

# THULAMELA LOCAL MUNICIPALITY



## Project Bid No.: 28/2020/2021 CONSTRUCTION OF TSHILAMBA ARTS CENTRE

### TENDER DOCUMENT

NOVEMBER 2020

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**NAME OF BIDDER:**.....

**BIDDING AMOUNT (EXCL VAT):**.....

**VAT AMOUNT:**.....

**TOTAL OFFERED BIDDING AMOUNT (INCL. VAT):**.....



**EXPANDED PUBLIC WORKS PROGRAMME**



## THULAMELA LOCAL MUNICIPALITY

Bid No. 28/2020/2021

### Construction of Tshilamba Arts Centre

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**THULAMELA LOCAL MUNICIPALITY**

**Bid No. 28/2020/2021**

**Construction of Tshilamba Arts Centre**

# **THE TENDER**

**PART T1: TENDERING PROCEDURES**

**PART T2: RETURNABLE DOCUMENTS**



T.2

## THULAMELA LOCAL MUNICIPALITY

**Bid No. 28/2020/2021**

**Construction of Tshilamba Arts Centre**

### **PART T1: TENDERING PROCEDURES**

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| T1.1 | TENDER NOTICE AND INVITATION TO TENDER ..... | T.3 |
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**THULAMELA LOCAL MUNICIPALITY****Bid No. 28/2020/2021****Construction of Tshilamba Arts Centre****THULAMELA LOCAL MUNICIPALITY****INVITATION TO BID****CONSTRUCTION OF TSHILAMBA ARTS CENTRE**

Thulamela Local Municipality is inviting capable service providers for the Construction of Tshilamba Arts Centre. Due to Covid -19, Thulamela Local Municipality will confine its procurement processes to the National Treasury regulation of MFMA circular no. 102 which indicate that briefing session should not be made compulsory or mandatory in view to prevent the spread of the virus by interaction with various stakeholders. Please note there will not be compulsory briefing and public opening of the bid documents.

| <b>Bid number</b>       | <b>Project Description</b>               | <b>Contact Persons</b>  | <b>CIDB Grading</b> | <b>Evaluation Criteria</b>                             |
|-------------------------|--|---|---------------------|--|
| NO:<br>28/2020/2<br>021 | Construction of<br>Tshilamba Arts Centre | Dr N Eldidy<br>(011 472 9294),<br>Mrs Netshivhazwaulu<br>ER (015 962 7645) &<br>Mr Mudzili T.P.<br>(015 962 7629) | 7GB or<br>Higher    | 80/20 Preference<br>points system and<br>functionality |

Tender documents can be downloaded from e-tender portal ([www.etender.gov.za](http://www.etender.gov.za)) for free as from **27 November 2020**. **Tender documents won't be available from Procurement Office, Office No. 02 at Thulamela Municipality Main Offices due to the global coronavirus pandemic in order to prevent face to face meetings between Thulamela Municipality Officials and the Service providers. The service providers must submit the completed Bid documents (in black ink) and hand deliver or courier them to Thulamela Municipality. All completed Bid documents (hand delivered or couriered) must be dropped in the BID BOX before the closing date and time of the Bids closure. The onus is on the service providers to make sure the Bid documents are submitted on time and late submission won't be accepted.**

Interested **Contractors and/or service providers** will be expected to submit the Bid documents with the following compulsory requirements.

- ❖ **Tax Compliance Status Letter or Tax Compliance Pin Number.**
- ❖ **Company registration documents (e.g. CK).**
- ❖ **Valid proof of registration with CIDB**
- ❖ **Valid proof of registration with professional bodies (ECSA, SACPCMP etc.)**
- ❖ **Valid proof of valid indemnity**
- ❖ **Valid proof of registration on CSD**
- ❖ **Curriculum vitae of the proposed project team**
- ❖ **Organogram of the project team and other relevant personnel**
- ❖ **Annual Financial statements for the past three (3) years**
- ❖ **Certified copy of partnership or JV agreement (if tenderer is a partnership or JV)**
- ❖ **Proof of municipal rates and taxes or municipal service charges owed by the bidder and ALL its directors, not in arrears for more than 3 months. (The proof of municipal rates and taxes or municipal service charges to be submitted must not be older than three (3) months from the closing date of the bid**
- ❖ **List of building projects completed by the contractor in the last 15 years with clients contact details, description and contract values (Attached completion certificates)**

Tenderers should note the following: Functionality will be scored out of **100%** and the **minimum threshold to qualify is 60%**. Tenderers who fail to meet the minimum threshold will not be considered for further evaluation.

|                                 | <b>TARGETED GOALS:</b>   | <b>WEIGHT</b> |
|---------------------------------|--|---------------|
| <b>Points for functionality</b> | Experience of the Construction Company: (Demonstrated company experience on similar project and past performance in Built Environment)         | <b>35</b>     |
|                                 | Key staff – Demonstrated experience- Qualifications and proof of registration with the Professional bodies (ECSA, SACPCMP etc.) and experience | <b>20</b>     |
|                                 | Proof of Plant and Equipment or Lease agreement or Letter of intent to hire with proof of plant registration document by owner                 | <b>20</b>     |
|                                 | Company's local offices (Locality)   | <b>10</b>     |
|                                 | Financial Reference  | <b>15</b>     |
| <b>TOTAL</b>                    |  | <b>100</b>    |

**NB: Service providers must submit their Certified BBBEE verification certificate from verification agency accredited by South African Accreditation System only (SANAS) or a registered auditor approved by the independent Regulatory Board (IRBA) or an accounting officer as contemplated in the corporation and BEE rating certificate or original sworn affidavit. Bids will be assessed under the provisions of the following Acts and its Regulations: Municipal Finance Management Act, (Act 56 of 2003); PPPFA, Supply Chain Management Policy of the municipality in accordance with the specifications and in terms of 80/20 preferential points system and functionality as per the advert and bid document.**

Sealed bid documents must be submitted in envelopes clearly indicating **“BID NUMBER AND DESCRIPTION”** on the outside and must reach the undersigned by depositing it into the official Bid Box at the front of the main entrance to **Thohoyandou Civic Centre, Old Agriven Building, Thohoyandou**, by no later than **11h00 on, 15 January 2021**.

**Kindly note that bids documents will not be opened in public as it involves face to face meeting which is restricted in terms of Disaster Management Act No.57 of 2002 and Government Gazette No. 43258 in relation to Covid-19. The municipality will publish the list of all bidder in the municipal website for public. The Municipality has taken this initiative to avoid the spread of the global coronavirus pandemic.**

**The Municipality is not bound to accept the lowest Bid and reserves the right to accept any part of a Bid. Bids must remain valid for a period of ninety (90) days after closing date of the submission thereof.**

Bids may only be submitted on the bid documentation provided by the municipality.

**NB:**

***Bids which are late, incomplete, unsigned, completed by pencil, sent by telegraph, facsimile, electronically (Fax), or E- mail and without the compulsory requirements will be disqualified.***

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**MALULEKE H.E.  
MUNICIPAL MANAGER**

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**DATE**





**THULAMELA LOCAL MUNICIPALITY**

**Bid No. 28/2020/2021**

**Construction of Tshilamba Arts Centre**

**T1.2 TENDER DATA**

The conditions of tender are the Standard Conditions of Tender as contained in Annex F of SANS 294:2004.

The Standard Conditions of Tender make several references to the tender data for details that apply specifically to this tender. The tender data shall have precedence in the interpretation of any ambiguity of inconsistency between it and the Standard Conditions of Tender.

Each item of data given below is cross-referenced to the sub clause in the Standard Conditions of Tender to which it mainly applies.

| Subclause | Data   |
|-----------|--|
| F.1.1     | The employer is the <b>THULAMELA LOCAL MUNICIPALITY.</b>   |
| F.1.2     | <p>The Project Document issued by the employer consists of the following:</p> <p><b>THE TENDER</b></p> <p>Part T1: Tendering procedures:</p> <p style="padding-left: 40px;">T1.1 Tender notice and invitation to tender</p> <p style="padding-left: 40px;">T1.2 Tender Data</p> <p>Part T2: Returnable documents</p> <p style="padding-left: 40px;">T2.1 Returnable Schedules required for Tender Evaluation</p> <p style="padding-left: 40px;">T2.2 Other Documents required for Tender Evaluation</p> <p style="padding-left: 40px;">T2.3 Returnable Schedules that will be incorporated into the Contract</p> <p style="padding-left: 40px;">T2.4 Other Schedules and Documents that will be Incorporated into the Contract</p> <p><b>THE CONTRACT</b></p> <p>Part C1: Agreements and contract data</p> <p style="padding-left: 40px;">C1.1 Form of Offer and Acceptance</p> <p style="padding-left: 40px;">C1.2 Agreement in Terms of the Occupational Health &amp; Safety Act</p> <p style="padding-left: 40px;">C1.3 Guarantee</p> <p style="padding-left: 40px;">C1.4 Form Agreement in Terms of the Mine Health and Safety Act</p> <p style="padding-left: 40px;">C1.5 Contract Data</p> <p>Part C2: Pricing data</p> <p style="padding-left: 40px;">C2.1 Pricing instructions</p> <p style="padding-left: 40px;">C2.2 Bills of quantities</p> |

| Subclause | Data   |
|-----------|--|
|           | <p>C2.3 Summary of Bills of Quantities<br/>C2.4 Calculation of Tender Sum</p> <p>Part C3: Scope of work<br/>C3.1 Description of Works<br/>C3.2 Building and Engineering Works<br/>C3.3 Procurement<br/>C3.4 Construction<br/>C3.5 Management<br/>C3.6 Project Specification relating to Standard Specification</p> <p>Part C4: Site information<br/>C4.2 Contract Drawings</p> <p>Part C5: Annexure<br/>C5.1 : Guidelines for the Implementation of Labour Intensive Infrastructure Projects under the Expanded Public Works Programme (EPWP)</p>  |
| F.1.4     | <p>The employer's agent is:<br/>Name: <b>Sobek (Pty) Ltd</b><br/>Address: <b>452 Ontdekkers Road</b><br/><b>Florida Park</b><br/><b>1706</b><br/>Tel: <b>(011) 472 9294</b> Fax: <b>(011) 388 5281</b><br/>e-mail <a href="mailto:gen@sobek.co.za">gen@sobek.co.za</a></p>   |
| F.2.1     | <p>Only those tenderers who are registered with the CIDB, or can provide proof of having applied for registration, in a contractor grading designation equal to or higher than a contractor grading designation determined in accordance with the sum tendered for a <b>7GB</b> or <b>higher</b> class of construction work, or by a contractor who is registered as a potentially emerging enterprise in terms of these Regulations at a contractor grading designation, one level higher than the contractor's registered grading designation, provided that the client</p> <p>(a) is satisfied that such a contractor has the potential to develop and qualify to be registered in that higher grade; and</p> <p>(b) ensures that financial, management or other support is provided to that contractor to enable the contractor to successfully execute that contract are eligible to submit tenders.</p> <p>Joint ventures are eligible to submit tenders provided that:</p> <ol style="list-style-type: none"> <li>1. every member of the joint venture is registered with the CIDB or can provide proof of having registered;</li> <li>2. the lead partner has a contractor grading designation in the <b>7GB</b> or</li> </ol> |

| Subclause | Data  |
|-----------|---|
|           | <p><b>higher</b> class of construction work; and the combined contractor grading designation calculated in accordance with the Construction Industry Development Regulations is equal to or higher than a contractor grading designation determined in accordance with the sum tendered for a <b>7GB</b> or <b>Higher</b> class of construction work are eligible to submit tenders.</p>  |
| F.2.1.5   | The closing time for submission of tender offers is as per Notice and Invitation to Tender T1.1   |
| F.2.1.7   | The tendered lump sums and rates shall be final and binding irrespective of the total tender price. The construction drawings prevail over the Bill of Quantities.  |
| F.2.7     | For particulars regarding a pre-tender site inspection meeting, see Notice and Invitation to Tender T1.1  |
| F.2.12    | <p>If a tenderer wish to submit an alternative tender offer, the only criteria permitted for such alternative tender offer is that it demonstrably satisfies the Employer's standards and requirements. A tenderer may submit alternative tender offers only if a main tender offer, strictly in accordance with all the requirements of the tender documents, is also submitted. Provided that the tenderer's main tender offer is according to specification and would under normal circumstances be recommended for acceptance, his alternative tender offer may also be considered for the purpose of the award of the contract.</p> <p>Calculations, drawings and all other pertinent technical information and characteristics as well as modified or proposed Pricing Data must be submitted with the alternative tender offer to enable the Employer to evaluate the efficacy of the alternative and its principal elements, to take a view on the degree to which the alternative complies with the Employer's standards and requirements and to evaluate the acceptability of the pricing proposals. Calculations must be set out in a clear and logical sequence and must clearly reflect all design assumptions. Pricing Data must reflect all assumptions in the development of the pricing proposal.</p> <p>Acceptance of an alternative tender offer will mean acceptance in principle of the offer. It will be an obligation of the contract for the tenderer, in the event that the alternative is accepted, to accept full responsibility and liability that the alternative offer complies in all respects with the Employer's standards and requirements.</p> <p>The modified Pricing Data must include an amount equal to 5% of the amount tendered for the alternative offer to cover the Employer's costs of confirming the acceptability of the detailed design before it is constructed.</p> |
| F.2.13.3  | Parts of each tender offer communicated on paper shall be submitted as an original, with no additional copies.  |
| F.2.13.5  | The Employer's address for delivery of tender offers and identification details to be shown on each tender offer package are as per Notice and Invitation to Tender T1.1  |

| Subclause         | Data  |
|-------------------|---|
| F.2.13.6<br>F.3.5 | A two-envelope procedure will not be followed.  |
| F.2.15            | The closing time for submission of tender offers is as per Notice and Invitation to Tender T1.1   |
| F.2.16            | The tender offer validity period is <b>90 days</b> .  |
| F.2.23            | <p>The tenderer is required to submit with his tender:</p> <ul style="list-style-type: none"> <li>a) a Certificate of Contractor Registration issued by the Construction Industry Development Board,</li> <li>b) valid PIN from SARS confirming status</li> <li>c) proof Registration with National Treasury Central Supplier Database (CSD) and</li> </ul> <p>Where a tenderer satisfies <b>CIDB</b> contractor grading designation requirement through joint venture formation, such tenderers must submit the above-mentioned Certificates in respect of each partner.</p>   |
| F.3.11            | A contract will only be entered into with a tenderer who has in his employ management and supervisory staff satisfying the requirements of the scope of work and competencies for supervisory and management staff.   |
| F.3.11.2          | <p>The procedure for evaluation of responsive tenders is the <b>80/20</b> preference point system as contained in the procurement policy <b>Form T2.1 I</b></p> <p>The financial offer will be scored using the following:</p> $P_s = W_1 \left( 1 - \frac{P_t - P_{\min}}{P_{\min}} \right)$ <p>Where</p> <p><math>P_s</math> = Points scored for functionality and price of the bid/proposal</p> <p><math>W_1</math> = (1) 80 where the financial value inclusive of VAT of all responsive tenders received have a value up to R50,000,000</p> <p><math>P_t</math> = Rand value of tender under consideration</p> <p><math>P_{\min}</math> = Rand value of the lowest acceptable tender</p> <p>Up to 100 minus <math>W_1</math> tender evaluation points will be awarded to tenderers who complete the preferencing schedule and who are found to be eligible for the preference claimed.</p> |
| F3.13.1           | <p>Tender offers will only be accepted on condition that:</p> <ul style="list-style-type: none"> <li>a) the tenderer is registered with the Construction Industry Development Board in an appropriate contractor grading designation;</li> <li>b) the tenderer or any of its directors is not listed in the Register of Tender Defaulters in terms of the Prevention and Combating of Corrupt Activities Act of 2004 as a person prohibited from doing business with the public sector; and</li> </ul>  |

| Subclause | Data   |
|-----------|--|
|           | <p>c) the tenderer has not over the last five years failed to satisfactorily perform a contract for the employer and has been issued with a written notice to this effect.</p> <p>d) the tenderer having participated in and graduated with fully satisfactory results from the relevant national qualification framework training organized under EPWP, and applying trained supervisory staff on a full-time basis for the execution of the works.</p> |
| F.3.18    | The number of paper copies of signed contract to be provided by the Engineer to the successful tenderer is <b>one (1)</b> .  |

### EVALUATION CRITERIA

Evaluation shall be done in accordance with CIDB regulations using Method 4 as described below:

|   |                     |   |
|---|---------------------|---|
| Method<br>Financial<br>quality<br>preferences | 4:<br>offer,<br>and | 1) Score quality, rejecting all tender offers that fail to score the minimum number of points for quality stated in the Tender data.                                      |
|   |                     | 2) Score tender evaluation points for functional offer.   |
|   |                     | 3) Confirm that tenderers are eligible for the preferences claimed, and if so score tender evaluation points for preferencing   |
|   |                     | 4) Calculate total tender evaluation points   |
|   |                     | 5) Rank tender offers from the highest number of tender evaluation points to the lowest   |
|   |                     | 6) Recommend tenderer with the highest number of tender evaluation points for the award of the contract, unless there are compelling and justifiable reasons not to do so |

## 1. DETAILS OF TENDER

|   |   |
|---|---|
| Name of firm / entity / enterprise  |   |
| Trading as<br>(if different from above)   |   |
| Company Registration no.  |   |
| Company Income Tax no.  |   |
| VAT Registration no.  |   |
| Any other Registration applicable to the Industry   |   |
| Postal Address  | Postal Code _____   |
| Physical Address  | Postal Code _____   |
| Contact details of the <b>Person signing the Tender</b>   | Name: _____<br><br>Telephone: ( ____ ) _____ Fax: ( ____ ) _____<br><br>Cellular Telephone: _____<br>Email address: _____ |
| Contact Details of the Tender's proposed <b>Project Manager who represent the Tenderer in the</b> | Name: _____<br><br>Telephone: ( ____ ) _____ Fax: ( ____ ) _____  |

|  |  |
|--|--|
| <b><u>Implementation processes</u></b>                                   | _____<br>Cellular Telephone: _____<br>Email address: _____   |
| <b>Contact Details of the Person responsible for Accounts / Invoices</b> | Name: _____<br>Telephone: ( ____ ) _____ Fax: ( ____ )<br>_____<br>Cellular Telephone: _____<br>Email address: _____ |

## 2. RESOLUTION TAKEN BY THE BOARD OF DIRECTORS / MEMBERS / PARTNERS

**RESOLUTION** of a meeting of the Board of Directors / Members / Partners of

\_\_\_\_\_ (NAME OF TENDERER)

Held at \_\_\_\_\_ (place)

On \_\_\_\_\_ (date)

### RESOLVED THAT:

1. The enterprise submits a Tender to the Thulamela Local Municipality in respect of the following project:

**BID NO: 28/2020/2021 - CONSTRUCTION OF TSHILAMBA ARTS CENTRE**

2. Mr/Mrs/Ms \_\_\_\_\_

In his/her capacity as \_\_\_\_\_

and who will sign as follows:

**X**

\_\_\_\_\_  
(SPECIMEN SIGNATURE)

be, and is hereby, authorised to sign the Tender and any and all other documents and/or correspondence in connection with and relating to the Tender, as well as to sign any contract, and or all documentation resulting from the award of the Tender to the enterprise mentioned above.

Note: The resolution must be signed by all the directors or members / partners of the Tendering enterprise. Should the space provided below not be sufficient for all directors to sign, please provide a separate sheet in the same format.

| No | Name | Capacity | Signature |
|----|------|----------|-----------|
| 1  |      |          |           |
| 2  |      |          |           |
| 3  |      |          |           |
| 4  |      |          |           |



3. **RESOLUTION TAKEN BY THE BOARD OF DIRECTORS TO ENTER INTO A CONSORTIUM OR JOINT VENTURE**

1. Full registered Names of the Joint Venture **Partners**:

\_\_\_\_\_

And

\_\_\_\_\_

And

\_\_\_\_\_

2. The **Joint Venture** shall carry on business under the **name**:

\_\_\_\_\_

(NAME BY WHICH THE JOINT VENTURE SHALL BE KNOWN)

3. **Name of the Tenderer:**

(if the Joint Venture is not registered in its own name and verified on the Thulamela Local Municipality's supplier database, as well as registered in its own name as an enterprise with the SA Revenue Service.) The J/V nominates the following Partner / Member as its "Lead Partner" for the purpose of this contract, which shall be the entity submitting this tender and shall be responsible for the financial administration of the contract on behalf of the Joint Venture (to handle correspondence, receive instructions and purchase order/s, issue the tax invoice/s, receive/make payment/s on behalf of the J/V, etc.):

\_\_\_\_\_

(NAME OF THE JOINT VENTURE PARTNER WHO WILL REPRESENT THE JOINT VENTURE)

(NOTE THAT THIS MUST ALSO BE THE NAME UNDER WHICH THE TENDER IS SUBMITTED)

4. **Parameters and objectives:**

Outline of the main business of the Joint Venture, and the **objectives** of the J/V intended to be **in line with** the relevant **contract** for which we are bidding:

Main Business / Objectives:

\_\_\_\_\_

\_\_\_\_\_

5. **Split of Responsibilities / Participation in Contract:**

[This is applicable where HDI participation points are claimed for a specific Council tender]

Split of responsibilities in terms of the Tender specifications, i.e. percentage of work to be performed by each partner. In the event of the tender being successful, the participation in this contract by the J/V partners in the total value will be:

| Name of J/V Partner | % Participation |
|---------------------|-----------------|
|                     |                 |
|                     |                 |
|                     |                 |
| Total:              | 100%            |

6. **Duration of Joint Venture:**

We agree that the Thulamela Municipality shall be properly covered in relation to the existence of the J/V until the final performance / completion of the original project / contract tendered for, including any extension of the contract period and any applicable guarantee / warranty period.

7. **Bank Account:**

We agree that if the tender is successful and the contract is awarded to this Joint Venture, the Municipality shall be provided with the bank details of the Joint Venture and we explicitly stipulate that should there be any change in the Joint Venture or disagreement among Joint Venture Partners / Members that the Municipality will continue any due payments to the initially agreed upon bank account and only a Court Order or a unanimous agreement of change of bank account (submitted in writing by the Joint Venture) would be complied with by the Municipality.

**Banking Details:**

Financial Institution: .....

Branch Code: .....

Account No.: .....

8. **Strict Compliance to Signing Powers:**

In as much as the Municipality would be always complying with the initial tendered terms and conditions, the Joint Venture Partners / Members agree always to ensure that their signatory would be treated in the same manner. The signatory will only be varied in terms of a Court Order by a unanimous agreement by all Partners / Members.

9. **Successor in title:**

Unless the context indicates otherwise, the rights and obligations of any party arising from the Joint Venture agreement shall devolve upon and bind its successor in title.

10. **Dissolution:**

Should the Joint Venture be dissolved before completion of any Municipal project or contract that they undertook to complete, it is agreed that the Municipality reserves all its rights to legal recourse.

11. **Breach**

Notwithstanding any other clause contained in any document, any form of breach shall entitle the Thulamela Local Municipality to sue any or all the **Joint Venture partners jointly and severally** for any damages suffered by the Municipality as a result of such breach. We, the parties to this Joint Venture, specifically renounce the benefits of excursions and division and all other legal exceptions that may be pleaded against the validity of our **joint and several liabilities** in terms of this undertaking.

Signatures:

**THUS DONE AND SIGNED**

at .....on the ..... day of ..... 20.....  
(PLACE) (DATE) (MONTH) (YEAR)

\_\_\_\_\_  
SIGNATURE

\_\_\_\_\_  
FULL NAMES

REPRESENTING

\_\_\_\_\_  
(NAME OF J/V PARTNER – COMPANY, CLOSE CORPORATION, - AS APPLICABLE)

REPRESENTING

\_\_\_\_\_  
(NAME OF J/V PARTNER – COMPANY, CLOSE CORPORATION, - AS APPLICABLE)

REPRESENTING

\_\_\_\_\_  
(NAME OF J/V PARTNER – COMPANY, CLOSE CORPORATION, - AS APPLICABLE)

#### 4. THE TENDER OFFER

- 1.1 I/we, Mr/Mrs/Messrs \_\_\_\_\_ duly assigned to represent the Tender for the purpose of this Tender, hereby Tender to supply all or any of the goods and/or render all or any of the services described in the attached documents to the Thulamela Local Municipality on terms and conditions stipulated in this Tender and in accordance with the specifications stipulated in the Tender documents (which shall be taken as part of, and incorporated into this Tender) at the prices reflected in Pricing Schedule.
- 1.2 I/we agree that this offer shall remain valid for a period of 90 days commencing from the closing date and time of this Tender.
- 1.3 I/We further agree that:
- 1.3.1 this Tender and its acceptance shall be subject to the terms and conditions contained in the Thulamela Local Municipality's Supply Chain Management and Procurement Policies;
  - 1.3.2 if I/we withdraw my/our Tender within the period for which I/we have agreed that the Tender shall remain open for acceptance, or fail to fulfil the contract when called upon to do so, the Thulamela Local Municipality may, without prejudice to its other rights, agree to the withdrawal of my/our Tender or cancel the contract that may have been entered into between me/us and the Thulamela Local Municipality and I/we will then pay the Thulamela Local Municipality any additional expense incurred by the Municipality having either to accept any less favourable Tender or, if fresh Tenders have to be invited, the additional expenditure incurred by the invitation of fresh Tenders and by the subsequent acceptance of any less favourable Tender; the Thulamela Local Municipality shall also have the right to recover such additional expenditure by set-off against moneys which may be due or become due to me/us under this or any other Tender or contract or against any guarantee or deposit that may have been furnished by me/us or on my/our behalf for the due fulfilment of this or any other Tender or contract and pending the ascertainment of the amount of such additional expenditure to retain such moneys, guarantee or deposit as security for any loss the Thulamela Local Municipality may sustain by reason of my/our default;
  - 1.3.3 if my/our Tender is accepted the acceptance may be communicated to me/us by letter or order by certified mail or registered mail. Such posting shall be deemed to be proper service of such notice with effect from the date of posting/dispatch of such notice;
  - 1.3.4 the law of the Republic of South Africa shall govern the contract created by the acceptance of my/our Tender and that I/we choose *domicilium citandi et executandi* in the Republic of South Africa, where any and all legal notices may be served at (full street address of this place).
- 
- 1.4 I/we furthermore confirm that I/we have satisfied myself/ourselves as to the correctness and validity of my/our Tender; that the price(s) and rate(s) quoted cover all the work/-item(s) specified in the Tender documents and that the

price(s) and rate(s) cover all my/our obligations under a resulting contract and that I/we accept that any mistakes regarding price(s) and calculations will be at my/our risk.

- 1.5 I/we hereby accept full responsibility for the proper execution and fulfilment of all obligations and conditions devolving on me/us under this agreement as the Principal(s) liable for the due fulfilment of this contract.
- 1.6 I/we agree that any action arising from this contract may in all respects be instituted against me/us and I/we hereby undertake to satisfy fully any sentence or judgment which may be pronounced against me/us as a result of such action.
- 1.7 I/we declare that I/we have a participation/no participation\* in the submission of any other offer for the supplies/services described in the attached documents. \*If in the affirmative. State name(s) of Tender(s) involved.

Name: \_\_\_\_\_ Signature \_\_\_\_\_

**NOTE:** IT IS VERY IMPORTANT THAT ALL TENDER CONDITIONS ARE STRICTLY ADHERED TO, AS FAILURE TO DO SO SHALL INVALIDATE THE TENDER

1. **No Tender will be considered unless submitted on Council's Official Tender Document.**
2. It should be noted that any portion of the Tender Document not completed should be regarded as not applicable.
3. A Tender submitted by:
  - 3.1 A registered **Company** may not be considered unless accompanied by a resolution of a Board of Directors of the Company authorising the Tender to be made and the signatory to sign the Tender on the Company's behalf.
  - 3.2 A registered **Close Corporation** may not be considered unless accompanied by written authority from all the members of the Close Corporation authorising the Tender to be made and the signatory to sign the Tender on the Close Corporation's behalf.
  - 3.3 A **Partnership** may not be considered unless duly signed by all partners or any one or more parties duly authorized thereto to Power of Attorney by the other parties, copy of which should accompany this Tender document.
  - 3.4 A **Trust** may not be considered unless duly signed by all trustees authorising the Tender to be made and the signatory to sign the Tender on the Trust's behalf.
  - 3.5 A Tender submitted for and on behalf of a **Company or Close Corporation** to be formed or in the course of formation shall not be considered unless accompanied by a written guarantee from the signatory, accepting in his personal capacity full responsibility for all performances due under these Conditions of Tender should the Company or Close Corporation not be registered and/or adopt this Contract. Should the Council accept such a Tender and such registration and adoption not take place within three months of the date of Council's acceptance, the aforesaid Company or Close Corporation to be formed or in the course of formation, shall deemed not have registered nor the contract adopted then the signatory shall be regarded as the Tenderer / Contractor and shall be responsible for all due performances under this Tender, failing which the Council shall be entitled to enforce the aforesaid written guarantee against the signatory.
4. The **Joint Venture Agreement** must be submitted with the Tender document detailing the split of responsibilities in terms of the Tender specifications, ie: percentage of work to be performed by each partner. All parties to the Joint Venture Agreement must be registered and verified on the Thulamela Municipality Supplier Database. Only those that are registered and verified before the closing date of the Tender will qualify for preference points.

5. Tenders shall be submitted in a sealed envelope, clearly marked with the relevant Tender number and description, in the officially marked **tender box at the Thulamela Local Municipality Head Office at the entrance to the Municipal Manager's Offices, before 11h00 on Friday, 15 January, 2021.**
6. Any Tender submitted shall remain valid, irrevocable and open for written acceptance for a period of **ninety (90) days** from the closing date. The submission of a Tender shall be deemed to constitute a Contract between Council and the Tenderer whereby the latter agrees not to withdraw his Tender or to amend it or derogate from its effect during the aforesaid period of ninety (90) days.
7. The Council reserves the right to accept all, some, or none of the Tenders submitted either wholly or in part – and it is not obligated to accept the lowest tender
8. Council shall not consider Tenders, which are received after the closing date and time.
9. **The Council retains the right to call for any additional information it may deem necessary.**
10. The Council will not be held responsible for any expenses incurred by the Tenderer in preparing and submitting Tenders.
11. This Tender will be adjudicated in terms of the Supply Chain Management Policy.
12. If a Tenderer or Contractor, or any person employed by him is found to have either directly or indirectly , promised or given to any Councillor or person in the employ of the Council, any commission, gratuity, gift or other consideration, the Council shall have the right summarily and without recourse to law and without prejudice to any other legal remedy which it may have in regard to any loss and/or additional cost or expenses, to disqualify the Tender or cancel the Contract without paying any compensation to the aforesaid Tenderer or Contractor.

13. A Tender shall not in any way communicate with a member of the Council or with any officer of the Council on a question affecting any contract for the supply of goods or for any work undertaking or service which is the subject of a Tender during the period between the closing date or receipt of Tenders and the dispatch of the written notification of the Council's decision on the award of the contract, provided that a Tenderer shall not hereby be precluded:
  - 13.1 At the request of the Head of a Council Department or his authorized representative from furnishing him with additional information, or with a sample of specimen for testing purposes or otherwise, or from giving a demonstration so as to enable the recommendation to the Council's responsible Committee on the award of the contract to be formulated;
  - 13.2 From obtaining from the Municipal Manager or his authorized representative information as to the date upon which the award of the contract is likely to be made or, after the decision upon the award has been made by the Council or any Committee to which the Council has delegated its powers, information as to the nature of the decision or such information as was publicly disclosed at the opening of Tenders or from submitting to the Municipal Manager in writing any communication relating to his Tender or award of the contract or a request for leave to withdraw his Tender, and provided further that nothing contained herein shall be construed so as to prevent information being sought and obtained from a Councillor in regard to any decision taken at an open Council meeting.
14. The Tenderer shall complete and sign the **Tender Form**. Failure to complete the form shall invalidate the Contractor's offer.
15. The Council's Representative for the purpose of this Tender shall be:

PMU Manager: Cedric Mphagi (015 962 7500) and Project Manager: Rhodah Netshivhazwaulue (015 962 7645)
16. In addition to the terms and conditions stipulated in this document, for the Tender to be considered responsive, the Tenderer must return the following documents:
  - a. A fully completed with black ink and signed Tender Form;
  - b. CIDB registration certificate
  - c. Valid PIN from SARS confirming compliance status
  - d. Proof of municipal rates and taxes
  - e. Company registration certificate
  - f. The bidder's Details;
  - g. The necessary document authorizing the Representative to sign and submit the bid on the bidder's behalf;



17. PLEASE NOTE – EXTRACTS FROM THE MUNICIPAL SUPPLY CHAIN MANAGEMENT POLICY:

- 17.1 (43) (1) the accounting officer must-
- 17.1.1 (a) take all reasonable steps to prevent abuse of the supply chain management system;
- 17.1.2 (b) investigate any allegations against an official or other role player of fraud, corruption, favouritism, unfair or irregular practices or failure to comply with this Policy, and when justified –
- i. Take appropriate steps against such official or other role player; or
  - ii. Report any alleged criminal conduct to the South African Police Services;
- 17.1.3 (c) check the National Treasury's database prior to awarding any contract to ensure that no recommended bidder, or any of its directors, is listed as a person prohibited from doing business with the public sector;
- 17.1.4 (d) reject any bid form a bidder –
- i. If any municipal rates and taxes or municipal service charges owed by that bidder or any of its directors to the Municipality, or to any other municipality or municipal entity, are in arrears for more than three months; or
  - ii. Who during the last five years has failed to perform satisfactorily on a previous contract with the Municipality or any other organ of state after written notice was given to that bidder that performance was unsatisfactory;
- 17.1.5 (e) reject a recommendation for the award of a contract if the recommended bidder, or any of its directors, has committed a corrupt or fraudulent act in competing for the particular contract;
- 17.1.6 (f) cancel a contract awarded to a person if –
- i. The person committed any corrupt or fraudulent act during the bidding process or the execution of the contract; or
  - ii. An official or other role player committed any corrupt or fraudulent act during the bidding process or the execution of the contract that benefited that person; and
- 17.1.7 (g) reject the bid of any bidder if that bidder or any of its directors –
- i. Has abused the supply chain management system of the Municipality or has committed any improper conduct in relation to such system;
  - ii. Has been convicted for fraud or corruption during the past five years;
  - iii. Has wilfully neglected, reneged on or failed to comply with any government, municipal or other public sector contract during the past five years; or
  - iv. Has been listed in the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2004).

## 18 OBJECTIONS, COMPLAINTS, QUERIES AND DISPUTES

Periods mentioned in this section run concurrently (every period mentioned will run from the same date of notification)

### 18.1 Objections or Complaints

Persons aggrieved by decisions or actions or actions taken in the implementation of the Municipal Supply Chain Management system, may lodge within 14 days of the decision or action, a written objection or complaint against the decision or action.

### 18.2 Requests for reasons

Every Tenderer has a right to request reasons for the award decision in terms of the Promotion of Administrative Justice Act (Act 3 of 2000). Such request must be received within 14 days of the notification of the result.

### 18.3 Dispute Resolution

Disputes must be settled by means of mutual consultation, mediation (with or without legal representation) or, where unsuccessful, in a court of South African law. Where a disagreement or dispute between a Municipal and a Tenderer or Contractor cannot be resolved by mutual discussions, the Municipal Manager shall appoint an independent and impartial person not directly involved in the supply chain to assist in the resolution of the dispute.

### 18.4 Right to Approach a Court

These foregoing provisions do not influence any affected person's rights to approach a Court at any time. The Contract shall in all respects be construed in accordance with the law of the Republic of South Africa, and any difference that may arise between the Council and the Contractor in regard to the Contract shall be settled in the Republic of South Africa.

**Legal correspondence** regarding this tender should be **addressed to the Municipal Manager**. However, correspondence regarding **administrative matters**, complaints and queries may in the first instance be addressed to the **Manager: Supply Chain at PRIVATE BAG X5066, THOHOYANDOU, 0950**.

## 10. RESPONSIVENESS AND EVALUATION CRITERIA

### 1. RESPONSIVENESS CRITERIA OF SUBMISSIONS

No Tender will be considered by Thulamela Local Municipality unless it meets the following responsiveness criteria:

- 1.1 The Tender must be properly received in a sealed envelope clearly indicating the **description** of the service and the Tender number for which the Tender is submitted.
- 1.2 The Tender must be **deposited in the relevant Tender box** as indicated on the notice of the Tender on or before the closing date and time of the Tender.
- 1.3 The official Tender document must be **fully completed** in indelible ink and must **not be dismembered**. Where information requested does not apply to the Tenderer and **the space is left blank**, it will be **deemed** to be **not applicable**.
- 1.4 All requested relevant and/or additional documentation **must** be submitted with the Tender on or before the closing date and time.
- 1.5 If the entity submitting a Tender is a **Joint Venture or a Consortium or Partnership**, each party to that formation **must** submit all the above information.
- 1.6 The Tenderer **must** be in **good standing** to do business with the public sector in terms of Regulation 38 of the Supply Chain Management Regulations (Government Gazette 27636 of 30 May 2005).
- 1.7 Registration with Thulamela Local Municipality's Vendor Database (refer to on **Instruction to Tenderers**).
- 1.8 Complies with the **requirements of the Specification**.
- 1.9 Adheres to **Pricing Instructions**.
- 1.10 Complies in full and observes the requirements of the **Notice to Tenderers (if applicable)**.
- 1.11 In addition to the terms and conditions stipulated in this document, for the Tender to be considered responsive, the Tenderer **must** submit the following Tender information:
  - 1.11.1 A fully completed and signed Tender Form;
  - 1.11.2 The Tenderer's Details;
  - 1.11.3 The necessary document authorising the Representative to sign and submit the Tender on the Tenderer's behalf;
  - 1.11.4 The duly completed and signed declaration by Tenderer.

## 2 EVALUATION OF TENDERS

- a) All Tenders received shall be evaluated in terms of the Supply Chain Management Regulations, Thulamela Local Municipality Supply Chain Management Policy and the Preferential Procurement Policy Framework Act.
- b) The Council reserves the right to accept all, some, or none of the tenders / Tenders submitted – either wholly or in part – and it is not obligated to accept the lowest Tender.
- c) Evaluation Criteria

### i. Functional Requirements

A tenderer must score a minimum of sixty points (60/100) to qualify for further evaluation. Tenders will be evaluated individually and scored by an evaluation panel according to the evaluation criteria mentioned below:

| Functionality Criteria  | Evaluation        | Sub Criteria  | Points Allocation for Sub Criteria | Maximum Points obtainable per main functionality Criteria |
|---|-------------------|---|------------------------------------|---|
| Company Experience (Demonstrated company experience on similar project and past performance in Built Environment)<br>Appointment completion certificates and reference letters with contactable references must be attached.<br><br>Project Programme and Schedule of estimated monthly expenditure | NB: letters, with | 4 or more similar projects in Built Environment with a minimum value of <u>R20million each</u>  | 30                                 | 35  |
|   |                   | 3 similar projects in Built Environment with a minimum value of <u>R20million each</u>  | 20                                 |   |
|   |                   | 2 similar projects in Built Environment with a minimum value of <u>R20million each</u>  | 10                                 |   |
|   |                   | 1 similar project in Built Environment with a minimum value of <u>R20million each</u>   | 5                                  |   |
|   |                   | No information has been provided  | 0                                  |   |
|   |                   | Project Programme – Understanding the scope and provide a concise and clear methodology of the tasks as well as adequacy of the programme of work | 2.5                                |   |

|  |  |     |    |
|--|--|-----|----|
|  | Schedule of estimated monthly expenditure – Realistic cash-flow based on estimated construction period and project cost.   | 2.5 |    |
| Key Staff – Demonstrated experience: Key Staff Registrations, Qualifications and experience. Attach CV's with certified copies of Qualifications and certified Professional Registration | <u>Key Staff CV, Certified qualifications, Certified professional registration (All Certified documents must not be older than 3 months and must not be copy of certified documents)</u>   |     | 20 |
|  | Contract Manager – minimum of 10 years relevant experience as a Contract Manager with a minimum qualification of National Diploma in Civil Engineering, Pr.CM/Pr.CPM with SACPCMP.   | 8   |    |
|  | 10 Years<br>11 and more Years  | 10  |    |
|  | Site Agent – minimum of 7 years relevant experience as Site Agent with National Diploma or Higher qualification in Civil (Structural) Engineering and registration as a Professional Engineer (Pr. Eng) or Technologist (Pr. Tech Eng) or Technician (Pr. Techni Eng) with ECSA. |     |    |
|  | 7 Years  | 4   |    |
|  | 8 and more Years   | 6   |    |
|  | Construction Health and Safety Officer (CHSO) – minimum 3 years relevant experience as CHOS and professional registration with SACPCMP.  |     |    |
|  | 3 Years  | 2   |    |
|  | 4 and more Years   | 4   |    |
| Plant and Equipment  | <u>Plant and Equipment for this</u>  |     | 20 |

|  |   |                             |                    |
|--|---|-----------------------------|--------------------|
| Details of major equipment owned and immediately available and to be hired.  | <u>project (2 Points each)</u><br>Grader<br>Excavator/TLB<br>10t Roller<br>18000L Water Cart<br>10m3 Tipper Truck<br>Concrete Vibrator<br>Mobile Crane<br>Tower Crane<br>Scaffoldings<br>Formworks  |                             |                    |
| Company's Financial  | Bank Rating<br>A & B<br>C<br>D<br>E<br>F-G  | <br>15<br>10<br>5<br>2<br>0 | <br><br>15<br><br> |
| Company's Local Office (Locality)  | Locality<br>Office situated within Thulamela Local Municipality<br>Office situated within Vhembe District but outside Thulamela Local Municipality<br>Office situated within Limpopo Province but outside Vhembe District<br>Office situated outside Limpopo Province | <br>10<br>7.5<br>5<br>2.5   | <br><br>10<br><br> |
| TOTAL  |   |                             | 100                |
| <u>Note: The minimum qualifying score for functionality is 60 points. All bids that fail to achieve the minimum qualifying score on functionality will not be eligible for further evaluation.</u> |   |                             |                    |



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**3. ADJUDICATION CRITERIA**

The adjudication of the proposals received will be based on the following scoring criteria:

The following preference point system is applicable to the: 80/20

- 80 points for Price
- 20 for B-BBEE

**3.1 THE PREFERENCE POINT SYSTEMS**

**1 Step 1: Calculation of points for price**

1.1 The PPPFA prescribes that the lowest acceptable bid will score 80 or 90 Points for Price. Bidders that quoted higher prices will score lower points for Price on a pro-rata basis.



- **TOTAL TENDER ADJUDICATION POINTS**

The total number of tender adjudication points awarded (N) is:  
(not to exceed 100).

$$N = N_p + N_{ep} + N_{ew}$$

- The 80/20 preference point system

**80/20 Preference point system [(for acquisition of services, works or goods up to a Rand value of R50million) (all applicable taxes included)]**

The following formula must be used to calculate the points for price in respect of tenders/procurement with a Rand value up to R50,000,000:

$$P_s = 80 \left( 1 - \frac{P_t - P_{\min}}{P_{\min}} \right)$$

Where

$P_s$  = Points scored for price of tender under consideration

$P_t$  = Rand value of tender under consideration

$P_{\min}$  = Rand value of lowest acceptable tender

(2) A maximum of 80 points may be awarded to a Bidder.

(3) Only the tender with the highest number of points scored may be selected

Points scored must be rounded off to the nearest 2 decimal places.

## 2 Step 2 : Calculation of points for B-BBEE status level of contributor

2.1 Points must be awarded to a bidder for attaining the B-BBEE status level of contribution in accordance with the table below:

| B-BBEE Status Level of Contributor | Number of points<br>(80/20 system) |
|------------------------------------|------------------------------------|
| 1                                  | 20                                 |
| 2                                  | 18                                 |
| 3                                  | 14                                 |
| 4                                  | 12                                 |
| 5                                  | 8                                  |
| 6                                  | 6                                  |

|                              |   |
|------------------------------|---|
| 7                            | 4 |
| 8                            | 2 |
| Non-complaint<br>contributor | 0 |

2.2 A bid must not be disqualified from the bidding process if the bidder does not submit a certificate substantiating the B-BBEE status level of contribution or is a non-compliant contributor. Such a bidder will score zero (0) out of a maximum of 20 points for B-BBEE.

**3 Calculation of total points scored for price and B-BBEE status level of Contribution**

3.1 The points scored for price must be added to the points scored for B-BBEE Status level of contribution to obtain the bidder's total points scored out of 100.

**11 SPECIAL CONDITIONS OF TENDER AND CONTRACT WHICH SHALL APPLY TO ANY CONTRACT THAT MAY ARISE FORM THIS TENDER**

**1 PAYMENTS**

**1.1 Standard Payment Terms**

Payments shall be made promptly by the purchaser, but in no case later than thirty (30) days after submission of an invoice or claim by the supplier.

**All invoices must be forwarded to the following address:**

**Thulamela Local Municipality, Private Bag X5066, Thohoyandou, 0950**

**1.2 Payments to SMME / HDI Contractors**

To enhance economic empowerment of SMME's and HDI's, the following will apply:

- a) On a fourteen (14) day basis up to a maximum of R 40 000 bi weekly, provided that all documentation are duly completed and authorized;
- b) No payment to be made to any creditor that is indebted to the municipality for any services fees/rentals; and
- c) Any outstanding amount must be deducted from the payment due to the creditor

**2. VALUE ADDED TAX**

**Where the value of an intended contract will exceed R1 000 000, 00 (R 1 million) a tenderer must be registered with the SA Revenue Service for VAT purposes to be able to issue Tax Invoices.**

It is a requirement of this contract that the amount of value-added tax (VAT) must be shown clearly on each invoice. The Tender price will read: Total Value of Service excluding VAT.

The amended Value-Added Tax Act requires that a Tax Invoice for supplies in excess of R3 000 should, in addition to the other required information, also disclose the VAT registration number of the recipient, with effect from 1 March 2005.

**The VAT registration number of the Thulamela Local Municipality is (4000142424).**

**3. PRICE SCHEDULE**

The Tenderer shall supply all the price information required in the price schedule, failure to do so shall invalidate the Tender.

**4. PRICE ADJUSTMENT**

**4.1 No claim for price escalation will be considered for the first year.**

**4.2 Notwithstanding anything to the contrary contained in the Council's Conditions of Tender, Memorandum of Agreement or the Price Schedule, any claim for an increase in the Tender prices herein quoted shall be submitted in writing to the Municipal Manager, Thulamela Local Municipality, Private Bag X5066, Thohoyandou, 0950, in the form of a written letter (not in form of an invoice or a general circular) before the said increase is to become effective. This is possible, as the original Tender itself may be based on three-month-old indices, and escalations may likewise be based on**

three-month-old revised indices. The Council reserves the right to withhold payment of any escalation while only provisional figures is available until the final (revised) figures are issued by the Government's Central Statistical Services. **When submitting any such claim, the Tenderer shall indicate the actual amount claim for each item. A mere notification of a claim for an increase without stating the new price claimed for each item shall, for the purpose of this clause, not be regarded as a valid claim.**

4.3 Notwithstanding anything to the contrary contained in this contract, the Council reserves the right to request the Tenderer to submit auditor's certificates or such other documentary proof as it may require in order to verify a claim for price increases. Should the Tenderer fail to submit such auditor's certificates or the request therefore, it shall be conclusively presumed that the Tenderer has abandoned his claim.

## 5. INDEMNITY

5.1 The Contractor agrees that the occupational use of Council's premises and buildings shall be at his own risk, and that he acknowledges the risks and dangers inherent therein. The Contractor furthermore acknowledges that the Council and / or its employees shall not be liable or responsible for any loss, liability, damages, accident or injury, whether fatal or otherwise, of whatsoever nature and howsoever arising, whether directly from the permission granted by the Council to execute certain events or otherwise, including but not limited to, the use of the premises and / or buildings, and indemnifies the Council and / or its employees against all and any loss of / or damage to property, or injury or death, and any claim for such loss, damage, injury or death, from any cause whatsoever and howsoever arising, which may be suffered in this regard.

5.2 The Contractor and / or its officers, employees, agents, concessionaires, suppliers, contractors or customers shall not have any claim of any nature against the Council for any loss, damage, injury or death which any of them may directly or indirectly suffer (whether or not such loss, damage, injury or death is caused through negligence of the Council or its agents or employees) or for:

5.2.1 any latent or patent defect in the premises;

5.2.2 a fire on the premises;

5.2.3 a theft from the premises;

5.2.4 the Premises or any part thereof being in a defective condition or state of disrepair;

5.2.5 force majeure of causes fortuitous or any other cause either wholly or partly beyond the Council's control;

5.2.6 the use of the services offered on the premises;

5.2.7 consequential loss or damage whether to persons or property caused by riots, civil commotion, insurrection or actions taken by the Contractor or the Council to mitigate the effect of / or prevent the aforesaid; and any other cause whatsoever.

5.2.8 any loss or damage whether to persons or property caused by riots, civil commotion, insurrection or actions taken by the Contractors or the Council to mitigate the effect of / or prevent the aforesaid; and any other cause whatsoever.

- 5.3 Save for any wilful acts or omission or gross negligence by the Council, its officers, employees, agents, concessionaires, suppliers and contractors, the Contractor indemnifies the Council and holds it harmless from and against all claims, actions, damages, liability and expense in connection with loss of life, personal injury and / or damage to property arising from or of any occurrence in, upon or at the premises of the occupancy or use by the Contractor of the premises.

## **6. INSURANCE**

Without limiting the obligations of the Contractor in terms of this Agreement, the Contractor shall effect and maintain the following insurances, covering:

- a) Public Liability for a minimum coverage of R5 million
- b) Contract Works for a minimum coverage of R5 million, which shall insure the Contractor against incidental damage to Principal surrounding property and assets while working on Council premises as well as Council assets damaged in the Contractors Workshop facilities or in transit between the Contractors facilities and the relevant Council premises.
- c) Surety/ Performance bond covering 10% of contract amount.

- 6.1.2 The Lessee shall insure all its own possessions and equipment kept on the premises, in its own name.

- 6.2 In the case of an occurrence giving rise to claim (and in accordance with the directives of the insurer); the Contractor shall proceed in the following manner:

- 6.2.1 Over and above any statutory and / or other requirements contained in the conditions of this agreement, the Council must immediately be notified telephonically (and confirmed by means of a telefax) of the circumstances, nature and estimate of the loss of damage; and

- 6.2.2 any claim settlement shall be subject to the approval of both the Council and the Contractor.

- 6.2.3 The Council reserves the right to make enquiries regarding the cause and result of any such occurrence giving rise to a claim, and the Contractor shall assist the Council in this regard.

- 6.3 All insurance must remain in force for the duration of this agreement.

- 6.4 Should the Contractor fail to arrange insurance or to maintain it, the Council shall be entitled to arrange for such insurance and to maintain it, and pay the premiums, as may be necessary. Amounts for this purpose are paid by the Council as a debt from the Contractor.

- 6.5 The Contractor hereby guarantees that it shall make the necessary submissions of insurance to the satisfaction of the Council (copies of which policies shall be provided to the Council annually, within 7 (seven) days of awarding / acceptance of this contract, as proof that the required insurance exist and that it will comply with all terms, requirements and conditions in respect of insurance applicable to this agreement.

## **7. CESSION AND ASSIGNMENT**

The CONTRACTOR will not assign, transfer, charge or in any manner make over, or purport to assign, transfer, charge or make over, this contract or their rights there

under or any part thereof, without obtaining the previous consent in writing of the COUNCIL.

**8. OCCUPATIONAL HEALTH AND SAFETY ACT (85 OF 1993)**

All successful Tenderers, Tendering on items where labour and / or equipment are included, shall enter into an agreement with the council, indemnifying Council from the provisions of the said ACT.

**9. COMPLIANCE WITH LEGISLATION**

The Contractor is to ensure compliance with the provisions of the OHAS Act & all relevant regulations, by all employees of theirs & other contractors on the site. The Tenderer shall provide a suitable **health and safety plan and COVID-19 Compliance plan** appropriate for the contract Tendered for.

The Contractor shall comply with all laws relating to wages conditions generally governing the employment of labour in the Thulamela area.

**10. WORKMEN'S COMPENSATION**

The Tenderer shall, prior to commencement of any work on site in terms hereof, give written proof that he is registered as an employer in terms of Section 80 of the Compensation for Occupational Injuries and Diseases Act, 130 of 1993 and the Tenderer shall remain registered as such for the duration of the contract awarded and shall pay all monies due to the Compensations Fund in terms of Section 15 of Act 130 of 1993. Failure to comply will result in the Tenderer being disqualified.



**THULAMELA LOCAL MUNICIPALITY**

**Bid No. 28/2020/2021**

**Construction of Tshilamba Arts Centre**

**PART T2: LIST OF RETURNABLE DOCUMENTS**

The tenderer must complete the following returnable documents:

|      |   |      |
|------|---|------|
| T2.1 | RETURNABLE SCHEDULES FOR TENDER EVALUATION.....     | T.37 |
| T2.2 | OTHER DOCUMENTS REQUIRED FOR TENDER EVALUATION..... | T.90 |

**THULAMELA LOCAL MUNICIPALITY****Bid No. 28/2020/2021****Construction of Tshilamba Arts Centre****T2.1 RETURNABLE SCHEDULES FOR TENDER EVALUATION**

|       |  |      |
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| T2.1B | CERTIFICATE OF ATTENDANCE AT CLARIFICATION MEETING...  | T.41 |
| T2.1C | SCHEDULE OF PROPOSED SUBCONTRACTORS.....   | T.42 |
| T2.1D | SCHEDULE OF PLANT AND EQUIPMENT.....   | T.43 |
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| T2.1L | MEDICAL CERTIFICATE FOR THE CONFIRMATION OF PERMANENT<br>DISABLED STATUS.....                      | T.58 |
| T2.1M | MUNICIPAL RATES .....  | T.59 |
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**THULAMELA LOCAL MUNICIPALITY**

**Bid No. 28/2020/2021**

**Construction of Tshilamba Arts Centre**

**T2.1 A CERTIFICATE OF AUTHORITY**

Indicate the status of the tenderer by ticking the appropriate box hereunder. The tenderer must complete the certificate set out below for the relevant category.

|                          |                          |                          |                          |                          |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| A<br>Company             | B<br>Partnership         | C<br>Joint Venture       | D<br>Sole Proprietor     | E<br>Close Corporation   |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

**A. Certificate for company**

I,....., chairperson of the board of directors of ..... hereby confirm that by resolution of the board (copy attached) taken on .....20...., Mr/Mrs.....acting in the capacity of.....,was authorised to sign all documents in connection with this tender and any contract resulting from it on behalf of the company.

As witness

1.....  
. Chairman  
2.....  
Date

**B. Certificate of partnership**

We, the undersigned, being the key partners in the business trading as .....

hereby authorise Mr/Mrs....., acting in the capacity of.....to sign all documents in connection with the tender for Contract.....and any contract resulting from it on our behalf.

| NAME | ADDRESS | SIGNATURE | DATE |
|------|---------|-----------|------|
|      |         |           |      |
|      |         |           |      |

|  |  |  |  |
|--|--|--|--|
|  |  |  |  |
|--|--|--|--|

NOTE: This certificate is to be completed and signed by all of the key partners upon who rests the direction of the affairs of the Partnership as a whole.

**C. Certificate for Joint Venture**

We, the undersigned, are submitting this tender offer in Joint Venture and hereby authorise Mr/Mrs....., authorised signatory of the company ....., acting in the capacity of lead partner, to sign all documents in connection with the tender offer for Contract.....and any other contract resulting from it on our behalf.

This authorisation is evidenced by the attached power of attorney signed by legally authorised signatories of all the partners to the Joint Venture.

| NAME OF FIRM | ADDRESS | AUTHORISING SIGNATURE, NAME & CAPACITY |
|--------------|---------|--|
| Lead partner |         |  |
|              |         |  |
|              |         |  |
|              |         |  |

NOTE: This certificate is to be completed and signed by all of the key partners upon who rests the direction of the affairs of the Partnership as a whole.

**D. Certificate for sole proprietor**

I, ....., hereby confirm that I am the sole owner of the business trading as.....

As Witness:

1.....

.....

Signature: Sole owner

2.....

.....

Date

**E. Certificate for Close Corporation**

We, the undersigned, being the key members in the business trading as.....hereby authorise Mr/Mrs.....

Acting in the capacity of....., to sign all documents in connection with the tender for Contract.....and any contract resulting from it on our behalf.

| NAME | ADDRESS | SIGNATURE | DATE |
|------|---------|-----------|------|
|      |         |           |      |
|      |         |           |      |
|      |         |           |      |
|      |         |           |      |

NOTE: This certificate is to be complete and signed by all the key members upon who rests the direction of the affairs of the Close Corporation as a whole



**THULAMELA LOCAL MUNICIPALITY**

**Bid No. 28/2020/2021**

**Construction of Tshilamba Arts Centre**

**T2.1 B CERTIFICATE OF ATTENDANCE AT CLARIFICATION MEETING**

This is to certify that.....(Tenderer)  
of.....  
.....(address)

was represented by the person(s) named below at the compulsory meeting held for all tenderers at .....(location) on.....(date), starting at.....

We acknowledge that the purpose of the meeting was to acquaint ourselves with the site of the works and / or matters incidental to doing the work specified in the tender documents in order for us to take account of everything necessary when compiling our rates and prices included in the tender.

Particulars of person(s) attending the meeting:

Name .....  
Signature.....

Capacity.....

Name.....  
Signature.....

Capacity.....

Attendance of the above persons at the meeting is confirmed by the employer's representative/ engineer, namely:

Name.....  
Signature.....

Capacity..... Date & Time.....

**THULAMELA LOCAL MUNICIPALITY****Bid No. 28/2020/2021****Construction of Tshilamba Arts Centre****T2.1 C SCHEDULE OF PROPOSED SUBCONTRACTORS**

We notify you that it is our intention to employ the following subcontractors for work in this contract.

If we are awarded a contract we agree that this notification does not change the requirement for us to submit the name of proposed subcontractors in accordance with requirements in the contract for such appointments. If there are no such requirements in the contract, then your written acceptance of this list shall be binding between us.

|    | <b>Name and address of proposed Subcontractor</b> | <b>Company Registration Number &amp; CIDB Classification</b> | <b>Description of Work to be executed by Subcontractor</b> |
|----|---|--|--|
| 1. |   |  |  |
| 2. |   |  |  |
| 3. |   |  |  |
| 4. |   |  |  |
| 5. |   |  |  |

Signed.....

Date.....

Name.....

Position.....

Tenderer.....



**THULAMELA LOCAL MUNICIPALITY**

**Bid No. 28/2020/2021**

**Construction of Tshilamba Arts Centre**

**T2.1 D SCHEDULE OF PLANT AND EQUIPMENT**

The following are lists of major items of relevant equipment that I/we presently own or lease and will have available for this contract or will acquire or hire for this contract is my/our tender is accepted.

(a) Details of major equipment that is **owned** by and immediately available for this contract.

| Quantity | Description, size, capacity, etc. |
|----------|-----------------------------------|
|          |                                   |
|          |                                   |
|          |                                   |
|          |                                   |
|          |                                   |
|          |                                   |
|          |                                   |
|          |                                   |

Attach additional pages if more space is required.

(b) Details of major equipment that will be **hired**, or **acquired** for this contract if my/our tender is acceptable

| Quantity | Description, size, capacity, etc. |
|----------|-----------------------------------|
|          |                                   |
|          |                                   |
|          |                                   |
|          |                                   |
|          |                                   |
|          |                                   |
|          |                                   |
|          |                                   |

Attach additional pages if more space is required

Signed..... Date.....

Name..... Position.....

Tenderer.....



**THULAMELA LOCAL MUNICIPALITY**

**Bid No. 28/2020/2021**

**Construction of Tshilamba Arts Centre**

**T2.1 E SCHEDULE OF THE TENDERER’S EXPERIENCE**

The following is a statement of similar work successfully executed by myself/ourselves in the last fifteen (15) years:

| Employer, contact person and telephone number | Description of contract | Value of work Inclusive of VAT (Rand) | CIDB Classification | Date Completed |
|---|-------------------------|---------------------------------------|---------------------|----------------|
|   |                         |                                       |                     |                |
|   |                         |                                       |                     |                |
|   |                         |                                       |                     |                |
|   |                         |                                       |                     |                |
|   |                         |                                       |                     |                |
|   |                         |                                       |                     |                |
|   |                         |                                       |                     |                |
|   |                         |                                       |                     |                |
|   |                         |                                       |                     |                |
|   |                         |                                       |                     |                |
|   |                         |                                       |                     |                |
|   |                         |                                       |                     |                |
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|   |                         |                                       |                     |                |
|   |                         |                                       |                     |                |
|   |                         |                                       |                     |                |
|   |                         |                                       |                     |                |
|   |                         |                                       |                     |                |
|   |                         |                                       |                     |                |
|   |                         |                                       |                     |                |
|   |                         |                                       |                     |                |
|   |                         |                                       |                     |                |
|   |                         |                                       |                     |                |

Signed..... Date .....

Name..... Position.....

Tenderer.....



**THULAMELA LOCAL MUNICIPALITY**

**Bid No. 28/2020/2021**

**Construction of Tshilamba Arts Centre**

**T2.1 F RECORD OF ADDENDA TO TENDER DOCUMENTS**

We confirm that the following communications received from the employer before the submission of this tender offer, amending the tender documents, have been taken into account in this tender offer:

|     | <b>Date</b> | <b>Title of Details</b> |
|-----|-------------|-------------------------|
| 1.  |             |                         |
| 2.  |             |                         |
| 3.  |             |                         |
| 4.  |             |                         |
| 5.  |             |                         |
| 6.  |             |                         |
| 7.  |             |                         |
| 8.  |             |                         |
| 9.  |             |                         |
| 10. |             |                         |

Attach additional pages if more space is required.

Signed..... Date .....

Name..... Position.....

Tenderer.....







THULAMELA LOCAL MUNICIPALITY

Bid No. 28/2020/2021

Construction of Tshilamba Arts Centre

T2.1 H DECLARATION OF GOOD STANDING REGARDING TAX

|   |                      |                     |
|---|----------------------|---------------------|
| <b>SOUTH AFRICAN REVENUE SERVICES</b>   |                      | Tender No: .....    |
|   |                      | Closing Date: ..... |
| <b>DECLARATION OF GOOD STANDING REGARDING TAX</b>   |                      |                     |
| <b>PARTICULARS</b>  |                      |                     |
| 1. Name of Taxpayer/Tenderer: .....   |                      |                     |
| 2. Trade Name: .....  |                      |                     |
| 3. Identification Number: (If applicable)   | <input type="text"/> |                     |
| 4. Company / Close Corporation registration number:   | <input type="text"/> |                     |
| 5. Income Tax reference number:   | <input type="text"/> |                     |
| 6. VAT registration number: (If applicable)   | <input type="text"/> |                     |
| 7. PAYE employer's registration number: (If applicable)   | <input type="text"/> |                     |
| 8. Monetary value of tender:  | <input type="text"/> |                     |
| <b>DECLARATION</b>  |                      |                     |
| I, ..... the undersigned, the above taxpayer/tenderer, hereby declare that my Income Tax, Pay-As-You-Earn (PAYE) and Value-Added-Tax (VAT) obligations of the above-mentioned taxpayer, which include the rendition of returns and payment of the relevant taxes: |                      |                     |
| (i) Have been satisfied in terms of the relevant Acts; or   |                      |                     |
| (ii) That suitable arrangements have been made with the Receiver of Revenue, ..... to satisfy them.*  |                      |                     |
| .....   | .....                | .....               |
| <b>SIGNATURE</b>  | <b>CAPACITY</b>      | <b>DATE</b>         |
| <b>PLEASE NOTE:*</b> The declaration (ii) cannot be made unless formal arrangements have been made with the Receiver of Revenue with regard to any outstanding revenue/outstanding tax returns.   |                      |                     |

(Tenderer to submit proof of **CSD registration and Valid PIN from SARS confirming compliance status**, failure to submit will result in the disqualification of the tender)



## THULAMELA LOCAL MUNICIPALITY

**Bid No. 28/2020/2021**

### **Construction of Tshilamba Arts Centre**

#### **T2.1 I CONSTRUCTION INDUSTRIES DEVELOPMENT BOARD REGISTRATION**

The tenderer is to affix to this page either:

- Written proof of his registration with the CIDB as a Category **7GB** or **Higher**

or

- Written proof of his application to the CIDB for registration as a contractor in the category listed above.

Note:

1. Failure to affix such documentation as prescribed to this page shall result in this tender not being further considered for the award of the contract.
2. Should this tender be considered for award of the contract, based on proof of submission of application for registration in the appropriate category with the CIDB, and should proof of such subsequent registration not be forthcoming to the employer by the time of award of the contract, then this tender will no longer be considered for the award of the contract.



**THULAMELA LOCAL MUNICIPALITY**

**Bid No. 28/2020/2021**

**Construction of Tshilamba Arts Centre**

**T2.1 J COMPLIANCE WITH OCCUPATIONAL HEALTH AND SAFETY ACT, 1993 AND  
CONSTRUCTION REGULATIONS, 2003**

The tenderer shall attach to this Form evidence that he is registered and in good standing with a compensation insurer who is approved by Department of Labour in terms of section 80 of the Compensation for Injury and Disease Act (COID) (Act 130 of 1993).

The tenderer is required to disclose, by also attaching documentary evidence to this form, all inspections, investigations and their outcomes conducted by the Department of Labour into the conduct of the tenderer at any time during the 36 months preceding the date of this tender.

SIGNED ON BEHALF OF THE TENDERER: .....



## THULAMELA LOCAL MUNICIPALITY

**Bid No. 28/2020/2021**

### **Construction of Tshilamba Arts Centre**

#### **T2.1 K PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL PROCUREMENT REGULATIONS 2011**

**Note:** BEFORE COMPLETING THIS FORM, BIDDERS MUST STUDY THE GENERAL CONDITIONS, DEFINITIONS AND DIRECTIVES APPLICABLE IN RESPECT OF B-BBEE, AS PRESCRIBED IN THE PREFERENTIAL PROCUREMENT REGULATIONS, 2011.

##### **1. GENERAL CONDITIONS:**

The following preference point system are applicable to all bids:

The 80/20 system for requirements with a Rand value of up to R50,000,000; and

The 90/10 system for requirements with a Rand value above R50,000,000.

Failure on the part of a bidder to fill in and/or sign this form may be interpreted to mean that preference points are not claimed.

The purchaser reserves the right to require of a bidder, either before a bid is adjudicated or at any time subsequently, to substantiate any claim in regard to preferences, in any manner required by the purchaser.

##### **2. GENERAL DEFINITIONS:**

- 2.1. **“Acceptable bid”** means any bid, which, in all respects, complies with the specifications and conditions of bid as set out in the bid document.
- 2.2. **“Bid”** means a written offer in a prescribed or stipulated form in response to an invitation by an organ of state for the provision of goods, works or services.
- 2.3. **“Comparative price”** means the price after the factors of a non-firm price and all unconditional discounts that can be utilised have been taken into consideration.
- 2.4. **“Consortium or joint venture”** means an association of persons for the purpose of combining their expertise, property, capital, efforts, skills and knowledge in an activity for the execution of a contract.
- 2.5. **“Contract”** means the agreement that results from the acceptance of a bid by an organ of state.
- 2.6. **“Specific contract participation goals”** means the goals as stipulated in the Preferential Procurement Regulations 2001. In addition to above-mentioned goals, the Regulations [12.(1)] also make provision for organs of state to give particular consideration to procuring locally manufactured products.
- 2.7. **“Control”** means the possession and exercise of legal authority and power to manage the assets, goodwill and daily operations of a business and the active and

continuous exercise of appropriate managerial authority and power in determining the policies and directing the operations of the business.

- 2.8. **“Disability”** means, in respect of a person, a permanent impairment of a physical, intellectual, or sensory function, which results in restricted, or lack of, ability to perform an activity in the manner, or within the range, considered normal for a human being.
- 2.9. **“Equity Ownership”** means the percentage ownership and control, exercised by individuals within an enterprise.
- 2.10. **“Historically Disadvantaged Individual (HDI)”** means a South African citizen.
- (1) who, due to the apartheid policy that had been in place, had no franchise in national elections prior to the introduction of the Constitution of the Republic of South Africa, 1983 (Act No 110 of 1983) or the Constitution of the Republic of South Africa, 1993, (Act No 200 of 1993) (“the interim Constitution); and/or
  - (2) who is a female; and/or
  - (3) who has a disability:  
provided that a person, who obtained South African citizenship on or after the coming into effect of the Interim Constitution, is deemed not to be a HDI;
- 2.11. **“Management”** means an activity inclusive of control and performed on a daily basis, by any person who is a principal executive officer of the company, by whatever name that person may be designated, and whether or not that person is a director.
- 2.12. **“Owned”** means having all the customary elements of ownership, including the right of decision-making and sharing all the risks and profits commensurate with the degree of ownership interests as demonstrated by an examination of the substance, rather than the form of ownership arrangements.
- 2.13. **“Person”** includes reference to a juristic person.
- 2.14. **“Rand value”** means the total estimated value of a contract in Rand denomination that is calculated at the time of bid invitations and includes all applicable taxes and excise duties.
- 2.15. **“Small, Medium and Micro Enterprises” (SMME’s)** bears the same meaning assigned to this expression in the National Small Business Act, 1996 (No 102 of 1996).
- 2.16. **“Sub-contracting”** means the primary contractor’s assigning or leasing or making out work to, or employing another person to support such primary contractor in the execution of part of a project in terms of the contract.
- 2.17. **“Trust”** means the arrangement through which the property of one person is made over or bequeathed to a trustee to administer such property for the benefit of another person.

- 2.18. **“Trustee”** means any person, including the founder of a trust, to whom property is bequeathed in order for such property to be administered for the benefit of another person.

### 3. ESTABLISHMENT OF HDI EQUITY OWNERSHIP IN AN ENTERPRISE:

- 3.1 Equity ownership shall be equated to the percentage of an enterprise which is owned by individuals classified as HDIs, or in the case of a company, the percentage shares that are owned by individuals classified as HDIs, who are actively involved in the management and daily business operations of the enterprise and exercise control over the enterprise, commensurate with their degree of ownership.
- 3.2 Where individuals are not actively involved in the management and daily business operations and do not exercise control over the enterprise commensurate with their degree of ownership, equity ownership may not be claimed.

### 4. ASSESSMENT USING A POINT SYSTEM:

- 4.1 The bidder obtaining the highest number of points will usually be awarded the bid.
- 4.2 Preference points shall be calculated after prices have been brought to a comparative basis.
- 4.3 Points scored will be rounded off to 2 decimal places.
- 4.4 In the event of equal points scored, the bid will be awarded to the bidder scoring the highest number of points for specified goals. If, however the bids are equal in all respects, then the award shall be decided by the drawing of lots.

### 5. POINTS AWARDED FOR PRICE/FUNCTIONALITY:

#### 5.1. The 80/20 preference point system

- 5.1.a. The following formula must be used to calculate the points for the price in respect of bids with a Rand value up to R50,000,000.

- 5.1.b. Points Awarded for Price/functionality (Ps)

**A maximum of 80 points is allocated on the following basis:**

$$P_s = 80 \left[ 1 - \frac{(P_t - P_{\min})}{P_{\min}} \right]$$

**Where**

P<sub>s</sub> = Points scored for price of bids under consideration

P<sub>t</sub> = Rand value of offer bid consideration

(2) A maximum of 80 points may be awarded to a Bidder.

(3) Only the tender with the highest number of points scored may be selected

Points scored must be rounded off to the nearest 2 decimal places.

Points must be awarded to a bidder for attaining the B-BBEE status level

of contribution in accordance with the table below:

| B-BBEE Status Level of Contributor | Number of points<br>(80/20 system) |
|------------------------------------|------------------------------------|
| 1                                  | 20                                 |
| 2                                  | 18                                 |
| 3                                  | 14                                 |
| 4                                  | 12                                 |
| 5                                  | 8                                  |
| 6                                  | 6                                  |
| 7                                  | 4                                  |
| 8                                  | 2                                  |
| Non-complaint contributor          | 0                                  |

#### 6. DECLARATION WITH REGARD TO EQUITY

|                                     |  |
|-------------------------------------|--|
| <b>Name of firm:</b>                |  |
| <b>VAT registration number:</b>     |  |
| <b>Company registration number:</b> |  |

|   |  |  |
|---|--|--|
| <b>Type of firm</b> ( <i>Tick applicable box</i> ): |  |  |
| <input type="checkbox"/> Partnership                | <input type="checkbox"/> One person business/sole trader | <input type="checkbox"/> Close corporation |
| <input type="checkbox"/> Company                    | <input type="checkbox"/> (Pty) Limited                   |  |

|  |
|--|
| <b>Describe principal business activities:</b> |
|  |
|  |



**COMPANY CLASSIFICATION** (*Tick applicable box*):

Manufacturer

Supplier

Professional service provider

Other service providers, e.g. transporters, etc.

|   |  |
|---|--|
| <b>Total number of years this has been in business?</b> |  |
|---|--|



T.55

7. Table 10 - List all Shareholders by Name, Position, Identity Number, Citizenship, HDI status and ownership, as relevant.

| Name | Date/Position occupied in Enterprise | ID Number | Date RSA Citizenship obtained | HDI Status   |  |  | % of business / enterprise owned |
|------|--------------------------------------|-----------|-------------------------------|--|--|--|----------------------------------|
|      |                                      |           |                               | No franchise prior to elections                          | Women  | Disabled   |                                  |
|      |                                      |           |                               | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No | %                                |
|      |                                      |           |                               | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No | %                                |
|      |                                      |           |                               | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No | %                                |
|      |                                      |           |                               | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No | %                                |
|      |                                      |           |                               | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No | %                                |



**8. CONSORTIUM / JOINT VENTURE**

In the event that preference points are claimed for HDI members by consortia / joint ventures, the following information must be furnished in order to be entitled to the points claimed in respect of the HDI member:

| Name of HDI member (to be consistent with table 10) | Percentage (%) of the contract value managed or executed by the HDI member |
|---|--|
|   |  |
|   |  |
|   |  |
|   |  |
|   |  |
|   |  |
|   |  |
|   |  |
|   |  |

9. I/we, the undersigned, who warrants that he/she is duly authorised to do so on behalf of the firm certify that points claimed, based on the equity ownership, indicated in paragraph 8 of the foregoing certificate, qualifies the firm for the preference(s) shown and I / we acknowledge that:

- a. The information furnished is true and correct.
- b. The Equity ownership claimed is in accordance with the General Conditions as indicated in paragraph 1 of this form.
- c. In the event of a contract being awarded as a result of points claimed as shown in paragraph 8, the contractor may be required to furnish documentary proof to the satisfaction of the purchaser that the claims are correct.
- d. If the claims are found to be incorrect, the Employer may, in addition to any other remedy he may have –
  - i. recover costs, losses or damages it has incurred or suffered as a result of that person’s conduct;
  - ii. cancel the contract and claim any damages which it has suffered as a result of having to make less favourable arrangements due to such cancellation;
  - iii. impose a financial penalty more severe than the theoretical financial preference associated with the claim which was made in the bid; and

| Name of Bidder | Signature | Date |
|----------------|-----------|------|
|----------------|-----------|------|

.....: .....: .....

|                           |                           |
|---------------------------|---------------------------|
| <b>Witness Signature:</b> | <b>Witness signature:</b> |
|---------------------------|---------------------------|

.....:

.....



**T2.1 L MEDICAL CERTIFICATE FOR THE CONFIRMATION OF PERMANENT DISABLED STATUS**

I, \_\_\_\_\_ (*surname and name*), Identity number, \_\_\_\_\_ do hereby declare that I am a registered medical practitioner, with my practice number being \_\_\_\_\_, practicing at \_\_\_\_\_ (Physical and postal addresses) declare that I have examined Mr./Mrs. \_\_\_\_\_, identity number of \_\_\_\_\_ and have found the said person to be permanently disabled or having a recurring disability.

“Disability” means, in respect of a person, a permanent impairment of a physical, intellectual, or sensory function, which results in restricted, or lack of, ability to perform an activity in the manner, or within the range, considered normal for a human being.” – As per Preferential Procurement Policy Framework Act: No 5 of 2000 (PPPFA)

The nature of the disability is as follows:

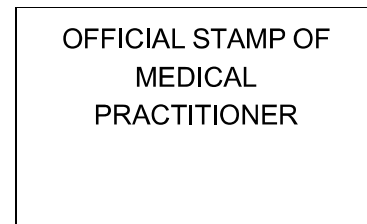
\_\_\_\_\_  
\_\_\_\_\_

Signed at \_\_\_\_\_ on this day of \_\_\_\_\_ of \_\_\_\_\_.

\_\_\_\_\_

Signature

Date





**T2.1 N MUNICIPAL RATES**

Provide proof of municipal rates and taxes or municipal service charges owed by the bidder and all its Directors, not in arrears for more than 3 months (The proof of municipal rates and taxes or municipal service charges to be submitted must not be older than three (3) months from the closing date of the bid.

.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....

## T2.1 N DECLARATION OF INTEREST

Any person, including persons in the employ of the Thulamela Local Municipality; or persons acting on behalf of the Thulamela Local Municipality, performing business as a sole proprietor or in partnership; or persons acting in the capacity of a trustee/s of a trust; or any legal entity, including legal entities and trusts, of which the members, directors, shareholders, trustees and/or beneficiaries are in the employ of the Thulamela Local Municipality or act on behalf of the Thulamela Local Municipality, may make an offer or offers in terms of this tender invitation.

In view of the possible allegations of favouritism, should the resulting tender, or part thereof, be awarded to persons employed by the Thulamela Local Municipality; or to persons who act on behalf of the Thulamela Local Municipality; or to persons connected or related to them, the bidder / tenderer or the bidder / tenderer's duly authorized representative shall disclose herein any relationship and/or kinship, including blood relation, which he/she; his/her employer; the bidder / tenderer's management; members; directors; partners; shareholders; trustees; and/or beneficiaries may have with any person or persons in the employ of the Thulamela Local Municipality and/or with any person or persons acting on behalf of the Thulamela Local Municipality and who may directly or indirectly be involved in, and/or may be in a position to influence the adjudication and/or evaluation and/or award of this bid / tender.

In order to give effect to the above, the following questionnaire shall be completed and submitted with the tender. Failure to furnish the information requested in the questionnaire below may render the tender submission not to be considered at all.

**(In answering the questions below, indicate the applicable answer with a ✓ and cross the other out)**

1. Is the bidder / tenderer and/or the duly authorized representative in the employ of the Thulamela Local Municipality?

YES  NO

If yes, State the full particulars of such person/s, together with their current position held as an employee of the Thulamela Local Municipality.

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2. Is the bidder / tenderer and/or the duly authorized representative in the employ of the person/s or legal entity acting on behalf of the Thulamela Local Municipality, and who may directly or indirectly be involved in, and/or may be in a position to influence, the adjudication and/or evaluation and/or award of this tender?

YES  NO

If yes, State the full particulars of such person/s, together with their current position held as an employee of such person/s or legal entity acting on behalf of the Thulamela Local Municipality.

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- 3. Does the bidder / tenderer, the bidder's/ tenderer's duly authorised representative, and/or any of the bidder's / tenderer's employees, management, partners, members, directors, shareholders, trustees and/or beneficiaries have any relationship (family, friend, business- or financial interest) with a person, or persons in the employ of the Thulamela Local Municipality and/or in the employ of the person/s or legal entity acting on behalf of the Thulamela Local Municipality, and who may directly or indirectly be involved in, and/or may be in a position to influence, the adjudication and/or evaluation and/or award of this tender?

YES  NO

If yes, State the full particulars of the persons between whom the relationship exists, the nature of the relationship and the current position/status of such employee/s of the Thulamela Local Municipality and/or of the person/s and/or legal entity acting on behalf of the Thulamela Local Municipality herein.

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I, \_\_\_\_\_ the \_\_\_\_\_ undersigned,

(name of the person duly authorised to sign the bid / tender documents on behalf of the bidder / tenderer) hereby certify that the information, furnished above, is correct in all respects. I accept and understand that the Thulamela Local Municipality, as representative of the Government of the Republic of South Africa in this bid / tender, may act against me and the bidder / tenderer, jointly and severally, should this declaration prove to be false.

Duly signed at \_\_\_\_\_ on this the \_\_\_\_\_ day of \_\_\_\_\_(month) \_\_\_\_\_(year)

---

Full name of signatory

---

Name of Bidder / Tenderer



---

Capacity of Signatory

---

Signature

**DECLARATION OF INTEREST**

- 1. No bid will be accepted from persons in the service of the state\*.
- 2. Any person, having a kinship with persons in the service of the state, including a blood relationship, may make an offer or offers in terms of this invitation to bid. In view of possible allegations of favouritism, should the resulting bid, or part thereof, be awarded to persons connected with or related to persons in service of the state, it is required that the bidder or their authorised representative declare their position in relation to the evaluating/adjudicating authority and/or take an oath declaring his/her interest.

**3 In order to give effect to the above, the following questionnaire must be completed and submitted with the bid.**

- 3.1 Full Name: .....
- 3.2 Identity Number: .....
- 3.3 Company Registration Number: .....
- 3.4 Tax Reference Number: .....
- 3.5 VAT Registration Number: .....

3.6 Are you presently in the service of the state\* **YES / NO**

3.6.1 If so, furnish particulars.

.....

\* MSCM Regulations: "in the service of the state" means to be –

- (a) a member of –
  - (i) any municipal council;
  - (ii) any provincial legislature; or
  - (iii) the national Assembly or the national Council of provinces;
- (b) a member of the board of directors of any municipal entity;
- (c) an official of any municipality or municipal entity;
- (d) an employee of any national or provincial department, national or provincial public entity or constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act No.1 of 1999);
- (e) a member of the accounting authority of any national or provincial public entity; or
- (f) an employee of Parliament or a provincial legislature.

.....

3.7 Have you been in the service of the state for the past twelve months?

**YES / NO**

3.7.1 If so, furnish particulars.

.....

.....

3.8 Do you, have any relationship (family, friend, other) with persons in the service of the state and who may be involved with the evaluation and or adjudication of this bid?

**YES / NO**

3.8.1 If so, furnish particulars.

.....

.....

**YES / NO**

3.9 Are you, aware of any relationship (family, friend, other) between a bidder and any persons in the service of the state who may be involved with the evaluation and or adjudication of this bid?

3.9.1 If so, furnish particulars

.....

.....

3.10 Are any of the company's directors, managers, principle shareholders or stakeholders in service of the state? **YES / NO**

3.10.1 If so, furnish particulars.

.....  
.....

3.11 Are any spouse, child or parent of the company's directors, managers, principle shareholders or stakeholders in service of the state? **YES / NO**

3.11.1 If so, furnish particulars.

.....  
.....

**CERTIFICATION**

**I, THE UNDERSIGNED (NAME)** .....

**CERTIFY THAT THE INFORMATION FURNISHED ON THIS DECLARATION FORM IS CORRECT.**

**I ACCEPT THAT THE STATE MAY ACT AGAINST ME SHOULD THIS DECLARATION PROVE TO BE**

**FALSE.**

.....

Signature

.....

Date

.....

....

Position

.....

Name of Bidder

**DECLARATION FOR PROCUREMENT ABOVE R10 MILLION (VAT INCLUDED)**

**For all procurement expected to exceed R10 million (VAT included), bidders must complete the following questionnaire:**

1 Are you by law required to prepare annual financial statements for auditing?

**YES / NO**

1.1 If yes, submit audited annual financial statements for the past three years or since the date of establishment if established during the past three years.

.....  
.....

2 Do you have any outstanding undisputed commitments for municipal services towards a municipality or any other service provider in respect of which payment is overdue for more than 30 days?

**YES / NO**

2.1 If no, this serves to certify that the bidder has no undisputed commitments for municipal services towards a municipality or other service provider in respect of which payment is overdue for more than 30 days.

2.2 If yes, provide particulars.

.....  
.....  
.....  
.....

3 Has any contract been awarded to you by an organ of state during the past five years, including particulars of any material non-compliance or dispute concerning the execution of such contract?

3.1 If yes, furnish particulars **YES / NO**

.....

.....

.....



4. Will any portion of goods or services be sourced from outside the Republic, and, if so, what portion and whether any portion of payment from the municipality / municipal entity is expected to be transferred out of the Republic?

**YES / NO**

4.1 If yes, furnish particulars

.....  
.....

**CERTIFICATION**

I, THE UNDERSIGNED (NAME) .....

**CERTIFY THAT THE INFORMATION FURNISHED ON THIS DECLARATION FORM IS CORRECT.**

**I ACCEPT THAT THE STATE MAY ACT AGAINST ME SHOULD THIS DECLARATION PROVE TO BE FALSE.**

.....

Signature

.....

Date

.....

.....

Position

.....

Name of Bidder

**Schedule 5: Declaration In Terms Of Regulation 21 (c) and 47**  
**Conflict Of Interest Declaration**

1. The Tenderer shall declare in respect of Regulation 21 (c), whether it has any conflict of interest in the transaction for which the tender is submitted? (Mark the appropriate box with "X")

|     |    |
|-----|----|
| YES | NO |
|-----|----|

If yes, the Tenderer is required to set out the particulars in the table below:

|  |
|--|
|  |
|  |
|  |
|  |
|  |

2. The Tenderer shall declare in respect of Regulation 47, whether it has directly or through a representative or intermediary promised, offered or granted:

- 2.1 any inducement or reward to the Thulamela Local Municipality or in connection with the award of this contract; or

- 2.2 any reward, gift, favour or hospitality to any official or any other role player involved in the implementation of the supply chain management policy. (Mark the appropriate box with "X")

|     |    |
|-----|----|
| YES | NO |
|-----|----|

If yes, the Tenderer is required to set out the particulars in the table below:

|  |
|--|
|  |
|  |
|  |
|  |

The Tenderer hereby certifies that the information set out in Returnable Schedule 5 and/or attached thereto is true and correct and acknowledges that failure to properly and truthfully complete the schedule may result in the tender being disqualified and/or in the event that the Tenderer is successful, cancellation of contract.

.....

**Signature & Print Name**

**(On behalf of the tenderer [duly authorised])**

.....

**Date**



**Schedule 6: Information required in terms of Regulation 38 (1)**  
**Fraud Convictions and Tender Defaulters Registers**

|   |   |  |
|---|---|--|
| <p>1. Is the Tenderer or any of its directors listed on the National Treasury's database as a company or person prohibited from doing business with the public sector? (Regulation 38(1)(c))</p> <p>(Companies or persons who are listed on this database were informed in writing of this restriction by the National Treasury)</p>  | <p>Yes<br/><input type="checkbox"/></p> | <p>No<br/><input type="checkbox"/></p> |
| <p>If yes, furnish particulars:</p> <p>_____</p> <p>_____</p> <p>_____</p>  |   |  |
| <p>2. Is the Tenderer or any of its directors listed on the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2004)? (Regulation 38(1)(g)(iv))</p> <p>(To access this Register enter the National Treasury's website, <a href="http://www.treasury.gov.za">www.treasury.gov.za</a>, click on the icon "Register for Tender Defaulters".</p> | <p>Yes<br/><input type="checkbox"/></p> | <p>No<br/><input type="checkbox"/></p> |
| <p>If yes, furnish particulars:</p> <p>_____</p> <p>_____</p> <p>_____</p>  |   |  |
| <p>3. Was the tenderer or any of its directors convicted by a court of law (including a court of law outside the Republic of South Africa) for fraud or corruption during the past five years: (Regulation 38(1)(g)(ii))</p>  | <p>Yes<br/><input type="checkbox"/></p> | <p>No<br/><input type="checkbox"/></p> |
| <p>If yes, furnish particulars:</p> <p>_____</p> <p>_____</p> <p>_____</p>  |   |  |

T.71

The Tenderer hereby certifies that the information set out in Returnable Schedule 6 and/or attached thereto is true and correct and acknowledges that failure to properly and truthfully complete may result in the tender being disqualified and/or in the event that the Tenderer is successful, cancellation of contract.

.....

**Signature & Print Name**

**(On behalf of the tenderer [duly authorised])**

.....

**Date**

## PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL PROCUREMENT REGULATIONS 2001

### 1. PURCHASES

This preference form must form part of all bids invited. It contains general information and serves as a claim form for Historically Disadvantaged Individual (HDI) preference points as well as a summary for preference points claimed for attainment of other specified goals

**NB: BEFORE COMPLETING THIS FORM, BIDDERS MUST STUDY THE GENERAL CONDITIONS, DEFINITIONS AND DIRECTIVES APPLICABLE IN RESPECT OF EQUITY OWNERSHIP BY HISTORICALLY DISADVANTAGED INDIVIDUALS (HDIs), AS PRESCRIBED IN THE PREFERENTIAL PROCUREMENT REGULATIONS, 2001.**

#### 1. GENERAL CONDITIONS

1.1 The following preference point systems are applicable to all bids:

- the 80/20 system for requirements with a Rand value of up to R50, 000,000; and
- the 90/10 system for requirements with a Rand value above R50, 000, 000.

1.2 The value of this bid is estimated to ~~exceed~~/not exceed R50,000,000 and therefore the 80/20 system shall be applicable.

1.3 Preference points for this bid shall be awarded for:

- (a) Price; and
- (b) Specific contract participation goals, as specified in the attached forms.

1.3.1 The points for this bid are allocated as follows:

|                |              |               |
|----------------|--------------|---------------|
| <b>1.3.1.1</b> | <b>PRICE</b> | <b>POINTS</b> |
|                |              | ...80.....    |

#### 1.3.1.2 SPECIFIC CONTRACT PARTICIPATION GOALS

**(a) Historically Disadvantaged Individuals:**

- |       |   |       |
|-------|---|-------|
| (i)   | who had no franchise in national elections before the 1983 and 1993 Constitutions | ..... |
| (ii)  | who is a female   | ..... |
| (iii) | who has a disability  | ..... |

**(b) Other specific goals (goals of the RDP- plus local manufacture)**

- |       |  |       |
|-------|--|-------|
| (i)   |  | ..... |
| (ii)  |  | ..... |
| (iii) |  | ..... |
| (iv)  |  | ..... |

|   |            |
|---|------------|
| <b>Total points for Price, HDIs and other RDP-goals must not exceed</b> | <b>100</b> |
|---|------------|

**Separate Preference Points Claim Forms will be used for the promotion of the specific goals for which points have been allocated in paragraph 1.3.1.2 (b) above.**

- 1.4 Failure on the part of a bidder to fill in and/or to sign this form may be interpreted to mean that preference points are not claimed.
- 1.5. The purchaser reserves the right to require of a bidder, either before a bid is adjudicated or at any time subsequently, to substantiate any claim in regard to preferences, in any manner required by the purchaser.

## 2. GENERAL DEFINITIONS

- 2.1 “**Acceptable bid**” means any bid which, in all respects, complies with the specifications and conditions of bid as set out in the bid document.
- 2.2 “**Bid**” means a written offer in a prescribed or stipulated form in response to an invitation by an organ of state for the provision of goods, works or services.
- 2.3 “**Comparative price**” means the price after the factors of a non-firm price and all unconditional discounts that can be utilised have been taken into consideration.
- 2.4 “**Consortium or joint venture**” means an association of persons for the purpose of combining their expertise, property, capital, efforts, skills and knowledge in an activity for the execution of a contract.
- 2.5 “**Contract**” means the agreement that results from the acceptance of a bid by an organ of state.
- 2.6 “**Specific contract participation goals**” means the goals as stipulated in the Preferential Procurement Regulations 2001.
- 2.6.1 In addition to above-mentioned goals, the Regulations [12.(1)] also make provision for organs of state to give particular consideration to procuring locally manufactured products.
- 2.7 “**Control**” means the possession and exercise of legal authority and power to manage the assets, goodwill and daily operations of a business and the active and continuous exercise of appropriate managerial authority and power in determining the policies and directing the operations of the business.
- 2.8 “**Disability**” means, in respect of a person, a permanent impairment of a physical, intellectual, or sensory function, which results in restricted, or lack of, ability to perform an activity in the manner, or within the range, considered normal for a human being.
- 2.9 “**Equity Ownership**” means the percentage ownership and control, exercised by individuals within an enterprise.
- 2.10 “**Historically Disadvantaged Individual (HDI)**” means a South African citizen
- (4) who, due to the apartheid policy that had been in place, had no franchise in national elections prior to the introduction of the Constitution of the Republic of South Africa, 1983 (Act No 110 of 1983) or the Constitution of the Republic of South Africa, 1993, (Act No 200 of 1993) (“the interim Constitution); and/or
  - (5) who is a female; and/or
  - (6) who has a disability:
    - provided that a person who obtained South African citizenship on or after the coming to effect of the Interim Constitution, is deemed not to be a HDI;
- 2.11 “**Management**” means an activity inclusive of control and performed on a daily basis, by any person who is a principal executive officer of the company, by whatever name that person may be designated, and whether or not that person is a director.
- 2.12 “**Owned**” means having all the customary elements of ownership, including the right of decision-making and sharing all the risks and profits commensurate with the degree of ownership interests as demonstrated by an examination of the substance, rather than the form of ownership arrangements.

- 2.13 “**Person**” includes reference to a juristic person.
- 2.14 “**Rand value**” means the total estimated value of a contract in Rand denomination that is calculated at the time of bid invitations and includes all applicable taxes and excise duties.
- 2.15 “**Small, Medium and Micro Enterprises (SMMEs)** bears the same meaning assigned to this expression in the National Small Business Act, 1996 (No 102 of 1996).
- 2.16 “**Sub-contracting**” means the primary contractor’s assigning or leasing or making out work to, or employing another person to support such primary contractor in the execution of part of a project in terms of the contract.
- 2.17 “**Trust**” means the arrangement through which the property of one person is made over or bequeathed to a trustee to administer such property for the benefit of another person.
- 2.18 “**Trustee**” means any person, including the founder of a trust, to whom property is bequeathed in order for such property to be administered for the benefit of another person.

### 3. ESTABLISHMENT OF HDI EQUITY OWNERSHIP IN AN ENTERPRISE

- 3.1 Equity ownership shall be equated to the percentage of an enterprise which is owned by individuals classified as HDIs, or in the case of a company, the percentage shares that are owned by individuals classified as HDIs, who are actively involved in the management and daily business operations of the enterprise and exercise control over the enterprise, commensurate with their degree of ownership.
- 3.2 Where individuals are not actively involved in the management and daily business operations and do not exercise control over the enterprise commensurate with their degree of ownership, equity ownership may not be claimed.

### 4. ADJUDICATION USING A POINT SYSTEM

- 4.1 The bidder obtaining the highest number of points will be awarded the contract.
- 4.2 Preference points shall be calculated after prices have been brought to a comparative basis.
- 4.3 Points scored will be rounded off to 2 decimal places.
- 4.4 In the event of equal points scored, the bid will be awarded to the bidder scoring the highest number of points for specified goals.

### 5. POINTS AWARDED FOR PRICE

#### 5.1 THE 80/20 OR 90/10 PREFERENCE POINT SYSTEMS

A maximum of 80 or 90 points is allocated for price on the following basis:

$$\begin{array}{ccc}
 \mathbf{80/20} & \mathbf{or} & \mathbf{90/10} \\
 \\
 P_s = 80 \left( 1 - \frac{P_t - P_{\min}}{P_{\min}} \right) & \mathbf{or} & P_s = 90 \left( 1 - \frac{P_t - P_{\min}}{P_{\min}} \right)
 \end{array}$$

Where

Ps = Points scored for price of bid under consideration

Pt = Rand value of bid under consideration

Pmin = Rand value of lowest acceptable bid

**6. Points awarded for historically disadvantaged individuals**

6.1 In terms of Regulation 13 (2) preference points for HDI's are calculated on their percentage shareholding in a business, provided that they are actively involved in and exercise control over the enterprise. The following formula is prescribed in Regulation 13 (5) (c):

$$NEP = NOP \times \frac{EP}{100}$$

Where

NEP = Points awarded for equity ownership by an HDI

NOP = The maximum number of points awarded for equity ownership by an HDI in that specific category

EP = The percentage of equity ownership by an HDI within the enterprise or business, determined in accordance with the definition of HDI's.

6.2 Equity claims for a trust will only be allowed in respect of those persons who are both trustees and beneficiaries and who are actively involved in the management of the trust.

6.3 Documentation to substantiate the validity of the credentials of the trustees contemplated above must be submitted.

6.4 Listed companies and tertiary institutions do not qualify for HDI preference points.

6.5 A consortium or joint venture may, based on the percentage of the contract value managed or executed by their HDI-members, be entitled to preference points in respect of an HDI.

6.6 A person awarded a contract as a result of preference for contracting with, or providing equity ownership to an HDI, may not subcontract more than 25% of the value of the contract to a person who is not an HDI or does not qualify for the same number or more preference for equity ownership.

**7. BID DECLARATION**

7.1 Bidders who claim points in respect of equity ownership must complete the Bid Declaration at the end of this form.

**8. EQUITY OWNERSHIP CLAIMED IN TERMS OF PARAGRAPH 2.10 ABOVE. POINTS TO BE CALCULATED FROM INFORMATION FURNISHED IN PARAGRAPH 9.8.**

|            | <b>Ownership</b>  | <b>Percentage owned</b> | <b>Points claimed</b> |
|------------|---|-------------------------|-----------------------|
| <b>8.1</b> | Equity ownership <b>by persons who</b> had no franchise in the national elections | %                       | .....                 |
| <b>8.2</b> | Equity ownership <b>by women</b>  | %                       | .....                 |
| <b>8.3</b> | Equity ownership <b>by disabled persons*</b>                                      | %                       | .....                 |

\*If points are claimed for disabled persons, indicate nature of impairment (see paragraph 2.8 above)

.....

**9 DECLARATION WITH REGARD TO EQUITY**

9.1 Name of firm :.....

9.2 VAT registration number :.....

9.3 Company registration number :.....

**9.4 TYPE OF FIRM**

- Partnership
- One person business/sole trader
- Close corporation
- Company
- (Pty) Limited

[TICK APPLICABLE BOX]

**9.5 DESCRIBE PRINCIPAL BUSINESS ACTIVITIES**

.....

.....

.....

.....

.....

**9.6 COMPANY CLASSIFICATION**

- Manufacturer
- Supplier
- Professional service provider
- Other service providers, e.g. transporter, etc.

[TICK APPLICABLE BOX]

**9.7 MUNICIPAL INFORMATION**

Municipality where business is situated: .....

Registered Account No: .....

Stand No: .....

**9.8 TOTAL NUMBER OF YEARS THE FIRM HAS BEEN IN BUSINESS?.....**





9.10 I/we, the undersigned, who warrants that he/she is duly authorised to do so on behalf of the firm certify that points claimed, based on the equity ownership, indicated in paragraph 8 of the foregoing certificate, qualifies the firm for the preference(s) shown and I / we acknowledge that:

- (i) The information furnished is true and correct.
- (ii) The Equity ownership claimed is in accordance with the General Conditions as indicated in paragraph 1 of this form.
- (iii) In the event of a contract being awarded as a result of points claimed as shown in paragraph 8, the contractor may be required to furnish documentary proof to the satisfaction of the purchaser that the claims are correct.
- (iv) If the claims are found to be incorrect, the purchaser may, in addition to any other remedy it may have -
  - (a) recover costs, losses or damages it has incurred or suffered as a result of that person's conduct; and
  - (b) cancel the contract and claim any damages which it has suffered as a result of having to make less favourable arrangements due to such cancellation;

**WITNESSES:**

1. ....

.....

|                           |
|---------------------------|
| SIGNATURE(S) OF BIDDER(S) |
|---------------------------|

2. ....

DATE:.....

ADDRESS:.....

.....

.....

.....

**Schedule 7: MBD 9 CERTIFICATE**

**MBD 9**

**CERTIFICATE OF INDEPENDENT BID DETERMINATION**

I, the undersigned, in submitting the accompanying bid:

\_\_\_\_\_

(Bid Number and Description)

In response to the invitation for the bid made by:

\_\_\_\_\_

(Name of Municipality / Municipal Entity)

Do hereby make the following statements that I certify to be true and complete in every respect:

I certify, on behalf of: \_\_\_\_\_ that:

(Name of Bidder)

1. I have read and I understand the contents of this Certificate;
2. I understand that the accompanying bid will be disqualified if this Certificate is found not to be true and complete in every respect;
3. I am authorized by the bidder to sign this Certificate, and to submit the accompanying bid, on behalf of the bidder;
4. Each person whose signature appears on the accompanying bid has been authorized by the bidder to determine the terms of, and to sign, the bid, on behalf of the bidder;
5. For the purpose of this Certificate and the accompanying bid, I understand that the word "competitor" shall include any individual or organization, other than the bidder, whether or not affiliated with the bidder, who:
  - a) Has been requested to submit a bid in response to this bid invitation;
  - b) Could potentially submit a bid in response to this bid invitation, based on their qualifications, abilities or experience; and
  - c) Provides the same goods and services and the bidder and/or is in the same line of business as the bidder.

**MBD 9**

- 6. The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement or arrangement with any competitor. However communication between partners in a joint venture or *consortium*\* will not be construed as collusive bidding.
- 7. In particular, without limiting the generality of paragraphs 6 above, there has been no consultation, communication, agreement or arrangement with any competitor regarding:
  - a) Prices;
  - b) Geographical area where product or service will be rendered (market allocation)
  - c) Methods, factors or formulas used to calculate prices;
  - d) The intention or decision to submit or not to submit, a bid;
  - e) The submission of a bid which does not meet the specifications and conditions of the bid
- 8. In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications and conditions or delivery particulars of the products or services to which this bid invitation relates.
- 9. The terms of the accompanying bid have not been, and will not be, disclosed by the bidder, directly, to any competitor, prior to the date and time of the official bid opening or of the awarding of the contract.

*\*Joint venture or Consortium means an association of persons for the purpose of combining their expertise, property, capital, efforts, skill and knowledge in an activity for the execution of a contract.*

- 10. I am aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to bids and contracts, bids that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No.89 of 1998 and or may be reported to the National Prosecuting Authority (NPA) for criminal investigation and or may be restricted from conducting business with public sector for a period not exceeding ten (10) years in terms of the Prevention and Combating of Corrupt Activities Act No.12 of 2004 or any other applicable legislation.

.....  
 Signature Date

.....  
 Position Name of Bidder

**15. Schedule 8: AUTHORISATION FOR THE DEDUCTION OF OUTSTANDING AMOUNTS OWED TO COUNCIL**

TM: Authorisation to deduct outstanding amounts

To: **THE MUNICIPAL MANAGER, THULAMELA LOCAL MUNICIPALITY**

From: \_\_\_\_\_

**(Name of Tenderer or Consortium)**

**AUTHORISATION FOR THE DEDUCTION OF OUTSTANDING AMOUNTS OWED TO COUNCIL**

Extract from Supply Chain Management Policy; Clause 43. (1) (d) (i):

***“The accounting officer must-***

***(d) reject any bid from a bidder-***

***(i) If any municipal rates and taxes or municipal services charges owed by that bidder or any of its directors to the Municipality, or to any other Municipality or Municipal Entity, are in arrears for more than three month ...”***

**I, THE UNDERSIGNED,**

**(FULL NAME IN BLOCK LETTERS)**

Hereby authorise the Thulamela Local Municipality to deduct the full amount outstanding by the business organisation / Director / Partner, etc. from any payment due to us / me.

**X**

\_\_\_\_\_  
Signature (THUS DONE AND SIGNED)  
for and on behalf of the Tenderer/Contractor

At .....On the ..... day of ..... 20.....  
(PLACE) (DATE) (MONTH) (YEAR)

**16. Schedule 9: CERTIFICATE FOR MUNICIPAL SERVICES AND PAYMENTS TO SERVICE PROVIDER**

TM: Authorisation to deduct outstanding amounts

To: THE MUNICIPAL MANAGER, THULAMELA LOCAL MUNICIPALITY

---

**CERTIFICATE FOR MUNICIPAL SERVICES AND PAYMENTS TO SERVICE PROVIDER**

---

|   |
|---|
| <p><b>NAME OF THE TENDERER:</b></p> <p>.....</p> <p>.....</p> |
|---|

**FURTHER DETAILS OF THE TENDERER/S; Proprietor / Director/s / Partners, etc:**

| Physical <b>Business</b> address of the Tenderer | Municipal Account number(s) |
|--|-----------------------------|
|  |                             |
|  |                             |
|  |                             |
|  |                             |
|  |                             |
|  |                             |

If there is not enough space for all the names, please attach the additional details to the Tender Document

| Name of Director / Member / Partner | Identity Number | Physical address of Director / Member / Partner | Municipal Account number(s) |
|-------------------------------------|-----------------|---|-----------------------------|
|                                     |                 |   |                             |
|                                     |                 |   |                             |
|                                     |                 |   |                             |

T.83

|  |  |  |  |
|--|--|--|--|
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

I,

\_\_\_\_\_  
the undersigned, (FULL NAME IN BLOCK LETTERS)

**Certify that the information furnished on this declaration form is correct and that I/we have no undisputed commitments for municipal services towards a municipality or other service provider in respect of which payment is overdue for more than 30 days.**

X

\_\_\_\_\_  
Signature (THUS DONE AND SIGNED)  
for and on behalf of the Tenderer/Contractor

At ..... On the ..... Day of ..... 20.....  
(PLACE) (DATE) (MONTH) (YEAR)

**Please Note:**

**Even if the requested information is not applicable to the Tenderer, the table above should be Endorsed Not Applicable and THIS DECLARATION MUST STILL BE SIGNED.**

**Schedule 10: PREVIOUS EXPERIENCE Annexure A**

**PLEASE INDICATE ALL RELEVANT PAST/CURRENT EXPERIENCE APPLICABLE TO THIS TENDER**

**(Please indicate the number of years, although you previously work for the Municipality. Allocation of points will be based on the information submitted with your document)**

| No | Details  |   |
|----|--|---|
| 1  | <p><b>Brief Description</b> of Contract</p> <p>_____</p> <p>_____</p> <p>Starting Date: _____</p> <p>EndDate:.....</p> <p>Total <b>Value</b> of Contract awarded to you:</p> <p><b>R</b> _____</p>   | <p>Principal (Employer / Awarder of Contract):</p> <p>_____</p> <p>(Company / Institution)</p> <p>Contact Person at Principal:</p> <p>_____</p> <p>(First name or Initials &amp; Surname)</p> <p>Telephone Number:</p> <p>_____</p> |
| 2  | <p><b>Brief Description</b> of Contract</p> <p>_____</p> <p>_____</p> <p>Starting Date: _____</p> <p>End Date: _____</p> <p>Total <b>Value</b> of Contract awarded to you:</p> <p><b>R</b> _____</p> | <p>Principal (Employer / Awarder of Contract):</p> <p>_____</p> <p>(Company / Institution)</p> <p>Contact Person at Principal:</p> <p>_____</p> <p>(First name or Initials &amp; Surname)</p> <p>Telephone Number:</p> <p>_____</p> |
| 3  | <p><b>Brief Description</b> of Contract</p> <p>_____</p> <p>_____</p> <p>Starting Date: _____</p> <p>End Date: _____</p> <p>Total <b>Value</b> of Contract awarded to you:</p> <p><b>R</b> _____</p> | <p>Principal (Employer / Awarder of Contract):</p> <p>_____</p> <p>(Company / Institution)</p> <p>Contact Person at Principal:</p> <p>_____</p> <p>(First name or Initials &amp; Surname)</p> <p>Telephone Number:</p> <p>_____</p> |
| 4  | <p><b>Brief Description</b> of Contract</p> <p>_____</p> <p>_____</p> <p>Starting Date: _____</p> <p>End Date: _____</p>   | <p>Principal (Employer / Awarder of Contract):</p> <p>_____</p> <p>(Company / Institution)</p> <p>Contact Person at Principal:</p> <p>_____</p>   |



|  |  |   |
|--|--|---|
|  | <p>Total Value of Contract awarded to you:</p> <p><b>R</b> _____</p> | <p>(First name or Initials &amp; Surname)</p> <p>Telephone Number:</p> <p>_____</p> |
|--|--|---|



## THULAMELA LOCAL MUNICIPALITY

**Bid No. 28/2020/2021**

**Construction of Tshilamba Arts Centre**

|             |  |      |
|-------------|--|------|
| <b>T2.2</b> | <b>OTHER DOCUMENTS REQUIRED FOR TENDER EVALUATION</b>  |      |
| T2.2A       | FINANCIAL DETAILS, STATEMENTS AND BANK REFERENCES..... | T.88 |
| T2.2B       | ORGANOGRAM AND CURRICULUM VITAE OF KEY PERSONNEL.....  | T.89 |
| T2.2C       | PROJECT PROGRAMME AND METHOD STATEMENT.....            | T.90 |
| T2.2D       | SCHEDULE OF ESTIMATED MONTHLY EXPENDITURE.....         | T.91 |
| T2.2E       | RATES FOR SPECIAL MATERIAL.....                        | T.93 |



**THULAMELA LOCAL MUNICIPALITY**

**Bid No. 28/2020/2021**

**Construction of Tshilamba Arts Centre**

**T2.2A FINANCIAL DETAILS, STATEMENTS AND BANK REFERENCES**

**1. FINANCIAL STATEMENTS**

I/We agree, if required, to furnish a copy of bank rating confirmation letter for consideration by the Thulamela Local Municipality

**2. DETAILS OF CONTRACTOR’S BANK ACCOUNT**

I/We furnish the following information:

- a) Name of Bank: .....
- b) Branch of Bank .....
- c) Town/city/suburb where bank is situated.....
- d) Contact Person at the Bank: .....
- e) Telephone number of Bank: Code: ..... Number: .....
- f) Account Number: .....
- g) Bank rating (include confirmation from bank or financial institution): .....

I/We hereby authorise the Employer to approach the above Bank for a reference.

SIGNED ON BEHALF OF THE TENDERER:.....

DATE: .....



## **THULAMELA LOCAL MUNICIPALITY**

**Bid No. 28/2020/2021**

### **Construction of Tshilamba Arts Centre**

#### **T2.2 B ORGANOGRAM AND CURRICULUM VITAE OF KEY PERSONNEL**

Tenderer to supply an organogram for the management of the contract and include curricula vitae of key personnel. These curricula vitae shall provide evidence of relevant experience of the key staff in the organogram. The personnel included here shall be used on the project unless otherwise agreed by the engineer.



## THULAMELA LOCAL MUNICIPALITY

**Bid No. 28/2020/2021**

### **Construction of Tshilamba Arts Centre**

#### **T2.2 C PROJECT PROGRAMME AND METHOD STATEMENT**

Tenderer to supply project programme, using acceptable software, in sufficient detail to cover the various facets of the work.

This programme is to be supported by a method statement indicating the tenderer's proposed work plan for the construction of the works.

SIGNED ON BEHALF OF TENDERER: .....

#### **Note to Tenderer**

**If a tenderer wishes to submit an alternative tender then this form, appropriately completed, shall be attached to the bill of quantities for the alternative proposal.**

**THULAMELA LOCAL MUNICIPALITY****Bid No. 28/2020/2021****Construction of Tshilamba Arts Centre****2.2 D SCHEDULE OF ESTIMATED MONTHLY EXPENDITURE**

The tenderer shall state his estimated value of the work to be completed every month, based on his preliminary programme and his tendered unit rates, in the table below. The amounts for contingencies and contract price adjustment shall not be included.

| <b>MONTH</b> | <b>VALUE (INCLUDING VAT)</b> |
|--------------|------------------------------|
| 1            | R .....                      |
| 2            | R .....                      |
| 3            | R.....                       |
| 4            | R .....                      |
| 5            | R .....                      |
| 6            | R .....                      |
| 7            | R .....                      |
| 8            | R .....                      |
| 9            | R .....                      |
| 10           | R .....                      |
| 11           | R .....                      |
| 12 (FINAL)   | R .....                      |

**TOTAL: R.....**

**(EXCLUDING CONTINGENCIES AND CONTRACT PRICE  
ADJUSTMENT)**

SIGNED ON BEHALF OF TENDERER: .....

**THULAMELA LOCAL MUNICIPALITY****BID NO. 28/2020/2021****CONSTRUCTION OF TSHILAMBA ARTS CENTRE****T2.2 E RATES FOR SPECIAL MATERIALS**

Only cements, solid bricks and steel reinforcements products will be dealt with as a special material in terms of sub clause 6.8.3 of the General Conditions of Contract, 2<sup>nd</sup> edition, 2010. All products as indicated in the contract data must be stated in the list below.

The rates and prices for the special materials shall be furnished by the contractor, which rates and prices shall exclude VAT but shall include all other obligatory taxes and levies.

| SPECIAL MATERIALS | UNIT * | RATE OR PRICE FOR THE BASE MONTH |
|-------------------|--------|----------------------------------|
|                   |        |                                  |
|                   |        |                                  |
|                   |        |                                  |
|                   |        |                                  |
|                   |        |                                  |
|                   |        |                                  |
|                   |        |                                  |
|                   |        |                                  |
|                   |        |                                  |

\* Indicate whether the material will be delivered in bulk or in containers.

When called upon to do so, the contractor shall substantiate the above rates or prices with acceptable documentary evidence.

SIGNED ON BEHALF OF TENDERER:.....





H.1

## THULAMELA LOCAL MUNICIPALITY

Tender No. 28/2020/2021

Construction of Tshilamba Arts Centre

# THE CONTRACT

|         |                             |
|---------|-----------------------------|
| PART C1 | AGREEMENT AND CONTRACT DATA |
| PART C2 | PRICING DATA                |
| PART C3 | SCOPE OF WORKS              |
| PART C4 | SITE INFORMATION            |



## THULAMELA LOCAL MUNICIPALITY

**Bid No. 28/2020/2021**

**Construction of Tshilamba Arts Centre**

### **PART C1: AGREEMENT AND CONTRACT DATA**

|      |   |      |
|------|---|------|
| C1.1 | FORM OF OFFER AND ACCEPTANCE.....   | H.3  |
| C1.2 | AGREEMENT IN TERMS OF THE OCCUPATIONAL HEALTH AND SAFETY<br>ACT, 1993 (ACT NO. 85 OF 1993) .....  | H.8  |
| C1.3 | GUARANTEE .....   | H.11 |
| C1.4 | FORM AGREEMENT IN TERMS OF THE MINE HEALTH AND SAFETY ACT,<br>(ACT NO. 29 OF 1996) AS AMENDED BY THE MINE HEALTH AND SAFETY<br>AMENDMENT ACT (ACT NO. 72 OF 1997) ..... | H.13 |
| C1.5 | CONTRACT DATA .....   | H.15 |



**C1.1 FORM OF OFFER AND ACCEPTANCE**

**Offer**

The employer, identified in the acceptance signature block, has solicited offers to enter into a contract in respect of the following works:

**Bid No.: 28/2020/2021 – The Construction of Tshilamba Arts Centre**

The tenderer, identified in the offer signature block below, has examined the documents listed in the tender data and addenda thereto as listed in the Tender Schedules, and by submitting this offer has accepted the Conditions of Tender.

By the representative of the Tenderer, deemed to be duly authorized, signing this part of this Form of Offer and Acceptance, the Tenderer offers to perform all of the obligations and liabilities of the Contractor under the Contract including compliance with all its terms and Conditions according to their true intent and meaning for an amount to be determined in accordance with the Conditions of Contract identified in the Contract Data.

**THE OFFERED TOTAL OF THE PRICE INCLUSIVE OF VALUE ADDED TAX IS  
(CONTRACT PRICE)**

.....  
Rand (in words); ..... (in figures)

This Offer may be accepted by the Employer by signing the Acceptance part of this Form of Offer and Acceptance and returning one copy of this document to the Tenderer before the end of the period of validity stated in the Tender Data, whereupon the Tenderer becomes the party named as the contractor in the conditions of contract identified in the Contract Data.

For the Tenderer:

Signature(s) .....  
Name(s) .....  
Capacity .....

Name and address of organization

.....  
.....  
.....  
.....

Name and  
signature of  
witness

.....

Date .....

**Acceptance**

By signing this part of this Form of Offer and Acceptance, the Employer identified below accepts the Tenderer's Offer. In consideration thereof, the Employer shall pay the Contractor the amount due in accordance with the Conditions of Contract identified in the Contract Data. Acceptance of the Tenderer's Offer shall form an agreement between the Employer and the Tenderer upon the terms and conditions contained in this Agreement and in the Contract that is the subject of this Agreement.

The terms of the contract are contained in:

- PART C1 Agreements and contract data, (which includes this agreement)
- PART C2 Pricing data
- PART C3 Scope of work
- PART C4 Site information

and drawings and documents or parts thereof, which may be incorporated by reference into Parts C1 to C4 above.

Deviations from and amendments to the documents listed in the Tender Data and any addenda thereto as listed in the Tender Schedules as well as any changes to the terms of the Offer agreed by the Tenderer and the Employer during this process of offer and acceptance, are contained in the Schedule of Deviations attached to and forming part of this agreement. No amendments to or deviations from said documents are valid unless contained in this schedule, which must be signed by the authorised representative(s) of both parties.

The Tenderer shall within two weeks after 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 at, or just after, the date this agreement comes into effect. Failure to fulfil any of these obligations in accordance with those terms shall constitute a repudiation of this Agreement.

Notwithstanding anything contained herein, this agreement comes into effect on the date when the Tenderer receives one fully completed original copy of this document, including the Schedule of Deviations (if any). Unless the Tenderer (now Contractor) within five days of the date of such receipt notifies the Employer in writing of any reason why he cannot accept the contents of this agreement, this agreement shall constitute a binding contract between the parties.

For the Employer:

Signature(s) .....

Name(s) .....

Capacity .....

Name and address of organization

.....  
.....

Name and  
signature of  
witness

.....

Date

.....

**Schedule of Deviations**

| Item | Deviation Details |
|------|-------------------|
|      |                   |
|      |                   |
|      |                   |
|      |                   |
|      |                   |

By the duly authorised representatives signing this Schedule of Deviations, the Employer and the Tenderer agree to and accept the foregoing schedule of deviations as the only deviations from and amendments to the documents listed in the tender data and addenda thereto as listed in the Tender Schedules, as well as any confirmation, clarification or changes to the terms of the offer agreed by the Tenderer and the employer during this process of offer and acceptance.

It is expressly agreed that no other matter whether in writing, oral communication or implied during the period between the issue of the tender documents and the receipt by the Tenderer of a completed signed copy of this Agreement shall have any meaning or effect in the contract between the parties arising from this agreement.

For the Tenderer:

Signature(s) .....

Name(s) .....

Capacity .....

Name and address of organization

.....  
.....  
.....  
.....

Name and  
signature of  
witness

.....

Date

.....

For the Employer:

Signature(s)

.....

Name(s)

.....

Capacity

.....

Name and address of organization

.....  
.....  
.....  
.....

Name and  
signature of  
witness

.....

Date

.....

**Confirmation of Receipt**

The Tenderer, (now Contractor) identified in the Offer part of this Agreement here-by confirms receipt from the Employer, identified in the Acceptance part of this Agreement, of one fully completed original copy of this Agreement, including the Schedule of Deviations (if any) today;

the .....(day) of ..... (month) 20.....(year) at .....( place).

For the Contractor:

Signature(s) .....

Name(s) .....

Capacity .....

Name and signature of witness .....

Date .....



**C1.2 AGREEMENT IN TERMS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT, 1993 (ACT NO. 85 OF 1993)**

THIS AGREEMENT made at ..... on this the ..... day of ..... in the year..... between Thulamela Local Municipality (hereinafter called "the Employer") on the one part, herein represented by ..... in his capacity as ..... and delegate of the Employer and..... (hereinafter called "the Principal Contractor") of the other part, herein represented by ..... in his capacity as .....

WHEREAS the Employer is desirous that certain works be constructed, viz ..... and has accepted a tender by the Principal Contractor for the construction, completion & maintenance of such works and whereas the Employer and the Principal Contractor have agreed to certain arrangements and procedures to be followed in order to ensure compliance by the Principal Contractor with the provisions of the Occupational Health and Safety Act 1993 (Act 85 of 1993 and the Construction Regulation, July 2003);

NOW THEREFORE THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. The Principal Contractor shall execute the work in accordance with the contract documents pertaining to this contract.
2. This Agreement shall hold good from its commencement date, which shall be the date of a written notice from the employer or engineer requiring him to commence the execution of the Works, to either:
  - a) the date of the final certificate issued in terms of clause 6.10 of the General Conditions of Contract for Construction Works 2010 (2<sup>nd</sup> Edition) as issued by the South African Institution of Civil Engineering (hereinafter referred to as "the GCC 2010"), as contained in the contract documents pertaining to this contract, or
  - b) the date of termination of the contract in terms of clauses 9.1, 9.2 or 9.3 of the GCC 2010, 2<sup>nd</sup> Edition.
3. The Principal Contractor declares himself to be conversant with the following:-
  - a) All the requirements, regulations and standards of the Occupational Health and Safety Act (Act 85 of 1993), hereinafter referred to as "The Act", together with its amendments and with special reference to the following Sections of The Act.
    - i) Section 8: General duties of employers to their employees.
    - ii) Section 9: General duties of employers and self-employed persons to persons other than employees.
    - iii) Section 37: Acts or omissions by employees or mandatory and



- iv) Sub-section 37(2) relating to the purpose and meaning of this Agreement.
  - v) Construction Regulations 2003, and other safety regulations, as applicable.
  - b) The procedures and safety rules of the employer as pertaining to the Principal Contractor and to all his sub contractors.
4. The Principal Contractor is responsible for the compliance with the Act by all his sub-contractors, whether or not selected and/or approved by the employer.
  5. The Principal Contractor warrants that all his and his sub-contractors' employees are covered in terms of the Compensation for Occupational Injuries and Diseases Act 1993 which cover shall remain in force whilst any such employees are present on site. A letter of good standing from the Compensation Commissioner to this effect must be produced to the Employer upon signature of the agreement.
  6. The Principal Contractor undertakes to ensure that he and/or his sub-contractors and/or their respective employees will at all times comply with the following conditions:
    - a) The Principal Contractor shall assume the responsibility in terms of Section 16.1 of the Occupational Health and Safety Act. The Principal Contractor shall not delegate any duty in terms of Section 16.2 of this Act without the prior written approval of the Employer. If the Principal Contractor obtains such approval and delegates any duty in terms of section 16.2 a copy of such written delegation shall immediately be forwarded to the Employer.
    - b) All incidents referred to in the Occupational Health and Safety Act shall be reported by the Principal Contractor to the Department of Labour as well as to the Employer. The Employer will further be provided with copies of all written documentation relating to any incident.
    - c) The Employer hereby obtains an interest in the issue of any formal enquiry conducted in terms of section 32 of the Occupational Health and Safety Act into any incident involving the Principal Contractor and/or his employees and/or his sub-contractors.

In witness thereof the parties hereto have set their signatures hereon in the presence of the subscribing witnesses:

SIGNED FOR AND ON BEHALF OF THE EMPLOYER:.....

WITNESS: 1..... 2 .....

NAME

(IN CAPITALS) 1..... 2 .....

SIGNED FOR AND ON BEHALF OF THE PRINCIPAL CONTRACTOR:.....

WITNESS: 1..... 2 .....

NAME

(IN CAPITALS)

1.....

2.....

**PRO FORMA**

**C1.3 GUARANTEE**

**CONTRACT No.28/2020/2021 Construction of Tshilamba Arts Centre**

I/We, the undersigned, .....

Acting herein in my/our capacity as ..... and as such duly authorized to represent

(Hereinafter referred to as "the (Guarantor)") (in the case of a Company a resolution to be attached) do hereby bind the said Guarantor for the obligations of..... (hereinafter referred to as "the Contractor") in terms of the above-mentioned Contract between the Head of the Thulamela Local Municipality and the said Contractor, and/or for the refund by the Contractor of any excess payments to the Contractor not due and which cannot be recovered from the amount of the retention money to the credit of the Contractor in terms of Clauses 6.2 and 6.10 of the General Conditions of Contract 2<sup>nd</sup> Edition 2010, and do further bind the Guarantor as surety and co-principal debtor with the Contractor for any other amounts which may become payable to the said head of Department from any cause whatsoever arising from the insolvency of the Contractor.

The Guarantor's liability in terms hereof shall be limited to the sum of R ..... ((..... %) of the contract amount) which amount I/we agree to hold at your disposal.

I/we declare that I/we on behalf of the Guarantor am/are fully acquainted with the terms and conditions of the said contract and the Guarantor undertakes to pay the said amount of R ..... or such portion thereof as may be demanded immediately on receipt of a written demand from you in terms of Clause 6.2 of the General Conditions of Contract 2<sup>nd</sup> Edition 2010. A certificate under your hand shall be sufficient and satisfactory evidence as to the amount of the Guarantor's liability for the purpose of enabling provisional sentence or any similar relief to be obtained against the Guarantor.

It is recorded that this guarantee shall remain in force until all moneys which might become due and payable by the Contractor to the Employer have been paid and you or the said Employer shall always be entitled without your or the Employer 's rights being affected, to release securities, to give time, to compound or to make any other arrangements with the Contractor, and any alteration or variation of the said Contract shall in no way release the Guarantor from liability in terms of this Guarantee.

This Guarantee is neither negotiable nor transferable, and must be surrendered to the Guarantor in the event of the full amount of the Guarantee being paid to your Agency.

This Guarantee shall lapse upon the issue of the Completion Certificate in terms of Clause 5.14.4 of the General Conditions of Contract 2<sup>nd</sup> Edition 2010.

SIGNED at ..... on this ..... day of .....  
20.....

AS WITNESSES:

1. .... GUARANTOR

ADDRESS: .....

.....

2. ....

ADDRESS: .....

.....

STAMP DUTY AND ENDORSEMENT

STAMP DUTY WILL BE REQUIRED AS SHOWN BELOW

(i) GUARANTEE PROVIDED BY BANK

Five (5) cents for every R100.00 or part thereof

Maximum Duty R20.00 item 20(1) of Schedule 1 of Stamp Duties Act, 1968 (Act 77 of 1968)

(ii) GUARANTEE PROVIDED BY INSURANCE COMPANY

No duty

The document constitutes a policy of insurance under the Insurance Act, 1943 (Act 27 of 1943)

ENDORSEMENT

In all cases the Deed of Suretyship must be inscribed with the number of the guarantee of policy, as applicable.



**C1.4 FORM AGREEMENT IN TERMS OF THE MINE HEALTH AND SAFETY ACT,  
(ACT No. 29 OF 1996) AS AMENDED BY THE MINE HEALTH AND SAFETY  
AMENDMENT ACT (ACT No. 72 OF 1997)**

THIS AGREEMENT made at .....on this the .....day  
of .....in the year..... between the Thulamela Local  
Municipality (hereinafter) called “the Employer”) of the one part, herein represented by  
..... in his capacity as .....and  
delegate of the Employer in terms of the Employer’s standard powers of delegation pursuant  
to the provisions of Act No. 7 of 1998 and .....in his capacity as  
..... and being duly authorised by virtue of a resolution  
appended hereto as

Annexure A:

WHEREAS the Employer is desirous that certain works be constructed, (insert contract title)  
and has accepted a tender by the Contractor for the construction, completion and  
maintenance of such works and whereas the Employer and the contract have agreed to  
certain arrangements and procedures to be followed in order to ensure compliance by the  
Contractor with the provisions of the Mine Health and Safety Act (Act 29 of 1996); as  
amended by the Mine Health and Safety Amendment Act (Act No. 27 of 1997).

NOW THEREFORE THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. The Contractor shall himself obtain the Mining Authorisation for the sites.
2. The Contractor shall assume responsibility for the Environmental Management Programmes (EMP) in respect of the sites and shall ensure that the sites are rehabilitated at the conclusion of the Contract.
3. The Contractor shall comply with the provisions of the Act and the requirements of the Director: Mineral Development of the Department of Minerals and Energy in making the necessary financial provisions to mine optimally and safety and to rehabilitate the surface of the land concerned satisfactory and to carry out the EMP. All costs incurred in providing a guarantee or other financial provision shall be borne by the Contract.
4. This Agreement shall hold good from the date on which the Mining Authorisation is issued until the date on which a Closure Certificate is issued in terms of the Minerals Act, 1991.
5. Nothing in this Agreement shall exonerate the Contractor from compliance with any requirements of the Engineer regarding the rehabilitation of sites prior to the issue of a Final Approval Certificate in terms of clause 5.16 of the General Conditions of Contract (2<sup>nd</sup> Edition 2010).
6. The Contractor shall undertake all the duties and accept all the responsibilities of the owner in compliance with the requirements of the Act as amended.
7. The Contractor accepts responsibility for compliance with the Act, as amended, by all his sub-contractors whether or not selected and/or approved by the

Employer.

In witness thereof the parties have set their signatures hereon in the presence of the subscribing witnesses:

SIGNED ON BEHALF OF THE EMPLOYER .....

AS WITNESS:

1. .... 2. ....

NAME(Print): ..... NAME(Print): .....

SIGNED ON BEHALF OF THE CONTRACTOR .....

AS WITNESS:

1. .... 2. ....

NAME(Print): ..... NAME(Print): .....

**THULAMELA LOCAL MUNICIPALITY****BID NO. 28/2020/2021****Construction of Tshilamba Arts Centre****C1.5 CONTRACT DATA****C1.5.1 Contract Specific Data**

The following contract specific data, referring to the General Conditions of Contract for Construction Works, Second Edition, 2010 are applicable to this Contract:

**Part 1: Data Provided by the Employer**

| <b>Clause</b>  |  |                  |                |                            |                           |                     |                      |                   |                |             |             |                                  |                                  |  |  |
|--|--|------------------|----------------|----------------------------|---------------------------|---------------------|----------------------|-------------------|----------------|-------------|-------------|----------------------------------|----------------------------------|--|--|
| 1.1.1.13   | The Defects Liability Period is <b>twelve (12) calendar months</b> after final completion date.  |                  |                |                            |                           |                     |                      |                   |                |             |             |                                  |                                  |  |  |
| 1.1.1.14   | The time of achieving Practical Completion is <b>Twelve (12)</b> months.   |                  |                |                            |                           |                     |                      |                   |                |             |             |                                  |                                  |  |  |
| 1.1.1.15   | The name of the employer is <b>Thulamela Local Municipality</b> .  |                  |                |                            |                           |                     |                      |                   |                |             |             |                                  |                                  |  |  |
| 1.1.1.26   | The pricing strategy is <b>Fixed Price Contract</b> .  |                  |                |                            |                           |                     |                      |                   |                |             |             |                                  |                                  |  |  |
| 1.2.1.2  | The address of the Employer is:<br><table><tr><td>Physical Address</td><td>Postal Address</td></tr><tr><td><b>CBD</b></td><td><b>Private Bag X 5066</b></td></tr><tr><td><b>THOHOYANDOU</b></td><td><b>THOHOYANDOU</b></td></tr><tr><td><b>LIMPOPO</b></td><td><b>LIMPOPO</b></td></tr><tr><td><b>0950</b></td><td><b>0950</b></td></tr><tr><td>Telephone: <b>(015) 962 7500</b></td><td>Facsimile: <b>(015) 962 5328</b></td></tr><tr><td>e-mail: <a href="mailto:mphagi@thulamela.co.za">mphagi@thulamela.co.za</a></td><td></td></tr></table> | Physical Address | Postal Address | <b>CBD</b>                 | <b>Private Bag X 5066</b> | <b>THOHOYANDOU</b>  | <b>THOHOYANDOU</b>   | <b>LIMPOPO</b>    | <b>LIMPOPO</b> | <b>0950</b> | <b>0950</b> | Telephone: <b>(015) 962 7500</b> | Facsimile: <b>(015) 962 5328</b> | e-mail: <a href="mailto:mphagi@thulamela.co.za">mphagi@thulamela.co.za</a> |  |
| Physical Address   | Postal Address   |                  |                |                            |                           |                     |                      |                   |                |             |             |                                  |                                  |  |  |
| <b>CBD</b>   | <b>Private Bag X 5066</b>  |                  |                |                            |                           |                     |                      |                   |                |             |             |                                  |                                  |  |  |
| <b>THOHOYANDOU</b>   | <b>THOHOYANDOU</b>   |                  |                |                            |                           |                     |                      |                   |                |             |             |                                  |                                  |  |  |
| <b>LIMPOPO</b>   | <b>LIMPOPO</b>   |                  |                |                            |                           |                     |                      |                   |                |             |             |                                  |                                  |  |  |
| <b>0950</b>  | <b>0950</b>  |                  |                |                            |                           |                     |                      |                   |                |             |             |                                  |                                  |  |  |
| Telephone: <b>(015) 962 7500</b>   | Facsimile: <b>(015) 962 5328</b>   |                  |                |                            |                           |                     |                      |                   |                |             |             |                                  |                                  |  |  |
| e-mail: <a href="mailto:mphagi@thulamela.co.za">mphagi@thulamela.co.za</a> |  |                  |                |                            |                           |                     |                      |                   |                |             |             |                                  |                                  |  |  |
| 1.1.1.16   | The name of the Engineer is <b>Sobek (Pty) Ltd</b>   |                  |                |                            |                           |                     |                      |                   |                |             |             |                                  |                                  |  |  |
| 1.2.1.2  | The address of the Engineer is:<br><table><tr><td>Physical Address</td><td>Postal Address</td></tr><tr><td><b>452 Ontdekkers Road</b></td><td><b>P. O Box 415</b></td></tr><tr><td><b>Florida Park</b></td><td><b>Ridge Terrace</b></td></tr><tr><td><b>Roodepoort</b></td><td><b>2168</b></td></tr><tr><td><b>1706</b></td><td></td></tr></table>   | Physical Address | Postal Address | <b>452 Ontdekkers Road</b> | <b>P. O Box 415</b>       | <b>Florida Park</b> | <b>Ridge Terrace</b> | <b>Roodepoort</b> | <b>2168</b>    | <b>1706</b> |             |                                  |                                  |  |  |
| Physical Address   | Postal Address   |                  |                |                            |                           |                     |                      |                   |                |             |             |                                  |                                  |  |  |
| <b>452 Ontdekkers Road</b>   | <b>P. O Box 415</b>  |                  |                |                            |                           |                     |                      |                   |                |             |             |                                  |                                  |  |  |
| <b>Florida Park</b>  | <b>Ridge Terrace</b>   |                  |                |                            |                           |                     |                      |                   |                |             |             |                                  |                                  |  |  |
| <b>Roodepoort</b>  | <b>2168</b>  |                  |                |                            |                           |                     |                      |                   |                |             |             |                                  |                                  |  |  |
| <b>1706</b>  |  |                  |                |                            |                           |                     |                      |                   |                |             |             |                                  |                                  |  |  |

| Clause    |   |
|-----------|---|
|           | Telephone <b>(011) 472 9294</b> Facsimile: <b>(011) 388 5281</b><br>e-mail: <a href="mailto:gen@sobek.co.za">gen@sobek.co.za</a>  |
| 5.3.1     | The documents required before commencement with the Works are:<br>Health and Safety Plan (refer to Clause 4.3)<br>Initial programme (refer to Clause 5.6)<br>Security (refer to Clause 6.2)<br>Insurance <b>(10% of the tendered sum, performance guarantee)</b> (refer to Clause 8.6)<br>Retention guarantee is not permissible. |
| 5.3.2     | Time to submit the documentation required before commencement with Works execution is <b>fourteen (14) days</b> .   |
| 5.8.1     | The non-working days are <b>Sundays</b> .<br>The special non-working days are:<br><b>(1) Statutory public holidays.</b><br><b>(2) The year end break.</b>   |
| 5.13.1    | The penalty for failing to complete the Works is <b>R5,000.00</b> per calendar day  |
| 5.16.3    | The latent defect period is <b>Ten (10) years</b>   |
| 6.10.1.5  | The percentage advance on materials not yet built into the Permanent Works is <b>80%</b>  |
| 6.10.3    | The limit of the retention is <b>10%</b> of the tendered sum  |
| 8.6.1.1.3 | The amount to cover fees for repairing damage and loss to be included in the insurance sum is <b>R5,000,000.00</b>  |
| 8.6.1.3   | The limit of indemnity for liability insurance is <b>R5,000,000.00</b>  |
|           | The Construction drawings prevail over the Bill of Quantities   |



**Section 2: Data provided by the Contractor**

| <b>Clause</b>  |  |  |                    |   |  |
|--|--|--|--------------------|---|--|
| 1.1.8  | The name of the contractor is .....  |  |                    |   |  |
| 1.2.1.2  | The contractor's address for receipt of communication is:<br>Telephone: ..... Facsimile: .....<br>e-mail:.....<br>Address:.....  |  |                    |   |  |
| 6.2.1  | The Security to be provided by the Contractor shall be the following: <table border="1"> <thead> <tr> <th>Type of Security<br/>(15% Value Added Tax to be included)</th> <th>Indicate Yes or No</th> </tr> </thead> <tbody> <tr> <td>Performance guarantee of <b>10%</b> of the Contract Sum</td> <td></td> </tr> </tbody> </table> | Type of Security<br>(15% Value Added Tax to be included) | Indicate Yes or No | Performance guarantee of <b>10%</b> of the Contract Sum |  |
| Type of Security<br>(15% Value Added Tax to be included) | Indicate Yes or No   |  |                    |   |  |
| Performance guarantee of <b>10%</b> of the Contract Sum  |  |  |                    |   |  |



**THULAMELA LOCAL MUNICIPALITY**

**Bid No. 28/2020/2021**

**Construction of Tshilamba Arts Centre**

**PART C2: PRICING DATA**

|      |                            |      |
|------|----------------------------|------|
| C2.1 | PRICING INSTRUCTIONS ..... | H.19 |
| C2.2 | BILL OF QUANTITIES .....   | H.26 |



## C2.1 PRICING INSTRUCTIONS

- 1 For the purposes of this bill of quantities, the following words shall have the meanings hereby assigned to them:

Unit: The unit of measurement for each item of work as defined in the standard specifications or the project specifications.

Quantity: The number of units of work for each item.

Rate: The payment per unit of work for which the tenderer tenders to do the work.

Amount: The product of the quantity and the rate tendered for an item.

Lump Sum: An amount tendered for an item, the extent of which is described in the bill of quantities, the specifications or elsewhere, but of which the quantity of work is not measured in units.

- 2 This bill of quantities forms part of the contract documents and must be read in conjunction with all the other documents comprising the contract documents.

- 3 The quantities set out in the bill of quantities are only approximate quantities. The quantities of work finally accepted and certified for payment, and not the quantities given in the bill of quantities, will be used to determine payments to the contractor.

The validity of the contract shall in no way be affected by differences between the quantities in the bill of quantities and the quantities finally certified for payment. Work is valued at the rates or lump sums tendered, subject only to the provisions of sub-clause 1209 (a) of the standard specifications.

- 4 Rates and lump sums shall include full compensation for overheads, profits, incidentals, tax (other than VAT), etc, and for the completed items of work as specified, all in accordance with sub-clause 1209 (b) of the standard specifications. Full compensation for completing and maintaining, during the defects liability period, all the work shown on the drawings and specified in the standard specifications and project specifications and for all the risks, obligations and responsibilities specified in the general conditions of contract, special conditions of contract, standard specifications and project specifications shall be considered as provided for collectively in the items of payment given in the bill of quantities, except in so far as the quantities given in the bill of quantities are only approximate.

- 5 The tenderer shall fill in a rate or a lump sum for each item where provision is made for it even where no quantities are given. Items against which no rate or lump sum has been entered in the tender will not be paid for when the work is executed, as

payment for such work will be regarded as being covered by other rates or lump sums in the bill of quantities.

The tenderer shall fill in a rate against all items where the words "rate only" appear in the amount column. Although no work is foreseen under such item and no quantities are consequently given in the quantity column, the tendered rate shall apply should work under this item actually be required. Tenders should note the provisions of paragraph 12 of this preamble.

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

The tendered lump sums and rates shall be valid irrespective of any change in the quantities during the execution of the contract.

- 6 The works executed are measured for payment in accordance with the methods described in the contract documents under the various payment items, notwithstanding any custom to the contrary. Attention is directed to the provisions of clause 1220 of the standard specifications regarding the measurements of quantities for payment. Except where specified otherwise than in clause 1220, the net measurement or mass of the finished work in place shall be taken for payment, and any volume or mass of work in excess of that prescribed, shall be excluded.
- 7 The amount of work or the quantities of material stated in the bill of quantities shall not be considered as restricting or extending the amount of work to be done or quantity of material to be supplied by the contractor.
- 8 The statement of quantities of material or the amount of work in the bill of quantities shall not be regarded as authorisation for the contractor to order material or to execute work. The contractor shall obtain the engineer's detailed instructions for all work before ordering any materials or executing work or making arrangements in this regard.
- 9 The short descriptions of the payment items in the bill of quantities are only given to identify the items and to provide specific details. Reference shall, inter alia, be made to the drawings, standard specifications, project specifications, general conditions of contract and special conditions of contract for more detailed information regarding the extent of work entailed under each item.
- 10 The provisions of clause 6.6 of the general conditions of contract shall apply to provisional sums and prime cost sums.
- 11 Subject to the conditions stated in paragraph 12 below, the rates and lump sums filled in by the tenderer in the bill of quantities shall be final and binding with regard to submitting the tender, and may not be adjusted should there be any mistakes in the extensions thereof and in the total sums appearing in the tender. Should there be any discrepancies between the tender sum and the correctly extended and totalled

bill of quantities, the rates will be regarded as being correct, and the employer shall have the right to make adjustments to the tender sum to reconcile the tender sum with the total of the bill of quantities. In such an event the contractor will be consulted but, failing agreement between the parties, the decision of the employer shall be final and binding. Adjustment of the tender sum will take place prior to the signing of the contract. In their own interest tenderers must make doubly sure of the correctness of their tendered rates, the extensions and the tender sum.

- 12 A tender may be rejected if the unit rates or lump sums for some of the items in the bill of quantities are, in the opinion of the employer, unreasonable or out of proportion, and if the tenderer fails, within a period of seven (7) days of having been notified in writing by the employer to adjust the unit rates or lump sums for such items, to make such adjustments.

- 13 The units of measurement indicated in the bill of quantities are metric units

The following abbreviations are used in the bill of quantities:

|                      |   |                       |
|----------------------|---|-----------------------|
| mm                   | = | millimetre            |
| m                    | = | metre                 |
| km                   | = | kilometre             |
| km-pass              | = | kilometre-pass        |
| m <sup>2</sup>       | = | square metre          |
| m <sup>2</sup> -pass | = | square metre pass     |
| ha                   | = | hectare               |
| m <sup>3</sup>       | = | cubic metre           |
| m <sup>3</sup> km    | = | cubic metre kilometre |
| l                    | = | litre                 |
| kl                   | = | kilolitre             |
| kg                   | = | kilogram              |
| t                    | = | ton (1000 kg)         |
| No                   | = | number                |
| mn                   | = | meganewton            |
| mn-m                 | = | meganewton-metre      |
| %                    | = | per cent              |
| kW                   | = | kilowatt              |
| Kn                   | = | kilonewton            |
| PC sum               | = | prime cost sum        |
| Prov sum             | = | provisional sum       |

- 14 All rates and sums of money quoted in the bill of quantities shall be in rands and whole cents. Fractions of a cent shall be discarded

- 15 The item numbers appearing in the bill of quantities refer to the corresponding item numbers in the standard specifications. Item numbers prefixed by the letter B refer to payment items described under part B of the project specifications, those with C to payment items described under part C, and so on for further parts of the project specifications.

Item numbers in schedule B of the bill of quantities are, in addition, preceded by the

number of each separate part of schedule B of the bill of quantities, e.g. payment item 62.02 described in the standard specifications (clause 6210), when used in part 3 of schedule B of the bill of quantities, would be numbered 3/62.02, and if this payment item had been amended in part B of the project specifications, the payment item would be indicated as 3/B62.02.

- 16 Those parts of the contract to be constructed using labour-intensive methods have been marked in the bill of quantities with the letters LI in a separate column filled in against every item so designated. The works, or parts of the works so designated are to be constructed using labour-intensive methods only. The use of plant to provide such works, other than plant specifically provided for in the scope of works, is a breach 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.
- 17 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.
- 18 The construction drawings prevail over the Bill of Quantities.

**C2.2 BILL OF QUANTITIES****SCHEDULE A: BUILDING WORKS****Bill No.**

|    |                                 |                |
|----|---------------------------------|----------------|
| 1  | Preliminaries and General.....  | C.26.1         |
| 2  | Site Clearance .....            | C.26.2         |
| 3  | Earthworks.....                 | C.26.3         |
| 4  | Concrete Works .....            | C.26.5         |
| 5  | Masonry.....                    | C.26.6         |
| 6  | Roofing.. ..                    | C.26.7         |
| 7  | Carpentry and Joinery.....      | C.26.8         |
| 8  | Iron Mongery.....               | C.26.9         |
| 9  | Floor Coverings .....           | C.26.10        |
| 10 | External Works.....             | C.26.11        |
| 11 | Plumbing.....                   | C.26.13        |
| 12 | Electrical and Mechanical ..... | C.26.14        |
|    | <b>FINAL SUMMARY.....</b>       | <b>C.26.18</b> |

| Item       | Payment Ref.           | Description  | Unit | Quantity | Rate       | Amount     |
|------------|------------------------|--|------|----------|------------|------------|
|            | <b>SABS<br/>1200 A</b> | <b>PRELIMINARY &amp; GENERAL</b>   |      |          |            |            |
|            |                        | <b>DEMOLITIONS AND REMOVALS</b>  |      |          |            |            |
|            |                        | NOTE: Allow for watering the works sufficiently to prevent nuisance from dust. None of the old materials are to be used for the new works except where specifically described as being set aside for re-use.   |      |          |            |            |
|            |                        | Handing Over of Materials: Where certain materials or articles from demolitions or articles are described as to be handed over by the contractor to the Employer, such materials or articles shall be properly stored by the Contractor, until handing over thereof. The Contractor must obtain an official receipt listing the materials or articles and dates of handing over. If the Contractor fails to submit the receipt when requested, it shall be deemed that the materials or articles are still in his possession and he will be held liable to the Employer for the full replacement value thereof, which amount will be deducted from any monies due to the Contractor. |      |          |            |            |
|            |                        | <u>ITEMS OF HERITAGE SIGNIFICANCE</u>  |      |          |            |            |
|            |                        | Carefully take out and hand to Employer (for onward submission to specialist restoration Contractor)   | Item | 1        |            |            |
|            |                        | <u>Careful demolish to re-use bricks</u>   |      |          |            |            |
|            |                        | A single storey building of approximately 730 m2 and severely damaged by fire. The thatch roof have been burnt and most of brick walls, stone walls and concrete structures are still standing.  | Item | 1        |            |            |
| <b>1,1</b> | <b>8,3</b>             | <b>SCHEDULED FIXED-CHARGE ITEMS</b>  |      |          |            |            |
| 1.1.1      | 8.3.1                  | <u>Contractual Requirements</u>  |      |          |            |            |
|            |                        | Contractor to notice requirements regarding Contractor All Risk Insurance to cover plant and personnel working on site. Contractor to execute work with safety requirements as per General and Particular Specifications of this document.   | Sum  | 1        |            |            |
|            |                        | Contractor to provide a fixed construction guarantee(surety)as specified in the contract data  | Sum  | 1        |            |            |
|            |                        |  |      |          |            | -          |
| 1.1.2      | 8.3.2                  | <u>Establish Facilities on Site</u>  |      |          |            |            |
| 1.1.3      | 8.3.2.1                | <u>Facilities for the Engineer</u>   |      |          |            |            |
|            | a)                     | Facilities for the Engineer including furnished offices,storage sheds,workshops,living accommodation,ablution and latrine facilities,tools and equipment,water supplies,electric power,communications and setting out of works to Engineer's instruction.  | Sum  | 1        | 200 000,00 | 200 000,00 |
|            | b)                     | Nameboard  | No.  | 1        |            | -          |
|            | c)                     | Provision of survey personnel on site for the project duration   | Sum  | 1        |            |            |
| 1.1.4      | 8.3.2.2                | <u>Facilities for the Contractor</u>   |      |          |            |            |
|            | a)                     | Office and storage sheds   | Sum  | 1        |            | -          |
|            | b)                     | Ablution and latrine facilities  | Sum  | 1        |            | -          |
|            | c)                     | Tools and equipment  | Sum  | 1        |            | -          |
|            | d)                     | Water supplies, electric power and communications  | Sum  | 1        |            | -          |
|            | e)                     | Dealing with water   | Sum  | 1        |            | -          |
|            | f)                     | Access   | Sum  | 1        |            | -          |
| 1.1.5      | 8.3.3                  | <u>Other Fixed-Charge Obligations</u>  |      |          |            |            |
| 1.1.6      |                        | Removal of Site Establishment  | Sum  | 1        |            | -          |
| <b>1,2</b> | <b>8,4</b>             | <b>SCHEDULED TIME-RELATED ITEMS</b>  |      |          |            |            |



| Item                         | Payment Ref. | Description  | Unit  | Quantity | Rate | Amount            |
|------------------------------|--------------|--|-------|----------|------|-------------------|
| 1.2.1                        | 8.4.1        | <u>Contractual Requirements</u>  | Sum   | 1        |      | -                 |
|                              | 8.4.3        | <u>Supervision for Duration of Construction</u>  | month | 13       |      | -                 |
|                              | 8.4.5        | <u>Other Time-Related Obligations</u>  |       |          |      |                   |
|                              | a)           | Preparation of risk assessment, safe work procedures, the project Health & Safety file, the Health & Safety plan, COVID-19 Safety Protocol plan, the provision of PPE and protection clothing and any other Health & Safety matters that the contractors deems necessary | Sum   | 1        |      | -                 |
| 1.2.4                        | b)           | Full compliance with all Health & Safety matters during construction of the works under the contract   | month | 13       |      | -                 |
| <b>Total Carried Forward</b> |              |  |       |          |      | <b>200 000,00</b> |

| Item       | Payment Ref.       | Description   | Unit               | Quantity   | Rate       | Amount            |
|------------|--------------------|---|--------------------|------------|------------|-------------------|
|            |                    | <b>Brought Forward</b>  |                    |            |            | <b>200 000,00</b> |
| 1.2.4      |                    | <u>Full compliance with all Health &amp; Safety Matters for the duration of the contract - General safety obligations, risk assessment, medical assessment of employees</u> | month              | 13         |            | -                 |
|            |                    | <u>As-built Drawings</u>  | Sum                | 1          |            | -                 |
| <b>1.3</b> | <b>8,5</b>         | <b>PROVISIONAL SUM</b>  |                    |            |            |                   |
| 1.3.1      | a)                 | Control Testing   | P.Sum              | 1          | 50 000,00  | 50 000,00         |
| 1.3.2      | b)                 | Overhead and profit on 1.3.1 (a) above  | %                  | 50 000,00  |            | -                 |
| 1.3.3      | c)                 | Allowance for a civil engineering student with S3 level   | month              | 13         | 6 000,00   | 78 000,00         |
| 1.3.4      | d)                 | Overhead and profit on 1.3.3 (b) above  | %                  | 78 000,00  |            | -                 |
| 1.3.5      | e)                 | Community Liaison Officer   | month              | 13         | 5 000,00   | 65 000,00         |
| 1.3.6      | f)                 | Overhead and profit on 1.3.6 (a) above  | %                  | 65 000,00  |            | -                 |
| 1.3.7      | g)                 | Allowance for Environmental Health and Safety Officer   | month              | 13         | 8 500,00   | 110 500,00        |
| 1.3.8      | h)                 | Overhead and profit on 1.3.8 (a) above  | %                  | 110 500,00 |            | -                 |
| 1.3.9      | i)                 | Provision for Disabled Community  | P.Sum              | 1          | 50 000,00  | 50 000,00         |
| 1.3.10     | j)                 | Provision for Project Launch  | P.Sum              | 1          | 200 000,00 | 200 000,00        |
| 1.3.11     | k)                 | Provision for Auditorium furniture  | P.Sum              | 1          | 100 000,00 | 100 000,00        |
| <b>1.4</b> | <b>8,7</b>         | <b>DAYWORK</b>  |                    |            |            |                   |
| 1.4.1      |                    | Labour  | P.Sum              | 1          |            | Rate Only         |
| 1.4.2      |                    | Materials   | P.Sum              | 1          |            | Rate Only         |
| 1.4.3      |                    | Plant   | P.Sum              | 1          |            | Rate Only         |
| <b>1.5</b> | <b>8,8</b>         | <b>TEMPORARY WORKS</b>  |                    |            |            |                   |
| 1.5.1      |                    | Setting out of the works  | Sum                | 1          |            | -                 |
| 1.5.2      |                    | Construct and maintain access road to works   | Sum                | 1          |            | -                 |
| <b>2</b>   | <b>SABS 1200 C</b> | <b>SITE CLEARANCE</b>   |                    |            |            |                   |
|            |                    | Note: For preambles see the model preambles for Trade 2008 edition published by the Association of South African Quantity Surveyors   |                    |            |            |                   |
|            |                    | Descriptions of carting away of excavated material shall be deemed to include loading excavated material onto trucks directly from excavations or alternatively,            |                    |            |            |                   |
| <b>2,1</b> | <b>8,2</b>         | <b>SCHEDULED ITEMS</b>  |                    |            |            |                   |
| 2.1.1      | 8.2.1              | <u>Clear and grub</u>   | m <sup>2</sup>     | 5000       |            | -                 |
| 2.1.4      | 8.2.9              | <u>Transport materials and debris to unspecified sites and dump</u>   | m <sup>3</sup> .km | 7500       |            | -                 |
| 2.1.5      | 8.2.10             | <u>Remove topsoil to nominal depth of 150mm and stockpile</u>   | m <sup>3</sup>     | 750        |            | -                 |
|            |                    | <b>Total Carried Forward to Summary</b>   |                    |            |            | <b>853 500,00</b> |

| Item    | Payment Ref. | Description  | Unit               | Quantity | Rate       | Amount            |
|---------|--------------|--|--------------------|----------|------------|-------------------|
| 3       | SABS         | <b>EARTHWORKS</b>  |                    |          |            |                   |
|         |              | Descriptions of excavations shall be deemed to include all ground conditions classifiable as "earth" and where conditions of a more difficult character are indicated these are separately measured  |                    |          |            |                   |
|         | 1200 D       |  |                    |          |            |                   |
| 3,1     | 8,3          | <b>SCHEDULED ITEMS</b>   |                    |          |            |                   |
| 3.1.1   | 8.3.2        | <u>Bulk Excavation</u>   |                    |          |            |                   |
| 3.1.1.1 | a)           | Excavate in all materials not exceeding 2m deep and use for embankments or backfill or dispose, as ordered   | m <sup>3</sup>     | 450      |            | -                 |
|         |              | Exceeding 2m and not exceeding 4m deep   | m <sup>3</sup>     | 84       |            | -                 |
| 3.1.1.2 | b)           | <u>Extra-over for</u>  |                    |          |            | -                 |
|         | 1)           | intermediate excavation  | m <sup>3</sup>     | 75       |            | -                 |
|         | 2)           | hard rock excavation   | m <sup>3</sup>     | 375      |            | -                 |
|         | 8.3.3 a)     | Excavate for restricted foundations, footings and pipe trenches in all materials and use for back fill or embankment or dispose  | m <sup>3</sup>     | 125      |            | -                 |
| 3.1.1.3 | b)           | <u>Extra-over for</u>  |                    |          |            | -                 |
|         | 1)           | intermediate excavation  | m <sup>3</sup>     | 35       |            | -                 |
|         | 2)           | hard rock excavation   | m <sup>3</sup>     | 90       |            | -                 |
|         |              | <u>Risk of collapse of excavation</u>  |                    |          |            |                   |
|         |              | Sides of bulk excavations not exceeding 1.5m deep  | m <sup>2</sup>     | 675      |            | -                 |
|         |              | Sides of bulk excavations exceeding 1.5m deep  | m <sup>2</sup>     | 150      |            | -                 |
|         |              | <u>Extra over all excavations for carting away</u>   |                    |          |            |                   |
|         |              | Suplus material from excavation and/or stock piles on site to a dumping site to be located by the contractor   | m <sup>3</sup>     | 440      |            | -                 |
| 3.1.2   |              | <u>Soil poisoning and Protection against termites</u>  |                    |          |            |                   |
| 3.1.2.1 | a)           | Under floors, ramps and steps including forming and shallow against foundation walls, filling in furrows and ramming   | m <sup>2</sup>     | 106      |            | -                 |
| 3.1.2.2 | b)           | To bottom and sides of trenches  | m <sup>2</sup>     | 980      |            | -                 |
| 3.1.4   | 8.3.4        | <u>Importing of materials</u>  |                    |          |            |                   |
|         | a)           | Imported filling G5 materials from borrow pits for earth filling under surface beds, under building and compacted to 95% Mod AASHTO density in 150mm thick layers  | m <sup>3</sup>     | 1720     |            | -                 |
|         | b)           | Overhaul   | m <sup>3</sup> .km | 1300     |            | -                 |
|         | c)           | Provision for Hardcore filling   | P.Sum              | 1        | 400 000,00 | 400 000,00        |
|         |              | <u>Compaction of surfaces</u>  |                    |          |            |                   |
|         |              | Compaction of ground surfaces under building, floors, trenches etc including scarifying for a depth not exceeding 150mm, breaking down over size material, adding suitable material where necessary and compacting to 95% Mod AASHTO density | m <sup>2</sup>     | 2 300    |            | -                 |
|         |              | Provide and install Damp proof membrane to foundation  | m <sup>2</sup>     | 2 300    |            | -                 |
|         |              | <u>Keeping bulk excavations free of water</u>  |                    |          |            |                   |
|         |              | Keeping excavations free of water  | Item               | 1        |            | -                 |
|         |              | <u>Prescribed density tests on filling</u>   |                    |          |            |                   |
|         |              | Modified AASHTO Density test   | No                 | 30       |            | -                 |
|         |              | <b>Total Carried Forward to Summary</b>  |                    |          |            | <b>400 000,00</b> |

| Item  | Payment Ref.    | Description  | Unit           | Quantity | Rate | Amount |
|-------|-----------------|--|----------------|----------|------|--------|
| 4     | SABS<br>1200 GB | <p><b>CONCRETE WORKS</b></p> <p>Note: For preambles see the model preambles for Trade 2008 edition published by the Association of South African Quantity Surveyors</p> <p><u>Supplementary Preambles</u></p> <p><u>Cost of test</u></p> <p>The costs of making, storing and testing of concrete test cubes as required under clause 7 "Tests" of SABS 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 Consultant. The testing shall be undertaken by an independent firm or institution nominated by the contractor to the approval of the Consultant. (The test cubes are measured separately)</p> <p><u>Formworks</u></p> <p>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.</p> <p>The vertical strutting shall be carried down to such construction as is sufficiently strong to afford the required support without damage and shall remain in position until the newly constructed work is able to support itself</p> <p>Formwork to soffits of solid slabs etc shall be deemed to be to slabs not exceeding 300mm thick unless otherwise described.</p> <p>Formwork to sides of bases, ground beams, etc will only be measured where it is prescribed by the engineer for design reasons. Formwork necessitated by irregularity or collapse of excavated faces will not be measured and the cost thereof shall be deemed to be included in the allowance for taking the risk of collapse of the sides of the excavations, provision for which is made in "Earthworks".</p> |                |          |      |        |
| 4.1   | 8.2             | SCHEDULED ITEMS  |                |          |      |        |
| 4.1.1 | 8.2.1           | <u>Formwork</u>  |                |          |      |        |
|       | a)              | Rough Formwork   |                |          |      | -      |
|       |                 | Square and rectangular columns   | m <sup>2</sup> | 420      |      | -      |
|       |                 | Circular columns   | m <sup>2</sup> | 257      |      | -      |
|       |                 | Sides of beams   | m <sup>2</sup> | 695      |      | -      |
|       |                 | Edge of slabs, risers, surface beds, etc not exceeding 300mm high  | m              | 390      |      | -      |
|       | b)              | Smooth Formwork (Normal)   |                |          |      | -      |
|       |                 | Square and rectangular columns   | m <sup>2</sup> | 168      |      | -      |
|       |                 | Circular columns   | m <sup>2</sup> | 102      |      | -      |
|       |                 | Sides of beams   | m <sup>2</sup> | 174      |      | -      |
|       |                 | Edge of slabs not exceeding 300mm high   | m              | 79       |      | -      |
|       |                 | Edge of steps, risers, surface beds, etc not exceeding 300mm high  | m              | 191      |      | -      |
| 4.1.2 | 8.2.4           | <u>Reinforcement</u>   |                |          |      |        |
|       | a)              | <u>High-tensile steel reinforcement to structural concrete work</u>  |                |          |      |        |
|       |                 | 8mm - 25mm Diameter bars in all class of concrete  | t              | 34       |      | -      |
|       |                 | <u>Mild-steel reinforcement to structural concrete work</u>  |                |          |      |        |
|       |                 | 8mm - 25mm Diameter bars in all class of concrete  | t              | 10       |      | -      |
|       | c)              | High-tensile welded mesh Ref 193 (Fabric reinforcement in concrete surface beds, slabs, etc)   | m <sup>2</sup> | 2292     |      | -      |
| 4.1.3 | 8.2.5           | <u>Concrete</u>  |                |          |      |        |

| Item                                    | Payment Ref. | Description   | Unit           | Quantity | Rate | Amount    |
|---|--------------|---|----------------|----------|------|-----------|
| 4.1.3.1                                 | a)           | <u>50mm concrete blinding (15MPa/20mm Concrete for surface blinding under footings, bases, strip footings etc)</u>  | m <sup>2</sup> | 1175     |      | -         |
| 4.1.3.2                                 | b)           | <u>Grade 35Mpa/20mm strength concrete for</u><br>Strip footings, Surface beds cast in panels on waterproofing(elsewhere measured), pad footings, slabs, Beams, Columns, Stairs/Steps, Roof slabs, Roof Beams and Reinforced Concrete Wall | m <sup>3</sup> | 1150     |      | -         |
|   |              | <u>Test Blocks</u><br>Making and testing 150 x 150 x 150mm concrete strenght test cubes (Provisional)   | No.            | 150      |      | -         |
| 4.1.4                                   | 8.2.6        | <u>Unformed Concrete Surface Finishes</u>   |                |          |      |           |
| 4.1.4.1                                 | a)           | Wood-floated finish - Surface beds, slabs etc   | m <sup>2</sup> | 1375     |      | -         |
| 4.1.4.2                                 | b)           | Steel-floated finish - Surface beds and slabs   | m <sup>2</sup> | 916      |      | Rate Only |
| 4.1.5                                   | 8.2.7        | <u>Joints</u>   |                |          |      |           |
|   | a)           | Expansion joint   | m              | 25       |      | -         |
|   | b)           | Isolation joint   | m              | 20       |      | -         |
|   |              | <u>Polystyrene Sheets</u><br>1220 x 2500mm wide "Polystyrene xtreme" polystyrene sheet laid to floors to 100mm thick polystyrene sheets laid to floors  | m <sup>2</sup> | 100      |      | Rate Only |
|   |              | <u>Movement Joints Etc</u><br>10mm softboard in vertical expansion joint not exceeding 300mm wide including out top section 10mm deep and filling with bituminous compound  | m              | 50       |      | -         |
|   |              | Two layers 375micron dpc slip joint not exceeding 300mm wide  | m              | 75       |      | -         |
| <b>Total Carried Forward to Summary</b> |              |   |                |          |      | -         |

| Item    | Payment Ref. | Description   | Unit           | Quantity | Rate | Amount |
|---------|--------------|---|----------------|----------|------|--------|
| 5       |              | <p><b>MASONRY</b></p> <p>Note: For Preambles see the Model Preambles for Trades 2008 edition published by the Association of South African Quantity Surveyors</p> <p><b>Supplementary Preambles</b></p> <p><b>Brickwork</b><br/> <b>Sizes in descriptions</b><br/> 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><b>Pointing</b><br/> Descriptions of recessed pointing to fair face brickwork and face brickwork shall be deemed to include square recessed, hollow recessed, weathered pointing, etc</p> <p>Surfaces to be plastered shall have joints raked out to a depth of at least 10mm to provide a key. Cavities of hollow walls shall be kept free of mortar droppings or other undesirable matter. Every second perpend of the bottom course of the external skin of hollow walls shall be left open as a weep hole</p> <p><b>Face bricks</b><br/> Bricks shall be ordered timeously to obtain uniformity in size and colour</p> <p><b>Wall Ties</b><br/> Descriptions of solid walls (except if built in English bond) and cavity walls shall be deemed to include metal wall ties complying with SABS 28, and of the butterfly or of the modified PWD type, of the required length with each end built at least 75mm deep into brickwork, spaced at not more than 1m centres alternatively to every third course of brickwork. Wore ties to be submitted to the Engineer for approval.</p> <p><b>Cement Mortar</b><br/> Water absorption must not exceed 12%</p> <p><b>Bagging</b><br/> Bagging must be a minimum of 5mm thick</p> <p><b>Samples</b><br/> Samples of all masonry building units, except those for walls described as "load bearing", shall consist of a minimum of 6 units. Samples of building units to be used in walls described as "load bearing" shall consist of 30 units from every 30,000 units delivered to site</p> |                |          |      |        |
| 5,1     |              | <b>SCHEDULED ITEMS</b>  |                |          |      |        |
| 5.1.1   |              | <u>Foundation brickwork (14Mpa nominal compressive strenght) in Class I (1:3) Mortar</u>  |                |          |      |        |
| 5.1.1.1 |              | 230mm foundation walls  | m <sup>2</sup> | 800      |      | -      |
|         |              | 115mm foundation walls  | m <sup>2</sup> | 38       |      | -      |
| 5.1.2   |              | <u>Superstructure brickwork Class II Mortar</u>   |                |          |      |        |
| 5.1.2.1 | a)           | 115mm walls   | m <sup>2</sup> | 350      |      | -      |
| 5.1.2.2 | b)           | 230mm walls   | m <sup>2</sup> | 4166     |      | -      |
| 5.1.2.3 | c)           | Extra over brickwork for fair face brickwork  | m <sup>2</sup> | 400      |      | -      |
| 5.1.2.4 | d)           | Extra over face brickwork in beam filling   | m <sup>2</sup> | 220      |      | -      |
| 5.1.2.5 | e)           | 150x15mm segmental concrete sills   | m              | 110      |      | -      |

| Item    | Payment Ref. | Description   | Unit           | Quantity | Rate | Amount |
|---------|--------------|---|----------------|----------|------|--------|
| 5.1.2.6 | f)           | Brickwork for snapped brick-on-end soldier course lintel including pointing to face and soffit  | m              | 45       |      | -      |
| 5.1.3   |              | <u>Brickwork reinforcement</u>  |                |          |      |        |
| 5.1.3.1 | a)           | 75mm wide reinforcement built in horizontally   | m              | 600      |      | -      |
| 5.1.3.2 | b)           | 150mm wide reinforcement built in horizontally  | m              | 850      |      | -      |
| 5.1.4   |              | Brickwork for snapped brick-on-end soldier course lintel including pointing to face and soffit  | m              | 30       |      | -      |
|         |              | <u>Prestressed fabricated lintels</u>   |                |          |      |        |
|         |              | 110 x 75mm not exceeding 3m Lintels   | m              | 45       |      | -      |
|         |              | 110 x 75mm exceeding 3m but not exceeding 4.5m Lintels  | m              | 40       |      | -      |
|         |              | <u>Turning pieces</u>   |                |          |      |        |
|         |              | 110mm Wide turning piece to lintels etc   | m              | 35       |      | -      |
|         |              | 220mm Wide turning piece to lintels etc   | m              | 35       |      | -      |
|         |              | <u>Air Bricks etc</u>   |                |          |      |        |
|         |              | 229 x 76mm Clay vermin proof air brick  | No             | 15       |      | -      |
|         |              | 229 x 156mm Clay vermin proof air brick   | No             | 20       |      | -      |
| 5.1.6   |              | <u>Waterproofing under surface beds and in walls</u>  |                |          |      |        |
|         |              | <u>Note: For preambles see the Model Preambles for Trades 2008 edition published by the Association of South African Quantity Surveyors</u>       |                |          |      |        |
| 5.1.6.1 | a)           | One layer of 'consol plastics brikgrip' embossed Damp Proof Course  | m <sup>2</sup> | 64       |      | -      |
| 5.1.6.2 | b)           | 25x25mm 'compriband' bitumen-impregnated foam plastic joint sealing strips between frames and walls   | m              | 115      |      | -      |
| 5.1.6.3 | c)           | One layer of 375 micron embossed damp proof sheeting sealed at laps with tape under surface beds, foundations, paving, etc                        | m <sup>2</sup> | 2292     |      | -      |
|         |              | Primer and two coats "Bostik M6" rubber bitumen emulsion paint on concrete floors, columns in foundation, columns, beams and fair faced brickwork |                |          |      |        |
|         |              | <u>Dampproofing of Roofs, etc</u>   |                |          |      |        |
|         |              | Preparation   |                |          |      |        |
|         |              | Prepare screed as per manufacturer's instruction  | m <sup>2</sup> | 74       |      | -      |
|         |              | Bondglass flexible reinforced waterproofing on roof slabs   | m <sup>2</sup> | 88       |      | -      |
|         |              | <u>Protective Roofing Paint</u>   |                |          |      |        |
|         |              | Two coats bituminous aluminium paint on waterproofing to roofs  | m <sup>2</sup> | 1325     |      | -      |
|         |              | <u>Joint Sealants Etc</u>   |                |          |      |        |
|         |              | Compriband bitumen impregnated foam plastic joint sealing strips  |                |          |      |        |
|         |              | 6 x 10mm in joints between frames and walls   | m              | 204      |      | -      |
|         |              | 6 x 15mm in expansion joints  | m              | 75       |      | -      |
| 5.1.7   |              | <u>Plastering</u>   |                |          |      |        |
| 5.1.7.1 |              | <u>Cement plaster on brickwork</u>  |                |          |      |        |
|         |              | Interior & External walls   | m <sup>2</sup> | 9032     |      | -      |
|         |              | <u>Cement plaster on concrete</u>   |                |          |      |        |
|         |              | On columns, beams, etc in narrow widths   | m <sup>2</sup> | 1782     |      | -      |
|         |              | On soffits of concrete slabs  | m <sup>2</sup> | 405      |      | -      |
|         |              | <u>Screeds</u>  |                |          |      |        |
|         |              | 30mm Screed to receive tiles, carpeting, etc (elsewhere)  | m <sup>2</sup> | 2359     |      | -      |
|         |              | 50mm Screed to receive tiles, carpeting, etc (elsewhere)  | m <sup>2</sup> | 2359     |      | -      |

| Item | Payment Ref. | Description                  | Unit | Quantity | Rate | Amount |
|------|--------------|------------------------------|------|----------|------|--------|
|      |              |                              |      |          |      |        |
|      |              | <b>Total Carried Forward</b> |      |          |      | -      |



| Item    | Payment Ref. | Description  | Unit           | Quantity | Rate | Amount |
|---------|--------------|--|----------------|----------|------|--------|
|         |              | <b>Brought Forward</b>   |                |          |      | -      |
|         |              | <b>Paintwork</b>   |                |          |      |        |
|         |              | <u>Note: For Preambles see the Model Preambles for Trades 2008 edition published by the Association of South African Quantity Surveyors</u>                                |                |          |      |        |
|         |              | <b>Cleaning, etc</b>   |                |          |      |        |
|         |              | Wash down with approved cleaning material by specialist  |                |          |      |        |
|         |              | Internal face brick walls  | m <sup>2</sup> | 6760     |      | -      |
|         |              | External face brick walls  | m <sup>2</sup> | 3640     |      | -      |
| 5.1.8   |              | <b>Painting</b>  |                |          |      |        |
| 5.1.8.1 |              | <u>One coat alkali resistant plaster primer and two coats PVA acrylic emulsion paint on</u>  |                |          |      |        |
|         |              | a) Internal walls  | m <sup>2</sup> | 6760     |      | -      |
|         |              | b) External walls  | m <sup>2</sup> | 3640     |      | -      |
|         |              | c) Internal plastered ceilings and beams   | m <sup>2</sup> | 450      |      | -      |
|         |              | <u>One coat alkali resistant primer, one undercoat and two coats "Plascon Double Velvet" (or other approved) acrylic paint on</u>  |                |          |      |        |
|         |              | Ceilings and cornices  | m <sup>2</sup> | 2177     |      | -      |
|         |              | <b>On Smooth Concrete</b>  |                |          |      |        |
|         |              | <u>One coat alkali resistant primer, one undercoat and two coats Dulux "Luxurious Silk" (or other approved) acrylic paint on</u>   |                |          |      |        |
|         |              | Columns  | m <sup>2</sup> | 710      |      | -      |
|         |              | <b>On Metal</b>  |                |          |      |        |
|         |              | Spot priming defects in pre-primed surfaces with zinc chromate primer and applying one universal undercoat and two coats non drip high gloss alkyd enamel paint on steel   |                |          |      |        |
|         |              | On doors and frames  | m <sup>2</sup> | 30       |      | -      |
|         |              | On transformer doors including frames  | m <sup>2</sup> | 5        |      | -      |
|         |              | <b>On Wood</b>   |                |          |      |        |
|         |              | Apply one coat oil wood primer, apply one universal undercoat and apply two coats varnish  |                |          |      |        |
|         |              | On doors   | m <sup>2</sup> | 20       |      | -      |
|         |              | On skirtings, rails, etc not exceeding 300mm girth   | m              | 180      |      | -      |
| 5.1.9   |              | <u>225x150mm cement air bricks</u>   | No.            | 22       |      | -      |
| 5.1.10  |              | <b>Stone cladding</b>  |                |          |      |        |
|         |              | Selected stone masonry cladding built to courses and dressed on site with a natural face and edges to be squared or bevelled on external surface of the wall.              | m <sup>2</sup> | 200      |      | -      |
| 6       |              | <b>ROOFING</b>   |                |          |      |        |
|         |              | <u>Note: For Preambles see the Model Preambles for Trades 2008 edition published by the Association of South African Quantity Surveyors</u>                                |                |          |      |        |
|         |              | <b>Supplementary Preambles</b>   |                |          |      |        |
|         |              | <b>Fixing of roof sheeting</b>   |                |          |      |        |
|         |              | The sheets shall be fixed to every purlin by means of patented fixing method which will securely hold the sheets in position and lock-in both the sidelap and centre ribs. |                |          |      |        |

| Item       | Payment Ref. | Description  | Unit                     | Quantity           | Rate | Amount           |
|------------|--------------|--|--------------------------|--------------------|------|------------------|
|            |              | <p><b>Certificate for Roof Covering</b><br/>The contractor is to submit a certificate signed by the merchant, stating that the roof covering supplied, complies with the required thickness specified</p> <p><b>Guarantee</b><br/>The manufacturer shall comply with ISO9002 Quality Management System. The sheeting shall be laid in strict accordance with the manufacturer's specifications by an approved contractor<br/>A written and approved five year guarantee of site-workmanship and watertightness shall be issued after final inspection of roofs by the manufacturer</p> <p><b>Erection</b><br/>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</p> <p><b>Safety</b><br/>The contractor shall exercise special care when handling long length sheeting, particularly in windy conditions. Should work be interrupted for any reason, all loose sheeting and incomplete sections must be adequately secured against possible movement by wind and gravity</p> |                          |                    |      |                  |
| <b>6,1</b> |              | <b>SCHEDULED ITEMS(Supply &amp; Installation)</b>  |                          |                    |      |                  |
| 6.1.1      |              | <p><u>Roof covering</u><br/>a) 0.58mm thick 'brownbuilt' chromadek IBR roof sheeting and accessories laid at 21 degrees pitch</p> <p>b) Ridge capping</p> <p>c) 12x225mm 'Everite' medium density plain nutec cement fascias and barge boards including H-profile jointing strips</p>  | m <sup>2</sup><br>m<br>m | 1322<br>50<br>124  |      | -<br>-<br>-      |
| 6.1.2      |              | <p><u>Rainwater disposal</u><br/><u>0.8mm thick galvanized mild steel rainwater goods and accessories in long lengths including jointing</u><br/>a) 100x125mm eaves gutters fixed with brackets to fascia boards</p> <p>b) Stopped end</p> <p>c) 75mm dia. downpipes plugged to wall with holderbats</p> <p>d) 2.5kl jojo tank mounted and secured on brick tank stand complete with brass 'bib' tap for rainwater harvesting</p>  | m<br>No.<br>m<br>No.     | 72<br>4<br>14<br>2 |      | -<br>-<br>-<br>- |
| 6.1.3      |              | <p>8.2 <u>Roof trusses</u><br/>a) Plate-nailed prefabricated roof trusses for hipped-gable roof including all permanent bracing, runners, nails, clips and roof ties, all fixed to specialist detail to 18 degrees pitch (wall plates and purlins detailed elsewhere)</p> <p>b) Overhead and profit on 8.2 (a) above</p> <p>c) 114x38mm SA Pine trusses at 700mm centres for 3120mm span to 21 deg. pitch for ablutions</p>  | Sum<br>%<br>No.          | 1<br>-<br>9        |      | -<br>-<br>-      |
| 6.1.4      |              | <p>a) 75x50mm SA Pine purlins</p> <p>b) 114x38mm SA Pine wall plate</p>  | m<br>m                   | 650<br>280         |      | -<br>-           |
|            |              | <b>Total Carried Forward to Summary</b>  |                          |                    |      | -                |

| Item    | Payment Ref. | Description  | Unit | Quantity | Rate | Amount |
|---------|--------------|--|------|----------|------|--------|
| 7       |              | <b><u>CARPENTRY AND JOINERY</u></b><br><u>Note: Tenderers are advised to study the Model Preambles for Trades before pricing</u>   |      |          |      |        |
| 7,1     |              | <b>SCHEDULED ITEMS(Supply &amp; Installation)</b>  |      |          |      |        |
| 7.1.1   |              | <u>Doors</u>   |      |          |      |        |
| 7.1.1.1 | a)           | <u>Solid core flush doors finished on both faces with tempered veneered hardboard</u>  |      |          |      |        |
|         |              | D01: 900x2032x40mm   | No.  | 10       |      | -      |
|         | b)           | Anodised aluminium door complete with frame, including handles and hinges as per manufacturers instruction for:  |      |          |      | -      |
|         | 1)           | 1100x2100mm paraplegic door  | No.  | 1        |      | -      |
|         | 2)           | 813x2100mm standard single door  | No.  | 5        |      | -      |
|         | 3)           | D02: 1546x2100mm double door   | No.  | 2        |      | -      |
| 7.1.2   |              | <u>Frames</u><br>1.4mm thick galvanized steel frame with 44mm rebate complete with hoop anchors welded to frame, 3 no. rubber shock absorbers in rebate and two pairs 100x75mm butt hinges for (Supply & Installation):            |      |          |      |        |
|         | a)           | D01: 813x2032x40mm   | No.  | 17       |      | -      |
|         | b)           | D2   | No.  | 5        |      | -      |
|         | c)           | D3   | No.  | 6        |      | -      |
|         | d)           | D4   | No.  | 12       |      | -      |
|         | e)           | D5   | No.  | 1        |      | -      |
|         | f)           | D6   | No.  | 3        |      | -      |
|         | g)           | D7 - Tuckshop  | No.  | 1        |      | -      |
|         | h)           | D11  | No.  | 2        |      | -      |
|         | i)           | D12  | No.  | 18       |      | -      |
|         | j)           | D01  | No.  | 1        |      | -      |
|         | k)           | D02  | No.  | 1        |      | -      |
| 7.1.3   |              | <u>Wrot meranti</u><br>44x70mm splayed and rebated weatherboard, screwed to and including groove in door with heads of screws sunk and pelleted  | m    | 17       |      | -      |
| 7.1.4   |              | <u>Windows</u><br>Supply, handle and build into brickwork powder-coated aluminium window frames finished in natural or bronze 543 anodised 25 microns, factory glazed with 4mm clear float glass and frame (Supply & Installation) |      |          |      |        |
|         | a)           | 8545 x 2200  | No.  | 2        |      | -      |
|         | b)           | 1450x 1490   | No.  | 9        |      | -      |
|         | c)           | 1190 x 1800  | No.  | 5        |      | -      |
|         | d)           | 1450 x 1190  | No.  | 2        |      | -      |
|         | e)           | 590 x 2125   | No.  | 50       |      | -      |
|         | f)           | 590 x 654  | No.  | 17       |      | -      |
|         | g)           | 1022 x 654   | No.  | 6        |      | -      |
|         | h)           | 5293 x 2438  | No.  | 2        |      | -      |
|         | i)           | 4833 x 2488  | No.  | 1        |      | -      |
|         | j)           | 4295 x 2438  | No.  | 2        |      | -      |
|         | k)           | 4677 x 2438  | No.  | 4        |      | -      |
|         | l)           | 4714 x 2438  | No.  | 3        |      | -      |
|         | m)           | 4834 x2438   | No.  | 1        |      | -      |
|         | n)           | 3756 x 2438  | No.  | 2        |      | -      |
|         | o)           | 3674 x 2438  | No.  | 2        |      | -      |
|         | p)           | 1178 x 1200  | No.  | 1        |      | -      |
|         | q)           | 1930 x 1200  | No.  | 1        |      | -      |

| Item                                    | Payment Ref. | Description  | Unit           | Quantity | Rate | Amount |
|---|--------------|--|----------------|----------|------|--------|
|   | r)           | 1000 x 900   | No.            | 1        |      | -      |
|   | s)           | 590 x 900  | No.            | 1        |      | -      |
| 7.1.5                                   |              | <u>Fittings</u><br><u>Particle board with 'formica' decorative laminate in plain light colours for:</u>  |                |          |      |        |
|   | a)           | 572x878x2400mm long modular kitchen unit with bull nose along one edge and fixed to wall complete with 1065x457mm wide stainless steel single end bowl sink                  | No.            | 1        |      | -      |
| 7.1.6                                   |              | <u>Ceilings</u>  |                |          |      |        |
| 7.1.6.1                                 | a)           | 6mm "Everite Nutec" fibre-cement flush boards with H-type pressed steel jointing strips including 38x38mm sawn softwood banding at 450mm centres in both directions          | m <sup>2</sup> | 300      |      | -      |
| 7.1.6.2                                 | b)           | Extra-over for 600x600mm trap door including sawn and wrot framing fitted flush with ceiling   | No.            | 2        |      | -      |
| 7.1.6.3                                 | c)           | 50x19mm angle rounded cornice plugged and including 19mm quadrant bead planted on  | m              | 650      |      | -      |
| 7.1.7                                   |              | <u>Factorylite Insulation</u><br>Insulation laid taut over purlins to be kept aligned with 2mm straining wires at 300mm centres  | m <sup>2</sup> | 315      |      | -      |
| 7.1.8                                   |              | <u>Sundries</u>  |                |          |      |        |
| 7.1.8.1                                 |              | 4.5kg dry chemical powder type fire extinguisher complete with bracket and 150x300x19mm meranti board fixed to wall with expanding bolts and including mortices in brickwork | No.            | 5        |      | -      |
| 7.1.9                                   |              | <u>Skirtings</u><br>19x76mm angle rounded skirting, plugged and including 19mm quadrant bead planted on  | m              | 550      |      | -      |
| <b>Total Carried Forward to Summary</b> |              |  |                |          |      | -      |

| Item     | Payment Ref. | Description  | Unit           | Quantity | Rate | Amount    |
|----------|--------------|--|----------------|----------|------|-----------|
| 8        |              | <b>IRON MONGERY</b>  |                |          |      |           |
| 8,1      |              | <b>SCHEDULED ITEMS(Supply &amp; Installation)</b>  |                |          |      |           |
| 8.1.1    |              | <u>Hinges, bolts, etc</u>  |                |          |      |           |
|          | a)           | Union two ball bearing butt hinges with satin brass finish   | No.            | 36       |      | -         |
| 8.1.2    |              | <u>Locks, etc</u>  |                |          |      |           |
|          |              | Union profile double cylinder lockset  | No.            | 36       |      | -         |
| 8.1.3    |              | <u>Nameplates</u>  |                |          |      |           |
| 8.1.3.1  | a)           | Approved engraved aluminium plate incorporating fire extinguisher pictogram  | No.            | 12       |      | -         |
| 8.1.3.2  | b)           | 3x60mm high perspex plate with white bold 'Helvetica' medium lettering 35mm high with blue background engraved "KITCHEN" and screwed to doors with four chromium plated sunk semi-dome headed screws on double-sided tape backing to all sides or similar approved | No.            | 1        |      | -         |
| 8.1.3.3  | c)           | Ditto, but engraved "BOARDROOM 1"  | No.            | 1        |      | -         |
| 8.1.3.4  | d)           | Ditto, but engraved "AUDITORIUM"   | No.            | 2        |      | -         |
| 8.1.3.5  | e)           | Ditto, but engraved "OFFICE"   | No.            | 8        |      | -         |
| 8.1.3.6  | h)           | Ditto, but engraved "WOMEN'S TOILET"   | No.            | 2        |      | -         |
| 8.1.3.7  | i)           | Ditto, but engraved "MEN'S TOILET"   | No.            | 2        |      | -         |
| 8.1.3.8  | j)           | Ditto, but engraved "PARAPLEGIC"   | No.            | 2        |      | -         |
| 9        |              | <b>FLOOR COVERINGS</b>   |                |          |      |           |
| 9,1      |              | <b>SCHEDULED ITEMS(Supply &amp; Installation)</b>  |                |          |      |           |
| 9.1.1    |              | <u>Tiling</u>  |                |          |      |           |
| 9.1.1.1  | a)           | 330x330mm non slip ceramic tiles fixed with adhesive, jointed and pointed with 4mm joints in grout on screed on floors, access ramps and steps   | m <sup>2</sup> | 2418     |      | -         |
| 9.1.1.2  | b)           | 150x150mm white glazed ceramic tiles fitted in kitchen wall  | m <sup>2</sup> | 10       |      | -         |
| 10       |              | <b>EXTERNAL WORKS</b>  |                |          |      |           |
| 10,1     |              | <b>SCHEDULED ITEMS(Supply &amp; Installation)</b>  |                |          |      |           |
|          |              | <u>ClearVu Fencing</u>   |                |          |      |           |
|          |              | "BetaView" or similar approved ZincAlu and PVC coated security fence, gates, etc and setting out of fence system to be maintenance free and carry a minimum 10 year anti corrosion guarantee and 15 year functional guarantee                                      | m              | 600      |      |           |
| 10.1.1   |              | <u>Razor Mesh Fencing</u>  |                |          |      |           |
| 10.1.1.1 |              | Provide 3 strands of galvanised twisted double stand 1.6mm thick wire with 3 barbs incorporated in every 150mm fixed to extended post with 2.5mm galvanised binding wire, mechanically strained between two straining posts and/or gate and corner posts.          | m              | 600      |      | Rate Only |
| 10.1.1.2 |              | Provide 2 strands of 4mm gauge galvanised staining wire fixed at one end to corner or straining wire fixed at one end to corner or straining posts and other end mechanically strained and fixed to posts.   | m              | 600      |      | Rate Only |
| 10.1.3   |              | <u>Gates</u>   |                |          |      | -         |
|          |              |  |                |          |      | -         |

| Item   | Payment Ref. | Description  | Unit                             | Quantity     | Rate      | Amount            |
|--------|--------------|--|----------------------------------|--------------|-----------|-------------------|
|        | a)           | Supply and install sliding driveway gate approx. 8.0m wide x 1.8m high vehicle gate, covered with razor mesh fencing, flatwrap, etc as per drawing including barrel bolt set in 300x300x300mm 15MPa concrete base.                     | No.                              | 2            |           | -                 |
|        | b)           | Supply and install standard 1.8x1.5m wide gate manufactured of 50mm dia. x 2.8mm tubular frame fully galvanised complete with hinges, bolts, etc as per drawing.   | No.                              | 1            |           | -                 |
|        | c)           | Provide and install 75mm dia. x 2.8mm stay poles and bolt it to gate posts and cast other end with a 200x200x6mm base plate in a 450x760x600mm concrete base (15MPa)   | No.                              | 4            |           | -                 |
| 10.1.4 |              | <u>Driveway and Parking</u>  |                                  |              |           | -                 |
|        | a)           | Filling<br><br>Base layer of natural gravel material (G5) supplied by the contractor and brought onto site compacted in layers not exceeding 150mm thick to 95% modified AASHTO density  | m <sup>3</sup>                   |              |           | -                 |
|        | b)           | Compaction of surfaces<br>Compaction of ground surface under pavings etc including scarifying for a depth of 450mm, breaking down oversize material, adding suitable material where necessary and compacting to 95% Mod AASHTO density | m <sup>2</sup>                   |              |           | -                 |
|        | c)           | Density Tests on filling<br>In-situ density (sand replacement) test in accordance with method A10 (a) of TMH 1   | No.                              |              |           | -                 |
|        |              | Maximum dry density and optimum moisture content test in accordance with method A7 of TMH 1  | No.                              |              |           | -                 |
|        | d)           | Paving<br>Provide and install 80mm paving blocks<br>Provide and install 60mm paving blocks   | m <sup>2</sup><br>m <sup>2</sup> | 9170<br>1300 |           | -<br>-            |
| 10.1.5 |              | Carry out hydrological study, drill, test and equip borehole for water supply to facility, including elevated water storage tank with support stand  | Sum                              | 1            |           | -                 |
| 10.1.6 |              | Provision for Septic tank and soak away pit  | P.Sum                            | 1            | 50000,00  | 50 000,00         |
| 10.1.7 |              | Allow a provisional sum for the façade aesthetics  | P.Sum                            | 1            | 150000,00 | 150 000,00        |
|        |              | <b>Total Carried Forward to Summary</b>  |                                  |              |           | <b>200 000,00</b> |

| Item   | Payment Ref.       | Description   | Unit | Quantity | Rate | Amount |
|--------|--------------------|---|------|----------|------|--------|
| 11     |                    | <b>PLUMBING</b>   |      |          |      |        |
| 11,1   | <b>SABS 1200L</b>  | <b>WATER PIPELINES</b>  |      |          |      |        |
|        | 8,2                | <b>SCHEDULED ITEMS</b>  |      |          |      |        |
| 11.1.1 | 8.2.1              | <u>Supply, lay, bed pipes complete with couplings and fittings</u>  |      |          |      |        |
|        | a)                 | 40mm diameter HDPE water pipe   | m    | 300      |      | -      |
|        | b)                 | Smart authomatic sprinkler system, 32mm dia.  | m    | 430      |      | -      |
| 11,2   | <b>SABS 1200LD</b> | <b>SEWER CONNECTION</b>   |      |          |      |        |
|        |                    | <u>Supply, lay, bed and joint Class 34 mPVC pipes:</u>  |      |          |      |        |
|        | a)                 | 160mm dia. Sewer pipeline   | m    | 225      |      | -      |
|        | b)                 | Sewer Manhole   | No.  | 5        |      | -      |
|        | c)                 | RE  | No.  | 3        |      | -      |
|        | d)                 | IE  | No.  | 22       |      | -      |
| 11,3   |                    | <b>SANITARY FITTINGS(Supply &amp; Installation)</b>   |      |          |      |        |
| 11.3.1 |                    | "Franke" model WC manufactured from Grade 304 (18/10) stainless steel with pressed flushing rim and integral stainless steel 110mm dia. p-trap and back entry flush pipe inlet, fixed to floor with 4 anchor bolts.   | No.  | 14       |      | -      |
| 11.4.2 |                    | "Franke" citimetal oval-B wash hand basin manufacture from Grade 304 (18/10) stainless steel with one piece pressed bowl and 50mm splashback and radius apron, fixed to the wall with 200mm stainless steel square tubing brackets welded to the underneath of the vasin (standard 40mm waste outlet) | No.  | 12       |      | -      |
| 11.4.3 |                    | WC suite as "Protea" paraplegic white vitreous china floor mounted paraplegic washdown suite comprising 90 degree outlet pan including lid, fittments and purpose made chromium plated side flush lever   | No.  | 2        |      | -      |
| 11.4.4 |                    | Wall hung "Vaal" urinal   | No.  | 6        |      | -      |
| 11.4.5 |                    | Allow for all fittings and accessories, taps, valves, copper piping and fitting, rubber traps, etc to all sanitary ware   | Sum  | 1        |      | -      |
| 11,5   |                    | <b>TESTING</b>  |      |          |      |        |
|        |                    | Allow for the testing for water installation  | Sum  | 1        |      | -      |
|        |                    | <b>Total Carried Forward to Summary</b>   |      |          |      | -      |
|        |                    | <b>Total Carried To Summary</b>   |      |          |      | -      |





|  |                                |  |  |  |  |
|--|--------------------------------|--|--|--|--|
|  |                                |  |  |  |  |
|  |                                |  |  |  |  |
|  | <b>SUBTOTAL FOR Bill No. 1</b> |  |  |  |  |

**2****BILL No. 3 : Office Area****- Electrical Installation (incl. tel, data & mechanical power supply)****Work Done**

| ITEM  | DESCRIPTION  | UNIT     | QTY  | RATE | AMOUNT |
|-------|--|----------|------|------|--------|
| 2,1   | <b>CONDUIT</b><br>Supply and install listed types of steel / pvc conduits for lights, plugs, power points, etc including joints, bushes, locknuts, cutting bending and threading, placed or <i>chased</i> in concrete floors, walls and ceiling voids. |          |      |      |        |
| 2.1.2 | 20 mm dia SABS marked PVC :  | Material | m    | 420  |        |
|       |  | Labour   | m    | 420  |        |
| 2.1.3 | 25 mm dia SABS marked PVC :  | Material | m    | 310  |        |
|       |  | Labour   | m    | 310  |        |
| 2.1.3 | 110 mm dia SABS marked PVC :   | Material | m    |      |        |
|       |  | Labour   | m    |      |        |
| 2.2.4 | 10kva Ups complete with 29 sealed lead acid at 80Ah with cabinet standby time 3hr  | Material | no.  | 1    |        |
|       |  | Labour   | no.  | 1    |        |
| 2,2   | <b>CONDUIT &amp; DRAW BOXES</b><br>Supply and install conduit boxes as listed including jointing to conduit with locknuts and bushes and placed in walls, concrete floors etc.   |          |      |      |        |
| 2.2.1 | 100 x 100 x 50 mm galvanised steel draw boxes for socket outlets & power points  | Material | each | 40   |        |
|       |  | Labour   | each | 40   |        |
| 2.2.2 | 100 x 50 x 50 mm galvanised steel draw boxes for L/switches  | Material | each | 25   |        |
|       |  | Labour   | each | 25   |        |
| 2.2.3 | 63mm dia PVC boxes (multiway) placed in roof spaces or mounted on wire trunking  | Material | each |      |        |
|       |  | Labour   | each |      |        |
| 2,3   | <b>CONDUCTORS</b><br>Supply and install listed PVC insulated copper conductors in conduit & wiring channel for lights, plugs and power points, data & tel points etc.  |          |      |      |        |
| 2.3.1 | Suffix 2,5 mm <sup>2</sup> pvc insulated   | Material | m    | 300  |        |
|       |  | Labour   | m    | 300  |        |
| 2.3.2 | General purpose wire 2,5 mm <sup>2</sup> pvc insulated   | Material | m    | 600  |        |
|       |  | Labour   | m    | 600  |        |
| 2.3.3 | General purpose wire 4,0 mm <sup>2</sup> pvc insulated   | Material | m    | 450  |        |
|       |  | Labour   | m    | 450  |        |
| 2.3.4 | 10,0 mm <sup>2</sup> pvc insulated   | Material | m    |      |        |
|       |  | Labour   | m    |      |        |
| 2.3.5 | 50mm <sup>2</sup> 4 core PVC Inculated PVC bedded SWA PVC sheeted 600/1000V Cable  | Material | m    |      |        |
|       |  | Labour   | m    |      |        |
| 2.3.6 | 25mm <sup>2</sup> 4 core PVC Inculated PVC bedded SWA PVC sheeted 600/1000V Cable  | Material | m    |      |        |
|       |  | Labour   | m    |      |        |
| 2.3.7 | 10mm <sup>2</sup> 4 core PVC Inculated PVC bedded SWA PVC sheeted 600/1000V Cable  | Material | m    |      |        |
|       |  | Labour   | m    |      |        |
| 2.3.8 | 2,5 mm <sup>2</sup> bare copper earthwire  | Material | m    | 500  |        |

| ITEM  | DESCRIPTION     | UNIT     | QTY | RATE | AMOUNT |
|-------|-----------------|----------|-----|------|--------|
|       |                 | Labour   | m   | 500  |        |
| 2.3.9 | Steel draw wire | Material | m   | 100  |        |
|       |                 | Labour   | m   | 100  |        |
|       |                 |          |     |      |        |

| ITEM  | DESCRIPTION  | UNIT     | QTY  | RATE | AMOUNT |
|-------|--|----------|------|------|--------|
| 2,4   | <b>ISOLATING SWITCHES FOR APPLIANCES</b><br>Supply and install the listed isolating switches for appliances in buildings c/w cover plates and connection to wiring         |          |      |      |        |
| 2.4.1 | 20Amp Isolator for air conditioners, Stove, Extraction Fan, Hand Dryers and Outside Signages   | Material | each | 10   |        |
|       |  | Labour   | each | 10   |        |
| 2.4.2 | 20Amp Industrial/Weatherproof rotary isolator for cold rooms   | Material | each | 1    |        |
|       |  | Labour   | each | 1    |        |
| 2,5   | <b>LIGHT SWITCHES</b><br>Supply and install of 16 A light switches in flush mounted 100 x 50 x 50 mm boxes including white coloured cover plates and connection to wiring. |          |      |      |        |
| 2.5.1 | Single lever one way   | Material | each | 8    |        |
|       |  | Labour   | each | 8    |        |
| 2.5.2 | Two lever, one way   | Material | each | 1    |        |
|       |  | Labour   | each | 1    |        |
| 2.5.3 | Single lever, two way  | Material | each | 1    |        |
|       |  | Labour   | each | 1    |        |
| 2.5.4 | Ceiling Mount- 360 Degree Dual Technology PIR Occupancy Sensor   | Material | each | 1    |        |
|       |  | Labour   | each | 1    |        |
| 2,6   | <b>SOCKET OUTLETS</b><br>Supply and install socket outlets in flush mounted wall boxes with white coloured cover plates  |          |      |      |        |
| 2.6.1 | 16 A single (switched)   | Material | each | 8    |        |
|       |  | Labour   | each | 8    |        |
| 2.6.2 | 16 A dual (switched)   | Material | each | 2    |        |
|       |  | Labour   | each | 2    |        |
| 3.6.3 | 16 A dedicated switched (flat earth pin type) with red cover plate   | Material | each | 8    |        |
|       |  | Labour   | each | 8    |        |
| 2.6.4 | York box c/w single 16Amp, SSO and wall mounted over drawbox   | Material | each |      |        |
|       |  | Labour   | each |      |        |
| 2.6.5 | 5 A un-switched suitable for mounting in round conduit box on wiring channel for light points  | Material | each | 25   |        |
|       |  | Labour   | each | 25   |        |
| 2,7   | <b>WORK STATION</b><br>Supply and install work stations in wall mounted power skirting (type as specified)   |          |      |      |        |
| 2.7.1 | 185 X 50 double compartment Aluminium power skirting, complete with cover, junctions and joints  | Material | each | 15   |        |
|       |  | Labour   | each | 15   |        |
| 2.7.2 | Work Station Points - 1 X telephone , 1 X Ethernet point, 1X Standard Socket and 1X Dedicated Socket Outlets   | Material | each | 8    |        |
|       |  | Labour   | each | 8    |        |

| ITEM  | DESCRIPTION   | UNIT    | QTY  | RATE | AMOUNT |
|-------|---|---------|------|------|--------|
| 2,8   | <b>LUMINAIRES</b><br>Supply and install luminaires as per schedule including general connections and lamps. Refer to Luminaire Schedule in Specification. |         |      |      |        |
| 2.8.1 | 3X35W Recessed Ceiling mounted FL Fitting with optic Louvres  | Supply  | each | 46   |        |
|       |   | Install | each | 46   |        |
|       | 3X35W Recessed Ceiling mounted FL Fitting with optic Louvres  | Supply  | each |      |        |
| 2.8.2 | 3X35W Recessed Ceiling mounted FL Fitting with optic Louvres  | Install | each |      |        |
|       | 4X35W Recessed Ceiling mounted FL Fitting with optic Louvres  | Install | each |      |        |
| 2.8.3 | 2X36W Recessed Ceiling mounted FL Fitting with Prismatic Diffusers  | Supply  | each |      |        |
|       | 2X36W Recessed Ceiling mounted FL Fitting with Prismatic Diffusers  | Install | each |      |        |
| 2.8.4 | LED 30W Surfaced mounted wall suspended   | Supply  | each |      |        |
|       | 2X36W Vapourproof Ceiling mounted FL Fitting  | Install | each |      |        |
| 2.8.5 | 2X36W Vapourproof Ceiling mounted FL Fitting  | Supply  | each |      |        |
|       | 2X36W Open channel Ceiling mounted FL Fitting   | Install | each |      |        |
| 2.8.6 | 3X35W Recessed Ceiling mounted FL Fitting with optic Louvres  | Supply  | each |      |        |
|       | 4X35W Recessed Ceiling mounted FL Fitting with optic Louvres  | Install | each |      |        |
| 2.8.7 | 2X36W Recessed Ceiling mounted FL Fitting with Prismatic Diffusers  | Supply  | each |      |        |
|       | 2X36W Recessed Ceiling mounted FL Fitting with Prismatic Diffusers  | Install | each |      |        |
| 2.8.8 | Light Fitting   | Supply  | each |      |        |
|       | 2X36W Vapourproof Ceiling mounted FL Fitting  | Install | each |      |        |
| 2.8.9 | 2X36W Vapourproof Ceiling mounted FL Fitting  | Supply  | each |      |        |
|       | 2X36W Open channel Ceiling mounted FL Fitting   | Install | each |      |        |

| ITEM   | DESCRIPTION   | UNIT              | QTY  | RATE | AMOUNT |
|--------|---|-------------------|------|------|--------|
| 2.9    | <b>CABLE TRUNKING</b><br><b>INDUSTRIAL type PVC cable trunking installed on roof trusses for data network cabling complete with covers and accessories as listed below.</b>                   |                   |      |      |        |
| 2.9.1  | A) P8000 Trunking   | Material          | m    | 50   |        |
|        | B) Internal / External elbows   | Material          | No.  | 6    |        |
|        | C) T-Off splices  | Material          | No.  | 8    |        |
|        | D) End Caps   | Material          | No.  | 31   |        |
|        | E) Install and fix trunking to roof structure as per drawings complete  | Labour            | m    | 40   |        |
| 2.10   | <b>DISTRIBUTION BOARDS</b><br><b>Supply and install new DB's circuit breakers fully equipped and pre-wired as per schedules and line diagrams.</b>  |                   |      |      |        |
| 2.10.2 | DB - New DB-1 as per approved SLD   | Supply            | no.  | 1    |        |
|        |   | Install           | no.  | 1    |        |
|        | DB - New DB-2 as per approved SLD   | Supply            | no.  | 1    |        |
|        |   | Install           | no.  | 1    |        |
|        | DB - New DB-G as per approved SLD   | Supply            | no.  |      |        |
|        |   | Install           | no.  |      |        |
| 2.10.3 | DB - New DB-Tel & Data as per approved SLD  | Supply            | no.  |      |        |
|        |   | Install           | no.  |      |        |
| 2.11   | <b>CONNECTION OF EQUIPMENT</b><br><b>Supply and install the required material for connecting fixed electrical equipment as listed :</b>   |                   |      |      |        |
| 2.11.1 | Single phase, 200L Geysers : Supply suitable flexible type pvc-sheathed galvanised steel conduit with end couplings and suitable wiring to connect geysers to Isolating switches              | Material          | each |      |        |
|        |   | Labour            | each |      |        |
| 2.12   | <b>EARTHING AND BONDING</b><br><b>Supply and install suitable earthing and bonding of geyser water pipes and other relevant items to comply with the standard specification requirements.</b> |                   |      |      |        |
| 2.12.1 | Earthing and bonding of geyser water pipes to comply with the standard specification requirements   | Material & Labour | sum  | 1    |        |
| 2.12.2 | Supply and install 1.8m Phosphor-Bronze earth spike for earthing of DB-G isolated supply  | Material & Labour | no.  | 4    |        |
|        |   | Labour            | no.  | 4    |        |
| 2.12.3 | Connect earth spike to DB-G earth-bar with 10mm <sup>2</sup> green pvc insulated copper conductor through 20mm dia pvc conduit  | Material & Labour | m    | 4    |        |
|        |   | Labour            | m    | 4    |        |
| 2.12.4 | Confirm earth measurement to within limits as set in specification  | Material & Labour | sum  | 4    |        |
| 2.13   | <b>BLANK COVERS FOR TEL/DATA/OTHER DRAWBOXES</b><br><b>Supply and fit blank steel cover plates for blank drawboxes as listed :</b>  |                   |      |      |        |

| ITEM                           | DESCRIPTION  | UNIT            | QTY  | RATE | AMOUNT     |
|--------------------------------|--|-----------------|------|------|------------|
| 2.13.1                         | Blank covers for 4 x 4 boxes   | Supply &<br>Fit | each |      |            |
| 2.13.2                         | Blank cover for 65mm dia round conduit boxes   | Supply &<br>Fit | each |      |            |
| 2,14                           | <b>TESTING AND COMMISSIONING</b><br><b>Full testing of completed installation and issuing of Certificate of Compliance for Residence</b> | sum             | 1    |      |            |
| <b>SUBTOTAL FOR BILL No. 2</b> |  |                 |      |      | <b>R -</b> |

**2****BILL No. 4 : Boardroom Area****- Electrical Installation (incl. tel, data & mechanical power supply)****Work Done**

| ITEM  | DESCRIPTION  |          | UNIT | QTY | RATE | AMOUNT |
|-------|--|----------|------|-----|------|--------|
| 2,1   | <b>CONDUIT</b><br>Supply and install listed types of steel / pvc conduits for lights, plugs, power points, etc including joints, bushes, locknuts, cutting bending and threading, placed or <i>chased</i> in concrete floors, walls and ceiling voids. |          |      |     |      |        |
| 2.1.2 | 20 mm dia SABS marked PVC :  | Material | m    | 180 |      |        |
|       |  | Labour   | m    | 180 |      |        |
| 2.1.3 | 25 mm dia SABS marked PVC :  | Material | m    | 120 |      |        |
|       |  | Labour   | m    | 120 |      |        |
| 2.1.3 | 110 mm dia SABS marked PVC :   | Material | m    | 80  |      |        |
|       |  | Labour   | m    | 80  |      |        |
| 2.2.4 | 10kva Ups complete with 29 sealed lead acid at 80Ah with cabinet standby time 3hr  | Material | no.  |     |      |        |
|       |  | Labour   | no.  |     |      |        |
| 2,2   | <b>CONDUIT &amp; DRAW BOXES</b><br>Supply and install conduit boxes as listed including jointing to conduit with locknuts and bushes and placed in walls, concrete floors etc.   |          |      |     |      |        |
| 2.2.1 | 100 x 100 x 50 mm galvanised steel draw boxes for socket outlets & power points  | Material | each | 8   |      |        |
|       |  | Labour   | each | 8   |      |        |
| 2.2.2 | 100 x 50 x 50 mm galvanised steel draw boxes for L/switches  | Material | each | 12  |      |        |
|       |  | Labour   | each | 12  |      |        |
| 2.2.3 | 63mm dia PVC boxes (multiway) placed in roof spaces or mounted on wire trunking  | Material | each |     |      |        |
|       |  | Labour   | each |     |      |        |
| 2,3   | <b>CONDUCTORS</b><br>Supply and install listed PVC insulated copper conductors in conduit & wiring channel for lights, plugs and power points, data & tel points etc.  |          |      |     |      |        |
| 2.3.1 | Suffix 2,5 mm <sup>2</sup> pvc insulated   | Material | m    | 160 |      |        |
|       |  | Labour   | m    | 160 |      |        |
| 2.3.2 | General purpose wire 2,5 mm <sup>2</sup> pvc insulated   | Material | m    | 280 |      |        |
|       |  | Labour   | m    | 280 |      |        |
| 2.3.3 | General purpose wire 4,0 mm <sup>2</sup> pvc insulated   | Material | m    | 190 |      |        |
|       |  | Labour   | m    | 190 |      |        |
| 2.3.4 | 10,0 mm <sup>2</sup> pvc insulated   | Material | m    |     |      |        |
|       |  | Labour   | m    |     |      |        |
| 2.3.5 | 50mm <sup>2</sup> 4 core PVC Inculated PVC bedded SWA PVC sheeted 600/1000V Cable  | Material | m    |     |      |        |
|       |  | Labour   | m    |     |      |        |
| 2.3.6 | 25mm <sup>2</sup> 4 core PVC Inculated PVC bedded SWA PVC sheeted 600/1000V Cable  | Material | m    |     |      |        |
|       |  | Labour   | m    |     |      |        |
| 2.3.7 | 10mm <sup>2</sup> 4 core PVC Inculated PVC bedded SWA PVC sheeted 600/1000V Cable  | Material | m    |     |      |        |
|       |  | Labour   | m    |     |      |        |
| 2.3.8 | 2,5 mm <sup>2</sup> bare copper earthwire  | Material | m    | 280 |      |        |



|       |   |          |      |     |  |  |
|-------|---|----------|------|-----|--|--|
|       |   | Labour   | m    | 280 |  |  |
| 2.3.9 | Steel draw wire   | Material | m    | 60  |  |  |
|       |   | Labour   | m    | 60  |  |  |
| 2,4   | <b>ISOLATING SWITCHES FOR APPLIANCES</b><br><b>Supply and install the listed isolating switches for appliances in buildings c/w cover plates and connection to wiring</b>         |          |      |     |  |  |
| 2.4.1 | 20Amp Isolator for air conditioners, Stove, Extraction Fan, Hand Dryers and Outside Signages  | Material | each | 4   |  |  |
|       |   | Labour   | each | 4   |  |  |
| 2.4.2 | 20Amp Industrial/Weatherproof rotary isolator for cold rooms  | Material | each |     |  |  |
|       |   | Labour   | each |     |  |  |
| 2,5   | <b>LIGHT SWITCHES</b><br><b>Supply and install of 16 A light switches in flush mounted 100 x 50 x 50 mm boxes including white coloured cover plates and connection to wiring.</b> |          |      |     |  |  |
| 2.5.1 | Single lever one way  | Material | each | 2   |  |  |
|       |   | Labour   | each | 2   |  |  |
| 2.5.2 | Two lever, one way  | Material | each | 1   |  |  |
|       |   | Labour   | each | 1   |  |  |
| 2.5.3 | Single lever, two way   | Material | each | 1   |  |  |
|       |   | Labour   | each | 1   |  |  |
| 2.5.4 | Ceiling Mount- 360 Degree Dual Technology PIR Occupancy Sensor  | Material | each | 1   |  |  |
|       |   | Labour   | each | 1   |  |  |
| 2,6   | <b>SOCKET OUTLETS</b><br><b>Supply and install socket outlets in flush mounted wall boxes with white coloured cover plates</b>  |          |      |     |  |  |
| 2.6.1 | 16 A single (switched)  | Material | each | 14  |  |  |
|       |   | Labour   | each | 14  |  |  |
| 2.6.2 | 16 A dual (switched)  | Material | each | 2   |  |  |
|       |   | Labour   | each | 2   |  |  |
| 3.6.3 | 16 A dedicated switched (flat earth pin type) with red cover plate  | Material | each | 14  |  |  |
|       |   | Labour   | each | 14  |  |  |
| 2.6.4 | York box c/w single 16Amp, SSO and wall mounted over drawbox  | Material | each |     |  |  |
|       |   | Labour   | each |     |  |  |
| 2.6.5 | 5 A un-switched suitable for mounting in round conduit box on wiring channel for light points   | Material | each | 12  |  |  |
|       |   | Labour   | each | 12  |  |  |
| 2,7   | <b>WORK STATION</b><br><b>Supply and install work stations in wall mounted power skirting (type as specified)</b>   |          |      |     |  |  |
| 2.7.1 | 185 X 50 double compartment Alluminium power skirting, complete with cover, junctions and joints  | Material | each | 8   |  |  |
|       |   | Labour   | each | 8   |  |  |
| 2.7.2 | Work Station Points - 1 X telephone , 1 X Ethernet point, 1X Standard Socket and 1X Dedicated Socket Outlets  | Material | each | 4   |  |  |
|       |   | Labour   | each | 4   |  |  |

|        |  |          |      |    |  |
|--------|--|----------|------|----|--|
| 2.8    | <b>LUMINAIRES</b><br>Supply and install luminaires as per schedule including general connections and lamps. Refer to Luminaire Schedule in Specification.                        |          |      |    |  |
| 2.8.1  | 3X35W Recessed Ceiling mounted FL Fitting with optic Louvres   | Supply   | each | 15 |  |
|        |  | Install  | each | 15 |  |
| 2.8.2  | Type NE 2 X 25 watt recessed Logus ML 1200x600mm; light fitting with Prismatic Diffuser  | Supply   | each |    |  |
|        |  | Install  | each |    |  |
| 2.8.3  | Type F Narrow Alpha Channel 1x 25w Osram Light fitting   | Supply   | each |    |  |
|        |  | Install  | each |    |  |
| 2.8.4  | Type K Surface mount vapour proof Dampa 2 x 25w light fitting  | Supply   | each |    |  |
|        |  | Install  | each |    |  |
| 2.8.5  | Type H1 Vapour proof Dampa 2 X 58W Low Temperature   | Supply   | each |    |  |
|        |  | Install  | each |    |  |
| 2.8.6  | Type B recessed LED downlight with Diffuser/ Natural white; 1w x19   | Supply   | each |    |  |
|        |  | Install  | each |    |  |
| 2.8.7  | Type L recessed LED downlight with Diffuser/ Natural white; 1w x12   | Supply   | each |    |  |
|        |  | Install  | each |    |  |
| 2.8.8  | Type O Open Channel Slimline Fluorescent 600m long light fitting   | Supply   | each |    |  |
|        |  | Install  | each |    |  |
| 2.8.9  | Type G Round Picanto Minibulkhead 1 x PL 26w/ECG   | Supply   | each |    |  |
|        |  | Install  | each |    |  |
| 2.9    | <b>CABLE TRUNKING</b><br>INDUSTRIAL type PVC cable trunking installed on roof trusses for data network cabling complete with covers and accessories as listed below.             |          |      |    |  |
| 2.9.1  | A) P8000 Trunking  | Material | m    | 20 |  |
|        | B) Internal / External elbows  | Material | No.  | 4  |  |
|        | C) T-Off splices   | Material | No.  | 8  |  |
|        | D) End Caps  | Material | No.  | 12 |  |
|        | E) Install and fix trunking to roof structure as per drawings; complete  | Labour   | m    | 40 |  |
| 2.10   | <b>DISTRIBUTION BOARDS</b><br>Supply and install new DB's circuit breakers fully equipped and pre-wired as per schedules and line diagrams.                                      |          |      |    |  |
| 2.10.2 | DB - New DB-G as per approved SLD  | Supply   | no.  |    |  |
|        |  | Install  | no.  |    |  |
| 2.10.3 | DB - New DB-Tel & Data as per approved SLD   | Supply   | no.  |    |  |
|        |  | Install  | no.  |    |  |
| 2.11   | <b>CONNECTION OF EQUIPMENT</b><br>Supply and install the required material for connecting fixed electrical equipment as listed :   |          |      |    |  |
| 2.11.1 | Single phase, 200L Geysers : Supply suitable flexible type pvc-sheathed galvanised steel conduit with end couplings and suitable wiring to connect geysers to Isolating switches | Material | each | 1  |  |
|        |  | Labour   | each | 1  |  |

|                                |  |                   |      |   |  |            |
|--------------------------------|--|-------------------|------|---|--|------------|
| 2.12                           | <b>EARTHING AND BONDING</b><br>Supply and install suitable earthing and bonding of geyser water pipes and other relevant items to comply with the standard specification requirements. |                   |      |   |  |            |
| 2.12.1                         | Earthing and bonding of geyser water pipes to comply with the standard specification requirements  | Material & Labour | sum  | 1 |  |            |
| 2.12.2                         | Supply and install 1.8m Phosphor-Bronze earth spike for earthing of DB-G isolated supply   | Material & Labour | no.  | 2 |  |            |
| 2.12.3                         | Connect earth spike to DB-G earth-bar with 10mm <sup>2</sup> green pvc insulated copper conductor through 20mm dia pvc conduit   | Material & Labour | m    | 2 |  |            |
| 2.12.4                         | Confirm earth measurement to within limits as set in specification   | Material & Labour | sum  | 2 |  |            |
| 2.13                           | <b>BLANK COVERS FOR TEL/DATA/OTHER DRAWBOXES</b><br>Supply and fit blank steel cover plates for blank drawboxes as listed :  |                   |      |   |  |            |
| 2.13.1                         | Blank covers for 4 x 4 boxes   | Supply & Fit      | each |   |  |            |
| 2.13.2                         | Blank cover for 65mm dia round conduit boxes   | Supply & Fit      | each |   |  |            |
| 2.14                           | <b>TESTING AND COMMISSIONING</b><br>Full testing of completed installation and issuing of Certificate of Compliance for Residence  |                   | sum  | 1 |  |            |
| <b>SUBTOTAL FOR BILL No. 2</b> |  |                   |      |   |  | <b>R -</b> |

**2****BILL No. 6 : Market Areas****- Electrical Installation (incl. tel, data & mechanical power supply)****Work Done**

| ITEM  | DESCRIPTION  | UNIT     | QTY  | RATE | AMOUNT |
|-------|--|----------|------|------|--------|
| 2,1   | <b>CONDUIT</b><br>Supply and install listed types of steel / pvc conduits for lights, plugs, power points, etc including joints, bushes, locknuts, cutting bending and threading, placed or <i>chased</i> in concrete floors, walls and ceiling voids. |          |      |      |        |
| 2.1.2 | 20 mm dia SABS marked PVC :  | Material | m    | 800  |        |
|       |  | Labour   | m    | 800  |        |
| 2.1.3 | 25 mm dia SABS marked PVC :  | Material | m    | 620  |        |
|       |  | Labour   | m    | 620  |        |
| 2.1.3 | 110 mm dia SABS marked PVC :   | Material | m    |      |        |
|       |  | Labour   | m    |      |        |
| 2.2.4 | 10kva Ups complete with 29 sealed lead acid at 80Ah with cabinet standby time 3hr  | Material | no.  |      |        |
|       |  | Labour   | no.  |      |        |
| 2,2   | <b>CONDUIT &amp; DRAW BOXES</b><br>Supply and install conduit boxes as listed including jointing to conduit with locknuts and bushes and placed in walls, concrete floors etc.   |          |      |      |        |
| 2.2.1 | 100 x 100 x 50 mm galvanised steel draw boxes for socket outlets & power points  | Material | each | 44   |        |
|       |  | Labour   | each | 44   |        |
| 2.2.2 | 100 x 50 x 50 mm galvanised steel draw boxes for L/switches  | Material | each | 16   |        |
|       |  | Labour   | each | 16   |        |
| 2.2.3 | 63mm dia PVC boxes (multiway) placed in roof spaces or mounted on wire trunking  | Material | each |      |        |
|       |  | Labour   | each |      |        |
| 2,3   | <b>CONDUCTORS</b><br>Supply and install listed PVC insulated copper conductors in conduit & wiring channel for lights, plugs and power points, data & tel points etc.  |          |      |      |        |
| 2.3.1 | Suffix 2,5 mm <sup>2</sup> pvc insulated   | Material | m    | 650  |        |
|       |  | Labour   | m    | 650  |        |
| 2.3.2 | General purpose wire 2,5 mm <sup>2</sup> pvc insulated   | Material | m    | 1200 |        |
|       |  | Labour   | m    | 1200 |        |
| 2.3.3 | General purpose wire 4,0 mm <sup>2</sup> pvc insulated   | Material | m    | 750  |        |
|       |  | Labour   | m    | 750  |        |
| 2.3.4 | 10,0 mm <sup>2</sup> pvc insulated   | Material | m    |      |        |
|       |  | Labour   | m    |      |        |
| 2.3.5 | 50mm <sup>2</sup> 4 core PVC Inculated PVC bedded SWA PVC sheeted 600/1000V Cable  | Material | m    |      |        |
|       |  | Labour   | m    |      |        |
| 2.3.6 | 25mm <sup>2</sup> 4 core PVC Inculated PVC bedded SWA PVC sheeted 600/1000V Cable  | Material | m    |      |        |
|       |  | Labour   | m    |      |        |
| 2.3.7 | 10mm <sup>2</sup> 4 core PVC Inculated PVC bedded SWA PVC sheeted 600/1000V Cable  | Material | m    |      |        |
|       |  | Labour   | m    |      |        |
| 2.3.8 | 2,5 mm <sup>2</sup> bare copper earthwire  | Material | m    | 750  |        |

|       |   |          |      |     |  |  |
|-------|---|----------|------|-----|--|--|
|       |   | Labour   | m    | 750 |  |  |
| 2.3.9 | Steel draw wire   | Material | m    | 240 |  |  |
|       |   | Labour   | m    | 240 |  |  |
| 2,4   | <b>ISOLATING SWITCHES FOR APPLIANCES</b><br><b>Supply and install the listed isolating switches for appliances in buildings c/w cover plates and connection to wiring</b>         |          |      |     |  |  |
| 2.4.1 | 20Amp Isolator for air conditioners, Stove, Extraction Fan, Hand Dryers and Outside Signages  | Material | each | 16  |  |  |
|       |   | Labour   | each | 16  |  |  |
| 2.4.2 | 20Amp Industrial/Weatherproof rotary isolator for cold rooms  | Material | each |     |  |  |
|       |   | Labour   | each |     |  |  |
| 2,5   | <b>LIGHT SWITCHES</b><br><b>Supply and install of 16 A light switches in flush mounted 100 x 50 x 50 mm boxes including white coloured cover plates and connection to wiring.</b> |          |      |     |  |  |
| 2.5.1 | Single lever one way  | Material | each | 14  |  |  |
|       |   | Labour   | each | 14  |  |  |
| 2.5.2 | Two lever, one way  | Material | each | 2   |  |  |
|       |   | Labour   | each | 2   |  |  |
| 2.5.3 | Single lever, two way   | Material | each | 1   |  |  |
|       |   | Labour   | each | 1   |  |  |
| 2.5.4 | Ceiling Mount- 360 Degree Dual Technology PIR Occupancy Sensor  | Material | each | 1   |  |  |
|       |   | Labour   | each | 1   |  |  |
| 2,6   | <b>SOCKET OUTLETS</b><br><b>Supply and install socket outlets in flush mounted wall boxes with white coloured cover plates</b>  |          |      |     |  |  |
| 2.6.1 | 16 A single (switched)  | Material | each | 26  |  |  |
|       |   | Labour   | each | 26  |  |  |
| 2.6.2 | 16 A dual (switched)  | Material | each | 2   |  |  |
|       |   | Labour   | each | 2   |  |  |
| 3.6.3 | 16 A dedicated switched (flat earth pin type) with red cover plate  | Material | each |     |  |  |
|       |   | Labour   | each |     |  |  |
| 2.6.4 | York box c/w single 16Amp, SSO and wall mounted over drawbox  | Material | each |     |  |  |
|       |   | Labour   | each |     |  |  |
| 2.6.5 | 5 A un-switched suitable for mounting in round conduit box on wiring channel for light points   | Material | each | 22  |  |  |
|       |   | Labour   | each | 22  |  |  |
| 2,7   | <b>WORK STATION</b><br><b>Supply and install work stations in wall mounted power skirting (type as specified)</b>   |          |      |     |  |  |
| 2.7.1 | 185 X 50 double compartment Alluminium power skirting, complete with cover, junctions and joints  | Material | each | 20  |  |  |
|       |   | Labour   | each | 20  |  |  |
| 2.7.2 | Work Station Points - 1 X telephone , 1 X Ethernet point, 1X Standard Socket and 1X Dedicated Socket Outlets  | Material | each |     |  |  |
|       |   | Labour   | each |     |  |  |

|        |  |          |      |     |  |
|--------|--|----------|------|-----|--|
| 2.8    | <b>LUMINAIRES</b><br>Supply and install luminaires as per schedule including general connections and lamps. Refer to Luminaire Schedule in Specification.                        |          |      |     |  |
| 2.8.1  | 2X36W Recessed Ceiling mounted FL Fitting with Prismatic Diffusers   | Supply   | each | 114 |  |
|        |  | Install  | each | 114 |  |
| 2.8.2  | Type NE 2 X 25 watt recessed Logus ML 1200x600mm; light fitting with Prismatic Diffuser  | Supply   | each |     |  |
|        |  | Install  | each |     |  |
| 2.8.3  | Type F Narrow Alpha Channel 1x 25w Osram Light fitting   | Supply   | each |     |  |
|        |  | Install  | each |     |  |
| 2.8.4  | Type K Surface mount vapour proof Dampa 2 x 25w light fitting  | Supply   | each |     |  |
|        |  | Install  | each |     |  |
| 2.8.5  | Type H1 Vapour proof Dampa 2 X 58W Low Temperature   | Supply   | each |     |  |
|        |  | Install  | each |     |  |
| 2.8.6  | Type B recessed LED downlight with Diffuser/ Natural white; 1w x19   | Supply   | each |     |  |
|        |  | Install  | each |     |  |
| 2.8.7  | Type L recessed LED downlight with Diffuser/ Natural white; 1w x12   | Supply   | each |     |  |
|        |  | Install  | each |     |  |
| 2.8.8  | Type O Open Channel Slimline Fluorescent 600m long light fitting   | Supply   | each |     |  |
|        |  | Install  | each |     |  |
| 2.8.9  | Type G Round Picanto Minibulkhead 1 x PL 26w/ECG   | Supply   | each |     |  |
|        |  | Install  | each |     |  |
| 2.9    | <b>CABLE TRUNKING</b><br>INDUSTRIAL type PVC cable trunking installed on roof trusses for data network cabling complete with covers and accessories as listed below.             |          |      |     |  |
| 2.9.1  | A) P8000 Trunking  | Material | m    | 90  |  |
|        | B) Internal / External elbows  | Material | No.  | 60  |  |
|        | C) T-Off splices   | Material | No.  | 22  |  |
|        | D) End Caps  | Material | No.  | 32  |  |
|        | E) Install and fix trunking to roof structure as per drawings; complete  | Labour   | m    | 100 |  |
| 2.10   | <b>DISTRIBUTION BOARDS</b><br>Supply and install new DB's circuit breakers fully equipped and pre-wired as per schedules and line diagrams.                                      |          |      |     |  |
| 2.10.2 | DB - New DB-G as per approved SLD  | Supply   | no.  |     |  |
|        |  | Install  | no.  |     |  |
| 2.10.3 | DB - New DB-Tel & Data as per approved SLD   | Supply   | no.  |     |  |
|        |  | Install  | no.  |     |  |
| 2.11   | <b>CONNECTION OF EQUIPMENT</b><br>Supply and install the required material for connecting fixed electrical equipment as listed :   |          |      |     |  |
| 2.11.1 | Single phase, 200L Geysers : Supply suitable flexible type pvc-sheathed galvanised steel conduit with end couplings and suitable wiring to connect geysers to Isolating switches | Material | each |     |  |
|        |  | Labour   | each |     |  |

|                                |  |                   |      |   |  |            |
|--------------------------------|--|-------------------|------|---|--|------------|
| 2.12                           | <b>EARTHING AND BONDING</b><br>Supply and install suitable earthing and bonding of geyser water pipes and other relevant items to comply with the standard specification requirements. |                   |      |   |  |            |
| 2.12.1                         | Earthing and bonding of geyser water pipes to comply with the standard specification requirements  | Material & Labour | sum  | 1 |  |            |
| 2.12.2                         | Supply and install 1.8m Phosphor-Bronze earth spike for earthing of DB-G isolated supply   | Material & Labour | no.  | 4 |  |            |
| 2.12.3                         | Connect earth spike to DB-G earth-bar with 10mm <sup>2</sup> green pvc insulated copper conductor through 20mm dia pvc conduit   | Material & Labour | m    | 4 |  |            |
| 2.12.4                         | Confirm earth measurement to within limits as set in specification   | Material & Labour | sum  | 4 |  |            |
| 2.13                           | <b>BLANK COVERS FOR TEL/DATA/OTHER DRAWBOXES</b><br>Supply and fit blank steel cover plates for blank drawboxes as listed :  |                   |      |   |  |            |
| 2.13.1                         | Blank covers for 4 x 4 boxes   | Supply & Fit      | each |   |  |            |
| 2.13.2                         | Blank cover for 65mm dia round conduit boxes   | Supply & Fit      | each |   |  |            |
| 2.14                           | <b>TESTING AND COMMISSIONING</b><br>Full testing of completed installation and issuing of Certificate of Compliance for Residence  |                   | sum  | 1 |  |            |
| <b>SUBTOTAL FOR BILL No. 2</b> |  |                   |      |   |  | <b>R -</b> |

**2****BILL No. 6 : Market Areas****- Electrical Installation (incl. tel, data & mechanical power supply)****Work Done**

| ITEM  | DESCRIPTION  | UNIT     | QTY  | RATE | AMOUNT |
|-------|--|----------|------|------|--------|
| 2,1   | <b>CONDUIT</b><br>Supply and install listed types of steel / pvc conduits for lights, plugs, power points, etc including joints, bushes, locknuts, cutting bending and threading, placed or <i>chased</i> in concrete floors, walls and ceiling voids. |          |      |      |        |
| 2.1.2 | 20 mm dia SABS marked PVC :  | Material | m    | 150  |        |
|       |  | Labour   | m    | 150  |        |
| 2.1.3 | 25 mm dia SABS marked PVC :  | Material | m    | 120  |        |
|       |  | Labour   | m    | 120  |        |
| 2.1.3 | 110 mm dia SABS marked PVC :   | Material | m    |      |        |
|       |  | Labour   | m    |      |        |
| 2.2.4 | 10kva Ups complete with 29 sealed lead acid at 80Ah with cabinet standby time 3hr  | Material | no.  |      |        |
|       |  | Labour   | no.  |      |        |
| 2,2   | <b>CONDUIT &amp; DRAW BOXES</b><br>Supply and install conduit boxes as listed including jointing to conduit with locknuts and bushes and placed in walls, concrete floors etc.   |          |      |      |        |
| 2.2.1 | 100 x 100 x 50 mm galvanised steel draw boxes for socket outlets & power points  | Material | each | 16   |        |
|       |  | Labour   | each | 16   |        |
| 2.2.2 | 100 x 50 x 50 mm galvanised steel draw boxes for L/switches  | Material | each | 12   |        |
|       |  | Labour   | each | 12   |        |
| 2.2.3 | 63mm dia PVC boxes (multiway) placed in roof spaces or mounted on wire trunking  | Material | each |      |        |
|       |  | Labour   | each |      |        |
| 2,3   | <b>CONDUCTORS</b><br>Supply and install listed PVC insulated copper conductors in conduit & wiring channel for lights, plugs and power points, data & tel points etc.  |          |      |      |        |
| 2.3.1 | Suffix 2,5 mm <sup>2</sup> pvc insulated   | Material | m    | 140  |        |
|       |  | Labour   | m    | 140  |        |
| 2.3.2 | General purpose wire 2,5 mm <sup>2</sup> pvc insulated   | Material | m    | 290  |        |
|       |  | Labour   | m    | 290  |        |
| 2.3.3 | General purpose wire 4,0 mm <sup>2</sup> pvc insulated   | Material | m    |      |        |
|       |  | Labour   | m    |      |        |
| 2.3.4 | 10,0 mm <sup>2</sup> pvc insulated   | Material | m    |      |        |
|       |  | Labour   | m    |      |        |
| 2.3.5 | 50mm <sup>2</sup> 4 core PVC Inculated PVC bedded SWA PVC sheeted 600/1000V Cable  | Material | m    |      |        |
|       |  | Labour   | m    |      |        |
| 2.3.6 | 25mm <sup>2</sup> 4 core PVC Inculated PVC bedded SWA PVC sheeted 600/1000V Cable  | Material | m    |      |        |
|       |  | Labour   | m    |      |        |
| 2.3.7 | 10mm <sup>2</sup> 4 core PVC Inculated PVC bedded SWA PVC sheeted 600/1000V Cable  | Material | m    |      |        |
|       |  | Labour   | m    |      |        |
| 2.3.8 | 2,5 mm <sup>2</sup> bare copper earthwire  | Material | m    | 110  |        |
|       |  | Labour   | m    | 110  |        |
| 2.3.9 | Steel draw wire  | Material | m    | 100  |        |
|       |  | Labour   | m    | 220  |        |



|       |  |          |      |    |  |
|-------|--|----------|------|----|--|
| 2.4   | <b>ISOLATING SWITCHES FOR APPLIANCES</b><br>Supply and install the listed isolating switches for appliances in buildings c/w cover plates and connection to wiring         |          |      |    |  |
| 2.4.1 | 20Amp Isolator for air conditioners, Stove, Extraction Fan, Hand Dryers and Outside Signages   | Material | each | 4  |  |
|       |  | Labour   | each | 4  |  |
| 2.4.2 | 20Amp Industrial/Weatherproof rotary Isolator for cold rooms   | Material | each |    |  |
|       |  | Labour   | each |    |  |
| 2.5   | <b>LIGHT SWITCHES</b><br>Supply and install of 16 A light switches in flush mounted 100 x 50 x 50 mm boxes including white coloured cover plates and connection to wiring. |          |      |    |  |
| 2.5.1 | Single lever one way   | Material | each | 6  |  |
|       |  | Labour   | each | 6  |  |
| 2.5.2 | Two lever, one way   | Material | each | 1  |  |
|       |  | Labour   | each | 1  |  |
| 2.5.3 | Single lever, two way  | Material | each | 2  |  |
|       |  | Labour   | each | 2  |  |
| 2.5.4 | Ceiling Mount- 360 Degree Dual Technology PIR Occupancy Sensor   | Material | each | 1  |  |
|       |  | Labour   | each | 1  |  |
| 2.6   | <b>SOCKET OUTLETS</b><br>Supply and install socket outlets in flush mounted wall boxes with white coloured cover plates  |          |      |    |  |
| 2.6.1 | 16 A single (switched)   | Material | each |    |  |
|       |  | Labour   | each |    |  |
| 2.6.2 | 16 A dual (switched)   | Material | each |    |  |
|       |  | Labour   | each |    |  |
| 3.6.3 | 16 A dedicated switched (flat earth pin type) with red cover plate   | Material | each |    |  |
|       |  | Labour   | each |    |  |
| 2.6.4 | York box c/w single 16Amp, SSO and wall mounted over drawbox   | Material | each |    |  |
|       |  | Labour   | each |    |  |
| 2.6.5 | 5 A un-switched suitable for mounting in round conduit box on wiring channel for light points  | Material | each |    |  |
|       |  | Labour   | each |    |  |
| 2.7   | <b>HAND DRYERS</b>   |          |      |    |  |
| 2.7.1 | Hand Dryer   | Material | each | 4  |  |
|       |  | Labour   | each | 4  |  |
| 2.7   | <b>EXTRACTION FANS</b><br>Supply and install Extraction/ Circulation Fans including connection. See Detail Specification   |          |      |    |  |
| 2.7.1 | Extraction Fan   | Material | each | 4  |  |
|       |  | Labour   | each | 4  |  |
| 2.8   | <b>LUMINAIRES</b><br>Supply and install luminaires as per schedule including general connections and lamps. Refer to Luminaire Schedule in Specification.                  |          |      |    |  |
| 2.8.1 | 2X11W CFL Down lighter Ceiling mounted Light Fitting   | Supply   | each | 72 |  |
|       |  | Install  | each | 72 |  |
| 2.8.2 | Type NE 2 X 25 watt recessed Logus ML 1200x600mm light fitting with Prismatic Diffuser   | Supply   | each |    |  |
|       |  | Install  | each |    |  |

|        |  |                   |      |    |  |  |
|--------|--|-------------------|------|----|--|--|
| 2.8.3  | Type F Narrow Alpha Channel 1x 25w Osram Light fitting   | Supply            | each |    |  |  |
|        |  | Install           | each |    |  |  |
| 2.8.4  | Type K Surface mount vapour proof Dampa 2 x 25w light fitting  | Supply            | each |    |  |  |
|        |  | Install           | each |    |  |  |
| 2.8.5  | Type H1 Vapour proof Dampa 2 X 58W Low Temperature   | Supply            | each |    |  |  |
|        |  | Install           | each |    |  |  |
| 2.8.6  | Type B recessed LED downlight with Diffuser/ Natural white 1w x19  | Supply            | each |    |  |  |
|        |  | Install           | each |    |  |  |
| 2.8.7  | Type L recessed LED downlight with Diffuser/ Natural white 1w x12  | Supply            | each |    |  |  |
|        |  | Install           | each |    |  |  |
| 2.8.8  | Type O Open Channel Slimline Fluorescent 600m long light fitting   | Supply            | each |    |  |  |
|        |  | Install           | each |    |  |  |
| 2.8.9  | Type G Round Picanto Minibulkhead 1 x PL 26w/ECG   | Supply            | each |    |  |  |
|        |  | Install           | each |    |  |  |
| 2.9    | <b>CABLE TRUNKING</b>  |                   |      |    |  |  |
|        | <b>INDUSTRIAL type PVC cable trunking installed on roof trusses for data network cabling complete with covers and accessories as listed below.</b>                               |                   |      |    |  |  |
| 2.9.1  | A) P8000 Trunking  | Material          | m    | 14 |  |  |
|        | B) Internal / External elbows  | Material          | No.  | 6  |  |  |
|        | C) T-Off splices   | Material          | No.  | 8  |  |  |
|        | D) End Caps  | Material          | No.  | 10 |  |  |
|        | E) Install and fix trunking to roof structure as per drawings complete   | Labour            | m    | 20 |  |  |
| 2.10   | <b>DISTRIBUTION BOARDS</b>   |                   |      |    |  |  |
|        | <b>Supply and install new DB's circuit breakers fully equipped and pre-wired as per schedules and line diagrams.</b>   |                   |      |    |  |  |
| 2.10.2 | DB - New DB-G as per approved SLD  | Supply            | no.  |    |  |  |
|        |  | Install           | no.  |    |  |  |
| 2.10.3 | DB - New DB-Tel & Data as per approved SLD   | Supply            | no.  |    |  |  |
|        |  | Install           | no.  |    |  |  |
| 2.11   | <b>CONNECTION OF EQUIPMENT</b>   |                   |      |    |  |  |
|        | <b>Supply and install the required material for connecting fixed electrical equipment as listed :</b>  |                   |      |    |  |  |
| 2.11.1 | Single phase, 200L Geysers : Supply suitable flexible type pvc-sheathed galvanised steel conduit with end couplings and suitable wiring to connect geysers to Isolating switches | Material          | each | 1  |  |  |
|        |  | Labour            | each | 1  |  |  |
| 2.12   | <b>EARTHING AND BONDING</b>  |                   |      |    |  |  |
|        | <b>Supply and install suitable earthing and bonding of geyser water pipes and other relevant items to comply with the standard specification requirements.</b>                   |                   |      |    |  |  |
| 2.12.1 | Earthing and bonding of geyser water pipes to comply with the standard specification requirements  | Material & Labour | sum  | 1  |  |  |
| 2.12.2 | Supply and install 1.8m Phosphor-Bronze earth spike for earthing of DB-G isolated supply   | Material & Labour | no.  | 2  |  |  |
|        |  | Labour            | no.  | 2  |  |  |
| 2.12.3 | Connect earth spike to DB-G earth-bar with 10mm <sup>2</sup> green pvc insulated copper conductor through 20mm dia pvc conduit   | Material & Labour | m    | 2  |  |  |
|        |  | Labour            | m    | 4  |  |  |
| 2.12.4 | Confirm earth measurement to within limits as set in specification   | Material & Labour | sum  | 4  |  |  |

|                                |   |              |      |   |  |            |
|--------------------------------|---|--------------|------|---|--|------------|
| 2,13                           | <b>BLANK COVERS FOR TEL/DATA/OTHER DRAWBOXES</b><br>Supply and fit blank steel cover plates for blank drawboxes as listed :       |              |      |   |  |            |
| 2.13.1                         | Blank covers for 4 x 4 boxes  | Supply & Fit | each |   |  |            |
| 2.13.2                         | Blank cover for 65mm dia round conduit boxes  | Supply & Fit | each |   |  |            |
| 2,14                           | <b>TESTING AND COMMISSIONING</b><br>Full testing of completed installation and issuing of Certificate of Compliance for Residence |              | sum  | 1 |  |            |
| <b>SUBTOTAL FOR BILL No. 2</b> |   |              |      |   |  | <b>R -</b> |

**2****BILL No. 6 : Market Areas****- Electrical Installation (incl. tel, data & mechanical power supply)****Work Done**

| ITEM  | DESCRIPTION  | UNIT     | QTY  | RATE | AMOUNT |
|-------|--|----------|------|------|--------|
| 2,1   | <b>CONDUIT</b><br>Supply and install listed types of steel / pvc conduits for lights, plugs, power points, etc including joints, bushes, locknuts, cutting bending and threading, placed or <i>chased</i> in concrete floors, walls and ceiling voids. |          |      |      |        |
| 2.1.2 | 20 mm dia SABS marked PVC :  | Material | m    | 50   |        |
|       |  | Labour   | m    | 50   |        |
| 2.1.3 | 25 mm dia SABS marked PVC :  | Material | m    | 35   |        |
|       |  | Labour   | m    | 35   |        |
| 2.1.3 | 110 mm dia SABS marked PVC :   | Material | m    |      |        |
|       |  | Labour   | m    |      |        |
| 2.2.4 | 10kva Ups complete with 29 sealed lead acid at 80Ah with cabinet standby time 3hr  | Material | no.  |      |        |
|       |  | Labour   | no.  |      |        |
| 2,2   | <b>CONDUIT &amp; DRAW BOXES</b><br>Supply and install conduit boxes as listed including jointing to conduit with locknuts and bushes and placed in walls, concrete floors etc.   |          |      |      |        |
| 2.2.1 | 100 x 100 x 50 mm galvanised steel draw boxes for socket outlets & power points  | Material | each | 2    |        |
|       |  | Labour   | each | 2    |        |
| 2.2.2 | 100 x 50 x 50 mm galvanised steel draw boxes for L/switches  | Material | each | 2    |        |
|       |  | Labour   | each | 2    |        |
| 2.2.3 | 63mm dia PVC boxes (multiway) placed in roof spaces or mounted on wire trunking  | Material | each |      |        |
|       |  | Labour   | each |      |        |
| 2,3   | <b>CONDUCTORS</b><br>Supply and install listed PVC insulated copper conductors in conduit & wiring channel for lights, plugs and power points, data & tel points etc.  |          |      |      |        |
| 2.3.1 | Suffix 2,5 mm <sup>2</sup> pvc insulated   | Material | m    | 45   |        |
|       |  | Labour   | m    | 45   |        |
| 2.3.2 | General purpose wire 2,5 mm <sup>2</sup> pvc insulated   | Material | m    | 90   |        |
|       |  | Labour   | m    | 90   |        |
| 2.3.3 | General purpose wire 4,0 mm <sup>2</sup> pvc insulated   | Material | m    | 50   |        |
|       |  | Labour   | m    | 50   |        |
| 2.3.4 | 10,0 mm <sup>2</sup> pvc insulated   | Material | m    |      |        |
|       |  | Labour   | m    |      |        |
| 2.3.5 | 50mm <sup>2</sup> 4 core PVC Inculated PVC bedded SWA PVC sheeted 600/1000V Cable  | Material | m    |      |        |
|       |  | Labour   | m    |      |        |
| 2.3.6 | 25mm <sup>2</sup> 4 core PVC Inculated PVC bedded SWA PVC sheeted 600/1000V Cable  | Material | m    |      |        |
|       |  | Labour   | m    |      |        |
| 2.3.7 | 10mm <sup>2</sup> 4 core PVC Inculated PVC bedded SWA PVC sheeted 600/1000V Cable  | Material | m    |      |        |
|       |  | Labour   | m    |      |        |
| 2.3.8 | 2,5 mm <sup>2</sup> bare copper earthwire  | Material | m    | 90   |        |

|       |   |          |      |    |  |  |
|-------|---|----------|------|----|--|--|
|       |   | Labour   | m    | 90 |  |  |
| 2.3.9 | Steel draw wire   | Material | m    | 50 |  |  |
|       |   | Labour   | m    | 50 |  |  |
| 2,4   | <b>ISOLATING SWITCHES FOR APPLIANCES</b><br><b>Supply and install the listed isolating switches for appliances in buildings c/w cover plates and connection to wiring</b>         |          |      |    |  |  |
| 2.4.1 | 20Amp Isolator for air conditioners, Stove, Extraction Fan, Hand Dryers and Outside Signages  | Material | each |    |  |  |
|       |   | Labour   | each |    |  |  |
| 2.4.2 | 20Amp Industrial/Weatherproof rotary isolator for cold rooms  | Material | each |    |  |  |
|       |   | Labour   | each |    |  |  |
| 2,5   | <b>LIGHT SWITCHES</b><br><b>Supply and install of 16 A light switches in flush mounted 100 x 50 x 50 mm boxes including white coloured cover plates and connection to wiring.</b> |          |      |    |  |  |
| 2.5.1 | Single lever one way  | Material | each | 2  |  |  |
|       |   | Labour   | each | 2  |  |  |
| 2.5.2 | Two lever, one way  | Material | each | 1  |  |  |
|       |   | Labour   | each | 1  |  |  |
| 2.5.3 | Single lever, two way   | Material | each | 2  |  |  |
|       |   | Labour   | each | 2  |  |  |
| 2.5.4 | Ceiling Mount- 360 Degree Dual Technology PIR Occupancy Sensor  | Material | each | 1  |  |  |
|       |   | Labour   | each | 1  |  |  |
| 2,6   | <b>SOCKET OUTLETS</b><br><b>Supply and install socket outlets in flush mounted wall boxes with white coloured cover plates</b>  |          |      |    |  |  |
| 2.6.1 | 16 A single (switched)  | Material | each | 6  |  |  |
|       |   | Labour   | each | 6  |  |  |
| 2.6.2 | 16 A dual (switched)  | Material | each | 2  |  |  |
|       |   | Labour   | each | 2  |  |  |
| 3.6.3 | 16 A dedicated switched (flat earth pin type) with red cover plate  | Material | each | 8  |  |  |
|       |   | Labour   | each | 8  |  |  |
| 2.6.4 | York box c/w single 16Amp, SSO and wall mounted over drawbox  | Material | each |    |  |  |
|       |   | Labour   | each |    |  |  |
| 2.6.5 | 5 A un-switched suitable for mounting in round conduit box on wiring channel for light points   | Material | each | 4  |  |  |
|       |   | Labour   | each | 4  |  |  |
| 2,7   | <b>WORK STATION</b><br><b>Supply and install work stations in wall mounted power skirting (type as specified)</b>   |          |      |    |  |  |
| 2.7.1 | 185 X 50 double compartment Alluminium power skirting, complete with cover, junctions and joints  | Material | each |    |  |  |
|       |   | Labour   | each |    |  |  |
| 2.7.2 | Work Station Points - 1 X telephone , 1 X Ethernet point, 1X Standard Socket and 1X Dedicated Socket Outlets  | Material | each |    |  |  |
|       |   | Labour   | each |    |  |  |

|        |  |          |      |   |  |
|--------|--|----------|------|---|--|
| 2.8    | <b>LUMINAIRES</b><br>Supply and install luminaires as per schedule including general connections and lamps. Refer to Luminaire Schedule in Specification.                        |          |      |   |  |
| 2.8.1  | 2X36W Open channel Ceiling mounted FL Fitting  | Supply   | each | 4 |  |
|        |  | Install  | each | 4 |  |
| 2.8.2  | Type NE 2 X 25 watt recessed Logus ML 1200x600mm; light fitting with Prismatic Diffuser  | Supply   | each |   |  |
|        |  | Install  | each |   |  |
| 2.8.3  | Type F Narrow Alpha Channel 1x 25w Osram Light fitting   | Supply   | each |   |  |
|        |  | Install  | each |   |  |
| 2.8.4  | Type K Surface mount vapour proof Dampa 2 x 25w light fitting  | Supply   | each |   |  |
|        |  | Install  | each |   |  |
| 2.8.5  | Type H1 Vapour proof Dampa 2 X 58W Low Temperature   | Supply   | each |   |  |
|        |  | Install  | each |   |  |
| 2.8.6  | Type B recessed LED downlight with Diffuser/ Natural white; 1w x19   | Supply   | each |   |  |
|        |  | Install  | each |   |  |
| 2.8.7  | Type L recessed LED downlight with Diffuser/ Natural white; 1w x12   | Supply   | each |   |  |
|        |  | Install  | each |   |  |
| 2.8.8  | Type O Open Channel Slimline Fluorescent 600m long light fitting   | Supply   | each |   |  |
|        |  | Install  | each |   |  |
| 2.8.9  | Type G Round Picanto Minibulkhead 1 x PL 26w/ECG   | Supply   | each |   |  |
|        |  | Install  | each |   |  |
| 2.9    | <b>CABLE TRUNKING</b><br>INDUSTRIAL type PVC cable trunking installed on roof trusses for data network cabling complete with covers and accessories as listed below.             |          |      |   |  |
| 2.9.1  | A) P8000 Trunking  | Material | m    | 8 |  |
|        | B) Internal / External elbows  | Material | No.  | 6 |  |
|        | C) T-Off splices   | Material | No.  | 8 |  |
|        | D) End Caps  | Material | No.  | 4 |  |
|        | E) Install and fix trunking to roof structure as per drawings; complete  | Labour   | m    | 8 |  |
| 2.10   | <b>DISTRIBUTION BOARDS</b><br>Supply and install new DB's circuit breakers fully equipped and pre-wired as per schedules and line diagrams.                                      |          |      |   |  |
| 2.10.2 | DB - New DB-G as per approved SLD  | Supply   | no.  |   |  |
|        |  | Install  | no.  |   |  |
| 2.10.3 | DB - New DB-Tel & Data as per approved SLD   | Supply   | no.  |   |  |
|        |  | Install  | no.  |   |  |
| 2.11   | <b>CONNECTION OF EQUIPMENT</b><br>Supply and install the required material for connecting fixed electrical equipment as listed :   |          |      |   |  |
| 2.11.1 | Single phase, 200L Geysers : Supply suitable flexible type pvc-sheathed galvanised steel conduit with end couplings and suitable wiring to connect geysers to Isolating switches | Material | each |   |  |
|        |  | Labour   | each |   |  |

|                                |  |                   |      |   |  |            |
|--------------------------------|--|-------------------|------|---|--|------------|
| 2.12                           | <b>EARTHING AND BONDING</b><br>Supply and install suitable earthing and bonding of geyser water pipes and other relevant items to comply with the standard specification requirements. |                   |      |   |  |            |
| 2.12.1                         | Earthing and bonding of geyser water pipes to comply with the standard specification requirements  | Material & Labour | sum  | 1 |  |            |
| 2.12.2                         | Supply and install 1.8m Phosphor-Bronze earth spike for earthing of DB-G isolated supply   | Material & Labour | no.  | 2 |  |            |
| 2.12.3                         | Connect earth spike to DB-G earth-bar with 10mm <sup>2</sup> green pvc insulated copper conductor through 20mm dia pvc conduit   | Material & Labour | m    | 2 |  |            |
| 2.12.4                         | Confirm earth measurement to within limits as set in specification   | Material & Labour | sum  | 1 |  |            |
| 2.13                           | <b>BLANK COVERS FOR TEL/DATA/OTHER DRAWBOXES</b><br>Supply and fit blank steel cover plates for blank drawboxes as listed :  |                   |      |   |  |            |
| 2.13.1                         | Blank covers for 4 x 4 boxes   | Supply & Fit      | each |   |  |            |
| 2.13.2                         | Blank cover for 65mm dia round conduit boxes   | Supply & Fit      | each |   |  |            |
| 2.14                           | <b>TESTING AND COMMISSIONING</b><br>Full testing of completed installation and issuing of Certificate of Compliance for Residence  |                   | sum  | 1 |  |            |
| <b>SUBTOTAL FOR BILL No. 2</b> |  |                   |      |   |  | <b>R -</b> |

**2****BILL No. 6 : Market Areas****- Electrical Installation (incl. tel, data & mechanical power supply)****Work Done**

| ITEM  | DESCRIPTION  | UNIT     | QTY  | RATE | AMOUNT |
|-------|--|----------|------|------|--------|
| 2,1   | <b>CONDUIT</b><br>Supply and install listed types of steel / pvc conduits for lights, plugs, power points, etc including joints, bushes, locknuts, cutting bending and threading, placed or <i>chased</i> in concrete floors, walls and ceiling voids. |          |      |      |        |
| 2.1.2 | 20 mm dia SABS marked PVC :  | Material | m    | 35   |        |
|       |  | Labour   | m    | 35   |        |
| 2.1.3 | 25 mm dia SABS marked PVC :  | Material | m    | 25   |        |
|       |  | Labour   | m    | 25   |        |
| 2.1.3 | 110 mm dia SABS marked PVC :   | Material | m    |      |        |
|       |  | Labour   | m    |      |        |
| 2.2.4 | 10kva Ups complete with 29 sealed lead acid at 80Ah with cabinet standby time 3hr  | Material | no.  |      |        |
|       |  | Labour   | no.  |      |        |
| 2,2   | <b>CONDUIT &amp; DRAW BOXES</b><br>Supply and install conduit boxes as listed including jointing to conduit with locknuts and bushes and placed in walls, concrete floors etc.   |          |      |      |        |
| 2.2.1 | 100 x 100 x 50 mm galvanised steel draw boxes for socket outlets & power points  | Material | each | 12   |        |
|       |  | Labour   | each | 12   |        |
| 2.2.2 | 100 x 50 x 50 mm galvanised steel draw boxes for L/switches  | Material | each | 10   |        |
|       |  | Labour   | each | 10   |        |
| 2.2.3 | 63mm dia PVC boxes (multiway) placed in roof spaces or mounted on wire trunking  | Material | each |      |        |
|       |  | Labour   | each |      |        |
| 2,3   | <b>CONDUCTORS</b><br>Supply and install listed PVC insulated copper conductors in conduit & wiring channel for lights, plugs and power points, data & tel points etc.  |          |      |      |        |
| 2.3.1 | Suffix 2,5 mm <sup>2</sup> pvc insulated   | Material | m    | 60   |        |
|       |  | Labour   | m    | 60   |        |
| 2.3.2 | General purpose wire 2,5 mm <sup>2</sup> pvc insulated   | Material | m    | 60   |        |
|       |  | Labour   | m    | 60   |        |
| 2.3.3 | General purpose wire 4,0 mm <sup>2</sup> pvc insulated   | Material | m    | 45   |        |
|       |  | Labour   | m    | 45   |        |
| 2.3.4 | 10,0 mm <sup>2</sup> pvc insulated   | Material | m    |      |        |
|       |  | Labour   | m    |      |        |
| 2.3.5 | 50mm <sup>2</sup> 4 core PVC Inculated PVC bedded SWA PVC sheathed 600/1000V Cable   | Material | m    |      |        |
|       |  | Labour   | m    |      |        |
| 2.3.6 | 25mm <sup>2</sup> 4 core PVC Inculated PVC bedded SWA PVC sheathed 600/1000V Cable   | Material | m    |      |        |
|       |  | Labour   | m    |      |        |
| 2.3.7 | 10mm <sup>2</sup> 4 core PVC Inculated PVC bedded SWA PVC sheathed 600/1000V Cable   | Material | m    |      |        |
|       |  | Labour   | m    |      |        |
| 2.3.8 | 2,5 mm <sup>2</sup> bare copper earthwire  | Material | m    | 45   |        |



|       |  |          |      |    |  |  |   |
|-------|--|----------|------|----|--|--|---|
|       |  | Labour   | m    | 45 |  |  |   |
| 2.3.9 | Steel draw wire  | Material | m    | 40 |  |  |   |
|       |  | Labour   | m    | 40 |  |  |   |
| 2,4   | <b>ISOLATING SWITCHES FOR APPLIANCES</b><br>Supply and install the listed isolating switches for appliances in buildings c/w cover plates and connection to wiring         |          |      |    |  |  |   |
| 2.4.1 | 20Amp Isolator for air conditioners, Stove, Extraction Fan, Hand Dryers and Outside Signages   | Material | each |    |  |  |   |
|       |  | Labour   | each |    |  |  |   |
| 2.4.2 | 20Amp Industrial/Weatherproof rotary isolator for cold rooms   | Material | each |    |  |  |   |
|       |  | Labour   | each |    |  |  |   |
| 2,5   | <b>LIGHT SWITCHES</b><br>Supply and install of 16 A light switches in flush mounted 100 x 50 x 50 mm boxes including white coloured cover plates and connection to wiring. |          |      |    |  |  |   |
| 2.5.1 | Single lever one way   | Material | each | 1  |  |  |   |
|       |  | Labour   | each | 1  |  |  |   |
| 2.5.2 | Two lever, one way   | Material | each | 1  |  |  |   |
|       |  | Labour   | each | 1  |  |  |   |
| 2.5.3 | Single lever, two way  | Material | each | 1  |  |  |   |
|       |  | Labour   | each | 1  |  |  |   |
| 2.5.4 | Ceiling Mount- 360 Degree Dual Technology PIR Occupancy Sensor   | Material | each | 1  |  |  |   |
|       |  | Labour   | each | 1  |  |  |   |
| 2,6   | <b>SOCKET OUTLETS</b><br>Supply and install socket outlets in flush mounted wall boxes with white coloured cover plates  |          |      |    |  |  | 1 |
| 2.6.1 | 16 A single (switched)   | Material | each | 2  |  |  |   |
|       |  | Labour   | each | 2  |  |  |   |
| 2.6.2 | 16 A dual (switched)   | Material | each | 1  |  |  |   |
|       |  | Labour   | each | 1  |  |  |   |
| 3.6.3 | 16 A dedicated switched (flat earth pin type) with red cover plate   | Material | each |    |  |  |   |
|       |  | Labour   | each |    |  |  |   |
| 2.6.4 | York box c/w single 16Amp, SSO and wall mounted over drawbox   | Material | each |    |  |  |   |
|       |  | Labour   | each |    |  |  |   |
| 2.6.5 | 5 A un-switched suitable for mounting in round conduit box on wiring channel for light points  | Material | each | 2  |  |  |   |
|       |  | Labour   | each | 2  |  |  |   |
| 2,7   | <b>WORK STATION</b><br>Supply and install work stations in wall mounted power skirting (type as specified)   |          |      |    |  |  |   |
| 2.7.1 | 185 X 50 double compartment Alluminium power skirting, complete with cover, junctions and joints   | Material | each |    |  |  |   |
|       |  | Labour   | each |    |  |  |   |
| 2.7.2 | Work Station Points - 1 X telephone , 1 X Ethernet point, 1X Standard Socket and 1X Dedicated Socket Outlets   | Material | each |    |  |  |   |
|       |  | Labour   | each |    |  |  |   |

|        |  |          |      |   |  |
|--------|--|----------|------|---|--|
| 2.8    | <b>LUMINAIRES</b><br>Supply and install luminaires as per schedule including general connections and lamps. Refer to Luminaire Schedule in Specification.                        |          |      |   |  |
| 2.8.1  | 2X36W Open channel Ceiling mounted FL Fitting  | Supply   | each | 4 |  |
|        |  | Install  | each | 4 |  |
| 2.8.2  | Type NE 2 X 25 watt recessed Logus ML 1200x600mm; light fitting with Prismatic Diffuser  | Supply   | each |   |  |
|        |  | Install  | each |   |  |
| 2.8.3  | Type F Narrow Alpha Channel 1x 25w Osram Light fitting   | Supply   | each |   |  |
|        |  | Install  | each |   |  |
| 2.8.4  | Type K Surface mount vapour proof Dampa 2 x 25w light fitting  | Supply   | each |   |  |
|        |  | Install  | each |   |  |
| 2.8.5  | Type H1 Vapour proof Dampa 2 X 58W Low Temperature   | Supply   | each |   |  |
|        |  | Install  | each |   |  |
| 2.8.6  | Type B recessed LED downlight with Diffuser/ Natural white; 1w x19   | Supply   | each |   |  |
|        |  | Install  | each |   |  |
| 2.8.7  | Type L recessed LED downlight with Diffuser/ Natural white; 1w x12   | Supply   | each |   |  |
|        |  | Install  | each |   |  |
| 2.8.8  | Type O Open Channel Slimline Fluorescent 600m long light fitting   | Supply   | each |   |  |
|        |  | Install  | each |   |  |
| 2.8.9  | Type G Round Picanto Minibulkhead 1 x PL 26w/ECG   | Supply   | each |   |  |
|        |  | Install  | each |   |  |
| 2.9    | <b>CABLE TRUNKING</b><br>INDUSTRIAL type PVC cable trunking installed on roof trusses for data network cabling complete with covers and accessories as listed below.             |          |      |   |  |
| 2.9.1  | A) P8000 Trunking  | Material | m    | 2 |  |
|        | B) Internal / External elbows  | Material | No.  | 4 |  |
|        | C) T-Off splices   | Material | No.  | 2 |  |
|        | D) End Caps  | Material | No.  | 4 |  |
|        | E) Install and fix trunking to roof structure as per drawings; complete  | Labour   | m    | 6 |  |
| 2.10   | <b>DISTRIBUTION BOARDS</b><br>Supply and install new DB's circuit breakers fully equipped and pre-wired as per schedules and line diagrams.                                      |          |      |   |  |
| 2.10.2 | DB - New DB-G as per approved SLD  | Supply   | no.  |   |  |
|        |  | Install  | no.  |   |  |
| 2.10.3 | DB - New DB-Tel & Data as per approved SLD   | Supply   | no.  |   |  |
|        |  | Install  | no.  |   |  |
| 2.11   | <b>CONNECTION OF EQUIPMENT</b><br>Supply and install the required material for connecting fixed electrical equipment as listed :   |          |      |   |  |
| 2.11.1 | Single phase, 200L Geysers : Supply suitable flexible type pvc-sheathed galvanised steel conduit with end couplings and suitable wiring to connect geysers to Isolating switches | Material | each |   |  |
|        |  | Labour   | each |   |  |

|                                |  |                   |      |   |  |            |
|--------------------------------|--|-------------------|------|---|--|------------|
| 2.12                           | <b>EARTHING AND BONDING</b><br>Supply and install suitable earthing and bonding of geyser water pipes and other relevant items to comply with the standard specification requirements. |                   |      |   |  |            |
| 2.12.1                         | Earthing and bonding of geyser water pipes to comply with the standard specification requirements  | Material & Labour | sum  | 1 |  |            |
| 2.12.2                         | Supply and install 1.8m Phosphor-Bronze earth spike for earthing of DB-G isolated supply   | Material & Labour | no.  | 2 |  |            |
| 2.12.3                         | Connect earth spike to DB-G earth-bar with 10mm <sup>2</sup> green pvc insulated copper conductor through 20mm dia pvc conduit   | Material & Labour | m    | 1 |  |            |
| 2.12.4                         | Confirm earth measurement to within limits as set in specification   | Material & Labour | sum  | 1 |  |            |
| 2.13                           | <b>BLANK COVERS FOR TEL/DATA/OTHER DRAWBOXES</b><br>Supply and fit blank steel cover plates for blank drawboxes as listed :  |                   |      |   |  |            |
| 2.13.1                         | Blank covers for 4 x 4 boxes   | Supply & Fit      | each |   |  |            |
| 2.13.2                         | Blank cover for 65mm dia round conduit boxes   | Supply & Fit      | each |   |  |            |
| 2.14                           | <b>TESTING AND COMMISSIONING</b><br>Full testing of completed installation and issuing of Certificate of Compliance for Residence  |                   | sum  | 1 |  |            |
| <b>SUBTOTAL FOR BILL No. 2</b> |  |                   |      |   |  | <b>R -</b> |

**2****BILL No. 6 : Market Areas****- Electrical Installation (incl. tel, data & mechanical power supply)****Work Done**

| ITEM  | DESCRIPTION  | UNIT     | QTY  | RATE | AMOUNT |
|-------|--|----------|------|------|--------|
| 2,1   | <b>CONDUIT</b><br>Supply and install listed types of steel / pvc conduits for lights, plugs, power points, etc including joints, bushes, locknuts, cutting bending and threading, placed or <i>chased</i> in concrete floors, walls and ceiling voids. |          |      |      |        |
| 2.1.2 | 20 mm dia SABS marked PVC :  | Material | m    | 60   |        |
|       |  | Labour   | m    | 60   |        |
| 2.1.3 | 25 mm dia SABS marked PVC :  | Material | m    | 40   |        |
|       |  | Labour   | m    | 40   |        |
| 2.1.3 | 110 mm dia SABS marked PVC :   | Material | m    |      |        |
|       |  | Labour   | m    |      |        |
| 2.2.4 | 10kva Ups complete with 29 sealed lead acid at 80Ah with cabinet standby time 3hr  | Material | no.  |      |        |
|       |  | Labour   | no.  |      |        |
| 2,2   | <b>CONDUIT &amp; DRAW BOXES</b><br>Supply and install conduit boxes as listed including jointing to conduit with locknuts and bushes and placed in walls, concrete floors etc.   |          |      |      |        |
| 2.2.1 | 100 x 100 x 50 mm galvanised steel draw boxes for socket outlets & power points  | Material | each | 8    |        |
|       |  | Labour   | each | 8    |        |
| 2.2.2 | 100 x 50 x 50 mm galvanised steel draw boxes for L/switches  | Material | each | 10   |        |
|       |  | Labour   | each | 10   |        |
| 2.2.3 | 63mm dia PVC boxes (multiway) placed in roof spaces or mounted on wire trunking  | Material | each |      |        |
|       |  | Labour   | each |      |        |
| 2,3   | <b>CONDUCTORS</b><br>Supply and install listed PVC insulated copper conductors in conduit & wiring channel for lights, plugs and power points, data & tel points etc.  |          |      |      |        |
| 2.3.1 | Suffix 2,5 mm <sup>2</sup> pvc insulated   | Material | m    | 60   |        |
|       |  | Labour   | m    | 60   |        |
| 2.3.2 | General purpose wire 2,5 mm <sup>2</sup> pvc insulated   | Material | m    | 120  |        |
|       |  | Labour   | m    | 120  |        |
| 2.3.3 | General purpose wire 4,0 mm <sup>2</sup> pvc insulated   | Material | m    | 80   |        |
|       |  | Labour   | m    | 80   |        |
| 2.3.4 | 10,0 mm <sup>2</sup> pvc insulated   | Material | m    |      |        |
|       |  | Labour   | m    |      |        |
| 2.3.5 | 50mm <sup>2</sup> 4 core PVC Inculated PVC bedded SWA PVC sheeted 600/1000V Cable  | Material | m    |      |        |
|       |  | Labour   | m    |      |        |
| 2.3.6 | 25mm <sup>2</sup> 4 core PVC Inculated PVC bedded SWA PVC sheeted 600/1000V Cable  | Material | m    |      |        |
|       |  | Labour   | m    |      |        |
| 2.3.7 | 10mm <sup>2</sup> 4 core PVC Inculated PVC bedded SWA PVC sheeted 600/1000V Cable  | Material | m    |      |        |
|       |  | Labour   | m    |      |        |
| 2.3.8 | 2,5 mm <sup>2</sup> bare copper earthwire  | Material | m    | 120  |        |

|       |   |          |      |     |  |  |
|-------|---|----------|------|-----|--|--|
|       |   | Labour   | m    | 120 |  |  |
| 2.3.9 | Steel draw wire   | Material | m    | 60  |  |  |
|       |   | Labour   | m    | 60  |  |  |
| 2,4   | <b>ISOLATING SWITCHES FOR APPLIANCES</b><br><b>Supply and install the listed isolating switches for appliances in buildings c/w cover plates and connection to wiring</b>         |          |      |     |  |  |
| 2.4.1 | 20Amp Isolator for air conditioners, Stove, Extraction Fan, Hand Dryers and Outside Signages  | Material | each | 2   |  |  |
|       |   | Labour   | each | 2   |  |  |
| 2.4.2 | 20Amp Industrial/Weatherproof rotary isolator for cold rooms  | Material | each | 1   |  |  |
|       |   | Labour   | each | 1   |  |  |
| 2,5   | <b>LIGHT SWITCHES</b><br><b>Supply and install of 16 A light switches in flush mounted 100 x 50 x 50 mm boxes including white coloured cover plates and connection to wiring.</b> |          |      |     |  |  |
| 2.5.1 | Single lever one way  | Material | each | 4   |  |  |
|       |   | Labour   | each | 4   |  |  |
| 2.5.2 | Two lever, one way  | Material | each | 1   |  |  |
|       |   | Labour   | each | 1   |  |  |
| 2.5.3 | Single lever, two way   | Material | each | 2   |  |  |
|       |   | Labour   | each | 2   |  |  |
| 2.5.4 | Ceiling Mount- 360 Degree Dual Technology PIR Occupancy Sensor  | Material | each | 1   |  |  |
|       |   | Labour   | each | 1   |  |  |
| 2,6   | <b>SOCKET OUTLETS</b><br><b>Supply and install socket outlets in flush mounted wall boxes with white coloured cover plates</b>  |          |      |     |  |  |
| 2.6.1 | 16 A single (switched)  | Material | each | 8   |  |  |
|       |   | Labour   | each | 8   |  |  |
| 2.6.2 | 16 A dual (switched)  | Material | each | 2   |  |  |
|       |   | Labour   | each | 2   |  |  |
| 3.6.3 | 16 A dedicated switched (flat earth pin type) with red cover plate  | Material | each | 6   |  |  |
|       |   | Labour   | each | 6   |  |  |
| 2.6.4 | York box c/w single 16Amp, SSO and wall mounted over drawbox  | Material | each |     |  |  |
|       |   | Labour   | each |     |  |  |
| 2.6.5 | 5 A un-switched suitable for mounting in round conduit box on wiring channel for light points   | Material | each | 4   |  |  |
|       |   | Labour   | each | 4   |  |  |
| 2,7   | <b>WORK STATION</b><br><b>Supply and install work stations in wall mounted power skirting (type as specified)</b>   |          |      |     |  |  |
| 2.7.1 | 185 X 50 double compartment Alluminium power skirting, complete with cover, junctions and joints  | Material | each | 6   |  |  |
|       |   | Labour   | each | 6   |  |  |
| 2.7.2 | Work Station Points - 1 X telephone , 1 X Ethernet point, 1X Standard Socket and 1X Dedicated Socket Outlets  | Material | each | 2   |  |  |
|       |   | Labour   | each | 2   |  |  |

|        |  |          |      |    |  |
|--------|--|----------|------|----|--|
| 2.8    | <b>LUMINAIRES</b><br>Supply and install luminaires as per schedule including general connections and lamps. Refer to Luminaire Schedule in Specification.                        |          |      |    |  |
| 2.8.1  | 2X36W Open channel Ceiling mounted FL Fitting  | Supply   | each | 4  |  |
|        |  | Install  | each | 4  |  |
| 2.8.2  | 2X18W CFL Weatherproof surface mounted Light Fitting   | Supply   | each | 4  |  |
|        |  | Install  | each | 4  |  |
| 2.8.3  | Type F Narrow Alpha Channel 1x 25w Osram Light fitting   | Supply   | each |    |  |
|        |  | Install  | each |    |  |
| 2.8.4  | Type K Surface mount vapour proof Dampa 2 x 25w light fitting  | Supply   | each |    |  |
|        |  | Install  | each |    |  |
| 2.8.5  | Type H1 Vapour proof Dampa 2 X 58W Low Temperature   | Supply   | each |    |  |
|        |  | Install  | each |    |  |
| 2.8.6  | Type B recessed LED downlight with Diffuser/ Natural white; 1w x19   | Supply   | each |    |  |
|        |  | Install  | each |    |  |
| 2.8.7  | Type L recessed LED downlight with Diffuser/ Natural white; 1w x12   | Supply   | each |    |  |
|        |  | Install  | each |    |  |
| 2.8.8  | Type O Open Channel Slimline Fluorescent 600m long light fitting   | Supply   | each |    |  |
|        |  | Install  | each |    |  |
| 2.8.9  | Type G Round Picanto Minibulkhead 1 x PL 26w/ECG   | Supply   | each |    |  |
|        |  | Install  | each |    |  |
| 2.9    | <b>CABLE TRUNKING</b><br>INDUSTRIAL type PVC cable trunking installed on roof trusses for data network cabling complete with covers and accessories as listed below.             |          |      |    |  |
| 2.9.1  | A) P8000 Trunking  | Material | m    | 6  |  |
|        | B) Internal / External elbows  | Material | No.  | 6  |  |
|        | C) T-Off splices   | Material | No.  | 4  |  |
|        | D) End Caps  | Material | No.  | 12 |  |
|        | E) Install and fix trunking to roof structure as per drawings; complete  | Labour   | m    | 12 |  |
| 2.10   | <b>DISTRIBUTION BOARDS</b><br>Supply and install new DB's circuit breakers fully equipped and pre-wired as per schedules and line diagrams.                                      |          |      |    |  |
| 2.10.2 | DB - New DB-G as per approved SLD  | Supply   | no.  | 1  |  |
|        |  | Install  | no.  | 1  |  |
| 2.10.3 | DB - New DB-Tel & Data as per approved SLD   | Supply   | no.  | 1  |  |
|        |  | Install  | no.  | 1  |  |
| 2.11   | <b>CONNECTION OF EQUIPMENT</b><br>Supply and install the required material for connecting fixed electrical equipment as listed :   |          |      |    |  |
| 2.11.1 | Single phase, 100L Geysers : Supply suitable flexible type pvc-sheathed galvanised steel conduit with end couplings and suitable wiring to connect geysers to Isolating switches | Material | each | 1  |  |
|        |  | Labour   | each | 1  |  |

|                                |  |                   |      |   |  |            |
|--------------------------------|--|-------------------|------|---|--|------------|
| 2.12                           | <b>EARTHING AND BONDING</b><br>Supply and install suitable earthing and bonding of geyser water pipes and other relevant items to comply with the standard specification requirements. |                   |      |   |  |            |
| 2.12.1                         | Earthing and bonding of geyser water pipes to comply with the standard specification requirements  | Material & Labour | sum  | 1 |  |            |
| 2.12.2                         | Supply and install 1.8m Phosphor-Bronze earth spike for earthing of DB-G isolated supply   | Material & Labour | no.  | 2 |  |            |
| 2.12.3                         | Connect earth spike to DB-G earth-bar with 10mm <sup>2</sup> green pvc insulated copper conductor through 20mm dia pvc conduit   | Material & Labour | m    | 1 |  |            |
| 2.12.4                         | Confirm earth measurement to within limits as set in specification   | Material & Labour | sum  | 1 |  |            |
| 2.13                           | <b>BLANK COVERS FOR TEL/DATA/OTHER DRAWBOXES</b><br>Supply and fit blank steel cover plates for blank drawboxes as listed :  |                   |      |   |  |            |
| 2.13.1                         | Blank covers for 4 x 4 boxes   | Supply & Fit      | each |   |  |            |
| 2.13.2                         | Blank cover for 65mm dia round conduit boxes   | Supply & Fit      | each |   |  |            |
| 2.14                           | <b>TESTING AND COMMISSIONING</b><br>Full testing of completed installation and issuing of Certificate of Compliance for Residence  |                   | sum  | 1 |  |            |
| <b>SUBTOTAL FOR BILL No. 2</b> |  |                   |      |   |  | <b>R -</b> |

**2****BILL No. 7 : Passage Area****- Electrical Installation (incl. tel, data & mechanical power supply)****Work Done**

| ITEM  | DESCRIPTION  | UNIT     | QTY  | RATE | AMOUNT |
|-------|--|----------|------|------|--------|
| 2,1   | <b>CONDUIT</b><br>Supply and install listed types of steel / pvc conduits for lights, plugs, power points, etc including joints, bushes, locknuts, cutting bending and threading, placed or <i>chased</i> in concrete floors, walls and ceiling voids. |          |      |      |        |
| 2.1.2 | 20 mm dia SABS marked PVC :  | Material | m    | 250  |        |
|       |  | Labour   | m    | 250  |        |
| 2.1.3 | 25 mm dia SABS marked PVC :  | Material | m    | 220  |        |
|       |  | Labour   | m    | 220  |        |
| 2.1.3 | 110 mm dia SABS marked PVC :   | Material | m    |      |        |
|       |  | Labour   | m    |      |        |
| 2.2.4 | 10kva Ups complete with 29 sealed lead acid at 80Ah with cabinet standby time 3hr  | Material | no.  |      |        |
|       |  | Labour   | no.  |      |        |
| 2,2   | <b>CONDUIT &amp; DRAW BOXES</b><br>Supply and install conduit boxes as listed including jointing to conduit with locknuts and bushes and placed in walls, concrete floors etc.   |          |      |      |        |
| 2.2.1 | 100 x 100 x 50 mm galvanised steel draw boxes for socket outlets & power points  | Material | each | 22   |        |
|       |  | Labour   | each | 22   |        |
| 2.2.2 | 100 x 50 x 50 mm galvanised steel draw boxes for L/switches  | Material | each | 18   |        |
|       |  | Labour   | each | 18   |        |
| 2.2.3 | 63mm dia PVC boxes (multiway) placed in roof spaces or mounted on wire trunking  | Material | each |      |        |
|       |  | Labour   | each |      |        |
| 2,3   | <b>CONDUCTORS</b><br>Supply and install listed PVC insulated copper conductors in conduit & wiring channel for lights, plugs and power points, data & tel points etc.  |          |      |      |        |
| 2.3.1 | Suffix 2,5 mm <sup>2</sup> pvc insulated   | Material | m    | 250  |        |
|       |  | Labour   | m    | 250  |        |
| 2.3.2 | General purpose wire 2,5 mm <sup>2</sup> pvc insulated   | Material | m    | 500  |        |
|       |  | Labour   | m    | 500  |        |
| 2.3.3 | General purpose wire 4,0 mm <sup>2</sup> pvc insulated   | Material | m    |      |        |
|       |  | Labour   | m    |      |        |
| 2.3.4 | 10,0 mm <sup>2</sup> pvc insulated   | Material | m    |      |        |
|       |  | Labour   | m    |      |        |
| 2.3.5 | 50mm <sup>2</sup> 4 core PVC Inculated PVC bedded SWA PVC sheathed 600/1000V Cable   | Material | m    |      |        |
|       |  | Labour   | m    |      |        |
| 2.3.6 | 25mm <sup>2</sup> 4 core PVC Inculated PVC bedded SWA PVC sheathed 600/1000V Cable   | Material | m    |      |        |
|       |  | Labour   | m    |      |        |
| 2.3.7 | 10mm <sup>2</sup> 4 core PVC Inculated PVC bedded SWA PVC sheathed 600/1000V Cable   | Material | m    |      |        |
|       |  | Labour   | m    |      |        |
| 2.3.8 | 2,5 mm <sup>2</sup> bare copper earthwire  | Material | m    | 400  |        |



|       |   |          |      |     |  |  |
|-------|---|----------|------|-----|--|--|
|       |   | Labour   | m    | 400 |  |  |
| 2.3.9 | Steel draw wire   | Material | m    | 100 |  |  |
|       |   | Labour   | m    | 150 |  |  |
|       |   |          |      | 150 |  |  |
| 2,4   | <b>ISOLATING SWITCHES FOR APPLIANCES</b><br><b>Supply and install the listed isolating switches for appliances in buildings c/w cover plates and connection to wiring</b>         |          |      |     |  |  |
| 2.4.1 | 20Amp Isolator for air conditioners, Stove, Extraction Fan, Hand Dryers and Outside Signages  | Material | each |     |  |  |
|       |   | Labour   | each |     |  |  |
| 2.4.2 | 20Amp Industrial/Weatherproof rotary isolator for cold rooms  | Material | each |     |  |  |
|       |   | Labour   | each |     |  |  |
| 2,5   | <b>LIGHT SWITCHES</b><br><b>Supply and install of 16 A light switches in flush mounted 100 x 50 x 50 mm boxes including white coloured cover plates and connection to wiring.</b> |          |      |     |  |  |
| 2.5.1 | Single lever one way  | Material | each | 2   |  |  |
|       |   | Labour   | each | 2   |  |  |
| 2.5.2 | Two lever, one way  | Material | each | 1   |  |  |
|       |   | Labour   | each | 1   |  |  |
| 2.5.3 | Single lever, two way   | Material | each | 1   |  |  |
|       |   | Labour   | each | 1   |  |  |
| 2.5.4 | Ceiling Mount- 360 Degree Dual Technology PIR Occupancy Sensor  | Material | each | 1   |  |  |
|       |   | Labour   | each | 1   |  |  |
| 2,6   | <b>SOCKET OUTLETS</b><br><b>Supply and install socket outlets in flush mounted wall boxes with white coloured cover plates</b>  |          |      |     |  |  |
| 2.6.1 | 16 A single (switched)  | Material | each | 2   |  |  |
|       |   | Labour   | each | 2   |  |  |
| 2.6.2 | 16 A dual (switched)  | Material | each | 2   |  |  |
|       |   | Labour   | each | 2   |  |  |
| 3.6.3 | 16 A dedicated switched (flat earth pin type) with red cover plate  | Material | each | 4   |  |  |
|       |   | Labour   | each | 4   |  |  |
| 2.6.4 | York box c/w single 16Amp, SSO and wall mounted over drawbox  | Material | each |     |  |  |
|       |   | Labour   | each |     |  |  |
| 2.6.5 | 5 A un-switched suitable for mounting in round conduit box on wiring channel for light points   | Material | each | 20  |  |  |
|       |   | Labour   | each | 20  |  |  |
| 2,7   | <b>WORK STATION</b><br><b>Supply and install work stations in wall mounted power skirting (type as specified)</b>   |          |      |     |  |  |
| 2.7.1 | 185 X 50 double compartment Alluminium power skirting, complete with cover, junctions and joints  | Material | each |     |  |  |
|       |   | Labour   | each |     |  |  |
| 2.7.2 | Work Station Points - 1 X telephone , 1 X Ethernet point, 1X Standard Socket and 1X Dedicated Socket Outlets  | Material | each |     |  |  |
|       |   | Labour   | each |     |  |  |

|        |  |          |      |    |  |
|--------|--|----------|------|----|--|
| 2.8    | <b>LUMINAIRES</b><br>Supply and install luminaires as per schedule including general connections and lamps. Refer to Luminaire Schedule in Specification.                        |          |      |    |  |
| 2.8.1  | 2X36W Recessed Ceiling mounted FL Fitting with Prismatic Diffusers   | Supply   | each | 68 |  |
|        |  | Install  | each | 68 |  |
| 2.8.2  | Type NE 2 X 25 watt recessed Logus ML 1200x600mm; light fitting with Prismatic Diffuser  | Supply   | each |    |  |
|        |  | Install  | each |    |  |
| 2.8.3  | Type F Narrow Alpha Channel 1x 25w Osram Light fitting   | Supply   | each |    |  |
|        |  | Install  | each |    |  |
| 2.8.4  | Type K Surface mount vapour proof Dampa 2 x 25w light fitting  | Supply   | each |    |  |
|        |  | Install  | each |    |  |
| 2.8.5  | Type H1 Vapour proof Dampa 2 X 58W Low Temperature   | Supply   | each |    |  |
|        |  | Install  | each |    |  |
| 2.8.6  | Type B recessed LED downlight with Diffuser/ Natural white; 1w x19   | Supply   | each |    |  |
|        |  | Install  | each |    |  |
| 2.8.7  | Type L recessed LED downlight with Diffuser/ Natural white; 1w x12   | Supply   | each |    |  |
|        |  | Install  | each |    |  |
| 2.8.8  | Type O Open Channel Slimline Fluorescent 600m long light fitting   | Supply   | each |    |  |
|        |  | Install  | each |    |  |
| 2.8.9  | Type G Round Picanto Minibulkhead 1 x PL 26w/ECG   | Supply   | each |    |  |
|        |  | Install  | each |    |  |
| 2.9    | <b>CABLE TRUNKING</b><br>INDUSTRIAL type PVC cable trunking installed on roof trusses for data network cabling complete with covers and accessories as listed below.             |          |      |    |  |
| 2.9.1  | A) P8000 Trunking  | Material | m    | 10 |  |
|        | B) Internal / External elbows  | Material | No.  | 8  |  |
|        | C) T-Off splices   | Material | No.  | 8  |  |
|        | D) End Caps  | Material | No.  | 6  |  |
|        | E) Install and fix trunking to roof structure as per drawings; complete  | Labour   | m    | 6  |  |
| 2.10   | <b>DISTRIBUTION BOARDS</b><br>Supply and install new DB's circuit breakers fully equipped and pre-wired as per schedules and line diagrams.                                      |          |      |    |  |
| 2.10.2 | DB - New DB-G as per approved SLD  | Supply   | no.  |    |  |
|        |  | Install  | no.  |    |  |
| 2.10.3 | DB - New DB-Tel & Data as per approved SLD   | Supply   | no.  |    |  |
|        |  | Install  | no.  |    |  |
| 2.11   | <b>CONNECTION OF EQUIPMENT</b><br>Supply and install the required material for connecting fixed electrical equipment as listed :   |          |      |    |  |
| 2.11.1 | Single phase, 200L Geysers : Supply suitable flexible type pvc-sheathed galvanised steel conduit with end couplings and suitable wiring to connect geysers to Isolating switches | Material | each |    |  |
|        |  | Labour   | each |    |  |

|                                |  |                   |      |   |  |            |
|--------------------------------|--|-------------------|------|---|--|------------|
| 2.12                           | <b>EARTHING AND BONDING</b><br>Supply and install suitable earthing and bonding of geyser water pipes and other relevant items to comply with the standard specification requirements. |                   |      |   |  |            |
| 2.12.1                         | Earthing and bonding of geyser water pipes to comply with the standard specification requirements  | Material & Labour | sum  | 1 |  |            |
| 2.12.2                         | Supply and install 1.8m Phosphor-Bronze earth spike for earthing of DB-G isolated supply   | Material & Labour | no.  |   |  |            |
| 2.12.3                         | Connect earth spike to DB-G earth-bar with 10mm <sup>2</sup> green pvc insulated copper conductor through 20mm dia pvc conduit   | Material & Labour | m    |   |  |            |
| 2.12.4                         | Confirm earth measurement to within limits as set in specification   | Material & Labour | sum  | 4 |  |            |
| 2.13                           | <b>BLANK COVERS FOR TEL/DATA/OTHER DRAWBOXES</b><br>Supply and fit blank steel cover plates for blank drawboxes as listed :  |                   |      |   |  |            |
| 2.13.1                         | Blank covers for 4 x 4 boxes   | Supply & Fit      | each |   |  |            |
| 2.13.2                         | Blank cover for 65mm dia round conduit boxes   | Supply & Fit      | each |   |  |            |
| 2.14                           | <b>TESTING AND COMMISSIONING</b><br>Full testing of completed installation and issuing of Certificate of Compliance for Residence  |                   | sum  | 1 |  |            |
| <b>SUBTOTAL FOR BILL No. 2</b> |  |                   |      |   |  | <b>R -</b> |

**2****BILL No. 6 : Market Areas****- Electrical Installation (incl. tel, data & mechanical power supply)****Work Done**

| ITEM  | DESCRIPTION  | UNIT     | QTY  | RATE | AMOUNT |
|-------|--|----------|------|------|--------|
| 2,1   | <b>CONDUIT</b><br>Supply and install listed types of steel / pvc conduits for lights, plugs, power points, etc including joints, bushes, locknuts, cutting bending and threading, placed or <i>chased</i> in concrete floors, walls and ceiling voids. |          |      |      |        |
| 2.1.2 | 20 mm dia SABS marked PVC :  | Material | m    | 30   |        |
|       |  | Labour   | m    | 30   |        |
| 2.1.3 | 25 mm dia SABS marked PVC :  | Material | m    | 25   |        |
|       |  | Labour   | m    | 25   |        |
| 2.1.3 | 110 mm dia SABS marked PVC :   | Material | m    |      |        |
|       |  | Labour   | m    |      |        |
| 2.2.4 | 10kva Ups complete with 29 sealed lead acid at 80Ah with cabinet standby time 3hr  | Material | no.  |      |        |
|       |  | Labour   | no.  |      |        |
| 2,2   | <b>CONDUIT &amp; DRAW BOXES</b><br>Supply and install conduit boxes as listed including jointing to conduit with locknuts and bushes and placed in walls, concrete floors etc.   |          |      |      |        |
| 2.2.1 | 100 x 100 x 50 mm galvanised steel draw boxes for socket outlets & power points  | Material | each | 6    |        |
|       |  | Labour   | each | 6    |        |
| 2.2.2 | 100 x 50 x 50 mm galvanised steel draw boxes for L/switches  | Material | each | 4    |        |
|       |  | Labour   | each | 4    |        |
| 2.2.3 | 63mm dia PVC boxes (multiway) placed in roof spaces or mounted on wire trunking  | Material | each |      |        |
|       |  | Labour   | each |      |        |
| 2,3   | <b>CONDUCTORS</b><br>Supply and install listed PVC insulated copper conductors in conduit & wiring channel for lights, plugs and power points, data & tel points etc.  |          |      |      |        |
| 2.3.1 | Suffix 2,5 mm <sup>2</sup> pvc insulated   | Material | m    | 30   |        |
|       |  | Labour   | m    | 30   |        |
| 2.3.2 | General purpose wire 2,5 mm <sup>2</sup> pvc insulated   | Material | m    | 60   |        |
|       |  | Labour   | m    | 60   |        |
| 2.3.3 | General purpose wire 4,0 mm <sup>2</sup> pvc insulated   | Material | m    | 40   |        |
|       |  | Labour   | m    | 40   |        |
| 2.3.4 | 10,0 mm <sup>2</sup> pvc insulated   | Material | m    |      |        |
|       |  | Labour   | m    |      |        |
| 2.3.5 | 50mm <sup>2</sup> 4 core PVC Inculated PVC bedded SWA PVC sheathed 600/1000V Cable   | Material | m    |      |        |
|       |  | Labour   | m    |      |        |
| 2.3.6 | 25mm <sup>2</sup> 4 core PVC Inculated PVC bedded SWA PVC sheathed 600/1000V Cable   | Material | m    |      |        |
|       |  | Labour   | m    |      |        |
| 2.3.7 | 10mm <sup>2</sup> 4 core PVC Inculated PVC bedded SWA PVC sheathed 600/1000V Cable   | Material | m    |      |        |
|       |  | Labour   | m    |      |        |
| 2.3.8 | 2,5 mm <sup>2</sup> bare copper earthwire  | Material | m    | 40   |        |

|       |  |          |      |    |  |  |
|-------|--|----------|------|----|--|--|
|       |  | Labour   | m    | 40 |  |  |
| 2.3.9 | Steel draw wire  | Material | m    | 40 |  |  |
|       |  | Labour   | m    | 20 |  |  |
| 2.4   | <b>ISOLATING SWITCHES FOR APPLIANCES</b><br>Supply and install the listed isolating switches for appliances in buildings c/w cover plates and connection to wiring         |          |      |    |  |  |
| 2.4.1 | 20Amp Isolator for air conditioners, Stove, Extraction Fan, Hand Dryers and Outside Signages   | Material | each | 1  |  |  |
|       |  | Labour   | each | 1  |  |  |
| 2.4.2 | 20Amp Industrial/Weatherproof rotary isolator for cold rooms   | Material | each | 1  |  |  |
|       |  | Labour   | each | 1  |  |  |
| 2.5   | <b>LIGHT SWITCHES</b><br>Supply and install of 16 A light switches in flush mounted 100 x 50 x 50 mm boxes including white coloured cover plates and connection to wiring. |          |      |    |  |  |
| 2.5.1 | Single lever one way   | Material | each | 2  |  |  |
|       |  | Labour   | each | 2  |  |  |
| 2.5.2 | Two lever, one way   | Material | each |    |  |  |
|       |  | Labour   | each |    |  |  |
| 2.5.3 | Single lever, two way  | Material | each |    |  |  |
|       |  | Labour   | each |    |  |  |
| 2.5.4 | Ceiling Mount- 360 Degree Dual Technology PIR Occupancy Sensor   | Material | each |    |  |  |
|       |  | Labour   | each |    |  |  |
| 2.6   | <b>SOCKET OUTLETS</b><br>Supply and install socket outlets in flush mounted wall boxes with white coloured cover plates  |          |      |    |  |  |
| 2.6.1 | 16 A single (switched)   | Material | each | 6  |  |  |
|       |  | Labour   | each | 6  |  |  |
| 2.6.2 | 16 A dual (switched)   | Material | each | 2  |  |  |
|       |  | Labour   | each | 2  |  |  |
| 3.6.3 | 16 A dedicated switched (flat earth pin type) with red cover plate   | Material | each | 4  |  |  |
|       |  | Labour   | each | 4  |  |  |
| 2.6.4 | York box c/w single 16Amp, SSO and wall mounted over drawbox   | Material | each |    |  |  |
|       |  | Labour   | each |    |  |  |
| 2.6.5 | 5 A un-switched suitable for mounting in round conduit box on wiring channel for light points  | Material | each | 2  |  |  |
|       |  | Labour   | each | 2  |  |  |
| 2.7   | <b>EXTRACTION FANS</b><br>Supply and install Extraction/ Circulation Fans including connection. See Detail Specification   |          |      |    |  |  |
| 2.7.1 | Extraction Fan   | Material | each | 1  |  |  |
|       |  | Labour   | each | 1  |  |  |
| 2.7.2 |  | Material | each |    |  |  |
|       |  | Labour   | each |    |  |  |

|        |  |          |      |   |  |
|--------|--|----------|------|---|--|
| 2.8    | <b>LUMINAIRES</b><br>Supply and install luminaires as per schedule including general connections and lamps. Refer to Luminaire Schedule in Specification.                        |          |      |   |  |
| 2.8.1  | 2X36W Vapourproof Ceiling mounted FL Fitting   | Supply   | each | 4 |  |
|        |  | Install  | each | 4 |  |
| 2.8.2  | Type NE 2 X 25 watt recessed Logus ML 1200x600mm; light fitting with Prismatic Diffuser  | Supply   | each |   |  |
|        |  | Install  | each |   |  |
| 2.8.3  | Type F Narrow Alpha Channel 1x 25w Osram Light fitting   | Supply   | each |   |  |
|        |  | Install  | each |   |  |
| 2.8.4  | Type K Surface mount vapour proof Dampa 2 x 25w light fitting  | Supply   | each |   |  |
|        |  | Install  | each |   |  |
| 2.8.5  | Type H1 Vapour proof Dampa 2 X 58W Low Temperature   | Supply   | each |   |  |
|        |  | Install  | each |   |  |
| 2.8.6  | Type B recessed LED downlight with Diffuser/ Natural white; 1w x19   | Supply   | each |   |  |
|        |  | Install  | each |   |  |
| 2.8.7  | Type L recessed LED downlight with Diffuser/ Natural white; 1w x12   | Supply   | each |   |  |
|        |  | Install  | each |   |  |
| 2.8.8  | Type O Open Channel Slimline Fluorescent 600m long light fitting   | Supply   | each |   |  |
|        |  | Install  | each |   |  |
| 2.8.9  | Type G Round Picanto Minibulkhead 1 x PL 26w/ECG   | Supply   | each |   |  |
|        |  | Install  | each |   |  |
| 2.9    | <b>CABLE TRUNKING</b><br>INDUSTRIAL type PVC cable trunking installed on roof trusses for data network cabling complete with covers and accessories as listed below.             |          |      |   |  |
| 2.9.1  | A) P8000 Trunking  | Material | m    |   |  |
|        | B) Internal / External elbows  | Material | No.  | 4 |  |
|        | C) T-Off splices   | Material | No.  | 2 |  |
|        | D) End Caps  | Material | No.  | 4 |  |
|        | E) Install and fix trunking to roof structure as per drawings; complete  | Labour   | m    | 8 |  |
| 2.10   | <b>DISTRIBUTION BOARDS</b><br>Supply and install new DB's circuit breakers fully equipped and pre-wired as per schedules and line diagrams.                                      |          |      |   |  |
| 2.10.2 | DB - New DB-G as per approved SLD  | Supply   | no.  |   |  |
|        |  | Install  | no.  |   |  |
| 2.10.3 | DB - New DB-Tel & Data as per approved SLD   | Supply   | no.  |   |  |
|        |  | Install  | no.  |   |  |
| 2.11   | <b>CONNECTION OF EQUIPMENT</b><br>Supply and install the required material for connecting fixed electrical equipment as listed :   |          |      |   |  |
| 2.11.1 | Single phase, 200L Geysers : Supply suitable flexible type pvc-sheathed galvanised steel conduit with end couplings and suitable wiring to connect geysers to Isolating switches | Material | each |   |  |
|        |  | Labour   | each |   |  |

|                                |  |                   |      |   |  |            |
|--------------------------------|--|-------------------|------|---|--|------------|
| 2.12                           | <b>EARTHING AND BONDING</b><br>Supply and install suitable earthing and bonding of geyser water pipes and other relevant items to comply with the standard specification requirements. |                   |      |   |  |            |
| 2.12.1                         | Earthing and bonding of geyser water pipes to comply with the standard specification requirements  | Material & Labour | sum  | 1 |  |            |
| 2.12.2                         | Supply and install 1.8m Phosphor-Bronze earth spike for earthing of DB-G isolated supply   | Material & Labour | no.  | 2 |  |            |
| 2.12.3                         | Connect earth spike to DB-G earth-bar with 10mm <sup>2</sup> green pvc insulated copper conductor through 20mm dia pvc conduit   | Material & Labour | m    | 2 |  |            |
| 2.12.4                         | Confirm earth measurement to within limits as set in specification   | Material & Labour | sum  | 2 |  |            |
| 2.13                           | <b>BLANK COVERS FOR TEL/DATA/OTHER DRAWBOXES</b><br>Supply and fit blank steel cover plates for blank drawboxes as listed :  |                   |      |   |  |            |
| 2.13.1                         | Blank covers for 4 x 4 boxes   | Supply & Fit      | each |   |  |            |
| 2.13.2                         | Blank cover for 65mm dia round conduit boxes   | Supply & Fit      | each |   |  |            |
| 2.14                           | <b>TESTING AND COMMISSIONING</b><br>Full testing of completed installation and issuing of Certificate of Compliance for Residence  |                   | sum  | 1 |  |            |
| <b>SUBTOTAL FOR BILL No. 2</b> |  |                   |      |   |  | <b>R -</b> |

**2****BILL No. 6 : Market Areas****- Electrical Installation (incl. tel, data & mechanical power supply)****Work Done**

| ITEM  | DESCRIPTION  | UNIT     | QTY  | RATE | AMOUNT |
|-------|--|----------|------|------|--------|
| 2,1   | <b>CONDUIT</b><br>Supply and install listed types of steel / pvc conduits for lights, plugs, power points, etc including joints, bushes, locknuts, cutting bending and threading, placed or <i>chased</i> in concrete floors, walls and ceiling voids. |          |      |      |        |
| 2.1.2 | 20 mm dia SABS marked PVC :  | Material | m    | 75   |        |
|       |  | Labour   | m    | 75   |        |
| 2.1.3 | 25 mm dia SABS marked PVC :  | Material | m    | 55   |        |
|       |  | Labour   | m    | 55   |        |
| 2.1.3 | 110 mm dia SABS marked PVC :   | Material | m    |      |        |
|       |  | Labour   | m    |      |        |
| 2.2.4 | 10kva Ups complete with 29 sealed lead acid at 80Ah with cabinet standby time 3hr  | Material | no.  |      |        |
|       |  | Labour   | no.  |      |        |
| 2,2   | <b>CONDUIT &amp; DRAW BOXES</b><br>Supply and install conduit boxes as listed including jointing to conduit with locknuts and bushes and placed in walls, concrete floors etc.   |          |      |      |        |
| 2.2.1 | 100 x 100 x 50 mm galvanised steel draw boxes for socket outlets & power points  | Material | each | 6    |        |
|       |  | Labour   | each | 6    |        |
| 2.2.2 | 100 x 50 x 50 mm galvanised steel draw boxes for L/switches  | Material | each | 2    |        |
|       |  | Labour   | each | 2    |        |
| 2.2.3 | 63mm dia PVC boxes (multiway) placed in roof spaces or mounted on wire trunking  | Material | each |      |        |
|       |  | Labour   | each |      |        |
| 2,3   | <b>CONDUCTORS</b><br>Supply and install listed PVC insulated copper conductors in conduit & wiring channel for lights, plugs and power points, data & tel points etc.  |          |      |      |        |
| 2.3.1 | Suffix 2,5 mm <sup>2</sup> pvc insulated   | Material | m    | 70   |        |
|       |  | Labour   | m    | 70   |        |
| 2.3.2 | General purpose wire 2,5 mm <sup>2</sup> pvc insulated   | Material | m    | 140  |        |
|       |  | Labour   | m    | 140  |        |
| 2.3.3 | General purpose wire 4,0 mm <sup>2</sup> pvc insulated   | Material | m    | 130  |        |
|       |  | Labour   | m    | 130  |        |
| 2.3.4 | 10,0 mm <sup>2</sup> pvc insulated   | Material | m    |      |        |
|       |  | Labour   | m    |      |        |
| 2.3.5 | 50mm <sup>2</sup> 4 core PVC Inculated PVC bedded SWA PVC sheeted 600/1000V Cable  | Material | m    |      |        |
|       |  | Labour   | m    |      |        |
| 2.3.6 | 25mm <sup>2</sup> 4 core PVC Inculated PVC bedded SWA PVC sheeted 600/1000V Cable  | Material | m    |      |        |
|       |  | Labour   | m    |      |        |
| 2.3.7 | 10mm <sup>2</sup> 4 core PVC Inculated PVC bedded SWA PVC sheeted 600/1000V Cable  | Material | m    |      |        |
|       |  | Labour   | m    |      |        |
| 2.3.8 | 2,5 mm <sup>2</sup> bare copper earthwire  | Material | m    | 140  |        |



|       |   |          |      |     |  |  |
|-------|---|----------|------|-----|--|--|
|       |   | Labour   | m    | 140 |  |  |
| 2.3.9 | Steel draw wire   | Material | m    | 80  |  |  |
|       |   | Labour   | m    | 80  |  |  |
| 2,4   | <b>ISOLATING SWITCHES FOR APPLIANCES</b><br><b>Supply and install the listed isolating switches for appliances in buildings c/w cover plates and connection to wiring</b>         |          |      |     |  |  |
| 2.4.1 | 20Amp Isolator for air conditioners, Stove, Extraction Fan, Hand Dryers and Outside Signages  | Material | each | 2   |  |  |
|       |   | Labour   | each | 2   |  |  |
| 2.4.2 | 20Amp Industrial/Weatherproof rotary isolator for cold rooms  | Material | each |     |  |  |
|       |   | Labour   | each |     |  |  |
| 2,5   | <b>LIGHT SWITCHES</b><br><b>Supply and install of 16 A light switches in flush mounted 100 x 50 x 50 mm boxes including white coloured cover plates and connection to wiring.</b> |          |      |     |  |  |
| 2.5.1 | Single lever one way  | Material | each | 4   |  |  |
|       |   | Labour   | each | 4   |  |  |
| 2.5.2 | Two lever, one way  | Material | each | 1   |  |  |
|       |   | Labour   | each | 1   |  |  |
| 2.5.3 | Single lever, two way   | Material | each | 2   |  |  |
|       |   | Labour   | each | 2   |  |  |
| 2.5.4 | Ceiling Mount- 360 Degree Dual Technology PIR Occupancy Sensor  | Material | each | 1   |  |  |
|       |   | Labour   | each | 1   |  |  |
| 2,6   | <b>SOCKET OUTLETS</b><br><b>Supply and install socket outlets in flush mounted wall boxes with white coloured cover plates</b>  |          |      |     |  |  |
| 2.6.1 | 16 A single (switched)  | Material | each | 6   |  |  |
|       |   | Labour   | each | 6   |  |  |
| 2.6.2 | 16 A dual (switched)  | Material | each | 2   |  |  |
|       |   | Labour   | each | 2   |  |  |
| 3.6.3 | 16 A dedicated switched (flat earth pin type) with red cover plate  | Material | each | 4   |  |  |
|       |   | Labour   | each | 4   |  |  |
| 2.6.4 | York box c/w single 16Amp, SSO and wall mounted over drawbox  | Material | each |     |  |  |
|       |   | Labour   | each |     |  |  |
| 2.6.5 | 5 A un-switched suitable for mounting in round conduit box on wiring channel for light points   | Material | each | 12  |  |  |
|       |   | Labour   | each | 2   |  |  |
| 2,7   | <b>WORK STATION</b><br><b>Supply and install work stations in wall mounted power skirting (type as specified)</b>   |          |      |     |  |  |
| 2.7.1 | 185 X 50 double compartment Alluminium power skirting, complete with cover, junctions and joints  | Material | each |     |  |  |
|       |   | Labour   | each |     |  |  |
| 2.7.2 | Work Station Points - 1 X telephone , 1 X Ethernet point, 1X Standard Socket and 1X Dedicated Socket Outlets  | Material | each |     |  |  |
|       |   | Labour   | each |     |  |  |

|        |  |          |      |    |  |
|--------|--|----------|------|----|--|
| 2.8    | <b>LUMINAIRES</b><br>Supply and install luminaires as per schedule including general connections and lamps. Refer to Luminaire Schedule in Specification.                        |          |      |    |  |
| 2.8.1  | 2X36W Vapourproof Ceiling mounted FL Fitting   | Supply   | each | 8  |  |
|        |  | Install  | each | 8  |  |
| 2.8.2  | Type NE 2 X 25 watt recessed Logus ML 1200x600mm; light fitting with Prismatic Diffuser  | Supply   | each |    |  |
|        |  | Install  | each |    |  |
| 2.8.3  | Type F Narrow Alpha Channel 1x 25w Osram Light fitting   | Supply   | each |    |  |
|        |  | Install  | each |    |  |
| 2.8.4  | Type K Surface mount vapour proof Dampa 2 x 25w light fitting  | Supply   | each |    |  |
|        |  | Install  | each |    |  |
| 2.8.5  | Type H1 Vapour proof Dampa 2 X 58W Low Temperature   | Supply   | each |    |  |
|        |  | Install  | each |    |  |
| 2.8.6  | Type B recessed LED downlight with Diffuser/ Natural white; 1w x19   | Supply   | each |    |  |
|        |  | Install  | each |    |  |
| 2.8.7  | Type L recessed LED downlight with Diffuser/ Natural white; 1w x12   | Supply   | each |    |  |
|        |  | Install  | each |    |  |
| 2.8.8  | Type O Open Channel Slimline Fluorescent 600m long light fitting   | Supply   | each |    |  |
|        |  | Install  | each |    |  |
| 2.8.9  | Type G Round Picanto Minibulkhead 1 x PL 26w/ECG   | Supply   | each |    |  |
|        |  | Install  | each |    |  |
| 2.9    | <b>CABLE TRUNKING</b><br>INDUSTRIAL type PVC cable trunking installed on roof trusses for data network cabling complete with covers and accessories as listed below.             |          |      |    |  |
| 2.9.1  | A) P8000 Trunking  | Material | m    | 12 |  |
|        | B) Internal / External elbows  | Material | No.  | 6  |  |
|        | C) T-Off splices   | Material | No.  | 8  |  |
|        | D) End Caps  | Material | No.  | 14 |  |
|        | E) Install and fix trunking to roof structure as per drawings; complete  | Labour   | m    | 12 |  |
| 2.10   | <b>DISTRIBUTION BOARDS</b><br>Supply and install new DB's circuit breakers fully equipped and pre-wired as per schedules and line diagrams.                                      |          |      |    |  |
| 2.10.2 | DB - New DB-G as per approved SLD  | Supply   | no.  |    |  |
|        |  | Install  | no.  |    |  |
| 2.10.3 | DB - New DB-Tel & Data as per approved SLD   | Supply   | no.  |    |  |
|        |  | Install  | no.  |    |  |
| 2.11   | <b>CONNECTION OF EQUIPMENT</b><br>Supply and install the required material for connecting fixed electrical equipment as listed :   |          |      |    |  |
| 2.11.1 | Single phase, 200L Geysers : Supply suitable flexible type pvc-sheathed galvanised steel conduit with end couplings and suitable wiring to connect geysers to Isolating switches | Material | each | 1  |  |
|        |  | Labour   | each | 1  |  |

|                                |  |                   |      |   |  |            |
|--------------------------------|--|-------------------|------|---|--|------------|
| 2.12                           | <b>EARTHING AND BONDING</b><br>Supply and install suitable earthing and bonding of geyser water pipes and other relevant items to comply with the standard specification requirements. |                   |      |   |  |            |
| 2.12.1                         | Earthing and bonding of geyser water pipes to comply with the standard specification requirements  | Material & Labour | sum  | 1 |  |            |
| 2.12.2                         | Supply and install 1.8m Phosphor-Bronze earth spike for earthing of DB-G isolated supply   | Material & Labour | no.  | 2 |  |            |
| 2.12.3                         | Connect earth spike to DB-G earth-bar with 10mm <sup>2</sup> green pvc insulated copper conductor through 20mm dia pvc conduit   | Material & Labour | m    | 2 |  |            |
| 2.12.4                         | Confirm earth measurement to within limits as set in specification   | Material & Labour | sum  | 4 |  |            |
| 2.13                           | <b>BLANK COVERS FOR TEL/DATA/OTHER DRAWBOXES</b><br>Supply and fit blank steel cover plates for blank drawboxes as listed :  |                   |      |   |  |            |
| 2.13.1                         | Blank covers for 4 x 4 boxes   | Supply & Fit      | each |   |  |            |
| 2.13.2                         | Blank cover for 65mm dia round conduit boxes   | Supply & Fit      | each |   |  |            |
| 2.14                           | <b>TESTING AND COMMISSIONING</b><br>Full testing of completed installation and issuing of Certificate of Compliance for Residence  |                   | sum  | 1 |  |            |
| <b>SUBTOTAL FOR BILL No. 2</b> |  |                   |      |   |  | <b>R -</b> |

**3****BILL No. 5 : Auditorium****- Electrical Installation (incl. tel, data & mechanical power supply)****Work Done**

| ITEM  | DESCRIPTION  | UNIT     | QTY  | RATE | AMOUNT |
|-------|--|----------|------|------|--------|
| 3,1   | <b>CONDUIT</b><br>Supply and install listed types of steel / pvc conduits for lights, plugs, power points, etc including joints, bushes, locknuts, cutting bending and threading, placed or <i>chased</i> in concrete floors, walls and ceiling voids. |          |      |      |        |
| 3.1.1 | 20 mm dia SABS marked PVC :  | Material | m    | 180  |        |
|       |  | Labour   | m    | 180  |        |
| 3.1.2 | 25 mm dia SABS marked PVC :  | Material | m    | 140  |        |
|       |  | Labour   | m    | 140  |        |
| 3.1.3 | 110 mm dia SABS marked PVC :   | Material | m    |      |        |
|       |  | Labour   | m    |      |        |
| 3.1.4 | 10kva Ups complete with 29 sealed lead acid at 80Ah with cabinet standby time 3hr  | Material | no.  |      |        |
|       |  | Labour   | no.  |      |        |
| 3,2   | <b>CONDUIT &amp; DRAW BOXES</b><br>Supply and install conduit boxes as listed including jointing to conduit with locknuts and bushes and placed in walls, concrete floors etc.   |          |      |      |        |
| 3.2.1 | 100 x 100 x 50 mm galvanised steel draw boxes for socket outlets & power points  | Material | each | 10   |        |
|       |  | Labour   | each | 10   |        |
| 3.2.2 | 100 x 50 x 50 mm galvanised steel draw boxes for L/switches  | Material | each | 6    |        |
|       |  | Labour   | each | 6    |        |
| 3.2.3 | 63mm dia PVC boxes (multiway) placed in roof spaces or mounted on wire trunking  | Material | each |      |        |
|       |  | Labour   | each |      |        |
| 3,3   | <b>CONDUCTORS</b><br>Supply and install listed PVC insulated copper conductors in conduit & wiring channel for lights, plugs and power points, data & tel points etc.  |          |      |      |        |
| 3.3.1 | Suffix 2,5 mm <sup>2</sup> pvc insulated   | Material | m    | 150  |        |
|       |  | Labour   | m    | 150  |        |
| 3.3.2 | General purpose wire 2,5 mm <sup>2</sup> pvc insulated   | Material | m    | 350  |        |
|       |  | Labour   | m    | 350  |        |
| 3.3.3 | General purpose wire 4,0 mm <sup>2</sup> pvc insulated   | Material | m    | 240  |        |
|       |  | Labour   | m    | 240  |        |
| 3.3.4 | 10,0 mm <sup>2</sup> pvc insulated   | Material | m    |      |        |
|       |  | Labour   | m    |      |        |
| 3.3.5 | 50mm <sup>2</sup> 4 core PVC Inculated PVC bedded SWA PVC sheeted 600/1000V Cable  | Material | m    |      |        |
|       |  | Labour   | m    |      |        |
| 3.3.6 | 25mm <sup>2</sup> 4 core PVC Inculated PVC bedded SWA PVC sheeted 600/1000V Cable  | Material | m    |      |        |
|       |  | Labour   | m    |      |        |
| 3.3.7 | 10mm <sup>2</sup> 4 core PVC Inculated PVC bedded SWA PVC sheeted 600/1000V Cable  | Material | m    |      |        |
|       |  | Labour   | m    |      |        |
| 3.3.8 | 2,5 mm <sup>2</sup> bare copper earthwire  | Material | m    | 300  |        |

| ITEM  | DESCRIPTION     | UNIT     | QTY | RATE | AMOUNT |
|-------|-----------------|----------|-----|------|--------|
|       |                 | Labour   | m   | 300  |        |
| 3.3.9 | Steel draw wire | Material | m   | 100  |        |
|       |                 | Labour   | m   | 100  |        |
|       |                 |          |     |      |        |

| ITEM  | DESCRIPTION  |          | UNIT | QTY | RATE | AMOUNT |
|-------|--|----------|------|-----|------|--------|
| 3,4   | <b>ISOLATING SWITCHES FOR APPLIANCES</b><br>Supply and install the listed isolating switches for appliances in buildings c/w cover plates and connection to wiring         |          |      |     |      |        |
| 3.4.1 | 20Amp Isolator for air conditioners, Stove, Extraction Fan, Hand Dryers and Outside Signages   | Material | each | 4   |      |        |
|       |  | Labour   | each | 4   |      |        |
| 3.4.2 | 20Amp Industrial/Weatherproof rotary isolator for cold rooms   | Material | each | 0   |      |        |
|       |  | Labour   | each | 0   |      |        |
| 3,5   | <b>LIGHT SWITCHES</b><br>Supply and install of 16 A light switches in flush mounted 100 x 50 x 50 mm boxes including white coloured cover plates and connection to wiring. |          |      |     |      |        |
| 3.5.1 | Single lever one way   | Material | each | 2   |      |        |
|       |  | Labour   | each | 2   |      |        |
| 3.5.2 | Two lever, one way   | Material | each |     |      |        |
|       |  | Labour   | each |     |      |        |
| 3.5.3 | Single lever, two way  | Material | each | 1   |      |        |
|       |  | Labour   | each | 1   |      |        |
| 3.5.4 | Ceiling Mount- 360 Degree Dual Technology PIR Occupancy Sensor   | Material | each |     |      |        |
|       |  | Labour   | each |     |      |        |
| 3,6   | <b>SOCKET OUTLETS</b><br>Supply and install socket outlets in flush mounted wall boxes with white coloured cover plates  |          |      |     |      |        |
| 3.6.1 | 16 A single (switched)   | Material | each | 6   |      |        |
|       |  | Labour   | each | 6   |      |        |
| 3.6.2 | 16 A dual (switched)   | Material | each |     |      |        |
|       |  | Labour   | each |     |      |        |
| 3.6.3 | 16 A dedicated switched (flat earth pin type) with red cover plate   | Material | each | 4   |      |        |
|       |  | Labour   | each | 4   |      |        |
| 3.6.4 | York box c/w single 16Amp, SSO and wall mounted over drawbox   | Material | each |     |      |        |
|       |  | Labour   | each |     |      |        |
| 3.6.5 | 5 A un-switched suitable for mounting in round conduit box on wiring channel for light points  | Material | each | 12  |      |        |
|       |  | Labour   | each | 12  |      |        |

| ITEM  | DESCRIPTION   | UNIT     | QTY  | RATE | AMOUNT |
|-------|---|----------|------|------|--------|
| 3,7   | <b>WORK STATION</b><br>Supply and install work stations in wall mounted power skirting;<br>(type as specified)  |          |      |      |        |
| 3.7.1 | 185 X 50 double compartment Alluminium power skirting, complete with cover, junctions and joints  | Material | m    | 30   |        |
|       |   | Labour   | m    | 30   |        |
| 3.7.2 | Work Station Points - 1 X telephone , 1 X Ethernet point, 1X Standard Socket and 1X Dedicated Socket Outlets  | Material | each | 4    |        |
|       |   | Labour   | each | 4    |        |
| 3,8   | <b>LUMINAIRES</b><br>Supply and install luminaires as per schedule including general connections and lamps. Refer to Luminaire Schedule in Specification. |          |      |      |        |
| 3.8.1 | 4X35W Recessed Ceiling mounted FL Fitting with optic Louvres  | Supply   | each | 112  |        |
|       |   | Install  | each | 112  |        |
| 3.8.2 | Type NE 2 X 25 watt recessed Logus ML 1200x600mm light fitting with Prismatic Diffuser  | Supply   | each |      |        |
|       |   | Install  | each |      |        |
| 3.8.3 | Type F Narrow Alpha Channel 1x 25w Osram Light fitting  | Supply   | each |      |        |
|       |   | Install  | each |      |        |
| 3.8.4 | Type K Surface mount vapour proof Dampa 2 x 25w light fitting   | Supply   | each |      |        |
|       |   | Install  | each |      |        |
| 3.8.5 | Type H1 Vapour proof Dampa 2 X 58W Low Temperature  | Supply   | each |      |        |
|       |   | Install  | each |      |        |
| 3.8.6 | Type G Round Picanto Minibulkhead 1 x PL 26w/ECG  | Supply   | each |      |        |
|       |   | Install  | each |      |        |

| ITEM   | DESCRIPTION  | UNIT     | QTY  | RATE | AMOUNT |
|--------|--|----------|------|------|--------|
| 3.9    | <b>CABLE TRUNKING</b><br>INDUSTRIAL type PVC cable trunking installed on roof trusses for data network cabling complete with covers and accessories as listed below.             |          |      |      |        |
| 3.9.1  | A) P8000 Trunking  | Material | m    | 80   |        |
|        | B) Internal / External elbows  | Material | No.  | 8    |        |
|        | C) T-Off splices   | Material | No.  | 12   |        |
|        | D) End Caps  | Material | No.  | 40   |        |
|        | E) Install and fix trunking to roof structure as per drawings complete   | Labour   | m    | 80   |        |
| 3.10   | <b>DISTRIBUTION BOARDS</b><br>Supply and install new DB's circuit breakers fully equipped and pre-wired as per schedules and line diagrams.                                      |          |      |      |        |
| 2.10.1 | DB - New DB-S as per approved SLD  | Supply   | no.  |      |        |
|        |  | Install  | no.  |      |        |
| 3.10.1 | DB - New DB-Tel & Data as per approved SLD   | Supply   | no.  |      |        |
|        |  | Install  | no.  |      |        |
| 3.10.2 |  |          |      |      |        |
| 3.11   | <b>METERING</b>  |          |      |      |        |
| 3.11.1 | Wall mounted 50A meter   | Supply   | no.  | 5    |        |
|        |  | Install  | no.  | 5    |        |
| 3.12   | <b>CONNECTION OF EQUIPMENT</b><br>Supply and install the required material for connecting fixed electrical equipment as listed :   |          |      |      |        |
| 3.12.1 | Single phase, 200L Geysers : Supply suitable flexible type pvc-sheathed galvanised steel conduit with end couplings and suitable wiring to connect geysers to Isolating switches | Material | each |      |        |
|        |  | Labour   | each |      |        |



| ITEM                           | DESCRIPTION  | UNIT              | QTY   | RATE | AMOUNT     |
|--------------------------------|--|-------------------|-------|------|------------|
| 3.13                           | <b>EARTHING AND BONDING</b><br>Supply and install suitable earthing and bonding of geyser water pipes and other relevant items to comply with the standard specification requirements. |                   |       |      |            |
| 3.13.1                         | Earthing and bonding of geyser water pipes to comply with the standard specification requirements  | Material & Labour | sum   |      |            |
| 3.13.2                         | Supply and install 1.8m Phosphor-Bronze earth spike for earthing of DB-S isolated supply   | Material & Labour | no. 2 |      |            |
| 3.13.3                         | Connect earth spike to DB-S earth-bar with 10mm <sup>2</sup> green pvc insulated copper conductor through 20mm dia pvc conduit   | Material & Labour | m 2   |      |            |
| 3.13.4                         | Confirm earth measurement to within limits as set in specification   | Material & Labour | sum 2 |      |            |
| 3.14                           | <b>BLANK COVERS FOR TEL/DATA/OTHER DRAWBOXES</b><br>Supply and fit blank steel cover plates for blank drawboxes as listed :  |                   |       |      |            |
| 3.14.1                         | Blank covers for 4 x 4 boxes   | Supply & Fit      | each  |      |            |
| 3.14.2                         | Blank cover for 65mm dia round conduit boxes   | Supply & Fit      | each  |      |            |
| 3.15                           | <b>TESTING AND COMMISSIONING</b><br>Full testing of completed installation and issuing of Certificate of Compliance for Residence  |                   | sum 1 |      |            |
| <b>SUBTOTAL FOR BILL No. 3</b> |  |                   |       |      | <b>R -</b> |

**4**

**BILL No. 4 : Office, Boardrooms, Auditorium and Markets Areas**  
**- Mechanical Installation**  
**Work Done**

| ITEM  | DESCRIPTION  | UNIT                               | QTY      | RATE | AMOUNT |
|-------|--|------------------------------------|----------|------|--------|
| 4.1   | <b>HAND DRYERS</b><br>Supply and install Hand dryers including connection. See Detail Specification  |                                    |          |      |        |
| 4.1.1 | Hand Dryer   | Supply<br>no.<br>Install<br>no.    | 10<br>10 |      |        |
| 4.2   | <b>EXTRACTION FANS</b><br>Supply and install Extraction/ Circulation Fans including connection. See Detail Specification   |                                    |          |      |        |
| 4.2.1 | Extraction Fan   | Supply<br>no.<br>Install<br>no.    | 22<br>22 |      |        |
| 4.3   | <b>HVAC System</b><br>Supply and install Airconditioners, Air-circulation fans and Extraction fans including connection. See Detail Specification                                  |                                    |          |      |        |
| 4.3.1 | 6.2KVA, 1-Phase High Wall Split Unit (Heating & Cooling)   | Material<br>no.<br>Install<br>no.  | 16<br>16 |      |        |
| 4.3.2 | 15KVA, 3-Phase Cassette Split Unit (Heating & Cooling)   | Material<br>no.<br>Install<br>no.  | 7<br>7   |      |        |
| 4.4   | <b>CONNECTION OF EQUIPMENT</b><br>Supply and install the required material for connecting fixed Mechanical equipment as listed :   |                                    |          |      |        |
| 4.4.1 | Hand Dryer : Supply suitable flexible type pvc-sheathed galvanised steel conduit with end couplings and suitable wiring to connect Dryers to Isolating switches                    | Material<br>each<br>Labour<br>each | 10<br>10 |      |        |
| 4.4.2 | Air conditioner : Supply suitable flexible type pvc-sheathed galvanised steel conduit with end couplings and suitable wiring to connect airconditioners to Isolating switches      | Material<br>each<br>Labour<br>each | 23<br>23 |      |        |
| 4.4.3 | Air Extraction/ Circulation Fan : Supply suitable flexible type pvc-sheathed galvanised steel conduit with end couplings and suitable wiring to connect fans to Isolating switches | Material<br>each<br>Labour<br>each | 22<br>22 |      |        |

| ITEM                           | DESCRIPTION  | UNIT                 | QTY | RATE | AMOUNT     |
|--------------------------------|--|----------------------|-----|------|------------|
| 4,5                            | <b>Fire Security</b>   |                      |     |      |            |
| 4.5.1                          | Water Mains, Fire Hydrants<br>Supply and Install fire hydrant at diameter of 80mm and pressure of 330KPa.  | Supply & Fit<br>each | 2   |      |            |
| 4.5.2                          | Fire Hose-Reels<br>Supply and Install 20mm X 30m fire hose-reels with a minimum pressure of 130KPa   | Supply & Fit<br>each | 4   |      |            |
| 4.5.3                          | Fire Extinguisher<br>Supply and install dry chemical and carbon dioxide fire extinguisher in accordance with the fire security specifications  | Supply & Fit<br>each | 12  |      |            |
| 4.5.4                          | Automatic Sprinklers<br>Supply and install automatic sprinklers fire extinguishing system as per specific requirements applicable to the building area. System to include control valve, pressure gauge, hydraulic alarms and O&M instructions | Supply & Fit<br>each | 36  |      |            |
| 4.5.5                          | Fire Pump<br>Supply and install Fire fighting pumps capable of operating in both manual and automatic modes in accordance with the fire pump specifications  | Supply & Fit<br>each | 1   |      |            |
| 4.5.6                          | Fire Panel<br>Supply and install fire panel as indicated on the fire detection layout plan   | Supply & Fit<br>each | 1   |      |            |
| 4.5.7                          | Temperature sensor<br>Supply and install temperature sensors as indicated on the fire detection layout plan  | Supply & Fit<br>each | 36  |      |            |
| 4.5.8                          | Breakglass Unit<br>Supply and install breakglass unit as indicated on the fire detection layout plan   | Supply & Fit<br>each | 36  |      |            |
| 4.5.9                          | Heat Detector<br>Supply and install smoke detectors as indicated on the fire detection layout plan   | Supply & Fit<br>each | 950 |      |            |
| 4.5.10                         | Smoke Detector<br>Supply and install smoke detectors as indicated on the fire detection layout plan  | Supply & Fit<br>each | 950 |      |            |
| 4.5.11                         | Red Indicator Light<br>Supply and install red light indicators as indicated on the fire detection layout plan  | Supply & Fit<br>each | 36  |      |            |
| 4.5.12                         | Fire Security Signage: Supply and Install wall mounted and Suspended pictogram signages  | Supply & Fit<br>each | 20  |      |            |
| 4,5                            | <b>TESTING AND COMMISSIONING</b>   | sum                  | 1   |      |            |
| <b>SUBTOTAL FOR BILL No. 4</b> |  |                      |     |      | <b>R -</b> |

| <b>6</b> BILL No. 2 : Site Works<br>22kV Cables, Transformers & Stand by units |  |                |     |      |        |  |
|--|--|----------------|-----|------|--------|--|
| ITEM   | DESCRIPTION  | UNIT           | QTY | Rate | AMOUNT |  |
|  | Brought forward  |                |     | R    | R -    |  |
| 6,1  | Trenching  |                |     |      |        |  |
|  | Pickable soil  | m <sup>3</sup> | 355 |      |        |  |
|  | Hard rock  | m <sup>3</sup> | 213 |      |        |  |
|  | Very hard rock   | m <sup>3</sup> | 142 |      |        |  |
|  | Backfilling & Compaction   | m <sup>3</sup> | 497 |      |        |  |
|  | Sifted local soil or river sand to surround cables   | m <sup>3</sup> | 213 |      |        |  |
| 6,2  | Low Voltage Cables   |                |     |      |        |  |
|  | Supply and install new 95mm <sup>2</sup> 4-core cable  | m              | 120 |      |        |  |
|  | Supply and install new 70mm <sup>2</sup> 4-core cable  | m              | 50  |      |        |  |
|  | Supply and install new 35mm <sup>2</sup> 4 core cable  | m              | 140 |      |        |  |
|  | Supply and install new 16mm <sup>2</sup> 4 core cable  | m              | 130 |      |        |  |
|  | Supply and install new 10mm <sup>2</sup> 4 core cable  | m              | 100 |      |        |  |
|  | Supply and install new 10mm <sup>2</sup> 3 core cable  | m              | 220 |      |        |  |
| 6,3  | Marking/protecting of cable routes   |                |     |      |        |  |
|  | PVC cable slabs to protect 22kV cable, installed 200mm above cable   | m              |     |      |        |  |
|  | PVC Cable warning tape, 300mm above cables   | m              | 500 |      |        |  |
|  | Concrete cable markers, above cables   | No             | 40  |      |        |  |
|  | 110mm dia PVC Sleeves  | m              | 160 |      |        |  |
|  | Labour   | m              | 160 |      |        |  |
| 6,4  | <b>KIOSK</b>   |                |     |      |        |  |
|  | Supply and install distribution kiosk complete with metering as indicated on the drawing                           | No             | 3   |      |        |  |
|  | Labour   | No             | 3   |      |        |  |
| 6,5  | <b>Transformer and Stand by Unit, etc</b><br><b>Supply and Install Normal and Emergency Supply as per the SLD.</b> |                |     |      |        |  |
|  | New Eskom supply point   | No             | 1   |      |        |  |
|  | Supply and install new 95mm <sup>2</sup> 3-core xlpe MV Cable  | m              | 100 |      |        |  |
|  | Dismantle existing Overhead 22kV MV Line   | m              | 150 |      |        |  |
|  | Install new 95mm <sup>2</sup> 3-core xlpe MV Cable to replace Existing Overhead MV Line                            | m              | 150 |      |        |  |
|  | 315kVA 22kV/415V Transformer   | No             | 1   |      |        |  |
|  | Stand by Unit (150kVA), with automatic change over, Silent weather resistant enclosure and 300l tank               | No             | 1   |      |        |  |
|  | Labour   | No             | 1   |      |        |  |
| 6,6  | <b>POST TOP STREET LUMINARIES AND POLES</b>  |                |     |      |        |  |

**Tshilamba Art Centre  
COMPREHENSIVE CONTRACT  
NEW ELECTRICAL INSTALLATION  
SUMMARY OF PRICED BILLS**

| ITEM | DESCRIPTION   | SUBTOTAL     | AMOUNT |
|------|---|--------------|--------|
| 1    | Bill No. 1 : General Items  | subtotal     |        |
| 2    | Bill No. 2 : Site Works-MV Cables, Transformer, Genset, LV cables and Kiosk | subtotal     |        |
| 3    | Bill No. 3 : Electrical Installation-Office Areas                           | subtotal     |        |
| 4    | Bill No. 4 : Electrical Installation-Boardroom Area                         | subtotal     |        |
| 5    | Bill No. 5 : Electrical Installation-Auditorium                             | subtotal     |        |
| 6    | Bill No. 6 : Electrical Installation-Market Areas                           | subtotal     |        |
| 7    | Bill No. 7: Electrical Installation-Passage Areas                           | subtotal     |        |
| 8    | Bill No. 8: Electrical Installation-Kitchen Areas                           | subtotal     |        |
| 9    | Bill No. 9: Electrical Installation-Strongroom Areas                        | subtotal     |        |
| 10   | Bill No. 10: Electrical Installation-Storeroom room                         | subtotal     |        |
| 11   | Bill No. 11: Electrical Installation-Electric room                          | subtotal     |        |
| 12   | Bill No. 12: Electrical Installation-Ablution Facilities                    | subtotal     |        |
| 13   | Bill No. 13: Electrical Installation-Guardhouse                             | subtotal     |        |
| 14   | Bill No. 14: Electrical Installation-10kVA UPS                              | subtotal     |        |
| 15   | Provisional Amounts - Earthing and Lightning Protection                     | subtotal     |        |
| 16   | Mechanical Installation   | subtotal     |        |
|      | Project Cost  | subtotal 1   |        |
|      | Contingency Amount @ 5%   |              |        |
|      | Project Cost (excl VAT)   | subtotal 2   |        |
|      | VAT at 15%  |              |        |
|      | <b>Total Projects Cost</b>  | <b>TOTAL</b> |        |

**NOTES:**

1.0 The amount given above as the "Nett Total for Electrical and Mechanical Installation" (excl. VAT) shall be carried over to the relevant items in the Main Bill of Quantities (PART A) and will be regarded as including the fixed amounts shown in the Price Summary and no adjustments will be made for any failure by tenderers to include these amounts in the total appearing of the official tender form.

2.0 The Price Schedule (Bill of Quantities) must be completed and submitted with the tender. It will be accepted that any item prices that are not filled in are included in the "Total Tender Price".

3.0 The complete price schedule shall be checked by the Engineer and the right is reserved to adjust any individual price and to rectify any discrepancy whilst the "Nett Total for Electrical and Mechanical Installation" quoted remains unaltered.

4.0 All materials covered by this specification, wherever possible, will be of South African manufacture. In the adjudication of tenders preference will be given to South African materials or items manufactured in the Republic of South Africa.

Name of Electrical and Mechanical Contractor

.....

Address: .....

Contractor's Registration Number with the Electrical and Mechanical Contracting Board of S A :  
.....

SIGNATURE OF TENDERER: \_\_\_\_\_ DATE \_\_\_\_\_



### **C3.1 DESCRIPTION OF WORKS**

#### **C3.1.1 Employer's Objectives**

The employer's objectives are to deliver public infrastructure in a sustainable and environmentally friendly manner, and in close consultation with the community. In this project, labour intensive construction methods will be used.

##### **Labour-intensive works**

Labour-intensive works comprise the activities described in SANS 1921-5, Earthworks activities which are to be performed by hand, and its associated specification data. Such works shall be constructed using local workers who are temporarily employed in terms of this Scope of Work.

#### **C3.1.2 Extent of Works**

##### **A. BUILDING WORKS**

Construction of Tshilamba Arts Centre comprising of: Site Clearing, Excavation work, Brickwork & Blockwork, Structural Steel & Metalwork, Roofing, Painting & Decorations, Plumbing & Drainage and External Works.

##### **B. MAINTENANCE OF WORKS**

- Maintenance of the works during construction and maintenance period.

##### **C. PAVING MATERIAL**

- Paving material will be from existing approved borrow-pits or commercial sources.

- D.** The Construction drawings prevail over the Bill of Quantities.

#### **C3.1.4 Location of the Works**

The existing facility of the Tshilamba Arts Centre is located close to Thohoyandou in the Thulamela Local Municipality. The proposed site is located on latitude: 22° 45' 23.28" S and longitude: 30° 30' 54.67"E and approximately 40km from Thohoyandou. The area is currently a *Brownfields* site. i.e. it has an existing development. The Tshilamba Arts Centre has been severely damaged by fire as well as been vandalised.

#### **C3.1.5 Temporary Works**

The contractor is to set up a site office including engineer's office accommodation. The contractor shall submit proposals in connection with site office accommodation to the engineer for approval prior to erecting any office structures on site. This requirement should be read in conjunction with C3.1.6.3



below.

The contractor will be required to construct deviation routes to accommodate traffic during construction as per his approved method of working and as per the employer's standard details for accommodation of traffic. Due cognisance should be taken of the requirement of C3.1.6.4.1 below.

Apart from the above requirements, there are no temporary works designed by the employer on this project. Any temporary works designed by the contractor as part of this project shall be subject to approval of the engineer. This requirement should be read in conjunction with C3.2.3 below.

### **C3.1.6 General Information**

#### **C3.1.6.1 Drawings**

The reduced drawings contained in a Separately Bounded Book of drawings that form part of the tender document shall be used for tender purposes only. Further drawings are to be provided on an on-going basis by the engineer.

Any information in the possession of the contractor, which the resident engineer requires to complete the as-built drawings, shall be supplied to the resident engineer before a certificate of completion will be issued.

Only figured dimensions shall be used and drawings shall not be scaled unless so instructed by the engineer. The engineer will supply all figured dimensions omitted from the drawings.

#### **C3.1.6.2 Power, Water Supply and Other Services**

The contractor shall make his own arrangements concerning the supply of electrical power and all other services. No direct payment will be made for the provision of electrical and other services. The cost of providing these services will be deemed to be included in the rates and amounts tendered for the various items of work for which these services are required.

#### **C3.1.6.3 Contractor's Camp Site and Security**

The contractor shall make his own arrangements regarding the establishment of a camp site and housing for his construction personnel and all regulations stipulated by the local authority shall be adhered to.

It is anticipated that the contractor's choice of a camp site will be influenced by the availability of telephone and electrical connections as well as the supply of





potable water.

Provision is made in these specifications for the erection of a security fence around the site offices. The contractor shall be responsible for the security of his personnel and constructional plant on and around the site of the works and for the security of his camp, and the employer will consider no claims in this regard.

#### C3.1.6.4 Additional Requirements for Construction Activities.

C3.1.6.4.1 The contractor may not commence constructional activities before adequate provision has been made to accommodate traffic in accordance with the requirements of this document and the South African Road Traffic Signs Manual.

C3.1.6.4.2 The contractor shall submit proposals in connection with directional signs to the engineer for approval.

#### C3.1.6.5 Programme Requirements for Construction Activities

The contractor shall programme his activities to be suitable in terms of his resources to complete the contract inside the stipulated time period.

#### C3.1.6.6 Construction in Confined Areas

It may be necessary for the contractor to work in confined areas. In certain areas the working space may be confined. The method of construction in these confined areas depends on the contractor's construction plant. However, the contractor must note that measurement and payment will be in accordance with the specified sections and dimensions, irrespective of the method used to achieve these sections and dimensions, and that the rates and amounts tendered will be deemed to include full compensation for any special equipment or construction methods or for any difficulty encountered in working in confined areas and narrow widths, and at or around obstructions, and that no extra payment will be made nor will any claim for payment be considered on account of these difficulties.

### **C3.2 BUILDING AND ENGINEERING WORKS**

#### **C3.2.1 Design**

- (a) The **Employer** is responsible for the design of the permanent Works as reflected in these Contract Documents unless otherwise stated.
- (b) The **Contractor** is responsible for the design of the temporary Works and their compatibility with the permanent Works.



- (c) The **Contractor** shall supply all details necessary to assist the engineer in the compilation of the as-built drawings.

#### **C3.2.2 Employer's Design**

- (a) Detail description of Works
- (b) General Works

#### **C3.2.3 Contractor's Design**

Where contractor is to supply the design of designated parts of the permanent Works or temporary Works he shall supply full working drawings supported by a professional engineer's design certificate.

#### **C3.2.4 Design procedures**

All designs and modifications thereto shall be communicated in writing and the contractor and engineer shall maintain master lists to record and track all transactions.

### **C3.3 PROCUREMENT**

#### **C3.3.1 Preferential procurement procedures**

The works shall be executed in accordance with the conditions attached to preferences granted in accordance with the Thulamela Local Municipality's preferencing guidelines.

#### **C3.3.2 Scope of subcontract work**

The portion of works to be subcontracted will be of the discretion of the contractor and approved by the Engineer. These works shall be subcontracted to CIDB registered contractors in accordance with the subcontracting procedures as prescribed by the Thulamela Local Municipality.



### **C3.4 CONSTRUCTION**

#### **C3.4.1 STANDARD SPECIFICATIONS**

- (a) The SANS 2001 series and SANS 1200 series standardised specification are to be read as part of this contract and specifications. The following specifications shall apply for the construction of the Works.
- (i) SANS or BS Specifications and Codes of Practice. SANS 2001 series, SANS 1200 and guided by GCC 2<sup>nd</sup> edition 2010.

Wherever any reference is made to the South African Bureau of Standards (SABS) in either these Bill of Quantities or the Specification of Materials and Methods to be Used (OOG-001E), this reference shall be deemed to read "SABS or equivalent standard".

- b. The SANS 2001 series and SANS 1200 series Standardized Specifications for the Civil Engineering Construction are referred to the Contractor and are to be read as part of this Contract and Specification.
- c. The Standardized Specifications are not bound into this Document but may be inspected at the Engineer's Offices during normal office hours or may be obtained from:
  - SA Bureau of Standards
  - Private Bag X191
  - Pretoria
- d. For the paving work and entrance access to the facility. The COLTO Standard Specifications for Road and Bridge Works for State Road Authorities (1998).  
The contractor may purchase copies of Volume (i) from the South African Institution of Civil Engineers.

SAICE House  
Block 19  
Thornhill Office Park  
MIDRAND

Tel : (011) 805-5947  
Fax : (011) 805-5971



- e. Various other specifications specified in the Project Specifications.

|                                     |                         |
|-------------------------------------|-------------------------|
| SANS 1200 A                         | : General               |
| SANS 1200 AB                        | : Engineer's Office     |
| SANS 1200C                          | : Site Clearance        |
| SANS 1200 D                         | : Earthworks            |
| SANS 1200 G                         | : Concrete (Structural) |
| SANS 1200M,ME,MF,MFL,MG,MH,MJ,MK,MM | : Roads (Paving)        |

### **C3.5 PROJECT SPECIFICATIONS RELATING TO STANDARD SPECIFICATIONS**

#### **C3.5.2.1 General Conditions of Contract Referred to in the Standard Specifications**

The contract is guided by the General conditions of contract for construction works 2<sup>nd</sup> Edition. The references to the General Conditions of Contract appearing in the COLTO Standard Specifications refer to the COLTO General Conditions of Contract which is superseded in this contract by the General Conditions of Contract for Construction Works 2<sup>nd</sup> Edition 2010. The corresponding clause in the latter document pertaining to the reference in the COLTO Standard Specifications is listed in the table below.

| <b>Clause No. in the Standard Specifications</b> | <b>Clause No. in COLTO General Conditions</b> | <b>Equivalent Clause No. in General Conditions of Contract 2<sup>nd</sup> Edition 2010</b> |
|--|---|--|
| 1202   | 15  | 5.6.1  |
| 1206   | 14  | Deleted  |
| 1209   | 52  | 6.1.1 & 6.7.5  |
| 1210   | 54  | 5.14.1   |
| 1212(1)  | 49  | 6.8  |
| 1215   | 45  | 5.12.1   |
| 1217   | 35  | 8.2 & 8.3  |



|              |       |        |
|--------------|-------|--------|
| 1303         | 49    | 6.8    |
| 1303         | 53    | 6.11   |
| 1303         | 12    | 5.3    |
| 1303         | 45    | 5.12.1 |
| 1403         | 40(1) | 6.4    |
| 1505         | 40    | 6.4    |
| 31.03        | 40    | 6.4    |
| 3204(b)      | 40    | 6.4    |
| 3303(b)      | 2     | 3      |
| 5803(c)      | 40    | 6.4    |
| 5805(d)      | 40    | 6.4    |
| 6103(c)      | 40    | 6.4    |
| Item 83.03   | 22    | 5.15   |
| ALL SECTIONS | 48    | 6.6    |

**C3.6.3 REQUIREMENTS OF EXPANDED PUBLIC WORKS PROGRAMME**

**C3.6.3.1 EPWP Special Project Specification**

As much as is economically feasible all work shall be implemented by employing Labour Intensive Construction methods. Over and above the normal Building and Allied works to be implemented by employing skilled and unskilled labour the works specified in the “Guidelines for the Implementation of Labour-Intensive Infrastructure Projects under the Expanded Public Works Programme (EPWP)” shall be undertaken using Labour Intensive Construction methods.



## THULAMELA LOCAL MUNICIPALITY

**Bid No. 28/2020/2021**

**Construction of Tshilamba Arts Centre**

### **C3.7      MATTERS RELATING TO THE STANDARD SPECIFICATIONS**

SECTION 1200 : GENERAL REQUIREMENTS AND PROVISIONS.....H.36

1500: ACCOMMODATION OF TRAFFIC.....H.48



## **SECTION 1200 : GENERAL REQUIREMENTS AND PROVISIONS**

### **B1202 SERVICES**

“Provision is made in the bill of quantities for payment for searching and exposing of known or unknown services as well as the relocation and/or protection of existing services. Any moving of existing services which may be required within the proclaimed road reserve will be undertaken by the relevant service authorities or by a selected subcontractor if so ordered by the engineer.”

### **B1204 PROGRAMME OF WORK**

#### **(a) General requirements**

“The bar-chart programme to be provided by the contractor shall show the various activities in such detail as may be required by the engineer. Progress in terms of the programme shall be updated monthly by the contractor in accordance with the progress made by the contractor.

In compiling the programme of work, the contractor shall indicate and make due allowance for the following, as specified elsewhere in the contract documents:

- The requirements regarding the accommodation of traffic and areas that may be occupied at any time for construction purposes (as indicated on the drawings and specified in Section 1500 of the specifications)
- Requirements regarding the training of labourers and Emerging Contractors (EC's).
- The requirements for work to be undertaken by labourers and work to be undertaken by EC's.

### **B1205 WORKMANSHIP AND QUALITY CONTROL**

“The engineer shall, however, undertake acceptance control tests for the judgement of workmanship and quality, without accepting any obligations vested with the contractor in terms of the contract with specific reference to quality of materials and workmanship. Such acceptance control test done by the engineer shall not relieve the contractor of his





obligations to maintaining his own quality control system.”

"The engineer shall, for the purpose of acceptance control on products and workmanship, assess test results and measurements in accordance with the provisions of section 8300 of the standard specifications. Where small quantities of work are involved, a lot shall mean a full day's production for a specific item of work subject to acceptance control testing."

#### **B1206 THE SETTING-OUT OF THE WORK AND PROTECTION OF BEACONS**

“The contractor shall be responsible for the true and proper setting out of the Works and for the correctness of the position, levels, dimensions and alignment of all parts of the Works and for the provision of all necessary instruments, appliances and labour in connection therewith.”

The Contractor shall take care that property beacons, trigonometrically survey beacons or setting-out beacons are not displaced or destroyed without the consent of the Engineer. Property beacons and trigonometrically survey beacons that have been displaced or destroyed shall be replaced by a registered land surveyor, who shall certify such replacement.

The cost of replacing all beacons displaced or destroyed during the course of the Contract without the consent of the Engineer shall be borne by the Contractor.”

#### **B1209 PAYMENT**

##### **(b) Rates to be inclusive**

“VAT shall be excluded from the rates and provided for as a lump sum in the Summary of Bill of Quantities”.

##### **(e) Materials on the site**

"In addition, the engineer may at his sole discretion also allow payments under "Materials on Site" in respect of any construction materials if stored off-site providing that:

- (a) The site selected for this purpose is approved by the engineer



- (b) Such land is physically separated from any production plant or operation
- (c) Only materials for use under this contract is stockpiled on such land
- (d) The contractor has provided proof of an agreement with the owner of such land that the owner has no claim whatsoever on any materials stockpiled on such land
- (e) Materials obtained by the contractor for or on behalf of emerging subcontractors (SMME's) shall remain the responsibility of the contractor after payment has been made in respect of materials on site.”

#### **B1215 EXTENSION OF TIME RESULTING FROM ABNORMAL RAINFALL**

"For the purposes of this contract, extension of time resulting from abnormal rainfall or other forms of inclement weather shall be determined according to the requirements of Method ii (critical-path method).”

##### **Method (ii) (Critical path method)**

Delete “(based on a five-day working week)” in the fifth and sixth lines of the second paragraph of the description of this method.

Delete the last sentence of the second paragraph of the description of this method and replace with the following:

“The value of “n” shall be taken as three (3) working days per calendar month.

If normal rainy or inclement weather, resulting in delays, occurs for less than three (3) working days in any calendar month, the difference between the three (3) working days and the actual number of working days on which normal rainy or inclement weather occurred, shall be ignored and not accumulated for the duration of the contract period for the purposes of determining an extension of time due to normal rainy weather, nor due to any other reason.

Items of work on the critical path of the programme of work which are subject to climatic limitations shall also be considered for extension of time if such items of work are delayed by e.g. cold weather, high winds or other inclement weather conditions.

In this regard, reference shall be made to weather limitations specified for the application of various bituminous products. However, for months during which seal-work cannot be undertaken in terms of the specifications, no extension of time shall be claimed for.



**B1217 PROTECTION OF THE WORKS AND REQUIREMENTS TO BE MET BEFORE CONSTRUCTION OF NEW WORK ON TOP OF COMPLETED WORK IS COMMENCED**

"(h) No concrete kerbing, edge beams or concrete drains directly adjoining the bituminous surfacing shall be constructed prior to the completion of the bituminous surfacing."

**B1222 USE OF EXPLOSIVES**

"(h) Where blasting operations are undertaken in close proximity of temporary deviations, the contractor shall implement all such safeguarding measures as may be required and instructed by the engineer."

**B1229 SABS CEMENT SPECIFICATIONS**

"Where reference is made in this specification or the standard specifications to the cement specifications, eg. SABS 471: Portland cement and rapid hardening Portland cement, it shall be replaced with the new specification:

**SABS ENV 197-1: Cement-composition, specifications and conformity criteria.**

Part 1: Common cements.

Furthermore, where reference is made in this specification or the standard specifications to the different cement types, the following new names/types shall apply:



| Old product nomenclature | Typical new product nomenclature |                       |
|--------------------------|----------------------------------|-----------------------|
|                          | Cement type                      | Cement strength class |
| OPC                      | CEM I                            | 32,5                  |
|                          | CEM I                            | 32,5R                 |
| RHC                      | CEM I                            | 42,5                  |
|                          | CEM I                            | 42,5R                 |
| LASRC                    | No provision made                | No provision made     |
| PC15SL                   | CEM II/A-S                       | 32,5                  |
|                          | CEM II/A-S                       | 32,5R                 |
|                          | CEM II/A-S                       | 42,5                  |
| PC15FA                   | CEM II/A-V                       | 32,5                  |
|                          | CEM II/A-V                       | 32,5R                 |
|                          | CEM II/A-W                       | 32,5                  |
|                          | CEM II/A-W                       | 32,5R                 |
| RH15FA                   | CEM II/A-V                       | 42,5                  |
|                          | CEM II/A-V                       | 42,5R                 |
|                          | CEM II/A-W                       | 42,5                  |
|                          | CEM II/A-W                       | 42,5R                 |
| PBFC                     | CEM III/A                        | 32,5                  |
|                          | CEM III/A                        | 32,5R                 |
| PFAC                     | CEM II/B-V                       | 32,5                  |
|                          | CEM II/B-W                       | 32,5                  |
| RH30SL                   | CEM II/B-S                       | 32,5R                 |
|                          | CEM II/B-S                       | 42,5                  |



| Old product nomenclature | Typical new product nomenclature |                       |
|--------------------------|----------------------------------|-----------------------|
|                          | Cement type                      | Cement strength class |
| RH40SL                   | CEM III/A                        | 32,5R                 |
|                          | CEM III/A                        | 42,5                  |

CEM I 32,5, CEM II A-S 32,5, CEM II/A-V 32,5, or CEM III A may be used for the manufacture of reinforced concrete members.”

#### **“B1230: IN-SERVICE AND STRUCTURED TRAINING**

The contractor shall in addition to the structured (accredited) training from the commencement of the contract, in which the various skills required for the execution and completion of the works are imparted to the labourers engaged thereon, in a programmed and progressive manner. Labourers shall be trained progressively throughout the duration of the contract, in the various stages of a particular type of work.

##### **(a) Details of in-service and structured training**

- (i) The contractor shall submit basic details of his proposed in-service training programme, which details shall inter alia include the following:
  - the details of training to be provided
  - the manner in which the training is to be delivered
  - the number and details of trainers to be utilised.
- (ii) The in-service training programme shall be submitted with the initial works programme. The progress in relation to this programme will be recorded monthly and attached to the site meeting minutes and payment certificate.
- (iii) The contractor shall provide on site, sufficient skilled and competent trainers to train all labourers engaged on the contract, in the various skills required for the execution and completion of the works.
- (iv) All labourers shall be remunerated in respect of all time spent undergoing training.
- (v) Every worker engaged on the contract shall on the termination of his participation on the contract, be entitled to receive from the contractor, a certificate of service



in which the following information shall be recorded:

- the name of the contractor
- the name of the employee
- the name of the project/contract
- the nature of the work satisfactorily executed by the worker and the time spent thereon
- the nature and extent of training provided to the worker
- the dates of service.

The cost of the above obligations shall be deemed to be covered by the sums and rates tendered for items B13.01(a), (b) and (c) and billed items in section 1200 in the bill of quantities.

**(b) Lead time for training**

The training of labour as specified shall, as far as possible, take place before commencement of each activity and the contractor shall take into account in his programme the lead-time he requires for such training. All training herein specified shall be deemed to be a construction activity and a non-negotiable condition of the contract”.

**B1231 COMMUNITY LIAISON OFFICER (CLO)**

The contractor or his appointed agent will appoint a Community Liaison Officer (CLO) after consultation with the local communities, the engineer and the employer. The contractor shall direct all his liaison efforts with the local communities through the appointed officer. The contractor shall, however, accept the appointed as part of his management personnel.

**(a) Duties of the Community Liaison Officer**

The Community Liaison Officer’s duties will be:

- (i) To be available on site daily between the hours of 08h00 and 14h00 and at other times as the need arises. His normal working day will extend from 08h00 in the morning until 16h00 in the afternoon.
- (ii) To determine, in consultation with the contractor, the needs of the temporary labour for relevant skills training. He will be responsible for the identification of suitable trainees and will attend one of each of the training sessions.



- (iii) To communicate daily with the contractor and the engineer to determine the labour requirements with regard to numbers and skill, to facilitate in labour disputes and to assist in their resolution.
- (iv) To assist in and facilitate in the recruitment of suitable temporary labour and the establishment of a "labour desk".
- (v) To attend all meetings in which the community and/or labour are present or are required to be represented.
- (vi) To assist in the identification, and screening of labourers from the community in accordance with the contractor's requirements.
- (vii) To inform temporary labour of their conditions of temporary employment and to inform temporary labourers as early as possible when their period of employment will be terminated.
- (viii) To attend disciplinary proceedings to ensure that hearings are fair and reasonable.
- (ix) To keep a daily written record of his interviews and community liaison.
- (x) To attend monthly site meetings to report on labour and RDP matters.
- (xi) All such other duties as agreed upon between all parties concerned.
- (xii) To submit monthly returns regarding community liaison.

**(b) Payment for the community liaison officer**

A special pay item is incorporated in section 1200 of the bill of quantities relating to payment of the liaison officer on a prime cost sum basis. This payment shall only be made for the period for which the duties of the liaison officer are required and not necessarily for the full duration of the contract. The remuneration of the CLO shall be determined Employer with a minimum salary of R 5,000.00 per month.

**(c) Period of employment of the community liaison officer**

The period of employment of the community liaison officer shall be as decided upon jointly by the contractor, engineer and employer at a maximum period of a six months basis, but with the option of renewal.



#### **B1232 SUBCONTRACTORS**

Over and above the stipulations of clause 4.4 of the General Conditions of Contract 2010, regarding subletting of part of the works, it is a condition of the contract that an approved subcontractor shall not sublet part of his work, covered in his appointment by the main contractor, to another subcontractor without the consent and approval of the engineer. Subletting shall in all cases be critically considered by the engineer.

#### **B1233 WORKMEN'S COMPENSATION ACT**

All labour employed on the site shall be covered by the Compensation for Occupational Injuries and Deceases Act (COIDA). The contractor shall pay in full, including the payment of the necessary levies, such amounts, as are due in terms of the Act. The contractor at the commencement of the contract shall resolve the manner in which Workmen's Compensation will be handled. Amounts paid by the contractor shall not be included in the wage rates but shall be covered by the Contractor to be deemed as included in his General Obligations rates in Section 1300 of the Bill of Quantities.

Add the following clause:

#### **B1234 MINE HEALTH AND SAFETY ACT 1996, ACT 29 OF 1996**

##### **(a) Introduction**

The main objective of this Act is to protect the health and safety of persons at mines. This specification is therefore aimed at promoting health and safety specifically at borrow pits. Borrow pits are classified as mines.

##### **(b) General Provisions**

The contractor shall be responsible for controlling his operations at every borrow pit where material is being excavated to ensure compliance with all the requirements of the Mine Health and Safety Act, 1996. The contractor shall also ensure that the works, shaping and finishing off of the borrow pit are done in accordance with the provisions as specified in section 3100 of the COLTO Standard Specifications and this Act. The contractor shall also comply with the requirements as set Environmental Management Plan.

The minimum requirements for operations at borrow pits are:





- Borrow pits are worked in such a way that the health and safety of employees and the public will not be endangered.
- A monthly report shall be submitted to the engineer on health and safety aspects at the borrow pits.
- The contractor shall appoint a manager to manage the borrow pits in accordance with the Mine Health and Safety Act.
- The contractor shall take the necessary steps to ensure that the work area of the borrow pits are safe at all times. This shall include items such as the provision of fencing and security guards.

**(c) Duties of the Manager**

The minimum duties of the manager supervising the activities at borrow pits shall be:

- Maintain a healthy and safe borrow pit environment.
- Identify hazards and related risks to which persons and employees are exposed.
- Establish a health and safety policy that
  - o Describes the organisation of work.
  - o Contains aspects concerning the protection of the employees and other persons' health and safety.
  - o Contains a risk analysis.
- Supply and erect the necessary safety and warning signs.

**B12.30 MEASUREMENT AND PAYMENT**

| <b>ITEM</b>  | <b>UNIT</b>                 |
|--|-----------------------------|
| <b>B 12.01 TRAINING</b>  |                             |
| (a) Technical Skills.....  | Provisional Sum (Prov.Sum)  |
| (b) Generic and Management Skills.....                                     | Provisional Sum (Prov. Sum) |
| (c) Contractor's handling cost, profit and all other charges in respect of |                             |



Sub items (a) and (b) above .....Percentage (%)

Payments under sub items B12.01 (a) and (b) shall be the amounts paid to the training institutions and shall be made in accordance with the provisions of the General Condition of Contract.

The percentage tendered for sub item B12.01(c) shall be the percentages of the amounts actually reimbursed to the Contractor under sub items B12.01 (a) and (b) and shall be in full and final compensation in respect of the Contractor's handling costs, profit, mentoring, record keeping, reporting and all other charges in connection with providing the services

| <b>ITEM</b>   | <b>UNIT</b>     |
|---|-----------------|
| <b>B12.02 Provision for a Community Liaison Officer</b>             |                 |
| a) Provisional sum for the payment of the Community Liaison Officer | Provisional Sum |
| b) Handling costs and profit in respect of sub-item B12.02 (a)      | Percentage (%)  |

Expenditure of the above item shall be made in accordance with the general conditions of contract.

The tendered percentage is a percentage of the amount actually spent under the sub-item B12.02 (a), which shall include full compensation for the handling costs of the contractor, and the profit in connection with providing the community liaison officer.”

| <b>ITEM</b>  | <b>UNIT</b>      |
|--|------------------|
| <b>B12.03 COMPLIANCE WITH OCCUPATIONAL HEALTH AND SAFETY ACT.</b>  |                  |
| (a) Contractor's initial obligations in respect of the Occupational health and Safety Act and Construction Regulations.....      | Lump Sum (L/Sum) |
| (b) Contractor's time related obligations in respect of the Occupational Health and Safety Act and Construction Regulations..... | Lump Sum (L/Sum) |
| (c) Submission of the Health and Safety File.....  | Lump Sum (L/sum) |

The tendered rates shall include full compensation for the Contractor's obligation regarding the compliance with occupational Health and Safety Act of 1993 for this contract.



## **1300: CONTRACTOR'S ESTABLISHMENT ON SITE AND GENERAL OBLIGATIONS**

### **B1302 GENERAL REQUIREMENTS**

#### **(a) Camps, constructional plant and testing facilities**

"The contractor shall, at each area where work is being undertaken, provide on a daily basis at least one (1) portable chemical toilet unit per thirty (30) workers for use by construction workers employed on the project. The toilet units shall be serviced daily and kept in a hygienic and orderly state to the satisfaction of the engineer. No separate payment shall be made for this requirement and shall be deemed to be included in the rates tendered for the contractor's time-related obligations."

## **1400 : HOUSING, OFFICES AND LABORATORIES FOR THE ENGINEER'S SITE PERSONNEL**

### **B1402 OFFICES AND LABORATORIES**

#### **(a) General**

Add the following:

"The facilities to be provided for the engineer in terms of these specifications shall be fenced off by a two metre high veranda type security fence with diamond mesh on the vertical portion and barbed wire on the overhang. A security gate shall be provided in the fence which shall be guarded at all times by an acceptable watchman provided by the contractor.

The engineer's establishment may be incorporated within the contractor's establishment provided that the preceding requirements are met to the satisfaction of the engineer.

Separate payment shall be made for the provision and erecting of the security fence and gate as indicated on the drawings, but the cost in respect of the provision of a watchman at all times by the contractor shall be deemed to be included in the contractor's tendered rate for item B13.01(c)."

#### **(b) Offices**

"(xviii) The engineer's site supervisory staff shall be provided with cellular telephones by the contractor for site communication purposes. Provision is made in the bill of quantities for separate payment of the supply and operating costs of such cellular phones."



## **B1403 HOUSING**

### **(c) Rented accommodation**

“The engineer may arrange for the obtaining of rented accommodation for his supervisory personnel on site. Payment of such rent shall be made under the provisional sum in sub-item 14.07(a) and shall be expended on a monthly basis by the contractor as ordered by the engineer.”

## **B1406 MEASUREMENT AND PAYMENT**

| <b>ITEM</b>  | <b>UNIT</b>     |
|--|-----------------|
| <b>B1403 (b) (ix)</b> 1.Provision of cellular telephones             | Number (No)     |
| 2. Provisional sum for the costs of cellular calls and other charges | Provisional sum |
| 3. Handling cost and profit in respect of sub-item B14.03(b)(ix) 2   | Percentage (%)  |

The unit of measurement for sub-sub-item B14.03 (b) (ix)1 shall be the number of cellular telephones supplied to the engineer’s site supervisory staff. The tendered rate shall include full compensation for the purchasing of the cellular phones inclusive of any fixed contract costs with the service provider.”

Measurement and payment in respect of the provisional sum item shall be made in accordance with the provisions of the general conditions of contract.

The tendered percentage is a percentage of the amount actually spent under sub-item B.14.03 (b)(ix) 2, which shall include full compensation for the handling costs of the contractor, and the profit in connection with the payment of the cost of calls and other charges relating to the use by the engineers site staff of the supplied cellular telephones.”

## **1500: ACCOMMODATION OF TRAFFIC**

### **B1502 GENERAL REQUIREMENTS**

#### **(e) Access to properties**

No separate payment will be made for providing acceptable and safe access to the site during construction.



**“(j) Handing over the site**

The total extent of the site as described in this document and indicated on the drawings will be handed over to the contractor at the commencement of the contract period. The engineer however reserves the right to adjust this arrangement should progress or safe passage of traffic warrant such a change.

**(k) Use of explosives in close proximity of temporary deviations**

The contractor shall arrange all necessary traffic control and other requirements to safeguard the traffic during construction.

**(l) Warning devices**

“It is a requirement of this contract that all construction vehicles and plant used on the works will be equipped with rotating amber flashing lights and warning boards as specified in the standard specifications. Construction vehicles travelling outside of construction areas shall however, not operate the warning lights.

The warning lights shall have a base diameter of at least 170mm and the amber bulb cover a height of at least 150mm high. It shall be a requirement that the contractor also provides the engineer’s site personnel with warning lights for their vehicles (a maximum of two lights are required) without any payment applicable.

**B1514 TEMPORARY FENCING AND GATES**

“Where temporary fencing is ordered by the engineer, it shall be paid for under item 55.06 of the standard specifications. The temporary fencing shall be new fencing material, which shall subsequently be dismantled and removed and erected at an alternative position as directed by the engineer. When ordered by the engineer, temporary fences and gates shall be moved to new locations or either left in place or when no longer required be dismantled and removed from site if so directed. Allowance is made in the bill of quantities for moving existing fences and gates.”

**B1517 RETRO-REFLECTIVE MATERIAL**

“Retro-reflective material for temporary signs shall comply with the requirements of SANS 1519-1 for weathered material. Tests shall be carried out with a field retro-reflectometer and the testing procedure and classification are described in Clause B 8118. The value of the coefficient of Retro-Reflection shall be at least 60% of the values indicated in Table B 8118/1.



**SECTION 1800: DAYWORK SCHEDULE**

**B1801 SCOPE**

This section covers the listing of daywork items for use in determining payment for work which cannot be quantified in specific pay item “units” in the bill of quantities or work ordered by the engineer during the construction period which was not foreseen at tender stage for which no applicable rate exists in the schedule or for work of a special or different character.

| ITEM   | DESCRIPTION  | UNIT                             |
|--------|--|----------------------------------|
| B18.01 | Labourers:<br>(i) Unskilled<br>(ii) Semi-skilled<br>(iii) Skilled  | Hour (h)<br>Hour (h)<br>Hour (h) |
| B18.02 | Foreman  | Hour (h)                         |
| B18.03 | Tipper trucks:<br>(i) 3 – 5 ton  | Hour (h)                         |
| B18.04 | TLB  | Hour (h)                         |
| B18.05 | LDV  | Hour (h)                         |
| B18.06 | Hand Controlled Compactors<br>(i) Pedestrian roller<br>(Bomag BW90)<br>(ii) Vibratory plate<br>(iii) Rammers | Hour(h)<br>Hour(h)<br>Hour(h)    |
| B18.07 | Water truck (min 10000 l)  | Hour(h)                          |



## **B1802 ORDERING OF DAYWORK**

No day work shall be undertaken unless specific written authorisation is obtained from the engineer.

## **B1803 MEASUREMENT AND PAYMENT**

The engineer may order the following day work items

The unit of measurement shall be the actual number of hours worked by labourers or foremen or an item of plant.

The tendered rates shall include full compensation for all cost items including overheads, head-office expenses and profits as described in subclause 40(3) of the general conditions of contract and shall be subject to contract price adjustment as provided for in the contract.

The mark-ups on day work items in accordance with the Appendix to the Tender shall not be applicable on day work items listed in the bill of quantities in terms of the above specifications. In the event of new day work rates being requested for items not appearing in the bill of quantities, then the provisions of the general conditions of contract and the Appendix to the Tender shall apply.

Prior to the commencement of any work by the labourers described under item B18.01, the contractor must obtain written consent from the engineer regarding the classification and composition of all labourers in terms of “unskilled” and “skilled” labourers required for the work as ordered by the engineer.”



## **DESIGN, SUPPLY, DELIVERY, INSTALLATION, TESTING, AND COMMISSIONING FOR THE ELECTRICAL INSTALLATION AT TSHILAMBA ART CENTRE**

### **SECTION A**

#### **DETAILED ELECTRICAL SPECIFICATION**

##### **ELECTRICAL EQUIPMENT**

##### **SUPPLY AND SUPPLY AUTHORITIES**

Eskom is the Supply Authority and client Electricity will be the body responsible for maintenance of the electrical infrastructure after completion and who will maintain and operate the system. As such, it is a specific requirement of this contract that the electrical infrastructure shall be to the satisfaction of the client

The connection to the new infrastructure will be obtained by connecting from an existing substation. At the connection point, the connections will be done at 22000 volts, 50Hz 3-phase 3-wire and the existing system's vector rotation is non-standard, while the neutral is effectively earthed. All equipment supplied under this contract shall furthermore be suitable for a maximum system fault level. After the infrastructure forming part of this contract has been completed and tested to the satisfaction of the Engineer, the contractor shall make the necessary arrangements with RES Engineers to connect the ends of the new low tension cable on the system.

It should once more be stressed that although the contractor is responsible for the supply of all materials, these materials should be in exact accordance with the drawings and specifications, in order that they conform to the standard materials used by client.

##### **MV RETICULATION**

1. Exist 22000V Overhead MV Line to be dismantled and be replaced with an underground MV XLPE UNDERGROUND Cable inside the facility Precinct as indicated on the drawing.
2. A new 315kVA/400V miniature substation will be installed as indicated on the site plan layout
3. All installation must meet the requirements Eskom MV Distribution standards and specification.

##### **LV RETICULATION**

1. 315kVA 22000/400V miniature substation will be installed as indicated on the site plan layout
2. 150kVA/400V standby generator will installed on site as indicated on the block diagram, for back up on essential installations
3. All installation must meet the requirements of SANS 10142

##### **HT METER**

HT metering will be done by Eskom on medium voltage (2200volts) during construction period before testing of equipments on site





### **EARTHING**

Building lightning protection must be installed in according with SANS 10313

To be done by others

### **SLEEVES FOR ROAD CROSSING**

Sleeves shall be provided for cable crossing paved and concrete ways around the the building and the sleeves shall be 110mm diameter.

### **DISTRIBUTION BOARD (L.V)**

1. LV Panel is feed from both miniature substation and stand by generator, the panel is positioned in the LV room as in dictated on the LV layout plan
2. Sub distribution board are feed from the main LV panel distribution board. Refer to the LV room layout plan

### **Standby Generator Change-Over Control Panel**

A control panel shall be fitted as integral part of the unit with the following:-

- i. Duty selector switch: Manual / Automatic
- ii. Push button for: Start, Stop, Reset.
- iii. LED indicator for: Run (red), Stop (green)
- iv. Panel meters or 7-segment LED display for frequency and current
- v. 7-segment LED indication or LED indication per alarm conditions such as over current, over voltage, under voltage, short circuit, overheat, stall etc.
- vi. Frequency adjustment selector with 0 to 10 scale and off position for external 4-20A control

### **Electrical Specifications**

The following specifications are not exhaustive and the tenderer shall indicate with his tender where and how the equipment offered deviates from this specification and what the implications of the differences are.



## Standby Diesel Generator

|                      |  |
|----------------------|--|
| Rating               | 150kW Motor  |
| Supply Voltage       | 3ph; 400V $\pm 10\%$ 50Hz $\pm 2$ Hz   |
| Output Voltage       | 3ph; o-supply voltage  |
| Output Frequency     | PWM sine wave constant V/f up to 50 Hz<br>Constant voltage over 50 Hz  |
| Derating Factor      | 75% maximum, preferably better than 80%  |
| Inverter Efficiency  | 95% minimum  |
| Overall Power Factor | 0.95 minimum   |
| Protection           | Over current / over voltage / under voltage / short circuit / overheat / stall / single phasing<br>instantaneous power failure |
| Alarm Output         | Single potential free contact  |
| Fault Reset          | Push button on panel with remote facility  |
| Ventilation          | Fan cooled   |

## Cabling

- i. XLPE shall be used between the Eskom supply point and new 315kVA 400V minisub and shall be properly protected with a Sleeve where it runs across the concrete floor.
- ii. The armouring of the cable shall be earthed.

## General

### a) Environmental Conditions

|                     |                 |
|---------------------|-----------------|
| Ambient Temperature | 0°C to +35°C    |
| Altitude            | Above sea level |



## SECTION B

### STANDARD SPECIFICATION FOR ELECTRICAL WORKS

#### STATUTORY REGULATIONS PERTAINING TO ELECTRICAL WORK

Except where otherwise specified or implied the contract work and equipment supplied shall comply with the latest revision of the standard specifications listed, including generally:

SANS 10142 – The Code of Practice for Wiring of premises

Local Fire Regulations

The Regulations of the Local Supply Authority

The Regulations of the Department of Posts and Telecommunications

Where an SANS Standard does not exist or if not applicable, the relevant IEC or BS Standard shall be applicable.

The equipment supplied and work carried out shall fully meet and comply with the requirements of the Occupational Health and Safety Act (Act 85 of 1993) and the Construction Regulations 2003 issued in terms of Section 43 of the Act, Standards South Africa ( a Division of the South African Bureau of Standard {SANS} and all other statutory regulations and laws insofar as they may apply to an electrical installation of the type contemplated.

In the event of discrepancy between any of the specifications, regulations and codes of practice, the SANS 10142 Code of Practice for Wiring of Premises shall take precedence.

All references to “SANS” specifications shall be read as “SANS” in light of the recent changes by the South African Bureau of Standards

Additionally, the following specifications, whether specifically mentioned within the tender document or not shall also apply:

|                   |   |
|-------------------|---|
| SANS 0111         | Part 1 – 1990 Clause 4.2 – Engineering Drawing – General Principles                             |
| SANS 1091         | National colour Standard for Paint  |
| SANS 156 & VC8036 | Moulded case circuit breakers   |
| SANS 172          | Cartridge type fuse-links for low voltage electric fuses  |
| SANS 173          | Fuses –link holders for cartridge type fuse-links   |
| SANS 950          | Unplasticised polyvinyl chloride rigid conduit and fittings for use in electrical installations |



|                                  |  |
|----------------------------------|--|
| SANS 1507                        | Electrical cables with extruded solid dielectric insulation for fixed installation                             |
| SANS 1195                        | Busbars  |
| SANS 1299                        | Direct-acting indicating electrical measuring instruments and their accessories                                |
| SANS IEC 60439-1 & 2             | Low voltage switchgear and control assemblies  |
| SANS 1473-1                      |  |
| SANS 1765                        |  |
| BS 4070                          | Performance of A.C control gear equipment rated up to 660 V for uses on high prospective fault-current systems |
| BS 587                           | Motor starters and controllers   |
| SANS 1195                        | Busbars  |
| SANS IEC 60947/4/1 and 60947/4/2 | Performance of A.C. control gear equipment rated up to 660 V for use on high prospective fault-current systems |

## **DRAWINGS**

### Engineer's Drawings

The Following drawings form part of the Standard Specifications:

1. Site plan layout
2. Distribution Board Single line diagram (SLD)
3. LV room layout plan
4. LV Single line
5. Lighting layout plan
6. Socket layout plan

### **Contractor's Drawings**

Workshop drawings of the Local Distribution Board in the project, as well as any other switchboards are required for approval by the Engineer prior to fabrication.

Record drawings (previously termed "as built") of the installation indicating cables routes, sleeve positions and circuit wiring details are required on completion. All these record drawings must be checked and signed by the Subcontractor before submission to the Engineer.

A full set of schematic drawings and wiring diagrams shall be handed over at the end of the Contract; including all switchboards, distribution boards, field control stations etc.

The Contract will be deemed incomplete until the Contractor has handed all these drawings over to the Engineer who shall provide his final acceptance in writing.



### **PREMISSIBLE VOLTAGE DROP**

Unless otherwise stated, the permissible voltage drop within low voltage installations from the Point of Common Coupling (PCC) shall be calculated as follows:

“1v plus 2% of the voltage at the end of the circuit when the entire circuit is fully loaded”

The PCC on low voltage installations shall be the respective transformer low voltage terminals.

### **CONTROL VOLTAGES**

Control Voltages within the Proposed Motor Control Centre shall be deemed to be 24V DC. Control voltages for remote field equipment, for example Start/Stop stations, shall be 220V AC. If an existing installations is to be expanded, the existing control voltage shall remain.

### **LV SWITCHBOARDS**

#### **General**

General details of the switchboards in this Subcontract are given below.

Existing and proposed Single Line Diagram (SLD's) included in this enquiry, as per the drawing numbers listed under Clause E5. In the event of any ambiguity, the SLD's shall take precedence over the specification.

#### **Existing Switchboards**

None

#### **Proposed Power and Lighting Distribution Board**

The Contractor shall provide and install the Proposed Power and Lighting Distribution Board in the Proposed Switch Room in the position as indicated on Drawings “Proposed Switch Room Power and Lighting Arrangement”

The Contract supplies and installs a flush mounted distribution board tray, mounted 1250 mm AFFL. The tray shall measure 800mm high x 800mm wide x 150mm deep and shall be fabricated from 1.6mm thick galvanised sheet steel.

The proposed Power and Lighting Distribution Board to be supplied under this Subcontract shall be manufactured from 1.6mm thick 3CR12 sheet steel and shall measure approximately 800mm wide x 800mm high x 150mm deep to fit the proposed tray detailed above. The proposed distribution board shall be coloured to Biscuit B64 of SANS 1091.

The architrave surrounding the door shall be not less than 50mm wide.

Demountable cable gland brackets shall be provided in the board, secured to the back. The brackets shall be provided with suitably sized and spaced holes for cable gland securement. A suitably drilled and rated copper earthing bar shall be provided in the board, to accommodate



all the earthing conductors on separate studs. The copper bar shall be provided with additional holes amounting to 5% of the contract requirements, to be left for spares.



## **SWITCHBOARD STANDARDS (MOTOR CONTROL CENTRE, DISTRIBUTION BOARDS, TRAYS, BOXES, ETC.)**

### **General**

The manufacture of motor control centre (MCCs) and distribution boards (DBs) {both collectively referred to as in this specification as “switchboards” noting that these refer to unpopulated arrangements} shall strictly comply with the latest revision of the following standards:

SANS IEC 60439-1  
SANS IEC 60439-2  
SANS 1473  
SANS 1765 Safety of Distribution Boards

For switchboards equal to or greater than a 10kA rating, switchboard manufacturers shall be in possession of a minimum of the test certificates required for Specially Tested Assemblies (STAs), as defined in SANS/IEC 60439. These test certificates are only relevant if approved by the South African Bureau of Standards (or their approved Certification Authority)

The test certificates required for compliance with a STA include verification of the following as defined in SANS/IEC 60439-1:

Installation Short-circuit withstand strength  
Dielectric properties  
Temperature-rise

Only these tests may be used as a basis for extrapolation to a lesser rated switchboard only.

Only the holder of these test certificates may provide switchboards; not third party manufacturer on behalf of test certificate holder

Copies of relevant test certificate shall be made available to the Engineer immediately upon request. Should this information not be presented to the Engineer upon request, Engineer reserves the right to call for another manufacturer to supply equipment that complies with this requirement and no compensation in any form shall be granted to the non-compliant party.

Notwithstanding any requirements of SANS/IEC 60439-1, the manufacturer of the switchboard (including the busbar assembly and mounting), shall retorque the busbars onsite once fully populated and connected-up, prior to switch-on, and shall issue a certificate to the Engineer detailing that the bus-bar arrangement is still to the same standards as at the time of initial construction and is safe for operation in terms of the requirements defining an STA.

Suppliers/Manufacturers of switchboards equal to or below 10kA shall be in possession of a *Permit to Apply Certification Mark*, issued by the South African Bureau of Standards, in terms of the Specific Permit Conditions of SANS 1765 .

Switchboards shall be fitted with a metal label, clearly displayed, detailing the information required by SANS/IEC 60439, SANS1473 or SANS 1765 as applicable, including compliance to the abovementioned STA tests.



### **Switchboard Preferred Tier Arrangement/Layouts**

Switchboards are to generally comply with the following, but these guidelines may be altered due to the specifics of the installation:

For switchboards with a single incomer, this cubicle and tier shall be positioned on the entrance side of the switchroom

For switchboards with a single incomer and a generator incomer, these cubicles and tiers shall be positioned in the middle of the switchboard.

For switchboards with two incoming mains feeders as well as optional and generator suppliers, these cubicles and tiers shall be position in the middle of the switchboard.

The position of PLC and Instrumentation dedicated Tiers shall be advise by the engineer

Bus-section switches shall be position in the middle of the switchboard adjacent to incomer tiers and cubicle.

Redundant/duplicated equipment shall be positioned on either side of a bus-section where practical.





## **Busbars and Busbar Chambers**

Totally enclosed busbar chambers shall be provided throughout the length of the MCC or DB. The busbar chamber shall have front, back, top and end covers.

The front and back covers shall be secured with square hatch keys, with one catch per cover lockable by padlock. The top and end covers shall be bolted.

The busbar chambers shall be so positioned in the MCC or DB at the top, that each and every connection is easily accessible and sufficient space is provided to easily operate a torque wrench on each and every bolt/nut.

Dielectric barriers shall be provided in the busbar chamber at 2 x tier module. The dielectric may not be split and offered into position as separate parts but shall instead be slotted to allow the busbars to pass through. The slotted holes shall be fitted with U-shaped rubber gasketing to ensure that busbar is snugly fitted to the dielectric. These dielectric barriers may not be employed to support the busbars. The dielectric shall be bolted to the sheet metal at the periphery of the busbar chamber.

The penetrations for circuit into or out of the busbar chamber shall also be provided with dielectric material at the point of penetration, as for the busbar chamber barriers.

Busbar supports shall comprise moulded epoxy insulators mounted on robust steel brackets arranged in stepped formation with the red-phase busbar at the top rear of the chamber and the neutral busbar at lower front position.

All busbars shall be tinned over the full length using only resin-based flux and fitted with phase colour coordinated heatshrink for the full length. Copper for busbars, risers and droppers which is delivered uninsulated shall be fitted with heat shrink sleeving between bolted connections. Once bolted connections have been completed, (torque checked) PVC insulation tape shall be provided, in neat half lapped formation, over the connection. The tape shall overlap onto the sleeving at least 40mm.

Joints in busbars shall be avoided as far as possible, but where they are necessary the joint shall be formed by offsetting one of the bars, by an amount equal to its own thickness, to overlap the other. The length shall be equal to twice the width of the bar, and the joint shall be secured with a minimum of 4 Hexagon headed set screws nuts and washers (plain and spring).

All busbar joints shall be torque tightened before the switchboard (MCC or Larger DB) is delivered, and torque checked (and tightened if necessary) just prior to commissioning.

Each joint or point of connection shall be properly tinned. Only resin based fluxes shall be employed during the tinning process.

The busbar riser sections, onto which cables terminate, shall be considered as part of busbar system as a whole and shall be equally subject to all the specifications detailed.

Busbars shall be capable of carrying the full rated current along their entire lengths. Reduced section busbars will not be permitted. Busbars shall be designed for a maximum temperature of 70°C (ie a 40°C temperature rise in an ambient of 30°C). Where a transformer feeds directly to the busbar (via a main circuit breaker), the copper busbar shall be designed for 125% of the transformer output (in kVA) and shall be rated to withstand an internal or external fault for 3 seconds without incurring any damage.



The neutral busbar in the MCC or any DB shall be equal in size to the busbars and shall be considered as part of the busbar system.

Busbars shall be manufactured from 99% electrolytic copper that has been hard drawn to the finished sizes. The copper shall be rectangular in cross section, shall be solid, and the cross section shall be maintained throughout the busbar system. Where the copper is delivered with rounded corners the copper shall be suitably de-rated for thermal emissivity. The copper shall be supported on SANS approved insulators at centres which are commensurate with the fault level to which the busbar system has been designed, but in no instance shall they be greater than 500mm apart. Where it becomes necessary to employ more than 1 copper bar per phase the copper bars shall be of equal cross section and shall properly spaced by an equal thickness spacer between the copper bars. Only copper having a cross section of 100mm x 6mm, or greater, may be employed in parallel, per phase. The spacers shall be bolted into position at points of attachment for lugged conductors or droppers. Where joints in the copper bar are inevitable they shall be made by offsetting one bar by the thickness of the copper such that the copper bars overlap one another, at the joint, by the width of the copper. Joints shall be properly fastened together with hexagon headed bolts, full size nuts, spring and flat washers. At least 2 and not more than 3 threads shall be visible beyond the nut once the final torque has been applied to each fastener. Where copper is punched or drilled the inevitable burr shall be removed and the copper shall be lightly chamfered at each hole. The busbars shall be provided with holes at either end of the switchboard to allow for an extension to the copper bar at some future time, together with centrally located holes in the copper bars between the insulating supports to allow for future loads to be added where required. At least two such sets of holes shall be provided, between consecutive supports along the busbar length. If more than one copper bar per phase is being employed then a copper spacer shall be provided between the copper bars and a bolt shall be provided to secure the spacer at each of the "space hole" positions. All copper shall be tinned with S6 solder using resin based flux, after all the drilling, bending and cutting has been completed. The finished, tinned copper, shall be free of solder lumps and shall be as smooth as the copper under the solder. After tinning, the copper shall be fitted with heat shrinkable, colour coded, insulating material before being fitted to the MCC. All joints and points of connection, once completed, shall be torque checked on site and shall then be fitted with colour coded PVC insulation tape. The tape shall be neatly installed by half lapping and shall commence on the heat shrink material on one side of the joint and shall finish on the heat shrink material on the opposite side of the joint. Non sticky PVC tape is the preferred material for this application.

### **Wiring, Cable Terminations and Glanding**

All wiring within panels may be enclosed in PVC slotted ducting. The exception is signal and instrumentation cabling passing through power compartments or cubicles, which shall be in galvanised screwed conduit. Wiring outside of panels and switchboards shall be run within galvanised ducting or conduit.

Alternatively, signal and instrumentation wiring may be run in a channel at either the front or the rear of the busbar chamber, accessible from the respective side of the switchboard within the busbar chamber. The channel shall be manufactured of 3CR12 and shall be welded into position. The channel shall contain a cover that is screwed into position.

All wiring and terminations shall be labelled with identification tags corresponding to the wiring diagrams. Cable terminations shall be marked with an identification label externally to the switchboard indicating the source of supply as well as the equipment being fed for feeder cables. For example: "FED FROM MCC 1" and "SUPPLY TO SUMP PUMP".

All glands for cable shall be nickel-plated brass, and fitted with waterproof neoprene shrouds.



## **Earth Bars**

The earth bar shall be mounted at the rear of the MCC or DB and shall be accessible along its length from all tiers (where applicable). The earth bar cross-section shall be as specified, or, where not specified shall be installed as per the minimum specified in SANS 0142 or SANS or SANS IEC 60439. Notwithstanding these requirements, the earth bar shall be not less than 70mm x 8mm in cross-section.

A one-piece copper bar shall be installed from one end of the board to the other and shall be provided with earthing studs (nuts, bolts and washers) in each tier.

The copper bar shall be bolted to the framework of the board in at least 10 positions with 10mm bolts. The copper bar shall be mounted 100mm above the top edge of the channel iron base and approximately 100mm from the backplate. Holes shall be provided in the copper bar in each cubicle along the length, for the termination of the earthing conductors associated with the circuits deriving a supply from the respective cubicles. Spares studs amounting to 10% of the Contractors requirements, shall be provided. Bunching of earthing conductors on a single stud will not be permitted.

## **MCC and DB Bases**

The floor mounted MCC or DB, shall be mounted to a one-piece hot dipped galvanised channel iron base, located at the position indicated in the transformer room. The one-piece base shall be fabricated from 100mm x 50mm x 6mm (10,57 kg/m) channel iron. The corners of the base shall be mitred and welded whilst cross bracing shall be provided on centres coincident with the cubicle modules along the length of the base.

Each cubicle shall be secured to the base with at least four 10mm diameter bolts, washers and nuts whilst the base shall be anchored to the concrete with a bolt in each corner and two bolts at every even numbered cubicle module. (One at the front of the base and one at the rear). The anchor bolts shall be 12mm diameter and shall be entered at least 80mm into the concrete.

The widths shall be uniform throughout their heights and plan view of the switchboard shall be uniformly rectangular in shape.

## **Paint and Finishing**

All metalwork in excess of 5mm thick shall be sandblasted to a profile of 40-80 microns, prior to painting. This finish shall be carried out carefully to provide the necessary "key" for the paint coats.

Where the material is less than 5mm thick, it shall be, lightly sanded, de-greased washed and forced air dried prior to painting.

The paint coat shall be a high quality polyurethane based powder coat to the acceptance of the Engineer. The sprayed powder coat shall be baked in an oven at a temperature of approximately 200°C for a period of 10min or as specified by the paint manufacturers.

The dry film coat shall be as uniform as possible but shall not be less than 40 microns nor more than 90 microns. The finish shall be high gloss with a minimum of surface defects.

Distribution boards, boxes, trays, covers, ducts, or any other enclosure housing electrical apparatus shall be coloured white internally, whilst externally the colour shall be B64 (Biscuit) to SANS 1091 or to the approval of the Engineer.



Switchboards connected for dedicated emergency supplies shall be coloured red externally.

### **Glanding Sections and Cable Gland Plates**

Gland plates shall be fitted in cubicle for termination of cables and shall be mounted 400mm above the final floor level. The cables shall be fitted with glands anchored to the respective gland plates. The glands shall be adequately spaced to permit the locknuts to be tightened with normal tools.

The gland plates shall be unpainted at least 2mm thick 3CR12 and shall be bolted to robust brackets welded to the framework of the board.

At positions where single core cables are employed the cable gland shall be fabricated from non-ferrous material of adequate thickness to support the cables i.e 15mm thick TUFNOL, 5mm 3CR12, 5mm galvanised sheet steel or 8mm aluminium.

### **Doors and Covers**

A door shall enclose the front each compartment, unless stated otherwise in the project specification.

Enclosures for outdoor or moist environments shall be provided with a weatherlip angled at 45° to the face of the enclosure framework, together with a door enclosing the cubicle and enveloping the weatherlip. The top of the outdoor enclosure shall be fitted with a full width canopy projecting at least 100mm from the enclosure face.

All doors shall be arranged to stand off from the face/rear of the board, cubicle, compartment or enclosure. Each door shall be properly stiffened and shall be twice returned at the periphery. The Second return shall be gusseted in the corners to further brace the door.

Large doors (e.g. those fitted to the rear of individual switchboard/MCC tiers) shall be further stiffened with “top hat” section channels welded to the inside of the door.

Each door shall be mounted on pin type hinges and shall be secured by mean of a lever operated tapered tongue catch or catches (Hinges and catches shall be Barker Nelson or equal to approval). The lever shall be provided with an external stop to prevent rotation in excess of 360° and to provide a padlocking facility. (A hole in the stop and a hole in the lever).

A minimum of two square hatch keys catches are required per door or rear panel, installed in conjunction with the tapered tongue catch at the top and bottom edges of the door on the opposite side of the hinges. For rear panels, one or both of these square hatch key catches shall be padlockable by having an extended section that encloses the latching mechanism and will allow a standard lock to prevent operation of the catch while in place.

For covers over busbar chambers, four square hatch key catches are required, with a minimum of one catch required to be lockable.

When doors are mounted adjacent to one another the spacing shall be arranged to permit each door to open through at least 150°, without fouling the adjacent door. A stop shall be provided which shall prevent the door from opening further to obviate damage to paintwork.

Doors fitted with flush mounted equipment shall be properly braced and stiffened to support the equipment. The hinges shall be easily able to support the mass added to the door when the flush fitted equipment is installed.



The space between the back of the door and the face of the coverplate shall be normally 80mm/

Where coverplates are provided the doors, the coverplates shall be adequately recessed into the cubicle to permit the spindle on the lever to drive the tapered tongue catch into a slot in the framework of the board without fouling the coverplate.

Coverplates shall be fabricated as for the doors and shall be further stiffened to compensate for the machine punches circuit breaker slots. The coverplates shall be secured at the top edge with at least two square key driven catches, whilst at the lower edge they shall be located with two 6mm diameter tapered dowel pins located in holes drilled in the architrave. Each pin shall be fitted with a 1.2mm thick spacer washer. Both the pins and the washer shall be welded to the cover.

The end, rear and top coverplates shall be removable to permit access to the equipment. The coverplates shall be lockable in the close positions.

### **Space Requirements**

In arranging the chassis layouts a minimum clearance of 80mm between equipment and framework, side panels or internal divisions is required. This minimum space is required on the top, bottom and sides of equipment.

A minimum of 50mm is required between equipment and wire trunkings. The spacing between equipment shall be sufficient to allow for the installation of conductors (taking in account the minimum permitted bending radii of conductors and cables).

A minimum of 80mm is required between power equipment (circuit breakers, contactors, etc). and any auxiliary control devices.

### **General Mounting Requirements**

No special tools shall be required to remove and re-install any equipment.

### **Switchboard Standard Colours**

The following colours shall be utilised for electrical switchboards:

|                               |                               |
|-------------------------------|-------------------------------|
| 6600V Mains Supply – EXTERNAL | B64 (Buscuit) to SANS 1091    |
| 6600V Mains Supply – INTERNAL | White Arc-Free                |
| Emergency Supply              | A11 (Signal Red) to SANS 1091 |

### **Metering within Switchboards**

As indicated on drawing TSE2003-0005 Sh2 entitled “Proposed Motor Control Centre Single Line Diagram” and on drawing TSE2003-0005 Sh3 entitled” Proposed Motor Control Centre General Arrangement (GA) Layout “, a combined Maximum Demand and kWh meter shall be provided, with associated cabling, fuses current transformer, calibration certificates etc. in the metering cubicle situated above the bus-section switch for the meter of the incomer supply from the Local Supply Authority and incomer from the future Generator.

The meters shall be positions behind a glass panel cut into the metering cubicle and shall only be accessible once the cubicle door has been opened. A small diameter hole shall be drilled though this glass to allow the meter function selector switch to be depressed without having to open the metering cubicle door.



This metering shall be independent of the metering to be supplied by the Local Supply Authority for billing purposes.

The meter shall be of the “Enermax” type or equal approved.

#### Field Control Station

These constitute local control stations mounted adjacent to equipment such as instrumentation, motors, etc, or emergency stop station in proximity to rotating machinery

Where required, these field control stations shall be installed in Glass Reinforced Polyester enclosures mounted on a hot dip galvanised stand. The stand shall be constructed of a minimum of 100mm x 50mm U channel, 3mm thick, welded to at least a 300mm x 300mm x 3mm thick base, bolted to the floor at each of the four corners.

A 3CR12 hood shall be fitted over the GRP enclosure.

#### **Hold Points During Manufacture**

The following hold points require action and shall be adhered to prior and during the manufacturing process of switchboards and associated/similar electrical equipment. Each step shall be completed in turn, requiring an inspection of the switchboard at the manufacturer’s premises and requiring the written acceptance of the Engineer for each step, prior to acceptance.

##### Distribution Board Design

After manufacture of metal work, prior to painting

After painting, prior to installation of equipment (switchgear etc)

Prior to delivery to site (at the sole discretion of the Engineer who may call for on-load testing of switchboards in the manufacturer’s workshop

Should these points not be followed and the item in question proves to be incorrect, it shall be for the manufacturer/tenderer/contractor to undertake to repair the situation at his own cost.

#### **Switchboard Construction Drawings – Standard Requirements**

All Construction Drawings for switchboards (MCCs, DBs, Field Control Stations, Instrumentation Panels etc) shall contain the following information:

Project Name and Contract Number

Manufacturer/ Supplier

Consulting Engineer and Contact person

Client details

Drawing Number and Revision

Drawing to be Signed

Source of Supply – MCC or transformer name etc

Switchboard General Description

Fault level (kA and time rating)

Form factor/Sectioning

Busbar Details (cross-section, material type, tinned etc)

Busbar Support Details- type, manufacturer

Each bar details (cross-section, full-length, front or rear etc)

Switchboard Material type, grade, thickness etc

Gland Plate details – material type, thickness, mounting etc



Colour – internal and external  
Switchboard Dimensions  
Base Dimensions and bolting arrangements  
Front door details- hinge and padlock requirements  
Rear door details – hinge and padlock requirements  
End panel details- removable cover details  
Door details – Stiffeners and restrainers installed etc.  
Hinge Details  
Locking Details  
Handle Details  
Cable Entry Details  
All bolts, nuts, screws material type (i.e 316 Stainless Steel)  
Equipment details – CV rating, fault levels, type, manufacturer etc  
Equipment Layout details – Cubicle name, function, equipment function etc  
Indication Light colours  
Section to be provided through switchboard

## **SWITCHGEAR AND CONTROL EQUIPMENT FOR SWITCHBOARDS**

### **General**

All equipment shall be of sizes, ratings and specification as detailed and as shown on the Single Line Diagrams. Where feeders or cables have to be revised because of equipment selection by the Principal Mechanical Contractor, these shall be done subsequent to the award of the Tender.

All equipment shall be approved by the Engineer in writing before acceptance for use on the project, and shall bear the SANS mark.

### **Circuit Breakers**

The circuit breakers shall comply with SANS 156 and VC 8036.

Cascading of circuit breakers is not permitted.

### **Metal Clad Air Circuit Breakers (ACB's)**

Metal clad air circuit breakers shall be of the withdraw able type and shall be suitable for use in power distribution systems up to 1000V 50Hz.

The circuit breakers shall comply with IEC 157 and shall have a P2 performance rating. The ACB's shall be self contained units of the dead front type with the necessary Mechanical interlocks to prevent:-

- Access to “Live” terminals when the circuit breaker is withdrawn.
- The withdrawal or insertion of the ACB when the circuit breaker is in the closed position.
- Closing of the circuit breaker without resetting after an automatic trip.

The circuit breaker shall be of the quick make and quick break type with a stored-energy spring assisted operating mechanism provided with:-



- A trip free, mechanical, hand operated closing mechanism.
- A manually operated, mechanical, trip mechanism suitably protected to prevent inadvertent tripping.
- A positively driven mechanical device to provide ON – OFF. – TRIP indication.

All non-current carrying metal parts of the ACB shall be connected to the earthing contact on the truck of the switch, which shall engage with a mating contact on the cradle. The cradle itself shall be connected to the earthing bar in the switchboard. The contacts for the earthing shall be made in the “Racked In” position as well as in the “Test” position. The cradle shall be of robust construction and shall incorporate safety shutters.

The “RACKED IN”, “TEST”, and “RACKED OUT” positions shall be clearly marked and easily visible.

The ACB’s shall be designed in such a way that the direction of the energy flow does not affect the operation or performance of the breaker.

Adjustable thermal overload releases shall be provided to suit the required current range. In addition, a magnetic short circuit release shall be fitted. This release shall have an adjustable current release values and an adjustable time lag. A minimum of four, time lag settings shall be available.

Care shall be taken to ensure the magnetic release occurs at a sufficiently low value to afford full protection under the lowest fault current conditions. (Where generators are encountered).

Each ACB shall be equipped with the following accessories:-

- Two normally open auxiliary contacts.
- Two normally closed auxiliary contacts.
- One alarm contact.
- One shunt release.
- Padlocking facilities in the “OFF” and “TEST” positions.
- Key interlock.

Each ACB shall allow for the fitting of the following options:-

- Motordrive for spring charge mechanism.
- Closing release complete with “Anti Pumping Circuit”
- Adjustable time delayed undervoltage release.
- Carriage switches for “RACKED IN” and “TEST” positions.
- Mechanical interlock facility of the Bowden type.

Minimum clearances and distances between the enclosure and the arc chutes shall be strictly observed.

Full technical information of the ACB’s offered, shall be supplied with the Tender.

### **Moulded Case Circuit Breakers (MCB’s)**

Moulded case circuit breakers shall be suitable for use in 1000V distribution systems at 50Hz. The circuit breakers shall comply with SANS 156 and VC 8036.

MCCB’s of the same frame size and the same fault level shall be from the same manufacturer.





Circuit breakers for feeders to lighting and small power sub-distribution boards and motors shall be equipped with an instantaneous magnetic release and a thermal release.

Discrimination shall be provided in the feeder circuit breaker arrangement. An adjustable release shall be provided where deemed necessary.

MCCB's employed for motor-starting circuits shall be rated in such a manner as to avoid 'nuisance tripping'.

Feeder breakers to motor control centres shall be equipped with a thermal release and a time and value adjustable release. These MCCB's shall be selective towards the upstream and downstream circuit breakers.

MCCB's of the same frame size, where in one application an instantaneous magnetic release is employed and in another application a time lagged release is used, shall have plug-in type trip units.

The operating handles of the MCCB's shall provide a positive "ON" "TRIP" "OFF" indication of the breaker status.

MCCB's shall be installed vertically. Horizontal mounting will not be accepted.

Minimum clearances and distances between the enclosure and the arc chutes shall be strictly observed.

## **MOTOR STARTING AND DRIVE SYSTEMS**

### **General**

Direct-on-line motor starter contactors shall be equipped with three pole thermal overload relays according to the rating of the motor. This shall be a combination unit with the door-interlocked circuit breaker.

The thermal overload relay be provided for single-phase protection, it shall be equipped with an electrical/electronic reset facility.

Drives to high gear ratio motor (such as the screen drive, screw conveyor and compactor) shall be equipped with an electronic shear-pin device. This protection relay will disregard the motor starting current, but trip the drive, should the current rise above a set threshold during running.

Should a phase failure or imbalance relay be incorporated in the design, this trip mechanism shall be manually reset along with the thermal overload relay.

### **DOL Motor Starter Compartments**

Motor starter compartment shall include for a minimum of:-

- i. Circuit-breaker (backplate mounted and arranged vertically).



- ii. Mechanical operating handle for circuit-breaker, including door interlock, self aligning spindle and padlocking facility (door mounted).
- iii. Current transformer class 1,5 (backplate mounted).
- iv. Ammeter.
- v. Hour meter.
- vi. Contactors for DOL starting or contactors for alternative methods of starting (backplate mounted).
- vii. Thermal overload device operating on single phase / three phases (usually mounted on contactor).
- viii. Electrical/electronic reset push button for thermal overload (via door mounted pushbutton).
- ix. Selector switch MAN, OFF, AUTO (door mounted).
- x. Start push button (door mounted).
- xi. Stop push button (door mounted).
- xii. Relays for stop/start and other controls where required (backplate mounted).
- xiii. Pilot lights for:
  - Motor stopped but power available (red)
  - Motor running (green)
  - Motor tripped (amber)
- xiv. Din rail mounted terminals.

In general, all motor starter control panels utilised for the control and operation of Surface Aerators shall include an adjustable tab timer positioned behind the Motor Starter Door. The timer's adjustable tabs shall protrude through the "Motor Control Relay" window .

All motor starter control panels for Surface Aerators shall be wired for connection to the PLC. A revised control philosophy may be issued in future under a separate contract for PLC control of the Surface Aerators. The Electrical Subcontractor shall allow in his pricing for this connection.

### **WIRING, CABLE TERMINATIONS AND GLANDING**

All wiring within panels may be enclosed in PVC slotted ducting. The exception is signal and instrumentation cabling passing through power compartments or cubicles, which shall be galvanised screwed conduit. Wiring outside of panels and switchboards shall be run within galvanised ducting or conduit.

All wiring and terminations shall be labelled with identification tags corresponding to the wiring diagrams. Cable terminations shall be marked with an identification label externally to the switchboard indicating the source of supply as well as the equipment being fed for feeder cables.



## **SWITCHBOARD ACCESSORIES**

### **General**

All manufacturers / suppliers of switchboard accessories shall ensure that the equipment is SANS certified. All systems providing starting and control shall provide full protection from the effects of internal and external faults.

### **Instrumentation in General**

Instruments shall generally be designed for an accuracy of 1% (Class 1) of the full-scale reading. (Assume the frequency remains constant at 50 Hz). Instrument faces shall be either 96mm x 96mm on large panels or 76mm x 76mm on smaller panels. The faceplates shall be painted white with black paint for the lettering and scale divisions. A thumbnail operated adjuster shall be provided to zero the pointer at any given time. A clear glass window that is positively located by the framework of the instrument shall enclose the pointer and faceplate. The glass shall be mounted on a gasket that will seal the space between the faceplate and the inside surface of the glass against the ingress of the moisture and dust. Terminals shall comprise nuts on a moulded in stud at the rear of the instrument. The terminals shall be fitted with two washers and a colour coded rubber shroud. The shroud shall allow the wire, fitted with a lug, to approach the stud at 90° and shall be moulded accordingly.

Instruments shall be provided with a scale not less than 20% above the normal operating value of the function being measured, then rounded up to the nearest standard scale provided by the manufacturers.

### **Voltmeters**

Volt meters shall be two sizes 96mm x 96mm on the large panels and 72mm x 72mm on the smaller panels. The meters shall be of the moving iron type and the movements shall be mounted on shockproof suspensions. The accuracy shall meet class 1.5 i.e. 1,5% of full scale value at each reading.

The main incoming section of the Switchboards (Motor Control Centres in particular) shall have a Voltmeter of 96 mm x 96 mm size, equipped with coloured surrounds representing each phase, i.e. Red, White and Blue and equipped with a phase selector switch. The switch shall permit the indication of all phase to phase and phase to neutral voltages on the voltmeter. The phases shall be noted as “R”, “W” and “B”.

Where a voltmeter is connected to the main busbar and a selector switch is provided for the operator to monitor the voltage between any two phases or between any phase and neutral, then two sets of HRC fuses shall be provided. One set mounted on the respective phase bars and the second set mounted adjacent to the voltmeter on the back of the door. The fuses mounted on the busbars shall each be provided with an element that affords protection for the conductors run between the two sets of fuses. The second set of fuses shall be fitted with elements that afford protection for the selector switch and instrument, besides being a convenient (and safer) point of disconnection for the maintenance staff. The minimum wire size for a voltmeter circuit shall be 2,5mm<sup>2</sup>.

### **Ammeters**

Ammeters shall be of two sizes 96mm x 96mm on the large panels and 72mm x 72mm on the smaller panels. The meters shall be of the moving iron type and the movements shall be



mounted on shockproof suspensions. The accuracy shall meet class 1.5 i.e. 1,5% of full scale value at each reading.

The main incoming section of the switchboards (Motor Control Centres in particular) shall be equipped with instantaneous and maximum demand ammeters of 96 mm x 96 mm size, equipped with coloured surrounds representing each phase, i.e. Red, White and Blue.

Each individual starter/drive cubicle shall be equipped with a 76 mm x 76 mm logarithmic scale instantaneous ammeter, with a label above the ammeter indicating the full load current for the respective drive.

Ammeters for ac applications shall be of the type suited to motor drives and shall provide a substantive overrange to allow for the motor starting current. The faceplate shall be marked, with a red line, at the point on the scale where the absorbed motor current occurs. Ammeters shall be arranged in circuit for direct reading or indirect reading (CT operated), as required. Direct reading devices shall be employed up to a maximum of 40 A. Where multiple CT's are installed to permit a single instrument to indicate the load on each phase, in sequence, a rotary selector switch shall be provided which will permit the operator to select the phase he wishes to monitor. The CT's shall be connected in a star configuration and the star point shall be 2,5mm<sup>2</sup>.

#### **Time Switches**

The time switches shall be of the 24 hour type, operating on a 230V 50 Hz supply with an electrically wound 9 hour spring reserve. The time switches shall be mounted behind the hinged access doors. Each time switch shall be fitted with fifteen "on" stops and fifteen "off" stops thereby providing 30 selective operations per 24 hours.

#### **Timers**

The timers shall be of the electronic plug-in type operating on a 230V 50 Hz supply. The timers shall be adjustable by turning a knob. They shall be mounted facing the front of the board but behind the access door.

#### **Fuses**

The fuses shall comply with SANS 172 and shall be adequately rated for the circuit currents. All fuses shall be positioned so as to be accessible from the front of the board.

#### **Fuse holders**

All fuse holders shall comply with SANS 173 and shall be adequately rated to cater for the load currents.

#### **Selector switches**

Selector switches shall be of the rotary pattern and shall be mounted on the cubicle doors or on the door to the panel above the circuit breaker. All selector switches shall have a minimum rating of 15 A.

These shall preferably be of the same manufacturer as the push buttons and indicators lamps.



Selector switches shall allow contacts arranged in wafer housings that permit stacking along, and positioning about, the centrally mounted spindle driven by the operating knob. The escutcheon plate mounted on the door of the motor drive, or other, cubicle shall be secured

with screws secreted from view by the 'snap on' plastic cover which shall be engraved in accordance with the circuit requirements (i.e. ON – OFF . REMOTE - OFF – LOCAL . MANUAL – OFF – AUTOMATIC) etc. The spindle shall be splined to allow the contacts within the wafer housings to be 'timed' for early or late, make and brake contacts, as required.

### **Relays**

The relays shall be general purpose plug-in relays with octal or 11 pin bases. Soldered connections to bases will not be accepted. Each relay shall be tightly sealed with a clear plastic cover. All relays shall operate on a 230V 50Hz supply.

### **Overload Relays**

The overload relays shall be of the thermal type with an element in each phase and shall conform to the characteristics curve held by the manufacturer with a tolerance of  $\pm 10\%$  of the values as specified in the SANS IEC 60947-4-1.

### **Contactors**

The contactors shall be operated electro-magnetically. The control voltage shall be 230V, except for the dc emergency lighting contactor, which shall be 110V dc. Contacts shall be capable of carrying 125% of the full load circuit current continuously. The contactors shall be suitable for "Intermittent Duty" 15 operations per hour.

### **Name Plates and Labels**

Each component of electrical apparatus installed under this Contract shall be properly and unambiguously labelled. Components on/in a distribution board shall be individually labelled, the compartments in which these components are mounted shall be labelled as an entity. The labels on the outside of each compartment shall be oriented, whilst the labels inside the various compartments shall be technician orientated and shall be worded/numbered as per the wiring diagram for the respective cubicle/compartment.

All labels shall be secured to the outside and inside of distribution boards with machine screws. Self-threading screws or glue will not be permitted. The exception is equipment labels within the switchboard, which may be glued only. All screw fixed labels shall be jig drilled to provide interchangeability between compartments.

All notices and labels for warning purposes or indicating dangerous conditions shall be in English, and Venda. General operating and identification notices and labels shall be in English only. Labels shall have black letters on a white background for standard labels or white letters on a red background for caution, warning or danger labels.

Each label shall comprise a high quality tri-laminate and the wording shall be engraved through the outer layer to expose the colour of the centre layer. All engraving shall sharp, clearly defined edges.



Labels and character sizes shall be commensurate with the size of article being labelled, with the proviso that where a range of labels sizes would thus occur on a panel, the labels/ character sizes shall be of a uniform average size.

## **EARTHING AND LIGHTNING PROTECTION**

### **Earthing**

The earthing installation shall comply with the requirements of the latest revision of the Wiring Code of Practice (SANS 0142) as well as the requirements of the Local Supply Authority.

The Neutral shall not be bonded to the Earth in the Motor Control Centre, but at the source of supply, namely the transformer.

All metallic cable support systems, handrails, ladders and access platforms shall be connected to the earthing system.

The resistance measured between the consumers earth terminal and any exposed conductive part of the installation or any other conductive part that needs to be bonded to the earth continuity conductor shall not be more than 0,2 ohms.

### **Lighting protection**

Lighting protection for this installation shall be limited to surge arrestors on the main board and suitable voltage protection on the instrumentation cables and equipment.

The surge arrestors shall be of an approval manufacture and shall bear the SANS mark approval.



## **CABLE TRAYS**

### **General**

All proposed cable tray installations shall be neatly sketched and submitted to the Engineer for approval before any cable tray work is commenced. The sketch shall include principal dimensions and show the proposed cable tray routes.

Cable trays shall be wide enough to accommodate the cables required in terms of this contract plus 15% spare capacity for future additions.

**Cable tray shall be installed within the entire cable trench of the Proposed Switch Room.**

### **Material and Manufacture**

Cable tray shall be of the heavy-duty type manufacture from 2,0mm thick sheet steel and hot dipped galvanised after manufacture, designed for internal external use.

Cable trays shall be plumb and true to line and shall be arranged either vertically or horizontally. Trays fixed to brickwork or concrete shall be mounted on 90 Z section spacer brackets, manufactured from 3 mm thick material, to space the back of the tray 30 mm from the structure. The brackets shall be full tray width and shall be provided along the cable tray route at approximately 500mm centres. Brackets shall be provided where cable trays terminate.

Each bracket shall be fixed to the wall with two 8mm anchor bolts entered at least 70mm into the wall whilst the tray shall be secured to each bracket with two 6mm galvanised steel set screws with nuts and washers.

A sample of the spacer brackets shall be submitted to the Engineer for approval, before proceeding with manufacture of the remaining brackets.

Joints in the tray shall be kept to a minimum and shall only occur coincident with a spacer bracket position or cross brace position.

Bends and tees in the cable tray shall be factory made by the same manufacturer as the cable tray. Joints in the cable tray shall be kept to a minimum and shall be arranged to occur coincident with a support bracket.

Nylon washers may be employed to prevent galvanic reaction between galvanised steel and 3CR12 or 316 steel (for specialised installation), but careful consideration shall be given to ensure earthing continuity of all metallic items employed.

Should the environment be considered corrosive (for example Wastewater Treatment Plants or near the coast) the Engineer may call for all brackets, straps, cable tray, bolts, nuts, washers, etc. employed for the cable tray system to be manufactured from AISI 316 stainless steel.

### **Cable Positioning and Fastening**

All cables shall be neatly fastened to they tray with PVC cable straps at 300mm centres.



Where cable trays are run Vertically, Power Cables shall be installed at the bottom of the cable tray and instrumentation and signal cables at the top.

Where cable trays are run horizontally, Power shall be installed closest to the supporting surface i.e wall, and instrumentation cable to the front.

All cables shall be run and cleated in accordance with the wiring regulations and shall be run in the ground or on cable trays secured to concrete, brick or steel structures.

## **SUBSTATION ENCLOSURE & RMU SLABS**

### **MOUNTING SLABS**

Mounting slabs shall be as per minisub manufacture specification

### **Substation Enclosure Surface Finish**

### **SLABS Substation Enclosure Fencing Material**

None

## **POWER CABLE TERMINATIONS**

Power cable terminations, connections and joints shall be facilitated by means of the use of a portable hydraulic compression tool with pre-set automatic tamperproof hydraulic unloading bypass valve, the entire equipment being either bought from, hired, or approved by the Cable Manufacturer. Approved lugs or Ferrules shall be crimped to the cable cores in all cases. No other method of termination or joint shall be allowed.

Where aluminium and copper or brass is in intimate contact and especially where the joint so formed is current carrying, "Densal" jointing paste or other approved paste or treatment shall be used.

### **Cable Trenches**

The cable trenches shall be a minimum of 450 mm wide x 750 mm deep. The trenches shall contain no stone or sharp objects and shall be inspected by the Engineer prior to backfilling.

For the purpose of this Subcontract, only three classes of material are considered and all excavated material shall be classified according to the following:

| <b>Type (as measured)<br/>in this document</b> | <b>General Description</b>                       | <b>Formal Classification to<br/>SANS 1200</b>  |
|--|--|--|
| Soft excavation                                | Excavation by pick and shovel in soft soil       | Soft Excavation  |
| Intermediate excavation                        | Possible by use of pneumatic tools and equipment | Intermediate excavation:<br>Boulder excavation Class A<br>Boulder excavation Class B |
| Hard rock excavation                           | Removal of material by blasting                  | Hard Rock excavation   |

## **CABLE TRENCHES:**

The Contractor shall provide all cable trenches. The Contractor shall be responsible for any damage to any services which may exist on the site and shall cover all costs incurred for the repair of any services which are damaged during the trench excavations.





Although a minimum cable trench width has been specified, the installation of two or more cables shall result in the Contractor engineering the actual cable trench width to ensure that all cables are not underrated.

Trenching that is to be undertaken within the existing MV substation shall be by hand and supervised by a competent person, approved by the Engineer. No trenching machines will be allowed within the Existing MV substation and MV equipment area.

#### **TRENCHING TO BE EXCAVATED FOR THE FOLLOWING ITEMS:-**

- From the MV equipment side of the existing Overhead line to 315 kVA miniature substation
- From the 315 kVA miniature substation to the LV room

The client shall undertake identification of existing cables. The Tenderer shall co-ordinate his work with the Water Services Staff.

The Tenderer shall ensure that he records the position of the identified cables by means approved by the Engineer. This does not preclude the Contractor from exercising caution while excavation work is undertaken.

All trenching as indicated on Drawing Master Plan entitled "Typical Multiple MV/LV Cable Trench Arrangement", shall be backfilled with excavated material that has had all hard material such as stone and gravel removed. Where necessary clean sifted building sand shall be imported to use as backfill.

All backfill material shall have enough moisture content so as to allow for good compaction. Backfill material shall be laid in layers to a depth of 150mm and then compacted by a compaction machine, suitable for the work at hand. The contractor shall ensure that the cable bedding sand and backfill is of a good quality to ensure that the thermal resistivity of the ground is at least improved.

All trenching shall conform to the standard as laid down in SANS 0198.

The contractor shall also ensure that the cable trenches are properly fenced off all time until the cables have been installed and the trenches backfilled.

Danger tape shall be installed as specified.

The cable trench shall be shored with timber boards where required to ensure safety to workers and the public and facilitate ease of installation.

All trenching shall be inspected by the Engineer prior to backfilling.

For the purpose of this Contract, only three classes of material are considered and all excavated material shall be classified according to the following:



| <b>Type (as measured) in this document</b> | <b>General Description</b>                       | <b>Formal Classification to SANS 1200</b>  |
|--|--|--|
| Soft excavation                            | Excavation by pick and shovel in soft soil       | Soft Excavation  |
| Intermediate excavation                    | Possible by use of pneumatic tools and equipment | Intermediate excavation:<br>Boulder excavation Class A<br>Boulder excavation Class B |
| Hard rock excavation                       | Removal of material by blasting                  | Hard Rock excavation   |

### **CABLE ROUTE MARKERS**

Cable route markers shall be installed every 50m in straight runs and at every change of direction. These shall be of concrete pyramid type, with engraved aluminium label as detailed on Drawing TSE2003-0007 entitled "Cable Route Markers".

### **LOW VOLTAGE ELECTRICAL MOTORS**

All electrical motors are supplied and installed under the Principal Mechanical Contract. The electrical contract includes only for the connection thereto and rotation testing of the motors.

### **BUILDING SERVICES INSTALLATION**

#### **EQUIPMENT**

##### **Specific Equipment**

All equipment supplied shall be rated at 10kA.

##### **Power Socket Outlets**

All power socket outlets shall conform to the types set out in the Project Specification Annexures or Single Line Diagrams.

All power socket outlets shall be at a height of 500mm above finished floor level, or as otherwise specified in Project Specification or on Drawings.

Where the socket outlet position would interfere with dado lines or other finishes the final position shall be decided on site by the Engineer.

##### **Power Socket Outlets Circuits**

##### **Single phase socket outlet circuits**

Circuits to single phase power socket outlets shall comprise two conductors not less than 4,0mm in cross sectional area drawn into 20mm or 25mm diameter conduit run between the switchboard and the socket outlet.

Circuits shall be arranged as detailed in the Project Specification.



### **Three phase socket outlet circuit**

Three phase socket outlet circuits, rated up to 32 A, shall comprise 4 conductors not less than 6mm in cross sectional area drawn into a 32mm diameter conduit run between the distribution board and the respective socket outlet position.

Circuits shall be arranged as detailed in the Project Specification.

### **Lighting Switches**

Lighting Switches shall conform to the types set out in the Project Specification Annexures or Single Line Diagrams and shall be mounted 1,45m above finished floor level.

The Contractors electrical representative shall throughout the contract ascertain from the Engineer, the heights of dado lines in the various rooms, etc. and so place switches so that they do not interfere with the dado lines or door swings.

### **Lighting Circuits**

Lighting Circuits shall comprise two conductors not less than 2,5mm in cross sectional area drawn into 20mm diameter conduit run from the distribution board to the various lighting points and their controlling switches.

Floodlighting circuits shall be wired with two 4mm conductors and one 2,5mm (earth) conductor.

Emergency dc lighting circuits shall be wired with two 2,5mm conductors drawn into 20mm diameter conduit. The conductors shall be coloured differently to the conductors of the normal lighting circuits.

### **Photocell**

A photo electric light sensing cell, controlling the 230V coil of the contactor shall be mounted external to the building in which the electrical installation is being undertaken at the same height as the lighting fittings it controls or as indicated in the specification.

A flush mounted conduit box shall be provided for the photo electric light sensing cell from where a 20mm diameter conduit shall be run to the distribution board, with 1,5mm conductors drawn into the conduit for the control circuit.

A rotary type switch mounted within the distribution board, shall be wired in the control circuit, to bypass the photo electric light sensing cell for testing purposes. A single pole circuit breaker shall be provided for the control circuit and connected to the load side of the triple control circuit breaker protecting the contactor.

### **DUCTS, CONDUITS, CONDUIT RUNS AND DRAW WIRES**

All conduits and conduit accessories shall be PVC, shall conform to SANS 950 and shall be concealed in walls, concrete floors or structures, and roof spaces, as far as possible. Conduit may be galvanised steel with screwed electric thread where specified.

Every effort shall be made to obviate chasing and the Contractor shall build conduits into walls and floors as the building work proceeds.



Where chasing is necessary the chases shall be as narrow as possible and shall be carried out by machine. Once the conduits have been installed they shall be secured to prevent springing whilst the brickwork is being made good. Chasing of concrete will not be permitted.

Where conduit is installed in concrete floor slabs the conduits shall not cross one another and shall be adequately spaced to permit the satisfactory consolidation of the concrete.

The conduits installed in the concrete slabs shall be kept well clear of the underside and top of the respective slabs. The conduits shall be installed so that any condensation that may form inside the conduit will gravitate to the nearest box.

An electrician shall be standing-by whilst the Contractor is casting concrete over any conduits.

Holes, slots, and cable trenches will be formed in the structure as the building work proceeds. The Contractor shall ensure that his conduits are kept well clear (at least 300 mm) from these penetrations when placing conduits for casting or building into the structures.

Are run in brickwork and are required to pass through a concrete column or beam, a conduit sleeve shall be cast into the column concrete. As the brickwork is raised the required conduit shall be installed through the sleeve.

Deep concrete boxes shall be employed in preference to shallow boxes fitted with extension rings.

All conduits shall be installed to permit the wiring to be "looped in".

Surface mounted conduit shall be subject to the approval of the Engineer.

All boxes shall fitted with cover plates where they are not covered by lighting fittings or other devices. All conduit for surface mounted lighting fittings shall terminate with conduit boxes and shall be arranged to permit back entry to each lighting fitting. The conduit boxes shall be securely fixed, flush with the underside of the ceiling or wall.

All ducts, spare conduits and conduits for other services shall be clear, water and moisture free and fitted with 2,0 mm diameter galvanised steel draw wire.

All PVC pipes installed as cable sleeves shall be provided with bends, where necessary, with a minimum radius of 600 mm.

## **POWER SKIRTING**

Three compartment power skirting manufactured from high impact PVC shall be provided and installed at the positions indicated on Drawings

The compartments shall be utilised for the following services:

|                                |                                  |
|--------------------------------|----------------------------------|
| Top compartment (80mm high)    | Power cabling and socket outlets |
| Centre compartment (40mm high) | Computer Services                |
| Bottom compartment (40mm high) | Telephone Services               |

All compartments of the skirting shall be approximately 35mm deep. All coverplates, end covers, elbows, bends and other fittings for the skirtings shall be provided from the same manufacturers range of equipment as the power skirting and shall match aesthetically and mechanically.



Flush mounted, round, conduit draw boxes shall be provided in the wall behind each compartment of the power skirting. A 50mm diameter hole shall be provided in the back of the top compartment and 40mm holes shall be provided in the back of the remaining compartments, at positions coincident with the flush mounted conduit boxes, to facilitate the drawing-in of cables and conductors.

Each compartment shall be provided with its own 25mm conduit and box. The conduit coupled to the power compartment shall be run to the respective distribution board (whilst the conduits coupled to each of the remaining two compartments shall be run in accordance with Schedule G.

## **WATER HEATER**

A water heater may be required during construction. The Contractor shall make the electrical connection to the water heater.

### **Water Heater Circuit**

Water heater circuit shall be installed according to the manufacture specification

## **LOW VOLTAGE CONTROL AND SIGNAL CABLES**

### **General**

All cables indicated on the drawings and schematics have been designed and selected according to the loads as shown. Should the Principal Mechanical Contractor offer equipment of different ratings and cable sizes are determined by the Electrical Contractor, the SANS 0142 and 0198 ratings and calculation methods must be followed. A maximum total volt drop of 2,5% is allowed across the cable from the MCC to the motor terminals under running conditions.

All conductors used in the electrical installation shall be highly conductivity, annealed copper with PVC insulation and shall comply with SANS 1507.

No joints will be permitted in any low voltage cable run, except where cable lengths exceed the drum length, without prior written acceptance by the Engineer. Any damaged cable shall be replaced by the Contractor at his own cost.

All cables shall be suitably rated.

The Electrical Subcontractor shall allow in his pricing for all control cabling, including but not limited to multi-core cabling for Stop (E-Stop)/Start stations, 4-20mA signals from field instrumentation etc.

### **Cable Routes**

The power cable for the new and existing motor shall be run on new cable tray in the Proposed Switch Room trenches, and on cable tray where cables are above the ground but not in ducts to ensure that cables are adequately supported.

The control and instrument cables for the project may be run on the same cable tray as the power cables but where electromagnetic interference may upset the control signals the necessary precautions regarding screening and physical separation shall be applied. The location of the new and replacement Stop (E-Stop)/Start stations shall be confirmed with the Engineer onsite, but shall generally be as accessible as possible to the operator.



### **Cable Lengths**

Cable lengths indicated in the document were employed for voltage drop calculations only (refer to Appendix “B”) and shall **not** be used as a basis for re-measurement. The onus is on the Electrical Subcontractor to adequately survey the site and measure and price the power and control cabling installation as an all-inclusive complete item

### **Power and Indication Cables (1000/600 Volt)**

All power and indication cables shall be of the multi-core stranded soft drawn copper wire PVC insulated PVC bedded, steel wire armoured type with an overall PVC sheath (preferably black) and shall be manufactured and tested in accordance with SANS 1507 for general purpose duty.

The colour of the cores shall be as follows:

- Twin core: one red, and one black.
- Three core: one red, one white and one blue.
- Four core: one red, one white, one blue and one black.

### **Instrumentation Cables (24V / 220V)**

Instrumentation cable shall be constructed of multiple twisted pairs of insulated stranded copper wire, PVC insulated with an overall aluminium shield, extruded PVC inner jacket, served with steel wire armour with an extruded PVC outer jacket.

The nominal conductor resistance shall not exceed 3,5 ohms per 100 m at 20C.

The complete cable shall withstand a dielectric test conductor to conductor and conductor to shield of 1000V dc for one minute.

The insulation resistance of each conductor shall be not less than 8 800 meg ohms/km for 1 minute at 500V and 20C, measured with the remaining conductors in the cable connected to the armouring.

The minimum core size shall be 1,5mm.

All instrumentation and signal cables (excluding optical fibre cables) shall be installed separate from power cables.

### **Spare Cores in all Cables**

All cables installed shall include for spare cores. The spare cores shall amount to 10% of the number of cores used, rounded up to the nearest whole core.

### **Cable Identification**

A suitable tag, onto which the appropriate cable identification number in accordance with the Contractor’s detailed cable schedule shall be stamped, shall be adequately secured just below the gland at the ends of each cable.

Where cables deviate from one route to another (e.g. at tee’s, on cable trays or in trenches) additional identification tags with numbers shall be fitted to each cable, within 500 mm of the point of deviation.



## **Cable Schedules**

The Contractor shall submit to the Engineer a detailed schedule of all cables together with drawings showing cable routes (both underground and on cable trays) for approval prior to the commencement of laying such cables.

## **MV Cables**

### **General**

The contractor shall present at the time of tendering, the qualifications of the cable jointer to be used, including copies of all relevant documentation.

Note: The Tenderer shall have a complete toolbox with all the necessary equipment need to complete the work at hand as well as any other work that may arise due to site conditions.

Only artisans that can produce Certification to prove that the relevant Termination Manufacturer has accredited them will be accepted for the proposed work.

### **Terminations**

Cable end terminations shall be dry type, suitable for the proposed equipment that is to be used.

The Engineer shall, before any work commencement, approve the type of cable ends proposed to be used by the contractor.

Heat shrink terminations shall be manufactures for non-tracking and U.V. stabilised for long life.

Termination or joint kits shall be packed as a complete kit, clearly marked in respect to the suitability for cable type, construction, and voltage. Each kit shall be have packed with the kit, a detailed set of manufacturer's instructions. All terminations, joints, and all associated work shall be executed with the correct tools as described by the manufacturer.

Soldered ferrules are to be used for cable joints and terminations.

Cable joints shall be of the moisture blocking type for the prevention of moisture ingress from one cable to the other through the joint box.

Paper-insulated cables that are to be made off into cable end boxes shall have the lead covering, armouring and a correctly sized earthing conductor, finished into and consolidated by a solder wipe.

The Contractor shall ensure that phase rotation of the cables installed, coincides with the supply phase rotation at all points in the installation.

Any cable ends that are to be left unattended for more than 12 hours shall have their ends capped to prevent any moisture ingress occurring.

In the event of inclement weather the Contractor shall ensure that all work on MV cables is undertaken under suitable cover.



## **CABLE GLANDS**

All cable glands shall be of the adjustable pattern to secure to the wire armouring of the cable and shall be manufactured from nickel-plated brass. All cable glands shall be fitted with waterproofing neoprene shrouds.

### **EQUIPMENT APPROVAL**

The Contractor shall submit detailed working drawings of all boxes, boards, panels, brackets trays, etc. to the Engineer for approval prior to manufacture. The drawings shall be not less than A2 and shall clearly indicate the principal dimensions and at least two cross sections shall be provided. Door and coverplate details shall be given, together with details of hinges and catches. The work may not proceed until the drawings have been properly scrutinised and approved.

### **SCHEDULE OF EQUIPMENT**

A complete list of fittings and other equipment intended for use on this Contract is to be submitted with the tender. This list shall contain manufacturers' names, catalogue numbers, etc. Where any item offered is not to specification, prior approval in writing shall be obtained from the Engineer before this can be offered.

Should any item supplied not comply with the specification, an alternative which meets the specification is to be approved by the Engineer and provided at no additional cost to the equipment to be supplied and installed.

The Engineer reserves the right to call for samples of the equipment offered, to inspect the workmanship as the work proceeds and to either accept or reject the equipment, or workmanship. The Engineer's approval of the design, materials and workmanship shall in no way reduce the Contractor's liability to provide a complete and proper working plant which in abreast with modern technology.

All such samples may be retained until completion of the Contract. All such samples shall have securely attached thereto labels designating the Contract by name and number (if any), the name of the Contractor and any further relevant information.

Unless where specified and agreed to IN WRITING, all equipment supplied by all parties shall be new and unused.

### **EVERYTHING NECESSARY**

The Contractor will be deemed to have visited the site and to have satisfied himself as to the nature of the work, to have acquainted himself with any limitations which may be imposed upon him and to have provided for any additional costs which he may consider necessary for the proper completion of the work. No claim will be recognised or considered after submission of price on the grounds of lack of knowledge of site conditions or limitations.

The installation shall include everything necessary whether specified in detail or not and shall be carried out in the best possible way to ensure a complete and first class installation to the approval of the Engineer.

### **UNIFORMITY**

All items of the same type of equipment shall where at all possible – be of the same make and type for each item throughout the installation, to ensure interchange ability and ease of maintenance.





### **RADIO, TELEVISION, COMPUTER AND COMPUTER SYSTEM INTERFERENCE**

The Contractor shall allow for interference suppression components where required, to ensure that the electrical installation shall not cause interference to radio, television, staff location, computer and computer systems.

All necessary steps are to be taken to comply with the regulations concerning interference.

### **YEAR 2000 (Y2K) COMPLIANCE**

The Contractor represents and warrants to the Client that any machines, software, or other goods (“Good”) and/or services (“Services”) supplied and Y2K compliant in that all Goods and/or Services correctly process, provide and/or receive date data within and between the twentieth and twenty-first centuries, provided that all other products (for example, hardware, software and firmware) used with such goods and/or Services correctly process, provide and/or properly exchange accurate date data with such goods and/or services.

### **DELIVERY**

The Contractor must co-ordinate the delivery dates for all items of equipment supplied by him to allow adequate time for installation, commissioning and testing prior to contract completion.

To this end, the Contractor must ensure that shop drawings are presented to the Engineer for approval timeously, and a programme of submission of such drawings must be approved by the Engineer as specified in the Conditions of Tender.

Documentary proof is to be supplied of the placing of all orders for equipment having a protracted delivery period. No substitution of specified items will be allowed due to the late placing of orders, and no delay claims in this regard will be entertained.

### **CONTRACTOR'S STAFF**

The work shall be done by, or at all times be under the personal supervision of an installation electrician appointed in writing by the Contractor as the Responsible Person, in terms of the requirements of the Machinery and Occupational Safety Act. This person shall be available during working hours, and shall be experienced in projects of the specified.

The Engineer may, if he deems fit, require that the Contractor removes or causes to be removed an employee of his from the specified premises by virtue of that person's incapability, appearance or any such reason which in the opinion of the Engineer, is valid.

At all times while on the specified premises, all artisan and labourer members of the Contractor's staff shall wear clothing adequately marked with the Contractor's name or acceptable identification.

### **VARIATIONS**

For the purpose of determining the cost of individual variations the Tenderer shall quote scheduled rates which would be accepted as a basis for the evaluation of extras and omission (See Detailed Project Specification).



## **INSPECTIONS, TESTS, MEETINGS AND COMMISSIONING**

### **General**

Should any tests or inspections be required outside of the, the Tenderer shall allow in his Tender price for all costs (travel, accommodation, subsistence, etc) for two persons to attend such tests or inspections.

The fact that the plant and equipment has satisfactorily passed any test made at the Subcontractor's works shall in no way lessen the responsibility of the Subcontractor to obtain the same results after it has been delivered and erected permanently on site.

### **Tests**

The Electrical Subcontractor shall notify the Engineer at least 2 weeks in advance, should his presence be required for inspections or witnessing of tests.

### **Inspections**

Works acceptance (function) tests shall be performed, which shall be witnessed by the Engineer and the Client of the Engineer's representative.

In the event that tests fail, the Subcontractor shall be required to perform such tests again. Should these tests require the Engineers to be present again, the Engineer's cost for time and travel shall be recovered from the Subcontractor at rates as set out by the Consulting Engineers South Africa.

All test certificates required in terms of the current SANS regulations shall be furnished before the project can be completed. These shall also be bound into the operating and maintenance manuals.

### **Meetings**

It is expected that the Subcontractor will be represented at every Project meeting during the contract. Meetings will be held in two formats, Site meetings and Technical meetings. The Site meetings will be held monthly, and it is expected that the Subcontractor be represented by a senior person in the Subcontractor's firm, who can act on behalf of the Subcontractor. At the Technical meetings, held between the Site meetings, the Subcontractor's representative may be a site or contracting foreman who is technically competent, having only to receive instructions on behalf of the Subcontractor.

The Subcontractor shall make provision in the pricing of his Preliminary and General costs for these meetings.



## **STANDARD SPECIFICATION OF MINIATURE SUBSTATION MEDIUM-VOLTAGE MINIATURE SUBSTATION**

### Scope

This specification is applicable to medium-voltage substations for systems with AC rated nominal voltages from 6.6kV up to and including 22kV. The specification covers both Type A and Type B miniature substations and distinguishes between miniature substations for inland and coastal applications

The tests prescribed in this specification will evaluate the performance capabilities of medium-voltage miniature substations.

### 1.1. Abbreviations

- 1.1.1. BIL: Basic insulation level
- 1.1.2. EFI: Earth fault indicator
- 1.1.3. MCCB: Moulded-case circuit-breaker
- 1.1.4. PECU: Photo-electric control unit

### 1.2. Requirements

#### 1.2.1. General

Nothing in this specification shall lessen the obligations of the supplier. The supplier shall be fully responsible for the design and its satisfactory performance in service. Approval by the engineer shall not relieve the supplier of the responsibility for the adequacy of the design.

This specification covers the requirements for the Type B mini-sub. Mini-sub shall be manufactured in accordance with SANS 1029, SANS 61330 and the requirements of this specification.

Where conflicting requirements with the relevant SANS specifications occur, this specification shall take precedence.

The specification distinguishes between mini-sub for inland application and coastal application. The technical schedules of an enquiry document will be arranged to cater for both inland and coastal applications. It is assumed that except for corrosion protection, units will be exactly the same for the two different applications.

#### 1.2.2. Standard operating conditions

The mini-sub units shall be suitable for operation under the following conditions:

- a) altitude: not exceeding 1800m;
- b) ambient air temperature: -5°C to 40°C;
- c) lighting ground flash density: severe (14 flashes/km/year);
- d) maximum solar radiation: 1000 W/m<sup>2</sup>;
- e) ultraviolet radiation: high;
- f) relative humidity: 10% to 95%;
- g) corrosive conditions: non-corrosive/corrosive (depending on application, i.e inland/coastal respectively)
- h) wind pressures not exceeding 700 Pa (equivalent to 34 m/s) shall be allowed for
- i) pollution conditions inside the mini-sub enclosure shall be considered to be in accordance with pollution degree 3' of SANS 60439-1 (clause 6.1.2.3).



## **Electrical requirements**

### **1.2.2.1. LV distribution panel**

- a) The LV distribution panel shall be constructed and designed for the use of either vertical fuse-bases or large frame MCCBs.
- b) If it is specified that vertical fuse-bases are to be used, the LV distribution panel shall be barricaded with individual removable sections (blanking plates) so as to allow for the installation of vertical fuse-bases as and when required on site. Blanking plates shall serve to complete the protection (barricading) of unoccupied spaces when using vertical fuse-bases.
- c) If it is specified that MCCBs are to be used, the LV distribution panel shall make provision for the mounting of the MCCBs as well as for barricading panels for the live terminals (i.e. line and load side) of the MCCBs. The mounting equipment provided for the MCCBs shall be positioned so as to ensure that when MCCBs are installed, the gases vented during current interruption are not directed towards any bare live metal (e.g. busbars)
- d) All LV live equipment (e.g. the LV busbars) forming part of the LV distribution panel shall be barricaded (using steel or a non-flammable plastic material) so as to prevent inadvertent contact by persons requiring access to the LV compartment (i.e. the front, sides and top shall provide protection against access to hazardous live parts).
- e) If LV feeder MCCBs are called for at the time of tender, they shall be in accordance with the requirements of SANS 556-1. MCCBs shall be fitted with individual inter-phase flash barriers. The spacing between the outer live terminals (metal) of adjacent MCCBs shall not be less than 25mm. This is to ensure that the risk of a flashover occurring between adjacent MCCBs (i.e. between the blue and red phases) is minimised during a short circuit interruption event. The lugbarrel and any exposed conductor of the single core flexible jumpers shall be adequately insulated.
- f) If LV feeder vertical fuse bases are called for at the time of tender, they shall be in accordance with the requirements of SANS 60947-3 and suitable for type 'gG-gL' NH 2 (DIN) fuses in accordance with the requirements of SANS 60269-2-1.
- g) The LV distribution panel shall be designed and constructed in accordance with the requirements of SANS 60439-1.

### **1.2.2.2. LV busbars**

- a) The LV phase busbars shall be positioned with 185 mm fixing centres and positioned above each other in a sequence, red, white, blue and neutral-earth from top to bottom.  
The spacing between the lowest LV phase busbar and the LV neutral-earth busbar shall be 300 mm. The spacing between the LV neutral-earth busbar and the gland plates shall be 200 mm.



- b) The LV phase busbars shall be made of hard-drawn copper in accordance with SANS 1029 and shall have a current rating of 1.2 times the kVA capacity of the transformer (see table 2). The current density shall not exceed  $1.8 \text{ A/mm}^2$ .
- c) The rated short-time current withstand level (1 s) of the LV busbars shall be 20 kA for mini-substations up to 500kVA.
- d) The LV phase busbars shall be drilled (centrally located 14 mm diameter holes) to accommodate the number of outgoing LV feeder bays specified in schedule A of the enquiry document. The holes shall be horizontally spaced at intervals of 110 mm. The number of holes drilled per busbar shall be equal to the number of outgoing LV feeder bays specified in schedule A of the enquiry document. The position and alignment of the holes shall correspond to the LV outgoing feeder cable bays. The distance between adjacent feeder bay centre-lines shall be 110 mm. The gland plate centreline spacing shall therefore co-ordinate with the busbar hole spacing.

Note: This arrangement allows for the installation (as and when required) of paralleled fuse-base units with a horizontal distance between axes (mounting holes) of 110 mm.

- e) The LV neutral-earth busbar shall be dimensioned identically to the LV phase busbars and be made of hard-drawn copper in accordance with SANS 1029. The LV neutral-earth busbar shall be drilled (centrally located 14 mm diameter holes) at intervals of 110 mm along the length of the busbar, so that the holes align vertically with the phase busbar holes.
- f) Neutral isolating links are not required.
- g) Stainless steel M12 set screws, nuts, washers and spring washers shall be provided for each of the 14 mm holes drilled on the LV phase and neutral busbars.
- h) The minimum diameter of the LV insulators used for the LV busbars shall be 40 mm. The insulators shall have a cylindrical shape (without sheds). The minimum diameter of the flat circular surface where the insulator makes contact with the frame and busbar shall be 25 mm. The insulators shall be at least 40 mm long (not including the projecting studs).

**Table 2 – LV busbar current ratings**

| 1                         | 2                             |
|---------------------------|-------------------------------|
| Transformer rating<br>kVA | LV busbar current rating<br>A |
| 200                       | 335                           |
| 315                       | 525                           |
| 500                       | 835                           |

#### 1.2.2.3. LV outgoing feeder cable gland plates

- a) Gland plates shall be provided for the outgoing LV feeder cables (one gland plate per feeder bay). The gland plates shall be at least 3 mm thick and shall be mounted on a steel support structure that is insulated from the mini-sub enclosure. The cross-sectional area of the individual steel support structures shall be at least  $70 \text{ mm}^2$ .



- b) Each individual gland plate shall be secured to the steel support structure with galvanized 4 x M8 bolts. Two standard size holes shall be provided (punched) per feeder bay (gland plate) (i.e. M63 and M32 holes with clearances for the glands of 98 mm and 49 mm, respectively). The distance between adjacent feeder bay centre-lines shall be 110 mm.

Note: With the use of mechanical adjustable glands, the M32 gland hole can accommodate 6 mm<sup>2</sup> to 35 mm<sup>2</sup> 4-core cable and the M63 gland hole can accommodate 70mm<sup>2</sup> to 185 mm<sup>2</sup> 4-core cable.

#### 1.2.2.4. LV auxiliary circuits

- a) A three pin socket outlet shall be fitted with the following protection equipment:-

- 1) an instantaneous trip earth leakage unit in compliance with VC 8035: 20 A load capacity, 5 kA rupturing capacity, 30 mA sensitivity;
- 2) a 20 A HRC fuse; and
- 3) a neutral fuse link

Note 1: The socket outlet earth shall be connected to the LV neutral-earth busbar and not to the mini-sub earth busbar or any steelwork of the mini-sub. If the socket housing is metallic, care must be taken to ensure that this connection to the steelwork is not inadvertently made.

- b) A removable blank plate shall be provided in the LV compartment for the installation of a streetlighting Photo Electric Control Unit (PECU) as and when required. The plate dimensions shall be approximately 300 mm x 300 mm and it shall be located as near as possible to or adjacent to the photocell compartment.
- c) All auxiliary wiring shall be numbered using an approved type of numbering ferrule at both ends of the wire.
- d) All LV 'earth' wiring (e.g. LV ammeter CTs), except that used to bond/earth the steelwork (e.g. metallic mounting boards and frame) to the mini-sub earth bar, shall be connected to the LV neutral earth busbar and not to the mini-sub earth bar.

#### 1.2.2.5. Additional equipment

- a) LV ammeters shall be provided for all three phases. The ammeters shall be phase-identified, thermal maximum demand ammeters, integrating over a 15 min period. The individual current transformers shall be busbar mounted and securely fitted.
- b) One voltmeter shall be provided with a selector switch to enable any one of the phase voltages to be read.  
The LV supply to the voltmeter shall be fitted with the following:
- 1) three 10 A HRC fuses; and
  - 2) a neutral fuse link.
- c) The meters shall be the standard 96 mm mm type, mounted as high as is practicable on the right hand side of the LV compartment.
- d) An earth-fault indicator (EFI) shall be provided with the mini-sub i.e. Type A and Type B mini-sub. The EFI control unit shall be positioned on the right-hand



side of the MV compartment and the current sensor shall be fitted to the left-side ring cable. The remote indicating unit shall be mounted on the outside of the mini-sub enclosure in such a manner that it can be clearly viewed from the front of the mini-sub (street-front). The type of EFI and design details shall be submitted to the engineer for approval at the tender stage.

e) The LV supply for the earth fault indicator (EFI) shall be fitted with the following:-

- 1) a 10 A HRC fuse; and
- 2) a neutral fuse link

#### 1.2.2.6. General electrical requirements

a) All LV auxiliary wiring shall be single core, stranded, colour coded, PVC insulated, copper conductor and shall be in accordance with the requirements of SANS 1507.

b) All LV auxiliary fuses shall be in accordance with the requirements of BS 88-6 and SANS 60269-1.

c) The connections between the transformer LV bushings and the LV busbars (including those to and from the main LV interrupting device) shall be 600/1000V single core, phase identified, heat resistant, flame retardant PVC insulated, copper flexible cable in accordance with the requirements of SANS 1574. The current rating shall be in accordance with table 2 and the current density in each phase, including the neutral, shall not exceed 2.5 A/mm<sup>2</sup>.

d) The LV bushings of the transformer shall be supplied with a brass/copper flag suitable for the connection of the LV single core cables. The flag shall have at least two holes each fitted with an M12 set screw, flat washer, spring washer and nut. No 'back to back' lug connections will be accepted.

e) All current carrying electrical compression fittings (i.e. lugs) shall be type tested in accordance with IEC 61238-1. All crimps shall be made using an approved hexagonal die system.

f) There shall be no joints or splices in the conductors and wiring.

g) All exposed live LV connections and components (e.g. the transformer LV bushings and the rear of the LV distribution panel if accessible) shall be barricaded (protected) using non-flammable plastic (e.g. polycarbonate) material to prevent inadvertent contact by persons requiring access to the LV compartment. Any barricade that obstructs viewing of the off-circuit tapping switch position (e.g. LV end compartment barricade) shall be made of transparent polycarbonate.

Note: The term 'barricaded' implies that a person would have to use a full forearms length to reach any live equipment.

h) The LV panel nominal (Un) and rated highest operational voltage (Um) shall be 400V and 440V (r.m.s.) respectively.

i) The rated impulse withstand voltage (BIL) of the LV panel shall be at least 8kV.

j) Clearances (and creepage) distances between bare LV live metal (phase to phase), and between bare LV live metal (i.e. phase) and earthed metal shall not be less than 20 mm. Where these clearances cannot be obtained, adequate solid



insulation shall be provided.

- k) The LV panel assembly shall be so designed as to ensure thermal interaction does not unduly affect the performance of any of the components.

### 1.2.3. Specific requirements for Type B mini-substations

A Type B min-substation shall comprise the following:

- a) a medium-voltage compartment housing a metal-enclosed ring main unit;
- b) a transformer compartment housing the transformer, and
- c) a low voltage compartment for housing LV equipment.

#### 1.2.3.1. Electrical requirements

##### 1.2.3.1.1. MV ring main unit (RMU)

None

##### 1.2.3.1.2. MV Interconnections between ring main unit and transformer

- a) For 6.6 kV mini-sub, if interconnecting single-core jumper cables are used between the ring main unit and the transformer MV bushings, these cables shall be screened, single core, XLPE insulated, unarmoured cables in accordance with SANS 1339. The screens shall be earthed on one side only. Flexible unscreened jumper cables will not be accepted. However, solid insulated busbars may be used which need not be screened. The insulated busbars shall be supported at each end and shall have no intermediate supporting arrangement. The clearances between the unscreened insulated busbars and between the busbars and earth shall be at least 50 mm. The design details of the interconnection arrangement shall be submitted to the engineer for approval at the tender stage.
- b) For 22 kV mini-sub, the three interconnecting single-core jumper cables between the ring main unit and the transformer MV bushings shall be screened, single core, XLPE insulated, unarmoured cables in accordance with SANS 1339. The screens shall be earthed on one side only. Screened separable connectors shall be used to terminate the interconnecting cables onto the ring main unit and transformer.

##### 1.2.3.1.3. Transformer MV bushings

- a) The transformer medium-voltage bushings shall comply with EN 50180 Type C (630A – tapered), bolted-type bushings with an M16x2 thread. These bushings have an internal screen which shall be earthed.

Note: All transformer bushings shall be subjected to a partial discharge test in accordance with SANS 60137.

- b) For 6.6kV mini-sub the transformer bushing-centre spacing shall be 135 mm and the distance between the outer bushing-centres and the mini-sub metal enclosure shall be 90 mm.
- c) For 22kV mini-sub, the transformer bushing-centre spacing shall be 100 mm and the distance between the outer bushing-centres and the mini-sub metal enclosure shall be 80 mm.





#### **1.2.3.1.4. Transformer overload protection**

The transformer unit shall be fitted with a top-oil thermoelectric temperature-sensing element. This shall trip the ring main unit tee-off switch-fuse/circuit breaker through a 240V shunt-trip facility when the transformer top-oil temperature exceeds 90°C. The relay used to provide the shunt-trip facility shall be housed in an enclosure and sealed with a stainless steel meter sealing wire and a 12mm tinned copper ferrule. The enclosure shall have a transparent front cover in order to view the temperature setting on the relay. The supply to the shunt trip facility shall be fitted with:-

- 1) a 10 A HRC fuse; and
- 2) a neutral fuse link.

Note: The pocket used to house the top-oil thermoelectric temperature-sensing element shall be filled with transformer oil and sealed to prevent oil from leaking during transit.

#### **1.2.3.1.5. LV main switch-disconnector**

- a) A main LV switch-disconnector shall be provided in the LV end compartment in order to isolate the LV busbars from the transformer.
- b) The switch-disconnector shall comply with the requirements of SANS 60947-3 and shall be fitted with phase (flash) barriers at the line and load side terminals
- c) The switch-disconnector shall be positioned in such a way as to ensure that the ionised gases released during a switching operation (i.e. arch extinguishing) are suitably vented away from all live metal including the transformer LV bushings.

### **1.2.4. Marking and labelling**

#### **1.2.4.1. Transformer rating plate information**

- a) In addition to the relevant requirements of SANS 780, the following information shall be clearly shown on the transformer rating plate:
  - 1) the manufacturer's name and year of manufacture
  - 2) the serial number
  - 3) the total mass of the mini-sub.
- b) The rating plate shall be permanently affixed in a prominent position at the LV transformer terminals so that it is clearly visible when the door to the LV compartment is open.

#### **1.2.4.2. Signs**

- a) A sign depicting "Treatment and Full First Aid Instructions" shall be permanently attached to the inside of the MV and LV compartment doors. For Type B mini-sub, the sign shall be attached to the inside of the door that opens first.



- b) External aluminium or 'Chromadek' electrical symbolic MV warning signs and LV warning signs shall be permanently attached to all the doors. If pop-rivets are used to attach the signs to the mini-sub doors, only aircraft or blind pop-rivets will be acceptable. Normal pop-rivets are not acceptable.
- c) The barrier used to barricade the air insulated cable junction box of the 6.6 kV Type A mini-sub shall have a sticker applied to it depicting an electrical symbolic warning sign (warning against "Unauthorized entry").
- d) The barrier used to barricade the LV bushings of the transformer shall have a sticker applied to it depicting an electrical symbolic warning sign (warning against "Unauthorized entry")

#### 1.2.4.3. **Labels**

- a) All LV auxiliary and additional equipment provided in the LV compartment shall be labelled and securely fixed by means of pop-rivets.
- b) A label shall be provided in the LV compartment adjacent to the control relay of the temperature sensing element that indicates the relay setting temperature (i.e. "Temp. Setting = 90<sup>0</sup>C")
- c) Phase labels shall be provided below all the bushings (primary and secondary) of the transformer.
- d) The LV busbars shall be colour-coded in the preferred colours of red, white, blue and black by clearly visible painted-on spot at least 20 mm diameter.
- e) The primary voltage, secondary voltage and 'kVA' rating shall be neatly and uniformly stencilled on the front, centre (100 mm below the roof) of the miniature substation housing, e.g. "6.6 kV/415 V 315 kVA". The markings shall be white and in characters larger than 50 mm high.
- f) The corrosion protection category (i.e. "INLAND" or "COASTAL") and total mass (in kg) shall be neatly and uniformly stencilled on the back of the mini-sub, e.g. "INLAND 3500 kg". The markings shall be white and in characters larger than 50 mm high.
- g) The labels "MV" and "LV" shall be neatly and uniformly stencilled onto the inside of the mini-sub MV and LV doors, respectively. Only the doors that open first shall be labelled. The markings shall be white and in characters larger than 50 mm high.
- h) For each batch of mini-sub manufactured the mini-sub roof and body shall be marked with stencilled marks that uniquely link the roof to the body. The purpose of the marking is to prevent roofs being swapped when off-loading batches of mini-sub.
- i) Main circuit designation labels that can be removed for engraving purposes shall be provided for each of the incoming cables in the MV compartment. The labels shall be at least 150 mm wide, 35 mm high and shall be blank sandwich-board or equivalent (orange-black-orange).
- 1) For Type A mini-sub, the labels shall be located in fixed positions adjacent to the cable support clamps provided. A label need not be provided for the tee-off to the transformer.



2) For Type B mini-sub, the labels shall be located on fixed positions at the front of the ring main unit adjacent to each cable box. A label shall be included for the tee-off to the transformer.

j) A label shall be provided in the LV compartment adjacent to the top-oil temperature sensing element pocket that state “CHECK THEMOMETER POCKET FILLED WITH OIL BEFORE COMMISSIONING”.

k) The label ‘MV’ followed by an ‘earth’ symbol shall be neatly and visibly stencilled (painted) onto the mini-sub earth bar (see 4.1.2.2) in both the MV and LV compartments.

l) The label ‘LV’ followed by an ‘earth’ symbol shall be neatly and visibly stencilled (painted) onto the LV neutral-earth bar (see 4.1.2.2) in their LV compartment.

m) For Type B mini-sub, the designation of IAC classification (see 5.2.1.3) shall be clearly shown on a label provided in the MV compartment of the mini-sub. The label shall be clearly visible to the operator.

#### 1.2.4.4. **Safe –keeping of documentation**

Provision shall be made for the safe-keeping of all relevant documentation (i.e. the installation, operating and maintenance instructions for the ring main unit and all routine test certification) on the inside of the MV compartment door.

### 1.2.5. Documentation

#### 1.2.5.1. **Transformer rating plate information (2 sets)**

Any revision to drawings of units being manufactured for and supplied for the project shall clearly indicate the revision number and date, and shall be submitted to the engineer for approval at the tendering.

#### 1.2.5.2. **Test certificates**

All required type test certificates (see 5.2.1) shall be submitted to the engineer by the manufacturer at the time of tendering. Single copies of all type-test reports and certificates, in English, for the minisubs offered shall be supplied to the engineer for approval at the tender stage. Certificates supplied for previous tenders shall be re-submitted.

Full routine test certificates (see 5.2.2) shall be provided with the mini-sub supplied. Original manufacturer’s test certificates/reports for bought-out (out-sourced) equipment shall be provided with the equipment supplied.

Test certificates for each unit shall be traceable by reference to the manufacturer’s serial reference number marked on the unit.

Any additional test certificates shall be marked “Additional tests” and kept separate from the required test certificates.

#### 1.2.6. Quality assurance

A quality management system shall be set up in order to assure the quality of the mini-sub during design, development, production, installation and servicing. Guidance on the requirements for a quality management system can be found in the following standards: SANS 9000, SANS 9001 and SANS 9004.

The details shall be subject to agreement between the purchaser and supplier.



#### 1.2.7. Installation of sub-switching stations, mini-substations and groundmounted transformers

- 1.2.7.1. Sub-switching stations, mini-substations and ground-mounted transformers shall be positioned at least 0.5 m from all erf boundaries and at least 1 m from the road kerbing.
- 1.2.7.2. Where a sub-switching station, mini-substation, ground-mounted transformer or metering equipment is installed within a 6 m x 3 m or 4 m x 3 m registered servitude, the plinth/s shall be positioned 0.7 m from the rear servitude boundary and at least 1 m from the front and side servitude boundaries.  
NOTE: This is to allow sufficient space for the equipment doors to open and provide operator access.
- 1.2.7.3. The equipment shall be installed on plinths 100 mm above natural ground level. Plinth designs are available for both pre-cast and cast-on-site options.  
NOTE: Cast-on-site plinths are intended to be used only in areas where the transport to site of pre-cast plinths is not cost effective or where pre-cast plinths are not available.
- 1.2.7.4. Before installing the plinth the ground shall be levelled and compacted to 90% MODAASHTO.
- 1.2.7.5. The inside of the plinths for mini-substations and free-standing RMU's shall be filled with sifted sand to a level of 50 mm above natural ground level. The remaining 50 mm to the top of the plinth shall be filled with a 6:1 ratio of sand to cement mixture that is neatly levelled and compacted.
- 1.2.7.6. At Type B mini-substation and free-standing RMU installations the source cable shall be terminated into the left hand side (i.e. when viewed from the point of operation) cable box. Similarly, at Type A mini-substation installations the source cable shall be terminated onto the left hand side of the MV compartment.

### 1.3. Tests

#### 1.3.1. General

- a) The tests shall be performed to establish the design characteristics of the mini-substations and assure compliance with the requirements specified. The tests shall be conducted on new units in the same state as they are normally supplied.
- b) BVi reserves the right to witness any or all of these tests. The supplier or manufacturer shall demonstrate an ability to provide means to enable the engineer to witness such tests.
- c) Suppliers are requested to indicate their compliance with the relevant standard at the tendering stage and shall submit all the required type test reports and design drawings.
- d) The qualifying type tests need not be performed if they were successfully completed for a previous BVi tender, provided that the design and material have not been changed or modified in any way. The type test certificates of completed successful type tests previously submitted shall be submitted with the current tender. Any change in the components shall be indicated at the time of tender. Reference to the appropriate enquiry for which the tests were successfully completed, shall be included in the current tender.
- e) The transfer of test certificates between manufacturers will not be allowed.



f) The supplier shall ensure that type tests are valid.

g) If there is reasonable doubt as to the validity of test certificates submitted, for example, by virtue of modifications made to the ring main unit, BVi may direct that further tests are carried out at a accredited test facility in the presence of a representative of the purchase, of a sample unit of the ring main unit in question. These tests shall be at the expense of the supplier.

### **1.3.2. Qualifying tests**

#### **1.3.2.1. Type tests**

Type tests are intended to establish design characteristics. They are normally only made once and repeated only when the design, components or the material of the unit are changed. The results of the type tests are recorded as evidence of compliance with design requirements.

The following type tests, in addition to those specified in SANS 1029, are required. The supplier shall cover the cost of type testing and shall provide BVi with the details of when and where these tests will be conducted.

##### **1.3.2.1.1. Transformer unit**

Type tests as specified in SANS 780 and SANS 60076-1 (temperature rise and voltage withstand (dielectric) type tests) shall be carried out on the transformer. The insulation levels of the transformer windings shall be tested in accordance with table 1.

In addition, the following special type tests shall be carried out:

- a) Short-circuit withstand test in accordance with SANS 60076-5.
- b) The fully assembled mini-sub shall not exceed the specified maximum audio-sound levels specified in accordance with IEC 60551. This test shall be conducted with the compartment doors closed and the mini-sub standing on a solid level surface.
- c) A type test shall be performed on a completed miniature substation to prove that the top-oil thermoelectric temperature-sensing element and associated circuitry functions correctly to provide overload protection of the transformer.

##### **1.3.2.1.2. Ring Main Unit (Type B mini-sub)**

Type tests as specified in the Ring Main Unit specification shall be carried out.

##### **1.3.2.1.3. Mini-sub (Type B mini-sub)**

The mini-sub shall be tested to assess the effects of arcing due to an internal fault inside the RMU. The minimum fault current inside the RMU shall be equal to the rated short time withstand current of the RMU as given in table 2 (column 2) of the Ring Main Unit specification corresponding to the specified rated voltage given in table 2 (column 1) of DISSCAAM6. The minimum duration of the fault shall be 0.5 seconds. The mini-sub is intended to be installed outdoors in a site of unrestricted public accessibility



(i.e. Type B accessibility) and shall thus be tested with indicators placed in the front, lateral and rear sides of the mini-sub as per SANS 61330.

However, the test shall be carried out with the mini-sub MV compartment doors (front) open. The conditions stated in clause A.5.3.4 of SANS 61330 (i.e. applicable to the 'Combined Test' requirements) shall be fulfilled – giving the entire mini-sub the following internal arc classification (IAC):  
Classification IAC AF-BFLR

Internal arc 20 kA 0,5 s (for 12 kV); and  
16kA 0,5 s (for 24 kV)

The test setup shall thus be in accordance with the following conditions:

Front: restricted to operators (Type A test requirements), and

Rear and lateral: public accessibility (Type B test requirements).

The arc initiation shall be made in one of the ring main cable compartments (i.e. that which produces the highest stresses in the mini-sub) provided:

1) the air-filled cable compartment(s) and SF<sub>6</sub> switchgear chamber(s) of the RMU have been previously internally arc tested in accordance with the requirements of SANS 62271-200 with a minimum classification IAC of "AF" for an internal arc of current and duration as specified above; and

2) the gas flow coming from the other air-filled cable compartment(s) and SF<sub>6</sub> switchgear chamber(s) is similar to that from the tested cable compartment in accordance with clause A.3 of SANS 61330.

If the above conditions are met, then the mini-sub need not be tested for an arc initiated in the SF<sub>6</sub> switchgear chamber. Venting of the internal arc gases (i.e. gas flow) shall be upwards as the MV cable entry through the concrete plinth is required to be sealed with a 50mm sand-cement (10:1 mix) screed. The designation of IAC classification shall be clearly shown on a label provided in the MV compartment of the mini-sub. The label shall be clearly visible to the operator.

#### 1.3.2.2. **Routine tests**

Routine tests are intended to prove conformance of units to specific requirements and shall be made on every unit. These tests shall be non-destructive. The following routine tests, in addition to those specified in SANS 1029, are required.

##### 1.3.2.2.1. **Transformer unit**

a) The following routine tests, as specified in SANS 780 and SANS 60076-1, shall be carried out on the transformer:

- 1) Measurement of winding resistance;
- 2) Measurement of voltage ratio and check of phase displacement;
- 3) Measurement of short-circuit impedance and load loss;
- 4) Measurement of no-load loss and current;
- 5) Dielectric routine tests.

b) All transformer bushings shall be subjected to a partial discharge test in accordance with SANS 60137.

##### 1.3.2.2.2. **Ring main unit (Type B mini-sub)**

a) Routine tests as specified in Ring Main Unit specification shall be carried out.

b) For ring main units with a circuit breaker T-off, the circuit breaker



relay shall be tested in accordance with the following minimum requirements and a routine test certificate for the relay shall be produced and included with each mini-sub and stored in the documentation holder provided:

- 1) Primary current injection tests shall be carried out to confirm the correct operation of the relays (i.e. the CTs, the wiring and the relay settings). At least two primary current injections shall be carried out to prove that the relay trips in both the low over-current (long time to trip) and high over-current or short-circuit ('instantaneous' trip) regions of the 'current – time' tripping characteristic.

#### 1.3.2.2.3. **Transformer overload protection and shunt-trip facility**

A routine test shall be carried out to confirm that the transformer overload protection facility (i.e. top-oil thermo-electric temperature-sensing element and relay) trips correctly. This shall be done by reducing the temperature setting on the relay from 90<sup>0</sup> C until the unit trips. Tripping shall occur at ambient temperature.



## **MEDIUM-VOLTAGE, METAL-ENCLOSED RING MAIN UNITS FOR 6.6 kV AND 22 kV MINIATURE SUBSTATIONS**

### **Scope**

This specification covers the minimum requirements for the selection, manufacture, testing and supply of factory-assembled metal-enclosed ring main units. It is applicable to three-phase ring main units intended for 6.6kV and 22 kV Type B miniature substations. The specification distinguishes between ring main units for inland and coastal applications. The ring main unit basically consists of two (ring main) switches connected in series by a common busbar and tee-off switch-fuse combination that are connected to the common busbar, thereby forming one integral unit within a metal enclosure.

The tests prescribed in this specification will evaluate the performance capabilities of medium-voltage metal-enclosed ring main units.

### **1.4. Requirements**

#### **1.4.1. General**

Nothing in this specification shall lessen the obligations of the supplier. The supplier shall be fully responsible for the design and its satisfactory performance in service. Approval of the unit shall not relieve the supplier of the responsibility for the adequacy of the design.

This specification covers the requirements for non-extensible, metal-clad ring main units for use within Type B miniature substations. The ring main unit basically consists of two (ring main) switches connected in series by a common busbar and a tee-off switch-fuse combination or circuit breaker that is connected to the common busbar, thus forming one integral unit within a metal enclosure. Ring main units shall be manufactured in accordance with NRS 006. Where conflicting requirements with NRS 006 occur, this specification shall take precedence.

The specification distinguishes between ring main units for inland and coastal applications. The technical schedules on an enquiry document will be arranged to cater for both inland and coastal applications. It is assumed that except for corrosion protection, units will be exactly the same for the two different applications.

#### **1.4.2. Standard operating conditions**

The units shall be suitable for operation under the following conditions:

- a) altitude: not exceeding 1800 m;
- b) ambient air temperature: -5°C to 40°C;
- c) lightning ground flash density: severe (14 flashes/km<sup>2</sup>/year);
- d) relative humidity; 10% to 95%;
- e) corrosive conditions: non-corrosive/corrosive (depending on application, i.e. inland/coastal respectively); and
- f) inland and coastal

#### **1.4.3. Marking and labelling**

##### **1.4.3.1. General**

- 1.4.3.1.1. For a switch-fuse combination, a label shall be provided that indicates the rated current of the fuse-link installed and shall be fitted to the RMU on the





fuse compartment cover (e.g. “40 A FUSES”). The label shall be similar to the main circuit designation labels (see 4.12.2 below).

- 1.4.3.1.2. For a switch-fuse combination or circuit breaker, a label shall be provided adjacent to the ‘open’ and ‘close’ (if applicable) buttons that indicates “OPEN/CLOSE”. The label shall be similar to the main circuit designation labels (see 4.12.2 below)
- 1.4.3.1.3. For a circuit breaker, if the protection relay is concealed behind a cover, a label shall be provided that indicate “PROTECTION RELAY BEHIND COVER”. The label shall be similar to the main circuit designation labels (see 4.12.2 below)
- 1.4.3.1.4. If an integral cable test facility is concealed behind a cover, a label shall be provided that indicates “CABLE TEST FACILITY BEHIND COVER”. The label shall be similar to the main circuit designation labels (see 4.12.2 below).
- 1.4.3.1.5. For the switch-fuse combination or circuit breaker Tee-off, a label shall be provided that indicates the basic operating procedure for a opening, isolating and earthing the T-off and b closing the T-off.
- 1.4.3.1.6. All labels (except the main circuit designation labels) shall be securely fixed by means of pop rivets.
- 1.4.3.1.7. All labels shall be legible with indelible characters. The font shall be 5mm high, UPPERCASE, and black on a white background.
- 1.4.3.1.8. Metallic labels shall be made of intrinsically corrosion-resistant metal.

#### **1.4.3.2. Main circuit designation labels**

- 1.4.3.2.1. The main circuit designation labels shall be blank sandwich-board or equivalent (black letters on orange background) that can be removed easily for engraving.
- 1.4.3.2.2. Main circuit designation labels shall be located on fixed positions at the front of each ring main unit.
- 1.4.3.2.3. Main circuit designation labels shall be at least 150 mm wide and 35 mm high.

#### **1.4.3.3. Rating plate information**

- 1.4.3.3.1. The rating plate shall comply with the relevant requirements of SABS IEC 60298
- 1.4.3.3.2. The rating plate shall be clearly visible to the operator.
- 1.4.3.3.3. Actual values shall be depicted on the rating plates.
- 1.4.3.3.4. The following information shall appear on the ring main unit rating plate:
  - a) rated voltage ( $U_m$ );
  - b) rated lighting impulse withstand voltage;
  - c) rated power frequency withstand voltage;
  - d) rated normal current of busbars;
  - e) the manufacturer’s name or trade mark;
  - f) the manufacturer’s type number or type designation;
  - g) the manufacturer’s serial number;
  - h) the year of manufacturer;
  - i) total weight of the ring main unit (including oil, if applicable);
  - j) that the ring main unit has been tested in accordance with SABS IEC 60298;
  - k) the standard value of duration of the rated short-time current;



The values to be used for rating plates shall be phase-to-earth values.

1.4.3.3.5. A rating plate shall be provided for each switch with the following information:

- a) rated normal current;
- b) rated short-time withstand current;
- c) rated peak withstand current;
- d) that the switch has been tested to the relevant standard.

1.4.3.3.6. Where applicable, a “PCB-free” sticker shall be provided on the ring main unit.

#### **1.4.3.4. ON, OFF and EARTH position labels**

1.4.3.4.1. All switching devices shall include labels that indicate the ON, OFF and EARTH positions.

1.4.3.4.2. These labels shall be permanently marked metal plates that have characters at least 10 mm high, or shall be located on a moving component of the switch that is visible through an opening.

1.4.3.4.3. The preferred marking shall be as follows:

- a) I: white lettering on a red background for the ON position;
- b) O: white lettering on a green background for the OFF position;
- c) the earth symbol in black on a yellow background for the EARTH position.

1.4.3.4.4. All position labels shall be visible to the operator in a normal operating position.

#### **1.4.3.5. Instruction plates**

1.4.3.5.1. Instruction plates in English or in pictograms shall be provided on switch-fuse combination panels to indicate to the operator how to insert and remove fuses when the fuse carriers are completely isolated and safe. These plates shall be placed near the fuses and the appropriate interlocking device.

1.4.3.5.2. Where the supplier is not the manufacturer, the supplier shall provide a label containing the supplier’s name or trade mark.

### **1.4.4. Documentation**

#### **1.4.4.1. Drawings**

1.4.4.1.1. The following drawings (2 sets) shall be submitted to BVi for approval at the time of tendering:

- a) a fully dimensioned general arrangement drawing of the RMU showing the cable termination enclosures, cable clamping and cable termination arrangements where appropriate

1.4.4.1.2. Any revision to drawing of units being manufactured for and supplied shall clearly indicate the revision number and date, and shall be submitted to Eskom for approval at the time of tendering.

#### **1.4.4.2. Test certificates**

1.4.4.2.1. The supplier shall provide BVi with a summary of the type test certificates stipulated in section 5.2.1 at the time of tendering. Type test



certificates shall be issued by an independent accredited testing facility. Certificates supplied for previous tenders shall be re-submitted.

- 1.4.4.2.2. Full routine test certificates (see 5.2.2) shall be provided with the ring main units supplied. Original manufacturer's test certificates/reports for bought-out (out-sourced) equipment shall be provided with the equipment supplied.
- 1.4.4.2.3. Routine test certificates for each unit shall be traceable by reference to the manufacturer's serial reference number marked on the unit.
- 1.4.4.2.4. Any additional test certificates shall be marked "Additional tests" and kept separate from the required test certificates.

#### **1.4.4.3. Installation, operating and maintenance instructions**

- 1.4.4.3.1. Installation, operating and maintenance instructions shall be provided for the ring main units supplied. 1 set shall be supplied to BVi for approval at the tender stage. 1 set shall be placed in the storage facility provided on the inside of the MV compartment door of each miniature substation supplied.
- 1.4.4.3.2. The installation instructions shall include:
  - a) a fully dimensioned general arrangement of the ring main unit, illustrating cable termination enclosures, cable clamping and cable termination arrangements where appropriate; and
  - b) the height of any cable support clamps above base level.
- 1.4.4.3.3. The maintenance instructions shall include:
  - a) detailed maintenance requirements and instructions
  - b) a comprehensive list of recommended spares/replenishment parts for the ring main unit supplied, including recommended quantities.
- 1.4.4.3.4. Details of special tools required and a recommended spare parts list shall be provided (2 sets). The tools/spare parts list shall include recommended requirements for:
  - a) commissioning; and
  - b) routine usage

#### **1.4.4.4. Catalogues**

All available catalogues for the ring main unit shall be submitted at the time of tendering.

#### **1.4.5. Quality Assurance**

A quality management system shall be set up in order to assure the quality of the metal-enclosed ring main units during design, development, production, installation and servicing. Guidance on the requirements for a quality management system may be found in the following standards: SABS ISO 9000-1, SABS ISO 9001, SABS ISO 9002, SABS ISO 9003 and SABS ISO 9004-1. The details shall be subject to agreement between the purchaser and supplier.

### **1.5. Tests**

#### **1.5.1. General**

- 1.5.1.1. The test shall be performed to establish the design characteristics of the ring main units and assure compliance with the requirements specified in this specification. The tests shall be conducted on new units in the same state as they are normally supplied.
- 1.5.1.2. The qualifying type tests need not be performed if they were successfully completed on a previous BVi tender, provided that the design and material have not been changed or modified in any way. The type test certificates of completed



successful type tests previously submitted shall be submitted with the current tender. Any change in the components shall be indicated at the time of tender. Reference to the appropriate enquiry for which the tests were successfully completed, shall be included in the current tender.

- 1.5.1.3. The transfer of test certificates between manufacturers will not be allowed.
- 1.5.1.4. The supplier shall ensure that type tests are valid.
- 1.5.1.5. If there is reasonable doubt as to the validity of test certificates submitted, for example, by virtue of modifications made to the ring main unit, BVi may direct that further tests are carried out at a accredited test facility in the presence of a representative of the purchaser, on a sample unit of the ring main unit in question. These tests shall be at the expense of the supplier.

## **1.5.2. Qualifying tests**

### **1.5.2.1. Type tests**

Type tests are intended to establish design characteristics. They are normally only made once and repeated only when the design, components or the material of the unit are changed. The results of the type test are recorded as evidence of compliance with design requirements.

The following type tests, in addition to those specified in NRS 006, are required. Note that the insulation levels of the ring main unit shall be tested in accordance with table 1. The supplier shall cover the cost of type testing and shall provide BVi with the details of when and where these tests will be conducted.

#### **1.5.2.1.1. Internal arc tests**

All air and/or gas-filled enclosures of the ring main unit shall be internally arc tested and shall be fitted with suitable explosion vents to ensure overpressure release in a controlled manner to the atmosphere, during the internal arc fault. This includes the arc-testing of the external cable boxes fitted to the ring main unit.

#### **1.5.2.1.2. Painted surfaces test**

Protection of coatings against corrosion shall be assessed using test samples of the same materials used in the construction of the ring main unit and subjected to the same painting procedures as the ring main unit components. The following tests shall be performed:

- a) an adhesion test in accordance with SABS SM 159: the cross-cutting coefficient shall be not less than 8;
- b) exposure to salt fog for 168 h in accordance with SABS SN 155: the coated surface shall show no visible defects and the underlying metal shall be free from corrosion and scale; and
- c) a scratch resistance test in accordance with SABS SA 147: when a mass-load of 1 kg is applied to the test needle, the scratch produced shall not have penetrated to the underlying metal. The scratch shall have no jagged edges.

### **1.5.2.2. Routine tests**

Routine test are intended to prove conformance of units to specific requirements and are made on every unit. These tests shall be non-destructive.

Routine tests as specified in NRS 006 shall be carried out. In addition, the following routine tests shall be carried out:



#### 1.5.2.2.1. **Bushing partial discharge test**

All bushings shall be subjected to a partial discharge test in accordance with SABS IEC 60137.

#### 1.5.2.2.2. **Circuit breaker relay test**

For ring main units with a circuit breaker T-off, the circuit breaker relay shall be tested in accordance with the following minimum requirements and a routine test certificate for the relay shall be produced and included with each mini-sub and stored in the documentation holder provided:

- a) Primary current injection tests shall be carried out to confirm the correct operation of the relays (i.e. the CTs, the wiring and the relay settings). At least two primary current injections shall be carried out to prove that the relay trips in both the low over-current (long time to trip) and high over-current or short-circuit ('instantaneous' trip) regions of the 'current-time' tripping characteristic.



## **DESIGN, SUPPLY, DELIVERY, INSTALLATION, TESTING, AND COMMISSIONING FOR THE ELECTRICAL INSTALLATION AT TSHILAMBA ART CENTRE**

### **SECTION C**

#### **HEALTH AND SAFETY SPECIFICATION**

##### **PURPOSE**

In terms of the Occupational Health and Safety Act (Act 85 of 1993) (OHSA) and the Construction Regulations 2003, the Client must provide the Contractor with a Health and Safety Specification to which the Contractor must respond with a Health and Safety Plan for approval by the Client.

The purpose of this Specification is to ensure that Principal Contractors entering into a contract with the Employer maintain an acceptable level of performance with regard to health and safety issues during the performance of the contract. In this regard the OHSA Specification form an integral part of the Contract and the Principal Contractor shall ensure that their contractors and/or suppliers comply with the requirements of this Specification.

##### **SCOPE**

This contract comprises the supply, Installation, testing and commissioning of various Electrical equipment.

The temporary and permanent Works required under this Contract are described in the following:

\* Part 3.2: Scope of Works

The Contractor, in complying with the OHS Act and the Construction Regulations, shall consider all aspects of the Works described and take into account the construction methods and materials to be used.

##### **GENERAL**

The contractor is referred to and shall comply with the full text of the Occupational Health and Safety Act (Act No. 85 of 1993) (OHSA) as amended and to the Construction Regulations 2003 promulgated there under

In this regard refer also the Health and Safety Agreement and Conditions attached to these contract documents. (See Part C1.4 in volume 2)

The following specification covers health and safety matters applicable during construction.

All the work included in this Contract shall, for the purpose of complying with OHSA and the Construction Regulations, be deemed to be “construction work”

It should be noted that, with a few exceptions, the Model Preambles and the project specifications are “end product specifications” and not “method specifications”. As the methods of construction to be used are generally determined by the Contractor, detailed safety requirements applicable to all the operations to be carried out on Site are not provided in the project documentation. The Contractor shall apply all the relevant regulations and requirements to the work methods and materials used.

The Principal Contractor shall give the required notice to the Provincial Department of Labour before commencement of any work on the Site. This notice shall include the information as required by the Construction Regulations and shall be signed by the Contractor and the Employer.

The Principal Contractor shall ensure current registration and good standing with the Compensation Commissioner and shall provide evidence to this effect to the Employer.

It is the responsibility of the Principal Contractor and his contractors to provide for all costs and expenses related to the management of and compliance with the OHSA and this Specification.



## **EXISTING SITE CONDITIONS**

The Contractor shall take into account, inter alia, the following existing conditions when complying with the OHS Act:

- Existing utility services
- Existing Site conditions. The Contractor shall be deemed to have visited the Site and examined the site conditions applicable for the Works. In this regards the contractor is advised that the existing roof material contains asbestos cement products.
- Traffic accommodation requirements
- Surrounding land use
- Anticipated weather conditions for the Thohoyandou area
- Access to the public and use of the facility during construction

## **DESIGN INFORMATION**

Design information provided for safety planning purposes, such as design loads for structures, foundation conditions etc, is available from the Principal Agent where required.

## **CONSTRUCTION MATERIALS**

The following commonly used construction materials and substances potentially pose health and safety hazards:

- \* All materials contained in pressurized containers;
- Bitumen and tar products;
- Cement;
- Epoxies;
- Lime and other stabilizing agents;
- Paints;
- Timber preservatives
- Asbestos cement products
- 

The materials to be used to construct the Works are described in the following:

- The Project Specification
- The Model Preambles for Trades 1999

The Contractor shall take appropriate measures to manage the risks associated with the use of all the materials required to complete the Works, i.e. not only those listed above, and shall, inter alia, implement all the precautionary measures provided by manufacturers and suppliers for the storage, use and application of materials used. In addition special care shall be taken in the cleaning, preparation and repainting of the existing asbestos cement roof sheeting and rain water goods.

## **SITE ACCESS AND ENVIRONMENTAL CONDITIONS**

- a) Site access, egress, deliveries and vehicular and pedestrian routes

The requirements regarding the control of access to and egress from the Site and vehicular and pedestrian routes are to be noted by the Contractor and provision is to be made to ensure the safety of all pedestrian and vehicular traffic at all times.

- b) Environment

The Principal Contractor shall ensure compliance with all current environmental legislation applicable to the Works and the Site. The Contractor is advised of the existing asbestos cement products and all necessary environmental precautions and requirements shall be adhered to in this regard.

## **USE OF SITE BY THE EMPLOYER**

Any continued use of the Site required by the Employer to maintain traffic flows or to allow work to be done by other contractors or authorities is a requirement of this contract and the contractor shall take due precaution in this regard



### **SITE RULES**

- a) Wayleaves, permissions and permits  
The Contractor shall be responsible for obtaining all the wayleaves, permissions or permits applicable to working near any existing services or other infrastructure on Site and shall abide by the safety conditions imposed by such wayleaves, permissions or permits.
- b) Reporting of incidents  
All incidents shall be reported strictly in accordance with the requirements of the OHSA and the General Conditions of Contract.

### **HEALTH AND SAFETY PLAN**

In compliance with the Construction Regulations the Contractor shall, after performing a risk assessment, prepare a health and safety plan for approval by the Employer.

The health and safety plan shall include, but not be limited to, the following:

- The safety management structure including the names of all designated persons such as the construction supervisor and any other competent persons;
- Safety method statements and procedures to be adopted to ensure compliance with the OHSA.

Aspects to be dealt with shall include:

Public vehicular and pedestrian traffic accommodation measures;  
Control of the movement of construction vehicles;  
The storage and use of materials;  
The use of tools, vehicles and plant;  
Temporary support structures;  
Dealing with working at height;  
Environmental conditions and safety requirements in working hazardous materials including asbestos cement products;  
Security, access control and the exclusion of unauthorised persons.

- The provision and use of temporary services;
- Compliance with wayleaves, permissions and permits
- Safety equipment, devices and protective clothing to be employed;
- Emergency procedures;
- Provision of welfare facilities;
- Induction and training;
- Provision and maintenance of the health and safety file and other documentation;
- Arrangements for monitoring and control to ensure compliance with the safety plan.

### **AUDITS BY THE EMPLOYER**

The Contractor shall permit the Employer to regularly audit, at an agreed interval, the implementation and maintenance of the approved health and safety plan and shall co-operate and provide all the required documentation, as may be required, in this regard.

### **VARIATIONS**

Should any variations be ordered or design amendments issued the Engineer shall inform the Contractor of all the associated potential hazards to ensure that the health and safety aspects of the work ordered are taken into account.





## ITEMS REQUIRING PARTICULAR ATTENTION

Restricted use of the Site:

The Principal Contractor is to note that the flow from the works must remain uninterrupted at all times.

Hazardous work or activities:

The following hazardous work or activities are identified and the Principal Contractor shall ensure that all necessary health and safety precautions are complied with and the necessary competent persons identified and appointed in accordance with the OHSA and the

Construction Regulations:

| Activity   | Applicable sub-regulation of the Construction Regulations 2003       | Sub-regulation clause reference |
|--|--|---------------------------------|
| Work at height   | Fall Protection  | 8                               |
| Possibility of collapse of structure                   | Structures (including the existing roof)                             | 9                               |
| Formwork and temporary support work                    | Formwork and support work  | 10                              |
| Access and scaffolding                                 | Scaffolding  | 14                              |
|  | Boatswains Chains  |                                 |
|  | Material   |                                 |
| Use of construction vehicles                           |  | 21                              |
| Electrical installation                                |  |                                 |
|  | Construction vehicles and mobile plant                               | 22                              |
| Use of flammable liquids                               |  |                                 |
|  | Electrical Installation and Machinery on construction sites          | 23                              |
| Housekeeping and environmental conditions              |  |                                 |
| Stacking and storage of materials                      | Use and temporary storage of flammable liquids on construction sites | 25                              |
| Fire hazards   |  |                                 |
|  | Housekeeping on construction sites                                   | 26                              |
| Facilities for staff                                   |  | 27                              |
| Hazardous Materials including asbestos cement products |  |                                 |
|  | Stacking and storage on construction sites                           | 28                              |
|  | Fire precautions on construction sites                               |                                 |
|  | Construction welfare facilities                                      |                                 |



## **PART A – DETAILED TECHNICAL SPECIFICATION**

### Detailed Technical Specifications

1. Site Electrical MV Reticulation installation scope is as follows;

#### Medium Voltage Supply Cables

95mm<sup>2</sup> x 3core XLPE shall be installed from the Existing Eskom line passing through the site to the new 315kVA miniature substation.

Aberdare Cable to SABS 97: 1999 with a 70mm<sup>2</sup> BCEW.

The existing 100m of an Eskom existing Overhead MV Line passing through the site shall be dismantled and a new 100m x 95mm<sup>2</sup> x 3core XLPE MV underground cable shall be installed to replace the Overhead portion of the MV line that will be dismantled.

2. Site Electrical LV Reticulation

A new **315kVA Miniature Substation** shall be installed on site to provide sufficient power to the facility.

#### Cables sizes

95mm<sup>2</sup> x 4core SWA PVC SWAPVC Underground cable shall be installed from the new 315kVA miniature substation to the LV Room to supply all the Non-essential loads in the Building as indicated on the drawing.

Aberdare Cable to SABS 97: 1999 with a 70mm<sup>2</sup> BCEW

A new **150kVA Standby Diesel Generator** shall be installed as indicated on the drawing to supply all the essential loads in the building and around the building as indicated on the drawing.

#### Cables sizes

70mm<sup>2</sup> x 4core SWA PVC SWAPVC Underground cable shall be installed from the new 150kVA Standby Diesel Generator to the LV Room to supply all the essential loads in the Building as indicated on the drawing.

Aberdare Cable to SABS 97: 1999 with a 50mm<sup>2</sup> BCEW

New **Kiosks** shall be installed on site as indicated on the drawing.

| Items | Description | From    | To                | Load                    |
|-------|-------------|---------|-------------------|-------------------------|
| 1     | Kiosk-1     | LV Room | Areal lighting    | 125W MV Lighting        |
| 2     | Kiosk-2     | LV Room | Security lighting | 400W HPS<br>Floodlights |
| 3     | Kiosk-3     | LV Room | Guard House       | Lighting & Plugs        |

#### Cables sizes

16mm<sup>2</sup> x 4core SWA PVC SWAPVC Underground cable shall be installed from the LV Room to supply all the kiosks installed around the building as indicated on the drawing.

10mm<sup>2</sup> x 3core SWA PVC SWAPVC Underground cable shall be installed from the Kiosks to the Security and Areal lighting around the Building as indicated on the drawings.

All kiosks shall be supplied from the Standby Generator Supply.



## SUMMARY OF OUR UNDERGROUND MV & LV NETWORK DESIGN

The following following equipment and cables were used namely ;

- 1x 315kVA 22000/400V Miniature Substation
- MV Cable: 22000/11000V, XLPE Cable
- LV Cable: 10, 16,50,70 & 95 x 4 core, Cu, PVC, PVC, SWA, PVC 600-1000V
- Earth Conductors 70,50,35,25 and 10mm<sup>2</sup> BCEW
- Security Lighting Cable: 10mm<sup>2</sup> PVC SWA PVC cable
- Aerial Lighting Cable: 10mm<sup>2</sup> PVS SWA PVC cable
- Metering Kiosks: 6,8 and 9 way
- Security Luminaires: ..... LED ( Equivalent to 400W HPS )

The following different cables shall be installed:

### Medium Voltage

95mm<sup>2</sup> x 3core XLPE. Aberdare Cable to SABS 97: 1999 with a 70mm<sup>2</sup> BCEW.

### Low Voltage

95 mm<sup>2</sup>, 70mm<sup>2</sup>, 70 mm<sup>2</sup> x 4core Copper PVC, PVC SWA PVC 600-1000V cable supplied by Messers Aberdare Cables SABC 1507:

### Bare Copper Earth Wire

70, 50 and 10mm<sup>2</sup> Bare Copper Earth Wire supplied by Messers Aberdare Cable.

### Kiosk Service Connection

16mm<sup>2</sup> PVC SWA PVC supplied by Messers Aberdare to NRS 063/1998

### Security lighting

10mm<sup>2</sup> PVC SWA PVC supplied by Messers Aberdare to NRS 063/1998

## **Technical Specifications : MV &LV Cables, Miniature, Kiosk and Lighting**

### Medium Voltage

95mm<sup>2</sup> x 3core XLPE. Aberdare Cable to SABS 97: 1999 with a 70mm<sup>2</sup> BCEW.

### Low Voltage

95 mm<sup>2</sup>, 70mm<sup>2</sup>, 50 mm<sup>2</sup> x 4core Copper PVC, PVC SWA PVC 600-1000V cable supplied by Messers Aberdare Cables SABC 1507:

### Bare Copper Earth Wire

70, 50 and 10mm<sup>2</sup> Bare Copper Earth Wire supplied by Messers Aberdare Cable.

### Security lighting

16mm<sup>2</sup> Airdac supplied by Messers Aberdare to NRS 063/1998

### Metering Kiosks

6/8/9 Way kiosk 3CR 12 Light Pastel Grey (Code G69) to SABS1091: 1975 as supplied by Messers GEM complete with busbars ect 6x80A Curve 1 Circuit breakers.



### Security lighting

The security lights will be installed at positions indicated on the relevant drawings (1 000mm from the erf pegs) at 750mm deep and properly compacted to Engineers specifications.

7,2 m hot dip galvanised to SABS 0225-I.S.O 1461, Pole with 5A MCB and AA-HT40-02 Post Top Luminaire with prismatic lens complete with 125W MV control gear lamp as supplied by Messers. Acrylic Art.

An alternative might be offered i.e. Genlux Post Top for Engineers approval.

### Miniature Substation

315kVA new Miniature Substations will be utilised.

Miniature Substations includes residential stands, business stands and town house stands.

315 kVA, 22kV/420V Miniature Substation with MCB and feeder breakers complete with Streetlight control circuit as supplied by Messer Alstom to Eskom s approval.

### 3. Distribution Boards

Distribution Boards shall be installed in the building Passages as indicated on the drawings . These Distribution Boards shall both have Essential and Non-essential supply.

#### Cables sizes

50mm<sup>2</sup> x 4core SWA PVC SWAPVC Underground cable shall be installed from the LV Room to supply all the Distribution Boards in the building as indicated on the drawing .

DB's Schedule is as follows namely ;

DB-1

DB-2

DB-G

| Items | Description | From     | To  |
|-------|-------------|----------|---|
| 1     | DB-1        | LV Room  | DB-1- both Essential and Non-essential Supply |
| 2     | DB-2        | LV Room  | DB-2- both Essential and Non-essential Supply |
| 3     | DB-G        | Kiosk -3 | DB-G-Only Essential Supply                    |

### 4. Lighting Installation Schedule

| Items | Areas      | Type of Light fittings   |
|-------|------------|--|
| 1     | Offices    | 3X35W Recessed Ceiling mounted FL Fitting with optic Louvres       |
| 2     | Boardrooms | 3X35W Recessed Ceiling mounted FL Fitting with optic Louvres       |
| 3     | Auditorium | 4X35W Recessed Ceiling mounted FL Fitting with optic Louvres       |
| 4     | Passages   |  |
| 5     | Markets    | 2X36W Recessed Ceiling mounted FL Fitting with Prismatic Diffusers |
| 6     | Kitchen    | 2X36W Vapourproof Ceiling mounted FL Fitting                       |



|    |                            |  |
|----|----------------------------|--|
|    | Strongrooms                | 2X36W Vapourproof Ceiling mounted FL Fitting                 |
| 8  | Storerooms                 | 2X36W Open channel Ceiling mounted FL Fitting                |
| 9  | Toilets                    | 2X11W CFL Down lighter Ceiling mounted Light Fitting         |
| 10 | Outside Building           | LED 30W Surfaced mounted wall suspended Light Fitting        |
| 11 | Security and Parking Areas | 12m Highmast with 3X400W HPS Security Floodlights            |
| 12 | Aerial Lighting            | 7m Galvanised Steelpole with 125 MV Light Fitting            |
| 13 | Guardhouse                 | 2X18W CFL Weatherproof surface mounted Light Fitting         |
| 14 | Main Entrance              | 4X35W Recessed Ceiling mounted FL Fitting with optic Louvres |

#### 5. Power sockets outlets

| Items | Areas      | Types   | Size           |
|-------|------------|---|----------------|
| 1     | Offices    | Essential and No-essential Power Socket Outlets | Single Sockets |
| 2     | Boardrooms | Essential and No-essential Power Socket Outlets | Single Sockets |
| 3     | Auditorium | Essential and No-essential Power Socket Outlets | Single Sockets |
| 4     | Passages   | None  |                |
| 5     | Markets    | No-essential Power Socket Outlets               | Single Sockets |
| 6     | Kitchen    | No-essential Power Socket Outlets               | Single Sockets |
| 7     | Guardhouse | Essential Power Socket Outlets                  | Single Sockets |

#### 6. Power skirting

Three compartment PVC power skirting shall be installed in the offices to provide for power, data and telephone points as indicated on the drawing.

#### 7. Wireways

P2000 and P8000 Trunking with cover plates shall be used to house cables and conductors installed in the building.

The use of wire ways is governed by several important standards i.e. SANS 10142-1

#### 8. Aircons power supply points

For the indoor environment quality, adequate heating and cooling of spaces is required. Distribution Boards shall provide power supply points for the aircons in the offices, Boardrooms, Auditoriums and Guardhouse.



The sizing of the units shall be determined and be finalised once the mechanical design is completed.

The power requirement shall be adequately provided accordingly.

This installation shall be supplied from the Non-essential supply.

#### Aircons Schedule

| Items | Areas      | Description | Sizes |
|-------|------------|-------------|-------|
| 1     | Offices    |             |       |
| 2     | Boardrooms |             |       |
| 3     | Auditorium |             |       |
| 4     | Guardhouse |             |       |

#### 9. Extractions fans power supply points

Distribution Boards shall provide power supply points for the Extractions in the Strongrooms, Market Areas and Toilets.

The sizing of the units shall be determined and be finalised once the mechanical design is completed.

The power requirement shall be adequately provided accordingly.

This installation shall be supplied from the Non-essential supply.

#### Extractions Fans Schedule

| Items | Areas      | Description | Sizes |
|-------|------------|-------------|-------|
| 1     | Offices    |             |       |
| 2     | Boardrooms |             |       |
| 3     | Auditorium |             |       |
| 4     | Guardhouse |             |       |

#### 10. Dryers power supply points

Distribution Boards shall provide power supply points for the Extractions in the Toilets.

The sizing of the units shall be determined and be finalised once the mechanical design is completed.

The power requirement shall be adequately provided accordingly.

This installation shall be supplied from the Non-essential supply.

#### Dryers Schedule

| Items | Areas   | Description | Sizes |
|-------|---------|-------------|-------|
| 1     | Toilets |             |       |
|       |         |             |       |

#### 11. Geyser unit

200l Geyser unit shall be installed at the kitchen area to supply hot water at the kitchen area.



## 12. Water pump power supply points

Fire Water and Domestic Water Pump Schedule

| Items | System Application | Description | Sizes |
|-------|--------------------|-------------|-------|
| 1     | Fire Hydrant Water |             |       |
| 2     | Domestic Water     |             |       |

## 13. Earthing

It is required by SANS to have the electrical system grounded, allowing electrical currents to safely and efficiently travel throughout the electrical system.

Earthing the main DB with earth spike Earth bar with 10mm<sup>2</sup> conductor Earthing & bonding geyser water pipes

## 14. Earthing and Lighting Protection

It is required by SANS to have the electrical system grounded, allowing electrical currents to safely and efficiently travel throughout the electrical system.

Earthing the structure corrugated iron roofing sheet is required to avoid excessive current flowing around the roof structure during lightning .

Roofing structure shall be adequately earthed with bonding wires and earthspikes.

## 15. Standby Diesel Generator specification

150kVA Gen-set outdoor with canopy and with 300l tank shall be installed as indicated on the drawings.

The standby Generator shall come with a change-over panel built within the Generator canopy.

The design team shall liaise with the local Fire Department as to any special fire prevention/detection requirements they may have regarding the incorporation of the stand-by generator and its fuel storage in the complex.

The Fire Consultants are to advise the Electrical Consulting Engineer of any demands on emergency power such that these can be catered for when sizing the stand-by generator and its dedicated distribution boards.

## 16. Fire Security

Fire Hose-reels

Fire extinguisher

Fire Panel,

Temperature sensor,

Break glass unit

Heat detector

Red Indicator light,

Fire security Signage

The Fire Detection and Protection is in compliance with SANS 10400-T: 2011 Ed 3 – Code of Practice for The Application of the National Building Regulations.



## **THULAMELA LOCAL MUNICIPALITY**

**Bid No. 28/2020/2021**

**Construction of Tshilamba Arts Centre**

### **C3.6 ADDITIONAL SPECIFICATIONS**





## **ADDITIONAL SPECIFICATION**

### **HIV/AIDS REQUIREMENT**

|       |                          |
|-------|--------------------------|
| SH 01 | SCOPE                    |
| SH 02 | MAINTENANCE REQUIREMENTS |
| SH 03 | MAINTENANCE CONTROL      |
| SH 04 | COMMUNICATION            |
| SH 05 | PERFORMANCE MEASUREMENT  |
| SH 06 | MEASUREMENT AND PAYMENT  |

#### **SH 01 SCOPE**

This specification contains all requirements applicable to the Contractor for creating HIV/AIDS awareness amongst all of the Workers involved in this project for the duration of the construction period, through the following strategies:

Raising awareness about HIV/AIDS through education and information on the nature of the disease, how it is transmitted, safe sexual behaviour, attitudes towards people affected and people living with HIV/AIDS, how to live a healthy lifestyle with HIV/AIDS, the importance of voluntary testing and counselling, the diagnosis and treatment of Sexually Transmitted Infections and the closest health Service Providers

- Informing Workers of their rights with regard to HIV/AIDS in the workplace
- Providing Workers with access to condoms and other awareness material that will enable them to make informed decisions about sexual practices

#### **SH 02 DEFINITIONS AND ABBREVIATIONS**

##### **SH 02.01 DEFINITIONS**

**Service Provider:** The natural or juristic person recognised and approved by the Department of Public Works as a specialist in conducting HIV/AIDS awareness programmes.

**Service Provider Workshop Plan:** A plan outlining the content, process and schedule of the training and education workshops, presented by a Service Provider which has been approved by the Representative/Agent.

**Worker:** Person in the employ of the Contractor or under the direction or supervision of the Contractor or any of his Sub-contractors, who is on site for a minimum period of 30 days in total.



## **SH 02.02 ABBREVIATIONS**

**HIV** : Human Immunodeficiency Virus

**AIDS** : Acquired Immune Deficiency Syndrome

**STI** : Sexually Transmitted Infection

## **SH 03 BASIC METHOD REQUIREMENT**

The Contractor shall, through a Service Provider, conduct onsite workshops with the Workers

The Service Provider shall develop and compile a Service Provider Workshop Plan to be presented at the workshops and which will be best suited for this project to achieve the specified objectives with regard to HIV/AIDS awareness.

The Service Provider Workshop Plan shall be based on the following information provided by the Contractor:

- Number of Workers and Sub-contractors on site
- When new Workers or Sub-contractors will join the construction project
- Duration of Workers and Sub-contractors on site
- How the maximum number of Workers can be targeted with workshops
- How the Contractor prefers workshops to be scheduled, e.g. three hourly sessions per Worker, or one 2.5 hour workshop per Worker
- Profile of Workers, including educational level, age and gender (if available)
- Preferred time of day or month to conduct workshops
- A Gantt chart reflecting the construction programme, for scheduling of workshops
- Suitable venues for workshops

The Contractor shall submit the Service Provider Workshop Plan for approval within 21 days after the tender acceptance date.

After approval by the Representative/Agent, the Contractor shall make available a suitable venue that will be conducive to education and training.

The Service Provider Workshop Plan shall address, but will not be limited to the following:

- The nature of the disease;
- How it is transmitted;
- Safe sexual behaviour;



- Post exposure services such as voluntary counselling and testing (VCT) and nutritional plans for people living with HIV/AIDS;
- Attitudes towards other people with HIV/AIDS;
- Rights of the Worker in the workplace;
- How the Awareness Champion will be equipped prior to commencement of the HIV/AIDS awareness programme with basic HIV/AIDS information and the necessary skills to handle questions regarding the HIV/AIDS awareness programme on site sensitively and confidentially;
- How the Service Provider will support the Awareness Champion;
- Location and contact numbers of the closest clinics, VCT facilities, counselling services and referral systems;
- How the workshops will be presented, including frequency and duration;
- How the workshops will fit in with the construction programme;
- How the Service Provider will assess the knowledge and attitude levels of attendees to structure workshops accordingly;
- How the video will be used;
- How the Service Provider will elicit maximum participation from the Workers;
- A questions and answers slot (interactive session)
- The Service Provider Workshop Plan shall encompass the Specific Learning Outcomes (SLO) as stipulated

#### **SH 04 HIV/ AIDS AWARENESS EDUCATION AND TRAINING**

##### **SH 04.01 WORKSHOPS**

The Contractor shall ensure that all Workers attend the workshops.

The workshops shall adequately deal with all the aspects contained in the Service Provider Workshop Plan. A video of HIV/AIDS in the construction industry, which can be obtained from all Regional Offices of the Department of Public Works, is to be screened to Workers at workshops. In order to enhance the learning experience, groups of not exceeding 25 people shall attend the interactive sessions of the workshops.

##### **SH 04.02 RECOMMENDED PRACTICE**

###### **SH 04.02.01 WORKSHOP SCHEDULE**

Presenting information contained in the Service Provider Workshop Plan can be divided in as many workshop sessions as deemed practicable by the Contractor, provided that all Workers are exposed to all aspects of the workshops as outlined in the Service Provider Workshop Plan.

Breaking down the content of information to be presented to Workers into more than one workshop session however, has the added advantage that messages are reinforced over time while providing opportunity between workshop sessions for Workers to reflect and test information. Workers will also have an opportunity to ask questions at a following session.



## **SH 04.02.02 SERVICE PROVIDERS**

A database of recommended Service Providers is available from all Regional Offices of the Department of Public Works.

## **SH 04.02.03 HIV/AIDS SPECIFIC LEARNING OUTCOMES AND ASSESSMENT CRITERIA**

Workers shall be exposed to workshops for a minimum duration of two-and-a-half hours. In order to set a minimum standard requirement, the following specific learning outcomes and assessment criteria shall be met.

### **04.02.03.01 UNIT 1: The nature of HIV/AIDS**

After studying and understanding this unit, the Worker will be able to differentiate between HIV and AIDS and comprehend whether or not it is curable. The Worker will also be able to explain how the HI virus operates once a person is infected and identify the symptoms associated with the progression of HIV/AIDS.

Assessment Criteria:

1. Define and describe HIV and AIDS
2. List and describe the progression of HIV/AIDS

### **04.02.03.02 UNIT 2: Transmission of the HI virus**

After studying and understanding this unit, the Worker will be able to identify bodily fluids that carry the HI virus. The Worker will be able to recognise how HIV/AIDS is transmitted and how it is not transmitted.

Assessment Criteria:

1. Record in what bodily fluids the HI virus can be found
2. Describe how HIV/AIDS can be transmitted
3. Demonstrate the ability to distinguish between how HIV/AIDS is transmitted and misconceptions around transmittance of HIV/AIDS

### **04.02.03.03 UNIT 3: HIV/AIDS preventative measures**

After studying and understanding this unit, the Worker will comprehend how to act in a way that would minimise the risk of HIV/AIDS infection and to use measures to prevent the HI virus from entering the bloodstream.



Assessment Criteria:

1. Report on how to minimise the risk of HIV/AIDS infection
2. Report on precautions that can be taken to prevent HIV/AIDS infection
3. Explain or demonstrate how to use a male and female condom
4. List the factors that could jeopardize the safety of condoms provided against HIV/AIDS transmission

04.02.03.04 UNIT 4: Voluntary HIV/AIDS counselling and testing

After studying and understanding this unit, the Worker will be able to recognise methods of testing for HIV/AIDS infection. The Worker will be able to understand the purpose of voluntary HIV/AIDS testing and pre- and post-test counselling

Assessment Criteria:

1. Describe methods of testing for HIV/AIDS infection
2. Report on why voluntary testing is important
3. Report on why pre- and post-test counselling is important

04.02.03.05 UNIT 5: Living with HIV/AIDS

After studying and understanding this unit, the Worker will be able to recognise the importance of caring for people living with HIV/AIDS and be able to manage HIV/AIDS.

Assessment Criteria

1. List and describe ways to manage HIV/AIDS
2. Describe nutritional needs of people living with HIV/AIDS
3. Describe ways to embrace a healthy lifestyle as a person living with HIV/AIDS
4. Explain the need for counselling and support to people living with HIV/AIDS

04.02.03.06 UNIT 6: Treatment options for people with HIV/AIDS

After studying and understanding this unit, the Worker will be familiar with the various treatments available to HIV/AIDS infected or potentially HIV/AIDS infected people

Assessment Criteria

1. Discuss anti-retroviral therapy
2. List methods of treatment to prevent HIV/AIDS transmission from mother-to-child
3. Describe the need for treatment of opportunistic diseases for people living with HIV/AIDS
4. Describe post exposure prophylactics



#### 04.02.03.07 UNIT 7: The rights and responsibilities of Workers in the workplace with regard to HIV/AIDS

After studying and understanding this unit, the Worker will be able to identify the rights and responsibilities of the Worker living with HIV/AIDS in the workplace. The Worker will recognise the importance of accepting colleagues living with HIV/AIDS and treating them in a non-discriminative way

Assessment Criteria:

1. Discuss the rights of a person living with HIV/AIDS in the workplace
2. Discuss the responsibilities of a person living with HIV/AIDS in the workplace
3. Report on why acceptance and non-discrimination of colleagues living with HIV/AIDS is important

#### **SH 04.03 DISPLAYING OF PLASTIC LAMINATED POSTERS AND DISTRIBUTION OF INFORMATION BOOKLETS**

The Contractor shall obtain a set of four laminated posters conveying different key messages and information booklets, which are available from all Regional Offices of the Department of Public Works.

The above-mentioned posters and information booklets have been prepared to raise awareness and to share information about HIV/AIDS and STI's

Posters or display stands shall be displayed on site as soon as possible, but not later than 14 days after the date of site handover

Posters shall be displayed in areas highly trafficked by Workers, including toilets, rest areas, the site office and compounds

The posters on display must always be intact, clear and readable

Information booklets must be distributed to all Workers as soon as possible, but not later than 14 days after site handover, or as soon as the Worker joins the site

#### **SH 05 PROVIDING WORKERS WITH ACCESS TO CONDOMS**

The Contractor shall provide and maintain condom dispensers and make both male and female condoms, complying with the requirements of SABS ISO 4074, available at all times to all Workers at readily accessible points on site, for the duration of the contract.



The Contractor may obtain condom dispensers from the Department of Health and condoms may be obtained from the Local Clinic or the Department of Health.

At least one male and one female condom dispenser and a sufficient supply of condoms, all to the approval of the Representative/Agent, shall be made available on site within 14 days of site hand over. Contractors should note that arrangements to obtain condoms from the Department of Health Clinics prior to site hand over may be necessary, to ensure that condoms are available within 14 days of site handover.

Condoms shall be made available in areas highly trafficked by Workers, including toilets, the site office and compounds.







**SCHEDULE A**

Date of progress inspection (dd/mm/yy) \_\_\_\_\_

Reporting period: (dd/mm/yy)\_\_\_\_\_ to (dd/mm/yy) \_\_\_\_\_

Deviations from HIV/AIDS awareness programme plan:

Corrective actions

---

Representative/Agent

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Date

---

Departmental Project Manager

---

Date

## SCHEDULE B

### HIV/AIDS AWARENESS PROGRAMME: SERVICE PROVIDER REPORT

Reporting period: (dd/mm/yy) \_\_\_\_\_ to (dd/mm/yy) \_\_\_\_\_

Number of workshops conducted in reporting period \_\_\_\_\_

Number of scheduled workshops according to approved workshop plan \_\_\_\_\_

Deviations from workshop plan:

State reasons for deviating from workshop plan:

Corrective actions:

\_\_\_\_\_  
Service Provider

\_\_\_\_\_  
Contractor

\_\_\_\_\_  
Date

\_\_\_\_\_  
Date

**SH 06 ENSURING ACCESS TO HIV/AIDS TESTING AND COUNSELLING FACILITIES AND TREATMENT OF SEXUALLY TRANSMITTED INFECTIONS (STI)**

The Contractor shall provide Workers with the names of the closest Service Providers that provide HIV/AIDS testing and counselling and Clinics providing Sexually Transmitted Infection (STI) diagnosis and treatment. Information on these Service Providers and Clinics must be displayed on a poster of a size not smaller than A1 in an area highly trafficked by Workers

**SH 07 APPOINTMENT OF AN HIV/AIDS AWARENESS CHAMPION**

Within 14 days of site handover the Contractor shall appoint an Awareness Champion from amongst the Workers, who speaks, reads and writes English, who speaks and understands all the local languages spoken by the Workers and who shall be on site during all stages of the construction period. The Contractor shall ensure that the Awareness Champion has been trained by the Service Provider on basic HIV/AIDS information, the support services available and the necessary skills to handle questions regarding the HIV/AIDS programme in a sensitive and confidential manner

The Awareness Champion shall be responsible for:

- 7.1 Liaising with the Service Provider on organising awareness workshops;
- 7.2 Filling condom dispensers and monitoring condom distribution;
- 7.3 Handing out information booklets;
- 7.4 Placing and maintaining posters

**SH 08 MONITORING**

The Contractor shall grant to the Representative/Agent reasonable access to the construction site, in order to establish that the Contractor complies with his obligations regarding HIV/AIDS awareness under this contract

The Contractor must report problems experienced in implementing the HIV/AIDS requirements to the Representative/Agent

The attached SITE CHECKLIST (SCHEDULE A) shall be completed and submitted at every construction progress inspection to the Representative/Agent

The attached SERVICE PROVIDER REPORT (SCHEDULE B) shall be completed and submitted on a monthly basis to the Department's Project Manager, through the Representative/Agent

The attached CONTRACTOR HIV/AIDS PROGRAMME REPORT (SCHEDULE C), a close out programme report, shall be completed by the Contractor at the end of the contract

## SCHEDULE C

### CONTRACTOR HIV/AIDS PROGRAMME REPORT

Project name \_\_\_\_\_

Project Location \_\_\_\_\_

Contract value of project (R) \_\_\_\_\_

Department of Public Works Project Manager \_\_\_\_\_

HIV/AIDS Programme duration: (dd/mm/yy) \_\_\_\_\_ to (dd/mm/yy) \_\_\_\_\_

#### AWARENESS MATERIAL

Describe location of posters displayed during the programme \_\_\_\_\_

\_\_\_\_\_

Comments on posters \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Indicate total number of booklets distributed \_\_\_\_\_

Comments on booklets \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**CONDOMS**

Indicate total number of male condoms distributed \_\_\_\_\_

Indicate total number of female condoms distributed \_\_\_\_\_

Describe where male condom dispenser was placed \_\_\_\_\_

Describe where female condom dispenser was placed \_\_\_\_\_

**HIV/AIDS WORKSHOPS**

**INDICATE THE TOTAL NUMBER OF HIV/AIDS WORKSHOPS CONDUCTED** \_\_\_\_\_

Indicate the duration of workshops \_\_\_\_\_

Indicate the total number of Workers that participated in the HIV/AIDS workshops \_\_\_\_\_

Indicate the total number of Workers that were exposed to the video on HIV/AIDS in the Construction Industry

Comments on HIV/AIDS workshops on site \_\_\_\_\_

**SCHEDULE C**

**GENERAL**

Briefly describe programme activities and satisfaction with outcome \_\_\_\_\_

Additional comments, suggestions or needs with regard to the HIV/AIDS awareness programmes on site

Please indicate if your company has a formal HIV/AIDS policy focussing on HIV/AIDS awareness raising and care and support of HIV/AIDS Workers

|     |    |                          |
|-----|----|--------------------------|
| Yes | No | Currently developing one |
|-----|----|--------------------------|

Please indicate if, to your knowledge, you have lost any workers during the duration of the project to HIV/AIDS related sicknesses. One or more of the following might indicate an HIV/AIDS related death:

Excessive weight loss

Coughing or chest pain

Vomiting

Reactive TB

Pain when swallowing

Meningitis

Hair loss

Persistent fever

Memory loss

Severe tiredness

Diarrhoea

Pneumonia

Number of HIV/AIDS-related deaths \_\_\_\_\_

\_\_\_\_\_  
**Contractor**

\_\_\_\_\_  
**Date**

\_\_\_\_\_  
**Departmental Project Manager**

\_\_\_\_\_  
**Date**



## **ADDITIONAL SPECIFICATION**

### **SI OCCUPATIONAL HEALTH AND SAFETY**

- SI 01 APPLICABLE LEGISLATION AND REGULATIONS
- SI 02 SCOPE OF WORK
- SI 03 THE PRINCIPLE CONTRACTOR'S GENERAL DUTIES
- SI 04 THE PRINCIPLE CONTRACTOR'S SPECIFIC DUTIES
- SI 05 THE PRINCIPLE CONTRACTOR'S SPECIFIC DUTIES WITH REGARD TO HAZARDOUS WORK OR ACTIVITIES

#### **SI 01 APPLICABLE LEGISLATION AND REGULATIONS**

This document was prepared to guide the Agent in the compilation of a Health and Safety Specification in terms of Sub-regulation 4(1)a of the Construction Regulation as published under Government Notice R.2003 of 18 July 2003. The content of this document or the fact it was made available for the use of the Agent will not relieve the Agent of any of his obligations in terms of the act.

The Occupational Health and Safety Act, 1993 (Act No. 85 of 1993) together with its applicable Regulations ("the Act") forms part of this Health and Safety Specification. Any word or expression to which a meaning has been assigned in the Act shall have the meaning so assigned to it unless the context otherwise indicates.

#### **SI 02 SCOPE OF WORK**

All work forming part of this Contract is as indicated in the Project specifications

#### **SI 03 THE PRINCIPAL CONTRACTOR'S GENERAL DUTIES**

The Principal Contractor's general duties in terms of this Health and Safety Specification are, but not limited to, the following:

1. Every Principal Contractor 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 and other contractors.
2. Without derogating from the generality of a Principal Contractor's duties under subsection (1), the matters to which those duties refer include in particular -

- a. the provision and maintenance of systems of work, plant and machinery that, as far as is reasonably practicable, are safe and without risks to health;
- b. taking such steps as may be reasonably practicable to eliminate or mitigate any hazard or potential hazard to the safety or health of employees and other contractors, before resorting to personal protective equipment;
- c. making arrangements for ensuring, as far as is reasonably practicable, the safety and absence of risks to health in connection with the production, processing, use, handling, storage or transport of articles or substances;
- d. establishing, as far as is reasonably practicable, what hazards to the health or safety of persons are attached to any work which is performed, any article or substance which is produced, processed, used, handled, stored or transported and any plant or machinery which is used in his business, and he shall, as far as is reasonably practicable, further establish what precautionary measures should be taken with respect to such work, article, substance, plant or machinery in order to protect the health and safety of persons, and he shall provide the necessary means to apply such precautionary measures;
- e. providing such information, instructions, training and supervision as may be necessary to ensure, as far as is reasonably practicable, the health and safety at work of his employees and other contractors;
- f. not permitting any employee or contractor to do any work or to produce, process, use, handle, store or transport any article or substance or to operate any plant or machinery, unless the precautionary measures contemplated in paragraphs (b) and (d), or any other precautionary measures which may be prescribed, have been taken;
- g. taking all necessary measures to ensure that the requirements of this Health and Safety Specification are complied with by every person in his employment or on premises under his control where plant or machinery is used;
- h. enforcing such measures as may be necessary in the interest of health and safety;
- i. ensuring that work is performed and that plant or machinery is used under the general supervision of a person trained to understand the hazards associated with it and who have the authority to ensure that precautionary measures taken by the employer are implemented; and
- j. causing all employees and other contractors to be informed regarding the scope of their authority as contemplated in section 37(1)(b) of the Act.

#### **SI 04 THE PRINCIPAL CONTRACTOR'S SPECIFIC DUTIES**

The Principal Contractor's specific duties in terms of this Health and Safety Specification are specified in the Construction Regulation as published under Government Notice R. 2003 of 18 July 2003. (Hereinafter referred to as "Construction Regulation, 2003").

The Principal Contractor is specifically referred to the following sub-regulations of the Construction Regulation, 2003:

| <b>Subject</b>                      | <b>Applicable sub-regulation of the Construction Regulation, 2003.</b> |
|-------------------------------------|--|
| Definitions                         | 1  |
| Scope of application                | 2  |
| Notification of construction work   | 3  |
| Principal Contractor and Contractor | 5  |
| Supervision of construction work    | 6  |
| Risk assessment                     | 7  |
| Approved inspection authorities     | 29   |
| Offences and penalties              | 30   |
| Withdrawal of regulations           | 31   |
| Short title                         | 32   |

The Principal Contractor will acquaint himself with these duties and will make provision in his Contract price for the implementation and supervision of these duties.

#### **SI 05 THE PRINCIPAL CONTRACTOR'S SPECIFIC DUTIES WITH REGARD TO HAZARDOUS WORK OR ACTIVITIES**

The following hazardous work or activities were identified in terms of the Construction Regulation, 2003, and it is the duty of the Principal Contractor to ensure that the said work and activities are performed or carried out in terms of the relevant sub-regulations of the Construction Regulation, 2003 and other applicable Regulations.

| <b>Hazardous work or activity</b> | <b>Applicable sub-regulation of the Construction Regulation, 2003.</b> | <b>Other applicable Regulations</b> |
|-----------------------------------|--|-------------------------------------|
| Fall protection                   | 8  |                                     |
| Structures                        | 9  |                                     |
| Formwork and support work         | 10   |                                     |

| Hazardous work or activity | Applicable sub-regulation of the Construction Regulation, 2003. | Other applicable Regulations   |
|----------------------------|---|--|
| Excavation                 | 11  | Precautionary measure as stipulated for confined spaces under the General Safety Regulations published under Government Notice R.1031 of 30 May 1986, as amended.  |
| Demolition work            | 12  | Asbestos related work will be conducted in accordance with the Asbestos Regulations published under Government Notice R. 155 of 10 February 2002 as amended.<br><br>Lead related work will be conducted in accordance with the Lead Regulations published under Government Notice R. 236 of 28 February 2002 as amended. |
| Tunnelling                 | 13  | Any tunnelling activities will comply with the Tunnelling Regulations published under the Mine Health and Safety Act, 1996 (Act No. 29 of 1996) as amended.  |
| Scaffolding                | 14  | Section 44 of the Act.   |
| Suspended scaffolds        | 15  | Section 44 of the Act.   |

| Hazardous work or activity | Applicable sub-regulation of the Construction Regulation, 2003. | Other applicable Regulations  |
|----------------------------|---|---|
| Boatswains chairs          | 16  |   |
| Material hoists            | 17  |   |
| Batch plants               | 18  | <p>Precautionary measure as stipulated for confined spaces under the General Safety Regulations published under Government Notice R.1031 of 30 May 1986, as amended.</p> <p>The Principal Contractor will ensure that all lifting machines and lifting tackle used in the operation of batch plant complies with the requirements of the Driven Machinery Regulations as published under Government Notice R.295 of 26 February 1988, as amended.</p> <p>The Principal Contractor will ensure that all precautionary measures are adhered to regarding the usage of electrical equipment in explosive atmospheres when entering a silo, as stipulated in the Electrical Installation Regulations as published under</p> |

| Hazardous work or activity  | Applicable sub-regulation of the Construction Regulation, 2003. | Other applicable Regulations  |
|---|---|---|
|   |   | Government Notice R.2271 of 11 October 1995, as amended.  |
| Explosive powered tools   | 19  |   |
| Cranes  | 20  | Applicable provisions of the Driven Machinery Regulations as published under Government Notice R.533 of 16 March 1990, as amended.  |
| Construction vehicles   | 21  |   |
| Electrical installations and machinery on construction sites.         | 22  | Applicable provisions in the Electrical Installation Regulations published under Government notice R.2920 of 23 October 1992 and the Electrical Machinery Regulations published under Government Notice R.1953 of 12 August 1988 respectively as amended. |
| Use and temporary storage of flammable liquids on construction sites. | 23  | Applicable provisions as stipulated in the General Safety Regulations published under Government Notice R.1031 of 30 May 1986, as amended.  |

| <b>Hazardous work or activity</b>           | <b>Applicable sub-regulation of the Construction Regulation, 2003.</b> | <b>Other applicable Regulations</b>  |
|---|--|--|
| Water environments                          | 24   |  |
| Housekeeping on construction sites.         | 25   | Applicable provisions as stipulated in the Environmental Regulations for Works places published under Government Notice R.2281 of 16 October 1987, as amended. |
| Stacking and storage on construction sites. | 26   | Applicable provisions as stipulated in the General Safety Regulations published under Government Notice R.1031 of 30 May 1986, as amended.                     |
| Fire precautions on construction sites.     | 27   | Applicable provisions as stipulated in the Environmental Regulations for Works places published under Government Notice R.2281 of 16 October 1987, as amended. |
| Construction Welfare facilities             | 28   | Applicable provisions as stipulated in the Facilities Regulations under Government Notice R.1593 of 12 August 1988, as amended.                                |

## **ADDITIONAL SPECIFICATION**

### **SJ LABOUR INTENSIVE SPECIFICATION**

#### **EXTENDED PUBLIC WORKS PROGRAMME:**

#### **LABOUR-INTENSIVE INFRASTRUCTURE PROJECTS**

##### ***PAYMENT FOR THE LABOUR-INTENSIVE COMPONENT OF THE WORKS***

Payment for works identified in the Scope of Work as being labour-intensive shall only be made in accordance with the provisions of the Contract if the works are constructed strictly in accordance with the provisions of the scope of work. Any non-payment for such works shall not relieve the Employer in any way from his obligations either in contract or in delict.

##### ***APPLICABLE LABOUR LAWS***

The Ministerial Determination, 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. R63 of 25 January 2002, of which extracts have been reproduced below, shall apply to works described in the scope of work as being labour intensive 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 as being labour intensive and which are undertaken by unskilled or semi-skilled workers.

#### **1.0 INTRODUCTION**

1.1 This document contains the standard terms and conditions for workers employed in elementary occupations on a Expanded Public Works Programme (EPWP). These terms and conditions do NOT apply to persons employed in the supervision and management of a EPWP.



1.2 In this document –

- (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 an 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.

**2 TERMS OF WORK**

- 2.1 Workers on a EPWP are employed on a temporary basis.
- 2.2 A worker may NOT be employed for longer than 24 months in any five-year cycle on a EPWP.
- 2.3 Employment on a EPWP does not qualify as employment as a contributor for the purposes of the Unemployment Insurance Act 30 of 1966.

**3 NORMAL HOURS OF WORK**

- 3.1 An employer may not set tasks or hours of work that require a worker to work–
  - (a) more than forty hours in any week
  - (b) on more than five days in any week; and
  - (c) for more than eight hours on any day.

- 3.2 An employer and worker may agree that a worker will work four days per week. The worker may then work up to ten hours per day.
- 3.3 A task-rated worker may not work more than a total of 55 hours in any week to complete the tasks allocated (based on a 40-hour week) to that worker.

#### **4 MEAL BREAKS**

- 4.1 A worker may not work for more than five hours without taking a meal break of at least thirty minutes duration.
- 4.2 An employer and worker may agree on longer meal breaks.
- 4.3 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.
- 4.4 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.

#### **5 SPECIAL CONDITIONS FOR SECURITY GUARDS**

- 5.1 A security guard may work up to 55 hours per week and up to eleven hours per day.
- 5.2 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.

#### **6 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.

#### **7 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").

## **8 WORK ON SUNDAYS AND PUBLIC HOLIDAYS**

- 8.1 A worker may only work on a Sunday or public holiday to perform emergency or security work.
- 8.2 Work on Sundays is paid at the ordinary rate of pay.
- 8.3 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.
- 8.4 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 SICK LEAVE**

- 9.1 Only workers who work four or more days per week have the right to claim sick-pay in terms of this clause.
- 9.2 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.
- 9.3 A worker may accumulate a maximum of twelve days' sick leave in a year.
- 9.4 Accumulated sick-leave may not be transferred from one contract to another contract.
- 9.5 An employer must pay a task-rated worker the worker's daily task rate for a day's sick leave.
- 9.6 An employer must pay a time-rated worker the worker's daily rate of pay for a day's sick leave.
- 9.7 An employer must pay a worker sick pay on the worker's usual payday.

- 9.8 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.
- 9.9 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.
- 9.10 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.

#### **10N MATERNITY LEAVE**

- 10.1 A worker may take up to four consecutive months' unpaid maternity leave.
- 10.2 A worker is not entitled to any payment or employment-related benefits during maternity leave.
- 10.3 A worker must give her employer reasonable notice of when she will start maternity leave and when she will return to work.
- 10.4 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.
- 10.5 A worker may begin maternity leave –
- (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.
- 10.7 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.

## **11 FAMILY RESPONSIBILITY LEAVE**

- 11.1 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

## **12 STATEMENT OF CONDITIONS**

- 12.1 An employer must give a worker a statement containing the following details at the start of employment –
- (a) the employer's name and address and the name of the EPWP;
  - (b) the tasks or job that the worker is to perform; and
  - (c) the period for which the worker is hired or, if this is not certain, the expected duration of the contract;
  - (d) the worker's rate of pay and how this is to be calculated;
  - (e) the training that the worker will receive during the EPWP. (would it not be more prudent to indicate entitlement to training?)
- 12.2 An employer must ensure that these terms are explained in a suitable language to any employee who is unable to read the statement.
- 12.3 An employer must supply each worker with a copy of these conditions of employment.

### **13 KEEPING RECORDS**

- 13.1 Every employer must keep a written record of at least the following –
- (a) the worker's name and position;
  - (b) in the case of a task-rated worker, the number of tasks completed by the worker;
  - (c) in the case of a time-rated worker, the time worked by the worker;
  - (d) payments made to each worker.
- 13.2 The employer must keep this record for a period of at least three years after the completion of the EPWP.

### **14 PAYMENT**

- 14.1 An employer must pay all wages at least monthly in cash or by cheque or into a bank account.
- 14.2 A task-rated worker will only be paid for tasks that have been completed.
- 14.3 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.
- 14.4 A time-rated worker will be paid at the end of each month.
- 14.5 Payment must be made in cash, by cheque or by direct deposit into a bank account designated by the worker.
- 14.6 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.
- 14.7 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.

- 14.8 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.
- 14.9 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.

## **15 DEDUCTIONS**

- 15.1 An employer may not deduct money from a worker's payment unless the deduction is required in terms of a law.
- 15.2 An employer must deduct and pay to the SA Revenue Services any income tax that the worker is required to pay.
- 15.3 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 law, court order or arbitration award concerned.
- 15.4 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.

## **16 HEALTH AND SAFETY**

- 16.1 Employers must take all reasonable steps to ensure that the working environment is healthy and safe.
- 16.2 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) obey all health and safety rules of the EPWP;
  - (d) use any personal protective equipment or clothing issued by the employer;
  - (e) report any accident, near-miss incident or dangerous behaviour by another person to their employer or manager.

## **17 COMPENSATION FOR INJURIES AND DISEASES**

- 17.1 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.
- 17.2 A worker must report any work-related injury or occupational disease to their employer or manager.
- 17.3 The employer must report the accident or disease to the Compensation Commissioner.
- 17.4 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.

## **18 TERMINATION**

- 18.1 The employer may terminate the employment of a worker for good cause after following a fair procedure.
- 18.2 A worker will not receive severance pay on termination.
- 18.3 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.
- 18.4 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 for the balance of the 24-month period.
- 18.5 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 for the balance of the 24-month period.

## **19 CERTIFICATE OF SERVICE**

- 19.1 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 EPWP on which the worker worked;



- (d) the work performed by the worker;
- (e) any training received by the worker as part of the EPWP;
- (f) the period for which the worker worked on the EPWP;
- (g) any other information agreed on by the employer and worker.

## **20 EMPLOYER'S RESPONSIBILITIES**

The contractor shall adhere to 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, it shall be the responsibility of the contractor to:

- (a) Formulate and design a contract between himself/ herself and the recruited beneficiaries, ensuring that the contract does not contravene any of the Acts stipulated within South African Law, e.g. Basic Conditions of Employment Act, etc.
- (b) Screen and select suitable candidates for employment from the approved list of beneficiaries provided by the client.
- (c) Ensure that the recruited beneficiaries/ are made available to receive basic life skills training which will be conducted and paid for by the Department of Labour.
- (d) Ensure that all beneficiaries receive induction on safety on site prior to beneficiaries commencing with work on site.
- (e) Ensure that all beneficiaries are covered for workmen's compensation for as long as they are contracted to the contractor. Payment to the Compensation Commissioner will be by the contractor.
- (f) Assist in the identification and assessment of potential beneficiaries to be taken for advanced technical training in respective trades.
- (g) Test and implement strict quality control and health and safety procedures, ensuring that the health and safety regulations are adhered to.
- (h) Provide all beneficiaries with the necessary protective clothing as required by law for the specific trades that the beneficiaries are involved in.
- (i) Provide overall supervision and day-to-day management of beneficiaries and/or sub-contractors.

- (j) Ensure that all beneficiaries are paid their wages on time through a pre-agreed payment method as stipulated in the beneficiary contract.

#### 20.1 Employment of targeted labour

Employers will be contractually obliged to:

- (a) employ beneficiaries from targeted social groups from the beneficiary list provided by the Independent Development Trust (IDT);
- (b) facilitate on-the-job training and skills development programs for the workers;
- (c) achieve the following minimum employment targets:
  - i. 60% women;
  - ii. 20% people between the ages of 18 and 35; and
  - iii. 2% people with disabilities.
- (d) brief workers on the conditions of contract as specified in clause 12 above;
- (e) contract with the workers, which contract will form part of the Employment Agreement;
- (f) allow workers the opportunity to attend life skills training through DOL. This shall be arranged at the beginning of the contract;
- (g) ensure that payments to workers are made as set out in clauses 14 and 15 above.
- (h) keep a copy of personnel files as compiled by IDT and as set out in clause 13 above.

#### 20.2 Training of workers

Three types of training are applicable, namely

- i. Life skills;
- ii. Technical skills development; and
- iii. Learnerships.

Training will be implemented in partnership with the Department and Labour (DOL) and the Construction Education and Training Authority (CETA).

- Beneficiaries shall be employed on the projects for an average of 6 months.

- Beneficiaries shall be deployed to projects in the vicinity of their homes. The same arrangements as for workers regarding accommodation, subsistence and travel shall be applicable to trainees

**(a) Life skills training**

All workers 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 during the period of site establishment and pre-planning before actual construction starts.

**(b) On-the job training**

The Employer shall provide workers 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 workers and identify potential trainees for the skills development programme.

**(c) Skills development and technical training**

The Employer shall assist in identifying workers for further training. These workers will undergo further technical training to prepare them for opportunities as semi-skilled labourers.

The CETA will fund training which 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.

**(d) Learnerships**

Workers who graduate from the first phase of the training programme will be identified and given opportunities to register for learnerships with the CETA. These learnerships will ultimately result in accredited qualification. The learnerships will consist of theoretical instruction away from the construction site as well as on-site practical work under the supervision of the employer. Learnership candidates will be entitled to 18 months of guaranteed employment to complete all training modules. This may require employment with multiple contractors to complete the required training modules.

20.3 Pay items

Item 1: Employ workers identified from IDT priority list.....Unit: worker-month

The unit of measurement shall be the number of workers employed 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 the workers and for complying with the conditions of contract: Part B. The cost of training shall be excluded.

Item 2: Train workers

- i. on-site for:
  - (i) life skills training .....Unit: trainee - day
  - (ii) skills development and technical training .....Unit: trainee - day
  - (iii) leanerships .....Unit: trainee - day
  
- ii. off-site for:
  - (i) life skills training.....Unit: trainee - day
  - (ii) skills development and technical training .....Unit: trainee - day
  - (iii) leanerships.....Unit: trainee - day

The units of measurement shall be the number of workers trained on and off-site multiplied by the number of days each type of training was carried out. The rates tendered will be paid over and above the rates for employment and shall include full compensation for the cost of training in partnership with DOL and CETA as well as for the cost of accommodation subsistence and travelling incurred by the trainees.

Item 3: Liaison with IDT.....Unit : Hours

The sum tendered shall include full compensation for the cost of liaising with IDT Social Facilitators on all issues regarding workers.

**RATES OF PAY FOR POVERTY ALLEVIATION PROJECTS**

**The current rates of pay as reflected in Government Notice R. 204 of 2 March 2001 and amended in Government Notice R201 of 18 February 2004 and amended in Government Notice R.133 of February 2007 will apply or and any latest amendment.**

**Table 1:** Job categories for workers in the Civil Engineering Sector

| <b>Task Grade</b> | <b>occupational group</b> | <b>Job Title</b>                       |
|-------------------|---------------------------|--|
| Task Grade 1      | General Worker            | General Worker                         |
| Task Grade 2      | Artisan Aid               | Artisan Aid                            |
|                   | Construction Hand         | Structures Construction Hand           |
|                   | Grade IV                  | Premix Paving Checker                  |
|                   |                           | Steel Bending Machine Operator         |
|                   |                           | Civil Construction Bricklayer Grade II |
|                   | Operator Grade V          | Boom Scraper Operator                  |
|                   |                           | Pedestrian Roller Operator             |
|                   | Checker                   | Checker                                |
| Chainman          | Chainman                  |  |
| Task Grade 3      | Construction Hand         | Shufferhand Grade III                  |
|                   | Grade III                 | Concrete Hand Grade 11                 |
|                   | Operator Grade IV         | Track Rig Operator (general)           |
|                   |                           | Bore Pile Operator                     |
|                   |                           | Drilling Supervisor                    |
| Site Support      | Junior Clerk              |  |

It must be noted that the individual project implementing bodies (or Departments of Public Works) should be allowed to set their daily rates for EPWP beneficiaries, taking into account the national average and the minimum rates currently paid by various provincial departments. Most importantly, such rates should be below the market related rates and self-targeting in approach.

*\*Note that this is the **MINIMUM** remuneration rate payable, and contractors should add their profit and attendance thereto in the schedule to be priced.*

**EPWP EMPLOYMENT AGREEMENT****TERMS, CONDITIONS AND POLICY RELATING TO THE EMPLOYMENT OF WORKERS**

All workers whose employment on the contract may be identified by the IDT in terms of Clause 20.1 of the Conditions of Contract: Part B, shall be employed by the contractor in terms and conditions which are consistent with and not less favourable to the Workers, than those set out below:

1. Engagement of the workers shall be of temporary nature for a period not exceeding the duration of the contract.
2. Appropriate protective clothing like safety boots, overalls and water boots shall be supplied to all workers and any other items needed in accordance with any prevailing legislation or regulations relating to the operation of machinery and occupation safety.
3. The Contractor shall in respect of every worker engaged on the contract, pay in full all amounts as may be due and payable in terms of the Workmen's Compensation Act.
4. Any worker may be summarily dismissed by the contractor for any of the following reasons:
  - being under the influence of alcohol or drugs whilst on the site;
  - theft of any materials, plant, tools and equipment;
  - gross insubordination;
  - any wilful or grossly negligent act or omission which constitutes a threat to person or property;
  - any other reason which the Engineer shall concur as warranting summary dismissal.
5. Where the engagement of a worker on the contractor is to be terminated prior to the contract, through reasons of this misconduct the contractor shall provide to the worker not less than TWO (2) normal working day's notice of termination of the workers participation in the project. Payment shall be made in lieu of such notice.

6. No worker shall be require or permitted to work for more that (FIVE) 5 hours continuously without a meal interval of not less than (THIRTY) 30 minutes, during which interval the worker shall not be permitted nor required to perform any work.
7. No worker shall be permitted to work in excess of the maximum permissible hours prescribed in any applicable labour legislation. In calculating the maximum permissible hours per week, work performed on Saturdays and Sundays shall be excluded.
8. The contractor shall not be required to provide to local workers:
  - holiday, leave, sick or severance pay;
  - a pension or similar scheme;
  - a medical aid or similar scheme.
9. No worker shall have any fine levied against him or any deductions made from his remuneration, other than with the written consent of the worker or any deduction which the contractor is by law or order of any competent court, required or permitted to make.
10. Any worker who absents himself from work due to injury, illness or any other reason shall not be entitled to remuneration in respect of the period concerned.

**EMPLOYEE**

**WITNESS**

Name .....

Name .....

Signature .....

Signature .....

Date: .....

Date: .....

**CONTRACTOR**

**WITNESS**

Name .....

Name .....

Signature .....

Signature .....

Date: .....

Date: .....

# THULAMELA LOCAL MUNICIPALITY

## HEALTH AND SAFETY SPECIFICATION

### 1. Introduction

In terms of the Construction Regulation, 2003 4 (1) (a) of the Occupational Health and Safety Act, No. 85 of 1993, THULAMELA MUNICIPALITY, refer as the Client, is required to compile a Health & Safety specification for any intended project and provide such specification to any prospective tenderer.

The specification has as objective to ensure that Principal Constructors entering into a Contract with THULAMELA MUNICIPALITY achieve an acceptable level of compliance in terms Occupational Health & Safety performance. This document forms an integral part of the Contract and/or Suppliers.

Compliance with this document doesn't absolve the Principal Contractor from complying with minimum legal requirements and the Principal Contractor remains responsible for the Health and Safety of his employees and for his or here mandatories unless the agreements has been reached in terms of section 37(2) of the Occupational Health and Safety Act, 1993.

The following legislations have been considered:

1. National Environmental Management Act No. 107 of 1998
  - 1.1 National Environment Management: Air Quality Act, 39 of 2004
2. Occupational Health and Safety Act No. 85 of 1993
  - 2.1 Construction Regulations, 2003
  - 2.2 Asbestosis Regulations, 2001
  - 2.3 General Administration Regulations, 2003
  - 2.4 Electrical Installation Regulations, 1992
  - 2.5 Noise-Induced Hearing Loss Regulations, R307, 07 March 2003
  - 2.6 Environmental Regulations for Workplaces, R2281, 16 October 1987
3. Employment Equity Act No. 55 of 1998
  - 3.1 Employment Equity Policy
4. Compensations for Occupational Injuries and diseases Act No. 130 of 1993
5. National Health Act No. 61 of 2003
6. Amendment- Compensation for Occupational Injuries and Diseases Act 1997
7. ISO Standards including SABS or SANS Code of Practice.



FORM OF AGREEMENT IN TERMS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT, 85 OF 1993

THIS AGREEMENT made at \_\_\_\_\_ on this \_\_\_\_\_ day of \_\_\_\_\_ in the year \_\_\_\_\_ between THULAMELA MUNICIPALITY (hereinafter) called "the client" of the one part, herein represented by \_\_\_\_\_ in his capacity as \_\_\_\_\_ and delegate of the employer in terms of the employer's standard powers of delegation pursuant to the provision of the Act and \_\_\_\_\_ (hereinafter called "the mandatory") of the other part, herein represented by \_\_\_\_\_ as \_\_\_\_\_ and as being duly authorized by virtue of resolution.

WHEREAS the Employer is desirous that certain works be constructed, viz. \_\_\_\_\_ and has accepted a tender by the Mandatory for the construction, completion and maintenance of such works and whereas the Client and the Mandatory have agreed to certain arrangements and procedures to be followed in order to ensure compliance by the Mandatory with the provisions of the Occupational Health and Safety Act 1993 (Act No. 85 of 1993)

**NOW THEREFORE THIS AGREEMENT WITNESSETH AS FOLLOWS:**

1. The mandatory declares himself to be conversant with the following:
  - a) All the requirements, regulations and standards of the Act hereinafter together with its amendments.
  - b) The procedures and safety rules of the Client as pertaining to the Mandatory and all his sub-contractors
2. In addition to all requirements, the Mandatory agrees to execute all the works forming part of this contract and to operate and utilize all machinery, plant and equipment in accordance with the Act.
3. The Mandatory is responsible for the compliance with the Act by all his sub-contractors, whether or selected and/or approved by the Client.
4. The Mandatory warrants that all his Occupational Injuries and Diseases Act 1993 which covers shall remain in force whilst any such workmen are present on site. A letter of good standing from the Compensation Commissioner to this effect must be produced to the Client upon signature of the agreement.
5. The mandatory undertakes to ensure that he/she and/or subcontractors and/or their respective employees will at all times comply with the following conditions:
  - a) The mandatory shall assume the responsibility in terms of section 16.1 of the Act. The Mandatory shall not delegate any duty in terms of section 16.2 of this Act without the prior written approval of the Employer. If the Mandatory obtains such approval

and delegates any duty in terms of section 16.2, a copy of such written delegation shall immediately be forwarded to the Client.

- b) All incidents referred to in the Act shall be reported by the Mandatory to the Department of Labour as well as to the Client. The Client will further be provided with copies of all written documentation relating to any incident (Occupational Health and Safety Act, 1993 and COIDA).
- c) The Employer hereby obtains an interest in the issue of any formal enquiry and informal conducted in terms of sections 31 and 32 of the Act into any incident involving the Mandatory and/or his/her employees and/or his/her sub-contractors.

In witness thereof the parties hereto have set their signatures hereon in the presence of the subscribing witnesses:

**SIGNED FOR AND ON BEHALF OF THE CLIENT:** \_\_\_\_\_

**WITNESSES:** 1. \_\_\_\_\_ 2. \_\_\_\_\_

**NAME (IN CAPITAL)** 1. \_\_\_\_\_

2. \_\_\_\_\_

**SIGNED FOR AND ON BEHALF OF THE MANDATORY** \_\_\_\_\_

**WITNESSES:** 1 \_\_\_\_\_ 2. \_\_\_\_\_

**NAME (IN CAPITAL)** 1. \_\_\_\_\_

2. \_\_\_\_\_

**Scope**

This specification details the Health & Safety requirements associated with the work.

**INTERPRETATIONS**

Occupational Health and Safety Act, No 85 of 1993 shall apply to this Contract. The construction regulation promulgated on 18 July 2003 and incorporated into the said Act by Government Notice R1010, published in Government Gazette 25207 apply to any person involved in construction work. These regulations are hereinafter referred to as “the Construction Regulations” and the said Act as “the Act”.

Construction work is defined as:

Any work in connection with:

1. the erection, maintenance, alteration, renovation, repair, demolition or dismantling of or addition to a building or similar structure;
2. the installation, erection, dismantling or maintenance of a fixed plant where such work includes the risk of a person failing;
3. the construction, maintenance, demolition or dismantling of any bridge, dam, canal, road sewer or water reticulation system or any similar civil engineering structure; or
4. the moving of earth, clearing of land, the making of an excavation, piling or any similar type of work.

**GENERAL**

The Client will appoint the Contractor in writing for execution of the Works. The Contractor shall accept its appointment under the terms and conditions of the Contract. The Contractor shall sign and agree to those terms and conditions and shall before commencing work, notify the Department of Labour of the intended construction work in terms of Regulation 3 of the Construction Regulations. The Contractor shall submit the notification in writing prior to commencement with work.

The Contractor shall ensure that is fully conversant with the requirements of this specification.

This specification is not intended to supersede the Act nor the Construction Regulations. Those sections of the Act and the Construction Regulations which apply to the scope of work to be performed by the Contractor in terms of this Contract continue to be a legal requirement of the Contractor.

Should the Contractor at any stage in execution of the Works÷

- Fail to implement or maintain Client's health and safety plan.
- Execute construction work which is not in accordance with Client's health and safety specification. (check regulation 4(1)(e) of Construction Regulation ; or
- Act in any way which may pose a threat to the health and safety of persons.

The Client or the Engineer will, by written order, suspend the progress of the Works. The Contractor shall, during the suspension, properly protect the Works so far as is necessary.

The contractor shall, in submitting his tender, demonstrate that he has made provision for the cost of compliance with the specified **Health and Safety** requirements, the Act and the Construction Regulations, all in terms of sub-clause 4(1) of the Construction Regulations. The costs of compliance shall clearly be demonstrated separately under the appropriate items of measurement, both under "fixed charge items" and "time related items".

The Contractor shall consistently demonstrate his competence and adequacy of resources to perform the duties imposed on the Contractor in terms of this Specification, the Act and the Construction Regulations.

The Contractor shall, throughout execution of the Contract, ensure that all conditions imposed on his sub-contractors in terms of the Act and Construction Regulations are complied with, as they were the Contractor.

## **GENERAL REQUIREMENTS**

### **Contract's Health and Safety plan**

1. The Client shall provide and demonstrate to the Contractor, a suitable and sufficient documented health and safety plan based on the Specifications, the Act and the Construction Regulations, which shall be supplied from the date of commencement of and duration of execution of the Works.
2. The **health and safety plan** includes the following principles:
  - A proper risk assessment of the construction work
  - Pro-active identification of potential hazards and unsafe working conditions
  - Informing and/or training of employees in hazards and risk area.
  - Provision of a safe working environment and safety equipment
  - Ensure the safety of sub-contractors through the safety plans.
  - Monitoring the health and safety on the construction works on a regular basis.
  - Use of competent safety officers.
3. The health and safety plan will cover the following details:

- 3.1 Method to ensure the approval, implementation and maintenance of all health and safety aspects regarding sub-contractors through the Contractor
- 3.2 Supervision of construction work, with
  - Details of the construction supervisor as well as his appointed assistants
  - Details of the construction safety officer.
  - Details of the suitability and competency of the above persons regarding the health and safety aspects of the construction works.
  - Details of a proper risk assessment on which the health and safety plan is based.
  - Details of the design, management, responsibilities, procedures, work methods, commissioning, maintenance, and any other requirement necessary for the Contractor and Sub-contractor to work safely and in a healthy environment.
  - Ways in which all construction employees are informed, instructed and trained regarding hazards and related work procedures.
4. The Client will take reasonable steps to ensure that **health and safety plan** is implemented and maintained. The steps taken will include periodic audits and regular monitoring.
5. The Contractor shall ensure that a copy of this **Health and Safety plan** is kept in the site office for further references or when requested by the Client, an inspector, employee or sub-contractors.
6. Upon completion of the Works, the Contractor shall hand over a consolidated Health and Safety file to the Client.

### **Consultation, Communication and Liaison**

- Occupational Health and Safety Liaison between the Client, the principal Contractor, the other Contractors, the Designer and other concerned parties will be through the OH&S Representative/ committee.
- In addition to the above, communication may be directly to the Client or his appointed Agent, verbally or in writing as and when the need arises.
- Consultation with the workforce on OH&S matters will be through their Supervisors, OH&S Representatives, the OH&S committee and their elected Trade Union Representatives, if any.
- The Principal Contractor will be responsible for the dissemination of all relevant OH&S information to the other Contractors through the appointed Safety Officers.
- The Principal Contractor will be required to do Site Safety Walks with THULAMELA MUNICIPALITY at least on a basis to be determined between the two parties.
- The Principal and other Contractors will be required to conduct Toolbox Talks with their employees on weekly basis and records of these must be kept on the OH&S file. Employees must acknowledge the receipt of Toolbox Talks which record must, likewise be kept on the OH&S file.
- The Principal Contractors most senior manager on site may be required to attend all THULAMELA MUNICIPALITY OH&S meetings.

**Training, Awareness and Competence**

The Principal Contractor is required to have a promotion and awareness scheme in place to create an OH&S culture in employees. The following are some of the methods that may be used:

- Toolbox Talks
- OH&S Posters
- Videos
- Competitions
- Suggestion schemes
- Participative activities such as OH&S circles.

**HIV/AIDS Awareness Campaign**

The Principal Contractor will see to it that all the employees are made aware of HIV/AIDS; thus include preventive measures (by providing condoms) and encouraged them for voluntary testing and counselling.

**Safety Health Environment and Quality Audit (SHEQ Audit)**

- THULAMELA MUNICIPALITY will be conducting a Monthly Audit to comply with Construction Regulation 4(1) (d) to ensure that the Principal Contractor has implemented and is maintaining the agreed and approved plan.
- THULAMELA MUNICIPALITY reserves the right to conduct other ad hoc audits and inspections as deemed necessary. This will include Site Safety Walks.
- The Principal Contractor shall conduct his own monthly internal audits to verify compliance with his own OH&S Management system as well as of with this specification including mandatory (Read section 37(2) of Occupational Health and Safety Act, 1993.

**Contractor's Construction Supervisor**

The Contractor shall appoint in writing a full-time construction supervisor with the duty of supervising construction of the Works (Construction Regulation 6(1) and 6(2)).

**Contractor's Construction Safety Officer**

Before commencing with the Works, the Contractor shall designate in writing a competent Construction Safety Officer (CSO) who shall be acceptable to the Engineer, to represent and act for the Contractor. The Contractor shall inform the Engineer in writing of the name and address of the Contractor's CSO and of any subsequent changes in the name and address of the Officer, together with the scope and limitation of the CSO's authority to act on behalf of the Contractor. The Contractor's CSO shall make available to the Employer an all-hours telephone number at which the CSO can be contacted at any given time in the event of an

emergency involving any of the Contractor's employees, or other persons at the Works.

### **Log Books**

The contractor shall keep the following log books and shall make them available to the Engineer on request:

- A record of the weekly inspection of first aid boxes.
- A record of the weekly inspection of ladders.
- A record of the weekly inspection of fire-fighting equipment.
- A record of the names and addresses of its employees who are registered as trained fire-fighting personnel and who are available on site for fire-fighting duties.
- A record of the monthly inspection of welding machines.
- A record of the monthly inspections of oxy-acetylene equipment.
- A record of the weekly inspections of scaffolding structure.
- A record of the monthly inspections of builder's hoist.
- A record of the monthly inspections of mobile and tower cranes.
- A record of the monthly inspections of lifting gear.
- A record of the inspections of electrical equipment.
- A record of the monthly tests of earth leakage units.

### **First Aid**

The Contractor shall appoint in writing, before commencing with the Works, a person(s) who is well trained in First Aid and being in a possession of a valid certificate of competency issued by an organization approved for the purposes by the Chief Inspector of the Department of Labour.

### **Safety Notice Board**

The Contractor shall provide a safety notice board where safety notices, site regulations concerning safe working practices and information on the location of the nearest first aid station, can be conspicuously displayed to its entire staff. The size of the notice board shall be at least (600 x 800) mm.

### **First Aid Equipment**

The contractor may provide for its employees a stretcher for emergencies and an approved first aid box. The first aid box shall be checked weekly by a responsible person, appointed by the Contractor and a record shall be kept of the contents. Any deficient medical supplies shall be promptly replenished by the Contractor. The said first aid box should be in compliance with regulation 3(2)(a) of General Administration Regulation.

### **Hazard Notices**

The Contractor shall display hazard notices in all areas where hazardous conditions prevail or may occur. (Warning notices)

### **Reporting of Incidents and/or injuries**

All incidents in respect of damage to Works, property or machinery, or injury to persons, shall be reported by the Contractor's Safety Officer or Site Representative to the Engineer by the quickest means possible. Thereafter should be reported in terms of section 24 of the Occupational Health and Safety Act to the Provincial Executive Manager of the Department of Labour jointly with the Compensation Commissioner in terms COIDA.

A mandatory incident report form, containing full details of the incident, shall be completed and submitted to the Engineer within twenty four (24) hours of the occurrence of the incident.

The Engineer shall have the right to make all or any enquiries as to the cause and result of any such incident. The Contractor shall provide the Engineer with full facilities for carrying out such enquiries.

### **Good Housekeeping and Safety Policy**

The Contractor shall at all times carry out the Works in a manner to avoid the risk of bodily harm to persons or risk of damage to any property. The Contractor shall take all precautions which are necessary and adequate to eliminate any conditions which contribute to the risk of injury to persons or damage to property. The Contractor shall continuously inspect all work, materials and equipment to discover and determine any such conditions and shall be solely responsible for the discovery, determination and elimination of such conditions.

During the period of this contract, the Contractor shall be responsible for the safe storage of all materials and equipment required for the execution of the Contract, and for disposal of all non-usable waste material in an orderly manner.

All materials, whether stored on the construction site or within the Contractor's designated area, shall be stored neatly and safely to prevent possible injury to any personnel. The material shall be stored to facilitate safe access to, and removal of the material from the storage area.

Any flammable material, such as paint, diesel fuel and oil, shall be stored in lockable no-combustible structures, which shall be clearly marked to indicate the hazardous nature of the materials stored within. The flammable materials stored shall be located in safe areas away from hazardous surroundings and adequate and suitable fire-fighting equipment shall be provided with easy reach of the materials stores and a "no smoking" sign should be displayed in that area.



**Toilets**

In terms of the National Building Regulations and Construction Regulation 28, the provision of Toilets is required. Chemical toilets are allowed instead of the water borne sewerage type. Toilets have to be provided at ratio of 1 toilet per 30 workers and a sign indicating to the recommendations made in the risk assessment.

**Exposed Danger Area**

All exposed danger area shall be demarcated by the Contractor with appropriate barrier tape and hazard notices to prevent unauthorized persons entering the danger area.

**Personal Protective Clothing**

The Contractor shall provide the necessary personal protective clothing for its employees in hazard areas, appropriate to the nature of the hazard.

**Hard Hats**

All employees of the Contractor shall wear hard hats in area where appropriate hazard notices are displayed. The Engineer shall have the right to ban certain colours if they are similar to the Employer's identifying colours. Hard hats shall not be painted or otherwise defaced.

**Eye Protection**

Suitable eye protection shall be worn in areas where appropriate hazard notices are displayed, or when grinding, chipping, breaking, drilling, arc-welding, cutting with oxy-acetylene equipment or similar activities are taking place.

**Hearing Protection**

Suitable hearing protection shall be worn in areas where appropriate hazard notices are displayed.

**Foot Wear**

All employees of the Contractor shall wear undamaged, laced-up safety boots or safety shoes, suitable for the intended purpose, in prescribed areas where appropriate hazard notices are displayed.

**Gloves**

All employees of the Contractor shall wear suitable protective gloves in areas where appropriate hazard notices are displayed, or when handling hot or hazardous materials or chemicals.

**Overhead Power lines**

Regulations of the Electricity Supply Authority in connection with prohibition of operations in the vicinity of overhead power lines shall be observed by the Contractor at all times.

**Machine Guarding**

All power tools and machinery driven by belts, gears, ropes, chains, couplings and similar drives shall be adequately guarded. The Contractor shall prohibit the use of any equipment with a damaged, missing or inadequate guard.

**Prevention of Uncontrolled Collapse**

The Contractor shall ensure that ÷

- All reasonable practicable steps are taken to prevent the uncontrolled collapse of any new or existing structure or any part thereof, which may become unstable or is in a temporary state of weakness or instability due to the carrying out of construction work; and
- No structure or part of a structure is loaded in a manner that would render it unsafe.

**Safe Working Loads**

The Contractor shall ensure that ÷

- The safe working loads of hoist, load-bearing beams and cranes are prominently displayed at all times.
- The safe working loads are not exceeded under any circumstances
- All lifting gear is marked with a unique identity number and recorded in a register.

**Commissioning Safety Precautions**

The Contractor shall ensure that wherever repairs, adjustments or any other work are undertaken on any plant or machinery, the power supply is switched off, disconnected or the plant/machinery disengaged until the work or repairs have been completed.

**Toxic Materials**

The Contractor shall exercise all necessary care in the handling of toxic compound and shall be able to identify the major chemical components in the event of medical treatment being required.

### **Hazardous Chemical and Materials**

- The Contractor shall provide suitable and adequate protective equipment when working in an area where hazardous chemical and materials are being used.
- The Contractor shall ensure that its employees have familiarized themselves with the hazardous material data sheets applicable to the specific site as well as the location of fire fighting equipment, safety showers/baths and other washing facilities prior to commencement of work.

### **INDEMNITY OF CLIENT AND HIS AGENTS**

1. The annexure to this Contract Document contain a “Mandatory Form of Authority and Agreement in terms of section 37(2) of the Occupational Health and Safety Act, No. 85 of 1993” which agreement shall be entered into and duly signed by both the Employer and Contractor prior to commencement with work.

A copy of the signed agreement shall be included in the Employer’s Health and safety plan.

2. Any acceptance, approval, check, certificate, consent, examination, inspection, instruction, notice, observation, proposal, request, test or similar act by either the Employer, any of his agents or the Engineer (including absence of disapproval) shall not relieve the Contractor from any responsibility he has under the Contract, the Act and the Construction Regulations, including responsibility for errors, omissions, discrepancies and non-compliance.

**THULAMELA LOCAL MUNICIPALITY**

**Bid No. 28/2020/2021**

**Construction of Tshilamba Arts Centre**

**C4 SITE INFORMATION**

C4.1 List of Drawings

C4.2 Tender Drawings

**THULAMELA LOCAL MUNICIPALITY****Bid No. 28/2020/2021****Construction of Tshilamba Arts Centre****C4.1 List of Tender Drawings.**

| <b>Drawing No.</b> | <b>Description</b>                              |
|--------------------|---|
| PS101              | Perspective View                                |
| PS102              | Perspective View                                |
| CS101              | Cover Sheet                                     |
| CS102              | Index of Drawing, Location Map and Vicinity Map |
| CS103              | General Notes for Structural Works              |
| CS104              | General Notes for Structural Works              |
| SL-100             | Detailed Survey                                 |
| SL-101             | Proposed Site Plan                              |
| A101               | Column Foundation Base Layout                   |
| A102               | Floor Plan                                      |
| A103               | Floor Plan                                      |
| A104               | Section   |
| A105               | Section   |
| A106               | Section   |
| A107               | Elevations                                      |
| A108               | -   |
| A109               | Window and Door Schedule                        |

|      |                          |
|------|--------------------------|
| A110 | Window and Door Schedule |
| A111 | Window and Door Schedule |
| S201 | Base Type A SOP1         |
| S202 | Base Type A SOP2         |
| S203 | Base Type A SOP3         |
| S204 | Base Type A SOP4         |
| S205 | Base Type A SOP5         |
| S206 | Base Type B SOP1         |
| S207 | Base Type B SOP3         |
| S208 | Base Type C SOP1         |
| S209 | Base Type B SOP3         |
| S210 | Base Type B SOP10        |
| S211 | Base Type C SOP2         |
| S212 | Base Type B SOP5         |
| S213 | Base Type B SOP6         |
| S214 | Base Type C SOP3         |
| S215 | Base Type A SOP06        |
| S216 | Base Type A SOP07        |
| S217 | Base Type A SOP08        |
| S218 | Base Type A SOP09        |
| S219 | Base Type A SOP10        |
| S220 | Base Type D SOP01        |
| S221 | Base Type D SOP02        |
| S222 | Base Type D SOP03        |

|      |                   |
|------|-------------------|
| S223 | Base Type D SOP04 |
| S224 | Base Type E SOP01 |
| S225 | Base Type F SOP01 |
| S226 | Base Type E SOP02 |
| S227 | Base Type F SOP02 |
| S228 | Base Type D SOP05 |
| S229 | Base Type D SOP06 |
| S230 | Base Type D SOP07 |
| S231 | Base Type D SOP08 |
| S232 | Base Type D SOP09 |
| S233 | Base Type D SOP10 |
| S234 | Base Type D SOP11 |
| S235 | Base Type D SOP12 |
| S236 | Base Type D SOP13 |
| S237 | Base Type D SOP14 |
| S238 | Base Type D SOP15 |
| S239 | Base Type D SOP16 |
| S240 | Base Type D SOP17 |
| S300 | Roof Beam Layout  |
| S301 | Roof Beam A       |
| S302 | Roof Beam B       |
| S303 | Roof Beam C       |
| S304 | Roof Beam D       |
| S305 | Roof Beam E       |

|      |                       |
|------|-----------------------|
| S306 | Roof Beam F           |
| S307 | Roof Beam G           |
| S308 | Roof Beam H           |
| S309 | Roof Beam I           |
| S310 | Roof Beam J           |
| S311 | Roof Beam M           |
| S312 | Roof Beam L           |
| S313 | Roof Beam K           |
| S314 | Roof Beam N           |
| S315 | Roof Beam O           |
| S316 | Roof Beam P           |
| S317 | Roof Beam Q           |
| S318 | Roof Beam R           |
| S319 | Roof Beam S           |
| S320 | Roof Beam T           |
| S321 | Roof Beam U           |
| S401 | Top 1 Reinforcing     |
| S402 | Top 2 Reinforcing     |
| S403 | Bottom 1 Reinforcing  |
| S404 | Bottom 2 Reinforcing  |
| S405 | Reinforcing Schedules |
| S406 | Top 1 Reinforcing     |
| S407 | Top 2 Reinforcing     |
| S408 | Bottom 1 Reinforcing  |



|      |                         |
|------|-------------------------|
| S409 | Bottom 2 Reinforcing    |
| S410 | Reinforcing Schedules   |
| E101 | Power Layout Floor Plan |