		
32	<u>Contract data</u> Tenderer's selections Before submission of his tender the contractor is to complete the tenderer's selections in the contract data F:..... V:..... T:.....	Item		
	<u>SECTION B: GENERAL PRELIMINARIES</u>			
	<u>Definitions and interpretation (B1)</u>			
33	Clause 1.1 - Definitions F:..... V:..... T:.....	Item		
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	<u>Management of contract (B5)</u>		
48	Clause 5.1 - Management of the works F:..... V:..... T:.....	Item	
49	Clause 5.2 - Progress meetings F:..... V:..... T:.....	Item	
50	Clause 5.3 - Technical meetings F:..... V:..... T:.....	Item	
	<u>Samples, shop drawings and manufacturer's instructions (B6)</u>		
51	Clause 6.1 - Samples of materials F:..... V:..... T:.....	Item	
52	Clause 6.2 - Workmanship samples F:..... V:..... T:.....	Item	
53	Clause 6.3 - Shop drawings F:..... V:..... T:.....	Item	
54	Clause 6.4 - Compliance with manufacturer's instructions F:..... V:..... T:.....	Item	
	<u>Deposits and fees (B7)</u>		
55	Clause 7.1 - Deposits and fees F:..... V:..... T:.....	Item	
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	<u>Temporary services (B8)</u>		
56	Clause 8.1 - Water F:..... V:..... T:.....	Item	
57	Clause 8.2 - Electricity F:..... V:..... T:.....	Item	
58	Clause 8.3 - Ablution and welfare facilities F:..... V:..... T:.....	Item	
59	Clause 8.4 - Communication facilities F:..... V:..... T:.....	Item	
	<u>Prime cost amounts (B9)</u>		
60	Clause 9.1 - Responsibility for prime cost amounts <i>Where details of materials included in prime cost amounts <u>are not</u> readily available and it is therefore not possible for the contractor to price for waste, the relevant prime cost amount shall be inserted in the bills of quantities as a lump sum with the contractor being given the opportunity to separately price his overheads and profit and for taking delivery, etc as called for in this clause 9.1 of the preliminaries. In such case the fixing only or installation only of the relevant materials shall be provisionally measured for the contractor to price and shall be re-measured upon completion</i> <i>Where details of materials for which prime cost amounts are to be allowed <u>are</u> readily available, the quantity surveyor may elect to insert the relevant prime cost amounts in measured items, which measured items shall contain sufficient detail for the contractor to price for fixing and installation, waste, etc</i> F:..... V:..... T:.....	Item	
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<u>Attendance on subcontractors (B10)</u>			
61	<p>Clause 10.1 - General attendance</p> <p>F:..... V:..... T:.....</p>	Item	
62	<p>Clause 10.2 - Special attendance</p> <p><i>It is important to note that general attendance only requires the contractor to "permit the subcontractor to use erected scaffolding, hoisting facilities, etc provided by the contractor, in common with others having the like right while it remains erected on the site" (refer to 12.2.13 of the JBCC n/s subcontract agreement). Many n/s subcontractors qualify their tenders to exclude scaffolding and/or hoisting facilities. Especially scaffolding could be an expensive item and it may be necessary in order to avoid claims to require the contractor to provide for the extended use of scaffolding for specific subcontracts within a description of "special attendance" in the applicable bill</i></p> <p>F:..... V:..... T:.....</p>	Item	
<u>General (B11)</u>			
63	<p>Clause 11.1 - Protection of the works</p> <p>F:..... V:..... T:.....</p>	Item	
64	<p>Clause 11.2 - Protection/isolation of existing works and works occupied in sections</p> <p>F:..... V:..... T:.....</p>	Item	
65	<p>Clause 11.3 - Security of the works</p> <p>F:..... V:..... T:.....</p>	Item	
Carried Forward		R	
<p>Section No. 1 Bill No. 1</p>			

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

	Brought Forward		R
66	<p>Clause 11.4 - Notice before covering work</p> <p>F:..... V:..... T:.....</p>	Item	
67	<p>Clause 11.5 - Disturbance</p> <p>Disturbance</p> <p>All work is to be carried out in such a manner as to cause no unacceptable or unreasonable dust, noise, vibrations, nuisance, inconvenience, annoyance and the like to the public, others, other properties and traffic in so far as they exceed the permissible limitations set by government legislation or by the local authority. Any delays, stoppages and the like arising from or in order to comply with the above will not constitute grounds for an adjustment to the construction period or contract value whatsoever ?</p> <p>F:..... V:..... T:.....</p>	Item	
68	<p>Clause 11.6 - Environmental disturbance</p> <p>Controlling all forms of pollution</p> <p>The contractor shall be responsible for and take all precautions in controlling by whatever means necessary all forms of pollution emanating from the site during the construction period due inter alia to noise, artificial light, wind-blown sand, dust, deposits of mud, etc</p> <p>The contractor is to ensure that all roads which border the site and are used by the contractor during the execution of the works are kept clean and free of any dirt or debris caused by the execution of the works ?</p> <p>Environmental management plan</p> <p>The employer has prepared an environmental management plan (EMP). The contractor shall price opposite this item for compliance with all the requirements of such EMP</p> <p>F:..... V:..... T:.....</p>	Item	
	Carried Forward		R
	<p>Section No. 1 Bill No. 1</p>		

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

	Brought Forward			R
69	Clause 11.7 - Works cleaning and clearing F:..... V:..... T:.....	Item		
70	Clause 11.8 - Vermin F:..... V:..... T:.....	Item		
71	Clause 11.9 - Overhand work F:..... V:..... T:.....	Item		
72	Clause 11.10 - Tenant installations F:..... V:..... T:.....	Item		
73	Clause 11.11 - Advertising F:..... V:..... T:.....	Item		
	<u>SECTION C: SPECIFIC PRELIMINARIES</u>			
74	Warranties for materials and workmanship Where warranties for materials and/or workmanship are called for, the contractor shall obtain a written warranty, addressed to the employer , from the entity supplying the materials and/or executing the work and shall deliver same to the principal agent on final completion of the contract The warranty shall state that workmanship, materials and installation are warranted for a specific period from the date of practical completion and that any defects that may arise during the specified period shall be made good at the expense of the entity supplying the materials and/or doing the work, upon written notice to do so			
	Carried Forward			R
	Section No. 1 Bill No. 1			

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward				R
	<p>The warranty will not be enforced if the work is damaged by defects in the execution of the works, in which case the responsibility for replacement shall rest entirely with the contractor</p> <p>F:..... V:..... T:.....</p>		Item	
75	<p>Overtime</p> <p>Should overtime be required to be worked for any reason whatsoever, the cost of such overtime is to be borne by the contractor unless the principal agent has specifically authorised, prior to execution thereof, that costs for such overtime are to be borne by the employer</p> <p>F:..... V:..... T:.....</p>		Item	
76	<p>Cooperation of the contractor for cost management</p> <p>It is specifically agreed that the contractor accepts the obligation of assisting the principal agent in implementing proper cost management. The contractor will be advised by the principal agent of all cost management procedures which will be implemented to ensure that the contract value does not exceed the budget</p> <p>F:..... V:..... T:.....</p>		Item	
77	<p>Overloading</p> <p>The contractor shall take all necessary steps to ensure that no damage occurs due to overloading of any portion of the works or temporary works eg scaffolding, etc. The contractor shall submit details of his proposed loading, storage, plant erection, etc to the principal agent for approval prior to proceeding with such loading, storing or erecting and shall comply with and pay for the principal agent's requirements in connection with the provision of temporary support work, etc. Any damage caused to the works by overloading shall be made good by the contractor at his sole expense</p> <p>F:..... V:..... T:.....</p>		Item	
Carried Forward				R
<p>Section No. 1 Bill No. 1</p>				

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

	Brought Forward			R
78	<p>Propping of floors below</p> <p>The contractor is advised that propping of floors below may be required if he wishes to use any areas of completed suspended reinforced concrete slabs for vehicle access, storage of materials and goods and location of plant, scaffolding, etc. The location of these areas and any necessary propping shall be approved by the principal agent and the cost thereof shall be borne by the contractor</p> <p>F:..... V:..... T:.....</p>		Item	
79	<p>Testing of flat roof waterproofing for watertightness</p> <p>Flat roof waterproof areas shall be flooded and kept "ponded" for at least forty eight (48) hours as a test to ensure the watertightness of the waterproofing and before any further construction work is carried out above the waterproofing</p> <p>F:..... V:..... T:.....</p>		Item	
80	<p>Health and safety</p> <p>Without limiting the generality of the provisions of clause 2.0, the contractor's attention is drawn to the provisions of the Construction Regulations issued in terms of the Occupational Health and Safety Act, 1993 as amended. It is specifically stated that the employer shall prepare a documented health and safety specification for the works and that the employer shall ensure that the contractor has made provision for the cost of health and safety measures during the execution of the works. The contractor shall price opposite this item for compliance with the act and the regulations and the reasonable provisions of the aforementioned health and safety specification [2.1]</p>			
	Carried Forward			R
	<p>Section No. 1 Bill No. 1</p>			

RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward		R	
Health and safety			
Without limiting the generality of the provisions of clause 2.0, the contractor's attention is drawn to the provisions of the Construction Regulations issued in terms of the Occupational Health and Safety Act, 1993 as amended. It is specifically stated that the employer shall prepare a documented health and safety specification for the works (refer to the relevant specification) and that the employer shall ensure that the contractor has made provision for the cost of health and safety measures during the execution of the works . The contractor shall price opposite this item for compliance with the act and the regulations and the provisions of the aforementioned health and safety specification [2.1]			
The contractor shall:			
1. Comply with the health and safety specification for the works			
2. Prepare and agree with the health and safety consultant the health and safety plan for the works			
3. Cooperate with the health and safety consultant in all respects			
4. Manage the compliance of all subcontractors with the regulations and with the health and safety plan and specification			
5. Conform to the conditions contained in the employer's health and safety specification			
6. Price in accordance with the specifications and pricing conditions contained in the employer's health and safety specification. C2.1 - Pricing Instructions - Item 13 - Pricing Instructions for Health and Safety			
F:..... V:..... T:.....		Item	
Carried Forward		R	
Section No. 1 Bill No. 1			

**RESIDENTIAL TRAIN STATION
BILLS OF QUANTITIES**

	Brought Forward		R
81	<p>Green star building certification</p> <p><u>User note</u></p> <p><i>Insert the provisions called for by the relevant green star consultant should it be a requirement that the project be submitted for green star certification</i></p> <p>F:..... V:..... T:.....</p>	Item	
82	<p>Broad based black economic empowerment (BBBEE)</p> <p>Tenders submitted will be evaluated taking into account their empowerment rating</p> <p>The employer will be monitoring the broad based black economic empowerment (BBBEE) status of the contractor throughout the execution of the works</p> <p>The contractor is to submit to the principal agent on an annual basis a schedule of spend, split into vendors engaged as subcontractors and suppliers indicating their BBBEE rating including proof of the said rating</p> <p>F:..... V:..... T:.....</p>	Item	
83	<p>Advertising rights</p> <p>The employer may elect to contract with advertising agencies for the erection of advertising hoardings, banners, wraps or the like for the duration of the contract. The contractor shall not prevent such an arrangement and will assist in the facilitation of same. The position and type of advertising structure to be agreed with the principal agent so as not to hinder the contractor in meeting his obligations under this agreement</p> <p>F:..... V:..... T:.....</p>	Item	
	Carried Forward		R
	<p>Section No. 1</p> <p>Bill No. 1</p>		

RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

	Brought Forward			R
84	<p>Confidentiality</p> <p>The contractor undertakes to maintain in confidence any and all information regarding this project and shall obtain appropriate similar undertakings from all subcontractors and suppliers. Such information shall not be used in any way except in connection with the execution of the works</p> <p>No information regarding this project shall be published or disclosed without the prior written consent of the employer</p> <p>F:..... V:..... T:.....</p>		Item	
85	<p>Media releases</p> <p>All rights of publication of articles in the media, together with any advertising relating thereto or in any way connected with this project, shall vest with the employer</p> <p>The contractor together with his subcontractors shall not, without the prior written consent of the employer, cause any statement or advertisement connected with this project to be printed, screened or aired by the media</p> <p>F:..... V:..... T:.....</p> <p>SUMMARY OF CATEGORIES</p> <p>Category : Fixed R.....</p> <p>Category : Value R.....</p> <p>Category : Time R.....</p>		Item	
	Carried to Final Summary			R
	Section No. 1			
	Bill No. 1			

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**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward	R
<p>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</p> <p>Doors, fanlights, fittings, frames, linings, etc which are to be re-used shall be thoroughly overhauled before refixing including taking off, easing and rehanging, cramping up, re-wedging as required and making good cramps, dowels, etc, and easing, oiling, adjusting and repairing ironmongery as necessary, replacing any glass damaged in removal or subsequently and stopping up all nail and screw holes with tinted plastic wood to match timber, unless otherwise described. Re-painting or re-varnishing is given separately</p> <p>Prices for taking out of doors, windows, etc shall include for removal of all beads, architraves, ironmongery, etc</p> <p>Prices for taking out and removing doors and frames shall include for removing door stops, cabin hooks, etc and making good floor and wall finishes to match existing</p> <p>With regard to building up of openings in existing walls, cement screeds and pavings, granolithic, tops of walls, etc, shall be levelled and prepared for raising of brickwork</p> <p>Making good of finishes shall include making good of the brick and concrete surfaces onto which the new finishes are applied, where necessary</p> <p>The contractor will be required to take all dimensions affecting the existing buildings on the site and he will be held solely responsible for the accuracy of all such dimensions where used in the manufacture of new items (doors, windows, fittings, etc)</p>	
Carried Forward	R
<p>Section No. 2 Bill No. 1</p>	

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
<u>Salvaging</u>			
The contractor is to note that all removed salvageable building materials are to remain the property of the user client			
All salvaged building materials are to handed over to user client and the remaining building rubble and demolished waste is be removed from site by the contractor and rates should allow for carting away of such rubble and waste.			
<u>TEMPORARY BARRIERS, SCREENS</u>			
<u>Temporary barriers, screens, etc including removal</u>			
1	Temporary construction site barriers suitable to prevent encroachment of pedestrians and vehicles onto the site [LI]	m	122
<u>REMOVAL OF EXISTING WORK</u>			
<u>Demolish Existing Structures including carting away rubble off site</u>			
2	Demolish existing building complete (Area approx 10m2) including carting away rubble off site [LI]	No	1
3	Demolish existing structures (Area approx 35m2) including carting away rubble off site [LI]	No	2
<u>Breaking up and removing reinforced concrete, including cutting off and removing reinforcement and carting away</u>			
4	85mm Thick surface bed, aprons and slabs [LI]	m2	1,296
5	110mm Thick surface bed [LI]	m2	82
<u>Breaking up and removing brick walls, including carting away rubble off site</u>			
6	Half brick walls [LI]	m2	67
7	One brick walls [LI]	m2	14
Carried Forward			R
Section No. 2 Bill No. 1			

RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>Taking down and removing roofs, floors, etc including carting away rubble off site</u>			
8	Gypsum plasterboard ceilings [LI]	m2	1,523
9	Prefabricated roof trusses complete including wall plates, permanent bracing, etc. measured on floor plan as per Engineer's detail [LI]	m2	82
<u>Taking out and removing doors, windows, etc including thresholds, sills, etc (altering or building up openings elsewhere measured)</u>			
10	Timber single door and frame not exceeding 2,5m2 [LI]	No	23
11	Timber double door and frame exceeding 2,5m2 [LI]	No	4
12	Glazed steel doors and burglar proofing exceeding 2,5m2 and not exceeding 5m2 [LI]	No	4
13	Glazed steel window and burglar proofing not exceeding 2,5m2 [LI]	No	25
14	Glazed steel window and burglar proofing exceeding 2,5m2 and not exceeding 5m2 [LI]	No	2
<u>Hacking up/off and removing granolithic, screeds, plaster, tiling, etc and preparing floors by scarifying screeds, etc including carting away rubble off site</u>			
15	Ceramic tiles from walls [LI]	m2	51
16	Ceramic tiles from floors including skirting [LI]	m2	1,523
<u>Taking out and removing ironmongery and store safely on site</u>			
17	Curtain track fixed to walls not exceeding 2,5m [LI]	No	5
18	Toilet roll holder [LI]	No	14
19	Soap holder [LI]	No	3
20	Liquid soap dispenser([LI]	No	2
21	Liquid soap bottle holder([LI]	No	2
Carried Forward			R
Section No. 2 Bill No. 1			

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RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
38	Instant water heater[LI]	No	1
<u>PLUMBING SUNDRIES</u>			
39	Removing of existing sewer drains, ducts and pipes	Item	
<u>CUTTING THROUGH FLOORS AND CEILINGS</u>			
<u>Sundries</u>			
40	Chasing in plaster and brickwork for pipes, conduits, etc 210mm wide average with and including making good cement plaster, etc	m	27
<u>PREPARATORY WORK TO EXISTING SURFACES</u>			
41	Making good defects in existing screeded floors by chipping, scarifying and applying a self levelling screed in patches to receive new floor coverings (floor coverings elsewhere)[LI]	m2	13
42	Making good cracks in existing brickwork by fixing with expanded metal lathing to receive cement plaster[LI]	m2	13
43	Preparing floors to existing surfaces to receive new finish (elsewhere measured)[LI]	m2	1,526
44	Preparing walls to existing surfaces to receive new finish (elsewhere measured)[LI]	m2	3,164
<u>MAKING GOOD OF FINISHES,</u>			
<u>Making good concrete surface beds, slabs</u>			
45	85mm Surface beds in patches	m2	21
46	Damaged edges to concrete aprons	m2	17
Carried Forward			R
Section No. 2 Bill No. 1			

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
<u>Altering of openings with and including necessary temporary support and building in precast concrete lintels</u>			
47	Alter opening in 230mm brick wall including building up brickwork, necessary precast concrete lintels, making good plaster on both sides, reveals, cutting tooth and bonding brickwork to existing (New window and make good paintwork elsewhere)	No	7
<u>Breaking out for and forming plain openings through brick walls, with and including necessary temporary support, building in pre stressed concrete lintels, making good brickwork and cement plaster on both sides (making good paintwork elsewhere)</u>			
48	Opening 990 x 1470mm high through one brick wall	No	2
49	Opening 815 x 2125mm high through one brick wall	No	1
<u>Breaking out for and forming openings through brick walls for new doors and frames, with and including necessary temporary support, building in pre stressed concrete lintels, making good cement plaster on both sides and into reveals and with 20 MPa concrete thresholds with steel trowelled finish (new doors and frames and making good paintwork elsewhere)</u>			
50	Opening for door with steel/aluminium frame 813 x 2100mm high overall through half brick wall	No	2
51	Opening for door with steel/aluminium frame 813 x 2100mm high overall through one brick wall	No	1
52	Opening for door with steel/aluminium frame 1100 x 2100mm high overall through 274mm cavity wall	No	1
<u>Breaking out for and forming openings through brick walls for new windows, with and including necessary temporary support, building in pre stressed concrete lintels, making good cement plaster on both sides and into reveals (new windows and making good paintwork elsewhere)</u>			
53	Opening for window 1000 x 1500mm high through 274mm cavity wall	No	1
Carried to Final Summary			R
Section No. 2			
Bill No. 1			

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**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
<u>SITE CLEARANCE</u>			
<u>Site Clearance</u>			
1	Digging up and removal of rubbish, debris, vegetation, hedges, shrubs and trees not exceeding 200mm girth, bush, etc [LI]	m2	120
<u>Remove and grub large trees and tree stumps, of girth around the trunk 1m high above ground level including grubbing of roots, filling of holes and compaction to 90% Mod AASHTO density.</u>			
2	Tree exceeding 200mm and not exceeding 500mm girth	No	1
3	Tree exceeding 500mm and not exceeding 1000mm girth	No	1
<u>Remove topsoil to nominal depth of 150mm and stockpile.</u>			
4	Stripping average 150mm thick layer of top soil and depositing material in prescribed stock piles on site	m2	18
<u>EXCAVATION, FILLING</u>			
<u>Excavation in earth not exceeding 2m deep</u>			
5	Trenches	m3	185
6	Holes	m3	19
<u>Extra over excavations in earth for excavation in</u>			
7	Soft rock	m3	20
8	Hard rock	m3	10
<u>Extra over all excavations for carting away</u>			
9	Surplus material from excavations	m3	65
<u>Risk of collapse of excavations</u>			
10	Side of trenches and holes	m2	411
Carried Forward			R
Section No. 3 Bill No. 1			

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
<u>Keeping excavations free of water</u>			
11	Keeping excavations free of all water	Item	
<u>Earth filling obtained from commercial sources compacted to 98% Mod AASHTO density</u>			
12	Under floors, steps, pavings	m3 30	
<u>Earth filling obtained from the excavations and/or prescribed stock piles on site, compacted to 98% Mod AASHTO density</u>			
13	Backfilling to trenches, holes	m3 103	
14	Under floors, steps, pavings	m3 30	
<u>Compaction of surfaces</u>			
15	Compaction of ground surface under floors	m2 110	
<u>Soil insecticide with</u>			
16	Under floors, steps, pavings	m2 100	
17	To bottom and sides of trenches	m2 494	
Carried Forward to Summary of Section No. 3			R
Section No. 3			
Bill No. 1			

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**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
<u>Finishing top surfaces of concrete smooth with a wood float</u>			
8	Surface beds, slabs, etc[LI]	m2	97
<u>Test blocks</u>			
9	150 x150 x 150mm Deep concrete cube test	No	10
<u>Expansion joints with bitumen impregnated soft board between vertical concrete and brick surfaces</u>			
10	10mm Joints not exceeding 300mm high	m	211
<u>Saw-cut joints sealed with two part flexible polyurethane joint sealant</u>			
11	6 x 30mm Saw-cut joints in top of concrete	m	30
<u>SMOOTH AND FAIR FORMWORK (DEGREE OF ACCURACY II)</u>			
<u>Smooth formwork to soffits</u>			
12	Slabs not exceeding 250mm thick propped to a height propped to a height exceeding 3,5m and not exceeding 5m	m2	11
<u>ROUGH FORMWORK (DEGREE OF ACCURACY (III))</u>			
<u>Rough formwork to sides</u>			
13	Edges, risers, ends and reveals not exceeding 300mm high or wide	m	76
<u>REINFORCEMENT</u>			
<u>High tensile steel</u>			
14	Various Diameter bars	t	7.23
<u>Fabric reinforcement</u>			
15	Mesh ref 193 fabric reinforcement in concrete surface beds, slabs, etc	m2	97
Carried Forward to Summary of Section No. 3			R
Section No. 3			
Bill No. 2			

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RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>BRICKWORK</u>			
<u>Brickwork of NFX bricks (14 MPa nominal compressive strength) in class II mortar</u>			
<u>FOUNDATIONS (PROVISIONAL)</u>			
1	Half brick walls[LI]	m2	26
2	One brick walls[LI]	m2	108
<u>SUPERSTRUCTURE</u>			
<u>Brickwork of NFP bricks in class II mortar</u>			
3	Half brick walls[LI]	m2	77
4	One brick walls[LI]	m2	323
5	One brick walls in parapets[LI]	m2	16
6	One brick walls in gables[LI]	m2	10
7	One brick walls in beam filling[LI]	m2	14
<u>Brickwork reinforcement</u>			
8	75mm Wide reinforcement	m	306
9	175mm Wide reinforcement	m	1,271
<u>Turning pieces</u>			
10	110mm Wide turning piece to lintels	m	34
11	230mm Wide turning piece to lintels	m	57
<u>Galvanised wire ties etc</u>			
12	4mm Diameter roof tie 2m girth bent double, with one end built into brickwork and other end fixed to timber	No	23
<u>FACEBRICK</u>			
Carried Forward			R
Section No. 3 Bill No. 3			

RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>External facings (PC R11500,00/1 000) pointed with square recessed horizontal and vertical joints:</u>			
13	Extra over brickwork for face brickwork	m2	122
14	Extra over brickwork for brick-on-edge header course lintel pointed on face and 230mm soffit	m	29
<u>External facings (PC R11500,00/1 000) pointed with square recessed horizontal and vertical joints:</u>			
15	Coping on top of one brick wall including fair raking cutting	m	24
16	Extra over brickwork for brick-on-edge header course lintels one course high, pointed on face and soffit	m	24
17	Corobrik FBX 106mm single bullnose solid pointed with recessed vertical and recessed horizontal joints (Colour: to match masonry FBX walls).	m	29
<u>Internal facings to the bottom of windows (PC R5500,00/1 000) pointed with square recessed horizontal and vertical joints:</u>			
18	Extra over brickwork for face brickwork	m2	16
Carried Forward			R
Section No. 3 Bill No. 3			

RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>SUNDRIES</u>			
<u>Window sill, size 150mm x 15mm thick, manufactured in accordance with SANS 803:2005 and installed below window with window sill lug screwed to underside of sill at 400mm centres, minimum of 75mm from end of window sill and bedded in Class II mortar at end of sills at plaster reveals. Sill to be cut flush with wall face. Sill to be primed according to manufacturer instruction and painted enamel paint to match wall colour, all in accordance with the manufacturer's recommendations.</u>			
19	Internal Sills	m	29
<u>Pre cast concrete sills 215 x 115 x 60mm, pointed with flush joints on all exposed faces</u>			
20	Sills (precast concrete)	m	29
Carried Forward to Summary of Section No. 3			R
Section No. 3			
Bill No. 3			

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**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
<u>FACIAS, BARGE BOARDS, ETC:</u>			
<u>Approved fibre cement fascia & barge boards, size 10 x 300mm to be primed 1 coat and painted 2 coats enamel paint. To be fixed to proper support structure with bolts within a straight line with aluminium joiners on corners and joints. (Colour: according to the architect)</u>			
1	Fibre cement fascia/barge drilled and brass screwed and including steel jointing strips between lengths.	m	55
<u>APPROVED RAILS</u>			
<u>Timber rails</u>			
2	Timber rails to have an elliptical gripping surface profile that is approximately 50 mm wide and 40 mm deep, or a circular profile of diameter not less than 35 mm and not more than 50 mm; to be fixed to the wall at 900mm high from the outdoor FFL and a minimum space of 200mm from the wall	m	58
<u>DOORS, ETC</u>			
<u>Heavy Duty Solid Door</u>			
3	Solid door with (x2) concealed edges, size 1830 x 2083mm (DAE)	No	2
4	Solid door with (x2) concealed edges, size 915 x 2032mm (DAB)	No	3
<u>Medium Duty Semi-Solid Door</u>			
5	Semi-solid door with (x2) concealed edges, size 815 x 2100mm (DAJ)	No	5
<u>JOINERY SUNDRIES</u>			
<u>Worktops</u>			
6	1800 x 600mm wide 32mm Rustenburg granite counter top all complete - Ticketing office (Refer to Architectural drawing No.400911/S1). [LI]	No	2
Carried Forward			R
Section No. 3 Bill No. 5			

RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward		R	
<u>FITTINGS</u>			
<u>Cupboard - Kitchen</u>			
Kitchen wall unit comprising of 22mm thick white melamine top cupboard size 1080 x 450 x 700mm high, drawers and shelves by specialist and 22mm thick white melamine bottom floor cupboard size 1905 x 600 x 900mm high, with 80mm high Rustenberg granite splash back epoxied to 600mm wide Rustenberg worktop, pull handle as per finishing schedule & drawers and shelves by specialist. All to architect's specifications (Refer to Architect's drawing)	No	1	
<u>Medicine Cabinet</u>			
MEDICINE CABINET: Standard white built in type. Complete with mirrors on door shelves etc size 380 x 610mm. [LI]	No	1	
Carried Forward to Summary of Section No. 3		R	
Section No. 3			
Bill No. 5			

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Brought Forward			R
<u>ROOF AND WALL INSULATION</u>			
<u>Alububble®, white bubble with foil backing insulation with thermal insulating, dustproofing and fire resistant capabilities complying with SANS 1381-4:2009 and tested to SANS 428. Quality in accordance with requirements of SANS 10400 Building Regulations, installations are to be to manufactures instructions and specifications. Thickness to mechanical engineer's specifications</u>			
2	Insulation blanket laid taut over purlins	m2	181
Carried Forward to Summary of Section No. 3			R
Section No. 3			
Bill No. 6			

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RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>Flush plastered gypsum plasterboard suspended bulkheads</u>			
Bulkheads shall comprise galvanised steel studding of 63,5mm top and bottom tracks with vertical studs at maximum 400mm centres, pop-riveted to the top and bottom tracks with similar additional vertical studs as necessary at abutments, ends, etc and covered as described with plasterboard screwed to studding with drywall screws at maximum 300mm centres. Boards shall be butt jointed and finished with tape and jointing compound and the whole finished with gypsum plaster trowelled to a smooth polished surface to the thickness recommended by the manufacturer.			
Descriptions shall be deemed to include any additional studs at ends and intersections, corner beads, cornices at junctions with ceilings, jointing compound, tape, etc			
<u>SUSPENDED CEILINGS</u>			
<u>1200 x 600 x 15mm thick acoustic ceiling tiles laid on pre-painted tees and adjustable hanger system.</u>			
1	Ceilings suspended not exceeding 1m below timber purlins	m2	42
2	Extra over ceiling for 650 x 650mm trap door complete with trimmers, frame, cross branders, ceiling board, hinges and including all necessary ironmongery	No	2
<u>1200 x 600 x 12,5mm vinyl faced ceiling panels laid on tees and adjustable hanger system.</u>			
3	12.5mm Vinyl Faced Ceiling Panels, face-covered with white embossed vinyl, size 1200 x 600mm, laid on fire rated S3 exposed demountable suspension system including galvanised main tees, cross tees, etc., all suspended with galvanised hangers at centres not exceeding 1200mm, with ceiling perimeter finished with Shadow-line trim plugged at 200mm centres, and all installed to manufacturer's instructions.	m2	20
Carried Forward			R
Section No. 3 Bill No. 7			

RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>Flush plasterboard ceiling fixed to concealed suspended tee system skimmed and prepared to receive 2 coats quality PVA paint</u> <u>All ceiling voids to receive 600 x 600mm access panel</u>			
4	Flush plastered ceiling	m2	25
<u>47 x 35mm grid recessed shadowline cornice</u>			
5	Cornice, plugged to walls	m	163
Carried Forward to Summary of Section No. 3			R
Section No. 3			
Bill No. 7			

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**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
<u>CPAP ADJUSTMENT</u>			
Unless otherwise stated all items in this bill shall be deemed to fall into Work Group 130 for Contract Price Adjustment Provisions			
<u>FLOOR COVERINGS</u>			
<u>500 x 500mm Loose lay Commercial carpet tiles with backing, to architects approval.</u> <u>Tessellated Installation</u> <u>100% Stainproof Miracle Fibre™ (Polypropylene) structured needle punch SABS Class 3 fire rating grade heavy commercial carpet tiles, size 500 x 500 x 8,5mm thick, all installed by approved installer in accordance with SANS 10186:2010, the code of practice for textile floor coverings.</u>			
1	Carpet floor covering	m2	50
<u>Approved Walk-off mat suitable for interior & exterior covered entrances.</u> <u>Approved Walk-off mat, overall size 4000mm or 3000mm x 12mm consisting of 100% polypropylene course fibre needle felt brushes alternated with soft strips to effectively scrape & dry with anti-slip latex backing glued in recess bedded into screed (by others), installed in accordance with the manufacturer's recommendations. To be vacuum cleaned regularly. Samples required for architect and client's approval.</u>			
2	Walk-off mats	m2	2
<u>SKIRTINGS, NOSINGS, ETC</u>			
<u>"Approved" brushed stainless steel edging strip to be installed all according to the instructions and recommendations of the manufacturer for vinyl floor finish.</u>			
3	Stainless steel edging strip	m	10
Carried Forward			R
Section No. 3			
Bill No. 8			

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**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
<u>LOCKS</u>			
<u>"APPROVED"</u>			
3	Nickel plated 60mm double cylinder master keyed [LI]	No	3
4	Double panic set for rebated double doors [LI]	No	2
5	Stainless Steel Toilet Cubicle Indicator bolt & lock set Grade 304 Stainless Steel indicator bolt (code: fixed to surface with matching stainless steel screws. To comply with SANS 4:2008. Finger pull handle to be fixed to door with tamper proof screws [LI]	No	2
6	Stainless Steel Security Deadlock Grade 304 Stainless steel Security Deadlock with a Deadcase plate in the door frame with Master key functioning. These type lock to be used with Push plates and Pull handles. Double side locking mechanism To comply with SANS 4:2008 [LI]	No	1
7	Stainless Steel cylinder lock 60mm Grade 304 Stainless steel Euro profile Double with 6 pin and Master keyed To comply with SANS 4:2008 [LI]	No	1
8	Stainless Steel Toilet Cubicle Indicator bolt & lock set Grade 304 Stainless Steel disabled indicator bolt, fixed to surface with matching stainless steel screws. To comply with SANS 4:2008. Finger pull handle to be fixed to door with tamper proof screws [LI]	No	1
9	Stainless steel 76mm commercial cylinder sash lock [LI]	No	1
10	Nickel plated 66mm knob cylinder - master keyed [LI]	No	1
11	Single panic bolt complete, Colour:Silver [LI]	No	1
12	Outside access device lever W/O cylinder [LI]	No	1
13	Nickel plated single cylinder - master keyed [LI]	No	1
Carried Forward			R
Section No. 3 Bill No. 9			

R|

R

RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>DOOR CLOSERS</u>			
<u>"APPROVED"</u>			
14	Door closer clockwise action with a standard guide rail Colour: Silver [LI]	No 1	
15	Door closer with parallel arm bracket [LI]	No 1	
16	Door closer with a clockwise action inclusive of guide rail [LI]	No 1	
17	Door closer with a clockwise action including standard and parallel arm [LI]	No 1	
<u>LETTERS, NAMEPLATES, ETC</u>			
<u>"APPROVED"</u>			
18	160 x 160mm stainless steel ironware outline engraved fire hose reel. [LI]	No 3	
19	160 x 160mm stainless steel ironware outline engraved female sign. [LI]	No 1	
20	160 x 160mm stainless steel ironware outline engraved male sign. [LI]	No 1	
21	160 x 160mm stainless steel ironware outline engraved disabled sign. [LI]	No 1	
22	160 x 160mm stainless steel ironware outline engraved shower sign. [LI]	No 1	
GENERAL NOTES: Colour: Black lettering on white background. Fixing: To be mechanical fastened. Positioning: To be determined site with architect once signage is available on site. Font: Arial Black To be read in conjunction with Fire signage drawing.			
Carried Forward			R
Section No. 3 Bill No. 9			

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
<u>PUSH PLATES AND KICK PLATES</u>			
<u>"APPROVED"</u>			
23	111 x 19mm thick push plate 160 x 160mm stainless steel back plate [LI]	No 2	
24	1.6mm stainless steel push plate 160 x 160mm [LI]	No 5	
25	1.5mm stainless steel push plate 165 x 165mm [LI]	No 4	
26	1.6mm Stainless steel kick plate [LI]	No 11	
<u>SUNDRIES</u>			
<u>"APPROVED"</u>			
27	Stainless steel cabin hook 150mm [LI]	No 9	
28	Stainless steel floor mounted door stop [LI]	No 6	
29	Floor mounted rubber door stop [LI]	No 5	
30	Stainless steel hat and coat hook with a rubber buffer [LI]	No 2	
31	Nickel plated patent screw 40-55mm [LI]	No 11	
32	Dust keep[LI]	No 11	
Carried Forward			R
Section No. 3 Bill No. 9			

RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>BATHROOM FITTINGS</u>			
<u>"APPROVED"</u>			
33	"Approved" Grade 304 18/10 stainless steel with "Approved" grip paraplegic grab rails, size 640 x 640 x 96mm deep, plugged and screwed to the wall with stainless steel screws [LI]	No	1
34	"Approved" Grade 304 32mm diameter 18/10 stainless steel grab rails with "Approved" grab 750 x 95mm deep, plugged and screwed to the wall with stainless steel screws [LI]	No	1
<u>"Approved" - Towel hooks</u>			
35	"Approved" chrome towel hook and installed with manufacturer's recommendations [LI]	No	2
<u>Miscellaneous</u>			
36	3-arm dish cloth holder [LI]	m	3
37	Toilet roll holder with a prime cost of R900.00 (excl. VAT) fixed to brickwork, concrete or partitioning [LI]	No	3
38	Toilet brush and holder with a prime cost of R190.00 (excl. VAT) [LI]	No	3
39	Stainless steel bin with a prime cost of R900.00 (excl. VAT) [LI]	No	2
40	Stainless steel soap dispenser with a prime cost of R750.00 (excl. VAT) fixed to brickwork, concrete or partitioning [LI]	No	3
41	Stainless steel hand dryer with a prime cost of R4 280.00 (excl. VAT) [LI]	No	1
42	Stainless steel paper towel dispenser, including bin with a prime cost of R4 700.00 (excl. VAT) [LI]	No	3
Carried Forward to Summary of Section No. 3			R
Section No. 3			
Bill No. 9			

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Item No	Quantity	Rate	Amount
<u>BILL NO. 10</u>			
<u>STRUCTURAL STEELWORK</u>			
<u>PREAMBLES</u>			
For preambles refer to "General Specification of Materials and Methods to be used for Building Contracts" (GP /ASC)			
<u>CPAP ADJUSTMENT</u>			
Unless otherwise stated all items in this bill shall be deemed to fall into Work Group 134 for Contract Price Adjustment Provisions			
<u>SUPPLEMENTARY PREAMBLES</u>			
The Structural Steelwork shall be in accordance with the Engineer's "STANDARD SPECIFICATION FOR STRUCTURAL STEEL" appended hereto as " Structural Steel Annexure A ".			
The Contractor is to notify the Principal Agent immediately if a conflict between the Engineer's Specification, Architectural Drawings and/or these Bills of Quantities are found.			
Steelwork are measured to the designed sizes of the components.			
The price for steelwork shall include all rolling margin, distance pieces, packings, additional material in welding and fixing steel members, decorative or protective and temporary aids; these shall be deemed included in the descriptions of the relevant steelwork.			
The price for steelwork shall also include for the preparation of all shop detail drawings as defined in the preables and the Engineering Specification.			
Carried Forward			R
Section No. 3 Bill No. 10			

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward		R	
<p>The price for steelwork shall include all welding, holes, bolts, nuts, washers, rivets, bolting and riveting integral with structural steelwork as well as all required weld and strength testing, these shall be deemed included in the descriptions of the relevant steelwork. The only bolts and anchors measured separately shall be those fixing the steel members to the structural concrete work.</p> <p><u>For clarity</u>; fixing structural steelwork members to each other is deemed included in the description of the steelwork and has thus not been measured separately and should be priced within the steelwork rates.</p> <p>Descriptions of bolts shall be deemed to include nuts and washers. Descriptions of anchor bolts shall be deemed to include bending, threading, nuts and washers and embedding in concrete. Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork or concrete.</p> <p>All structural steelwork rates shall include the factory coat of paint only, all repair-, other- and final paintwork to structural steel members are included under a "Painting" heading in these Structural Steelwork Bills of Quantities.</p> <p>The quantities are provisional and will be re-measured upon completion of the works. The Contractor shall not use these quantities for ordering of materials. The Contractor must immediately notify the Quantity Surveyor if discrepancies are found between the quantities and/or descriptions in these Bills of Quantities and the Contractor's quantities measured from construction drawings and specifications.</p> <p><u>GALVANISED STEEL COLUMNS AND BEAMS</u></p> <p><u>Welded hollow section beams in single lengths with flat bearer and connection plates, bolted to steel</u></p>			
1	125 x 75 x 20 x 2.00mm, 4.71kg/m lipped channels in lengths not exceeding 2m	t	0.64
2	160 x 82 x 16 x 2.00mm, 15.80kg/m I sections in lengths not exceeding 3m	t	1.24
Carried Forward		R	
<p>Section No. 3 Bill No. 10</p>			

RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>STEEL PURLINS, GIRTS, BRACING,</u>			
3	100 x 50 x 20 x 2.5mm x 4.32kg/m cold-formed lipped channel purlins	t	0.32
	<u>Welded bracing, anti-sag rails, etc with flat connection plates, bolted to steel</u>		
4	30 x 30 x 3mm angle bracing	t	0.32
	<u>Welded box gutter bearers with flat cleats, bolted to steel</u>		
5	Angle longitudinal bearers	t	0.10
<u>BOLTS, FASTENERS,</u>			
6	High tensile bolts (class 8.8)	t	0.50
<u>PAINTING</u>			
	<u>Touch-up steel primer, one coat 1 universal undercoat to 2 finishing coats high gloss enamel paint</u>		
7	On structural steel columns, beams, etc	t	1.88
8	On steel purlins, girts, etc	t	0.32
9	On angle bracing	t	0.32
Carried Forward to Summary of Section No. 3			R
Section No. 3			
Bill No. 10			

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<p style="text-align: right;">Brought Forward</p> <p><u>Construction</u></p> <p>Outer frame to consist of a single part compensating head and jamb and continuous sub-Sill.</p> <p>Infill panels are to be constructed from double cavity tubular profiles, forming a wet cavity with drainage slots to allow for transom drainage to the exterior. All glazing rebates to be 25mm. Joints of the infill panels shall be notched and screwed to spigots with No 8 stainless steel screws. Where required, a 111mm or 166mm Split mullion assembly must be used to couple infill panels together, still making allowance for all thermal and dynamic movement. Door panels within the screens to have a 4-edge door rebate with gasket seal all round.</p> <p><u>Installation</u></p> <p>All aluminium work to be done in strict accordance to the manufacturers specifications by a specialist firm. All openings to be checked on site before any materials are ordered or manufacture of window and door frames. Panel-by-panel installation from Inside or from Outside the building. All aluminium frame works to be provided with a continuous silicone seal around all construction openings.</p> <p><u>Hardware</u></p> <p>All sashes to have mechanical Corner Connectors, wind locks and multi-point locking handles. Sashes not to exceed 1700mm wide by 1200mm high as per specification. Friction stay to suit max weight and size of Sash.</p> <p>Door hardware shall be compatible with the system and will take cognisance of the finish specification of the applicable area. See Hardware Schedule for door.</p>	<p style="text-align: right;">R</p>
<p style="text-align: right;">Carried Forward</p> <p>Section No. 3 Bill No. 11</p>	<p style="text-align: right;">R</p>

<div>Brought Forward</div> <div><div>Finish</div><div>Sections will be painted in accordance with SABS1578, parts1 & 2. Powercote, and anodised aluminium, should be protected to prevent any damage or stain by cement, etc. All powder coating to be 25 micron thick and shall be executed in strict adherence to sabs 999</div></div> <div><div>Glazing</div><div>Glass thickness should be in accordance with SANS 10400 and deigned by a competent person. Glazing is to be carried out in accordance with SABS 0137, with particular attention to size limitations, packing and setting blocks. Thicknesses from 6-28mm.</div></div> <div><div>Structural Perfomance</div><div>System shall meet or exceed the requirements of SANS613 and the design loading determination by SABS 0160 for this application. Deflection of structural members shall not exceed L/175 or L/240+6mm as applicable.</div></div> <div><div>Thermal Perfomance</div><div>System shall comply with SANS204 in applications where Fenestration makes up more than 15% of Floor area. U-value with Air filled glazing units = 3.36 For U-values below 3.38 use Argon or Krypton gas filled glazing units.</div></div>	<div>R</div>
<div>Carried Forward</div> <div>Section No. 3 Bill No. 11</div>	<div>R</div>

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

	<p style="text-align: right;">Brought Forward</p> <p><u>STEEL GATES, SCREENS, ETC</u></p> <p><u>Full height exterior turnstile with high volume access and high level of security. The turnstile must be a 3 arm 120degree single unit. The Rotor diameter to be 1200mm and arm thickness of 50mm diameter tube arms spaced 120mm apart. The system must be able to intergrate with all access control and time and attendance systems, proximity reader, biometric and or push button readers. Electrically controlled bi-directional rotation (factory standard)and Mechanically controlled uni-directional rotation by means of key override and free rotation in the case of an emergency. The flat roof canopy to provide protection from the elements, Anti-climb protection and low energy light on underside of canopy. Finishes: 304 grade brushed stainless steel (Inland) and 316 grade brushed stainless steel (coastal). The turnstile must be with a bi-directional rotation System certification to comply with ISO 9001:2015 and must comply also to CE conformity. Unit to have a 10 year mechanical guarantee. The turnstile must be fiited with a gate for disabled persons.</u></p> <p>1 Electrical Industrial type full height turnstile with a gate for disabled people and as an emergency exit.</p> <p style="text-align: right;"><u>STRONGROOM, RECORD ROOM DOORS, VENTILATORS, ETC</u></p> <p>NOTE</p> <p>The rates for strongroom doors, wall safes and ventilators shall include for fixing in position complete</p> <p style="text-align: right;">Carried Forward</p> <p>Section No. 3 Bill No. 11</p>		<p style="text-align: right;">R</p>	
		<p style="text-align: right;">No</p>	<p style="text-align: right;">1</p>	<p style="text-align: right;">R</p>

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
	<p><u>Level G3 bullet resistant Anti-bandit door, complete with 100 x 50 x 3mm gauge mild steel rectangular frame and 25 x 25 x 3mm MS angle rebates, overall size 930 x 2100mm high in powder coating and or galvanised cladding with peep hole, supplied with a 6 pin tumbler key system, mortice dead lock with an additional heavy duty magnetic lock and striker including key switch and surface mounted casing, 6 Amp power supply, push buttons and interlock system, heavy duty aluminium continuous hinge, aluminium slam bar with heavy duty door closer and D-style pull handles. Door to comply to SABS 1658-1996</u></p>		
2	930 x 2100mm	No	1
	<p><u>DOOR FRAMES, DOORS, WINDOWS,</u></p> <p><u>Standard heavy duty double rebated pressed mild steel doorframe with factory red oxide primer for doorswing and wall thickness as indicated on plan with (x2) coat enamel paint finish over edge (Colour: according to the architect). Frame to accommodate for screeded floor finish.</u></p>		
3	Frame for door size 815 x 2100mm (DAJ)	No	5
4	Frame for door size 915 x 2032mm (DAB)	No	3
5	Frame for door size 1830 x 2083mm (DAE)	No	2
	<p><u>ALUMINIUM WINDOWS</u></p> <p><u>Purpose made powder coated windows including glazing and ironmongery complete plugged to brickwork or concrete</u></p>		
6	Top hung casement aluminium windows overall size of 1500 x 1500mm, able to meet the performance requirements of SANSA 613. Mullion to be plugged or screwed to brickwork. Glazing shall be executed strictly in conformance with glass manufacturer's recommendations and SAND 10137:2011 all in accordance with SANS10400 Parts B, N, XA. W1	No	4
Carried Forward			R
Section No. 3 Bill No. 11			

RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

		Brought Forward		R
7	Top hung casement aluminium windows overall size of 1800 x 600mm, able to meet the performance requirements of SANSA 613. Mullion to be plugged or screwed to brickwork. Glazing shall be executed strictly in conformance with glass manufacturer's recommendations and SAND 10137:2011 all in accordance with SANS10400 Parts B, N, XA. W2	No	2	
8	Top hung casement aluminium windows overall size of 600 x 900mm, able to meet the performance requirements of SANSA 613. Mullion to be plugged or screwed to brickwork. Glazing shall be executed strictly in conformance with glass manufacturer's recommendations and SAND 10137:2011 all in accordance with SANS10400 Parts B, N, XA. W4	No	3	
9	Top hung casement aluminium windows overall size of 1500 x 1500mm, able to meet the performance requirements of SANSA 613. Mullion to be plugged or screwed to brickwork. Glazing shall be executed strictly in conformance with glass manufacturer's recommendations and SAND 10137:2011 all in accordance with SANS10400 Parts B, N, XA. W9	No	2	
10	Top hung casement aluminium windows overall size of 1800 x 1450mm, able to meet the performance requirements of SANSA 613. Mullion to be plugged or screwed to brickwork. Glazing shall be executed strictly in conformance with glass manufacturer's recommendations and SAND 10137:2011 all in accordance with SANS10400 Parts B, N, XA. W10	No	4	
<u>ALUMINIUM SHOPFRONTS</u>				
<u>Purpose made powder coated aluminium shopfronts, doors and frames glazed with 9,52mm laminated safety glass, hinges, sealant, ironmongery, etc. plugged to brickwork or concrete</u>				
11	1800 x 2500mm Custom aluminium shopfront including 900 x 2100 aluminium door complete powdercoated with INTERPON finish according to specialist subcontractor specifications as well as architects approval with a continuous clear silicone seal around all construction openings. (Colour according to the architect). (SF1-01)	No	1	
Carried Forward				R
Section No. 3 Bill No. 11				

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
12	1800 x 2500mm Custom aluminium shopfront including 900 x 2100 aluminium door complete powdercoated with INTERPON finish according to specialist subcontractor specifications as well as architects approval with a continuous clear silicone seal around all construction openings. (Colour according to the architect). (SF1-02)	No	1
13	1920 x 2500mm Custom aluminium shopfront including 900 x 2100 aluminium door complete powdercoated with INTERPON finish according to specialist subcontractor specifications as well as architects approval with a continuous clear silicone seal around all construction openings. (Colour according to the architect). (SF2-01)	No	1
<u>Ticketing office shopfronts (bullet proof)</u>			
14	1810 x 1500mm Custom aluminium shopfront made of bullet resistant glass including transaction window and tray (by specialist) complete, powdercoated with INTERPON finish according to specialist subcontractor specifications as well as architects approval with a continuous clear silicone seal around all construction openings. (Colour according to the architect).	No	2
<u>GALVANISED STEEL HANDRAILS</u>			
<u>Welded handrails to walkways and ramps</u>			
15	Steel Connection 50mm diameter, wall mounted mild steel handrail, to follow line of stair at 1000mm high	m	18
<u>Welded balustrades</u>			
16	Mild steel railings consisting of 1000mm high, 90° 54mm Ø x 2.0mm stanchions spaced at 1600mm centres, with 44mm Ø x 2.0mm hand/knee rails. Top mounted stanchions to be fitted with baseplates pre-drilled with 30 x 18mm slotted holes for fixing to concrete/metal surface, including all necessary bends, closures, ferrules etc. as indicated on drawings	m	12
Carried Forward to Summary of Section No. 3			R
Section No. 3			
Bill No. 11			

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RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward				R
<u>Plaster interior walls with 1:4 cement sand plaster with steel trowel finish and approved plaster sand.</u> <u>Plaster rhinoLite smooth coat according to the instructions of the manufacturer.</u>				
4	On walls[LI]	m2	470	
5	On narrow widths[LI]	m2	47	
Carried Forward to Summary of Section No. 3				R
Section No. 3				
Bill No. 12				

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**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
<u>WALL TILING</u>			
<u>200mm x 200 White Ceramic approved tiles over all basins and sinks. Or similar approved to be laid in accordance with and to the approval of the material supplier with appropriate tinted grout. "Approved" natural anodised 10mm high Elite aluminium straight edge trim, laid in tile adhesive while wall tiles are being installed or similar approved. Ceramic tiles (min. 10mm thick) PC SUM (R250/M2)</u>			
1	On walls in isolated panels, splashbacks, etc [LI]	m2	110
2	On narrow widths [LI]	m2	11
<u>FLOOR TILING</u>			
<u>600 x 600mm "Approved" dark grey matt with 3mm joints. Fixed with "Approved" Professional adhesive and Light Grey "Approved" Chemical resistant grouting mixed with approved bonding liquid. PC SUM (R400/M2)</u>			
3	On floors [LI]	m2	39
<u>Full body porcelain tile skirting (min. 10mm thick) to be laid in accordance with and to the approval of the material supplier at height of 150mm from FFL with stainless steel tile trimming on top PC SUM (R400/M2)</u>			
4	100mm High skirting [LI]	m	37
<u>SUNDRIES</u>			
<u>Brushed stainless steel corner tile trimming (to be approved by the architect) for all reveal corners of tiled door- & window openings in tiled walls</u>			
5	Straight edge [LI]	m	20
6	Corner tile trims [LI]	m	20
Carried Forward to Summary of Section No. 3			R
Section No. 3			
Bill No. 13			

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Item No		Quantity	Rate	Amount
	<u>BILL NO. 14</u>			
	<u>PLUMBING AND DRAINAGE (PROVISIONAL)</u>			
	<u>PREAMBLES</u>			
	For preambles refer to "General Specification of Materials and Methods to be used for Building Contracts" (GP /ASC)			
	<u>CPAP ADJUSTMENT</u>			
	Unless otherwise stated all items in this bill shall be deemed to fall into Work Group 146 and 148 for Contract Price Adjustment Provisions			
	<u>SUPPLEMENTARY PREAMBLES</u>			
	<u>Polypropylene pipes:</u>			
	Polypropylene pipes 54mm diameter and under shall be seamless copper coloured class 16 pipes jointed with "Fast-fuse" heat welded thermoplastic or brass compression fittings as designed for use with copper pipes as stated			
	Pipes shall be firmly fixed to walls etc with coloured nylon snap-in pipe clips with provision for accommodating thermal movement and jointed and fixed strictly in accordance with the manufacturer's instructions			
	All pipe diameters are nominal external			
	<u>Polypropylene pipes:</u>			
	Polypropylene pipes 63mm diameter and over shall be class 12 pipes jointed with cast iron "Supraclamp" running joints			
	Fusion welded bends, once or twice mitred as necessary, and tees shall be factory manufactured			
	Fusion welded bends and tees shall include jointing to pipes with PVC rubber ring double Z joint couplers			
	Carried Forward		R	
	Section No. 3 Bill No. 14			

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
<p>Branch tees shall include flanged and bolted joints to "Polycop" branch pipes in addition and for brass compression male iron to copper straight couplers</p> <p>Reducers shall include jointing to pipes with PVC rubber ring double Z joint couplers and reducers shall be of sufficient overall length to accommodate same</p> <p>All pipes shall be jointed and fixed strictly in accordance with the manufacturer's instructions</p> <p>All pipe diameters are nominal external</p> <p><u>Vitrified clay pipes:</u></p> <p>Pipes shall rest on solid ground and, where necessary, pockets of sufficient size shall be cut around joints to enable the jointing to be properly performed or, alternatively, pipes shall be bedded full length on and including unreinforced concrete laid in a semi-dry state immediately before pipes are laid</p> <p>Sewer and drainage pipes and fittings shall be jointed and sealed with butyl rubber rings</p> <p><u>uPVC pipes and fittings:</u></p> <p>Soil, waste and vent pipes and fittings shall be solvent weld jointed</p> <p><u>SOIL DRAINAGE</u></p>			
1	110mm Pipe and including excavation not exceeding 1m deep	m	20
<u>Extra over uPVC pipes for fittings</u>			
2	110mm Bend	No	2
3	110mm Access pipe	No	2
4	110mm Access junction	No	2
<u>SUNDRIES</u>			
5	Extra over excavation for excavation in soft rock	m3	2
Carried Forward			R
<p>Section No. 3 Bill No. 14</p>			

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
6	Extra over excavation for excavation in hard rock	m3	1
7	Extra over excavation for carting away surplus material to a dumping site to be located by the contractor	m3	10
8	Extra over backfilling to pipe trenches	m3	9
9	100mm Cast iron "Approved" cleaning eye	No	1
10	Testing drainage pipe system	Item	
<u>RAINWATER DISPOSAL</u>			
<u>Commercial and industrial Square profile aluminium seamless gutter, 0,9mm thick coated internally and externally with ColourTech G4 in colour Marble White including cut and mitred angles covered with a mitre strip externally, stop ends riveted and all sealed on the inside with Dow Corning 813 silicone sealer, secured to fibre cement fascia with 20 x 3mm dual-purpose brackets at 600mm centres using aluminium peeled rivets, including a 50 x 20mm high overflow spiggot, with 78 x 78 x 2mm thick aluminium downpipes in colour Marble White fixed to wall with straps at 1500mm centres using nail plugs, with downpipes riveted and silicone sealed to gutter outlets, including all necessary bends, elbows, shoes etc.</u>			
11	100 x 100mm Eaves gutters	m	35
12	Extra over square eaves gutter for outlet for 78mm pipe	No	4
13	78mm diameter galvanised rainwater downpipes	m	12
14	Extra over round rainwater pipe for bend	No	4
15	Extra over round rainwater pipe for shoe	No	4
<u>SANITARY FITTINGS</u>			
<u>"Approved"</u>			
16	Approved 600 x 460mm basin, tap hole with overflow, wall mounted all as per the Architect's specifications	No	3
Carried Forward			R
Section No. 3			
Bill No. 14			

RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
17	"Approved" paraplegic 90° outlet pan and matching 9 litre cistern complete with lid, fitments, and purpose-made C.P. side-flush 5 lever (left or right) or a back inlet exposed flushvalve. Accesories to manufacturers recommendations and all complete as per the Architect's specifications	No	1
18	Approved 3 piece close-couple suite with soft close seat Pan, cistern: softclose seat & cover, all complete as per the Architect's specifications	No	2
<u>"Approved"</u>			
19	Single bowl sink 830 x 450 x 255mm all complete as per the Architect's specifications	No	1
<u>TRAPS</u>			
<u>Approved</u>			
20	"Approved" chrome 32mm bottle trap for basin with escutcheon, fixed dip tube and wall connection	No	3
<u>TAPS, VALVES</u>			
<u>Cobra or similar approved</u>			
21	Approved flush valves, exposed type toilet flush valve, top entry installations, pan connector, wall flange, seat buffer and ball-o-stop and wall flange. SANS 1240.	No	3
22	Approved "S" single lever kitchen mixer 200 with pull out spray all complete as per the Architect's specifications	No	1
23	Approved "S", single Lever basin mixer for concealed installation with spout 225 mm wall mounted. 305mm x 290mm all complete as per the Architect's specifications	No	3
Carried Forward			R
Section No. 3 Bill No. 14			

RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>SANITARY PLUMBING</u>			
<u>uPVC soil and vent pipes</u>			
24	50mm Pipes including chasing into brickwork	m	20
25	110mm Pipes including chasing into brickwork	m	5
<u>Extra over uPVC soil and vent pipes for fittings</u>			
26	50mm End cap	No	3
27	50mm Bend	No	3
28	50mm Junction	No	3
29	50mm Access bend	No	3
30	50mm Access junction	No	3
31	110mm End cap	No	1
32	110mm Pan connector	No	3
33	110mm Bend	No	3
34	110mm Junction	No	1
35	110mm Reducing junction	No	1
36	110mm Reducing double junction	No	1
37	110mm Access bend	No	1
38	110mm Air vent cowl	No	3
39	50mm Stubstack	No	3
Carried Forward			R
Section No. 3 Bill No. 14			

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
<u>Precast concrete gulleys</u>			
40	Gulley not exceeding 1m deep to invert comprising 100mm diameter vitrified clay gulley trap and head, fitted with 190mm diameter cast in iron grating, including excavating for, bedding on and encasing in mass concrete and fitted with and including precast gulley top bedded in (3:1) cement mortar	No	1
<u>Testing</u>			
41	Provide all necessary apparatus for testing of waste pipe system		Item
<u>WATER SUPPLIES</u>			
<u>Class 0 copper pipes with capillary type soldered joints, including couplers in the running length</u>			
42	15 mm Pipes	m	60
43	22 mm Pipes	m	50
44	28 mm Pipes	m	39
45	35 mm Pipes	m	26
<u>Extra over class 0 copper pipes for capillary fittings</u>			
46	15 mm Fittings	No	60
47	22 mm Fittings	No	50
48	28 mm Fittings	No	39
49	35mm Fittings	No	26
<u>Extra over class 0 copper pipes for conex compression fittings</u>			
50	15 mm Fittings	No	20
51	22mm Fittings	No	20
Carried Forward			R
Section No. 3 Bill No. 14			

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R	
<u>Copper overflow and service pipes</u>				
52	22mm Overflow pipe 500mm girth twice bent	No	10	
<u>Sundries</u>				
53	500 x 500mm Cast iron stopcock box including brick chamber below not exceeding 500mm deep internally	No	1	
<u>ELECTRIC WATER HEATERS</u>				
<u>"Approved"</u>				
54	"Approved" 2,5 litre instant boiling water unit with white epoxy powder coated outer case, and two-way tap, complete with twin-chamber technology, installed in accordance with manufacturer's recommendations	No	2	
Carried Forward to Summary of Section No. 3			R	
Section No. 3				
Bill No. 14				

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**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Item No	Quantity	Rate	Amount
<u>BILL NO. 16</u>			
<u>PAINTWORK</u>			
<u>PREAMBLES</u>			
For preambles refer to "General Specification of Materials and Methods to be used for Building Contracts" (GP /ASC)			
<u>CPAP ADJUSTMENT</u>			
Unless otherwise stated all items in this bill shall be deemed to fall into Work Group 152 for Contract Price Adjustment Provisions			
<u>PREPARATORY WORK TO EXISTING WORK</u>			
<u>New plastered walls</u>			
Ensure plastered surface to be clean and dry before painting. New plaster must be given adequate drying time (moisture content must be less than 15%) and treat with plaster primer before the first coat of paint is applied			
<u>Previously painted plastered surfaces</u>			
Surfaces shall be thoroughly washed down and allowed to dry completely before any paint is applied. Blistered or peeling paint shall be completely removed and cracks shall be opened, filled with a suitable filler and finished smooth			
<u>Previously painted metal surfaces</u>			
Surfaces shall be thoroughly rubbed and cleaned down. Blistered or peeling paint shall be completely removed down to bare metal			
<u>Previously painted wood surfaces</u>			
Surfaces shall be thoroughly cleaned down. Blistered or peeling paint shall be completely removed and cracks and crevices shall be primed, filled with suitable filler and finished smooth			
Carried Forward		R	
Section No. 3 Bill No. 16			

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
<p><u>Previously painted surfaces to receive epoxy coating</u></p> <p><u>Previously painted surfaces are to be stripped back to the original firm substrate by abrading, flame treatments or chemical removal, using an approved paint Remover. Once contaminants have been removed the surface is to be acid etched using an approved acid diluted 1:1 with water, applied with plastic watering can at approximately 2m/lt, removing laitance and slightly roughening the surface to give a finish similar to that of fine sandpaper. Rinse the entire surface with clean water and allow to dry; normally if well ventilated.</u></p> <p><u>ON INTERNAL FLOATED PLASTER SURFACES</u></p> <p><u>Prepare one coat gypsum & plaster primer & 2 coats of superior low sheen. Final colour: TBC.</u></p>			
1	Walls	m2	470
<p><u>Prepare one coat gypsum & plaster primer & two coats of a water-based eggshell enamel paint. Final colour: TBC.</u></p>			
2	On Bathroom & Kitchen Walls	m2	132
<p><u>ON EXTERNAL FLOATED PLASTER SURFACES</u></p> <p><u>Prepare one coat of plaster primer and two coats of superior low sheen paint. Colour TBC</u></p>			
3	On walls	m2	33
<p><u>ON PLASTERBOARD SURFACES</u></p> <p><u>Prepare one coat gypsum & plaster primer & 2 coats of superior low sheen paint. Final colour: TBC.</u></p>			
4	Ceilings and cornices, including priming metal cover strips and nailheads	m2	25
Carried Forward			R
<p>Section No. 3 Bill No. 16</p>			

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
<u>ON FIBRE-CEMENT BOARD SURFACES</u>			
<u>One coat primer and painted two coats enamel paint.</u>			
5	Fascias and barge boards, including priming metal jointing strips	m2	56
<u>ON METAL SURFACES</u>			
<u>One coat primer and two coats enamel paint finish over edge (Colour: according to the architect).</u>			
6	New rainwater gutters and downpipes	m2	20
7	Gates, grilles, burglar screens, balustrades, etc (both sides measured over the full flat area)	m2	10
8	Rails, bars, pipes, etc	m	12
<u>ON WOOD SURFACES</u>			
<u>One coat primer and two coats enamel paint finish over edge (Colour: according to the architect).</u>			
9	Timber doors and frames	m2	40
Carried Forward to Summary of Section No. 3			R
Section No. 3			
Bill No. 16			

RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

SECTION SUMMARY - Section 3 - East Admin		Page No	Amount	
Bill No				
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2	Bill No. 2 - Concrete, Formwork & Reinforcement	45		
3	Bill No. 3 - Masonry	49		
4	Bill No. 4 - Waterproofing	50		
5	Bill No. 5 - Carpentry and Joinery	53		
6	Bill No. 6 - Roof Coverings, etc.	55		
7	Bill No. 7 - Ceilings, Partitions and Access Flooring	58		
8	Bill No. 8 - Floor Coverings, Plastic Linings, etc.	61		
9	Bill No. 9 - Iron Mongery	67		
10	Bill No. 10 - Structural Steel Work	70		
11	Bill No. 11 - Metal Work	77		
12	Bill No. 12 - Plastering	79		
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14	Bill No. 14 - Plumbing and Drainage (Provisional)	88		
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16	Bill No. 16 - Paintwork	92		
Carried to Final Summary			R	
Section No. 3				

Carried Forward

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
<u>SITE CLEARANCE</u>			
<u>Site Clearance</u>			
1	Digging up and removal of rubbish, debris, vegetation, hedges, shrubs and trees not exceeding 200mm girth, bush, etc [LI]	m2	120
<u>Remove and grub large trees and tree stumps, of girth around the trunk 1m high above ground level including grubbing of roots, filling of holes and compaction to 90% Mod AASHTO density.</u>			
2	Tree exceeding 200mm and not exceeding 500mm girth	No	1
3	Tree exceeding 500mm and not exceeding 1000mm girth	No	1
<u>Remove topsoil to nominal depth of 150mm and stockpile.</u>			
4	Stripping average 150mm thick layer of top soil and depositing material in prescribed stock piles on site	m2	18
<u>EXCAVATION, FILLING</u>			
<u>Excavation in earth not exceeding 2m deep</u>			
5	Trenches	m3	185
6	Holes	m3	19
<u>Extra over excavations in earth for excavation in</u>			
7	Soft rock	m3	20
8	Hard rock	m3	10
<u>Extra over all excavations for carting away</u>			
9	Surplus material from excavations	m3	65
<u>Risk of collapse of excavations</u>			
10	Side of trenches and holes	m2	411
Carried Forward			R
Section No. 4 Bill No. 1			

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
<u>Keeping excavations free of water</u>			
11	Keeping excavations free of all water	Item	
<u>Earth filling obtained from commercial sources compacted to 98% Mod AASHTO density</u>			
12	Under floors, steps, pavings	m3 30	
<u>Earth filling obtained from the excavations and/or prescribed stock piles on site, compacted to 98% Mod AASHTO density</u>			
13	Backfilling to trenches, holes	m3 103	
14	Under floors, steps, pavings	m3 30	
<u>Compaction of surfaces</u>			
15	Compaction of ground surface under floors	m2 110	
<u>Soil insecticide with</u>			
16	Under floors, steps, pavings	m2 100	
17	To bottom and sides of trenches	m2 494	
Carried Forward to Summary of Section No. 4			R
Section No. 4			
Bill No. 1			

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**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
<u>Finishing top surfaces of concrete smooth with a wood float</u>			
8	Surface beds, slabs, etc[LI]	m2	97
<u>Test blocks</u>			
9	150 x150 x 150mm Deep concrete cube test	No	10
<u>Expansion joints with bitumen impregnated soft board between vertical concrete and brick surfaces</u>			
10	10mm Joints not exceeding 300mm high	m	211
<u>Saw-cut joints sealed with two part flexible polyurethane joint sealant</u>			
11	6 x 30mm Saw-cut joints in top of concrete	m	30
<u>SMOOTH AND FAIR FORMWORK (DEGREE OF ACCURACY II)</u>			
<u>Smooth formwork to soffits</u>			
12	Slabs not exceeding 250mm thick propped to a height propped to a height exceeding 3,5m and not exceeding 5m	m2	11
<u>ROUGH FORMWORK (DEGREE OF ACCURACY (III))</u>			
<u>Rough formwork to sides</u>			
13	Edges, risers, ends and reveals not exceeding 300mm high or wide	m	76
<u>REINFORCEMENT</u>			
<u>High tensile steel</u>			
14	Various Diameter bars	t	7.23
<u>Fabric reinforcement</u>			
15	Mesh ref 193 fabric reinforcement in concrete surface beds, slabs, etc	m2	97
Carried Forward to Summary of Section No. 4			R
Section No. 4			
Bill No. 2			

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RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>BRICKWORK</u>			
<u>Brickwork of NFX bricks (14 MPa nominal compressive strength) in class II mortar</u>			
<u>FOUNDATIONS (PROVISIONAL)</u>			
1	Half brick walls[LI]	m2	26
2	One brick walls[LI]	m2	108
<u>SUPERSTRUCTURE</u>			
<u>Brickwork of NFP bricks in class II mortar</u>			
3	Half brick walls[LI]	m2	77
4	One brick walls[LI]	m2	323
5	One brick walls in parapets[LI]	m2	16
6	One brick walls in gables[LI]	m2	10
7	One brick walls in beam filling[LI]	m2	14
<u>Brickwork reinforcement</u>			
8	75mm Wide reinforcement	m	306
9	175mm Wide reinforcement	m	1,271
<u>Turning pieces</u>			
10	110mm Wide turning piece to lintels	m	34
11	230mm Wide turning piece to lintels	m	57
<u>Galvanised wire ties etc</u>			
12	4mm Diameter roof tie 2m girth bent double, with one end built into brickwork and other end fixed to timber	No	23
<u>FACEBRICK</u>			
Carried Forward			R
Section No. 4 Bill No. 3			

RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>External facings (PC R11500,00/1 000) pointed with square recessed horizontal and vertical joints:</u>			
13	Extra over brickwork for face brickwork	m2	122
14	Extra over brickwork for brick-on-edge header course lintel pointed on face and 230mm soffit	m	29
<u>External facings (PC R11500,00/1 000) pointed with square recessed horizontal and vertical joints:</u>			
15	Coping on top of one brick wall including fair raking cutting	m	24
16	Extra over brickwork for brick-on-edge header course lintels one course high, pointed on face and soffit	m	24
17	Corobrik FBX 106mm single bullnose solid pointed with recessed vertical and recessed horizontal joints (Colour: to match masonry FBX walls).	m	29
<u>Internal facings to the bottom of windows (PC R5500,00/1 000) pointed with square recessed horizontal and vertical joints:</u>			
18	Extra over brickwork for face brickwork	m2	16
Carried Forward			R
Section No. 4 Bill No. 3			

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
<u>SUNDRIES</u>			
<u>Window sill, size 150mm x 15mm thick, manufactured in accordance with SANS 803:2005 and installed below window with window sill lug screwed to underside of sill at 400mm centres, minimum of 75mm from end of window sill and bedded in Class II mortar at end of sills at plaster reveals. Sill to be cut flush with wall face. Sill to be primed according to manufacturer instruction and painted enamel paint to match wall colour, all in accordance with the manufacturer's recommendations.</u>			
19	Internal Sills	m	29
<u>Pre cast concrete sills 215 x 115 x 60mm, pointed with flush joints on all exposed faces</u>			
20	Sills (precast concrete)	m	29
Carried Forward to Summary of Section No. 4			R
Section No. 4			
Bill No. 3			

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**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
<u>FACIAS, BARGE BOARDS, ETC:</u>			
<u>Approved fibre cement fascia & barge boards, size 10 x 300mm to be primed 1 coat and painted 2 coats enamel paint. To be fixed to proper support structure with bolts within a straight line with aluminium joiners on corners and joints. (Colour: according to the architect)</u>			
1	Fibre cement fascia/barge drilled and brass screwed and including steel jointing strips between lengths.	m	55
<u>APPROVED RAILS</u>			
<u>Timber rails</u>			
2	Timber rails to have an elliptical gripping surface profile that is approximately 50 mm wide and 40 mm deep, or a circular profile of diameter not less than 35 mm and not more than 50 mm; to be fixed to the wall at 900mm high from the outdoor FFL and a minimum space of 200mm from the wall	m	58
<u>DOORS, ETC</u>			
<u>Heavy Duty Solid Door</u>			
3	Solid door with (x2) concealed edges, size 1830 x 2083mm (DAE)	No	2
4	Solid door with (x2) concealed edges, size 915 x 2032mm (DAB)	No	3
<u>Medium Duty Semi-Solid Door</u>			
5	Semi-solid door with (x2) concealed edges, size 815 x 2100mm (DAJ)	No	5
<u>JOINERY SUNDRIES</u>			
<u>Worktops</u>			
6	1800 x 600mm wide 32mm Rustenburg granite counter top all complete - Ticketing office (Refer to Architectural drawing No.400911/S1). [LI]	No	2
Carried Forward			R
Section No. 4 Bill No. 5			

RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward		R	
<u>FITTINGS</u>			
<u>Cupboard - Kitchen</u>			
Kitchen wall unit comprising of 22mm thick white melamine top cupboard size 1080 x 450 x 700mm high, drawers and shelves by specialist and 22mm thick white melamine bottom floor cupboard size 1905 x 600 x 900mm high, with 80mm high Rustenberg granite splash back epoxied to 600mm wide Rustenberg worktop, pull handle as per finishing schedule & drawers and shelves by specialist. All to architect's specifications (Refer to Architect's drawing)	No	1	
<u>Medicine Cabinet</u>			
MEDICINE CABINET: Standard white built in type. Complete with mirrors on door shelves etc size 380 x 610mm. [LI]	No	1	
Carried Forward to Summary of Section No. 4		R	
Section No. 4			
Bill No. 5			

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R

Alububble®, white bubble with foil backing insulation with thermal insulating, dustproofing and fire resistant capabilities complying with SANS 1381-4:2009 and tested to SANS 428. Quality in accordance with requirements of SANS 10400 Building Regulations, installations are to be to manufactures instructions and specifications. Thickness to mechanical engineer's specifications

2	Insulation blanket laid taut over purlins	m2	181
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R

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RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>Flush plastered gypsum plasterboard suspended bulkheads</u>			
Bulkheads shall comprise galvanised steel studding of 63,5mm top and bottom tracks with vertical studs at maximum 400mm centres, pop-riveted to the top and bottom tracks with similar additional vertical studs as necessary at abutments, ends, etc and covered as described with plasterboard screwed to studding with drywall screws at maximum 300mm centres. Boards shall be butt jointed and finished with tape and jointing compound and the whole finished with gypsum plaster trowelled to a smooth polished surface to the thickness recommended by the manufacturer.			
Descriptions shall be deemed to include any additional studs at ends and intersections, corner beads, cornices at junctions with ceilings, jointing compound, tape, etc			
<u>SUSPENDED CEILINGS</u>			
<u>1200 x 600 x 15mm thick acoustic ceiling tiles laid on pre-painted tees and adjustable hanger system.</u>			
1	Ceilings suspended not exceeding 1m below timber purlins	m2	42
2	Extra over ceiling for 650 x 650mm trap door complete with trimmers, frame, cross branders, ceiling board, hinges and including all necessary ironmongery	No	2
<u>1200 x 600 x 12,5mm vinyl faced ceiling panels laid on tees and adjustable hanger system.</u>			
3	12.5mm Vinyl Faced Ceiling Panels, face-covered with white embossed vinyl, size 1200 x 600mm, laid on fire rated S3 exposed demountable suspension system including galvanised main tees, cross tees, etc., all suspended with galvanised hangers at centres not exceeding 1200mm, with ceiling perimeter finished with Shadow-line trim plugged at 200mm centres, and all installed to manufacturer's instructions.	m2	20
Carried Forward			R
Section No. 4 Bill No. 7			

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**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
<u>CPAP ADJUSTMENT</u>			
Unless otherwise stated all items in this bill shall be deemed to fall into Work Group 130 for Contract Price Adjustment Provisions			
<u>FLOOR COVERINGS</u>			
<u>500 x 500mm Loose lay Commercial carpet tiles with backing, to architects approval.</u> <u>Tessellated Installation</u> <u>100% Stainproof Miracle Fibre™ (Polypropylene) structured needle punch SABS Class 3 fire rating grade heavy commercial carpet tiles, size 500 x 500 x 8,5mm thick, all installed by approved installer in accordance with SANS 10186:2010, the code of practice for textile floor coverings.</u>			
1	Carpet floor covering	m2	50
<u>Approved Walk-off mat suitable for interior & exterior covered entrances.</u> <u>Approved Walk-off mat, overall size 4000mm or 3000mm x 12mm consisting of 100% polypropylene course fibre needle felt brushes alternated with soft strips to effectively scrape & dry with anti-slip latex backing glued in recess bedded into screed (by others), installed in accordance with the manufacturer's recommendations. To be vacuum cleaned regularly. Samples required for architect and client's approval.</u>			
2	Walk-off mats	m2	2
<u>SKIRTINGS, NOSINGS, ETC</u>			
<u>"Approved" brushed stainless steel edging strip to be installed all according to the instructions and recommendations of the manufacturer for vinyl floor finish.</u>			
3	Stainless steel edging strip	m	10
Carried Forward			R
Section No. 4 Bill No. 8			

RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward				R
<u>"Approved" stainless steel 30 x 9mm high carpet gripper capping strip trim, plugged and counter sunk screwed into cement screed with stainless steel screws all in accordance with the specifications and recommendations of the manufacturers.</u>				
4	Tile to carpet transition strip	m	10	
Carried Forward to Summary of Section No. 4				R
Section No. 4				
Bill No. 8				

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RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>LOCKS</u>			
<u>"APPROVED"</u>			
3	Nickel plated 60mm double cylinder master keyed [LI]	No	3
4	Double panic set for rebated double doors [LI]	No	2
5	Stainless Steel Toilet Cubicle Indicator bolt & lock set Grade 304 Stainless Steel indicator bolt (code: fixed to surface with matching stainless steel screws. To comply with SANS 4:2008. Finger pull handle to be fixed to door with tamper proof screws [LI]	No	2
6	Stainless Steel Security Deadlock Grade 304 Stainless steel Security Deadlock with a Deadcase plate in the door frame with Master key functioning. These type lock to be used with Push plates and Pull handles. Double side locking mechanism To comply with SANS 4:2008 [LI]	No	1
7	Stainless Steel cylinder lock 60mm Grade 304 Stainless steel Euro profile Double with 6 pin and Master keyed To comply with SANS 4:2008 [LI]	No	1
8	Stainless Steel Toilet Cubicle Indicator bolt & lock set Grade 304 Stainless Steel disabled indicator bolt, fixed to surface with matching stainless steel screws. To comply with SANS 4:2008. Finger pull handle to be fixed to door with tamper proof screws [LI]	No	1
9	Stainless steel 76mm commercial cylinder sash lock [LI]	No	1
10	Nickel plated 66mm knob cylinder - master keyed [LI]	No	1
11	Single panic bolt complete, Colour:Silver [LI]	No	1
12	Outside access device lever W/O cylinder [LI]	No	1
13	Nickel plated single cylinder - master keyed [LI]	No	1
Carried Forward			R
Section No. 4 Bill No. 9			

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
<u>DOOR CLOSERS</u>			
<u>"APPROVED"</u>			
14	Door closer clockwise action with a standard guide rail Colour: Silver [LI]	No 1	
15	Door closer with parallel arm bracket [LI]	No 1	
16	Door closer with a clockwise action inclusive of guide rail [LI]	No 1	
17	Door closer with a clockwise action including standard and parallel arm [LI]	No 1	
<u>LETTERS, NAMEPLATES, ETC</u>			
<u>"APPROVED"</u>			
18	160 x 160mm stainless steel ironware outline engraved fire hose reel. [LI]	No 3	
19	160 x 160mm stainless steel ironware outline engraved female sign. [LI]	No 1	
20	160 x 160mm stainless steel ironware outline engraved male sign. [LI]	No 1	
21	160 x 160mm stainless steel ironware outline engraved disabled sign. [LI]	No 1	
22	160 x 160mm stainless steel ironware outline engraved shower sign. [LI]	No 1	
GENERAL NOTES: Colour: Black lettering on white background. Fixing: To be mechanical fastened. Positioning: To be determined site with architect once signage is available on site. Font: Arial Black To be read in conjunction with Fire signage drawing.			
Carried Forward			R
Section No. 4 Bill No. 9			

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
<u>PUSH PLATES AND KICK PLATES</u>			
<u>"APPROVED"</u>			
23	111 x 19mm thick push plate 160 x 160mm stainless steel back plate [LI]	No 2	
24	1.6mm stainless steel push plate 160 x 160mm [LI]	No 5	
25	1.5mm stainless steel push plate 165 x 165mm [LI]	No 4	
26	1.6mm Stainless steel kick plate [LI]	No 11	
<u>SUNDRIES</u>			
<u>"APPROVED"</u>			
27	Stainless steel cabin hook 150mm [LI]	No 9	
28	Stainless steel floor mounted door stop [LI]	No 6	
29	Floor mounted rubber door stop [LI]	No 5	
30	Stainless steel hat and coat hook with a rubber buffer [LI]	No 2	
31	Nickel plated patent screw 40-55mm [LI]	No 11	
32	Dust keep[LI]	No 11	
Carried Forward			R
Section No. 4 Bill No. 9			

RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>BATHROOM FITTINGS</u>			
<u>"APPROVED"</u>			
33	"Approved" Grade 304 18/10 stainless steel with "Approved" grip paraplegic grab rails, size 640 x 640 x 96mm deep, plugged and screwed to the wall with stainless steel screws [LI]	No	1
34	"Approved" Grade 304 32mm diameter 18/10 stainless steel grab rails with "Approved" grab 750 x 95mm deep, plugged and screwed to the wall with stainless steel screws [LI]	No	1
<u>"Approved" - Towel hooks</u>			
35	"Approved" chrome towel hook and installed with manufacturer's recommendations [LI]	No	2
<u>Miscellaneous</u>			
36	3-arm dish cloth holder [LI]	m	3
37	Toilet roll holder with a prime cost of R900.00 (excl. VAT) fixed to brickwork, concrete or partitioning [LI]	No	3
38	Toilet brush and holder with a prime cost of R190.00 (excl. VAT) [LI]	No	3
39	Stainless steel bin with a prime cost of R900.00 (excl. VAT) [LI]	No	2
40	Stainless steel soap dispenser with a prime cost of R750.00 (excl. VAT) fixed to brickwork, concrete or partitioning [LI]	No	3
41	Stainless steel hand dryer with a prime cost of R4 280.00 (excl. VAT) [LI]	No	1
42	Stainless steel paper towel dispenser, including bin with a prime cost of R4 700.00 (excl. VAT) [LI]	No	3
Carried Forward to Summary of Section No. 4			R
Section No. 4			
Bill No. 9			

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Item No	Quantity	Rate	Amount
<u>BILL NO. 10</u>			
<u>STRUCTURAL STEELWORK</u>			
<u>PREAMBLES</u>			
For preambles refer to "General Specification of Materials and Methods to be used for Building Contracts" (GP /ASC)			
<u>CPAP ADJUSTMENT</u>			
Unless otherwise stated all items in this bill shall be deemed to fall into Work Group 134 for Contract Price Adjustment Provisions			
<u>SUPPLEMENTARY PREAMBLES</u>			
The Structural Steelwork shall be in accordance with the Engineer's "STANDARD SPECIFICATION FOR STRUCTURAL STEEL" appended hereto as " Structural Steel Annexure A ".			
The Contractor is to notify the Principal Agent immediately if a conflict between the Engineer's Specification, Architectural Drawings and/or these Bills of Quantities are found.			
Steelwork are measured to the designed sizes of the components.			
The price for steelwork shall include all rolling margin, distance pieces, packings, additional material in welding and fixing steel members, decorative or protective and temporary aids; these shall be deemed included in the descriptions of the relevant steelwork.			
The price for steelwork shall also include for the preparation of all shop detail drawings as defined in the preables and the Engineering Specification.			
Carried Forward			R
Section No. 4 Bill No. 10			

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward				R	
<p>The price for steelwork shall include all welding, holes, bolts, nuts, washers, rivets, bolting and riveting integral with structural steelwork as well as all required weld and strength testing, these shall be deemed included in the descriptions of the relevant steelwork. The only bolts and anchors measured separately shall be those fixing the steel members to the structural concrete work.</p> <p><u>For clarity</u>; fixing structural steelwork members to each other is deemed included in the description of the steelwork and has thus not been measured separately and should be priced within the steelwork rates.</p> <p>Descriptions of bolts shall be deemed to include nuts and washers. Descriptions of anchor bolts shall be deemed to include bending, threading, nuts and washers and embedding in concrete. Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork or concrete.</p> <p>All structural steelwork rates shall include the factory coat of paint only, all repair-, other- and final paintwork to structural steel members are included under a "Painting" heading in these Structural Steelwork Bills of Quantities.</p> <p>The quantities are provisional and will be re-measured upon completion of the works. The Contractor shall not use these quantities for ordering of materials. The Contractor must immediately notify the Quantity Surveyor if discrepancies are found between the quantities and/or descriptions in these Bills of Quantities and the Contractor's quantities measured from construction drawings and specifications.</p> <p><u>GALVANISED STEEL COLUMNS AND BEAMS</u></p> <p><u>Welded hollow section beams in single lengths with flat bearer and connection plates, bolted to steel</u></p>					
1	125 x 75 x 20 x 2.00mm, 4.71kg/m lipped channels in lengths not exceeding 2m	t	0.64		
2	160 x 82 x 16 x 2.00mm, 15.80kg/m I sections in lengths not exceeding 3m	t	1.24		
Carried Forward				R	
Section No. 4 Bill No. 10					

RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>STEEL PURLINS, GIRTS, BRACING,</u>			
3	100 x 50 x 20 x 2.5mm x 4.32kg/m cold-formed lipped channel purlins	t	0.32
	<u>Welded bracing, anti-sag rails, etc with flat connection plates, bolted to steel</u>		
4	30 x 30 x 3mm angle bracing	t	0.32
	<u>Welded box gutter bearers with flat cleats, bolted to steel</u>		
5	Angle longitudinal bearers	t	0.10
<u>BOLTS, FASTENERS,</u>			
6	High tensile bolts (class 8.8)	t	0.50
<u>PAINTING</u>			
	<u>Touch-up steel primer, one coat 1 universal undercoat to 2 finishing coats high gloss enamel paint</u>		
7	On structural steel columns, beams, etc	t	1.88
8	On steel purlins, girts, etc	t	0.32
9	On angle bracing	t	0.32
Carried Forward to Summary of Section No. 4			R
Section No. 4			
Bill No. 10			

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<p style="text-align: right;">Brought Forward</p> <p><u>Construction</u></p> <p>Outer frame to consist of a single part compensating head and jamb and continuous sub-Sill.</p> <p>Infill panels are to be constructed from double cavity tubular profiles, forming a wet cavity with drainage slots to allow for transom drainage to the exterior. All glazing rebates to be 25mm. Joints of the infill panels shall be notched and screwed to spigots with No 8 stainless steel screws. Where required, a 111mm or 166mm Split mullion assembly must be used to couple infill panels together, still making allowance for all thermal and dynamic movement. Door panels within the screens to have a 4-edge door rebate with gasket seal all round.</p> <p><u>Installation</u></p> <p>All aluminium work to be done in strict accordance to the manufacturers specifications by a specialist firm. All openings to be checked on site before any materials are ordered or manufacture of window and door frames. Panel-by-panel installation from Inside or from Outside the building. All aluminium frame works to be provided with a continuous silicone seal around all construction openings.</p> <p><u>Hardware</u></p> <p>All sashes to have mechanical Corner Connectors, wind locks and multi-point locking handles. Sashes not to exceed 1700mm wide by 1200mm high as per specification. Friction stay to suit max weight and size of Sash.</p> <p>Door hardware shall be compatible with the system and will take cognisance of the finish specification of the applicable area. See Hardware Schedule for door.</p>	<p style="text-align: right;">R</p>
<p style="text-align: right;">Carried Forward</p> <p>Section No. 4 Bill No. 11</p>	<p style="text-align: right;">R</p>

<div>Brought Forward</div> <div><div>Finish</div><div>Sections will be painted in accordance with SABS1578, parts1 & 2. Powercote, and anodised aluminium, should be protected to prevent any damage or stain by cement, etc. All powder coating to be 25 micron thick and shall be executed in strict adherence to sabs 999</div></div> <div><div>Glazing</div><div>Glass thickness should be in accordance with SANS 10400 and deigned by a competent person. Glazing is to be carried out in accordance with SABS 0137, with particular attention to size limitations, packing and setting blocks. Thicknesses from 6-28mm.</div></div> <div><div>Structural Perfomance</div><div>System shall meet or exceed the requirements of SANS613 and the design loading determination by SABS 0160 for this application. Deflection of structural members shall not exceed L/175 or L/240+6mm as applicable.</div></div> <div><div>Thermal Perfomance</div><div>System shall comply with SANS204 in applications where Fenestration makes up more than 15% of Floor area. U-value with Air filled glazing units = 3.36 For U-values below 3.38 use Argon or Krypton gas filled glazing units.</div></div>	<div>R</div>
<div>Carried Forward</div> <div>Section No. 4 Bill No. 11</div>	<div>R</div>

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

	Brought Forward		R
1	Electrical Industrial type full height turnstile with a gate for disabled people and as an emergency exit.	No	1
	Carried Forward		R

Section No. 4
Bill No. 11

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
	<u>Level G3 bullet resistant Anti-bandit door, complete with 100 x 50 x 3mm gauge mild steel rectangular frame and 25 x 25 x 3mm MS angle rebates, overall size 930 x 2100mm high in powder coating and or galvanised cladding with peep hole, supplied with a 6 pin tumbler key system, mortice dead lock with an additional heavy duty magnetic lock and striker including key switch and surface mounted casing, 6 Amp power supply, push buttons and interlock system, heavy duty aluminium continuous hinge, aluminium slam bar with heavy duty door closer and D-style pull handles. Door to comply to SABS 1658-1996</u>		
2	930 x 2100mm	No	1
	<u>DOOR FRAMES, DOORS, WINDOWS,</u>		
	<u>Standard heavy duty double rebated pressed mild steel doorframe with factory red oxide primer for doorswing and wall thickness as indicated on plan with (x2) coat enamel paint finish over edge (Colour: according to the architect). Frame to accommodate for screeded floor finish.</u>		
3	Frame for door size 815 x 2100mm (DAJ)	No	5
4	Frame for door size 915 x 2032mm (DAB)	No	3
5	Frame for door size 1830 x 2083mm (DAE)	No	2
	<u>ALUMINIUM WINDOWS</u>		
	<u>Purpose made powder coated windows including glazing and ironmongery complete plugged to brickwork or concrete</u>		
6	Top hung casement aluminium windows overall size of 1500 x 1500mm, able to meet the performance requirements of SANSA 613. Mullion to be plugged or screwed to brickwork. Glazing shall be executed strictly in conformance with glass manufacturer's recommendations and SAND 10137:2011 all in accordance with SANS10400 Parts B, N, XA. W1	No	4
Carried Forward			R
Section No. 4 Bill No. 11			

RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

		Brought Forward		R
7	Top hung casement aluminium windows overall size of 1800 x 600mm, able to meet the performance requirements of SANSA 613. Mullion to be plugged or screwed to brickwork. Glazing shall be executed strictly in conformance with glass manufacturer's recommendations and SAND 10137:2011 all in accordance with SANS10400 Parts B, N, XA. W2	No	2	
8	Top hung casement aluminium windows overall size of 600 x 900mm, able to meet the performance requirements of SANSA 613. Mullion to be plugged or screwed to brickwork. Glazing shall be executed strictly in conformance with glass manufacturer's recommendations and SAND 10137:2011 all in accordance with SANS10400 Parts B, N, XA. W4	No	3	
9	Top hung casement aluminium windows overall size of 1500 x 1500mm, able to meet the performance requirements of SANSA 613. Mullion to be plugged or screwed to brickwork. Glazing shall be executed strictly in conformance with glass manufacturer's recommendations and SAND 10137:2011 all in accordance with SANS10400 Parts B, N, XA. W9	No	2	
10	Top hung casement aluminium windows overall size of 1800 x 1450mm, able to meet the performance requirements of SANSA 613. Mullion to be plugged or screwed to brickwork. Glazing shall be executed strictly in conformance with glass manufacturer's recommendations and SAND 10137:2011 all in accordance with SANS10400 Parts B, N, XA. W10	No	4	
<u>ALUMINIUM SHOPFRONTS</u>				
<u>Purpose made powder coated aluminium shopfronts, doors and frames glazed with 9,52mm laminated safety glass, hinges, sealant, ironmongery, etc. plugged to brickwork or concrete</u>				
11	1800 x 2500mm Custom aluminium shopfront including 900 x 2100 aluminium door complete powdercoated with INTERPON finish according to specialist subcontractor specifications as well as architects approval with a continuous clear silicone seal around all construction openings. (Colour according to the architect). (SF1-01)	No	1	
Carried Forward				R
Section No. 4 Bill No. 11				

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R	
12	1800 x 2500mm Custom aluminium shopfront including 900 x 2100 aluminium door complete powdercoated with INTERPON finish according to specialist subcontractor specifications as well as architects approval with a continuous clear silicone seal around all construction openings. (Colour according to the architect). (SF1-02)	No	1	
13	1920 x 2500mm Custom aluminium shopfront including 900 x 2100 aluminium door complete powdercoated with INTERPON finish according to specialist subcontractor specifications as well as architects approval with a continuous clear silicone seal around all construction openings. (Colour according to the architect). (SF2-01)	No	1	
<u>Ticketing office shopfronts (bullet proof)</u>				
14	1810 x 1500mm Custom aluminium shopfront made of bullet resistant glass including transaction window and tray (by specialist) complete, powdercoated with INTERPON finish according to specialist subcontractor specifications as well as architects approval with a continuous clear silicone seal around all construction openings. (Colour according to the architect).	No	2	
<u>GALVANISED STEEL HANDRAILS</u>				
<u>Welded handrails to walkways and ramps</u>				
15	Steel Connection 50mm diameter, wall mounted mild steel handrail, to follow line of stair at 1000mm high	m	18	
<u>Welded balustrades</u>				
16	Mild steel railings consisting of 1000mm high, 90° 54mm Ø x 2.0mm stanchions spaced at 1600mm centres, with 44mm Ø x 2.0mm hand/knee rails. Top mounted stanchions to be fitted with baseplates pre-drilled with 30 x 18mm slotted holes for fixing to concrete/metal surface, including all necessary bends, closures, ferrules etc. as indicated on drawings	m	12	
Carried Forward to Summary of Section No. 4			R	
Section No. 4				
Bill No. 11				

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RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>WALL TILING</u>			
<u>200mm x 200 White Ceramic approved tiles over all basins and sinks. Or similar approved to be laid in accordance with and to the approval of the material supplier with appropriate tinted grout. "Approved" natural anodised 10mm high Elite aluminium straight edge trim, laid in tile adhesive while wall tiles are being installed or similar approved. Ceramic tiles (min. 10mm thick) PC SUM (R250/M2)</u>			
1	On walls in isolated panels, splashbacks, etc [LI]	m2	110
2	On narrow widths [LI]	m2	11
<u>FLOOR TILING</u>			
<u>600 x 600mm "Approved" dark grey matt with 3mm joints. Fixed with "Approved" Professional adhesive and Light Grey "Approved" Chemical resistant grouting mixed with approved bonding liquid. PC SUM (R400/M2)</u>			
3	On floors [LI]	m2	39
<u>Full body porcelain tile skirting (min. 10mm thick) to be laid in accordance with and to the approval of the material supplier at height of 150mm from FFL with stainless steel tile trimming on top PC SUM (R400/M2)</u>			
4	100mm High skirting [LI]	m	37
<u>SUNDRIES</u>			
<u>Brushed stainless steel corner tile trimming (to be approved by the architect) for all reveal corners of tiled door- & window openings in tiled walls</u>			
5	Straight edge [LI]	m	20
6	Corner tile trims [LI]	m	20
Carried Forward to Summary of Section No. 4			R
Section No. 4			
Bill No. 13			

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Item No		Quantity	Rate	Amount
	<u>BILL NO. 14</u>			
	<u>PLUMBING AND DRAINAGE (PROVISIONAL)</u>			
	<u>PREAMBLES</u>			
	For preambles refer to "General Specification of Materials and Methods to be used for Building Contracts" (GP /ASC)			
	<u>CPAP ADJUSTMENT</u>			
	Unless otherwise stated all items in this bill shall be deemed to fall into Work Group 146 and 148 for Contract Price Adjustment Provisions			
	<u>SUPPLEMENTARY PREAMBLES</u>			
	<u>Polypropylene pipes:</u>			
	Polypropylene pipes 54mm diameter and under shall be seamless copper coloured class 16 pipes jointed with "Fast-fuse" heat welded thermoplastic or brass compression fittings as designed for use with copper pipes as stated			
	Pipes shall be firmly fixed to walls etc with coloured nylon snap-in pipe clips with provision for accommodating thermal movement and jointed and fixed strictly in accordance with the manufacturer's instructions			
	All pipe diameters are nominal external			
	<u>Polypropylene pipes:</u>			
	Polypropylene pipes 63mm diameter and over shall be class 12 pipes jointed with cast iron "Supraclamp" running joints			
	Fusion welded bends, once or twice mitred as necessary, and tees shall be factory manufactured			
	Fusion welded bends and tees shall include jointing to pipes with PVC rubber ring double Z joint couplers			
	Carried Forward		R	
	Section No. 4 Bill No. 14			

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
<p>Branch tees shall include flanged and bolted joints to "Polycop" branch pipes in addition and for brass compression male iron to copper straight couplers</p> <p>Reducers shall include jointing to pipes with PVC rubber ring double Z joint couplers and reducers shall be of sufficient overall length to accommodate same</p> <p>All pipes shall be jointed and fixed strictly in accordance with the manufacturer's instructions</p> <p>All pipe diameters are nominal external</p> <p><u>Vitrified clay pipes:</u></p> <p>Pipes shall rest on solid ground and, where necessary, pockets of sufficient size shall be cut around joints to enable the jointing to be properly performed or, alternatively, pipes shall be bedded full length on and including unreinforced concrete laid in a semi-dry state immediately before pipes are laid</p> <p>Sewer and drainage pipes and fittings shall be jointed and sealed with butyl rubber rings</p> <p><u>uPVC pipes and fittings:</u></p> <p>Soil, waste and vent pipes and fittings shall be solvent weld jointed</p> <p><u>SOIL DRAINAGE</u></p>			
1	110mm Pipe and including excavation not exceeding 1m deep	m	20
<u>Extra over uPVC pipes for fittings</u>			
2	110mm Bend	No	2
3	110mm Access pipe	No	2
4	110mm Access junction	No	2
<u>SUNDRIES</u>			
5	Extra over excavation for excavation in soft rock	m3	2
Carried Forward			R
<p>Section No. 4 Bill No. 14</p>			

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

	Brought Forward			R
6	Extra over excavation for excavation in hard rock	m3	1	
7	Extra over excavation for carting away surplus material to a dumping site to be located by the contractor	m3	10	
8	Extra over backfilling to pipe trenches	m3	9	
9	100mm Cast iron "Approved" cleaning eye	No	1	
10	Testing drainage pipe system		Item	
<u>RAINWATER DISPOSAL</u>				
<u>Commercial and industrial Square profile aluminium seamless gutter, 0,9mm thick coated internally and externally with ColourTech G4 in colour Marble White including cut and mitred angles covered with a mitre strip externally, stop ends riveted and all sealed on the inside with Dow Corning 813 silicone sealer, secured to fibre cement fascia with 20 x 3mm dual-purpose brackets at 600mm centres using aluminium peeled rivets, including a 50 x 20mm high overflow spiggot, with 78 x 78 x 2mm thick aluminium downpipes in colour Marble White fixed to wall with straps at 1500mm centres using nail plugs, with downpipes riveted and silicone sealed to gutter outlets, including all necessary bends, elbows, shoes etc.</u>				
11	100 x 100mm Eaves gutters	m	35	
12	Extra over square eaves gutter for outlet for 78mm pipe	No	4	
13	78mm diameter galvanised rainwater downpipes	m	12	
14	Extra over round rainwater pipe for bend	No	4	
15	Extra over round rainwater pipe for shoe	No	4	
<u>SANITARY FITTINGS</u>				
<u>"Approved"</u>				
16	Approved 600 x 460mm basin, tap hole with overflow, wall mounted all as per the Architect's specifications	No	3	
Carried Forward				R
Section No. 4 Bill No. 14				

RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
17	"Approved" paraplegic 90° outlet pan and matching 9 litre cistern complete with lid, fitments, and purpose-made C.P. side-flush 5 lever (left or right) or a back inlet exposed flushvalve. Accesories to manufacturers recommendations and all complete as per the Architect's specifications	No	1
18	Approved 3 piece close-couple suite with soft close seat Pan, cistern: softclose seat & cover, all complete as per the Architect's specifications	No	2
<u>"Approved"</u>			
19	Single bowl sink 830 x 450 x 255mm all complete as per the Architect's specifications	No	1
<u>TRAPS</u>			
<u>Approved</u>			
20	"Approved" chrome 32mm bottle trap for basin with escutcheon, fixed dip tube and wall connection	No	3
<u>TAPS, VALVES</u>			
<u>Cobra or similar approved</u>			
21	Approved flush valves, exposed type toilet flush valve, top entry installations, pan connector, wall flange, seat buffer and ball-o-stop and wall flange. SANS 1240.	No	3
22	Approved "S" single lever kitchen mixer 200 with pull out spray all complete as per the Architect's specifications	No	1
23	Approved "S", single Lever basin mixer for concealed installation with spout 225 mm wall mounted. 305mm x 290mm all complete as per the Architect's specifications	No	3
Carried Forward			R
Section No. 4 Bill No. 14			

RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>SANITARY PLUMBING</u>			
<u>uPVC soil and vent pipes</u>			
24	50mm Pipes including chasing into brickwork	m	20
25	110mm Pipes including chasing into brickwork	m	5
<u>Extra over uPVC soil and vent pipes for fittings</u>			
26	50mm End cap	No	3
27	50mm Bend	No	3
28	50mm Junction	No	3
29	50mm Access bend	No	3
30	50mm Access junction	No	3
31	110mm End cap	No	1
32	110mm Pan connector	No	3
33	110mm Bend	No	3
34	110mm Junction	No	1
35	110mm Reducing junction	No	1
36	110mm Reducing double junction	No	1
37	110mm Access bend	No	1
38	110mm Air vent cowl	No	3
39	50mm Stubstack	No	3
Carried Forward			R
Section No. 4 Bill No. 14			

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
<u>Precast concrete gulleys</u>			
40	Gulley not exceeding 1m deep to invert comprising 100mm diameter vitrified clay gulley trap and head, fitted with 190mm diameter cast in iron grating, including excavating for, bedding on and encasing in mass concrete and fitted with and including precast gulley top bedded in (3:1) cement mortar	No	1
<u>Testing</u>			
41	Provide all necessary apparatus for testing of waste pipe system	Item	
<u>WATER SUPPLIES</u>			
<u>Class 0 copper pipes with capillary type soldered joints, including couplers in the running length</u>			
42	15 mm Pipes	m	60
43	22 mm Pipes	m	50
44	28 mm Pipes	m	39
45	35 mm Pipes	m	26
<u>Extra over class 0 copper pipes for capillary fittings</u>			
46	15 mm Fittings	No	60
47	22 mm Fittings	No	50
48	28 mm Fittings	No	39
49	35mm Fittings	No	26
<u>Extra over class 0 copper pipes for conex compression fittings</u>			
50	15 mm Fittings	No	20
51	22mm Fittings	No	20
Carried Forward			R
Section No. 4 Bill No. 14			

**RESIDENTIAL TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R	
<u>Copper overflow and service pipes</u>				
52	22mm Overflow pipe 500mm girth twice bent	No	10	
<u>Sundries</u>				
53	500 x 500mm Cast iron stopcock box including brick chamber below not exceeding 500mm deep internally	No	1	
<u>ELECTRIC WATER HEATERS</u>				
<u>"Approved"</u>				
54	"Approved" 2,5 litre instant boiling water unit with white epoxy powder coated outer case, and two-way tap, complete with twin-chamber technology, installed in accordance with manufacturer's recommendations	No	2	
Carried Forward to Summary of Section No. 4			R	
Section No. 4				
Bill No. 14				

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**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Item No		Quantity	Rate	Amount
	<u>BILL NO. 16</u>			
	<u>PAINTWORK</u>			
	<u>PREAMBLES</u>			
	For preambles refer to "General Specification of Materials and Methods to be used for Building Contracts" (GP /ASC)			
	<u>CPAP ADJUSTMENT</u>			
	Unless otherwise stated all items in this bill shall be deemed to fall into Work Group 152 for Contract Price Adjustment Provisions			
	<u>PREPARATORY WORK TO EXISTING WORK</u>			
	<u>New plastered walls</u>			
	Ensure plastered surface to be clean and dry before painting. New plaster must be given adequate drying time (moisture content must be less than 15%) and treat with plaster primer before the first coat of paint is applied			
	<u>Previously painted plastered surfaces</u>			
	Surfaces shall be thoroughly washed down and allowed to dry completely before any paint is applied. Blistered or peeling paint shall be completely removed and cracks shall be opened, filled with a suitable filler and finished smooth			
	<u>Previously painted metal surfaces</u>			
	Surfaces shall be thoroughly rubbed and cleaned down. Blistered or peeling paint shall be completely removed down to bare metal			
	<u>Previously painted wood surfaces</u>			
	Surfaces shall be thoroughly cleaned down. Blistered or peeling paint shall be completely removed and cracks and crevices shall be primed, filled with suitable filler and finished smooth			
	Carried Forward		R	
	Section No. 4 Bill No. 16			

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
<p><u>Previously painted surfaces to receive epoxy coating</u></p> <p><u>Previously painted surfaces are to be stripped back to the original firm substrate by abrading, flame treatments or chemical removal, using an approved paint Remover. Once contaminants have been removed the surface is to be acid etched using an approved acid diluted 1:1 with water, applied with plastic watering can at approximately 2m/lit, removing laitance and slightly roughening the surface to give a finish similar to that of fine sandpaper. Rinse the entire surface with clean water and allow to dry; normally if well ventilated.</u></p> <p><u>ON INTERNAL FLOATED PLASTER SURFACES</u></p> <p><u>Prepare one coat gypsum & plaster primer & 2 coats of superior low sheen. Final colour: TBC.</u></p>			
1	Walls	m2	470
<p><u>Prepare one coat gypsum & plaster primer & two coats of a water-based eggshell enamel paint. Final colour: TBC.</u></p>			
2	On Bathroom & Kitchen Walls	m2	132
<p><u>ON EXTERNAL FLOATED PLASTER SURFACES</u></p> <p><u>Prepare one coat of plaster primer and two coats of superior low sheen paint. Colour TBC</u></p>			
3	On walls	m2	33
<p><u>ON PLASTERBOARD SURFACES</u></p> <p><u>Prepare one coat gypsum & plaster primer & 2 coats of superior low sheen paint. Final colour: TBC.</u></p>			
4	Ceilings and cornices, including priming metal cover strips and nailheads	m2	25
Carried Forward			R
<p>Section No. 4 Bill No. 16</p>			

RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>ON FIBRE-CEMENT BOARD SURFACES</u>			
<u>One coat primer and painted two coats enamel paint.</u>			
5	Fascias and barge boards, including priming metal jointing strips	m2	56
<u>ON METAL SURFACES</u>			
<u>One coat primer and two coats enamel paint finish over edge (Colour: according to the architect).</u>			
6	New rainwater gutters and downpipes	m2	20
7	Gates, grilles, burglar screens, balustrades, etc (both sides measured over the full flat area)	m2	10
8	Rails, bars, pipes, etc	m	12
<u>ON WOOD SURFACES</u>			
<u>One coat primer and two coats enamel paint finish over edge (Colour: according to the architect).</u>			
9	Timber doors and frames	m2	40
Carried Forward to Summary of Section No. 4			R
Section No. 4			
Bill No. 16			

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**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
<u>SITE CLEARANCE</u>			
<u>Site Clearance</u>			
1	Digging up and removal of rubbish, debris, vegetation, hedges, shrubs and trees not exceeding 200mm girth, bush, etc [LI]	m2	121
<u>Remove and grub large trees and tree stumps, of girth around the trunk 1m high above ground level including grubbing of roots, filling of holes and compaction to 90% Mod AASHTO density.</u>			
2	Tree exceeding 200mm and not exceeding 500mm girth	No	1
3	Tree exceeding 500mm and not exceeding 1000mm girth	No	1
<u>Remove topsoil to nominal depth of 150mm and stockpile.</u>			
4	Stripping average 150mm thick layer of top soil and depositing material in prescribed stock piles on site	m2	18
<u>EXCAVATION, FILLING</u>			
<u>Excavation in earth not exceeding 2m deep</u>			
5	Trenches	m3	114
6	Holes	m3	11
<u>Extra over excavations in earth for excavation in</u>			
7	Soft rock	m3	11
8	Hard rock	m3	5
<u>Extra over all excavations for carting away</u>			
9	Surplus material from excavations	m3	44
<u>Risk of collapse of excavations</u>			
10	Side of trenches and holes	m2	254
Carried Forward			R
Section No. 5 Bill No. 1			

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
<u>Keeping excavations free of water</u>			
11	Keeping excavations free of all water	Item	
<u>Earth filling obtained from commercial sources compacted to 98% Mod AASHTO density</u>			
12	Under floors, steps, pavings	m3 35	
<u>Earth filling obtained from the excavations and/or prescribed stock piles on site, compacted to 98% Mod AASHTO density</u>			
13	Backfilling to trenches, holes	m3 100	
14	Under floors, steps, pavings	m3 33	
<u>Compaction of surfaces</u>			
15	Compaction of ground surface under floors	m2 117	
<u>Soil insecticide with</u>			
16	Under floors, steps, pavings	m2 117	
17	To bottom and sides of trenches	m2 335	
Carried Forward to Summary of Section No. 5			R
Section No. 5			
Bill No. 1			

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**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
<u>Finishing top surfaces of concrete smooth with a wood float</u>			
9	Surface beds, slabs, etc(LI)	m2	110
<u>Finishing top surfaces of concrete smooth with a wood float</u>			
10	Surface beds, slabs, beams, etc [LI]	m2	30
<u>Test blocks</u>			
11	150 x150 x 150mm Deep concrete cube test	No	5
<u>Expansion joints with bitumen impregnated soft board between vertical concrete and brick surfaces</u>			
12	10mm Joints not exceeding 300mm high	m	135
<u>Saw-cut joints sealed with two part flexible polyurethane joint sealant</u>			
13	6 x 30mm Saw-cut joints in top of concrete	m	46
<u>SMOOTH AND FAIR FORMWORK (DEGREE OF ACCURACY II)</u>			
14	Rectangular columns with total height not exceeding 3,5m above bearing level	m2	22
15	Beams propped to a height exceeding 3,5m and not exceeding 5m	m2	90
<u>ROUGH FORMWORK (DEGREE OF ACCURACY (III))</u>			
<u>Rough formwork to sides</u>			
16	Edges, risers, ends and reveals not exceeding 300mm high or wide	m	46
17	Rectangular columns in foundations (Provisional)	m2	10
<u>REINFORCEMENT</u>			
Carried Forward			R
Section No. 5 Bill No. 2			

RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>High tensile steel</u>			
18	Various Diameter bars	t	3.60
<u>Fabric reinforcement</u>			
19	Mesh ref 193 fabric reinforcement in concrete surface beds, slabs, etc	m2	110
Carried Forward to Summary of Section No. 5			R
Section No. 5			
Bill No. 2			

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RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>BRICKWORK</u>			
<u>Brickwork of NFX bricks (14 MPa nominal compressive strength) in class II mortar</u>			
<u>FOUNDATIONS (PROVISIONAL)</u>			
1	Half brick walls[LI]	m2	10
2	One brick walls[LI]	m2	89
<u>SUPERSTRUCTURE</u>			
<u>Brickwork of NFP bricks in class II mortar</u>			
3	Half brick walls[LI]	m2	28
4	One brick walls[LI]	m2	89
5	One brick walls in parapets[LI]	m2	10
6	One brick walls in gables[LI]	m2	11
7	One brick walls in beam filling[LI]	m2	12
<u>Brickwork reinforcement</u>			
8	75mm Wide reinforcement	m	200
9	175mm Wide reinforcement	m	1,406
<u>Turning pieces</u>			
10	110mm Wide turning piece to lintels	m	7
11	230mm Wide turning piece to lintels	m	61
<u>Galvanised wire ties etc</u>			
12	4mm Diameter roof tie 2m girth bent double, with one end built into brickwork and other end fixed to timber	No	18
<u>FACEBRICK</u>			
Carried Forward			R
Section No. 5 Bill No. 3			

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
<u>External facings (PC R11500,00/1 000) pointed with square recessed horizontal and vertical joints:</u>			
13	Extra over brickwork for face brickwork	m2	138
14	Extra over brickwork for brick-on-edge header course lintel pointed on face and 230mm soffit	m	46
<u>External facings (PC R11500,00/1 000) pointed with square recessed horizontal and vertical joints:</u>			
15	Coping on top of one brick wall including fair raking cutting	m	46
16	Extra over brickwork for brick-on-edge header course lintels one course high, pointed on face and soffit	m	12
17	Corobrik FBX 106mm single bullnose solid pointed with recessed vertical and recessed horizontal joints (Colour: to match masonry FBX walls).	m	12
<u>Internal facings to the bottom of windows (PC R5500,00/1 000) pointed with square recessed horizontal and vertical joints:</u>			
18	Extra over brickwork for face brickwork	m2	46
Carried Forward			R
Section No. 5 Bill No. 3			

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
<u>SUNDRIES</u>			
<u>Window sill, size 150mm x 15mm thick, manufactured in accordance with SANS 803:2005 and installed below window with window sill lug screwed to underside of sill at 400mm centres, minimum of 75mm from end of window sill and bedded in Class II mortar at end of sills at plaster reveals. Sill to be cut flush with wall face. Sill to be primed according to manufacturer instruction and painted enamel paint to match wall colour, all in accordance with the manufacturer's recommendations.</u>			
19	Internal Sills	m	12
<u>Pre cast concrete sills 215 x 115 x 60mm, pointed with flush joints on all exposed faces</u>			
20	Sills (precast concrete)	m	12
Carried Forward to Summary of Section No. 5			R
Section No. 5			
Bill No. 3			

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RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>FACIAS, BARGE BOARDS, ETC:</u>			
<u>Approved fibre cement fascia & barge boards, size 10 x 300mm to be primed 1 coat and painted 2 coats enamel paint. To be fixed to proper support structure with bolts within a straight line with aluminium joiners on corners and joints. (Colour: according to the architect)</u>			
1	Fibre cement fascia/barge drilled and brass screwed and including steel jointing strips between lengths.	m	46
<u>APPROVED RAILS</u>			
<u>Timber rails</u>			
2	Timber rails to have an elliptical gripping surface profile that is approximately 50 mm wide and 40 mm deep, or a circular profile of diameter not less than 35 mm and not more than 50 mm; to be fixed to the wall at 900mm high from the outdoor FFL and a minimum space of 200mm from the wall	m	46
<u>DOORS, ETC</u>			
3	Solid door with (x2) concealed edges, size 915 x 2032mm (DAB)	No	1
4	Semi-solid door with (x2) concealed edges, size 815 x 2100mm (DAJ)	No	2
<u>JOINERY SUNDRIES</u>			
<u>FITTINGS</u>			
<u>Cupboard - Kitchen</u>			
5	Kitchen wall unit comprising of 22mm thick white melamine top cupboard size 1080 x 450 x 700mm high, drawers and shelves by specialist and 22mm thick white melamine bottom floor cupboard size 1905 x 600 x 900mm high, with 80mm high Rustenberg granite splash back epoxied to 600mm wide Rustenberg worktop, pull handle as per finishing schedule & drawers and shelves by specialist. All to architect's specifications (Refer to Architect's drawing)	No	1
Carried Forward to Summary of Section No. 5			R
Section No. 5			
Bill No. 5			

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Brought Forward			R
<u>ROOF AND WALL INSULATION</u>			
<u>Alububble®, white bubble with foil backing insulation with thermal insulating, dustproofing and fire resistant capabilities complying with SANS 1381-4:2009 and tested to SANS 428. Quality in accordance with requirements of SANS 10400 Building Regulations, installations are to be to manufactures instructions and specifications. Thickness to mechanical engineer's specifications</u>			
2	Insulation blanket laid taut over purlins	m2	120
Carried Forward to Summary of Section No. 5			R
Section No. 5			
Bill No. 6			

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RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward				R
<u>Flush plastered gypsum plasterboard suspended bulkheads</u>				
Bulkheads shall comprise galvanised steel studding of 63,5mm top and bottom tracks with vertical studs at maximum 400mm centres, pop-riveted to the top and bottom tracks with similar additional vertical studs as necessary at abutments, ends, etc and covered as described with plasterboard screwed to studding with drywall screws at maximum 300mm centres. Boards shall be butt jointed and finished with tape and jointing compound and the whole finished with gypsum plaster trowelled to a smooth polished surface to the thickness recommended by the manufacturer.				
Descriptions shall be deemed to include any additional studs at ends and intersections, corner beads, cornices at junctions with ceilings, jointing compound, tape, etc				
<u>SUSPENDED CEILINGS</u>				
<u>1200 x 600 x 12,5mm vinyl faced ceiling panels laid on tees and adjustable hanger system.</u>				
1	12.5mm Vinyl Faced Ceiling Panels, face-covered with white embossed vinyl, size 1200 x 600mm, laid on fire rated S3 exposed demountable suspension system including galvanised main tees, cross tees, etc., all suspended with galvanised hangers at centres not exceeding 1200mm, with ceiling perimeter finished with Shadow-line trim plugged at 200mm centres, and all installed to manufacturer's instructions.	m2	21	
<u>Flush plasterboard ceiling fixed to concealed suspended tee system skimmed and prepared to receive 2 coats quality PVA paint</u> <u>All ceiling voids to receive 600 x 600mm access panel</u>				
2	Flush plastered ceiling	m2	77	
<u>47 x 35mm grid recessed shadowline cornice</u>				
3	Cornice, plugged to walls	m	135	
Carried Forward to Summary of Section No. 5				R
Section No. 5				
Bill No. 7				

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RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward		R	
<u>LOCKS</u>			
<u>"APPROVED"</u>			
3	Stainless Steel Toilet Cubicle Indicator bolt & lock set Grade 304 Stainless Steel indicator bolt (code: fixed to surface with matching stainless steel screws. To comply with SANS 4:2008. Finger pull handle to be fixed to door with tamper proof screws [LI]	No	2
4	Stainless Steel Security Deadlock Grade 304 Stainless steel Security Deadlock with a Deadcase plate in the door frame with Master key functioning. These type lock to be used with Push plates and Pull handles. Double side locking mechanism To comply with SANS 4:2008 [LI]	No	1
Carried Forward		R	
Section No. 5 Bill No. 9			

RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward		R	
<u>DOOR CLOSERS</u>			
<u>"APPROVED"</u>			
5	Door closer clockwise action with a standard guide rail Colour: Silver [LI]	No	1
<u>LETTERS, NAMEPLATES, ETC</u>			
<u>"APPROVED"</u>			
6	160 x 160mm stainless steel ironware outline engraved fire hose reel. [LI]	No	4
7	160 x 160mm stainless steel ironware outline engraved female sign. [LI]	No	1
8	160 x 160mm stainless steel ironware outline engraved male sign. [LI]	No	1
9	160 x 160mm stainless steel ironware outline engraved disabled sign. [LI]	No	1
GENERAL NOTES: Colour: Black lettering on white background. Fixing: To be mechanical fastened. Positioning: To be determined site with architect once signage is available on site. Font: Arial Black To be read in conjunction with Fire signage drawing.			
Section No. 5 Bill No. 9		R	
Carried Forward			

RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>PUSH PLATES AND KICK PLATES</u>			
<u>"APPROVED"</u>			
10	111 x 19mm thick push plate 160 x 160mm stainless steel back plate [LI]	No 1	
11	1.6mm stainless steel push plate 160 x 160mm [LI]	No 1	
12	1.5mm stainless steel push plate 165 x 165mm [LI]	No 1	
13	1.6mm Stainless steel kick plate [LI]	No 3	
<u>SUNDRIES</u>			
<u>"APPROVED"</u>			
14	Stainless steel cabin hook 150mm [LI]	No 1	
15	Stainless steel floor mounted door stop [LI]	No 3	
16	Stainless steel hat and coat hook with a rubber buffer [LI]	No 2	
Carried Forward			R
Section No. 5 Bill No. 9			

RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>BATHROOM FITTINGS</u>			
<u>"APPROVED"</u>			
17	"Approved" Grade 304 18/10 stainless steel with "Approved" grip paraplegic grab rails, size 640 x 640 x 96mm deep, plugged and screwed to the wall with stainless steel screws [LI]	No	1
18	"Approved" Grade 304 32mm diameter 18/10 stainless steel grab rails with "Approved" grab 750 x 95mm deep, plugged and screwed to the wall with stainless steel screws [LI]	No	1
<u>"Approved" - Towel hooks</u>			
19	"Approved" chrome towel hook and installed with manufacturer's recommendations [LI]	No	3
<u>Miscellaneous</u>			
20	3-arm dish cloth holder [LI]	m	3
21	Toilet roll holder with a prime cost of R900.00 (excl. VAT) fixed to brickwork, concrete or partitioning [LI]	No	2
22	Toilet brush and holder with a prime cost of R190.00 (excl. VAT) [LI]	No	2
23	Stainless steel bin with a prime cost of R900.00 (excl. VAT) [LI]	No	2
24	Stainless steel soap dispenser with a prime cost of R750.00 (excl. VAT) fixed to brickwork, concrete or partitioning [LI]	No	2
25	Stainless steel hand dryer with a prime cost of R4 280.00 (excl. VAT) [LI]	No	2
26	Stainless steel paper towel dispenser, including bin with a prime cost of R4 700.00 (excl. VAT) [LI]	No	2
Carried Forward to Summary of Section No. 5			R
Section No. 5			
Bill No. 9			

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**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward		R	
<p>The price for steelwork shall include all welding, holes, bolts, nuts, washers, rivets, bolting and riveting integral with structural steelwork as well as all required weld and strength testing, these shall be deemed included in the descriptions of the relevant steelwork. The only bolts and anchors measured separately shall be those fixing the steel members to the structural concrete work.</p> <p><u>For clarity</u>; fixing structural steelwork members to each other is deemed included in the description of the steelwork and has thus not been measured separately and should be priced within the steelwork rates.</p> <p>Descriptions of bolts shall be deemed to include nuts and washers. Descriptions of anchor bolts shall be deemed to include bending, threading, nuts and washers and embedding in concrete. Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork or concrete.</p> <p>All structural steelwork rates shall include the factory coat of paint only, all repair-, other- and final paintwork to structural steel members are included under a "Painting" heading in these Structural Steelwork Bills of Quantities.</p> <p>The quantities are provisional and will be re-measured upon completion of the works. The Contractor shall not use these quantities for ordering of materials. The Contractor must immediately notify the Quantity Surveyor if discrepancies are found between the quantities and/or descriptions in these Bills of Quantities and the Contractor's quantities measured from construction drawings and specifications.</p> <p><u>GALVANISED STEEL COLUMNS AND BEAMS</u></p> <p><u>Welded hollow section beams in single lengths with flat bearer and connection plates, bolted to steel</u></p>			
1	125 x 75 x 20 x 2.00mm, 4.71kg/m lipped channels in lengths not exceeding 2m	t	0.64
2	160 x 82 x 16 x 2.00mm, 15.80kg/m I sections in lengths not exceeding 3m	t	1.24
Carried Forward		R	
<p>Section No. 5 Bill No. 10</p>			

RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>STEEL PURLINS, GIRTS, BRACING,</u>			
3	100 x 50 x 20 x 2.5mm x 4.32kg/m cold-formed lipped channel purlins	t	0.32
	<u>Welded bracing, anti-sag rails, etc with flat connection plates, bolted to steel</u>		
4	30 x 30 x 3mm angle bracing	t	0.32
	<u>Welded box gutter bearers with flat cleats, bolted to steel</u>		
5	Angle longitudinal bearers	t	0.10
<u>BOLTS, FASTENERS,</u>			
6	High tensile bolts (class 8.8)	t	0.50
<u>PAINTING</u>			
	<u>Touch-up steel primer, one coat 1 universal undercoat to 2 finishing coats high gloss enamel paint</u>		
7	On structural steel columns, beams, etc	t	1.88
8	On steel purlins, girts, etc	t	0.32
9	On angle bracing	t	0.32
Carried Forward to Summary of Section No. 5			R
Section No. 5			
Bill No. 10			

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<p data-bbox="663 237 880 264">Brought Forward</p> <p data-bbox="191 306 359 333"><u>Construction</u></p> <p data-bbox="191 369 817 427">Outer frame to consist of a single part compensating head and jamb and continuous sub-Sill.</p> <p data-bbox="191 463 858 763">Infill panels are to be constructed from double cavity tubular profiles, forming a wet cavity with drainage slots to allow for transom drainage to the exterior. All glazing rebates to be 25mm. Joints of the infill panels shall be notched and screwed to spigots with No 8 stainless steel screws. Where required, a 111mm or 166mm Split mullion assembly must be used to couple infill panels together, still making allowance for all thermal and dynamic movement. Door panels within the screens to have a 4-edge door rebate with gasket seal all round.</p> <p data-bbox="191 835 333 862"><u>Installation</u></p> <p data-bbox="191 898 858 1140">All aluminium work to be done in strict accordance to the manufacturers specifications by a specialist firm. All openings to be checked on site before any materials are ordered or manufacture of window and door frames. Panel-by-panel installation from Inside or from Outside the building. All aluminium frame works to be provided with a continuous silicone seal around all construction openings.</p> <p data-bbox="191 1211 314 1238"><u>Hardware</u></p> <p data-bbox="191 1274 858 1422">All sashes to have mechanical Corner Connectors, wind locks and multi-point locking handles. Sashes not to exceed 1700mm wide by 1200mm high as per specification. Friction stay to suit max weight and size of Sash.</p> <p data-bbox="191 1458 852 1547">Door hardware shall be compatible with the system and will take cognisance of the finish specification of the applicable area. See Hardware Schedule for door.</p>	<p data-bbox="1278 237 1297 264">R</p>
<p data-bbox="675 1912 880 1939">Carried Forward</p> <p data-bbox="191 1955 359 2013">Section No. 5 Bill No. 11</p>	<p data-bbox="1278 1912 1297 1939">R</p>

<div>Brought Forward</div> <div><div>Finish</div><div>Sections will be painted in accordance with SABS1578, parts1 & 2. Powercote, and anodised aluminium, should be protected to prevent any damage or stain by cement, etc. All powder coating to be 25 micron thick and shall be executed in strict adherence to sabs 999</div></div> <div><div>Glazing</div><div>Glass thickness should be in accordance with SANS 10400 and deigned by a competent person. Glazing is to be carried out in accordance with SABS 0137, with particular attention to size limitations, packing and setting blocks. Thicknesses from 6-28mm.</div></div> <div><div>Structural Perfomance</div><div>System shall meet or exceed the requirements of SANS613 and the design loading determination by SABS 0160 for this application. Deflection of structural members shall not exceed L/175 or L/240+6mm as applicable.</div></div> <div><div>Thermal Perfomance</div><div>System shall comply with SANS204 in applications where Fenestration makes up more than 15% of Floor area. U-value with Air filled glazing units = 3.36 For U-values below 3.38 use Argon or Krypton gas filled glazing units.</div></div>	<div>R</div>
<div>Carried Forward</div> <div>Section No. 5 Bill No. 11</div>	<div>R</div>

Brought Forward			R
<u>STEEL GATES, SCREENS, ETC</u>			
<p><u>Full height exterior turnstile with high volume access and high level of security. The turnstile must be a 3 arm 120degree single unit. The Rotor diameter to be 1200mm and arm thickness of 50mm diameter tube arms spaced 120mm apart. The system must be able to intergrate with all access control and time and attendance systems, proximity reader, biometric and or push button readers. Electrically controlled bi-directional rotation (factory standard)and Mechanically controlled uni-directional rotation by means of key override and free rotation in the case of an emergency. The flat roof canopy to provide protection from the elements, Anti-climb protection and low energy light on underside of canopy. Finishes: 304 grade brushed stainless steel (Inland) and 316 grade brushed stainless steel (coastal). The turnstile must be with a bi-directional rotation System certification to comply with ISO 9001:2015 and must comply also to CE conformity. Unit to have a 10 year mechanical guarantee. The turnstile must be fiited with a gate for disabled persons.</u></p>			
1	Electrical Industrial type full height turnstile with a gate for disabled people and as an emergency exit.	No	1
<u>DOOR FRAMES, DOORS, WINDOWS,</u>			
<p><u>Standard heavy duty double rebated pressed mild steel doorframe with factory red oxide primer for doorswing and wall thickness as indicated on plan with (x2) coat enamel paint finish over edge (Colour: according to the architect). Frame to accommodate for screeded floor finish.</u></p>			
2	Frame for door size 815 x 2100mm (DAJ)	No	1
3	Frame for door size 915 x 2032mm (DAB)	No	2
<u>ALUMINIUM WINDOWS</u>			
Carried Forward			R
Section No. 5 Bill No. 11			

RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>Purpose made powder coated windows including glazing and ironmongery complete plugged to brickwork or concrete</u>			
4	Top hung casement aluminium windows overall size of 1800 x 600mm, able to meet the performance requirements of SANSA 613. Mullion to be plugged or screwed to brickwork. Glazing shall be executed strictly in conformance with glass manufacturer's recommendations and SAND 10137:2011 all in accordance with SANS10400 Parts B, N, XA. W2	No	3
5	Top hung casement aluminium windows overall size of 600 x 900mm, able to meet the performance requirements of SANSA 613. Mullion to be plugged or screwed to brickwork. Glazing shall be executed strictly in conformance with glass manufacturer's recommendations and SAND 10137:2011 all in accordance with SANS10400 Parts B, N, XA. W4	No	4
<u>GALVANISED STEEL HANDRAILS</u>			
<u>Welded handrails to walkways and ramps</u>			
6	Steel Connection 50mm diameter, wall mounted mild steel handrail, to follow line of stair at 1000mm high	m	12
<u>Welded balustrades</u>			
7	Mild steel railings consisting of 1000mm high, 90° 54mm Ø x 2.0mm stanchions spaced at 1600mm centres, with 44mm Ø x 2.0mm hand/knee rails. Top mounted stanchions to be fitted with baseplates pre-drilled with 30 x 18mm slotted holes for fixing to concrete/metal surface, including all necessary bends, closures, ferrules etc. as indicated on drawings	m	12
<u>STEEL ROLLER SHUTTERS ETC</u>			
<u>"Approved" Fire rated roller shutter doorby Stab-a-load</u>			
8	Opening size 3000mm x 3000mm high, fixed to brickwork, complete	No	4
Carried Forward to Summary of Section No. 5			R
Section No. 5			
Bill No. 11			

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RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>WALL TILING</u>			
<u>200mm x 200 White Ceramic approved tiles over all basins and sinks. Or similar approved to be laid in accordance with and to the approval of the material supplier with appropriate tinted grout. "Approved" natural anodised 10mm high Elite aluminium straight edge trim, laid in tile adhesive while wall tiles are being installed or similar approved. Ceramic tiles (min. 10mm thick) PC SUM (R250/M2)</u>			
1	On walls in isolated panels, splashbacks, etc [LI]	m2	103
2	On narrow widths [LI]	m2	10
<u>FLOOR TILING</u>			
<u>600 x 600mm "Approved" dark grey matt with 3mm joints. Fixed with "Approved" Professional adhesive and Light Grey "Approved" Chemical resistant grouting mixed with approved bonding liquid. PC SUM (R400/M2)</u>			
3	On floors [LI]	m2	110
<u>Full body porcelain tile skirting (min. 10mm thick) to be laid in accordance with and to the approval of the material supplier at height of 150mm from FFL with stainless steel tile trimming on top PC SUM (R400/M2)</u>			
4	100mm High skirting [LI]	m	135
<u>SUNDRIES</u>			
<u>Brushed stainless steel corner tile trimming (to be approved by the architect) for all reveal corners of tiled door- & window openings in tiled walls</u>			
5	Straight edge [LI]	m	24
6	Corner tile trims [LI]	m	24
Carried Forward to Summary of Section No. 5			R
Section No. 5			
Bill No. 13			

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Item No		Quantity	Rate	Amount
	<u>BILL NO. 14</u>			
	<u>PLUMBING AND DRAINAGE (PROVISIONAL)</u>			
	<u>PREAMBLES</u>			
	For preambles refer to "General Specification of Materials and Methods to be used for Building Contracts" (GP /ASC)			
	<u>CPAP ADJUSTMENT</u>			
	Unless otherwise stated all items in this bill shall be deemed to fall into Work Group 146 and 148 for Contract Price Adjustment Provisions			
	<u>SUPPLEMENTARY PREAMBLES</u>			
	<u>Polypropylene pipes:</u>			
	Polypropylene pipes 54mm diameter and under shall be seamless copper coloured class 16 pipes jointed with "Fast-fuse" heat welded thermoplastic or brass compression fittings as designed for use with copper pipes as stated			
	Pipes shall be firmly fixed to walls etc with coloured nylon snap-in pipe clips with provision for accommodating thermal movement and jointed and fixed strictly in accordance with the manufacturer's instructions			
	All pipe diameters are nominal external			
	<u>Polypropylene pipes:</u>			
	Polypropylene pipes 63mm diameter and over shall be class 12 pipes jointed with cast iron "Supraclamp" running joints			
	Fusion welded bends, once or twice mitred as necessary, and tees shall be factory manufactured			
	Fusion welded bends and tees shall include jointing to pipes with PVC rubber ring double Z joint couplers			
	Carried Forward		R	
	Section No. 5 Bill No. 14			

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
<p>Branch tees shall include flanged and bolted joints to "Polycop" branch pipes in addition and for brass compression male iron to copper straight couplers</p> <p>Reducers shall include jointing to pipes with PVC rubber ring double Z joint couplers and reducers shall be of sufficient overall length to accommodate same</p> <p>All pipes shall be jointed and fixed strictly in accordance with the manufacturer's instructions</p> <p>All pipe diameters are nominal external</p> <p><u>Vitrified clay pipes:</u></p> <p>Pipes shall rest on solid ground and, where necessary, pockets of sufficient size shall be cut around joints to enable the jointing to be properly performed or, alternatively, pipes shall be bedded full length on and including unreinforced concrete laid in a semi-dry state immediately before pipes are laid</p> <p>Sewer and drainage pipes and fittings shall be jointed and sealed with butyl rubber rings</p> <p><u>uPVC pipes and fittings:</u></p> <p>Soil, waste and vent pipes and fittings shall be solvent weld jointed</p> <p><u>SOIL DRAINAGE</u></p>			
1	110mm Pipe and including excavation not exceeding 1m deep	m	20
<u>Extra over uPVC pipes for fittings</u>			
2	110mm Bend	No	2
3	110mm Access pipe	No	2
4	110mm Access junction	No	2
<u>SUNDRIES</u>			
5	Extra over excavation for excavation in soft rock	m3	2
Carried Forward			R
<p>Section No. 5 Bill No. 14</p>			

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward				R
6	Extra over excavation for excavation in hard rock	m3	1	
7	Extra over excavation for carting away surplus material to a dumping site to be located by the contractor	m3	10	
8	Extra over backfilling to pipe trenches	m3	9	
9	100mm Cast iron "Approved" cleaning eye	No	1	
10	Testing drainage pipe system		Item	
<u>RAINWATER DISPOSAL</u>				
<u>Commercial and industrial Square profile aluminium seamless gutter, 0,9mm thick coated internally and externally with ColourTech G4 in colour Marble White including cut and mitred angles covered with a mitre strip externally, stop ends riveted and all sealed on the inside with Dow Corning 813 silicone sealer, secured to fibre cement fascia with 20 x 3mm dual-purpose brackets at 600mm centres using aluminium peeled rivets, including a 50 x 20mm high overflow spiggot, with 78 x 78 x 2mm thick aluminium downpipes in colour Marble White fixed to wall with straps at 1500mm centres using nail plugs, with downpipes riveted and silicone sealed to gutter outlets, including all necessary bends, elbows, shoes etc.</u>				
11	100 x 100mm Eaves gutters	m	35	
12	Extra over square eaves gutter for outlet for 78mm pipe	No	4	
13	78mm diameter galvanised rainwater downpipes	m	12	
14	Extra over round rainwater pipe for bend	No	4	
15	Extra over round rainwater pipe for shoe	No	4	
<u>SANITARY FITTINGS</u>				
<u>"Approved"</u>				
16	Approved 600 x 460mm basin, tap hole with overflow, wall mounted all as per the Architect's specifications	No	3	
Carried Forward				R
Section No. 5 Bill No. 14				

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
17	"Approved" paraplegic 90° outlet pan and matching 9 litre cistern complete with lid, fitments, and purpose-made C.P. side-flush 5 lever (left or right) or a back inlet exposed flushvalve. Accesories to manufacturers recommendations and all complete as per the Architect's specifications	No	1
18	Approved 3 piece close-couple suite with soft close seat Pan, cistern: softclose seat & cover, all complete as per the Architect's specifications	No	2
<u>"Approved"</u>			
19	Single bowl sink 830 x 450 x 255mm all complete as per the Architect's specifications	No	1
<u>TRAPS</u>			
<u>Approved</u>			
20	"Approved" chrome 32mm bottle trap for basin with escutcheon, fixed dip tube and wall connection	No	3
<u>TAPS, VALVES</u>			
<u>Cobra or similar approved</u>			
21	Approved flush valves, exposed type toilet flush valve, top entry installations, pan connector, wall flange, seat buffer and ball-o-stop and wall flange. SANS 1240.	No	3
22	Approved "S" single lever kitchen mixer 200 with pull out spray all complete as per the Architect's specifications	No	1
23	Approved "S", single Lever basin mixer for concealed installation with spout 225 mm wall mounted. 305mm x 290mm all complete as per the Architect's specifications	No	3
Carried Forward			R
Section No. 5 Bill No. 14			

RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>SANITARY PLUMBING</u>			
<u>uPVC soil and vent pipes</u>			
24	50mm Pipes including chasing into brickwork	m	20
25	110mm Pipes including chasing into brickwork	m	5
<u>Extra over uPVC soil and vent pipes for fittings</u>			
26	50mm End cap	No	3
27	50mm Bend	No	3
28	50mm Junction	No	3
29	50mm Access bend	No	3
30	50mm Access junction	No	3
31	110mm End cap	No	1
32	110mm Pan connector	No	3
33	110mm Bend	No	3
34	110mm Junction	No	1
35	110mm Reducing junction	No	1
36	110mm Reducing double junction	No	1
37	110mm Access bend	No	1
38	110mm Air vent cowl	No	3
39	50mm Stubstack	No	3
Carried Forward			R
Section No. 5 Bill No. 14			

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
<u>Precast concrete gulleys</u>			
40	Gulley not exceeding 1m deep to invert comprising 100mm diameter vitrified clay gulley trap and head, fitted with 190mm diameter cast in iron grating, including excavating for, bedding on and encasing in mass concrete and fitted with and including precast gulley top bedded in (3:1) cement mortar	No	1
<u>Testing</u>			
41	Provide all necessary apparatus for testing of waste pipe system	Item	
<u>WATER SUPPLIES</u>			
<u>Class 0 copper pipes with capillary type soldered joints, including couplers in the running length</u>			
42	15 mm Pipes	m	60
43	22 mm Pipes	m	50
44	28 mm Pipes	m	39
45	35 mm Pipes	m	26
<u>Extra over class 0 copper pipes for capillary fittings</u>			
46	15 mm Fittings	No	60
47	22 mm Fittings	No	50
48	28 mm Fittings	No	39
49	35mm Fittings	No	26
<u>Extra over class 0 copper pipes for conex compression fittings</u>			
50	15 mm Fittings	No	20
51	22mm Fittings	No	20
Carried Forward			R
Section No. 5 Bill No. 14			

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R	
<u>Copper overflow and service pipes</u>				
52	22mm Overflow pipe 500mm girth twice bent	No	10	
<u>Sundries</u>				
53	500 x 500mm Cast iron stopcock box including brick chamber below not exceeding 500mm deep internally	No	1	
<u>ELECTRIC WATER HEATERS</u>				
<u>"Approved"</u>				
54	"Approved" 2,5 litre instant boiling water unit with white epoxy powder coated outer case, and two-way tap, complete with twin-chamber technology, installed in accordance with manufacturer's recommendations	No	1	
Carried Forward to Summary of Section No. 5			R	
Section No. 5				
Bill No. 14				

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**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Item No		Quantity	Rate	Amount
	<u>BILL NO. 16</u>			
	<u>PAINTWORK</u>			
	<u>PREAMBLES</u>			
	For preambles refer to "General Specification of Materials and Methods to be used for Building Contracts" (GP /ASC)			
	<u>CPAP ADJUSTMENT</u>			
	Unless otherwise stated all items in this bill shall be deemed to fall into Work Group 152 for Contract Price Adjustment Provisions			
	<u>PREPARATORY WORK TO EXISTING WORK</u>			
	<u>New plastered walls</u>			
	Ensure plastered surface to be clean and dry before painting. New plaster must be given adequate drying time (moisture content must be less than 15%) and treat with plaster primer before the first coat of paint is applied			
	<u>Previously painted plastered surfaces</u>			
	Surfaces shall be thoroughly washed down and allowed to dry completely before any paint is applied. Blistered or peeling paint shall be completely removed and cracks shall be opened, filled with a suitable filler and finished smooth			
	<u>Previously painted metal surfaces</u>			
	Surfaces shall be thoroughly rubbed and cleaned down. Blistered or peeling paint shall be completely removed down to bare metal			
	<u>Previously painted wood surfaces</u>			
	Surfaces shall be thoroughly cleaned down. Blistered or peeling paint shall be completely removed and cracks and crevices shall be primed, filled with suitable filler and finished smooth			
	Carried Forward		R	
	Section No. 5 Bill No. 16			

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
<u>Previously painted surfaces to receive epoxy coating</u> <u>Previously painted surfaces are to be stripped back to the original firm substrate by abrading, flame treatments or chemical removal, using an approved paint Remover. Once contaminants have been removed the surface is to be acid etched using an approved acid diluted 1:1 with water, applied with plastic watering can at approximately 2m/lit, removing laitance and slightly roughening the surface to give a finish similar to that of fine sandpaper. Rinse the entire surface with clean water and allow to dry; normally if well ventilated.</u> <u>ON INTERNAL FLOATED PLASTER SURFACES</u> <u>Prepare one coat gypsum & plaster primer & 2 coats of superior low sheen. Final colour: TBC.</u>			
1	Walls	m2	405
<u>Prepare one coat gypsum & plaster primer & two coats of a water-based eggshell enamel paint. Final colour: TBC.</u>			
2	On Bathroom & Kitchen Walls	m2	103
<u>ON EXTERNAL FLOATED PLASTER SURFACES</u> <u>Prepare one coat of plaster primer and two coats of superior low sheen paint. Colour TBC</u>			
3	On walls	m2	23
<u>ON PLASTERBOARD SURFACES</u> <u>Prepare one coat gypsum & plaster primer & 2 coats of superior low sheen paint. Final colour: TBC.</u>			
4	Ceilings and cornices, including priming metal cover strips and nailheads	m2	77
Carried Forward			R
Section No. 5 Bill No. 16			

RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>ON FIBRE-CEMENT BOARD SURFACES</u>			
<u>One coat primer and painted two coats enamel paint.</u>			
5	Fascias and barge boards, including priming metal jointing strips	m2	12
<u>ON METAL SURFACES</u>			
<u>One coat primer and two coats enamel paint finish over edge (Colour: according to the architect).</u>			
6	New rainwater gutters and downpipes	m2	21
7	Gates, grilles, burglar screens, balustrades, etc (both sides measured over the full flat area)	m2	12
8	Rails, bars, pipes, etc	m	12
<u>ON WOOD SURFACES</u>			
<u>One coat primer and two coats enamel paint finish over edge (Colour: according to the architect).</u>			
9	Timber doors and frames	m2	4
Carried Forward to Summary of Section No. 5			R
Section No. 5			
Bill No. 16			

Carried to Final Summary

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**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
<u>SITE CLEARANCE</u>			
<u>Site Clearance</u>			
1	Digging up and removal of rubbish, debris, vegetation, hedges, shrubs and trees not exceeding 200mm girth, bush, etc [LI]	m2	97
<u>Remove and grub large trees and tree stumps, of girth around the trunk 1m high above ground level including grubbing of roots, filling of holes and compaction to 90% Mod AASHTO density.</u>			
2	Tree exceeding 200mm and not exceeding 500mm girth	No	1
3	Tree exceeding 500mm and not exceeding 1000mm girth	No	1
<u>Remove topsoil to nominal depth of 150mm and stockpile.</u>			
4	Stripping average 150mm thick layer of top soil and depositing material in prescribed stock piles on site	m2	15
<u>EXCAVATION, FILLING</u>			
<u>Excavation in earth not exceeding 2m deep</u>			
5	Trenches	m3	183
6	Holes	m3	18
<u>Extra over excavations in earth for excavation in</u>			
7	Soft rock	m3	18
8	Hard rock	m3	9
<u>Extra over all excavations for carting away</u>			
9	Surplus material from excavations	m3	74
<u>Risk of collapse of excavations</u>			
10	Side of trenches and holes	m2	406
Carried Forward			R
Section No. 6 Bill No. 1			

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
<u>Keeping excavations free of water</u>			
11	Keeping excavations free of all water	Item	
<u>Earth filling obtained from commercial sources compacted to 98% Mod AASHTO density</u>			
12	Under floors, steps, pavings	m3 29	
<u>Earth filling obtained from the excavations and/or prescribed stock piles on site, compacted to 98% Mod AASHTO density</u>			
13	Backfilling to trenches, holes	m3 109	
14	Under floors, steps, pavings	m3 29	
<u>Compaction of surfaces</u>			
15	Compaction of ground surface under floors	m2 97	
<u>Soil insecticide with</u>			
16	Under floors, steps, pavings	m2 97	
17	To bottom and sides of trenches	m2 544	
Carried Forward to Summary of Section No. 6			R
Section No. 6			
Bill No. 1			

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**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
<u>Test blocks</u>			
8	150 x150 x 150mm Deep concrete cube test	No	10
<u>Expansion joints with bitumen impregnated soft board between vertical concrete and brick surfaces</u>			
9	10mm Joints not exceeding 300mm high	m	187
<u>Saw-cut joints sealed with two part flexible polyurethane joint sealant</u>			
10	6 x 30mm Saw-cut joints in top of concrete	m	41
<u>SMOOTH AND FAIR FORMWORK (DEGREE OF ACCURACY II)</u>			
<u>Smooth formwork to soffits</u>			
11	Slabs not exceeding 250mm thick propped to a height propped to a height exceeding 3,5m and not exceeding 5m	m2	52
<u>ROUGH FORMWORK (DEGREE OF ACCURACY (III))</u>			
<u>Rough formwork to sides</u>			
12	Edges, risers, ends and reveals not exceeding 300mm high or wide	m	105
<u>REINFORCEMENT</u>			
<u>High tensile steel</u>			
13	Various Diameter bars	t	5.76
<u>Fabric reinforcement</u>			
14	Mesh ref 193 fabric reinforcement in concrete surface beds, slabs, etc	m2	97
Carried Forward to Summary of Section No. 6			R
Section No. 6			
Bill No. 2			

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RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>BRICKWORK</u>			
<u>Brickwork of NFX bricks (14 MPa nominal compressive strength) in class II mortar</u>			
<u>FOUNDATIONS (PROVISIONAL)</u>			
1	Half brick walls[LI]	m2	46
2	One brick walls[LI]	m2	113
<u>SUPERSTRUCTURE</u>			
<u>Brickwork of NFP bricks in class II mortar</u>			
3	Half brick walls[LI]	m2	103
4	One brick walls[LI]	m2	309
5	One brick walls in parapets[LI]	m2	21
6	One brick walls in gables[LI]	m2	6
7	One brick walls in beam filling[LI]	m2	14
<u>Brickwork reinforcement</u>			
8	75mm Wide reinforcement	m	844
9	175mm Wide reinforcement	m	2,359
<u>Turning pieces</u>			
10	110mm Wide turning piece to lintels	m	44
11	230mm Wide turning piece to lintels	m	44
<u>Galvanised wire ties etc</u>			
12	4mm Diameter roof tie 2m girth bent double, with one end built into brickwork and other end fixed to timber	No	21
<u>FACEBRICK</u>			
Carried Forward			R
Section No. 6 Bill No. 3			

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
<u>External facings (PC R11500,00/1 000) pointed with square recessed horizontal and vertical joints:</u>			
13	Extra over brickwork for face brickwork	m2	161
14	Extra over brickwork for brick-on-edge header course lintel pointed on face and 230mm soffit	m	44
<u>External facings (PC R11500,00/1 000) pointed with square recessed horizontal and vertical joints:</u>			
15	Coping on top of one brick wall including fair raking cutting	m	44
16	Extra over brickwork for brick-on-edge header course lintels one course high, pointed on face and soffit	m	44
17	Corobrik FBX 106mm single bullnose solid pointed with recessed vertical and recessed horizontal joints (Colour: to match masonry FBX walls).	m	24
<u>Internal facings to the bottom of windows (PC R11500,00/1 000) pointed with square recessed horizontal and vertical joints:</u>			
18	Extra over brickwork for face brickwork	m2	75
Carried Forward			R
Section No. 6 Bill No. 3			

RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
SUNDRIES			
<u>Window sill, size 150mm x 15mm thick, manufactured in accordance with SANS 803:2005 and installed below window with window sill lug screwed to underside of sill at 400mm centres, minimum of 75mm from end of window sill and bedded in Class II mortar at end of sills at plaster reveals. Sill to be cut flush with wall face. Sill to be primed according to manufacturer instruction and painted enamel paint to match wall colour, all in accordance with the manufacturer's recommendations.</u>			
19	Internal Sills	m	24
<u>Pre cast concrete sills 215 x 115 x 60mm, pointed with flush joints on all exposed faces</u>			
20	Sills (precast concrete)	m	24
Carried Forward to Summary of Section No. 6			R
Section No. 6			
Bill No. 3			

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RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>FACIAS, BARGE BOARDS, ETC:</u>			
<u>Approved fibre cement fascia & barge boards, size 10 x 300mm to be primed 1 coat and painted 2 coats enamel paint. To be fixed to proper support structure with bolts within a straight line with aluminium joiners on corners and joints. (Colour: according to the architect)</u>			
1	Fibre cement fascia/barge drilled and brass screwed and including steel jointing strips between lengths.	m	52
<u>APPROVED RAILS</u>			
<u>Timber rails</u>			
2	Timber rails to have an elliptical gripping surface profile that is approximately 50 mm wide and 40 mm deep, or a circular profile of diameter not less than 35 mm and not more than 50 mm; to be fixed to the wall at 900mm high from the outdoor FFL and a minimum space of 200mm from the wall	m	52
<u>DOORS, ETC</u>			
<u>Heavy Duty Solid Door</u>			
3	Solid door with (x2) concealed edges, size 1830 x 2083mm (DAE)	No	2
4	Solid door with (x2) concealed edges, size 915 x 2032mm (DAB)	No	2
<u>Medium Duty Semi-Solid Door</u>			
5	Semi-solid door with (x2) concealed edges, size 815 x 2100mm (DAJ)	No	10
Carried Forward to Summary of Section No. 6			R
Section No. 6			
Bill No. 5			

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Brought Forward				R
<u>ROOF AND WALL INSULATION</u>				
<u>Alububble®, white bubble with foil backing insulation with thermal insulating, dustproofing and fire resistant capabilities complying with SANS 1381-4:2009 and tested to SANS 428. Quality in accordance with requirements of SANS 10400 Building Regulations, installations are to be to manufactures instructions and specifications. Thickness to mechanical engineer's specifications</u>				
2	Insulation blanket laid taut over purlins	m2	72	
Carried Forward to Summary of Section No. 6				R
Section No. 6				
Bill No. 6				

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RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>Flush plastered gypsum plasterboard suspended bulkheads</u>			
Bulkheads shall comprise galvanised steel studding of 63,5mm top and bottom tracks with vertical studs at maximum 400mm centres, pop-riveted to the top and bottom tracks with similar additional vertical studs as necessary at abutments, ends, etc and covered as described with plasterboard screwed to studding with drywall screws at maximum 300mm centres. Boards shall be butt jointed and finished with tape and jointing compound and the whole finished with gypsum plaster trowelled to a smooth polished surface to the thickness recommended by the manufacturer.			
Descriptions shall be deemed to include any additional studs at ends and intersections, corner beads, cornices at junctions with ceilings, jointing compound, tape, etc			
<u>SUSPENDED CEILINGS</u>			
<u>Flush plasterboard ceiling fixed to concealed suspended tee system skimmed and prepared to receive 2 coats quality PVA paint</u>			
<u>All ceiling voids to receive 600 x 600mm access panel</u>			
1	Flush plastered ceiling	m2	72
2	Extra over ceiling for 650 x 650mm trap door complete with trimmers, frame, cross branders, ceiling board, hinges and including all necessary ironmongery	No	2
<u>47 x 35mm grid recessed shadowline cornice</u>			
3	Cornice, plugged to walls	m	52
Carried Forward to Summary of Section No. 6			R
Section No. 6			
Bill No. 7			

-211-

Brought Forward			R
<u>CPAP ADJUSTMENT</u>			
Unless otherwise stated all items in this bill shall be deemed to fall into Work Group 130 for Contract Price Adjustment Provisions			
<u>FLOOR COVERINGS</u>			
<u>Approved Walk-off mat suitable for interior & exterior covered entrances.</u>			
<u>Approved Walk-off mat, overall size 4000mm or 3000mm x 12mm consisting of 100% polypropylene course fibre needle felt brushes alternated with soft strips to effectively scrape & dry with anti-slip latex backing glued in recess bedded into screed (by others), installed in accordance with the manufacturer's recommendations. To be vacuum cleaned regularly. Samples required for architect and client's approval.</u>			
1	Walk-off mats	m2	4
Carried Forward to Summary of Section No. 6			R
Section No. 6			
Bill No. 8			

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RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>LOCKS</u>			
<u>"APPROVED"</u>			
3	Nickel plated 60mm double cylinder master keyed [LI]	No	3
4	Double panic set for rebated double doors [LI]	No	2
5	Stainless Steel Toilet Cubicle Indicator bolt & lock set Grade 304 Stainless Steel indicator bolt (code: fixed to surface with matching stainless steel screws. To comply with SANS 4:2008. Finger pull handle to be fixed to door with tamper proof screws [LI]	No	2
6	Stainless Steel Security Deadlock Grade 304 Stainless steel Security Deadlock with a Deadcase plate in the door frame with Master key functioning. These type lock to be used with Push plates and Pull handles. Double side locking mechanism To comply with SANS 4:2008 [LI]	No	1
7	Stainless Steel cylinder lock 60mm Grade 304 Stainless steel Euro profile Double with 6 pin and Master keyed To comply with SANS 4:2008 [LI]	No	1
8	Stainless Steel Toilet Cubicle Indicator bolt & lock set Grade 304 Stainless Steel disabled indicator bolt, fixed to surface with matching stainless steel screws. To comply with SANS 4:2008. Finger pull handle to be fixed to door with tamper proof screws [LI]	No	1
9	Stainless steel 76mm commercial cylinder sash lock [LI]	No	1
10	Nickel plated 66mm knob cylinder - master keyed [LI]	No	1
11	Single panic bolt complete, Colour:Silver [LI]	No	1
12	Outside access device lever W/O cylinder [LI]	No	1
13	Nickel plated single cylinder - master keyed [LI]	No	1
Carried Forward			R
Section No. 6 Bill No. 9			

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RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>DOOR CLOSERS</u>			
<u>"APPROVED"</u>			
14	Door closer clockwise action with a standard guide rail Colour: Silver [LI]	No 1	
15	Door closer with parallel arm bracket [LI]	No 1	
16	Door closer with a clockwise action inclusive of guide rail [LI]	No 1	
17	Door closer with a clockwise action including standard and parallel arm [LI]	No 1	
<u>LETTERS, NAMEPLATES, ETC</u>			
<u>"APPROVED"</u>			
18	160 x 160mm stainless steel ironware outline engraved fire hose reel. [LI]	No 3	
19	160 x 160mm stainless steel ironware outline engraved female sign. [LI]	No 1	
20	160 x 160mm stainless steel ironware outline engraved male sign. [LI]	No 1	
21	160 x 160mm stainless steel ironware outline engraved disabled sign. [LI]	No 1	
22	160 x 160mm stainless steel ironware outline engraved shower sign. [LI]	No 1	
GENERAL NOTES: Colour: Black lettering on white background. Fixing: To be mechanical fastened. Positioning: To be determined site with architect once signage is available on site. Font: Arial Black To be read in conjunction with Fire signage drawing.			
Carried Forward			R
Section No. 6 Bill No. 9			

RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>PUSH PLATES AND KICK PLATES</u>			
<u>"APPROVED"</u>			
23	111 x 19mm thick push plate 160 x 160mm stainless steel back plate [LI]	No 2	
24	1.6mm stainless steel push plate 160 x 160mm [LI]	No 5	
25	1.5mm stainless steel push plate 165 x 165mm [LI]	No 4	
26	1.6mm Stainless steel kick plate [LI]	No 11	
<u>SUNDRIES</u>			
<u>"APPROVED"</u>			
27	Stainless steel cabin hook 150mm [LI]	No 9	
28	Stainless steel floor mounted door stop [LI]	No 6	
29	Floor mounted rubber door stop [LI]	No 5	
30	Stainless steel hat and coat hook with a rubber buffer [LI]	No 2	
31	Nickel plated patent screw 40-55mm [LI]	No 11	
32	Dust keep[LI]	No 11	
Carried Forward			R
Section No. 6 Bill No. 9			

RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>BATHROOM FITTINGS</u>			
<u>"APPROVED"</u>			
33	"Approved" Grade 304 18/10 stainless steel with "Approved" grip paraplegic grab rails, size 640 x 640 x 96mm deep, plugged and screwed to the wall with stainless steel screws [LI]	No	2
34	"Approved" Grade 304 32mm diameter 18/10 stainless steel grab rails with "Approved" grab 750 x 95mm deep, plugged and screwed to the wall with stainless steel screws [LI]	No	2
<u>"Approved" - Towel hooks</u>			
35	"Approved" chrome towel hook and installed with manufacturer's recommendations [LI]	No	2
<u>Miscellaneous</u>			
36	Toilet roll holder with a prime cost of R900.00 (excl. VAT) fixed to brickwork, concrete or partitioning [LI]	No	12
37	Toilet brush and holder with a prime cost of R190.00 (excl. VAT) [LI]	No	12
38	Stainless steel bin with a prime cost of R900.00 (excl. VAT) [LI]	No	2
39	Stainless steel soap dispenser with a prime cost of R750.00 (excl. VAT) fixed to brickwork, concrete or partitioning [LI]	No	6
40	Stainless steel hand dryer with a prime cost of R4 280.00 (excl. VAT) [LI]	No	2
41	Stainless steel paper towel dispenser, including bin with a prime cost of R4 700.00 (excl. VAT) [LI]	No	6
42	"Approved" stainless steel wall mounted urinal divider with surface satin finished, sheet material thickness 1.5mm and frame of 32mm pipe diameter, with two stainless steel covers for hidden mounting included screws and dowels, complete [LI]	No	3
Carried Forward to Summary of Section No. 6			R
Section No. 6			
Bill No. 9			

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**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward		R	
<p>The price for steelwork shall include all welding, holes, bolts, nuts, washers, rivets, bolting and riveting integral with structural steelwork as well as all required weld and strength testing, these shall be deemed included in the descriptions of the relevant steelwork. The only bolts and anchors measured separately shall be those fixing the steel members to the structural concrete work.</p> <p><u>For clarity</u>; fixing structural steelwork members to each other is deemed included in the description of the steelwork and has thus not been measured separately and should be priced within the steelwork rates.</p> <p>Descriptions of bolts shall be deemed to include nuts and washers. Descriptions of anchor bolts shall be deemed to include bending, threading, nuts and washers and embedding in concrete. Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork or concrete.</p> <p>All structural steelwork rates shall include the factory coat of paint only, all repair-, other- and final paintwork to structural steel members are included under a "Painting" heading in these Structural Steelwork Bills of Quantities.</p> <p>The quantities are provisional and will be re-measured upon completion of the works. The Contractor shall not use these quantities for ordering of materials. The Contractor must immediately notify the Quantity Surveyor if discrepancies are found between the quantities and/or descriptions in these Bills of Quantities and the Contractor's quantities measured from construction drawings and specifications.</p> <p><u>GALVANISED STEEL COLUMNS AND BEAMS</u></p> <p><u>Welded hollow section beams in single lengths with flat bearer and connection plates, bolted to steel</u></p>			
1	125 x 75 x 20 x 2.00mm, 4.71kg/m lipped channels in lengths not exceeding 2m	t	0.64
2	160 x 82 x 16 x 2.00mm, 15.80kg/m I sections in lengths not exceeding 3m	t	1.24
Carried Forward		R	
<p>Section No. 6 Bill No. 10</p>			

RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>STEEL PURLINS, GIRTS, BRACING,</u>			
3	100 x 50 x 20 x 2.5mm x 4.32kg/m cold-formed lipped channel purlins	t	0.32
	<u>Welded bracing, anti-sag rails, etc with flat connection plates, bolted to steel</u>		
4	30 x 30 x 3mm angle bracing	t	0.32
	<u>Welded box gutter bearers with flat cleats, bolted to steel</u>		
5	Angle longitudinal bearers	t	0.10
<u>BOLTS, FASTENERS,</u>			
6	High tensile bolts (class 8.8)	t	0.50
<u>PAINTING</u>			
	<u>Touch-up steel primer, one coat 1 universal undercoat to 2 finishing coats high gloss enamel paint</u>		
7	On structural steel columns, beams, etc	t	1.88
8	On steel purlins, girts, etc	t	0.32
9	On angle bracing	t	0.32
Carried Forward to Summary of Section No. 6			R
Section No. 6			
Bill No. 10			

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<div>Brought Forward</div> <div><div>Construction</div><p>Outer frame to consist of a single part compensating head and jamb and continuous sub-Sill.</p><p>Infill panels are to be constructed from double cavity tubular profiles, forming a wet cavity with drainage slots to allow for transom drainage to the exterior. All glazing rebates to be 25mm. Joints of the infill panels shall be notched and screwed to spigots with No 8 stainless steel screws. Where required, a 111mm or 166mm Split mullion assembly must be used to couple infill panels together, still making allowance for all thermal and dynamic movement. Door panels within the screens to have a 4-edge door rebate with gasket seal all round.</p><div>Installation</div><p>All aluminium work to be done in strict accordance to the manufacturers specifications by a specialist firm. All openings to be checked on site before any materials are ordered or manufacture of window and door frames. Panel-by-panel installation from Inside or from Outside the building. All aluminium frame works to be provided with a continuous silicone seal around all construction openings.</p><div>Hardware</div><p>All sashes to have mechanical Corner Connectors, wind locks and multi-point locking handles. Sashes not to exceed 1700mm wide by 1200mm high as per specification. Friction stay to suit max weight and size of Sash.</p><p>Door hardware shall be compatible with the system and will take cognisance of the finish specification of the applicable area. See Hardware Schedule for door.</p></div>	<div>R</div>
<div>Carried Forward</div> <div>Section No. 6 Bill No. 11</div>	<div>R</div>

Brought Forward		R
<p><u>Finish</u></p> <p>Sections will be painted in accordance with SABS1578, parts1 & 2. Powercote, and anodised aluminium, should be protected to prevent any damage or stain by cement, etc. All powder coating to be 25 micron thick and shall be executed in strict adherence to sabs 999</p> <p><u>Glazing</u></p> <p>Glass thickness should be in accordance with SANS 10400 and deigned by a competent person. Glazing is to be carried out in accordance with SABS 0137, with particular attention to size limitations, packing and setting blocks. Thicknesses from 6-28mm.</p> <p><u>Structural Perfomance</u></p> <p>System shall meet or exceed the requirements of SANS613 and the design loading determination by SABS 0160 for this application. Deflection of structural members shall not exceed L/175 or L/240+6mm as applicable.</p> <p><u>Thermal Perfomance</u></p> <p>System shall comply with SANS204 in applications where Fenestration makes up more than 15% of Floor area.</p> <p>U-value with Air filled glazing units = 3.36</p> <p>For U-values below 3.38 use Argon or Krypton gas filled glazing units.</p>		
Carried Forward		R
Section No. 6 Bill No. 11		

RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>DOOR FRAMES, DOORS, WINDOWS,</u>			
<u>Standard heavy duty double rebated pressed mild steel doorframe with factory red oxide primer for doorswing and wall thickness as indicated on plan with (x2) coat enamel paint finish over edge (Colour: according to the architect). Frame to accommodate for screeded floor finish.</u>			
1	Frame for door size 815 x 2100mm (DAJ)	No	8
2	Frame for door size 915 x 2032mm (DAB)	No	2
<u>ALUMINIUM WINDOWS</u>			
<u>Purpose made powder coated windows including glazing and ironmongery complete plugged to brickwork or concrete</u>			
3	Top hung casement aluminium windows overall size of 1800 x 900mm, able to meet the performance requirements of SANSA 613. Mullion to be plugged or screwed to brickwork. Glazing shall be executed strictly in conformance with glass manufacturer's recommendations and SAND 10137:2011 all in accordance with SANS10400 Parts B, N, XA. W29	No	5
4	Top hung casement aluminium windows overall size of 600 x 600mm, able to meet the performance requirements of SANSA 613. Mullion to be plugged or screwed to brickwork. Glazing shall be executed strictly in conformance with glass manufacturer's recommendations and SAND 10137:2011 all in accordance with SANS10400 Parts B, N, XA. W25	No	12
Carried Forward to Summary of Section No. 6			R
Section No. 6			
Bill No. 11			

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RESIDENTIA TRAIN STATION BILLS OF QUANTITIES

Brought Forward			R
	<u>Plaster interior walls with 1:4 cement sand plaster with steel trowel finish and approved plaster sand. Plaster rhinoLite smooth coat according to the instructions of the manufacturer.</u>		
4	On walls[LI]	m2	558
5	On narrow widths[LI]	m2	56
<p>Carried Forward to Summary of Section No. 6</p> <p>Section No. 6 Bill No. 12</p>			R

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**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
<u>WALL TILING</u>			
<u>200mm x 200 White Ceramic approved tiles over all basins and sinks. Or similar approved to be laid in accordance with and to the approval of the material supplier with appropriate tinted grout. "Approved" natural anodised 10mm high Elite aluminium straight edge trim, laid in tile adhesive while wall tiles are being installed or similar approved. Ceramic tiles (min. 10mm thick) PC SUM (R250/M2)</u>			
1	On walls in isolated panels, splashbacks, etc [LI]	m2	208
2	On narrow widths [LI]	m2	21
<u>FLOOR TILING</u>			
<u>600 x 600mm "Approved" dark grey matt with 3mm joints. Fixed with "Approved" Professional adhesive and Light Grey "Approved" Chemical resistant grouting mixed with approved bonding liquid. PC SUM (R400/M2)</u>			
3	On floors [LI]	m2	97
<u>Full body porcelain tile skirting (min. 10mm thick) to be laid in accordance with and to the approval of the material supplier at height of 150mm from FFL with stainless steel tile trimming on top PC SUM (R400/M2)</u>			
4	100mm High skirting [LI]	m	52
<u>SUNDRIES</u>			
<u>Brushed stainless steel corner tile trimming (to be approved by the architect) for all reveal corners of tiled door- & window openings in tiled walls</u>			
5	Straight edge [LI]	m	25
6	Corner tile trims [LI]	m	25
Carried Forward to Summary of Section No. 6			R
Section No. 6			
Bill No. 13			

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Item No		Quantity	Rate	Amount
	<u>BILL NO. 14</u>			
	<u>PLUMBING AND DRAINAGE (PROVISIONAL)</u>			
	<u>PREAMBLES</u>			
	For preambles refer to "General Specification of Materials and Methods to be used for Building Contracts" (GP /ASC)			
	<u>CPAP ADJUSTMENT</u>			
	Unless otherwise stated all items in this bill shall be deemed to fall into Work Group 146 and 148 for Contract Price Adjustment Provisions			
	<u>SUPPLEMENTARY PREAMBLES</u>			
	<u>Polypropylene pipes:</u>			
	Polypropylene pipes 54mm diameter and under shall be seamless copper coloured class 16 pipes jointed with "Fast-fuse" heat welded thermoplastic or brass compression fittings as designed for use with copper pipes as stated			
	Pipes shall be firmly fixed to walls etc with coloured nylon snap-in pipe clips with provision for accommodating thermal movement and jointed and fixed strictly in accordance with the manufacturer's instructions			
	All pipe diameters are nominal external			
	<u>Polypropylene pipes:</u>			
	Polypropylene pipes 63mm diameter and over shall be class 12 pipes jointed with cast iron "Supraclamp" running joints			
	Fusion welded bends, once or twice mitred as necessary, and tees shall be factory manufactured			
	Fusion welded bends and tees shall include jointing to pipes with PVC rubber ring double Z joint couplers			
	Carried Forward		R	
	Section No. 6 Bill No. 14			

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
<p>Branch tees shall include flanged and bolted joints to "Polycop" branch pipes in addition and for brass compression male iron to copper straight couplers</p> <p>Reducers shall include jointing to pipes with PVC rubber ring double Z joint couplers and reducers shall be of sufficient overall length to accommodate same</p> <p>All pipes shall be jointed and fixed strictly in accordance with the manufacturer's instructions</p> <p>All pipe diameters are nominal external</p> <p><u>Vitrified clay pipes:</u></p> <p>Pipes shall rest on solid ground and, where necessary, pockets of sufficient size shall be cut around joints to enable the jointing to be properly performed or, alternatively, pipes shall be bedded full length on and including unreinforced concrete laid in a semi-dry state immediately before pipes are laid</p> <p>Sewer and drainage pipes and fittings shall be jointed and sealed with butyl rubber rings</p> <p><u>uPVC pipes and fittings:</u></p> <p>Soil, waste and vent pipes and fittings shall be solvent weld jointed</p> <p><u>SOIL DRAINAGE</u></p>			
1	110mm Pipe and including excavation not exceeding 1m deep	m	53
<u>Extra over uPVC pipes for fittings</u>			
2	110mm Bend	No	7
3	110mm Access pipe	No	4
4	110mm Access junction	No	2
<u>SUNDRIES</u>			
5	Extra over excavation for excavation in soft rock	m3	5
Carried Forward			R
<p>Section No. 6 Bill No. 14</p>			

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

	Brought Forward			R
6	Extra over excavation for excavation in hard rock	m3	3	
7	Extra over excavation for carting away surplus material to a dumping site to be located by the contractor	m3	18	
8	Extra over backfilling to pipe trenches	m3	42	
9	100mm Cast iron "Approved" cleaning eye	No	4	
10	Testing drainage pipe system		Item	
<u>RAINWATER DISPOSAL</u>				
<u>Commercial and industrial Square profile aluminium seamless gutter, 0,9mm thick coated internally and externally with ColourTech G4 in colour Marble White including cut and mitred angles covered with a mitre strip externally, stop ends riveted and all sealed on the inside with Dow Corning 813 silicone sealer, secured to fibre cement fascia with 20 x 3mm dual-purpose brackets at 600mm centres using aluminium peeled rivets, including a 50 x 20mm high overflow spiggot, with 78 x 78 x 2mm thick aluminium downpipes in colour Marble White fixed to wall with straps at 1500mm centres using nail plugs, with downpipes riveted and silicone sealed to gutter outlets, including all necessary bends, elbows, shoes etc.</u>				
11	100 x 100mm Eaves gutters	m	35	
12	Extra over square eaves gutter for outlet for 78mm pipe	No	4	
13	78mm diameter galvanised rainwater downpipes	m	12	
14	Extra over round rainwater pipe for bend	No	4	
15	Extra over round rainwater pipe for shoe	No	4	
<u>SANITARY FITTINGS</u>				
<u>"Approved"</u>				
16	Approved 600 x 460mm basin, tap hole with overflow, wall mounted all as per the Architect's specifications	No	2	
Carried Forward				R
Section No. 6 Bill No. 14				

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
17	Approved under counter sunk basin 560 x 400mm with overflow, fixings for stone tops all as per Architect's specifications	No	10
18	Visible Inlet (top entry) urinal 305mm x 290mm includes jet nozzle inlet set, waste, bottle trap & fixings.	No	4
19	"Approved" paraplegic 90° outlet pan and matching 9 litre cistern complete with lid, fitments, and purpose-made C.P. side-flush 5 lever (left or right) or a back inlet exposed flushvalve. Accesories to manufacturers recommendations and all complete as per the Architect's specifications	No	2
20	Approved 3 piece close-couple suite with soft close seat Pan, cistern: softclose seat & cover, all complete as per the Architect's specifications	No	10
<u>TRAPS</u>			
<u>Approved</u>			
21	"Approved" chrome 32mm bottle trap for basin with escutcheon, fixed dip tube and wall connection	No	12
<u>TAPS, VALVES</u>			
<u>Cobra or similar approved</u>			
22	Approved flush valves, exposed type toilet flush valve, top entry installations, pan connector, wall flange, seat buffer and ball-o-stop and wall flange. SANS 1240.	No	4
23	Approved "S", single Lever basin mixer for concealed installation with spout 225 mm wall mounted. 305mm x 290mm all complete as per the Architect's specifications	No	12
Carried Forward			R
Section No. 6 Bill No. 14			

RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>SANITARY PLUMBING</u>			
<u>uPVC soil and vent pipes</u>			
24	50mm Pipes including chasing into brickwork	m	84
25	110mm Pipes including chasing into brickwork	m	91
<u>Extra over uPVC soil and vent pipes for fittings</u>			
26	50mm End cap	No	11
27	50mm Bend	No	21
28	50mm Junction	No	9
29	50mm Access bend	No	6
30	50mm Access junction	No	5
31	110mm End cap	No	7
32	110mm Pan connector	No	18
33	110mm Bend	No	14
34	110mm Junction	No	11
35	110mm Reducing junction	No	13
36	110mm Reducing double junction	No	5
37	110mm Access bend	No	3
38	110mm Air vent cowl	No	2
39	110mm Access junction	No	18
40	50mm Stubstack	No	15
Carried Forward			R
Section No. 6 Bill No. 14			

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
<u>Precast concrete gulleys</u>			
41	Gulley not exceeding 1m deep to invert comprising 100mm diameter vitrified clay gulley trap and head, fitted with 190mm diameter cast in iron grating, including excavating for, bedding on and encasing in mass concrete and fitted with and including precast gulley top bedded in (3:1) cement mortar	No	2
<u>Testing</u>			
42	Provide all necessary apparatus for testing of waste pipe system	Item	
<u>WATER SUPPLIES</u>			
<u>Class O copper pipes with capillary type soldered joints, including couplers in the running length</u>			
43	15 mm Pipes	m	270
44	22 mm Pipes	m	174
45	28 mm Pipes	m	78
46	35 mm Pipes	m	56
<u>Extra over class 0 copper pipes for capillary fittings</u>			
47	15 mm Fittings	No	270
48	22 mm Fittings	No	174
49	28 mm Fittings	No	39
50	35mm Fittings	No	28
<u>Extra over class 0 copper pipes for conex compression fittings</u>			
51	15 mm Fittings	No	20
52	22mm Fittings	No	20
Carried Forward			R
Section No. 6 Bill No. 14			

RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>Copper overflow and service pipes</u>			
53	22mm Overflow pipe 500mm girth twice bent	No	2
<u>Sundries</u>			
54	500 x 500mm Cast iron stopcock box including brick chamber below not exceeding 500mm deep internally	No	1
<u>ELECTRIC WATER HEATERS</u>			
<u>"Approved" Geyser</u>			
55	"Approved" 450 litre electric geyser reticulated in series, including special contractor's switch, complete as per manufacturer's instructions	No	2
Carried Forward to Summary of Section No. 6			R
Section No. 6			
Bill No. 14			

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**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Item No		Quantity	Rate	Amount
	<u>BILL NO. 16</u>			
	<u>PAINTWORK</u>			
	<u>PREAMBLES</u>			
	For preambles refer to "General Specification of Materials and Methods to be used for Building Contracts" (GP /ASC)			
	<u>CPAP ADJUSTMENT</u>			
	Unless otherwise stated all items in this bill shall be deemed to fall into Work Group 152 for Contract Price Adjustment Provisions			
	<u>PREPARATORY WORK TO EXISTING WORK</u>			
	<u>New plastered walls</u>			
	Ensure plastered surface to be clean and dry before painting. New plaster must be given adequate drying time (moisture content must be less than 15%) and treat with plaster primer before the first coat of paint is applied			
	<u>Previously painted plastered surfaces</u>			
	Surfaces shall be thoroughly washed down and allowed to dry completely before any paint is applied. Blistered or peeling paint shall be completely removed and cracks shall be opened, filled with a suitable filler and finished smooth			
	<u>Previously painted metal surfaces</u>			
	Surfaces shall be thoroughly rubbed and cleaned down. Blistered or peeling paint shall be completely removed down to bare metal			
	<u>Previously painted wood surfaces</u>			
	Surfaces shall be thoroughly cleaned down. Blistered or peeling paint shall be completely removed and cracks and crevices shall be primed, filled with suitable filler and finished smooth			
	Carried Forward		R	
	Section No. 6 Bill No. 16			

RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<p><u>Previously painted surfaces to receive epoxy coating</u></p> <p><u>Previously painted surfaces are to be stripped back to the original firm substrate by abrading, flame treatments or chemical removal, using an approved paint Remover. Once contaminants have been removed the surface is to be acid etched using an approved acid diluted 1:1 with water, applied with plastic watering can at approximately 2m/lt, removing laitance and slightly roughening the surface to give a finish similar to that of fine sandpaper. Rinse the entire surface with clean water and allow to dry; normally if well ventilated.</u></p> <p><u>ON INTERNAL FLOATED PLASTER SURFACES</u></p> <p><u>Prepare one coat gypsum & plaster primer & 2 coats of superior low sheen. Final colour: TBC.</u></p>			
1	Walls	m2	558
<p><u>Prepare one coat gypsum & plaster primer & two coats of a water-based eggshell enamel paint. Final colour: TBC.</u></p> <p><u>ON EXTERNAL FLOATED PLASTER SURFACES</u></p> <p><u>Prepare one coat of plaster primer and two coats of superior low sheen paint. Colour TBC</u></p>			
2	On walls	m2	75
<p><u>ON PLASTERBOARD SURFACES</u></p> <p><u>Prepare one coat gypsum & plaster primer & 2 coats of superior low sheen paint. Final colour: TBC.</u></p>			
3	Ceilings and cornices, including priming metal cover strips and nailheads	m2	97
Carried Forward			R
<p>Section No. 6 Bill No. 16</p>			

RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>ON FIBRE-CEMENT BOARD SURFACES</u>			
<u>One coat primer and painted two coats enamel paint.</u>			
4	Fascias and barge boards, including priming metal jointing strips	m2	16
<u>ON METAL SURFACES</u>			
<u>One coat primer and two coats enamel paint finish over edge (Colour: according to the architect).</u>			
5	New rainwater gutters and downpipes	m2	23
6	Gates, grilles, burglar screens, balustrades, etc (both sides measured over the full flat area)	m2	16
7	Rails, bars, pipes, etc	m	24
<u>ON WOOD SURFACES</u>			
<u>One coat primer and two coats enamel paint finish over edge (Colour: according to the architect).</u>			
8	Timber doors and frames	m2	50
Carried Forward to Summary of Section No. 6			R
Section No. 6			
Bill No. 16			

RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Bill No	<u>SECTION SUMMARY - Section 6 - Public Ablution</u>	Page No	Amount	
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12	Bill No. 12 - Plastering	227		
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15	Bill No. 15 - Glazing	237		
16	Bill No. 16 - Paintwork	240		
Section No. 6			R	

Carried to Final Summary

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**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
<u>SITE CLEARANCE</u>			
<u>Site Clearance</u>			
1	Digging up and removal of rubbish, debris, vegetation, hedges, shrubs and trees not exceeding 200mm girth, bush, etc [LI]	m2	120
<u>Remove and grub large trees and tree stumps, of girth around the trunk 1m high above ground level including grubbing of roots, filling of holes and compaction to 90% Mod AASHTO density.</u>			
2	Tree exceeding 200mm and not exceeding 500mm girth	No	1
3	Tree exceeding 500mm and not exceeding 1000mm girth	No	1
<u>Remove topsoil to nominal depth of 150mm and stockpile.</u>			
4	Stripping average 150mm thick layer of top soil and depositing material in prescribed stock piles on site	m2	18
<u>EXCAVATION, FILLING</u>			
<u>Excavation in earth not exceeding 2m deep</u>			
5	Trenches	m3	185
6	Holes	m3	19
<u>Extra over excavations in earth for excavation in</u>			
7	Soft rock	m3	20
8	Hard rock	m3	10
<u>Extra over all excavations for carting away</u>			
9	Surplus material from excavations	m3	65
<u>Risk of collapse of excavations</u>			
10	Side of trenches and holes	m2	411
Carried Forward			R
Section No. 7 Bill No. 1			

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
<u>Keeping excavations free of water</u>			
11	Keeping excavations free of all water	Item	
<u>Earth filling obtained from commercial sources compacted to 98% Mod AASHTO density</u>			
12	Under floors, steps, pavings	m3 30	
<u>Earth filling obtained from the excavations and/or prescribed stock piles on site, compacted to 98% Mod AASHTO density</u>			
13	Backfilling to trenches, holes	m3 103	
14	Under floors, steps, pavings	m3 30	
<u>Compaction of surfaces</u>			
15	Compaction of ground surface under floors	m2 110	
<u>Soil insecticide with</u>			
16	Under floors, steps, pavings	m2 100	
17	To bottom and sides of trenches	m2 494	
Carried Forward to Summary of Section No. 7			R
Section No. 7			
Bill No. 1			

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**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
<u>Finishing top surfaces of concrete smooth with a wood float</u>			
8	Surface beds, slabs, etc[LI]	m2	97
<u>Test blocks</u>			
9	150 x150 x 150mm Deep concrete cube test	No	10
<u>Expansion joints with bitumen impregnated soft board between vertical concrete and brick surfaces</u>			
10	10mm Joints not exceeding 300mm high	m	211
<u>Saw-cut joints sealed with two part flexible polyurethane joint sealant</u>			
11	6 x 30mm Saw-cut joints in top of concrete	m	30
<u>SMOOTH AND FAIR FORMWORK (DEGREE OF ACCURACY II)</u>			
<u>Smooth formwork to soffits</u>			
12	Slabs not exceeding 250mm thick propped to a height propped to a height exceeding 3,5m and not exceeding 5m	m2	11
<u>ROUGH FORMWORK (DEGREE OF ACCURACY (III))</u>			
<u>Rough formwork to sides</u>			
13	Edges, risers, ends and reveals not exceeding 300mm high or wide	m	76
<u>REINFORCEMENT</u>			
<u>High tensile steel</u>			
14	Various Diameter bars	t	7.23
<u>Fabric reinforcement</u>			
15	Mesh ref 193 fabric reinforcement in concrete surface beds, slabs, etc	m2	97
Carried Forward to Summary of Section No. 7			R
Section No. 7			
Bill No. 2			

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RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>BRICKWORK</u>			
<u>Brickwork of NFX bricks (14 MPa nominal compressive strength) in class II mortar</u>			
<u>FOUNDATIONS (PROVISIONAL)</u>			
1	Half brick walls[LI]	m2	26
2	One brick walls[LI]	m2	108
<u>SUPERSTRUCTURE</u>			
<u>Brickwork of NFP bricks in class II mortar</u>			
3	Half brick walls[LI]	m2	77
4	One brick walls[LI]	m2	323
5	One brick walls in parapets[LI]	m2	16
6	One brick walls in gables[LI]	m2	10
7	One brick walls in beam filling[LI]	m2	14
<u>Brickwork reinforcement</u>			
8	75mm Wide reinforcement	m	306
9	175mm Wide reinforcement	m	1,271
<u>Turning pieces</u>			
10	110mm Wide turning piece to lintels	m	34
11	230mm Wide turning piece to lintels	m	57
<u>Galvanised wire ties etc</u>			
12	4mm Diameter roof tie 2m girth bent double, with one end built into brickwork and other end fixed to timber	No	23
<u>FACEBRICK</u>			
Carried Forward			R
Section No. 7 Bill No. 3			

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
<u>External facings (PC R11500,00/1 000) pointed with square recessed horizontal and vertical joints:</u>			
13	Extra over brickwork for face brickwork	m2	122
14	Extra over brickwork for brick-on-edge header course lintel pointed on face and 230mm soffit	m	29
<u>External facings (PC R11500,00/1 000) pointed with square recessed horizontal and vertical joints:</u>			
15	Coping on top of one brick wall including fair raking cutting	m	24
16	Extra over brickwork for brick-on-edge header course lintels one course high, pointed on face and soffit	m	24
17	Corobrik FBX 106mm single bullnose solid pointed with recessed vertical and recessed horizontal joints (Colour: to match masonry FBX walls).	m	29
<u>Internal facings to the bottom of windows (PC R5500,00/1 000) pointed with square recessed horizontal and vertical joints:</u>			
18	Extra over brickwork for face brickwork	m2	16
Carried Forward			R
Section No. 7 Bill No. 3			

RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
SUNDRIES			
<u>Window sill, size 150mm x 15mm thick, manufactured in accordance with SANS 803:2005 and installed below window with window sill lug screwed to underside of sill at 400mm centres, minimum of 75mm from end of window sill and bedded in Class II mortar at end of sills at plaster reveals. Sill to be cut flush with wall face. Sill to be primed according to manufacturer instruction and painted enamel paint to match wall colour, all in accordance with the manufacturer's recommendations.</u>			
19	Internal Sills	m	29
<u>Pre cast concrete sills 215 x 115 x 60mm, pointed with flush joints on all exposed faces</u>			
20	Sills (precast concrete)	m	29
Carried Forward to Summary of Section No. 7			R
Section No. 7			
Bill No. 3			

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**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
<u>FACIAS, BARGE BOARDS, ETC:</u>			
<u>Approved fibre cement fascia & barge boards, size 10 x 300mm to be primed 1 coat and painted 2 coats enamel paint. To be fixed to proper support structure with bolts within a straight line with aluminium joiners on corners and joints. (Colour: according to the architect)</u>			
1	Fibre cement fascia/barge drilled and brass screwed and including steel jointing strips between lengths.	m	55
<u>APPROVED RAILS</u>			
<u>Timber rails</u>			
2	Timber rails to have an elliptical gripping surface profile that is approximately 50 mm wide and 40 mm deep, or a circular profile of diameter not less than 35 mm and not more than 50 mm; to be fixed to the wall at 900mm high from the outdoor FFL and a minimum space of 200mm from the wall	m	58
<u>DOORS, ETC</u>			
<u>Heavy Duty Solid Door</u>			
3	Solid door with (x2) concealed edges, size 1830 x 2083mm (DAE)	No	2
4	Solid door with (x2) concealed edges, size 915 x 2032mm (DAB)	No	3
5	Semi-solid door with (x2) concealed edges, size 815 x 2100mm (DAJ)	No	5
<u>JOINERY SUNDRIES</u>			
<u>Worktops</u>			
6	1800 x 600mm wide 32mm Rustenburg granite counter top all complete - Ticketing office (Refer to Architectural drawing No.400911/S1). [LI]	No	2
<u>FITTINGS</u>			
Carried Forward			R
Section No. 7 Bill No. 5			

RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>Cupboard - Kitchen</u>			
7	Kitchen wall unit comprising of 22mm thick white melamine top cupboard size 1080 x 450 x 700mm high, drawers and shelves by specialist and 22mm thick white melamine bottom floor cupboard size 1905 x 600 x 900mm high, with 80mm high Rustenberg granite splash back epoxied to 600mm wide Rustenberg worktop, pull handle as per finishing schedule & drawers and shelves by specialist. All to architect's specifications (Refer to Architect's drawing)	No	1
<u>Medicine Cabinet</u>			
8	MEDICINE CABINET: Standard white built in type. Complete with mirrors on door shelves etc size 380 x 610mm. [LI]	No	1
Carried Forward to Summary of Section No. 7			R
Section No. 7			
Bill No. 5			

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Brought Forward			R
<u>ROOF AND WALL INSULATION</u>			
<u>Alububble®, white bubble with foil backing insulation with thermal insulating, dustproofing and fire resistant capabilities complying with SANS 1381-4:2009 and tested to SANS 428. Quality in accordance with requirements of SANS 10400 Building Regulations, installations are to be to manufactures instructions and specifications. Thickness to mechanical engineer's specifications</u>			
2	Insulation blanket laid taut over purlins	m2	181
Carried Forward to Summary of Section No. 7			R
Section No. 7			
Bill No. 6			

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**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
<u>Flush plastered gypsum plasterboard suspended bulkheads</u>			
Bulkheads shall comprise galvanised steel studding of 63,5mm top and bottom tracks with vertical studs at maximum 400mm centres, pop-riveted to the top and bottom tracks with similar additional vertical studs as necessary at abutments, ends, etc and covered as described with plasterboard screwed to studding with drywall screws at maximum 300mm centres. Boards shall be butt jointed and finished with tape and jointing compound and the whole finished with gypsum plaster trowelled to a smooth polished surface to the thickness recommended by the manufacturer.			
Descriptions shall be deemed to include any additional studs at ends and intersections, corner beads, cornices at junctions with ceilings, jointing compound, tape, etc			
<u>SUSPENDED CEILINGS</u>			
<u>1200 x 600 x 15mm thick acoustic ceiling tiles laid on pre-painted tees and adjustable hanger system.</u>			
1	Ceilings suspended not exceeding 1m below timber purlins	m2	42
2	Extra over ceiling for 650 x 650mm trap door complete with trimmers, frame, cross branders, ceiling board, hinges and including all necessary ironmongery	No	2
<u>1200 x 600 x 12,5mm vinyl faced ceiling panels laid on tees and adjustable hanger system.</u>			
3	12.5mm Vinyl Faced Ceiling Panels, face-covered with white embossed vinyl, size 1200 x 600mm, laid on fire rated S3 exposed demountable suspension system including galvanised main tees, cross tees, etc., all suspended with galvanised hangers at centres not exceeding 1200mm, with ceiling perimeter finished with Shadow-line trim plugged at 200mm centres, and all installed to manufacturer's instructions.	m2	20
Carried Forward			R
Section No. 7 Bill No. 7			

RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>Flush plasterboard ceiling fixed to concealed suspended tee system skimmed and prepared to receive 2 coats quality PVA paint</u> <u>All ceiling voids to receive 600 x 600mm access panel</u>			
4	Flush plastered ceiling	m2	25
<u>47 x 35mm grid recessed shadowline cornice</u>			
5	Cornice, plugged to walls	m	163
Carried Forward to Summary of Section No. 7			R
Section No. 7			
Bill No. 7			

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**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
<u>CPAP ADJUSTMENT</u>			
Unless otherwise stated all items in this bill shall be deemed to fall into Work Group 130 for Contract Price Adjustment Provisions			
<u>FLOOR COVERINGS</u>			
<u>500 x 500mm Loose lay Commercial carpet tiles with backing, to architects approval.</u> <u>Tessellated Installation</u> <u>100% Stainproof Miracle Fibre™ (Polypropylene) structured needle punch SABS Class 3 fire rating grade heavy commercial carpet tiles, size 500 x 500 x 8,5mm thick, all installed by approved installer in accordance with SANS 10186:2010, the code of practice for textile floor coverings.</u>			
1	Carpet floor covering	m2	50
<u>Approved Walk-off mat suitable for interior & exterior covered entrances.</u> <u>Approved Walk-off mat, overall size 4000mm or 3000mm x 12mm consisting of 100% polypropylene course fibre needle felt brushes alternated with soft strips to effectively scrape & dry with anti-slip latex backing glued in recess bedded into screed (by others), installed in accordance with the manufacturer's recommendations. To be vacuum cleaned regularly. Samples required for architect and client's approval.</u>			
2	Walk-off mats	m2	2
<u>SKIRTINGS, NOSINGS, ETC</u>			
<u>"Approved" brushed stainless steel edging strip to be installed all according to the instructions and recommendations of the manufacturer for vinyl floor finish.</u>			
3	Stainless steel edging strip	m	10
Carried Forward			R
Section No. 7 Bill No. 8			

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**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
<u>LOCKS</u>			
<u>"APPROVED"</u>			
3	Nickel plated 60mm double cylinder master keyed [LI]	No	3
4	Double panic set for rebated double doors [LI]	No	2
5	Stainless Steel Toilet Cubicle Indicator bolt & lock set Grade 304 Stainless Steel indicator bolt (code: fixed to surface with matching stainless steel screws. To comply with SANS 4:2008. Finger pull handle to be fixed to door with tamper proof screws [LI]	No	2
6	Stainless Steel Security Deadlock Grade 304 Stainless steel Security Deadlock with a Deadcase plate in the door frame with Master key functioning. These type lock to be used with Push plates and Pull handles. Double side locking mechanism To comply with SANS 4:2008 [LI]	No	1
7	Stainless Steel cylinder lock 60mm Grade 304 Stainless steel Euro profile Double with 6 pin and Master keyed To comply with SANS 4:2008 [LI]	No	1
8	Stainless Steel Toilet Cubicle Indicator bolt & lock set Grade 304 Stainless Steel disabled indicator bolt, fixed to surface with matching stainless steel screws. To comply with SANS 4:2008. Finger pull handle to be fixed to door with tamper proof screws [LI]	No	1
9	Stainless steel 76mm commercial cylinder sash lock [LI]	No	1
10	Nickel plated 66mm knob cylinder - master keyed [LI]	No	1
11	Single panic bolt complete, Colour:Silver [LI]	No	1
12	Outside access device lever W/O cylinder [LI]	No	1
13	Nickel plated single cylinder - master keyed [LI]	No	1
Carried Forward			R
Section No. 7 Bill No. 9			

R

R

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
<u>DOOR CLOSERS</u>			
<u>"APPROVED"</u>			
14	Door closer clockwise action with a standard guide rail Colour: Silver [LI]	No 1	
15	Door closer with parallel arm bracket [LI]	No 1	
16	Door closer with a clockwise action inclusive of guide rail [LI]	No 1	
17	Door closer with a clockwise action including standard and parallel arm [LI]	No 1	
<u>LETTERS, NAMEPLATES, ETC</u>			
<u>"APPROVED"</u>			
18	160 x 160mm stainless steel ironware outline engraved fire hose reel. [LI]	No 3	
19	160 x 160mm stainless steel ironware outline engraved female sign. [LI]	No 1	
20	160 x 160mm stainless steel ironware outline engraved male sign. [LI]	No 1	
21	160 x 160mm stainless steel ironware outline engraved disabled sign. [LI]	No 1	
22	160 x 160mm stainless steel ironware outline engraved shower sign. [LI]	No 1	
GENERAL NOTES: Colour: Black lettering on white background. Fixing: To be mechanical fastened. Positioning: To be determined site with architect once signage is available on site. Font: Arial Black To be read in conjunction with Fire signage drawing.			
Carried Forward			R
Section No. 7 Bill No. 9			

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
<u>PUSH PLATES AND KICK PLATES</u>			
<u>"APPROVED"</u>			
23	111 x 19mm thick push plate 160 x 160mm stainless steel back plate [LI]	No 2	
24	1.6mm stainless steel push plate 160 x 160mm [LI]	No 5	
25	1.5mm stainless steel push plate 165 x 165mm [LI]	No 4	
26	1.6mm Stainless steel kick plate [LI]	No 11	
<u>SUNDRIES</u>			
<u>"APPROVED"</u>			
27	Stainless steel cabin hook 150mm [LI]	No 9	
28	Stainless steel floor mounted door stop [LI]	No 6	
29	Floor mounted rubber door stop [LI]	No 5	
30	Stainless steel hat and coat hook with a rubber buffer [LI]	No 2	
31	Nickel plated patent screw 40-55mm [LI]	No 11	
32	Dust keep[LI]	No 11	
Carried Forward			R
Section No. 7 Bill No. 9			

RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>BATHROOM FITTINGS</u>			
<u>"APPROVED"</u>			
33	"Approved" Grade 304 18/10 stainless steel with "Approved" grip paraplegic grab rails, size 640 x 640 x 96mm deep, plugged and screwed to the wall with stainless steel screws [LI]	No	1
34	"Approved" Grade 304 32mm diameter 18/10 stainless steel grab rails with "Approved" grab 750 x 95mm deep, plugged and screwed to the wall with stainless steel screws [LI]	No	1
<u>"Approved" - Towel hooks</u>			
35	"Approved" chrome towel hook and installed with manufacturer's recommendations [LI]	No	2
<u>Miscellaneous</u>			
36	3-arm dish cloth holder [LI]	m	3
37	Toilet roll holder with a prime cost of R900.00 (excl. VAT) fixed to brickwork, concrete or partitioning [LI]	No	3
38	Toilet brush and holder with a prime cost of R190.00 (excl. VAT) [LI]	No	3
39	Stainless steel bin with a prime cost of R900.00 (excl. VAT) [LI]	No	2
40	Stainless steel soap dispenser with a prime cost of R750.00 (excl. VAT) fixed to brickwork, concrete or partitioning [LI]	No	3
41	Stainless steel hand dryer with a prime cost of R4 280.00 (excl. VAT) [LI]	No	1
42	Stainless steel paper towel dispenser, including bin with a prime cost of R4 700.00 (excl. VAT) [LI]	No	3
Carried Forward to Summary of Section No. 7			R
Section No. 7			
Bill No. 9			

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Item No	Quantity	Rate	Amount
<u>BILL NO. 10</u>			
<u>STRUCTURAL STEELWORK</u>			
<u>PREAMBLES</u>			
For preambles refer to "General Specification of Materials and Methods to be used for Building Contracts" (GP /ASC)			
<u>CPAP ADJUSTMENT</u>			
Unless otherwise stated all items in this bill shall be deemed to fall into Work Group 134 for Contract Price Adjustment Provisions			
<u>SUPPLEMENTARY PREAMBLES</u>			
The Structural Steelwork shall be in accordance with the Engineer's "STANDARD SPECIFICATION FOR STRUCTURAL STEEL" appended hereto as " Structural Steel Annexure A ".			
The Contractor is to notify the Principal Agent immediately if a conflict between the Engineer's Specification, Architectural Drawings and/or these Bills of Quantities are found.			
Steelwork are measured to the designed sizes of the components.			
The price for steelwork shall include all rolling margin, distance pieces, packings, additional material in welding and fixing steel members, decorative or protective and temporary aids; these shall be deemed included in the descriptions of the relevant steelwork.			
The price for steelwork shall also include for the preparation of all shop detail drawings as defined in the preables and the Engineering Specification.			
Carried Forward			R
Section No. 7 Bill No. 10			

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward		R	
<p>The price for steelwork shall include all welding, holes, bolts, nuts, washers, rivets, bolting and riveting integral with structural steelwork as well as all required weld and strength testing, these shall be deemed included in the descriptions of the relevant steelwork. The only bolts and anchors measured separately shall be those fixing the steel members to the structural concrete work.</p> <p><u>For clarity</u>; fixing structural steelwork members to each other is deemed included in the description of the steelwork and has thus not been measured separately and should be priced within the steelwork rates.</p> <p>Descriptions of bolts shall be deemed to include nuts and washers. Descriptions of anchor bolts shall be deemed to include bending, threading, nuts and washers and embedding in concrete. Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork or concrete.</p> <p>All structural steelwork rates shall include the factory coat of paint only, all repair-, other- and final paintwork to structural steel members are included under a "Painting" heading in these Structural Steelwork Bills of Quantities.</p> <p>The quantities are provisional and will be re-measured upon completion of the works. The Contractor shall not use these quantities for ordering of materials. The Contractor must immediately notify the Quantity Surveyor if discrepancies are found between the quantities and/or descriptions in these Bills of Quantities and the Contractor's quantities measured from construction drawings and specifications.</p> <p><u>GALVANISED STEEL COLUMNS AND BEAMS</u></p> <p><u>Welded hollow section beams in single lengths with flat bearer and connection plates, bolted to steel</u></p>			
1	125 x 75 x 20 x 2.00mm, 4.71kg/m lipped channels in lengths not exceeding 2m	t	0.64
2	160 x 82 x 16 x 2.00mm, 15.80kg/m I sections in lengths not exceeding 3m	t	1.24
Carried Forward		R	
<p>Section No. 7 Bill No. 10</p>			

RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>STEEL PURLINS, GIRTS, BRACING,</u>			
3	100 x 50 x 20 x 2.5mm x 4.32kg/m cold-formed lipped channel purlins	t	0.32
	<u>Welded bracing, anti-sag rails, etc with flat connection plates, bolted to steel</u>		
4	30 x 30 x 3mm angle bracing	t	0.32
	<u>Welded box gutter bearers with flat cleats, bolted to steel</u>		
5	Angle longitudinal bearers	t	0.10
<u>BOLTS, FASTENERS,</u>			
6	High tensile bolts (class 8.8)	t	0.50
<u>PAINTING</u>			
	<u>Touch-up steel primer, one coat 1 universal undercoat to 2 finishing coats high gloss enamel paint</u>		
7	On structural steel columns, beams, etc	t	1.88
8	On steel purlins, girts, etc	t	0.32
9	On angle bracing	t	0.32
Carried Forward to Summary of Section No. 7			R
Section No. 7			
Bill No. 10			

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<div>Brought Forward</div> <div><div>Construction</div><p>Outer frame to consist of a single part compensating head and jamb and continuous sub-Sill.</p><p>Infill panels are to be constructed from double cavity tubular profiles, forming a wet cavity with drainage slots to allow for transom drainage to the exterior. All glazing rebates to be 25mm. Joints of the infill panels shall be notched and screwed to spigots with No 8 stainless steel screws. Where required, a 111mm or 166mm Split mullion assembly must be used to couple infill panels together, still making allowance for all thermal and dynamic movement. Door panels within the screens to have a 4-edge door rebate with gasket seal all round.</p><div>Installation</div><p>All aluminium work to be done in strict accordance to the manufacturers specifications by a specialist firm. All openings to be checked on site before any materials are ordered or manufacture of window and door frames. Panel-by-panel installation from Inside or from Outside the building. All aluminium frame works to be provided with a continuous silicone seal around all construction openings.</p><div>Hardware</div><p>All sashes to have mechanical Corner Connectors, wind locks and multi-point locking handles. Sashes not to exceed 1700mm wide by 1200mm high as per specification. Friction stay to suit max weight and size of Sash.</p><p>Door hardware shall be compatible with the system and will take cognisance of the finish specification of the applicable area. See Hardware Schedule for door.</p></div>	<div>R</div>
<div>Carried Forward</div> <div>Section No. 7 Bill No. 11</div>	<div>R</div>

<div>Brought Forward</div> <div><div>Finish</div><div>Sections will be painted in accordance with SABS1578, parts1 & 2. Powercote, and anodised aluminium, should be protected to prevent any damage or stain by cement, etc. All powder coating to be 25 micron thick and shall be executed in strict adherence to sabs 999</div></div> <div><div>Glazing</div><div>Glass thickness should be in accordance with SANS 10400 and deigned by a competent person. Glazing is to be carried out in accordance with SABS 0137, with particular attention to size limitations, packing and setting blocks. Thicknesses from 6-28mm.</div></div> <div><div>Structural Perfomance</div><div>System shall meet or exceed the requirements of SANS613 and the design loading determination by SABS 0160 for this application. Deflection of structural members shall not exceed L/175 or L/240+6mm as applicable.</div></div> <div><div>Thermal Perfomance</div><div>System shall comply with SANS204 in applications where Fenestration makes up more than 15% of Floor area. U-value with Air filled glazing units = 3.36 For U-values below 3.38 use Argon or Krypton gas filled glazing units.</div></div>	<div>R</div>
<div>Carried Forward</div> <div>Section No. 7 Bill No. 11</div>	<div>R</div>

RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>DOOR FRAMES, DOORS, WINDOWS,</u>			
<u>Standard heavy duty double rebated pressed mild steel doorframe with factory red oxide primer for doorswing and wall thickness as indicated on plan with (x2) coat enamel paint finish over edge (Colour: according to the architect). Frame to accommodate for screeded floor finish.</u>			
1	Frame for door size 815 x 2100mm (DAJ)	No	5
2	Frame for door size 915 x 2032mm (DAB)	No	3
3	Frame for door size 1830 x 2083mm (DAE)	No	2
<u>ALUMINIUM WINDOWS</u>			
<u>Purpose made powder coated windows including glazing and ironmongery complete plugged to brickwork or concrete</u>			
4	Top hung casement aluminium windows overall size of 1500 x 1500mm, able to meet the performance requirements of SANSA 613. Mullion to be plugged or screwed to brickwork. Glazing shall be executed strictly in conformance with glass manufacturer's recommendations and SAND 10137:2011 all in accordance with SANS10400 Parts B, N, XA. W1	No	4
5	Top hung casement aluminium windows overall size of 1800 x 600mm, able to meet the performance requirements of SANSA 613. Mullion to be plugged or screwed to brickwork. Glazing shall be executed strictly in conformance with glass manufacturer's recommendations and SAND 10137:2011 all in accordance with SANS10400 Parts B, N, XA. W2	No	2
6	Top hung casement aluminium windows overall size of 600 x 900mm, able to meet the performance requirements of SANSA 613. Mullion to be plugged or screwed to brickwork. Glazing shall be executed strictly in conformance with glass manufacturer's recommendations and SAND 10137:2011 all in accordance with SANS10400 Parts B, N, XA. W4	No	3
Carried Forward			R
Section No. 7 Bill No. 11			

RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
7	Top hung casement aluminium windows overall size of 1500 x 1500mm, able to meet the performance requirements of SANSA 613. Mullion to be plugged or screwed to brickwork. Glazing shall be executed strictly in conformance with glass manufacturer's recommendations and SAND 10137:2011 all in accordance with SANS10400 Parts B, N, XA. W9	No	2
8	Top hung casement aluminium windows overall size of 1800 x 1450mm, able to meet the performance requirements of SANSA 613. Mullion to be plugged or screwed to brickwork. Glazing shall be executed strictly in conformance with glass manufacturer's recommendations and SAND 10137:2011 all in accordance with SANS10400 Parts B, N, XA. W10	No	4
<u>GALVANISED STEEL HANDRAILS</u>			
<u>Welded handrails to walkways and ramps</u>			
9	Steel Connection 50mm diameter, wall mounted mild steel handrail, to follow line of stair at 1000mm high	m	18
<u>Welded balustrades</u>			
10	Mild steel railings consisting of 1000mm high, 90° 54mm Ø x 2.0mm stanchions spaced at 1600mm centres, with 44mm Ø x 2.0mm hand/knee rails. Top mounted stanchions to be fitted with baseplates pre-drilled with 30 x 18mm slotted holes for fixing to concrete/metal surface, including all necessary bends, closures, ferrules etc. as indicated on drawings	m	12
Carried Forward to Summary of Section No. 7			R
Section No. 7			
Bill No. 11			

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**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
<u>WALL TILING</u>			
<u>200mm x 200 White Ceramic approved tiles over all basins and sinks. Or similar approved to be laid in accordance with and to the approval of the material supplier with appropriate tinted grout. "Approved" natural anodised 10mm high Elite aluminium straight edge trim, laid in tile adhesive while wall tiles are being installed or similar approved. Ceramic tiles (min. 10mm thick) PC SUM (R250/M2)</u>			
1	On walls in isolated panels, splashbacks, etc [LI]	m2	110
2	On narrow widths [LI]	m2	11
<u>FLOOR TILING</u>			
<u>600 x 600mm "Approved" dark grey matt with 3mm joints. Fixed with "Approved" Professional adhesive and Light Grey "Approved" Chemical resistant grouting mixed with approved bonding liquid. PC SUM (R400/M2)</u>			
3	On floors [LI]	m2	39
<u>Full body porcelain tile skirting (min. 10mm thick) to be laid in accordance with and to the approval of the material supplier at height of 150mm from FFL with stainless steel tile trimming on top PC SUM (R400/M2)</u>			
4	100mm High skirting [LI]	m	37
<u>SUNDRIES</u>			
<u>Brushed stainless steel corner tile trimming (to be approved by the architect) for all reveal corners of tiled door- & window openings in tiled walls</u>			
5	Straight edge [LI]	m	20
6	Corner tile trims [LI]	m	20
Carried Forward to Summary of Section No. 7			R
Section No. 7			
Bill No. 13			

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Item No		Quantity	Rate	Amount
	<u>BILL NO. 14</u>			
	<u>PLUMBING AND DRAINAGE (PROVISIONAL)</u>			
	<u>PREAMBLES</u>			
	For preambles refer to "General Specification of Materials and Methods to be used for Building Contracts" (GP /ASC)			
	<u>CPAP ADJUSTMENT</u>			
	Unless otherwise stated all items in this bill shall be deemed to fall into Work Group 146 and 148 for Contract Price Adjustment Provisions			
	<u>SUPPLEMENTARY PREAMBLES</u>			
	<u>Polypropylene pipes:</u>			
	Polypropylene pipes 54mm diameter and under shall be seamless copper coloured class 16 pipes jointed with "Fast-fuse" heat welded thermoplastic or brass compression fittings as designed for use with copper pipes as stated			
	Pipes shall be firmly fixed to walls etc with coloured nylon snap-in pipe clips with provision for accommodating thermal movement and jointed and fixed strictly in accordance with the manufacturer's instructions			
	All pipe diameters are nominal external			
	<u>Polypropylene pipes:</u>			
	Polypropylene pipes 63mm diameter and over shall be class 12 pipes jointed with cast iron "Supraclamp" running joints			
	Fusion welded bends, once or twice mitred as necessary, and tees shall be factory manufactured			
	Fusion welded bends and tees shall include jointing to pipes with PVC rubber ring double Z joint couplers			
	Carried Forward		R	
	Section No. 7 Bill No. 14			

RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<p>Branch tees shall include flanged and bolted joints to "Polycop" branch pipes in addition and for brass compression male iron to copper straight couplers</p> <p>Reducers shall include jointing to pipes with PVC rubber ring double Z joint couplers and reducers shall be of sufficient overall length to accommodate same</p> <p>All pipes shall be jointed and fixed strictly in accordance with the manufacturer's instructions</p> <p>All pipe diameters are nominal external</p> <p><u>Vitrified clay pipes:</u></p> <p>Pipes shall rest on solid ground and, where necessary, pockets of sufficient size shall be cut around joints to enable the jointing to be properly performed or, alternatively, pipes shall be bedded full length on and including unreinforced concrete laid in a semi-dry state immediately before pipes are laid</p> <p>Sewer and drainage pipes and fittings shall be jointed and sealed with butyl rubber rings</p> <p><u>uPVC pipes and fittings:</u></p> <p>Soil, waste and vent pipes and fittings shall be solvent weld jointed</p> <p><u>SOIL DRAINAGE</u></p>			
1	110mm Pipe and including excavation not exceeding 1m deep	m	20
<u>Extra over uPVC pipes for fittings</u>			
2	110mm Bend	No	2
3	110mm Access pipe	No	2
4	110mm Access junction	No	2
<u>SUNDRIES</u>			
5	Extra over excavation for excavation in soft rock	m3	2
Carried Forward			R
<p>Section No. 7 Bill No. 14</p>			

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
6	Extra over excavation for excavation in hard rock	m3	1
7	Extra over excavation for carting away surplus material to a dumping site to be located by the contractor	m3	10
8	Extra over backfilling to pipe trenches	m3	9
9	100mm Cast iron "Approved" cleaning eye	No	1
10	Testing drainage pipe system	Item	
<u>RAINWATER DISPOSAL</u>			
<u>Commercial and industrial Square profile aluminium seamless gutter, 0,9mm thick coated internally and externally with ColourTech G4 in colour Marble White including cut and mitred angles covered with a mitre strip externally, stop ends riveted and all sealed on the inside with Dow Corning 813 silicone sealer, secured to fibre cement fascia with 20 x 3mm dual-purpose brackets at 600mm centres using aluminium peeled rivets, including a 50 x 20mm high overflow spiggot, with 78 x 78 x 2mm thick aluminium downpipes in colour Marble White fixed to wall with straps at 1500mm centres using nail plugs, with downpipes riveted and silicone sealed to gutter outlets, including all necessary bends, elbows, shoes etc.</u>			
11	100 x 100mm Eaves gutters	m	52
12	Extra over square eaves gutter for outlet for 78mm pipe	No	4
13	78mm diameter galvanised rainwater downpipes	m	12
14	Extra over round rainwater pipe for bend	No	4
15	Extra over round rainwater pipe for shoe	No	4
<u>SANITARY FITTINGS</u>			
<u>"Approved"</u>			
16	Approved 600 x 460mm basin, tap hole with overflow, wall mounted all as per the Architect's specifications	No	5
Carried Forward			R
Section No. 7			
Bill No. 14			

**RESIDENTIAL TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
17	"Approved" paraplegic 90° outlet pan and matching 9 litre cistern complete with lid, fittings, and purpose-made C.P. side-flush 5 lever (left or right) or a back inlet exposed flushvalve. Accessories to manufacturers recommendations and all complete as per the Architect's specifications	No	2
18	Approved 3 piece close-couple suite with soft close seat Pan, cistern: softclose seat & cover, all complete as per the Architect's specifications	No	5
<u>"Approved"</u>			
19	Single bowl sink 830 x 450 x 255mm all complete as per the Architect's specifications	No	1
<u>TRAPS</u>			
<u>Approved</u>			
20	"Approved" chrome 32mm bottle trap for basin with escutcheon, fixed dip tube and wall connection	No	5
<u>TAPS, VALVES</u>			
<u>Cobra or similar approved</u>			
21	Approved flush valves, exposed type toilet flush valve, top entry installations, pan connector, wall flange, seat buffer and ball-o-stop and wall flange. SANS 1240.	No	5
22	Approved "S" single lever kitchen mixer 200 with pull out spray all complete as per the Architect's specifications	No	1
23	Approved "S", single Lever basin mixer for concealed installation with spout 225 mm wall mounted. 305mm x 290mm all complete as per the Architect's specifications	No	5
Carried Forward			R
Section No. 7 Bill No. 14			

RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>SANITARY PLUMBING</u>			
<u>uPVC soil and vent pipes</u>			
24	50mm Pipes including chasing into brickwork	m	20
25	110mm Pipes including chasing into brickwork	m	5
<u>Extra over uPVC soil and vent pipes for fittings</u>			
26	50mm End cap	No	3
27	50mm Bend	No	3
28	50mm Junction	No	3
29	50mm Access bend	No	3
30	50mm Access junction	No	3
31	110mm End cap	No	1
32	110mm Pan connector	No	3
33	110mm Bend	No	3
34	110mm Junction	No	1
35	110mm Reducing junction	No	1
36	110mm Reducing double junction	No	1
37	110mm Access bend	No	1
38	110mm Air vent cowl	No	6
39	50mm Stubstack	No	6
Carried Forward			R
Section No. 7 Bill No. 14			

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
<u>Precast concrete gulleys</u>			
40	Gulley not exceeding 1m deep to invert comprising 100mm diameter vitrified clay gulley trap and head, fitted with 190mm diameter cast in iron grating, including excavating for, bedding on and encasing in mass concrete and fitted with and including precast gulley top bedded in (3:1) cement mortar	No	4
<u>Testing</u>			
41	Provide all necessary apparatus for testing of waste pipe system	Item	
<u>WATER SUPPLIES</u>			
<u>Class O copper pipes with capillary type soldered joints, including couplers in the running length</u>			
42	15 mm Pipes	m	60
43	22 mm Pipes	m	50
44	28 mm Pipes	m	39
45	35 mm Pipes	m	26
<u>Extra over class 0 copper pipes for capillary fittings</u>			
46	15 mm Fittings	No	60
47	22 mm Fittings	No	50
48	28 mm Fittings	No	39
49	35mm Fittings	No	26
<u>Extra over class 0 copper pipes for conex compression fittings</u>			
50	15 mm Fittings	No	20
51	22mm Fittings	No	20
Carried Forward			R
Section No. 7 Bill No. 14			

**RESIDENTIAL TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
<u>Copper overflow and service pipes</u>			
52	22mm Overflow pipe 500mm girth twice bent	No	10
<u>Sundries</u>			
53	500 x 500mm Cast iron stopcock box including brick chamber below not exceeding 500mm deep internally	No	1
<u>ELECTRIC WATER HEATERS</u>			
<u>"Approved"</u>			
54	"Approved" 2,5 litre instant boiling water unit with white epoxy powder coated outer case, and two-way tap, complete with twin-chamber technology, installed in accordance with manufacturer's recommendations	No	2
Carried Forward to Summary of Section No. 7			R
Section No. 7			
Bill No. 14			

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**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Item No		Quantity	Rate	Amount
	<u>BILL NO. 16</u>			
	<u>PAINTWORK</u>			
	<u>PREAMBLES</u>			
	For preambles refer to "General Specification of Materials and Methods to be used for Building Contracts" (GP /ASC)			
	<u>CPAP ADJUSTMENT</u>			
	Unless otherwise stated all items in this bill shall be deemed to fall into Work Group 152 for Contract Price Adjustment Provisions			
	<u>PREPARATORY WORK TO EXISTING WORK</u>			
	<u>New plastered walls</u>			
	Ensure plastered surface to be clean and dry before painting. New plaster must be given adequate drying time (moisture content must be less than 15%) and treat with plaster primer before the first coat of paint is applied			
	<u>Previously painted plastered surfaces</u>			
	Surfaces shall be thoroughly washed down and allowed to dry completely before any paint is applied. Blistered or peeling paint shall be completely removed and cracks shall be opened, filled with a suitable filler and finished smooth			
	<u>Previously painted metal surfaces</u>			
	Surfaces shall be thoroughly rubbed and cleaned down. Blistered or peeling paint shall be completely removed down to bare metal			
	<u>Previously painted wood surfaces</u>			
	Surfaces shall be thoroughly cleaned down. Blistered or peeling paint shall be completely removed and cracks and crevices shall be primed, filled with suitable filler and finished smooth			
	Carried Forward		R	
	Section No. 7 Bill No. 16			

**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

Brought Forward			R
<p><u>Previously painted surfaces to receive epoxy coating</u></p> <p><u>Previously painted surfaces are to be stripped back to the original firm substrate by abrading, flame treatments or chemical removal, using an approved paint Remover. Once contaminants have been removed the surface is to be acid etched using an approved acid diluted 1:1 with water, applied with plastic watering can at approximately 2m/lit, removing laitance and slightly roughening the surface to give a finish similar to that of fine sandpaper. Rinse the entire surface with clean water and allow to dry; normally if well ventilated.</u></p> <p><u>ON INTERNAL FLOATED PLASTER SURFACES</u></p> <p><u>Prepare one coat gypsum & plaster primer & 2 coats of superior low sheen. Final colour: TBC.</u></p>			
1	Walls	m2	470
<p><u>Prepare one coat gypsum & plaster primer & two coats of a water-based eggshell enamel paint. Final colour: TBC.</u></p>			
2	On Bathroom & Kitchen Walls	m2	132
<p><u>ON EXTERNAL FLOATED PLASTER SURFACES</u></p> <p><u>Prepare one coat of plaster primer and two coats of superior low sheen paint. Colour TBC</u></p>			
3	On walls	m2	33
<p><u>ON PLASTERBOARD SURFACES</u></p> <p><u>Prepare one coat gypsum & plaster primer & 2 coats of superior low sheen paint. Final colour: TBC.</u></p>			
4	Ceilings and cornices, including priming metal cover strips and nailheads	m2	25
Carried Forward			R
<p>Section No. 7 Bill No. 16</p>			

RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward			R
<u>ON FIBRE-CEMENT BOARD SURFACES</u>			
<u>One coat primer and painted two coats enamel paint.</u>			
5	Fascias and barge boards, including priming metal jointing strips	m2	56
<u>ON METAL SURFACES</u>			
<u>One coat primer and two coats enamel paint finish over edge (Colour: according to the architect).</u>			
6	New rainwater gutters and downpipes	m2	20
7	Gates, grilles, burglar screens, balustrades, etc (both sides measured over the full flat area)	m2	10
8	Rails, bars, pipes, etc	m	12
<u>ON WOOD SURFACES</u>			
<u>One coat primer and two coats enamel paint finish over edge (Colour: according to the architect).</u>			
9	Timber doors and frames	m2	40
Carried Forward to Summary of Section No. 7			R
Section No. 7			
Bill No. 16			

RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Bill No	<u>SECTION SUMMARY - Section 7 - Cleaners & Security</u>	Page No	Amount	
1	Bill No. 1 - Earthworks (Provisional)	244		
2	Bill No. 2 - Concrete, Formwork & Reinforcement	246		
3	Bill No. 3 - Masonry	250		
4	Bill No. 4 - Waterproofing	251		
5	Bill No. 5 - Carpentry and Joinery	254		
6	Bill No. 6 - Roof Coverings, etc.	256		
7	Bill No. 7 - Ceilings, Partitions and Access Flooring	259		
8	Bill No. 8 - Floor Coverings, Plastic Linings, etc.	262		
9	Bill No. 9 - Iron Mongery	268		
10	Bill No. 10 - Structural Steel Work	271		
11	Bill No. 11 - Metal Work	276		
12	Bill No. 12 - Plastering	278		
13	Bill No. 13 - Tiling	280		
14	Bill No. 14 - Plumbing and Drainage (Provisional)	287		
15	Bill No. 15 - Glazing	288		
16	Bill No. 16 - Paintwork	291		
Section No. 7			R	

Carried to Final Summary

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**RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES**

<p style="text-align: right;">Brought Forward</p> <p><u>Profit</u></p> <p>Where listed the contractor may allow for profit if required. The profit will be adjusted in the same ratio as the adjusted value of the subcontract.</p> <p><u>Attendance</u></p> <p>Without in any way limiting the meaning and interpretation, "general attendance" on sub-contractors shall include free of charge to the sub-contractor the following services for the purpose of the relative sub-contract works:</p> <ol style="list-style-type: none"> 1) access to the site and to the places where the work is to be carried out, including the use of any temporary personnel hoists erected by the Contractor for his own use; 2) the provision of water and lighting and of single and/or three phase electric power to a position within 50 metres of the place where work is to be carried out, but excluding water, fuel and power for commissioning of the installation for which the Contractor shall be responsible; 3) the provision of an area for office accommodation, temporary workshops and for the storage of plant and materials; 4) the use of erected scaffolding belonging to the Contractor, in common with others having the like right whilst it so remains erected upon the site; 5) the use of mess rooms, latrine, health and welfare facilities, and the like, where provided; 6) the use of the site telephone (if provided) subject to the payment by the sub-contractor for all his outgoing calls; 7) temporary casing and/or other protection of the work; 8) site security measures; <p style="text-align: right;">Carried Forward</p> <p>Section No. 8 Bill No. 1</p>	<p style="text-align: right;">R</p> <hr/> <p style="text-align: right;">R</p>
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RESIDENTIA TRAIN STATION

BILLS OF QUANTITIES

Brought Forward	R
<p>9) hoisting of the sub-contractor's material in loads not exceeding the available hoisting loads of cranes of the contractor;</p> <p>10) repairs and making good in all trades and final cleaning down on completion.</p> <p><u>Fuel, power and water for commissioning plant</u></p> <p>The cost of fuel, power and water for the commissioning of plant shall be borne by the sub-contractor appointed for the relevant sub-contract works in terms of the conditions under which they have/are contracted for the specialist work involved. The contractor shall allow opposite this item or under the relevant attendance items for the recovery of such costs via the installation of the necessary meters, etc.</p> <p><u>Work executed by direct contractors</u></p> <p>Work listed under the heading "Work executed by direct contractors" shall be executed before and during this contract and the tenderer must allow free access to the site for such other contractors.</p> <p>These contractors shall be directly paid by the client and the tenderer must allow for programming in conjunction with them to complete the project successfully within the contract period.</p> <p>The estimated values of these contracts are listed to enable the tenderer to determine the extent of the attendance if required. Profit on these contracts shall not be allowed.</p> <p><u>Budgetary allowances</u></p> <p>Budgetary allowances shall be re-measured and valued on the same pricing structure as the rest of the contract or shall be omitted in full if so required.</p>	
<p style="text-align: right;">Carried Forward</p> <p>Section No. 8 Bill No. 1</p>	<p style="text-align: right;">R</p>

RESIDENTIA TRAIN STATION
BILLS OF QUANTITIES

Brought Forward		R	
<u>Signage</u>			
1	Provide an amount of R 500 000 nett for the complete supply & installation of PRASA mandatory signage to be used as directed by the Employer or Employer's representative and to be deducted in whole or in part if not required.	Item	500,000.00
2	Add: Profit	Item	
3	Add: Attendance	Item	
<u>Community Liason Officer</u>			
4	Provide an amount of R 90 000 nett for the appointment of a Community Liaison Officer for the duration of the Contract to be used as directed by the Employer or Employer's representative and to be deducted in whole or in part if not required.	Item	90,000.00
5	Add: Profit	Item	
6	Add: Attendance	Item	
Carried to Final Summary		R	
Section No. 8			
Bill No. 1			

PART 2

SECTION 9 - CIVIL ENGINEERING WORKS

RESIDENCIA TRAIN STATION						
Item	Pay Ref	Description	Unit	Qty	Rate	Amount
	SABS 1200 C	SECTION 2: SITE CLEARANCE				
LI	8.2.1	Clear and grub and dispose	ha	0.15		
	8.2.2	Remove and grub large trees and tree stumps of girth and dispose				
LI		(a) Over 1 m and up to and including 2 m	No.			
	8.2.8	Demolish and remove structures/ buildings and dismantle steelwork, etc.				
LI		a) Demolish and dispose of unreinforced concrete paving and base courses	m3			
LI		b) Demolish and dispose of 50mm thick asphalt paved surfaces	m²			
		c) Take up and dispose of 80mm thick block paving	m²			
		d) Demolish and dispose of precast concrete kerbs deemed to be in poor condition and cut to spoil	m			
		e) Demolish and dispose of reinforced concrete paving	m3			
	8.2.9	Transport materials and debris Extra-over for importation of materials from commercial sources or from borrow	m3.km	1 329		
		Provision Sum - Scanning of underground services using LMX200 type of GPRS equipment is recommended as it provides unprecedented insights and target confidence to detect traditionally non-locatable subsurface features such as: Non-metallic pipes, Underground Electrical Cable, Concrete storm/sewer systems etc	P.sum	1.00	R 75 000.00	R 75 000.00
		Provision Sum - Dismantle and Removal of existing car ports and store them at designated place as instructed by the Engineer	P.sum		R 120 000.00	R -
SECTION 2: SITE CLEARANCE - TOTAL AMOUNT CARRIED TO SUMMARY						

RESIDENCIA TRAIN STATION						
Item	Pay Ref	Description	Unit	Qty	Rate	Amount
	SABS 1200 D	SECTION 3: EARTHWORKS				
	8.3.1	Site preparation				
	8.3.1.2	Remove topsoil to nominal depth 150 mm depth), stockpile and maintain	m3	35.00		
	8.3.2	Bulk excavation				
		(a) Excavate in all materials and disposal of spoil at source obtained by contractor in compliance with regulations				
		(1) bulk excavation ≤ 3m deep for Buildings	m3			
		(b) Extra-over for				
		(1) intermediate excavation	m3			
		(2) hard rock excavation	m3			
		(3) boulder excavation class A	m3			
		(a) Excavate in all materials, stockpile and use for embankment or backfill	m3			
		selected material from excavation compacted to min 93% of MOD AASHTO density in 150mm layers				
	8.3.4	Importing of materials				
	8.3.4.1	Extra-over for importation of materials from commercial sources or from borrow pits				
		(b) From commercial sources				
		(ii) 150mm G5 subbase Natural gravel, compacted to minimum 95% of mod AASHTO maximum density	m3	221.55		
		(iv) 150mm G6 subbase Natural gravel, compacted to minimum 93% of mod AASHTO maximum density	m3			
		(v) 150mm G7 or better subbase Natural gravel, compacted to minimum 93% of mod AASHTO maximum density	m3			
		(vi) Rip & recompact 150mm insitu layer min 93% of MOD AASHTO density	m3	221.55		
Section 3- Earthworks - Total Amount Carried to Summary						

RESIDENCIA TRAIN STATION						
WALKWAYS AND COURTYARDS						
Item	Pay Ref	Description	Unit	Qty	Rate	Amount
	SABS 1200 DM	SECTION 39: EARTHWORKS (ROADS, SUBGRADE)				
		Milling out existing bituminous material with an average milling depth (Hand excavation)				
		(b) Material to be disposed of with the average depth of excavation				
		(i) Not exceeding 30mm	m3	400.00		
	8.3.3	Treatment of road-bed				
		(1) rip & recompact 150mm insitu layer min 93% of MOD AASHTO density	m3	60.00		
	8.3.7	Cut to spoil				
		(a) Soft excavation	m3	12.00		
		(b) Intermediate excavation	m3	1.20		
		(c) Hard excavation	m3	0.60		
		(d) Boulder excavation class A	m3	0.30		
	PS 3	Watering of temporary deviations for dust control (as per Engineer's instruction)	kl	500.00		
SECTION 39: SANS 1200DM - EARTHWORKS (ROADS) - TOTAL AMOUNT CARRIED TO SUMMARY						
	SABS 1200 ME	Extra-over for importation of materials from commercial sources or from borrow SECTION 40: SUBBASE				
		Construct the subbase course/ shoulders/gravel wearing course with material from commercial sources				
	8.3.3	(a) Natural gravel				
		(i) G5 base Natural gravel, compacted to minimum 95% of mod AASHTO maximum density	m3	60.00		
		(ii) Filling with C4 subbase using min. G5 parent material stabilised with $\pm 3\%$ cement CEM II / III A 32.5N by mass, selected and supplied by the Contractor, deposited, watered and consolidated to 95% modified AASHTO density in 150mm thick sub-base course.	m3			
		PLATFORM PAVEMENT				
		ASPHALT BASE AND SURFACING -PLATFORM Asphalt surfacing				
		Continuously graded hot-mix asphalt using: 50/70 penetratgrade bitumen 20 mm thick medium grade	m2	12950		
SECTION 40: SANS 1200ME: SUBBASE - TOTAL AMOUNT CARRIED TO SUMMARY						

	SABS 1200 MJ	SECTION 41: SEGMENTED PAVING				
	8.2.2	Construction of block paving complete				
LI		60mm Type S-A, class 25 interlocking units - Grey in colour	m ²	1 477.00		
		60mm Type S-A, class 25 interlocking terracotta precast blocks	m ²			
		PLATFORM EDGING				
		Tactiles				
LI		300x300x30mm Cement base product with Tac pins from Union Tiles or equal approved, with manufacturer recommended sealant.	m	1 122.00		
LI		Guidance TGS's SANS 784 Standard Block_400 x 400 x 65mm in pedestrian ramps	m ²	240.00		
	8.2.3	Cutting units to fit edge restraints				
LI		a) 60mm blocks	m			
LI	8.2.5	Trial section, not part of permanent work (provisional)	m ²			
		Provisional sum for Canopy steel frame and Cover sheeting	P. sum	1.00	R 200 000.00	R 200 000.00
		Retro-reflective road marking paint: [Provisional Sum]	P. sum	1.00	R 85 000.00	R 85 000.00
SECTION 41: SANS 1200MJ - SEGMENTED PAVING - TOTAL AMOUNT CARRIED TO SUMMARY						
	SABS 1200 MK	SECTION 42: KERBING AND CHANNELLING				
	8.2.1	Concrete kerbing to SANS 927 on sand-cement bedding				
		(d) Fig. 3 kerb grade 25MPa/19 mm concrete for precast kerbs				
		(1) Straight kerbing	m	570.00		
	8.2.7	Trimming of excavations for concrete-lined open drains in				
		(a) Soft material	m ²	70.00		
		Concrete (Class 25MPa) lined drain 100mm thick and 900 mm wide, 100 mm depth including surface preparation i.e. shape, rip & recompact to min 90% Mod AASHTO density	m			
SECTION 42: SANS 1200MK - KERBING AND CHANNELLING - TOTAL AMOUNT CARRIED TO SUMMARY						

SUMMARY CIVIL WORKS

DESCRIPTION			AMOUNT
SECTION 39: SANS 1200DM: EARTHWORKS (WALKWAYS SUBGRADE)			
SECTION 40: SANS 1200ME: SUBBASE (G5) (WALKWAY)			
SECTION 41: SANS 1200MJ: SEGMENTED PAVING (WALKWAYS)			
SECTION 42: SANS 1200MK: KERBING AND CHANNELLING			
Sub-Total - Bills of Quantities - (Excluding P & Gs)			

RESIDENCIA TRAIN STATION						
WATER SUPPLY						
Item	Pay Ref	Description	Unit	Qty	Rate	Amount
	SABS 1200 DB	SECTION 15: EARTHWORKS (PIPE TRENCHES)				
	8.3.2	Excavation				
		(a) Excavate in all materials for trenches, backfill, compact and dispose of surplus material				
		(2) Over 125 mm and up to 1200 mm dia pipes for depths				
		Over and up to				
		0,0 m 1,0 m	m3	84		
		1,0 m 2,0 m	m3	31		
		(b) Extra-over item (a) above for:				
		(1) intermediate excavation	m3	8		
		(2) hard rock excavation	m3	4		
		(c) Excavate and dispose of unsuitable material from trench bottom (provisional)	m3	15		
		Extra-over for importation of materials from commercial sources or from borrow barrel) with material obtained from trench excavations. To be compacted in 150mm layers to 90% MOD AASHTO density.	m3	82		
Section 15: SANS 1200DB - Earthworks (pipe trenches) - Total Amount Carried to Summary						
	SABS 1200 L	SECTION 16: MEDIUM-PRESSURE PIPELINES				
	8.2.1	Supply, lay, joint, bed and test pipelines complete with couplings. The tests shall include pressure and leakage tests.				
		(a) class 12 uPVC pipes:				
		(b) mPVC Class 16 pipes				
		(1) 50 mm diameter	m			
		(2) 75 mm diameter	m	45		
		(3) 90 mm diameter	m			
		(4) 110 mm diameter	m	130		
	8.2.2	Extra-over 8.2.1 for the sup- plying, laying, and bedding of specials complete with couplings				
		(a) 45° slow bends	No.	3		
		(b) 90° slow bends	No.	15		
		(c) 100 mm, calibrated flow meter	No.	1		
		(d) 90 mm, calibrated flow meter	No.	1		
		(e) Hydrant tees, CI class 12				
		(i) 90mm diameter	No			

		(ii) 110mm diameter	No			
		(f) Hydrants (aboveground type, 90 mm diameter hydrant on 80mm diameter riser,	No			
	8.2.3	Extra-over 8.2.1 for the supplying, fixing, and bedding of valves				
		(a) 100 mm gate valve	No.	1		
		(b) 75 mm gate valve	No.	1		
	8.2.11	Anchor/thrust blocks and pedestals				
		(b) (1) Concrete, grade 25MPa	m3	4		
	8.2.12	Concrete casing -grade 15MPa	m3	2		
	8.2.13	Valve and hydrant chambers, etc.				
		(a) 80mm Air & gate valve complete with chambers	No.	2		
	PS1	Marker post to show pipeline	No	3		
		TESTING & COMMISSIONING				
		Pressure Testing	Sum	1		
SECTION 16: SANS 1200DM - MEDIUM-PRESSURE PIPELINES - TOTAL AMOUNT CARRIED TO SUMMARY						
	SABS 1200 LB	SECTION 17: BEDDING (PIPES)				
	8.2.1	Provision of bedding from trench excavation				
		(a) Selected granular material	m3	84		
		(b) Selected fill material	m3	37		
	8.2.2	Supply only of bedding by importation				
	8.2.2.1	From other necessary excavations (provisional)				
		(a) Selected granular material	m3	41		
		(b) Selected fill material	m3			
SECTION 17: SANS 1200LB - BEDDING (PIPES) - TOTAL AMOUNT CARRIED TO SUMMARY						

SUMMARY WATER SUPPLY WORKS

DESCRIPTION			AMOUNT
SECTION 15: SANS 1200DB: EARTHWORKS (PIPE TRENCHES: WATER SUPPLY)			
SECTION 16: SANS 1200L: MEDIUM PRESSURE PIPELINES			
SECTION 17: SANS 1200LB: BEDDING (PIPES: WATER SUPPLY)			
Sub-Total - Bills of Quantities - (Excluding P & Gs)			

RESIDENCIA TRAIN STATION						
SEWER						
Item	Pay Ref	Description	Unit	Qty	Rate	Amount
	SABS 1200 DE	SECTION 19: EARTHWORKS (PIPE TRENCHES)				
	8.3.2	Excavation				
		(a) Excavate in all materials for trenches, backfill, compact and dispose of surplus material				
		(2) Over 125 mm and up to 1200 mm dia pipes for depths				
		Over and up to				
		0,0 m 1,0 m	m3	84		
		1,0 m 2,0 m	m3	32		
		2,0 m 3,0 m	m3	7		
		(b) Extra-over item (a) above for:				
		(1) intermediate excavation	m3	8		
		(2) hard rock excavation	m3	5		
		(d) The general backfilling of pipe trenches (excluding the backfill around the pipe barrel) with material obtained from trench excavations. To be compacted in 150mm layers to 90% MOD AASHTO density.	m3	81		
	8.3.3	Excavation ancillaries				
	8.3.3.1	Make up deficiency in backfill				
		Extra-over for importation of materials from commercial sources or from borrow				
		(a) from other necessary excavations on site	m3			
		(c) by importation from commercial or off-site sources selected by the Contractor	m3			
	8.3.4	Particular items				
		(a) Shore trench opposite structure or service	m			
	SABS 1200 LD	SECTION 8: SEWERS				
	8.2.1	Supply, lay, joint, bed and test pipelines. The tests shall include mirror and leakage tests.				
		(a) uPVC Heavy Duty Class 34 to SANS 791				
		(1) 160 mm dia pipes	m	120		
		(2) 200 mm dia pipes	m			
	8.2.3	Manholes				
		Manholes as per dwg _Dia 1050mm - 1200mm complete with type 2A lockable cover and frame for depths				
		Over and up to				
		(1) 0 m 0,5 m	No.			
		(2) 0,5 m 1,0 m	No.			
		(3) 1,0 m 1,5 m	No.	5		
		(4) 1,5 m 2,0 m	No.			

8.2.8	Anchor blocks (b) Concrete grade 20MPa including formwork	m3	2		
8.2.9	Marker posts	No.	3		
8.2.10	Permanent plug stoppers	No.			
	Construct rodding eye complete with uPVC replacement cover, cast - in uPVC frame and 160mm dia x 45 deg bend.	No.	4		
8.2.11	Connection to existing sewer Manholes - Tie in and rebuild complete Manholes	No.	1		
8.2.12	Raising or lowering of existing manholes	No.	2		
	TESTING OF SEWERS				
	Random watertightness test of manholes as specified by SANS 1200 LB.	no	1		
	Air test of sewer as described by SANS 1200 LD	m	120		
	CCTV camera inspection of sewer lines up to: 160mm dia	m	120		
	Direct manhole connection into existing Bulk Sewer	no	2		
	STORMWATER CHANNEL				
	Supply and install U-Channel with square grid for u-channel as per Engineer's specification reinforced concrete U-Channel				
	370mm x 408mm x 1200mm U-Channel	m	210		
	370mm x 135mm x 600mm Square Grid for U-Channel	m	210		
	GRID INLET				
	Construct grid inlet, complete with floorslab, benching, walls and grid. Rate should include for all excavation and recompaction to 93% Mod AASHTO density and for cutting of pipes to fit as shown in the drawing for pipes up to:				
	450mm dia	No.	12		
	525mm dia	No.			
	600mm dia	No.			
SECTION 8: SANS 1200 LD - SEWERS - TOTAL AMOUNT CARRIED TO SUMMARY					

RESIDENCIA TRAIN STATION

SUMMARY CIVIL WORKS BILLS OF QUANTITIES

Item	Description	Amount
1	Site clearance	
2	Earthworks	
3	Walkway pavements	
4	Water Supply	
5	Sewer	
	TOTAL	

SECTION 10 - ELECTRICAL WORKS

PRASA RESIDENCIA STATION ELECTRICAL BOQ					
LV Reticulation					
Item	Description	Unit	Qty	Rate	Amount
	Distribution Boards				
	Refurbish the following distribution boards, including all equipment, complete with all accessories. Installation shall include fixing, accessories and earthing.				
	The price shall include for all fixing materials, circuit terminations, lugs, cable straps and any other items necessary for the complete installation. The price shall also include liaison with the board manufacturer, obtaining shop drawings for approval by the engineer, and the preparation and provision of detailed legend cards, as per the specification.				
1	Main Station Kiosk	Lot	0		
2	Ticket Office - 6 Way	Lot	1		
3	Security Office DB 6 Way	Lot	1		
4	Main Platform Distribution Baords	Lot	1		
5	Platform Distribution Boards	Lot	0		
6	Admin Buildings Distribution Boards	Lot	1		
	Power Cabling				
	Supply and install the following cables laid on cable tray, pulled in a sleeve or in a trench, including all fixings and accessories. The cables shall be 600/1000V/ PVC/SWA/PVC/ECC with copper conductors.Complete with terminations				
7	50mm ² x 4 core ecc cable + 6 Cable Terminations	m	33		
8	35mm ² x 4 core ecc cable + 8 Cable Terminations	m	0		
9	25mm ² x 4 core ecc cable + 4 Cable Terminations	m	5		
10	16mm ² x 4 core ecc cable + 10 Cable Terminations	m	66		
11	Joining Kits PC Sum	Lot	1		
12	110 Flexible Sleeves	m	131		
13	50mm Flexible Sleeves	5	0		

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PRASA RESIDENCIA STATION ELECTRICAL BOQ					
LIGHTING					
Item	Description	Unit	Qty	Rate	Amount
	LIGHTING				
	All Internal Light Fittings complete with 3m Lead,5Amp Plug and appropriate drivers				
1	16 Amp, single lever light Switch	Lot	5		
2	5 Amp, 3 pin, unswitched socket outlet to fit deep round conduit boxes	Lot	22		
3	LED panel Sidelift flicker free driver + PMMA LG + Prisma Diffuser - 4000 Lumens - 600x600 Recessed	Lot	4		
4	LED panel Sidelift flicker free driver + PMMA LG + Prisma Diffuser - 4000 Lumens - 600x600 Recessed with Battery Backup	Lot	4		
5	1578mm Surface Mounted fitting 53W LED complete with driver and microwave sensor with 70'000hr operation warranty	Lot	9		
6	LED panel Sidelift flicker free driver + PMMA LG + Prisma Diffuser - 4000 Lumens - 600x600 Surface Mounted		5		
6	Led Industrial Bulkhead fitting with unpainted marine grade high pressure die cast aluminium backing with non discolouring injection moulded high impact acrylic diffuser, IP66. 4370 lm 32W, Neutral white 740 with 10kv surge protection	Lot	1		
7	LED Pole Top with aluminium Spigot and Cover, high impact Acrylic Protector, IP55 rated, 3506-5219lm output, 37-54W with 142 Efficacy, Neutral white 740, complete with 5m Pole with 2m Stub	Lot	1		
	18W LED Downlight Recessed in ceiling complete with driver and 5A plug		1		
8	Bridge Lighting Solar type 40W LED Street Lamp	Lot	1		
	132W LED Type Highbay with unpainted marine grade high pressure die cast aluminium backing with non discolouring injection moulded high impact acrylic diffuser Natural White colour rendering, 4m Mountable height	Lot	0		
9	Exit Sign/Running Man c/w battery backup including lamps	Lot	1		
10	Photo Electric Cell	Lot	1		
10	2,5mm² x 3 (Red, Black & Green) - Housewire	m	876		
11	25mm diameter PVC conduit	m	526		
	Total Carried to Summary				

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SMALL POWER

Item	Description	Unit	Qty	Rate	Amount
	SMALL POWER				
1	16 Amp, single Switched Socket Outlet - white	No	2		
2	16 Amp, single Switched Socket Outlet - white on Power Skirting	No	4		
3	20 Amp, DP Isolator - complete with conduit to outlet box below-	No	1		
	100x100 Steel Wall box chased		2		
	100x100 PVC Surface Box Mounted on Wall		0		
	100x50 Steel Wall box chased		0		
4	4mm ² x 3 (Red, Black & Green) - Housewire	m	350		
5	25mm diameter PVC conduit	m	35		
6	2 compartment PVC Power Skirting + 5 End caps	m	3		
7	500VA single phase UPS	Lot	1		
8	To provide the earthing and testing of the electrical installation in accordance with the General Specification, regulations and the requirements of the local authority. All circuits shall be earthed in accordance with the wiring code. Where the earth conductor is joined at the terminal block, the wires shall be soldered together so that removal of the equipment shall not result in an interruption of the earth continuity of the conductors.	Lot	1		
	Total Carried to Summary				

PRASA RESIDENCIA STATION ELECTRICAL BOQ

SUMMARY

Item	Description	Amount
1	LV Reticulation	
2	Lighting	
3	Small Power	
	Sub Total Carried to Main Summary	

SECTION 11 - ELECTRONICS & ICT

Item	Description	Unit	Qty	Rate	Amount
1.1	<u>DOOR INTEGRATION</u>				
1.1.1	300kg Maglock complete with Z Bracket.	No	3		
1.1.2	Green Breakglass	No	3		
1.1.3	3A ,24V Power Supply complete with battery back up.	No	3		
1.1.4	Cabling for Access Control System (PH30)	m	140		
1.1.5	Cabling for Access Control System (PH120)	m	15		
1.2	<u>FIRE DETECTION</u>				
1.2.1	Addressable 4 Loop Fire Alarm Panel with Network Card	No	2		
1.2.2	Addressable 2 Loop Repeater Panel with Network Card	No	1		
1.2.3	Program Fire Alarm Panel	No	4		
1.2.4	Addressable Smoke Detector	No	18		
1.2.5	Addressable Sounder	No	3		
1.2.6	Addressable Strobe	No	6		
1.2.7	Addressable Void Smoke Detector + Ceiling mounted LED	No	4		
1.2.8	Addressable Heat Detectors	No	1		
1.2.9	Addressable Manual Call Point (Red Breakglass)	No	4		
1.2.10	Addressable Relay Unit	No	4		
1.2.11	Addressable Interface Unit	No	1		
1.2.12	Fire Door Hold Open Magnets	No	1		
1.2.13	3A 24V Power Supply with battery back up	No	1		
1.2.14	Intergration with Ventilation System	No	1		
1.2.15	PH30 Cable	m	950		
1.2.16	PH120 Cable	m	44		
1.3	<u>INTERCOMM SYSTEM</u>				
1.3.1	90 Way Intercom Controller Master Station. Must support or drive a minimum of 90 speakers	No	1		
1.3.2	Paging console with Gooseneck microphone	No	1		
1.3.3	Program Preset Timer for optional School Bell System (hardware unit with lcd display, running bell control software)	No	1		
1.3.4	Outdoor Intercom module complete with Horn Speaker (5-30W) & microphone. (IP66)	No	7		
1.3.5	High quality, wall mount, indoor, intercom module complete with Speaker (10W) & microphone. The microphone must be very sensitive, able to clearly pick audio in a class environment when activated with no feedback	No	8		
1.3.6	Intercom Terminal Box: 4U Wall Mount, lockable	No	1		
1.3.7	Intercomm Cabling (PH30) - 2 Core	m	402		
1.3.8	Intercomm Cabling (PH30) - 20 Core	m	183		
1.3.9	Intercomm Cabling (PH120) - 40 Core	m	73		
1.4	<u>INTRUSION DETECTION SYSTEM</u>				
1.4.1	Control Panel. 8 on-board zones. Expandable to 128 hardwired zones. 4PGM On-board outputs expandable to 80. Template Programming. 8 partitions. Connect up to 16 supervised keypads with keypad zones and expansion. 500-event buffer. 500 user codes.	No	1		
1.4.2	Central Master Control and Indication Panel	No	1		
1.4.3	Hard wired Full message LCD Keyboard	No	1		
1.4.4	Wired Panic Button	No	9		
1.4.5	Wireless Panic Button	No	9		
1.4.6	Outdoor Indicator LED Mounted above door (IP66) complete with accessories	No	9		
1.4.7	Communication network module (GSM or /TCP/IP)	No	1		
1.4.8	Outdoor 15W, Electric, 12DC, Siren,	No	2		
1.4.9	Power Supply complete with battery backup	No	1		
1.4.10	Dual type (microwave and infrared) detectors	No	9		
1.4.11	Cabling (PH30) - 4 pair twisted screened cable	m	146		
1.4.12	Cabling (PH120) - 20 pair twisted screened cable	m	15		
1.5	<u>INDEPENDENT INTERVAL BELL SOUNDER SYSTEM</u>				
1.5.1	Bell System Control Panel with Timer and Override Function	No	1		
1.5.2	203mm Gong type bell as shown on drawings.	No	2		
1.5.3	Sounder Cabling (PH30)	m	183		

1.6	<u>MISCELLANEOUS</u>				
1.6.1	Sundries (to include termination boxes, screws, heat shrinks and other materials deemed necessary to complete installation)	Item	1		
1.7	<u>TESTING & COMMISSIONING INCLUDING COC</u>				
1.7.1	Access Control	Item	1		
1.7.2	Fire Detection	Item	1		
1.7.3	Intercomm System	Item	1		
1.7.4	Intrusion Detection System	Item	1		
1.7.5	Independent Interval Bell Sounder	Item	1		
1.7.6	Labelling of Outlets	Item	1		
1.7.7	As Built Drawings	Item	4		
Total Carried to Summary					

Item	Description	Unit	Qty	Rate	Amount
1.1.	<u>ACCESS CONTROL</u>				
1.1.1	Biometric Reader with Tag reader facility	No	7		
1.1.2	Door Controller	No	4		
1.1.3	Access Control Head End	No	1		
1.1.4	Cabling for Access Control System including terminations (CAT 6A FUTP)	m	584		
1.1.5	5m CAT 6A FUTP Fly Leads	No	15		
1.1.6	Integration with CCTV System	No	1		
1.1.7	Intergration with Fire Alarm System	No	1		
1.2	<u>WIRED NETWORK SYSTEM (DATA)</u>				
1.2.1	Data Points - Cradles and terminations	No	31		
1.2.2	Data Cabling including terminations (CAT 6A FUTP)	m	2511		
1.2.3	5m CAT 6A FUTP Fly leads	No	63		
1.30	<u>TELEPHONE SYSTEM</u>				
1.3.1	IP Telephone PABX including Software and Server	No	1		
1.3.2	Desktop IP Telephones and Power Supply	No	13		
1.3.3	Telephone Points - Cradles and terminations	No	0		
1.3.4	Telephone Cabling including terminations (CAT 6A FUTP)	m	0		
1.3.5	5m CAT 6A FUTP Fly leads	No	19		
1.40	<u>WIRELESS NETWORK (WIFI)</u>				
1.4.1	Wireless LAN Controller with 60 AP License (See Spec). Wireless intrusion prevention system	No	1		
1.4.2	WIFI Access Point	No	4		
1.4.3	WIFI CAT 6A FUTP point - Cradles and terminations	No	5		
1.4.4	WIFI Cabling including terminations (CAT 6A FUTP)	m	350		
1.4.5	5m CAT 6A FUTP Fly leads	No	9		
1.5	<u>CCTV SYSTEM</u>				
1.5.1	Rack Mounted PVR with 1 week storage with capacity for extension and cloud storage	No	1		
1.5.2	Control Equipment including 2 x 50 inch 1920x1080 monitors INCLUDING ALL SOFTWARE AND LICENCES	No	1		
1.5.3	IP, 2x2.0 MegaPixel (1080p) HD Indoor Dome Camera with analytics, 3-9mm lens PoE, Vandal resistant and to IP66.	No	2		
1.5.4	IP, 3x2.0 MegaPixel (1080p) HD Indoor Dome Camera with analytics, 3-9mm lens PoE, Vandal resistant and to IP66.	No	1		
1.5.5	IP, 4x3.0 MegaPixel, WDR Day/Night Camera, 2.8-8mm f/1.3, Pendant Dome Camera, Vandal resistant and to IP66.	No	1		
1.5.6	CCTV CAT 6A FUTP point - Cradles and terminations	No	5		
1.5.7	CCTV Cabling including terminations (CAT 6A FUTP)	m	409		
1.5.8	5m CAT 6A FUTP Fly leads	No	10		
1.6	<u>NETWORK SWITCHES</u>				
1.6.1	8 Port Switch	No	1		
1.6.2	48 Port Switch	No	3		
1.7	<u>CABINETTES</u>				
1.7.1	20u Cabinette	No	1		
1.7.2	43u Cabinette	No	1		
1.7.3	8 port Fibre Patch Panel	No	3		
1.7.4	24 Port Patch Panel	No	6		
1.7.5	48 Port Patch Panel	No	3		
1.7.6	XFP,SFP + Modules	No	58		

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PRASA RESIDENCIA STATION ELECTRONICS & ICT PROVISIONAL BOQ		
SUMMARY		
Item	Description	Amount
1	Electronic	
2	ICT	
	Sub Total Carried to Main Summary	

SECTION 12 - MECHANICAL WORKS

SUMMARY

Item	Description	Amount
1	Wet Services	
2	Lifts	
3	HVAC	
4	Fire Protection	
	Total	

WET SERVICES BOQ

Item	Description	UoM	Qty	Rate	Amount
	Supply and install the following pipes complete with all fittings, bends, reducers, etc				
	HDPE PE 100 class 12.5				
1	Dia 110	m	-		
2	dia 75	m	100.00		
3	dia 40	m	-		
4	dia 32	m	-		
5	dia 25	m	-		
6	dia 20	m	60.00		
	Copper class 1				
7	dia 15	m	-		
8	dia 22	m	-		
9	dia 28	m	-		
10	dia 35	m	-		
11	dia 42	m	-		
12	dia 58	m	-		
13	dia 110	m	-		
14	Insulation of all hot water piping with an insulation with an R-Value of 1	lumpsum	-		
	Supply and install the following brass valves				
15	dia 15 angle valves	nr	300.00		
16	dia 15 stop cock	nr	40.00		
17	dia 22 stop cock	nr	80.00		
18	dia 28 stop cock	nr	15.00		
19	dia 75 gate valve	nr	40.00		
20	dia 110 gate valve	nr	15.00		
21	100 mm dia pressure gauge (650kPa range)	nr	4.00		
22	100 mm dia pressure gauge (2500kPa range)	nr	2.00		
23	dia 65 back flow preventor	nr	1.00		
24	dia 110 backflow preventor	nr	1.00		
25	dia 65 non return	nr	4.00		
26	dia 110 non return	nr	4.00		
27	dia 65 strainers	nr	4.00		
	Supply and install the following mechanical equipment as per manufacture's instructions				
28	150lt solar pre-heater complete with flat panel collector and all fittings and valves as per manufacture's instructions	nr	2.00		
29	300lt solar pre-heater complete with flat panel collector and all fittings and valves as per manufacture's instructions	nr	-		
30	150lt geyser with all fittings and valves as per manufacture's instructions	nr	2.00		
	Balance Carried Forward				

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MECHANICAL LIFTS BOQ

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MECHANICAL HVAC BOQ

Item	Description	UoM	Qty	Rate	Amount
	Supply and install the following circular EC fan complete attenuators, support brackets, speed controllers, etc. (the combination fan and silencer selection must be such as to satisfy the specified noise levels)				
1	Fan 1980 l/s @ 400Pa static	nr	-		
2	Potentiometer speed controllers	nr	-		
3	Fan 400l/s @ 300Pa static	nr	-		
4	Potentiometer speed controllers	nr	-		
	Supply and install 0.9mm 430 stainless steel (with a no. 4 satin finish) kitchen extraction canopy, complete with all support brackets, studs, accessories, etc				
5	1500l x 1500w x 500h extraction canopy	nr	-		
6	500 x 500 inertial filters made of 430 stainless steel (495l/s)	nr	-		
7	Supply and install electric controls for 2 canopies	lumpsum	-		
8	Supply and install dia 450 roof dispersion cowl	nr	-		
9	1900l x 1000w x 500h extraction canopy	nr	-		
	Supply and install the following ducting in accordance to SMACNA complete with spigots, all fittings, flexis, suppotrs, etc.				
10	dia 224	m	10.00		
11	dia 315	m	4.00		
12	325 x 325	m	4.00		
13	250 x 250	m	4.00		
14	375 x 375	m	4.00		
15	dia 400	m	4.00		
16	450 x 425	m	2.00		
17	650 x 650	m	2.00		
18	800 x 400	m	1.00		
19	300 x 300	m	1.00		
20	600 x 300	m	1.00		
	Supply and install the following diffusers. Each diffuser must be selected in accordance with the manufacture's recommendations, to be capable of passing the specified air quantity without creating excessive resistance, noise or local draughts				
	Each diffuser must be provided with an opposed blade volume control damper or adjustable disk type throttling mechanism				
21	600 x 600 face louvre diffuser	nr	2.00		
	Supply and install Aluminium weather louvres				
22	800 x 400 weather louvre	nr	1.00		
23	Supply and install G4 pleated type filters (min 50mm thick) washable type	nr	1.00		
	Supply and instal the following AC units				
24	9000 BTU split Unit	nr	2.00		
	Balance Carried Forward				
	Balance Brought Forward				

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MECHANICAL FIRE BOQ

Item	Description	UoM	Qty	Rate	Amount
	<u>FIRE PROTECTION INSTALLATION</u>				
	Design, manufacture, works testing, supply and delivery to site, moving into position, erection, connecting up, site testing, witness testing, proving to the inspectors, demonstrating to the Employer and maintenance of the complete installation as per conditions of contract and the specification and on drawings.				
1	Fire Hose Reel pump set comprising Electric Duty and Standby pumps: Duty at 1.0 litres/second @ 600kPa. All equipment to be mounted on frame complete with AVMs, pressure vessel and pressure switches as shown on the drawings of the site plan	Item	1.00		
2	Swing Type Fire Hose Reel to comply with SANS 543 Fire hose reels shall be fitted with a 30m long reinforced red rubber hose of internal diameter of 20mm nominal bore, with a 4.8mm internal diameter chromium plated brass nozzle and isolating valve. Fire hose reel pipes above ground shall be colour coded signal red A11.	No.	1.00		
3	Standard Wall Mounted Type Fire Hose Reel to comply with SANS 543 Fire hose reels shall be fitted with a 30m long reinforced red rubber hose of internal diameter of 20mm nominal bore, with a 4.8mm internal diameter chromium plated brass nozzle and isolating valve. Fire hose reel pipes above ground shall be colour coded signal red A11.	No.	4.00		
4	Supply, install, test and commission 80 X 65 mm right angled tamper proof fire hydrant with handwheel opening mechanism with a stand pipe galvanised 100mm pipe and beeled anchor block.	No.	2.00		
5	Supply, install, test and commission Ø65mm Twin Booster fire connection hydrant complete with plastic material dust covers and connection chain, 15mm Pressure Gauge adaptor with ball valve .	No.	1.00		
6	Supply, install, test and commission Ø100mm suction hydrant complete with Storz coupling and plastic cover as per detail 1 on SITE DISTRIBUTION LAYOUT	No.	-		
7	15mm stainless steel glycerine filled pressure gauge with stop cork rated to 2500kPa	No.	1.00		
	Galvanised mild steel pipe treated with galvafruid paint and two coats of firemen red signal paint A11 in accordance with SANS 10140-3 :2003. Pipework to be complete with supports, bends, unions to make a complete installation				
8	25mm	m	100.00		
9	32mm	m	60.00		
10	40mm	m	-		
11	50 mm	m	-		
12	65mm	m	-		
13	80 mm	m	-		
14	100mm	m	60.00		
	GMS Pipework for fittings, as shown on the drawings:				
15	25mm (Tees, reduces, bends , etc)	No.	50.00		
16	32mm (Tees, reduces, bends , etc)	No.	20.00		
17	40mm (Tees, reduces, bends , etc)	No.	-		
18	50mm (Tees, reduces, bends , etc)	No.	-		
19	65mm (Tees, reduces, bends , etc)	No.	-		
	Balance Carried Forward				

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	Description				Amount
	<u>FIRE PROTECTION SUMMARY PAGE</u>				
	Fire Protection				
	Preliminary & General Items				
	Total for Fire Protection Services Sub- Contract				
	TOTAL MECHANICAL SUM CARRIED TO MAIN CONTRACT SUMMARY				

SECTION 13 - EPWP

Item		Unit	Quantity	Rate	Amount
SECTION 13					
BILL NO.1					
EXPANDED PUBLIC WORKS PROGRAMME					
SUPPLEMENTARY PREAMBLES					
Labour intensive methods					
Refer to Part C3: Scope of Work					
1	Training allowance for each Bricklayer learner in terms of formal training (Accredited by SETA)	No.	20		
2	Training allowance for each Plasterer learner in terms of formal training (Accredited by SETA)	No.	20		
3	Training allowance for each Tiler learner in terms of formal training (Accredited by SETA)	No.	20		
4	Training allowance for each Plumber learner in terms of formal training (Accredited by SETA)	No.	20		
5	Training allowance for each Painter learner in terms of formal training (Accredited by SETA)	No.	20		
6	Training allowance for each Trainee allowance per day not less than R150.00	Day	20		
7	The cost of the training facility that meets the minimum OHS requirement	Item	1		
8	Allowance for stationery per learner	No.	20		
9	Allowance for orange overall and PPE with EPWP logo	No.	20		
10	Allowance for transport to the training facility	Item	1		
Carried to Summary					
Section No. 13					
Bill No. 1					

SUMMARY

Section No	FINAL SUMMARY	Page No	Amount
	PART 1		
1	Section 1 - Preliminary and General		R
2	Section 2 - Alterations		R
3	Section 3 - East Admin		R
4	Section 4 - West Admin		R
5	Section 5 - Ticket Verification		R
6	Section 6 - Public Ablution		R
7	Section 7 - Cleaners & Security		R
8	Section 8 - Provisional Sums		R
	Sub-total A		R
	PART 2		
9	Civil Engineering Works (Vat excl. Carried over from a separate document Civils Bills of Quantities)	Item	R
10	Electrical Works (Vat excl. Carried over from a separate document Electrical Bills of Quantities)	Item	R
11	Electronics & ICT (Vat excl. Carried over from a separate document Electronics & ICT Bills of Quantities)	Item	R
12	Mechanical Works (Vat excl. Carried over from a separate document Mechanical Bills of Quantities)	Item	R
13	EPWP (Vat excl. Carried over from a separate document EPWP Bills of Quantities)	Item	R
	Sub-total B		R
	Sub-total C (Sub-total A+Sub-total B)	Carried to Summary	R

FINAL SUMMARY

UPGRADES AND ADDITIONS TO STRETFORD AND RESIDENCIA TRAIN STATIONS

FINAL SUMMARY		Page No	Amount
Section No			
STRETFORD TRAIN STATION			
1	Sub-total Brought from Stretford BOQ (excl VAT)		R
RESIDENCIA TRAIN STATION			
2	Sub-total Brought from Residencia BOQ (excl VAT)		R
SUB-TOTAL			R
Add: VAT @ 15%			R
Carried to Form of Tender			R