

PROVINCIAL ADMINISTRATION OF KWAZULU-NATAL DEPARTMENT OF PUBLIC WORKS



KWAZULU-NATAL PROVINCE

PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

BILLS OF QUANTITIES

with GCC for Construction Works - Second Edition 2010

CONTRACTUAL SECTION ONE VOLUME APPROACH

PHASE 14: STORM DAMAGED PROGRAMME: REPAIRS AND RENOVATIONS TO STORM DAMAGED SCHOOLS THROUGHOUT THE PROVINCE OF KWAZULU-NATAL:SOUTHERN REGION: CLUSTER 155: EMGANGENI SECONDARY SCHOOL. OPEN BIDS

Engineer/Principal Agent

Ravi Jhupsee Architects cc t/a Architronic
P.O. Box 19393
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4091
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Employer:

Head: Public Works
KZN Department of Public Works
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Fax Number: N/A

Region:

Head Public Works: Operations
KZN Department of Public Works
X9041
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3200
Tel Number: 033 - 355 5569
Fax Number: N/A

Tender Number: ZNTM01199W
CIDB Grading: 5GB OR HIGHER
ECDP Number: N/A

Project Code: 063241
Document Date: 12 December 2023

Contracting Party: _____
CIDB Registration number: _____
Central Suppliers Database Registration Number: _____



KWAZULU-NATAL PROVINCE

PUBLIC WORKS
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**PHASE 14: STORM DAMAGED PROGRAMME: REPAIRS AND RENOVATIONS TO STORM
DAMAGED SCHOOLS THROUGHOUT THE PROVINCE OF KWAZULU-NATAL:SOUTHERN
REGION: CLUSTER 155: EMGANGENI SECONDARY SCHOOL. OPEN BIDS**

THE CONTRACT



**PHASE 14: STORM DAMAGED PROGRAMME: REPAIRS AND RENOVATIONS TO STORM
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REGION: CLUSTER 155: EMGANGENI SECONDARY SCHOOL. OPEN BIDS**

C1 - AGREEMENT AND CONTRACT DATA



**PHASE 14: STORM DAMAGED PROGRAMME: REPAIRS AND RENOVATIONS TO STORM
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REGION: CLUSTER 155: EMGANGENI SECONDARY SCHOOL. OPEN BIDS**

FORM OF OFFER AND ACCEPTANCE

FORM OF OFFER AND ACCEPTANCE

Tender No - ZNTM01199W



KWAZULU-NATAL PROVINCE

PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

PHASE 14: STORM DAMAGED PROGRAMME: REPAIRS AND RENOVATIONS TO STORM DAMAGED SCHOOLS THROUGHOUT THE PROVINCE OF KWAZULU-NATAL: SOUTHERN REGION: CLUSTER 155: EMGANGENI SECONDARY SCHOOL. OPEN BIDS

C.1.1 - FORM OF OFFER AND ACCEPTANCE

THE OFFER AND ACCEPTANCE FORM IS BOUND INTO **SECTION 1** (See end of Returnable Documents) OF THIS DOCUMENT AS PART OF THE RETURNABLE DOCUMENTS. ONCE A CONTRACT IS CONCLUDED WITH A SUCCESSFUL TENDERER, THIS PAGE WILL BE REPLACED WITH THE FILLED AND SIGNED OFFER AND SIGN ACCEPTANCE BY THE EMPLOYER AND IT WILL BECOME PART OF THE CONTRACT.

PLEASE SUBMIT THE OFFER AND ACCEPTANCE FORM WITH THE OTHER RETURNABLE DOCUMENTS.



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**PHASE 14: STORM DAMAGED PROGRAMME: REPAIRS AND RENOVATIONS TO STORM
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REGION: CLUSTER 155: EMGANGENI SECONDARY SCHOOL. OPEN BIDS**

C1.2 - CONTRACT DATA

C 1.2 CONTRACT DATA: with GCC for Construction Works - Second Edition 2010	
CONTRACT DATA FOR:	
PHASE 14: STORM DAMAGED PROGRAMME: REPAIRS AND RENOVATIONS TO STORM DAMAGED SCHOOLS THROUGHOUT THE PROVINCE OF KWAZULU-NATAL: SOUTHERN REGION: CLUSTER 155: EMGANGENI SECONDARY SCHOOL. OPEN BIDS	
Tender no:	ZNTM01199W
	The General Conditions of Contract are the clauses contained in the General Conditions of Contract (2010) (Second Edition) published by the South African Institution of Civil Engineering. Copies of these conditions of contract may be obtained through most regional offices of the South African Institution of Civil Engineering, telephone number 011 805 5947 or by visiting their website at www.saice.org.za.
	CONTRACT SPECIFIC DATA The following contract specific data are applicable to this contract:
	CONTRACT VARIABLES This schedule contains all variables specific to this document and is divided into pre-tender and post-tender categories. The pre-tender category must be completed in full and included in the tender documents. Both the pre-tender and post-tender categories form part of this agreement . Spaces requiring information must be filled in, shown as 'not applicable' or deleted <u>but not left blank</u> . Where choices are offered, the non-applicable items are to be deleted. Where insufficient space is provided the information should be annexed hereto and cross referenced to the applicable clause of the schedule. Key cross reference clauses are italicised in [] brackets. The Engineer/Principal Agent, in accordance with Clause 1.1.1.16, shall obtain the specific approval from the Employer before executing any of his functions according to the "Conditions under which Consultants are appointed", or in the event where an employee of the Employer represents the Employer, the relevant General Delegations applicable at the time of executing his/her duties as described in Clause 3.1.2.
Part 1: CONTRACT DATA PROVIDED BY THE EMPLOYER:	
PRE-TENDER INFORMATION	
CONTRACTING AND OTHER PARTIES	
[1.1.1.15]	Employer: Head: Public Works (KZN Department of Public Works: Province of KwaZulu-Natal) Postal address: <i>Private Bag X 9041</i> <i>PIETERMARITZBURG</i> <i>3200</i> Tel: <i>N/A</i> Fax: <i>033 - 355 5569</i>
[1.2.1.2]	Physical address: <i>191 Prince Alfred Street</i> <i>PIETERMARITZBURG</i> <i>3200</i>
[1.1.1.16]	Employers Agent 1 <i>Ravi Jhupsee Architects cc t/a Architronic</i> Agent's service: <i>Architect</i> Postal address: <i>P.O. Box 19393</i> <i>Durban</i> <i>4091</i> Tel: <i>031 - 201 3933</i> Fax: <i>031 - 201 3930</i>
	Employers Agent 2 <i>[Agents Name]</i> Agent's service: <i>[Identify Agent's Service, eg. Engineer]</i> Postal address: <i>[P.O. Box number]</i> <i>[Name of town]</i> <i>[Code]</i> Tel: <i>[Tel Number including Area Code]</i> Fax: <i>[Fax Number including Area Code]</i>
	Employers Agent 3 <i>[Agents Name]</i> Agent's service: <i>[Identify Agent's Service, eg. Engineer]</i> Postal address: <i>[P.O. Box number]</i> <i>[Name of town]</i> <i>[Code]</i> Tel: <i>[Tel Number including Area Code]</i> Fax: <i>[Fax Number including Area Code]</i>
	Employers Agent 4 <i>[Agents Name]</i> Agent's service: <i>[Identify Agent's Service, eg. Engineer]</i> Postal address: <i>[P.O. Box number]</i> <i>[Name of town]</i> <i>[Code]</i> Tel: <i>[Tel Number including Area Code]</i> Fax: <i>[Fax Number including Area Code]</i>
Tender no:	ZNTM01199W

	<p>Employers Agent 5 [Agents Name]</p> <p>Agent's service: [Identify Agent's Service, eg. Engineer]</p> <p>Postal address: [P.O. Box number] [Name of town] [Code]</p> <p>Tel: insert [Tel Number including Area Code] Fax: [Fax Number including Area Code]</p>
	<p>Employers Agent 6 [Agents Name]</p> <p>Agent's service: [Identify Agent's Service, eg. Engineer]</p> <p>Postal address: [P.O. Box number] [Name of town] [Code]</p> <p>Tel: insert [Tel Number including Area Code] Fax: [Fax Number including Area Code]</p>
	<p>Employers Agent 7 [Agents Name]</p> <p>Agent's service: [Identify Agent's Service, eg. Engineer]</p> <p>Postal address: [P.O. Box number] [Name of town] [Code]</p> <p>Tel: insert [Tel Number including Area Code] Fax: [Fax Number including Area Code]</p>
	<p>Employers Agent 8 [Agents Name]</p> <p>Agent's service: [Identify Agent's Service, eg. Engineer]</p> <p>Postal address: [P.O. Box number] [Name of town] [Code]</p> <p>Tel: insert [Tel Number including Area Code] Fax: [Fax Number including Area Code]</p>
PART 1: DATA PROVIDED BY THE EMPLOYER	
[1.1.1.13]	<p>Defects Liability Period</p> <p>The defects liability period is: A time measured from the date of the Certificate of Completion. Defects Liability Period is 6 Months for the whole of the Works</p>
Latent Defect Period	
[5.16.3]	<p>The latent defect period is: 5 years after the Final Approval Certificate</p>
Documentation required before Commencement of the Works:	
[5.3.1]	<p>The documentation required before commencement with the Works execution are;</p>
[4.3]	<p>Health and Safety Plan</p> <p>The Contractor shall deliver his Health and Safety Plan of the Works within 14 calendar days after notice from the Employer, prior to the Commencement Date.</p>
[5.6]	<p>Initial Programme</p> <p>The Contractor shall deliver his programme of work within 10 calendar days after notice from the Employer, prior to the Commencement Date.</p>
[6.2]	<p>Guarantee</p> <p>The Contractor shall deliver his chosen Guarantee (security) for this Works within 14 calendar days after notice from the Employer, prior to the Commencement Date.</p>
[8.6]	<p>Insurance</p> <p>The Contractor shall deliver his insurance for the Works within 14 calendar days after notice from the Employer, prior to the Commencement Date.</p>
	<p>Cash flow by contractor</p> <p>The Contractor shall deliver his Cash flow for the Works within 14 calendar days after notice from the Employer, prior to the Commencement Date.</p>
	<p>Priced Bill of Quantity</p> <p>The Contractor shall deliver his Priced Bill of Quantity with his initial tender submission.</p>
	<p>Programme</p> <p>The Contractor is required to submit his Programme of Works in terms of Clause 5.6.1 and 5.3.1 and the Principal Agent is required to approve this within 7 days in terms of Clause 5.6.3</p>
	<p>Other requirements</p>
[5.3.2]	<p>The time to submit the documentation required before commencement with Works execution is: 14 calendar days</p>

	<p>For the works in sections:</p> <p>The date for practical completion from the commencement date and the penalty per calendar day:</p> <p>Portion 1:</p>
[5.5.1]	N/A
[5.13.1]	0,04% of the Contractor Price, rounded to the nearest R10.
	Portion 2:
[5.5.1]	N/A
[5.13.1]	N/A
	Portion 3:
[5.5.1]	N/A
[5.13.1]	N/A
	Portion 4:
[5.5.1]	N/A
[5.13.1]	N/A
	Portion 5:
[5.5.1]	N/A
[5.13.1]	N/A
	Portion 6:
[5.5.1]	N/A
[5.13.1]	N/A
[1.3.2]	The law applicable to this agreement shall be that of the: Republic of South Africa
[6.10.1.5]	The percentage advance on materials not yet built into the Permanent Works is: 80,00%
[6.10.3]	Percentage retention on amounts due to contractor is: Retention will be deducted per payment certificate up to maximum of 10% of the contract value and 5% will be released at works completion and the remaining 5% will be released at final completion stage.
	Maximum retention is: 10,00% of the Contract Price
[6.8.1]	Notwithstanding anything to the contrary contained in the General conditions of Contract and Preliminaries, this contract could only, when the <u>construction period</u> exceeds 6 months and the contract exceeds R1,000,000.00, be subject to a Contract Price Adjustment Factor.
[6.8.2]	Clause 6.8.2 the last part of the sentence saying "calculated according to the formula and the conditions set out in the Contract Price Adjustment Schedule." must be replaced by "calculated according to the Contract Price Adjustment Provisions (CPAP) Indices Application Manual for use with P0151 indices (Revised 1 January 2013)" as published by Statistics South Africa. The Contract Price Adjustment Provision (CPAP) will be subject to the most recently released indices by Statistic South Africa. Tenderers are advised that with reference to Clause 3.4.6 of the Contract Price Adjustment Provisions (CPAP) Indices Applications Manual, the Head: Public Works will not accept the submission by Tenderers of lists of additional items."
[6.8.2]	Where this contract is a Lump Sum contract, the contract will only be subject to Contract Price Adjustment Provisions (CPAP)(Revised 1 January 2013) where the contract period equals or exceeds 6 calendar months. The applicable work group shall be WG 180 for domestic buildings or WG 181 for commercial and industrial buildings only.
[5.14.5]	The following clause must be added to clause 5.14.5: [5.14.5.6] The employers agent shall submit the final account within 3 calendar months to the principal agent.
[10.5]	The determinations of disputes shall be by ARBITRATION ONLY.
[10.5.3]	The number of Arbitration board members to be appointed is: One Replace the last part of the clause with the following: "...on the application of either party, by the Chairman, or his nominee of the Association of Arbitrators."
[10.9.1]	
	Where CPAP is applicable, the contract sum will be adjusted in accordance with the Contract Price Adjustment Provisions (CPAP) as set out in the CPAP Indices Application Manual as published by Statistics South Africa, dated 1 January 2013 and any amendments thereto: 1) Glass etc. measured in specialist section Metalwork, will be adjusted in terms of the index for that work group unless specifically stated otherwise in the bills of quantities. 2) In case of uninterruptible power supplies, elevators, escalators and hoists, generating sets, motor-alternator sets and intercommunication systems shall be adjusted in accordance with Work Group 170. 3) Further to clause 3.4.6 of the CPAP Indices Application Manual, the listing of additional items for exclusion by Tenderer's, will not be permitted. Alternative Indices: Not Applicable Details of changes made to the General Conditions of Contract for construction works (2010) Second Edition
[1.1]	Clause [1.1.1.5] COMMENCEMENT DATE – means the actual date of Site Hand over that should not occur prior to the Tenderer receiving one fully signed copy of the Offer and Acceptance in terms of the Form of Offer and Acceptance. [5.12.2.2] ABNORMAL CLIMATIC CONDITIONS - means conditions over and above what could reasonably be expected for the specific locality where the Works are being executed and include inter alia excessive rain, heat, cold, wind and any other climatic condition that would not normally be experienced during the season that the Works are executed in that area. The South African Weather Service's (http://www.weathersa.co.za) 10 year average climatic conditions statistics would be what could be reasonably expected for the specific locality where the Works are executed. [6.2.1] CONSTRUCTION GUARANTEE – means an on demand guarantee at call obtained by the contractor from an institution approved by the employer in terms of the employer's construction guarantee form as selected in the Offer and Acceptance Form and the contract data . CONSTRUCTION PERIOD – means the period commencing on the commencement date and ending on the date of due completion date . This period will be deemed to commence on actual site hand over date to the contractor and end on the date of practical completion and shall include all annual industrial holiday periods, Sundays and public holidays. CORRUPT PRACTICE – means the offer, giving, receiving, or soliciting of anything of value to influence the action of a public official in the procurement process or in contract execution. FINAL ACCOUNT - The document prepared by the principal agent, which reflects the contract value of the works at final approval or termination. FRAUDULENT PRACTICE – means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of any tenderer and includes collusive practise among tenderers (prior to or after the tender submission) designed to establish tender prices at artificial non-competitive levels and to deprive the tenderer of the benefits of free and open competition.

	<p>INTEREST – the interest rates applicable on this contract, whether specifically indicated in the relevant clauses or not, will be in terms of the legislation of the Republic of South Africa, and in particular:</p> <p>(a) in respect of interest owed by the employer, the interest rate as determined by the Minister of Justice and Constitutional Development from time to time, in terms of section 1(2) of the Prescribed Rate of Interest Act, 1975 (Act No. 55 of 1975), will apply; and</p> <p>(b) in respect of interest owed to the employer, the interest rate as determined by the Minister of Finance, from time to time, in terms of section 80(1)(b) of the Public Finance Management Act, 1999 (Act No. 1 of 1999), will apply</p>
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	<p>[1.1.1.16] ENGINEER/PRINCIPAL AGENT – means the person or entity appointed by the Employer and named in the Contract Data as the Engineer /Principal Agent to act as agent of the Employer. In the event of an Engineer/Principal Agent not being appointed, then all the duties and obligations of an Engineer/Principal Agent as detailed in the Contract shall be fulfilled by a representative of the Employer as named in the Contract Data. (Hereafter referred to as Engineer)</p> <p>[1.1.1.21] GENERAL ITEMS - or preliminaries means items stipulated in the Pricing Data relating to general obligations, site services, facilities and/or items that cover elements of the cost of the work which are not considered as proportional to the quantities of the Permanent Works.</p>
	<p>[4.4.1] Add the following to the clause 4.4.1: "The Contract shall only use subcontractors who are duly registered with the CIDB and who has an ACTIVE status at the time of submitting the tender"</p> <p>[6.2.1] Refer to Offer and Acceptance form for the various options that the contractor may choose from in providing a form of Guarantee under "GUARANTEE OPTIONS".</p> <p>[6.10.6.2] Replace "at the prime overdraft rate, as charged by the Contractor's Bank," with "...at the interest rate as determined by the Minister of Justice and Constitutional Development from time to time, in terms of section 1(2) of the Prescribed Rate of Interest Act, 1975 (Act No. 55 of 1975)." Omit "...on all overdue payments from the date on which the same should have been paid..." and replace with "only after 30 calendar days from receiving written notice from the Contractor that the amount is overdue..."</p>
[5.12.3]	<p>SPECIAL CONDITIONS OF CONTRACT Omit clause 5.12.3 and add the following: "5.12.3. If an extension of time is granted, the Contractor shall be paid such additional time-related General Items, including for special non-working days, if applicable as are appropriate regarding to any other compensation which may already have been granted in respect of the circumstances concerned. The reasons for extension of time that would invoke payment of time related General Items are inter alia;</p> <p>5.12.3.1 Failure to give possession of the site to the contractor. 5.12.3.2 Making good physical loss and repairing damage to the works where the contractor is not at risk. 5.12.3.3 Contract instructions not occasioned by default by the contractor. 5.12.3.4 Failure to issue construction information timeously or the late issue of a contract instruction following a request from the contractor. 5.12.3.5 Late acceptance by the principal agent of a design undertaken by a selected subcontractor where the contractor's obligations have been met. 5.12.3.6 Suspension or cancellation termination invoked by a nominated or selected n/s subcontractor due to default by the employer or the principal agent. 5.12.3.7 Insolvency of a nominated subcontractor. 5.12.3.8 A direct contractor. 5.12.3.9 Opening up and testing of work and materials and goods where such work is according to in accordance with the contract documents. 5.12.3.10 The execution of additional work for which the quantity included in the bills of quantities is not sufficiently accurate. 5.12.3.11 Late or failure to supply materials and goods for which the employer is responsible. 5.12.3.12 Suspension of the works."</p>
[5.14.5.1]	Omit entire clause 5.14.5.1
[5.16.4]	Add the following new clause "5.16.4. Upon the issue of a Final Approval Certificate, unless otherwise provided in the Contract: 5.16.4.1. The performance Guarantee (if any) shall be returned within 14 days to the guarantor in terms of Clause 7."
[6.2.2]	Replace the following "...it shall be deemed that the Contractor has selected a security of ten percent retention of the value of the Works." with "...it shall be deemed that the Contractor has selected a security of a bank or insurance guarantee of 5% of the value of the Works and a payment reduction of 5% of the value certified in the payment certificate excluding value added tax."
[6.2.3]	Add to clause 6.2.3 the following "The Contractor shall provide proof of paid-up premium payments to accompany his payment certificate as proof that his performance guarantee has not expired yet. The Contractor will not receive payment without proof of the validity of their performance
[9.3.2.2]	<p>Omit "without prejudice to the exercise of any lien the Contractor may have acquired over the Employer's property."</p> <p>Duties and functions of the Engineer requiring the specific approval of the Employer BEFORE execution of any part of these duties are as follows:</p> <p>(a) Determinations of contractors claims for extension of time (revision of the contract completion date). All claims for extension of time shall be submitted by the Engineer, together with the Engineer's recommendations, to the Employer for determination. Omit "Engineer" in clause 42.2 and replace with "Employer".</p> <p>(b) Drawings, instructions or communications of any kind requiring variations of the works and involving Extra's shall NOT be given effect by the Contractor UNTIL BOTH the "Official Variation Order" and the "Financial Request for Variation Order and Additional Funds" form, as issued by the Department of Public Works, have been approved and signed by the Employer.</p> <p>(c) Insurance policies to be approved by the Employer within 21 days of the date of the Commencement of the Works.</p> <p>(d) Any notice of disagreement raised by the Contractor or written Dispute Notice given by the Contractor to the Engineer shall be submitted by the Engineer, together with the Engineer's recommendations, to the Employer for determination.</p> <p>(e) The issue of the certificate of practical completion, certificate of completion and the final approval certificate shall be signed and submitted by the Engineer, to the Employer for final approval and signature. The certificates shall not be considered as officially issued until signed by the Employer.</p> <p>MANAGING PROJECT DURATION</p> <p>(a) The Contractor shall co-ordinate his programme with all other contractors whose work may precede or be executed simultaneously to his own. The Contractor will be called upon to plan and control the project using the Project Evaluation and Review Technique (PERT) or other approved Critical Path Method (CPM) network analysis of his events and activities and those of the sub-contractors in his employ and must co-ordinate his planning with any other contractor employed on the project. A fortnightly project control report will be expected from the Contractor in writing, evaluating any gains or delays against the critical path and he should allow for all costs involved in planning reviewing and updating the programme to the satisfaction of the Principal Agent against this item.</p> <p>(b) Activity-and total float shall belong to the Employer.</p> <p>(c) The Contractor shall deliver his programme of work within 10 calendar days after notice from the Employer, prior to the Commencement Date. It is a condition of this contract that, the contractor submit to the Engineer/principal agent a detailed CPM Programme which shall be to the approval of the Engineer/principal agent. In this regard tenderers are advised to consult with the Engineer/Principal Agent as to the format and requirements of the programme as no claim whatsoever will entertained should the programme fail to meet the requirements of the Engineer/Principal Agent. Failure to submit the programme within the stipulated time may result in the contractor being held in breach of contract.</p> <p>The approved programme will form the basis of time management of the project and extension of time will not be guaranteed unless the Contractor has strictly complied with this provision.</p> <p>The programme shall make allowance for rain and the number of rain days allowed within the critical path shall be on the provisions of the clause dealing with inclement weather and claiming for delays in performance in this bill.</p> <p>Allowance for the above must be made under this item as no claims for failing to comply with this precondition will later be entertained.</p>

INCLEMENT WEATHER AND CLAIMS FOR DELAYS IN PERFORMANCE																																									
(a)	The Contract Sum includes a monthly allowance of 3 working days inclement weather during which rainfall exceeds 10mm per day for months as indicated in the Scope of Works. These days shall be reflected on the critical path of the Contractor's programme as specified in MANAGING PROJECT DURATION above.																																								
(b)	Claims for delays in performance due to inclement weather shall be calculated separately for each calendar month and for the project as a whole. Delays or gains to the critical path shall be reflected in all revisions of the programme. An extension of time will only be granted where the following conditions are met: <ul style="list-style-type: none"> (i) The criteria to be used for WORK stoppages shall be for safety hazards or poor quality of work. (ii) The Employer's site representative or the Employer's Principal Agent, if the site representative is not available shall be notified when the Contractor stops the work and intends to claim performance delays. The Employer representative shall inspect the situation together with the Contractor and give an immediate decision. <ul style="list-style-type: none"> 1. The stoppage claimed must cause a delay in the Completion Date of work. If the critical activities can proceed and a non-critical activity is delayed due to inclement weather no claims for delay shall be granted. 2. No claims for stoppages less than 2(two) hours per day shall be considered. 3. Claims granted for more than 2 (two) hours, but less than 10 (ten) hour (lunch included) day, shall be added together and expressed as full days. 4. All claims shall be submitted in writing to the Principal Agent within one working day of the actual stoppage. 5. The total delay in performance granted to the Contractor expressed in days shall be added to the contractual Completion Date of each section of the Works. The contractual penalty clause shall only come into effect after this newly arrived date. 6. Total delays (in hours) will be rounded up or down to the nearest integer for the calculation of Working Days. The total hours (including lunch) per Working Day shall be 10 unless otherwise indicated on the Contractor's programme. 7. Where the programmed delays for inclement weather exceed the actual delays incurred the Completion Date(s) will not be adjusted. 8. Where the project includes builder's holidays the programmed durations for inclement weather shall be adjusted pro-rate to the actual Working Days. 9. The total of all monthly delays due to inclement weather shall be calculated in accordance with the example given below: <table border="1" style="margin-left: 20px;"> <thead> <tr> <th rowspan="2">Description</th> <th colspan="5">Months</th> <th rowspan="2">Total</th> </tr> <tr> <th>Sept</th> <th>Oct</th> <th>Nov</th> <th>Dec</th> <th>Jan</th> </tr> </thead> <tbody> <tr> <td>Programmed Rain days</td> <td>0</td> <td>30</td> <td>30</td> <td>15</td> <td>15</td> <td>90</td> </tr> <tr> <td>Actual Rain days</td> <td>16</td> <td>22</td> <td>35</td> <td>15</td> <td>18</td> <td>106</td> </tr> <tr> <td>Difference</td> <td>-16</td> <td>8</td> <td>-5</td> <td>0</td> <td>-3</td> <td>-16</td> </tr> <tr> <td colspan="6" style="text-align: right;">Estimated Extension of time - in working days</td> <td>2</td> </tr> </tbody> </table> 	Description	Months					Total	Sept	Oct	Nov	Dec	Jan	Programmed Rain days	0	30	30	15	15	90	Actual Rain days	16	22	35	15	18	106	Difference	-16	8	-5	0	-3	-16	Estimated Extension of time - in working days						2
Description	Months					Total																																			
	Sept	Oct	Nov	Dec	Jan																																				
Programmed Rain days	0	30	30	15	15	90																																			
Actual Rain days	16	22	35	15	18	106																																			
Difference	-16	8	-5	0	-3	-16																																			
Estimated Extension of time - in working days						2																																			
8 hrs/day*																																									
See point 5.2 in the Scope of Works for the specific days the tenderer must allow for in this contract.																																									

Tender no:	ZNTM01199W	Part 2: CONTRACT DATA PROVIDED BY THE CONTRACTOR:	
POST-TENDER INFORMATION			
Note: All information for this section requires consultation with the Contractor . The Engineer/Principal Agent shall not pre-select any of the alternatives available to the Contractor .			
1 CONTRACT DETAILS			
[1.1.1.9]	Contractor Name:		
[1.2.1.2]	Postal address:		
		
		
	Tel no	Fax no	
	Tax / VAT Registration No:	e-mail	
	Physical address:		
		
[1.1.1.10]	The accepted contract price inclusive of tax is R :		
	[Amount in words]		
	Payment Of Preliminaries (Clause 6.7, 6.8, 6.10 and 6.11)		
	The preliminaries amounts shall be paid in terms of:	*Alternative A	Yes
		**Alternative B	N/A
	* Assessed by the Engineer/Principal Agent as an amount prorated to the value of the Work duly executed in the same ratio as the Preliminaries bears to the Contract Price excluding VAT, Preliminary amount, Contingencies and any CPAP.		
	** Calculated from the priced Bill of Quantity/Lump Sum document. The Contractor and the Engineer/Principal Agent shall agree on a division of the priced Preliminaries items into: initial establishment charge, monthly charge and final disestablishment charge.		
	If the Contractor and the Engineer/Principal Agent can not agree, within 10 Working Days from the Commencement Date, on such a division then the Engineer/Principal Agent shall make a division of the Preliminaries to be incorporated in the valuations for each monthly payment certificate as follows;		
	10% of the General Items/Preliminaries amount shall not be varied		
	15% of the General Items/Preliminaries shall only be varied in proportion of the Contract Price to the Contract Sum		
	75% of the General Items/Preliminaries shall be varied in proportion to the revised Construction Period compared with the initial Construction Period.		

Waiver of the Contractors lien or right of continuing possession is required.	YES
GUARANTEE OPTIONS	
The Tenderer agrees to provide a bank or insurance guarantee in accordance with clause 6.2.3 of the Conditions of the GCC2010 Contract within the period stated in the Contract Data. This guarantee shall be for a sum equal to an amount stated in the Contract Data.	
Guarantees submitted must be issued by either an insurance company duly registered in terms of the Insurance Act (Long Term Insurance Act No 52 of 1998 or Short Term Insurance Act No 53 of 1998) or by a bank duly registered in terms of the Banks Act No 94 of 1990, on the pro-forma referred to above. No alterations or amendments of the wording of the pro-forma will be accepted.	
(a) the tenderer accepts that in respect of contracts up to R1 million, a payment reduction of 5% of the contact value will be applicable and will be reduced by the Employer in terms of the applicable conditions of contract.	
(b) in respect of contracts above R1 million, the Tenderer offers to provide security as indicated below: select one option	
(i) cash deposit of 10 % of the Contract Price	No
(ii) bank or insurance Performance Guarantee of 10 % of the Contract Price	No
(iii) cash deposit of 5% of the Contract Price and a payment reduction of 5% of the value certified in the payment certificate (excluding VAT)	No
(iv) bank or insurance guarantee of 5% of the Contract Price and a payment reduction of 5% of the value certified in the payment certificate (excluding VAT)	No
(v) A payment reduction of 10% of the payment value certified in the payment certificate (Excluding Vat) up to a maximum of 10% of the contract value (Excluding Vat)	Yes
NOTE: Where the Tenderer has not selected one of the guarantee options above, the default option will be as if the Tenderer has selected a security of a bank or insurance guarantee of 5% of the value of the Works and a payment reduction of 5% of the value certified in the payment certificate excluding value added tax. - See GCC2010 clause 6.2.2 as amended in Contract Data.	
3 SIGNATURES OF THE CONTRACTING PARTIES	
Thus done and signed at.....onof.....20.....	
Name of signatory	for and behalf of the Employer who by signature hereof
Capacity of signatory	as Witness.
Thus done and signed at.....onof.....20.....	
Name of signatory	for and behalf of the Contractor who by signature hereof
Capacity of signatory	as Witness.



**PHASE 14: STORM DAMAGED PROGRAMME: REPAIRS AND RENOVATIONS TO STORM
DAMAGED SCHOOLS THROUGHOUT THE PROVINCE OF KWAZULU-NATAL: SOUTHERN
REGION: CLUSTER 155: EMGANGENI SECONDARY SCHOOL. OPEN BIDS**

C1.3 - FORM OF GUARANTEE

**C1.3 PERFORMANCE GUARANTEE -
 GCC FOR CONSTRUCTION WORKS (2nd Edition - 2010)**

Head: Public Works
 KZN Department of Public Works:
 Private Bag X 9041
 PIETERMARITZBURG
 3200

Sir,

ON DEMAND PERFORMANCE GUARANTEE

Tender Number ZNTM01199W

Project Code 063241

For use with the General Conditions of Contract for Construction Works, Second Edition, 2010.

GUARANTOR DETAILS AND DEFINITIONS

"Guarantor" means: _____

Physical Address: _____

"Employer" means: The Provincial Administration of KwaZulu-Natal in its Department of Public Works

"Contractor" means: _____

"Engineer" means: _____

"Works" means: **PHASE 14: STORM DAMAGED PROGRAMME: REPAIRS AND RENOVATIONS TO STORM DAMAGED SCHOOLS THROUGHOUT THE PROVINCE OF KWAZULU-NATAL: SOUTHERN REGION: CLUSTER 155: EMCANGENI SECONDARY SCHOOL. OPEN BIDS**

"Site" means: _____

"Contract" means: The Agreement made in terms of the Form of Offer and Acceptance and such amendments or additions to the Contract as may be agreed in writing between the parties.

"Contract Sum" means: The accepted amount inclusive of tax of: _____

Amount in Words:

"Guaranteed Sum" means: The maximum aggregate amount of: 10% _____
Of Contract Sum

Amount in Words: _____

"Expiry Date" means: _____

CONTRACT DETAILS

Engineer Issues: Interim Payment Certificates, Final Payment Certificates and the Certificate Completion of the Works as defined in the Contract.

PERFORMANCE GUARANTEE

- 1 The Guarantor's liability shall be limited to the amount of the Guaranteed Sum.
- 2 The Guarantor's period of liability shall be from and including the date of issue of this Performance Guarantee and up to and including the Expiry Date or the date of issue by the Engineer of the Certificate of Completion of the Works or the date of payment in full of the Guaranteed Sum, whichever occurs first. The Engineer and/or the Employer shall advise the Guarantor in writing of the date on which the Certificate of Completion of the Works has been issued.
- 3 The Guarantor hereby acknowledges that:
 - 3,1 any reference in this Performance Guarantee to the Contract is made for the purpose of convenience and shall not be construed as any intention whatsoever to create an accessory obligation or any intention whatsoever to create a suretyship;
 - 3,2 its obligation under the Performance Guarantee is restricted to the payment of money.
- 4 Subject to the Guarantor's maximum liability referred to in 1, the Guarantor hereby undertakes to pay the Employer the sum certified upon receipt of the documents identified in 4.1 to 4.3:
 - 4,1 A copy of a first written demand issued by the Employer to the Contractor stating that payment of a sum certified by the Engineer in an Interim or Final Payment Certificate has not been made in terms of the Contract and failing such payment within seven (7) calendar days, the Employer intends to call upon the Guarantor to make payment in terms of 4.2;
 - 4,2 A first written demand issued by the Employer to the Guarantor at the Guarantor's physical address with a copy to the Contractor stating that a period of seven (7) days has elapsed since the first written demand in terms of 4.1 and the sum certified has still not been paid;
 - 4,3 A copy of the aforesaid payment certificate which entitles the Employer to receive payment in terms of the Contract of the sum Certified in 4.
- 5 Subject to the Guarantor's maximum liability referred to in 1, the Guarantor undertakes to pay to the Employer the Guaranteed Sum or the full outstanding balance upon receipt of a first written demand from the employer to the Guarantor at the Guarantor's physical address calling up this Performance Guarantee, such demand stating that:
 - 5,1 the Contract has been terminated due to the Contractor's default and that this Performance Guarantee is called up in terms of 5; or
 - 5,2 a provisional or final sequestration or liquidation court order has been granted against the Contractor and that the Performance Guarantee is called up in terms of 5; and
 - 5,3 the aforesaid written demand is accompanied by a copy of the notice of termination and/or the provisional/final sequestration and/or the provisional liquidation court order.
- 6 It is recorded that the aggregate amount of payments required to be made by the Guarantor in terms of 4 and 5 shall not exceed the Guarantor's maximum liability in terms of 1.
- 7 Where the Guarantor has made payments in terms of 5, the Employer shall upon the date of issue of the Final Payment Certificate submit an expense account to the Guarantor showing how all monies received in terms of this Payment Guarantee have been expended and shall refund to the Guarantor any resulting surplus. All monies refunded to the Guarantor in terms of this Performance Guarantee shall bear interest at the prime overdraft rate of the Employer's bank compounded monthly and calculated from the date payment was made by the Guarantor to the Employer until the date of refund.
- 8 Payment by the Guarantor in terms of 4 or 5 shall be made with seven (7) calendar days upon receipt of the first written demand to the Guarantor.
- 9 Payment by the Guarantor in terms of 5 will only be made against the return of the original Performance Guarantee by the Employer.

- 10 The Employer shall have the absolute right to arrange his affairs with the Contractor in any manner which the Employer may deem fit and the Guarantor shall not have the right to claim his release from this Performance Guarantee on account of any conduct alleged to be prejudicial to the Guarantor.
- 11 The Guarantor chooses the physical address as stated above for the service of all notices for all purposes in connection herewith.
- 12 This Performance Guarantee is neither negotiable nor transferable and shall expire in terms of 2, where after no claims will be considered by the Guarantor. The original of this Guarantee shall be returned to the Guarantor after it has expired.
- 13 This Performance Guarantee, with the required demand notices in terms of 4 or 5 shall be regarded as a liquid document for the purposes of obtaining a court order.
- 14 Where this Performance Guarantee is issued in the Republic of South Africa the Guarantor hereby consents in terms of Section 45 of the Magistrate's Court Act No 32 of 1944, as amended, to the jurisdiction of the Magistrate's Court of any district having jurisdiction in terms of Section 28 of the said Act, notwithstanding that the amount of the claim may exceed the jurisdiction of the Magistrate's Court.

Signed at _____

Date _____

Guarantor's signatory (1) _____

Capacity _____

Guarantor's signatory (2) _____

Capacity _____

Witness signatory (1) _____

Witness signatory (2) _____



**PHASE 14: STORM DAMAGED PROGRAMME: REPAIRS AND RENOVATIONS TO STORM DAMAGED
SCHOOLS THROUGHOUT THE PROVINCE OF KWAZULU-NATAL:SOUTHERN REGION: CLUSTER
155: EMGANGENI SECONDARY SCHOOL. OPEN BIDS**

PART C2 - PRICING DATA

C2.1 PRICING INSTRUCTIONS
GCC FOR CONSTRUCTION WORKS (Second Edition 2010)

Project title:	PHASE 14: STORM DAMAGED PROGRAMME: REPAIRS AND RENOVATIONS TO STORM DAMAGED SCHOOLS THROUGHOUT THE PROVINCE OF KWAZULU-NATAL:SOUTHERN REGION: CLUSTER 155: EMGANGENI SECONDARY SCHOOL. OPEN BIDS		
Tender no:	ZNTM01199W	Project Code:	063241

C2.1 Pricing Instructions

	<p>Where any item is not relevant to this specific contract, such item is marked N/A (signifying “not applicable”)</p> <p>The adjustment of the preliminaries each item priced is to be allocated to one or more of the three categories by insertion of “F”, “V”, “T” as the case may be against the price in the “rate” column immediately preceding the “amount” column, where “F” denotes a fixed amount (amount not varied), “V” denotes an amount variable in proportion to value and “T” denotes an amount variable in proportion to time.</p>
1	<p>MASSES AND MEASURING UNITS</p> <p>These shall be in accordance with the Measuring Units and National Measuring Standards Act No. 76 of 1973 and amendments thereto.</p> <p>The pages of each of these documents are numbered consecutively and before the Tenderer submits his tender he should check the number of pages, and if any are found missing or duplicated, or the figures or writing indistinct, or the documents contain any obvious error, he should apply to the Head : Public Works AT ONCE and have same rectified as no liability whatsoever will be admitted by the Administration in respect of errors in Tender due to the foregoing.</p>
2	<p>PRICES FOR VARIATIONS</p> <p>Where prices or quotations for variations are submitted by the Contractor during the currency of the Contract, it is to be clearly understood that these are for the purpose of consideration by the Head : Public Works and that there is no assumption of acceptance. The Contractor will be notified of acceptance of prices or quotations either by insertion of the amount on the variation order or by written intimation.</p>
3	<p>SCALE</p> <p>The scale to which the Drawings are made is only to be made use of when no figured dimensions are given either on the Drawings or in the tender documents and the figured dimensions are always to be followed though they may not coincide with the scale of the Drawings, but dimensions where possible are to be taken from the buildings.</p>
4	<p>PROVISIONAL ITEMS</p> <p>All items described as "Provisional" shall be used as directed by the Employer and measured and valued or paid for.</p> <p>No work for which "Provisional" items are allowed shall be commenced without written instructions from the Head : Public Works.</p>

5	<p>TIMELY ORDERING OF MATERIALS</p> <p>The Contractor is warned to place all orders for materials or special articles as early as possible, as he will be held solely responsible for any delay in the delivery of such goods. Nevertheless this tender is conditional upon no liability being attached to the Contractor if delivery of materials is rendered impossible by reason of any act of the Government.</p>
6	<p>ELECTRICAL LIGHTING, POWER AND WATER</p> <p>The Contractor shall provide any artificial lighting which may be necessary or required for the proper execution of the works, and provide electric power and water required by all Sub-Contractors, Nominated Sub-Contractors and Sub-Contractors appointed directly by the Employer.</p> <p>The Contractor shall give all notices and pay all fees in connection with temporary electrical and water connections and shall connect temporary Electrical and Water meters for and pay for all current and water consumed.</p> <p>Tenderers are advised that the permanent light fittings and water points of any kind installed in the Works are not to be used to provide temporary lighting and supplement water requirements for construction purposes.</p>
7	<p>IMPORT PERMITS, DUTIES AND SURCHARGES.</p> <p>All tenders by means of which imported products are being called for, must use the rate of exchange 14 days prior to the closing date indicated in the tender documents. If this day falls on a weekend or public holiday, the next working day must be used.</p> <p>Furthermore, Tenderers must submit documentary proof (in the form of a certified copy) from their bank or legally recognised financial institution, clearly indicating what the rate of exchange was 14 days prior to the closing date, as mentioned above.</p> <p>Together with this, the Tenderer must confirm that the tender price relating to an imported product, was based on the rate of exchange 14 days prior to the closing date as mentioned above.</p>
8	<p>STANDARD SYSTEM OF MEASUREMENT WHERE BILLS OF QUANTITIES FORM PART OF THE TENDER DOCUMENTS</p> <p>The work executed under this Contract has been measured in accordance with the;</p> <p style="text-align: center;">Standard System of Measuring Builders Work (7th Edition)</p> <p>including all amendments unless descriptions of items indicate a deviation and it shall be understood that the system of measurement which is herein adopted is the only system of measurement which will be recognised in connection with this contract. Any contradictions to this system of measurement contained in the “Model Preambles for Trades 2008” shall be disregarded (unless same have been accommodated in the system of measurement) but applicable rates shall be included for all requirements stated and not measured separately in compliance with this system.</p>
9	<p>PRICING OF ROCK EXCAVATIONS</p> <p>It is a condition of this tender that should the tenderer elect to price the Rock Excavation included in this tender, the rates must be market related and should be identically priced for the same classification of excavations and not vary for similar billed items in the different sections.</p>

10	<p>BROAD BASED BLACK ECONOMIC EMPOWERMENT</p> <ol style="list-style-type: none"> 1. It is the deliberate policy of the Provincial Administration of KwaZulu-Natal to foster and to encourage the economic empowerment of Black South Africans. This policy will be implemented without prescription and without prejudicing the principles and the integrity of the Provincial Administration of KwaZulu-Natal. Subject to these constraints and also subject to good business practise and commercial consideration, it is therefore considered appropriate that the Provincial Administration of KwaZulu-Natal should encourage business relationships with companies which actively pursue Affirmative Action and Black Economic Empowerment Programmes. 2. In responding to this tender you are therefore encouraged to devote attention to these two subjects of Affirmative Action and Economic Empowerment. In addition, in considering the appointment of sub-contractors, you are requested to extend the spirit of these policies. 3. The foregoing enunciations of this policy are not intended to be prescriptive nor to preclude any individual or operation from responding to this tender.
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11	<p>REGISTRATION ON THE CENTRAL SUPPLIERS DATABASE</p> <ol style="list-style-type: none"> 1. In terms of the Public Finance Management Act (PFMA), 1999 (Act No 1 of 1999) Section 38 (1) (a) (iii) and 51 (1) (iii) and Section 76 (4) of PFMA National Treasury developed a single platform, The Central Supplier Database (CSD) for the registration of prospective suppliers including the varification functionality of key supplier information. 2. Prospective suppliers will be able to self - register on the CSD website: www.csd.gov.za 3. Once the supplier information has been varified with external data sources by National Treasury a unique supplier number and security code will be allocated and communicated to the supplier. Suppliers will be required to keep their data updated regularly and should confirm at least once a year that their data is still current and updated. 4. Suppliers can provide their CSD supplier number and unique security code to organs of state to view their varified CSD information. 5 Tenderers are required to fill in clearly, legibly, in bold print and black ink their CSD supplier number in the space hereunder:
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Name of Supplier	
Central Supplier Database (CSD) Supplier Number:	

12	<p>TAX CLEARANCE REQUIREMENTS</p> <p>It is a condition of tender that the taxes of the successful tenderer must be in order, or that satisfactory arrangements have been made with South African Revenue Service (SARS) to meet the Tenderder's tax obligations. It is a condition of this Offer of Commission that your practice remains in good standing with SARS (South African Revenue Services) in terms of its tax clearance, during the project, which is required to process your payment certificates.</p> <ol style="list-style-type: none"> 1 In order to meet this requirement tenderers are required to apply via e-filing at any SARS branch office nationally. The Tax Compliance Status (TCS) requirements are also applicable to foreign Tenderders / individuals who wish to submit Tenders. 2 SARS will then furnish the Tenderder with a Tax Compliance Status (TCS) PIN that will be valid for a period of 1 (one) year from the date of approval. 3 In tenders where Consortia / Joint Ventures / Sub-contractors are involved, each party must submit a separate Tax Compliance Status (TCS) PIN. 4 Application for Tax Compliance Status (TCS) PIN can be done via e-filing at any SARS branch office nationally or on the website www.sars.gov.za.
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5	Tax Clearance Certificates may be printed via eFiling. In order to use this provision, taxpayers will need to register with SARS as eFilers through the website www.sars.gov.za .
6	Tax Clearance Certificates may be printed via eFiling. In order to use this provision, taxpayers will need to register with SARS as eFilers through the website www.sars.gov.za .
	Security PIN Number
	Company / Entity Tax Reference Number
13	<p>BILLS OF QUANTITIES/LUMP SUM DOCUMENT</p> <p>The Bills of Quantities document forms part of and must be read and priced in conjunction with all the other documents forming part of the contract documents, the Standard Conditions of Tender, Conditions of Contract, Standard Preambles to all Trades, Specifications, Drawings and all other relevant documentation.</p>
14	<p>VALUE ADDED TAX</p> <p>The tender price must include for Value Added Tax (VAT). All rates, provisional sums, etc. in the Bills of Quantities must however be net (exclusive of VAT) with VAT calculated and added to the Total Value thereof in the Final Summary.</p>
15	<p>FIXED PRICE CONTRACT</p> <p>Should the Bills of Quantities/Lump Sum Document be a fixed price contract, the following clause must be inserted in the Pricing Instructions:</p> <p>Tenderers are to take note that the contract price adjustments are not applicable to this contract. Tenderers should therefore make provision in the Contract Sum, schedule of rates, etc. for possible price increases during the contract period, as no claims in this regard shall be entertained.</p>



PHASE 14: STORM DAMAGED PROGRAMME: REPAIRS AND RENOVATIONS TO STORM DAMAGED SCHOOLS THROUGHOUT THE PROVINCE OF KWAZULU-NATAL:SOUTHERN REGION: CLUSTER 155: EMGANGENI SECONDARY SCHOOL. OPEN BIDS

C2.2 - Preliminaries for GCC for Construction works - 2nd Edition 2010

PHASE 14: STORM DAMAGED PROGRAMME: REPAIRS AND RENOVATIONS TO STORM DAMAGED SCHOOLS THROUGHOUT THE PROVINCE OF KWAZULU-NATAL:SOUTHERN REGION: CLUSTER 155: EMGANGENI SECONDARY SCHOOL. OPEN BIDS

**BILL NO. 1
 C2 .2 PRELIMINARY AND GENERAL**

	NOTES	UNIT	QUANTITY	RATE	AMOUNT
i)	The agreement is to be the General Conditions of Contract for Works of Civil Engineering Construction (2010) (Second Edition) , published by the S. A. Institution Of Civil Engineering.				
ii)	The Preliminaries are to be the Construction and management requirements for works contracts - Part 1: General engineering and construction works (SANS 1921-1: 2004 Edition 1) prepared by Standards South Africa and shall be deemed to be incorporated herein.				
iii)	Tenderers are referred to the abovementioned documents for the full intent and meaning of each clause thereof (hereinafter referred to by heading and clause number only) for which such allowance must be made as may be considered necessary.				
iv)	Where standard clauses or alternatives are not entirely applicable to this contract such modifications, corrections or supplements as will apply are given under each relevant clause heading.				
v)	Where any item is not relevant to this specific contract such item is marked N/A (signifying "not applicable").				
vi)	Adjustment of the preliminaries: each item priced, is to be allocated to one or more of the three categories, where "F" denotes a fixed amount (amount not to be varied), "V" denotes an amount variable in proportion to value and "T" denotes an amount in proportion to time.				
vii)	Time (T) related Preliminaries will only be adjusted for omissions or additions, issued by the Employer, or delays caused by the Employer, for which variation and extension of time has been granted. See Contract Data .				
SECTION A: GENERAL CONDITIONS OF CONTRACT					
A1	General (clause 1) F:..... V:..... T:.....	Item			
A2	Basis of Contract (clause 2) F:..... V:..... T:.....	Item			
A3	Engineer (clause 3) F:..... V:..... T:.....	Item			
A4	Contractor's General Obligation (clause 4) F:..... V:..... T:.....	Item			
A5	Time and Related Matters (clause 5) - As referred to in the Contract Data under Special Condition of Contract. The Contract Period shall be deemed to include all Non – Working Days, Special Non – Working Days and the year-end Builders Annual Industry Holiday Periods. F:..... V:..... T:.....	Item			
Carried forward to collection				R	

		UNIT	QUANTITY	RATE	AMOUNT
A6	Payment and Related Matters (clause 6) F:..... V:..... T:.....	Item			
A7	Quality and Related Matters (clause 7) F:..... V:..... T:.....	Item			
A8	Risk and Related Matters (clause 8) F:..... V:..... T:.....	Item			
A9	Termination of Contract (clause 9) F:..... V:..... T:.....	Item			
A10	Claims and Disputes (clause 10) F:..... V:..... T:.....	Item			
<p>SECTION B: SANS 1921-1:2004 (Edition 1): CONSTRUCTION AND MANAGEMENT REQUIREMENTS FOR WORKS CONTRACTS: PART 1</p> <p>Refer to the SCOPE OF WORK for detail requirements:</p>					
B1	Scope F:..... V:..... T:.....	Item			
B2	Normative references F:..... V:..... T:.....	Item			
B3	Definitions F:..... V:..... T:.....	Item			
B4	Requirements for construction and management F:..... V:..... T:.....	Item			
B4.1	General F:..... V:..... T:.....	Item			
B4.2	Responsibilities for design and construction F:..... V:..... T:.....	Item			
B4.3	Planning, programme and method statements F:..... V:..... T:.....	Item			
Carried forward to collection				R	

		UNIT	QUANTITY	RATE	AMOUNT
B4.4	Quality assurance F:..... V:..... T:.....	Item			
B4.5	Setting out F:..... V:..... T:.....	Item			
B4.6	Management and disposal of water F:..... V:..... T:.....	Item			
B4.7	Blasting F:..... V:..... T:.....	Item			
B4.8	Works adjacent to services and structures F:..... V:..... T:.....	Item			
B4.9	Management of the Works and site F:..... V:..... T:.....	Item			
B4.10	Earthworks F:..... V:..... T:.....	Item			
B4.11	Testing F:..... V:..... T:.....	Item			
B4.12	Materials, samples and fabrication drawings F:..... V:..... T:.....	Item			
B4.13	Equipment F:..... V:..... T:.....	Item			
B4.14	Site establishment F:..... V:..... T:.....	Item			
B4.15	Survey control F:..... V:..... T:.....	Item			
B4.16	Temporary works F:..... V:..... T:.....	Item			
Carried forward to collection				R	

		UNIT	QUANTITY	RATE	AMOUNT
B4.17	Existing services F:..... V:..... T:.....	Item			
B4.18	Health and safety F:..... V:..... T:.....	Item			
B4.19	Environmental requirements F:..... V:..... T:.....	Item			
B4.20	Alterations, additions, extensions and modifications to existing works F:..... V:..... T:.....	Item			
B4.21	Inspection of adjoining structures, services, buildings and property F:..... V:..... T:.....	Item			
B4.22	Attendance on nominated and selected subcontractors F:..... V:..... T:.....	Item			
SECTION C: SCOPE OF WORK in accordance with SANS 10403 <i>(The reference to Clauses refer to Table B.1 of SANS 1921-1:2004)</i>					
C1	Certification by recognised bodies - CLAUSE 4.4 F:..... V:..... T:.....	Item			
C2	Agrément certificates - CLAUSE 4.5 F:..... V:..... T:.....	N/A			
C3	Other services and facilities - CLAUSE 4.8 F:..... V:..... T:.....	Item			
C4	Recording of weather - CLAUSE 5.2 F:..... V:..... T:.....	Item			
C5	Management meetings - CLAUSE 5.3 F:..... V:..... T:.....	Item			
C6	Daily records CLAUSE 5.6 F:..... V:..... T:.....	Item			
C7	Bond and guarantees - CLAUSE 5.7 F:..... V:..... T:.....	Item			
Carried forward to collection				R	

		UNIT	QUANTITY	RATE	AMOUNT
C8	Permits - CLAUSE 5.9 F:..... V:..... T:.....	Item			
C9	Proof of compliance with the law - CLAUSE 5.10 F:..... V:..... T:.....	Item			
SECTION D: SPECIFICATION DATA ASSOCIATED WITH SANS 1921-1:2004 (Table A.1)					
D1	Requirements for drawings, information and calculations for which the contractor is responsible CLAUSE 4.1.7 F:..... V:..... T:.....	Item			
D2	The responsibility strategy assigned to the contractor for the works CLAUSE 4.2.1 F:..... V:..... T:.....	Item			
D3	The planning, programme and method statements - CLAUSE 4.3 F:..... V:..... T:.....	Item			
D4	Samples of materials, workmanship and finishes - CLAUSE 4.12.1 F:..... V:..... T:.....	Item			
D5	Fabrication drawings that the contractor is to provide and deliver to the employer - CLAUSE 4.12.2 F:..... V:..... T:.....	Item			
D6	Office for the foreman CLAUSE 4.14.3 F:..... V:..... T:.....	Item			
D7	Telephone - CLAUSE 4.14.3 F:..... V:..... T:.....	Item			
D8	Office for inspector of works - CLAUSE 4.14.3 F:..... V:..... T:.....	Item			
D9	Telephone in office for inspector of works - CLAUSE 4.14.3 F:..... V:..... T:.....	Item			
D10	Sheds - CLAUSE 4.14.3 F:..... V:..... T:.....	Item			
Carried forward to collection				R	

		UNIT	QUANTITY	RATE	AMOUNT
D11	Provision and erection of signboards - CLAUSE 4.14.6 F:..... V:..... T:.....	Item			
D12	Termination, diversion or maintenance of existing services - CLAUSE4.17.1 F:..... V:..... T:.....	Item			
D13	Services which are known to exist - CLAUSE 4.17.3 F:..... V:..... T:.....	Item			
D14	Detection apparatus - CLAUSE 4.17.4 F:..... V:..... T:.....	Item			
D15	Additional health and safety requirements - CLAUSE 4.18 F:..... V:..... T:.....	Item			
SECTION E: SPECIFIC PRELIMINARIES					
<u>Section E contains Specific Preliminary items which apply to this contract except where "N/A" (Not Applicable) appears against the item.</u>					
E1	PROPRIETARY BRANDED PRODUCTS The contractor shall take delivery of, handle, store, use apply and/or fix all proprietary branded products in strict accordance with the manufacturers' instruction after consultation with the manufacturer's authorised representative. F:..... V:..... T:.....	Item			
E2	OVERTIME Should overtime be required to be worked for any reason whatsoever, the costs of such overtime are to be borne by the Contractor unless the Engineer/Principal Agent has specifically authorised in writing, prior to the execution thereof, that costs for such overtime are to be borne by the Employer. F:..... V:..... T:.....	Item			
E3	AS BUILT DRAWINGS The position of construction breaks and the extent of individual concrete pours are to be recorded by the Contractor on the Structural Engineer's drawings and are to be submitted to the Engineer/Principal Agent and the Structural Engineer for their records. F:..... V:..... T:.....	Item			
Carried forward to collection				R	

SECTION E: SPECIFIC PRELIMINARIES		UNIT	QUANTITY	RATE	AMOUNT
E4	<p>SITE INSTRUCTIONS</p> <p>Site Instructions issued on site are to be recorded in triplicate in a Site Instruction book which is to be maintained on site by the Contractor.</p> <p>F:..... V:..... T:.....</p>	Item			
E5	<p>LABOUR RECORD</p> <p>At the end of each week the Contractor shall provide the Engineer/Principal Agent with a written record, in schedule form, reflecting the number and description of tradesmen and labourers employed by him and all sub-contractors on the works each day.</p> <p>F:..... V:..... T:.....</p> <p><i>Note : In the event that the contractor fails to satisfy the requirements of this specification, the Employer (Head: Public Works) may apply any of the sanctions provided in the contract. Sanctions may include the application of a financial penalty of .04% of the Contract Sum per calendar day of which the required report has not been submitted.</i></p>	Item			
E6	<p>PLANT RECORD</p> <p>At the end of each week the Contractor shall provide the Engineer/Principal Agent with a written record, in schedule form, reflecting the number, type and capacity of all plant, excluding hand tools, currently used on the works.</p> <p>F:..... V:..... T:.....</p>	Item			
E7	<p>NON CESSION OF MONIES</p> <p>The Contractor shall not cede nor assign his rights or claims to any monies due or to become due under this contract.</p> <p>F:..... V:..... T:.....</p>	Item			
E8	<p>SECTIONAL COMPLETION</p> <p>When it is required that the contract be executed in sections or portions, the tenderer shall allow for all costs in this regard as no claim for additional costs will be entertained.</p> <p>F:..... V:..... T:.....</p>	Item			
E9	<p>LOCAL LABOUR</p> <p>It is a general requirement of this contract that persons normally resident in the locality of the works (Local Labour) be given preference for employment on the contract. Provided, however, that should adequate and appropriate Labour not be available within the locality, others may be employed subject to satisfactory proof being provided that every reasonable endeavour has been made to employ Local Labour. The Contractor shall identify the local community leaders with the purpose of negotiating with them regarding the utilization of Local Labour in the construction process. In this regard, the Contractor shall furthermore give preference, wherever possible to the employment of single heads of households, women and youth. The Contractor shall, in general, maximize the involvement of the local community. All standard local labour employment forms, together with the supporting documentation i.e. certified copies of ID documents, employment details, wage rates, proof of payments, periods of employment and employment contracts must be submitted with the monthly payment certificate to the engineer.</p> <p>F:..... V:..... T:.....</p>	Item			
Carried forward to collection				R	

		UNIT	QUANTITY	RATE	AMOUNT
E10	<p>IMPORT PERMITS AND DUTIES</p> <p>The responsibility for obtaining the necessary import permits shall rest with the successful Tenderer. No foreign exchange will be arranged or provided by the Administration.</p> <p>Tenderers are to allow in their tenders and pay the ordinary levy imposed on imported items in terms of item 196.10 of Part 8 of Schedule No. 1 of the Customs and Excise Act, 1964 with effect from 1 October 1989.</p> <p>F:..... V:..... T:.....</p>	Item			
E11	<p>CONTRACT PRICE ADJUSTMENT PROVISIONS (CPAP)</p> <p>Notwithstanding anything to the contrary contained in the GCC for Construction Works 2010 2nd Edition, this Contract shall only when the Construction Period exceeds 6 months and the Contract sum exceeds R1,000,000,00 be subject to the Contract Price Adjustment Provisions Indices Application Manual for use with P0151 indices (CPAP) (Revised 1 January 2013) as published by Statistics South Africa. Tenderers are advised that with reference to Clause 3.4.6 of the Contract Price Adjustment Provisions (CPAP) Indices Applications Manual, the Head: Public Works <u>will not accept the submission by Tenderers of lists of additional items.</u></p> <p>Where this contract is a Lump Sum contract, the contract will be subject to Contract Price Adjustment Provisions (CPAP) only where the contract period equals or exceeds 6 calendar months. The applicable work group shall be WG 180 for domestic buildings or WG 181 for commercial and industrial buildings.</p> <p>F:..... V:..... T:.....</p>	Item			
E12	<p>EPWP CONDITIONS AND SPECIFICATIONS</p> <p>12.1 EMPLOYMENT TARGETS</p> <p><u>E12.1 a Employment Targets</u></p> <p>The contractor needs to provide a realistic estimate on the number of jobs that the project has the potential to create throughout the project duration as the project will be implemented using labour intensive construction methods on elements where it is economical and feasible for this construction method.</p> <p>No of jobs to be created = [Contractor to fill in an estimated number]</p> <p>F:..... V:..... T:.....</p> <p><u>E12.1 b Employment requirements</u></p> <p>Tenderers are advised that this contract will be subject to the Expanded Public Works Program (EPWP) aimed at alleviating and reducing unemployment.</p> <p>Tenderers must allow for any costs for the employment of unskilled labour as per the requirements of the EPWP program;</p> <ol style="list-style-type: none"> 1. 55% of unskilled labour to be women 2. 55% of unskilled labour to be youth aged between 18 and 35 years 3. 2% of unskilled labour to be people living with disability 4. 100% Unskilled labour utilised must reside within the boundaries of the Municipality Ward where this contract is executed, with preference to the local community closest or at the walking distance to the contract site. Wherever possible local skilled tradesmen are to be employed on this contract with the view to maximize utilization of local resources. <p>F:..... V:..... T:.....</p>	Item			
	Carried forward to collection			R	

	UNIT	QUANTITY	RATE	AMOUNT
<p><u>E12.1 c Labour rate and payment intervals</u> The contractor should ensure that labour rate paid to unskilled local labour is commensurate to the daily task. When determining the rate, consideration should be given to that EPWP beneficiaries are mostly bread winners in their families, as the program intends alleviating poverty. There should also be consideration that the labour rate promotes creation of expanded number of jobs created and person days of work.</p> <p>Contractors should make endeavours to ensure that labourers, particularly unskilled are remunerated on fortnight basis and prior notification be made should there be a shortfall on their wages. The labour rate for local unskilled shall also be determined in consideration of the location of the project, i.e. for projects implemented in urbanized municipalities will not be the same as that for rural municipalities.</p> <p>The labour rate for local unskilled shall also be determined in consideration of the location of the project, i.e. for projects implemented in urbanized municipalities will not be the same as that for rural municipalities and must comply with the latest legislated labour rate per hour as per the minimum wage rates applicable at the time the work is carried out.</p> <p>F:..... V:..... T:.....</p>	Item			
<p>12.2 LABOUR INTENSIVE CONSTRUCTION METHOD <u>E12.2 a Labour Intensive Construction (LIC) method</u> On site there must a person(s) having competency in managing and implementing LIC methods. *Foreman @ NQF Level 4 the Unit Standard on Implementing LIC methods on site. *Site Agent/ Managers @ NQF level 5 the Unit Standard on Manage Labour-Intensive Skills Programme both must be CETA accredited</p> <p>F:..... V:..... T:.....</p>	N/A			
<p><u>E12.2 b Labour Intensive Construction Method</u> Those parts of the contract to be constructed using Labour Intensive methods will be marked in the BoQ with letter LI (indicating Labour Intensive) against every item so designated. Such works will only be constructed using method so indicated.</p> <p>Reference to be made to Guidelines for the implementation of Labour Intensive Infrastructure projects under EPWP. "Scope of Work in Respect of Work Relating to the Expanded Public Works Programme (EPWP)"</p> <p>F:..... V:..... T:.....</p>	N/A			
<p>E12.3 RECORD KEEPING 12.3.1 Every employer must keep in the project site office the following minutes of site progress minutes; contractors' monthly site progress reports; accurately recorded attendance register; proof of payment as means to verify authenticity of data in the EPWP Beneficiary form submitted with payment certificates. Copies of submitted EPWP beneficiary data forms should also be kept in the site office.</p> <p>F:..... V:..... T:.....</p> <p>12.3.2 The employer must keep this record for a period of at least three (3) years after the completion of the project in his/her office as the project site office would have been relocated.</p> <p>This should be safely kept for job creation data verifications and periodical audits on projects conducted by National and Provincial Department of Public Works after one (1) or two (2) quarters of submitting captured EPWP Data to the National EPWP coordinating Department.</p> <p>F:..... V:..... T:.....</p>	Item			
Carried forward to collection			R	

	UNIT	QUANTITY	RATE	AMOUNT
<p>E12.4 EPWP REPORTING as per EPWP DATA FORM At the end of each month as part of site progress report and to be attached to every contractors' progress payment certificate; the contractor shall provide the principal agent & Public Works with a written records, as per EPWP data form; which will be reflecting, beneficiaries full name & surname; ID No and job description of labour employed by main contractor and sub-contractors on site. At the end of each month the contractor must submit the following documents to be attached to the Progress payment certificate: 1. EPWP monthly data collection form 2. Worker monthly payment upload 3. Worker monthly proof of payment i.e 3.1 Acknowledgement of receipt of payment or 3.2 Payslips 3.3 Bank statement highlighted the workers paid 4. Worker monthly training form 5. Monthly attendance register 6. Certified copies of ID's (once off) 7. ID size photos (once off) 8. Proof of UIF 9. Proof of COIDA</p> <p>F:..... V:..... T:.....</p> <p>E12.5 EPWP PROMOTION 12.5.1 EPWP signage board EPWP Program at the project level shall always be promoted through have the projects signage board that embrace EPWP logo at the bottom, correct measurement for this signage board will be provided by the project leader during the site handing over meeting. the standard "HELVETIVA MEDUIM " letters are to be used . Professional title to be 10 mm above line . Line thickness to be 8 mm thick . Space between bottom of the line and bottom of the lettering below the line has to be 100 mm. Letter sizes are as follows : Helvetica meduim 100 mm black upper case to be for project name and owner . Helvetica meduim 75mm black upper case only to be used for professional titles.Project name and owner shall be black lettering on white background.board sizes are as follows : Board to be minomum 2000mm from ground level and to be constructed from reinforced formed chromadek panels minimum 0,6mm thick chromadek. The contractor is responsible for ensuring that the project board remains neatly and safely erected for the full duration including maintenance period,after which the project board and post are to be dismantled and handed to the client in good order.</p> <p>F:..... V:..... T:.....</p> <p>12.5.2 Branding of labour apparel Contractor & Sub-contractors' labourers shall be provided with EPWP branded Personal Protective Equipment (PPE), reflector vest with EPWP wording at the back is an ideal and cost effective means of promoting program on site.</p> <p>The contractor is then advised to price for both item 17.5.1 and 17.5.2</p> <p>F:..... V:..... T:.....</p>	Item			
	Item			
	Item			
	Carried forward to collection			R

		UNIT	QUANTITY	RATE	AMOUNT
	<p>E12.6 COMMUNITY LIAISON OFFICER (CLO) UTILISATION OF A COMMUNITY LIAISON OFFICER In addition to the requirements of Clause E9, contained in this document; The Contractor shall allow for and pay any and all costs necessary for the engagement of the services of a Community Liaison Officer (CLO) for the full duration of this contract In the interest of providing a sound service to both the community and the Contractor, a CLO may only manage one project at a given time.</p> <p>A CLO will be identified by the local structures of the ward areas and appointed following fair and transparent interviewing process, to be conducted in the presence of local structures and the contractor representative, in order to assist the Contractor in the procurement of any local labour, etc. required for this project. The Contractor is to liaise with the CLO and afford him any assistance needed in ensuring sound working relations with the local community.</p> <p>Key Responsibilities of the CLO are envisaged to include and not necessary be limited to:</p> <ol style="list-style-type: none"> 1. Assisting local leadership in conducting skills and resources audit which facilitates sourcing labour from within the ward or targeted areas for employment, as required by contractor. 2. Assisting in sourcing labour-only domestic sub-contractors and the procurement of materials from local resources, as required by the contractor. 3. Assisting the contractor by identifying areas of potential conflict and or threats to the project or to stakeholders in the project and recommend appropriate action to the contractor. 4. Assisting contractor and stakeholders in the project in the resolution of any conflict which may arise. 5. Establishing and ensuring that sufficient and open communication channels between the contractor and the work force are maintained. 6. Establish and ensuring that efficient and open communication channels between the contractor and the community are maintained 7. Identifying and reporting to the Contractor regarding issues where communication between stakeholder is necessary, recommend courses of action and facilitate such communications 				
	Carried forward to collection			R	

		UNIT	QUANTITY	RATE	AMOUNT
	<p><u>TENDERER'S TO NOTE CONDITIONS</u></p> <p>a) The contract to be entered into between the Contractor and the PPG's will be a LABOUR ONLY sub-contract.</p> <p>b) The Contractor will be responsible for ensuring that all materials for use by the PPG's in the works are to be on site timeously. The Contractor shall liaise with The Mentor and PPG to determine the nature and extent of materials required and the lead time necessary.</p> <p>c) The Contractor shall be responsible for the overall programming of the Works and he is to allow for monitoring the PPG's programme and progress.</p> <p>d) In conjunction with the Mentor, he is to allow for the supervision and mentoring (where necessary) of the PPG to ensure quality and adherence to standard building practice</p> <p>e) The Contractor is to allow for extra storage facilities on site for the PPG's tools and equipment.</p> <p>f) Basic tools shall be provided by the PPG's and where these are not available; the Contractor will supply him with the necessary tools and equipment and deduct the costs thereof from the interim claims made by the PPG.</p> <p>g) Work requiring specialized tools will be provided free of charge by the Contractor with the provision that these be returned upon completion of the Work.</p> <p><u>CO-ORDINATION</u></p> <p>The Contractor is to co-ordinate the work of all the PPG's, Sub-Contractors and Nominated Sub- Contractors appointed direct by the Employer in such a manner and at all times as will suit the building programme and he is to allow adequate access, for the PPG's, where required, to carry out their work in an efficient manner as no claims for extras in this connection will be entertained.</p> <p>F:..... V:..... T:.....</p> <p><u>ATTENDANCE</u></p> <p>The Contractor may allow for attendance upon the PPG's concerned to execute the work. The Contractor is to allow the PPG's the use of any scaffolding belonging to him while it remains so erected on the site.</p> <p>Where scaffolding is necessary for the use by any PPG and the Contractor has not erected any for his own use or has removed same after his own use, the Contractor shall supply sufficient scaffolding to the PPG to be erected and dismantled by the PPG and returned to the Contractor.</p> <p>This attendance upon PPG's to execute the work is to include for the scaffolding provisions as aforesaid and, in addition, is to include for co-operating to the fullest extent with all the parties, attending on off-loading materials, providing suitable storage for tools and materials used by the PPG's, use of general facilities such as latrines, etc., supply and cost of power, lighting, water and the like.</p> <p>F:..... V:..... T:.....</p> <p><u>E12.9 EPWP CONTRACT FOR LABOUR</u></p> <p>It is compulsory that shortly after the contractor and or sub contractor has appointed local labour, the employment contract should be signed by both parties, prior to commencement with works on site. The employment contract forms part of the Ministerial Determination or from the regional EPWP officials. Each contract will lapse at the end of each financial year therefore requiring the Contractor to do a renewal of each contract should the need of employment still exist for that particular labourer.</p> <p>F:..... V:..... T:.....</p>	Item			
	Carried forward to collection			R	

		UNIT	QUANTITY	RATE	AMOUNT
E13	<p>HIV/AIDS AWARENESS Tenderers are to price against the following items for compliance with the SPECIFICATION FOR HIV/AIDS AWARENESS bound into this document (The clauses referred to are those of the Specification for HIV/AIDS)</p>				
E13.1	<p>Provide and maintain a condom dispenser in terms of Clause 5.1a) F:..... V:..... T:.....</p>	Item			
E13.2	<p>Provide and maintain HIV/AIDS awareness posters terms of Clause 5.1b) F:..... V:..... T:.....</p>	Item			
E13.3	<p>HIV /Aids Awareness Programme on Site for not less than 90% of workers inclusive of all direct and indirect costs; Engage a qualified service provider as described in the scope of works to conduct an HIV Awareness Programme in terms of Clause 5.2.1a) F:..... V:..... T:.....</p>	Item			
E13.4	<p>Arrange for workers to attend the HIV Awareness Programme in terms of Clause 5.2.1b) F:..... V:..... T:.....</p>	Item			
E13.5	<p>Reporting Prepare and attach to claims for payment a brief report in terms of Clause 5.3 (see also HIV/STI Compliance Report included with this document). F:..... V:..... T:..... <i>Note: In the event that the contractor fails to satisfy the requirements of this specification, the employer (Head: Public Works) may apply any of the sanctions provided for in the contract. Sanctions may include the application of a financial penalty of .04% of the Contract Sum per calendar day of which the required reports has not been submitted.</i></p>	Item			
E14	<p>OCCUPATIONAL HEALTH AND SAFETY ACT NO. 85 OF 1993 Tenderers are to allow for costs in providing a project specific ' Construction Phase Safety, Health and Environmental Plan' in accordance with "Section 2 - Specification Data associated with SANS 1921-1:2004" clause C4.18 in "Part C3 - Scope of Work" F:..... V:..... T:.....</p>	Item			
E15	<p>NOTICE BOARD, SITE OFFICE, ETC. Tenderers are to allow for the provision and removal of a project notice board and a site office in accordance with the Principal Agent's requirements. F:..... V:..... T:.....</p>	Item			
E16	<p>IMPORTED MATERIALS AND EQUIPMENT Where imported items are listed in the tender documents, the tenderer shall provide all information called for, failing which the price of any such item, material or equipment shall be excluded from currency fluctuations. (Refer to T2.14 - Schedule of Imported Materials and Equipment .) F:..... V:..... T:.....</p>	Item			
E17	<p>CONTRACT DOCUMENTS The drawings issues with these Tender documents do not comprise the complete set but serves as a guide only for tendering purposes and for indicating the scope of works to enable the Tenderer to acquaint him with the nature and extent of the works and the manner in which they are to be executed. Should any part of the drawings not be clearly legible to the Tenderer he shall, before submitting his Tender, obtain clarification in writing from the principal agent. F:..... V:..... T:.....</p>	Item			
	Carried forward to collection			R	

		UNIT	QUANTITY	RATE	AMOUNT
E18	<p>GENERAL PREAMBLES The Document Preambles will be the “ASAQS Model Preambles for Trades – 2008” and is obtainable from the various Regional Office’s of the Department of Public Works and shall be read in conjunction with the Bills of Quantities and be referred to for the full descriptions of work to be done and materials to be used.</p> <p>F:..... V:..... T:.....</p>	Item			
E19	<p>TRADE NAMES Wherever a Trade Name for any product has been described in the Bills of Quantities the Tenderer's attention is drawn to the fact that any other product of equal quality may be used subject to the written approval of the Principal Agent being obtained prior to the closing date for submission of Tenders.</p> <p>F:..... V:..... T:.....</p>	Item			
E20	<p>EXISTING PREMISES OCCUPIED Refer to Scope of Works Part C3 of this Tender Document for information on the occupation of existing buildings.</p> <p>F:..... V:..... T:.....</p>	Item			
E21	<p>INACCURATE AND DEFECTIVE WORK EXECUTED UNDER PREVIOUS CONTRACT The contractor shall, after taking possession of the site and before commencing the work, check all levels, liners, profiles and the like and satisfy himself as to the dimensional accuracy of all work executed under the previous contract which may affect his work.</p> <p>Should any inaccurate or defective work be found, the contractor shall immediately notify the principal agent in writing requesting his instructions with regard thereto and afford every facility to those rectifying such inaccurate or defective work.</p> <p>F:..... V:..... T:.....</p>	Item			
E22	<p>VIEWING THE SITE IN SECURITY AREAS If the site is situated in a security area and the Tenderer must arrange with the Authorities to obtain permission to enter the site for Tendering purposes.</p> <p>F:..... V:..... T:.....</p>	Item			
E23	<p>COMMENCEMENT OF WORKS IN SECURITY AREAS If the works falls within a security area, the contractor must arrange with the Authorities and give the necessary notices before commencement of the works. Should the contractor fail to make such arrangements, admission to the site may be refused and any additional costs will be for the contractor's account.</p> <p>F:..... V:..... T:.....</p>	Item			
E24	<p>ENTRANCE PERMITS TO SECURITY AREAS If the works fall within a security area, the contractor shall obtain entrance permits for his personnel and workmen entering the area and shall comply with all regulations and instructions which may be issued from time to time regarding the protection of persons and property under control of the Authority.</p> <p>F:..... V:..... T:.....</p>	Item			
Carried forward to collection				R	

		UNIT	QUANTITY	RATE	AMOUNT
E25	<p>SECURITY CHECK OF PERSONNEL The principal agent may require the contractor to have his personnel and workmen, or a certain number of them, security classified.</p> <p>In the event of the principal agent requesting the removal of a person or persons from the works for security reasons, the contractor shall do so forthwith and shall thereafter ensure that such person or persons are denied access to the works and the site and/or to any document or information relating to the works.</p> <p>F:..... V:..... T:.....</p>	Item			
E26	<p>PROHIBITION ON TAKING PHOTOGRAPHS In terms of article 119 of the Defence Act, 44 of 1957, it is prohibited to sketch or to take photographs of any military site or installation or any building or civil works thereon or to be in possession of a camera or other apparatus used for taking photographs, except when authorised thereto by or on behalf of the Minister.</p> <p>The same prohibition is also applicable to all Correctional Institutions in terms of article 44.1(e) of the Correctional Services Act 8 of 1959.</p> <p>F:..... V:..... T:.....</p>	Item			
E27	<p>Management of Water Water for Construction purposes must be obtained from alternative water sources (i.e. supply other than water that is produced and distributed by a regulated water service authority from a licenced water treatment works for human consumption), eg dams, rivers, boreholes, springs, rainwater harvesting, recycled sewerage water, etc. The alternative water source shall not be of an inferior quality / standard than that required for construction purposes. The client reserves the right through his agents to test such supplies or request certificates confirming the grade and nature of the water supply. Relevant knowledge of the respective area will be an advantage.</p> <p>F:..... V:..... T:.....</p>	Item			
E28	<p>ELECTRICITY CONSUMPTION</p> <p>The contractor will be responsible to remunerate the school with an amount of R1200.00/month for electricity used on the site during the construction period and from site handover until works completion is reached and must make allowance in their preliminaries for such payment to the school on a monthly basis and if this is not paid, it will be deducted in the final account. The above mentioned electricity payments will only be applicable if the contractor make use of the school's electricity. However the school is not obliged to supply the contractor with electricity, and if so the contractor must provide his own electricity for construction purposes. Contractors also need to factor in the unavailability of electricity due to load shedding or any other disruptions and no claims with reference to any such disruptions will be entertained in respect of time or money.</p> <p>F:..... V:..... T:.....</p>	Item			
Carried forward to collection				R	

SECTION 1			
SUMMARY – PRELIMINARY & GENERAL			
Collection	Page No.	Amount	
	1	R	
	2	R	
	3	R	
	4	R	
	5	R	
	6	R	
	7	R	
	8	R	
	9	R	
	10	R	
	11	R	
	12	R	
	13	R	
	14	R	
	15	R	
	16	R	
	17	R	
Carried forward to Final Summary		R	
Section No. 1 Preliminary & General Summary			



**PHASE 14: STORM DAMAGED PROGRAMME: REPAIRS AND RENOVATIONS TO STORM
DAMAGED SCHOOLS THROUGHOUT THE PROVINCE OF KWAZULU-NATAL:SOUTHERN
REGION: CLUSTER 155: EMGANGENI SECONDARY SCHOOL. OPEN BIDS**

PART C2.3 BILL OF QUANTITIES

Item No		Quantity	Rate	Amount
	<p><u>BILL NO. 2</u></p> <p><u>ALTERATIONS (PROVISIONAL)</u></p> <p><u>(CPAP WORK GROUP NO. 102 UNLESS OTHERWISE STATED)</u></p> <p>Key: Location Description</p> <p>A Block A (5 Classrooms & Admin)</p> <p>B Block B (2 Classrooms)</p> <p>C External works</p> <p>D General</p> <p><u>PREAMBLES</u></p> <p>The tenderer is referred to the relevant clauses in the Standard Preambles for Trades 2008 which are incorporated at the back of these Bills of Quantities.</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>View site:</u></p> <p>Before submitting his tender the contractor shall visit the site and satisfy himself as to the nature and extent of the work to be done and the value of the materials contained in the buildings or portions of the buildings to be demolished. No claim for any variations of the contract sum in respect of the nature and extent of the work or of inferior or damaged materials will be entertained</p> <p><u>Damage to existing finishes:</u></p> <p>The Contractor will be held responsible for all damage, however caused, to existing finishes and fittings etc. and he must make good all damage at his own expense to the approval of the Principal Agent</p>			
	Carried to Collection			
	Bill No. 2 Alterations (Provisional)		R	

Breaking down, demolition and alteration activities and tasks, hacking off of existing plaster, etc. is to be executed with care so as to prevent damage to remaining floor and wall surfaces and finishes (where these are to be retained). Tenders will be deemed to include allowance for any necessary protection of existing surfaces and structures as may be necessary to effect the above, as the cost of repairing damage to existing surfaces and structures will be solely for the Contractors account

Responsibility for site:

The contractor is to note that upon possession of the site by himself, and extending until practical completion is achieved, he is solely responsible for the site, site security, general upkeep and cleaning of the site and all other responsibilities in maintaining a construction site in conformance with but not limited to, the Construction Regulations 2003, all local by-laws, all user client regulations, and all Client regulations and procedures. Tenderers are therefore urged to study all available material and to investigate fully the site and areas contiguous to the site, in order to determine the range and extent of responsibility. No additional monetary and/or time claims will be entertained in respect of the above

Explosives :

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

General:

The contract shall carry out the whole of the works with as little mess and noise as possible and with a minimum of disturbance to adjoining classroom blocks and their students. He shall provide proper protection and provide, erect and remove when directed, any temporary tapaulins that may be necessary during the progress of the works, or to the satisfaction of the principal agent

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

Carried to Collection

Bill No. 2
 Alterations (Provisional)

R

Prices for taking out of doors, windows, etc. shall include for removal of all beads, architraves, ironmongery, etc

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

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

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

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.)

Removal of materials:

Where removal is included in the heading, sub-heading or item description, prices shall be deemed to include for the necessary costs in removal and appropriate disposal of materials including but not limited to labour, transportation and disposal costs. No further claims in this regard will be entertained

Removal of asbestos material:

All preparatory work, alterations, etc., to existing asbestos cement roof sheeting, gutters, rainwater pipes, etc., is to be carried out strictly by an approved and certified specialist company and in accordance with statutory requirements (Occupational Health and Safety Act, 1993 - Asbestos Regulations 2001) and all necessary precautions must be taken when working with and disposing of asbestos cement products and the disposing of waste water resulting from cleaning operations, etc

Carried to Collection

Bill No. 2
 Alterations (Provisional)

R

The following shall apply in respect of asbestos removal:

The removal of asbestos shall be carried out by a certified entity, registered in accordance with the Occupational Health and Safety Act 1993 and the Asbestos Regulation 2001. Asbestos in all forms/building elements that is to be removed, shall be carried out in strict accordance with aforementioned regulation, and a certificate issued by the entity as contemplated in the above, shall be provided per block for the removal thereof, where the term block shall in this context refer to any single, free standing building structure, regardless of size or purpose. Corresponding disposal certificates shall be issued by the facility at which the asbestos is disposed off, with said facility to, prior to the disposal of any asbestos material provide satisfactory proof that the facility is duly registered and fully compliant in terms of the act, to receive the asbestos material. Under no circumstances is the contractor nor any of his duly authorised representatives to sell and/or give away asbestos material to any member/s of the school community, the community in general or the public at large. Should this be found to be occurring, the contractor will be held responsible contractually and may further be prosecuted criminally. The cost for complying with the above, and all requirements of regulation as reflected above is to be priced for in the items for removal of asbestos material. No further claims in this regard will therefore be entertained

TEMPORARY BARRIERS, SCREENS, ETC

Temporary parkhome units

Provide temporary parkhomes on site for educational facilities during the construction phase as herewith measured, including levelling, positioning on site and connection to an electrical supply including issuing compliance certificates

Parkhomes are to be standard classroom size minimum 7 x 7m or nearest size

1	Provision of parkhome for a period of 8 months	No		4
	A : 1 B : 0 C : 0 D : 3			
2	Provision of two tier steps for 8 months	No		4
	A : 1 B : 0 C : 0 D : 3			

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 Alterations (Provisional)

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3	Provision of electrical compliance certificates for parkhomes A : 1 B : 0 C : 0 D : 3	No	4	
4	Transport to and from site of parkhomes as per distance between supplier and site per return trip A : 1 B : 0 C : 0 D : 3	TRIP	4	

TEMPORARY ROOF PROTECTION

The Contractor will be held responsible for all damage, howsoever caused, to finishes inside rooms where the existing roof coverings have been removed and he must make good all damage at his own expense to the approval of the Employer

5	Supply and install temporary waterproofing and weatherproof protection to buildings in the form of uPVC underlay or tarpaulin where roofing and related items have been removed during construction whereby exposing buildings, including the relocation of the protection to various blocks within the works as area. The contractor to allow for maintenance of the waterproofing during periods of exposure to classrooms as well the reuse and reallocation to the blocks as per the contracts construction programme A : 235 B : 80 C : 0 D : 0	m2	315	
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REMOVAL OF EXISTING WORK

Breaking up and removing reinforced concrete including cutting off and removing reinforcement and cart away

6	100mm Thick slabs A : 0 B : 160 C : 0 D : 0	m2	160	
<u>Breaking down and removing brickwork etc</u>				
7	Half brick beamfills A : 0 B : 14 C : 0 D : 0	m2	14	
8	One brick walls A : 8 B : 0 C : 0 D : 0	m2	8	

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Taking out and removing doors, windows, etc., including thresholds, sills, etc. (building up openings and making good finishes elsewhere)

9	Timber single door and frame size 900 x 2100mm high A : 10 B : 2 C : 0 D : 0	No	12
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Note: Tenderers are referred to the foregoing supplementary preambles within this trade when pricing the following item (removal of asbestos)

Taking down and removal of Asbestos by Specialist

10	Asbestos roof sheets including all fixings	m2	470	
	A : 470 B : 0 C : 0 D : 0			

Taking down and removing roofs, floors, panelling, ceilings, partitions, etc

11	Pitched corrugated iron roof 16000 x 10000 x 800mm high overall including roof covering, timber trusses and purlins, eaves soffit covering, fascias, barge boards, gutters and rainwater pipes	No	1	
	A : 0 B : 1 C : 0 D : 0			

12	Fascias boards fixed to ends of rafters including galvanised steel H-profile joint strips, etc,	m	164	
	A : 56 B : 108 C : 0 D : 0			

13	125 x 75mm uPVC Eaves gutters and rainwater pipes	m	174	
	A : 126 B : 48 C : 0 D : 0			

Taking out and removing glass and mirrors

14	Glass from steel windows including cleaning out rebates and preparing for new glass	m2	72	
	A : 54 B : 18 C : 0 D : 0			

Taking up and removing vinyl floor coverings, carpeting, etc

15	Vinyl tile floor covering including preparing screed for new vinyl floor covering	m2	160	
	A : 0 B : 160 C : 0 D : 0			

Taking out and removing ironmongery

16	Make good existing glazed steel window approximately 900mm x 1200mm high including sanding down thoroughly, applying metal primer and two coats gloss enamel paint, replacing broken glazing, overhauling, adjusting and servicing existing ironmongery to leave complete unit in a perfect condition	No	56	
	A : 45 B : 11 C : 0 D : 0			

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17	Remove existing chalkboards approximately 4800 x 1200mm high, including fixings, etc. and cart off site A : 5 B : 2 C : 0 D : 0	No	7	
18	Remove existing pinning board approximately 1800 x 2800mm high, including fixings, etc. and cart off site A : 5 B : 2 C : 0 D : 0	No	7	
<u>Hacking up/off and removing granolithic, screeds, plaster, etc from concrete or brickwork and preparing surfaces for new screeds, plaster, etc</u>				
19	25mm Screed from floors A : 80 B : 0 C : 0 D : 0	m2	80	
<u>MAKING GOOD OF FINISHES ETC</u>				
20	Remove 100mm width of plaster on either side of crack, rake out crack: 6mm X 6mm deep, clean out all loose material and repair crack using Prostruct 506 Flexicoat polymer modified cementitious coating or similar approved, to Manufacturer's specification A : 15 B : 6 C : 0 D : 0	m	21	
<u>Making good existing Roof trusses</u>				
<u>Repairs to Bottom Chord</u>				
21	Make good existing timber roof truss in position, of tie beam span approximately 8000mm - 9400mm between walls and approximately 1600mm high at apex, including carefully cutting out and removing sections of damaged 76 x 114mm bottom chord, replacing with new including bolting new section to old using approved galvanised mild steel bolts, washers, etc., replacing all bottom chord fixings, gang nails, etc. (whether damaged or not), sanding down and sealing entire truss to leave in a perfect condition, including reinstating in position as approved by the Engineer A : 2 B : 2 C : 0 D : 0	No	4	
Carried to Collection				
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	<u>Repairs to rafters</u>				
22	<p>Make good existing timber roof truss in position, of tie beam span approximately 8000mm - 9400mm between walls and approximately 1600mm high at apex, including carefully cutting out and removing sections of damaged 76 x 114mm rafters, replacing with new including bolting new section to old using approved galvanised mild steel bolts, washers, etc., replacing all rafter fixings, gang nails, etc. (whether damaged or not), sanding down and sealing entire truss to leave in a perfect condition including reinstating in position as approved by the Engineer</p> <p style="text-align: center;">A : 16 B : 8 C : 0 D : 0</p>	m	24		
	<u>Repairs to king post</u>				
23	<p>Make good existing timber roof truss in position, of tie beam span approximately 8000mm - 9400mm between walls and approximately 1200mm high at apex, including carefully cutting out and removing sections of damaged 76 x 76mm king post, replacing with new including bolting new section to old using approved galvanised mild steel bolts, washers, etc., replacing all king post fixings, gang nails, etc. (whether damaged or not), sanding down and sealing entire truss to leave in a perfect condition, including reinstating in position as approved by the Engineer</p> <p style="text-align: center;">A : 2 B : 2 C : 0 D : 0</p>	No	4		
	<u>Repairs to Bracings</u>				
24	<p>Make good existing timber roof truss in position, of tie beam span approximately 8000mm - 9400mm between walls and approximately 1200mm high at apex, including carefully cutting out and removing sections of damaged 76 x 52mm bracings and intermediate posts and supports, replacing with new including bolting new section to old using approved galvanised mild steel bolts, washers, etc., replacing all king post fixings, gang nails, etc. (whether damaged or not), sanding down and sealing entire truss to leave in a perfect condition, including reinstating in position as approved by the Engineer</p> <p style="text-align: center;">A : 4 B : 3 C : 0 D : 0</p>	No	7		
	Carried to Collection				
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<u>Repairs to Queen posts</u>							
25	<p>Make good existing timber roof truss in position, of tie beam span approximately 8000mm - 9400mm between walls and approximately 1200mm high at apex, including carefully cutting out and removing sections of damaged 76 x 52mm queen posts and/or intermediate and diagonal bracing and/or supports, replacing with new including bolting new section to old using approved galvanised mild steel bolts, washers, etc., replacing all queen posts and intermediate and diagonal bracing and supports fixings, gang nails, etc. (whether damaged or not), sanding down and sealing entire truss to leave in a perfect condition, including reinstating in position as approved by the Engineer</p> <p style="text-align: center;">A : 1 B : 1 C : 0 D : 0</p>	No	2				
<u>Making good untinted granolithic</u>							
26	<p>Floors in patches</p> <p style="text-align: center;">A : 49 B : 24 C : 0 D : 0</p>	m2	73				
<u>Making good internal cement plaster</u>							
27	<p>Walls in patches</p> <p style="text-align: center;">A : 219 B : 54 C : 0 D : 0</p>	m2	273				
<u>Making good external cement plaster</u>							
28	<p>Walls in patches</p> <p style="text-align: center;">A : 109 B : 54 C : 0 D : 0</p>	m2	163				
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Alterations (Provisional)

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Bill No. 2

Alterations (Provisional)

Item No		Quantity	Rate	Amount
	<p><u>BILL NO. 3</u></p> <p><u>EARTHWORKS (PROVISIONAL)</u></p> <p><u>(CPAP WORK GROUP NO. 104 UNLESS OTHERWISE STATED)</u></p> <p>Key: Location Description</p> <p>A Block A (5 Classrooms & Admin)</p> <p>B Block B (2 Classrooms)</p> <p>C External works</p> <p>D General</p> <p><u>PREAMBLES</u></p> <p>The tenderer is referred to the relevant clauses in the Standard Preambles for Trades 2008 which are incorporated at the back of these Bills of Quantities.</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Nature of ground</u></p> <p>The nature of the ground is assumed to be loose sandy material, therefore 'earth', but possibly interspersed with 'soft rock' or 'hard rock'</p> <p><u>Excavation for working space in rock</u></p> <p>Notwithstanding clause 11 of the Standard System of Measuring Building Work, excavation for working space in rock will be measured in cubic metres to the extent executed and given as 'extra over' bulk excavation or trench and hole excavation as the case may be</p> <p><u>Carting away of excavated material</u></p> <p>Descriptions of carting away of excavated material shall be deemed to include loading excavated material onto trucks directly from the excavations or, alternatively, from stock piles situated on the building site</p>			
	Carried to Collection			
	Bill No. 3 Earthwork (Provisional)		R	

<u>Filling</u>				
Notwithstanding the reference to prescribed multiple handling in clause 1 of the Standard System of Measuring Building Work, prices for filling and backfilling shall include for all selection and any necessary multiple handling of material				
<u>Testing</u>				
Prices for filling are to include for all necessary density tests in accordance with SANS 10400				
<u>EXCAVATION, FILLING, ETC OTHER THAN BULK</u>				
<u>Excavation in earth not exceeding 2m deep</u>				
1	Reduced levels under floors A : 0 B : 24 C : 0 D : 0	m3	24	
<u>Extra over trench and hole excavations in earth for excavation in</u>				
2	Soft rock A : 0 B : 2 C : 0 D : 0	m3	2	
<u>Extra over all excavations for carting away</u>				
3	Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor A : 0 B : 24 C : 0 D : 0	m3	24	
<u>Earth filling supplied by the contractor compacted to 98% Mod AASHTO density</u>				
4	G5 material under floors A : 0 B : 24 C : 0 D : 0	m3	24	
<u>Compaction of surfaces</u>				
5	Compaction of ground surface under floors etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 95% Mod AASHTO density A : 0 B : 160 C : 0 D : 0	m2	160	
Carried to Collection				R
Bill No. 3 Earthwork (Provisional)				

Prescribed density tests on filling

6	"Modified AASHTO Density" test	No	3	
	A : 0 B : 3 C : 0 D : 0			

SOIL POISONING

Soil insecticide

7	Under floors etc including forming and poisoning shallow furrows against foundation walls etc, filling in furrows and ramming	m2	160	
	A : 0 B : 160 C : 0 D : 0			

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 Earthwork (Provisional)

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Earthwork (Provisional)

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Bill No. 3
 Earthwork (Provisional)

Item No		Quantity	Rate	Amount
	<p><u>BILL NO. 4</u></p> <p><u>CONCRETE, FORMWORK AND REINFORCEMENT</u></p> <p><u>(CPAP WORK GROUP NO. 110 UNLESS OTHERWISE STATED)</u></p> <p>Key: Location Description</p> <p>A Block A (5 Classrooms & Admin)</p> <p>B Block B (2 Classrooms)</p> <p>C External works</p> <p>D General</p> <p><u>PREAMBLES</u></p> <p>The tenderer is referred to the relevant clauses in the Standard Preambles for Trades 2008 which are incorporated at the back of these Bills of Quantities.</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Cost of tests</u></p> <p>The costs of making, storing and testing of concrete test cubes as required under clause 7 Tests of SABS 1200 G shall include the cost of providing cube moulds necessary for the purpose, for testing costs and for submitting reports on the tests to the principal agent. The testing shall be undertaken by an independent firm or institution nominated by the contractor to the approval of the principal agent. (Test cubes are measured separately)</p>			
	Carried to Collection			
	Bill No. 4 Concrete, Formwork and Reinforcement		R	

Formwork

Descriptions of formwork shall be deemed to include use and waste only (except where described as 'left in' or 'permanent'), for fitting together in the required forms, wedging, plumbing and fixing to true angles and surfaces as necessary to ensure easy release during stripping and for reconditioning as necessary before re-use

The vertical strutting shall be carried down to such construction as is sufficiently strong to afford the required support without damage and shall remain in position until the newly constructed work is able to support itself.

Formwork to soffits of solid slabs etc. shall be deemed to be to slabs not exceeding 250mm thick unless otherwise described.

Formwork to soffits of slabs, beams, etc. shall be deemed to be propped up exceeding 1,5m and not exceeding 3,5m high unless otherwise described.

Formwork to sides of bases, pile caps, ground beams, etc. will only be measured where it is prescribed by the engineer for design reasons. Formwork necessitated by irregularity or collapse of excavated faces will not be measured and the cost thereof shall be deemed to be included in the allowance for taking the risk of collapse of the sides of the excavations, provision for which is made in Earthworks.

REINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES

25MPa/19mm concrete

1	Surface beds and thickening, etc cast in panels on waterproofing	m3	16	
	A : 0 B : 16 C : 0 D : 0			

TEST BLOCKS

2	Making and testing 150 x 150 x 150mm concrete strength test cube (Provisional)	Sets	2	
	A : 0 B : 2 C : 0 D : 0			

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Bill No. 4
 Concrete, Formwork and Reinforcement

R

CONCRETE SUNDRIES

Finishing top surfaces of concrete smooth with a power float

3	Surface beds, slabs, etc to falls	m2	160	
	A : 0 B : 160 C : 0 D : 0			

MOVEMENT JOINTS ETC

Two sheets of masonite with smooth surfaces as slip joints between horizontal concrete and brick surfaces including cement mortar bed

4	Not exceeding 300mm wide	m	98	
	A : 0 B : 98 C : 0 D : 0			

Expansion joints with bitumen impregnated softboard between vertical concrete and brick surfaces

5	12mm Joints not exceeding 300mm high	m	98	
	A : 0 B : 98 C : 0 D : 0			

Saw cut joints

6	5 x 30mm Saw cut joints in top of concrete	m	14	
	A : 0 B : 14 C : 0 D : 0			

REINFORCEMENT (PROVISIONAL) (CPAP WORK Group No. 114)

Fabric reinforcement

7	Type 193 fabric reinforcement in concrete surface beds, slabs, etc.	m2	160	
	A : 0 B : 160 C : 0 D : 0			

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Bill No. 4

Concrete, Formwork and Reinforcement

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Bill No. 4

Concrete, Formwork and Reinforcement

Item No		Quantity	Rate	Amount
	<p><u>BILL NO. 5</u></p> <p><u>MASONRY</u></p> <p><u>(CPAP WORK GROUP NO. 116 UNLESS OTHERWISE STATED)</u></p> <p>Key: Location Description</p> <p>A Block A (5 Classrooms & Admin)</p> <p>B Block B (2 Classrooms)</p> <p>C External works</p> <p>D General</p> <p><u>PREAMBLES</u></p> <p>The tenderer is referred to the relevant clauses in the Standard Preambles for Trades 2008 which are incorporated at the back of these Bills of Quantities.</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Proprietary items or materials</u></p> <p>Proprietary items or materials where specified are to be of the brand specified or other approved by the Representative / Agent</p> <p><u>BRICKWORK</u></p> <p><u>Sizes in description:</u></p> <p>Where sizes in descriptions are given in brick units, 'one brick' shall represent the length and 'half brick' the width of a brick</p> <p><u>Hollow walls:</u></p> <p>Descriptions of hollow walls shall be deemed to include leaving every fifth perpend of the bottom course of the external skin open as a weep hole</p> <p><u>Bagged and sealed walls:</u></p> <p>Walls in two skins described as 'bagged and sealed' shall be deemed to include having the outer face of the inner skin bagged with 1:6 cement and sand mixture and sealed with two coats bitumen emulsion waterproofing coating</p>			
	Carried to Collection			R
	Bill No. 5 Masonry			

Face bricks:

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

Pointing:

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

SUPERSTRUCTURE

Brickwork of NFP bricks in class II mortar

1	Half brick walls in beamfilling	m2	14	
	A : 0 B : 14 C : 0 D : 0			
2	One brick walls	m2	98	
	A : 75 B : 22 C : 0 D : 0			

BRICKWORK SUNDRIES

Brickwork reinforcement

3	75mm Wide reinforcement built in horizontally	m	55	
	A : 0 B : 55 C : 0 D : 0			
4	150mm Wide reinforcement built in horizontally	m	383	
	A : 295 B : 88 C : 0 D : 0			

Galvanised wire ties etc.

5	4mm Diameter roof tie 2000mm girth bent double, with one end shot pinned to concrete beam and the other end fixed to timber	No	76	
	A : 0 B : 76 C : 0 D : 0			

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Masonry

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Masonry

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Bill No. 5
Masonry

Item No		Quantity	Rate	Amount
	<u>BILL NO. 6</u>			
	<u>WATERPROOFING</u>			
	<u>(CPAP WORK GROUP NO. 120 UNLESS OTHERWISE STATED)</u>			
	Key:	Location Description		
	A	Block A (5 Classrooms & Admin)		
	B	Block B (2 Classrooms)		
	C	External works		
	D	General		
	<u>PREAMBLES</u>			
	The tenderer is referred to the relevant clauses in the Standard Preambles for Trades 2008 which are incorporated at the back of these Bills of Quantities.			
	<u>SUPPLEMENTARY PREAMBLES</u>			
	<u>Proprietary items or materials</u>			
	Proprietary items or materials where specified are to be of the brand specified or other approved by the Representative / Agent			
	<u>DAMP-PROOFING OF WALLS AND FLOORS</u>			
	<u>One layer of 375 micron "Consol Plastics Brikgrip DPC" or equally approved embossed damp proof course</u>			
1	In walls A : 0 B : 11 C : 0 D : 0	m2	11	
	<u>One layer of 250 micron "Consol Plastics Gunplas USB Green" or equally approved waterproof sheeting sealed at laps with "Gunplas Pressure Sensitive Tape"</u>			
2	Under surface beds A : 0 B : 160 C : 0 D : 0	m2	160	
	<u>JOINT SEALANTS ETC</u>			
	Carried to Collection			R
	Bill No. 6 Waterproofing			

Two-part grey polysulphide sealing compound including backing cord, bond breaker, primer, etc

3	12 x 12mm In expansion joints in floors including raking out expansion joint filler as necessary	m	98	
	A : 0 B : 98 C : 0 D : 0			
4	5 x 10mm In saw cut joints in floors	m	14	
	A : 0 B : 14 C : 0 D : 0			

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Waterproofing

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Bill No. 6

Waterproofing

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Bill No. 6
Waterproofing

Item No		Quantity	Rate	Amount
	<p><u>BILL NO. 7</u></p> <p><u>ROOF COVERINGS ETC</u></p> <p><u>(CPAP WORK GROUP NO. 124 UNLESS OTHERWISE STATED)</u></p> <p>Key: Location Description</p> <p>A Block A (5 Classrooms & Admin)</p> <p>B Block B (2 Classrooms)</p> <p>C External works</p> <p>D General</p> <p><u>PREAMBLES</u></p> <p>The tenderer is referred to the relevant clauses in the Standard Preambles for Trades 2008 which are incorporated at the back of these Bills of Quantities.</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Proprietary items or materials</u></p> <p>Proprietary items or materials where specified are to be of the brand specified or other approved by the Representative / Agent</p> <p><u>Sheeting:</u></p> <p>The roof sheeting shall be 0.8mm thick full hard IBR profile galvanised mild steel or other approved roof sheets, roll formed in continuous lengths and cut to length by a pneumatic cut-off process. A certificate verifying compliance to all current SANS codes in respect to galvanised sheeting shall be issued by the manufacturer</p> <p><u>Finishing of sheets:</u></p> <p>The paint finish shall be colour plus on one side and standard grey finish on the other side</p>			
	Carried to Collection			
	Bill No. 7 Roof Coverings		R	

Fixing of sheets:

The roof sheeting shall be laid in long lengths, narrow flutes outermost, with single flute sidelaps facing away from prevailing wind. All sheets shall be secured to timber purlins utilising approved roofing screws in strict accordance to the manufacturers instructions. Sheeting is to be drilled and not punched, with side laps filled with approved Mastic sealant. Sheeting is to protrude a minimum of 50mm from ends of rafters

Flashings:

Flashings shall be approved by the manufacturer and fixed to the sheeting with approved fixings. Prior to flashings being fixed, all troughs at the apex shall be stop-ended to the full depth of the sheet in order to prevent any penetration of wind driven water. The trough shall be lipped at the eaves end to form a drip. Flashing flanges shall be notched to the sheet profile where necessary. Care shall be taken to ensure that no sheeting or flashing will be cut with abrasive disc on roof surface in order to prevent steel spatter from penetrating colour coated areas

Erection:

Every precaution shall be taken to prevent damage to roof sheets during all stages of construction. Duck boards should be used when necessary to protect the sheeting from damage. Sheeting which has become deformed or damaged in any way, shall be replaced, at no additional cost to the contract

Safety:

The contractor shall exercise special care when handling long length sheeting, particularly in windy conditions. Should work be interrupted for any reason, all loose sheeting and incomplete sections must be adequately secured against possible movement by wind and gravity

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 Roof Coverings

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Guarantee:

The manufacturer shall comply with ISO9002 Quality Management System. Sheeting shall be laid in strict accordance with manufacturers specifications by an approved contractor. A written and approved five (5) year guarantee of site workmanship and water tightness shall be issued after final inspection of roof sheets by the manufacturer

TROUGHED METAL SHEETING AND ACCESSORIES

0.58mm Thick galvanized "Colourbond" IBR profile metal sheeting or equal approved sheeting, colour to the determined on site, fixed to timber purlins with and including approved roofing screws with 26mm diameter galvanised washers and rubber gasket (timber purlins measured elsewhere) and fixed strictly in accordance with the manufacturer's instructions

1	Roof covering with pitch not exceeding 25 degrees A : 470 B : 179 C : 105 D : 0	m2	755
2	Ridge capping 462mm girth A : 42 B : 16 C : 0 D : 0	m	58
3	Side wall flashing 462mm girth A : 84 B : 32 C : 0 D : 0	m	116
4	Head wall flashing 462mm girth A : 0 B : 0 C : 14 D : 0	m	14
5	Counter flashing 185mm girth A : 84 B : 32 C : 0 D : 0	m	116
6	Apex flashing 660mm girth A : 22 B : 22 C : 0 D : 0	m	45
7	Hot dip galvanised metal polyclosures to under ridge capping and eaves A : 106 B : 54 C : 0 D : 0	m	161
8	Sondor IBR pattern polyclosure under ridge capping and eaves A : 106 B : 54 C : 0 D : 0	m	161
9	Extra over roof sheet for fixing every crown at eaves A : 22 B : 22 C : 0 D : 0	m	45

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Roof Coverings

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10 Extra over for fixing screws at every ridge
A : 84 B : 32 C : 0 D : 0

m

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Roof Coverings

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ROOF AND WALL INSULATION

**"Super Sisalation Heavy Industrial Grade 430" or
 equally approved - Double sided reflective foil
 laminate incorporating layers of kraft paper and
 reinforcing scrim, laminated together with low
 density polyethylene (293gsm)**

11	Insulation laid taut over timber rafters (at approximately 1200mm centres) and fixed concurrent with tiling battens, purlins, etc A : 384 B : 134 C : 0 D : 0	m2	518
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 Roof Coverings

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Bill No. 7

Roof Coverings

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Bill No. 7
Roof Coverings

Item No		Quantity	Rate	Amount
	<p><u>BILL NO. 8</u></p> <p><u>CARPENTRY AND JOINERY</u></p> <p><u>(CPAP WORK GROUP NO. 126 UNLESS OTHERWISE STATED)</u></p> <p>Key: Location Description</p> <p>A Block A (5 Classrooms & Admin)</p> <p>B Block B (2 Classrooms)</p> <p>C External works</p> <p>D General</p> <p><u>PREAMBLES</u></p> <p>The tenderer is referred to the relevant clauses in the Standard Preambles for Trades 2008 which are incorporated at the back of these Bills of Quantities.</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Fixing:</u></p> <p>Items described as 'nailed' shall be deemed to be fixed with hardened steel nails or pins, or to be shot-pinned, to brickwork or concrete</p> <p>Items described as 'plugged' shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 500mm centres, and where described as 'bolted', the bolts have been given elsewhere</p> <p><u>Joinery:</u></p> <p>Descriptions of frames shall be deemed to include frames, transomes, rails, etc.</p> <p>Descriptions of hardwood joinery shall be deemed to include sinking and pelleting heads and nuts of bolts</p> <p><u>Decorative thermosetting plastic laminate covering:</u></p> <p>Laminate covering shall be glued under pressure and edge strips of same shall be butt jointed at junctions with adjacent similar finish</p>			
	Carried to Collection			R
	Bill No. 8 Carpentry and Joinery			

Prefabricated plate nailed timber roof truss construction:

NOTE: The following is applicable in respect of roof trusses:

The Contractor shall allow for all items deemed necessary for the proper design, fabrication and erection of the roof trusses, bracing, etc.

The materials and design of the roof construction shall be in accordance with the relevant edition of the South African National Standards (SANS) and the Standard Building Regulations (SBR)

The design of trusses and permanent bracing shall be carried out under the control of a registered professional engineer who shall provide the requisite certificate of stability on completion of the roof construction. All calculations and drawing, including a key plan of each building showing the position of each type of member shall be submitted timeously to the consulting Structural Engineer for his approval before fabrication is commenced

Prices are to include for the provision of adequate temporary bracing during construction to the approval of the Departmental Engineer

The dimensions in the descriptions of the trusses are nominal and actual measurements are to be obtained from the architect and/or the site before fabrication commences

Trusses must be designed in accordance with the environmental conditions of the area

The following roof trusses are to a pitch not exceeding 25 degrees (unless otherwise stated) spaced at approximately 1200mm centres and are to receive 0,8mm thick IBR profile roof sheets on timber purlins and a nailed up ceiling under

Pretreatment of timber:

This service falls within the areas defined in the National Building Regulations for Treatment of Timber against insect pest affecting softwood fixed permanently in all buildings

Carried to Collection

Bill No. 8
 Carpentry and Joinery

R

The Regulations require that timber be treated in terms of the relevant SANS. Tenderers are to make allowance in their rates

Prefabricated roof trusses, etc:

All timber roof trusses including nail-plated trusses and bolted trusses with lapped members must comply with SANS

Prices for roof trusses are to include for all temporary bracing and supports and for all necessary top and bottom chord bracing, wind bracing and runners where required and overhanging ends are to be wrot faced all round

Plate nailed timber roof truss construction:

The following is applicable in respect of roof trusses: Trusses are at maximum 1200mm centres. Roof covering is 0,8mm thick IBR profile roof sheets on timber purlins. Ceilings are plasterboard on softwood brandering. The dimensions in the descriptions of the trusses are nominal and actual measurements are to be obtained from the Architect and/or the site before design or fabrication commences

PREFABRICATED ROOF TRUSSES, ETC.

The following in plate nailed timber roof trusses with pitch not exceeding 25 degrees from an approved supplier, delivered to site, hoisted into position, fixed and braced on timber wall plates to SABS 0243:

Prefabricated plate nailed timber roof truss construction

The following is applicable in respect of roof trusses:

Trusses are at maximum 1200mm centres
 Roof covering is "0.58mm Thick galvanized "Colourbond" IBR profile metal sheeting or equal approved sheeting on purlins. The references given in the descriptions are to the respective types of trusses. The dimensions in the descriptions of the trusses are nominal and actual measurements are to be obtained from the architect and/or the site before design or fabrication commences

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1	Design, supply and install roof truss system size complete and in accordance with SANS, including cross battens at hips, valleys, longitudinal bracing, etc. all in accordance with the specifications to building size approximately 16 000mm x 10 000mm on plan and with a clear span between walls approximately 7 500mm (approximate on flat 160m2) (17.5 degree pitch)	No	1		
	A : 1 B : 0 C : 0 D : 0				
2	Provide manufacture and installation certificates (TR1 and TR2), to be supplied by the contractor and approved by the Consulting Structural Engineer after manufacture and installation respectively			Item	
<u>ROOFS ETC</u>					
<u>Sawn softwood</u>					
3	38 x 114mm Wall plates	m	32		
	A : 0 B : 32 C : 0 D : 0				
4	38 x 114mm Longitudinal bracing	m	50		
	A : 18 B : 32 C : 0 D : 0				
5	50 x 76mm Purlins	m	456		
	A : 168 B : 256 C : 32 D : 0				
6	50 x 228mm Rafter	m	37		
	A : 0 B : 0 C : 37 D : 0				
7	76 x 76mm Splayed purlins	m	78		
	A : 0 B : 64 C : 14 D : 0				
<u>Sundries</u>					
8	75 x 287mm wrought saligna beams bolted to steel post (post elsewhere measured)	m	88		
	A : 0 B : 0 C : 88 D : 0				
9	Wrought faces on sawn timbers	m2	0.2		
	A : 0.0 B : 0.2 C : 0.0 D : 0.0				
10	Two coats creosote on sawn timbers	m2	5		
	A : 0 B : 5 C : 0 D : 0				
11	600mm Long wrought end to 38 x 114mm sawn timber and splayed cut	No	16		
	A : 0 B : 16 C : 0 D : 0				
Carried to Collection					
				R	
Bill No. 8 Carpentry and Joinery					

12	"Teco" or equally approved hurricane clips A : 560 B : 0 C : 24 D : 0	No	584		
13	2.5mm Diameter galvanised wire tie 400mm girth wrapped around rafter and purlin with ends tied together A : 560 B : 0 C : 24 D : 0	No	584		

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 Carpentry and Joinery

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EAVES, VERGES ETC

"Everite Nutec" or other equally approved medium density pressed fibre-cement

14	15 x 255mm Fascias, including galvanised steel H-profile joiners A : 84 B : 32 C : 14 D : 0	m	130
15	80 x 275mm Angle section barge board, including galvanised steel H-profile joiners A : 24 B : 24 C : 10 D : 0	m	58

DOORS ETC

Meranti doors hung to steel frame (Steel frame elsewhere measured)

16	44mm Meranti framed ledged braced door with 44 x 146mm top rail and stiles, 22 x 108mm braces, 22 x 146mm lock rail, 22 x 222mm bottom rail, 22 x 70mm tongue in grove and v-jointed boarding. Size 813 x 2032mm high A : 10 B : 2 C : 0 D : 0	No	12
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 Carpentry and Joinery

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Bill No. 8

Carpentry and Joinery

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Bill No. 8
 Carpentry and Joinery

Item No		Quantity	Rate	Amount
	<p><u>BILL NO. 9</u></p> <p><u>CEILING, PARTITIONS AND ACCESS FLOORING</u></p> <p><u>(CPAP WORK GROUP NO. 129 UNLESS OTHERWISE STATED)</u></p> <p>Key: Location Description</p> <p>A Block A (5 Classrooms & Admin)</p> <p>B Block B (2 Classrooms)</p> <p>C External works</p> <p>D General</p> <p><u>PREAMBLES</u></p> <p>The tenderer is referred to the relevant clauses in the Standard Preambles for Trades 2008 which are incorporated at the back of these Bills of Quantities.</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Proprietary items or materials</u></p> <p>Proprietary items or materials where specified are to be of the brand specified or other approved by the Representative / Agent</p> <p><u>Fixing</u></p> <p>Items described as 'nailed' shall be deemed to be fixed with hardened steel nails or pins, or to be shot-pinned, to brickwork or concrete</p> <p>Items described as 'plugged' shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 500mm centres, and where described as 'bolted', the bolts have been given elsewhere</p> <p><u>Ceilings</u></p> <p>Unless otherwise described ceilings shall be deemed to be horizontal</p>			
	Carried to Collection			R
	Bill No. 9 Ceilings, Partitions & Access Flooring			

Bulkheads

Bulkheads are defined as those portions of ceilings which are stepped down from the general ceiling level in a particular room or area and which generally occur along the perimeter. Their purpose is either to conceal services or to create architectural features

Bulkheads have only been described as such where they conform to the above definition and where the horizontal or vertical dimensions do not exceed 900mm. Where these dimensions are more than 900mm such portions of ceilings have been included in the appropriate general items of ceilings

Unless otherwise described bulkheads shall be deemed to be horizontal along the length

Steel components

All steel components for ceilings, partitions, etc. are to be galvanised in accordance with SANS 121

NAILED UP CEILINGS

6mm "Everite Nutec" fibre-cement boards

1	Ceilings including 38 x 38mm sawn softwood brander at 350mm centres in one direction only to trusses (elsewhere) at 750mm centres	m2	116
	A : 84 B : 32 C : 0 D : 0		

9,5mm "Rhino" gypsum plasterboard

2	Ceilings including 38 x 38mm sawn softwood brander at 600mm centres with cross brander at joints, ends of sheets and at light fittings, etc	m2	490
	A : 392 B : 98 C : 0 D : 0		

3	Extra over ceiling for 800 x 800mm trap door of wrought softwood rebated framing with one sawn softwood cross brander covered with ceiling board and fitted flush in opening	No	10
	A : 8 B : 2 C : 0 D : 0		

"Everite Nucornice" cornices

4	75mm Coved polystyrene cornice	m	66
	A : 46 B : 20 C : 0 D : 0		

Carried to Collection

Bill No. 9
Ceilings, Partitions & Access Flooring

R

"Rhino" gypsum plasterboard cornices

5	75mm Coved cornices	m	490
	A : 392 B : 98 C : 0 D : 0		

Sundries

"Isotherm" or equally approved insulation

6	100mm Insulation closely fitted and laid on top of brandering between roof timbers etc	m2	574
	A : 476 B : 98 C : 0 D : 0		

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 Ceilings, Partitions & Access Flooring

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Ceilings, Partitions & Access Flooring

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Bill No. 9

Ceilings, Partitions & Access Flooring

Item No		Quantity	Rate	Amount
	<p><u>BILL NO. 10</u></p> <p><u>FLOOR COVERINGS, PLASTIC LININGS, ETC</u></p> <p><u>(CPAP WORK GROUP NO. 130 UNLESS OTHERWISE STATED)</u></p> <p>Key: Location Description</p> <p>A Block A (5 Classrooms & Admin)</p> <p>B Block B (2 Classrooms)</p> <p>C External works</p> <p>D General</p> <p><u>PREAMBLES</u></p> <p>The tenderer is referred to the relevant clauses in the Standard Preambles for Trades 2008 which are incorporated at the back of these Bills of Quantities.</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Proprietary items or materials</u></p> <p>Proprietary items or materials where specified are to be of the brand specified or other approved by the Representative / Agent</p> <p>Screed deviations are not to exceed 5mm over 3000mm</p> <p>Thoroughly clean down with SANS 10183:1-4 compliant diluted natural detergent and thoroughly rinse, allow to dry and apply 3 coats water based floor dressing compliant with SANS 1042.</p> <p>Remove all contaminates, clean down and apply TAL screed master, prime with TAL Floor Primer using pump method all by TAL contractor in accordance with the manufacturer's instructions</p> <p><u>Using "Floorworx Self-Leveller" when required, including all cutting, waste, and sealing with matt or gloss sealer.</u></p> <p><u>FLOOR COVERINGS</u></p>			
	Carried to Collection			R
	Bill No. 10 Floor Coverings, Wall Linings, etc			

300 x 300 x 2.5mm Thick "Floorflex" or equally approved semi-flexible vinyl tiles manufactured in accordance with SANS 581 and laid in FloorworX No. 62 acrylic adhesive spread with a trowel fitted with an A2 notched blade at a rate of between 5.5m2 and 6.5m2 per litre on a previously prepared Class 1 sub floor in accordance with SANS 10070, using FloorworX Self Leveller when required, including all cutting and waste. The flooring must be rolled in both directions with an articulated 68kg three-sectional roller immediately after it has been laid into the adhesive

1	On floors A : 80 B : 160 C : 0 D : 0	m2	240	
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Carried to Collection

Bill No. 10
 Floor Coverings, Wall Linings, etc

R

SKIRTINGS, NOSINGS, ETC

"Marley " or equally approved

2	12mm anodised aluminium edge strip fixed to concrete	m	98
	A : 49 B : 49 C : 0 D : 0		

POLISH, SEALERS, ETC

"Floorworx" or equally approved

3	Strip floor using "Floorworx Stripper", including scrubbing using a diluted solution of "Floorworx Rinse" and seal with three coats of "Floorworx Silk Matt" or "Gloss Sealer"	m2	240
	A : 80 B : 160 C : 0 D : 0		

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Bill No. 10
 Floor Coverings, Wall Linings, etc

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Bill No. 10

Floor Coverings, Wall Linings, etc

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Bill No. 10

Floor Coverings, Wall Linings, etc

Item No		Quantity	Rate	Amount
	<p><u>BILL NO.11</u></p> <p><u>IRONMONGERY</u></p> <p><u>(CPAP WORK GROUP NO. 132 UNLESS OTHERWISE STATED)</u></p> <p>Key: Location Description</p> <p>A Block A (5 Classrooms & Admin)</p> <p>B Block B (2 Classrooms)</p> <p>C External works</p> <p>D General</p> <p><u>PREAMBLES</u></p> <p>The tenderer is referred to the relevant clauses in the Standard Preambles for Trades 2008 which are incorporated at the back of these Bills of Quantities.</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Proprietary items or materials</u></p> <p>Proprietary items or materials where specified are to be of the brand specified or other approved by the Representative / Agent</p> <p><u>Finishes to ironmongery</u></p> <p>Where applicable finishes to ironmongery are indicated by suffixes in accordance with the following list: BS Satin bronze lacquered CH Chromium plated SC Satin chromium plated SE Silver enamelled GE Grey enamelled AS Anodised silver AB Anodised bronze AG Anodised gold ABL Anodised black PB Polished brass PL Polished and lacquered PT Epoxy coated SD Sanded</p>			
	Carried to Collection			
	Bill No. 11 Ironmongery		R	

HINGES, BOLTS, ETC

"Union" or equally approved

1	100mm Brass hinge A : 30 B : 6 C : 0 D : 0	No	36	
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Carried to Collection

Bill No. 11
 Ironmongery

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<u>LOCKS</u>					
<u>"Union" or equally approved</u>					
2	"2277-103 SS" Three lever lockset A : 10 B : 2 C : 0 D : 0	No	12		
<u>"Viro" or equally approved</u>					
3	30mm Padlock A : 10 B : 2 C : 0 D : 0	No	12		
<u>SUNDRIES</u>					
<u>"Union" or equally approved</u>					
4	"CZ8731SC" door stop A : 10 B : 2 C : 0 D : 0	No	12		
<u>PINNING BOARDS, WRITING BOARDS, PROJECTION SCREENS, ETC</u>					
5	Combi board with and including anodised aluminium frame, size 2000 x 1200mm high plugged A : 0 B : 0 C : 0 D : 4	No	4		
6	2400 x 1200mm High, wall mounted aluminium framed pinning board A : 5 B : 2 C : 0 D : 0	No	7		
7	2420 x 1220mm fixed projection white board (non reflective) aluminium framed, magnetic surface (centre board) complete with (x2) 1210 x 1220mm swing leaf aluminium framed magnetic chalk boards (without any lines or graphics, etc) with heavy duty hinges and 2250mm one complete aluminium pen tray to the centre board A : 5 B : 2 C : 0 D : 0	No	7		
8	Magnetic starter pack (1x full complete set) consisting of: 4 x White board markers (red, green, black, blue) 1 x Cleaning cloth 1x Magnetic eraser 1x Cleaning fluid 250ml 1x Moulded magnets d day A : 5 B : 2 C : 0 D : 0	No	7		
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Bill No. 11

Ironmongery

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Bill No. 11
 Ironmongery

Item No		Quantity	Rate	Amount
	<p><u>BILL NO. 12</u></p> <p><u>METALWORK</u></p> <p><u>(CPAP WORK GROUP NO. 136 UNLESS OTHERWISE STATED)</u></p> <p>Key: Location Description</p> <p>A Block A (5 Classrooms & Admin)</p> <p>B Block B (2 Classrooms)</p> <p>C External works</p> <p>D General</p> <p><u>PREAMBLES</u></p> <p>The tenderer is referred to the relevant clauses in the Standard Preambles for Trades 2008 which are incorporated at the back of these Bills of Quantities.</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Proprietary items or materials</u></p> <p>Proprietary items or materials where specified are to be of the brand specified or other approved by the Representative / Agent</p> <p><u>Descriptions of bolts, anchors, etc.:</u></p> <p>Descriptions of bolts shall be deemed to include nuts and washers</p> <p>Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork or concrete</p> <p>Items described as 'holed for bolt(s)' shall be deemed to exclude the bolts unless otherwise described</p> <p>Items described as 'plugged' shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 600mm centres</p>			
	Carried to Collection			
	Bill No. 12 Metalwork		R	

Hot dipped galvanising:

The mass of hot dip galvanised steelwork has been calculated on the mass before galvanising and no allowance has been made for the additional mass of galvanising for which allowance must be made in pricing

Unless otherwise stated, all steelwork described as galvanised shall be deemed to include for 'hot-dip' galvanising in accordance with the latest SANS standards

WELDED GALVANISED SCREENS, GATES, ETC

Screens and gates

1	Purpose made single hot dipped galvanised mild steel gate, 1100mm x 2125mm formed of 40 x 60 x 3mm hollow sectioned frames and midrail, filled in with 12mm solid square vertical bars at 110mm centres welded to frame and fitted with 2no. Pin type gate hinges welded to frame and pad lock plates welded to gate and plugged to walls with and including expansion joints	No	12	
	A : 10 B : 2 C : 0 D : 0			

GALVANISED PRESSED STEEL DOOR FRAMES

NOTE:

All door frames to be fitted with one and a half pair chromium plated on steel, brass butts with double nylon washers for each door leaf unless otherwise described and chromium plated striking plates

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

2	Frame for door 900 x 2100mm high	No	12	
	A : 10 B : 2 C : 0 D : 0			

GALVANISED STEEL POSTS

Carried to Collection

Bill No. 12
 Metalwork

R

Hot dipped galvanised mild steel post

3	73mm diameter x 4mm thick x approximately 2900mm high hollow section hot dipped galvanised mild steel posts with 200 200 6mm U-shaped beam support four times holed on both sides welded on top end and 200 x 200 12mm thick base plate with four times holed and plugged to concrete with M12 Chemical anchors and plugged to concrete with M12 Chemical anchors (Bolts elsewhere measured)	No	32	
	A : 4 B : 0 C : 28 D : 0			
4	M12 x 100mm Chemical anchor bolts	No	128	
	A : 16 B : 0 C : 112 D : 0			
5	M12 x 100mm bolts	No	128	
	A : 16 B : 0 C : 112 D : 0			

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 Metalwork

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Bill No. 12

Metalwork

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Bill No. 12
Metalwork

Item No		Quantity	Rate	Amount
	<p><u>BILL NO. 13</u></p> <p><u>PLASTERING</u></p> <p><u>(CPAP WORK GROUP NO. 142 UNLESS OTHERWISE STATED)</u></p> <p>Key: Location Description</p> <p>A Block A (5 Classrooms & Admin)</p> <p>B Block B (2 Classrooms)</p> <p>C External works</p> <p>D General</p> <p><u>PREAMBLES</u></p> <p>The tenderer is referred to the relevant clauses in the Standard Preambles for Trades 2008 which are incorporated at the back of these Bills of Quantities.</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Proprietary items or materials</u></p> <p>Proprietary items or materials where specified are to be of the brand specified or other approved by the Representative / Agent</p> <p><u>Method :</u></p> <p>The method to be used shall be either the monolithic method or the bonded method</p> <p><u>Preparation :</u></p> <p>For granolithic applied monolithically, the concrete floor shall be swept clean after bleeding of the concrete has ceased and the slab has begun to stiffen; any remaining bleed water shall be removed and the granolithic applied immediately thereafter. For granolithic to be bonded to the floor slab after it has hardened, the slab surface shall be hacked (preferably by mechanical means) until all laitance, dirt, oil, etc. is dislodged and swept clean of all loose matter. The slab shall then be wetted and kept damp for at least six hours before applying the granolithic</p>			
	Carried to Collection			R
	Bill No. 13 Plastering			

Mix :

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

Panels :

Granolithic shall be laid in panels not exceeding 14m\`b2 for monolithic finishes, not exceeding 9,5m\`b2 for bonded finishes and not exceeding 6m\`b2 for all external granolithic. Wherever possible, panels shall be square but at no time should the length of the panel exceed 1,5 times its width

Where possible joints between panels shall be positioned over joints in the floor slab and shall be at least 3mm wide through the full thickness of the finish, separated by strips of wood or fibreboard and finished with V-joints

Laying :

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

Bonded granolithic shall be applied to the slab after applying a 1:1 sand-and-cement slurry brushed over the surface and allowed to partially set before applying the granolithic. The granolithic shall be thoroughly compacted and lightly wood floated to the required levels

After wood floating, the monolithic and bonded granolithic shall remain undisturbed until bleeding has ceased and the surface has stiffened. Any remaining bleed water and laitance shall then be removed and the surface steel trowelled or power floated

Curing, seasoning and protection :

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

Carried to Collection

Bill No. 13
 Plastering

R

Colour :

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

SCREEDS

Screeds power floated on concrete

1	25mm Thick on floors and landings	m2	116
	A : 84 B : 32 C : 0 D : 0		

Screeds wood floated on concrete

2	25mm Thick on floors and landings	m2	240
	A : 80 B : 160 C : 0 D : 0		

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Plastering

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Bill No. 13

Plastering

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Bill No. 13
Plastering

Item No		Quantity	Rate	Amount
	<p><u>BILL NO. 14</u></p> <p><u>PLUMBING AND DRAINAGE</u> <u>(PROVISIONAL)</u></p> <p><u>(CPAP WORK GROUP NO. 148 UNLESS OTHERWISE STATED)</u></p> <p>Key: Location Description</p> <p>A Block A (5 Classrooms & Admin) B Block B (2 Classrooms) C External works D General</p> <p><u>PREAMBLES</u></p> <p>The tenderer is referred to the relevant clauses in the Standard Preambles for Trades 2008 which are incorporated at the back of these Bills of Quantities.</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Proprietary items or materials</u></p> <p>Proprietary items or materials where specified are to be of the brand specified or other approved by the Representative / Agent</p> <p><u>Wire gratings:</u></p> <p>Descriptions of gutter outlets etc. shall be deemed to include wire balloon gratings</p> <p><u>Stormwater channels:</u></p> <p>Descriptions of channels shall be deemed to include necessary excavation, surface preparation, compaction, etc., and disposal of surplus material on site :</p> <p><u>French drains:</u></p> <p>Descriptions of French drains shall be deemed to include excavation, stone filling graded from 300mm diameter at bottom to 75mm diameter at top, geofabric filter blanket over stone, 300mm earth filling over and disposal of surplus material on site :</p>			
	Carried to Collection			R
	Bill No. 14 Plumbing & Drainage (Provisional)			

Septic tanks:

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

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

Stainless steel for economy basins, domestic sinks and worktops shall be Type 430 (17/0) Stainless steel for urinals, basins, quality sinks, wash troughs, institutional equipment, etc. shall be Type 304 (18/8) Stainless steel for laboratory sinks, photographic equipment, etc. shall be Type 316 (18/8) Units shall have standard aprons on all exposed edges and tiling keys against walls where applicable

Sealing of edges:

Outer edges of sinks, basins, baths, urinals, etc. are to be sealed against adjacent surfaces with approved silicone

uPVC pipes and fittings:

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

uPVC pressure pipes and fittings:

Pipes of 50mm diameter and smaller shall be plain ended with solvent welded uPVC loose sockets and fittings. Pipes of 63mm diameter and greater shall have sockets and spigots with push-in type integral rubber ring joints. Bends shall be uPVC and all other fittings shall be cast iron, all with similar push-in type joints

High density polyethylene (HDPE) pipes and fittings:

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

Carried to Collection

Bill No. 14
 Plumbing & Drainage (Provisional)

R

Polycop polypropylene pipes:

Polypropylene pipes 54mm diameter and smaller shall be seamless copper coloured Class 16 pipes jointed with Fast-fuse heat welded thermoplastic or where so described Polylock compression fittings Pipes shall be firmly fixed to walls, etc. with coloured nylon snap-in pipe clips with provision for accommodating thermal movement and jointed and fixed strictly in accordance with the manufacturer's instructions

Copper pipes:

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

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

Reducing fittings:

Where fittings have reducing ends or branches they are described as 'reducing' and only the largest end or branch size is given. Should the contractor wish to use other fittings and bushes or reducers he may do so on the understanding that no claim in this regard will be entertained

Fixing of pipes:

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

Carried to Collection

Bill No. 14
 Plumbing & Drainage (Provisional)

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Paper wrapping to pipes:

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

Disinfection of water pipework:

Water pipework is to be disinfected at completion in accordance with SANS

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

Pipes to be taped shall be coated with the appropriate primer and the tape shall be applied in the appropriate widths and with 25% overlaps. Couplings and fittings to pipes shall be taped in strict accordance with the manufacturer's instructions including mastic, tape, Layflat sheeting, securing of same, etc

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

Laying, backfilling, bedding, etc. of pipes:

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

Where no manufacturers' instructions exist, pipes shall be laid in accordance with SANS

General:

Descriptions of cast iron roof outlets shall be deemed to include joints to pipes and casting into concrete and shall include adaptors for joints to PVC pipes, etc.). Descriptions of overflow pipes where measured in number, shall be deemed to include joints to cisterns and splay cut ends

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

Descriptions of service pipes and flexible connecting pipes shall be deemed to include connections to taps, cisterns, etc., steel pipes, copper pipes, etc

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 Plumbing & Drainage (Provisional)

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Descriptions of WC pans, slop hoppers, etc. shall be deemed to include for joints to soil pipes (pan connectors are separately measured)

As-built drawings:

The contractor shall prepare an updated set of as-built drawings. At completion of the contract the contractor shall hand these drawings to the principal agent for reproducing onto the originals for handing over to the employer (provision for allowance of as-built drawings elsewhere)

RAINWATER DISPOSAL

0.8mm Seamless aluminium

1	150 x 150mm Box gutter aluminium white baked enamel finish fixed with concealed brackets A : 84 B : 32 C : 40 D : 0	m	156
2	Extra over eaves gutter for stopped end A : 4 B : 4 C : 8 D : 0	No	16
3	Extra over eaves gutter for angle A : 4 B : 4 C : 8 D : 0	No	16
4	Extra over eaves gutter for outlet for 150 x 75mm pipe A : 4 B : 4 C : 8 D : 0	No	16
5	125 x 75mm Rainwater aluminium downpipes with white baked enamel finish A : 10 B : 10 C : 20 D : 0	m	40
6	Extra over rainwater pipe for bend A : 8 B : 8 C : 16 D : 0	No	32
7	Extra over rainwater pipe for shoe A : 4 B : 4 C : 8 D : 0	No	16

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Item No		Quantity	Rate	Amount
	<p><u>BILL NO. 15</u></p> <p><u>GLAZING</u></p> <p><u>(CPAP WORK GROUP NO. 150 UNLESS OTHERWISE STATED)</u></p> <p>Key: Location Description</p> <p>A Block A (5 Classrooms & Admin)</p> <p>B Block B (2 Classrooms)</p> <p>C External works</p> <p>D General</p> <p><u>PREAMBLES</u></p> <p>The tenderer is referred to the relevant clauses in the Standard Preambles for Trades 2008 which are incorporated at the back of these Bills of Quantities.</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Proprietary items or materials</u></p> <p>Proprietary items or materials where specified are to be of the brand specified or other approved by the Representative / Agent</p> <p><u>Float glass</u></p> <p>The term 'float glass' is used for monolithic annealed glass</p> <p><u>Laminated glass</u></p> <p>Laminated glass to have polyvinyl butyral (PVB) interlayer(s)</p>			
	Carried to Collection			
	Bill No. 15 Glazing		R	

GLAZING TO STEEL WITH PUTTY

Note: Tenderers are referred to architect's drawings annexed to these bill of quantities.

Glazing to conform with "The South African Glass & Glazing Association (SAGGA)" and shall comply with the National Building Regulations and Building Standards Act 103 of 1977 and SANS 10137 Code of Practice for the Installation of Glazing in Buildings

6mm Clear toughened safety glass puttied in with steel window putty as per SANS 10400:N

1	Panes exceeding 0,5m2 and not exceeding 2m2 A : 54 B : 18 C : 0 D : 0	m2	72	
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TOPS, SHELVES, DOORS, MIRRORS, ETC

6mm Silvered float glass copper backed mirrors with polished edges holed for and fixed with chromium plated dome capped mirror screws with rubber buffers to plugs in brickwork or concrete

2	Mirror 550 x 550mm high A : 5 B : 2 C : 0 D : 0	No	7	
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Glazing Certificate

3	Issue of AAAMSA Glass & Glazing Certificate by registered and authorised entity			Item
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 Glazing

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Bill No. 15

Glazing

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Bill No. 15
Glazing

Item No		Quantity	Rate	Amount
	<p><u>BILL NO. 16</u></p> <p><u>PAINTWORK</u></p> <p><u>(CPAP WORK GROUP NO. 152 UNLESS OTHERWISE STATED)</u></p> <p>Key: Location Description</p> <p>A Block A (5 Classrooms & Admin)</p> <p>B Block B (2 Classrooms)</p> <p>C External works</p> <p>D General</p> <p><u>PREAMBLES</u></p> <p>The tenderer is referred to the relevant clauses in the Standard Preambles for Trades 2008 which are incorporated at the back of these Bills of Quantities.</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Proprietary items or materials</u></p> <p>Proprietary items or materials where specified are to be of the brand specified or other approved by the Representative / Agent</p> <p><u>PAINTWORK ETC TO PREVIOUSLY PAINTED WORK</u></p> <p><u>Previously painted plastered surfaces</u></p> <p>Surfaces shall be thoroughly washed down and allowed to dry completely before any paint is applied. Blistered or peeling paint shall be completely removed and cracks shall be opened, filled with a suitable filler and finished smooth</p> <p><u>Previously painted metal surfaces</u></p> <p>Surfaces shall be thoroughly rubbed and cleaned down. Blistered or peeling paint shall be completely removed down to bare metal</p>			
	Carried to Collection			R
	Bill No. 16 Paintwork			

Previously painted wood surfaces

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

COLOURS

Colours, etc.

Unless otherwise described all paintwork shall be deemed to have a colour value in excess of 7 on the Munsell system in accordance with SANS 1091

PREPARATORY WORK TO EXISTING WORK

Previously painted plastered surfaces

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

PAINTWORK ETC TO PREVIOUSLY PAINTED WORK

ON FLOATED PLASTER

Prepare surfaces and remove all loose material, apply one coat "Plascon or equally approved Professional Plaster Prime (PP700)" thinned 20% and two coats "Plascon Egg Shell Enamel (PSB700)" paint

1	On internal walls	m2	1 380
	A : 1104 B : 276 C : 0 D : 0		

Prepare and sand down existing surfaces and remove all loose material, and apply alkali resistant primer and two coats "Micatex" emulsion paint for exterior use

2	On external walls	m2	546
	A : 364 B : 182 C : 0 D : 0		

Carried to Collection

Bill No. 16
 Paintwork

R

PAINTWORK ETC TO NEW WORK

ON PLASTERBOARD

Prepare surfaces and remove all loose material, apply one coat "Plascon Merit Plaster Primer or equally aproved" and two coats "Plascon Velvaglo Polyurethane Enamel or equally aproved" paint

3	On ceilings and cornices	m2	490	
	A : 392 B : 98 C : 0 D : 0			

ON FIBRE-CEMENT

Prepare surfaces and remove all loose material, apply one coat "Plascon Merit Plaster Primer or equally aproved" and two coats "Plascon Velvaglo Polyurethane Enamel or equally aproved" paint

4	On ceilings and cornices	m2	124	
	A : 92 B : 32 C : 0 D : 0			

5	On fascia and barge boards	m	188	
	A : 108 B : 56 C : 24 D : 0			

ON WOOD

Spot, sand down and prepare wood surfaces and apply three coats "Plascon Woodcare Woodcoat Polyurethane or equally aproved" matt clear varnish

6	On doors	m2	45	
	A : 38 B : 8 C : 0 D : 0			

Prepare surfaces and remove all loose material, apply one coat "Plascon Merit Plaster Primer or equally aproved" and two coats "Plascon Velvaglo Polyurethane Enamel or equally aproved" paint

7	On trusses	m2	47	
	A : 7 B : 6 C : 35 D : 0			

ON METAL

Carried to Collection

Bill No. 16
Paintwork

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Hot dipped galvanised, primed with approved 2 coats "Plascon Metal Galvanised Iron Primer - Code: GIP 1) steel alkyline primer and allow drying between the coats and 3 coats (Plascon Arcylic Paint Wall and All Code: TWA Tint base) or equally approved. colour to Architect

8	On door frames etc	m2	6	
	A : 5 B : 1 C : 0 D : 0			
9	Window frames, etc,	m2	76	
	A : 60 B : 15 C : 0 D : 0			

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Bill No. 16
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Item No		Quantity	Rate	Amount
	<p><u>BILL NO. 17</u></p> <p><u>ELECTRICAL WORK (PROVISIONAL)</u></p> <p><u>(CPAP WORK GROUP NO. 160 UNLESS OTHERWISE STATED)</u></p> <p><u>PREAMBLES</u></p> <p>The tenderer is referred to the relevant clauses in the Standard Preambles for Trades 2008 which are incorporated at the back of these Bills of Quantities.</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p>The General Conditions of Contract, the Special and Project Specific Conditions of Contract, the Specifications (including the Project Specifications, Technical Specifications and Additional Specifications) and the Drawings shall be read in conjunction with the Schedule of Quantities.</p> <p>The Schedule comprises items covering the Contractor's profit and costs of general liabilities and of the construction of temporary and permanent Works.</p> <p>Although the Tenderer is at liberty to insert a rate of his own choosing for each item in the Schedule, he should note the fact that the Contractor is entitled, under various circumstances, to payment for additional work carried out and that the Engineer is obliged to base his assessment of the rates to be paid for such additional work on the rates inserted in the schedule by the Contractor.</p> <p>Where applicable, Clause 8 of each Standardised Specification, the measurement and payment clause of each Particular Specification, and the Scheduled Payment items read together with the relevant clauses of the Standard, Project, Technical and Additional Specifications, all set out which ancillary or associated activities are included in the rates for the specified operations.</p>			
	Carried to Collection			
	Bill No. 17 Electrical Works (Provisional)		R	

For example, where PFA 04.02 and FA 15.02 appear in the "Payment Refers To" column, the specific payment item to be priced shall include all work to be done, material, labour, etc, as described and specified in the Standard and Particular Specifications, Clauses PFA 04.02 and FA 15.02. The "Payment Refer" item numbers appearing in the Schedule of Quantities thus refer to the corresponding item numbers in the Specifications.

Descriptions in the Schedule of Quantities are abbreviated and may differ from those in the Standardised Specifications. No considerations will be given to any claim submitted on these bases. Should any requirements of the measurement and payment clause of the appropriate Standardised Specification(s) be contrary to the terms of the Schedule, the requirement of the appropriate Standard, Project, Particular, Technical or Additional Specification as the case may be, shall prevail.

Unless stated to the contrary, items are measured nett in accordance with the Drawings without any allowance having been made for waste.

The amounts and rates to be inserted in the Schedule of Quantities shall be the full inclusive amounts to the Employer for the work described under the several items. Such amounts shall cover all the costs and expenses that may be required in and for the construction of the work described, and shall cover the costs of all general risks, profits, taxes (but excluding value-added tax), liabilities and obligations set forth or implied in the documents on which the Tender is based.

An amount or rate shall be entered against each item in the Schedule of Quantities, whether or not quantities are stated. An item against which no amount or rate is entered will be considered to be covered by the other amounts or rates in the Schedule.

Should the Tenderer group a number of items together and tender one lump sum for such group of items, the single tendered lump sum shall apply to that group of items and not to each individual item, or should he indicate against any item that full compensation for such item has been included in another item, the rate for the item included in another item shall be deemed to be nil.

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 Electrical Works (Provisional)

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The Tenderer shall enter a rate or lump sum for each item in the Schedule of Quantities in BLACK INK.

The Tenderer is also referred to paragraph 7.2 of form PW 782 (07/99): Conditions of Tender, enclosed to the Tender documents.

LOW VOLTAGE CABLE

Provide, install, test and commission the following 1000V PVC/SWA/PVC copper cables. Prices shall allow for the installation of cables in cable ducts, through sleeves, conduit or installation against vertical and horizontal levels.

10mm² x 3 Core ECC PVC Copper Cable

1	Supply	m	100		
2	Install	m	100		

6mm² x 3 Core ECC PVC Copper Cable

3	Supply	m	80		
4	Install	m	80		

2.5mm² x 3 Core ECC PVC Copper Cable

5	Supply	m	70		
6	Install	m	70		

TERMINATIONS

Terminate and make off the following 1000V PVC/SWA/PVC cables in a cable gland according to the manufacturer's instructions. Provide the cores with lugs and bolt onto terminals. The cable gland and marking of the cable shall also be allowed for.

10mm² x 2 Core PVC Copper Cable

7	Supply	No	4		
8	Install	No	4		

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<u>6mm² x 2 Core PVC Copper Cable</u>			
9	Supply	No	4
10	Install	No	4
<u>2,5mm² x 2 Core PVC Copper Cable</u>			
11	Supply	No	4
12	Install	No	4
<u>CABLE SLEEVES</u>			
<u>Provide and install the following UPVC sleeves in the ground complete with mild-steel draw wire.</u>			
<u>50mm Sleeves</u>			
13	Supply	m	160
14	Install	m	160
<u>50mm Bends</u>			
15	Supply	No	6
16	Install	No	6
<u>Electrical 800 x 800 x 600mm double brick manhole complete with manhole cover</u>			
17	Supply	No	3
18	Install	No	3
<u>DISTRIBUTION BOARDS</u>			
<u>New distribution boards, kiosks, etc., supplied and installed in position, complete with all busbar work, switchgear, terminals, wiring, lacing, conduit terminations, meters, and all other items, including full labelling and legend card, all in accordance with the schematic distribution board drawings:</u>			
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32	Allow the sum for the removal of existing Electrical installation in Block B		Item		
33	Allow the sum for the removal of existing Electrical installation in Block C		Item		
<u>LIGHTNING PROTECTION INSTALLATION AND ISSUING OF CERTIFICATE FOR BLOCK A, B and C</u>					
34	Allow for the execution of a Soil Resistivity Survey for the site and for submitting a copy of the reports to the Engineer.		Item		
35	Allow for the testing of the complete installation, including lightning protection earth electrodes and the issuing of test certificates for each block	No		4	
36	50mm PVC insulated aluminium conductor for bonding down conductors to earth rods, etc. inclusive of lugs, ferrules, bolts, etc.	m		272	
37	Supply and install corrosion resistant stainless steel terminal for roof connection points and aluminium bond to take aluminium down conductor from roof terminals.	No		18	
38	Supply and Install ferrules and lugs for bonding of any metalwork to air terminal system.	No		38	
39	Supply and install 1.5m copper 16mm diameter earth rods driven into the ground including jointing to copper bonding conductor.	No		18	
40	Supply and install test point connection in each down conductor complete with 132 x 82 x 55mm deep screw lid enclosure.	No		18	
41	Supply and Install 25mm pvc pipe	m		88	
42	Supply and Install 50mm aluminium conductor	m		272	
<u>SITE EXTERIOR LIGHTING</u>					
<u>Luminaries and accessories supplied complete with lamps. All fittings to carry the SABS mark.</u>					
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	<u>Type G, Complete with 4 meter Fibre glass pole</u>			
43	Supply	No	2	
44	Install	No	2	
	<u>Photo electric-cell complete with 20A contactor</u>			
45	Supply	No	1	
46	Install	No	1	
	<u>TESTING AND COMMISSIONING ELECTRICAL INSTALLATION, CABLES, DISTRIBUTION BOARDS AND ISSUING COC AS PER SANS 10142.</u>			
47	Distribution board (DB-A)		Item	
48	Distribution board DB-B		Item	
49	Distribution board DB-C		Item	
50	Distribution board DB-D		Item	
	<u>ALLOWANCE FOR BUILDERS WORK</u>			
51	Allow the Net Sum of R25 000.00 (Twenty Five Thousand Rand) for builders work			SUM
	<u>CONDUIT</u>			
	<u>20mm Diameter PVC Conduit</u>			
52	Supply	m	1 200	
53	Install	m	1 200	
	<u>25mm Diameter PVC conduit</u>			
54	Supply	m	600	
55	Install	m	600	
	<u>CIRCUIT WIRING</u>			
	Carried to Collection			R
	Bill No. 17 Electrical Works (Provisional)			

The supply and installation in conduit of stranded copper PVC insulated conductors in groups.

2 x 1.5mm² and 2.5mm² earth wire

56 Supply m 3 600

57 Install m 3 600

2 x 2.5mm² and 2.5mm² earth wire

58 Supply m 1 800

59 Install m 1 800

Draw wire

60 Supply m 1 800

61 Install m 1 800

CONDUIT BOXES

50mm round PVC box flush in concrete & brickwork

50mm round PVC surface box

62 Supply No 80

63 Install No 80

100 x 50 x 50mm galvanised box flush in brickwork

64 Supply No 13

65 Install No 13

100 x 100 x 50mm galvanised box with cover plate

66 Supply No 11

67 Install No 11

LIGHT FITTINGS

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Luminaries and accessories supplied complete with lamps. All fittings to carry the SABS mark.

Type A luminaries

68 Supply No 30

69 Install No 30

Type B luminaries

70 Supply No 28

71 Install No 28

Type E luminaries

72 Supply No 12

73 Install No 12

SMALL POWER

Supply and installation complete with all covers and fixings.

Photo electric-cell with 65mm deep conduit box

74 Supply No 2

75 Install No 2

Supply & Install 20A Double Pole , 220V Contactor

76 Supply No 2

77 Install No 2

16A Double Socket Outlet in box

78 Supply No 11

79 Install No 11

Carried to Collection

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Bill No. 17
 Electrical Works (Provisional)

Item No		Quantity	Rate	Amount
	<p><u>BILL NO. 18</u></p> <p><u>EXTERNAL WORKS (ALL TRADES)</u></p> <p><u>PREAMBLES</u></p> <p>The tenderer is referred to the relevant clauses in the Standard Preambles for Trades 2008 which are incorporated at the back of these Bills of Quantities.</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>The tenderer is referred to the relevant clauses in the ASAQS Model Trades Preambles 2008 which are incorporated at the back of these Bills of Quantities</u></p> <p><u>Explosives :</u></p> <p>No explosives whatsoever may be used for demolition purposes unless otherwise stated</p> <p><u>General :</u></p> <p>The contractor shall carry out the whole of the works with as little mess and noise as possible and with minimum disturbance to adjoining classroom blocks and their students. He shall provide proper protection and provide, erect and remove when directed, any temporary tarpaulins that may be necessary during the progress of the works, all to the satisfaction of the principal agent</p> <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>			
	Carried to Collection			R
	Bill No. 18 External Works (Provisional)			

Removal of materials :

Where removal is included in the heading, sub-heading or item description, prices shall be deemed to include for the necessary costs in removal and appropriate disposal of materials including but not limited to labour, transportation and disposal costs. No further claims in this regard will be entertained

TEMPORARY WORKS

Metalwork (CPAP work group No. 136)

1	1.8m "Bonnox" wire mesh temporary fencing with shade cloth	m	390
2	Double gate 3 x 1.8m high	No	1

THE FOLLOWING TO FENCING AND GATES

Metalwork (CPAP work group No. 136)

3	Double leaf gate size 4000 x 1900mm high hot dipped galvanised steel coated with fusion bond epoxy powder welded mesh	No	1
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THE FOLLOWING TO DRY STACK RETAINING WALL

Precast concrete interlocking planter blocks finished smooth on exposed surfaces with stepped face and curves as required to suit slopes with planter blocks laid with horizontal bed joints to 60 degree slope including backfilling with earth obtained from the excavations and filling the blocks with garden soil lightly tamped as the work proceeds

Earthworks (CPAP Work Group No. 104)

4	Excavation not exceeding 2m deep for trenches including risk of collapse, carting away, etc	m3	25
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Carried to Collection

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Bill No. 18
External Works (Provisional)

5	Soilcrete backfilling stabilised with 6% cement and compacted to 95% mod aashto density in minimum layers of 150mm	m3	3		
<u>Concrete (CPAP Work Group No. 110)</u>					
6	25MPa/19mm Reinforced concrete in foundation	m3	8		
7	"Infraset Paving Terrace Blok® Concrete Retaining Walls or equally aproved" TB500 Interlocking blocks in foundations	m2	19		
8	"Infraset Paving Terrace Blok® Concrete Retaining Walls or equally aproved" TB500 Interlocking blocks	m2	46		
9	Extra over for filling in retaining blok with 25MPa/19mm unreinforced concrete in foundations	m3	2		
<u>Reinforcement (CPAP Work Group 114)</u>					
10	Steel reinforcement of various diameters to concrete foundations	t	1.50		
<u>Drainage (CPAP Work Group No. 146)</u>					
11	Geogrid 100 x 100 at 500mm laps vertically behind wall	m2	46		
12	160mm Diameter "Drainex or equally aproved" slotted pipe encased and including 19mm stones wrapped in bitem	m	38		
13	50mm Diameter PVC weepholes 250mm long wrapped in bitem	No	92		
Carried to Collection					
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<u>V-DRAINS</u>			
<u>Earthworks (CPAP Work Group No. 104)</u>			
14	Reduce levels in earth not exceeding 2m deep	m3	44
15	Extra over all excavations for loading, carting and dumping surplus excavated material off site to a dumping site to be found by the Contractor (no allowance made for increase in bulk)	m3	44
16	Backfilling with G5 material supplied and carted onto site by the Contractor, compacted to a density of at least 95% Mod. AASHTO maximum density under v-drains	m3	22
17	Coarse river sand supplied by the contractor under v-drains, etc.	m3	4
18	Keeping excavations free of all water other than subterranean water		Item
19	In-situ dry density (sand replacement) test in accordance with method A10 (a) of TMH 1	No	4
20	Maximum dry density and optimum moisture content test in accordance with method A7 of TMH 1	No	3
21	Atterberg limits test in accordance with methods A2 to A4 of TMH1	No	2
22	Compaction of ground surface under V-drains, etc., including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 95% Mod. AASHTO density	m2	142
23	Approved brand of anti-termite soil poison applied by a registered pest control company and guaranteed against termite infestation for ten years under V-drains, etc. including forming and poisoning shallow furrows against foundation walls etc., filling in furrows and ramming	m2	142
<u>Concrete (CPAP Work Group No. 110)</u>			
24	25MPa/19mm Reinforced concrete V-drains cast against compacted earth laid to falls and currents.	m3	22
Carried to Collection			R
Bill No. 18 External Works (Provisional)			

25	Finishing to top surfaces of concrete with smooth wood float (Class FM2) to V-drains to falls and currents	m2	142		
26	Movement joint not exceeding 300mm high formed with one layer of 10mm 'Masonite Flexi joint Board' or other equally approved approved bitumen impregnated softboard filler board vertically between block and concrete surfaces.	m	225		
27	Making and testing set of three 150 x 150 x 150mm concrete strength test cube (Provisional)	No	4		
<u>Formwork (CPAP Work Group No. 111)</u>					
28	Class FM2 ordinary finish formwork to edges not exceeding 300mm high	m	178		
<u>Reinforcement (CPAP Work Group No. 114)</u>					
29	Type ref. 193 fabric reinforcement in v-drains	m2	142		
<u>Waterproofing (CPAP Work Group No. 120)</u>					
30	One layer of 375 micron "Consol Plastics" waterproof sheeting sealed at laps	m2	142		
31	Thioflex 600' or other equally approved two-part polysulphide flexible joint sealants, including backing cord, bond breaker, primer, etc., in horizontal joints 10 x 10mm at expansion joints.	m	225		
<u>Drainage (CPAP Work Group No. 146)</u>					
<u>Class 34 uPVC pipes</u>					
32	110mm Pipes laid in and including trenches not exceeding 1m deep	m	150		
<u>Gulleys, inlet manholes, inspection chambers, etc</u>					
33	Inspection chamber 600 x 600mm and not exceeding 750mm deep internally complete	No	3		
<u>Gratings, covers, etc</u>					
34	300 x 450mm x 53.2kg Cast iron dished grating and frame (Saint Gobain code 2880)	No	3		
Carried to Collection					
Bill No. 18					
External Works (Provisional)					
				R	

<u>Class 100D concrete pipes with interlocking joints</u>				
35	450mm Pipes laid in and including trenches exceeding 1m and not exceeding 2m deep	m	20	
<u>Sumps, catchpits, inspection chambers, etc. including concrete kerbs or precast concrete cover slabs, gratings and covers</u>				
36	Construct 230mm brick catchpit approximately 1255mm x 940mm overall size on plan and approximately 1100mm high, including excavation in earth and cart away all excess material, 25MPa concrete surface bed with 2 layers of 395 Mesh, concrete benching for 450mm diameter pipe including 520 x 790 heavy duty stormwater grating and frame	No	1	
<u>CONCRETE APRONS</u>				
<u>Earthworks (CPAP Work Group No. 104)</u>				
37	Reduce levels in earth not exceeding 2m deep	m3	68	
38	Extra over all excavations for loading, carting and dumping surplus excavated material off site to a dumping site to be found by the Contractor (no allowance made for increase in bulk)	m3	68	
39	Backfilling with G5 material supplied and carted onto site by the Contractor, compacted to a density of at least 95% Mod. AASHTO maximum density under aprons	m3	34	
40	Coarse river sand supplied by the contractor under aprons, etc.	m3	7	
41	Keeping excavations free of all water other than subterranean water		Item	
42	In-situ dry density (sand replacement) test in accordance with method A10 (a) of TMH 1	No	6	
43	Maximum dry density and optimum moisture content test in accordance with method A7 of TMH 1	No	4	
44	Atterberg limits test in accordance with methods A2 to A4 of TMH1	No	2	
Carried to Collection				
Bill No. 18 External Works (Provisional)				R

45	Compaction of ground surface under aprons, etc., including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 95% Mod. AASHTO density	m2	222		
46	Approved brand of anti-termite soil poison applied by a registered pest control company and guaranteed against termite infestation for ten years under floors etc including forming and poisoning shallow furrows against foundation walls etc., filling in furrows and ramming	m2	222		
<u>Concrete (CPAP Work Group No. 110)</u>					
47	25MPa/19mm Reinforced concrete aprons cast against compacted earth laid to falls and currents.	m3	34		
48	Finishing to top surfaces of concrete with smooth wood float (Class FM2) to aprons to falls and currents	m2	222		
49	Movement joint not exceeding 300mm high formed with one layer of 10mm 'Masonite Flexi joint Board' or other equally approved approved bitumen impregnated softboard filler board vertically between block and concrete surfaces.	m	296		
50	Making and testing set of three 150 x 150 x 150mm concrete strength test cube (Provisional)	No	7		
<u>Formwork (CPAP Work Group No. 111)</u>					
51	Class FM2 ordinary finish formwork to edges not exceeding 300mm high	m	222		
<u>Reinforcement (CPAP Work Group No. 114)</u>					
52	Type ref. 193 fabric reinforcement in aprons	m2	222		
<u>Waterproofing (CPAP Work Group No. 120)</u>					
53	One layer of 375 micron "Consol Plastics" waterproof sheeting sealed at laps	m2	222		
54	Thioflex 600' or other equally approved two-part polysulphide flexible joint sealants, including backing cord, bond breaker, primer, etc., in horizontal joints 10 x 10mm at expansion joints.	m	296		
Carried to Collection					
Bill No. 18 External Works (Provisional)				R	

<u>THE FOLLOWING TO RAIN WATER HARVESTING TANKS, ETC.</u>			
<u>Alterations (CPAP work group No. 102)</u>			
55	Demolish existing concrete plinth 200mm thick	m2	64
<u>Polyethylene water storage tanks</u>			
<u>Plumbing (CPAP Work Group No. 148)</u>			
56	2500 Litres rainwater tank or similar approved, with 75mm Diameter opening for downpipe from gutter including 50mm Diameter overflow opening with 4mm Diameter galvanised wire looped through top of tank isolated with 15mm diameter hose to top of tank and anchored to top of slab with 'Hilti' hooks drilled into slab at all four corners and 15mm hose bib tap	No	2
57	5000 Litres rainwater tank or similar approved, with 75mm Diameter opening for downpipe from gutter including 50mm Diameter overflow opening with 4mm Diameter galvanised wire looped through top of tank isolated with 15mm diameter hose to top of tank and anchored to top of slab with 'Hilti' hooks drilled into slab at all four corners and 15mm hose bib tap	No	8
58	20mm PVC ball valve or equally approved tank tap fitted to a 22mm extension pipe with barrel nipple & galvanised socket	No	10
<u>Tank stand</u>			
<u>Earthworks (CPAP Work Group No. 104)</u>			
59	Excavation in earth not exceeding 2m deep to reduce levels	m3	90
60	Risk of collapse of sides of trench and hole excavations not exceeding 1,5m deep	m2	256
61	Extra over all excavations for loading, carting and dumping surplus excavated material (no allowance made for increase in bulk) off site to be located by the contractor	m3	34
Carried to Collection			R
Bill No. 18 External Works (Provisional)			

62	Backfilling to trenches, holes, etc.,	m3	38		
63	Keeping excavations free of all water other than subterranean water		Item		
<u>Concrete (CPAP Work Group No.110)</u>					
64	Reinforced concrete Class 25/19 in surface beds	m3	24		
65	Reinforced concrete Class 25/19 in strip footings	m3	34		
66	Finishing top surfaces of concrete smooth with a power float to surface beds, slabs, etc to falls	m2	160		
<u>Formwork (CPAP Work Group No. 111)</u>					
67	Rough formwork to sides edges, risers, ends and reveals not exceeding 300mm high or wide	m	160		
<u>Reinforcement (CPAP Work Group No. 114)</u>					
68	Steel reinforcement of various diameters to concrete foundations	t	3.40		
69	Type 617 fabric reinforcement	m2	160		
<u>Masonry (CPAP Work Group No. 116)</u>					
70	One Brickwork of NFX bricks (14 MPa nominal compressive strength) in Class I mortar	m2	80		
<u>THE FOLLOWING TO COVERED WALKWAYS</u>					
<u>Earthworks (CPAP Work Group No. 104)</u>					
71	Excavation in earth not exceeding 2m deep for reducing levels under floors	m3	50		
72	Extra over trench and hole excavations in earth for excavation in soft rock	m3	5		
73	Extra over trench and hole excavations in earth for excavation in hard rock	m3	3		
Carried to Collection					
Bill No. 18 External Works (Provisional)				R	

74	Risk of collapse of excavations to sides of trench and hole excavations not exceeding 1,5m deep	m2	14		
75	Keeping excavations free of all water other than subterranean water		Item		
76	Earth filling obtained from the excavations and/or prescribed stock piles on site compacted to 98% Mod AASHTO density for backfilling to trenches, holes, etc	m3	8		
77	150mm Thick earth filling of G2 quality supplied by the contractor compacted to 90% Mod AASHTO density	m3	28		
78	Coarse river sand supplied by the contractor under floors etc	m3	7		
79	In-situ dry density (sand replacement) test in accordance with method A10 (a) of TMH 1	No	5		
80	Maximum dry density and optimum moisture content test in accordance with method A7 of TMH 1	No	3		
81	Atterberg limits test in accordance with methods A2 to A4 of TMH1	No	3		
82	Compaction of ground surface under floors etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 95% Mod AASHTO density	m2	186		
83	Soil poisoning under floors etc including forming and poisoning shallow furrows against foundation walls etc, filling in furrows and ramming	m2	186		
<u>Waterproofing (CPAP Work Group No. 120)</u>					
84	One layer of 250 micron "Consol Plastics Gunplas USB Green or equally aproved" waterproof sheeting sealed at laps with "Gunplas Pressure Sensitive Tape or equally aproved" under pavings	m2	50		
<u>Concrete (CPAP Work Group No. 110)</u>					
85	25MPa/19mm Reinforced concrete in surface beds and thickenings, etc cast in panels on waterproofing	m3	10		
Carried to Collection					
Bill No. 18					
External Works (Provisional)					
				R	

86	Making and testing 150 x 150 x 150mm concrete strength test cube (Provisional)	Sets	1		
87	Finishing top surfaces of concrete smooth with a power float to surface beds, slabs, etc to falls	m2	50		
<u>Formwork (CPAP Work Group No. 111)</u>					
88	Rough formwork to edges, risers, ends and reveals not exceeding 300mm high or wide	m	45		
<u>Reinforcement (CPAP Work Group No. 114)</u>					
89	Type 617 fabric reinforcement	m2	50		
<u>Masonry (CPAP Work Group No. 116)</u>					
90	60mm Approved clay interlocking paving bricks laid in herringbone pattern to SANS 1200MJ, blocks laid on 25mm river sand layer	m2	136		
Carried to Collection					
Bill No. 18 External Works (Provisional)				R	

Bill No. 18

External Works (Provisional)

COLLECTION

Total Brought Forward from Page No.

**Page
No**

Amount

102

103

104

105

106

107

108

109

110

111

112

Carried to Summary

R

Bill No. 18

External Works (Provisional)

Item No		Quantity	Rate	Amount
	<p><u>BILL NO. 19</u></p> <p><u>PROVISIONAL SUMS</u></p> <p><u>Asbestos removal</u></p>			
1	<p>Provide the Amount of R 100,000.00 (One hundred thousand Rand) for the Asbestos Inspection Authority (AIA) to be appointed by the Department of Public Works via the Awarded Contractor.</p> <p>The Awarded Contractor will be expected to provide three (3) quotes for AIA services for approval and acceptance by the Department of Public Works and will then be appointed by the Contractor. The appointed AIA and the appointed Asbestos Contractor for removal and disposal will not be the same entity / company, Refer to duties for AIA and Asbestos Contractor attached"</p> <p>The duties and responsibilities of the appointed AIA Inspection Authority Abatement Regulations of 2020:</p> <ol style="list-style-type: none"> 1. If there is no Asbestos Inventory available, the AIA will develop the Inventory for the Client. 2. If there is Asbestos Inventory, the AIA will review the Inventory and Risk Assessment and amend if needed. 3. Based on the Inventory, recommend an anticipated Scope of Work and advise the Client of what category of Asbestos Contractor needs to be appointed. 4. When the Asbestos Contractor is appointed, in consultation with the Asbestos Contractor develop and approve the Plan of Work. 5. Upon approval of the Asbestos Plan, at least 7 days before work is scheduled to take place, submit the plan to Department of Employment and Labour. 6. Ensure that acknowledgement of the Work Plan Submission to the Department of Employment and Labour is received within the 7 day period. 7. Ensure that Medical Fitness certificates and Asbestos training records are available. 8. Provide guidance and site specific instructions to the Asbestos removal and disposal Sub-Contractor. 9. Inspect work activities and if needed to stop 			
	Carried to Collection			
	Bill No. 19 Provisional Sums		R	

Training for function of the smart interactive board (screen)

11 Provide an amount of R10,000.00 (Ten Thousand Rand) for training to be given on the functioning of the smart interactive screen

Item

10 000.00

12 Allow for profit and general attendance

%

Carried to Collection

R

Bill No. 19
Provisional Sums

Bill No. 19

Provisional Sums

COLLECTION

Total Brought Forward from Page No.

**Page
No**

Amount

114

115

116

Carried to Summary

R

Bill No. 19
Provisional Sums

Bill No	<u>FINAL SUMMARY</u>	Page No	Amount
1	Preliminaries	18	
2	Alterations (Provisional)	29	
3	Earthwork (Provisional)	33	
4	Concrete, Formwork and Reinforcement	37	
5	Masonry	40	
6	Waterproofing	43	
7	Roof Coverings	49	
8	Carpentry and Joinery	56	
9	Ceilings, Partitions & Access Flooring	60	
10	Floor Coverings, Wall Linings, etc	64	
11	Ironmongery	68	
12	Metalwork	72	
13	Plastering	76	
14	Plumbing & Drainage (Provisional)	82	
15	Glazing	85	
16	Paintwork	90	
17	Electrical Works (Provisional)	101	
18	External Works (Provisional)	113	
19	Provisional Sums	117	
	Sub-total Excluding Vat		R
	Add 15% Value Added Tax		R
	Carried to Form of Tender		R



**PHASE 14: STORM DAMAGED PROGRAMME: REPAIRS AND RENOVATIONS TO STORM
DAMAGED SCHOOLS THROUGHOUT THE PROVINCE OF KWAZULU-NATAL:SOUTHERN
REGION: CLUSTER 155: EMGANGENI SECONDARY SCHOOL. OPEN BIDS**

PART C3. SCOPE OF WORKS

C3.1 SCOPE OF WORKS
GCC FOR CONSTRUCTION WORKS (Edition 2 of 2010)

Scope of Works complied in accordance with SANS 10403 where reference is made to this part of SANS 1921-1:2004

Project title:	PHASE 14: STORM DAMAGED PROGRAMME: REPAIRS AND RENOVATIONS TO STORM DAMAGED SCHOOLS THROUGHOUT THE PROVINCE OF KWAZULU-NATAL:SOUTHERN REGION: CLUSTER 155: EMGANGENI SECONDARY SCHOOL. OPEN BIDS		
Tender no:	ZNTM01199W	Project Code:	063241

1	<p><u>SECTION 1</u></p> <p><u>EXTENT OF THE WORKS</u></p> <p>1.1 EMPLOYERS OBJECTIVES Repairs and renovations to Storm Damage Schools including the provisions of new facilities (where applicable) refer to scope of work Annexure 13.</p> <p>1.2 OVERVIEW OF THE WORKS This Project involves the Repairs and Renovations to Storm Damaged Schools in the Ugu District.</p> <p>1.3 EXTENT OF THE WORKS Refer to the Bills of Quantities, Scope of Work and attached drawings for detailed scope of work. Refer to Annexure 13.</p> <p>1.4 LOCATION OF THE WORKS Emgangeni Secondary School is located in Ugu District Municipality at Umgababa Location, Durban, 4125 in KwaZulu-Natal Province, GPS Co-ordinates for the site are 30°07'00.8"S 30°41'37.7"E</p> <p>1.5 TEMPORARY WORKS All temporary work to comply with the Occupational Health and safety Act (Act 85 of 1993)</p>
2	<p><u>ENGINEERING</u></p> <p>2.1 EMPLOYER'S DESIGN Applicable</p> <p>2.2 DESIGN BRIEF Not applicable</p> <p>2.3 DRAWINGS See list of drawings/Annexure's attached to this document.</p>

2.4	<p>DESIGN PROCEDURES</p> <p>Not applicable</p>
3	<p><u>PROCUREMENT</u></p> <p>3.1 PREFERENTIAL PROCUREMENT PROCEDURES</p> <p>This tender will be subject to the implementation of the Preferential Procurement Regulations, 2022, pertaining to the Preferential Procurement Policy Framework Act, Act Number 5 of 2000 and the relevant Supply Chain Management Legislation and the KwaZulu-Natal Supply Chain Management Policy Framework published by the KwaZulu-Natal Provincial Treasury. Tenderers are referred to www.kzntreasury.gov.za for access to the relevant documents.</p> <p>Tenderers are advised to familiarize themselves with the contents of the KwaZulu-Natal Supply Chain Management Policy Framework regarding Preference Point Systems, evaluation of tenders appeals and other matters.</p> <p>3.2 RESOURCE STANDARD PERTAINING TO TARGETED PROCUREMENT</p> <p>NOTE : This project will be adjudicated as not exceeding R 50,000 000,00</p> <p>3.3 SCOPE OF MANDATORY SUBCONTRACT WORK</p> <p>Not applicable</p> <p>3.4 PREFERRED SUBCONTRACTORS/SUPPLIERS</p> <p>Not applicable</p> <p>3.5 SUBCONTRACTING PROCEDURES</p> <p>Not applicable</p>
4	<p><u>CONSTRUCTION</u></p> <p>4.1 APPLICABLE SANS 2001 STANDARDS FOR CONSTRUCTION WORKS</p> <p>The Contractor is referred to the "Model Preambles to Trades - 2008", any "Supplementary Preambles", the Electrical Specifications and Mechanical Specification for full descriptions of materials and methods referred to in these Bills of Quantities/Lump Sum documents, insofar as they apply. The Contractor is advised to study the "Standard Preambles to all Trades", any "Supplementary Preambles", the Electrical Specifications and Mechanical Specification, before pricing Bills of Quantities/Lump Sum documents.</p> <p>Where the description in the Bills of Quantities/Lump Sum documents differ from those in the Standard Electrical Specifications, the descriptions in the Bills of Quantities/Lump Sum documents are to apply. No claim whatsoever will be allowed in respect of errors in pricing due to brevity of description of items in the Bills of Quantities/Lump Sum documents which are fully described when read in conjunction with the relevant Preambles and/or Specifications. Suppliers of materials and the like, whose quality systems apply with one or more of the SABS/SANS ISO 9000 Series should be used whenever possible in the absence of a particular SABS/SANS Specification Standard Mark.</p> <p>Wherever the words "shall be deemed to be included in the description", "shall be stated" or other words having the same effect, appear in the Standard System, it shall be deemed that all descriptions in these Bills of Quantities/Lump Sum documents incorporated such inclusions and statements whether specifically stated or not.</p> <p>The Contractor is hereby informed that where SABS/SANS Specifications are referred to in these Bills of Quantities/Lump Sums documents and Specifications thereto, then ONLY the Specification of Work Clauses will apply. The method of measurement and payment clauses will NOT apply to this Contract.</p> <p>The Contractor is hereby informed that risk of collapse and keeping excavations free from water (excluding subterranean water) generally are deemed to be included in the descriptions unless accommodated in the system of measurement. Please refer to the Geotechnical Investigation report when included at the end of these tender documents.</p> <p>Whenever reference is made to "Sub-Contractor", "Nominated Sub-Contractor" or the like in the specifications included or referred to in these Bills of Quantities/Lump Sums documents, it shall be deemed to mean "Contractor" as defined.</p>

4.2	<p>APPLICABLE NATIONAL AND INTERNATIONAL STANDARDS</p> <p>See above 4.1</p>												
4.3	<p>PARTICULAR / GENERIC SPECIFICATIONS</p> <p>The Contractor is referred to the following documents whether attached to this document or not:</p> <table border="0"> <thead> <tr> <th style="text-align: left;"><u>SPECIFICATION</u></th> <th style="text-align: left;"><u>PAGES</u></th> </tr> </thead> <tbody> <tr> <td>Specification for HIV/AIDS Awareness (CIDB)</td> <td>HIV1 TO HIV3</td> </tr> <tr> <td>Specific Construction, Safety, Health and Environmental Plan</td> <td>H1 to H27</td> </tr> <tr> <td>Model Preambles for Trades 2008</td> <td>1 to 49</td> </tr> <tr> <td>General Electrical Specification</td> <td>E1 to E21</td> </tr> <tr> <td>Lightning Protection Installation</td> <td>LP/1 to LP/6</td> </tr> </tbody> </table>	<u>SPECIFICATION</u>	<u>PAGES</u>	Specification for HIV/AIDS Awareness (CIDB)	HIV1 TO HIV3	Specific Construction, Safety, Health and Environmental Plan	H1 to H27	Model Preambles for Trades 2008	1 to 49	General Electrical Specification	E1 to E21	Lightning Protection Installation	LP/1 to LP/6
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General Electrical Specification	E1 to E21												
Lightning Protection Installation	LP/1 to LP/6												
4.4	<p>CERTIFICATION BY RECOGNIZED BODIES</p> <p>Only contractors registered with the Electrical Contracting Board of South Africa in accordance with the Regulations of the Occupational Health and Safety Act will be accepted and permitted to do work under this contract.</p>												
4.5	<p>AGREEMENT CERTIFICATES</p> <p>Not applicable</p>												
4.6	<p>PLANT AND MATERIAL PROVIDED BY THE EMPLOYER</p> <p>Not applicable</p>												
4.7	<p>SERVICES AND FACILITIES PROVIDED BY THE EMPLOYER</p> <p>Not applicable</p>												
4.8	<p>OTHER SERVICES AND FACILITIES</p> <p>The Contractor shall provide any artificial lighting which may be necessary or required for the proper execution of the works, and provide electric power and water required by all Sub-Contractors, Nominated Sub-Contractors and Sub-Contractors appointed directly by the Administration.</p> <p>The Contractor shall give all notices and pay all fees in connection with temporary electrical and water connections and shall connect temporary Electrical and Water meters for and pay for all current and water consumed.</p> <p>The Contractor is advised that the permanent light fittings and water points of any kind installed in the Works are not to be used to provide temporary lighting and supplement water requirements for construction purposes.</p>												
5	<p><u>MANAGEMENT</u></p>												
5.1	<p>APPLICABLE SANS 1921 STANDARDS</p> <p>Tenderers are referred to SECTION 2 : SPECIFICATION DATA ASSOCIATED WITH SANS 1921-1:2004 IN THIS DOCUMENT</p>												
5.2	<p>RECORDING OF WEATHER</p> <p>The Contractor shall keep record of abnormal climatic conditions to facilitate the adjudication of claims for extension of the contract period.</p>												

The Contractor shall allow in his programme for the following number of days for rain days (rain > 10mm per day) as per the table below:

CURRENT YEAR			YEAR + 1	YEAR + 2
January	w/days		3	3
February	w/days		3	3
March	w/days		3	3
April	w/days		3	3
May	w/days		3	3
June	w/days		3	3
July	w/days		3	
August	w/days		3	
September	w/days		3	
October	w/days		3	
November	w/days		3	
December	w/days	3	3	

5.3 MANAGEMENT MEETINGS

In order to facilitate the smooth functioning of the Works and to ensure the closest co-operation between all the parties concerned, the Employer will call for regular meetings (two meetings per month), one technical meeting and one progress meeting to be held on the site, at which a senior member of the Contracting firm and the General Foreman of the Works will always be required to be present.
 In addition to the above, other persons will be required to attend these meetings as and when their presence is necessary, e.g., Consultants in all disciplines, representatives of the various Sub-Contractors, etc.
 Proper minutes of these meetings will be kept by the Employer\Principal Agent and copies will be circulated to all persons attending the meetings and to others who need to be kept informed.

5.4 FORMS FOR CONTRACT ADMINISTRATION

The Employer shall provide all necessary forms.

5.5 ELECTRONIC PAYMENTS

The Contractor shall provide all required information to the Employer to facilitate electronic payments upon request.

5.6 DAILY RECORDS

The Contractor shall keep daily records of people and equipment employed as well as a site diary in respect of work performed on the site.
 At the end of each week the Contractor shall provide the Principal Agent with a written record, in schedule form, reflecting the number and description of tradesmen and labourers employed by him and all Sub-Contractors on the works each day.
 At the end of each week the Contractor shall provide the Principal Agent with a written record, in schedule form, reflecting the number, type and capacity of all plant, excluding hand tools, currently used on the works.

5.7 BONDS AND GUARANTEES

The Contractor shall within 10 calendar days after receiving notice from the Engineer and prior to receiving a completed copy of this agreement, including the schedule of deviations (if any), contact the Employer's agent (whose details are given in the contract data) to arrange the delivery of any bonds, guarantees, proof of insurance and any other documentation to be provided in terms of the conditions of contract identified in the Contract Data.

5.8 PAYMENT CERTIFICATES

Requirements will be in accordance with the Employers prescriptions.

<p>4.3</p>	<p>The planning, programme and method statement are to comply with the following:</p> <p>The contractor shall provide for the fixing of the different blocks in conjunction with the approval of the headmaster and will have to provide temporary classroom accommodation, allow the school to transfer their furniture, items on the walls, etc. to the temporary classrooms and obtain written permission to proceed with the vacated block before they proceed. The contractor needs to allow in his programme for any possible delay that might be associated with such procedure and approvals. The contractor to liaise with the Project Manager, Principal Agent and Headmaster and draw up a plan to show how the blocks would be transferred to the contractor in order for the work to proceed. This plan then needs to be reflected on the contractor's construction programme and must be updated as the project progresses. The sequence of Blocks would be determined once the Contractor is on site and the Contractor has submitted their construction programme and the approval of the removal of asbestos has been obtained from the appointed AIA (applicable to the school).</p>
<p>4.12.1</p>	<p>Samples of materials</p> <p>The work is to be executed with materials of the best specified and in the most substantial and workmanlike manner under the inspection of the Employer and to his satisfaction.</p> <p>The Contractor shall furnish, without delay, such samples as called for or may be called for by the Employer, who may reject all materials or workmanship not corresponding with the approved sample.</p> <p>The samples of materials, workmanship and finishes that the Contractor is to provide and deliver to the employer are:</p> <ul style="list-style-type: none"> - Tile sample. - Brick sample. - Light fitting sample. - Screed panel 2m x 2m impact test. - Tested trial mix to be approved by the Engineer. - Roof sheeting sample. - Gutter sample. - Door sample. - Ironmongery sample. - Paint sample.
<p>4.12.2</p>	<p>Fabrication drawings that the contractor is to provide to the employer are:</p>
	<p>None</p>
<p>4.12.3</p>	<p>Office accommodation, equipment, accommodation for site meetings and other facilities for use by the employer and his agents are:</p> <p>OFFICE FOR FOREMAN</p> <p>Provide, erect, maintain and remove at completion a suitable temporary office for the Contractor or his Foreman, perfectly secured, lighted and ventilated and having a desk with drawers.</p> <p>TELEPHONE</p> <p>The Contractor shall provide a telephone on the site for the use of the Contractor and all Sub-Contractors for the duration of the Contract, and must make the necessary application for connection, give all notices and pay all fees, rentals and charges for the service and also for all calls.</p> <p>OFFICE FOR INSPECTOR OF WORKS</p> <p>Provide, erect, maintain and remove at completion a well constructed temporary office for the Inspector of Works not less than 4 x 3 m on plan and 3 m high to eaves to the approval of the Employer. The office shall be constructed of wood framing covered externally with corrugated iron or corrugated asbestos and with a lean-to roof covered with the same material as the external wall covering. The office shall be lined internally with soft board or other approved material and a ceiling shall be provided of the same material as the internal lining. A suspended wood floor shall be provided and is to finish not less than 300 mm above the ground level. A lockable door and a window, which provides adequate light and ventilation, shall be fitted.</p> <p>An office constructed of 115 mm thick brick-work and provided with a screeded concrete floor and roofed and ceiled as above described may be accepted as an alternative but prior permission of the Employer will be necessary before construction of such an office is commenced and his requirements shall be stated and fulfilled by the Contractor.</p> <p>The office shall be fitted in an approved manner with a sloping topped desk of height and length suitable for the laying out and studying of drawings, a desk or table with not less than two lock-up drawers, shelves, seating and wash-stand, and the Contractor shall provide all necessary attendance.</p>

	TELEPHONE IN OFFICE FOR INSPECTOR OF WORKS
	The Contractor shall arrange for the installation of a lockable telephone in the Office for the Inspector of Works for the duration of the Contract. The Contractor will be required to make the necessary application for connection and give all notices on behalf of the Employer. The Employer will, however, be responsible for the direct payment of all fees, rentals and other charges by Telkom for the service for the Inspector of Works and for all calls made from this telephone.
	SHED
	Provide, erect, maintain and remove at completion, ample temporary sheds for the proper storage of materials and for the use of the workmen, and remove when no longer required.
4.14.6	The requirement for provision and erection of signboards are:
	Supply, erect, maintain and remove at completion a painted notice board, size overall 2800 x 2345 mm high sign written to detail as Drawing No. T9506 which drawing is available from offices of the Department of Public Works. Only the official notice board is to be displayed on the site and no Sub-Contractor's boards will be permitted. The Contractor, at his own cost, may provide a board on which all sub-contract firms' names may be sign written. The notice board is to be to the approval of the Employer and is to be maintained in first class condition and placed where directed at the entrance to the site and remain there for the duration of the Contract.
4.17.1	Requirement for the termination, diversion or maintenance of existing services:
	Should the Contractor come in contact with any underground cables or pipes during excavations, immediate notification must be made to the Employer and all work in the vicinity of such cables, pipes, etc., shall cease until authority to proceed has been obtained from the Employer. Should the Contractor damage underground cables or pipes resulting in a disruption of services to an existing institution such damage shall be repaired immediately.
4.17.3	Services which are known to exist on the site:
	Investigate and provide detail drawings.
4.17.4	Requirement for detection apparatus
	None
4.18	ADDITIONAL HEALTH AND SAFETY REQUIREMENTS ARE:
	By the submission of a tender, any Tenderer will, if awarded the contract to which this tender document relates, be deemed to be the mandatory as envisaged by Section 37 (2) of the Act. As a mandatory the successful Tenderer will be deemed to be the "principal contractor" and an employer in his/her/their own right with duties as prescribed in the Act and accordingly will be deemed to have agreed to be solely responsible for ensuring that in connection with the service to which this tender document relates, all work will be performed and machinery and plant used in accordance with the Act. Should the Contractor, for whatever reason be unable to perform as required by the Act, the Contractor undertakes to inform the Employer accordingly. Tenderers are advised that it is a Condition of this Tender that a 'Construction Phase Safety, Health and Environmental Plan' specifically relates to the project for which tenders are being submitted and must be prepared by the Tenderer and submitted with the other tender documents at the time of tender. Failure to do so will invalidate the tender. Tenderers are therefore advised to study the 'Construction Safety, Health and Environmental Specification' which is issued as part of this tender document, the Model Preambles to Trades - 2008, any project Specification included in this tender document and any and all drawings which are referred to and issued as part of this tender document before preparing their own project specific 'Construction Phase Safety, Health and Environmental Plan' . Tenderers are also advised that such a plan which is submitted with a tender but is incomplete or considered inadequate by the Employer or his Representative will invalidate the tender. The Contractor will be deemed to have satisfied himself with his obligations in terms of the Act and to have allowed for all costs arising from compliance with the Act as no claim for extra costs arising from compliance with, and obligations in terms of the Act will be entertained.
4.22	WORK BY NOMINATED AND SELECTED SUBCONTRACTORS COMPRISE:
	N/A

C3.2 - SPECIFICATION FOR HIV/AIDS AWARENESS

1 Scope

This generic specification contains requirements applicable to the reduction of the risk of transfer of the HIV virus between and among construction workers and the local community through the following four strategies:

- a) raising awareness about HIV/AIDS;
- b) providing construction workers with access to condoms;
- c) HIV counselling, testing and referral services; and
- d) Sexually Transmitted Infection diagnosis and treatment.

2 Normative references:

The following standard contains provisions that, through reference in this text, constitute provisions of this standard:

SANS 4074 ISO 4074, *Condom Rubbers*

3 Definitions and Abbreviations

3,1 Definitions

Construction Worker: all persons in the employ of the contractor or in the employ of any of the subcontractors contracted by the contractor.

Local Community: the communities local to the site which are most likely to have contact with the construction worker and, in particular, sex workers in those communities.

Service provider: the natural or juristic person recognised by the South African Department of Health as specialist in conducting Aids Awareness Programmes.

3,2 Abbreviations

STI: Sexually transmitted infection

HIV: Human Immunodeficiency Virus

AIDS: Acquired Immune Deficiency Syndrome

4 Objectives

The objectives are to:

- a) reduce the risk of transfer of the HIV virus between and among construction workers and the local community;
- b) raise awareness amongst construction workers and the local community of the risk of infection with the HIV virus;
- c) promote early diagnosis; and
- d) assist affected individuals to access care and counselling.

5 Requirements

5.1 General requirement

The contractor shall, in order to satisfy the objectives stated in 4:

- a) make condoms complying with the requirements of SABS ISO 4074 available to all construction workers at readily accessible points on the site, suitably protected from the elements, for the duration of the contract;
- b) either place and maintain HIV/AIDS awareness posters of size of not less than A1 in areas which are highly trafficked by construction workers, or provide construction workers with a pamphlet, in languages largely understood by construction workers, which
- c) encourage voluntary HIV/STI testing;
- d) provide information concerning counselling, support and care of those that are infected services; and
- e) comply with the requirements of 5.2.

The provisions of 5.1 c) and d) do not apply to this contract.

5.2 HIV awareness programme

5.2.1 The contractor shall:

- a) engage a qualified service provider as described in the scope of works to conduct an HIV Awareness Programme which is structured to achieve the outcomes stated in 5.2.3 for contract workers as soon as a construction workers camp is established and populated or, where no such camp is established, within two weeks of the commencement of a significant portion of the works and at subsequent intervals, if any, provided for in the scope of works; and
- b) arrange for, provide a suitable venue, and instruct all construction workers to attend the HIV Awareness Programme and notify the Employer's Representative of the date, time and venue whenever a session with construction workers is conducted.

Note: The National Department of Public Works maintains a list of qualified service providers.

5.2.2 The contractor shall do nothing to dissuade construction workers from attending such an HIV Awareness Programme and shall take all reasonable steps to ensure that a minimum of 90% of construction workers engaged in the works attend such a programme, when it is conducted.

5.2.3 The outcomes of the HIV Awareness Programme shall as a minimum, result in contract workers exposed to such a programme being able to:

- a) communicate the existence of problems of HIV and be able to outline the consequences of transmission of HIV to or from the local community;
- b) recall and communicate the mode of HIV transmission and preventative measures including the proper use of the condom.

The HIV/ Aids awareness programme described in 5.2 is to be repeated at four month intervals throughout the duration of the contract. (Four times in total, including the initial one at the start of the contract)

5,3 Reporting

5.3.1 The contractor shall prepare and attach to his claims for payment a brief report which outlines how the actions taken by the contractor in the period for which payment is claimed satisfy the requirements and a schedule which lists the names, identity numbers, trade / occupation and name of employer of all construction workers exposed to the programme (see **HIV/STI Compliance Report**).

5.3.2 The employer's representative shall certify the report and schedule described in 5.3.1 whenever a claim for payment is issued to the employer.

Note: In the event that the contractor fails to satisfy the requirements of this specification, the employer (Head: Public Works) may apply any of the sanctions provided for in the contract. Sanctions may include the application of a financial penalty of .04% of the Contract Sum.

The *HIV /Aids* awareness programme described in 5.2 shall in addition *be conducted* for the benefit of the local community on two occasions in the community centre nearest to the building site. The contractor shall be *responsible* for inviting identifiable community-based *institutions and organisations, churches, and schools to participate in the* programme.

C3.3 - HIV/STI COMPLIANCE REPORT

Pro-forma reporting format in terms of the SPECIFICATION FOR HIV/AIDS AWARENESS

Project Code:

063241

Payment Claim number:

Period covered by payment claim:

1. Distribution of condoms (briefly describe where and how condoms are distributed).

2. Posters / pamphlets (briefly describe where posters were placed / how pamphlets were distributed).

3. Voluntary testing (briefly describe the actions taken / information provided to promote testing).

4. Counselling, support and care (summarise information provided).

5. HIV awareness programme (briefly describe action).



**PHASE 14: STORM DAMAGED PROGRAMME: REPAIRS AND RENOVATIONS TO STORM
DAMAGED SCHOOLS THROUGHOUT THE PROVINCE OF KWAZULU-NATAL:SOUTHERN
REGION: CLUSTER 155: EMGANGENI SECONDARY SCHOOL. OPEN BIDS**

PART C4. SITE INFORMATION

C4.1 SITE INFORMATION
GCC FOR CONSTRUCTION WORKS (2 Edition of 2010)

Project title:	PHASE 14: STORM DAMAGED PROGRAMME: REPAIRS AND RENOVATIONS TO STORM DAMAGED SCHOOLS THROUGHOUT THE PROVINCE OF KWAZULU-NATAL:SOUTHERN REGION: CLUSTER 155: EMGANGENI SECONDARY SCHOOL. OPEN BIDS		
Tender No.	ZNTM01199W	Project Code:	063241

C4.1 Site Information

C4.1 GENERAL

- (a) Emgangeni Secondary School is located at Ngolela Road which is a fairly flat dirt road, a gently sloped site and is surrounded with open grounds / sites. The school has municipal electrical connection. The is not a paving or asphalt parking area, mainly gravel. There is minimal obstructions on site which could pose an issue during construction however there is not much space on site to house temporary park homes for the contract period.
- (b) The site is an existing, operational school. Extreme care must be taken to ensure that construction areas are kept secure and not accessible to students. The contractor must take note that storage material on site would not be problematic and the contractor must provide to create a workable space which will not be disrupt the operation of the school or endanger the learners on the premises. The working are must be clearly demarcated and entrance to the Works must be controlled.
- (c) The school is situated in a rural area in the Southern Region.

 The Project would be done classroom block for classroom block and the contractor must allow for the fact that they would not have all the buildings at the same time to work on. The sequence of blocks would be determined once the contractor is on site and the contractor has submitted their construction programme and the approval of the removal of asbestos has been obtained from the appointed AIA (IF APPLICABLE TO THE SCHOOL). The construction programme will further be discussed and agreed to by the Principal of the school to ensure normal operations of the school at all times. The contractor and the Principal of the school will agree how the contractor would get possession of each block. The contractor will then draw up a sequence list of each block or area that they would be working in and submit it at the first site meeting for approval before any works may commence.

C4.2 GEOTECHNICAL INVESTIGATION REPORT

- (a) Not Applicable



**PHASE 14: STORM DAMAGED PROGRAMME: REPAIRS AND RENOVATIONS TO STORM
DAMAGED SCHOOLS THROUGHOUT THE PROVINCE OF KWAZULU-NATAL: SOUTHERN
REGION: CLUSTER 155: EMGANGENI SECONDARY SCHOOL. OPEN BIDS**

PART C5 - DRAWINGS / ANNEXURES

C5.1 - LIST OF DRAWINGS/ANNEXURES

PHASE 14: STORM DAMAGED PROGRAMME: REPAIRS AND RENOVATIONS TO STORM DAMAGED SCHOOLS THROUGHOUT THE PROVINCE OF KWAZULU-NATAL:SOUTHERN REGION: CLUSTER 155: EMGANGENI SECONDARY SCHOOL. OPEN BIDS

Tender No.:	ZNTM01199W	Project Code:	063241
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(Where drawings/annexure's are issued, document compilers must insert the following paragraph and list the applicable drawings/annexure's below.)

The following drawings/annexure's shall be issued during the Tender period to form part of the tender documentation. Where applicable, drawings/annexure's could be re-issued to the Contractor at commencement of the construction phase.

<u>DRAWING NO</u>	<u>DESCRIPTION</u>
<u>Architect Drawings</u>	
	site plan
270 - 201	Typical section and elevation
<u>Electrical Drawings</u>	
2748D-SC-001	DB-A Electrical Schematic
2748D-SC-002	DB-B Electrical Schematic
2748D-SC-003	DB-C Electrical Schematic
2748D-SC-004	DB-D Electrical Schematic
2748D-SC-005	Schedule of Luminaires

<u>ANNEXURES</u>	
Annexure 1	Model Preambles for Trades 2008
Annexure 2	General Electrical Specifications
Annexure 3	Lightning Protection Specifications
Annexure 4	Map of Tender submission location
Annexure 5	Joint Venture Agreement
Annexure 6	Health and Safety Specification
Annexure 7	Health and Safety Bill of Quantities
Annexure 8	Waiver of Contractor's Lien
Annexure 9	Additional Specifications - EPWP
Annexure 10	EPWP Employment Agreement Contract
Annexure 11	EPWP Attendance Register
Annexure 12	EPWP - BOQ and Scope
Annexure 13	Scope of Works
Annexure 14	Architectural Drawings
Annexure 15	Electrical Drawings



KWAZULU-NATAL PROVINCE

PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

**PHASE 14: STORM DAMAGED PROGRAMME: REPAIRS AND RENOVATIONS TO STORM
DAMAGED SCHOOLS THROUGHOUT THE PROVINCE OF KWAZULU-NATAL: SOUTHERN
REGION: CLUSTER 155: EMGANGENI SECONDARY SCHOOL. OPEN BIDS**

ANNEXURES



**PHASE 14: STORM DAMAGED PROGRAMME: REPAIRS AND RENOVATIONS TO STORM
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REGION: CLUSTER 155: EMGANGENI SECONDARY SCHOOL. OPEN BIDS**

ANNEXURE 1

MODEL PREAMBLES FOR TRADES 2008



MODEL PREAMBLES FOR TRADES

2008

*forming part of
the bills of quantities*

Project:

Contract Reference Number:

EXPLANATORY NOTES AND INSTRUCTIONS ON THE USE OF THESE MODEL PREAMBLES

1. The document

- 1.1 This document is published by and is available from the Association of South African Quantity Surveyors, P.O. Box 3527, Halfway House, 1685. Telephone (011) 315 4140. E-mail: administration@asaqs.co.za
- 1.2 The contents of this document are intended to cover workmanship and materials encountered in a significant majority of projects. If a material is not encountered in a significant majority of projects, its preamble will in all likelihood not be included in this document
- 1.3 By its very nature, this document is a "Model" document and one that is designed to act as a basis upon which to build. It is anticipated that it will be supplemented by a "Supplementary Preambles" document included in the text of the bills of quantities that will include, *inter alia*, the following:
 - 1.3.1 supplementary clauses of a general nature that practitioners may deem necessary to cover their own individual requirements,
 - 1.3.2 additional clauses pertaining to specific materials incorporated in a project and not covered by the Model Preambles,
 - 1.3.3 amendments to anything contained in the Model Preambles. A clause has been incorporated in the "General" section of the document stipulating that anything contained in the "Supplementary Preambles" which is at variance to that which is contained in the Model Preambles, will take precedence over the Model Preambles and apply to the works in hand
- 1.4 It is intended that this document will be used by reference only in the text of the bills of quantities and will NOT be bound or reproduced therein

2. The basic philosophy

- 2.1 Wherever possible, reference has been made throughout the preambles to South African National Standards (SANS) to describe materials and methods respectively. It is therefore incumbent on the users of these preambles to have ready access to the relevant Specifications and Codes. Where such Specifications or Codes do not exist, suitable preambles have been compiled
- 2.2 These preambles have been designed to assist in abbreviating descriptions in the text of the bills of quantities and practitioners are encouraged to make use of this facility. e.g. The description of a stormwater catchpit would read:

"Brick stormwater catchpit size internally 600 x 400 x 1 200mm deep to invert fitted with and including a 450 x 300mm x 59kg cast iron grating and frame"
- 2.3 Wherever alternatives exist in respect of materials or workmanship, specific choices have been made in these preambles. Should users require different choices to specific items, these should be referred to in the Supplementary Preambles as outlined in clause 1.3

3. Additional notes in the use of these Model Preambles

3.1 Concrete, Formwork and Reinforcement

The Project Specification embodied in these preambles was compiled in collaboration with the Authors of SANS 1200G, which forms the basis for the Concrete, Formwork and Reinforcement model preambles

Users of these preambles are advised to submit a copy of the Model Preambles to the Engineers involved in a project for their scrutiny. Any amplifications, amendments, etc required by individual Engineers would then be incorporated in the Supplementary Preambles referred to in item 1.3

3.2 Roof Coverings

The roof coverings included in these Model Preambles are limited in their content and therefore any roofing material not included in these Preambles will need to have its full preamble included in the Supplementary Preambles

3.3 Structural Steelwork

The comments made under item 3.1 apply equally to Structural Steelwork

Note that the protective treatment of the structural steel covers only the treatment up to and including the primer (and patching after erection). The finishing coats of paint must be fully described and included either in the "Structural Steelwork" or in the "Paintwork" trade, as the practitioner wishes

MODEL PREAMBLES FOR TRADES

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A. GENERAL

A.1 APPLICATION OF CLAUSES

These Model Preambles for Trades, and any Supplementary Preambles, shall be read in conjunction with and shall form part of the descriptions of items in the bills of quantities

Where descriptions or Supplementary Preambles in the bills of quantities differ from these Model Preambles for Trades, the descriptions or Supplementary Preambles in the bills of quantities shall take precedence. Where supplementary preambles differ from descriptions in the bills of quantities, the descriptions in the bills of quantities shall take precedence

Except where otherwise stated, all preambles contained in any individual Trade Preamble shall apply equally to any work of a similar nature in all other trades

A.2 ABBREVIATIONS

The following abbreviations shall apply:

AASHTO	–	American Association of State Highway and Transportation Officials
AISI	–	American Institute of Steel Industries
BS	–	British Standard
CKS	–	Coordinating Specifications issued by the Central Coordinating Committee under the auspices of the South African Bureau of Standards
CSIR	–	Council for Scientific and Industrial Research
SANS	–	South African National Standards and the number following shall refer to the relevant specification or code of practice as the case may be

A.3 MATERIALS AND WORKMANSHIP

Materials and workmanship shall be the best of their respective kinds. Only new and undamaged materials shall be used in the Works. Materials to be permanently installed into the works shall not be used for any temporary purposes on site. Work shall be to the approval of the Principal Agent and shall be executed in accordance with the relevant manufacturer's written recommendations and instructions where applicable

A.4 PROPRIETARY PRODUCTS

For the purposes of submission of tenders, rates for items described in the bills of quantities by trade names, catalogue references, etc shall be for the particular type and manufacture specified

The approval of the Principal Agent shall be obtained prior to any substitution and where products or materials etc other than those specified are used, adjustments in the rates will be made if necessary

A.5 ASSEMBLING

Rates for manufactured items shall include assembling complete and handing over in proper working order

A.6 REFERENCES IN DESCRIPTIONS

Any references given in brackets at the end of certain descriptions shall refer to the relevant references on the drawings or schedules

A.7 WATER

Water shall be clean and free from injurious amounts of acids, alkalis, organic matter and other substances and shall be suitable for its intended use

A.8 APPLICATION OF THE NATIONAL BUILDING REGULATIONS

All work shall be executed in accordance with the requirements of SANS 10400

A.9 ACCURACY IN BUILDINGS

The dimensional and positional accuracy of the buildings and their component parts shall comply with Grade II requirements of SANS 10155 unless otherwise stated

A.10 REFERENCES TO OTHER DOCUMENTS

References in these "Model Preambles for Trades" to other documents, including SANS, CKS and BS, shall pertain to the latest edition thereof including all amendments thereto at the date for submission of the tender

B. ALTERATIONS

B.1 ALTERATIONS

In taking down and removing existing work the utmost care shall be observed to prevent any structural or other damage to remaining portions of the building. The Contractor shall ensure the stability of all structures during alteration work

Special care shall be exercised during the progress of the work to ensure that any electrical installations, water supply pipes, telephone and other services which may be encountered are not interfered with and notice shall be given to the Principal Agent if any disconnection or alterations become necessary

The Contractor shall take all precautions necessary to prevent any nuisance from dust whilst carrying out the work

B.2 MATERIALS FROM THE ALTERATIONS, CREDIT, ETC

Materials recovered from the alterations (except where described as to be re-used or to be handed over to the Employer) will become the property of the Contractor, who may allow credit in respect thereof where provided for in the bills of quantities. Such materials shall not be re-used in new work without written permission from the Principal Agent

Materials described as "removed" shall be removed from the site immediately.

Materials described as "handed over to the Employer" shall be carefully dismantled where necessary, neatly stored under cover on the site where directed and protected from damage, until required

Materials described as "set aside for re-use" shall be carefully dismantled where necessary, cleaned, neatly stored under cover and protected from damage until required for re-use. Any damage caused to such materials during removal, storage or refixing shall be made good at the Contractor's expense

B.3 DISPOSAL OF DEBRIS ETC

The Contractor shall be responsible for the removal from the site of all materials, debris and rubbish resulting from the alterations

B.4 MAKING GOOD DAMAGED WORK

The Contractor shall make good in all trades to existing work where damaged or disturbed through the alterations with all necessary new materials to match the existing

B.5 FORMING NEW OPENINGS OR ALTERING OPENINGS IN EXISTING WALLS

Where new openings are formed or openings altered in existing walls, the wall above the opening shall be broken out and a new brick, in situ concrete or prestressed concrete lintel inserted, complete with all necessary reinforcement, formwork, turning piece, etc, the jambs and portions of openings as described shall be built up with new brickwork or blockwork properly toothed and bonded to existing, cavities of hollow walls shall be closed where necessary and finishes shall be made good all round and into reveals

B.6 BUILDING UP OPENINGS

Where existing openings are given in number as built up, the existing surfaces all round shall be prepared as necessary, brickwork or blockwork properly toothed and bonded to existing, wedged up to underside of existing lintel and finishes shall be made good on both sides

C. EARTHWORKS

C.1 DEMOLITIONS

C.1.1 Nature and extent

Descriptions of demolitions give a rough guide only as to the scope of the work. Tenderers are therefore advised to visit the site before submitting a tender and to acquaint themselves with the nature and extent of the work to be done and the value of recoverable materials which are not to be re-used or handed over to the Employer. Unless otherwise stated, loose furniture, kitchen and other equipment, apparatus, machinery, etc shall remain the property of the Employer and the removal thereof does not fall within the scope of this Contract

The Contractor shall completely demolish the buildings etc in a careful, skilful, practical and safe manner down to 150mm below ground level

Demolitions shall include breaking up and removing:

all floors and surface beds;

all external screen walls, steps, ramps, aprons, surface water channels, rainwater sumps, gulleys, etc attached to the building to be demolished;

all services, manholes, etc in ground to a point not less than 1m beyond the perimeter of the building including plugging off ends of all remaining pipes, drains, etc, filling in holes where necessary and ramming and levelling to ground level

Where only a portion of a building is to be demolished, it shall be done without damage to the remaining portion of the building. Any such damage shall be made good by the Contractor at his own expense

C.1.2 Notices etc

The Contractor shall, before commencing work, obtain all necessary authorisation for carrying out the work, by whatever means including the use of pneumatic equipment or blasting, give all necessary notices and pay all charges and fees in connection therewith. He shall also comply with all regulations pertaining to rodent extermination and he shall obtain the requisite Rodent Extermination Clearance Certificate and pay all necessary fees. All receipts and certificates shall be left in the safekeeping of the Principal Agent. All the abovementioned charges and fees shall be paid by the Contractor and included in his prices

The Contractor shall give ample notice to the Principal Agent and Local Authorities regarding any disconnections necessary prior to the removal or interruption of electrical or telephone cables, water and sanitary services etc

C.1.3 Loss

After the handing over of the site to the Contractor, the full risk of any loss or damage to buildings to be demolished shall be the responsibility of the Contractor and he shall take such precautions as he deems necessary against such loss or damage

C.1.4 Materials from the demolitions, credit, etc

Materials recovered from the demolitions will become the property of the Contractor, who may allow credit in respect thereof where provided for in the bills of quantities. Such materials shall not be re-used in any new work without written permission from the Principal Agent

C.1.5 Disposal of debris etc

The Contractor shall be responsible for the removal from the site of all materials, rubble, debris and rubbish resulting from the demolitions

C.2 SOIL INSECTICIDES

The application of soil insecticides shall be carried out in accordance with "The application of soil insecticides for the protection of buildings" - SANS 10124

C.3 FILLING ETC

C.3.1 Filling generally

Filling over site shall be spread, levelled, watered and consolidated in layers not exceeding 300mm

Filling under floors and backfilling to excavations shall be suitable inert material, free from clay, vegetable matter, large stones, etc, having a maximum plasticity index of 10, spread, levelled and compacted to a density of at least 90% Mod. AASHTO

C.3.2 Hardcore

Hardcore shall be broken stone or other approved hard material graded from 25mm to 75mm with the finer material on top and shall be spread, levelled and consolidated

C.4 EXCAVATIONS

C.4.1 Classification of excavated material

“Hard rock” shall mean granite, quartzitic sandstone or other rock of similar hardness, the removal of which requires drilling, wedging and splitting or the use of explosives

“Soft rock” shall mean hard material the removal of which warrants the use of pneumatic tools and includes hard shale, ferricite, compact outcrop and material of similar hardness

“Earth” shall mean all ground other than that classified as “hard rock” or “soft rock” and shall include made-up ground and any loose stones or pieces of concrete not exceeding 0,03m³ in volume

D. CONCRETE, FORMWORK AND REINFORCEMENT

D.1 SPECIFICATION FOR CONCRETE WORK GENERALLY

All in situ concrete work (plain and reinforced) shall comply with SANS 1200G supplemented by the following Project Specification. Where SANS 1200G and the Project Specification are in conflict, the Project Specification shall take precedence

Wherever the term "Engineer" appears in SANS 1200G or in the following Project Specification this shall be deemed to mean the Principal Agent's representative responsible for this section of the Works

PROJECT SPECIFICATION

The following amplifications, additions and amendments to SANS 1200G shall constitute the Project Specification. Clause numbers refer to either the existing clauses in SANS 1200G or to new clauses, which are related to the existing clauses

1. SCOPE

This clause is amended to include:

- 1.1 This specification does not cover the methods by which the finished structure is to be measured for the purpose of payment and the "Standard System of Measuring Building Work" shall apply

2. INTERPRETATIONS

2.1 SUPPORTING SPECIFICATIONS

Clause 2.1(b) shall not apply

2.2 APPLICATION

This clause shall not apply

4. PLANT

4.5 FORMWORK

4.5.2 Finish

Unless otherwise stated the quality of all formwork shall be such that the finished surface of the concrete is "Rough" in terms of clause 5.2.1(a)

5. CONSTRUCTION

5.2 FORMWORK

5.2.1 Classification of Finishes

- (a) **Rough.** No treatment of the surface of the concrete will be required after the striking of the formwork. The finish of the concrete need not be more accurate than Degree of Accuracy III
- (b) **Smooth.** Imperfections such as small fins, bulges, irregularities, surface honeycombing and surface discolorations shall be made good and repaired by approved methods. The finish of the concrete shall be accurate to Degree of Accuracy II
- (c) **Special**
- (i) **Smooth and fair**

This class of finish requires the highest standard of concrete work, formwork, accuracy and technique

Concrete placed in any one structure to give this finish shall be made from cement and aggregates from the same source. The grading of the aggregate shall be kept constant

Formwork shall be metal, wrot timber or other approved material in new condition designed and constructed to suit the particular job in hand and with shutter bolts and joints between panels in a regular pattern approved by the Principal Agent. Joints between panels shall be watertight, but the use of sealing tape which will mark the concrete shall not be permitted

Designated joints shall be in the position and of the details shown upon the working drawings. Should the Contractor wish to incorporate further construction joints or amend the position of those shown to suit his own requirements or technique, this may be allowed provided that all design considerations are met, that the prior approval of the Engineer is obtained and that any extra costs are borne by the Contractor

In the case of horizontal construction joints, the top edge of the concrete on the smooth and fair finished side shall be struck true and level with a trowel

Special care shall be taken to ensure that forms are clean and free of all pieces of tying wire, nails and other debris at the time of concreting

The standard of finish shall be such that upon removal of the formwork, no further treatment, other than treatment of bolt holes if required, shall be found necessary to provide a straight, smooth and uniform finish of good quality and consistent colour and texture, free of all honeycombing etc. Any defect shall be made good by either removing and replacing the defective concrete or, in certain instances only, by patching

5.5 CONCRETE

5.5.1.6 Prescribed mix concrete

Where prescribed mix concrete is specified the proportions of constituents, the maximum size of coarse aggregate and the estimated minimum compressive strength shall be as specified in the following table:

Class of Concrete	Estimated minimum compressive strength in MPa at 28 days	Maximum nominal size of coarse aggregate in mm	Proportions of Constituents		
			Cement (Parts)	Fine aggregate (Parts)	Coarse aggregate (Parts)
A	7	37,5	1	4	8
B	15	19	1	3	5
C	20	19	1	2,5	3,5

Cement shall comply with SANS 50917-1 of strength 32,5N or higher

Should cement and aggregates be mixed by volume, the contents of a 50kg sack of cement shall be taken to be 0,033m³

Notwithstanding the requirements contained in SANS 1200G, the Principal Agent may permit certain items of non-structural concrete to be mixed by hand

If the concrete is mixed by hand, it shall first be mixed in a dry state on a clean non-absorbent surface until it is of uniform colour and consistency. Just enough water shall then be added to permit mixing and working, at which stage the concrete shall continue to be mixed until it is of uniform colour and consistency

5.5.1.7 Strength concrete

Where strength concrete is specified it shall be designated by its specified strength followed by the size of stone used in its manufacture, eg 30 MPa/19mm

The water/cement ratio shall be as Table 5 of clause 5.5.1.5 for moderate exposure conditions

5.5.1.8 "No-Fines" concrete

"No-fines" concrete shall consist of one part cement to eight parts aggregate graded from minimum 6mm to maximum 13mm size

The quantity of water used shall be just sufficient to form a smooth grout which shall completely coat every particle of aggregate and also to ensure that the grout is just wet enough to form a small fillet at each point of contact between the stones. "No-fines" concrete mixed with excessive water, which results in a thin grout, which drops off the aggregate, will be rejected

"No-fines" concrete shall be placed in its final position within 20 minutes of mixing and shall be placed in continuous horizontal layers. Concrete shall be spade worked sufficiently to ensure that it fills the forms but vibrating, tamping or ramming will not be permitted

5.5.3.2 **Ready-mixed concrete**

The use of ready-mixed concrete and the acceptability of test results from a central concrete production facility shall be subject to the written approval of the Engineer

6. **TOLERANCES**

Degree of Accuracy II shall apply for all work unless otherwise stated

7. **TESTS**

7.1 **FACILITIES AND FREQUENCY OF SAMPLING**

7.1.2 **Frequency of sampling**

7.1.2.5 The frequency of sampling shall be as directed by the Engineer, but not less than one set of cubes from every 50m³ cast

8. **MEASUREMENT AND PAYMENT**

This clause shall not apply

D.2 AGGREGATES OF LOW DENSITY

Aggregates of low density shall comply with SANS 794

D.3 HOLLOW BLOCKS, PREFABRICATED BLOCK BEAMS AND PLANKS, ETC

Blocks, block beams, planks, etc shall be fixed and supported in such a manner that no movement can take place before or during the casting of concrete. No broken components shall be used

D.4 SUPERVISION

A competent and experienced foreman shall superintend personally the whole of the concrete construction and pay special attention to:

- (a) The quality, testing and mixing of materials,
- (b) The placing and compaction of concrete,
- (c) The construction and removal of formwork and
- (d) The sizes and position of reinforcement

The Contractor shall obtain the permission of the Principal Agent before commencing concreting of foundations or reinforced structure

No inspection, approval, authorisation to proceed, comment or instructions following from such an inspection, or failure of the Principal Agent to comment on any particular aspect of the work, shall be deemed to relieve the Contractor in any way from his obligation to ensure through his own supervision that the work is constructed in every way in accordance with the Drawings, Specification and Conditions of Contract, nor relieve him from his obligations to make good any fault or defect, nor shall it be deemed that there is any obligation on the Principal Agent to inspect all or any part of the Works or that such inspection is necessarily complete in every respect

D.5 GENERAL

Concrete

Rates for concrete work shall include all "construction joints" other than "designated joints" as defined in SANS 1200G clause 2.4.3 which are measured separately, and for the design of strength concrete mixes and all testing of concrete and materials other than compressive strength testing of concrete samples taken from concrete being placed in the Works. The Contractor shall only be entitled to payment for those samples and compressive strength tests called for by the Engineer and which pass the test requirements

Surface beds cast in panels shall be cast in panels approximately 9m²

Formwork

Formwork to slabs and beams shall be cambered where required

Rates for formwork to soffits shall include propping not exceeding 3,5m high unless otherwise described.

Formwork to walls and columns is not exceeding 3,5m high above bearing level unless otherwise described

Reinforcement

Standard welded steel fabric reinforcement shall be as included in Table 1 of SANS 1024 and shall have 300mm wide laps.

The mass of binding wire is not included in the mass of the reinforcement and the cost thereof shall be included in the rates for the reinforcement

E. PRECAST CONCRETE

E.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Precast concrete paving slabs SANS 541

Cement, water, aggregates and reinforcement shall be as described under D. CONCRETE, FORMWORK AND REINFORCEMENT

E.2 CONCRETE

Concrete shall be as described under D. CONCRETE, FORMWORK AND REINFORCEMENT and unless otherwise stated shall be prescribed mix concrete Class C but with coarse aggregate of an appropriate size

E.3 MOULDS

Before each casting, moulds shall be coated with a suitable release agent which will not in any way discolour the surface of the finished product or impair its strength. Where items are described as "finished smooth from the mould" or as "precast terrazzo", moulds shall be made to a high degree of accuracy and shall be such as to leave even and smooth surfaces

E.4 FINISHES TO BLOCKS

Where described as "precast terrazzo", such surfaces shall have a facing of terrazzo described under O. PLASTERING. The facing shall be poured into the moulds in a wet state (not dry pressed) and thoroughly worked up against finished faces to ensure that it finishes smooth from the mould

Projections shall be rubbed off and faces shall be of even colour and free from blemishes, cracks and other imperfections. Salient angles shall be arris rounded

E.5 CASTING ETC

Items shall be suitably cured, shall not be handled whilst still green and shall not be built in within 21 days of casting

E.6 REINFORCEMENT

Unspecified reinforcement required for manufacturing, handling and erection purposes and for reinforcing projecting and other unwieldy portions of blocks shall be provided by the Contractor at his discretion

E.7 BEDDING, JOINTING AND POINTING

Blocks shall be bedded and jointed solidly in Class I mortar as described under F. MASONRY and shall be pointed with slightly keyed joints

Blocks finished with "precast terrazzo" shall have joints raked out and pointed with slightly keyed joints in tinted waterproofed mortar composed of one part cement and three parts sand to match terrazzo facing

E.8 GENERAL

Precast concrete work shall include reinforcement required for manufacturing, handling and erection purposes, steel rod or wire hooks and/or mortices for lewis bolts required for handling and transporting, any necessary temporary propping and strutting and bedding, jointing and pointing

F. MASONRY

F.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Burnt clay masonry units	SANS 227
Limes for use in building	SANS 523 {Slaked (hydrated) limes}
Aggregates from natural sources – fine aggregates for plaster and mortar	SANS 1090
Concrete masonry units	SANS 1215
Prestressed concrete lintels	SANS 1504
Burnt clay paving units	SANS 1575
Metal ties for cavity walls	SANS 28
Common cement	SANS 50197-1 (Class 32,5N)
Masonry cement	SANS 50413-1 (Class 22,5X)
Concrete masonry construction	SANS 10145
The structural use of masonry	SANS 10164-1
Masonry walling	SANS 10249
Concrete floors	SANS 10109-1&2

F.2 SAND

Sand shall be washed where necessary and screened through a 2,4mm mesh sieve

F.3 BURNT CLAY BRICKS

Burnt clay bricks shall be of nominal size 222 x 106 x 73mm unless otherwise stated

Common bricks shall be General Purpose bricks

Extra hard burnt bricks shall be General Purpose (Special) bricks

Facing bricks shall exhibit a liability to efflorescence not in excess of "Slight" and water absorption when tested in conformity with the requirements of SANS 227 shall not exceed 14%

Particular care shall be taken to preserve arrisses and faces of facing and paving bricks during transit and handling

F.4 CONCRETE BRICKS

Concrete bricks shall have a nominal compressive strength of 8 MPa

F.5 QUARRY TILES ETC

Quarry, cement and similar tiles shall be of approved manufacture, even in shape and size, free from cracks, twists or blemishes and uniform in colour

F.6 WIRE TIES

Wire ties shall be of galvanized steel of the single wire type for solid walls and either the "Butterfly" or Modified PWD type for hollow walls. Ties shall be of sufficient length to allow not less than 75mm of each end to be built into brickwork or embedded in concrete

F.7 BRICKWORK REINFORCEMENT

Brickwork reinforcement shall be manufactured from hard drawn steel wire conforming to BS 785 and shall consist of two 2,8mm diameter main wires with 2,5mm diameter cross wires at 300mm centres welded at intersections

Brickwork reinforcement shall be lapped not less than 300mm at end joints and for a length equal to the width of the widest reinforcement at intersections

F.8 MORTAR

Mortar shall comply with the following table:

1	2	3	4
Mortar Class	Minimum compressive strength MPa	Cement:sand (common cement)	Cement:sand (masonry cement)
I	10	1:4 or 50kg to 130 litres	1:3 or 50kg to 100 litres
II	5	1:6 or 50kg to 200 litres	1:5 or 50kg to 170 litres
III	1,5	1:9 or 50kg to 300 litres	1:6 or 50kg to 200 litres

Mortar shall be Class II unless otherwise specified

Mortar plasticizers may only be used with the approval of the Principal Agent

The materials shall be mixed dry until of uniform colour, water added and the mixture turned over until the ingredients are thoroughly incorporated

Mortar shall be produced in such quantities as can be used before commencement of set and no mortar that has set shall be used

F.9 COMPO MORTAR

Compo mortar shall be Class III mortar in accordance with clause F.8 but with a lime content of 80 litres

The lime and sand shall be mixed dry until of uniform colour, water added and the mixture turned over until the ingredients are thoroughly incorporated. Immediately before use, the cement shall be mixed in and the requisite amount of water added. Compo mortar shall be produced in such quantities as can be used before commencement of set and no compo mortar that has set shall be used

F.10 BRICKWORK

Wherever practicable, brickwork shall be built in stretcher bond. Unless legitimately required to form bond, no false headers shall be used. English bond shall only be used where specifically so indicated or where stretcher bond is not practicable

Brickwork, unless otherwise described, shall be built in Class II mortar

Bricks shall be laid on a solid bed of mortar and all joints shall be grouted up solid

The brickwork shall be carried up in a uniform manner, no part being raised more than 1,2m above adjoining work

Where necessary, bricks shall be wetted before being laid and the course of bricks last laid shall be well wetted before laying a fresh course upon it

Walls in thicknesses of more than one skin shall have at least five wire ties per square metre. Linings to concrete, unless otherwise specified, shall be tied to the concrete with at least five wire ties per square metre

Hollow walls, unless otherwise specified, shall be built of two half brick skins with cavity between, tied together with at least five wire ties per square metre. The cavities shall be kept free of all rubbish, mortar droppings and projecting mortar. Mortar joints to brickwork shall be not less than 8mm or more than 12mm thick

F.11 BLOCKWORK

Unless otherwise described, all blockwork shall be built in stretcher bond. Whole blocks shall be used except where bats or closers are required to form bond. Blockwork, unless otherwise described, shall be built in Class II mortar

Solid blocks shall be laid on a solid bed of mortar and all joints shall be grouted up solid

Hollow blocks shall be laid in shell bedding, ie only the inner and outer shells of the blocks shall be covered with mortar. Vertical joints shall be similarly formed

The blockwork shall be carried up in a uniform manner, no part being raised more than 1,2m above adjoining work

Clay blocks shall be wetted before being laid and the course of blocks last laid shall be well wetted before laying a fresh course upon it

F.12 CENTRES AND TURNING PIECES

Centres and turning pieces to soffits of arches and lintels shall be left in position for not less than 14 days

F.13 FACE BRICKWORK

Face brickwork shall be built in stretcher bond, unless otherwise specified, to a true and fair face. Perpendents shall be vertically aligned

Facing bricks shall be mixed to ensure that the proper blending of bricks within the colour range of each facing brick being used is obtained

F.14 PAVINGS, SILLS, COPINGS, ETC

Clay bricks and tiles shall be wetted before fixing and shall be solidly bedded and jointed in Class I mortar and pointed with slightly keyed joints

G. WATERPROOFING

G.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Bituminous damp-proof courses	SANS 248 (Type FV)
Polyolefin film for damp- and waterproofing in buildings (walls, sills, etc)	SANS 952 (Type B)
Polyolefin film for damp- and waterproofing in buildings (floors and basements)	SANS 952 (Type C)
Mastic asphalt for roofing	SANS 297
Mastic asphalt for damp-proof courses and tanking	SANS 298
Bituminous roofing felt	SANS 92 (Type 60)
Polyolefin film for damp- and waterproofing in buildings (flat roofs)	SANS 952 (Type A)
Chloroprene rubber sheet (for waterproofing)	SANS 580
Sealing compounds for the building industry, two-component, polysulphide base	SANS 110 (Type 2 - Gun Grade)
Sealing compounds for the building and construction industry, two- component, polyurethane base	SANS 1077
The waterproofing of buildings (including damp-proofing and vapour barrier installation)	SANS 10021

G.2 WATERPROOFING TO ROOFS, BASEMENTS, ETC

Waterproofing to roofs, basements, etc shall be carried out by workmen who are experienced in this type of work

G.3 DAMP-PROOF COURSE TO WALLS

All joints in damp-proof course to walls shall be lapped a minimum of 150mm except at junctions and corners where the lap shall equal the full thickness of the wall

H. ROOF COVERINGS ETC

H.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Concrete roofing tiles	SANS 542
Clay roofing tiles	SANS 632
Sawn softwood timber battens	SANS 1783-4
Fibre-cement sheets (flat and profiled)	SANS 685
Aluminium alloy corrugated and troughed sheets	SANS 903
Continuous hot-dip zinc-coated carbon steel sheet of commercial, lock-forming and drawing qualities	SANS 3575
Continuous hot-dip zinc-coated carbon steel sheet of structural quality	SANS 4998
Polyolefin film for damp- and waterproofing in buildings	SANS 952
Metal roofing tiles	SANS 1022
Glass-reinforced polyester (GRP) laminated sheets (profiled or flat)	SANS 1150
Fasteners for roof and wall coverings in the form of sheeting	SANS 1273
Materials for thermal insulation of buildings	SANS 1381-1&4
Expanded polystyrene thermal insulation boards	SANS 1508
Fixing of concrete interlocking roofing tiles	SANS 10062
Roof and side cladding	SANS 10237
Sheet zinc	BS 849
Sheet lead	BS 1178
Sheet aluminium	BS 1470
Sheet copper	BS 2870

H.2 GALVANIZED STEEL PROFILED SHEETS ETC

Galvanized steel profiled sheets, ridge and hip coverings, etc shall be coated with a minimum of 275 g zinc per m² and shall be free of white rust

H.3 GALVANIZED SHEET IRON

Galvanized sheet iron shall be rolled steel sheet coated on both sides with a minimum of 275 g of zinc per m² and shall be free from white rust

H.4 NAILING AND SCREWING

Where nailing and screwing is required:

- galvanized iron nails and screws shall be used for galvanized sheet iron and sheet zinc
- copper or copper alloy nails and screws for sheet copper and sheet lead
- aluminium alloy or stainless steel nails and screws for sheet aluminium

H.5 LAPS

Sheet metal flashings shall have minimum 100mm laps and linings to valleys, secret gutters, etc minimum 225mm laps

H.6 GENERAL

Rates for profiled sheet roofing and rolled edges, ridge and hip coverings, flashing pieces, etc of metal, fibre-cement, plastic, etc shall include fixing accessories

I. CARPENTRY AND JOINERY

I.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Sawn softwood timber : General requirements	SANS 1783-1
Sawn softwood timber : Stress-graded structural timber and timber for frame wall construction	SANS 1783-2
Sawn softwood timber : Brandering and battens	SANS 1783-4
Softwood flooring boards	SANS 629
Hardwood furniture timber	SANS 1099
Hardwood block and strip flooring	SANS 281
Wooden ceiling and panelling boards	SANS 1039
Laminated timber (glulam)	SANS 1460
Gypsum plasterboard	SANS 266
Fibreboard products	SANS 540
Wood-wool panels (cement bonded)	SANS 637
Fibre-cement sheets (flat and profiled)	SANS 685
Fibre-cement boards	SANS 803
Plywood and composite board	SANS 929
Wooden ceiling and panelling boards	SANS 1039
Particle boards	SANS 50312-1to7
Decorative laminates	SANS 4586
Wooden doors	SANS 545
Fire doors	SANS 1253
Materials for thermal insulation of buildings	SANS 1381-1,2,4&6
Expanded polystyrene thermal insulation boards	SANS 1508
Mild steel nails	SANS 820
Metal screws for wood	SANS 1171
Wood-preserving creosote	SANS 539

Softwood shall bear the relevant SABS mark and shall be ordered in the sizes in which it will be used as no scantlings of marked timber will be allowed. Should SABS marked timber be unavailable, the Principal Agent's prior permission shall be obtained before using unmarked timber

I.2 HARDWOODS

All hardwoods shall be specially selected, well seasoned, free from sapwood and well kiln dried. Meranti shall be Red or Medium Brown Meranti, even in grain and colour, selected from "Standard and Better" quality from Malaysia

I.3 INFECTION AND PRE-TREATMENT OF TIMBER

All timber used on the site, whether for permanent or temporary work, shall be free of borer or other beetle and termite infection. If the work under this contract falls within an area designated under Government Notice R2577 of 197812-29, permanent softwood fixed in the building shall be treated against borer etc in accordance with Government Notice R451 of 1969-03-28 using Class B or C preservative

When treated timbers are cut, the cut surfaces shall be effectively brushed with at least two coats of preservative solution

I.4 CONSTRUCTION IN GENERAL

Where applicable, construction methods shall comply with SANS 10082. Wood and laminate flooring shall be installed in accordance with SANS 10043. Roof trusses shall be manufactured, erected and braced in accordance with SANS 10243

I.5 STRUCTURAL TIMBER

Timbers generally shall be in single lengths and jointing of timbers will only be permitted when the required length is unobtainable. Only the absolute minimum of joints to obtain a particular length will be permitted and such joints are to be evenly spaced along the length of the timber

Finger-jointing of structural timber will be permitted, in which case it shall be manufactured in accordance with SANS 10096

I.6 PLATE NAILED TIMBER ROOF TRUSSES

Plate nailed timber roof trusses shall be of approved design and manufacture and constructed with softwood structural timber by a truss Fabricator holding a current Certificate of Competence awarded by the Institute of Timber Construction

Each roof truss shall have all its members accurately cut and closely butted together and rigidly fixed by CSIR approved patented galvanized metal spiked connectors, precision pressed on both sides of each intersection by an approved method, all in accordance with the manufacturer's instructions

The design, manufacture and transportation of the roof trusses, bracing, etc shall be under the control of a registered Structural Engineer in accordance with SANS 1900, SANS 10160 and SANS 10163, who shall, after erection, provide a certificate confirming that the design, manufacture, transportation, erection and bracing has been carried out in accordance with this specification

The design shall include for all live loads, wind loads and for dead loads imposed by roof covering, purlins, ceilings, etc

Fully detailed shop drawings of all trusses etc, indicating sizes, bracing, loading, etc, shall be submitted to the Principal Agent for approval prior to fabrication

Unless specific erection instructions are given, erection shall be carried out in accordance with the procedures and recommendations of the manual "The Erection and Bracing of Timber Roof Trusses" published by the Institute for Timber Construction and the Council for Scientific and Industrial Research or as detailed by the designer

Roof trusses and bracing shall include design and preparation of shop drawings

I.7 TONGUED AND GROOVED BOARDING

Tongued and grooved boards for floors, panelling, etc shall be in long varying lengths with joints tightly cramped up and secret nailed. Flooring boarding shall be flush jointed with staggered heading joints and machine sanded after fixing

I.8 JOINERY

Skirtings, cornices, rails, etc shall be in single lengths wherever practicable and shall have splayed heading joints where necessary. Skirtings shall be trenched at back

All horns of door frames shall be checked and splayed back where frames are fixed projecting or flush with surface and built in

Heads of screws in exposed faces of hardwood joinery shall be sunk and match pelleted

Joinery shall have arris rounded angles and shall be blocked and planted on

I.9 VENEERS

All face veneers shall be of kiln dried timber, free from knots, cracks, patchwork, sapwood and other defects, selected and glued, dried and machine-sanded to a smooth finish. All veneers shall be applied under hydraulic pressure

I.10 DOORS

Flush doors shall have solid timber edge strips with concealed edges. Where doors are to be finished with a transparent finish, the veneer and the edge strips shall be timber of the same species and as far as possible of matching colour. Unless otherwise described all flush doors shall be of interior quality, but where exterior quality doors are specified the glue used shall be of the WBP type

Framed and ledged batten doors described as filled in with V-jointed boarding shall be filled in flush on one side with tongued and grooved vertical boarding, V-jointed on one or both sides and of the thickness stated. The boarding shall be in narrow widths, closely cramped up, rebated or tongued on outer edges and housed to grooves in stiles and rails and twice countersunk brass screwed at each intersection with ledges and braces and the inner edges of the abutting stiles and rails shall be chamfered to form a V-joint at junction with the board

Unless otherwise described double doors shall have rebated meeting stiles

I.11 FIXING

All nails and screws shall be of the size, length and type appropriate to their respective uses. All screws for hardwood joinery work shall be brass

Items described as "plugged" shall be screwed to fibre, plastic or metal plugs at not exceeding 600mm centres. Where items are described as "bolted", the bolts have been given separately

I.12 ADHESIVES

Adhesives shall comply with BS 1204 and 4071 where applicable. Adhesives used in the manufacture of external joinery exposed to excessive moisture (eg kitchen and laboratory worktops) shall be of the WBP type

J. CEILINGS, PARTITIONS AND ACCESS FLOORING

J.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Gypsum plasterboard	SANS 266
Fibreboard products	SANS 540
Gypsum cove cornice	SANS 622
Wood-wool panels (cement-bonded)	SANS 637
Sawn softwood timber : Brandering and battens	SANS 1783-4
Sawn softwood timber : Timber for frame wall Construction	SANS 1783-2
Fibre-cement boards	SANS 803
Plywood and composite board	SANS 929
Wooden ceiling and panelling boards	SANS 1039
Materials for thermal insulation of buildings	SANS 1381-1&4
Expanded polystyrene thermal insulation boards	SANS 1508
Raised access flooring	SANS 1549

J.2 TONGUED AND GROOVED BOARDING

Tongued and grooved boarding for ceilings shall be in long varying lengths, V-jointed one side and with joints tightly cramped up and secret nailed

J.3 CEILINGS ETC

J.3.1 Brandering

Brandering for ceilings and eaves soffit coverings shall be symmetrically arranged with necessary smaller panels. Main branders shall be at right angles to roof timbers, with cross branders cut in between and branders shall be fixed with galvanized wire nails driven in on skew alternately in opposite directions

J.3.2 Ceiling boards

Ceiling boards shall be in long lengths symmetrically arranged with necessary smaller panels, closely butted and secured at 150mm centres to brandering with galvanized or cadmium-plated clout-headed nails

J.4 GYPSUM SKIM PLASTER

Gypsum skim plaster shall be pure gypsum plaster finished with a steel trowel

J.5 EXPOSED TEE-SYSTEM SUSPENDED CEILINGS

The ceiling panels shall be as described in the items and the panels shall be stiffened at back as recommended by the manufacturer to prevent bowing or sagging

The exposed surfaces of all ceiling panels and supporting members shall be uniform in colour and free from surface blemishes

The suspension grid system shall be an approved patent suspension system comprising 38mm galvanized steel main and cross tee bearers spaced in both directions at centres to suit sizes of ceiling panels used, with the cross bearers fitted between and notched to form flush fit with main bearers. The exposed flange of the tees shall be 25mm wide, covered with a rolled aluminium cap painted a low sheen satin white. Cornices etc shall be as described in the items and shall be finished to match the exposed tees

The main tee bearers shall have holes for cross tees at 300mm centres and holes for hangers at 50mm centres. In addition, main and cross tee bearers shall be holed as necessary for and provided with timber wedges or steel clips where recommended by the manufacturer to prevent ceiling panels from lifting

The web of the exposed cross tee bearers shall extend to form a positive interlock with the main tee bearers and the lower flange shall be cut back to provide a joint free appearance

All hangers shall be galvanized and shall be at centres to meet the requirements of the specification with one end fixed to the suspension grid main bearers and the other end fitted with suitable galvanized fixing cleat securely fixed to the structure. Fixing points shall be agreed to by the Principal Agent before any power shot fixings are made. Hangers shall not be suspended from air-conditioning ducts. Where recommended by the manufacturer, hangers shall be of the rigid type

Component parts and fixings shall be non-corrosive and able to withstand atmospheric pollution. Surfaces of aluminium which are in contact with other materials when fixed, particularly metals, shall be suitably insulated to prevent electrolytic corrosion

Ceilings shall comprise hangers, suspension grid system and ceiling panels, shall be constructed in a manner suitable for carrying air-conditioning diffusers and light fittings in the positions required, shall be set out to layouts approved by the Principal Agent and shall have the standard suspension systems modified as necessary to work around any pipes or light fittings

J.6 FLUSH PLASTERED SUSPENDED CEILINGS

Gypsum plasterboard panels of the specified thickness generally in 1200mm widths and in long lengths shall be fixed grey side down with self-tapping screws to the suspension system with the joints between boards loosely butt jointed and covered with 50mm wide strips of self-adhesive fibre tape

The plasterboard panels shall be finished with gypsum skim plaster trowelled to a smooth polished surface to the thickness etc recommended by the manufacturer

The suspension system shall be an approved patent concealed suspension system consisting of galvanized mild steel bearers suspended on approved non-rusting metal hangers spaced generally at 1200mm centres or to suit layout of air-conditioning ducts and other services etc above ceiling with one end bolted to the bearer and the other end fitted with a galvanized fixing cleat securely fixed to the structure as required

Fixing points shall be agreed to by the Principal Agent before any power shot fixings are made. Hangers shall not be suspended from air-conditioning ducting

Ceilings shall comprise hangers, suspension system, ceiling panels and plaster finish, shall be constructed in a manner suitable for carrying air-conditioning diffusers and light fittings in the positions required, shall be set out to layouts approved by the Principal Agent and shall have the standard suspension system modified as necessary to work around any pipes or light fittings

K. FLOOR COVERINGS, WALL LININGS, ETC

K.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Semi-flexible vinyl floor tiles	SANS 581
Resin modified vinyl floor tiles	SANS 586
Flexible vinyl flooring	SANS 786
Hardwood block and strip flooring	SANS 281
Wood mosaic flooring	SANS 978
Textile floor coverings (pile construction)	SANS 1375
Textile floor coverings (needle-punched construction)	SANS 141
Carpet underlays	SANS 1419
The installation of wood and laminate flooring	SANS 10043
The installation of resilient thermoplastic and similar flexible floor covering materials	SANS 10070
The installation of textile floor coverings	SANS 10186
Sheet linoleum (calendered types), cork, carpet and linoleum tiles	BS 810
Solid rubber flooring	BS 1711
Felt backed linoleum	BS 1863

K.2 LAYING OF MATERIAL

Floor tiles shall be laid with continuous joints in both directions

Patterned floor coverings shall be matched at joints

K.3 GENERAL

Floor coverings, wall linings, skirtings, nosings, etc shall include all preparatory work to screeded or plastered surfaces etc, priming coats and adhesives

Floor coverings and wall linings shall be dressed around and into corners. Wood block and wood mosaic flooring shall be sanded with a sanding machine and sealed with a coat of approved penetrating sealer

Plastic handrails shall have welded and polished butt joints

L. IRONMONGERY

L.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Locks, latches and associated furniture for doors. (Domestic type)	SANS 4
Kitchen cupboards: Built-in and free-standing	SANS 1385
Single action closers	SANS 1510
Padlocks	SANS 1533
Fasteners	SANS 1700
Chalk writing boards for schools	CKS 36

L.2 KEYS

Locks shall have the minimum possible number of interchangeable keys. Cylinder locks and locks described as “en suite” shall be clearly marked with consecutive numbers and each key shall be punched with the corresponding number of the relative lock

L.3 FIXING

Unless otherwise described, ironmongery is to be fixed to wood

Items described as “plugged” shall be screwed to fibre, plastic or metal plugs

Screws, bolts, etc for fixing of ironmongery shall be of matching metal and finish, except for aluminium ironmongery or ironmongery fixed to aluminium in which cases stainless steel screws may be used

All necessary preparation of pressed steel door frames for the fixing of ironmongery to the frames has been included with the pressed steel door frames

L.4 KITCHEN CUPBOARDS

Steel cupboards shall be finished with baked enamel. Tops of floor cupboards shall have laminated plastic covering

Cupboards shall be fitted with all necessary hinges, handles, catches, etc. Cupboards shall be securely fixed with all necessary screws and fibre, plastic or metal plugs

Where cupboards are described as a “series”, tops shall be continuous and cupboards shall be bolted or screwed together, including bolts, screws, holes, etc

M. STRUCTURAL STEELWORK

M.1 SPECIFICATION

All structural steelwork shall comply with SANS 1200H or 1200HA as applicable. Structural fasteners shall comply with SANS 1700

Whenever the term "Engineer" appears in SANS 1200H or 1200HA or in the following Project Specification this shall be deemed to mean the Principal Agent's representative responsible for this section of the Works

M.2 PROJECT SPECIFICATION INCORPORATING AMPLIFICATIONS, ADDITIONS AND AMENDMENTS TO SANS 1200H AND 1200HA

The following amplifications, additions and amendments to SANS 1200H and SANS 1200HA shall apply and clause numbers refer to either the existing clauses in the relevant SANS or to new clauses which are related to the clauses therein

SANS 1200H

3.1.1 Weldable structural steel

Weldable structural steel shall comply with SANS 1431

5.1.2 Contractor provides shop details

The Contractor shall be responsible for the preparation of all shop detail drawings

5.1.3 Engineer provides shop details

This clause shall not apply

5.3.9 Protective treatment

Structural steelwork shall be cleaned and prepared by wire brushing in accordance with SANS 10064 and all surfaces shall be primed as specified to a minimum dry film thickness of 30 micrometres before leaving the workshop. Upon delivery to the site and again after erection all bared surfaces shall be made good with similar primer

8. Measurement and payment

This clause shall not apply

SANS 1200HA

5.2.10 Protective treatment

Structural steelwork shall be cleaned and prepared by wire brushing in accordance with SANS 10064 and all surfaces shall be primed as specified to a minimum dry film thickness of 30 micrometres before leaving the workshop. Upon delivery to the site and again after erection all bared surfaces shall be made good with similar primer

5.3.7 Repairs to paint and site painting

This clause shall not apply

8. Measurement and payment

This clause shall not apply

N. METALWORK

N.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Fasteners	SANS 1700
Expanded metal	SANS 190-1&2
Windows and doors made of rolled mild steel sections	SANS 727
Hot-dip galvanized zinc coatings on fabricated iron and steel articles	SANS 121
Strongroom and vault doors	SANS 949
Anodized coatings on aluminium (for architectural applications)	SANS 999
Steel door frames	SANS 1129
Mushroom- and countersunk-head bolts and nuts	SANS 1143
Welding of metalwork	SANS 1044
Adjustable glass-louvred windows	CKS 413
Aluminium sheet and strips	BS 1470
Aluminium extruded tube and hollow sections	BS 1474
Aluminium bars and sections	BS 1476

N.2 STEEL

Steel shall be mild steel of approved commercial quality. Steelwork shall be cleaned and prepared by wire brushing in accordance with SANS 10064 and given one coat of primer as specified before leaving the workshop

N.2.1 Galvanizing of steel

Steelwork described as “galvanized” shall be galvanized by means of the hot-dip process after fabrication. Where welding on site is unavoidable, such welded joints shall be cleaned down and cold galvanized to approval

N.3 STAINLESS STEEL

Stainless steel shall be AISI Type 304 stainless steel and shall be buffed to an even satin finish. Stainless steel screws shall be used for fixing stainless steel

N.4 ALUMINIUM

Aluminium extrusions shall be of 6063-T6 alloy and temper. Aluminium sheet and strips shall be of 1200-H4 alloy and temper.

Joints in all aluminium members shall be formed in an approved manner so that the joints are practically invisible. Screw heads, pins, rivets, etc shall be concealed as far as possible. 300 Series stainless steel screws and bolts shall be used for jointing and fixing aluminium work

The surfaces of all aluminium which are in contact with other materials when fixed shall be suitably insulated with a non-absorbent insulating material to prevent corrosion. All aluminium work shall be suitably protected against damage, deterioration or discolouration caused by mortar droppings, paint, etc by taping with removable tape, covering with temporary casings or by covering with motor oil

N.4.1 Anodizing of aluminium

Aluminium described as “anodized” shall be treated with Grade 25 coating thickness for exterior use or Grade 15 for interior use as specified, to the required finish. All alloys to be anodized shall be suited to anodizing

N.5 BOLTS AND NUTS

Nuts shall be of at least the strength grade appropriate to the grade of bolt or other threaded element with which they are used

N.6 SCREWING OF METALWORK TO STEEL, WOOD, CONCRETE, ETC

Metalwork described as "screwed" to steel, wood, etc or "plugged" to brickwork, concrete, etc shall be fixed at not exceeding 500mm centres, with necessary holes, countersinking, threading, screws, set screws, self-tapping screws and fibre, plastic or metal plugs

N.7 BOLTING OF METALWORK

Where metalwork is described as "bolted" to steel, wood, brickwork, concrete, etc the bolts are measured elsewhere

N.8 WELDING OF METALWORK

All welds shall be cleaned and filed or ground off smooth to approval. All welded joints shall be continuous

N.9 METALWORK GENERALLY

Metalwork shall have all sharp edges ground smooth. Tubular and pipe work shall include running joints. Rails etc described as "continuous" shall be in long lengths with welded joints

N.10 PRESSED STEEL DOORS, FRAMES, ETC

N.10.1 Door frames

Frames shall project not less than 20mm into floor finish. Except where described as galvanized, frames shall be primed as specified before leaving the factory. Frames are to jambs and heads of openings. Frames for single doors shall be provided with two 100mm steel butt hinges and an adjustable striking plate for a mortice lock and frames for double doors shall be provided with four 100mm steel butt hinges. Butt hinges shall be steel butts with loose pins, welded to frames. Where necessary mortar caps shall be welded to frames and back plates shall be welded on behind tappings for screws

N.10.2 Cupboard door frames

Cupboard door frames shall be as described in N.10.1, but with thresholds of unequal channel section, two 100mm steel butt hinges to hanging stiles, two 75mm steel butt hinges to hanging stiles above transoms, necessary striking plates for mortice locks and keeps for barrel bolts

N.10.3 Combination doors and frames

Combination doors and frames shall be manufactured of 1,6mm thick steel plate. Frames shall be as described in N.10.1. Doors shall be standard design and required profile, with a 44mm wide edge all round, vertical reinforcing ribs pressed in and with two reinforcing rails welded on. The door shall be provided with two lever mortice lock with lock box welded to inside. Doors shall be welded to steel butts

N.10.4 Transformer room doors and frames

Transformer room doors and frames shall be manufactured of 1,6mm thick steel plate. Frames shall be as described in N.10.1. Doors shall be of standard design with a 44mm wide edge all round, vertical reinforcing ribs pressed in and with three reinforcing rails welded on. Single doors shall be fitted with a padlock cleat and two 100mm brass pintle hinges and double doors shall be fitted with a padlock cleat, two 150mm bolts and four 100mm brass pintle hinges. Each leaf shall be fitted with a louvered ventilation panel of standard design backed with 6mm mesh galvanized wire vermin proof screen

N.10.5 Sizes

The frame widths given refer to unfinished wall thicknesses

N.10.6 Glazing beads

Where specified, glazing beads shall be 12 x 12mm standard metal glazing beads mitred at angles and countersunk screwed on at not exceeding 300mm centres with self-tapping screws

N.11 STEEL WINDOWS, DOORS, ETC

N.11.1 Windows, doors, etc

All fittings to windows, doors, etc shall be chromium plated. Fixed lights and opening sashes shall be in single squares. Windows etc of single unit construction shall have weather bars at transoms above opening sashes

Composite windows not of single piece construction shall be coupled with standard coupling mullions and transoms that correspond with the window section used

Kicking plates and panels shall be 1,6mm metal plate fixed with standard metal glazing beads mitred at angles and countersunk screwed on at not exceeding 300mm centres with self-tapping screws

Except where described as galvanized, windows, doors, burglar bars, etc shall be primed as specified before leaving the factory

N.11.2 Burglar bars and flyscreens

Where windows are described as fitted with burglar bars or flyscreens, these shall be standard type fitted over opening sashes

N.12 ADJUSTABLE LOUVRE UNITS

Adjustable louvre units shall be suitable for hand or longarm operation

Louvre units shall include glass louvres with polished edges and installation, including holes, screws, rivets, preparation of openings, etc

N.13 ALUMINIUM WINDOWS AND DOORS

The foregoing preambles "N.4 – ALUMINIUM" shall apply to aluminium windows, doors, etc in all respects in so far as they are applicable. Aluminium windows and doors shall be manufactured from extruded aluminium members of 6063T6, 6261-T6 or 6082-T6 alloy and temper

Ancillary members such as sills, flashings, infill panels and the like formed from flat sheet material shall be of an appropriate alloy selected from 1200, 3004 or 5251 complying with BS 1470 of a temper suitable for the method of forming and a composition suitable for anodizing or painting as required

Windows, doors, etc shall be of an approved standard system, manufactured by an approved firm experienced in this type of work, and shall meet with the minimum recommended performance requirements as set out by the Association of Architectural Aluminium Manufacturers of South Africa (AAAMSA) in the latest edition of the Selection Guide

The fittings for all opening sashes shall be substantial and, unless otherwise described, shall be of high quality aluminium alloy finished to match the windows, doors, etc on which they occur. Samples of all fittings shall be supplied to the Principal Agent for approval

Top, side and bottom hung opening sashes shall be hung on two aluminium hinges with 300 Series stainless steel pins, nylon bushes and stainless steel washers. Side hung sashes shall have fasteners and sliding stays, top hung sashes shall have peg stays and bottom hung sashes shall have spring catches and concealed arms

Projected out sashes shall have aluminium fasteners and concealed arms of a non-corrosive material compatible with aluminium

The frames which are to be built into openings in brickwork shall be fitted with the manufacturer's standard type fixing lugs, not less than 20 x 3 x 150mm long, screwed to frame and placed one near each corner and intermediately not more than 450mm apart to sides, top and bottom and where fixed to concrete reveals, wood sub-frames or to preformed openings in brickwork shall have countersunk holes for screws, one near each corner and intermediately not more than 450mm apart to sides, top and bottom

N.13.1 Glazing beads

Where so described, openings and sashes of windows and doors shall be fitted with approved channel section aluminium glazing beads sufficient in size and profile to suit the method of glazing employed, finished to match the windows, doors, etc and neatly mitred. Screws where necessary shall be of aluminium or 300 Series stainless steel and have pan or raised heads finished to match the beads

N.13.2 Finishes

Windows, doors, etc described as "anodized" shall be treated with Grade 25 coating thickness. Windows, doors, etc described as "factory painted" shall have an electrostatically applied oven baked polyester paint coating not less than 25 micrometres thick

N.13.3 General

Aluminium windows, doors, etc shall include glass as described, fixing in position, sealing and protection against damage, deterioration or discolouration by taping with removable tape or covering with temporary casings or motor oil and removing same on completion

N.14 STRONGROOM AND RECORD ROOM DOORS

Strongroom and record room doors shall not be built in as the work proceeds, but shall be fixed later in the openings provided. The Contractor shall ensure that the lock or other important parts of the door are not tampered with. Should any such tampering occur, the Contractor will be held responsible and at the Principal Agent's discretion shall provide a new door or lock and keys at his own expense. The keys shall not be delivered together with the doors to the building site. The Contractor shall arrange for the manufacturer to send the keys direct to the Principal Agent per registered post. If these instructions are not complied with, a new lock and keys shall be provided by the Contractor at his own expense

N.15 STEEL ROLLER SHUTTERS

Roller shutters shall be of approved manufacture comprising curtain, vertical channel guides and top mechanism. The curtain shall be constructed of 1mm thick machine-rolled galvanized interlocking slats with mild steel end locks spot welded to alternate strips. The bottom shall be provided with a galvanized rail riveted on and vertical edges shall slide in galvanized channel guides formed of steel not less than 2,5mm thick bolted to sides of openings

The mechanism shall be covered in a galvanized sheet iron box. The ungalvanized sections shall be primed as specified before leaving the factory

O. PLASTERING

O.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Common cement	SANS 50197-1(Class 32,5N)
Masonry cement	SANS 50413-1(Class 225X)
Limes for use in building	SANS 523 {Slaked (hydrated) limes}
Aggregates from natural sources – Fine aggregates for plaster and mortar	SANS 1090

O.2 PREPARATORY WORK

Surfaces shall be clean and free of oil and thoroughly wetted directly before any plastering or other in situ finishes are commenced. Concrete surfaces shall be slushed with a mixture of one part cement and one part coarse sand or otherwise treated to form a proper key. Preparatory coats shall be thoroughly scored and roughened to form a proper key

O.3 FINISH

All coats of paving and plastering shall be executed in one operation without any blemishes

O.4 SCREEDS

Screeds shall be composed of one part cement and four parts sand

O.5 CEMENT RENDER

Cement render shall be composed of one part cement and three parts sand finished with a steel trowel to a smooth polished surface and cured for at least seven days after laying

Cement render finish shall be divided into panels not exceeding 6m² with V-joints and deep trowel cuts

O.6 GRANOLITHIC

Granolithic shall be composed of one part cement, one part fine sand, two parts coarse sand and one part granite or other approved stone aggregate that will pass through a 5mm sieve, finished with a steel trowel to a smooth polished surface and cured for at least seven days after laying

Coloured granolithic shall be carried out in two coats in one operation and shall be tinted to the required colour with approved colouring pigment mixed into the finishing coat. Under no circumstances is the pigment to be sprinkled on and trowelled in after the granolithic is laid

Granolithic shall be divided into panels not exceeding 6m² with V-joints and deep trowel cuts

O.7 TERRAZZO

Terrazzo shall be applied in two coats. The undercoat shall be composed of one part cement and three parts sand and shall be finished with a wooden float. The finishing coat shall be composed of one part cement and two parts marble or stone aggregate of a colour and size to obtain the required colour and texture and shall be at least 12mm thick, and applied before the undercoat has dried out. The finishing coat shall be compacted by tamping or rolling until superfluous water has been expelled, finished with a steel trowel and cured for at least seven days after laying. The finished surface shall show at least 80% of the aggregate

Surfaces described as "polished" shall be polished by machine using various grades of abrasive and grouting with tinted cement as necessary between polishings

Surfaces described as "polished" shall be polished by machine using various grades of abrasive and grouting with tinted cement as necessary between polishings

Surfaces described as "brushed" shall be brushed with a steel wire brush on the day the terrazzo has been laid to expose the aggregate as required

Where required, brass or other dividing strips shall be embedded in the undercoat to finish flush with the finished surface

Three sample blocks, each size 300 x 300mm, as separately measured shall be prepared for approval by the Principal Agent and kept in an accessible place on the site until the completion of the contract

O.8 SKIRTINGS

Skirtings shall not exceed 25mm thick and shall have a fair edge with arris or rounded external angle at top edge or V-joint to finish flush with plaster and coved or square junction with floor finish

O.9 THICKNESS OF PLASTER

All plaster, other than skim plaster, shall be not less than 10mm and not more than 20mm thick

O.10 CEMENT PLASTER

Cement plaster shall comply with the following table:

1	2	3
Plaster Class	Cement:sand (common cement)	Cement:sand (masonry cement)
I	1:4 or 50kg to 130 litres	1:3 or 50kg to 100 litres
II	1:6 or 50kg to 200 litres	1:5 or 50kg to 170 litres
III	1:9 or 50kg to 300 litres	1:6 or 50kg to 200 litres

O.11 COMPO PLASTER

Compo plaster shall be composed of one part cement, two parts lime and nine parts sand

O.12 GYPSUM SKIM PLASTER

Gypsum skim plaster shall be pure gypsum plaster finished with a steel trowel

O.13 TWO COAT PLASTER WITH GYPSUM FINISH

Two coat plaster with gypsum finish shall comprise an undercoat of Class II cement plaster finished with a wooden float and a finishing coat of gypsum skim plaster

O.14 ROUGH-CAST PLASTER

Rough-cast plaster shall be applied in two coats. The undercoat shall be composed of one part cement and five parts sand finished with a wooden float. The finishing coat shall be composed of one part cement and three parts stone aggregate that will pass through a 4mm sieve. The finishing coat shall be flicked on with a machine before the undercoat has set to obtain an even texture

O.15 FINE ROUGH-CAST PLASTER

Fine rough-cast plaster shall be as for rough-cast plaster but the finishing coat shall be composed of one part cement and three parts coarse sand

O.16 GENERAL

Rates for plastering described as being on vertical surfaces of brickwork or blockwork shall include concrete columns, beams and lintels flush with the face of the wall

P. TILING

P.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Glazed ceramic wall tiles and fittings	SANS 22
Ceramic wall and floor tiles	SANS 1449
Common cement	SANS 50197-1(Class 32,5N)
Masonry cement	SANS 50413-1(Class 22,5X)
Aggregates from natural sources – Fine aggregates for plaster and mortar	SANS 1090
The design and installation of ceramic tiling	SANS 10107

P.2 TILES, MOSAICS, ETC

Tiles, mosaics, etc shall be even in shape and size, free from cracks, twists or blemishes and uniform in colour

P.3 PREPARATORY WORK

Surfaces shall be clean and free of oil and thoroughly wetted directly before any tiling is commenced. Concrete surfaces shall be slushed with a mixture of one part cement and one part coarse sand or otherwise treated to form a proper key

P.4 CERAMIC WALL AND FLOOR TILING

Where tiles are fixed to plaster or screeds with an adhesive, the adhesive shall be as recommended by the manufacturer of the tiles. Joints shall be straight, continuous and flush pointed with an approved grouting compound

P.5 GENERAL

Tiling described as “on walls” is on brick walls or block walls unless otherwise stated and shall include concrete columns, beams and lintels flush with the face of the wall

Q. PLUMBING AND DRAINAGE

Q.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Sheet metal

Sheet zinc	BS 849
Sheet aluminium	BS 1470
Sheet copper	BS 2870

Rainwater systems

Unplasticized poly(vinyl chloride) (PVC-U) components for external rainwater systems	SANS 11
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Pipes and fittings

Steel pipes : Pipes suitable for threading and of nominal size not exceeding 150mm	SANS 62
Plain-ended solid drawn copper tubes for Potable water	SANS 460
Malleable cast iron fittings threaded to ISO 7-1	SANS 4
Polyethylene (PE) pipes for water supply – Specifications	SANS 4427
Cast iron fittings for asbestos cement pressure pipes	SANS 546
Vitrified clay sewer pipes and fittings	SANS 559
Reinforced concrete pressure pipes	SANS 676
Concrete non-pressure pipes	SANS 677
Cast iron pipes and pipe fittings for use above ground in drainage installations	SANS 746
Unplasticized poly(vinyl chloride) (PVC-U) sewer and drain pipes and pipe fittings	SANS 791
Fibre-cement pipes, couplings and fittings for sewerage, drainage and low-pressure irrigation	SANS 819
Pitch-impregnated fibre pipes and fittings and jointing	SANS 921
Unplasticized poly (vinyl chloride) (PVC-U) pressure pipe systems	SANS 966-1
Unplasticized poly(vinyl chloride) (PVC-U) soil, waste and vent pipes and pipe fittings	SANS 967
Rubber joint rings (non-cellular)	SANS 974-1
Copper-based fittings for copper tubes	SANS 1067-1&2
Fibre-cement pressure pipes and couplings	SANS 1223
Polypropylene pressure pipes	SANS 1315
Non-metallic waste traps	SANS 1321-1&2
Vent valves for drainage installations	SANS 1532
Heavy duty cast iron pipe fittings for drainage and gas and water supplies	BS 78

Lead pipes	BS 602
Cast iron pressure pipes for use in drainage and gas and water supplies	BS 1211
Stainless steel pipes for use with compression fittings	BS 4127
Sanitary fittings etc	
Stainless steel sinks with draining boards (for domestic use)	SANS 242
Stainless steel wash-hand basins and wash troughs	SANS 906
Stainless steel sinks for institutional use	SANS 907
Stainless steel stall urinals	SANS 924
Acrylic sanitary ware : Baths	SANS 1402-1
Glazed ceramic sanitary ware	SANS 497
WC flushing cisterns	SANS 821
Flush valves for WC flushing cisterns	SANS 1509
Taps, valves etc	
Water taps (metallic bodies)	SANS 226
Water taps (plastic bodies)	SANS 1021
Single control mixer taps	SANS 1480
Float valves	SANS 752
Plastic floats for ball valves	SANS 1006
Functional control valves and safety valves for Domestic hot and cold water supply systems	SANS 198
Cast iron gate valves for waterworks	SANS 664
Automatic shut-off flush valves for water closets and urinals	SANS 1240
Check valves (flanged and wafer types)	SANS 1551-1&2
Fire extinguishers	
Portable refillable fire extinguishers	SANS 1910
Portable rechargeable fire extinguishers : Halogenated hydrocarbon type extinguishers	SANS 1151
Water heaters and fire hose reels	
Fixed electric storage water heaters	SANS 151
Fire hose reels (with semi-rigid hose)	SANS 543
Drainage covers, gratings, etc	
Cast iron surface boxes and manhole and inspection covers and frames	SANS 558
Cast iron gratings for gullies and stormwater drains	SANS 1115
The installation of polyethylene and poly (vinyl chloride) (PVC-U and PVC-M) pipes	SANS 10112
Water supply and drainage for buildings	SANS 10252-1&2

Q.2 GENERAL**Q.2.1 Excavations**

Excavations shall be deemed to be in "earth". Backfilling to excavations shall be executed in 300mm thick layers, watered and compacted. Surplus excavated material shall be spread and levelled over site as directed

Q.2.2 Concrete

Unreinforced concrete shall be Class B prescribed mix concrete and reinforced and precast concrete shall be Class C prescribed mix concrete

Q.2.3 Brickwork

Brickwork shall be of extra hard burnt bricks built in Class I mortar

Q.2.4 Plaster

Plaster shall be 1:3 cement plaster finished smooth with a steel trowel. All angles shall be rounded

Q.2.5 Diameters of pipes etc

Diameters stated for pipes, traps, valves, etc are internal diameters except PVC, polyethylene, stainless steel and copper pipes and traps for which external diameters are stated

Q.3 SHEET METAL WORK**Q.3.1 Galvanized sheet iron**

Galvanized sheet iron shall be rolled steel sheet coated on both sides with Class Z275, unless otherwise specified, zinc coating complying with SANS 3575/4998. Sheets shall be free from white rust

Q.4 EAVES GUTTERS**Q.4.1 Galvanized sheet iron gutters**

Galvanized sheet iron gutters shall have beaded edges and all joints shall be riveted and soldered. Angles shall be strengthened with 50 x 0,6mm galvanized sheet iron strips soldered on over the internal faces of mitres

Gutters shall be fixed with falls to outlets on 30 x 3mm galvanized mild steel brackets, bent to the shape of gutters, with front ends taken up to the underside of beaded edge of gutter and each screwed to roof timbers or bolted to fibre-cement fascias with 6mm galvanized gutter bolts. Gutters shall be bolted to brackets at front with 6mm galvanized gutter bolts, one to each bracket

Brackets shall be positioned at joints of gutters and intermediately at not exceeding 1,25m centres

Q.4.2 Fibre-cement gutters

Fibre-cement gutters shall have spigot and socket joints. Gutters shall be fixed with falls to outlets on standard aluminium alloy brackets, screwed or bolted to roof timbers or fascias

Q.4.3 Unplasticized polyvinyl chloride (UPVC) gutters

Gutters shall be fixed with falls to outlets on brackets as supplied by the manufacturer, screwed or bolted to roof timbers or fascias

Q.4.4 Aluminium gutters

Aluminium gutters shall be roll formed on site to required lengths and profiles from 3003H14-3SH4 alloy strip not less than 0,7mm thick factory coated on both sides with baked enamel and two coats of silicone modified polyester to a total minimum thickness of 20 micrometres. Angles, stopped ends, etc shall be prefabricated units pop riveted to gutters with joints sealed with mastic. The guttering shall be in continuous lengths between angles, stopped ends, etc

Q.5 RAINWATER PIPES

Q.5.1 Galvanized sheet iron pipes

Galvanized sheet iron pipes shall have seams at the back and shall be jointed with soldered slip joints. Pipes shall be fixed to walls etc with galvanized mild steel holderbats spaced at not exceeding 2m centres with tails driven in or cut and pinned in 1:3 cement mortar

Q.5.2 Fibre-cement pipes

Fibre-cement pipes shall have spigot and socket joints. Pipes shall be fixed to walls etc with standard aluminium alloy holderbats with tails driven in or cut and pinned in 1:3 cement mortar

Q.5.3 Unplasticized polyvinyl chloride (UPVC) pipes

Pipes shall be fixed to walls etc with patented UPVC or aluminium clips and holderbats as supplied by the manufacturer of the pipe

Q.5.4 Aluminium pipes

Aluminium pipes and fixing straps shall be formed from 3003H14-3SH4 alloy strip not less than 0,7mm thick factory coated on both sides as described for aluminium gutters. Pipes shall be in continuous lengths with formed angles, offsets, shoes, etc. Pipes shall be fixed to walls etc with 20 x 0,6mm straps at not exceeding 1,5m centres screwed to 25 x 75 x 100mm hardwood chamfered and oiled blocks plugged to walls

Q.6 STORMWATER CHANNELS

In-situ concrete stormwater channels shall be constructed of unreinforced concrete with segmental channel formed in top. Channels shall be laid to falls on a well rammed earth bottom and finished smooth on exposed surfaces

Precast concrete channels shall be of 25 MPa concrete, generally in 1m lengths, finished smooth from the mould on exposed surfaces, laid to falls on a well rammed earth bottom, jointed in 1:3 cement mortar and pointed with keyed joints

Q.7 JOINTS

Joints of pipes not covered by SANS shall be as follows:

Pipes

Fibre-cement, concrete, pitch-impregnated fibre and vitrified clay pipes for use under ground in non-pressure pipe lines

Cast iron for use above ground

Cast iron for use below ground

Galvanized mild steel

Joints between pipes of different materials shall be as follows:

Between cast iron and mild steel

Between cast iron and clay

Between mild steel or copper and clay

Joints

Flexible joints in accordance with the manufacturer's instructions

Spigot and socket joints with tarred rope yarn and caulking compound

or

Plain ended joints with stainless steel couplings with neoprene rubber sleeves

Spigot and socket joints with tarred rope yarn and caulking compound

Joints of screwed galvanized steel sockets or bolted galvanized iron flanges

Screwed joints with plastic jointing tape or hemp

Flanged joints which shall be bolted and provided with rubber gaskets and with flanges screwed to pipes

Spigot and socket joints with tarred rope yarn and caulking compound

Spigot and socket joint with semi-dry cement caulking and 1:2 cement mortar fillet

Spigot and socket joint with either bitumen or semi-dry cement caulking and 1:2 cement mortar fillet

Q.8 FIXING OF PIPES

Pipes shall be fixed as follows:

Q.8.1 Galvanized mild steel (except those stated in Q.8.3)

To walls with galvanized mild steel brackets for pipes not exceeding 80mm diameter and with galvanized cast iron hinged holderbats with brass pins or bolts for pipes exceeding 80mm diameter; both types with tails cut and pinned in 1:3 cement mortar

To woodwork with screw-on type galvanized mild steel holderbats

Q.8.2 Copper and stainless steel

To walls with brass holderbats or screw-on type two-piece spacing clips for pipes not exceeding 75mm diameter and with purpose made holderbats for pipes exceeding 75mm diameter; both types with tails cut and pinned in 1:3 cement mortar

To woodwork with screw-on type brass holderbats

Q.8.3 Cast iron and galvanized mild steel for soil, waste and vent pipes

To walls with hinged cast iron holderbats with brass bolts and with tails cut and pinned in 1:3 cement mortar

To woodwork with screw-on type galvanized mild steel holderbats

Q.8.4 Polyethylene, polypropylene and patented UPVC or unplasticized polyvinyl chloride

To walls, woodwork, etc with aluminium clips and holderbats as supplied by the manufacturer of the pipes

Q.8.5 Fibre-cement

To walls with aluminium alloy holderbats with tails cut and pinned in 1:3 cement mortar

Q.8.6 Pipes fixed to ceilings

Fixed with holderbats and standard or purpose made hangers, with extended hangers for pipes to falls

Q.9 PIPES LAID IN GROUND

Q.9.1 Water pipes etc

Water pipes, gas pipes, etc laid in ground shall be at least 400mm deep from the crown of the pipe to the finished surface

Q92 Drain pipes

Excavations taken out too deep shall be filled in with selected soil and compacted. Backfilling to sides and up to 300mm above plastic pipes shall be free from stone or hard substances which will not pass a 10mm mesh

Q.10 CLEANING EYE LIDS

Cleaning eye lids for drain pipe fittings shall be fixed and sealed as follows:

Pipe fittings

Method of sealing and fixing

Fibre-cement

Sealed with synthetic rubber or bituminous mastic packing and fixed with screws

Vitrified clay

Polypropylene lid sealed with synthetic rubber packing and pressed into position

Polypropylene and unplasticized polyvinyl chloride

Sealed with synthetic rubber packing and screwed on or pressed into position

Cast iron

Sealed with tallow or putty and fixed with non-ferrous metal screws

Galvanized malleable cast iron and cast brass

Sealed with synthetic rubber packing and screwed in

Q.11 CLEANING EYES

Cleaning eyes shall consist of cast iron frames and lids with letters "CE" (or "SO") cast in lids. The lids shall be secured with non-ferrous metal screws. Frames shall be jointed to vertical drain pipes. Cleaning eyes shall be encased in unreinforced concrete taken up to ground level and plastered on exposed surfaces

Q.12 INSPECTION EYE MARKER SLABS

Inspection eye marker slabs shall be 350 x 350 x 50mm thick precast concrete finished smooth from the mould, with letters "IE" (or "IO") formed in top and placed flush in ground or paving

Q.13 GULLEYS

Gulleys shall be built up of traps, vertical piping and gulley heads with loose gratings, all encased in unreinforced concrete to finish flush with gulley head top and taken up to at least 50mm above surrounding finished surfaces. The outer top edge of the concrete encasing shall be splayed and the exposed surfaces plastered

Q.14 DISHED GULLEYS

Dished gulleys shall be built up of traps, vertical piping and gulley heads with loose gratings, all encased in unreinforced concrete and with dished unreinforced concrete hopper size 450 x 450mm overall around gulley head with rounded kerb 50mm wide to front and sides and 25mm wide at back, 100mm high above top of dishing and the hopper plastered on exposed surfaces. Top of hopper shall be taken up to at least 50mm above surrounding finished surfaces

Q.15 SUMPS, CATCHPITS, INSPECTION CHAMBERS, ETC

Q.15.1 Rainwater sumps

Rainwater sumps shall be built with half-brick sides on 100mm thick unreinforced concrete bottom, plastered internally on walls and with 80mm high unreinforced concrete kerb at top rebated for grating or cover and plastered on exposed surfaces

Q.15.2 Stormwater catchpits and inspection chambers

Brick catchpits and inspection chambers shall be built with one-brick sides on 150mm thick unreinforced concrete bottom projecting 100mm beyond walls all round, plastered internally on walls and with 100mm thick reinforced concrete cover slab with opening rebated for frame of grating or cover and plastered on exposed surfaces

Precast concrete catchpits and inspection chambers shall be constructed in accordance with the applicable details shown on Drawing LE-1 of SANS 1200LE. Precast concrete manhole sections and slabs shall comply with SANS 1294 and pipes shall be SC type and in accordance with SANS 677

Q.15.3 Sewer inspection chambers

Brick inspection chambers shall be built as for brick stormwater inspection chambers and with the bottom of the chamber well benched around half round channels, bends, junctions, etc up to sides of chamber in unreinforced concrete finished smooth

Precast concrete inspection chambers shall be constructed in accordance with the applicable details shown on Drawing LD-5 of SANS 1200LD. Precast concrete manhole sections and slabs shall comply with SANS 1294 and the pipes shall be SC type in accordance with SANS 677

Q.15.4 Stormwater drain junction boxes

Junction boxes shall be formed of 150mm thick unreinforced concrete bottom and sides to suit the various sizes of the drain pipes and built after the pipes have been laid, with the sides taken up slightly higher than the highest pipe and finished level on top for and covered with a 75mm thick loose precast concrete slab

Q.15.5 Step irons

Where inspection chambers exceed 1,2m deep, cast iron step irons shall be provided, built into the wall at 300mm centres and staggered regularly in vertical rows spaced at 200mm centres horizontally

Q.16 STOPCOCK AND METER BOXES

Stopcock and meter boxes shall be built with half-brick sides with a cast iron box and lid complying with SANS 558 set in 75mm wide unreinforced concrete kerb for the full depth of the cast iron box and plastered on exposed surfaces

Q.17 VALVE CHAMBERS

Valve chambers shall be built with half-brick sides with 100mm thick unreinforced concrete kerb to top with rebate for cover and frame to finish flush with adjacent paving or finished ground level and plastered on exposed surfaces

Q.18 CAST IRON COVERS, GRATINGS, ETC

All cast iron covers, gratings, frames and surface boxes shall be coated with preservative solution. Frames shall be cast into concrete. Covers, except covers to stormwater drainage or electrical cable inspection chambers, shall be set in grease

Q.19 CONCRETE ENCASING

Concrete encasing for pipes, bends, traps, gulleys, grease traps, etc shall be unreinforced concrete not less than 100mm thick all round

Q.20 SANITARY FITTINGS

Q.20.1 General

Glazed ceramic, acrylic and porcelain enamelled sanitary fittings and component parts shall be white. Accessories for sanitary fittings shall be chromium plated brass

Waste outlets for baths, basins, etc shall comprise chromium plated brass waste union with grating, rubber washers and locknut, fitted with rubber or vulcanite plug on a chromium plated brass chain and stay

Q.20.2 Stainless steel sanitary fittings

Stainless steel sinks and draining boards, basins, wash troughs and urinals shall be AISI Type 304 satin finished stainless steel. All stainless steel fittings shall be treated on the back with a vermin proof sound deadening coating. Sinks, basins and wash troughs shall be provided with 40mm diameter screwed waste outlets

Q.20.3 Precast concrete wash troughs

Reinforced precast concrete wash troughs shall have a sloping front with ribbed rubbing surface and shall be finished smooth on exposed faces with top edges and inner angles rounded. Each compartment shall be fitted with a 40mm diameter waste outlet. Wash troughs shall each be supported on two reinforced precast concrete pedestals finished smooth on exposed faces

Q.20.4 Steel baths

Steel baths shall be porcelain enamelled internally and painted externally and fitted with waste outlet and overflow grating with coupling

Q.20.5 Acrylic resinous baths

Acrylic resinous baths shall be fitted with waste outlet and overflow grating with coupling

Q.20.6 Acrylic resinous wash hand basins

Acrylic resinous wash hand basins and vanity units shall have a smooth high gloss finish, with outlet openings, soap recesses, tap-holes and integral overflow and shall be fitted with waste outlet and overflow grating with coupling

Q.20.7 Glazed ceramic sanitary fittings

Sinks shall be provided with integral weir overflows

Washdown closet pans shall have washdown action and be provided with smooth finished injection moulded polypropylene heavy duty double flap seats fixed with non-ferrous bolts. Urinal channels shall be provided with outlet gratings fitted in bitumen

Q.20.8 Flush and sparge pipes

Flush pipes for high level cisterns shall be of plastic or drawn galvanized steel

Flushpipes for low level cisterns shall be of plastic

Flush and sparge pipes for urinals with high level cisterns shall be of chromium plated copper piping and of the sizes recommended by the manufacturer of the urinal

Q.21 INSTALLATION OF SANITARY FITTINGS

Sanitary fittings shall be installed as follows:

Q.21.1 Precast concrete wash troughs

Precast concrete wash troughs shall be bedded on top of pedestals which shall be bedded on floors in 1:3 cement mortar

Q.21.2 Stainless steel wash troughs and wash hand basins

Stainless steel wash troughs and wash hand basins shall be fixed to walls on a pair of galvanized mild steel gallows brackets bolted to wall with 6mm diameter expanding bolts

Q.21.3 Acrylic resinous wash hand basins

Acrylic resinous wash hand basins shall be fixed to walls on a pair of standard painted cast iron brackets screwed to underside of basin and bolted to wall with 6mm diameter expanding bolts

Q.21.4 Ceramic wash hand basins

Ceramic wash hand basins shall be fixed to walls on a pair of standard painted steel or cast iron brackets bolted to wall with 6mm diameter expanding bolts

Q.21.5 Acrylic resinous baths

Acrylic resinous baths shall be bedded in 1:5 cement mortar on three cross rows of bricks or bedded solid on a layer of dry river sand and fixed to wall with galvanized steel brackets under edges (in the middle of the sides against walls) bolted to wall with 6mm diameter expanding bolts and sealed along top against wall finishes with patent mildew resistant silicone rubber

Q.21.6 Washdown closet pans and cisterns

Washdown closet pans shall be bedded on floors in 1:3 cement mortar. Cisterns shall be fixed to walls with 6mm diameter expanding bolts

Q.21.7 Ceramic urinals

Ceramic stall and slab urinals shall be bedded on floors and against walls in 1:3 cement mortar. Slabs, channels, treads, etc shall be jointed in 1:3 cement mortar and pointed in white cement

Ceramic bowl urinals shall be fixed to walls on standard steel brackets bolted to wall with 6mm diameter expanding bolts. Cisterns shall be fixed to walls on standard brackets bolted to wall with 6mm diameter expanding bolts

Q.21.8 Stainless steel urinals

Stainless steel stall and slab urinals shall be bedded on floors in 1:3 cement mortar and with backs and sides against walls filled in with fine unreinforced concrete. Cisterns shall be fixed as cisterns for ceramic urinals

Q.22 FIRE HOSE REELS

Fire hose reels shall each be fitted with a 30m long hose of internal diameter not less than 19mm with a 4,8mm internal diameter chromium plated brass nozzle

Q.23 FIRE EXTINGUISHERS

All fire extinguishers shall be fully charged

Q.24 TESTS

Sewerage pipe lines, sanitary plumbing including fittings and hot and cold water supply and fire service shall be tested to the approval of the Principal Agent and Local Authority

The Contractor shall provide all testing apparatus, material and labour required for the tests and inspections

R. GLAZING

R.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Glass in building	SANS 50572-1 to 5
Glazing putty for wooden and metal window frames	SANS 680
Silvered glass mirrors for general use	SANS 1236
Safety and security glazing materials for buildings	SANS 1263-1 to 3
Sealing compounds for the building industry, one Component, silicone-rubber based	SANS 1305
The installation of glazing materials in buildings	SANS 10137
Work on glass for glazing	SANS 1817

R.2 PUTTY ETC

Glazing putty shall be Type I for wooden sashes and Type II for steel sashes. Putty for glazing to unpainted hardwood shall be tinted to match the colour of the wood

Back putty shall not exceed 3mm thick. Putty shall not be painted until it has formed a surface crust, and if the putty does not form a surface crust it shall be replaced

Butyl putty shall be used where glass is to be fixed in aluminium sashes with glazing beads

Non-setting compounds shall be used where laminated glass is fixed in sashes with glazing beads

S. PAINTWORK

S.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Decorative paint for interior use	SANS 515
Decorative high gloss enamel paints	SANS 630
Primers for wood (for external work)	SANS 678
Primers for wood (for internal work)	SANS 678
Zinc phosphate primer for steel	SANS 1319
Undercoats for paints (except emulsion paint)	SANS 681
Aluminium paint	SANS 682
Varnish for interior use	SANS 887
Emulsion paints	SANS 1586

Materials for paintwork shall be delivered to the site in unopened containers and applied in accordance with the manufacturer's instructions. Materials shall be suitable for application to the surfaces concerned. Undercoats shall be as recommended by the manufacturer of the finishing coats

S.2 PREPARATORY WORK

S.2.1 Plastered surfaces etc

Plastered surfaces shall be thoroughly inspected and, if necessary, washed down and brushed in order to remove any traces of efflorescence and allowed to dry completely before any paint finish is applied. Before any paint is applied, holes, cracks and irregularities in plaster and other surfaces shall be filled with a suitable filler and finished smooth. Unfinished concrete surfaces shall have all projections rubbed off and shall be thoroughly cleaned with a spirits-of-salts solution (1 part concentrated spirits-of-salts to 4 parts water)

S.2.2 Metal surfaces

Metal surfaces shall be sanded, where necessary, washed with a suitable cleaning agent and left smooth

Protective coatings applied by manufacturers to galvanized metal surfaces shall be removed with a suitable agent and the surfaces washed down

Rust, grease and defective factory primers on metal surfaces, as well as pitch on cast iron pipes, shall be removed

S.2.3 Wood surfaces

Knots in woodwork shall be treated with knotting. Minor blemishes shall be filled with a suitable filler. Wood surfaces shall be sanded smooth

S.3 APPLICATION OF PAINT

Primers to wood surfaces shall be applied by brush. Primers to other surfaces may be applied by roller with the approval of the Principal Agent. Undercoats and finishing coats may be applied by brush or roller

Paint shall not be sprayed on except in the case of cellulose and other special paints where spray painting is the accepted method of application

Before subsequent coats of paint are applied the previous coat shall be properly dry and shall be sanded down where necessary

S.4 COLOUR SCHEME

A colour scheme comprising colours and the blending of colours approved by the Principal Agent shall be used for the paintwork. The tints of the undercoats shall closely match the finishing coat but nevertheless differ sufficiently to indicate the number of undercoats. Colour samples of the finishing coats shall be provided in all cases

S.5 GENERAL

Paintwork shall include the preparation of surfaces, filling, stopping, sanding and priming of nail heads and screws. Where windows, sashes, etc are to be painted, the rebates of the openings to be glazed shall be primed

T. PAPERHANGING

T.1 PREPARATORY WORK

Plaster surfaces to be papered shall be dry, thoroughly cleaned down, filled with a suitable filler as necessary to obtain a smooth surface and painted thereafter with a single coat of emulsion paint

Wood surfaces to be papered shall be knotted, stopped and sanded

T.2 PAPERHANGING

Wallpaper shall be hung in vertical long lengths. Vertical joints shall be close-fitted and plumb and the paper shall be tightly fitted to skirtings, ceilings, door frames, windows, etc. Horizontal joints will not be allowed

U. EXTERNAL WORKS

U.1 GENERAL

U.1.1 Excavations

Excavations shall be deemed to be in "earth"

U.2 LANDSCAPING

U.2.1 Topsoil

Topsoil shall vary between sandy loamy soil and sandy clayey soil with an ideal composition of 15% to 25% clay, 10% silt/sludge and 65% to 75% sand, with a minimum ratio of organic material of 2%. All material shall be free of harmful deposits as well as unwanted seeds

U.2.2 Compost

Compost shall be composed of properly decayed organic material, free from harmful deposits, salts, seeds and other waste material and shall have a pH of more than 4 and less than 7

U.2.3 Mulch

Mulch shall be approved organic material free from small particles of bark residue, fungus, disease, etc

U.2.4 Lime

Lime shall be agricultural lime of an approved manufacture

U.2.5 Fertilizer

Fertilizer shall be of the type specified, mixed thoroughly into the soil as prescribed. No fertilizer shall be added more than two weeks prior to planting

U.2.6 Backfilling

Backfilling in plant and tree holes shall be composed of two parts topsoil to one part compost mixed thoroughly together and compacted by foot in 100mm layers. Fertilizer shall only be added if prescribed

U.2.7 Pebbles

Pebbles shall be smooth with a uniform colour and form and ranging in size from 50mm to 75mm diameter. Removal of pebbles from river beds shall be done selectively to avoid any major disruption to the ecology of the river and environment

U.2.8 Plant material

U.2.8.1 General

All plant material (plants, shrubs, trees, etc) shall be obtained from a registered nursery and shall be free from damaged parts, parasites, fungus, other plant diseases or insects. No container-bound plants will be acceptable

U.2.8.2 Trees

The height of trees described in the bills of quantities shall be measured from the top of the root ball to the top of the tree. Where trees are pruned, such prune wounds shall not be more than 25mm in diameter and be sealed with an approved sealing compound

U.2.8.3 Shrubs and small plants

Shrubs and small plants shall meet the requirements for height and spread as specified. Thin or sparsely branched plants shall not be accepted. Branches shall be well spread with ample young branches and the plant as a whole shall be growing well

U.2.8.4 Groundcover

Groundcover shall be dense and healthy and shall comply with the minimum requirements for leaf density as specified

Formal grass shall be planted as runners in 50mm deep drills at 150mm centres unless otherwise described

U.2.9 **Cultivation and preparation of planting areas etc**

All surface rocks and stones larger than 50mm shall be removed before commencing cultivation and preparation. The entire area shall be ripped and rotavated using approved machinery by breaking up the earth to a depth of 300mm at 600mm centres in both directions, unless otherwise described, and then levelled. Where fertilizer or compost is specified, it shall be worked into the topsoil after ripping and rotavation to a depth of 300mm and finished to final levels

All fertilizer to areas to be grassed shall be strewn on the final layer before final finishing is commenced and worked mechanically into the top 150mm soil

U.2.10 **Planting procedure**

Holes for shrubs and groundcover shall be as follows:

Shrubs – 500 x 500 x 500mm deep

Groundcover – 300 x 300 x 300mm deep (if not planted in drills)

Holes for trees shall be square, of adequate size to accommodate the root system and suitable for the height of the tree

All plant material shall be watered thoroughly before careful removal from the container and planted in the prescribed planting medium with the top of the soil in the container finishing level with the surrounding area. Water dams size 800mm diameter x 150mm deep and 500mm diameter x 150mm deep shall be formed around trees and shrubs respectively and all planting material shall be watered immediately after planting. Trees, shrubs, etc shall be properly staked or stayed, depending on their size, on the prevailing windy side with patent tree ties

U.2.11 **Maintenance**

All planted areas shall be maintained for a period of three months after practical completion as defined in the contract with the exception of hydroseeded areas which shall be maintained for 12 months after an acceptable cover has been obtained

This maintenance shall consist of keeping clear of weeds and litter, loosening soil where necessary every two weeks, replacing damaged, diseased or dead plants, pruning, cutting and mowing as necessary and watering so as to keep the plant material in a healthy growing condition

U.3 **ROADWORK**

U.3.1 **Filling**

Filling under roads etc shall be of inert material having a maximum plasticity index of 10, free from large stones etc spread, levelled, watered and compacted in layers not exceeding 200mm thick to a density of 98% Mod AASHTO

U.3.2 **Preparation of sub-grade**

The sub-grade shall be prepared by scarifying for a depth of 150mm and compacting to a density of 98% Mod. AASHTO, including trimming to the correct levels and grades

U.3.3 **Base course**

The base course shall consist of crusher run stone compacted to a density of 98% Mod. AASHTO and finished to the correct levels and grades

U.3.4 **Weed killer**

The completed sub-grade shall be treated with an approved total weed killer

U.3.5 **Bituminous premix road surfacing**

Before spreading the premix material, the base course shall be swept clean and free from all dust, dirt and loose particles, lightly wetted and sprayed with a prime coat of cutback bitumen complying with SANS 308 at the rate of 1 litre/m²

The material shall consist of semi-gap graded crushed stone aggregate having the following grading:

Sieve size (mm)	% By mass passing sieve
13,2	100
4,75	45-60
2,36	42-55
1,18	40-52
0,3	25-45
0,075	5-12

The aggregate shall be mixed with bituminous road tar binder complying with SANS 748 at the rate of 1m³ of stone to 120 litre of emulsion at atmospheric temperature

The binder shall be added to the stone and mixed until the stone is uniformly coated. Thereafter 5% of clean, dry quartzitic sand shall be added and mixed until evenly distributed through the mixture

The premix shall be applied only after the primer has dried out completely and shall be spread immediately after mixing and rolled on the same day

Spreading shall be done evenly over the prepared base course to a loose depth sufficient to ensure the consolidated thickness specified

Rolling shall commence as soon as the binder has set sufficiently, followed after three days by a final rolling

U.3.6 Precast concrete block road surfacing

Paving blocks shall be precast concrete blocks complying with SANS 1058

Blocks shall be laid to true levels and grades on and including a 25mm thick layer of river sand with joints exceeding 2mm and not exceeding 6mm wide

After laying, the paving shall be compacted by means of a vibrating plate compactor, with joints between the blocks filled in, after compaction, by sweeping in fine sand

Infill areas at edges of paving constituting less than 25% of a full block unit and of 25mm minimum dimension shall be filled with Class C prescribed mix unreinforced concrete with top surface trowelled smooth to match blocks. Smaller areas shall be filled with 1:4 cement mortar

U.3.7 Precast concrete kerbs and channels

Precast concrete kerbs and channels shall comply with SANS 927, generally in 1m lengths and finished smooth from the mould on exposed surfaces. Kerbs and channels shall be bedded on and jointed in 1:3 cement mortar and pointed with keyed joints. Bases to kerbs shall be Class B prescribed mix unreinforced concrete

U.3.8 Process control tests

The Contractor shall be responsible for carrying out all necessary process control tests on the density and moisture content of the compacted sub-grade, base course, etc to ensure that the required compaction is being attained

U.4 FENCING ETC

U.4.1 Materials

Materials and workmanship shall comply with the following specifications and requirements :

Wooden poles, droppers, guardrail posts and spacer blocks	SANS 457-2&3
Zinc-coated fencing wire	SANS 675
Prefabricated concrete components for fencing	SANS 1372
Chain-link fencing and its wire accessories	SANS 1373

Fasteners SANS 1700

Anti-intruder fences CKS 451

Metal droppers and standards CKS 451

U.4.2 **Galvanized wire**

All galvanized wire shall be zinc coated wire with Class B zinc coating. Straining wire shall be 4mm diameter galvanized mild steel wire. Tie wire shall be 1,6mm diameter galvanized mild steel wire

U.4.3 **Plastic coated wire**

Plastic coated straining wire shall be 3,15mm diameter Class C galvanized mild steel wire plastic coated to an overall diameter of 3,95mm

Plastic coated tie wire shall be 1,8mm diameter Class C galvanized mild steel wire plastic coated to an overall diameter of 2,5mm

U.4.4 **Galvanized barbed wire**

Galvanized barbed wire shall be 2,5mm diameter mild steel double strand reverse twist zinc coated barbed wire with Class A zinc coating

U.4.5 **Galvanized wire mesh**

Galvanized wire mesh shall be 50mm mesh chain link netting of 2,5mm diameter Class C galvanized mild steel wire

U.4.6 **Plastic coated wire mesh**

Plastic coated wire mesh shall be 50mm mesh chain link netting of 2,5mm diameter Class C galvanized mild steel wire plastic coated to an overall diameter of 3,25mm

U.4.7 **Galvanized welded wire mesh**

Galvanized welded wire mesh shall be fabricated from pre-galvanized wires to rectangular pattern welded together at each intersection using a welding method which forms a zinc oxide protective coating at each intersection

U.4.8 **Razor wire**

Razor wire shall be fabricated from 2,5mm diameter galvanized high tensile steel wire fitted with razor barbs formed of 0,5mm galvanized steel strip clipped on at 37,5mm centres

U.4.9 **Metal droppers and standards**

Droppers shall be of ridged T-section mild steel with a mass of not less than 0,55kg/m. Standards shall be of I-section mild steel with a mass of not less than 3kg/m or of ridged edge Y-section mild steel with a mass of not less than 2,5kg/m, and shall be driven 600mm deep into the ground

Droppers and standards shall have either galvanized, sprayed metal or painted finish as described in the items and in accordance with CKS 451. In addition, those surfaces of standards embedded in the ground shall be coated with bitumen

U.4.10 **Metal posts and stays**

Posts and stays shall comply with CKS 451 and shall be of black galvanized mild steel tubing as specified

Straining posts shall be of 108mm outside diameter x 3mm wall thickness tubing, each with a 300 x 300 x 5mm thick mild steel sole plate and a steel cap welded on

Intermediate posts shall be of 50mm outside diameter x 2,5mm wall thickness tubing, each with a 230 x 230 x 5mm thick mild steel sole plate and a steel cap welded on

Stays for straining posts shall be of 50mm outside diameter x 2,5mm wall thickness tubing, each with a 230 x 230 x 5mm thick mild steel sole plate welded on and fixed raking with top end flattened, bent, holed and bolted to straining post with and including a 5mm diameter galvanized mild steel bolt with nut and washer

Posts and stays shall have either galvanized or painted finish as described in the items and in accordance with CKS 451. In addition, sole plates and portions of posts and stays embedded in ground shall be coated with bitumen

U.4.11 Timber posts, stays and droppers

Timber posts shall be 125mm diameter, timber stays shall be 100mm diameter and timber droppers shall be 30mm diameter

U.4.12 Prestressed concrete posts and stays

Prestressed concrete posts and stays shall be finished smooth from the mould and uniformly stressed by means of high tensile longitudinal prestressing wires with concrete cover to wires of not less than 20mm

Corner and straining posts shall be 100 x 100mm and intermediate posts and stays shall be 75 x 75mm. Stays shall be fixed raking with top end splayed and glued to posts with a suitable epoxy compound

U.4.13 Bolts, nuts and washers

Straining eye bolts, hinge bolts, bolts, nuts and washers shall be galvanized

U.4.14 Precast concrete fencing

Precast concrete fencing over sloping terrain shall be stepped to suit terrain, including the use of increased lengths of posts as necessary, excavation, etc

U.4.15 Concrete bases

Bases in ground for posts, stays, etc shall be of Class B prescribed mix concrete with tops 100mm below surface of ground

Sizes of concrete bases for posts, stays, etc shall be as follows:

Straining and gate posts	–	450 x 450 x 700mm deep
Intermediate posts	–	300 x 300 x 600mm deep
Stays	–	600 x 300 x 500mm deep

U.4.16 Security overhangs

Where fencing is described as having a security overhang, the posts and standards shall have angular (single arm) extension arms

Extension arms shall be attached to the posts and standards by welding in the case of steel and by spiking in the case of timber

Concrete extension arms shall be cast integrally with the post or standard

Barbed wire to security overhangs shall be tightly strained and wired at each intersection with extension arms and shall have barbed wire braces at 450mm centres between standards, posts, etc wired onto the barbed wire and the top straining wire

U.4.17 Gates

Gates shall be formed of 40mm outside diameter x 2,5mm wall thickness mild steel tubular framework with welded joints, strongly braced as necessary and filled in with wire mesh as described above, properly strained and securely bound to framework with tie wire



**PHASE 14: STORM DAMAGED PROGRAMME: REPAIRS AND RENOVATIONS TO STORM
DAMAGED SCHOOLS THROUGHOUT THE PROVINCE OF KWAZULU-NATAL: SOUTHERN
REGION: CLUSTER 155: EMGANGENI SECONDARY SCHOOL. OPEN BIDS**

ANNEXURE 2

GENERAL ELECTRICAL SPECIFICATIONS

GENERAL ELECTRICAL SPECIFICATION

(ALL IN CONTRACTS)

1. CONDUIT AND CONDUIT ACCESSORIES

1.1 Conduit

Conduit shall be of steel galvanised internally and externally, either solid drawn, or welded and not less than 20 mm diameter, with all rough edges removed. All tube ends removed. All tube ends are to be reamed. With screwed conduit one threaded end is to be fitted with a coupling and the other end is to be protected against damage.

UPVC conduit may only be used if permitted by the Head : Works and only in those areas which he may specify. In this case this conduit shall be according to SABS 950.

Conduit accessories, which are secured to the conduit by means of lugs, screws or setscrews, are not acceptable.

General requirements of conduiting to SABS IEC 60614 (1).

Metal conduits shall be fully in accordance with SABS 1065 PART I.

1.2 Conduit Accessories

All conduit accessories shall be galvanised both internally and externally and comply with SABS 1065 – PART II.

All screwed conduit fittings shall be of malleable cast iron.

Where fittings are fitted with covers, the covers shall be of galvanised pressed steel secured with brass screws.

1.3 Flexible Conduit

Flexible conduit shall be of the plastic covered metal type complete with brass connectors to the approval of the Head : Works.

2. INSTALLATION OF CONDUIT

2.1 General

Except where cables are specified for certain circuits, the installation(s) shall be tubed throughout in steel conduit. Split conduit is not permitted. All conduits shall, wherever possible, or unless otherwise specified or agreed, be concealed in the structural work.

Except where agreed or otherwise specified or indicated on the drawings, all conduit to points shall run via the ceiling and floor slabs or roof space. In damp situations and where exposed to the weather, the conduits shall be so installed as to avoid, as far as possible, the condensation of moisture within them. All running joints are to be painted with an approved metal primer.

Mechanical and Electrical continuity must be maintained throughout the installation. Each length of conduit and every conduit fitting must be inspected for defects and all sharp edges or burrs must be removed before it is installed. All joints are to be tightly fitted together.

Running joints with long threads, where used, are to be fitted with a lock nut and the running thread shall not be longer in length than a coupling and lock unit.

In conduits smaller than 32 mm elbows and normal bends are not to be used but conduits are to be set to the required angles.

Flexible connections between conduit and appliance or other equipment shall be by means of flexible tubing (see Par 1.3).

No wiring shall be drawn into conduits until the conduits have been installed.

Where more than one socket outlet is connected on a circuit, the conduit shall be looped from the one outlet box to the following outlet box.

All switch-boxes, socket outlet boxes and any other purpose made metal box including distribution board trays shall be suitable treated against corrosion before installation with "Rustodian" or other approved metal primer.

All conduits shall be securely fixed into chases, and all flush switch and socket outlet boxes must be firmly embedded in cement mortar.

The Contractor shall make himself familiar with the positions of all fittings, such as blackboards, pinning boards, cupboards, shelving, worktops, etc, before commencing the conduit installation. The position of switches and socket outlets as indicated on the drawings are approximate only. The Contractor must verify that the final position of these will not be covered by the installation of the fittings referred to above, or come midway between the junction of any dados and upper wall finishes.

No extras will be entertained for moving switches or socket outlets as a result of the Contractor's failure to verify the final positions of the fittings or type of wall finish.

2.2 **In Roof Spaces**

The conduit in roof spaces shall be installed parallel or at right angles to the roof truss members and shall be secured at centers not exceeding 1,2 m by means of galvanised saddles nailed to the timbers with galvanised clout nails. Crampets will not be allowed.

Crossing of conduits is to be avoided wherever possible. Where unavoidable, one conduit must be neatly set over the other. Where a number of conduits have to run back to the distribution board or switchboard, they shall run parallel to the distribution board or switchboard, and at saddle distance to each other wherever possible.

Conduit runs from distribution boards shall terminate in fabricated sheet steel draw boxes installed in the roof above the distribution boards. Each draw box shall be fabricated from 1,6 mm galvanised sheet steel with welded corners and

suitably treated against corrosion with "Rustodian" or other approved primer and finished in aluminium paint.

Each draw box is to be fitted with slip-on lid with a 13 mm skirt. The box shall be 75 mm deep, shall be rectangular in shape and the size of conduits entering or leaving the box. Conduits shall be fixed to the box by means of couplings and brass male bushes or lock nuts and brass bush-nuts.

Conduit droppers shall be neatly cut into timber wall plates and set to face the right direction. All sets must be uniform. Conduits may be set at angles only where droppers or ceiling points are within 230 mm of roof members.

No conduits are to be run over the top of gangplanks or trapdoors.

Draw-in boxes with metal covers shall be provided where required and shall be installed near the gangplanks, if any. All inspection conduit fittings in open roof spaces shall face upwards to facilitate wiring and to permit easy inspection. Three-way conduit boxes shall be used for tee-off purposed in open roof spaces. Inspection tees are not to be used except where otherwise agreed or specified.

All conduits extended into a roof space with a roof clearance of more than 900 mm shall be set onto the beam and extended into the roof for a distance where there is sufficient clearance. Under flat roofs or where there is less than 900 mm clearance, the conduit shall be installed as specified for tubing in concrete slabs, right angle bends should be kept to a minimum and the shortest route taken.

Where false ceilings occur they shall be tubed as called for in the detailed specification. Conduits in restricted spaces and run as for concrete slabs must however, be installed in a neat and orderly manner.

Conduits to ceiling points for all types of fittings must be firmly supported and shall terminate in a back entry conduit box. The conduit box shall be taken through to the face of the ceiling and finish flush. Where the ceiling brandering interferes with the installation of the ceiling point specified, the Contractor must trim the brandering to allow the conduit box to be taken through to the face of the ceiling as specified. Luminaires must be bonded to the conduit box by means of metal threaded screws.

2.3 **In Concrete Slabs**

In order not to delay building operations, the Contractor must ensure that all conduits and conduit fittings, which are to be cast in concrete, are laid in good time. The Contractor shall have a competent Electrical Artisan standing by during casting of concrete, etc, to ensure that the conduit boxes are not damaged during casting of concrete.

Draw boxes, expansion joints boxes and round conduit boxes are to be provided where necessary.

Deep type conduit boxes shall be used for side entering conduits and normal shallow boxes may be used for back entry conduits. No elbows, bends or sharp sets will be allowed in concrete slabs except in cases of conduits of 40 mm diameter or when larger sweeping bends will be permitted.

Common drawn and/or inspection boxes shall be used where there is more than one circuit involved. They shall be installed in lavatories, storerooms, or other inconspicuous places. Covers shall be of hardboard neatly finished to match the finished ceiling or wall surface, and shall be fitted parallel to the wall or ceiling.

All boxes, etc. are to be securely fixed to the shuttering to prevent displacement when concrete is cast. All conduits must be laid off the deck, supported and secured at regular intervals and installed as close as possible to the neutral axis of concrete beams and slabs.

Expansion joints shall be shown on layout drawings and shall consist of a metal box in which one conduit is fixed and the other capable of movement with the building's expansion and contraction. Earth continuity of these joints shall be maintained by means of stranded copper conductors bonded to the conduits in the box as shown on the drawing.

Earth conductors and clamps buried in concrete are not permitted.

Conduits must be spaced sufficiently apart to allow for proper concreting. All joints shall be painted with an approved metal primer after completion of the tubing installation, prior to the concreting. All exposed parts of the conduit installation shall be suitably, protected against corrosion at the discretion of the Head : Works.

Before any concrete slab is cast, all conduit droppers to switchboards shall be neatly spaced and rigidly fixed.

2.4 **Surface Work**

All conduit must be plumbed and leveled and only straight lengths shall be used.

In cases where doorframes are out of plumb, or fittings, beams etc, are out of level, the conduit shall be run parallel with the doorframes, fittings, beams etc.

No threads shall be visible when the conduit installation is complete, except on running couplings.

Running couplings shall only be used where unavoidable and shall be fitted with a sliced coupling as a lock nut.

No inspection or normal bends are to be used on surface work, except with the approval of the Works Inspector and where conduits of 32 mm diameter or larger are used. Conduits shall be set uniformly and inspection couplings shall be used where necessary.

Fittings, tees, boxes, couplings, etc, are to be cut into the surface to allow the conduit to fit flush against the surface or alternatively spacer bar saddles may be used. Conduit is to be bedded into any irregularities to avoid gaps between the surface and the conduit.

Double sets, where used, shall be parallel with no twists and shall be as short as possible. All conduits, which terminate at metal trays, boxes, industrial switches and plugs shall do so by means of couplings and male bushes. No couplings will be permitted in droppers of lengths less than 3.6 m.

Where crossings of conduits is unavoidable, purpose made metal boxes shall be used. The length of the box is to be 8 times the diameter of the largest conduit, the width one and half times the sum of the diameter of all the conduits, and the depth one and half times the diameter of the largest conduit with a minimum depth of 50 mm. The box shall be fitted with a neatly fitting cover and the finish shall be in keeping with the general layout.

Where a number of conduits are to be installed in parallel they shall be evenly spaced and grouped under one purpose made saddle. Conduit spacing shall not exceed 10 mm. The purpose made saddle shall be made of 25 x 2 mm galvanised steel strip or other approved material, formed to suit the curvature of the various conduits and shall be drilled and fixed by means of screws between. Saddles shall be spaced at intervals not exceeding 1.8 m, except for conduit droppers, which shall be saddled centrally between ceiling and accessory box. All saddles are to be secured to the wall by means of black japan or brass rounded head screws. Distribution boards, draw boxes, industrial switches and plugs, etc, shall be neatly recessed into the surface of plastered walls to avoid double sets or alternatively spacer bar saddles may be used. On face brick walls the conduit shall be tightly set into the switch or plug.

In situations where there are not ceilings, the conduits are to be run along the wall plates and tie beams.

No wiring is to be carried out until the tubing has been inspected and approved.

Where spacer bar saddles are used, these shall be installed at centers of 1 m for horizontal and 1.5 m for vertical runs.

All conduits shall be painted with an approved enamel paint to match the background colour.

2.5 **Future Extensions**

In roof spaces with a minimum clearance of 900 mm, switch and plug drips for future use are to be set 300 mm in the correct direction and shall be threaded and fitted with plugged couplings. Where the roof over a slab is to be removed for future expansions, conduits for future use are to terminate 40 mm above tie beams and shall be threaded and fitted with plugged couplings.

Where future extensions are to be below slabs, all switch, socket outlet and other conduit droppers are to terminate 130 mm below slabs or beams with conduit ends threaded and fitted with plugged couplings.

Where provision is made for future extensions to a concrete slab, all conduits required for future use are to project 130 mm from the slab. Conduit projections are to be painted with an approved anti-corrosive paint and must be fitted with plugged couplings.

All switch, plug and other outlet boxes required for future use shall be fitted with approved blank cover plates.

Unused lighting outlet boxes are to be fitted with round hardboard or plastic covers with brass cover screws, which shall fit flat on the finished ceiling.

2.6 **Fixing of Conduits**

Conduits shall be fixed to switch and socket outlet boxes by means of couplings and brass male bushes or lock nuts and brass bush nuts. Couplings and male bushes to be used on all surface work.

2.7 **Chases and Building Work**

Except where otherwise specified conduits, switch boxes, plug boxes and distribution boards are to be built into the brick walls by the Contractor. It will, however, remain the responsibility of the Contractor to ensure that the above-mentioned boxes and distribution boards are correctly built in and are firmly bedded and cemented into the walls, plumb and square.

The Contractor shall, unless otherwise specified, do all necessary chasing and cutting of bricks. All electrical materials (e.g. conduits up to 40 mm for UG cables, conduits, conduit boxes, distribution boards etc) must be supplied by the Contractor who must arrange to have these on site, and positioned when required for the building work. A competent Electrical Artisan must be in attendance and ensure that the conduits etc are correctly installed and positioned.

The Contractor is to ensure that tubing installed in chases is securely nailed and covered by a layer of 5:1 mixture of coarse sand and cement, finished flush with brickwork and that switch and plug boxes finish flush with the finished wall surface.

The Contractor is to ensure that below distribution boards connected by means of under-ground cables, a 230 mm wide by 115 mm deep cavity in the wall from the cable pipe to the distribution board is to be provided by the Contractor, or alternatively, cable sleeves as specified.

3. **PLUGGING OF WALLS**

Only approved plastic plugs shall be used to secure conduit or equipment up to 5kg mass. The use of round-headed screws only will be permitted.

Heavier equipment shall be secured by means of approved expansion bolts.

Wood plugs and any plugs in the joints in brick walls are not permitted.

4. **FIXING TO CONCRETE CEILINGS**

Ceilings mounted equipment other than luminaires shall be secured to concrete ceilings by means of expansion bolts, shot bolts or "Robot" tools bolts or as expressly specified for the service.

5. **WIRING**

5.1 **PVC Insulated Single Core Medium Voltage Conductor**

The conductor is to be of high conductivity copper wire insulated with Polyvinyl Chloride. The cable shall be finished in the required colours and shall be in accordance with SABS 1507 and 1574.

Circuit wiring shall be of the Loop-in system and no wiring joints in the conduit or conduit fittings will be permitted. Not more than two conductors of a kind will be allowed at any outlet point. The end strands of cables, whether single or looped which have to be connected to terminals of switches, plugs, lamp-holders, fittings and distribution boards, etc, are to be tightly twisted together. Cutting away of wire strands of any cable will not be allowed. Only one circuit in any one conduit will be permitted unless otherwise specified.

Conductor sizes shall be as follows except where otherwise specified:

Lighting circuits	1,5 mm ²	
Bells circuits	1,5 mm ²	
Clock circuits	1,5 mm ²	
Incinerator circuits	2,5 mm ²	
Ironing circuits	2,5 mm ²	with 2,5 mm ² insulated earth wire
Plug circuits	4,0 mm ²	with 2,5 mm ² insulated earth wire
Geyser circuits	4,0 mm ²	with 2,5 mm ² insulated earth wire
Heater circuits	4,0 mm ²	with 2,5 mm ² insulated earth wire
Stove	10 mm ²	with 6,0 mm ² insulated earth wire
Motor circuits		
Up to 4kW single phase	4,0 mm ²	with 2,5 mm ² insulated earth wire
Up to 11kW three phase	4,0 mm ²	with 2,5 mm ² insulated earth wire

To avoid deformation of PVC insulated cables at temperatures in excess of 57° C, they shall not be brought directly on to the terminals of appliances such as electric heaters, or any other electrical appliances or apparatus (including luminaires) which have a temperature in excess of 57° C. They shall terminate in a suitable terminal box as near to the appliance or fittings as possible and connect up from thereon, with heat resistant conductor.

6. MOUNTING AND POSITIONING OF LUMINAIRES

Luminaires and installation to comply with SABS 1464 Parts 1 to 22 and IEC 598-1 and IEC 60598 as applicable.

The contractor shall, in the case of board and acoustic tile ceilings (i.e. as opposed to concrete slabs), ensure that the luminaires are symmetrically positioned with regard to the ceiling pattern.

The layout of the luminaires as indicated on the drawings shall be adhered to as far as possible. The exact positions must be confirmed on site with the Head : Works.

Except where otherwise specified, pendant luminaires are to be mounted with the bottom of the fittings 2,5 m above finished floor level, mounted on either metal discs or wood blocks.

Under no circumstances shall cover strips be cut to accommodate wood blocks. Wood blocks must be neatly slotted to fit over cover strips and are to be secured by a minimum of two screws, which shall penetrate at least 25 mm into solid wood. Ceiling cover strips shall be neatly cut to accommodate fluorescent luminaires.

Where ceilings are raked, all incandescent luminaires are to be mounted on shaped leveling wood blocks securely fixed to the ceiling. Batten holders shall be secured to woodblocks by suitable brass screws. Fluorescent luminaires are to be mounted direct on raked ceiling without leveling blocks.

Fluorescent luminaires to be mounted on concrete ceilings shall be screwed to the outlet boxes and additionally supported by means of 50 x 6 mm expansion bolts. The bolts are to be $\frac{3}{4}$ of the length of luminaires apart.

Where a number of luminaires are installed end to end, outlet points must be provided after every second luminaire unless otherwise indicated on the drawing. The luminaires are to be joined together by means of 20 mm conduit nipples, lock nuts and male brass bushes, and the wiring led through the channels of the luminaires. The Contractor shall ensure that all such rows are correctly lined up and that the rows are parallel with the relevant building line.

The luminaires are to be jointed together by means of 20 mm conduit nipples, lock nuts and male brass bushes, and the wiring led through the channels of the luminaires. The Contractor shall ensure that all such rows are correctly lined up and that the rows are parallel with the relevant building line.

Incandescent luminaires are to be screwed directly to outlet boxes in concrete slabs and in board ceilings. In board ceilings the conduit box and the conduit shall be secured to the timberwork of the ceiling in such a manner that it shall support any incandescent luminaire, which is designed to be fixed to a normal conduit box.

Fluorescent luminaires shall be secured to board ceilings by means of the conduit box and 6 mm bolts passing through the boards and brandering.

7. **BATTEN HOLDERS**

B.C. batten holders shall be of brass or moulded plastic reinforced type complete with shade ring. The batten holders shall comply with SABS IEC 60238 and SABS IEC 61184. All lamp holders are to have brass terminals with screw type connection.

8. **LAMP HOLDERS**

Edison screw lamp holders : SABS IEC 60238

Bayonet lamp holders : SABS IEC 61184

Lamp holders for tubular fluorescent lamps : SABS IEC 60400

B.C. screwed lamp holders shall be of brass 20 mm E.T. complete with shade ring and shall comply with SABS IEC 60238 and SABS IEC 61184 with screw type connection terminals.

9. **SWITCHES AND SOCKET OUTLETS**

Switches SABS IEC 60669 as applicable and socket outlets SABS IEC 60884 as applicable shall be of the most modern manufacture and bear the SABS mark.

Flush switch and plug cover plates shall, unless otherwise specified, be of anodized aluminium of thickness not less than 0,9 mm, satin or other approved finish as directed and otherwise to be fully in accordance with SABS IEC 1084 for cover plates and SABS 1085 for wall boxes.

10. **POSITIONS OF SWITCHES AND SOCKET OUTLETS**

Except where otherwise specified, lighting switches and socket outlets are to be installed 1,4 m above finished floor level.

All mounting heights specified are to be measured from finished floor level to the bottom of the outlet box.

Where the lower portion of the wall consists of face brickwork and the upper portion of plastered finish, switches and socket outlets are to be mounted in the plastered surface, provided that the lower edge of the plasterwork does not exceed a height of 1,5 m above finished floor level in which case the switches or socket outlets are to be installed in the face brick dado.

Where socket outlet and switch boxes have been installed with fixing lugs below finished wall surface, only approved distance pieces required to compensate for the recess shall be used. The lengths of distance pieces are not to exceed 15 mm.

Unless otherwise approved, light switches adjacent to doors are to be installed at the lock side of the door. Where the lock position is not indicated on the drawings, its position shall be ascertained before the switch box is installed. Switches are to be installed 150 mm from the reveal, or centrally if there is a fitting near the door.

All switch and socket outlet boxes shall be installed plumb, and built into the wall with a 1:1 mixture of cement and sand.

Industrial type switches and socket outlets shall be neatly recessed into the surface of plastered walls to avoid sets or alternatively spacer bar saddles may be used.

Deep type boxes may be used where switches or socket outlets are back to back, but where one side only is to be utilized at the time and the other is for future use, the side for future use shall be suitably covered with a metal cover plate.

11. **LOW TENSION SWITCHBOARDS**

Low Voltage switch gear and control gear to comply with SABS 1473 and SABS IEC 60947 and SABS 60349.

Where switchboards are to be installed in switch rooms or switch cupboards, the Contractor must ensure that the boards are manufactured to suit the dimensions of the rooms or cupboards.

Low tension switchboards shall be specified in detail for each service, but shall generally conform to the following:

They are to be of strong and rigid construction, with suitable angle, channel or folded steel framework. They are to be flush fronted and totally enclosed with sheet steel panels suitably formed at the edges and reinforced to prevent distortion. Unless otherwise directed, all front panels must be at least 2 mm thick

and all other panels at least 1.6 mm thick. Panels are to be secured to the framework with studs and chromium plated dome nuts (self-tapping and similar screws are not permitted).

Switches, etc, are to be mounted on metal frames within the boards to give flush front panels. Equipment of normally surface mounted types such as energy meters, time switches and contractors, are to be mounted on inner metal trays behind hinged front panels. In the case of supply authority meters the hinged front panels must have transparent inserts.

All metal work of the boards must be thoroughly degreased, primed with PA 10 self etching primer and finished with one coat of undercoat and two coats of electrical orange high gloss enamel, unless otherwise specified.

All accessible current carrying parts, bus-bars, connecting strips, collector bars, etc, are to be adequately insulated in phase colours and suitably braced to withstand projected fault currents.

Connecting strips and collector bars must be of sufficient cross sectional area to carry full rated current of the switches served, irrespective of the fuse or trip rating.

The complete distribution board including bus-bars must be suitably constructed to withstand fault currents specified.

Connections to bus-bars are to be made by means of lugs suitably bolted and locked with high tensile bolts and connections to lugs must be effected by means of a crimping tools.

Incoming and outgoing bus-bar studs, where required, must be suitably insulated where they pass through panels of the board, and firmly supported within the board.

Where applicable, incoming and outgoing collector bars for cables in parallel must so arrange that the multiple cable ends can be connected to the bars with reasonably short tails which do not have to cross.

Cable supports must be placed at suitable heights having regard to the bending radius of the cables concerned and convenience in making off.

Wall-mounting and floor-standing back to wall type boards must be provided with full easy access to all equipment and wiring without any necessity of disconnecting or removing of any of the equipment mounted in the board.

Clear visible indication of all switch positions must be provided and the switches must be clearly labeled as directed by the Head : Works.

The details of construction proposed, and the Head : Works must approve all equipment of switchboards: Works before manufacture is commenced.

12. **DISTRIBUTION BOARDS**

12.1 **Approval**

The Head : Works must approve the details of construction proposed and all equipment within distribution boards: Works before manufacture is commenced.

12.2 **Flush Mounting Distribution Boards**

These shall be generally manufactured in accordance with SABS 1765. The board shall consist of two panels fitted side by side with common bonding tray and attached to a common architrave. One panel shall accommodate all single phase MCB's and the second panel shall accommodate the main isolator, main bus-bars and the triple pole MCB's. Chassis shall be of rigid channel section rust proofed steel with clip-on trays for the single pole MCB's. The main isolator is to be mounted at the bottom of the second panel with the triple pole circuit breakers above.

12.3 **Surface Mounting Distribution Boards**

These shall be generally manufactured in accordance with SABS 1765, with two panels as for flush boards.

12.4 **Single Phase Distribution Boards**

Single Phased boards shall be generally constructed as three phase boards except they shall have a single panel. Single phase boards shall be mounted with the bottom of the architrave 1,5 m above finished floor level unless specifically directed otherwise.

12.5 **Distribution Board – In Roof Spaces**

Where distribution boards are installed below a roof space, a minimum of 2 x 20 mm and 1 x 25 mm spare conduits are to be run from the distribution board into the roof space.

13. **METER BOXES**

The meter box shall be mounted with the top 1,7 m above finished ground level. Surface mounted meter boxes shall be secured by at least 4 x 10 mm expansion bolts.

Service cables entering the meter box shall be protected by means of a suitably sized galvanised pipe extended 450 mm below the ground surface and securely saddled to the wall and bonded to the meter box.

14. **CONNECTIONS TO OUTLETS**

14.1 **General**

Where connectors are used to connect to the wiring of luminaires and other appliances, the connectors shall comply with SABS Specification 1239.

14.2 **Connection to Stoves**

14.2.1 **General**

The connection to an electric stove, unless otherwise specified shall consist of 2 x 10 mm² conductors and a 6 mm² insulated earth wire in 25 mm conduit. The stove shall be controlled by a 60 Amp micro gap switch of approved make and the

connection shall be by means of a 45 Amp 3 pin stove plug of the "Cape Town" type. Cable ends, which are to be connected to the stove, shall be equipped with suitable soldered or crimped lugs. The connection between the stove plug and stove shall be by means of flexible conduit.

Except for high school domestic science unit kitchens (see Clause 14.2.2), the conduit shall be chased into the wall and fitted with a switchbox for housing the micro gap switch and a 25 mm circular conduit box over which the stove plug will be mounted. The stove plug shall be fitted with an adaptor plate and shall be screwed directly to the conduit box by means of round head metal screws. The plug outlet shall face downward.

The stove plug and switch shall be mounted 430 mm and 1,4 m respectively above finished floor level unless otherwise specified or indicated on the drawings.

14.2.2 **Stove Connections in High School Domestic Science Unit Kitchens**

Connections to stoves in High School Domestic Science Unit Kitchens, where the stoves are situated in front of a fitting, shall be generally as specified in Clause 14.2.1 except that the 25 mm diameter conduit shall be run in the floor slab, from the distribution board to a position to the right of the stove. A pedestal, which is complete with a 45 Amp 3 pin "Cape Town" type cooker plug, mounted on the back, shall be fitted over the conduit and securely bolted to the floor by means of expansion bolts. The plug circuit, which passes through the pedestal, is to be on a separate circuit.

14.3 **Connections to Hot-water Cylinders**

The connections to hot-water cylinders not exceeding 3kW loading shall consist of 2 x 4 mm² PVC conductors and 1 x 2,5 mm² earth wire in a 20 mm diameter conduit from the distribution board. The conduits shall be chased in the wall and shall terminate at the side of the cylinder in a box over which is to be mounted a double pole isolator with pilot light.

The final connection between the isolator and cylinder shall be by means of silicone heat resistant conductors in 20 mm diameter flexible conduit.

Connections to roof mounted hot-water cylinders shall generally be as specified above with an isolator with pilot light mounted adjacent.

14.4 **Connections to Power Points**

Connections to electric motors and fixed apparatus to vibration shall, unless otherwise specified or indicated on the drawings, have final connections consisting of conduit and flexible tubing or reinforced hose in accordance with Clause 1.3 of this specification and PVC cables and earth wire of the required size.

An isolator shall protect all fixed apparatus and where necessary a starter fitted with a no-volt coil and overload protection adjacent to such apparatus.

Power points for connection of fixed apparatus to be installed by others, shall terminate in an approved type wall mounted switch unless otherwise specified.

The minimum conductor size for all power points shall be 4 mm² unless otherwise specified.

14.5 **Underground Service Connection**

This clause refers to underground service connections not provided by the Supply Authority.

The service cable and earth wire to be connected at the supply point in accordance with Clause 15.8 of this specification, and unless otherwise specified, shall be laid 600 mm below ground level throughout and otherwise fully in accordance with Clause 15 and all applicable sub-clauses thereof. Cable entries to meter boxes shall be in accordance with Clause 13 and other entries shall be by pipe or duct as directed.

14.6 **Connections to Outbuildings**

Connections to outbuildings shall be made by means of underground cable only, laid in accordance with Clause 15 and all applicable sub-clauses.

Where the cable is run from the roof space of the main building, it shall be enclosed in suitably sized galvanised pipe built into the wall or run surface as directed. Surface run pipes shall be securely saddled at 1,8 m centers. Where the cable connects to the conduit in the roof space, a suitable joint box shall be provided or alternatively the cable may be taken through the roof space, a suitable joint box shall be provided or alternatively the cable may be taken through the roof space with fixings at regular intervals, and down to the main board. At the outbuildings, the cable shall be enclosed in a suitably sized galvanised sleeve pipe built into the wall or run surface and terminated in the distribution board tray.

14.7 **Connection and Mounting of Cable Fed Street/Site Lighting**

Street/site lights shall in all cases, except where otherwise specified, be fed by underground cable. Unless otherwise directed, a suitable terminal board shall be provided in the base of the lighting pole for the connection of the incoming and outgoing cables, the feeds from the terminal board to the fitting shall be as specified.

"Surfix" cable and compression glands shall be installed between terminal board and cross arm/bracket mounted luminaires. The terminal board shall also accommodate a miniature circuit-breaker in the phase connection to the fitting. Poles intended for mounting directly in ground are to be provided with a 300 x 300 mm base plate.

15. **UNDERGROUND CABLES**

1000 volt PVC SWA and 110 Volt PILCA cable and accessories shall be in accordance with the relevant SABS specifications to SABS 1507.

The storage, transportation, handling and laying of underground cables shall be according to the manufacturer's requirements and the Contractor shall have adequate and suitable equipment and labour to ensure that no damage is done to cables during such operation. All cable pipes and ducts entering buildings are to be sealed against the ingress of vermin, water, etc.

15.1 **Trenching**

Cables, unless otherwise specifically directed, shall be laid at a depth of 600 mm below ground level. Trenches shall not be less than 300 mm wide for one to three cables, and the width shall be increased where more than three cables are to be laid together so that the cables may be placed at least 75 mm throughout the run.

The Contractor shall take all necessary precautions to prevent trenching work being in any way a hazard to the public and to safeguard all structures, roads, sewer works, or other property from risk of subsidence and damage.

15.2 **Cable Joints**

Joints in underground cable runs will not be permitted unless unavoidable and at the discretion of the Head : Works. Where cable joints are unavoidable, the cable jointer is to work efficiently and cleanly and so that each end of the cables to be joined may have a minimum of 0,9 m of slack disposed in a loop without stress. Back-filling under joints must be firmly tamped to prevent any subsequent settling.

15.3 **Bedding**

In trenches made in intermediate, hard rock, or boulder material, the cables shall be laid on a 75 mm thick bed of earth and be covered with a 150 mm layer of earth before the trench is filled in. The Contractor to supply all earth required for trench filling.

15.4 **Laying**

Cables shall be removed from the cable drum in such a way that no twisting, tension or mechanical damage is caused, and must be adequately supported at short intervals during the whole operation. Particular care must be exercised where it is necessary to draw cables through pipes and ducts, to avoid abrasion, elongation or distortion of any kind. The ends of such pipes and ducts shall be sealed to approval after the drawing in of the cables.

15.5 **Back Filling**

Back filling after bedding (see Clause 15.3) is to be carried out with a proper grading of the material to ensure settling without voids, and the material is to be tamped down after the addition of every 150 mm. The surface is to be made good as required.

Back filling of cable trenches must not be commenced until after the cable trenches and laid cable(s) have been inspected by the Head : Works. Where a Contractor fails to observe this requirement he may, at the discretion of the Head : Works, be required to re-open such cable trenches for inspection at his own expense.

15.6 **Protection of Cables**

Where so directed by the Head : Works, concrete or other warning covers shall be placed over cables above the top bedding layer. Cable pipes when directed are to be installed at road and other crossings.

15.7 **Marking of Cables**

Cable marking tape is to be supplied by the Contractor and is to be laid 150 mm below ground over a cable run and as may be directed by the Head : Works to give early indication of underground cable runs.

15.8 **Joints and Termination of Cables**

Joints in underground cables and terminations shall be made by means of "Scotch Cast" or other approved epoxy-resin pressure type jointing kits. Low tension PVC cables are to be made off with sealing glands and materials designed for this purpose, which must be of approved make.

15.9 **Sealing of Paper Insulated Cable Ends**

Where cables are cut and not immediately made off, the ends must be sealed without delay. If cables are cut and the ends not immediately made off or sealed, the cable may be rejected and the Contractor will be required to replace it at his own expense.

15.10 **Earth Wires**

Except where specifically directed otherwise, earth continuity conductors are to be run with all underground cables constituting part of a low tension distribution system. Such earth continuity conductors shall be bare copper wire of a cross sectional area in accordance with the Code of Practice 0142 but shall not be less than 4 mm² nor more than 70 mm². The earth continuity conductor is to be bonded to the cable armouring, and to the lead sheath if any, at each termination, as well as to the local earth bard. The earth wire must be secured to the cable at 1,8 m centers.

15.11 **Opening Up of Existing Cables**

Where it is necessary to expose existing buried cables for any purpose, or to excavate in the vicinity of existing buried cables, pipes, etc, every care is to be exercised and only labourers experienced in such work, and duly warned by the Contractor, shall be employed thereon.

15.12 **Definitions for Classifying of Excavation**

- (a) **Soft Excavation** – shall be excavation in material that can be efficiently removed by a back-acting excavator of flywheel power approximately 0,10kW per millimeter of tinned-bucket width, without the assistance of pneumatic tools such as paving breakers, or that can be efficiently loaded without prior ripping or stockpiling by a rubber tyred front-end loader approximately 15T mass and a flywheel power of approximately 100kW.
- (b) **Intermediate Excavation** – shall be excavation in material that requires a back-acting excavator of flywheel power exceeding 0,10kW per millimeter of tinned-bucket width and the assistance of pneumatic tools prior to removal by equipment equivalent to that specified in (a) above.

- (c) Hard Rock Excavation – shall be excavation in material that cannot be efficiently removed without blasting or without wedging and splitting prior to removal.
- (d) Class A Boulder Excavation – shall be excavation in materials containing more than 40% by volume of boulders of sizes between 0,03 cubic meter and 20 cubic meter in a matrix of softer material or smaller boulders.

Note: (1) Excavation of solid boulders or lumps of size exceeding 20 cubic meter will be classified as hard rock excavation.

(2) Excavation of fissured or fractured rock will not be classed as boulder excavation but as hard rock intermediate excavation according to the nature of the material.

(e) Class B Boulder Excavation – shall be excavation of boulders only in a material containing 40% or less by volume of boulders of size between 0,03 cubic meter and 20 cubic meter in a matrix of softer material or smaller boulders.

Note: Those boulders that required individual drilling and blasting in order to be loaded by a back-acting excavator as specified in (a) above, or by a track type front-end loader, will each be separately classed as Class B Boulder Excavation.

16. EARTHING

16.1 Main Earthing

The type of main earthing shall be as required by the Supply Authority, if other than the Head : Works and in any case as directed by the Head : Works who may require additional earthing to meet test standards.

Where required, an earth mat is to be provided, the minimum size, unless otherwise specified, being constructed from copper straps 950 x 25 x 3 mm at 230 mm centers and braced at all intersections. Alternatively or additionally earth rods or trench earths may be required, as the Head : Works may direct, and installed according to his instructions.

All earth electrodes and connections thereto must be approved "in-situ" by the Head : Works before back-filling.

The electrical installation shall not be earthed by means of the lightning arrester earth electrode, if such is included in the installation, but may be bonded thereto.

16.2 Earthing in Installations

The installation shall be effectively earthed in accordance with the relevant sections of the Code of Practice 0142 and the requirements of the Supply Authority.

All hot and cold water and waste pipes are to be effectively bonded by means of 12 x 1,5 mm solid copper tape (perforated tape or wire will not be permitted), clamped by means of brass bolts and nuts. Bonding tapes exceeding 75 mm in

length must be fixed to the wall by means of No. 6 x 20 mm brass screws and plastic plugs not exceeding 150 mm centers. Main earth copper tapes where installed less than 2,5 m from ground level, must be run in 20 mm diameter conduit securely saddled to the wall.

Gutters and down pipes are to be bonded by means of 6 mm round headed brass bolts, with nuts and washers. Self-tapping screws are not permitted.

Connections from the earth bar or terminal on the main board must be made to a visible cold water main, the incoming service conductor, if any, and the earth mat or plate (where such is required) by means of either 12 x 1,5 mm solid copper tape or bare 25 mm² copper wire, or such larger conductor as the Head : Works may direct. From each distribution board separate earth conductors are to be taken to the main earth bar or terminal on the main board. Each conductor shall consist to stranded copper conductors drawn into the conduit together with the distribution board feeders. The size of the earth conductors to be in accordance with the requirements of the Code of Practice 0142 or as specified.

Earthing clips shall be made of not less than 0,9 mm thick copper strips not less than 12 mm wide. They are to be complete with 25 x 7,7 mm brass bolts, washers and nuts and must be constructed so that the clips will fit firmly to the conduit without any additional packing.

Adjustable earth clips are not permitted.

17. **EXISTING BUILDINGS**

17.1 **Occupied Buildings**

Where work is to be carried out in occupied buildings the Contractor must arrange to carry out the installation with as little interruption to services and discomfort to the occupants as possible.

17.2 **Temporary Connections**

Temporary connections shall be provided where necessary for continuity of services, and as directed by the Head : Works. The contractor must ensure that such connections are both electrically safe and free from physical hazard.

17.3 **Old Materials**

Unless otherwise specified all existing materials removed by the Contractor shall remain the property of the Head : Works and are to be handed to the Head : Works.

17.4 **Making Good**

Any damage which may be done to the plaster work, floors, ceilings, wood and paint work, furniture and other equipment in the building, etc, during the progress of the electrical installation shall be repaired and made good by the Contractor to the satisfaction of the Head : Works.

18. **COMPLETION**

18.1 **Balancing of Load**

The Contractor is required to balance the load as equally as possible over multi-phase supplies.

18.2 **Tests**

The installation shall be tested by the Contractor as the service progresses or as required by the Head : Works and upon completion, for earth continuity and insulation. The final test before the taking over of the installation shall be made in the presence of the Head : Works.

The mandatory "Certificate of Compliance" shall be issued by the Contractor to the Supply Authority, with a copy to the Head : Works prior to first delivery being taken.

18.3 **Labelling**

All circuits and apparatus on switchboards shall be suitably correctly labeled by means of engraved plastic labels (white lettering on black), which are to be either bolted or screwed to the equipment panel, or fitted in channeling provided below the switch gear.

Sub-circuits are to be numbered and a legend detailing the circuits is to be framed and fitted to the door of the distribution board.

All other equipment is to be individually labeled to indicate the function.

All switchboards are to be fitted with a label on which the designation of the board is clearly indicated.

A separate engraved label depicting the origin and cable/conductor size shall be fixed below the main switch.

18.4 **Finishes**

Covers for all boxes, expansion boxes, etc, shall be finished to match the paint work of the ceiling or wall surface or as specified.

18.5 **Site Drawing**

On all completed new work or where specifically called for in the Tender Document, the Contractor shall, on completion of the works, submit to the Head : Works, a marked up site plan indicating the exact underground cable reticulation.

19. **POWER DUCTING FOR SCHOOL SCIENCE LABORATORIES**

The ducting shall be "Ductline 3" supplied by Messrs. Lascon Lighting, 102 Malbourne Road, P.O. Box 2479, Durban 4000: Telephone 031-2075081 or other approved.

20. **SPEAKER AND MICROPHONE OUTLETS**

Speaker and microphone outlets are to conform to the following details:

1. Speaker outlet – To have one flat and one round pin.
2. Microphone outlet – To have one round pin only.

Both female and male parts to be supplied and installed by the Contractor.

21. **BELLS AND BUZZERS**

21.1 **Bells**

Bells for schools and hostels shall be 220 Volt AC or 24 Volt DC as specified for the service. They are to be of robust construction encased in a sturdy cast metal weather-proof case. They are to operate on the frequency of the supply. They shall have an adjustable stabilizing spring, gold-silver contact points and 150 mm gongs.

21.2 **Doorbells, Buzzers and Bell Transformers**

These will be as specified for each service.

21.3 **Bell Pushes**

Except where otherwise specified, bell pushes shall be of the flush type suitable for mounting in a standard 100 x 50 mm box. They shall be clearly marked as a bell push and shall be fitted with satin finished anodized aluminium cover plates.

22. **SIGNAL TIMERS**

22.1 **Primary Schools**

The timer shall be designed to automatically signal the start and finish of school periods by the switching of a bell circuit and is to comply with the following specification:

1. The mechanism may be synchronous motor or quartz movement driven with a 24 hour dial or digital time read-out suitable for operation on a 220V 50Hz supply and is to be provided with a spring or battery reserve of a least 24 (twenty four) hours.
2. The unit is preferably to have minute to minute timing for a 24 (twenty four) hour period although 5 (five) minute intervals are acceptable, and is to be provided with Weekend lockout. Signal periods shall be adjustable from 5 – 45 seconds.
3. The unit shall be housed in a metal or plastic case with detachable front cover suitable for wall mounting.
4. Timers with punch tape programming are not acceptable.

22.2 High Schools and Colleges

Timers for these institutions shall generally be as for Primary Schools but are to have at least 3 (three) separate programmes and be fitted with three push buttons for independent manual operations for testing of each programme, plus an on/off switch for each programme, which does not affect the running of the clock.

23. CLOCKS

Electric clocks shall be of the quartz electronic battery operated type, with a dial of 250 mm diameter. The dial shall be white, with distinctive minute markings and chapters shall be black Arabic figures. Time adjustment shall be simple. Where mains operated electronic clocks are specified, these shall be of the synchronous self starting type, suitable for a 200 – 250 V 50 Hz AC supply

24. TIME SWITCHES

The time switch shall consist of a single pole switch with silver to silver or other approved contacts operated by a quartz movement with a 24 hour reserve.

A suitable 24 hour, night and day dial, with hour indicator and two adjustable strikers, one OFF and one ON must be provided. The whole mechanism is to be totally enclosed in a dust proof case.

The current rating shall be required and the switch is to be suitable for operation on 220 volt 50 Hertz AC supply. Time switches used for under floor heating are to be fitted with weekend cut-out.

25. MOULDED CASE CIRCUIT BREAKERS (INCLUDING MINIATURE)

Circuit breakers shall be of the size and type as directed and specified for the service. They shall comply with SABS Specification 156 and SABS IEC 60947-2.

26. SWITCHES: ON-LOAD FAULT MAKING (CIRCUIT BREAKER TYPE) WITHOUT TRIPS

The switches shall be triple pole, hand operated, panel mounting air break type, having continuous current rating as specified and suitable for operation of 380 – 440 Volt 50 Hz AC system.

The contacts are to be of silver alloy and the switch mechanism shall be of the quick-make, quick-break type.

27. SWITCHBOARD EQUIPMENT

Switchboard equipment such as switches, circuit breakers, etc, shall be as directed and specified in the detail specification for the service.

Circuit breaker equipment of SABS IEC 60934.

28. **FUSE-SWITCH UNITS (WITH HRC FUSES)**

The fuse-switch unit is to be of the double pole, or triple pole or triple pole with neutral link type, and of the required current rating, as specified for the service and must be in accordance with BS EN 60947-3.

The fuse links must be fully isolated when the switch is in the open position, and interlocks must be provided to prevent the switch being operated with the cover open.

The fuse links shall comply with SABS Specification 172 and SABS IEC 60269-1 to 4.

29. **BUS-BAR COPPER**

Bus-bar copper must be fully in accordance with Tables A1 and A2 of SABS 1473-2 and SABS IEC 60439-2.

30. **SPECIFICATION COMPLIANCE**

The complete installation shall comply with the requirements of this specification. Should any differences or contradictions exist between this Specification and the detailed requirements for a specific installation, then the detailed requirements shall take precedence.



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ANNEXURE 3

LIGHTNING PROTECTION SPECIFICATIONS

LIGHTNING PROTECTION INSTALLATION

GENERAL SPECIFICATION

1. SATISFACTORY INSTALLATION

The whole of the installation shall be carried out in accordance with:

- (a) The latest S.A.B.S. Code of Practice for the Protection of Structures against Lightning - S.A.B.S. 03 ; SABS IEC 61024 (1) , 61024 (1 -1); SABS IEC 61312 (1) ; SABS IEC 61662 & NRS 042.
- (b) The KwaZulu-Natal Department of Works General Electrical Specification.
- (c) The Municipal By-Laws and any other special requirements as deemed necessary by the Local Supply Authority;
- (d) Local Fire Regulations.

2. S.A.B.S. APPROVED DRAWINGS

SABS Approved drawings are not required for this project.

3. TEST ON COMPLETION

Upon completion of the lightning protection system, the following tests shall be witnessed by an appointed representative of the Employer. The results shall be recorded on suitable test certificates which must be signed by both the Contractor and the Employers representative. A sketch must be included on each test certificate indicating the positions of each earth electrode in relation to some permanent reference point. It must also indicate the positions at which tests were carried out, the type of test and the results of these tests.

3.1 Earth Resistance Test

The Earth Resistance Test shall involve measuring the resistance to earth of each rod-type electrode, or group of rod-type electrodes, or trench earth which would normally be connected to one down-conductor or earth terminal. This test must be made with the electrodes completely disconnected from any part of the structure or lightning protection system.

3.2 Electrical Continuity Tests

(a) External Down-Conductors

Electrical continuity between the lower ends of external down-conductors which must all be disconnected from the earthing system during the test shall not exceed 1 (one) ohm.

(b) Metallic Services

Electrical continuity between any metallic structures of services (e.g. rainwater pipes) which form an integral part of the lightning protection system shall not exceed 1 (one) ohm. These tests should be carried out with all other components of the lightning protection system disconnected from the component being tested.

4. **DESCRIPTION OF MATERIAL**

4.1 **Air Terminals and Down-conductors**

All conductors must be in accordance with the requirements of BSS 1474 or American Standards Specification 6063. All aluminium conductors shall have a cross-section area of not less than 30 mm² (domestic dwelling only) or 50 mm² for all other applications. The dimensions of flat section conductors to be 20 mm x 3 mm. Where conductors are mounted in stand-off guides, the cross-section area of the conductor must be not less than 70 mm² to give adequate mechanical strength.

4.2 **Conductor Guides**

The conductor must be mounted in aluminium alloy guides conforming with the material specification given in 4.1 above. The guides must allow for free longitudinal movement of the conductor to cater for expansion and contraction of the system caused by temperature variation. The minimum thickness of any part of the guide shall not be less than 3 mm. The guides must be securely attached to the structure using two stainless steel screws and plugs, the use of plated screws is not permitted.

The conductor system shall be supported in guides so that an air gap exists at all times between the aluminium and the surface of the structure, the guides being seated upon plastic or other similar insulating material. Should conductors be installed directly upon the surface of concrete or cement plaster, an insulating strip is to be installed over its whole length to prevent contact between the two surfaces. Guides shall be installed to support the conductor at intervals not exceeding 1,2 metres horizontally or 1,5 metres vertically.

N.B.: No part of an aluminium conductor system must be allowed to come into direct contact with concrete or cement plaster as this may cause the aluminium to corrode.

4.3 **Expansion Loops**

Where conductors are installed horizontally without deviation from a straight line over long distances, expansion loops must be provided at distances not exceeding 30 metres. These expansion loops must have a cross-sectional area which is at least equal to that of the conductor.

4.4 **Protection of Down-conductors**

Where external down-conductors are installed in areas which are readily accessible to the public, the lower ends of the conductors shall be enclosed in a semi-rigid insulating material. In the case of a circular section conductor this shall comprise a 2 metre length of 20 mm diameter P.V.C. conduit. This conduit shall be securely attached to the wall by means of galvanized steel saddles fixed with stainless steel screws and plugs, spaced at intervals not exceeding 1 m. Where a flat section conductor is used this shall be covered by a similar length of 25 mm P.V.C. conduit. The lower end of the conduit shall be positioned as close as practicable to ground level, i.e. immediately above an aluminium to copper joint. The ends of the conduit shall not be sealed.

4.5 **Earthing Electrodes**

Earthing electrodes must consist of either copper-clad steel rods not less than 12 mm in diameter and having a minimum copper thickness of 0,20 mm driven into the ground, or a 50 mm² (35 mm² for domestic dwellings) bare copper conductor buried in a trench, or a combination thereof. Where copper clad steel electrodes are used they must have a suitable bond between the steel core and copper exterior to prevent moisture ingress between the two metals. Where it is necessary to extend earth rods, an electrolytically compatible corrosion resistant, coupling device, which prevents ingress or moisture into the joint shall be used. The copper conductor below the down-conductor joint shall be covered by a semi-rigid P.V.C. conduit for a distance of approximately 200 mm above ground and 400 mm below ground.

4.6 **Joints Above Ground**

Circular section aluminium conductors shall be jointed by aluminium ferrules or lugs which are securely crimped into place. Aluminium lugs must be bolted together using 10 mm diameter aluminium bolts and washers. The material specification for these components must conform with that laid down in paragraph 4.1. Alternatively heavily tinned copper lugs and ferrules may be used. The lugs should be joined together by means of 10 mm diameter copper, brass or bronze bolts and washers. Care should be taken to inhibit corrosion where dissimilar metals are used by thoroughly cleaning the surfaces of the metal before assembly and subsequently sealing the joint with an inert tenacious compound or tape.

Flat section aluminium conductors shall be joined by double riveting, using aluminium rivets which comply with the material specification laid down in 4.1. Alternatively 2 x 6 mm diameter stainless steel bolts, nuts and washers may be used. Fold over type bends will not be permitted.

Down-conductors are to be terminated approximately 200 mm above finished ground level. Circular section aluminium is to be jointed to a 50 mm² (35 mm² in the case of domestic dwellings) stranded copper conductor by securely crimping in place two heavily tinned lugs and bolting these together using 10 mm diameter copper, brass or bronze nuts, bolts and washers.

N.B. : Under no circumstances shall aluminium conductors be buried in the ground.

4.7 **Joints Below Ground**

A joint in the stranded copper conductor which forms part of the earthing system must be made by using a crimped copper ferrule clamping (not lugs) using two copper line taps of suitable dimensions, or exothermic welding. The copper earth conductor must be joined to an earth rod by either clamping, using a standard earth rod clamp or copper line tap or by exothermic welding. Joints which are made between dissimilar metals (i.e. copper conductor to galvanized steel water main), must be thoroughly cleaned before assembly. They shall be rendered watertight using waterproof adhesive tape on a suitable compound for a minimum distance of 200 mm in all directions from the joint.

4.8 **Bonds**

Where it is necessary to bond the aluminium conductor to any other metallic surface, this must be done by bolting or riveting. When attaching aluminium to a dissimilar metal the joints are to be thoroughly cleaned and sealed to prevent corrosion.

5. **GENERAL INSTALLATION PROCEDURE**

5.1 **Air Terminals for Non-metallic Pitched Roofs**

Aluminium conductors are to be installed along all ridges of roofs and projections such as dormer windows, etc., terminating at the ends with conductors running downwards over the surface of the roof and the eaves. Non-metallic chimneys must be protected by means of a finial of sufficient length to cover the chimney within a 45° angle struck downwards from its point. Alternatively it should have a conductor installed in the form of a closed loop upon the upper surface. The conductors are to follow the outer contour of the stack and must be bonded at a convenient point to the nearest component of the air terminal system.

N.B. : This bond may run in a horizontal or downward direction, but under no circumstances must any part of it run above horizontal.

Conductors may be dead-ended (i.e. have one end free and unbonded), providing that the length of such a conductor does not exceed 10 metres and that the unbonded end is either at the same level or higher than the bonded end. This technique may be used where ridge conductors are installed over dormer windows, etc.

In all cases where metallic gutters have been installed along the eaves of a pitched roof, these must be bonded to the air terminal system. Where metallic gutters do not exist, however, a conductor must be installed over the surface of the roof at eaves level to which the remainder of the air terminal system is to be bonded, with the following exceptions :

- (a) Where the maximum distance from the ground level to the eaves of the building is less than 4 metres and the pitch of the roof is more than 1 in 2 (27° from the horizontal).
- (b) Where the maximum distances from ground level to the eaves is less then 7 metres and the pitch of the roof is more than 1 in 1,5 (34° from the horizontal).
- (c) Where the distance from the ground level to the eaves is more than 7 metres and the pitch of the roof is more than 1 in 1 (i.e. the included angle at the apex of the roof is less than 90°).

Under these circumstances eaves conductors need not be installed.

Any non-metallic objects which protrude above the general roof lines, such as Cape Dutch gable ends, must be protected as described above with a suitable air terminal system. Any metallic objects which protrude above the general roof line, such as hot water expansion pipes must be bonded as directly as possible to the nearest eaves conductor, gutter or other part of the lightning system.

N.B. : These bonding conductors must run in a horizontal or preferably a downward direction, from the vent pipe, etc., to the lightning protection system.

5.2 **Air Terminals for Metallic Pitched Roofs**

Buildings with roofs covered with electrically continuous metal sheets do not require separate air terminals but must be earthed via down conductors generally as described in 5.6 and 5.7. Any non-metallic objects projecting above the general roof line must be separately protected as described in 5.1 and bonded to the metal roof covering.

5.3 **Air Terminals for Non-metallic flat or Mono-pitched Roofs**

For flat or mono pitched roofs of non-metallic construction the air terminal system must consist of aluminium alloy conductors installed around the outer perimeter of each section of the roof structure.

These conductors must be installed on top of parapet walls if these exist. Lift motor rooms, tank rooms, penthouses, etc., which protrude above the general roof line must have air terminal conductors installed around the outer perimeter of each roof slab or parapet wall. Any metallic objects which protrude above the roof line, such as expansion pipes, signs, flag poles, handrails, etc., must be bonded directly to the nearest component of the lightning protection system as described in 5.1.

N.B. : It is not permissible for the ends of conductors to be bonded directly to the perimeter air terminal system if the latter is installed upon a parapet wall having a height exceeding 500 mm above roof slab level. In these circumstances the conductors are to be bonded directly to the down conductors.

5.4 **Air Terminals for Metallic flat or Mono Pitched Roofs**

Metallic flat or mono pitched roofs do not require separate air terminal conductors, providing that there is electrical continuity between the metallic roofing sheets, (see 5.2). A metallic roof surrounded by a non-metallic parapet wall shall have conductors installed at the top of the parapet wall and these must be bonded to the metallic roof at intervals not exceeding 20 metres. If the parapet wall is clad with metal over its upper surface or a handrail is installed which affords good electrical continuity, separate air terminal conductors need not be installed. Under these circumstances the metal handrail or cladding must be bonded to the metal roof covering at intervals not exceeding 20 metres.

All non-metallic covering such as slates, tiles, asbestos cement sheeting, etc., supported by a steel structure being electrically continuous throughout may be treated as being of a complete metal construction. In these circumstances no separate air terminal system need be installed providing the steel roof structure is bonded to earth at intervals given in 5.5.

5.5 **Down Conductors for Non-metallic Structures**

Down conductors must be installed at regular intervals around structures and to run as directly as possible between the air terminal and earthing system. They must, where practicable, be positioned at the external corners of the structure. The maximum separating distance between down conductors around the perimeter of the structure must not exceed 30 metres. In the case of very tall buildings having a slender base (i.e. chimney stacks, water towers, etc.), a minimum of two down conductors must be installed.

The lower ends of down conductors are to be terminated and bonded to the earthing system approximately 200 mm above finished ground level. Under no circumstances must aluminium conductors be buried underground. Test joints must be provided between the down conductors and earthing system. Down conductors must run vertically between the air terminal and earthing systems. Where this is impracticable, their course may be deviated to run at any angle up to and including horizontal.

Where it is necessary to run conductors horizontally over the upper surface of a structural protrusion, such as an exposed concrete slab, the conductor may run down vertically over the edge of the slab and return to the main structure, so that the distance between the upper and lower conductors exceeds one third of the length of the horizontal run. Looped down conductors are not permitted. Down conductors must not run over the underside of large overhangs which are less than 6 metres above ground level, or other areas where people are likely to be present during a thunderstorm.

External or internal metallic rainwater pipes may be used as down conductors providing these are of substantial section and are jointed by screwing one length into another or welding. Thin gauge galvanized steel pipes whose sections are held together by friction, rivets or screws must not form part of a lightning protection system.

5.6 **Down conductors for reinforced concrete framed structures**

The steel reinforcement of this type of structure may be used in place of down conductors. Where the reinforcing system is used, the air terminal system must be bonded to it at a maximum of 30 metre intervals using steel clamps. This bond may be achieved by clamping, with a steel clamp, a steel conductor to a selected reinforcing bar, the opposite end of this conductor must terminate at a corrosion resistant metallic terminal such as Grade 316 stainless steel.

The reinforcing system of prefabricated concrete buildings must not be used unless special provision is made for bonding the various prefabricated sections together.

The terminals should be mounted flush with the face of the concrete. An aluminium alloy bond must then be taken from the air terminal system and be connected to the stainless steel terminal by means of a heavily tinned crimp lug for circular section aluminium, or a suitable bi-metallic joint in the case of flat section aluminium. A similar system must be used to bond the reinforcing system at ground level to the earthing system at points directly below the air terminal bonds. Here copper conductors must be used as the external bonding material.

Under no circumstances must copper, or other non-ferrous material be allowed to come into contact with steel reinforcing bars, as this may cause severe corrosion and subsequent structural damage. The lightning protection system must not be bonded to any part of the structure which is electrically isolated from the remainder of the building, i.e. cantilevered sections. In these circumstances, or where it is otherwise impracticable to use the reinforcing system, external down conductors must be installed as described in 5.5.

5.7 **Down conductors for steel framed structures**

Where the framework of a building is constructed of structural steel columns, these may be used in place of down conductors providing the separating distance between them does not exceed 30 metres. The upper ends of the columns must be bonded to the air terminal systems and the lower ends to the earthing system.

5.8 **Earthing by means of vertically installed rod type electrodes**

Rod-type electrodes must be driven into the ground at a position directly below each down connector. The maximum earthing resistance of each electrode or number of electrodes bonded to any one down conductor shall not exceed $N \times 30$ ohms, where N equals the total number of down conductors which are bonded to a common air terminal system, or 200 ohms whichever is the lower value.

The minimum horizontal separating distance between rod-type electrodes bonded together must not be less than their installed depth. The upper ends of installed rod-type electrodes are to be terminated approximately 500 mm below finished surface level. A 50 mm² copper bonding conductor must be installed to run between each earthing electrode system and the lower ends of the adjacent down conductors. A joint is to be made between each of these bonding conductors and the down conductors at a position approximately 200 mm above finished ground level. These bonding conductors must be installed in P.V.C. conduit securely affixed to the wall (see 3.4). The length of this P.V.C. conduit must be approximately 600 mm and must be installed so that approximately 200 mm protrudes above ground level, the remainder being buried into the soil.

5.9 **Earthing by means of metallic water mains**

Where two or three down conductors are installed the water mains may serve as an earth terminal for one of these. Where three or more down conductors are installed the water mains may serve as an earth terminal for two of these. Regardless of whether the water mains are used as an earth terminal or not, the incoming metal water pipe must be bonded to the lightning protection earthing system underground.

5.10 **Earthing by means of trench type electrodes**

Where the soil conditions prevent the satisfactory installation of rod-type electrodes, a trench earth system must be installed. This method is to comprise a 50 mm² stranded copper conductor installed horizontally into a trench at a depth of 500 mm below finished ground level. The conductor is to follow the general outline of the structure to be protected and be installed 1 metre away from the outside walls. Where the building stands on rocky ground, the trench earth may be attached to the lower part of the wall in areas where rock protrudes through the soil. The conductor must, however, be buried wherever possible as described above.

Each down conductor must be bonded to the trench earth system as directly as possible by means of a copper conductor.

Trench earth systems must have a maximum earth resistance of 30 ohms. An isolated length of trench earth mat must be bonded to the down conductor system in such a way as to reduce the length of dead-ends to the minimum.

Should trench earths be installed beneath pathways where people are likely to be present during a thunderstorm, a plastic, bitumastic or ceramic pipe must be installed having a length similar to the width of the pathway and the trench earth conductor run inside it.

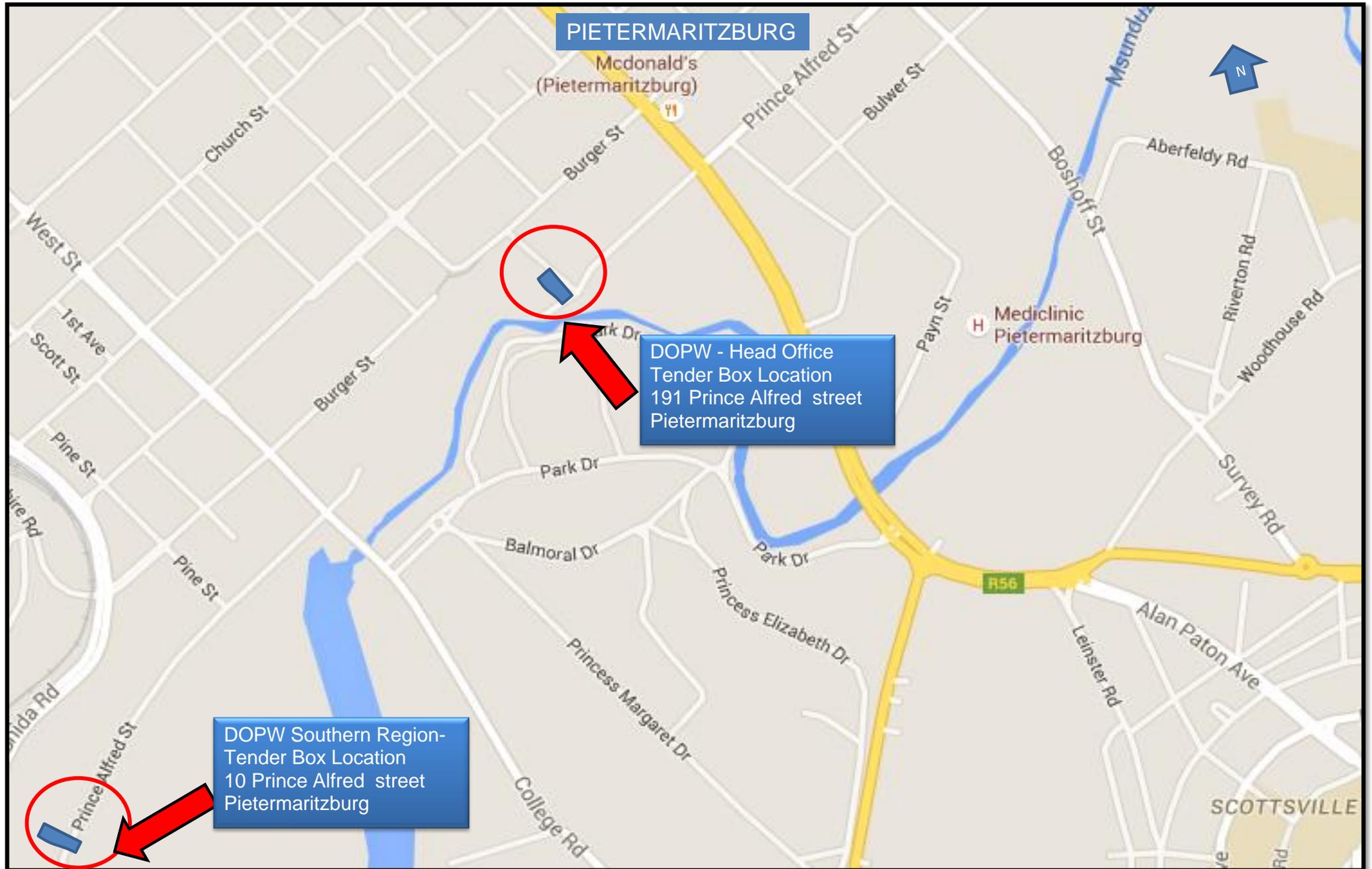
N.B. : The maximum useful length of a dead-ended trench earth is 80 metres.



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ANNEXURE 4

MAP OF TENDER SUBMISSION LOCATION





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ANNEXURE 5

JOINT VENTURE AGREEMENT



Annexure 5
Joint Venture Agreement
(March 2004)
(First Edition of CIDB document 1017)

1. **PREAMBLE**

This agreement is made and entered into by and between

of the first part and

of the second part and

of the third part.

(allow for additional parties as necessary).

Whereas the foregoing parties have resolved to form a Joint Venture under the title of

for the exclusive purposes of securing and/or executing the Contract to be awarded by
(name of Employer)

to the KZN Department of Public Works in respect of the following project:

for (brief description of Contract)

**PHASE 14: STORM DAMAGED PROGRAMME: REPAIRS AND RENOVATIONS TO STORM DAMAGED SCHOOLS
THROUGHOUT THE PROVINCE OF KWAZULU-NATAL:SOUTHERN REGION: CLUSTER 155: EMGANGENI SECONDARY
SCHOOL. OPEN BIDS**

Now it is hereby agreed as follows :

2. **DEFINITIONS AND INTERPRETATION**

2.1 Definitions

The following words and expressions shall have the meanings indicated, except where the context otherwise requires. Defined terms and words are, in general, signified in the text of the Agreement by the use of capital initial letters, but the absence of such letters does not necessarily signify that a term, or word, is not defined.

'Agreement' means the agreement between the Members of the Joint Venture and includes this model form of agreement together with the Preamble, Specific Provisions, if any, Schedules 'A', 'B' and 'C' and any relevant Documents prepared prior to the signing of the Agreement and appended thereto.

'Contract' means the contract with the Employer for the supply of the Deliverables, for the purposes of securing and executing which, the Joint Venture has been formed.

'Deliverables' means the works and/or services, equipment, materials, goods, etc. to be furnished by the Joint Venture to the Employer in terms of the Contract.

'Document' means any written, drawn, typed, printed, or photographic material, which relates to the Agreement.

'Employer' means the person, or body, which is to award the Contract and will employ the Joint Venture if it is awarded the Contract.

'Joint Venture' means the joint venture formed by the Members in accordance with the Agreement.

'Management Committee' means the body established in terms of the Agreement to manage all aspects of the work of the Joint Venture in securing and executing the Contract and in meeting the provisions for the Agreement.

'Member' means a person, or body which, being a party to the Agreement, is a member of the Joint Venture.

'Member's Interest' means the proportion expressed as a percentage, which the total monetary value of all resources provided and contributions made by a Member towards the execution by the Joint Venture of the Contract bears to the total of such values by all Members and, unless otherwise indicated in the Agreement, represents the extent to which the Member participates in the fortunes of the Joint Venture.

'Representative' means the person representing a Member on the Management Committee.

'Schedules' means Schedules 'A', 'B' and 'C' which set out general, financial and other information relating to the Members and the obligations, duties, rights, risks and benefits arising from their participation in the Joint Venture.

'Specific Provisions' means the variations, if any, required to this standard form of agreement for the specific purposes of the Agreement.

2.2 Interpretation

Unless inconsistent with the context, an expression in the Agreement which denotes:

- any gender shall include the other genders
- a natural person shall include a juristic person and vice versa
- the singular shall include the plural and vice versa

2.3 Headings

The headings to clauses of the Agreement shall not be considered part thereof, nor shall the words they contain be taken into account in the interpretation of any clause.

2.4 Law

The Agreement shall be construed in accordance with and governed by the laws of the Republic of South Africa and the English language versions shall prevail.

2.5 Language

English shall be exclusively used by the Members in the preparation of Documents unless otherwise indicated.

2.6 Conflict between Agreement and Contract

Should any provision of the Agreement be in conflict with the terms of the Contract, the Agreement shall be amended to the approval of the Management Committee so as to eliminate the conflict.

3. **JOINT VENTURE GENERAL**

3.1 Establishment and Purpose

The Joint Venture established by the Members in terms of the Agreement is an unincorporated association with the exclusive purposes of securing and executing the Contract for the benefit of the Members.

3.2 Termination

The operation of the Joint Venture and the validity of the Agreement shall terminate if and when it becomes evident that the Joint Venture will not be awarded the Contract, or, if the Joint Venture secures the Contract, when all obligations and rights of the Joint Venture and the Members in connection with the Contract and the Agreement have ceased and/or been satisfactorily discharged.

Unless otherwise decided by the Management Committee, the Agreement shall not terminate if a Member changes its name, or is taken over by, or merged with, another body.

This agreement will terminate when any one of the Members resigns, are liquidated or opts out of this agreement and the Joint Venture will be in breach of contract with the Employer and their contract could be cancelled.

3.3 Exclusivity

Unless otherwise agreed by the Management Committee, or provided for in the Contract no Member shall engage in any activity related to the Contract other than as a Member of the Joint Venture and Members shall ensure that their subsidiaries and other bodies over which they have control comply with this requirement.

3.4 Participation of Members

Except as may otherwise be stipulated in the Agreement, each Member shall be responsible for all costs incurred by it prior to the date of inception of the Agreement.

Subsequent to the date of inception of the Agreement, each Member shall, participate in the operations, risks, responsibilities and fortunes of the Joint Venture including, inter alia, the provision of funding, sureties, guarantees, insurances, human and other resources and participation in profits and losses to the extents indicated in the Schedules. Participation in any aspect not covered in the Schedules shall, if an agreement cannot be reached between the Members, be to the same extents as indicated by the Members Interests.

3.5 Management

The affairs of the Joint Venture shall be directed and controlled by the Management Committee, as set out in Section 4 hereof.

3.6 Confidentiality

All matters relating to the Agreement and the Contract shall be treated by the Members as confidential and no such matter shall be disclosed to any third party without the prior written approval of the Management Committee.

No Member shall be party to the dissemination of publicity relating to the Contract, or the Agreement, without the prior written approval of the Management Committee and the Employer.

3.7 Assignment

No Member shall cede, assign, or in any other way make over any of its rights, or obligations, under the Agreement without the prior written consent of the Management Committee.

3.8 Subcontracting

No Member shall subcontract any obligation, work or duty for which it is, itself, responsible in terms of the Agreement without the prior written consent of the Management Committee.

3.9 Variations to Agreement

No variation, modification, or waiver of any part of the Agreement shall be of any force, or effect, unless unanimously agreed by the Members and reduced to writing.

3.10 Liability

Each Member warrants that it will indemnify the other Members against all legal liabilities arising out of, or in connection with the performance of its obligations under the Agreement.

It is acknowledged by the Members that they may be held jointly and severally liable in respect of claims against the Joint Venture by the Employer or third parties.

4. MANAGEMENT OF JOINT VENTURE

4.1 General

The affairs of the Joint Venture shall be directed, controlled and managed by the Management Committee, which, within the terms of the Agreement and the Contract, shall have full authority to bind the Members in all matters relating to the affairs of the Joint Venture.

Communication between the Joint Venture and the Employer, or third parties, relating to the Contract shall be conducted exclusively by the Management Committee, or by such person as it may delegate to perform this function.

The Management Committee shall have the power to appoint a project manager and/or such other persons as it may see fit to appoint for the purpose of executing the Contract and may delegate such of its powers, responsibilities and duties as it may consider necessary, or desirable, to persons or bodies appointed or seconded for this purpose.

Such administrative functions as are necessary to ensure the effective operation of the Management Committee shall be performed by its chairman.

4.2 Management Committee

4.2.1 Composition

The Management Committee shall, unless otherwise agreed by all the Members, consist of one Representative of each Member and each Member shall be obliged, at all times, to maintain a Representative on the Management Committee.

Each member shall, not later than three working days after the signing of the Agreement, appoint its Representative and notify the other Members of the name and contact details of the Representative. Such Representative shall have the power to bind the Member that he represents in all matters relating to the execution of the Contract and the performance of the Agreement.

A Member shall be entitled, after giving the other Members not less than three working days written notice of his intention to do so, appoint, remove and/or replace, an alternate who shall, at any meeting of the Management Committee from which the Representative whom he represents is absent, be vested with all rights and powers and subjected to all the obligations of the absent Representative.

The chairman of the Management Committee shall be the Representative of the Member which has the largest Member's Interest. If two, or more, Members have the same, largest Member's Interest, the chairmanship shall rotate between the Representatives of such Members at three monthly intervals, the order of rotation to be determined by ballot.

Notwithstanding the foregoing, the chairmanship of the Management Committee may be determined, or changed, at any time by unanimous decision of the Management Committee.

4.2.2 *Meetings*

No remuneration shall be paid by the Joint Venture to Representatives or their alternates for serving on the Management Committee. Meetings of the Management Committee shall take place at such times and places as the Management Committee may determine, provided that the chairman shall convene a meeting of the Management Committee to be held not later than ten working days after he has been requested, in writing, by a Member to do so. Not less than five working days written notice of any meeting of the Management Committee shall be given to all Representatives and their alternates.

The Management Committee may permit, or invite, persons other than Representatives or alternates to attend any of its meetings, but such persons shall not have voting rights.

4.2.3 *Decisions*

Each Representative shall have one vote on the Management Committee and where, in terms of this clause, a casting vote is required, this shall be exercised by the chairman.

All decisions of the Management Committee shall, desirably, be unanimous. Accordingly, if unanimity cannot, initially, be achieved in regard to a decision, the meeting at which that decision is sought shall be adjourned for a period of 48 hours to enable Representatives to consult with their principals. If, on resumption of the adjourned meeting, unanimity can still not be achieved, the decision, provided it is not one requiring unanimity of the Members, shall be taken by majority vote and, in the event of a tie, the chairman shall exercise a casting vote.

A Member not satisfied with a majority decision of the Management Committee may declare a dispute, to be dealt with in terms of Clause 8 hereof, but the majority decision shall, nevertheless, be implemented with immediate effect.

Decisions of the Management Committee, whether taken at a meeting, or otherwise, shall be recorded in written minutes, which shall be distributed by the chairman to reach the Representatives not later than five working days after those decisions were taken. Such minutes shall be deemed to have been affirmed by the Representatives unless written notice of dissent is received by the chairman not later than three working days after receipt of the minutes by the Representative.

4.2.4 Powers and duties

The functions, responsibilities and powers of the Management Committee shall include, inter alia, those listed below:

- 4.2.4.1 Formulating overall policy in regard to the achievement of the objectives of the Joint Venture.
- 4.2.4.2 Managing the day to day affairs of the Joint Venture.
- 4.2.4.3 Monitoring, directing and co-ordinating the activities of the Members to ensure that the objectives of the Joint Venture are achieved and that the obligations and responsibilities of the individual Members are met.
- 4.2.4.4 Monitoring and controlling the financial affairs of the Joint Venture and ensuring that proper books of account and financial records relating to affairs of the Joint Venture are maintained in an approved form and submitted to the Management Committee for approval at regular intervals, which shall not be longer than one month.
- 4.2.4.5 Determining the necessity for and the details of any changes in the duties and responsibilities of Members provided that any resulting changes in Members' Interests shall be unanimously approved by the Members.
- 4.2.4.6 Determining the terms and conditions of employment of personnel and the emoluments applicable to staff seconded to the Joint Venture by the Members.
- 4.2.4.7 Controlling and approving the appointment of all subcontractors.
- 4.2.4.8 Procuring, after the completion of the Contract and the release of all bonds, guarantees and sureties given in respect of the performances of the Joint Venture and the Members, the preparation and auditing of a final set of accounts, on the basis of which the final profits, or losses, attributable to the individual Members shall be determined and any necessary adjustments effected.

5 RESOURCES OF JOINT VENTURE

The resources to be utilised by the Joint Venture in securing and executing the Contract shall, insofar as these are to be provided directly by the Members, be as set out in the Schedules and may, from time to time, be amended by decision of the Management Committee, provided that the Member's Interests are not, except with the unanimous approval of the Members, affected thereby.

Similarly, specific areas of responsibility of the Members for the performance of work and the provision of facilities shall be as set out in the Schedules and may, from time to time, be amended by decision of the Management Committee, provided that the Members' Interest are not, except with the unanimous approval of the Members, affected thereby.

5.1 Schedule 'A' (General)

Schedule 'A' shall contain general information relating to the Joint Venture including, inter alia, the following :

1. The Employer's name and address.
 2. A brief description of the Contract and the Deliverables.
 3. The name, physical address, communications addresses and domicilium citandi et executandi of each Member and of the Joint Venture.
 4. The Members' Interests.
 5. A statement indicating whether, or not, Specific Provisions apply to the Agreement.
 6. A schedule of insurance policies which must be taken out by the Joint Venture and by the individual Members.
 7. A Schedule of sureties, indemnities and guarantees that must be furnished by the Joint Venture and by the individual Members.
8. Details of the persons, who, in the event of failure by the Members to reach agreement on the appointments of mediator and arbitrator, will nominate appointees to these positions in terms of Clauses 8.2 and 8.3.

5.2 Schedule 'B' (Financial)

Schedule 'B' shall contain information regarding the financial affairs of the Joint Venture including, inter alia, the following :

1. The working capital required by the Joint Venture and the extent to which and manner whereby this will be provided and/or guaranteed by the individual Members from time to time.
2. The banking accounts that are to be opened in the name of the Joint Venture and the manner in which these are to be operated.
3. The rates of interest that will be applicable to amounts by which Members are in debit, or credit, to the Joint Venture.
4. The names of the auditors and others, if any, who will provide auditing and accounting services to the Joint Venture.
5. The intervals at which interim financial accounts and forecasts will be prepared for approval by the Management Committee.
6. Insofar as not covered in Schedule 'C', the basis on which contributions of various types by the Members towards the work of the Joint Venture in securing, executing, managing and satisfactorily completing the Contract, will be valued.
7. The basis on which profits and/or surplus cash will, if available from time to time, be distributed to Members.
8. The basis upon which losses, if any, are to be apportioned to Members.

5.3 Schedule 'C' (Contributions by Members)

Schedule 'C' shall set out the contributions of various types, other than cash, that will be made by the individual Members towards the work and obligations of the Joint Venture and shall, as far as possible, indicate the monetary values to be placed on such contributions, which may include, inter alia, the following :

1. Staff seconded to the Joint Venture.
2. Work carried out and services provided to, or on behalf of, the Joint Venture.
3. Plant, equipment, facilities etc. made available for use by the Joint Venture.
4. Materials and goods supplied to, or on behalf of, the Joint Venture.
5. Licences, sureties, guarantees and indemnities furnished to, or on behalf of, the Joint Venture.
6. Joint Venture Disclosure form required for the Contract.

6. BREACH OF AGREEMENT

If a Member breaches any material provision of the Agreement, or delays or fails to fulfil its obligations in whole, or in part, and does not remedy the situation within fourteen calendar days of receipt of notice from the Management Committee, or another Member, to do so, the other Members shall have the right, without prejudice to any other rights arising from the default, to summarily terminate the Agreement and re-assign the defaulting Member's rights and obligations in the Joint Venture as they see fit and withhold any moneys due to the defaulting member by the Joint Venture.

Each Member shall indemnify the other Members against all losses, costs and claims which may arise against them in the event of the Agreement being terminated as a result of breach of the Agreement by the said Member.

7. INSOLVENCY OF MEMBER

Should a Member be placed in liquidation, or under judicial management, whether provisionally or finally, or propose any compromise with its creditors, the other Members shall be entitled to proceed in terms of Clause 6, as if the Member had breached the Agreement.

8. DISPUTES

8.1 Settlement

The Members shall negotiate in good faith and make every effort to settle any dispute, or claim, that may arise out of, or relate to, the Agreement.

If agreement cannot be reached, an aggrieved Member shall, if he intends to proceed further in terms of Clause 8.2 hereof, advise all other Members in writing that negotiations have failed and that he intends to refer the matter to mediation in terms of Clause 8.2.

8.2 Mediation

Not earlier than ten working days after having advised the other Members, in terms of Clause 8.1, that negotiations in regard to a dispute have failed, an aggrieved Member may require that the dispute be referred, without legal representation, to mediation by a single mediator.

The mediator shall be selected by agreement between the Members, or, failing such agreement, by the person named for this purpose in Schedule 'A'. The costs of the mediation shall be borne equally by all Members.

The mediator shall convene a hearing of the Members and may hold separate discussions with any Member and shall assist the Members in reaching a mutually acceptable settlement of their differences through means of reconciliation, interpretation, clarification, suggestion and advice. The Members shall record such agreement in writing and thereafter they shall be bound by such agreement.

The mediator is authorised to end the mediation process whenever in his opinion further efforts at mediation would not contribute to a resolution of the dispute between the Members.

8.3 Arbitration

Where a dispute or claim is not resolved by mediation, it shall be referred to arbitration by a single arbitrator to be selected by agreement between the Members or, failing agreement, to be nominated by the person named for this purpose in Schedule 'A'.

The Member requiring referral to arbitration shall notify the other Members, in writing, thereof, not later than thirty calendar days after the mediator has expressed his opinion, failing which the mediator's opinion shall be deemed to have been accepted by all Members and shall be put into effect.

Arbitration shall be conducted in accordance with the provisions of the Arbitration Act No. 42 of 1965, as amended, and in accordance with such procedure as may be agreed by the Members or, failing such agreement, in accordance with the rules for the Conduct of Arbitrations published by the Association of Arbitrators and current at the date that the arbitrator is appointed.

The decisions of the arbitrator shall be final and binding on the Members, shall be carried into immediate effect and, if necessary, be made an order of any court of competent jurisdiction.

9. DOMICILIUM

The Members choose domicilium citandi et executandi for all purposes of and in connection with the Agreement as stated in Schedule 'A'. A Member shall be entitled to change his domicilium from time to time, but such change shall be effective only on receipt of written notice of the change by all other Members.

Member No. 1

Thus done and signed at _____ this _____ day of _____ 20____

For and on behalf of _____ [Company]

by [name] _____ who warrants his authority to do so.

As witnesses 1. _____ As witnesses 2. _____

Member No. 2

Thus done and signed at _____ this _____ day of _____ 20____

For and on behalf of _____ [Company]

by [name] _____ who warrants his authority to do so.

As witnesses 1. _____

As witnesses 2. _____

Member No. 3

Thus done and signed at _____ this _____ day of _____ 20____

For and on behalf of _____ [Company]

by [name] _____ who warrants his authority to do so.

As witnesses 1. _____

As witnesses 2. _____

[Allow for additional parties as necessary].



KWAZULU-NATAL PROVINCE

PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

Project Name:	PHASE 14: STORM DAMAGED PROGRAMME: REPAIRS AND RENOVATIONS TO STORM DAMAGED SCHOOLS THROUGHOUT THE PROVINCE OF KWAZULU-NATAL:SOUTHERN REGION: CLUSTER 155: EMGANGENI SECONDARY SCHOOL. OPEN BIDS
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ANNEXURE 6

HEALTH AND SAFETY SPECIFICATION



public works

Department:
Public Works
PROVINCE OF KWAZULU-NATAL

Occupational Health and Safety Specification (OHSE SPEC)

Project Name : EMGANGENI PRIMARY SCHOOL – STORM
DAMAGE

WIMS no. : 063241

**Client OHS
Representative** : L NTULI

Region : N/A

District : N/A

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1. Introduction

The KwaZulu Natal Department of Public Works is deemed as the “**Client**” in terms of the definitions of Construction Regulations of 2014 as published in *Government Gazette No. 37305*. The Construction Regulations of 2014 under *CR(5)(1)* stipulates that the client must prepare a suitable, sufficiently documented and coherent site specific Occupational Health and Safety Specification for the intended construction work based on the baseline risk assessment.

The purpose of this Occupational Health and Safety Specification document (which hereinafter will be referred to as OHSE Spec) is to provide designers and the successful tenderer with essential OHS information to ensure effective safety management during the design and construction phase of the project.

This OHSE Spec forms an integral part of the contract between the Client and the Principal Contractor, so as to ensure compliance with the Occupational Health and Safety Act, Act 85 of 1993 and its applicable regulations and must serve as the basis for the Principal Contractor to develop his/her Project Safety, Health and Environmental Management Plan. As with any other plan for it to be implemented and managed effectively it requires the allocation of sufficient funds to achieve the objectives set out in the plan. In line with this requirement Construction Regulation 5(1)(g) requires the Client to ensure that the Principal Contractor has made adequate provisions for the cost of Health and Safety Measures in their tenders.

It must be noted that this OHSE Spec as much as it is detailed it is not exhaustive and the onus is on the Principal Contractors to ensure that they comply with Section 8 of the OHS Act, Act 85 of 1993 which states that *“Every Employer shall provide and maintain, as far as is reasonably practicable, a working environment that is safe and without risk to the health of his employees.”* this means that Principal Contractors as they are employers in their own right must at all times ensure continuous assessments are done for continued provision and maintenance of a healthy and safe working environment.

2. Definitions

For the purpose of the OHSE Spec, the abbreviations or definitions given hereunder shall apply and the reference to on gender will also apply to the other gender.

“CR” refers to the Construction Regulations 2014

“Agent (Pr.CHSA)” means a competent person who acts as a representative for a Client in terms of regulation (5)5.

“Client” means Department of Public Works

“Competent person” means a person who-

(a) Has in respect of the work or task to be performed the required knowledge, training and experience and, where applicable, qualifications, specific for that work or task: Provided that where appropriate qualifications and training are registered in terms of the provisions of the National Qualifications Framework Act, 2000 (Act No.67 of 2000), those qualifications and that training must be regarded as the required qualifications and training; and

(b) Is familiar with the OHS Act, Act 85 of 1993 and with the applicable regulations made under the Act;

"Construction Manager (Site Agent)" means a competent person responsible for the management of the physical construction processes and the coordination, administration and management of resources on a construction site;

"Construction Site" means a work place where construction work is being performed;

"Construction Supervisor" means a competent person responsible for supervising construction activities on a construction site;

"Construction Vehicle" means a vehicle used as a means of conveyance for transporting persons or material, or persons and material, on and off the construction site for the purposes of performing construction work;

"Construction work" means any work in connection with –

(a) The construction, erection, alteration, renovation, repair, demolition or dismantling of or addition to a building or any similar structure; or

(b) the construction, erection, maintenance, demolition or dismantling of any bridge, dam, canal, road, railway, runway, sewer or water reticulation system; or the moving of earth, clearing of land, the making of excavation, piling, or any similar civil engineering structure or type of work;

"Contractor" means an employer who performs construction work;

"Demolition Work" means a method to dismantle, wreck, break, pull down or knock down of a structure or part thereof by way of manual labour, machinery, or the use of explosives;

"Fall Protection Plan" means a documented plan, which includes and provides for-

- (a) All risks relating to working from a fall risk position, considering the nature of work undertaken;
- (b) The procedures and methods to be applied in order to eliminate the risk of falling; and
- (c) A rescue plan and procedures;

"Health and Safety File" means a file, or other record containing the information in writing required by these Regulations;

"Health and Safety Plan" means a site, activity or project specific documented plan in accordance with the client's health and safety specification;

"Health and Safety Specification" means a site, activity or project specific document prepared by the client pertaining to all health and safety requirements related to construction work;

"Medical Certificate of Fitness" means a certificate contemplated in regulation 7(8) of Construction Regulations 2014;

"Principal Contractor" means an employer appointed by the client to perform construction work;

"Safety Officer" – a person deemed competent by SACPCMP under the relevant category of registration.

"Professional Engineer or Professional Certificated Engineer" means a person holding registration as either a Professional Engineer or Professional Certificated Engineer in terms of the Engineering Profession Act, 2000 (Act No. 46 of 2000);

3. Scope of Application

- 3.1** This OHSE Specification document stipulates the minimum Occupational Health, Safety, and Environmental requirements that the tenderer need to address in his / her OHSE Plan. This Specification also addresses legal compliance, hazard identification, risk assessment, risk control, and the promotion of a Health and Safety culture amongst those working on the project.
- 3.2** This Specification also makes provision for the protection of persons other than employees. This OHSE Spec is exclusively applicable to the following project pending any change of scope which may necessitate changes to the OHSE Specification;

Emgangeni Primary School: Storm Damage Project

3.3 This OHSE Specification further seeks to achieve the following;

- 3.3.1** To provide Principal Contractors with the Structure of the Detailed OHSE Plans they will have to prepare and submit for this project. **See Annexure A**
- 3.3.2** Provide the overarching framework within which the Principal Contractor is required to demonstrate compliance with certain requirements for occupational health and safety established by the Occupational Health and Safety Act, Act 85 of 1993, all applicable regulations and Client Specific Requirements. **See Annexure B**
- 3.3.3** To bring to the attention of the Bidding Principal Contractors that they need to make an undertaking that the costs for executing the project includes the costs of complying with the OHS Act, Act 85 of 1993, all applicable regulations including Client Specific requirements. Such undertaking is made by appending signatures on the OHS Declaration for Tenders. **See Annexure C**
- 3.3.4** Ensure that the Principal Agent as the Professional Service Provider appointed by the Department to manage the project on its behalf in terms of the Conditions of Contract applicable to this project ensures that the contents of this document and the attached Baseline Risk Assessment are taken into consideration during design by all professionals appointed and that the OHSE Specification is incorporated into the tender documents. **See Annexure D**

4. Contractual Issues

- 4.1** Acceptance by the Principal Contractor of the contract with KZN DOPW shall constitute acknowledgement that the Principal Contractor has familiarised him / herself with the contents of the OHSE Spec and that he / she will comply with all its obligations in respect thereof.
- 4.2** Due to fact that this document is based on legislative requirements, the Client requires that all Contractors comply with the requirements of this document and all other relevant legislative requirements not covered by this document.
- 4.3** The Client or its duly appointed Construction H&S Agent reserves the right to stop any Principal Contractor or Sub-Contractors from working whenever Safety, Health or Environmental requirements are being violated as required by regulation 5(1)(q). Any resultant costs of such work stoppages will be for the relevant Contractor's account.
- 4.4** The requirements as specified by the Client in this document must not be deemed to be exhaustive and the Client reserves the right to make changes as and when the Client deems fit to address issue of OHSE Compliance.
- 4.5** The Client will not entertain any claim of any nature whatsoever which arises as a result of costs incurred or delays being experienced due to the Contractor not complying with the requirements of this document and or any other applicable legislative requirements imposed on the Contractor.

5. Administrative Requirements

5.1 Notification of Construction Work

The successful tenderer must at least within 07 working days before commencing with construction work notify the Provincial Director in writing using **Annexure "2"**. A copy of the notification once stamped by a DEL Official must be submitted to the client prior to commencing with construction work.

6. Appointment of a Part time Safety Officer

6.1 The Principal Contractors will have to appoint a competent Part Time Construction H&S Officer as per the following criteria;

- *A part time safety officer shall be appointed and will be onsite at least 2 days a week.*
- *During asbestos removal the Safety Officer will have to be present during that period.*

Annexure A

Structure of the Detailed OHSE Plan

A detailed OHSE Plan is to be submitted by the successful tenderer as per section 8 above. The following are the minimum standard legal documentation that must form part of the OHSE Plan based on the risks attached in executing this project –

EMGANGENI PRIMARY SCHOOL

1. The notification to commence with construction work made to the Provincial Director of Labour using Annexure 2. *(Filled in only to be submitted on approval of the Safety Plan)*
2. Letter of Good Standing with Compensation Commissioner or Compensation insurer
3. The Contractor's Health, Safety & Environmental Policy, signed by the chief executive officer, which outlines the Contractor's OHSE compliance objectives and how they will be achieved.
4. Pre-Construction risk assessment *(Site specific)*
5. Relevant checklists and registers.
6. Site specific OHSE Organogram
7. Preliminary Induction Program
8. Fall Protection Plan
9. Environmental Management Plan
10. Public Safety Management Plan
11. Asbestos Management Plan
12. Proof of competency for the following legal appointees;
 - 12.1. *Construction Manager – (Detailed CV reflecting qualification, relevant experience and references from previous clients)*
 - 12.2. *Construction Work Supervisor – (Detailed CV reflecting qualification, relevant experience and references from previous clients)*
 - 12.3. *Construction H&S Officer – SACPCMP proof of registration*
 - 12.4. *Risk Assessor – SAMTRAC or equivalent*
 - 12.5. *Accident Investigator - SAMTRAC or equivalent*
 - 12.6. *Fall Protection Planner - SAMTRAC or equivalent*
 - 12.7. *Electrician – wireman's licence*

Legal appointments to be appointed	
Prior Site Handover	After Site Handover on commencement with Construction work
<ul style="list-style-type: none"> • 16.2 • Construction Manager • Construction Work Supervisor • Construction H&S Officer • Risk Assessor • Fall protection Planner • Demolition work supervisor • Accredited Asbestos Contractor 	<ul style="list-style-type: none"> • Scaffold Erectors • Scaffold Inspectors • First Aiders • Emergency co-ordinator • Fire Marshalls • Fire team members • Portable Electrical tool inspector • Hand tools inspector • Housekeeping inspector • Stacking and storage inspector • Construction Vehicle and mobile plant inspector • Traffic Controller (Flagman) • Temporary electrical installation inspector • Flammable liquids Storage Inspector • Hazardous substance storage inspector • Ladder inspector • Health and safety representatives • Accident investigator

Annexure B

Client Specific Requirements

Items	Client Specific Requirements
Site Office location	<ul style="list-style-type: none"> The location of the site office should be in an area that will not require visitors to pass through or enter area where construction work is active and will not require the re-location of the office as the project progresses.
Site Establishment	<ul style="list-style-type: none"> Site establishment form to be completed and sent back to us once site establishment is done.
Medical Certificates	<ul style="list-style-type: none"> In compliance with the requirements of the Construction Regulations 2014 section 7(8) the Contractor must ensure that all of his employee's onsite have a valid medical certificate of fitness specific to the construction work to be performed and issued by an occupational health practitioner in the form of Annexure 3.
Appointment of a Part - time safety officer	<ul style="list-style-type: none"> The Principal Contractors will have to appoint a competent Part Time Construction H&S Officer for this project and the part time safety officer will have to visit the site twice a week for the duration of this project. When asbestos work is being carried out, SHE Officer will have to be there fulltime.
Public Safety	<ul style="list-style-type: none"> When working in a occupied facility the contractors risk assessment and subsequent safe work method statement must take into consideration the negative effect the Contractors activities may have on the health and safety of the occupants of the facility and make provisions for the implementation of all reasonably practicable measures to ensure the health and safety of the occupants of the building.
Extreme weather conditions	<ul style="list-style-type: none"> If the weather condition poses a threat to the health & safety of employees be it extreme heat, cold, lightning or any adverse weather condition appropriate safety measures have to be taken.
Change to scope of work	<ul style="list-style-type: none"> Should there be changes to the original scope of work, the Principal Agent must inform appointed Construction Health and Safety Agent to effect changes to the OHSE Specification.
Safety Plan Submission	<ul style="list-style-type: none"> The successful Tenderer must submit a copy of the detailed OHSE Plan for approval and keep the original for onsite use during construction. The principal Contractor will not be allowed to start site establishment before his/her SHE Plan has been approved in writing.
Bylaws	<ul style="list-style-type: none"> The Principal Contractor must incorporate any aspects of the Local Municipal bylaws which affect the, Safety and Environmental wellbeing of the employees and the public into his/her OHSE Plan and ensure compliance to such bylaws.
Risk assessment for construction work	<ul style="list-style-type: none"> To comply with CR(9) and to also address environmental issues <i>See the attached baseline risk assessment to be considered by both the designer and the principal contractor.</i>
Fall protection	<ul style="list-style-type: none"> To comply with CR (10),

	<ul style="list-style-type: none"> • Edge protection and protection of floor openings need to be of such a manner as to properly protect employees from falling off elevated positions or falling into floor openings
Structures	<ul style="list-style-type: none"> • To comply with CR (11)
Temporary work	<ul style="list-style-type: none"> • To comply with CR (12)
Excavations	<ul style="list-style-type: none"> • To comply with CR(13) and the following; • If the risk exists of a person in an excavation being enclosed in an event of a collapse the following will apply; shoring sufficient to prevent enclosure, any excavated material must be placed at least 1metre from the edge and at the maximum angle of repose to the horizontal. • No excavation may affect the stability of any adjoining structure or road unless steps have been taken as identified by an Engineer or a Technologist. • Adequate provisions must be made to ensure that water is drained from excavations where water may enter such excavations as a result of seepage or rain • All excavations made by the Principal or Sub Contractors must be barricaded by means of solid barricading and barricading tape may only be used to make such barricading more visible
Scaffolding	<ul style="list-style-type: none"> • To comply with CR(16) and the following; • Scaffolding Inspectors and Scaffolding Erectors must be different individuals. • Scaffold Harness must be used on Scaffolding, normal Harnesses may not be used on scaffolding • Sufficient Scaffolding material e.g., tags, trapdoors etc. need to be on site as determined by the activities on site • Scaffold bases may not be supported by materials such as bricks and chipboard. Suitable material needs to be used as per SANS 10085
Material hoists	<ul style="list-style-type: none"> • To comply with CR (19)
Construction vehicles and mobile plant	<ul style="list-style-type: none"> • To comply with CR (23) and the following;
Electrical installations and machinery on construction sites	<ul style="list-style-type: none"> • To comply with CR (24) • Over and above the requirements of CR24, the contractor must issue a CoC for temporary and final electrical connection to buildings and parkhomes where connection work has been undertaken prior any usage of such infrastructure.
Use and temporary storage of flammable liquids on construction sites	<ul style="list-style-type: none"> • To comply with CR (25)
Water environments	<ul style="list-style-type: none"> • To comply with CR (26)
Housekeeping and general safeguarding on construction sites	<ul style="list-style-type: none"> • To comply with CR (27) and the following; • Contractor to designate areas for placing refuse and rubble prior to being removed from site

	<ul style="list-style-type: none"> • Contractor must implement a daily task site clean-up for all activities these should cover work areas, stairways, walkways etc. to free of any construction debris obstruction. • Refuse to be separated for recycling purposes • Hazardous materials such as asbestos may not be included in general rubble and need to be disposed of as per applicable legislative requirements
Stacking and storage on construction sites	<ul style="list-style-type: none"> • To comply with CR (28)
Fire precautions on construction sites	<ul style="list-style-type: none"> • To comply with CR (29) and the following; • No smoking may be permitted on site except in designated smoking areas
Construction employees' facilities	<ul style="list-style-type: none"> • To comply with CR (30) and the following; • Gender signs to be placed at appropriate locations • All welfare facilities to be kept in a hygienic condition at all times • Employees to be trained in good hygiene practices
Public Safety & Signage	<ul style="list-style-type: none"> • The Principal Contractor engaged in construction work must ensure that each person working on or visiting a site, and the general public in the vicinity of the construction site, shall be made aware of the dangers likely to arise from onsite activities and the precautions to be observed to avoid or minimise those dangers. • Appropriate signage shall be posted at conspicuous points within and around the perimeter of the site. The steps to comply with this requirement must be outlined in the OHSE Plan. • The public or visitors may only be permitted on site if they go through an appropriate health and safety induction detailing hazards and risks they may be exposed to and what measures are in place to control these hazards and risks • The entire project site must be secured against unauthorized access and provided with appropriate warning signage. Where roadways or walkways must be encroached or closed due to work, adequate barriers shall be installed to safely redirect the flow of vehicles and pedestrians and protect them from construction activities. • Whenever it is necessary to maintain public use of work areas (such as sidewalks, ramps, entrances to buildings, corridors, or stairways), the public shall be protected with appropriate guardrails, barricades, temporary fences, overhead protection, or temporary partitions and hoarding. The public must also be adequately protected from any work created hazards, such as excavations. Appropriate warnings, signs, warning lights and instructional safety signs shall be conspicuously posted and placed where necessary. • The public must also be protected from falling debris and objects from the project site. Overhead protection shall be provided that will fully protect the public and be capable of withstanding the maximum forces that could be applied from potential falling objects. Special attention shall also be given to developing adequate means to protect against

	wind-blown debris and construction-related materials.
On Site Health and Safety Training & Induction	<ul style="list-style-type: none"> • The Principal Contractor shall ensure that all site personnel and visitors undergo a risk-specific health & safety induction training session before starting work or being permitted to enter the site. A record of attendance shall be kept in the health & safety file. • The Principal Contractor shall ensure that, on site periodic toolbox talks take place at least once per week. These talks should deal with risks relevant to the construction work at hand. A record of attendance shall be kept in the health & safety file. The above should also cover all sub-contractors that are onsite. • All Contractors have to comply with this minimum requirement. Environmental issues to be included in toolbox talks where required.
General Record Keeping	<ul style="list-style-type: none"> • The Principal Contractor and all Sub Contractors must keep and maintain Health and Safety records to demonstrate compliance with this Specification, The OHS Act 85/1993; and with the Construction Regulations of 2014. The Principal Contractor shall ensure that all records of incidents/accidents, training, inspections; audits, etc. are kept in a health & safety file held in the site office, which must be present on site at all times. The Principal Contractor must ensure that every Sub Contractor opens its own health & safety file, maintains the file and makes it available on request.
Health & Safety Audits, Monitoring and reporting	<ul style="list-style-type: none"> • The Client or its duly appointed Agent shall conduct monthly health & safety audits. The Principal Contractor is obligated to conduct similar audits on all Sub Contractors appointed by them at least once a month. Detailed audit reports must be presented and discussed at all levels of project management meetings and a copy of such audit will be provided to the Client or its duly appointed Agent within 7 working days of such audit. Copies of the Client's audit reports shall be kept in the Principal Contractors Health & Safety File.
Emergency Procedures	<ul style="list-style-type: none"> • The Principal Contractor shall submit a detailed Emergency Plan for approval by the Client prior to commencement on site. The plan shall detail the response procedure including the following key elements: <ol style="list-style-type: none"> 1. List of key competent personnel; 2. Details of emergency services; 3. Actions or steps to be taken in the event of the specific types of emergencies; 4. Information on hazardous material/situations.
First Aid Boxes and First Aid Equipment	<ul style="list-style-type: none"> • The appointed First Aider(s) to be in possession of a valid first aid training certificate Level 2. Valid certificates are to be kept in the Site Safety File. All Sub Contractors with more than 5 employees shall supply their own first aid box, except if otherwise agreed upon between Principal and Sub- Contractor in writing.
Accident / Incident Reporting and Investigation	<ul style="list-style-type: none"> • Injuries are to be categorised into Near miss, first aid, LTI, fatal etc. Fatal accidents to be reported in addition to applicable legislative requirements to the Client or its duly appointed Agent with immediate effect. The Principal Contractor must stipulate in its construction phase OHSE Plan how it will handle each of these categories. When reporting injuries to the Client, these categories shall be used. The Principal Contractor shall investigate all injuries, with a report being forwarded to the Client immediately. All Sub- Contractors have to report on the abovementioned categories of injuries to the Principal Contractor at

	<p>least monthly. All categories of incidents/accidents must be in the Statistics Section of the Monthly Audit Reports, submitted to the Client or it's duly appointed Agent.</p>
Hazards and Potential Situations	<ul style="list-style-type: none"> • The Principal Contractor shall immediately notify other Sub Contractors as well as the Client of any hazardous or potentially hazardous situations that may arise during performance of construction activities. • Should a hazardous situation require work stoppages, the work must be stopped and corrective steps taken such as the issue of Written Safe Work Procedures and the issue of Personal Protective Equipment.
Personal Protective Equipment (PPE) and Clothing	<ul style="list-style-type: none"> • The Principal Contractor must ensure that all workers are issued with the required PPE as required by the risks associated with the activities they perform .The minimum PPE to be worn on site will be Safety Shoes/Boots, Hard Hats, Overalls. No Visitors may enter the site without Safety Shoes/Boots and Hardhats. The Principal Contractor and all Sub Contractors shall make provision and keep adequate quantities of SABS approved PPE on site at all times. All employees issued with PPE to be trained in correct use, records of training and issue to be kept in the Site SHE File .Procedure to be in place to deal with: <ul style="list-style-type: none"> • 1 Lost or stolen PPE; • 2 Worn out or damaged PPE replacement. • 3. Employees not utilising PPE as required • The above procedure applies to Principal Contractors and their appointed Sub- Contractors, as they are all employers in their own right.
Permits	<ol style="list-style-type: none"> 1) The Principal Contractor shall prepare and issue the required written permits relating to but not limited to the following: <ul style="list-style-type: none"> • Roof Work; and • Electrical work (both temporary and permanent) 2) The Principal Contractor must ensure that where permits are required that they are properly implemented and adhered to.
Speed Restrictions and Protections	<p>Unless otherwise stipulated, the maximum speed limit on sites must be limited to 10 km/h.</p> <ol style="list-style-type: none"> 1) Vehicle movement routes on site must be clearly indicated where applicable. 2) Signage to ensure the safe movement of vehicles on site, as well as to ensure the health and safety of all employees and visitors on site, must be displayed in strategic locations.
Hazardous Chemical Substances (HCS)	<ol style="list-style-type: none"> 1) To comply with Hazardous Chemical Substances Regulations as published in Government Notice No. R. 1179 dated 25 August 1995. 2) In addition to the abovementioned, Material Safety Data Sheets must be kept on site for all materials, which may contain hazardous chemical substances
ASBESTOS ABATEMENT REGULATIONS, 2020	<ol style="list-style-type: none"> 1) To comply with ASBESTOS ABATEMENT REGULATIONS, 2020. Published under. Government Notice R1196 in GG 43893 of 10 November 2020. 2) AIA to be appointed 3) To re-evaluate current Asbestos Inventory, recommend Category Asbestos Contractor to be appointed, if no Inventory 4) Inventory to be drawn by the AIA to distinguish the level of an asbestos contractor to remove asbestos 5) AIA to assist Asbestos Contractor with Development of Plan of Work, once in agreement sign and submit to us before submitting it to DEL at

	<p>least 7 days before work is scheduled to take place</p> <ol style="list-style-type: none"> 6) Attached asbestos checklist to be completed before any asbestos work takes place and be forwarded to us. 7) Removal to be done by an accredited asbestos contractor , supervised by AIA and monitoring of Exposure 8) AIA and Asbestos Contractor Proof of accreditation to be kept on site. 9) Disposal certificate to be kept on Site Health and Safety File. 10) Under no circumstances may asbestos be handed over to the community irrespective of shape or condition. 11) No Work may proceed in a previously designated Asbestos Zone until such time as what the AIA issues a Clearance certificate.
Hygiene management plan	<ol style="list-style-type: none"> 1) Wash and dry your hands thoroughly before handling food, and wash and dry them again frequently during work. 2) Occupational exposure is a major problem and all Contractors must ensure that proper health and hygiene measures are put in place to prevent +exposure to these hazards. 3) All Contractors must prevent inhalation, ingestion and absorption of any harmful chemical or biological agents. 4) Water to be utilized for drinking purposes may only be drawn from taps designated for drinking water purposes. Fire hydrants and fire hose reels may not be utilized for drinking water purposes.
Fire Extinguishers and Fire Fighting Equipment	<ol style="list-style-type: none"> 1) The Principal Contractor and Sub-Contractors must allow for and provide adequate provision of regularly serviced temporary firefighting equipment located at strategic points on site, specific for the classes of fire likely to occur. 2) The appropriate notices and signs must be allowed for and be erected as required 3) Contractors may not utilize fire protection equipment belonging to the Client without prior consent
Ladders and Ladder Work	<ol style="list-style-type: none"> 1) The Principal Contractor must allow for and ensure that all ladders are inspected at least monthly, are in a good safe working order, are the correct height for the task, extend at least 1m above the landing, are fastened and secured and are placed at a safe angle. 2) Records of inspections must be kept in a register on site.
General Machinery	To comply with Driven Machinery Regulations as published in Government Notice No. R. 1010 dated 18 July 2003
Portable Electrical Tools and Hand Tools	<ol style="list-style-type: none"> 1) The Principal Contractor shall ensure that all electrical tools, electrical distribution boards, extension leads, and plugs are kept in a safe working order. 2.) The Principal Contractor shall ensure that all portable electrical Equipment, is clearly numbered, inspected by a Competent appointed person and records of such inspections to be kept on record in an appropriate register on the site SHE file 3) The Principal Contractor shall allow for and ensure the following in relation to hand Tools: That a "Competent Person" undertakes routine inspections and records are kept on site.

	<p>That only authorized trained persons use the tools. That safe working procedures apply. That PPE is provided and used.</p>
Adequate Lighting	All Contractors must allow for and ensure that adequate lighting is provided to allow for work to be carried out safely.
Transportation of Workers	<p>1) In addition to CR 23 the following will apply The Principal Contractor and Sub-Contractors shall not:</p> <ul style="list-style-type: none"> • Transport persons together with goods or tools unless there is an appropriate area or section of the vehicle in which to store such goods. • Transport persons on the back of trucks except if a proper canopy (properly covering the sides and top) has been provided with suitable seating areas. • Permit workers to stand or sit on the edge of the transporting vehicle. • Transport workers in LDVs unless they are closed/covered and have the correct number of seats for the passengers • No driver may transport more than six people on the back of a 1 Ton LDV and more than four passengers on the back of a ½ Ton LDV. <p>2) The driver of any LDV may not permit more than two passengers to occupy the cab of any LDV.</p> <p>3) Drivers of such vehicles must have a valid driver’s license for the code of vehicle being driven by them.</p> <p>4) No servicing of vehicles will be permitted on a Construction Site. No Vehicles or machinery leaking oil will be permitted on site due to the risk posed to the environment.</p> <p>5) Any oil or diesel spilled on site must be cleaned up as per accepted environmental practice</p>
Earth Moving Machinery	<p>In the event that Earth Moving Machinery is present on site the following must be adhered to:</p> <ul style="list-style-type: none"> • Drivers of vehicles must be instructed to avoid parking behind earth moving machinery in order to ensure that their vehicles are visible to the operators of earth moving machinery. • Right of way must be afforded to earth moving machinery at all times. • Vehicles must only be permitted to park, where possible, in designated areas
	<p>1) Occupational exposure is a major problem and all Contractors must ensure that proper health and hygiene measures are put in place to prevent exposure to these hazards.</p> <p>2) All Contractors must prevent inhalation, ingestion and absorption of any harmful chemical or biological agents</p> <p>3) Water to be utilized for drinking purposes may only be drawn from taps designated for drinking water purposes. Fire hydrants and fire hose reels may not be utilized for drinking water purposes.</p>
Environmental Management	<ul style="list-style-type: none"> • The Principal Contractor and Sub-Contractors must comply with the requirements of NEMA Act..... • The Principal Contractor must develop a waste management plan,

	<p>implement and maintained it onsite</p> <ul style="list-style-type: none"> • Cement mixing to be done at a predetermined location on site which must include a solid, slab, and banded edges to prevent runoff • Contaminated run off water from the site must be treated such as to ensure that it does not pose a risk to the environment • Any material which may have a harmful effect when disposed of by normal means must be disposed of in an appropriate manner to eliminate its harmful effect on the environment after disposal. • The Principal Contractor must allow for and ensure that adequate procedures are implemented and maintained to ensure that waste generated is placed in suitable receptacles and removed from the site promptly. • Plans to deal with spillages must be in place and maintained. • No waste materials (liquid or solid) may be disposed of in drains. • No burning of waste material may take place on site as such material being burned may result in pollution of the air or give off toxic vapours which could be harmful to the health of employees or any other person present on site.
Alcohol and other Drugs	<ul style="list-style-type: none"> • No alcohol and other drugs will be allowed on site without the express permission of the Principal Contractor • No person may be under the influence of alcohol or any other drugs while on the construction site. • Any person on the construction site who is on prescription drugs must inform his/her Employer accordingly and the Employer shall in turn report this to the Principal Contractor immediately. • Any person on the construction site who is suffering from any illness/condition that may have a negative effect on his/her safety performance must report this to his/her Employer, who in turn must report this to the Principal Contractor forthwith. • Any person on the construction site who is suspected of being under the influence of alcohol or other drugs must be removed from site immediately and be instructed to report back the next day for a preliminary inquiry. A full disciplinary procedure must be followed by the Contractor concerned and a copy of the disciplinary action must be forwarded to the Principal Contractor for his records.

Annexure C

T2.16 CONTRACTOR'S SAFETY, HEALTH AND ENVIRONMENTAL DECLARATION

Project title:	Emgangezi Primary School : Storm Damage		
Bid no:		WIMS no:	063241

INTRODUCTION

In terms of *Construction Regulation 5(1)(h)* of the *Construction Regulations of February 2014* a Contractor may only be appointed to perform construction work if the Client is satisfied that the Contractor has the necessary competencies and resources to carry out the work safely in accordance with the *Occupational Health and Safety Act, Act 85 of 1993* and the *Construction Regulations of February 2014*. In line with this requirement the Contractor is required to read through this document carefully, sign it and submit it with his/her Tender.

DECLARATION

1. I the undersigned hereby declare and confirm that I am fully conversant with the Occupational Health and Safety Act, Act 85 of 1993, the Construction Regulations of February 2014 and the Construction Safety, Health and Environmental Specification attached in the tender document.
2. I hereby declare that my company and its employees has the necessary competency and resources to safely carry out the construction work under this contract in compliance with the Occupational Health and Safety Act, Act 85 of 1993, the Construction Regulations of February 2014 and the Construction Safety, Health and Environmental Specification.
3. I hereby confirm that adequate provisions has been made in my tender to cover the cost of all Safety, Health and Environmental duties and responsibilities imposed on me by the Occupational Health and Safety Act, Act 85 of 1993, the Construction Regulations of February 2014 and the Construction Safety, Health and Environmental Specification.
4. I confirm that I may not commence with any part of construction work under the contract until my Construction Safety, Health and Environmental Plan has been approved in writing by the Client.
5. I hereby confirm that copies of the following documentation will be kept on site for viewing and inspection purposes for the duration of the construction work:
 - a) Client's Construction Safety, Health and Environmental Specification
 - b) Approved Construction Safety, Health and Environmental Plan
 - c) Occupational Health and Safety Act, Act 85 of 1993, and
 - d) Construction Regulations of February 2014.
6. I agree that my failure to complete and execute this declaration to the satisfaction of the Client will mean that I am unable to comply with the requirements of the Occupational Health and Safety Act, Act 85 of 1993 and Construction Regulations 2014, and accept that my tender will be rejected.

Signature:.....

Date:.....

(*Person duly authorised to sign on behalf of Tenderer*)

Annexure D
Baseline Risk Assessment
EMGANGENI PRIMARY SCHOOL

Main Activity	Sub Activity	Safety	Health Risk	Environmental Risk	Public Safety Risk	Control Measures	Responsible Person
Site Establishment	Barricading and Installation of temporary gates and fencing	Struck by tools, tripping, falling into small excavations	Back strain, cuts, abrasion, heat exhaustion, noise exposure, dust inhalation	Littering from poor housekeeping	Tripping hazard, dust , noise	Risk Assessment Training to employees; Safe & proper use of hand tools; Wearing required PPE, practise of proper manual lifting of material	Contractor
	Placement / building of site office	Struck by tools, electrocution, tripping.	Back strain, cuts, abrasion, heat exhaustion, noise exposure, dust inhalation	Littering from poor housekeeping	Tripping hazard, dust , noise	Safety Induction Training to employees; Safe & proper use of hand tools; practise of proper manual lifting of material; Wearing required PPE	Contractor
	vehicles entering and exiting	Vehicles colliding with other vehicles, employees knocked / run-over by construction vehicles	Cuts, abrasions, death	Leaking of petrol and oil from construction vehicles.	Noise, dust, collisions, death	Construction vehicles operated by competent operators; Vehicle route to be demarcated; Display speed limit.	Contractor
	Establishing water connections	Struck by tools, Tripping, Falling into excavations	Back strain, cuts, abrasion, heat exhaustion, noise exposure, dust inhalation	none	none	Safety Induction Training to employees; Safe & proper use of hand tools; Wearing required PPE	Contractor
	Establishing Electricity connections	Struck by tools, electrocution, tripping, Falling into excavations	Back strain, cuts, abrasions, Heat exhaustion, noise , dust, etc.	none	none	Risk Assessment Training to employees; Safe & proper use of portable electrical tools; Wearing required PPE	Contractor

Remedial Work Roof Structure

Main Activity	Sub Activity	Safety	Health Risk	Environmental Risk	Public Safety Risk	Control Measures	Responsible Person
Stripping of roof Sheeting/ fixtures Corrugated/ Asbestos	Isolation of services	Electrocution; struck by tools; cuts; trip & fall; skin burn; etc.	Dust Inhalation; electrocution; death; etc.	Littering due to poor housekeeping; etc.	None	Risk Assessment; training to employees; Safe & proper use of portable electrical tools; Wearing required PPE	Contractor
	Removal of roof Sheets	Falling through fragile material, persons being struck by falling objects, hands being caught between surfaces etc	Inhalation of respirable asbestos particles, inhalation of moulds, bacteria or others similar contaminanats,Cuts, abrasions, fractures etc from galling etc	Release of asbestos contaminated dust into the surrounding environment	Inhalation of air contaminated with respirable asbestos, moulds etc dust	Fall Protection Plan. Documented method statement for removal of sheets, Damping procedures, Warning signage, Placing and securing PVC sheeting below roof structure to contain dust released, correct lifting of sheets, placing in approved skips, cleaning up etc. Obtaining Asbestos Disposal certificate etc.	Contractor
	Stripping of fixtures	Struck by tools, falls, tripping	Cuts, abrasions, fractures	Littering from poor housekeeping	fixtures being removed falling on public, noise	Risk Assessment Training to employees; Safe & proper use of hand tools; Wearing required PPE, practise of proper manual lifting of material	Contractor
	Removal of damaged gutters and downpipes	Struck by tools; cuts; abrasion; trip & falls; fracture / hand injuries; etc.	Back strain; dust inhalation; exposure to noise; etc.	none	none	Training, PPE, safe systems of work and supervision	Contractor
	Removal of damaged fascia boards / barge boards	Struck by tools; cuts; abrasion; trip & falls; fracture / hand injuries; etc.	Back strain; dust inhalation; exposure to noise; etc.	none	none	Training, PPE, safe systems of work and supervision	Contractor

	Use of hand tools	Struck by hand tools, tripping,	Abrasions, burns, hand injuries, eye injuries, back injury, heat exhaustion	none	none	Training in pre-use inspection, maintenance; Training in using correct tools, inspection; Wearing required PPE (<i>i.e. Overalls, hard hats, safety shoes, goggles, etc.</i>)	Contractor
	Removing of rubble, machine and labour	Tripping, struck by, bumping against,, machine colliding with vehicles &People	Back strain, heat exhaustion, bruising,, cuts, abrasions, death	Spilling of oil, diesel, petrol	Noise, dust, collisions, death	Training in pre-use inspection, maintenance; Training in using correct tools, inspection; Wearing required PPE (<i>i.e. Overalls, hard hats, safety shoes, goggles, etc.</i>)	Contractor
Installation of Roof Trusses and Roof Covering including sisalation	Installation of timber roof Trusses	Falls, Struck by, hands caught between,	Back strain, cuts, abrasions, Heat exhaustion, noise, fractures and death/	None	None	Training, PPE, safe systems of work and supervision	Contractor
	Fitting of battens	Falls, Struck by, hands caught between,	Back strain, cuts, abrasions, Heat exhaustion, noise, fractures and death	None	None	Training, PPE, safe systems of work and supervision	Contractor
	Fitting of roof sheets	Falls, struck by, bumping against objects, sharp edges	Back strain, cuts, abrasions, Heat exhaustion, noise, fractures and death etc.	none	Sheets being fitted falling on public	Training, PPE, safe systems of work and supervision	Contractor
Installation of sisalation	Securing sisalation	Falls, hazardous dust, bumps, sharp edges, struck by falling objects	Muscular strains, dust inhalations, cuts and abrasions	Hazardous dust being release into the environment	None	Training, PPE, safe systems of work and supervision	Contractor

Installation of gutters and down pipes	Lifting into position	Falls, hazardous dust, bumps, sharp edges, struck by falling objects	Muscular strains, cuts and abrasions	None	None	Training, PPE, safe systems of work and supervision	Contractor
	Drilling and securing	Falls, hazardous dust, bumps, sharp edges, struck by falling objects	Muscular strains, cuts and abrasions, noise	None	None	Training, PPE, safe systems of work and supervision	Contractor
Installation of barge boards and new fascias	Lifting into position	Falls, hazardous dust, bumps, sharp edges. Struck by falling objects	Muscular strains, dust inhalations, cuts and abrasions	Hazardous dust being release into the environment	None	Training, PPE, safe systems of work and supervision	Contractor
	Drilling and securing	Falls, hazardous dust, bumps, sharp edges, struck by falling objects	Muscular strains, dust inhalations, cuts and abrasions	Hazardous dust being release into the environment	None	Training, PPE, safe systems of work and supervision	Contractor
Painting of new gutters, downpipes, new fascias and barge boards - and Treatment of exposed timber at eaves.	Painting work	Falls, hazardous dust, bumps, sharp edges, etc	Muscular strains, cuts and abrasions, inhalation of toxic vapours	Contamination of natural resources	Contamination of natural resources	Training, PPE, safe systems of work and supervision	Contractor
Installation of new purlin to interior and exterior of beam filling	Installation of new purlin	Falls, Struck by falling objects, sharp edges, Manual Handling	Muscular strain, Muscular strain, Cuts, Fracture and Death etc.,	None	None	HIRA, Competent Management, Competent Supervision, safe systems of work. Tools and equipment inspections, Medical Fitness Certificates, continuous housekeeping signage, training. PPE etc.	Contractor

Repairs to existing roof structure	Roof repairs	Physical injuries from falling from roof height and from materials falling from heights; Injuries from falling off during wet weather work & windy conditions. Cuts / laceration / electrical shocks from using unsafe angle grinders.	Back strain from lifting heavy material; heat exhaustion; etc	None	None	HIRA, Competent Management, Competent Supervision, safe systems of work. Tools and equipment inspections, Medical Fitness Certificates, continuous housekeeping signage, training. PPE etc.	Contractor
Painting of existing roof	Painting	Poor working posture, repetitive motion, hazardous chemical substances, Falls, hazardous dust etc.	Dermatitis ,muscular strain etc.	Contamination of natural resource, spillage and disposal	None	Training, PPE, safe systems of work and supervision	Contractor

Ceilings							
Main Activity	Sub Activity	Safety	Health Risk	Environmental Risk	Public Safety Risk	Control Measures	Responsible Person
Remove existing damaged ceilings	Removal of ceilings	Manual Handling, Struck by falling items. Sharp edges, Poor working posture, Tripping. etc.	Muscular strain, Bruising, fractures, Cuts, abrasion, Lower back strain, Fractures, grazing etc.	Back pains, fatigue, abrasions etc.	Littering from poor housekeeping etc	HIRA , Competent Supervision and Management, Insulated tools ,Lock out, testing and tagging , permit issue, PPE etc.	Contractor
Installation of ceilings	Fitting of ceiling boards	Falls, hazardous dust, bumps, sharp edges, etc.	Muscular strains, cuts and abrasions, inhalation of toxic vapours	None	None	Training, PPE, safe systems of work and supervision	Contractor
	Fitting of cornices	Falls, hazardous dust, bumps, sharp edges, etc.	Muscular strains, cuts and abrasions, inhalation of toxic vapours	None	None	Training, PPE, safe systems of work and supervision	Contractor
	Skimming	Falls, hazardous dust, bumps, sharp edges, etc.	Muscular strains, cuts and abrasions, inhalation of toxic vapours	None	None	Training, PPE, safe systems of work and supervision	Contractor
	Painting	Falls, hazardous dust, bumps, sharp edges, etc.	Muscular strains, cuts and abrasions, inhalation of toxic vapours	Contamination of natural resources	Contamination of natural resources	Training, PPE, safe systems of work and supervision	Contractor

Brickwork – Build of Fire walls							
Main Activity	Sub Activity	Safety	Health Risk	Environmental Risk	Public Safety Risk	Control Measures	Responsible Person
Build new fire walls	Construction of new fire walls	Caught in-Between demolished structure, Flying particles, Struck against surface, Abrasive surfaces, Dust, Excessive Environmental Temperatures Noise,, etc.	Fractures, death Eye injuries, Abrasions, Dust inhalation, Dehydration, Noise induced hearing loss etc.	None	None	HIRA, Engineers Recommendation, Competent Management, Competent Supervision, Demolition Plan, safe systems of work, Medical Fitness Certificates, continuous housekeeping signage and barricading, training. PPE etc.	Contractor
Windows							
Main Activity	Sub Activity	Safety	Health Risk	Environmental Risk	Public Safety Risk	Control Measures	Responsible Person
Replace / repair broken Windows	Repair / replace windows	Falls, hazardous dust, bumps, sharp edges, etc.	Burns, Inhalation of hazardous vapours	None	None	Training, PPE, safe systems of work and supervision	Contractor
	Glazing	Contact with sharp edges , Hazardous substances, falling	Cuts and lacerations ,, fractures , death	None	None	Training, PPE, safe systems of work and supervision	Contractor
	Painting of windows	Hazardous dust, bumps, sharp edges	Inhalation of hazardous dust and vapours	None	None	Training, PPE, safe systems of work and supervision	Contractor

Doors / Frames							
Main Activity	Sub Activity	Safety	Health Risk	Environmental Risk	Public Safety Risk	Control Measures	Responsible Person
Removal of existing damaged doors and frames	Removal of existing damaged doors	Struck by tools; cuts; abrasion; trip & falls; fracture / hand injuries; etc.	Back strain; dust inhalation; heat exhaustion; exposure to noise; etc.	none	none	Training, PPE, safe systems of work and supervision.	Contractor
	Removal of existing damaged frames	Struck by tools; cuts; abrasion; trip & falls; fracture / hand injuries; etc.	Back strain; dust inhalation; heat exhaustion; exposure to noise; etc.	none	none	Training, PPE, safe systems of work and supervision	Contractor
	Install new doors and ironmongery	Falls, Struck by falling objects, sharp edges, Manual Handling	Muscular strain, Muscular strain, Cuts, Fracture and Death etc.,	None	None	HIRA, Competent Management, Competent Supervision, safe systems of work. Tools and equipment inspections, Medical Fitness Certificates, continuous housekeeping signage, training. PPE etc.	Contractor
	Install new galvanized steel frames and ironmongery	Falls, Struck by falling objects, sharp edges, Manual Handling	Muscular strain, Muscular strain, Cuts, Fracture and Death etc,	None	None	HIRA, Competent Management, Competent Supervision, safe systems of work. Tools and equipment inspections, Medical Fitness Certificates, continuous housekeeping signage, training. PPE etc.	Contractor

	Painting of doors / frames	Hazardous dust, bumps, sharp edges	Inhalation of hazardous dust and vapours	None	None	Training, PPE, safe systems of work and supervision	Contractor
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Plastering and Painting

Main Activity	Sub Activity	Safety	Health Risk	Environmental Risk	Public Safety Risk	Control Measures	Responsible Person
Plaster work external and internal		Bumps, sharp edges, Incorrect working positions	Grazing, dermatitis,, cuts and abrasions	Minimal	None	Training, PPE, safe systems of work and supervision	Contractor
Painting of Plaster work external and internal		Struck by hand tools, tripping,	Back strain, heat exhaustion, bruising, hand injuries	Land pollution (from poor housekeeping); paint spillage; etc.	none	Training, PPE, safe systems of work and supervision	Contractor

Security Gates

Main Activity	Sub Activity	Safety	Health Risk	Environmental Risk	Public Safety Risk	Control Measures	Responsible Person
Install new galvanized security gates to classrooms and new entrance	Install new security gates	Physical exertion, bump against, caught between etc.	Muscular strain, bruising etc.	None	None	HIRA, Safe Systems of work, barricading, training, supervision, Flagmen, PPE etc.	Contractor

gates to driveways.							
Floors							
Main Activity	Sub Activity	Safety	Health Risk	Environmental Risk	Public Safety Risk	Control Measures	Responsible Person
Screed to floors, walkways and corridors		Poor working position ,caught between surfaces, dust	Muscular strain , dust inhalation, abrasions, dermatitis etc.	None	None	Training, PPE, safe systems of work and supervision	Contractor
Construction of new surface beds	Excavation	Poor posture, Bumps, sharp edges etc.	Muscular strains, dust inhalation, cuts and abrasions	None	None	Training, PPE, safe systems of work and supervision	Contractor
	Formwork	Tripping, poor posture, bumps,, sharp edges etc.	Muscular strains, dust inhalation, cuts and abrasions	None	None	Training, PPE, safe systems of work and supervision	Contractor
	Concrete pouring	Poor posture, Bumps, sharp edges etc.	Muscular strains, dust inhalation, cuts and abrasions	None	None	Training, PPE, safe systems of work and supervision	Contractor
	Brick work	Rough surfaces, hazardous substances, flying particles, falling objects	Cuts, abrasions, burns, fractures, death	None	None	Training, PPE, safe systems of work and supervision	Contractor

Floor covering	Remove floor covering and installation of new floor covering	Struck by tools, hands caught between areas, Flying particles , sharp edges, poor posture	cuts, abrasions, dust inhalation, fractures	None	None	Training, PPE, safe systems of work and supervision	Contractor
Structural repairs							
Main Activity	Sub Activity	Safety	Health Risk	Environmental Risk	Public Safety Risk	Control Measures	Responsible Person
Repairs to foundation and cracks to walls internal / external	Excavation	Poor posture, Bumps, sharp edges etc.	Muscular strains, dust inhalation, cuts and abrasions	None	None	Training, PPE, safe systems of work and supervision	Contractor
	Formwork	Tripping, poor posture, bumps,, sharp edges etc.	Muscular strains, dust inhalation, cuts and abrasions	None	None	Training, PPE, safe systems of work and supervision	Contractor
	Concrete pouring	Poor posture, Bumps, sharp edges etc.	Muscular strains, dust inhalation, cuts and abrasions	None	None	Training, PPE, safe systems of work and supervision	Contractor
	Brick work	Rough surfaces, hazardous substances, flying particles, falling objects	Cuts, abrasions, burns, fractures, death	None	None	Training, PPE, safe systems of work and supervision	Contractor

Repairs structural cracks to walls internal / external	Repairs structural cracks to walls and Plaster walls.	Abrasive surfaces, Poor working posture, Hot climatic conditions, Falls Cement Dust, HCS etc.	Abrasions, Muscular strain, Heat exhaustion, Dermatitis, Lung infection, Fracture and Death etc.	None	None	HIRA, Competent Management, Competent Supervision, safe systems of work. Tools and equipment inspections, Medical Fitness Certificates, continuous housekeeping signage, training. PPE etc.	Contractor
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Chalkboards and Notice board

Main Activity	Sub Activity	Safety	Health Risk	Environmental Risk	Public Safety Risk	Control Measures	Responsible Person
Remove damaged chalkboard		Falls, hazardous dust, bumps, sharp edges, etc.	Muscular strains, cuts and abrasions, inhalation of toxic vapours	none	none	Training, PPE, safe systems of work and supervision.	Contractor
Install new chalkboards and pinning boards and notice board	Install new chalkboards, pinning boards and notice boards	Falls, hazardous dust, bumps, sharp edges, etc.	Muscular strains, cuts and abrasions, inhalation of toxic vapours	None	None	Training, PPE, safe systems of work and supervision	Contractor

Electrical work							
Main Activity	Sub Activity	Safety	Health Risk	Environmental Risk	Public Safety Risk	Control Measures	Responsible Person
Strip out existing damage / unsafe electrical installation. and Install new power points, light and lighting protector.	Disconnection of services	Electrocution, struck by tools, sharp edges,	Burns, respiratory failure ,cuts, abrasions, death	None	None	Training, PPE, safe systems of work and supervision	Contractor
	Chasing	Electricity, moving part, entanglement, struck by flying items, sparks, noise , dust, entanglement	Burns, Electrocution, cuts abrasions, dust inhalation, noise induced hearing loss	None	None	Training, PPE, safe systems of work and supervision	Contractor
	Fitting of plug boxes, junction boxes ,Distribution boards etc.	Noise , dust , Electricity ,bumping against, struck by flying items, entanglement , moving parts	Electrocution ,cuts and abrasions , dust inhalation ,noise induced hearing loss	None	None	Training, PPE, safe systems of work and supervision	Contractor
	Wiring	Muscular exertion ,bumping against , sharp surfaces	Muscular strain ,cuts and abrasions ,	None	None	Training, PPE, safe systems of work and supervision	Contractor
	Lights Installations	Cuts & abrasion; trips & falls; Electric shock; Electrocution; Falls from height, etc.	Back strain; dust inhalation; Electrocution; etc.	None	None	HIRA, Competent Management, Competent Supervision, safe systems of work. Tools and equipment inspections, Medical Fitness Certificates, continuous housekeeping signage, training. PPE etc.	Contractor

	Lighting protection installation.	Cuts / laceration / electrical shocks; Electrical burns, Electrocutation, Falls from height, Dust etc.	Cuts, abrasions, burns, Electrocutation, fractures, death, Muscular strain, Dust Inhalation, Bruzing, Grazing, etc.	None	None	HIRA, Competent Management, Competent Supervision, safe systems of work. Tools and equipment inspections, Medical Fitness Certificates, continuous housekeeping signage, training. PPE etc.	Contractor
Retaining structure							
Main Activity	Sub Activity	Safety	Health Risk	Environmental Risk	Public Safety Risk	Control Measures	Responsible Person
Construction of new retaining structure	Excavation	Poor posture, Bumps, sharp edges etc.	Muscular strains, dust inhalation, cuts and abrasions	None	None	Training, PPE, safe systems of work and supervision	Contractor
	Concrete pouring	Poor posture, Bumps, sharp edges etc.	Muscular strains, dust inhalation, cuts and abrasions	None	None	Training, PPE, safe systems of work and supervision	Contractor
	Block movement	Poor posture, Bumps, etc.	Muscular strains, dust inhalation, cuts and abrasions, crushing of fingers etc.	None	None	Training, PPE, safe systems of work and supervision	Contractor
	Construction of retaining structure	Falls from elevated positions; Struck by objects; Cut & abrasion; slip / trip & falls; eye injuries; etc.	Back strain; dust inhalation; etc.	Littering from poor housekeeping	None	HIRA, Competent Management, Competent Supervision, safe systems of work. Tools and equipment inspections, Medical Fitness Certificates, continuous	Contractor

						housekeeping signage, training. PPE etc.	
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External works							
Main Activity	Sub Activity	Safety	Health Risk	Environmental Risk	Public Safety Risk	Control Measures	Responsible Person
Repair work to existing driveways	Preparation and levelling	Tripping ,bumping against, Poor working positions, dust	Muscular strain ,dust inhalation , abrasions	None	None	Training, PPE, safe systems of work and supervision	Contractor
	Compaction (Sub base)	Noise , dust ,Flammable substances ,struck by, vibration	Muscular strain, dust inhalation , noise induced hearing loss	None	None	Training, PPE, safe systems of work and supervision	Contractor
	Compaction	Heated materials ,Noise Dust, hazardous substances, , struck by, vibration	Muscular strain, dust inhalation , noise induced hearing loss, burns	None	None	Training, PPE, safe systems of work and supervision	Contractor

Ablution & Plumbing							
Main Activity	Sub Activity	Safety	Health Risk	Environmental Risk	Public Safety Risk	Control Measures	Responsible Person
Plumbing of sanitary ware and refurbish of damaged ablution.	Chasing	Electricity, moving part, entanglement, struck by flying items, sparks, noise , dust	Electrocution, cuts abrasions, dust inhalation, noise induced hearing loss	None	None	Training, PPE, safe systems of work and supervision	Contractor
	Chiselling	Struck by tools, hands caught between areas, Flying particles	cuts, abrasions, dust inhalation, fractures	None	None	Training, PPE, safe systems of work and supervision	Contractor
	Excavations	Struck by tools , tripping, Falling into excavations,	Back strain, heat exhaustion, bruising,, cuts, abrasions, death	None	None	Training, PPE, Barricading, safe systems of work and supervision.	Contractor
	Compaction	Noise , dust ,Flammable substances ,struck by, vibration	Muscular strain, dust inhalation , noise induced hearing loss	None	None	Training, PPE, safe systems of work and supervision	Contractor
	Fitting of fixtures	Noise , dust, sharp edges, bumping against ,	Muscular strain, dust inhalation , noise induced hearing loss	None	None	Training, PPE, safe systems of work and supervision	Contractor
	Soldering of pipes	Hazardous substances , heated surfaces, flammable substances, Sharp edges	Inhalation of hazardous vapour ,burns, noise induced hearing loss	None	None	Training, PPE, safe systems of work and supervision	Contractor

Storm water control and Sewer

Main Activity	Sub Activity	Safety	Health Risk	Environmental Risk	Public Safety Risk	Control Measures	Responsible Person
Construction of new – drains, walkways, aprons etc.	Excavation	Poor posture, Bumps, sharp edges etc.	Muscular strains, dust inhalation, cuts and abrasions	None	None	Training, PPE, safe systems of work and supervision	Contractor
	Formwork	Tripping, poor posture, bumps,, sharp edges etc	Muscular strains, dust inhalation, cuts and abrasions	None	None	Training, PPE, safe systems of work and supervision	Contractor
	Concrete pouring	Struck by vehicle, vehicle colliding with other vehicles, Impact hazard, Caught between parts, falling	Back strain, heat exhaustion, abrasions, fractures, death	Pollution due to cement spillage, leaking of oil and diesel	Noise	Minimal speed limit and flag man. Training of personnel on the use of HCS; Wearing required PPE Supervision	Contractor
Repair concrete v-drains	Repair concrete v-drains	Abrasive surfaces, heavy load, poor working posture etc.	Abrasions, muscular strain etc.	None	None	Safe systems of work, training, PPE, Good Housekeeping Practises, Supervision; etc.	Contractor
Replace damaged sewer lines, septic tanks and sewer drains		Abrasive surfaces, heavy load, poor working posture etc.	Abrasions, muscular strain etc.	None	None	Safe systems of work, training, PPE, Good Housekeeping Practises, Supervision; etc.	Contractor

Water tanks / Conc. Plinths							
Main Activity	Sub Activity	Safety	Health Risk	Environmental Risk	Public Safety Risk	Control Measures	Responsible Person
Install new jojo tanks including plinths	Excavation	Poor posture, Bumps, sharp edges etc	Muscular strains, dust inhalation, cuts and abrasions	None	None	Training, PPE, safe systems of work and supervision	Contractor
	Formwork	Tripping, poor posture, bumps,, sharp edges etc	Muscular strains, dust inhalation, cuts and abrasions	None	None	Training, PPE, safe systems of work and supervision	Contractor
	Concrete pouring	Poor posture, Bumps, sharp edges etc	Muscular strains, dust inhalation, cuts and abrasions	None	None	Training, PPE, safe systems of work and supervision	Contractor
Repair work to existing tanks, taps and plinths		Tripping ,bumping against, Poor working positions, dust	Muscular strain ,dust inhalation , abrasions	None	None	Training, PPE, safe systems of work and supervision	Contractor

Note:

CR 7 (8) A contractor must ensure that **all his or her employees** have a **valid medical certificate of fitness** specific to the construction work to be performed, and issued by an **Occupational Health Practitioner in the form of Annexure 3.**

 <p>KWAZULU-NATAL PROVINCE PUBLIC WORKS REPUBLIC OF SOUTH AFRICA</p>	<p>Directorate: Private Bag Tel: Cell: Enquiries: Email:</p>
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Site Establishment Checklist

Note: This checklist is for Site Establishment only. To be submitted to the Client Health and Safety Representative upon completion and attached to claim for Site Establishment.

Site:		Contractor:
Completed by:		Date:
Item	✓ or ✗ or N/A	
OHS Administration/Records		
1		Approved PC and Sub-Contractors SHE Plans on site.
2		Safety Induction program in place and on site.
3		SHE Representative/s nominated.
4		Incident notification/reporting system in place and on site.
5		OHS Regulations, Act, etc on site .
6		Safety needs for job identified and addressed.
8		Sub-contractors involved in Site Establishment SHE Plans approved.
9		PC and Sub-contractor RAMS called for and approved prior to work and on file.
10		Site registers, training, and qualification records on site.
11		Notices, permits and construction plans obtained and available on site.
12		Medical Fitness records available for all persons on site, job/task demands included on Annexure 3 Form.
13		DSTI's for establishment activities, signed, dated, communicated, on file.
Existing Site Building Hazards		
14		Asbestos and other hazardous materials audit conducted and recorded.
15		Underground services located, and marked on site layout plan.
16		Stored substances & underground tanks identified; location marked.
17		Potential for soil contamination assessed and recorded.
18		Electrical wiring and powerlines identified, recorded location communicated.
19		Strength of structural members, floors, roofs, stairs, and guard rails assessed and recorded.
Safety Signs and Warnings		
20		PPE signs posted where needed in work areas (such as footwear, eye, hearing, respiratory protection and hard hats.)
21		Safety hazard and warning signs available (such as excavations, scaffold incomplete, danger tags, explosive tools).
22		"Construction Site" signage posted at entrances to site.
Fire Protection		
23		Fire protection needs evaluated and recorded.
24		Hot work procedures in place.

25		Fire extinguishing equipment available and location marked on site layout plan.
Site Security		
26		Site security needs evaluated and recorded.
27		<u>Suitable</u> Barriers, fences or hoarding in place and secure.
28		"No unauthorized Entry" – Report to Site Office signs posted at entrances to site.
29		Access to the site effectively controlled.
Public Protection		
30		Public protection needs evaluated & documented.
31		Adequate signage provided .
32		Footpaths safe with no trip hazards.
33		Overhead protection gantries, scaffolding, catch platforms, catch fans used to contain falling objects.
33		Rubbish chutes enclosed & skip covered.
34		Skips and rubbish chutes barricaded and fitted with warning signs.
35		All accessible pits, excavations guarded or fenced.
Site Amenities		
36		Weather- proof Meals/Dining area/s with sufficient tables and chairs.
37		Clean water for drinking and washing hands and eating utensils available.
38		Separate gender toilets and washing facilities items such as soap and towels.
39		Separate Gender Change Rooms with lockable storage facilities available.
40		Regular cleaning of amenities arranged and recorded on register.
First Aid		
41		First aid needs for job assessed and recorded.
42		First aid kit/s available , clearly labelled and accessible.
43		First aid procedure, first aider names and emergency contact numbers displayed.
44		First Aid Register and first aid treatment records system in place.
Emergencies		
45		Emergency procedures in place, communicated and recorded.
46		Emergency exits signposted, unobstructed and sufficiently illuminated.
47		Fire extinguishers clearly marked, accessible and serviced.
		Emergency Gathering points sign posted.
Traffic Management		
48		Traffic Management Plan in place.
49		Appropriate traffic control to warn and guide users of roads, footpaths and near excavations.
50		Appropriate warning/ information signage posted.
51		Flagmen used where required to ensure effective warning, vehicle movement etc.
Electrical Safety		
52		Sufficient number of switchboards in place.
53		Initial electrical testing and tagging carried out.
54		Power tools numbered, on register and inspected by competent person.
55		Certificates of electrical safety available on site (COC).
Access/Egress and Housekeeping		
56		Entry, access, egress, walkways, and passageways clearly marked, unobstructed and well illuminated.
57		Building materials, in designated areas, demarcated, sign posted etc.
58		Sufficient rubbish bins, skips in place

59		Refuse/Waste removal frequency arrangements in line with refuse/waste generation frequency to ensure that skips and storage areas do not overflow.
Fall Risk Management		
60		Fall risks areas identified.
61		Fall protection measures in place for all work where there is a fall risk.
62		Scaffold tagging, handover and inspection system in place.
63		Ladders tagged, numbered, on register and inspected.
		Harnesses on register, checked, users trained.
Personal Protective Equipment		
64		PPE program, training and use procedures in place followed and recorded.
65		PPE correct for type of hazard.
Plant, Machinery and Hand Tools		
66		Initial plant checklist & register acceptance to use system in place.
67		Plant hazard ID and risk assessment carried out.
68		Operators hold relevant certification/licenses (where required) and/or are trained and competent to use.
69		Adequate guarding and safe operating procedures in place.
70		Maintenance registers/logbooks in place.
		Spill kits on site to deal with fuel spillages when re-fuelling.
Hazardous Substances and Dangerous Goods		
71		Registers for hazardous substances and dangerous goods established.
72		Risk assessment done for all hazardous substances and dangerous goods.
73		MSDSs available & readily accessible to users.
74		Adequate controls in place.
75		Special storage and handling requirements (such as flammables/combustibles & ignition sources; access, ventilation, lighting, security) addressed.
76		Fire protection measures in place and maintained (such as fire extinguishers, fire blankets) .
Manual Handling & Mechanical Aids		
77		Hazards and risks assessed.
78		Lifting and handling aids (such as forklift, pallet trolley) provided and maintained, maintenance and inspection records available where required.
79		Training provided about risk factors and the proper technique to do the task and only authorised persons to operate equipment.
80		Control mechanisms implemented to eliminate or reduce manual handling risk.
Noise Generation and Exposure Control		
81		Noise hazards identified and risks assessed.
82		Noise control plan documented.
83		Noise control measures in place.
Compressed Air		
84		Hoses couplings secured and fitted with safety clips.
85		Protective clothing (goggles, face shields, earmuffs).
86		All compressors, on register, checked and pressure test records available.
Explosive Powered Tools		
87		Risk assessment done for each job.
88		Safety equipment and signs available and used.
89		Compliance with CR21 requirements.
Other specific hazards to be addressed		
90		

 <p>KWAZULU-NATAL PROVINCE PUBLIC WORKS REPUBLIC OF SOUTH AFRICA</p>	<p>Directorate: ITMS Private Bag X9041 PIETERMARITZBURG 3200 Tel: Cell: Enquiries: Email:</p>
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ASBESTOS REMOVAL CHECKLIST

ON-SITE CHECKLIST TO BE COMPLETED BY THE PRINCIPAL CONTRACTOR IN PREPERATION OF ASBESTOS REMOVAL. COPY TO BE SENT TO CLIENT HEALTH AND SAFETY REPRESENTATIVE AND COPY TO BE KEPT ON SITE SAFETY FILE. NOTE: THE AIA WILL CONDUCT FINAL INSPECTION BEFORE GRANTING PERMISSION TO START ASBESTOS REMOVAL WORK

In terms of the Asbestos Abatement Regulations, 2020, the Registered Asbestos Contractor must:

	<u>ITEM TO BE CHECKED</u>	Yes	No
1	Does the Registered Asbestos Contractor (RAC) have an up-to-date registration as a Type 2 Asbestos Contractor with DEL.		
2	Has the Asbestos Client appointed an AIA to oversee the asbestos removal work.		
3	Did the Asbestos Client, sign the Plan of work in addition to the other signatures required.		
4	Has the Client Health and safety Representative (CHSR) and the AIA been informed at least 7 days before the planned work of the anticipated date of work on site.		
5	Has an Asbestos Supervisor been appointed in writing.		
6	Has an Occupational Health and Safety Representative, as contemplated in section 17 of the Occupational Health and Safety Act been appointed.		
7	Has an up-to-date Asbestos Inventory, from the Asbestos Client, been provided prior to any asbestos work taking place.		
8	Has an in-house risk assessment been performed for asbestos removal employees, in terms of Regulation 5(6) of the Asbestos Abatement Regulations, 2020, and an up-to-date copy of this risk assessment made available at the relevant asbestos work site.		
9	Has the RAC's employees and transport drivers been adequately informed, instructed and trained as per the requirements of Regulation 7 of the Asbestos Abatement Regulations, 2020.		
10	Are employee medical and training records available on site for inspection and validation by the AIA inspector.		
11	Is a list with employee's details and physical addresses available on site.		
12	Has all asbestos removal employees been made aware of the contents of the Plan of Work and such communication been recorded.		
13	Is sufficient measures and supervision in place to ensure strict adherence to asbestos removal methodology and associated control measures as stipulated in the Plan of Work.		

14	Is there compliance with general occupational health and safety requirements on the asbestos removal site;		
15	Is the Regulated Asbestos Area (RAA) clearly demarcated with shade cloth, as well as pictograms and signs as specified in Annexure 1 of the Asbestos Abatement Regulations, 2020.		
16	Has adequate quantities of PPE as listed below been provided and employees been trained in the correct use as stipulated in the Plan of Work: 1. FFP2 / FFP3 Disposable Asbestos Masks, 2. Type 5/6 Category 3 Protective Coveralls (Asbestos Grade), 3. Over boots / lace less boots 4. Labelled Asbestos Bags (Double Bagged), 5. Goggles, 6. Nitrile Gloves		
17	Has adequate provisions been made for the removal, double bagging, temporary storage, and disposal of asbestos cement material, in accordance with this Plan of Work.		
18	Has a dedicated three stage de-contamination with filtration of run-off water and washing facilities been made available for Employees so they can after each shift and before going home, wash their hands, head, and face, and remove contaminated PPE, as per Regulation 19(6)(a).		
19	Has the container or a vehicle in which asbestos is to be transported clearly identified in accordance with the UN Transport of Dangerous Goods or UN Orange Book.		
20	Has there been any deviations from the Plan of Work and has it been immediately reported to the AIA .		
21	Has it been confirmed with the RAC that disposal certificates for asbestos removed and disposed must be supplied within 14 days of disposal.		
22	Has energy sources such as electrical supply to areas where work will be conducted been terminated and the necessary documentary proof that such sources do not pose a risk to workers been obtained eg.COC.		
23	Has the PC, s Fall Prevention Plan been communicated to employees, Fall Arrest Equipment provided and checked, suitable lifelines which has been properly secured to be able to sustain the load imposed should the worker/s fall installed.		

Initials and Surname

Signature CR 8.5

Date

Initials and Surname
Signature

Signature CR 8.1 /8.7

Date



KWAZULU-NATAL PROVINCE

PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

Project Name:	PHASE 14: STORM DAMAGED PROGRAMME: REPAIRS AND RENOVATIONS TO STORM DAMAGED SCHOOLS THROUGHOUT THE PROVINCE OF KWAZULU-NATAL:SOUTHERN REGION: CLUSTER 155: EMGANGENI SECONDARY SCHOOL. OPEN BIDS
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ANNEXURE 7

HEALTH AND SAFETY BILLS OF QUANTITIES

HEALTH AND SAFETY IMPLEMENTATION COSTING

Contractor to give a breakdown of his Health and Safety costs on this sheet.

ITEM	DESCRIPTION	UNIT	QUAN- TITY	MONTHS (Indicative)	RATE	AMOUNT
			(a)		(b)	(a) x (b)
1	MEDICALS					
1.1	Pre-employment medical	Nr.	-			
1.2	Re-medicals - yearly	Nr.	-			
	TOTAL					
2	PERSONAL PROTECTIVE EQUIPMENT					
2.1	Overalls	Nr.				
2.2	Hard Hats	Nr.				
2.3	Safety boots/shoes	Nr.				
2.4	Gloves	Nr.				
2.5	Gumboots steel toe cap	Nr.				
2.6	Safety glasses	Nr.				
2.7	Reflector Bibs	Nr.				
2.8	Barricading Material	M				
2.9	Dust masks	Box 20				
	TOTAL					
3	FIRE FIGHTING					
3.1	Fire extinguishers - 4.5Kg	Nr.				
3.2	Surveys - Annual Service	Nr.				
	TOTAL					
4	HEALTH AND SAFETY PERSONNEL					
4.1	Safety Manager	Nr.				
4.2	Safety Officer	Nr.				
4.3	Construction Phase Safety, Health, Environmental and Waste Management Plan	Nr.				
	TOTAL					
5	FACILITIES					
5.1	Provision of ablution facilities	Nr.				
5.2	Service and maintenance of ablution facilities	Nr.				
5.3	Provision of eating areas	Nr.				
5.4	Cleaning of Lay down and other storage areas	Nr.				
5.5	Wash hand basin	Nr.				
5.6	Hot and Cold running water	Nr.				
5.7	Degreasing & Toilet soap	Nr.				
	TOTAL					

6	FALL PREVENTION / PROTECTION					
6.1	Safety harnesses with double lanyards	Nr.				
6.2	Safety harnesses with Scaffold hooks	Nr.				
6.3	Lifelines and vertical fall arrest systems	Nr.				
6.4	Scaffolding – material, erection and inspection (Estimate for project)	Nr.				
6.5	Temporary hand railing material and kick flats	Nr.				
6.6	Chin Straps	Nr.				
	TOTAL					
7	FIRST AID					
7.1	Replenishment of boxes and other supplies	Nr				
	TOTAL					
8	TRAINING					
8.1	SHE Representative	Nr.				
8.2	First Aid Level 1	Nr.				
8.3	Fire Fighting	Nr.				
	TOTAL					
9	SIGNAGE					
9.1	All Signage as required by Law, regulatory, warning and information	Nr.				
9.2	Posters for awareness	Nr.				
	TOTAL					
10	ELECTRICAL					
10.1	Replacement of Locks required for lockouts	Nr.				
10.2	Replacement of tags	Nr.				
10.3	Replacement for Permit books	Nr.				
10.4	Replacement of Callipers	Nr.				
	TOTAL					
11	OTHERS (Project Specific)					
11.1		Nr.				
	TOTAL					
GRAND TOTAL TO BE CARRIED TO THE PRELIMINARIES AND GENERAL IN BILL OF QUANTITIES						



**PHASE 14: STORM DAMAGED PROGRAMME: REPAIRS AND RENOVATIONS TO STORM
DAMAGED SCHOOLS THROUGHOUT THE PROVINCE OF KWAZULU-NATAL: SOUTHERN
REGION: CLUSTER 155: EMGANGENI SECONDARY SCHOOL. OPEN BIDS**

ANNEXURE 8

WAIVER OF CONTRACTOR'S LIEN

WAIVER OF CONTRACTOR'S LIEN

DEFINITIONS

Contractor: _____

Employer: Head: Public Works (KZN Department of Public Works: Province of KwaZulu-Natal)

Agreement: GCC FOR CONSTRUCTION WORKS - SECOND EDITION 2010

Works (description):

PHASE 14: STORM DAMAGED PROGRAMME: REPAIRS AND RENOVATIONS TO STORM DAMAGED SCHOOLS THROUGHOUT THE PROVINCE OF KWAZULU-NATAL:SOUTHERN REGION: CLUSTER 155: EMGANGENI SECONDARY SCHOOL. OPEN BIDS

Site:

Region: eThekweni, District Municipality: Ugu District Municipality, Local Municipality: Umgababa.

AGREEMENT

The Contractor waives, in favour of the Employer, any lien or right of retention that is or may be held in respect of the Works to be executed on the Site

Thus done and signed at _____ on _____
[Date]

Name of signatory

Capacity of signatory

As witness

For and on behalf of the contractor who by signature hereof warrants authorisation hereto



**PHASE 14: STORM DAMAGED PROGRAMME: REPAIRS AND RENOVATIONS TO STORM
DAMAGED SCHOOLS THROUGHOUT THE PROVINCE OF KWAZULU-NATAL: SOUTHERN
REGION: CLUSTER 155: EMGANGENI SECONDARY SCHOOL. OPEN BIDS**

ANNEXURE 9

ADDITIONAL SPECIFICATION - EPWP

ADDITIONAL SPECIFICATION - EPWP

SL

EMPLOYMENT AND TRAINING OF EPWP BENEFICIARY ON THE EXPANDED PUBLIC WORKS PROGRAMME (EPWP) Infrastructure Projects:

CONTENTS

SL 01	SCOPE
SL 02	TERMINOLOGY AND DEFINITIONS
SL 03	APPLICABLE LABOUR LAWS
SL 04	EXTRACTS FROM MINISTERIAL DETERMINATION REGARDING EPWP
SL 05	EMPLOYER'S RESPONSIBILITIES
SL 06	PLACEMENT OF RECRUITED EPWP BENEFICIARY
SL 07	TRAINING OF YOUTH WORKERS
SL 08	BENEFICIARY (EPWP BENEFICIARY) SELECTION CRITERIA
SL 09	CONTRACTUAL OBLIGATIONS IN RELATION TO EPWP BENEFICIARY
SL 10	PROVINCIAL RATES OF PAY
SL 11	MEASUREMENTS AND PAYMENT
EXAMPLE	EPWP EMPLOYMENT AGREEMENT

SL 01 SCOPE

This project is part of the Expanded Public Works Programme aims to train young people and provide them with practical work experience as part of this programme. Youth aged between 18 and 35 will be recruited and trained in skills relevant to the work to be done on this project. These youth will have to be employed by the contractor as part of this project so that they can gain their work experience on these projects. The training of the youth will be coordinated and implemented by a separate service provider. This service provider will provide the contractor with a list of all the youth and the training each of these youth have received. The Contractor will be required to employ all of these youth for a minimum period of 6 months. Furthermore the Contractor will be required to supervise these youth to ensure that the work they perform is of the required standard.

If necessary the contractor's staff will be required to assist and mentor the youth to ensure that they are able to perform the type of work they need to do to the satisfactory standards required. The contractor will not be required to employ all youth in the programme at the same time, but may rotate the youth on the project, as long as all youth are employed for the minimum duration stated earlier.

This specification contains the standard terms and conditions for workers employed in elementary occupations and trained on a Expanded Public Works Programme (EPWP) for the Infrastructure Programme.

SL 02 TERMINOLOGY AND DEFINITIONS

SL 02.01 TERMINOLOGY

- (a) EPWP The Code of Good Practice for Expanded Public Works Programmes, which has been gazetted by the Department of Labour, and which provides for special conditions of employment for these EPWP projects. In terms of the Code of Good Practice, the workers on these projects are entitled to formal training, which will be provided by training providers appointed (and funded) by the Department of Labour. For projects of up to six months in duration, this training will cover life-skills and information about other education, training and employment opportunities.
- (b) EPWP Expanded Public Works Programme, a National Programme of the government of South Africa, approved by Cabinet.
- (c) UYF Umsobumvu Youth Fund.
- (d) DOL Department of Labour.

SL 02.02 DEFINITIONS

- (a) "employer" means the contractor or any party employing the worker / beneficiary under the EPWP Programme.
- (b) "client" means the Department of Public Works.
- (c) "worker / trainee" means any person working or training in an elementary occupation on a EPWP.

SL 03 APPLICABLE LABOUR LAWS

In line with the Expanded Public Works Programme (EPWP) policies, the Ministerial Determination, Special Public Works Programmes, issued in terms of the Basic Conditions of Employment Act of 1997 by the Minister of labour in government Notice No. R63 of 25 January 2002, of which extracts have been reproduced below in clauses SL 04 shall apply to works described in the scope of work and which are undertaken by unskilled or semi-skilled workers. The Code of Good Practise for Employment and Conditions of Work for Expanded Public Works Programmes, issued in terms of the Basic Conditions of Employment Act of 1997 by the Minister of Labour in Government Notice No. R64 of 25 January 2002 shall apply to works described in the scope of work and which unskilled or semi-skilled workers undertake.

SI 04 EXTRACTS FROM MINISTERIAL DETERMINATION REGARDING EPWP

SL 04.01 DEFINITIONS

- (a) "department" means any department of the State, implementing agent or contractor;
- (b) "employer" means any department that hires workers to work in elementary occupations on a EPWP;
- (c) "worker" means any person working in an elementary occupation on a EPWP;
- (d) "elementary occupation" means any occupation involving unskilled or semi-skilled work;
- (e) "management" means any person employed by a department or implementing agency to administer or execute a EPWP;
- (f) "task" means a fixed quantity of work;
- (g) "task-based work" means work in which a worker is paid a fixed rate for performing a task;
- (h) "task-rated worker" means a worker paid on the basis of the number of tasks completed;
- (i) "time-rated worker" means a worker paid on the basis of the length of time worked
- (j) "Service Provider" means the consultant appointed by Department to coordinate and arrange the employment and training of labour on EPWP infrastructure projects.

SL 04.02 TERMS OF WORK

- (a) Workers on a EPWP are employed on a temporary basis.
- (b) A worker may NOT be employed for longer than 24 months in any five-year cycle on a EPWP.
- (c) Employment on a EPWP does not qualify as employment and a worker so employed does not have to register as a contributor for the purposes of the Unemployment Insurance Act 30 of 1966.

SL 04.03 NORMAL HOURS OF WORK

- (a) An employer may not set tasks or hours of work that require a worker to work–
 - (i) more than forty hours in any week
 - (ii) on more than five days in any week; and
 - (iii) for more than eight hours on any day.
- (b) An employer and a worker may agree that the worker will work four days per week. The worker may then work up to ten hours per day.

- (c) A task-rated worker may not work more than a total of 55 hours in any week to complete the tasks (based on a 40-hour week) allocated to him.

Every work is entitled to a daily rest period of at least eight consecutive hours. The daily rest period is measured from the time the worker ends work on one day until the time the worker starts work on the next day.

SL 04.04 MEAL BREAKS

- (a) A worker may not work for more than five hours without taking a meal break of at least thirty minutes duration.
- (b) An employer and worker may agree on longer meal breaks.
- (c) A worker may not work during a meal break. However, an employer may require a worker to perform duties during a meal break if those duties cannot be left unattended and cannot be performed by another worker. An employer must take reasonable steps to ensure that a worker is relieved of his or her duties during the meal break.

SL 04.05 SPECIAL CONDITIONS FOR SECURITY GUARDS

- (a) A security guard may work up to 55 hours per week and up to eleven hours per day.
- (b) A security guard who works more than ten hours per day must have a meal break of at least one hour duration or two breaks of at least 30 minutes duration each.

SL 04.06 DAILY REST PERIOD

Every worker is entitled to a daily rest period of at least eight consecutive hours. The daily rest period is measured from the time the worker ends work on one day until the time the worker starts work on the next day.

SL 04.07 WEEKLY REST PERIOD

Every worker must have two days off every week. A worker may only work on their day off to perform work which must be done without delay and cannot be performed by workers during their ordinary hours of work ("emergency work").

SL 04.08 WORK ON SUNDAYS AND PUBLIC HOLIDAYS

- (a) A worker may only work on a Sunday or public holiday to perform emergency or security work.
- (b) Work on Sundays is paid at the ordinary rate of pay.
- (c) A task-rated worker who works on a public holiday must be paid –
- (i) the worker's daily task rate, if the worker works for less than four hours;
 - (ii) double the worker's daily task rate, if the worker works for more than four hours.
- (d) A time-rated worker who works on a public holiday must be paid –
- (i) the worker's daily rate of pay, if the worker works for less than four hours on the public holiday;
 - (ii) double the worker's daily rate of pay, if the worker works for more than four hours on the public holiday.

SL 04.09 SICK LEAVE

- (a) Only workers who work four or more days per week have the right to claim sick-pay in terms of this clause.
- (b) A worker who is unable to work on account of illness or injury is entitled to claim one day's paid sick leave for every full month that the worker has worked in terms of a contract.
- (c) A worker may accumulate a maximum of twelve days' sick leave in a year.
- (d) Accumulated sick-leave may not be transferred from one contract to another contract.

- (e) An employer must pay a task-rated worker the worker's daily task rate for a day's sick leave.
- (f) An employer must pay a time-rated worker the worker's daily rate of pay for a day's sick leave.
- (g) An employer must pay a worker sick pay on the worker's usual payday.
- (h) Before paying sick-pay, an employer may require a worker to produce a certificate stating that the worker was unable to work on account of sickness or injury if the worker is –
 - (i) absent from work for more than two consecutive days; or
 - (ii) absent from work on more than two occasions in any eight-week period.
- (i) A medical certificate must be issued and signed by a medical practitioner, a qualified nurse or a clinic staff member authorised to issue medical certificates indicating the duration and reason for incapacity.
- (j) A worker is not entitled to paid sick-leave for a work-related injury or occupational disease for which the worker can claim compensation under the Compensation for Occupational Injuries and Diseases Act.

SL 04.10 MATERNITY LEAVE

- (a) A worker may take up to four consecutive months' unpaid maternity leave.
- (b) A worker is not entitled to any payment or employment-related benefits during maternity leave.
- (c) A worker must give her employer reasonable notice of when she will start maternity leave and when she will return to work.
- (d) A worker is not required to take the full period of maternity leave. However, a worker may not work for four weeks before the expected date of birth of her child or for six weeks after the birth of her child, unless a medical practitioner, midwife or qualified nurse certifies that she is fit to do so.
- (e) A worker may begin maternity leave –
 - (i) four weeks before the expected date of birth; or
 - (ii) on an earlier date –
 - (1) if a medical practitioner, midwife or certified nurse certifies that it is necessary for the health of the worker or that of her unborn child; or
 - (2) if agreed to between employer and worker; or
 - (iii) on a later date, if a medical practitioner, midwife or certified nurse has certified that the worker is able to continue to work without endangering her health.
- (f) A worker who has a miscarriage during the third trimester of pregnancy or bears a stillborn child may take maternity leave for up to six weeks after the miscarriage or stillbirth.
- (g) A worker who returns to work after maternity leave, has the right to start a new cycle of twenty-four months employment, unless the EPWP on which she was employed has ended.

SL 04.11 FAMILY RESPONSIBILITY LEAVE

- (a) Workers, who work for at least four days per week, are entitled to three days paid family responsibility leave each year in the following circumstances -
 - (i) when the employee's child is born;
 - (ii) when the employee's child is sick;

- (iii) in the event of the death of –
 - (1) the employee's spouse or life partner
 - (2) the employee's parent, adoptive parent, grandparent, child, adopted child, grandchild or sibling

SL 04.12 STATEMENT OF CONDITIONS

- (a) An employer must give a worker a statement containing the following details at the start of employment –
 - (i) the employer's name and address and the name of the EPWP;
 - (ii) the tasks or job that the worker is to perform;
 - (iii) the period for which the worker is hired or, if this is not certain, the expected duration of the contract;
 - (iv) the worker's rate of pay and how this is to be calculated;
 - (v) the training that the worker may be entitled to receive during the EPWP.
- (b) An employer must ensure that these terms are explained in a suitable language to any employee who is unable to read the statement.
- (c) An employer must supply each worker with a copy of the relevant conditions of employment contained in this specification.
- (d) An employer must enter into a formal contract of employment with each employee. A copy of a pro-forma is attached at the end of this specification.

SL 04.13 KEEPING RECORDS

- (a) Every employer must keep a written record of at least the following –
 - (i) the worker's name and position;
 - (ii) in the case of a task-rated worker, the number of tasks completed by the worker;
 - (iii) in the case of a time-rated worker, the time worked by the worker;
 - (iv) payments made to each worker.
- (b) The employer must keep this record for a period of at least three years after the completion of the EPWP.

SL 04.14 PAYMENT

- (a) A task-rated worker will only be paid for tasks that have been completed.
- (b) An employer must pay a task-rated worker within five weeks of the work being completed and the work having been approved by the manager or the contractor having submitted an invoice to the employer. Payment must be made in cash, by cheque or by direct deposit into a bank account designated by the worker.
- (c) A time-rated worker will be paid at the end of each month and payment must be made in cash, by cheque or by direct deposit into a bank account designated by the worker.
- (d) Payment in cash or by cheque must take place –
 - (i) at the workplace or at a place agreed to by at least 75% of the workers; and
 - (ii) during the worker's working hours or within fifteen minutes of the start or finish of work;
- (e) All payments must be enclosed in a sealed envelope which becomes the property of the worker.
- (f) An employer must give a worker the following information in writing –
 - (i) the period for which payment is made;
 - (ii) the number of tasks completed or hours worked;
 - (iii) the worker's earnings;

- (iv) any money deducted from the payment;
 - (v) the actual amount paid to the worker.
- (g) If the worker is paid in cash or by cheque, this information must be recorded on the envelope and the worker must acknowledge receipt of payment by signing for it.
- (h) If a worker's employment is terminated, the employer must pay all monies owing to that worker within one month of the termination of employment.

SL 04.15 **DEDUCTIONS**

- (a) An employer may not deduct money from a worker's payment unless the deduction is required in terms of a law.
- (b) An employer must deduct and pay to the SA Revenue Services any income tax that the worker is required to pay.
- (c) An employer who deducts money from a worker's pay for payment to another person must pay the money to that person within the time period and other requirements specified in the agreement law, court order or arbitration award concerned.
- (d) An employer may not require or allow a worker to –
 - (i) repay any payment except an overpayment previously made by the employer by mistake;
 - (ii) state that the worker received a greater amount of money than the employer actually paid to the worker; or
 - (iii) pay the employer or any other person for having been employed.

SL 04.16 **HEALTH AND SAFETY**

- (a) Employers must take all reasonable steps to ensure that the working environment is healthy and safe and that all legal requirements regarding health and safety are strictly adhered to.
- (b) A worker must:
 - (i) work in a way that does not endanger his/her health and safety or that of any other person;
 - (ii) obey any health and safety instruction;
 - (iii) obey all health and safety rules;
 - (iv) use any personal protective equipment or clothing issued by the employer;
 - (v) report any accident, near-miss incident or dangerous behaviour by another person to their employer or manager.

SL 04.17 **COMPENSATION FOR INJURIES AND DISEASES**

- (a) It is the responsibility of employers to arrange for all persons employed on a EPWP to be covered in terms of the Compensation for Occupational Injuries and Diseases Act, 130 of 1993.
- (b) A worker must report any work-related injury or occupational disease to their employer or manager.
- (c) The employer must report the accident or disease to the Compensation Commissioner.
- (d) An employer must pay a worker who is unable to work because of an injury caused by an accident at work 75% of their earnings for up to three months. The employer will be refunded this amount by the Compensation Commissioner. This does NOT apply to injuries caused by accidents outside the workplace such as road accidents or accidents at home.

SL 04.18 **TERMINATION**

- (a) The employer may terminate the employment of a worker provided he has a valid reason and after following existing termination procedures.
- (b) A worker will not receive severance pay on termination.
- (c) A worker is not required to give notice to terminate employment. However, a worker who wishes to resign should advise the employer in advance to allow the employer to find a replacement.
- (d) A worker who is absent for more than three consecutive days without informing the employer of an intention to return to work will have terminated the contract. However, the worker may be re-engaged if a position becomes available for the balance of the 24-month period.
- (e) A worker who does not attend required training events, without good reason, will have terminated the contract. However, the worker may be re-engaged if a position becomes available for the balance of the 24-month period.

SL 04.19 **CERTIFICATE OF SERVICE**

- (a) On termination of employment, a worker is entitled to a certificate stating –
 - (i) the worker's full name;
 - (ii) the name and address of the employer;
 - (iii) the SPWP on which the worker worked;
 - (iv) the work performed by the worker;
 - (v) any training received by the worker as part of the EPWP;
 - (vi) the period for which the worker worked on the EPWP;
 - (vii) any other information agreed on by the employer and worker.

SL 05 **EMPLOYER'S RESPONSIBILITIES**

The employer shall adhere to the conditions of employment as stipulated in the *Code of Good Practice for Employment and Conditions of Work for Expanded Public Works Programmes*. Over and above the conditions stipulated above, he shall be responsible to:

- (a) formulate and design a contract between himself/ herself and each of the recruited EPWP beneficiary, ensuring that the contract does not contravene any of the Acts stipulated in South African Law, e.g. Basic Conditions of Employment Act, etc. (A copy of a pro-forma contract is attached at the end of this specification);
- (b) screen and select suitable candidates for employment from the priority list of EPWP beneficiary provided by the Umsobumvu Youth Fund (UYF);
- (c) ensure that the recruited EPWP beneficiary are made available to receive basic life skills training which will be conducted and paid for by the Umsobumvu Youth Fund;
- (d) ensure that all EPWP beneficiary receive instruction on safety on site prior to them commencing with work on site;
- (e) ensure that all EPWP beneficiary are covered under workmen's compensation for as long as they are contracted to the contractor. Payment to the Compensation Commissioner shall be the responsibility of the contractor;
- (f) assist in the identification and assessment of potential EPWP beneficiary to undergo advanced technical training in respective trades;
- (g) test and implement strict quality control and to ensure that the health and safety regulations are adhered to;
- (h) provide all EPWP beneficiary with the necessary protective clothing as required by law for the specific trades that they are involved in.
- (i) provide overall supervision and day-to-day management of EPWP beneficiary and/or sub-contractors; and
- (j) ensure that all EPWP beneficiary are paid their wages on time through a pre-agreed payment method as stipulated in the contract with the EPWP beneficiary.

SL 06 PLACEMENT OF RECRUITED EPWP BENEFICIARY

Employers will be contractually obliged to:

- (a) employ EPWP beneficiary from targeted social groups from the priority list provided by the Service Provider/ Umsobumvu Youth Fund.
- (b) facilitate on-the-job training and skills development programmes for the EPWP beneficiary;
- (c) achieve the following minimum employment targets:
 - (i) 55% people between the ages of 18 and 35
 - (ii) 55% women;
 - (iii) 2% people with disabilities.
- (d) brief EPWP beneficiary on the conditions of employment as specified in sub clause SL 04.09 above;
- (e) enter into a contract with each EPWP beneficiary, which contract will form part of the Employment Agreement;
- (f) allow EPWP beneficiary the opportunity to attend life skills training through DOL. This shall be arranged at the beginning of the contract;
- (g) ensure that payments to EPWP beneficiary are made as set out in sub clauses SL 04.14 and SL 04.15 above.
- (h) set up of personal profile files as prescribed by EPWP beneficiary and as set out in sub clause SL 04.13 above.
- (i) in addition to (h)
 - a copy of the I.D;
 - qualifications;
 - career progress;
 - EPWP Employment Agreement, and
 - list of small trade tools;must be included in the EPWP beneficiary's personal profile file.

SL 07 TRAINING OF EPWP BENEFICIARY

Three types of training are applicable, namely

- Life skills;
- On the job training and
- Technical Skills training.

Training will be implemented by training instructors accredited by DOL and/or CETA :

- EPWP beneficiary shall be employed on the projects for an average of 6 months.
- EPWP beneficiary shall be deployed on projects in the vicinity of their homes. The same arrangements as for other workers regarding accommodation, subsistence and travel shall be applicable to EPWP beneficiary.

(a) Life skills training

All EPWP beneficiary are entitled to undergo life skills training. Training of this module will be flexible enough to meet the needs of the employer. Training should take place immediately after site hand-over and during the period of site establishment and pre-planning before actual construction starts, alternatively this will be spread over the duration of the contract period. The contractor will be required to work closely with the person to schedule the training sessions so that the timing of the training is aligned with the contractors work schedule and his demand for workers.

(b) On-the job training

The Employer shall provide EPWP beneficiary with on-the-job training to enable them to fulfil their employment requirements. The employer shall also be expected to closely monitor the job performance of EPWP beneficiary and shall identify potential EPWP beneficiary for skills development programmes.

- (c) Technical skills training
The Employer shall assist in identifying EPWP beneficiary for further training. These EPWP beneficiary will undergo further technical training to prepare them for opportunities as semi-skilled labourers.

Such training will comprise of an off-site theoretical component and practical training on-site.

The contractor will be responsible for on-site practical work under his supervision. EPWP beneficiary who graduate from the first phase of the training programme will be identified and given opportunities to register for skills development programmes. These can ultimately result in a accredited qualification. The programme will consist of theoretical instruction away from the construction site as well as on-site practical work under the supervision of the employer. Candidates will be entitled to employment to complete all training modules.

SL 08 BENEFICIARY (EPWP BENEFICIARY) SELECTION CRITERIA

SL 08.01 PREAMBLE

The *Code of Good Practise for Employment and Conditions of Work for Expanded Public Works Programmes* encourages:

- optimal use of locally-based labour in a Expanded Public Works Programme (EPWP);
- a focus on targeted groups which consist of namely youth, consisting of women, female-headed households, disabled and households coping with HIV/AIDS; and
- the empowerment of individuals and communities engaged in a SPWP through the provision of training.

SL 08.02 BENEFICIARY (EPWP BENEFICIARY) SELECTION CRITERIA

- (a) The EPWP beneficiary of the programmes should preferably be non-working individuals from the most vulnerable sections of disadvantaged communities who do not receive any social security pension income. The local community must, through all structures available, be informed of and consulted about the establishment of any EPWP
- (b) In order to spread the benefit as broadly as possible in the community, a maximum of one person per household should be employed, taking local circumstances into account.
- (c) Skilled artisans from other areas may be employed if they have skills that are required for a project and there are not enough persons in the local communities who have those skills or who could undergo appropriate skills training. However, this should not result in more than 20% of persons working on a programme not being from local communities.
- (d) Programmes should set participation targets for employment with respect to youth, single male- and female-headed households, women, people with disabilities, households coping with HIV/AIDS, people who have never worked, and those in long-term unemployment.
- (e) The proposed targets as set out in sub clause SL 06 (c)
- 55% youth from 18 to 35 years of age;
 - 55% women;
 - 2% disabled.

SL 09 CONTRACTUAL OBLIGATIONS IN RELATION TO YOUTH LABOUR

The EPWP beneficiary to be employed in the programme (EPWP) shall be directly contracted to the employer. Over and above the construction and project management responsibilities, the employer will be expected to perform the tasks and responsibilities as set out in clause SL 05 above.

SL 10 PROVINCIAL RATES OF PAY

It is stipulated that youth workers on the EPWP receive a minimum of R 1 000 per month whilst working and R 600 per month whilst on training in ALL provinces. Should EPWP beneficiary be attending training whilst employed by the contractor, the contractor will still be responsible for payment to the EPWP beneficiary whilst at training.

SL 11 MEASUREMENTS AND PAYMENT

The number of EPWP beneficiary specified for this contract that will receive life skills training is 50 and technical training is 50

**SL 11.01 PAYMENT FOR TRAINING OF EPWP BENEFICIARY
(TARGET:- 50 EPWP BENEFICIARY)**

**SL 11.01.01 Skills development and Technical training for EPWP beneficiary for an average of 10 days
.....(Prov.Sum).....Unit: R/EPWP beneficiary**

The above item is only applicable if DoL does not fund the Technical Training PRIOR to site handover.

**SL 11.01.02 Penalty due to not meeting the target as in
SL 11.01.01.....Unit: EPWP beneficiary**

LESS R 2000 per EPWP beneficiary

SL 11.02 PAYMENT FOR TRAVELLING AND ACCOMMODATION DURING OFF-SITE TRAINING

SL 11.02.01 Life skills training for 26 days:

01 Travelling (based on 50 km/EPWP beneficiary)Unit: km

02 Accommodation.....(Prov.Sum).....Unit: R/EPWP beneficiary

03 Profit and attendance..... Unit: %

SL 11.02.02 Skilled development and Technical training:

01 Travelling (based on 50 km/EPWP beneficiary).....Unit: km

02 Accommodation.....(Prov.Sum).....Unit: R/EPWP beneficiary

03 Profit and attendance Unit: %

The units of measurement for sub items SL 11.02.01 (01) and SL 11.02.02 (01) above shall be the distance travelled in km by the EPWP beneficiary trained off site. The tendered rate shall include full compensation to safely transport the youth workers to and from the training venue/s.

The unit of measurement for sub items SL 11.02.01 (02) and SL 11.02.02 (02) above shall be the amounts in Rand expended for accommodation and daily meal allowances for the EPWP beneficiary trained off site that must be arranged by the contractor. Amounts quoted shall be corrected according to re-measurement based on actual invoices.

The tendered percentages under sub items SL 11.02.01 (03) and SL 11.02.02 (03) will be paid to the contractor on the value of each payment pertaining to the accommodation and advance meal allowances to cover his expenses in this regard.

SL 11.03 ALTERNATIVE WORKERS FOR THE PERIOD OF OFF-SITE TRAINING

SL 11.03.01 Life skills training for 26 days Unit: worker-days

SL 11.03.02 Skilled development and Technical training for EPWP beneficiary for (.....) days..... Unit: worker-days

The unit of measurement shall be the number of EPWP beneficiary replaced while in training multiplied by the number of days absent from the site.

The rates tendered shall include full compensation for additional replacement labour during periods of off-site training.

SL 11.04 EMPLOYMENT OF EPWP BENEFICIARY

SL 11.04.01 Employment of EPWP beneficiary.....(Prov.Sum)¹/₄.Unit: R/ worker-month

SL 11.04.02 Employment of EPWP beneficiary.....(Prov.Sum)¹/₄.Unit: R/ worker-month

The unit of measurement shall be the number of EPWP beneficiary at the statutory labour rates of R multiplied by the period employed in months and the rate tendered shall include full compensation for all costs associated with the employment of EPWP beneficiary and for complying with the conditions of contract. The cost for the training shall be excluded from this item. This item is based on 6 months appointment for EPWP beneficiary.

SL 11.05 PROVISION OF EPWP DESIGNED OVERALLS TO EPWP BENEFICIARY

SL 11.05.01 Supply EPWP designed overalls to EPWP beneficiary (Prov.Sum).....Unit: R

EPWP beneficiary overalls should be orange (top and bottom) as per EPWP specification with the exception of Correctional Services contracts where the EPWP beneficiary top would be blue and the bottom orange.

SL 11.05.02 Profit and attendance..... Unit: %

An amount has been provided in the Schedule of Quantities under sub item SL 10.05.01 for the supply of EPWP designed overalls, as per the specification provided by the EPWP unit, arranged by the Service Provider. The Engineer will have sole authority to spend the amounts or part thereof. The tendered percentage under sub items SL 10.05.02 will be paid to the contractor on the value of each payment pertaining to the supply of overalls to cover his expenses in this regard.

SL 11.06 PROVISION OF SMALL TOOLS FOR EPWP BENEFICIARY

SL 11.06.01 Provide all EPWP beneficiary with prescribed tools for their respective trades. Specification for the mentioned tools to be provided by the EPWP Service Provider. These tools will become the property of the EPWP beneficiary after the completion of the programme.....(Prov.Sum).....Unit: R 500-00 /youth worker

SL 11.06.02 Profit and attendance..... Unit: %

SL 11.07 APPOINTMENT OF EPWP BENEFICIARY TEAM LEADER/S

SL 11.07.01 Appointment of (____) EPWP beneficiary team leader/s for the duration of the contract.....(Prov.Sum)..... Unit: R / EPWP beneficiary team leader

The EPWP beneficiary Team Leader will act as CLO/PLO to facilitate the project work between the EPWP beneficiary and the contractor. Umsobumvu Youth Fund can assist with the sourcing of EPWP beneficiary Team Leader for employment by the contractor.

SL 11.08 LIAISON WITH SERVICE PROVIDER.....Unit: hours

The tendered rate shall include full compensation for the cost of liaising with the Service Provider and Social Facilitators on all issues regarding the works.



**PHASE 14: STORM DAMAGED PROGRAMME: REPAIRS AND RENOVATIONS TO STORM
DAMAGED SCHOOLS THROUGHOUT THE PROVINCE OF KWAZULU-NATAL: SOUTHERN
REGION: CLUSTER 155: EMGANGENI SECONDARY SCHOOL. OPEN BIDS**

ANNEXURE 10

EPWP EMPLOYMENT AGREEMENT CONTRACT



(Insert Your Company Logo)

(This shall serve as the cover page on employment contracts for local labour)

EMPLOYMENT AGREEMENT

BETWEEN

[CONTRACTOR NAME].....

AND

[WORKER NAME].....

1. PARTIES

The Parties to this Agreement are -

1.1. Contractor: _____
herein represented by: _____
duly authorised thereto

And

1.2. Mr / Me: _____
[worker's name]

2. DEFINITIONS AND INTERPRETATION

2.1. In this Agreement and any Annexure thereto, unless inconsistent with or otherwise indicated by the context-

“Agreement” means the contents of this Agreement.

“Company” means the company that employs the worker

“Department” means the Department of Public Works

“Worker” is a person that performs a specific or necessary task or who completes tasks in a certain way

“EPWP” The Expanded Public Works Programme is a government programme aimed at the alleviation of poverty and unemployment. The programme ensures the full engagement on Labour Intensive Methods of Construction (LIC) to contractors for skills development. The EPWP focuses at reducing unemployment by increasing economic growth by means of improving skills levels through education and training and improving the enabling environment for the industry to flourish.

3. PURPOSE

The purpose of this agreement is to:-

Ensure that the agreement is binding to both the Worker and the Employer.

4. TERMS AND CONDITIONS

- The worker will have no entitlement to the benefits of a full time employee, namely;

- The worker should not have the expectation that this contract will be renewed or extended.
- The worker will be subject to all laws, rules, policies, codes and procedures applicable to the;

- The worker must meet the standards and requirements of the contractor
- The worker must render his/her services during normal working hours of minimum of forty to fifty five hours in any week; which comprise of an eight-hour working day in a five-day week.

5. REMUNERATION

The worker will receive compensation to the amount of R_____00 which must be paid by the 25th or on the last day of each month.

6. ROLES AND RESPONSIBILITIES

6.1 Employer / Worker

- Work for _____ in terms of the period as specified in the employment agreement contract.
- Be available for and participate in all learning and work experience required by the company.
- Comply with workplace policies and procedures.
- Complete any attendance or any written assessment tools supplied by the contractor to record relevant workplace experience.
- Demonstrate willingness to grow and learn through work experience.

Provide the following documentation to the employer,

- Certified identity document not longer than 3 months
- ID size photos
- Sign employment contract

6.2 Employer

- Employ the worker for a period specified in the agreement.
- Provide the worker with appropriate work based experience in the work environment.
- Facilitate payments of wages / stipends.
- Keep accurate records of workers.
- Where a worker/ learner is disabled, the employer will have to provide in the additional needs e.g. special materials, learning aids and in some cases physical or professional support (such aids remain the property of the employer).
- Keep up to date records of learning and discuss progress with the intern on a regular basis.
- Apply fair disciplinary, grievance and dispute resolution procedures to the worker.
- Prepare an orientation/ induction course to introduce worker/ learner to the workplace and specific workplace requirements.
- Ensure the daily attendance register is signed by the worker.

7. DURATION.

This agreement commences on:

and

expires on:

8. BREACH.

If either party commits any breach of the terms of this contract (and fails to rectify it within 30 days of receipt of a written notice calling it to do so, then) the other party shall be entitled to terminate the contract or to claim specific performance without prejudice to any of its other legal rights, including its rights to claim damages.

9. CONDITIONS OF EMPLOYMENT

9.1. Meal Breaks

9.1.1 A worker may not work for more than five hours without taking a meal break of at least thirty minutes duration.

9.1.2 An employer and worker may agree on longer meal breaks.

9.1.3 A worker may not work during a meal break. However, an employer may require a worker to perform duties during a meal break if those duties cannot be left unattended and cannot be performed by another worker. An employer must take reasonable steps to ensure that a worker is relieved of his or her duties during the meal break.

9.1.4 A worker is not entitled to payment for the period of a meal break. However, a worker who is paid on the basis of time worked must be paid if the worker is required to work or to be available for work during the meal break.

9.2. Special Conditions for Security Guards (Only applicable to security Guards)

9.2.1 A security guard may work up to 55 hours per week and up to eleven hours per day.

9.2.2 A security guard who works more than ten hours per day must have a meal break of at least one hour or two breaks of at least 30 minutes each.

9.3. Weekly Rest Period

Every worker must have two days off every week. A worker may only work on their day off to perform work which must be done without delay and cannot be performed by workers during their ordinary hours of work ("emergency work").

9.4. Work on Sundays and Public Holidays

9.4.1 A worker may only work on a Sunday or public holiday to perform emergency or security work.

9.4.2 Work on Sundays is paid at the ordinary rate of pay.

9.4.3 A task-rated worker who works on a public holiday must be paid;

- (a) the worker's daily task rate, if the worker works for less than four hours;
- (b) double the worker's daily task rate, if the worker works for more than four hours.

9.4.4 A time-rated worker who works on a public holiday must be paid

- (a) the worker's daily rate of pay, if the worker works for less than four hours on the public holiday;
- (b) double the worker's daily rate of pay, if the worker works for more than four hours on the public holiday.

9.5 Sick leave

9.5.1 Only workers who work more than 24 hours per month have the right to claim sick-pay in terms of this clause.

9.5.2 A worker who is unable to work on account of illness or injury is entitled to claim one day's paid sick leave for every full month that the worker has worked in terms of a contract.

9.5.3 A worker may accumulate a maximum of twelve days' sick leave in a year.

9.5.4 Accumulated sick-leave may not be transferred from one contract to another contract.

9.5.5 An employer must pay a task-rated worker the worker's daily task rate for a day's sick leave.

9.5.6 An employer must pay a time-rated worker the worker's daily rate of pay for a day's sick leave.

9.5.7 An employer must pay a worker sick pay on the worker's usual payday.

9.5.8 Before paying sick-pay, an employer may require a worker to produce a certificate stating that the worker was unable to work on account of sickness or injury if the worker is

- (a) absent from work for more than two consecutive days; or
- (b) absent from work on more than two occasions in any eight-week period.

9.5.9 A medical certificate must be issued and signed by a medical practitioner, a qualified nurse or a clinic staff member authorised to issue medical certificates indicating the duration and reason for incapacity.

9.5.10 A worker is not entitled to paid sick-leave for a work-related injury or occupational disease for which the worker can claim compensation under the Compensation for Occupational Injuries and Diseases Act.

9.6. Maternity Leave

- 9.6.1 A worker may take up to four consecutive months' unpaid maternity leave.
- 9.6.2 A worker is not entitled to any payment or employment-related benefits during maternity leave.
- 9.6.3 A worker must give her employer reasonable notice of when she will start maternity leave and when she will return to work.
- 9.6.4 A worker is not required to take the full period of maternity leave. However, a worker may not work for four weeks before the expected date of birth of her child or for six weeks after the birth of her child, unless a medical practitioner, midwife or qualified nurse certifies that she is fit to do so.
- 9.6.5 A worker may begin maternity leave as follows;
- (a) four weeks before the expected date of birth; or
 - (b) on an earlier date
 - (i) if a medical practitioner, midwife or certified nurse certifies that it is necessary for the health of the worker or that of her unborn child; or
 - (ii) if agreed to between employer and worker; or
 - (c) on a later date, if a medical practitioner, midwife or certified nurse has certified that the worker is able to continue to work without endangering her health.
- 10.6 A worker who has a miscarriage during the third trimester of pregnancy or bears a stillborn child may take maternity leave for up to six weeks after the miscarriage or stillbirth.

9.7. Family responsibility leave

- 9.7.1 Workers, who work for at least four days per week, are entitled to three days paid family responsibility leave each year in the following circumstances;
- (a) when the employee's child is born;
 - (b) when the employee's child is sick;
 - (c) in the event of a death of
 - (i) the employee's spouse or life partner;
 - (ii) the employee's parent, adoptive parent, grandparent, child, adopted child, grandchild or sibling.

9.8. Keeping Records

9.8.1 Every employer must keep a written record on site for the duration of the project and three (3) year after completion records should consists of at least the following;

- (a) the worker's name and position;
- (b) copy of an acceptable worker identification
- (c) in the case of a task-rated worker the number of tasks completed by the worker;
- (d) in the case of a time-rated worker, the time worked by the worker;
- (e) payments made to each worker in a form of Proof of Payment, Payroll registers and the acknowledgement of payment receipt signed by the worker.

9.8.2 The employer must keep this record for a period of at least three years after the completion of the EPWP.

9.9. Payment

9.9.1 An employer must pay all wages at least monthly in cash or by cheque or into a bank account.

9.9.2 A worker may not be paid less than the Ministerial Determination wage rate.

9.9.3 A task-rated worker will only be paid for tasks that have been completed.

9.9.4 An employer must pay a task-rated worker within five weeks of the work being completed and the work having been approved by the manager or the contractor having submitted an invoice to the employer.

9.9.5 A time-rated worker will be paid at the end of each month.

9.9.6 Payment must be made in cash, by cheque or by direct deposit into a bank account designated by the worker.

9.9.7 Payment in cash or by cheque must take place

- (a) at the workplace or at a place agreed to by the worker;
- (b) during the worker's working hours or within fifteen minutes of the start or finish of work;
- (c) in a sealed envelope which becomes the property of the worker.

9.9.8 An employer must give a worker the following information in writing

- (a) the period for which payment is made;
- (b) the numbers of tasks completed or hours worked;
- (c) the worker's earnings;
- (d) any money deducted from the payment;
- (e) the actual amount paid to the worker.

9.9.9 If the worker is paid in cash or by cheque, this information must be recorded on the envelope and the worker must acknowledge receipt of payment by signing for it.

9.9.10 If a worker's employment is terminated, the employer must pay all monies owing to that worker within one month of the termination of employment.

9.10. Inclement weather

If no work has begun on site, and if an employee has reported for work, the employee will be paid for four hours. Should work be stopped after the first four hours, the employee will be paid for the hours worked. Where the employer has given employees notice on the previous working day that no work will be available due to inclement weather, then no payment will be made.

9.11. Deductions

9.11.1 An employer may not deduct money from a worker's payment unless the deduction is required in terms of a law.

9.11.2 An employer must deduct and pay to the SA Revenue Services any income tax that the worker is required to pay.

9.11.3 An employer who deducts money from a worker's pay for payment to another person must pay the money to that person within the time period and other requirements specified in the agreement of Law; court order or arbitration

9.11.4 It is the responsibility of the employers to arrange for all persons employed on a Project to be covered in terms of the Unemployment Insurance Fund Contributions Act, 2002 (Act No. 4 of 2002)

9.11.5 An employer may not require or allow a worker to

- (a) repay any payment except an overpayment previously made by the employer by mistake;

- (b) state that the worker received a greater amount of money than the employer actually paid to the worker; or
- (c) pay the employer or any other person for having been employed.

9.12. Health and Safety

9.12.1 Employers must take all reasonable steps to ensure that the working environment is healthy and safe.

9.12.2 A worker must;

- (a) work in a way that does not endanger his/her health and safety or that of any other person;
- (b) obey any health and safety instruction;
- (c) use any personal protective equipment or clothing issued by the employer;
- (d) report any accident, near-miss incident or dangerous behaviour by another person to their employer or manager.

9.13. Compensation for Injuries and Diseases

9.13.1 It is the responsibility of the employers to arrange for all persons employed on a Project to be covered in terms of the Compensation for Occupational Injuries and Diseases Act, 130 of 1993 as amended by COIDA Act 61, 1997.

9.13.2 A worker must report any work-related injury or occupational disease to their employer or manager.

9.13.3 The employer must report the accident or disease to the Compensation Commissioner.

9.13.4 An employer must pay a worker who is unable to work because of an injury caused by an accident at work 75% of their earnings for up to three months. The employer will be refunded this amount by the Compensation Commissioner. This does NOT apply to injuries caused by accidents outside the workplace such as road accidents or accidents at home.

9.14. Termination

9.14.1 The employer may terminate the employment of a worker for good cause after following a fair procedure.

9.14.2 A worker will not receive severance pay on termination.

9.14.3 A worker is not required to give notice to terminate employment. However, a worker who wishes to resign should advise the employer in advance to allow the employer to find a replacement.

9.14.4 A worker **who is absent for more than three consecutive days** without informing the employer of an intention to return to work will have terminated the contract. However, the worker may be re-engaged if a position becomes available.

9.14.5 A worker who does not attend required training events, without good reason, will have terminated the contract. However, the worker may be re-engaged if a position becomes available.

Notice procedure is as follows;

- One week if employed for four weeks or less
- Two weeks if employed for more than four weeks but not more than a year
- Four weeks if employed for one (1) year or more

9.15. Certificate of Service

9.15.1 On termination of employment, a worker is entitled to a certificate stating;

- (a) the worker's full name;
- (b) the name and address of the employer;
- (c) the Project on which the worker worked; the work performed by the worker;
- (d) any training received by the worker;
- (e) the period for which the worker worked on the Project; and
- (f) any other information agreed on by the employer and worker.

9.16. DOMICILE

The address to which notices and all legal documents may be delivered or served are as follows:

Employee Details

Name & Surname: _____

ID No: _____

Residential Address: _____

Contact No: _____

Date of Employment: _____

To be supervised by: **Main Contractor:**
or Sub Contractor:

Category of employment: **Skilled:**
Semi-skilled:
Unskilled:

For Skilled & Semi-skilled state the trade: _____

Period of employment: Fixed for until when your services are still required on site

I confirm that I have been inducted and fully understand the condition of my appointment.

Employee Signature: _____ **Witness by SGB/CLO:** _____

Signature by Witness: _____

Employer Details

Name & Surname: _____

Designation: _____

Contact No: _____ **Signature:** _____



KWAZULU-NATAL PROVINCE

PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

**PHASE 14: STORM DAMAGED PROGRAMME: REPAIRS AND RENOVATIONS TO STORM
DAMAGED SCHOOLS THROUGHOUT THE PROVINCE OF KWAZULU-NATAL: SOUTHERN
REGION: CLUSTER 155: EMGANGENI SECONDARY SCHOOL. OPEN BIDS**

ANNEXURE 11

EPWP ATTENDANCE REGISTER



EXPANDED PUBLIC WORKS PROGRAMME

The Attendance Register for on-site Workers

Reporting month: _____
Surname: _____

Cell No: _____
First Name: _____

Project Name: **PHASE 14: STORM DAMAGED PROGRAMME: REPAIRS AND RENOVATIONS TO STORM DAMAGED SCHOOLS THROUGHOUT THE PROVINCE OF KWAZULU-NATAL:SOUTHERN REGION: CLUSTER 155: EMGANGENI SECONDARY SCHOOL. OPEN BIDS**

Project Code: **063241**

Tender No **ZNTM01199W**

IDENTITY NUMBER:

Day	Date	Time In	Signature	Time Out	Signature	Report On Any Formal Training Provided In The Reporting Month
WEEK 1						
MONDAY						
TUESDAY						
WEDNESDAY						
THURSDAY						
FRIDAY						
WEEK 2						
MONDAY						
TUESDAY						
WEDNESDAY						
THURSDAY						
FRIDAY						
WEEK 3						
MONDAY						
TUESDAY						
WEDNESDAY						
THURSDAY						
FRIDAY						
WEEK 4						
MONDAY						
TUESDAY						
WEDNESDAY						
THURSDAY						
FRIDAY						
WEEK 5						
MONDAY						
TUESDAY						
WEDNESDAY						
THURSDAY						
FRIDAY						
Total Days worked						



**PHASE 14: STORM DAMAGED PROGRAMME: REPAIRS AND RENOVATIONS TO STORM
DAMAGED SCHOOLS THROUGHOUT THE PROVINCE OF KWAZULU-NATAL: SOUTHERN
REGION: CLUSTER 155: EMGANGENI SECONDARY SCHOOL. OPEN BIDS**

ANNEXURE 12

EPWP - BOQ AND SCOPE

PAGE NO	ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
1		<u>BILL NO 2</u>				
1		<u>EMPLOYMENT AND TRAINING OF LABOUR ON THE EPWP BENEFICIARY INFRASTRUCTURE PROJECTS</u>				
1		<u>PREAMBLES</u>				
1		Tenderers are advised to study the Additional Specification SL: Employment and training of Labour on the Expanded Public Works Programme (EPWP) Infrastructure Projects as bound elsewhere in the Bills of Quantities and then price this Bill accordingly				
1		<u>TRAINING OF EPWP BENEFICIARY</u>				
1		(TARGET: 50 EPWP BENEFICIARY)				
1		Skills development and Technical training:				
1	1	Skills development and technical training for EPWP beneficiary for an average of 10 days (ref. SL11.01.01)	Item	1		
1	2	Penalty due to not meeting the target as in SL 11.01.02	Y/Work	R 2 000,00		
1		<u>TRAVELLING AND ACCOMMODATION DURING OFF SITE TRAINING:</u>				
1		Life skills training for 26 days (ref. SL 11.02.01)				
1	3	Travelling (based on 50km/EPWP beneficiary)	km	2500		
1	4	Profit and attendance on Items 1, 2 & 3	%			
1		<u>EMPLOYMENT OF EPWP BENEFICIARY</u>				
1	5	Employment of EPWP beneficiary (30 youth) [New Office Block]	Item	1		
1		The unit of measurement shall be the number of EPWP beneficiary at the statutory labour rates of R 100/day multiplied by the period employed in months and the rate tendered shall include full compensation for all costs associated with the employment of EPWP beneficiary and for complying with the conditions of contract. The cost for training shall be excluded from this item. This item is based on 6 months appointment for EPWP beneficiary				
1	6	Employment of EPWP beneficiary(40 youth) [Parking garage]	Item	1		
		TOTAL CARRIED TO SUMMARY				

		UNIT	QUANTITY	RATE	AMOUNT
2					
	The unit of measurement shall be the number of EPWP beneficiary at the statutory labour rates of R 110/day multiplied by the period employed in months and the rate tendered shall include full compensation for all costs associated with the employment of EPWP beneficiary and for complying with the conditions of contract. The cost for training shall be excluded from this item. This item is based on 12 months appointment for EPWP beneficiary				
2	7	Employment of EPWP beneficiary (30 youth) [Conference Centre & Canteen]	Item	1	
2					
	The unit of measurement shall be the number of EPWP beneficiary at the statutory labour rates of R 120/day multiplied by the period employed in months and the rate tendered shall include full compensation for all costs associated with the employment of EPWP beneficiary and for complying with the conditions of contract. The cost for training shall be excluded from this item. This item is based on 12 months appointment for EPWP beneficiary				
2		<u>PROVISION OF EPWP DESIGNED OVERALLS TO YOUTH WORKERS</u>			
2	8	Supply EPWP designed overalls to EPWP beneficiary (ref. SL 11.05.01) for 100 workers	Item	1	
2	9	Profit and attendance on Items 5 - 8 (ref. SL 11.05.02)	%	7,5	
2		<u>PROVISION OF SMALL TOOLS FOR EPWP BENEFICIARY</u>			
2	10	Supply of small tools to EPWP beneficiary. Specification to be supplied by the EPWP-NYS Serviced Provider for the respective trades (ref. SL 11.06.01) for 100 workers	Item	1	
2	11	Profit and attendance (ref. SL 11.06.02)	%	7,5	
2		<u>APPOINTMENT OF YOUTH TEAM LEADERS</u>			
2	12	Appointment of EPWP beneficiary Team Leaders for the duration of the contract (ref. SL 11.07)	Item	1	
2	13	Liaison with Service Provider (ref. SL 11.08)	Hrs	30	
2	14	Profit and attendance on Items 12 & 13	%	7,5	
FINAL TOTAL CARRIED TO PRELIMINARY AND GENERAL IN BILL OF QUANTITIES					

SCOPE OF WORKS IN RESPECT OF WORK RELATING TO THE EXTENDEND PUBLIC WORKS PROGRAMME (EPWP)			
Project title:	PHASE 14: STORM DAMAGED PROGRAMME: REPAIRS AND RENOVATIONS TO STORM DAMAGED SCHOOLS THROUGHOUT THE PROVINCE OF KWAZULU-NATAL:SOUTHERN REGION: CLUSTER 155: EMGANGENI SECONDARY SCHOOL. OPEN BIDS		
Project Code:	063241	EPWP NO:	N/A

Introductory notes:

1. The works, or parts of the works will be constructed using labour-intensive methods only in terms of this specification. The use of plant to provide such works, other than plant specifically provided for in the scope of work, is a variation to the contract. The items marked with the letters **LI** are not necessarily an exhaustive list of all the activities which must be done by hand, and this clause does not over-ride any of the requirements in the generic labour intensive specification in the Scope of Works.
2. Payment for items which are designated to be constructed labour-intensively (either in this schedule or in the Scope of Works) will not be made unless they are constructed using labour-intensive methods. Any unauthorised use of plant to carry out work which was to be done labour-intensively will not be condoned and any works so constructed will not be certified for payment.

DESCRIPTION OF THE WORKS

Employer's objectives

The employer's objectives are to deliver public infrastructure using labour-intensive methods in accordance with EPWP Guidelines.

Labour-intensive works

Labour-intensive works comprise the activities described in the Labour-Intensive Specification. Labour-intensive works shall be constructed/maintained using local workers who are temporarily employed in terms of the scope of work.

LABOUR-INTENSIVE COMPETENCIES OF SUPERVISORY AND MANAGEMENT STAFF

Contractors shall only engage supervisory and management staff in labour-intensive works that have completed the skills programme including Foremen/ Supervisors at NQF level 4 "National Certificate: Supervision of Civil Engineering Construction Processes" and Site Agent/ Manager at NQF level 5 "Manage Labour-Intensive Construction Processes" or equivalent QCTO qualifications (See Appendix C). at NQF outlined in Table 1. (See GUIDELINES FOR THE IMPLEMENTATION OF LABOUR-INTENSIVE INFRASTRUCTURE PROJECTS UNDER THE EXPANDED PUBLIC WORKS PROGRAMME (EPWP) -THIRD EDITION 2015)

Emerging contractors shall have personally completed, or be registered on a skills programme for the NQF level 2 unit standard. All other site supervisory staff in the employ of emerging contractors must have completed, or be registered on a skills programme for the NQF level 2 unit standards or NQF level 4 unit standards. Table 1: Skills programme for supervisory and management staff.

Table 1: Skills programme for supervisory and management staff

Personnel	NQF level	Unit standard titles	Skills programme description
Team leader / supervisor	2	Apply Labour-Intensive Construction Systems and Techniques to Work Activities	This unit standard must be completed, and any one of these 3 unit standards
		Use Labour-Intensive Construction Methods to Construct and Maintain Roads and Storm water Drainage	
		Use Labour-Intensive Construction Methods to Construct and Maintain Water and Sanitation Services	

Personnel	NQF level	Unit standard titles	Skills programme description
Foreman/supervisor	4	Use Labour-Intensive Construction Methods to Construct, Repair and Maintain structures	This unit standard must be completed, and any one of these 3 unit standards
		Implement Labour-Intensive Construction Systems and Techniques	
		Use Labour-Intensive Construction Methods to Construct and Maintain Roads and Storm water Drainage	
		Use Labour-Intensive Construction Methods to Construct and Maintain Water an Sanitation Services	
Site Agent /Manager (i.e. the contractor's most senior representative that is resident on the site)	5	Use Labour-Intensive Construction Methods to Construct, Repair and Maintain structures	Skills Programme against this single unit standard
		Manage Labour-Intensive Construction Processes	
Details of these skills programmes may be obtained from the CETA ETQA manager (e-mail :gerard@ceta.co.za , tel: 011-265 5900)			

EMPLOYMENT OF UNSKILLED AND SEMI-SKILLED WORKERS IN LABOUR-INTENSIVE WORKS

- 1.1 Requirements for the sourcing and engagement of labour.
- 1.1.1 Unskilled and semi-skilled labour required for the execution of all labour-intensive works shall be engaged strictly in accordance with prevailing legislation and SANS 1914-5, Participation of Targeted Labour.
- 1.1.2 The rate of pay set for the SPWP per task or per day will be an acceptable rate determined by the Department of Labour.
- 1.1.3 Tasks established by the contractor must be such that:
- the average worker completes 5 tasks per week in 40 hours or less; and
 - the weakest worker completes 5 tasks per week in 55 hours or less.
- 1.1.4 The contractor must revise the time taken to complete a task whenever it is established that the time taken to complete a weekly task is not within the requirements of 1.1.3.
- 1.1.5 The Contractor shall, through all available community structures, inform the local community of the labour-intensive
- where the head of the household has less than a primary school education;
 - that have less than one full time person earning an income;
 - where subsistence-agriculture is the source of income.
 - that who are not in receipt of any social security pension income
- 1.1.6 The Contractor shall endeavour to ensure that the expenditure on the employment of unskilled and semi-skilled workers is in the following proportions:
- 55% women;
 - 55% youth who are between the ages of 18 and 35; and
 - 2% on persons with disabilities.
- 1.2 Specific provisions pertaining to SANS 1914-5
- 1.2.1 Definitions
Targeted labour: Unemployed persons who are employed as local labour on the project.
- 1.2.2 Contract participation goals
- 1.2.2.1 There is no specified contract participation goal for the contract. The contract participation goal shall be measured in the performance of the contract to enable the employment provided to targeted labour to be quantified.
- 1.2.2.2 The wages and allowances used to calculate the contract participation goal shall, with respect to both time-rated and task rated workers, comprise all wages paid and any training allowance paid in respect of agreed training programmes.

- 1.2.3 Terms and conditions for the engagement of targeted labour
Further to the provisions of clause 3.3.2 of SANS 1914-5, written contracts shall be entered into with targeted labour.
- 1.2.4 Terms and conditions for the engagement of targeted labour
Further to the provisions of clause 3.3.2 of SANS 1914-5, written contracts shall be entered into with targeted labour.
- 1.2.5 Variations to SANS 1914-5
- 1.2.5.1 The definition for net amount shall be amended as follows:
Financial value of the contract upon completion, exclusive of any value added tax or sales tax which the law requires the employer to pay the contractor.
- 1.2.5.2 The schedule referred to in 5.2 shall in addition reflect the status of targeted labour as women, youth and persons with disabilities and the number of days of formal training provided to targeted labour.
- 1.3 Training of targeted labour
- 1.3.1 The contractor shall provide all the necessary on-the-job training to targeted labour to enable such labour to master the basic work techniques required to undertake the work in accordance with the requirements of the contract in a manner that does not compromise worker health and safety.
- 1.3.2 The cost of the formal training of targeted labour, will be funded by the local office of the Department of Labour. This training will take place as close to the project site as practically possible. The contractor must access this training by informing the relevant regional office of the Department of Labour in writing, within 14 days of being awarded the contract, of the likely number of persons that will undergo training and when such training is required. The Employer and the Department of Public Works (Fax: 012 3258625/ EPWP Unit, Private Bag X65, Pretoria 0001) must be furnished with a copy of this request.
- 1.3.3 The contractor shall do nothing to dissuade targeted labour from participating in training programmes and shall take all reasonable steps to ensure that each beneficiary is provided with two days of formal training for every 22 days worked.
- 1.3.4 An allowance equal to 100% of the task rate or daily rate shall be paid by the contractor to workers who attend formal training, in terms of the above.
- 1.3.5 Proof of compliance with the above requirements must be provided by the Contractor to the Employer prior to submission of the final payment certificate.

GENERIC LABOUR-INTENSIVE SPECIFICATION

1 Scope

This specification establishes general requirements for activities which are to be executed by hand involving the following:

- a) trenches having a depth of less than 1.5 metres
- b) storm water drainage
- c) low-volume roads and sidewalks

2 Precedence

Where this specification is in conflict with any other standard or specification referred to in the Scope of Works to this Contract, the requirements of this specification shall prevail.

3 Hand excavatable material

Hand excavatable material is material:

a) Granular materials:

- i) whose consistency when profiled may in terms of table 1 be classified as very loose, loose, medium dense, or dense; or
- ii) where the material is a gravel having a maximum particle size of 10mm and contains no cobbles or isolated boulders, no more than 15 blows of a dynamic cone penetrometer is required to penetrate 100mm;

b) Cohesive materials:

- i) whose consistency when profiled may in terms of table 1 be classified as very soft, soft, firm, stiff and stiff / very stiff; or
- ii) where the material is a gravel having a maximum particle size of 10mm and contains no cobbles or isolated boulders, no more than 8 blows of a dynamic cone penetrometer is required to penetrate 100mm;

Note: 1) A boulder, a cobble and gravel is material with a particle size greater than 200mm, between 60 and 200mm.

2) A dynamic cone penetrometer is an instrument used to measure the in-situ shear resistance of a soil comprising a drop weight of approximately 10 kg which falls through a height of 400mm and drives a cone having a maximum diameter of 20mm (cone angle of. 60 degrees with respect to the horizontal) into the material being used.

Table 2: Consistency of materials when profiled

GRANULAR MATERIALS		COHESIVE MATERIALS	
CONSISTENCY	DESCRIPTION	CONSISTENCY	DESCRIPTION
Very loose	Crumbles very easily when scraped with a geological pick.	Very soft	Geological pick head can easily be pushed in as far as the shaft of the handle.
Loose	Small resistance to penetration by sharp end of a geological pick.	Soft	Easily dented by thumb; sharp end of a geological pick can be pushed in 30-40 mm; can be moulded by fingers with some pressure.
Medium dense	Considerable resistance to penetration by sharp end of a geological pick.	Firm	Indented by thumb with effort; sharp end of geological pick can be pushed in up to 10 mm; very difficult to mould with fingers; can just be penetrated with an ordinary hand spade.
Dense	Very high resistance to penetration by the sharp end of a geological pick; requires many blows for excavation.	stiff	Can be indented by thumb-nail; slight indentation produced by pushing geological pick point into soil; cannot be moulded by fingers.
Very dense	High resistance to repeated blows of a geological pick.	Very stiff	Indented by thumb-nail' with difficulty; slight indentation produced by blow of a geological pick point.

4 Trench excavation

All hand excavatable material in trenches having a depth of less than 1,5 metres shall be excavated by hand.

5 Compaction of backfilling to trenches (areas not subject to traffic)

Backfilling to trenches shall be placed in layers of thickness (before compaction) not exceeding 100mm. Each layer shall be compacted using hand stampers

- a) to 90% Proctor density;
- b) such that in excess of 5 blows of a dynamic cone penetrometer (DCP) is required to penetrate 100 mm of the backfill, provided that backfill does not comprise more than 10% gravel of size less than 10mm and contains no isolated boulders, or
- c) such that the density of the compacted trench backfill is not less than that of the surrounding undisturbed soil when tested comparatively with a DCP.

6 Excavation

All hand excavatable material including topsoil classified as hand excavatable shall be excavated by hand. Harder material may be loosened by mechanical means prior to excavation by hand.

The excavation of any material which presents the possibility of danger or injury to workers shall not be excavated by hand.

7 Clearing and grubbing

Grass and small bushes shall be cleared by hand.

8 Shaping

All shaping shall be undertaken by hand.

9 Loading

All loading shall be done by hand, regardless of the method of haulage.

10 Haul

Excavation material shall be hauled to its point of placement by means of wheelbarrows where the haul distance is not greater than 150 m.

11 Offloading

All material, however transported, is to be off-loaded by hand, unless tipper-trucks are utilised for haulage.

12 Spreading

All material shall be spread by hand.

13 Compaction

Small areas may be compacted by hand provided that the specified compaction is achieved.

14 Grassing

All grassing shall be undertaken by sprigging, sodding, or seeding by hand.

15 Stone pitching and rubble concrete masonry

All stone required for stone pitching and rubble concrete masonry, whether grouted or dry, must be collected, loaded, off loaded and placed by hand.

Sand and stone shall be hauled to its point of placement by means of wheelbarrows where the haul distance is not greater than 150m.

Grout shall be mixed and placed by hand.

16 Manufactured Elements

Elements manufactured or designed by the Contractor, such as manhole rings and cover slabs, precast concrete planks and pipes, masonry units and edge beams shall not individually, have a mass of more than 320kg. In addition, the items shall be large enough so that four workers can conveniently and simultaneously acquire a proper handhold on them.



**PHASE 14: STORM DAMAGED PROGRAMME: REPAIRS AND RENOVATIONS TO STORM
DAMAGED SCHOOLS THROUGHOUT THE PROVINCE OF KWAZULU-NATAL: SOUTHERN
REGION: CLUSTER 155: EMGANGENI SECONDARY SCHOOL. OPEN BIDS**

ANNEXURE 13
SCOPE OF WORKS



REF.	ITEM	SCOPE OF WORK	BLOCKS	COMMENTS
1.	TEMPORARY ACCOMMODATION	<ul style="list-style-type: none"> Provision for temporary accommodation during construction 		3 Parkhomes
2.	ROOFS	<ul style="list-style-type: none"> Removal of storm damaged asbestos roof sheeting Removal of damaged roof sheeting Removal of damaged roof trusses Removal of damaged gutters and downpipes Removal of damaged fascia boards / barge boards Install new roof trusses, including sisalation and fixings Install new IBR roof sheeting Install new gutters and downpipes including painting Install new fascias and barge boards including painting Install new purlin to interior and exterior of beam filling Treat all exposed timber work with carbolinium Repairs to existing roof structure Provision for safe disposal asbestos certificate Paint existing roofs 	<p>A</p> <p>B</p> <p>B</p> <p>A,B</p> <p>A,B</p> <p>B</p> <p>A,B</p> <p>A,B</p> <p>A,B</p> <p>A,B</p> <p>A,B</p> <p>B</p> <p>A</p> <p>-</p>	<p>Health and safety requirement</p>
3.	CEILINGS	<ul style="list-style-type: none"> Remove existing damaged ceilings Install new ceilings, brandering and cornice Paint new ceilings 	<p>-</p> <p>A,B</p> <p>A,B</p>	
4.	FIRE WALLS	<ul style="list-style-type: none"> Build new fire walls to underside of roof sheeting 	A,B	
5.	WINDOWS	<ul style="list-style-type: none"> Replace broken window panes Replace / repair damaged window mechanisms Paint windows 	<p>A,B</p> <p>A,B</p> <p>A,B</p>	<p>Allow for 80%</p> <p>Allow for 80%</p>



REF.	ITEM	SCOPE OF WORK	BLOCKS	COMMENTS
6.	DOORS / FRAMES	<ul style="list-style-type: none"> Removal of existing damaged doors Removal of existing damaged frames Install new doors and ironmongery Install new galvanized steel frames and ironmongery Painting of doors and frames Repairs to existing doors / frames/ ironmongery 	A,B	
7.	PLASTERING / PAINTING	<ul style="list-style-type: none"> Repairs to existing plasterwork externally Repairs to existing plasterwork internally Painting of plasterwork externally Painting of plasterwork internally 	A,B	
8.	SECURITY GATES	<ul style="list-style-type: none"> Install new galvanized security gates to classrooms Install new entrance gate to driveway 	A,B Main entrance	
9.	FLOORS	<ul style="list-style-type: none"> Screed to concrete floors, walkways, corridors Construct new surface beds Remove floor coverings Install new floor coverings 	A,B B - -	
10.	STRUCTURAL REPAIRS	<ul style="list-style-type: none"> Repairs to foundations Repair structural cracks to walls internally / externally 	A,B	YES
11.	CHALKBOARDS	<ul style="list-style-type: none"> Remove damaged chalkboards Install new chalkboards Install new pinning board 	A,B A,B A,B	
12.	NOTICE BOARD	<ul style="list-style-type: none"> Install new notice boards as per D.O.E specification 		YES



REF.	ITEM	SCOPE OF WORK	BLOCKS	COMMENTS
13.	ELECTRICAL	<ul style="list-style-type: none"> Strip out existing damaged / unsafe electrical installation 	A,B	
		<ul style="list-style-type: none"> Provision for new electrical installation including power – points and lighting 	A,B	
		<ul style="list-style-type: none"> Repairs to unsafe electrical installation 		
		<ul style="list-style-type: none"> Provision for lightning protection 	A,B	
14.	RETAINING STRUCTURES	<ul style="list-style-type: none"> Construct new retaining structures 	A	35 m X1.2m
		<ul style="list-style-type: none"> Install new 1m high wire mesh balustrade above retaining structures 		
15.	EXTERNAL WORKS	<ul style="list-style-type: none"> Provision for layerworks to accommodate retaining structures 		
		<ul style="list-style-type: none"> Provision for repairs to driveways 		
16.	ABLUTIONS	<ul style="list-style-type: none"> Refurbish existing ablutions damaged by storm 	C	Recommendation to demolish & rebuild
		<ul style="list-style-type: none"> Replace sanitaryware / and plumbing 		
		<ul style="list-style-type: none"> Replace doors, frames including ironmongery and painting 		
		<ul style="list-style-type: none"> Repairs to windows including painting 		
17.	STORMWATER CONTROL	<ul style="list-style-type: none"> Construct new V - drains, walkways, aprons etc. 	A,B	Allow 20m of new walkways
		<ul style="list-style-type: none"> Repairs to existing V - drains, catchpits, channels, aprons etc. 	A,B	3 new catchpits
18.	SEWER	<ul style="list-style-type: none"> Desludging of existing ablutions, septic tanks and sewer drains. 	Externally	Provision to desludge ablutions
		<ul style="list-style-type: none"> Replace damaged sewer lines. 	Externally	If required
19.	WATER TANKS / CONC. PLINTHS	<ul style="list-style-type: none"> Install new jojo tanks including plinths 	Externally	Provision to install 3 new tanks
		<ul style="list-style-type: none"> Repairs to existing tanks, taps and plinths. 	Externally	Provision to repair exist, if necessary



**PHASE 14: STORM DAMAGED PROGRAMME: REPAIRS AND RENOVATIONS TO STORM
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ANNEXURE 14

ARCHITECTURAL DRAWINGS

LEGEND:

- A - EXISTING 5 CLASSROOM BLOCK WITH ADMIN AND KITCHEN
- B - EXISTING 2 CLASSROOM BLOCK
- C - EXISTING MALE/FEMALE ABLUTION BLOCK (6 CUBICLES)
- D - EXISTING GUARD HOUSE
- E - UNUSED BUILDING

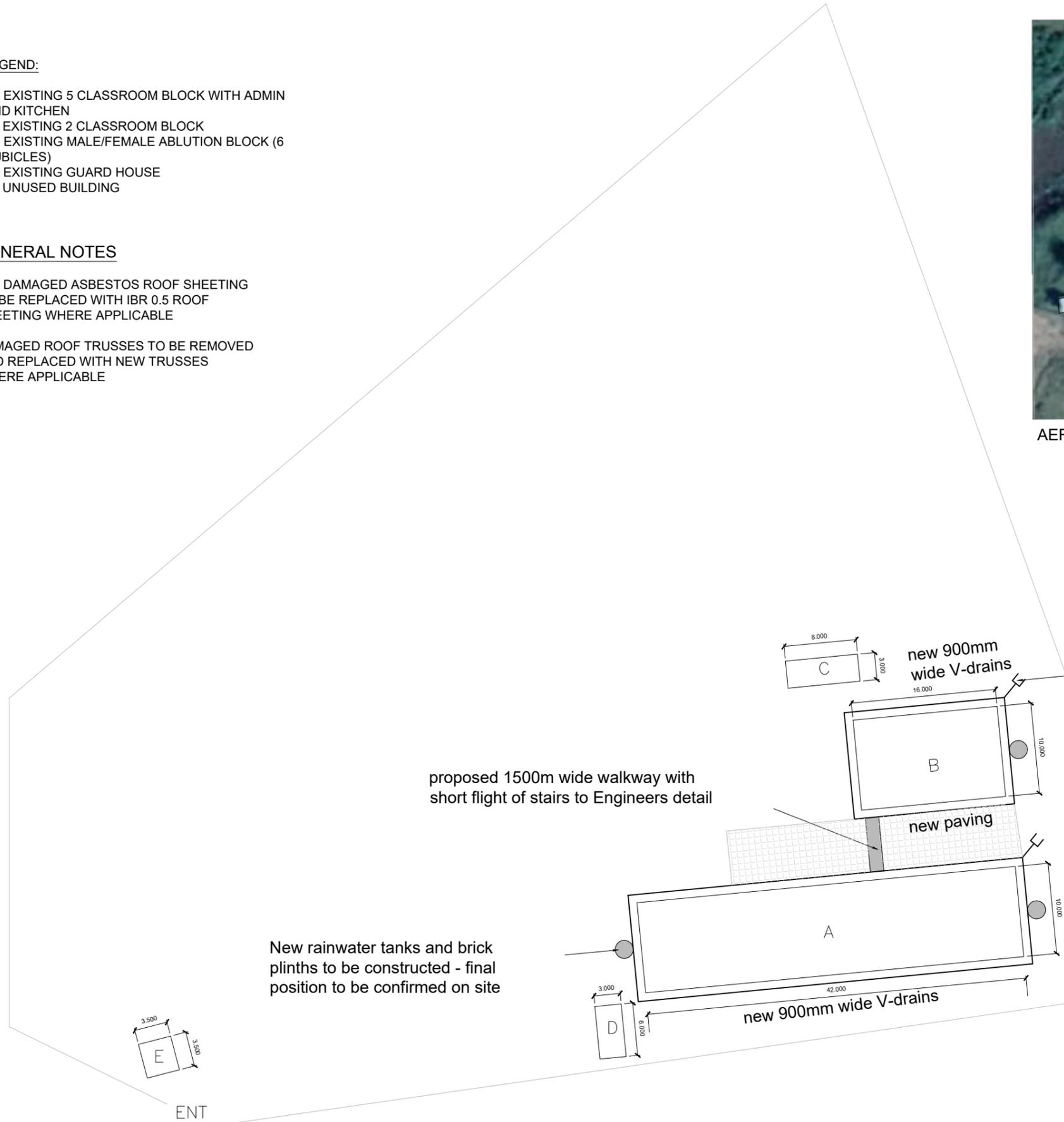
GENERAL NOTES

ALL DAMAGED ASBESTOS ROOF SHEETING TO BE REPLACED WITH IBR 0.5 ROOF SHEETING WHERE APPLICABLE

DAMAGED ROOF TRUSSES TO BE REMOVED AND REPLACED WITH NEW TRUSSES WHERE APPLICABLE



AERIAL VIEW



Install new 900mm wide V-drains around buildings to energy dissipators at lowest points

New rainwater tanks and brick plinths to be constructed - final position to be confirmed on site

GENERAL NOTES:

All dimensions to be verified on site prior to construction or installation of any new fixtures.

Any discrepancies that might be found to be reported to the architect immediately before commencement of any work.

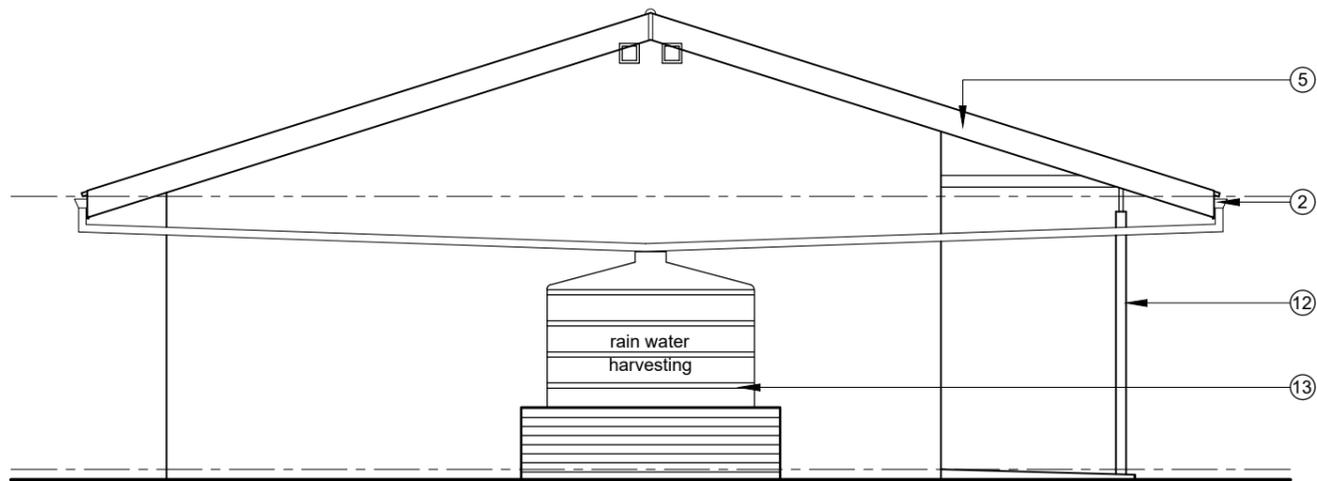
Drawings are not to be scaled.

All work is to be executed in strict accordance with the by-laws and regulations of the local authority.

Where required, architects drawings are to be read in conjunction with Engineers and other consultants drawings.



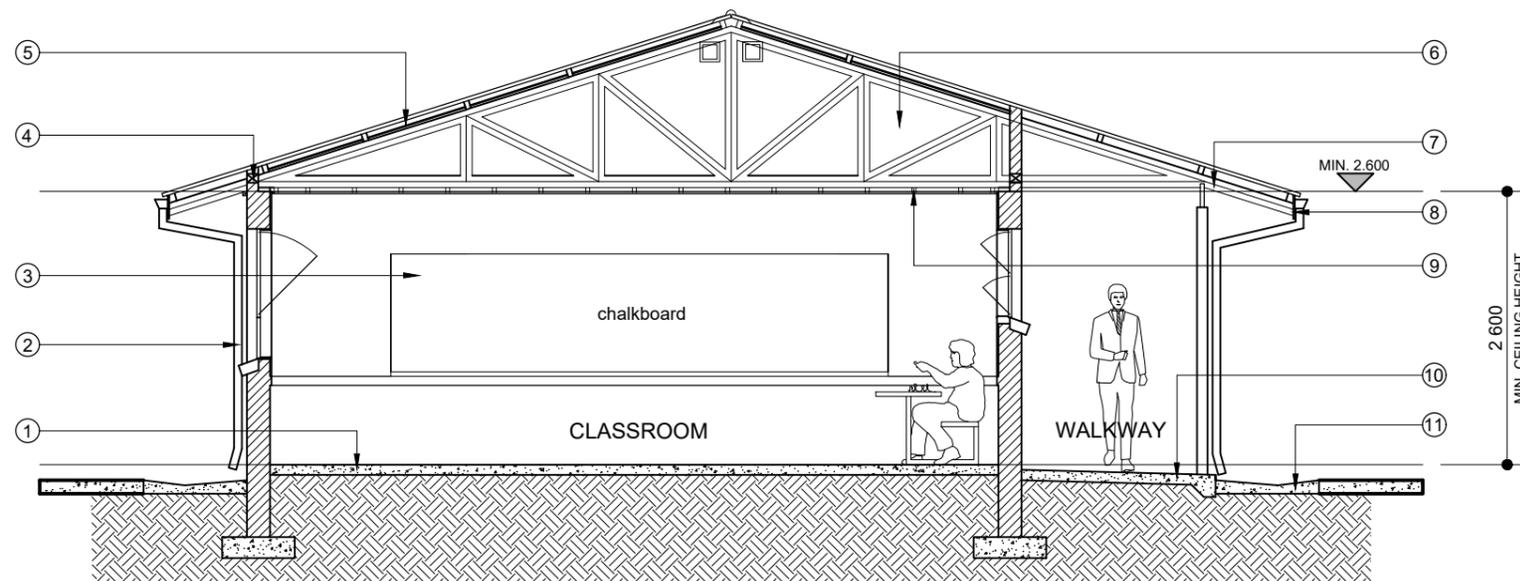
discipline ARCHITECTURAL	
drawing title STORM DAMAGE SCHOOLS FOR THE DEPARTMENT OF PUBLIC WORKS AT EMGANGENI SECONDARY SCHOOL UGU DISTRICT WIMS NO: 063241 PROPOSED SITE PLAN	
ref.no 000000	designed 000000
scale AS INDICATED	drawn NS
date JULY 2016	checked LC
drawing number 241 - 201	



2 SIDE ELEVATION
SCALE 1:50

LEGEND:

- ① Existing concrete floor slab to be replaced where required. Refer to Engineers report.
- ② Seamless Aluminium Ogee gutters with 100x75mm downpipes with baked enamel finish and fixed to suppliers specification.
- ③ 4800 X 1140mm Green chalkboard to comply with cks 38-1980 supplied complete with chalk rails as one unit. Chalkboard to be fixed as per manufactures instructions.
- ④ Hurricane clips to be used externally to secure purlins to trusses at eaves overhangs and 38x38mm timber purlin to prevent wind damage.
- ⑤ Timber roof trusses at 17.5° pitch to manufacturers specification to take 0.55mm IBR Colourplus - AZ 150 roof sheeting and sisalation.
- ⑥ Fire wall to be built between classroom to underside of roof
- ⑦ Exposed roof timbers to be painted with two coats of ABE Provonite before fixing of roof sheeting, fasias and barge boards
- ⑧ Everite Nutec fibre cement barge and fascia boards
- ⑨ 9mm skimmed Rhinoboard ceiling fixed to Aluminium structure by specialist
- ⑩ Concrete walkways to be repaired where required. Refer to Engineers report.
- ⑪ V-drains and concrete aprons to Engineers detail.
- ⑫ GMS support posts with beam over to support roof above to Engineers detail.
- ⑬ 5000 litre watertank on brick plinth to Engineers design and detail.



1 TYPICAL SECTION
SCALE 1:50



public works

Department:
Public Works
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF PUBLIC WORKS



archITRONIC

architectural, interior & exterior design
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SACAP NO. : 6012

discipline **ARCHITECTURAL**

drawing title
**STORM DAMAGE SCHOOLS
FOR THE
DEPARTMENT OF PUBLIC WORKS
AT
EMGANGENI SECONDARY SCHOOL**

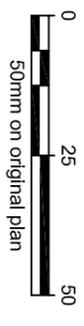
TYPICAL SECTION & ELEVATION	
ref.no 000000	designed 000000
scale AS INDICATED	drawn RP
date OCT 2023	checked LC
drawing number 270 - 201	



**PHASE 14: STORM DAMAGED PROGRAMME: REPAIRS AND RENOVATIONS TO STORM
DAMAGED SCHOOLS THROUGHOUT THE PROVINCE OF KWAZULU-NATAL: SOUTHERN
REGION: CLUSTER 155: EMGANGENI SECONDARY SCHOOL. OPEN BIDS**

ANNEXURE 15

ELECTRICAL DRAWINGS



REVISIONS

Rev	Date	Checked	Description

Contract No:



Consultant:



Project title:

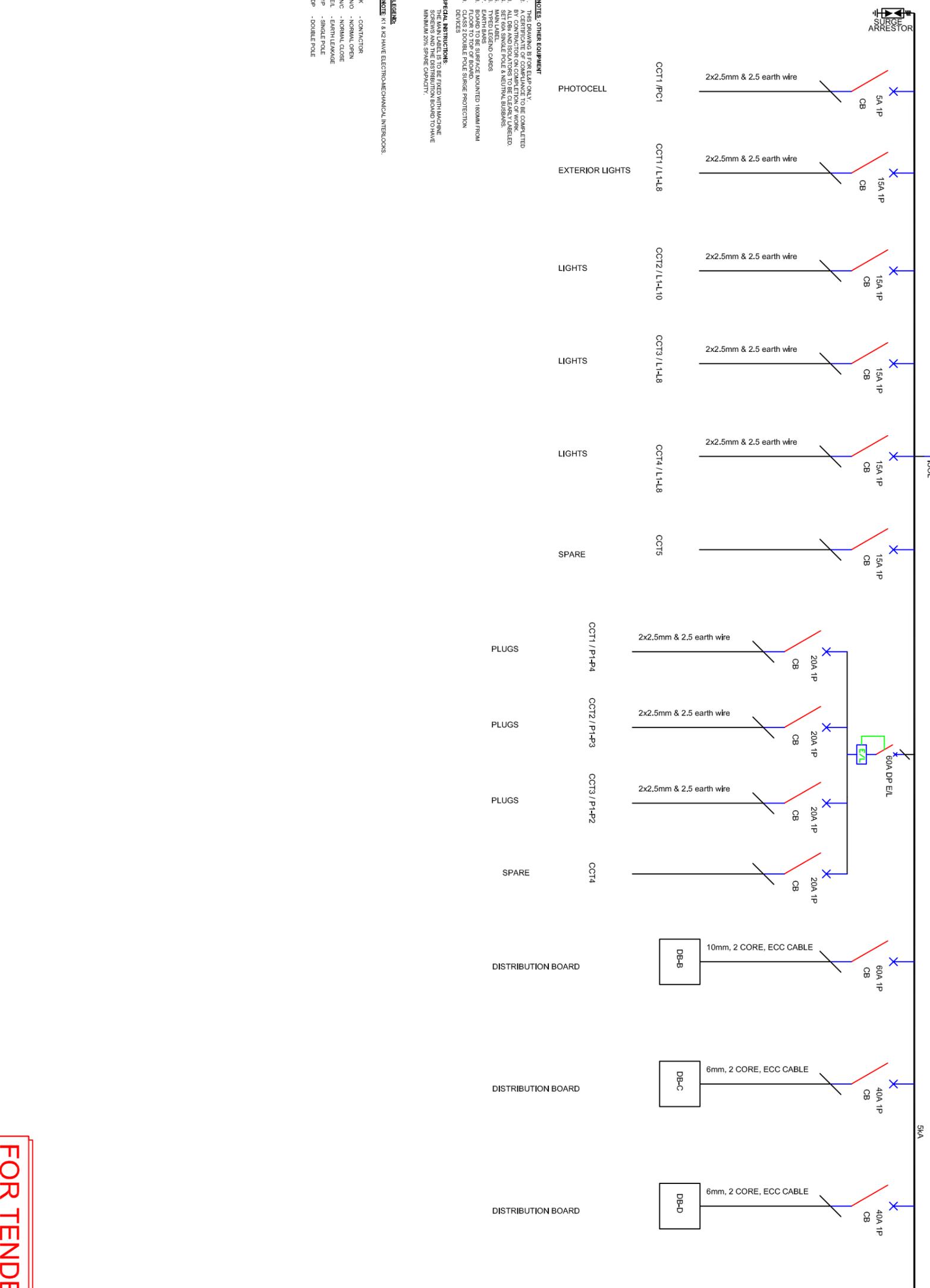
**UGU DISTRICT:
EMGANGENI HIGH
SCHOOL**

Drawing title:

**DB-A
ELECTRICAL SCHEMATIC**

Design:	N.D.	Date:	2016-07-06	Sign:	
Drawn:	N.D.	Date:	2016-07-06	Sign:	
Checked:	L.C.	Date:	2016-07-06	Sign:	
Director:	L.Z.	Date:	2016-07-06	Sign:	
	NTS	Sheet Size:	A3	Sheet:	
Drawing No:	2748D-SC-001				

FOR TENDER

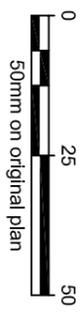


- NOTES: OTHER EQUIPMENT**
- THIS DRAWING IS FOR EQUIPMENT.
 - A CERTIFICATE OF COMPLIANCE TO BE COMPLETED.
 - BY CONTRACTOR ON COMPLETION OF WORK.
 - ALL WORK TO BE DONE IN ACCORDANCE WITH THE SANS 10142-1:2011.
 - SET FOR SINGLE POLE & NEUTRAL BARS/BARS.
 - MAIN LINES TO BE 25mm² OR GREATER.
 - MAIN LINES TO BE 25mm² OR GREATER.
 - CONDUIT TO BE SURFACE MOUNTED 180MM FROM WALL.
 - CONDUIT TO BE SURFACE MOUNTED 180MM FROM WALL.
 - CLASS 2 DOUBLE POLE SURGE PROTECTION DEVICES.

SPECIAL INSTRUCTIONS:
THE MAIN LABEL IS TO BE FIXED WITH MACHINE MINIMUM 20% SPARE CAPACITY.

LEGEND:
NOTE: K1 & K2 HAVE ELECTROMECHANICAL INTERLOCKS.

- K - CONTACTOR
- N/O - NORMAL OPEN
- N/C - NORMAL CLOSE
- EL - EARTH LEVAGE
- 1P - SINGLE POLE
- 2P - DOUBLE POLE



REVISIONS

Rev	Date	Checked	Description

Contract No:

Client Logo:



Consultant:



Project title:

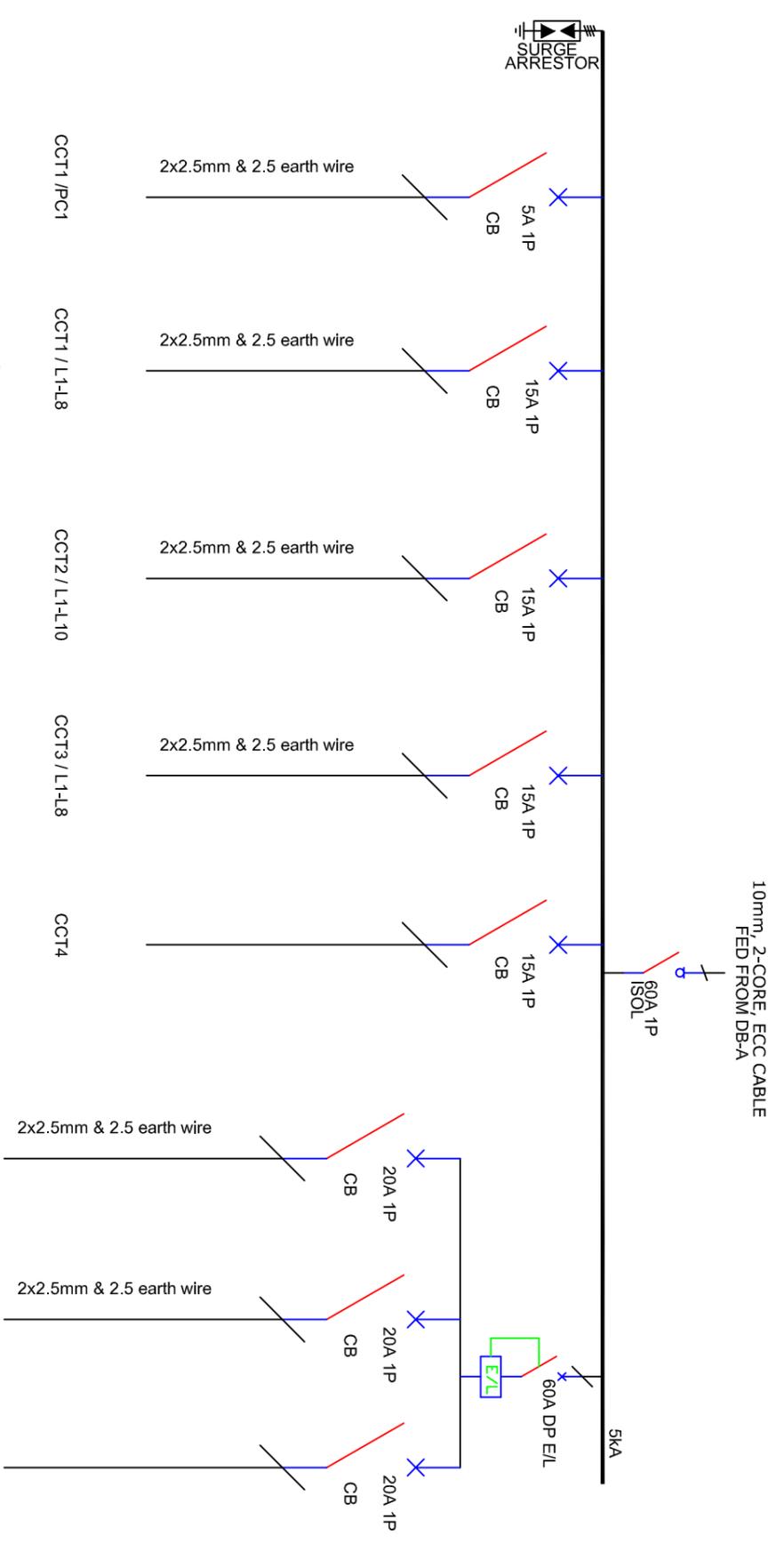
**UGU DISTRICT:
EMGANGENI HIGH
SCHOOL**

Drawing title:

**DB-B
ELECTRICAL SCHEMATIC**

Design:	N.D.	Date:	2016-07-06	Sign:	
Drawn:	N.D.	Date:	2016-07-06	Sign:	
Checked:	L.C.	Date:	2016-07-06	Sign:	
Director:	L.Z.	Date:	2016-07-06	Sign:	
	NTS	Sheet Size:	A3	Sheet:	
Drawing No:	2748D-SC-002				

FOR TENDER



- NOTES: OTHER EQUIPMENT**
1. THIS DRAWING IS FOR E&P ONLY.
 2. A CERTIFICATE OF COMPLIANCE TO BE COMPLETED BY CONTRACTOR ON COMPLETION OF WORK.
 3. ALL DBs AND ISOLATORS TO BE CLEARLY LABELED.
 4. SET 60A SINGLE POLE & NEUTRAL BUSBARS.
 5. MAIN LABEL.
 6. TYPED LEGEND CARDS
 7. EARTH BARS
 8. BOARD TO BE SURFACE MOUNTED 1800MM FROM FLOOR TO TOP OF BOARD.
 9. CLASS 2 DOUBLE POLE SURGE PROTECTION DEVICES
- SPECIAL INSTRUCTIONS:**
- THE MAIN LABEL IS TO BE FIXED WITH MACHINE SCREWS AND THE DISTRIBUTION BOARD TO HAVE MINIMUM 20% SPARE CAPACITY.

- LEGEND:**
- NOTE:** K1 & K2 HAVE ELECTRO-MECHANICAL INTERLOCKS.
- K - CONTACTOR
 - NO - NORMAL OPEN
 - NC - NORMAL CLOSE
 - E/L - EARTH LEAKAGE
 - 1P - SINGLE POLE
 - DP - DOUBLE POLE

ELECTRICAL INSTALLATION TO CLUSTER 155 – EMGANGENI PRIMARY SCHOOL

SECHEDULE OF LUMINAIRES

The Client reserves the right to change or omit any or all the light fittings specified. The luminaires supplied complete with lamps and are to be SABS approved. Any alternatives proposed must be approved by the Engineer on submission of all technical information. Any rate quoted in the provisional bill of quantities will be deemed to include for lamps and mounting accessories.

TYPE	PICTURE	DESCRIPTION	MAKE OR TRADE NAME
A		1500mm, Surface mounted complete with control gear open channel fluorescent luminaire. Metal body 2 x T5 fluorescent lamps complete with electronic control gear and telescopic ends. 35W cool white.
B		IP65, 2 x 11W Surface wall mounted round bulkhead with high pressure die cast aluminium base and trim ring. The supply rate shall include control gear, lamps and all other necessary equipments.
E		1500mm Surface mounted 2 x 58W ECG IP 65 corrosion / vapour proof fluorescent luminaire. Securing latches must be stainless steel.

G		Beka Zela 16 Led 37w, 4000K asymmetrical distribution glare free Post Top, IP 66, base manufactured from marine grade aluminum EN 1706 AC-44300, 10kV/10kA surge protection device and high impact acrylic protector. The supply rate shall include control gear, lamps and all other necessary equipment.
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NAME OF TENDERER:

SIGNATURE OF TENDERER: DATE:.....