SANBI
Biodiversity for Life
South African National Biodiversity Institute

SOUTH AFRICAN NATIONAL BIODIVERSITY INSTITUTE (SANBI)

Bid No. SANBI: G435/2022

REQUEST FOR BIDS FOR THE APPOINTMENT OF A CONTRACTOR FOR THE CONSTRUCTION OF A NEW VISITORS' CENTRE, PARKING UPGRADES, LANDSCAPING, SECURITY UPGRADES AND ASSOCIATED CIVIL SERVICES FOR THE SOUTH AFRICAN NATIONAL BIODIVERSITY INSTITUTE AT THE THOHOYANDOU NATIONAL BOTANICAL GARDEN IN THOHOYANDOU

PROCUREMENT DOCUMENT

OCTOBER 2022

Issued by:

South African National Biodiversity Institute
Private Bag X101
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Contact:

Supply Chain Management

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Name of Tenderer: .....

Address: .....

Tel No.: ..... **Fax No.:** .....

E-mail: .....

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

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PROJECT TITLE:	**REQUEST FOR BIDS FOR THE APPOINTMENT OF A CONTRACTOR FOR THE CONSTRUCTION OF A NEW VISITORS' CENTRE, PARKING UPGRADES, LANDSCAPING, SECURITY UPGRADES AND ASSOCIATED CIVIL SERVICES FOR THE SOUTH AFRICAN NATIONAL BIODIVERSITY INSTITUTE AT THE THOHOYANDOU NATIONAL BOTANICAL GARDEN IN THOHOYANDOU**
BID No.:	**SANBI: G435/2022**

Advertising Date:	**21 October 2022**	**Closing Date:**	**18 November 2022**
Closing Time:	**11:00**	**Validity Period:**	**90 days**

T1.1 Tender Notice and Invitation to Tender

THE SOUTH AFRICAN NATIONAL BIODIVERSITY INSTITUTE INVITES TENDERERS FOR THE PROVISION OF: REQUEST FOR BIDS FOR THE APPOINTMENT OF A CONTRACTOR FOR THE CONSTRUCTION OF A NEW VISITORS' CENTRE, PARKING UPGRADES, LANDSCAPING, SECURITY UPGRADES AND ASSOCIATED CIVIL SERVICES FOR THE SOUTH AFRICAN NATIONAL BIODIVERSITY INSTITUTE AT THE THOHOYANDOU NATIONAL BOTANICAL GARDEN IN THOHOYANDOU

Tender documents will be available as from **21 October 2022** and will be available **ONLINE ONLY** on:

- SANBI website www.sanbi.org (click on "Opportunities")
- CIDB Website
- National e-Tender Publication Portal
- Government Tender Bulletin

Only Tenderers who can demonstrate that they will have in their employ staff which satisfy EPWP requirements during the contract validity, are eligible to submit tenders.

It is a condition of this tender that the successful contractor shall be required to sub-contract a minimum value of work to local SMMEs, equal to 30% of the contract value. In addition, the successful contractor must ensure the following conditions are met:

1. **Jobs are created for local communities.**
2. **Priority must be given to unemployed people from previously disadvantaged groups, youth, women and disabled individuals, with special focus given to Africans.**
3. **Comply with SANBI's monitoring tool/mechanism that will be developed to ensure integration and beneficiation of local communities, and that local employment is maximized.**
4. **Any foreign nationals to be appointed on this contract are properly documented and legally residents of South Africa, and that employment preference is given to South African citizens.**

A **compulsory** site briefing session will take place on site on **03 November 2022 at 09:00** at the Thohoyandou National Botanical Garden, Limpopo. Only one representative per service provider will be allowed to attend the scheduled compulsory site briefing session. Bidders are encouraged to direct all technical and bidding procedure enquiries to the email addresses below.

Department: Supply Chain Management
Email: sanbi.tenders@sanbi.org.za
Cc: technical@projectneers.com
Cut-off date for enquiries: **10 November 2022 at 12:00**

Any queries regarding the Tender document or any related matter prior to submission of Tenders must be directed to:

SANBI Representative (Technical Queries Only)	Dr Brighton Tshuma PROJECTNEERS Consulting technical@projectneers.com
SANBI SCM Representative	sanbi.tenders@sanbi.org.za

The closing time and date for the receipt of Tenders is **11:00** on **18 November 2022.**

The Tenders will **NOT** be opened in public (please note that the two-envelope system is being followed). Requirements for sealing, addressing, delivery, opening and assessment of Tenders are stated in the Tender Data.

T1.2 Tender Data

The Conditions of Tender are the Standard Conditions of Tender as contained in Annex C of the CIDB Standard for Uniformity in Engineering and Construction Works Contracts – August 2019. (See www.cidb.org.za).

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 or inconsistency between it and the Standard Conditions of Tender.

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

Clause number	Tender Data
C.1.1.1	The Employer is: South African National Biodiversity Institute (SANBI): The Employer's *domicilium citandi et executandi* (permanent physical business address) is: Pretoria National Botanical Garden Biodiversity Centre 2 Cussonia Avenue, Brummeria, Pretoria The Employer's address for communication relating to this project is: Private Bag X101 Silverton 0184
C.1.2	The Tender Documents issued by the Employer comprise the following documents: **PART T THE TENDER** **Part T1 Tendering Procedures** T1.1 Tender Notice and Invitation to Tender T1.2 Tender Data Annexure C Standard Conditions of Tender

Clause number	Tender Data
	Part T2 Returnable Documents T2.1 List of Returnable Documents T2.2 Returnable Documents/Schedules **PART C THE CONTRACT** **Part C1 Agreement and Contract Data** C1.1 Form of Offer and Acceptance C1.2 Contract Data C1.3 Form of Construction Guarantee C1.4 Occupational Health & Safety Agreement 37(2) **Part C2 Pricing Data** C2.1 Pricing Instructions C2.2 Bills of Quantities **Part C3 Scope of works** C3.1 Description of the Works C3.2 Construction C3.3 Management **Part C4 Site information** C4.1 Site Information **Appendix A: Drawings** **Appendix B: Health & Safety Specifications** **Appendix C: Guidelines for the Implementation of Labour- Intensive Projects under the Expanded Public Works Programme (EPWP)** **Appendix D: Geotechnical Report**
C.1.4	The Employer's Agent is: **PROJECTNEERS CONSULTING** Office No. 3, 1st Floor, Building 2, Thornhill Office Park, 94 Bekker Road, Midrand 1685 Contact person: Dr Brighton Tshuma Tel: +27 11 043 1307 Email: technical@projectneers.com
C.2.1	Only those Tenderers who satisfy the following eligibility criteria are eligible to submit Tenders Only those Tenderers who score the minimum score in respect of the quality criteria stated in C.3.11.1 of this Tender Data shall be considered responsive and have their Tenders evaluated further. (a) CIDB registration Only those Tenderers who are registered with the CIDB or are capable of being so prior to the evaluation of submissions, in a Contractor grading designation equal to or higher than a Contractor grading designation determined in accordance with the sum Tendered, or a value determined in accordance with Regulation 25 (1B) or 25(7A) of the Construction Industry Development Regulations, for a **7GB** class of construction work, are eligible to have their Tenders evaluated. Joint ventures are eligible to submit Tenders provided that: 1. every member of the joint venture is registered with the CIDB; 2. the lead partner has a Contractor grading designation in the **7GB** class of construction work; and 3. 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 **7GB** class of construction work or a value determined in accordance with Regulation 25 (1B) or 25(7A) of the Construction Industry Development Regulations. (b) National Treasury Central Supplier Database Tenderers who are not registered on the National Treasury Central Supplier Database at close of Tender, shall submit a copy of their application of registration, with their Tender submission. Tenders received from such Tenderers who have not submitted proof of their registration within 21 days after the closing date for Tender submissions, will not be considered.

Clause number	Tender Data
C.2.6	Failure to apply instructions contained in addenda may render a Tenderer's offer non-responsive in terms of clause C.3.8.
C.2.7	The arrangements for a compulsory clarification meeting are as stated in the Tender Notice and Invitation to Tender.
C.2.8	Request clarifications at least 7 working days before the closing time.
C.2.12	Main Tender Offers are required to be submitted together with alternative Tenders. If a Tenderer wishes 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, the details of which may be obtained from the Employer's Agent. 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. 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. 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 in confirming the acceptability of the detailed design.
C.2.13.6	A two-envelope procedure will be followed as described in clause C.2.13.7.
C.2.13.7	Tenderers shall note the specific requirements for packaging of their tender documents and include only the following: • Financial: one (1) original document marked "Original" **including** Form of Offer and Acceptance, Estimated monthly expenditure and Priced Bills of Quantities; and • Technical: one (1) document pack **without any** pricing on a **memory stick** Financial or pricing details should **ONLY** be included in the printed document pack marked **'ORIGINAL',** and not in the PDF file(s) of the document(s) on the **memory stick**. **NB**: Service Providers are to submit one (1) pack of the original tender with the memory stick (USB) in the same envelope, failure to comply will lead to your bid being **disqualified**. **INCLUSION OF ANY PRICING INFORMATION ANYWHERE ON THE MEMORY STICK WILL LEAD TO THE BID BEING DISQUALIFIED.** The original document will be placed in one envelope and the memory stick will be placed in another envelope. The two envelopes shall be placed together in an outer envelope sealed and bearing the following: • The address as stated in C.2.15.1 below • The identification details as stated in C.2.15.1 below • Name of the Tenderer • The words "Not be opened before the Tender opening" The Technical and Financial envelopes should also contain the details of the last three bullets on them. The financial envelope must contain the words NOT TO BE OPENED WITH THE TECHNICAL ENVELOPE.

Clause number	Tender Data
C.2.13.9	Telephonic, telegraphic, telex, facsimile or eMailed Tender Offers will not be accepted.
C.2.15.1	The Employer's address for delivery of Tender Offers and identification details to be shown on each Tender Offer package are: **Location of Tender Box:** Biodiversity Centre **Physical address:** Pretoria National Botanical Garden 2 Cussonia Avenue Brummeria Pretoria **Identification Details:** Tender No.: **SANBI: G435/2022** **Title of Tender:** REQUEST FOR BIDS FOR THE APPOINTMENT OF A CONTRACTOR FOR THE CONSTRUCTION OF A NEW VISITORS' CENTRE, PARKING UPGRADES, LANDSCAPING, SECURITY UPGRADES AND ASSOCIATED CIVIL SERVICES FOR THE SOUTH AFRICAN NATIONAL BIODIVERSITY INSTITUTE AT THE THOHOYANDOU NATIONAL BOTANICAL GARDEN IN THOHOYANDOU
C.2.15.2	The closing time for submission of Tender Offers is as stated in the Tender Notice and Invitation to Tender.
C.2.16.1	The Tender Offer validity period is **90 days**.
C.2.16.3	Where a Tenderer, at any time after the opening of his Tender Offer but prior to entering into a contract based on his Tender Offer: (1) withdraws his Tender; (2) gives notice of his inability to execute the contract in terms of his Tender; or (3) fails to comply with a request made in terms of C.2.17, C.2.18 or C.3.9 such Tenderer shall be barred from Tendering on any of the Employer's future Tenders for a period to be determined by the Employer, but not less than six (6) months, from the date of Tender closure. The Employer may fully or partly exempt a Tenderer from the provisions of this condition if he is of the opinion that the circumstances justify the exemption.
C.2.18	The Tenderer shall, when requested by the Employer to do so, submit the names of all management and supervisory staff that will be employed to supervise the Labour-Intensive portion of the works together with satisfactory evidence that such staff members satisfy the eligibility requirements.
C.2.22	Tender Documents will **not be returned** to Bidders.
C.2.23	The Tenderer is required to submit with his Tender the following **(failure to provide below documentation will result in the Tender being rejected)**: 1) A copy of the Central Suppliers Database (CSD) registration report or registration number. 2) A printed copy of the Active Contractor's Listing off the CIDB website (www.cidb.org.za) 3) Letter of Good Standing from the Office of the Compensation Commissioner as required by the Compensation for Occupational Injuries and Diseases Act (COIDA). The letter should be issued by the Department of Labour. 4) A valid certified copy or original Broad-Based Black Economic Empowerment (B-BBEE) Status Level 1 certificate. Note that for this Tender, the following pre-qualification criterion for preferential procurement will be applied: Section 4(1) a Tenderer having a B-BBEE Status Level of Contributor Level 1. 1) Certificates 2) Include in the Tender submission or provide the Employer with any certificates as stated in the Tender Data. 3) In case of a Joint Venture, bidders are required to submit a consolidated B-BBEE certificate or sworn affidavit, as well as a joint venture agreement that clearly outlines each party's percentage involvement or role. 4) In the case of a Joint Venture/Consortium the tax Compliance status Pin must be submitted for each member of the Joint Venture/Consortium."
C.3.1.1	The Employer shall respond to clarifications received up to 7 working days before the Tender closing time.
C.3.2	The Employer shall issue addenda until 5 working days before the Tender closing time.

Clause number	Tender Data
C.3.4.1	The Tenders will not be opened in public
C.3.5.1	The two-envelope system will be followed for this Tender.
C.3.7	In the event of disqualification, the Employer may, at his sole discretion, impose a specified period during which Tender Offers will not be accepted from the offending Tenderer and report same to the CIDB and National Treasury.
C.3.11.1	The procedure for the evaluation of responsive Tenders is stated in **Annexure A**.
C.3.13	In addition to the requirements of the Condition of Tender, offers will only be accepted if: a) the Tenderer submits **a copy of the CSD registration report or registration number** (refer to T2.1.13); b) the Tenderer is registered with the Construction Industry Development Board in an appropriate Contractor grading designation (refer to T2.1.12); c) the Tenderer or any of its directors/shareholders is not listed on 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 d) the Tenderer has completed the Compulsory Enterprise Questionnaire and there are no conflicts of interest which may impact on the Tenderer's ability to perform the contract in the best interests of the Employer or potentially compromise the Tender process and persons in the employ of the state are permitted to submit Tenders or participate in the contract (refer to T2.1.16); e) the Tenderer is registered and in good standing with the compensation fund issued by the Department of Labour (Letter of Good Standing from the Office of the Compensation Commissioner (COIDA)); f) the Employer is reasonably satisfied that the Tenderer has in terms of the Construction Regulations, 2014, issued in terms of the Occupational Health and Safety Act, 1993, the necessary competencies and resources to carry out the work safely. g) A valid certified copy or original Broad-Based Black Economic Empowerment (B-BBEE) Status Level 1 certificate. Note that for this Tender, the following pre-qualification criterion for preferential procurement will be applied: Section 4(1) a **Tenderer having a B-BBEE Status Level of Contributor Level 1.**
F.2.1	Only those Tenderers who can demonstrate that they will have in their employ management and supervisory staff satisfying the requirements of the scope of work for labour-intensive competencies for supervisory and management staff during the validity of the contract, are eligible to submit tenders.
F.2.18	The Tenderer must submit to the Employer names of all management and supervisory staff that will be employed to supervise the labour-intensive portion of the works, together with satisfactory evidence that such staff members satisfy the eligibility requirements.

Annexure A

This Annexure contains all the criteria that the Employer shall use to evaluate Tenders. In accordance with clause C.3.11 of the Standard conditions of Tender. No other factors, methods or criteria shall be used. The Tenderer shall provide all the information requested in the forms included in Part T2.2 – Returnable Schedules.

Tenders shall be evaluated in three stages as follows

- Stage 1 – Evaluation of Eligibility and Administrative Compliance
- Stage 2 – Evaluation of Functionality
- Stage 3 – Evaluation of Tender Price and Preference

1 Stage 1: Eligibility and Administrative Compliance

The first stage will determine whether Bids are compliant with all mandatory and disqualifiable submission requirements. Bidders that are deemed compliant will be eligible for further evaluation.

The criteria as identified in Clauses C.2.23 and C.3.13 in the Tender Data will be used to determine the Tenders eligibility.

For administrative compliance, the Tenderers must complete all the returnable forms in Part T2.2, the Bills of Quantities and the Offer section in Part C1.1.

2 Stage 2: Functionality

The Tenderers who complied with the eligibility and administrative criteria in Stage 1, are considered for further evaluation on their capability to execute the project.

In this stage Tenders will be evaluated on functionality according to the criteria listed below. Tenderers who fail to score a minimum of 70 points out of a possible 100 points on functionality criteria will not be eligible for further consideration.

Scoring quality
The functionality (quality) evaluation criteria are listed below. Maximum points for each criterion are in bold while points for each sub-criteria are indicated in brackets.

<table>
<tr><th colspan="3">FUNCTIONALITY CRITERIA</th></tr>
<tr><th>ID</th><th>CRITERIA</th><th>POINTS</th></tr>
<tr><td>1</td><td>Implementation method and project plan or programme
• Method to be followed in delivering this project
• Weekly plan/programme with milestones</td><td>20
(10)
(10)</td></tr>
<tr><td>2</td><td>Contractor's Experience
• Three reference letters regarding work of similar scope and scale completed in last five years
<table>
<tr><th>Sub-Criteria</th><th>Points</th></tr>
<tr><td>One reference letter</td><td>5</td></tr>
<tr><td>Two reference letters</td><td>10</td></tr>
<tr><td>Three reference letters or more</td><td>15</td></tr>
</table>
• List of at least five conventional projects with telephonic references, indicating value of works completed and project duration in the last 10 years.</td><td>55
(15)</td></tr>
</table>

	<table><tr><th>Sub-Criteria</th><th>Points</th></tr><tr><td>One Project</td><td>3</td></tr><tr><td>Two Projects</td><td>6</td></tr><tr><td>Three Projects</td><td>9</td></tr><tr><td>Four Projects</td><td>12</td></tr><tr><td>Five Projects</td><td>15</td></tr></table> • List of at least five labour intensive construction projects with telephonic references, indicating value of works completed and project duration in the last 10 years. <table><tr><th>Sub-Criteria</th><th>Points</th></tr><tr><td>One Labour Intensive Project</td><td>5</td></tr><tr><td>Two Labour Intensive Projects</td><td>10</td></tr><tr><td>Three Labour Intensive Projects</td><td>15</td></tr><tr><td>Four Labour Intensive Projects</td><td>20</td></tr><tr><td>Five Labour Intensive Projects</td><td>25</td></tr></table>	(15) (25)
3	Contractor's Resources – Personnel and Plant Proposed personnel: • CVs for proposed key personnel **(At least 3)** indicating: o Previous work experience o Total number of years' working experience in construction o Individual experience on similar work in last five years o Qualifications or artisan's certification or other recognised training courses completed o Membership of professional bodies or guilds <table><tr><th>Sub-Criteria</th><th>Points</th></tr><tr><td>Combined CV experience of less than 5 years</td><td>4</td></tr><tr><td>Combined CV experience of more than 5 years</td><td>8</td></tr><tr><td>Combined CV experience of more than 10 years</td><td>12</td></tr><tr><td>Combined CV experience of more than 15 years</td><td>16</td></tr><tr><td>Combined CV experience of more than 20 years</td><td>20</td></tr></table> Plant: • Equipment owned by Contractor • Equipment to be rented (if any) – with preferred rental companies	**25** (20) (5)
TOTAL		**100**

Functionality shall be scored by not less than three evaluators in accordance with the following schedules:

Each evaluation criterion will be assessed in terms of five indicators – no response, poor, satisfactory, acceptable, good and very good. Scores ranging from of 0 to 5 will be allocated to no response, very poor, poor, acceptable, good and very good responses, respectively. The scores submitted by each of the evaluators will be averaged, weighted and then totalled to obtain the final score for functionality. The prompts for judgment and the associated scores used in the evaluation of quality shall be as follows:

Score	Prompt for judgement
0	Failed to address the question/issue
1	Very poor response - response/answer/solution lacks convincing evidence of skill/experience sought or medium risk that relevant skills will not be available.
2	Poor response – some elements of the response/answer/solution are present but documentary evidence is mostly lacking in respect of the required information
3	Acceptable response/answer/solution to the particular aspect of the requirements and evidence given of skill /experience sought
4	Above acceptable – response/answer/solution demonstrating real understanding of requirements and evidence of ability to meet it.
5	Excellent - response/answer/solution provides confidence that the Tenderer will add real value to the project.

The minimum number of evaluation points for functionality proposal is **70 points** in order to progress to Stage 3 of the evaluation

3 Stage 3: Tender Price and Preference

The Tenderers who complied with the functionality criteria in Stage 2 are considered for further evaluation in terms of their Tender Price and Preference Points.

3.1 Correction of arithmetical errors

Pursuant to clause C.3.9 of the Standard Conditions of Tender as amended in the Tender Data, correction of arithmetical errors shall be undertaken.

3.2 Calculation of score for Tender Price

The score for Tender Price shall be calculated using the following formula:

$$N_F = W_f \times \left[1 - \left(\frac{P_t - P_{min}}{P_{min}}\right)\right]$$

Where:

N_F = the score for Tender Price awarded for the Tender under consideration

W_f = the weighting given to financial offer, determined as follows:

- 90 where the Tender Price, inclusive of VAT, of all responsive Tender Offers received has a value in excess of R50 000 000,00; or
- 80 where the Tender Price, inclusive of VAT, of one or more responsive Tender Offers has a value that equals or is less than R50 000 000,00.

P_t = Tender Price of the Tender under consideration

P_{min} = Tender Price of the lowest responsive Tender

In the event that the calculated value of N_F is negative, the allocated score shall be 0

3.3 Calculation of Preference points

Up to 100 minus W_f Tender evaluation points will be awarded to Tenderers who submit responsive Tenders and who are found to be eligible for the preference claimed. Points are based on a Tenderer's scorecard measured in terms of the Broad-Based Black Economic Empowerment Act (B-BBEE, Act 53 of 2003) and the Regulations (2017) to the Preferential Procurement Policy Framework Act (PPPFA, Act 5 of 2000).

Points awarded will be according to a Tenderer's B-BBEE status level of contributor and summarised in the table below:

B-BBEE Status Level of contributor	Qualification	Number of Points for Contract value up to R50 000 000	Number of Points for Contract Value above R50 000 000
1	≥ 100 points	20	10
2	≥ 85 but < 100 points	18	9
3	≥ 75 but < 85 points	14	6
4	≥ 65 but < 75 points	12	5
5	≥ 55 but < 65 points	8	4
6	≥ 45 but < 55 points	6	3
7	≥ 40 but < 45 points	4	2
8	≥ 30 but < 40 points	2	1
Non-compliant Contributor	< 30 points	0	0

Eligibility for preference points is subject to the following conditions:

(1) A Tenderer's scorecard shall be based on the Construction Sector Codes of Practice promulgated in Government Gazette 32305 of 5 June 2009, only if such certificate has been issued before 17 February 2016, alternatively a B-BBEE Certificate issued in accordance with the revised Notice of Clarification published in Notice 444 of 2015 of Government Gazette No.38799 on 15 May 2015 by the Department of Trade and Industry; and
(2) The scorecard shall be submitted as a certificate attached to Returnable Schedule Form T2.1.06; and
(3) The certificate shall:
    (a) be an original or an original certified copy of the original; and
    (b) have been issued by a verification agency accredited by the South African National Accreditation System (SANAS); or
    (c) have been issued by a registered auditor approved by the Independent Regulatory Board of Auditors (IRBA), and
(4) The Verification Certificate must be valid at the Tender closing date; and
(5) The date of issue of the certificate must be less than 12 (twelve) months prior to the advertised Tender closing date (see Tender Data C.2.15.2); and
(6) Compliance with any other information requested to be attached to Form T2.1.06; and
(7) If a Tenderer claims a preference score without submitting an acceptable verification certificate, a period of 24 hours will be granted to submit an acceptable verification certificate which was valid at date of Tender closure; and
(8) Failure to submit a valid verification certificate will result in the award of 0 (zero) points for preference; and
(9) In the event of a joint venture (JV), a consolidated B-BBEE verification certificate in the name of the JV shall be submitted.

3.4 Financial and Preference

After calculation of the scores for Tender Price and for Preference, a combined score will be calculated as follows:

NT = NF + NP

Where:

NT = Total score for Tender under consideration
NF = Score for Tender Price
NP = Score for Preference

The Tender with the highest score should be recommended for appointment.

Annexure C: Standard Conditions of Tender

C.1 General

C.1.1 Actions

C.1.1.1 The Employer and each Tenderer submitting a Tender Offer shall comply with these conditions of Tender. In their dealings with each other, they shall discharge their duties and obligations as set out in C.2 and C.3, timeously and with integrity, and behave equitably, honestly and transparently, comply with all legal obligations and not engage in anticompetitive practices.

C.1.1.2 The Employer and the Tenderer and all their agents and employees involved in the Tender process shall avoid conflicts of interest and where a conflict of interest is perceived or known, declare any such conflict of interest, indicating the nature of such conflict. Tenderers shall declare any potential conflict of interest in their Tender submissions. Employees, agents and advisors of the Employer shall declare any conflict of interest to whoever is responsible for overseeing the procurement process at the start of any deliberations relating to the procurement process or as soon as they become aware of such conflict and abstain from any decisions where such conflict exists or recuse themselves from the procurement process, as appropriate.

Note:

1) A conflict of interest may arise due to a conflict of roles which might provide an incentive for improper acts in some circumstances. A conflict of interest can create an appearance of impropriety that can undermine confidence in the ability of that person to act properly in his or her position even if no improper acts result.

2) Conflicts of interest in respect of those engaged in the procurement process include direct, indirect or family interests in the Tender or outcome of the procurement process and any personal bias, inclination, obligation, allegiance or loyalty which would in any way affect any decisions taken.

C.1.1.3 The Employer shall not seek, and a Tenderer shall not submit a Tender without having a firm intention and the capacity to proceed with the contract.

C.1.2 Tender Documents

The documents issued by the Employer for the purpose of a Tender Offer are listed in the Tender Data.

C.1.3 Interpretation

C.1.3.1 The Tender Data and additional requirements contained in the Tender schedules that are included in the returnable documents are deemed to be part of these conditions of Tender.

C.1.3.2 These conditions of Tender, the Tender Data and Tender schedules which are required for Tender evaluation purposes, shall form part of any contract arising from the invitation to Tender.

C.1.3.3 For the purposes of these conditions of Tender, the following definitions apply:

a) **conflict of interest** means any situation in which:

i) someone in a position of trust has competing professional or personal interests which make it difficult to fulfill his or her duties impartially.

ii) an individual or Tenderer is able to exploit a professional or official capacity in some way for their personal or corporate benefit; or

iii) incompatibility or contradictory interests exist between an employee and the Tenderer who employs that employee.

b) **comparative offer** means the price after the factors of a non-firm price and all unconditional discounts it can be utilised to have been taken into consideration.

c) **corrupt practice** means the offering, giving, receiving or soliciting of anything of value to influence the action of the Employer or his staff or agents in the Tender process.

d) **fraudulent practice** means the misrepresentation of the facts in order to influence the Tender process or the award of a contract arising from a Tender Offer to the detriment of the Employer, including collusive practices intended to establish prices at artificial levels.

C.1.4 Communication and Employer's agent

Each communication between the Employer and a Tenderer shall be to or from the Employer's agent only, and in a form that can be readily read, copied and recorded. Communications shall be in the English language. The Employer shall not take any responsibility for non-receipt of communications from or by a Tenderer. The name and contact details of the Employer's agent are stated in the Tender Data.

C.1.5 Cancellation and Re-Invitation of Tenders

C.1.5.1 An Employer may, prior to the award of the Tender, cancel a Tender if-

a) due to changed circumstances, there is no longer a need for the engineering and construction works specified in the invitation;
b) funds are no longer available to cover the total envisaged expenditure; or
c) no acceptable Tenders are received;
d) there is a material irregularity in the Tender process.

C.1.5.2 The decision to cancel a Tender invitation must be published in the same manner in which the original Tender invitation was advertised

C.1.5.3 An Employer may only with the prior approval of the relevant treasury cancel a Tender invitation for the second time.

C.1.6 Procurement procedures

C.1.6.1 General

Unless otherwise stated in the Tender Data, a contract will, subject to C.3.13, be concluded with the Tenderer who in terms of C.3.11 is the highest ranked or the Tenderer scoring the highest number of Tender evaluation points, as relevant, based on the Tender submissions that are received at the closing time for Tenders.

C.1.6.2 Competitive negotiation procedure

C.1.6.2.1 Where the Tender Data require that the competitive negotiation procedure is to be followed, Tenderers shall submit Tender Offers in response to the proposed contract in the first round of submissions. Notwithstanding the requirements of C.3.4, the Employer shall announce only the names of the Tenderers who make a submission. The requirements of C.3.8 relating to the material deviations or qualifications which affect the competitive position of Tenderers shall not apply.

C.1.6.2.2 All responsive Tenderers or at least a minimum of not less than three responsive Tenderers that are highest ranked in terms of the evaluation criteria stated in the Tender Data shall be invited to enter into competitive negotiations based on the principle of equal treatment, keeping confidential the proposed solutions and associated information.

Notwithstanding the provisions of C.2.17, the Employer may request that Tenders be clarified, specified and fine-tuned in order to improve a Tenderer's competitive position provided that such clarification, specification, fine-tuning or additional information does not alter any fundamental aspects of the offers or impose substantial new requirements which restrict or distort competition or have a discriminatory effect.

C.1.6.2.3 At the conclusion of each round of negotiations, Tenderers shall be invited by the Employer to revise their Tender Offer based on the same evaluation criteria, with or without adjusted weightings. Tenderers shall be advised when they are to submit their best and final offer.

C.1.6.2.4 The contract shall be awarded in accordance with the provisions of C.3.11 and C.3.13 after Tenderers have been requested to submit their best and final offer.

C.1.6.3 Proposal procedure using the two stage-system

C.1.6.3.1 Option 1

Tenderers shall in the first stage submit technical proposals and, if required, cost parameters around which a contract may be negotiated. The Employer shall evaluate each responsive submission in terms of the method of evaluation stated in the Tender Data, and in the second stage negotiate a contract with the Tenderer scoring the highest number of evaluation points and award the contract in terms of these conditions of Tender.

C.1.6.3.2 Option 2

C.1.6.3.2.1 Tenderers shall submit in the first stage only technical proposals. The Employer shall invite all responsive Tenderers to submit Tender Offers in the second stage, following the issuing of procurement documents.

C.1.6.3.2.2 The Employer shall evaluate Tenders received during the second stage in terms of the method of evaluation stated in the Tender Data and award the contract in terms of these conditions of Tender.

C.2 Tenderer's obligations

C.2.1 Eligibility

C.2.1.1 Submit a Tender Offer only if the Tenderer satisfies the criteria stated in the Tender Data and the Tenderer, or any of his principals, is not under any restriction to do business with Employer.

C.2.1.2 Notify the Employer of any proposed material change in the capabilities or formation of the Tendering entity (or both) or any other criteria which formed part of the qualifying requirements used by the Employer as the basis in a prior process to invite the Tenderer to submit a Tender Offer and obtain the Employer's written approval to do so prior to the closing time for Tenders.

C.2.2 Cost of Tendering

C.2.2.1 Accept that, unless otherwise stated in the Tender Data, the Employer will not compensate the Tenderer for any costs incurred in the preparation and submission of a Tender Offer, including the costs of any testing necessary to demonstrate that aspects of the offer comply with requirements.

C.2.2.2 The cost of the Tender documents charged by the Employer shall be limited to the actual cost incurred by the Employer for printing the documents. Employers must attempt to make available the Tender documents on its website so as not to incur any costs pertaining to the printing of the Tender documents.

C.2.3 Check documents

Check the Tender documents on receipt for completeness and notify the Employer of any discrepancy or omission.

C.2.4 Confidentiality and copyright of documents

Treat as confidential all matters arising in connection with the Tender. Use and copy the documents issued by the Employer only for the purpose of preparing and submitting a Tender Offer in response to the invitation.

C.2.5 Reference documents

Obtain, as necessary for submitting a Tender Offer, copies of the latest versions of standards, specifications, conditions of contract and other publications, which are not attached but which are incorporated into the Tender documents by reference.

C.2.6 Acknowledge addenda

Acknowledge receipt of addenda to the Tender documents, which the Employer may issue, and if necessary, apply for an extension to the closing time stated in the Tender Data, in order to take the addenda into account.

C.2.7 Clarification meeting

Attend, where required, a clarification meeting at which Tenderers may familiarize themselves with aspects of the proposed work, services or supply and raise questions. Details of the meeting(s) are stated in the Tender Data.

C.2.8 Seek clarification

Request clarification of the Tender documents, if necessary, by notifying the Employer at least five (5) working days before the closing time stated in the Tender Data.

C.2.9 Insurance

Be aware that the extent of insurance to be provided by the Employer (if any) might not be for the full cover required in terms of the conditions of contract identified in the Contract Data. The Tenderer is advised to seek qualified advice regarding insurance.

C.2.10 Pricing the Tender Offer

C.2.10.1 Include in the rates, prices, and the Tendered total of the prices (if any) all duties, taxes except Value Added Tax (VAT), and other levies payable by the successful Tenderer, such duties, taxes and levies being those applicable fourteen (14) days before the closing time stated in the Tender Data.

C.2.10.2 Show VAT payable by the Employer separately as an addition to the Tendered total of the prices.

C.2.10.3 Provide rates and prices that are fixed for the duration of the contract and not subject to adjustment except as provided for in the conditions of contract identified in the Contract Data.

C.2.10.4 State the rates and prices in Rand unless instructed otherwise in the Tender Data. The conditions of contract identified in the Contract Data may provide for part payment in other currencies.

C.2.11 Alterations to documents

Do not make any alterations or additions to the Tender documents, except to comply with instructions issued by the Employer, or necessary to correct errors made by the Tenderer. All signatories to the Tender Offer shall initial all such alterations.

C.2.12 Alternative Tender Offers

C.2.12.1 Unless otherwise stated in the Tender Data, submit alternative Tender Offers only if a main Tender Offer, strictly in accordance with all the requirements of the Tender documents, is also submitted as well as a schedule that compares the requirements of the Tender documents with the alternative requirements that are proposed.

C.2.12.2 Accept that an alternative Tender Offer must be based only on the criteria stated in the Tender Data or criteria otherwise acceptable to the Employer.

C.2.12.3 An alternative Tender Offer must only be considered if the main Tender Offer is the winning Tender.

C.2.13 Submitting a Tender Offer

C.2.13.1 Submit one Tender Offer only, either as a single Tendering entity or as a member in a joint venture to provide the whole of the works identified in the Contract Data and described in the scope of works, unless stated otherwise in the Tender Data.

C.2.13.2 Return all returnable documents to the Employer after completing them in their entirety, either electronically (if they were issued in electronic format) or by writing legibly in non-erasable ink.

C.2.13.3 Submit the parts of the Tender Offer communicated on paper as an original plus the number of copies stated in the Tender Data, with an English translation of any documentation in a language other than English, and the parts communicated electronically in the same format as they were issued by the Employer.

C.2.13.4 Sign the original and all copies of the Tender Offer where required in terms of the Tender Data. The Employer will hold all authorized signatories liable on behalf of the Tenderer. Signatories for Tenderers proposing to contract as joint ventures shall state which of the signatories is the lead partner whom the Employer shall hold liable for the purpose of the Tender Offer.

C.2.13.5 Seal the original and each copy of the Tender Offer as separate packages marking the packages as "ORIGINAL" and "COPY". Each package shall state on the outside the Employer's address and identification details stated in the Tender Data, as well as the Tenderer's name and contact address.

C.2.13.6 Where a two-envelope system is required in terms of the Tender Data, place and seal the returnable documents listed in the Tender Data in an envelope marked “financial proposal” and place the remaining returnable documents in an envelope marked “technical proposal”. Each envelope shall state on the outside the Employer’s address and identification details stated in the Tender Data, as well as the Tenderer's name and contact address.

C.2.13.7 Seal the original Tender Offer and copy packages together in an outer package that states on the outside only the Employer's address and identification details as stated in the Tender Data.

C.2.13.8 Accept that the Employer will not assume any responsibility for the misplacement or premature opening of the Tender Offer if the outer package is not sealed and marked as stated.

C.2.13.9 Accept that Tender Offers submitted by facsimile or e-mail will be rejected by the Employer, unless stated otherwise in the Tender Data.

C.2.14 Information and data to be completed in all respects

Accept that Tender Offers, which do not provide all the data or information requested completely and, in the form required, may be regarded by the Employer as non-responsive.

C.2.15 Closing time

C.2.15.1 Ensure that the Employer receives the Tender Offer at the address specified in the Tender Data not later than the closing time stated in the Tender Data. Accept that proof of posting shall not be accepted as proof of delivery.

C.2.15.2 Accept that, if the Employer extends the closing time stated in the Tender Data for any reason, the requirements of these conditions of Tender apply equally to the extended deadline.

C.2.16 Tender Offer validity

C.2.16.1 Hold the Tender Offer(s) valid for acceptance by the Employer at any time during the validity period stated in the Tender Data after the closing time stated in the Tender Data.

C.2.16.2 If requested by the Employer, consider extending the validity period stated in the Tender Data for an agreed additional period with or without any conditions attached to such extension.

C.2.16.3 Accept that a Tender submission that has been submitted to the Employer may only be withdrawn or substituted by giving the Employer’s agent written notice before the closing time for Tenders that a Tender is to be withdrawn or substituted. If the validity period stated in C.2.16 lapses before the Employer evaluating Tender, the Contractor reserves the right to review the price based on Consumer Price Index (CPI).

C.2.16.4 Where a Tender submission is to be substituted, a Tenderer must submit a substitute Tender in accordance with the requirements of C.2.13 with the packages clearly marked as "SUBSTITUTE".

C.2.17 Clarification of Tender Offer after submission

Provide clarification of a Tender Offer in response to a request to do so from the Employer during the evaluation of Tender Offers. This may include providing a breakdown of rates or prices and correction of arithmetical errors by the adjustment of certain rates or item prices (or both). No change in the competitive position of Tenderers or substance of the Tender Offer is sought, offered, or permitted.

Note: *Sub-clause C.2.17 does not preclude the negotiation of the final terms of the contract with a preferred Tenderer following a competitive selection process, should the Employer elect to do so.*

C.2.18 Provide other material

C.2.18.1 Provide, on request by the Employer, any other material that has a bearing on the Tender Offer, the Tenderer's commercial position (including notarized joint venture agreements), preferencing arrangements, or samples of materials, considered necessary by the Employer for the purpose of a full and fair risk assessment.

Should the Tenderer not provide the material, or a satisfactory reason as to why it cannot be provided, by the time for submission stated in the Employer's request, the Employer may regard the Tender Offer as non-responsive.

C.2.18.2 Dispose of samples of materials provided for evaluation by the Employer, where required.

C.2.19 Inspections, tests and analysis

Provide access during working hours to premises for inspections, tests and analysis as provided for in the Tender Data.

C.2.20 Submit securities, bonds and policies

If requested, submit for the Employer's acceptance before formation of the contract, all securities, bonds, guarantees, policies and certificates of insurance required in terms of the conditions of contract identified in the Contract Data.

C.2.21 Check final draft

Check the final draft of the contract provided by the Employer within the time available for the Employer to issue the contract.

C.2.22 Return of other Tender documents

If so instructed by the Employer, return all retained Tender documents within twenty-eight (28) days after the expiry of the validity period stated in the Tender Data.

C.2.23 Certificates

Include in the Tender submission or provide the Employer with any certificates as stated in the Tender Data.

C.3 The Employer's undertakings

C.3.1 Respond to requests from the Tenderer

C.3.1.1 Unless otherwise stated in the Tender Data, respond to a request for clarification received up to five (5) working days before the Tender closing time stated in the Tender Data and notify all Tenderers who collected Tender documents.

C.3.1.2 Consider any request to make a material change in the capabilities or formation of the Tendering entity (or both) or any other criteria which formed part of the qualifying requirements used to prequalify a Tenderer to submit a Tender Offer in terms of a previous procurement process and deny any such request if as a consequence:

a) an individual firm, or a joint venture as a whole, or any individual member of the joint venture fails to meet any of the collective or individual qualifying requirements.
b) the new partners to a joint venture were not prequalified in the first instance, either as individual firms or as another joint venture; or
c) in the opinion of the Employer, acceptance of the material change would compromise the outcome of the prequalification process.

C.3.2 Issue Addenda

If necessary, issue addenda that may amend or amplify the Tender documents to each Tenderer during the period from the date that Tender documents are available until three (3) working days before the Tender closing time stated in the Tender Data. If, as a result a Tenderer applies for an extension to the closing time stated in

the Tender Data, the Employer may grant such extension and, shall then notify all Tenderers who collected Tender documents.

C.3.3 Return late Tender Offers

Return Tender Offers received after the closing time stated in the Tender Data, unopened, (unless it is necessary to open a Tender submission to obtain a forwarding address), to the Tenderer concerned.

C.3.4 Opening of Tender submissions

C.3.4.1 Unless the two-envelope system is to be followed, open valid Tender submissions in the presence of Tenderers' agents who choose to attend at the time and place stated in the Tender Data. Tender submissions for which acceptable reasons for withdrawal have been submitted will not be opened.

C.3.4.2 Announce at the meeting held immediately after the opening of Tender submissions, at a venue indicated in the Tender Data, the name of each Tenderer whose Tender Offer is opened and, where applicable, the total of his prices, number of points claimed for its BBBEE status level and time for completion for the main Tender Offer only.

C.3.4.3 Make available the record outlined in C.3.4.2 to all interested persons upon request.

C.3.5 Two-envelope system

C.3.5.1 Where stated in the Tender Data that a two-envelope system is to be followed, open only the technical proposal of valid Tenders in the presence of Tenderers' agents who choose to attend at the time and place stated in the Tender Data and announce the name of each Tenderer whose technical proposal is opened.

C.3.5.2 Evaluate functionality of the technical proposals offered by Tenderers, then advise Tenderers who remain in contention for the award of the contract of the time and place when the financial proposals will be opened. Open only the financial proposals of Tenderers, who score in the functionality evaluation more than the minimum number of points for functionality stated in the Tender Data, and announce the score obtained for the technical proposals and the total price and any points claimed on BBBEE status level. Return unopened financial proposals to Tenderers whose technical proposals failed to achieve the minimum number of points for functionality.

C.3.6 Non-disclosure

Not disclose to Tenderers, or to any other person not officially concerned with such processes, information relating to the evaluation and comparison of Tender Offers, the final evaluation price and recommendations for the award of a contract, until after the award of the contract to the successful Tenderer.

C.3.7 Grounds for rejection and disqualification

Determine whether there has been any effort by a Tenderer to influence the processing of Tender Offers and instantly disqualify a Tenderer (and his Tender Offer) if it is established that he engaged in corrupt or fraudulent practices.

C.3.8 Test for responsiveness

C.3.8.1 Determine, after opening and before detailed evaluation, whether each Tender Offer properly received:

a) complies with the requirements of these Conditions of Tender,
b) has been properly and fully completed and signed, and
c) is responsive to the other requirements of the Tender documents.

C.3.8.2 A responsive Tender is one that conforms to all the terms, conditions, and specifications of the Tender documents without material deviation or qualification. A material deviation or qualification is one which, in the Employer*'s* opinion, would:

a) detrimentally affect the scope, quality, or performance of the works, services or supply identified in the Scope of Work*,*
b) significantly change the Employer*'s* or the Tenderer's risks and responsibilities under the contract, or
c) affect the competitive position of other Tenderers presenting responsive Tenders, if it were to be rectified.

Reject a non-responsive Tender Offer, and not allow it to be subsequently made responsive by correction or withdrawal of the non-conforming deviation or reservation.

C.3.9 Arithmetical errors, omissions and discrepancies

C.3.9.1 Check responsive Tenders for discrepancies between amounts in words and amounts in figures. Where there is a discrepancy between the amounts in figures and the amount in words, the amount in words shall govern.

C.3.9.2 Check the highest ranked Tender or Tenderer with the highest number of Tender evaluation points after the evaluation of Tender Offers in accordance with C.3.11 for:

a) the gross misplacement of the decimal point in any unit rate.
b) omissions made in completing the pricing schedule or Bills of Quantities; or
c) arithmetic errors in:
   (i) line-item totals resulting from the product of a unit rate and a quantity in Bills of Quantities or schedules of prices; or
   (ii) the summation of the prices.

C.3.9.3 Notify the Tenderer of all errors or omissions that are identified in the Tender Offer and either confirm the Tender Offer as Tendered or accept the corrected total of prices.

C.3.9.4 Where the Tenderer elects to confirm the Tender Offer as Tendered, correct the errors as follows:

a) If Bills of Quantities or pricing schedules apply and there is an error in the line-item total resulting from the product of the unit rate and the quantity, the line-item total shall govern, and the rate shall be corrected. Where there is an obviously gross misplacement of the decimal point in the unit rate, the line-item total as quoted shall govern, and the unit rate shall be corrected.

b) Where there is an error in the total of the prices either as a result of other corrections required by this checking process or in the Tenderer's addition of prices, the total of the prices shall govern, and the Tenderer will be asked to revise selected item prices (and their rates if Bills of Quantities apply) to achieve the Tendered total of the prices.

C.3.10 Clarification of a Tender Offer

Obtain clarification from a Tenderer on any matter that could give rise to ambiguity in a contract arising from the Tender Offer.

C.3.11 Evaluation of Tender Offers

The Standard Conditions of Tender standardize the procurement processes, methods and procedures from the time that Tenders are invited to the time that a contract is awarded. They are generic in nature and are made project specific through choices that are made in developing the Tender Data associated with a specific project.

Conditions of Tender are by definition the document that establishes a Tenderer's obligations in submitting a Tender and the Employer's undertakings in soliciting and evaluating Tender Offers. Such conditions establish the rules from the time a Tender is advertised to the time that a contract is awarded and require Employers to conduct the process of offer and acceptance in terms of a set of standard procedures.

The CIDB Standard Conditions of Tender are based on a procurement system that satisfies the following system requirements:	
Requirement	**Qualitative interpretation of goal**
Fair	The process of offer and acceptance is conducted impartially without bias, providing simultaneous and timely access to participating parties to the same information.
Equitable	Terms and conditions for performing the work do not unfairly prejudice the interests of the parties.
Transparent	The only grounds for not awarding a contract to a Tenderer who satisfies all requirements are restrictions from doing business with the Employer, lack of capability or capacity, legal impediments and conflicts of interest.
Competitive	The system provides for appropriate levels of competition to ensure cost effective and best value outcomes.
Cost effective	Cost effective

The activities associated with evaluating Tender Offers are as follows:

a) Open and record Tender Offers received
b) Determine whether or not Tender Offers are complete
c) Determine whether or not Tender Offers are responsive
d) Evaluate Tender Offers
e) Determine if there are any grounds for disqualification
f) Determine acceptability of preferred Tenderer
g) Prepare a Tender evaluation report
h) Confirm the recommendation contained in the Tender evaluation report

C.3.11.1 General

The Employer must appoint an evaluation panel of not less than three persons conversant with the proposed scope of works to evaluate each responsive Tender Offer using the Tender evaluation methods and associated evaluation criteria and weightings that are specified in the Tender Data.

C.3.12 Insurance provided by the Employer

*If requested by the proposed successful Tenderer, submit for the Tenderer's information the policies and / or certificates of insurance which the conditions of contract identified in the Contract Data, require the Employer to provide.

C.3.13 Acceptance of Tender Offer

Accept the Tender Offer; if in the opinion of the Employer, it does not present any risk and only if the Tenderer:

a) is not under restrictions, or has principals who are under restrictions, preventing participating in the Employer's procurement.
b) can, as necessary and in relation to the proposed contract, demonstrate that he or she possesses the professional and technical qualifications, professional and technical competence, financial resources, equipment and other physical facilities, managerial capability, reliability, experience and reputation, expertise and the personnel, to perform the contract.
c) has the legal capacity to enter into the contract.
d) is not; insolvent, in receivership, under Business Rescue as provided for in chapter 6 of the Companies Act No. 2008, bankrupt or being wound up, has his/her affairs administered by a court or a judicial officer, has suspended his/her business activities or is subject to legal proceedings in respect of any of the foregoing.
e) complies with the legal requirements, if any, stated in the Tender Data; and
f) is able, in the opinion of the Employer, to perform the contract free of conflicts of interest.

C.3.14 Prepare contract documents

C.3.14.1 If necessary, revise documents that shall form part of the contract and that were issued by the Employer as part of the Tender documents to take account of:

a) addenda issued during the Tender period,
b) inclusion of some of the returnable documents and
c) other revisions agreed between the Employer and the successful Tenderer.

C.3.14.2 Complete the schedule of deviations attached to the form of offer and acceptance, if any.

C.3.15 Complete adjudicator's contract

Unless alternative arrangements have been agreed or otherwise provided for in the contract, arrange for both parties to complete formalities for appointing the selected adjudicator at the same time as the main contract is signed.

C.3.16 Registration of the award

An Employer must, within twenty-one (21) working days from the date on which a Contractor's offer to perform a construction works contract is accepted in writing by the Employer, register and publish the award on the CIDB Register of Projects.

C.3.17 Provide copies of the contracts

Provide to the successful Tenderer the number of copies stated in the Tender Data of the signed copy of the contract as soon as possible after completion and signing of the form of offer and acceptance.

C.3.18 Provide written reasons for actions taken

Provide upon request written reasons to Tenderers for any action that is taken in applying these conditions of Tender but withhold information which is not in the public interest to be divulged, which is considered to prejudice the legitimate commercial interests of Tenderers or might prejudice fair competition between Tenderers.

PART T: THE TENDER
Part T2: Returnable Documents

PROJECT TITLE:	**REQUEST FOR BIDS FOR THE APPOINTMENT OF A CONTRACTOR FOR THE CONSTRUCTION OF A NEW VISITORS' CENTRE, PARKING UPGRADES, LANDSCAPING, SECURITY UPGRADES AND ASSOCIATED CIVIL SERVICES FOR THE SOUTH AFRICAN NATIONAL BIODIVERSITY INSTITUTE AT THE THOHOYANDOU NATIONAL BOTANICAL GARDEN IN THOHOYANDOU**
BID No.:	**SANBI: G435/2022**

T2.1 List of Returnable Documents

1. RETURNABLE SCHEDULES REQUIRED FOR TENDER EVALUATION PURPOSES

Tender document name	Number of pages issued	Returnable document
Resolution of Board of Directors (T2.2.01)	1 Page	■ Yes □ No
Resolution of Board of Directors to enter into consortia or JV's (T2.2.02) (If Applicable)	2 Pages	■ Yes □ No
Special Resolution of Consortia or JV's (T2.2.03) (If Applicable)	3 Pages	■ Yes □ No
Schedule of Proposed Sub-contractors (T2.2.04)	1 Page	■ Yes □ No
Capacity of Tenderer (T2.2.05)	3 Pages	■ Yes □ No
PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL PROCUREMENT REGULATIONS 2017 (T2.2.06)	4 Pages	■ Yes □ No
Resources to be employed in terms of organization and staffing (T2.2.07)	2 Pages	■ Yes □ No
Estimated Monthly Expenditure (T2.2.08)	1 Page	■ Yes □ No
Compulsory Site Inspection Meeting Certificate (T2.2.09)	1 Page	■ Yes □ No
Compensation of Occupational Injuries and Disease Act (COIDA) (T2.2.18)	1 Page	■ Yes □ No

2. OTHER DOCUMENTS REQUIRED FOR TENDER EVALUATION PURPOSES

Tender document name	Number of pages issued	Returnable document
Declaration of Interest (T2.2.10)	2 Pages	■ Yes □ No
Medical Certificate for the confirmation of permanent disabled status (T2.2.11)	1 Page	■ Yes □ No
Proof of Registration with Construction Industry Development Board (T2.2.12)	1 Page	■ Yes □ No
Copy of CSD Registration Certificate (T2.2.14)	1 Page	■ Yes □ No

SMME PLAN (T2.2.20)	1 Page	■ Yes □ No

Tender document name	Number of pages issued	Returnable document
Financial References (T2.2.15)	1 Page	■ Yes □ No
Proof of Liability Insurance (T2.2.19)	1 Page	■ Yes □ No
SBD 6.2 Declaration Certificate for Local Production and Content for Designated Sectors	6 Pages	■ Yes □ No

3. RETURNABLE SCHEDULES THAT WILL BE INCORPORATED INTO THE CONTRACT

Tender document name	Number of pages issued	Returnable document
Record of Addenda to Tender Documents (T2.2.16)	1 Page	■ Yes □ No
Compulsory Enterprise Questionnaire (T2.2.17)	3 Pages	■ Yes □ No

4. OTHER DOCUMENTS THAT WILL BE INCORPORATED INTO THE CONTRACT

Tender document name	Number of pages issued	Returnable document
Applicable Form of Guarantee	3 Pages	■ Yes □ No
Priced Bills of Quantities	254 Pages	■ Yes □ No
Approved SMME Plan	1 Page	■ Yes □ No

C1.1 Offer portion of Form of Offer and Acceptance
C1.2 Contract Data - Part 2
C1.3 Form of Guarantee

RETURNABLE DOCUMENT CHECKLIST

This form has been created as an aid to ensure a Tenderer's compliance with the completion of the returnable schedules and subsequent placement in the correct **Technical** and **Financial** envelopes.

A TECHNICAL ENVELOPE (1 COPY)

Reference No.	Document Description	Tick if completed
T2.2.01	Resolution of Board of Directors	
T2.2.02	Resolution of Board of Directors to enter into consortia or JV's (If Applicable)	
T2.2.03	Special Resolution of Consortia or Joint Ventures (If Applicable)	
T2.2.04	Schedule of Proposed Sub-contractors	
T2.2.05	Capacity of Tenderer	
T2.2.06	Preference points claim form in terms of the Preferential Procurement Regulations 2017	
T2.2.07	Resources to be employed in terms of organization and staffing	
T2.2.08	Estimated Monthly Expenditure	
T2.2.09	Compulsory Site Inspection Meeting Certificate	
T2.2.10	Declaration of Interest	
T2.2.11	Medical Certificate for the confirmation of permanent disabled status	
T2.2.12	Proof of Registration with Construction Industry Development Board	
T2.2.13	Original Valid Tax Clearance Certificate	
T2.2.14	Copy of CSD Registration Certificate	
T2.2.15	Financial References	
T2.2.16	Record of Addenda to Tender Documents	
T2.2.17	Compulsory Enterprise Questionnaire	
T2.2.18	Compensation of Occupational Injuries and Disease Act (COIDA)	
T2.2.19	Proof of Liability Insurance	
T2.2.20	SMME Plan	

B FINANCIAL ENVELOPE (ORIGINAL DOCUMENT)

The entire original Tender document must be submitted in this envelope including the forms as listed below:

Reference No.	Document Description	Tick if completed
C1.1	Form of Offer and Acceptance	
C1.2	Contract Data – Part 1	
C2.2	Priced Bills of Quantities	
T2.2.08	Estimated Monthly Expenditure	
SBD 6.2	Local Content Declaration and Annexures	
T2.2.21	SMME PLAN	

T2.2 Returnable Documents/Schedules

T2.2.01: RESOLUTION OF BOARD OF DIRECTORS

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

.....

.....
(*legally correct full name and registration number, if applicable, of the Enterprise)*

Held at ..... (place)

On ..... (date)

RESOLVED that:

1. The Enterprise submits a Bid / Tender to the South African National Biodiversity Institute in respect of the following project:

   .....

   .....
   (*project description as per Bid / Tender Document)*

   Bid / Tender Number: ..... *(Bid / Tender Number as per Bid / Tender Document)*

2. *Mr/Mrs/Ms: .....

   in *his/her Capacity as: ..... *(Position in the Enterprise)*

   and who will sign as follows: .....

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

	Name	**Capacity**	**Signature**
1			
2			
3			
4			

Note:

1. ** Delete which is not applicable*
2. ***NB**. This resolution must be signed by all the Directors / Members / Partners of the Bidding Enterprise.*
3. *Should the number of Directors / Members/Partners exceed the space available above, additional names and signatures must be supplied on a separate page.*

ENTERPRISE STAMP

T2.2.02: RESOLUTION OF BOARD OF DIRECTORS TO ENTER INTO CONSORTIA OR JOINT VENTURES

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

.....

.....
(*Legally correct full name and registration number, if applicable, of the Enterprise)*

Held at ..... (place)

On ..... (date)

RESOLVED that:

1. The Enterprise submits a Bid /Tender, in consortium/Joint Venture with the following Enterprises:

   .....

   .....
   (List all the legally correct full names and registration numbers, if applicable, of the Enterprises forming the Consortium/Joint Venture)

   to the South African National Biodiversity Institute in respect of the following project:

   .....

   .....
   (*Project description as per Bid/Tender Document)*

   Bid/Tender Number: ..... *(Bid/Tender Number as per Bid/Tender Document)*

2. *Mr/Mrs/Ms: .....

   in *his/her Capacity as: ..... *(Position in the Enterprise)*

   and who will sign as follows: .....

   be, and is hereby, authorised to sign a consortium/joint venture agreement with the parties listed under item 1 above, and any and all Other documents and/or correspondence in connection with and relating to the consortium/joint venture, in respect of the project described under item 1 above.

3. The Joint Venture formation/arrangement will be in the following proportions:

Name of Contractor	**Proportion (%)**

4. The Enterprise accepts joint and several liability with the parties listed under item 1 above for the due fulfilment of the obligations of the joint venture deriving from, and in any way connected with, the Contract to be entered into with the Employer in respect of the project described under item 1 above.

5. The Enterprise chooses as its *domicilium citandi et executandi* for all purposes arising from this joint venture agreement and the Contract with the Employer in respect of the project under item 1 above:

Physical address:.....

.....

.....(code)

Postal address: .....

.....

.....(code)

Telephone number: .....(code)

Fax number: .....(code)

	Name	**Capacity**	**Signature**
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

Note:

1. ** Delete which is not applicable.*
2. ***NB**. This resolution must be signed by all the Directors/ Members/Partners of the Bidding Enterprise.*
3. *Should the number of Directors/Members/Partners exceed the space available above, additional names and signatures must be supplied on a separate page.*

ENTERPRISE STAMP

T2.2.03: SPECIAL RESOLUTION OF CONSORTIA OR JOINT VENTURES (If Applicable)

RESOLUTION of a meeting of the duly authorised representatives of the following legal entities who have entered into a consortium/joint venture to jointly Bid for the project mentioned below: (*legally correct full names and registration numbers, if applicable, of the Enterprises forming a Consortium/Joint Venture)*

1. .....

   .....

2. .....

   .....

3. .....

   .....

4. .....

   .....

5. .....

   .....

6. .....

   .....

7. .....

   .....

8. .....

   .....

Held at ..... (place)

On ..... (date)

RESOLVED that:

A. The above-mentioned Enterprises submit a Bid in Consortium/Joint Venture to the South African National Biodiversity Institute in respect of the following project:

   .....

   .....
   (*Project description as per Bid /Tender Document)*

   Bid / Tender Number: ..... *(Bid / Tender Number as per Bid / Tender Document)*

   *Mr/Mrs/Ms: .....

   in *his/her Capacity as: ..... *(Position in the Enterprise)*

   and who will sign as follows: .....
   be, and is hereby, authorised to sign the Bid, and any and all other documents and/or correspondence in connection with and relating to the Bid, as well as to sign any Contract, and any and all documentation, resulting from the award of the Bid to the Enterprises in Consortium/Joint Venture mentioned above.

B. The Enterprises constituting the Consortium/Joint Venture, notwithstanding its composition, shall conduct all business under the name and style of: .....

C. The Enterprises to the Consortium/Joint Venture accept joint and several liabilities for the due fulfilment of the obligations of the Consortium/Joint Venture deriving from, and in any way connected with, the Contract entered into with the Employer in respect of the project described under item A above.

D. Any of the Enterprises to the Consortium/Joint Venture intending to terminate the consortium/joint venture agreement, for whatever reason, shall give the Employer 30 day's written notice of such intention. Notwithstanding such decision to terminate, the Enterprises shall remain jointly and severally liable to the Employer for the due fulfilment of the obligations of the Consortium/Joint Venture as mentioned under item D above.

E. No Enterprise to the Consortium/Joint Venture shall, without the prior written consent of the other Enterprises to the Consortium/Joint Venture and of the Employer, cede any of its rights or assign any of its obligations under the consortium/joint venture agreement in relation to the Contract with the Employer referred to herein.

F. The Enterprises choose as the *domicilium citandi et executandi* of the Consortium/Joint Venture for all purposes arising from the consortium/joint venture agreement and the Contract with the Employer in respect of the project under item A above:

Physical address: .....

.....

.....(code)

Postal address: .....

.....

.....(code)

Telephone number: .....(code)

Fax number: .....(code)

	Name	**Capacity**	**Signature**
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			

Note:

1. ** Delete which is not applicable.*
2. ***NB**. This resolution must be signed by all the Duly Authorised Representatives of the Legal Entities to the Consortium Joint Venture submitting this Bid.*
3. *Should the number of Duly Authorised Representatives of the Legal Entities joining forces in this Bid exceed the space available above, additional names and signatures must be supplied on a separate page.*
4. *Resolutions, duly completed and signed, from the separate Enterprises who participate in this Consortium/Joint Venture must be attached to the Special Resolution.*

T2.2.04: SCHEDULE OF PROPOSED SUB-CONTRACTORS

PROJECT TITLE:	**REQUEST FOR BIDS FOR THE APPOINTMENT OF A CONTRACTOR FOR THE CONSTRUCTION OF A NEW VISITORS' CENTRE, PARKING UPGRADES, LANDSCAPING, SECURITY UPGRADES AND ASSOCIATED CIVIL SERVICES FOR THE SOUTH AFRICAN NATIONAL BIODIVERSITY INSTITUTE AT THE THOHOYANDOU NATIONAL BOTANICAL GARDEN IN THOHOYANDOU**
BID No.:	**SANBI: G435/2022**

We notify you that it is our intention to employ the following Sub-contractors 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 names of proposed Sub-contractors 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.

	Name and address of proposed Sub-contractor	**Nature and extent of work**	**Previous experience with Sub-contractor**
1			
2			
3			
4			

Name of representative:	**Signature**	**Capacity**	**Date**

Name of organisation:	

T2.2.05: CAPACITY OF TENDERER

PROJECT TITLE:	**REQUEST FOR BIDS FOR THE APPOINTMENT OF A CONTRACTOR FOR THE CONSTRUCTION OF A NEW VISITORS' CENTRE, PARKING UPGRADES, LANDSCAPING, SECURITY UPGRADES AND ASSOCIATED CIVIL SERVICES FOR THE SOUTH AFRICAN NATIONAL BIODIVERSITY INSTITUTE AT THE THOHOYANDOU NATIONAL BOTANICAL GARDEN IN THOHOYANDOU**
BID No.:	**SANBI: G435/2022**

1. WORK CAPACITY: *(The Tenderer is requested to furnish the following particulars, attach additional pages if more space is required. Failure to furnish the particulars may result in the Tender being disregarded)*

Skilled technicians employed		**Unskilled employees employed**	
Categories of technicians	**Number**	**Categories of employees**	**Number**

1.1 Provide full particulars of:

Machinery	**Equipment**	**Workshops**

2. PARTICULARS OF COMMITMENTS WHICH THE TENDERER HAS PREVIOUSLY COMPLETED AND PRESENTLY ENGAGED WITH:

2.1 Current projects:

	Project	Place (town)	Reference / Contact person	Contact Tel. No.	Contract amount	Contract period	Date of commencement	Scheduled date of completion
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								

2.2 Previous projects:

	Project	**Place (town)**	**Reference / Contact person**	**Contact Tel. No.**	**Contract amount**	**Contract period**	**Date of commencement**	**Scheduled date of completion**	**Actual date of completion**
1									
2									
3									
4									
5									
6									
7									
8									

Name of Tenderer	**Signature**	**Date**

T2.2.06: PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL PROCUREMENT REGULATIONS 2017

This preference form must form part of all Bids invited. It contains general information and serves as a claim form for preference points for Broad-Based Black Economic Empowerment (B-BBEE) Status Level of Contribution

NB: 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, 2017

---

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 (all applicable taxes included).

a) The value of this Bid is estimated **to not exceed** R50 000 000 (all applicable taxes included) and therefore the **80/20** preference point system shall be applicable.

1.2 Points for this Bid shall be awarded for:

(a) Price; and
(b) B-BBEE Status Level of Contributor.

1.3 The maximum points for this Bid are allocated as follows:

	POINTS
PRICE	**80**
B-BBEE STATUS LEVEL OF CONTRIBUTOR	**20**
Total points for Price and B-BBEE must not exceed	**100**

1.4 Failure on the part of a Bidder to submit proof of B-BBEE Status level of contributor together with the Bid, will be interpreted to mean that preference points for B-BBEE status level of contribution 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. DEFINITIONS

(a) **"B-BBEE"** means broad-based black economic empowerment as defined in section 1 of the Broad-Based Black Economic Empowerment Act.

(b) "**B-BBEE status level of contributor"** means the B-BBEE status of an entity in terms of a code of good practice on black economic empowerment, issued in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act.

(c) **"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 or services, through price quotations, advertised competitive Bidding processes or proposals.

(d) **"Broad-Based Black Economic Empowerment Act"** means the Broad-Based Black Economic Empowerment Act, 2003 (Act No. 53 of 2003).

(e) **"EME"** means an Exempted Micro Enterprise in terms of a code of good practice on black economic empowerment issued in terms of section 9 (1) of the Broad-Based Black Economic Empowerment Act.

(f) **"functionality"** means the ability of a Tenderer to provide goods or services in accordance with specifications as set out in the Tender documents.

(g) **"prices"** includes all applicable taxes less all unconditional discounts.

(h) **"proof of B-BBEE status level of contributor"** means:

1) B-BBEE Status level certificate issued by an authorized body or person.

2) A sworn affidavit as prescribed by the B-BBEE Codes of Good Practice.

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

3) Any other requirement prescribed in terms of the B-BBEE Act.

(i) **"QSE"** means a qualifying small business enterprise in terms of a code of good practice on black economic empowerment issued in terms of section 9 (1) of the Broad-Based Black Economic Empowerment Act.

(j) **"rand value"** means the total estimated value of a contract in Rand, calculated at the time of Bid invitation, and includes all applicable taxes.

3. POINTS AWARDED FOR PRICE

3.1 THE 80/20 OR 90/10 PREFERENCE POINT SYSTEMS

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

80/20 **or** **90/10**

$$Ps = 80\left(1 - \frac{Pt - P\min}{P\min}\right) \quad \text{or} \quad Ps = 90\left(1 - \frac{Pt - P\min}{P\min}\right)$$

Where

Ps = Points scored for price of Bid under consideration
Pt = Price of Bid under consideration
Pmin = Price of lowest acceptable Bid

4. POINTS AWARDED FOR B-BBEE STATUS LEVEL OF CONTRIBUTOR

4.1 In terms of Regulation 6 (2) and 7 (2) of the Preferential Procurement Regulations, preference 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 (90/10 system)	Number of points (80/20 system)
1	10	20
2	9	18
3	6	14
4	5	12
5	4	8
6	3	6
7	2	4
8	1	2
Non-compliant contributor	0	0

5. BID DECLARATION

5.1 Bidders who claim points in respect of B-BBEE Status Level of Contribution must complete the following:

6. B-BBEE STATUS LEVEL OF CONTRIBUTOR CLAIMED IN TERMS OF PARAGRAPHS 1.4 AND 4.1

6.1 B-BBEE Status Level of Contributor: = …… (maximum of 10 or 20 points)

(Points claimed in respect of paragraph 7.1 must be in accordance with the table reflected in paragraph 4.1 and must be substantiated by relevant proof of B-BBEE status level of contributor.

7. SUB-CONTRACTING

7.1 Will any portion of the contract be sub-contracted?

(***Tick applicable box***)

YES		NO	

7.1.1 If yes, indicate:

i) What percentage of the contract will be sub-contracted .....……%
ii) The name of the Sub-contractor……..
iii) The B-BBEE status level of the Sub-contractor.....……..
iv) Whether the Sub-contractor is an EME or QSE
(Tick applicable box)

YES		NO	

v) Specify, by ticking the appropriate box, if subcontracting with an enterprise in terms of Preferential Procurement Regulations,2017:

Designated Group: An EME or QSE which is at last 51% owned by:	**EME** √	**QSE** √
Black people		
Black people who are youth		
Black people who are women		
Black people with disabilities		
Black people living in rural or underdeveloped areas or townships		
Cooperative owned by black people		
Black people who are military veterans		
OR		
Any EME		
Any QSE		

8. **DECLARATION WITH REGARD TO COMPANY/FIRM**

8.1 Name of company/firm: ……

8.2 VAT registration number: ……

8.3 Company registration number: ……

8.4 TYPE OF COMPANY/ FIRM

- Partnership/Joint Venture/Consortium
- One-person business/sole propriety
- Close corporation
- Company
- (Pty) Limited

[TICK APPLICABLE BOX]

8.5 DESCRIBE PRINCIPAL BUSINESS ACTIVITIES

……
……
……

8.6 COMPANY CLASSIFICATION

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

[*TICK APPLICABLE BOX*]

8.7 Total number of years the company/firm has been in business: ……

8.8 I/we, the undersigned, who is/are duly authorised to do so on behalf of the company/firm, certify that the points claimed, based on the B-BBEE status level of contributor indicated in paragraphs 1.4 and 6.1 of the foregoing certificate, qualifies the company/ firm for the preference(s) shown and I / we acknowledge that:
i) The information furnished is true and correct.
ii) The preference points claimed are 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 paragraphs 1.4 and 6.1, the Contractor may be required to furnish documentary proof to the satisfaction of the purchaser that the claims are correct.

iv) If the B-BBEE status level of contributor has been claimed or obtained on a fraudulent basis or any of the conditions of contract have not been fulfilled, the purchaser may, in addition to any other remedy it may have –

(a) disqualify the person from the Bidding process.

(b) recover costs, losses or damages it has incurred or suffered as a result of that person's conduct.

(c) 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.

(d) recommend that the Bidder or Contractor, its shareholders and directors, or only the shareholders and directors who acted on a fraudulent basis, be restricted by the National Treasury from obtaining business from any organ of state for a period not exceeding 10 years, after the *audi alteram partem* (hear the other side) rule has been applied; and

(e) forward the matter for criminal prosecution.

WITNESSES 1. …….. 2. ……	…… SIGNATURE(S) OF BIDDER(S) DATE: …….. ADDRESS …….. …….. ……..

T2.2.07: RESOURCES TO BE EMPLOYED IN TERMS OF ORGANIZATION AND STAFFING

The Tenderer shall list below the key personnel (including first nominee and the second-choice alternate), whom he proposes to employ on the Contract should his Tender be accepted, both at his headquarters and on the Site, to direct and for the execution of the work, together with their qualifications, experience, positions held and their nationalities.

DESIGNATION	NAME AND NATIONALITY OF: (i) NOMINEE (ii) ALTERNATE	SUMMARY OF QUALIFICATIONS, EXPERIENCE AND PRESENT OCCUPATION
HEADQUARTERS Partner/Director Project Manager Other key staff (give designation)		

DESIGNATION	NAME AND NATIONALITY OF: (i) NOMINEE (ii) ALTERNATE	SUMMARY OF QUALIFICATIONS, EXPERIENCE AND PRESENT OCCUPATION
SITE OFFICE Site Agent Site Engineer/Technician Construction supervisor (Give designation) SMME Supervisor Other key staff (Give designation)		

T2.2.08: Estimated Monthly Expenditure

The Tenderer shall state below the estimated value of work to be completed every month, based on his preliminary programme and his tendered unit rates.

The amounts for Contingencies and Contract Price Adjustment must not be included

MONTH	VALUE
1	R .....
2	R .....
3	R .....
4	R .....
5	R .....
6	R .....
7	R .....
8	R .....
9	R .....
10	R .....
11	R .....
12	R .....
	COMPLETION OF CONTRACT
TOTAL	R .....

T2.2.09: Compulsory Site Inspection Meeting Certificate

PROJECT TITLE:	**REQUEST FOR BIDS FOR THE APPOINTMENT OF A CONTRACTOR FOR THE CONSTRUCTION OF A NEW VISITORS' CENTRE, PARKING UPGRADES, LANDSCAPING, SECURITY UPGRADES AND ASSOCIATED CIVIL SERVICES FOR THE SOUTH AFRICAN NATIONAL BIODIVERSITY INSTITUTE AT THE THOHOYANDOU NATIONAL BOTANICAL GARDEN IN THOHOYANDOU**
BID No.:	**SANBI: G435/2022**

This is to certify that I, _____representing

_____in the company of

_____ visited the site on: _____

I have made myself familiar with all local conditions likely to influence the work and the cost thereof. I further certify that I am satisfied with the description of the work and explanations given at the site inspection meeting and that I understand perfectly the work to be done, as specified and implied, in the execution of this contract.

Name of Tenderer	Signature	Date

Name of Principal Agent	Signature	Date

T2.2.10: DECLARATION OF INTEREST

PROJECT TITLE:	**REQUEST FOR BIDS FOR THE APPOINTMENT OF A CONTRACTOR FOR THE CONSTRUCTION OF A NEW VISITORS' CENTRE, PARKING UPGRADES, LANDSCAPING, SECURITY UPGRADES AND ASSOCIATED CIVIL SERVICES FOR THE SOUTH AFRICAN NATIONAL BIODIVERSITY INSTITUTE AT THE THOHOYANDOU NATIONAL BOTANICAL GARDEN IN THOHOYANDOU**
BID No.:	**SANBI: G435/2022**

Any person, including persons in the employ of the South African National Biodiversity Institute; or persons acting on behalf of the South African National Biodiversity Institute 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 South African National Biodiversity Institute or act on behalf of the South African National Biodiversity Institute, 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 South African National Biodiversity Institute; or to persons who act on behalf of the South African National Biodiversity; 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 South African National Biodiversity Institute and/or with any person or persons acting on behalf of the South African National Biodiversity Institute 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 South African National Biodiversity Institute?

   ☐ YES ☐ NO

   If yes, State the full particulars of such person/s, together with their current position held as an employee of the South African National Biodiversity Institute.

   _____

   _____

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 South African National Biodiversity Institute, 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 South African National Biodiversity Institute.

   _____

   _____

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 South

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

African National Biodiversity Institute and/or in the employ of the person/s or legal entity acting on behalf of the South African National Biodiversity Institute, 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 South African National Biodiversity Institute and/or of the person/s and/or legal entity acting on behalf of the South African National Biodiversity Institute herein.

_____

_____

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 South African National Biodiversity Institute, may act against me and the Bidder/Tenderer, jointly and severally, should this declaration prove to be false.

Duly signed at ..... on this .....day of .....(month) of.....(year)

....

Full name of signatory Name of Bidder/Tenderer

....

Capacity of Signatory Signature

COMMISSIONER OF OATHS

T2.2.11: MEDICAL CERTIFICATE FOR THE CONFIRMATION OF PERMANENT DISABLED STATUS

PROJECT TITLE:	**REQUEST FOR BIDS FOR THE APPOINTMENT OF A CONTRACTOR FOR THE CONSTRUCTION OF A NEW VISITORS' CENTRE, PARKING UPGRADES, LANDSCAPING, SECURITY UPGRADES AND ASSOCIATED CIVIL SERVICES FOR THE SOUTH AFRICAN NATIONAL BIODIVERSITY INSTITUTE AT THE THOHOYANDOU NATIONAL BOTANICAL GARDEN IN THOHOYANDOU**
BID No.:	**SANBI: G435/2022**

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:

.....

.....

.....

Thus signed at ..... on this ..... day of ..... of.....

OFFICIAL STAMP OF
MEDICAL PRACTITIONER

.....

Signature

.....

Date

T2.2.12: PROOF OF REGISTRATION WITH CONSTRUCTION INDUSTRY DEVELOPMENT BOARD

PROJECT TITLE:	**REQUEST FOR BIDS FOR THE APPOINTMENT OF A CONTRACTOR FOR THE CONSTRUCTION OF A NEW VISITORS' CENTRE, PARKING UPGRADES, LANDSCAPING, SECURITY UPGRADES AND ASSOCIATED CIVIL SERVICES FOR THE SOUTH AFRICAN NATIONAL BIODIVERSITY INSTITUTE AT THE THOHOYANDOU NATIONAL BOTANICAL GARDEN IN THOHOYANDOU**
BID No.:	**SANBI: G435/2022**

The Tenderer shall provide a printed copy of the Active Contractor's Listing off the CIDB website. (www.cidb.org.za). In the case of a joint venture, a printed copy of the Active Contractor's listing must be provided for each member of the joint venture.

Name of Contractor: .....

Contractor Grading Designation: .....

CIDB Contractor Registration Number: .....

T2.2.13: ORIGINAL VALID TAX CLEARANCE CERTIFICATE

PROJECT TITLE:	**REQUEST FOR BIDS FOR THE APPOINTMENT OF A CONTRACTOR FOR THE CONSTRUCTION OF A NEW VISITORS' CENTRE, PARKING UPGRADES, LANDSCAPING, SECURITY UPGRADES AND ASSOCIATED CIVIL SERVICES FOR THE SOUTH AFRICAN NATIONAL BIODIVERSITY INSTITUTE AT THE THOHOYANDOU NATIONAL BOTANICAL GARDEN IN THOHOYANDOU**
BID No.:	**SANBI: G435/2022**

A valid original Tax Clearance Certificate and/or Tax Pin number **must be included** for evaluation purposes.

T2.2.14: COPY OF CSD REGISTRATION CERTIFICATE

PROJECT TITLE:	**REQUEST FOR BIDS FOR THE APPOINTMENT OF A CONTRACTOR FOR THE CONSTRUCTION OF A NEW VISITORS' CENTRE, PARKING UPGRADES, LANDSCAPING, SECURITY UPGRADES AND ASSOCIATED CIVIL SERVICES FOR THE SOUTH AFRICAN NATIONAL BIODIVERSITY INSTITUTE AT THE THOHOYANDOU NATIONAL BOTANICAL GARDEN IN THOHOYANDOU**
BID No.:	**SANBI: G435/2022**

A copy of **Central Suppliers' Database (CSD) Registration Certificate <u>must be included</u>** for evaluation purposes.

T2.2.15: FINANCIAL REFERENCES

PROJECT TITLE:	**REQUEST FOR BIDS FOR THE APPOINTMENT OF A CONTRACTOR FOR THE CONSTRUCTION OF A NEW VISITORS' CENTRE, PARKING UPGRADES, LANDSCAPING, SECURITY UPGRADES AND ASSOCIATED CIVIL SERVICES FOR THE SOUTH AFRICAN NATIONAL BIODIVERSITY INSTITUTE AT THE THOHOYANDOU NATIONAL BOTANICAL GARDEN IN THOHOYANDOU**
BID No.:	**SANBI: G435/2022**

Notes to Tenderers:

1. The Tenderer(s) shall attach to this form a letter from the bank in which it is declared how he/they conducts his/their account(s). The contents of the bank's letter must state the credit rating that the bank, in addition to the information required below, accords to the Tenderer(s) for the business envisaged by this Tender. Failure to provide the required letter with the Tender submission may render the Tenderer's offer unresponsive in terms of Tender Condition C3.8.

2. The Tenderer's banking details as they appear below shall be completed.

3. In the event that the Tenderer is a joint venture enterprise, details of all the members of the joint venture shall be similarly provided and attached to this form.

Details of Company's Bank

	BANK DETAILS APPLICABLE TO TENDERER'S HEAD OFFICE
Name of Bank	
Branch Name	
Branch Code	
Street Address	
Postal Address	
Name of Manager	
Telephone Number	
Fax Number	
Account Number	

T2.2.16: RECORD OF ADDENDA TO TENDER DOCUMENTS

PROJECT TITLE:	**REQUEST FOR BIDS FOR THE APPOINTMENT OF A CONTRACTOR FOR THE CONSTRUCTION OF A NEW VISITORS' CENTRE, PARKING UPGRADES, LANDSCAPING, SECURITY UPGRADES AND ASSOCIATED CIVIL SERVICES FOR THE SOUTH AFRICAN NATIONAL BIODIVERSITY INSTITUTE AT THE THOHOYANDOU NATIONAL BOTANICAL GARDEN IN THOHOYANDOU**
BID No.:	**SANBI: G435/2022**

I/We confirm that the following communications received from the South African National Biodiversity Institute before the submission of this Tender Offer, amending the Tender documents, have been taken into account in this Tender Offer: *(Attach additional pages if more space is required)*

	Date	Title or Details
1		
2		
3		
4		
5		
6		
7		
8		
9		

Name of Tenderer	Signature	Date

I / We confirm that no communications were received from the South African National Biodiversity Institute before the submission of this Tender Offer, amending the Tender documents.

Name of Tenderer	Signature	Date

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

T2.2.17: COMPULSORY ENTERPRISE QUESTIONNAIRE

The following particulars must be furnished. In the case of a joint venture, separate enterprise questionnaires in respect of each partner must be completed and submitted.

Section 1: **Name of enterprise:**.....

Section 2: **VAT registration number, if any:**.....

Section 3: **PSIRA registration number, if any:** .....

Section 4: **Particulars of sole proprietors and partners in partnerships**

Name*	Identity number*	Personal income tax number*

*Complete only if sole proprietor or partnership and attach separate page if more than 3 partners.

Section 5: **Particulars of companies and close corporations**

Company registration number: ……..

Close corporation number: .....

Tax reference number: ……

Section 6: **Record in the service of the state**

Indicate by marking the relevant boxes with a cross, if any sole proprietor, partner in a partnership or director, manager, principal shareholder or stakeholder in a company or close corporation is currently, or has been within the last 12 months, in the service of any of the following:

- □ a member of any municipal council
- □ a member of any provincial legislature
- □ a member of the National Assembly or the National Council of Province
- □ a member of the board of directors of any municipal entity
- □ an official of any municipality or municipal entity
- □ an employee of any 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)
- □ a member of an accounting authority of any national or provincial public entity
- □ an employee of Parliament or a provincial legislature

If any of the above boxes are marked, disclose the following:

Name of sole proprietor, partner, director, manager, principal shareholder or stakeholder	Name of institution, public office, board or organ of state and position held	Status of service (tick appropriate column)	
		Current	Within last 12 months

*Insert separate page if necessary.

Section 7: **<u>Record of spouses, children and parents in the service of the state</u>**

Indicate by marking the relevant boxes with a cross, if any spouse, child or parent or a sole proprietor, partner in a partnership or director, manager, principal shareholder or stakeholder in a company or close corporation is currently, or has been within the last 12 months, in the service of any of the following:

- □ a member of any municipal council
- □ a member of any provincial legislature
- □ a member of the National Assembly or the National Council of Province
- □ a member of the board of directors of any municipal entity
- □ an official of any municipality or municipal entity
- □ an employee of any 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)
- □ a member of an accounting authority of any national or provincial public entity
- □ an employee of Parliament or a provincial legislature

Name of spouse, child or parent	Name of institution, public office, board or organ of state and position held	Status of service (tick appropriate column)	
		Current	Within last 12 months

*Insert separate page if necessary.

The undersigned, who warrants that he/she is duly authorised to do so on behalf of the enterprise:

(i) authorises the Employer to obtain a tax clearance certificate from the South African Revenue Services that my/our tax matters are in order.

(ii) confirms that neither the name of the enterprise or the name of any partner, manager, director or other person, who wholly or partly exercises, or may exercise, control over the enterprise appears on the Register of Tender Defaulters established in terms of the Prevention and Combating of Corrupt Activities Act, 2004.

(iii) confirms that no partner, member, director or other person, who wholly or partly exercises, or may exercise, control over the enterprise, has within the last five years been convicted of fraud or corruption.

(iv) confirms that I/we are not associated, linked or involved with any other Tendering entities submitting Tender Offers and have no other relationship with any of the Tenderers or those responsible for compiling the Scope of Work that could cause or be interpreted as a conflict of interest; and

(v) confirms that the contents of this questionnaire are within my personal knowledge and are to the best of my belief both true and correct.

Signed: ..... Date: .....

Name: ..... Position: .....

Enterprise name: .....

T2.2.18: COMPENSATION OF OCCUPATIONAL INJURIES AND DISEASE ACT (COIDA)

PROJECT TITLE:	**REQUEST FOR BIDS FOR THE APPOINTMENT OF A CONTRACTOR FOR THE CONSTRUCTION OF A NEW VISITORS' CENTRE, PARKING UPGRADES, LANDSCAPING, SECURITY UPGRADES AND ASSOCIATED CIVIL SERVICES FOR THE SOUTH AFRICAN NATIONAL BIODIVERSITY INSTITUTE AT THE THOHOYANDOU NATIONAL BOTANICAL GARDEN IN THOHOYANDOU**
BID No.:	**SANBI: G435/2022**

Letter of Good Standing from the Office of the Compensation Commissioner as required by the Compensation for Occupational Injuries and Diseases Act (COIDA) **must be included** for evaluation purposes. The letter should be issued by the Department of Labour.

T2.2.19: PROOF OF LIABILITY INSURANCE

PROJECT TITLE:	**REQUEST FOR BIDS FOR THE APPOINTMENT OF A CONTRACTOR FOR THE CONSTRUCTION OF A NEW VISITORS' CENTRE, PARKING UPGRADES, LANDSCAPING, SECURITY UPGRADES AND ASSOCIATED CIVIL SERVICES FOR THE SOUTH AFRICAN NATIONAL BIODIVERSITY INSTITUTE AT THE THOHOYANDOU NATIONAL BOTANICAL GARDEN IN THOHOYANDOU**
BID No.:	**SANBI: G435/2022**

The Tenderer **shall append** their **Proof of Liability Insurance** behind this page.

T2.2.20: SMME PLAN

The tenderer shall include as an attachment to their submission a detailed SMME plan indicating how the SMME requirements will be achieved per project, as detailed in Scope of Works (Part C3). The SMME Plan must clarify the manner in which the bidder intends to manage, support and empower local SMMEs and contractors.

The SMME plan must detail (i) how quality will be controlled, (ii) how the scope of works will be scheduled (programme), (iii) how will skills be transferred, (iv) how will reporting to the client be done (content of reports, frequency etc.) and (v) a comprehensive list of all bill items which are to be allocated to SMMEs equivalent to 30% of the Offer Price. Tenderers are to demonstrate the list of items allocated to SMMEs by providing a separate schedule

It is to be specifically noted that the rates for items of work to be executed by SMMEs must be market related. Tenderers are to ensure that rates tendered for this portion of the works is to take into account all items that the main contractor would have allowed for in his normal course of pricing, i.e. materials, labour, wastage, profit, attendance, etc. all at applicable productivity rates.

SBD 6.2

DECLARATION CERTIFICATE FOR LOCAL PRODUCTION AND CONTENT FOR DESIGNATED SECTORS

This Standard Bidding Document (SBD) must form part of all Bids invited. It contains general information and serves as a declaration form for local content (local production and local content are used interchangeably).

Before completing this declaration, Bidders must study the General Conditions, Definitions, Directives applicable in respect of Local Content as prescribed in the Preferential Procurement Regulations, 2017, the South African Bureau of Standards (SABS) approved technical specification number SATS 1286:2011 (Edition 1) and the Guidance on the Calculation of Local Content together with the Local Content Declaration Templates [Annex C (Local Content Declaration: Summary Schedule), D (Imported Content Declaration: Supporting Schedule to Annex C) and E (Local Content Declaration: Supporting Schedule to Annex C)].

1. General Conditions

1.1. Preferential Procurement Regulations, 2017 (Regulation 8) make provision for the promotion of local production and content.

1.2. Regulation 8(2) prescribes that in the case of designated sectors, organs of state must advertise such Tenders with the specific Bidding condition that only locally produced or manufactured goods, with a stipulated minimum threshold for local production and content will be considered.

1.3. Where necessary, for Tenders referred to in paragraph 1.2 above, a two stage Bidding process may be followed, where the first stage involves a minimum threshold for local production and content and the second stage price and B-BBEE.

1.4. A person awarded a contract in relation to a designated sector, may not sub-contract in such a manner that the local production and content of the overall value of the contract is reduced to below the stipulated minimum threshold.

1.5. The local content (LC) expressed as a percentage of the Bid price must be calculated in accordance with the SABS approved technical specification number SATS 1286: 2011 as follows:

LC = [1 - x / y] * 100

Where
x is the imported content in Rand
y is the Bid price in Rand excluding value added tax (VAT)

Prices referred to in the determination of x must be converted to Rand (ZAR) by using the exchange rate published by South African Reserve Bank (SARB) at 12:00 on the date of advertisement of the Bid as indicated in paragraph 4.1 below.

The SABS approved technical specification number SATS 1286:2011 is accessible on http:/www.thedti.gov.za/industrial development/ip.jsp at no cost.

1.6. A Bid may be disqualified if this Declaration Certificate and the Annex C (Local Content Declaration: Summary Schedule) are not submitted as part of the Bid documentation;

2. The stipulated minimum threshold(s) for local production and content (refer to Annex A of SATS 1286:2011) for this Bid is/are as follows:

No.	Description of services, works or goods	Unit (e.g. m^2, m^3, ton, etc.)	Quantity	Stipulated minimum threshold
1	Steel Reinforcing	Ton	3.18	100%
2	Mesh Ref. 395	m^2	198	100%
3	Steel windows	No	10	100%

No.	Description of services, works or goods	Unit (e.g. m^2, m^3, ton, etc.)	Quantity	Stipulated minimum threshold
4	Steel burglar bars	No	36	100%
5	Steel balustrade/handrails	m	71	100%
6	Structural Steel	Ton	1.49	100%

3. Does any portion of the goods or services offered have any imported content?
(***Tick applicable box***)

YES		NO	

3..1 If yes, the rate(s) of exchange to be used in this Bid to calculate the local content as prescribed in paragraph 1.5 of the general conditions must be the rate(s) published by SARB for the specific currency at 12:00 on the date of advertisement of the Bid.

The relevant rates of exchange information is accessible on www.reservebank.co.za

Indicate the rate(s) of exchange against the appropriate currency in the table below (refer to Annex A of SATS 1286:2011):

Currency	Rates of exchange
US Dollar	
Pound Sterling	
Euro	
Yen	
Other	

NB: Bidders must submit proof of the SARB rate (s) of exchange used.

4. Where, after the award of a Bid, challenges are experienced in meeting the stipulated minimum threshold for local content the dti must be informed accordingly in order for the dti to verify and in consultation with the AO/AA provide directives in this regard.

LOCAL CONTENT DECLARATION
(REFER TO ANNEX B OF SATS 1286:2011)

LOCAL CONTENT DECLARATION BY CHIEF FINANCIAL OFFICER OR OTHER LEGALLY RESPONSIBLE PERSON NOMINATED IN WRITING BY THE CHIEF EXECUTIVE OR SENIOR MEMBER/PERSON WITH MANAGEMENT RESPONSIBILITY (CLOSE CORPORATION, PARTNERSHIP OR INDIVIDUAL)

IN RESPECT OF BID NO. .....

ISSUED BY: (Procurement Authority / Name of Institution): **SOUTH AFRICAN NATIONAL BIODIVERSITY INSTITUTE.**

NB

1 The obligation to complete, duly sign and submit this declaration cannot be transferred to an external authorized representative, auditor or any other third party acting on behalf of the Bidder.

2 Guidance on the Calculation of Local Content together with Local Content Declaration Templates (Annex C, D and E) is accessible on http://www.thedti.gov.za/industrial development/ip.jsp. Bidders should first complete Declaration D. After completing Declaration D, Bidders should complete Declaration E and then consolidate the information on Declaration C. **Declaration C should be submitted with the Bid documentation at the closing date and time of the Bid in order to substantiate the declaration made in paragraph (c) below.** Declarations D and E should be kept by the Bidders for verification purposes for a period of at least 5 years. The successful Bidder is required to continuously update Declarations C, D and E with the actual values for the duration of the contract.

I, the undersigned, ……..... (full names),
do hereby declare, in my capacity as …… ……..
of .....(name of Bidder entity), the following:

(a) The facts contained herein are within my own personal knowledge.

(b) I have satisfied myself that:

(i) the goods/services/works to be delivered in terms of the above-specified Bid comply with the minimum local content requirements as specified in the Bid, and as measured in terms of SATS 1286:2011; and

(c) The local content percentage (%) indicated below has been calculated using the formula given in clause 3 of SATS 1286:2011, the rates of exchange indicated in paragraph 4.1 above and the information contained in Declaration D and E which has been consolidated in Declaration C:

Bid price, excluding VAT (y)	R
Imported content (x), as calculated in terms of SATS 1286:2011	R
Stipulated minimum threshold for local content (paragraph 3 above)	
Local content %, as calculated in terms of SATS 1286:2011	

If the Bid is for more than one product, the local content percentages for each product contained in Declaration C shall be used instead of the table above. The local content percentages for each product has been calculated using the formula given in clause 3 of SATS 1286:2011, the rates of exchange indicated in paragraph 4.1 above and the information contained in Declaration D and E.

(d) I accept that the Procurement Authority / Institution has the right to request that the local content be verified in terms of the requirements of SATS 1286:2011.

(e) I understand that the awarding of the Bid is dependent on the accuracy of the information furnished in this application. I also understand that the submission of incorrect data, or data that are not verifiable as described in SATS 1286:2011, may result in the Procurement Authority / Institution imposing any or all of the remedies as provided for in Regulation 14 of the Preferential Procurement Regulations, 2017 promulgated under the Preferential Policy Framework Act (PPPFA), 2000 (Act No. 5 of 2000).

SIGNATURE: _____ **DATE:** _____

WITNESS No. 1 _____ **DATE:** _____

WITNESS No. 2 _____ **DATE:** _____

SATS 1286.2011

Annex C

Local Content Declaration - Summary Schedule

(C1)	**Tender No.**	QXXX/2021					**Note:** VAT to be excluded from all calculations
(C2)	**Tender description:**	Thohoyandou Botanical Gardens					
(C3)	**Designated product(s)**	Steel Components					
(C4)	**Tender Authority:**	South African National Biodiversity Institute					
(C5)	**Tendering Entity name:**						
(C6)	**Tender Exchange Rate:**	Pula		EU		GBP	
(C7)	**Specified local content %**	100%					

		Calculation of local content						Tender summary			
Tender item no's	**List of items**	**Tender price - each (excl VAT)**	**Exempted imported value**	**Tender value- net of exempted imported content**	**Imported value**	**Local value**	**Local content % (per item)**	**Tender Qty**	**Total tender value**	**Total exempted imported content**	**Total Imported content**
(C8)	*(C9)*	*(C10)*	*(C11)*	*(C12)*	*(C13)*	*(C14)*	*(C15)*	*(C16)*	*(C17)*	*(C18)*	*(C19)*
1	Steel reinforcing						100%	3.18			
2	Mesh Ref 395						100%	198.00			
3	Steel windows						100%	10.00			
4	Steel burglar bars						100%	36.00			
5	Steel Balustrade/Handrails						100%	71.00			
6	Structural steel						100%	1.49			

	(C20) **Total tender value**	**R 0**	
Signature of tenderer from Annex B	***(C21)*** **Total Exempt imported content**		**R 0**
	(C22) Total **Tender value net of exempt imported content**		**R 0**
	(C23) **Total Imported content**		**R 0**
	(C24) **Total local content**		**R 0**
Date:	***(C25)*** **Average local content % of tender**		

SATS 1286.2011

Annex D

Imported Content Declaration - Supporting Schedule to Annex C

(D1)	**Tender No.**	QXXX/2021			**Note:** VAT to be excluded from all calculations
(D2)	**Tender description:**	Thohoyandou Botanical Gardens			
(D3)	**Designated Products:**	Steel Components			
(D4)	**Tender Authority:**	South African National Biodiversity Institute			
(D5)	**Tendering Entity name:**				
(D6)	**Tender Exchange Rate:**	Pula	EU	GBP	

A. Exempted imported content

				Calculation of imported content						Summary	
Tender item no's	Description of imported content	Local supplier	Overseas Supplier	Forign currency value as per Commercial Invoice	Tender Exchange Rate	Local value of imports	Freight costs to port of entry	All locally incurred landing costs & duties	Total landed cost excl VAT	Tender Qty	Exempted imported value
(D7)	*(D8)*	*(D9)*	*(D10)*	*(D11)*	*(D12)*	*(D13)*	*(D14)*	*(D15)*	*(D16)*	*(D17)*	*(D18)*

(D19) **Total exempt imported value** R 0

This total must correspond with Annex C - C 21

B. Imported directly by the Tenderer

				Calculation of imported content						Summary	
Tender item no's	Description of imported content	Unit of measure	Overseas Supplier	Forign currency value as per Commercial Invoice	Tender Rate of Exchange	Local value of imports	Freight costs to port of entry	All locally incurred landing costs & duties	Total landed cost excl VAT	Tender Qty	Total imported value
(D20)	*(D21)*	*(D22)*	*(D23)*	*(D24)*	*(D25)*	*(D26)*	*(D27)*	*(D28)*	*(D29)*	*(D30)*	*(D31)*

(D32) **Total imported value by tenderer** R 0

C. Imported by a 3rd party and supplied to the Tenderer

				Calculation of imported content						Summary	
Description of imported content	Unit of measure	Local supplier	Overseas Supplier	Forign currency value as per Commercial Invoice	Tender Rate of Exchange	Local value of imports	Freight costs to port of entry	All locally incurred landing costs & duties	Total landed cost excl VAT	Quantity imported	Total imported value
(D33)	*(D34)*	*(D35)*	*(D36)*	*(D37)*	*(D38)*	*(D39)*	*(D40)*	*(D41)*	*(D42)*	*(D43)*	*(D44)*

(D45) **Total imported value by 3rd party** R 0

D. Other foreign currency payments

			Calculation of foreign currency payments		Summary of payments
Type of payment	Local supplier making the payment	Overseas beneficiary	Foreign currency value paid	Tender Rate of Exchange	Local value of payments
(D46)	*(D47)*	*(D48)*	*(D49)*	*(D50)*	*(D51)*

(D52) **Total of foreign currency payments declared by tenderer and/or 3rd party**

Signature of tenderer from Annex B

(D53) **Total of imported content & foreign currency payments - *(D32), (D45) & (D52)* above** R 0

Date:

This total must correspond with Annex C - C 23

SATS 1286.2011

Annex E

Local Content Declaration - Supporting Schedule to Annex C

(E1)	**Tender No.**	Qxxxx/2021
(E2)	**Tender description:**	Thohoyandou Botanical Gardens
(E3)	**Designated products:**	Steel Components
(E4)	**Tender Authority:**	South African National Biodiversity Institute
(E5)	**Tendering Entity name:**	

Note: VAT to be excluded from all calculations

Local Products (Goods, Services and Works)	Description of items purchased	Local suppliers	Value
	(E6)	*(E7)*	*(E8)*
	Steel reinforcing		
	Mesh Ref 395		
	Steel windows		
	Steel burglar bars		
	Steel Balustrade/Handrails		
	Structural steel		
	***(E9)* Total local products (Goods, Services and Works)**		

(E10)	**Manpower costs**	(Tenderer's manpower cost)	
(E11)	**Factory overheads**	(Rental, depreciation & amortisation, utility costs, consumables etc.)	
(E12)	**Administration overheads and mark-up**	(Marketing, insurance, financing, interest etc.)	
		***(E13)* Total local content**	
		This total must correspond with Annex C - C24	

Signature of tenderer from Annex B

Date:

SBD 8

DECLARATION OF BIDDER'S PAST SUPPLY CHAIN MANAGEMENT PRACTICES

This Standard Bidding Document must form part of all Bids invited.

1 It serves as a declaration to be used by institutions in ensuring that when goods and services are being procured, all reasonable steps are taken to combat the abuse of the supply chain management system.

2 The Bid of any Bidder may be disregarded if that Bidder, or any of its directors have-

a. abused the institution's supply chain management system;
b. committed fraud or any other improper conduct in relation to such system; or
c. failed to perform on any previous contract.

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

Item	Question	Yes	No
4.1	Is the Bidder or any of it's directors listed on the National Treasury's database as companies or persons prohibited from doing business with the public sector? (Companies or persons who are listed on this database were informed in writing of this restriction by the National Treasury after the *audi alteram partem* rule was applied).	Yes ☐	No ☐
4.1.1	If so, furnish particulars:		
4.2	Is the Bidder or any of it's 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)? **To access this Register enter the National Treasury's website, www.treasury.gov.za, click on the icon "Register for Tender Defaulters" or submit your written request for a hard copy of the Register to facsimile number (012) 3265445.**	Yes ☐	No ☐
4.2.1	If so, furnish particulars:		
4.3	Was the Bidder or any of it's directors convicted by a court of law (including a court outside of the Republic of South Africa) for fraud or corruption during the past five years?	Yes ☐	No ☐
4.3.1	If so, furnish particulars:		
4.4	Was any contract between the Bidder and any organ of state terminated during the past five years on account of failure to perform on or comply with the contract?	Yes ☐	No ☐
4.4.1	If so, furnish particulars:		

CERTIFICATION

I, THE UNDERSIGNED (FULL NAME) ……

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

I ACCEPT THAT, IN ADDITION TO CANCELLATION OF A CONTRACT, ACTION MAY BE TAKEN AGAINST ME SHOULD THIS DECLARATION PROVE TO BE FALSE.

……	……
Signature	Date
……	……
Position	Name of Bidder

SBD 9

CERTIFICATE OF INDEPENDENT QUOTATION DETERMINATION

1. This Standard Bidding Document (SBD) must form part of all quotations[1] invited.

2. Section 4 (1) (b) (iii) of the Competition Act No. 89 of 1998, as amended, prohibits an agreement between, or concerted practice by, firms, or a decision by an association of firms, if it is between parties in a horizontal relationship and if it involves collusive Bidding (or Bid rigging) [2] Collusive Bidding is a *per se* prohibition meaning that it cannot be justified under any grounds.

3. Treasury Regulation 16A9 prescribes that accounting officers and accounting authorities must take all reasonable steps to prevent abuse of the supply chain management system and authorizes accounting officers and accounting authorities to:

    a. disregard the Bid of any Bidder if that Bidder, or any of its directors have abused the institution's supply chain management system and or committed fraud or any other improper conduct in relation to such system.

    b. cancel a contract awarded to a supplier of goods and services if the supplier committed any corrupt or fraudulent act during the Bidding process or the execution of that contract.

4. This SBD serves as a certificate of declaration that would be used by institutions to ensure that, when Bids are considered, reasonable steps are taken to prevent any form of Bid-rigging.

5. In order to give effect to the above, the attached Certificate of Bid Determination (SBD 9) must be completed and submitted with the Bid:

[1] Includes price quotations, advertised competitive Bids, limited Bids and proposals.

[2] Bid rigging (or collusive Bidding) occurs when businesses, that would otherwise be expected to compete, secretly conspire to raise prices or lower the quality of goods and / or services for purchasers who wish to acquire goods and / or services through a Bidding process. Bid rigging is, therefore, an agreement between competitors not to compete.

CERTIFICATE OF INDEPENDENT BID DETERMINATION

I, the undersigned, in submitting the accompanying Bid:

SANBI: G435/2022: REQUEST FOR BIDS FOR THE APPOINTMENT OF A CONTRACTOR FOR THE CONSTRUCTION OF A NEW VISITORS' CENTRE, PARKING UPGRADES, LANDSCAPING, SECURITY UPGRADES AND ASSOCIATED CIVIL SERVICES FOR THE SOUTH AFRICAN NATIONAL BIODIVERSITY INSTITUTE AT THE THOHOYANDOU NATIONAL BOTANICAL GARDEN IN THOHOYANDOU

(Bid Number and Description)

in response to the invitation for the quote made by:
SOUTH AFRICAN NATIONAL BIODIVERSITY INSTITUTE (SANBI)
(Name of Institution)

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 purposes 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 as the Bidder and/or is in the same line of business as the Bidder
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[3] 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; or
   (f) Bidding with the intention not to win 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.

   [3] 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.
9. The terms of the accompanying Bid have not been, and will not be, disclosed by the Bidder, directly or indirectly, to any competitor, prior to the date and time of the official Bid opening or of the awarding of the 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 the 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

PART C: THE CONTRACT
Part C1: Agreement and Contract Data

PROJECT TITLE:	**REQUEST FOR BIDS FOR THE APPOINTMENT OF A CONTRACTOR FOR THE CONSTRUCTION OF A NEW VISITORS' CENTRE, PARKING UPGRADES, LANDSCAPING, SECURITY UPGRADES AND ASSOCIATED CIVIL SERVICES FOR THE SOUTH AFRICAN NATIONAL BIODIVERSITY INSTITUTE AT THE THOHOYANDOU NATIONAL BOTANICAL GARDEN IN THOHOYANDOU**
BID No.:	**SANBI: G435/2022**

C1.1 Form of Offer and Acceptance

The Employer, identified in the Acceptance signature block, has solicited offers to enter into a contract for:

THE CONSTRUCTION OF A NEW VISITORS' CENTRE, PARKING UPGRADES, LANDSCAPING, SECURITY UPGRADES AND ASSOCIATED CIVIL SERVICES FOR THE SOUTH AFRICAN NATIONAL BIODIVERSITY INSTITUTE AT THE THOHOYANDOU NATIONAL BOTANICAL GARDEN IN THOHOYANDOU

The Tenderer, identified in the offer signature block, has examined the documents listed in the Tender Data and Addenda thereto as listed in the Returnable Schedules, and by submitting this offer has accepted the Conditions of Tender.

The Tenderer, identified in the offer signature block, has examined the draft contract as listed in the acceptance section and agreed to provide this offer.

By the representative of the Tenderer, deemed to be duly authorised, 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 PRICES INCLUSIVE OF VAT IS:

(in words) ..... Rand;

R..... (in figures)

THE OFFERED PRICES ARE AS STATED IN THE PRICING SCHEDULE

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 including the Schedule of Deviations (if any) to the Tenderer before the end of the period of validity stated in the Tender Data, or other period as agreed, whereupon the Tenderer becomes the party named as the **Contractor** in the conditions of contract identified in the Contract Data.

Signature(s) .....

Name(s) .....

Capacity .....

For the Tenderer: .....

.....

(Insert name and address of organisation)

Name & signature of witness ..... Date .....

.....

[Failure of a Tenderer to complete and sign this form will invalidate the Tender]

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	Agreement 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 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 the said documents are valid unless contained in this Schedule, which must be duly signed by the authorised representative(s) of both parties.

The Tenderer shall within the time required to submit documentation in accordance with Clause 5.3 of the Contract Data (C1.2) 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 working 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.

Signature(s) .....

Name(s) .....

Capacity .....

For the Employer: .....

.....

.....
(Insert name and address of organisation)

Name & signature of witness ..... Date .....

.....

Schedule of Deviations

1 Subject .....

Details .....

.....

.....

.....

2 Subject .....

Details .....

.....

.....

.....

3 Subject .....

Details .....

.....

.....

.....

4 Subject .....

Details .....

.....

.....

.....

5 Subject .....

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 change 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 organisation]

Name and signature of witness ..... Date .....

FOR THE EMPLOYER:

Signature(s) ....

Name(s) ....

Capacity ....

.....
[Name and address of organisation]

Name and signature of witness ..... Date .....

CONFIRMATION OF RECEIPT:

The Tenderer (now Contractor), identified in the offer part of this Agreement, hereby 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

.....
Name

.....
Capacity

Signature and name of witness: .....
Signature

.....
Name

C1.2 Contract Data

The Conditions of Contract are the **JBCC Series 2000 Principal Building Agreement (July 2007 Edition 5.0 - Reprint 1)** published by the Joint Building Contract Committee. Copies of these documents may be obtained from the **Association of South African Quantity Surveyors** (011-315 4140), the **Master Builders Association** (011-205 9000), the **South African Association of Consulting Engineers** (011-463 2022) or the **South African Institute of Architects** (011-486 0684).

The JBCC Principal Building Agreement Contract Data EC and the JBCC Principal Building Agreement Contract Data CE form an integral part of this agreement.

The **ASAQS Preliminaries (August 2010)** published by the Association of South African Quantity Surveyors for use with the said JBCC Principal Building Agreement shall be deemed to be incorporated in the Bills of Quantities.

The **Model Preambles for Trades (2017 Edition)** as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in the Bills of Quantities and no claims arising from brevity of description of items fully described in the said Model Preambles will be entertained.

Contract Data: Employer to Contractor (EC)

Employer Addendum Code 2101-EC

For information purposes only. To be signed on appointment.

Introduction

This addendum contains all variables referred to in the **Principal Building Agreement** that are the responsibility of the Contractor to provide the appropriate information that is necessary for the Contractor to complete his Tender. The Addendum must be completed in full and included in the Tender documents. The Addendums "Contract Data – EC", "Contract Data – CE", "Contract Data – ES" and "Contract Data – SE" form part of the contract between the parties.

Definitions

The definitions used in this document and the interpretation thereof are as listed in the Principal Building Agreement. The work or phrase of a definition is in bold text and shall bear the meaning assigned to it in the Principal Building Agreement. Where such word or phrase is not highlighted it shall bear the meaning consistent with the context of its use. The listed defined word or phrase does not quality as a definition where information required to be stated in the Contract Data has not been provided.

Provision of Contract Data

Spaces requiring information must be filled in, shown as "not applicable" or deleted and not left blank. Where choices are offered, the non-applicable items are to be clearly struck out. Where insufficient space is provided the additional information should be annexed hereto and cross referenced to the applicable clause of the Contract Data.

Reference Clauses

Where relevant the Principal Building Agreement clause applicable to the required information is printed in italics under the Contract Data clause number i.e. [27.4.2]

TABLE OF CONTENTS

Section No.	Description
1.0	CONTRACTING AND OTHER PARTIES
2.0	CONTRACT AND SITE INFORMATION
3.0	INSURANCES AND SECURITIES
4.0	PRACTICAL COMPLETION DATES AND PENALTIES
5.0	DOCUMENTS AND GENERAL
6.0	STATE PROVISIONS AND SUBSTITUTIONS
7.0	CHANGES MADE TO THE STANDARD JBCC DOCUMENT
8.0	DECLARATION BY THE PRINCIPAL AGENT

CONTRACT DATA – EMPLOYER

1.0 CONTRACTING AND OTHER PARTIES

1.1 *[1.2]*	**Employer:**	South African National Biodiversity Institute		
	Postal Address:	Private Bag X101, Silverton, Gauteng	**Code:**	0184
	Physical Address:	Pretoria National Botanical Garden 2 Cussonia Avenue, Brummeria, Gauteng	**Code:**	0184
	Tel No.:	012 843 5000	**Fax No.:**	012 843 5205
	eMail:	c.willis@sanbi.org.za		
1.2 *[5.1]*	**Principal Agent:**	PROJECTNEERS Consulting	**Person:**	Brighton Tshuma
	Postal Address:	Thornhill Office Park, Midrand	**Code:**	1685
	Tel No.:	011 043 1307	**Fax No.:**	086 440 0186
	eMail:	technical@projectneers.com		

1.9 *[5.5]* **Interest of Principal Agent or other Agent in the project.** (Yes / No) **No**

Details where "yes": **N/A**

1.10 The **Principal Agent** named in 1.2 above is responsible for the preparation of the **Contract Data** schedule and must be contacted should the **Contractor** be uncertain of the information provided or to be provided. Failure to complete the **Contract Data** schedule in full may result in the Tender being disqualified.

2.0 CONTRACT AND SITE INFORMATION

2.1 *[1.7]* The **law** applicable to this **agreement**: (Country / State) **RSA**

2.2 *[1.1]* **Works** identification: **THE CONSTRUCTION OF A NEW VISITORS' CENTRE, PARKING UPGRADES, LANDSCAPING, SECURITY UPGRADES AND ASSOCIATED CIVIL SERVICES FOR THE SOUTH AFRICAN NATIONAL BIODIVERSITY INSTITUTE AT THE THOHOYANDOU NATIONAL BOTANICAL GARDEN IN THOHOYANDOU**

2.3 *[1.1]* Site description: **Thohoyandou National Botanical Garden, Limpopo**

2.4 *[15.2.1]* Possession of the **site** is to be given on: (Date)

Within 5 (five) working days after receipt of documentary evidence that:
- Insurances have been effected *[12.2];*
- Security has been provided to the Employer *[14.1];*
- Contractor's Lien has been signed;
- Safety Plan has been approved by the Employer

2.5 *[15.3]* Period for the commencement of the **works** after the Contractor takes possession of the **site:** (Working days) **5 (Five)**

2.6 *[15.4], [28.0]*	Completion of the works in **sections** is required.			(Yes / No)	**No**	(No. of sections) **N/A**
2.7 *[3.3], [31.16.2]*	Waiver of the **Contractor's** lien or right of continuing possession is required.					(Yes / No) **Yes**
2.8 *[16.1]*	Defined restrictions to the **site** area. Where "yes" the specific requirements are described below or detailed in the **contract documents**.					(Yes / No) **Yes**
2.9 *[16.4]*	Geotechnical investigation of the **site** has been undertaken. Where "yes" the results are included in the **contract documents.**					(Yes / No) **Yes**
2.10 *[16.6]*	Existing premises will be occupied. Where "yes" the specific requirements are described below or detailed in the **contract documents.**					(Yes / No) **Yes**
2.11 *[16.7]*	Provision of temporary services is required. Where "yes" the specific requirements are described below or detailed in the **contract documents.**					(Yes / No) **Yes**
	2.11.1	**Water**	Option A Option B Option C	Contractor – his cost Employer – free of charge Contractor – metered (Contractor cost)		(A, B or C) **A**
	2.11.2	**Electricity**	Option A Option B Option C	Contractor – his cost Employer – free of charge Contractor – metered (Contractor cost)		(A, B or C) **A**
	2.11.3	**Telecom**	Option A Option B Option C	Contractor – his cost Employer – free of charge Contractor – metered (Contractor cost)		(A, B or C) **A**
	2.11.4	**Ablutions**	Option A Option B Option C	Contractor – his cost Employer – free of charge Contractor – metered (Contractor cost)		(A, B or C) **A**
2.12 *[16.8]*	Protection of existing trees and shrubs is required. Where "yes" the specific requirements are described below or detailed in the **contract documents.**					(Yes / No) **Yes**

3.0 INSURANCE AND SECURITIES

3.1 *[10.1.1], [12.6]*	Contract works insurance to be effected by:	(Employer / Contractor)	**Contractor**
	For the sum of:	(Amount)	**Contract Sum Plus 20%**
	With a deductible of:	(Amount)	**R20 000**
3.2 *[10.1.2], [11.1-3], [12.6]*	Supplementary / Special insurance to be effected by:	(Employer / Contractor)	**N/A**

	For the sum of:	(Amount)	**N/A**
	With a deductible of:	(Amount)	**N/A**
3.3 *[10.1.3], [12.6]*	Public liability insurance to be effected by:	(Employer / Contractor)	**Contractor**
	For the sum of:	(Amount)	**R5 000 000 per claim**
	With a deductible of:	(Amount)	**R20 000**
3.4 *[11.1.1]*	Support insurance to be effected by:	(Employer / Contractor)	**N/A**
	For the sum of:	(Amount)	**N/A**
	With a deductible of:	(Amount)	**N/A**
3.5 *[11.1.2-3], [12.1]*	Special insurance to be effected by:	(Employer / Contractor)	**N/A**
	Type:	**N/A**	
	For the sum of:	(Amount)	**N/A**
	With a deductible of:	(Amount)	**N/A**

4.0 PRACTICAL COMPLETION DATES AND PENALTIES

		Date	**Penalty Amount**
4.1 *[24.3.1], [30.1-36]*	For the **works** as a whole: The **Date** for P**ractical Completion** and the **Penalty** per **calendar day** is:	**14 Calendar Months** after date of Site Handover, including builders' holiday period(s)	Penalty per Calendar Day: **R 0.0275 per R100** of Contract Sum (excluding VAT) per Calendar Day

Or

4.2 *[24.3.1], [28.1]* For the **works** in **sections**:
The **Date** for **Practical Completion** and the **Penalty** per **calendar day** is:

	Date	**Penalty Amount**

Section 1	**N/A**	**N/A**
Section 2	**N/A**	**N/A**

5.0 DOCUMENTS AND GENERAL

5.1 *[3.7]*	Construction document copies to be supplied to the **Contractor** free of charge.	(No. of copies)	**3**		
5.2 *[3.9]*	The **priced document** may be used as a specification of **materials and goods** and work methods.	(Yes / No)	**No**		
5.3 *[3.10]*	The **Contractor** shall provide a schedule of rates.	(Yes / No)	**No**	(Addendum No.)	**Refer to Bills of Quantities**
5.4 *[3.11]*	Changes made to **JBCC** standard documents.	(Yes / No)	**Yes**	(Addendum No.)	**Refer to Point 6 below**
5.5 *[15.1.1]*	On acceptance of the Tender, the **priced document** is to be submitted within the stated **working days.**	(No. of days)	**Priced document to be submitted with Tender**		
5.6 *[22.2]*	Work to be undertaken by **Direct Contractors.**	(Yes / No)	**No**	(Addendum No.)	**N/A**
5.7 *[24.9]*	On achievement of Practical Completion, the **Contractor** is to hand over all certificates and manuals, etc. related to the works.				
5.8 *[31.1]*	Interim **payment certificates** to be issued by:	(Date of Month)	**25th**		

5.8 *[4.1]* The following items of works shall be supplied by the Contractor:

(1)	Roof sheeting certificate of compliance	(2)	Timber roof structure certificate of compliance
(3)	Electrical certificate of compliance	(4)	Plumbing compliance certificate
(5)	Municipality inspections and certifications for various stages	(6)	QC documentation as required by all disciplines

EPWP Requirements:

Payment for the labour-intensive component of the works

Payment for works identified by the contractor 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 Contractor in any way from his obligations either in contract or in delict.

Linkage of payment for labour-intensive component of works to submission of project data

The Contractor's payment invoices shall be accompanied by labour information for the corresponding period in a format specified by the Employer. If the Contractor chooses to delay submitting payment invoices, labour returns shall still be submitted as per frequency and timeframe stipulated by the Employer. The Contractor's invoices shall not be paid until all pending labour information has been submitted.

Applicable labour laws

The current Ministerial Determination (also downloadable at www.epwp.gov.za), Expanded Public Works Programmes, issued in terms of the Basic Conditions of Employment Act of 1997 by the Minister of Labour in Government Notice, shall apply to works described in the scope of work as being labour-intensive and which are undertaken by unskilled or semi-skilled workers.

6.0 STATE PROVISIONS AND SUBSTITUTIONS

6.1 *Replace the following definitions with:*

"CONSTRUCTION PERIOD" means the period commencing on the date of acceptance of the Bid as stated in [15.2.1] And ending on the date of **practical completion**

"**INTEREST"** means the interest rate as determined by the Minister of Finance, from time to time, in terms of section 80(1)(b) of the Public Finance Management Act, 1999 (Act No. 1 of 1999).

6.2 *Replace the last sentence with the following:*
[3.6]

The original signed set of contract documents shall be held by the **Employer**.

6.3 *Replace the clause with the following:*
[5.1]

In terms of the clauses listed hereunder the **Employer** has retained its authority and has not given a mandate to the **Principal Agent**. The **Employer** shall sign all documents in relation to the following clauses:

20.1, 20.7, 26.2.1, 26.3.1, 29.1, 29.2, 29.4.1, 29.4.3, 29.7, 29.8, 32.1, 32.6.2, 32.15, 34.3

Copies of the signed documents shall be provided to the **Principal Agent**.

6.4 *Replace the clause with the following:*
[8.4]

The **Contractor** shall bear the full risk of damage to and/or destruction of the **works** by whatever cause during construction of the **works** and hereby indemnifies and holds harmless the **Employer** against any such damage. The **Contractor** shall take such precautions and security measures and other steps for the protection and security of the **works** as the **Contractor** may deem necessary.

6.6 *Add the following clause:*
[9.3]

The **Employer's** rights to claim damages for the **Contractor's** omissions and actions will not be affected.

6.7 *Replace the clause with the following:*
[10.1]

The **Contractor** shall effect contract works insurances and, where available, supplementary insurance in respect of civil commotion, riot and strike shall be effected for the **works** for the Contractor's all risk and, in addition, covering the **Contractor's** Sub-contractors. Such insured amounts shall include the full value of materials and goods supplied by the **Employer** to the Contractor. Supplementary insurance shall not be effected, where the **Employer** makes such an election as stated in [11.1.2 – 3]

6.8 *Add the following clause:*
[11.2]

The **Contractor** shall effect public liability insurance for not less than the amount and the deductible as stated in [10.1.3]. In addition, the **Contractor** shall affect any relevant workmen's compensation or similar insurances as are required by **law**. The **Contractor** shall ensure that his Sub-contractors effect their own similar insurances.

6.9 *Add the following clause:*
[11.3]

Should the **Employer** decide that the execution of the works could cause the weakening or interference with the support of the land adjacent to the **site**, the **Employer** shall state in [11.1.1] That the **Contractor** shall effect support insurance

6.12 *Replace the clause with the following:*
[12.3]

Where the **Contractor** fails to effect any of the required insurances or to keep them in force, the **Employer** may cancel this agreement in terms of clause [36.0]

6.13 *Replace the clause with the following:*
[12.4]

Before effecting support insurance in terms of [11.2] the **Contractor** shall engage an engineer or technologist to design and inspect the provision of the necessary support.

6.14 *Replace the clause with the following:*
[14.1]

Security:

The securities to be provided by the **Contractor** are:

(1) Variable construction guarantee
(2) Fixed construction guarantee
(3) Advance payment guarantee

6.14 *Replace the clause with the following:*
[15.2.1]

Give the **Contractor** possession of site within ten (10) **working days** of the commencement of the **construction period** provided that the **Contractor** has complied with the terms of [15.1.1] and [15.1.2]

6.15 *Replace the clause with the following:*
[25.3]

Should the **Principal Agent** not issue a **works completion** list, in terms of [25.1] or [25.2.2], within seven (7) **calendar days** from the end of the inspection period, the **Contractor** shall notify the **Employer** and **Principal Agent**. Should the **Principal Agent** not issue such **works completion** list within seven (7) **calendar days** of such notice, the **Employer** may within seven (7) **calendar days** issue to the **Contractor** a **works completion** list. Should the **Employer**:

6.16 *Replace the clause with the following:*
[25.3.1]

Not issue such **works completion** list within seven (7) **calendar days**, then the **certificate of works completion** shall be deemed to have been issued on the date of expiry of the initial notice period and **works completion** shall be deemed to have been achieved on such date.

6.17 *Replace the clause with the following:*
[25.3.2]

Issue a **works completion** list and the work on the **works completion** list not completed or where further **defects** have become apparent, the **Employer** shall forthwith identify such items on the updated **works completion** list and notify the **Contractor**. The **Contractor** shall repeat the procedure in terms of [25.2.2] until such items have been completed to the satisfaction of the **Employer**.

6.18 *Replace the clause with the following:*
[26.1]

The defects liability period for the works shall commence on the date of works completion and end after three hundred and sixty-five (365) **calendar days** for items stated in the **Bills of Quantities**.

6.19 *Replace the clause with the following:*
[26.4]

Should the **Principal Agent** not issue a **defects** list in terms of [26.2.2 or 26.3.2], within seven (7) **calendar days** from the end of the **defects** liability period, the **Contractor** shall notify the **Employer** and **Principal Agent**. Should the **Principal Agent** not issue such **defects** list within seven (7) **calendar days** of receipt of such notice, the **Employer** may within seven (7) **calendar days** issue to the **Contractor** a **defects** list. Should the **Employer**:

6.20 *Replace the clause with the following:*
[26.4.1]

Not issue such **defects** list within seven (7) **calendar days**, then the **certificate of final completion** shall be deemed to have been issued on the date of expiry of the initial notice period and **final completion** shall be deemed to have been achieved on such date.

6.21 *Replace the clause with the following:*
[26.4.2]

Issue a **defects** list and the work on the **defects** list has not been completed or where further **defects** have become apparent, the **Employer** shall forthwith identify such items on the updated **defects** list and notify the **Contractor**. The **Contractor** shall repeat the procedure in terms of [26.3.2] until such items have been completed to the satisfaction of the **Employer**

6.22 *Replace the clause with the following:*
[26.6]

A **certificate of final completion** issued in terms of [26.0] shall be *prima facie* evidence as to the sufficiency of the **works** and that the Contractor's obligations in terms of [2.0] and [15.0] have been fulfilled other than for **latent defects**.

6.23 *Replace the clause with the following:*
[27.1]

The **latent defects** liability period shall commence at the start of the **construction period** and end ten (10) years from the date of **final completion** where **final completion** in terms of [26.0] is achieved.

6.24 *Replace the clause with the following:*
[27.2]

Where cancellation of this **agreement** occurs before the achievement of **final completion** the **latent defects** liability period shall end ten (10) years from the date of cancellation.

6.27 *Replace the clause with the following:*
[31.4.2]

A reasonable estimate of the value of **materials and goods** in terms of [31.6] unless the **Employer** elects not to pay for such.

6.29 *Replace the clause with the following:*
[31.9]

The **Employer** shall pay the **Contractor** the amount certified within thirty (30) **calendar days** of the date for issue of the **payment certificate**. Payment shall be subject to the **Contractor** giving the **Employer** a **tax** invoice for the amount due.

6.30 *Replace the last sentence with the following:*
[31.11.2]

The **Principal Agent** shall calculate such default interest at the rate as determined by the Minister of Finance, from time to time, in terms of section 80(1)(b) of the Public Finance Management Act, 1999 (Act No. 1 of 1999).

6.31 *Replace the clause with the following:*
[31.12]

Where a **payment certificate** reflects an amount in favour of the **Employer**, the **Contractor** shall pay the amount certified within twenty-one (21) **calendar days** of the date of issue of the **payment certificate**. Where such an amount has not been paid, the **Contractor** shall be liable for default interest and the **Principal Agent** shall include such an amount in the **recovery statement** in terms of [33.0]. Payment shall be subject to the **Employer** giving the **Contractor** a **tax** invoice for the amount due. The **Principal Agent** shall calculate such interest at the rate as determined by the Minister of Finance, from time to time, in terms of section 80(1)(b) of the Public Finance Management Act, 1999 (Act No. 1 of 1999).

6.32 *Replace the clause with the following:*
[34.1]

The **Contractor** shall cooperate with and assist the **Principal Agent** in the preparation of the **final account** by timeously providing all relevant documents on request. The **Principal Agent** shall issue the final account to the **Contractor** within one hundred and twenty (120) **working days**.

6.33 *Add the following clause:*
[34.2]

The **Principal Agent** shall allow the **Employer** twenty (20) **working days**, within the period provided in [34.1] to accept the **final account** before presentation to the **Contractor** in terms of [34.3]

6.34 *Add the following:*
[34.5]

The final payment certificate shall be issued by the **Employer**.

6.35 *Replace the clause with the following:*
[34.9]

The **Employer** shall concurrently with the issue of the final **payment certificate** issue a statement to the **Contractor** showing the total amount of **tax** certified.

6.36 The **Employer** shall pay to the **Contractor** the amount certified for payment in the final **payment certificate**
[34.10] within thirty (30) **calendar days** of the date of issue of the final **payment certificate** subject to the **Contractor** giving the **Employer** a **tax** invoice for the amount due.

6.37 *Replace the last sentence with:*
[34.12]

Such interest shall be calculated at the rate as determined by the Minister of Finance, from time to time, in terms of section 80(1)(b) of the Public Finance Management Act, 1999 (Act No. 1 of 1999).

6.38 *Replace the clause with the following:*
[36.1]

The **Employer** may, without prejudice of any other rights available to him, cancel this **agreement** where the **Contractor:**

6.39 *Replace the clause with the following:*
[36.2]

Where the **Contractor** is in default, the **Employer** may notify the **Contractor**, either directly or through the **Principal Agent**, of his default and of the **Employer's** intention to cancel this **agreement** in terms of [36.1], should the default not be remedied.

6.40 *Replace the clause with the following:*
[37.2]

Where the **Employer** considers cancelling this **agreement** in terms of [37.1] the **Employer** shall notify the **Contractor** of the **Employer's** intention to cancel this **agreement**.

6.41 *Add the following clause:*
[39.2]

The **Employer** shall be entitled at any time to unilaterally terminate or cancel this **agreement** or any part thereof. Save for the following the **Contractor** shall not be entitled to claim any other amounts whatsoever in respect of such termination or cancellation of this **agreement**. The **Employer** shall be obliged to pay the **Contractor** as damages and/or loss of profit the lesser of:

6.42 *Add the following clause:*
[39.2.1]

An amount not exceeding Ten per cent (10%) of the **contract sum.**

6.43 *Add the following clause:*
[39.2.2]

Ten per cent (10%) of the value of incomplete work.

6.43 *Add the following clause:*
[39.2.3]

The **Contractor's** actual damage or loss as determined by the **Employer** after receipt of evidence substantiating any such damage or loss.

6.44 *Replace the clause with the following:*
[40.2.2]

Litigation where the **Employer** so elects. Institution of the action shall be commenced, and process served within one (1) year from the date of existence of the dispute, failing which the dispute shall lapse.

7.0 CHANGES MADE TO THE STANDARD JBCC DOCUMENT

Changes made to the standard JBCC document are listed in section 6 above.

8.0 DECLARATION BY THE PRINCIPAL AGENT

I, the Principal Agent named in 1.2 above, declare that the information provided above is complete and accurate at the time of calling for Tenders. Where necessary, should any of the above information need to be varied, Tenderers will be forthwith informed thereof in writing.

BRIGHTON TSHUMA
……
Principal Agent

2022-10-17
……
Date

Contract Data: Contractor to Employer (CE)

Contractor Addendum Code 2101-CE

Introduction

This addendum contains all variables referred to in the Principal Building Agreement that are the responsibility of the Contractor to provide the appropriate information that is necessary for the Contractor to complete his Tender. The Addendum must be completed in full and included in the Tender documents. The Addendums "Contract Data – EC", "Contract Data – CE", "Contract Data – ES" and "Contract Data – SE" form part of the contract between the parties.

Definitions

The definitions used in this document and the interpretation thereof are as listed in the Principal Building Agreement. The work or phrase of a definition is in **bold text** and shall bear the meaning assigned to it in the Principal Building Agreement. Where such word or phrase is not highlighted it shall bear the meaning consistent with the context of its use. The listed defined word or phrase does not quality as a definition where information required to be stated in the **Contract Data** has not been provided.

Provision of Contract Data

Spaces requiring information must be filled in, shown as "not applicable" or deleted and not left blank. Where choices are offered, the non-applicable items are to be clearly struck out. Where insufficient space is provided the additional information should be annexed hereto and cross referenced to the applicable clause of the **Contract Data**.

Reference Clauses

Where relevant the Principal Building Agreement clause applicable to the required information is printed in italics under the Contract Data clause number i.e. *[27.4.2]*

TABLE OF CONTENTS

Section No.	Description
1.0	CONTRACTING PARTY
2.0	SECURITIES
3.0	PAYMENT AND ADJUSTMENT OF PRELIMINARIES
4.0	EMPLOYER CHANGES TO JBCC STANDARD DOCUMENTS
5.0	THE TENDER

1.0 CONTRACTING PARTY

1.1 *[1.2]* **Contractor:** _____

Postal Address: _____ **Code:** _____

_____

Physical Address: _____ **Code:** _____

_____ **eMail:** _____

Tel No.: _____ **Fax No.:** _____

VAT No.: _____

2.0 SECURITIES

2.1 The security provisions selected are:

2.1.1 *[14.3]*	Variable Construction Guarantee	(Yes / No)	
2.1.2 *[14.4]*	Fixed Construction Guarantee and Payment Reduction	(Yes / No)	
2.1.3 *[14.5]*	Advanced Payment is required. Where "Yes"	Amount	**N/A**
2.1.4 *[14.5]*	An Advance Payment Guarantee to be provided	(Yes / No)	**No**

3.0 PAYMENT AND ADJUSTMENT OF PRELIMINARIES

3.1 **Payment of Preliminaries**

The payment of Preliminaries shall be according to the option selected by the **Contractor**. The amount included in each monthly **payment certificate** in respect of Preliminaries as stated in the **Contract Data** shall be:

3.1.1 **Option A**

Assessed by the **Principal Agent** as an amount prorated to the value of the work duly executed in the same ratio as the Preliminaries bears to the **contract sum** excluding:

- The amount for Preliminaries
- Any contingency sum
- Any amount in respect of **CPAP**

All inclusive of **tax.**

3.1.2 **Option B**

Calculated from the priced items in the **Bills of Quantities**. The **Contractor** and the **Principal Agent** shall agree on a division of the priced Preliminaries items into:

- An initial or establishment charge
- A monthly charge
- A final or dis-establishment charge

All inclusive of **tax.**

In arriving at such a division cognizance shall be taken of such factors as:

- Premiums for annually renewable insurance policies.
- Plant, scaffolding and the like remaining the property of the **Contractor** or the hiring company and the capital costs thereof not treated as part of the initial charge.

Where the initial **construction period** is extended the monthly charge shall be recalculated on the same basis as was originally applied but taking into account the revised **construction period** and the amounts already paid to the **Contractor.**

Should the **Contractor** and the **Principal Agent** be unable to agree such division then the **Principal Agent** shall make a division of the amount of Preliminaries to be incorporated in the valuations of each monthly **payment certificate.**

3.2 **Adjustment of Preliminaries**

The amount of items of Preliminaries shall be adjusted to take account of the theoretical financial effect which changes in time and/or value have on Preliminaries. Such ad adjustment shall be based on the particulars provided by the **Contractor** for this purpose in terms of Option A or B and shall preclude any further adjustment of Preliminaries.

Adjustment of Preliminaries in terms of Options A or B shall apply notwithstanding the actual employment of resources by the **Contractor** in the execution of the **works**. The adjustment of Preliminaries shall be based on the options as selected in the **Contractor's Tender.**

For the adjustment of the Preliminaries both the **contract sum** and the **contract value** shall exclude:

- The amount of Preliminaries
- Any contingency sum
- Any amount in respect of **CPAP**

All inclusive of **tax.**

3.2.1 **Option A**

The amount of Preliminaries shall be adjusted in the following categories:

- An amount which shall not be varied.
- An amount which shall be varied in proportion to the **contract value** as compared with the **contract sum.**
- An amount which shall be varied in proportion to the **construction period** as compared to the initial **construction period** excluding revisions to the **construction period** for which the **Contractor** is not entitled to adjustment of the **contract value** in terms of the **agreement.**

The **Contractor** shall, within fifteen (15) working days of taking possession of the **site**, give the **Principal Agent** a breakdown, subdivided into the above categories, of the amount for Preliminaries in tabulated form, all to the satisfaction of the **Principal Agent.**

Should the **Contractor** fail to provide such information within the period stipulated then the amount for Preliminaries shall be deemed to be subdivided into the following proportions:

- 10% (ten percent) which amount shall not be varied.
- 15% (fifteen percent) which amount shall be varied in proportion to the **contract value** as compared with the **contract sum.**
- 75% (seventy-five percent) which amount shall be varied in proportion to the **construction period** as compared with the initial **construction period.**

For a lump sum document, should the **Contractor** fail to identify the amount for Preliminaries, then such an amount shall be deemed to be 7,5% (seven and a half percent) of the contract sum excluding:

- Any contingency sum
- Any amount in respect of **CPAP**

All inclusive of **tax.**

Where sectional completion is required in terms of the agreement, the **Contractor** shall provide the **Principal Agent** with the division of the above categorised amounts into sections. Should the **Contractor** fail to provide such information within the period stipulated the categorised amounts shall be prorated to the value of each section.

3.2.2 **Option B**

The **Contractor** shall, within fifteen (15) **working days** of taking possession of the site, provide the **Principal Agent** with a detailed breakdown of the amount for Preliminaries. This breakdown shall set out, among others, full particulars of administrative, supervisory and other personnel, plant, transport and other resources and charges included in the amount for Preliminaries. The **Contractor** shall show the periods to which the individual items related with the charge rate for such items by means of a **programme** all to the satisfaction of the **Principal Agent.**

Where sectional completion is required in terms of the **agreement,** the **Contractor** shall provide the **Principal Agent** with details of the resources required for each section and those that are common to sections. Should the **Contractor** fail to provide such information within the period stipulated, Option A shall apply.

3.2.3 **Payment certificate cash flow**

The **Contractor** shall provide all reasonable assistance to the **Principal Agent** in the preparation of cash flow projections of claims for **payment certificates** where required by the **Employer**. The projections shall be based on the **programme** and shall be updated as and when the **programme** requires updating. The cooperation of the Contractor in terms of this item shall not prejudice his right to receive payment in terms of the **agreement.**

3.2.4	The **contract value** shall be adjusted according to **CPAP** [3.1]	(Yes / No)	**No**
3.2.5	Payment of Preliminaries [3.1.1-2]	(A or B)	
3.2.6	Adjustment of Preliminaries [3.2.1-2]	(A or B)	

4.0 EMPLOYER CHANGES TO JBCC STANDARD DOCUMENTS

4.1	Changes (if any) in terms of the Employer's Contract Data are accepted [3.11]. Where "no" an addendum referenced to this clause is to be attached.	(Yes / No)	**Yes. Refer to EC 6**

5.0 THE TENDER

5.1 This Tender is to be submitted to SANBI at the street address provided in the Invitation to Tender before the Tender closing date and time stated herein.

5.2 By the submission of this Tender to the **Employer,** the Tenderer offers and agrees to contract for, execute and complete the **works** for the Tender Sum as stated below.

5.3 Tenders will be opened in public directly after the stated closing time. Only the total Tender Sum as stated in each Tender will be announced.

5.4 The lowest or any Tender will not necessarily be accepted.

5.5 This Tender shall remain in full legal force for **one hundred and twenty (120) calendar days**. The Tenderer accepts liability for damages as may be suffered by the **Employer** should the Tender validity period not be honoured.

5.6 This Tender takes into account all listed items [4.0] for the purpose of preparing and submitting this Tender.

5.7 The successful Tenderer will be appointed in terms of the JBCC Principal Building Agreement.

5.8	**TENDER SUM COMPILATION**	**Amount**
5.8.1	Tenderer's work including **prime cost amounts**	R
5.8.2	**Employer allowances** stated by the **Principal Agent**	R
5.8.3	**SUB TOTAL**	R
5.8.4	*Add* **tax** on 5.8.3	R
5.8.5	**TOTAL TENDER SUM inclusive of tax**	R
5.8.6	Tender Sum in words	

Thus done and signed at ..... on .....

.....	.....
Name of Signatory	Capacity of Authorised Signatory
.....	.....
As witness	for and on behalf of the Tenderer, who warrants authorisation hereto

C1.3 Form of Construction Guarantee

C1.3.1 FIXED CONSTRUCTION GUARANTEE - JBCC 2000 PRINCIPAL BUILDING AGREEMENT (Edition 5.0 (Reprint 1) of July 2007)

To:
South African National Biodiversity Institute
Private Bag X101
Silverton
0184

Sir,

FIXED CONSTRUCTION GUARANTEE FOR THE EXECUTION OF A CONTRACT IN TERMS OF JBCC 2000 (5.0 EDITION (Reprint 1) JULY 2007)

1. With reference to the contract between .....(hereinafter referred to as the "**Contractor**") and the **South African National Biodiversity Institute** (hereinafter referred to as the "**Employer**"), **Contract/Tender No.: SANBI: G435/2022 for REQUEST FOR BIDS FOR THE APPOINTMENT OF A CONTRACTOR FOR THE CONSTRUCTION OF A NEW VISITORS' CENTRE, PARKING UPGRADES, LANDSCAPING, SECURITY UPGRADES AND ASSOCIATED CIVIL SERVICES FOR THE SOUTH AFRICAN NATIONAL BIODIVERSITY INSTITUTE AT THE THOHOYANDOU NATIONAL BOTANICAL GARDEN IN THOHOYANDOU**

(hereinafter referred to as the "contract") in the amount of

R ……..(insert amount), ….....

.....(insert amount in words), (hereinafter referred to as the contract sum),

I/We, ...

in my/our Capacity as ..... and hereby

representing .....

(hereinafter referred to as the "**Guarantor**") advise that the **Guarantor** holds at the **Employer's** disposal the sum of R ..... , (insert amount in figures)

.....(insert amount in words) being 5% of the contract sum (excluding VAT), for the due fulfillment of the contract.

2. The **Guarantor** hereby renounces the benefits of the exceptions *non numeratae punia; non causa debiti; excussionis et divisionis;* and *de duobus vel pluribus reis debendi* which could be pleaded against the enforcement of this guarantee, with the meaning and effect whereof I/we declare myself/ourselves to be conversant, and undertake to the **Employer** the amount guaranteed, on receipt of a written demand from the **Employer** to do so, stating that the **Employer** has a right of recovery against the **Contractor** in terms of 33.0 of the contract.

3. Subject to the above, but without in any way detracting from the **Employer's** rights to adopt any of the procedures provided for in the contract, the said demand can be made by the **Employer**, at any stage prior to the expiry of this guarantee.
4. The amount id by the **Guarantor** in terms of this guarantee may be retained by the **Employer** on condition that upon the issue of the last final **payment certificate**, the **Employer** shall account to the **Guarantor** showing how this amount has been expended and refund any balance due to the **Guarantor**.

5. The **Employer** shall have the absolute right to arrange his affairs with the **Contractor** in any manner which the **Employer** deems fit and the **Guarantor** shall not have the right to claim his release on account of any conduct alleged to be prejudicial to the **Guarantor**. Without derogating from the aforegoing, any compromise, extension of the **construction period**, indulgence, release or variation of the **Contractor's** obligation shall not affect the validity of this guarantee.

6. The **Guarantor** reserves the right to withdraw from this guarantee at any time by depositing the guaranteed amount with the **Employer**, whereupon the Guarantor's liability seizes.

7. This guarantee is neither negotiable nor transferable, and

   (a) must be surrendered to the **Guarantor** at the time when the **Employer** accounts to the **Guarantor** in terms of clause 4 above, or
   (b) shall lapse on the date of the last **certificate of Practical Completion**.

8. This guarantee shall not be interpreted as extending the **Guarantor's** liability to anything more than payment of the amount guaranteed.

Signed at ..... on this ..... day of ..... 20.....

AS WITNESS

1. .....

2. .....

.....
By and on behalf of

.....

.....

(insert the name and physical address of the Guarantor)

Name: .....

Capacity: .....
(Duly authorised thereto by resolution attached marked Annexure A)

Date: .....

A. No alterations and/or additions of the wording of this form will be accepted.

B. The physical address of the Guarantor must be clearly indicated and will be regarded as the Guarantor's *domicilium citandi et executandi,* for all purposes arising from this guarantee.

C. This GUARANTEE must be returned to: .....

.....

C1.3.2: VARIABLE CONSTRUCTION GUARANTEE - JBCC 2000 PRINCIPAL BUILDING AGREEMENT (Edition 5.0 (Reprint 1) of July 2007)

To:
South African National Biodiversity Institute
Private Bag X101
Silverton
0184

Sir,

VARIABLE CONSTRUCTION GUARANTEE FOR THE EXECUTION OF A CONTRACT IN TERMS OF JBCC 2000 (5.0 EDITION JULY 2007)

5. With reference to the contract between .....(hereinafter referred to as the "**Contractor**") and the **South African National Biodiversity Institute** (hereinafter referred to as the "**Employer**"), **Contract/Tender No.: SANBI: G435/2022** for **REQUEST FOR BIDS FOR THE APPOINTMENT OF A CONTRACTOR FOR THE CONSTRUCTION OF A NEW VISITORS' CENTRE, PARKING UPGRADES, LANDSCAPING, SECURITY UPGRADES AND ASSOCIATED CIVIL SERVICES FOR THE SOUTH AFRICAN NATIONAL BIODIVERSITY INSTITUTE AT THE THOHOYANDOU NATIONAL BOTANICAL GARDEN IN THOHOYANDOU**

(hereinafter referred to as the "contract") in the amount of

R ……..(insert amount), ….....

.....(insert amount in words), (hereinafter referred to as the contract sum),

I/We, ...

in my/our Capacity as ..... and hereby

representing .....

(hereinafter referred to as the "**Guarantor**") advise that the **Guarantor** holds at the **Employer's** disposal the sum of R ..... , (insert amount in figures)

.....(insert amount in words) being 10% of the contract sum (excluding VAT), for the due fulfillment of the contract.

1. I / We advise that the **Guarantor's** liability in terms of this guarantee shall be as follows:

   (a) From and including the date on which this guarantee is issued and up to and including the date of payment of the amount in the last final **payment certificate**, the **Guarantor** will be liable in terms of this guarantee to the maximum amount of 10% of the **contract sum** (excluding VAT);

   (b) The **Guarantor's** liability shall reduce to 3 % of the **contract value** (excluding VAT) as determined at the date of the last **certificate of practical completion**, subject to such amount not exceeding 10% of the **contract sum** (excluding VAT).

   (c) The **Guarantor's** liability shall reduce to 1 % of the **contract value** (excluding VAT) as determined at the date of the last **certificate of final completion**, subject to such amount not exceeding 10 % of the **contract sum** (excluding VAT).

   (d) This guarantee shall expire on the date of the last **final payment certificate**.

   (e) The **Practical Completion Certificate** and the **Final Completion Certificate** referred to in this guarantee shall mean the certificates issued in terms of the contract.

2. The **Guarantor** hereby renounces the benefits of the exceptions *non numeratae punia; non causa debiti; excussionis et divisionis;* and *de duobus vel pluribus reis debendi* which could be pleaded against the enforcement of this guarantee, with the meaning and effect whereof I/we declare myself/ourselves to be conversant, and undertake to the **Employer** the amount guaranteed on receipt of a written demand from the **Employer** to do so, stating that the **Employer** has a right of recovery against the **Contractor** in terms of 33.0 of the contract.

4. Subject to the above, but without in any way detracting from the **Employer's** rights to adopt any of the procedures provided for in the contract, the said demand can be made by the **Employer** at any stage prior to the expiry of this guarantee.

5. The amount id by the **Guarantor** in terms of this guarantee may be retained by the **Employer** on condition that upon the issue of the last **final payment certificate**, the **Employer** shall account to the **Guarantor** showing how this amount has been expended and refund any balance due to the **Guarantor**.

6. The **Employer** shall have the absolute right to arrange his affairs with the **Contractor** in any manner which the **Employer** deems fit and the **Guarantor** shall not have the right to claim his release on account of any conduct alleged to be prejudicial to the **Guarantor**. Without derogating from the aforegoing, any compromise, extension of the construction period, indulgence, release or variation of the **Contractor's** obligation shall not affect the validity of this guarantee.

7. The **Guarantor** reserves the right to withdraw from this guarantee at any time by depositing the amount guaranteed with the **Employer**, whereupon the **Guarantor's** liability ceases.

8. This guarantee is neither negotiable nor transferable, and

   (a) must be surrendered to the **Guarantor** at the time when the **Employer** accounts to the **Guarantor** in terms of clause 5 above, or
   (b) shall lapse in accordance with clause 2(d) above.

9. This guarantee shall not be interpreted as extending the **Guarantor's** liability to anything more than the payment of the amount guaranteed.

Signed at ..... on this ..... day of ..... 20.....

AS WITNESS

1. .....

2. .....

.....
By and on behalf of

.....

.....

(insert the name and physical address of the Guarantor)

Name: .....

Capacity: .....
(Duly authorised thereto by resolution attached marked Annexure A)

Date: .....

A. **No alterations and/or additions of the wording of this form will be accepted.**

B. **The physical address of the Guarantor must be clearly indicated and will be regarded as the Guarantor's *domicilium citandi et executandi*, for all purposes arising from this guarantee.**

C. **This GUARANTEE must be returned to:** .....

.....

C1.4 Occupational Health and Safety Agreement 37(2)

AGREEMENT MADE AND ENTERED INTO BETWEEN THE

SOUTH AFRICAN NATIONAL BIODIVERSITY INSTITUTE (SANBI)

(hereinafter called the **"EMPLOYER"**)

.....

(Contractor / Mandatary / Company / CC Name)

IN TERMS OF SECTION 37(2) OF THE OCCUPATIONAL HEALTH AND SAFETY ACT, ACT NO. 85 OF 1993 AS AMENDED

I, ... , representing

..... , as an Employer in its own right, do hereby undertake to ensure, as far as is reasonably practicable, that all work will be performed, and all equipment, machinery or plant used in such a manner as to comply with the provisions of the Occupational Health and Safety Act (OHSA) and the Regulations promulgated there under.

I furthermore confirm that I/we am/are registered with the Compensation Commissioner and that all registration and assessment monies due to the Compensation Commissioner have been fully paid or that I/we are insured with an approved licensed compensation insurer.

COID ACT Registration Number: .....

Or Compensation Insurer: ..... Policy No.: .....

I undertake to appoint, where required, suitable competent persons, in writing, in terms of the requirements of OHSA and the Regulations and to charge him / them with the duty of ensuring that the provisions of OHSA and Regulations as well as the Council's Special Conditions of Contract, Way Leave, Lock-Out and Work Permit Procedures are adhered to as far as reasonably practicable.

I further undertake to ensure that any Sub-contractors employed by me will enter into an Occupational Health and Safety Agreement separately, and that such Sub-contractors comply with the conditions set.

I hereby declare that I have read and understand the appended Occupational Health and Safety Conditions and undertake to comply therewith at all times.

I hereby also undertake to comply with the Occupational Health and Safety Specification and Plan.

Signed at ..... this ..... day of .....20 .....

....
WITNESS MANDATARY

Signed at ..... this ..... day of .....20 .....

....
WITNESS FOR AND ON BEHALF OF THE EMPLOYER

OCCUPATIONAL HEALTH AND SAFETY CONDITIONS

1. The Chief Executive Officer of the Contractor shall assume the responsibility in terms of Section 16(1) of the Occupational Health and Safety Act (as amended). Should the Contractor assign any duty in terms of Section 16(2), a copy of such assignment shall immediately be provided to the representative of the Employer as defined in the Contract.

2. All work performed on the Employer's premises shall be performed under the supervision of the construction supervisor who understand the hazards associated with any work that the Contractor performs on the site in terms of Construction Regulations 2003.

3. The Contractor shall appoint a Competent Person who shall be trained on any occupational health and safety aspect pertaining to them or to the work that is to be performed.

4. The Contractor shall ensure that he familiarises himself with the requirements of the Occupational Health and Safety Act and that he, his employees, and any Sub-contractors, comply with them.

5. Discipline in the interests of occupational health and safety shall be strictly enforced.

6. Personal protective equipment shall be issued by the Contractor as required and shall be worn at all times where necessary.

7. Written safe work procedures and appropriate precautionary measures shall be available and enforced, and all employees shall be made conversant with the contents of these practices.

8. No substandard equipment/machinery/articles or substances shall be used on the site.

9. All incidents referred to in terms of Section 24 of the Occupational Health and Safety Act shall be reported by the Contractor to the Department of Labour and the Employer.

10 The Employer hereby obtains an interest in the issue of any formal inquiry conducted in terms of Section 32 of the Occupational Health and Safety Act and into any incident involving a Contractor and/or his employees and/or his Sub-contractor/s.

11. No use shall be made of any of the Employer's machinery / plant / equipment / substance / personal protective equipment or any other article without prior arrangement and written approval.

12. No alcohol or any other intoxicating substance shall be allowed on the site. Any person suspected of being under the influence of alcohol or any other intoxicating substance shall not be permitted access to or allowed to remain on the site.

13. Prior to commencement of any work, verified copies of all documents mentioned in the agreement, must be presented to the Employer.

PART C: THE CONTRACT
Part C2: Pricing Data

C2.1 Pricing Instructions

1. GENERAL INFORMATION

a. Bills of Quantities
The **Bills of Quantities** forms part of and must be read and priced in conjunction with all the other documents forming part of the **contract documents**, the Standard Conditions of Tender, Conditions of Contract, Specifications, Drawings and all other relevant documentation.

b. Value Added Tax
The **Contract Sum** must include for Value Added Tax (VAT). All rates, provisional sums, etc. in the **Bills of Quantities** must however be net (exclusive of VAT) with VAT calculated and added to the total value thereof in the Final Summary.

c. Contract Price Adjustment
Tenderers are to take note that contract price adjustments are not applicable to this contract

2. PRICING INFORMATION

1. These Bills of Quantities contain sequentially numbered pages as indicated in the contents list. Tenderers are required to check that the pages in their Bills of Quantities are complete/correct. If any pages are duplicated or omitted, or if any quantity or typing is unclear or if the Bills of Quantities contain any obvious errors, the Tenderer shall immediately notify the Principal Agent, so that the problem may be rectified. No responsibility for any errors arising from any of the above shall be accepted by the Principal Agent.

2. The Bills of Quantities form part of and shall be read in conjunction with the specification, which contains full description of the work required to be performed and the materials and equipment to be supplied and used in the execution of the works. Tenderers shall refer to the specification for the full meaning and description of work to be executed and materials and equipment to be supplied or used in the execution of the work.

3. Tenders shall be submitted with Bills of Quantities completed in full. Non or partial completion of the Bills of Quantities shall render Tenders liable for disqualification.

4. The total Tender Price as carried forward to the Form of Offer and Acceptance, after correction for arithmetic extension errors, etc. shall be the Contract Price as awarded to the successful Tenderer. Tenderers are requested to check multiplication and addition of the Bills of Quantities. The rate(s) submitted shall be regarded as the price offered per item.

5. No changes, additions or omissions to the contents of the Bills of Quantities shall be permitted. If any changes, additions or omissions are made these shall not be recognised and the original wording of the Bills of Quantities shall apply.

6. The priced Bills of Quantities (of Tenderer) shall be checked by the Principal Agent. The Principal Agent reserves the right to request adjustments to one or more individual Tender Prices and to rectify contradictions and thereby alter the total Tender Price as submitted. The acceptance of this Tender does not preclude the Principal Agent from querying or requesting of the Contractor to adjust the rates at any stage during the contract period or any extension thereto.

7. The responsibility of the accuracy of the quantities included in the Bills of Quantities, remains with the person who prepared the bills. The Tenderer is relieved from the responsibility of the measurement of quantities at Tender stage and the Tender Amounts shall be for the quantities as listed in the bills. It is, however, expected from the Tenderer to include for minor construction items such as would be required for the complete execution of works in accordance with the specification.

8. The quantities in these Bills of Quantities shall not be used for the ordering of materials.

9. Changes in the scope of works included in the Bills of Quantities shall be permitted and shall be measured and priced at the tariffs as included in the Bills of Quantities and shall form an addition to or omission from the total of the Bills of Quantities. Any changes not covered by any rates in the Bills of Quantities, shall be agreed and priced as non-schedule items in accordance with the conditions of contract.

10. The extent and value of variations shall be in accordance with the conditions of contract. Variations to the works prior to the execution thereof shall be priced as above. Variations to work already executed, shall not necessarily be priced in accordance with the Bills of Quantities and shall be judged individually on merit.

11. Except where the separate rate for the material and labour components of any item is specifically called for, the unit price of such item shall be deemed to include the supply and installation of that item.

    The description of any items shall, except where otherwise specified, allow for the purchase, delivery, off-loading, storage, packing, lifting, placing, positioning and fixing in position, cutting and wastage, dies and patterns, models and equipment, temporary work, return of packing material, fixing costs, profit or other obligations of the contract arising out of the conditions of contract. All items' prices shall exclude VAT but include any other tax or levy as applicable.

    All items are measured to the net final quantity as indicated on the drawings with the completed work in the position as indicated on the drawing. All prices and rates shall allow for wastage for whatever reason, irrespective of any other standard measurement which may be currently used elsewhere.

12. Should the Contractor identify any additional issues or items which in his opinion are necessary for the complete and proper execution of the works, he shall identify such items in a covering letter attached to his Tender and submit rates for these items. Mistakes in the physical measurement of items in the Bills of Quantities shall be rectified, but no claim shall be considered for the non-measurement of doubtful or minor items or claims resulting of criticism of method of measurement used or descriptions given. The priced Bills of Quantities shall not be adjusted on the grounds of the items which in the opinion of the Tenderer should have been brought into account unless so detailed in the accompanying letter.

13. The Bills of Quantities shall be adjusted to reflect the quantities of materials used on completion of whole or part of the works as a result of remeasurement, qualification or variations. The remeasured quantities shall form the basis for the calculation of payment certificates. The Bills of Quantities are not intended for the ordering of materials, etc. and the Contractor is advised to extract the quantities for the ordering of materials directly from the drawings and specification(s). Any order placed directly from the Bills of Quantities, shall be solely at the Contractor's risk.

14. The unit rates as entered in the Bills of Quantities with the exclusion of dayworks items, shall in all cases include any present and applicable sales tax or similar statutory duties.

15. Labour-intensive Works:
    a) Those parts of the contract to be constructed using labour-intensive methods will be identified by the contractor in the Bills of Quantities and priced accordingly. 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 work, is a variation to the contract. The items identified as labour intensive 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.
    b) Payment for items which are identified by the contractor to be constructed labour-intensively will not be made unless they are constructed using labour-intensive methods. Any unauthorized 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.
    c) The contractor is to provide a schedule of identified labour-intensive items identified in the Bills of Quantities. This schedule will be provided to the principal agent timeously once site is handed over.

16. The amount of the Preliminary and General Section to be included in each monthly payment certificate shall be assessed as an amount prorated to the value of the work duly executed in the same ratio as the preliminaries bears to the total of prices excluding any contingency sum, the amount for the Preliminary and General Section and any amount in respect of contract price adjustment provided for in the contract.

17. Where the initial contract period is extended, the monthly charge shall be calculated on the basis as set out in 16 but taking into account the revised period for completing the works.

18. The amount or items of the Preliminary and General Section shall be adjusted to take account of the theoretical

financial effect which changes in time or value (or both) have on this section. Such adjustments shall be based on adjustments in the following categories as recorded in the Bills of Quantities:

- an amount which is not to be varied, namely Fixed (F)
- an amount which is to be varied in proportion to the contract value, namely Value Related (V); and
- an amount which is to be varied in proportion to the contract period as compared to the initial construction period excluding revisions to the construction period for which no adjustment to the contractor is not entitled to in terms of the contract, namely Time Related (T).

19. Where the initial contract period is extended, the monthly charge shall be calculated on the basis as set out in 16 but taking into account the revised period for completing the works. Where no provision is made in the Bills of Quantities to indicate which of the three categories in 17 apply or where no selection is made, the adjustments shall be based on the following breakdown:
    - 10 percent is Fixed;
    - 15 percent is Value Related
    - 75 percent is Time Related.

20. The adjustment of the Preliminary and General Section shall apply notwithstanding the actual employment of resources in the execution of the works. The contract value used for the adjustment of the Preliminary and General Section shall exclude any contingency sum, the amount for the Preliminary and General Section and any amount in respect of contract price adjustment provided for in the contract. Adjustments in respect of any staged or sectional completion shall be prorated to the value of each section.

21. The quantities of work as measured and accepted and certified for payment in accordance with the conditions of contract, and not the quantities stated 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 difference between the quantities in the Bill of Quantities and the quantities certified for payment. The Ordering of materials is not to be based on the Bill of Quantities, but only on information issued for construction purposes.

22. For the purposes of this Bill of Quantities, the following words shall have the meanings hereby assigned to them:

23. Unit : The unit of measurement for each item of work as defined in the Standardized, Project or Particular Specifications
    - Quantity: The number of units of work for each item
    - Rate : The payment per unit of work at each which the Tenderer tenders to do the work
    - Amount : The quantity of an item multiplied by the tendered rate of the (same) item
    - 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

24. The units of measurements indicated in the bill of Quantities are metric units. The following abbreviations may appear in the Bill of Quantities:
    - mm = millimetre
    - m = metre
    - km = kilometre
    - km-pass = kilometre-pass
    - m^2 = square metre
    - m^2-pass = square metre-pass
    - ha = hectare
    - m^3 = cubic metre
    - m^3-km = cubic metre-kilometre
    - kW = kilowatt
    - kN = kilonewton
    - kg = kilogram
    - t = ton (1 000 kg)
    - % = per cent
    - MN = meganewton
    - MN-m = meganewton-metre
    - PC Sum = Prime Cost Sum (Cost of material supplied excluding vat, profit and labour, but including transport and delivery costs)
    - Prov Sum= Provisional Sum

25. Occupational Health and Safety Act and Construction Regulations
    A payment item in the Bill of Quantities has been made to allow the tenderers to price for compliance with OHSA and the Construction Regulations. This payment item must also include for the erection of Visitors Indemnity Signs and for ensuring that visitors receive instructions and sign an indemnity declaration.

26. The Tenderer must note that this is a fixed rate contract, and that the Tenderer is not entitled to adjust the rates/prices for escalation

27. The Tenderer must take note that this is a Bill of Provisional Quantities and that the total number of units will be re-measured.

28. A price or rate shall be entered against each item in the Bill of Quantities, whether the quantities are stated or not. An item against which no price is entered will be covered by the other prices or rates in the Schedule.

29. The short descriptions of the items of payment given in the bill of quantities are only for the purposes of identifying the items. Detail regarding the extent of the work entailed under each item is provided in the Scope.

30. Unless otherwise stated, items are measured net in accordance with the drawings and no allowance is made for waste.

31. The prices and rates to be inserted in the Bills of Quantities are to be the full inclusive for the work described under the several items. Such prices and rates shall cover all costs and expenses that may be required in and for the execution of the work described, and shall cover the cost of all general risks, liabilities and obligations set forth or implied in the documents on which the tender is based, as well as overhead charges and profit. Reasonable prices shall be inserted as these will be used as a basis for assessment of payment for additional work that may have to be carried out.

32. Except where rates only are required, insert all amounts to be included in the total tendered price in the "amount" column and show the corresponding total tendered price.

33. It will be assumed that prices included in the Bills of Quantities are based on Acts, Ordinances, Regulations, By laws, International Standards and National Standards that were published 28 days before the closing date for tenders. (Refer to www.stanza.org.za or www.iso.org for information on standards).

34. The quantities contained in the Bill of Quantities may not be final and do not necessarily represent the actual amount of work to be done. The Bills of Quantities is not intended for the ordering of materials. Any ordering of materials, based on the Bills of Quantities, is at the Contractor's risk.

35. The descriptions provided trades must be read in conjunction with the Architect's and Engineer's Drawings, Details, Schedules and Specifications and the tenderer must price accordingly.

C2.2 Bills of Quantities

THOHOYANDOU

BOTANICAL GARDENS

CONSTRUCTION OF NEW VISITORS AND INFORMATION CENTRE INCLUDING ASSOCIATED CIVIL WORKS

BILLS OF QUANTITIES

Item No		Quantity	Rate	Amount

SECTION NO. 1

BILL NO. 1

BILL NO. 1
PRELIMINARIES

BUILDING AGREEMENT AND PRELIMINARIES

The **JBCC** Principal Building Agreement (Edition 6.2 - May 2018) prepared by the Joint Building Contracts Committee shall be the applicable building agreement, amended as hereinafter described

The **JBCC** Principal Building Agreement **contract data** form an integral part of this **agreement**

The **JBCC** General Preliminaries (May 2018) published by the Joint Building Contracts Committee for use with the **JBCC** Principal Building Agreement (Edition 6.2 - May 2018) shall be deemed to be incorporated in these **bills of quantities**, amended as hereinafter described

The **contractor** is deemed to have referred to the abovementioned documents for the full intent and meaning of each clause

The clauses in the abovementioned documents are hereinafter referred to by clause number and heading only

Where any item is not relevant to this **agreement** such item is marked N/A signifying "not applicable"

Where standard clauses or alternatives are not entirely applicable to this **agreement** such amendments, modifications, corrections or supplements as will apply are given under each relevant clause heading and such amendments, modifications, corrections or supplements shall take precedence notwithstanding anything to the contrary contained in the above mentioned documents

Carried to Collection R

PREAMBLES FOR TRADES

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

Supplementary preambles and/or specifications are incorporated in these **bills of quantities** to satisfy the requirements of this project. Such supplementary preambles and/or specifications shall take precedence over the provisions of the General Preambles

The **contractor's** prices for all items throughout these **bills of quantities** shall take account of and include where applicable for all of the obligations, requirements and specifications given in the General Preambles and in any supplementary preambles and/or specifications

STRUCTURE OF THIS PRELIMINARIES BILL

Section A : A recital of the headings of the individual clauses in the aforementioned **JBCC** Principal Building Agreement

Section B : A recital of the headings of the individual clauses in the aforementioned **JBCC** General Preliminaries

Section C : Any special clauses to meet the particular circumstances of the project

PRICING OF PRELIMINARIES

Should the **contractor** select Option A in the **contract data** for the adjustment of **preliminaries**, the amounts entered against the relevant items in these **preliminaries** are to be divided into one or more of the three categories provided namely fixed (F), value related (V) and time related (T)

SECTION A: PRINCIPAL BUILDING AGREEMENT

Carried to Collection R

Section No. 1
SECTION 1: PRELIMINARIES
Bill No. 1
Preliminaries
Thohoyandou Botanical Garden (TBG)

Interpretation (A1-A7)

1 Clause 1.0 - Definitions and interpretation

Pricing of bills of quantities

The **contractor** is to allow opposite each item for all costs in connection therewith. All prices to include, unless otherwise stated, for all materials, fabrication, conveyance and delivery, unloading, storing, unpacking, hoisting, labour, setting, fitting and fixing in position, cutting and waste (except where to be measured in accordance with the standard system of measurement), patterns, models and templates, plant, temporary works, returning of packaging, duties, taxes (other than Value Added Tax), imposts, establishment charges, overheads, profit and all other obligations arising out of this **agreement**. Value Added Tax (VAT) is to be separately stated on the summary page of these **bills of quantities**

Items left unpriced will be deemed to be covered in prices against other items throughout these **bills of quantities** and no claim for any extras arising out of the **contractor's** omission to price any item will be entertained

Prices for all **construction equipment**, temporary works, services and other items shall include for the supply, maintenance, operating cost and subsequent removal and making good as necessary

Abbreviated descriptions

The items in these **bills of quantities** utilise abbreviated descriptions. It is the intention that the abbreviated descriptions be fully described when read with the applicable measuring system and the relevant preambles and/or specifications. However, should the full intent and meaning of any description not be clear, the **contractor** shall, before submission of his tender, call for a written directive from the **principal agent**, failing which it shall be assumed that the **contractor** has allowed in his pricing for materials and workmanship in terms of international best practice

Legal status of contractor

Carried to Collection R

If the **contractor** constitutes a joint venture, consortium or other unincorporated grouping of two or more persons then:

1. These persons are deemed to be jointly and severally liable to the **employer** for the performance of this **agreement**

2. These persons shall notify the **employer** of their leader who has assigned authority to bind the **contractor** and each of these persons

3. The **contractor** shall not alter its composition or legal status without the prior written consent of the **employer**

F:..... V:.....
T:..... Item

2 Clause 2.0 - **Law**, regulations and **notices**

3 Clause 3.0 - Offer and acceptance

F:..... V:.....
T:.....
Item

Amend clause 3.3 to read as follows:
This agreement shall come into force on the date as stated in Form of Offer and Acceptance effectively communicated and continue to be of force and effect until the end of the latent defects liability period (22.0) notwithstanding termination (29.0) or the certification of final completion (21.0) and final payment (25.0)

Add new sub-clause 3.6 as follows:
The Form of Offer and Acceptance and schedule of Deviations shall form part of the contract document and constitutes the tender acceptance and agreement.

4 Clause 4.0 - Cession and assignment

F:..... V:.....
T:..... Item

5 Clause 5.0 - Documents

Carried to Collection R

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Value Added Tax

Provision is made in the summary page of these **bills of quantities** for the inclusion of Value Added Tax (VAT)

Priced document as specification

Clause 5.4 is deemed to be deleted

The **principal agent** shall decide which portion of the **priced document** may be used as a specification of **materials and goods** or methods, if any

Electronic issue of drawings

All drawings for this project will be issued electronically and the **contractor** shall be deemed to have received such drawings on the date that such drawings have been dispatched electronically [5.6]

F:..... V:.....
T:..... Item

6 Clause 6.0 - **Employer's agents**

Delegated authority

The authority of the **principal agent** to issue **contract instructions** [17.1] and perform duties for specific aspects of the **works** is delegated to **agents** as follows [6.2]. This does not preclude the **principal agent** from issuing such **contract instructions**:

1. Architect

1.1 Duties [6.2] :

The architect is responsible for the architectural design, functional design and quality inspection of the **works**

1.2 **Contract instructions** [6.2; 17.1] :

1.2.1 Rectification of discrepancies, errors in description or quantity or omission of items in the **agreement** other than in the **JBCC** Principal Building Agreement

Carried to Collection R

Section No. 1
SECTION 1: PRELIMINARIES
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Preliminaries
Thohoyandou Botanical Garden (TBG)

1.2.2 Alteration to design, standards or quantity of the **works** provided that such **contract instructions** shall not substantially change the scope of the **works**

1.2.3 The **site** [13.0]

1.2.4 Compliance with the **law**, regulations and bylaws [2.1]

1.2.5 Provision and testing of samples of **materials and goods** and/or of finishes and assemblies of elements of the **works**

1.2.6 Opening up of work for inspection, removal or re-execution [23.2.4; 26.4.2]

1.2.7 Removal or re-execution of work

1.2.8 Removal or substitution of any **materials and goods**

1.2.9 Protection of the **works**

1.2.10 Making good physical loss and repairing damage to the **works** [23.2.2]

1.2.11 Rectification of **defects** [21.2]

1.2.12 A **list for practical completion** specifying outstanding or defective work to be rectified to achieve **practical completion**, a **list for completion** and a **list for final completion** specifying outstanding or defective work to be rectified to achieve **final completion**

1.2.13 Expenditure of **budgetary allowances**, **prime cost amounts** and **provisional sums**

1.2.14 Appointment of a **subcontractor** [14.0; 15.0]

1.2.15 Work by **direct contractors** [16.0]

Carried to Collection R

Section No. 1
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1.2.16 On suspension or termination, protection of the **works**, removal of **construction equipment** and surplus **materials and goods** [29.0]

2. Quantity surveyor

2.1 Duties [6.2] :

The quantity surveyor is responsible for all measurements, valuations, financial assessments and all other quantity surveying and cost control functions of the **works**

2.2 **Contract instructions** [6.2; 17.1] :

2.2.1 No **contract instructions** delegated to the quantity surveyor

3. Civil and structural engineer

3.1 Duties [6.2] :

The civil and structural engineer is responsible for all aspects of civil and structural engineering design and quality inspection of the **works**

3.2 **Contract instructions** [6.2; 17.1] :

3.2.1 Rectification of discrepancies, errors in description or quantity or omission of items in the **agreement** other than in the **JBCC** Principal Building Agreement

3.2.2 Alteration to design, standards or quantity of the **works** provided that such **contract instructions** shall not substantially change the scope of the **works**

3.2.3 The **site** [13.0]

3.2.4 Compliance with the **law**, regulations and bylaws [2.1]

3.2.5 Provision and testing of samples of **materials and goods** and/or of finishes and assemblies of elements of the **works**

Carried to Collection R

3.2.6 Opening up of work for inspection, removal or re-execution [23.2.4; 26.4.2]

3.2.7 Removal or re-execution of work

3.2.8 Removal or substitution of any **materials and goods**

3.2.9 Protection of the **works**

3.2.10 Making good physical loss and repairing damage to the **works** [23.2.2]

3.2.11 Rectification of **defects** [21.2]

3.2.12 A **list for practical completion** specifying outstanding or defective work to be rectified to achieve **practical completion**, a **list for completion** and a **list for final completion** specifying outstanding or defective work to be rectified to achieve **final completion**

3.2.13 Expenditure of **budgetary allowances**, **prime cost amounts** and **provisional sums**

4. Mechanical engineer

4.1 Duties [6.2] :

The mechanical engineer is responsible for all aspects of mechanical engineering design and quality inspection of the **works** and, where appointed by the **employer** for quantity surveying services in respect of the mechanical installations, for all measurements, valuations, financial assessments and all other quantity surveying and cost control functions

4.2 **Contract instructions** [6.2; 17.1] :

4.2.1 Rectification of discrepancies, errors in description or quantity or omission of items in the **agreement** other than in the **JBCC** Principal Building Agreement

Carried to Collection R

4.2.2 Alteration to design, standards or quantity of the **works** provided that such **contract instructions** shall not substantially change the scope of the **works**

4.2.3 Compliance with the **law**, regulations and bylaws [2.1]

4.2.4 Provision and testing of samples of **materials and goods** and/or of finishes and assemblies of elements of the **works**

4.2.5 Opening up of work for inspection, removal or re-execution [23.2.4; 26.4.2]

4.2.6 Removal or re-execution of work

4.2.7 Removal or substitution of any **materials and goods**

4.2.8 Protection of the **works**

4.2.9 Making good physical loss and repairing damage to the **works** [23.2.2]

4.2.10 Rectification of **defects** [21.2]

4.2.11 A **list for practical completion** specifying outstanding or defective work to be rectified to achieve **practical completion**, a **list for completion** and a **list for final completion** specifying outstanding or defective work to be rectified to achieve **final completion**

4.2.12 Expenditure of **budgetary allowances**, **prime cost amounts** and **provisional sums**

5. Electrical engineer

Carried to Collection R

5.1 Duties [6.2] :

The electrical engineer is responsible for all aspects of electrical engineering design and quality inspection of the **works** and, where appointed by the **employer** for quantity surveying services in respect of the electrical installations, for all measurements, valuations, financial assessments and all other quantity surveying and cost control functions

5.2 **Contract instructions** [6.2; 17.1] :

5.2.1 Rectification of discrepancies, errors in description or quantity or omission of items in the **agreement** other than in the **JBCC** Principal Building Agreement

5.2.2 Alteration to design, standards or quantity of the **works** provided that such **contract instructions** shall not substantially change the scope of the **works**

5.2.3 Compliance with the **law**, regulations and bylaws [2.1]

5.2.4 Provision and testing of samples of **materials and goods** and/or of finishes and assemblies of elements of the **works**

5.2.5 Opening up of work for inspection, removal or re-execution [23.2.4; 26.4.2]

5.2.6 Removal or re-execution of work

5.2.7 Removal or substitution of any **materials and goods**

5.2.8 Protection of the **works**

5.2.9 Making good physical loss and repairing damage to the **works** [23.2.2]

5.2.10 Rectification of **defects** [21.2]

Carried to Collection R

5.2.11 A **list for practical completion** specifying outstanding or defective work to be rectified to achieve **practical completion**, a **list for completion** and a **list for final completion** specifying outstanding or defective work to be rectified to achieve **final completion**

5.2.12 Expenditure of **budgetary allowances**, **prime cost amounts** and **provisional sums**

6. Wet services engineer

6.1 Duties [6.2] :

The wet services engineer is responsible for all aspects of wet services engineering design and quality inspection of the **works**

6.2 **Contract instructions** [6.2; 17.1] :

6.2.1 Rectification of discrepancies, errors in description or quantity or omission of items in the **agreement** other than in the **JBCC** Principal Building Agreement

6.2.2 Alteration to design, standards or quantity of the **works** provided that such **contract instructions** shall not substantially change the scope of the **works**

6.2.3 Compliance with the **law**, regulations and bylaws [2.1]

6.2.4 Provision and testing of samples of **materials and goods** and/or of finishes and assemblies of elements of the **works**

6.2.5 Opening up of work for inspection, removal or re-execution [23.2.4; 26.4.2]

6.2.6 Removal or re-execution of work

6.2.7 Removal or substitution of any **materials and goods**

6.2.8 Protection of the **works**

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Thohoyandou Botanical Garden (TBG)

6.2.9 Making good physical loss and repairing damage to the **works** [23.2.2]

6.2.10 Rectification of **defects** [21.2]

6.2.11 A **list for practical completion** specifying outstanding or defective work to be rectified to achieve **practical** completion, a **list for completion** and a **list for final completion** specifying outstanding or defective work to be rectified to achieve **final completion**

6.2.12 Expenditure of **budgetary allowances**, **prime cost amounts** and **provisional sums**

7. Fire consultant

7.1 Duties [6.2] :

The fire consultant is responsible for all aspects of rational fire design and quality inspection of the **works**

7.2 **Contract instructions** [6.2; 17.1] :

7.2.1 Rectification of discrepancies, errors in description or quantity or omission of items in the **agreement** other than in the **JBCC** Principal Building Agreement

7.2.2 Alteration to design, standards or quantity of the **works** provided that such **contract instructions** shall not substantially change the scope of the **works**

7.2.3 Compliance with the **law**, regulations and bylaws [2.1]

7.2.4 Provision and testing of samples of **materials and goods** and/or of finishes and assemblies of elements of the **works**

7.2.5 Opening up of work for inspection, removal or re-execution [23.2.4; 26.4.2]

7.2.6 Removal or re-execution of work

Carried to Collection R

7.2.7 Removal or substitution of any **materials and goods**

7.2.8 Protection of the **works**

7.2.9 Making good physical loss and repairing damage to the **works** [23.2.2]

7.2.10 Rectification of **defects** [21.2]

7.2.11 A **list for practical completion** specifying outstanding or defective work to be rectified to achieve **practical completion**, a **list for completion** and a **list for final completion** specifying outstanding or defective work to be rectified to achieve **final completion**

7.2.12 Expenditure of **budgetary allowances**, **prime cost amounts** and **provisional sums**

8. Health and safety consultant

8.1 Duties [6.2] :

The health and safety consultant is responsible for all aspects of health and safety of the **works**. Without derogating from the generality thereof, the health and safety consultant will perform the following specific functions and duties in respect of the health and safety aspects of the **works**. He shall:

8.1.1 Act as the **employer's agent** in terms of the Construction Regulations issued in terms of the Occupational Health and Safety Act,1993 as amended

8.1.2 Prepare and update the health and safety specification for the **works**

8.1.3 Agree with the **contractor** the health and safety plan for the **works**

8.1.4 Carry out regular audits to ensure adherence to the safety plan and compliance with the act and regulations

Carried to Collection R

	8.1.5 Stop the execution of the **works** where the agreed specification or plan is not adhered to F:..... V:..... T:.....	Item		
7	Clause 7.0 - Design responsibility F:..... V:..... T:.....	Item		
	Insurances and securities (A8-A11)			
8	Clause 8.0 - **Works** risk F:..... V:..... T:.....	Item		
9	Clause 9.0 - Indemnities F:..... V:..... T:.....			
	Amend sub-clause 9.2.7 by adding the following to the end of the first sentence: '.....due to no fault of the contractor'	Item		
10	Clause 10.0 - Insurances **Add the following as clause 10.1.5.2** The insurance for the project to expire on the date of practical completion or extended practical completion. Any costs to extend insurances must be for the contractor's account. F:..... V:..... T:.....	Item		
11	Clause 11.0 - **Securities** **Guarantee for payment**			
	Carried to Collection		R	

The **employer** shall provide to the **contractor** a **guarantee for payment** in the amount of .....**N/A**.....Rand (R.....) [11.5.1]. The **contractor** shall consequently waive his lien or right of continuing possession of the **works** [11.10]

Extension of waiver of lien

The **contractor** shall ensure that a waiver of lien is included in all subcontracts and that the **works** executed on the **site** are kept free of all liens and other encumbrances at all times [11.10] **- N/A**

F:..... V:.....
T:..... Item

Execution (A12 - A17)

12 Clause 12.0 - Obligations of the **parties**

Office accommodation

The **contractor** shall provide, maintain and remove on **practical completion** air conditioned office accommodation with suitable tables and chairs for meetings to be held on the **site**. Such offices shall be kept clean and fit for use at all times [12.2.18]

Notice board

The **contractor** shall erect in a position approved by the **principal agent**, maintain and remove on **practical completion** a notice board recommended by the South African Institute of Architects and as approved by the **principal agent** listing the names and logos of the **employer**, the **contractor** and the professional consultants. No subcontractor or supplier notice boards may be erected unless permission is granted by the **principal agent** for such notice boards to be erected [12.2.18]

Statutory and other notices

Carried to Collection R

Section No. 1
SECTION 1: PRELIMINARIES
Bill No. 1
Preliminaries
Thohoyandou Botanical Garden (TBG)

	The **contractor** shall submit and/or comply with all statutory and other notices that may be required by any local or other authority in order not to cause any delay to the commencement of the **works** by the **contractor**. The **contractor** shall pay all deposits or fees in this regard It is, however, specifically recorded that the **employer** shall be responsible for the timeous approval of building plans by any local or other authorities and the payment of any fees or charges related thereto F:..... V:..... T:.....	Item			
13	Clause 13.0 - Setting out F:..... V:..... T:.....	Item			
14	Clause 14.0 - Nominated **subcontractors** F:..... V:..... T:.....	Item			
15	Clause 15.0 - Selected **subcontractors** F:..... V:..... T:.....	Item			
16	Clause 16.0 - **Direct contractors** **Attendance on direct contractors** In respect of **direct contractors** the **contractor** shall: 1. Designate an area for the **direct contractor** to establish a temporary office and workshop and storage of equipment and materials 2. Allow the use of personnel welfare facilities, where provided 3. Provide water, lighting and single phase electric power to a position within 50m of the place where the direct contract work is to be carried out, other than fuel or power for commissioning of any installation				
	Carried to Collection			R	

	4. Permit the **direct contractor** to use erected scaffolding, hoisting facilities, etc provided by the **contractor**, in common with others having the like right, while it remains erected on the **site** [16.1]				
	F:..... V:..... T:.....		Item		
17	Clause 17.0 - **Contract instructions**				
	Site instructions Instructions issued on **site** are to be recorded in a site instruction book which is to be supplied and maintained on **site** by the **contractor**				
	F:..... V:..... T:.....		Item		
	<u>Completion (A18 - A24)</u>				
18	Clause 18.0 - Interim completion		N/A		
19	Clause 19.0 - **Practical completion**				
	F:..... V:..... T:.....		Item		
20	Clause 20.0 - Completion in **sections**				
	F:..... V:..... T:.....		Item		
21	Clause 21.0 - **Defects** liability period and **final completion**				
	F:..... V:..... T:.....		Item		
22	Clause 22.0 - **Latent defects** liability period				
	F:..... V:..... T:.....		Item		
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23	Clause 23.0 - Revision of the date for **practical completion** **Substitution of materials and goods** The removal or substitution of any **materials and goods** which do not conform to the specification or the **contract drawings** shall not constitute grounds for the extension of the **construction period** nor for the adjustment of the **contract value** [17.1.8; 23.1 & 2] F:..... V:..... T:.....	Item			
24	Clause 24.0 - **Penalty** for late or non-completion F:..... V:..... T:.....	Item			
	<u>Payment (A25 - A27)</u>				
25	Clause 25.0 - Payment **Prices submitted** Where prices are submitted by the **contractor** or **subcontractor** during the progress of the **works** in respect of **contract instructions** or in regard to a claim under the terms of this **agreement** and notwithstanding the fact that such prices may be used in an interim **payment certificate**, there is to be no presumption of acceptance. Should the **principal agent** wish to accept any such prices prior to the issue of the **certificate of final completion**, it shall be in writing F:..... V:..... T:.....	Item			
26	Clause 26.0 - Adjustment of the **contract value** and **final account** **Fluctuations in costs** All fluctuations in costs, with the exception of fluctuations in the rate of Value Added Tax, shall be for the account of the **contractor** [26.9.5]				
	Carried to Collection			R	

Tenant installation/user requirements delayed

There is a possibility that certain works related to tenant installation/user requirements may have to be delayed and may consequently not be executed prior to **practical completion**

Should the **contractor** be instructed to do so he shall execute this work under the conditions pertaining to this **agreement** on the basis that a separate amount for **preliminaries** appurtenant to this work (if applicable) is agreed to between the **contractor** and the **principal agent** and on condition that instruction to proceed with such work is given to him within a period of three (3) calendar months after the date of **practical completion** of the **works**

The **employer** reserves the right to omit such work without compensation to the **contractor** for loss of profit or any other loss which the **contractor** may suffer as a result of such omission

Cost of claims

All costs incurred by the **contractor** in the preparation of claims shall be borne by the **contractor**. This provision shall not preclude an adjudicator or an arbitrator appointed in terms of this **agreement** [30.6 & 7] from making a determination on costs

Claims from subcontractors

The **contractor** shall review, assess and adjudicate any claims received by him from any **subcontractor** and thereafter submit same to the **principal agent** with a recommendation in order to assist the **principal agent** in adjudicating the claim [26.6]

F:..... V:.....
T:..... Item

27 Clause 27.0 - Recovery of expense and/or loss

F:..... V:.....
T:..... Item

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Suspension and termination (A28 - A29)

28 Clause 28.0 - Suspension by the **contractor**

F:..... V:.....
T:..... Item

29 Clause 29.0 - Termination

F:..... V:.....
T:..... Item

Dispute resolution (A30)

30 Clause 30.0 - Dispute resolution

F:..... V:.....
T:..... Item

31 **Agreement**

The required information of the **parties** and the amount of the **contract sum** shall be inserted in the **agreement** for signature of the **agreement** by the **parties**

F:..... V:.....
T:..... Item

32 **Contract data**

Tenderer's selections

Before submission of his tender the **contractor** is to complete the tenderer's selections in the **contract data**

F:..... V:.....
T:..... Item

SECTION B: GENERAL PRELIMINARIES

Definitions and interpretation (B1)

33 Clause 1.1 - Definitions

F:..... V:.....
T:..... Item

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34	Clause 1.2 - Interpretation F:..... V:..... T:.....	Item			
	<u>Documents (B2)</u>				
35	Clause 2.1 - Checking of documents F:..... V:..... T:.....	Item			
36	Clause 2.2 - Provisional **bills of quantities** **Multiple procurement** These **bills of quantities** are in multiple procurement format ie the "wet trades" - N/A F:..... V:..... T:.....	Item			
37	Clause 2.3 - Availability of **construction information** F:..... V:..... T:.....	Item			
38	Clause 2.4 - Ordering of **materials and goods** F:..... V:..... T:.....	Item			
	<u>Previous work and adjoining properties (B3)</u>				
39	Clause 3.1 - Previous work - dimensional accuracy F:..... V:..... T:.....	Item			
40	Clause 3.2 - Previous work - **defects** F:..... V:..... T:.....	Item			
41	Clause 3.3 - Inspection of adjoining properties F:..... V:..... T:.....	Item			
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	The site (B4)			
42	Clause 4.1 - Handover of **site** in stages F:..... V:..... T:.....	Item		
43	Clause 4.2 - Enclosure of the **works** F:..... V:..... T:.....	Item		
44	Clause 4.3 - Geotechnical and other investigations F:..... V:..... T:.....	Item		
45	Clause 4.4 - Encroachments F:..... V:..... T:.....	Item		
46	Clause 4.5 - Existing premises occupied F:..... V:..... T:.....	Item		
47	Clause 4.6 - Services - known F:..... V:..... T:.....	Item		
	Management of contract (B5)			
48	Clause 5.1 - Management of the **works** F:..... V:..... T:.....	Item		
49	Clause 5.2 - Progress meetings F:..... V:..... T:.....	Item		
50	Clause 5.3 - Technical meetings F:..... V:..... T:.....	Item		
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	Samples, shop drawings and manufacturer's instructions (B6)			
51	Clause 6.1 - Samples of materials F:..... V:..... T:.....	Item		
52	Clause 6.2 - Workmanship samples F:..... V:..... T:.....	Item		
53	Clause 6.3 - Shop drawings F:..... V:..... T:.....	Item		
54	Clause 6.4 - Compliance with manufacturer's instructions F:..... V:..... T:.....	Item		
	Deposits and fees (B7)			
55	Clause 7.1 - Deposits and fees F:..... V:..... T:.....	Item		
	Temporary services (B8)			
56	Clause 8.1 - Water F:..... V:..... T:.....	Item		
57	Clause 8.2 - Electricity F:..... V:..... T:.....	Item		
58	Clause 8.3 - Ablution and welfare facilities F:..... V:..... T:.....	Item		
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59	Clause 8.4 - Communication facilities F:..... V:..... T:.....	Item			
	<u>Prime cost amounts (B9)</u>				
60	Clause 9.1 - Responsibility for **prime cost amounts** F:..... V:..... T:.....	Item			
	<u>Attendance on subcontractors (B10)</u>				
61	Clause 10.1 - General attendance F:..... V:..... T:.....	Item			
62	Clause 10.2 - Special attendance It is important to note that general attendance only requires the contractor to "permit the subcontractor to use erected scaffolding, hoisting facilities, etc provided by the contractor, in common with others having the like right while it remains erected on the site" (refer to 12.2.13 of the JBCC n/s subcontract agreement). Many n/s subcontractors qualify their tenders to exclude scaffolding and/or hoisting facilities. Especially scaffolding could be an expensive item and it may be necessary in order to avoid claims to require the contractor to provide for the extended use of scaffolding for specific subcontracts within a description of "special attendance" in the applicable bill F:..... V:..... T:.....	Item			
	<u>General (B11)</u>				
63	Clause 11.1 - Protection of the **works** F:..... V:..... T:.....	Item			
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64	Clause 11.2 - Protection/isolation of existing **works** and **works** occupied in **sections** F:..... V:..... T:.....	Item		
65	Clause 11.3 - Security of the **works** F:..... V:..... T:.....	Item		
66	Clause 11.4 - Notice before covering work F:..... V:..... T:.....	Item		
67	Clause 11.5 - Disturbance **Disturbance** All work is to be carried out in such a manner as to cause no unacceptable or unreasonable dust, noise, vibrations, nuisance, inconvenience, annoyance and the like to the public, others, other properties and traffic in so far as they exceed the permissible limitations set by government legislation or by the local authority. Any delays, stoppages and the like arising from or in order to comply with the above will not constitute grounds for an adjustment to the **construction period** or **contract value** whatsoever F:..... V:.....T:.....	Item		
68	Clause 11.6 - Environmental disturbance **Controlling all forms of pollution** The **contractor** shall be responsible for and take all precautions in controlling by whatever means necessary all forms of pollution emanating from the **site** during the **construction period** due inter alia to noise, artificial light, wind-blown sand, dust, deposits of mud, etc The **contractor** is to ensure that all roads which border the **site** and are used by the **contractor** during the execution of the **works** are kept clean and free of any dirt or debris caused by the execution of the **works**			
	Carried to Collection		R	

	Environmental management plan The **employer** has prepared an environmental management plan (EMP) (refer to Annexure for a copy of the relevant plan). The **contractor** shall price opposite this item for compliance with all the requirements of such EMP F:..... V:.....T:.....	Item			
69	Clause 11.7 - **Works** cleaning and clearing F:..... V:..... T:.....	Item			
70	Clause 11.8 - Vermin F:..... V:..... T:.....	Item			
71	Clause 11.9 - Overhand work F:..... V:..... T:.....	Item			
72	Clause 11.10 - Tenant installations F:..... V:..... T:.....	Item			
73	Clause 11.11 - Advertising F:..... V:..... T:.....	Item			
	<u>SECTION C: SPECIFIC PRELIMINARIES</u>				
74	Warranties for materials and workmanship Where warranties for materials and/or workmanship are called for, the **contractor** shall obtain a written warranty, addressed to the **employer**, from the entity supplying the materials and/or executing the work and shall deliver same to the **principal agent** on **final completion** of the contract				
	Carried to Collection			R	

	The warranty shall state that workmanship, materials and installation are warranted for a specific period from the date of **practical completion** and that any **defects** that may arise during the specified period shall be made good at the expense of the entity supplying the materials and/or doing the work, upon written **notice** to do so The warranty will not be enforced if the work is damaged by **defects** in the execution of the **works**, in which case the responsibility for replacement shall rest entirely with the **contractor** F:..... V:..... T:.....	Item			
75	Overtime Should overtime be required to be worked for any reason whatsoever, the cost of such overtime is to be borne by the **contractor** unless the **principal agent** has specifically authorised, prior to execution thereof, that costs for such overtime are to be borne by the **employer** F:..... V:.....T:.....	Item			
76	Cooperation of the **contractor** for cost management It is specifically agreed that the **contractor** accepts the obligation of assisting the **principal agent** in implementing proper cost management. The **contractor** will be advised by the **principal agent** of all cost management procedures which will be implemented to ensure that the **contract value** does not exceed the budget F:..... V:.....T:.....	Item			
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77	Overloading The **contractor** shall take all necessary steps to ensure that no damage occurs due to overloading of any portion of the **works** or temporary works eg scaffolding, etc. The **contractor** shall submit details of his proposed loading, storage, plant erection, etc to the **principal agent** for approval prior to proceeding with such loading, storing or erecting and shall comply with and pay for the **principal agent's** requirements in connection with the provision of temporary support work, etc. Any damage caused to the **works** by overloading shall be made good by the **contractor** at his sole expense F:..... V:.....T:.....	Item			
78	Propping of floors below The **contractor** is advised that propping of floors below may be required if he wishes to use any areas of completed suspended reinforced concrete slabs for vehicle access, storage of **materials and goods** and location of plant, scaffolding, etc. The location of these areas and any necessary propping shall be approved by the **principal agent** and the cost thereof shall be borne by the **contractor** F:..... V:.....T:.....	Item			
79	Testing of flat roof waterproofing for water tightness Flat roof waterproof areas shall be flooded and kept "ponded" for at least forty eight (48) hours as a test to ensure the water tightness of the waterproofing and before any further construction work is carried out above the waterproofing F:..... V:.....T:.....	Item			
80	Health and safety				
	Carried to Collection			R	

Without limiting the generality of the provisions of clause 2.0, the **contractor's** attention is drawn to the provisions of the Construction Regulations issued in terms of the Occupational Health and Safety Act, 1993 as amended. It is specifically stated that the **employer** shall prepare a documented health and safety specification for the **works** and that the **employer** shall ensure that the **contractor** has made provision for the cost of health and safety measures during the execution of the **works**. The **contractor** shall price opposite this item for compliance with the act and the regulations and the reasonable provisions of the aforementioned health and safety specification [2.1]

Health and safety

Without limiting the generality of the provisions of clause 2.0, the **contractor's** attention is drawn to the provisions of the Construction Regulations issued in terms of the Occupational Health and Safety Act, 1993 as amended. It is specifically stated that the **employer** shall prepare a documented health and safety specification for the **works** (refer to Annexure for a copy of the relevant specification) and that the **employer** shall ensure that the **contractor** has made provision for the cost of health and safety measures during the execution of the **works**. The **contractor** shall price opposite this item for compliance with the act and the regulations and the provisions of the aforementioned health and safety specification [2.1]

The **contractor** shall:

1. Comply with the health and safety specification for the **works**

2. Prepare and agree with the health and safety consultant the health and safety plan for the **works**

3. Cooperate with the health and safety consultant in all respects

4. Manage the compliance of all subcontractors with the regulations and with the health and safety plan and specification

5. Conform to the conditions contained in the **employer's** health and safety specification

Carried to Collection R

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	F:..... V:..... T:.....	Item		
81	Green star building certification F:..... V:.....T:.....	Item		
82	Broad based black economic empowerment (BBBEE) Tenders submitted will be evaluated taking into account their empowerment rating The **employer** will be monitoring the broad based black economic empowerment (BBBEE) status of the **contractor** throughout the execution of the **works** The **contractor** is to submit to the **principal agent** on an annual basis a schedule of spend, split into vendors engaged as **subcontractors** and suppliers indicating their BBBEE rating including proof of the said rating F:..... V:.....T:.....	Item		
83	Advertising rights The **employer** may elect to contract with advertising agencies for the erection of advertising hoardings, banners, wraps or the like for the duration of the contract. The **contractor** shall not prevent such an arrangement and will assist in the facilitation of same. The position and type of advertising structure to be agreed with the **principal agent** so as not to hinder the **contractor** in meeting his obligations under this **agreement** F:..... V:.....T:.....	Item		
	Carried to Collection		R	

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

SECTION 1: PRELIMINARIES

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Preliminaries

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SECTION 1: PRELIMINARIES

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SECTION NO. 2

BILL NO. 1

EARTHWORKS (PROVISIONAL)

PREAMBLES

NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill

SUPPLEMENTARY PREAMBLES

Nature of ground

The nature of the ground is assumed to be gravel, therefore "earth", but possibly interspersed with "soft rock" or "hard rock"

Subterranean water

No subterranean water is expected

The water table is expected to vary between approximately 1,5m and 2m below natural ground level. The removal of subterranean water is given separately

Carting away of excavated material

Descriptions of carting away of excavated material shall be deemed to include loading excavated material onto trucks directly from the excavations or, alternatively, from stock piles situated on the building site

Filling

Notwithstanding the reference to prescribed multiple handling in clause 1 page 6 of the Standard System of Measuring Building Work, prices for filling and backfilling shall include for all selection and any necessary multiple handling of material

Carried to Collection R

	Testing				
	Prices for filling are to include for all necessary density tests in accordance with SABS 1200D				
	EXCAVATION, FILLING, ETC OTHER THAN BULK				
	EXCAVATIONS, ETC				
	Excavate in earth not exceeding 2m deep				
1	Holes	m3	33		
2	Trenches	m3	199		
	Extra over excavations in earth for excavation in:				
3	Soft rock	m3	1		
4	Hard rock	m3	1		
	Extra over all excavations for carting away				
5	Surplus material from excavations and/or stock piles on site, to a dumping site to be located by the contractor	m3	227		
	Risk of collapse of excavations				
6	Sides of trench and hole excavations not exceeding 1,5m deep	m2	587		
	Keeping excavations free of water				
7	Keeping excavations free of all water other than subterranean water		Item		
	FILLING ETC				
	Earth filling obtained from the excavations and/or prescribed stock piles on site compacted to 90% Mod AASHTO density				
8	Backfilling to trenches, holes, etc	m3	98		
9	Under floors, steps, pavings, etc	m3	73		
	Carried to Collection			R	

	Earth filling supplied by the Contractor, compacted to 90% Mod AASHTO density				
10	Under floors, steps, pavings, etc	m3	72		
	Compaction of surfaces				
11	Compaction of ground surface under pavings, aprons, etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 90% Mod AASHTO density	m2	486		
	Sand blinding				
12	30mm thick sand spread level	m2	486		
	SOIL POISONING				
	Soil insecticide in accordance with SANS 5859				
13	Under floors, etc including forming and poisoning shallow furrows against foundation walls, etc filling in furrows and ramming	m2	486		
14	To bottoms and sides of trenches, etc	m2	795		
	Weedkiller (active ingredients metalaclor 102,8 g/l, terbitilasien 248,6 g/l and atrasien 248,6 g/l) mixed in the proportion of 100 ml weedkiller to 100 l water and applied at a rate of 10 l/mg				
15	Under paving, etc	m2	20		
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Section No. 2

SECTION 2: INFORMATION AND VISITORS CENTRE

Bill No. 1

Earthworks

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SECTION NO. 2

BILL NO. 2

CONCRETE, FORMWORK AND REINFORCEMENT

PREAMBLES

NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill

SUPPLEMENTARY PREAMBLES

Cost of tests

The costs of making, storing and testing of concrete test cubes as required under clause 7 "Tests" of SABS 1200 G shall include the cost of providing cube moulds necessary for the purpose, for testing costs and for submitting reports on the tests to the principal agent. The testing shall be undertaken by an independent firm or institution nominated by the contractor to the approval of the principal agent. (Test cubes are measured separately)

Formwork

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

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

Carried to Collection R

	Formwork to soffits of solid slabs etc shall be deemed to be to slabs not exceeding 250mm thick unless otherwise described				
	Formwork to soffits of slabs, beams, etc shall be deemed to be propped up exceeding 1,5m and not exceeding 3,5m high unless otherwise described				
	Formwork to sides of bases, pile caps, ground beams, etc will only be measured where it is prescribed by the engineer for design reasons. Formwork necessitated by irregularity or collapse of excavated faces will not be measured and the cost thereof shall be deemed to be included in the allowance for taking the risk of collapse of the sides of the excavations, provision for which is made in "Earthworks"				
	UNREINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES				
	15Mpa/19mm concrete				
1	Blinding	m3	2		
	25Mpa/19mm concrete				
2	Ramps	m3	7		
3	Aprons cast in panels	m3	7		
4	Thickening down the edge of apron 150mm deep ,200mm top and tapering to 100mm at bottom including all excavations, formwork, backfilling, etc	m	64		
	REINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES				
	30Mpa/19mm concrete				
5	Holes	m3	20		
6	In footings	m3	53		
7	In surface beds in panels	m3	70		
	Carried to Collection			R	

8	Thickening down the edge of apron 150mm deep ,200mm top and tapering to 100mm at bottom including all excavations, formwork, backfilling, etc	m	23		
	REINFORCED CONCRETE CAST ON/IN FORMWORK				
	30Mpa/19mm concrete				
9	Slabs	m3	30		
10	Beams	m3	6		
	TEST CUBES				
11	Making and testing 150 x 150 x 150mm concrete strength test cube (Provisional)	No	30		
	35 MPa non-shrink grout				
12	Bedding approximately 30mm thick under 500 x 300mm base plate including chamfered edges all round	No	13		
	CONCRETE SUNDRIES				
	Finishing top surfaces of concrete smooth with a wood float				
13	Aprons to falls	m2	64		
	ROUGH FORMWORK				
	SMOOTH FORMWORK (DEGREE OF ACCURACY I)				
	Smooth formwork to sides				
14	Edges, risers, ends and reveals not exceeding 300mm high or wide	m	5		
15	Isolated beams	m2	47		
	Smooth formwork to soffits				
16	Slabs propped up exceeding 3,5m but n.e. 4.5m high	m2	120		
	Carried to Collection			R	

	MOVEMENT JOINTS, ETC				
	Expansion joints with 10mm bitumen impregnated softboard expanded polyethylene between vertical concrete and brick surfaces				
17	Not exceeding 300mm high to edges of surface beds	m	390		
	Saw cut joints				
18	10 x 20mm saw cut joints on top of concrete	m	221		
	REINFORCEMENT (PROVISIONAL)				
	Mild tensile steel reinforcement to structural concrete work				
19	8mm Diameter bars	t	1.55		
20	12mm Diameter bars	t	2		
	High tensile steel reinforcement to structural concrete work				
21	10mm Diameter bars	t	4.27		
22	16mm Diameter bars	t	6.79		
23	25mm Diameter bars	t	4.85		
	Fabric reinforcement				
24	Type 617 fabric reinforcement in surface beds, ramps,etc	m2	492		
25	Type 617 fabric reinforcement in footings, etc	m2	245		
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Section No. 2

SECTION 2: INFORMATION AND VISITORS CENTRE

Bill No. 2

Concrete, Formwork and Reinforcement

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SECTION NO. 2

BILL NO. 3

MASONRY

PREAMBLES

NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill

SUPPLEMENTARY PREAMBLES

BRICKWORK

Sizes in descriptions

Where sizes in descriptions are given in brick units, "one brick" shall represent the length and "half brick" the width of a brick

Hollow walls

Descriptions of hollow walls shall be deemed to include leaving every fifth perpend of the bottom course of the external skin open as a weep hole

Face bricks

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

Pointing

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

Carried to Collection R

	BRICKWORK				
	FOUNDATIONS (PROVISIONAL)				
	Brickwork of NFX bricks (14MPa nominal compressive strength) in class I mortar in foundations				
1	Half brick walls	m2	50		
2	One brick walls	m2	54		
3	One brick walls circular on plan	m2	111		
4	One brick and half walls circular on plan	m2	17		
	SUPERSTRUCTURE				
	Brickwork of NFP bricks (14 MPa nominal compressive strength) in class II mortar				
5	Half brick walls	m2	49		
6	Half brick wall in beam filling	m2	14		
7	Half brick walls in beam filling circular on plan	m2	19		
8	One brick walls	m2	287		
9	One brick walls circular on plan	m2	492		
10	One brick and half walls circular on plan	m2	38		
	BRICKWORK SUNDRIES				
	2,5mm Brickwork reinforcement				
11	75mm Wide reinforcement built in horizontally	m	389		
12	75mm Wide reinforcement built in horizontally on plan	m	63		
13	150mm Wide reinforcement built in horizontally	m	1 000		
	Carried to Collection			R	

14	150mm Wide reinforcement built in horizontally on plan	m	1 990		
15	230mm Wide reinforcement built in horizontally on plan	m	182		
	Galvanised hoop iron cramps, ties, etc				
16	30 x 1,6mm Roof tie 1,5m long with one end fixed to timber and other end built into brickwork	No	159		
	Turning pieces				
17	230mm Wide turning pieces to lintels etc	m	30		
	"Allied Concrete" or equal approved prestressed fabricated lintels				
18	110 x 75mm Lintels in lengths not exceeding 3m	m	84		
19	110 x 75mm Lintels in lengths exceeding 4,50m and not exceeding 6m	m	50		
	"Allied Concrete" or equal approved prestressed fabricated copings				
20	230 x 150mm thick overall coping weathered on top to 20mm thick along edge with drip groove in bottom along edge bedded in cement mortar on top of brick wall.	m	106		
	Holes				
21	Leave or form opening through one brickwall for pipe n.e 100mm diameter	No	10		
22	Leave or form opening through one brickwall for pipe exceeding 100mm and n.e 200mm diameter	No	9		
	FACE BRICKWORK				
	Maize Travertine FBX clay face brick or equal approved pointed with recessed horizontal and vertical joints				
23	Extra over brickwork for face brickwork	m2	60		
24	One brick wall beam filling faced both sides	m2	9		
25	One brick wall in facings	m2	21		
	Carried to Collection			R	

	Brick-on-edge header course copings, sills, etc of face bricks pointed with recessed joints on all exposed faces				
26	220mm Wide sill set sloping and slightly protecting outside	m	30		
27	220mm wide brick on edge lintel	m	3		
	NUTEC-CEMENT/FIBRE-CEMENT WINDOW SILLS				
	Nutec window internal sill, size 150mm x 15mm thick, manufactured in accordance with SANS 803:2005 and installed below window with window sill lug screwed to underside of sill at 400mm centres, minimum of 75mm from end of window sill and bedded in Class II mortar with plastic slip joints at end of sills at plaster reveals and projecting from the finished face of wall, all in accordance with the manufacturer's recommendations.				
28	Internal window sill set slopping.	m	29		
	PAVING				
	60mm Thick precast concrete DZZ interlocking heavy duty block paving of grey paving blocks in accordance with SANS 1058, laid to falls on and including 25mm thick sand layer with joints filled in with sand, compacted with a vibration compactor:				
29	Paving brick, size 220 x 110 x 50mm thick laid in Stretcher Bond pattern with a minimum longitudinal fall of 1% on a transverse fall of at least 2% on 25mm compacted sand bed with fine jointing sand swept and vibrated into joints, all laid on sub-grade conforming to SANS 1200	m2	20		
30	Cutting to edges	m	22		
	STONE CLADDING				
	Global stone brown Pena Slate or equal approved stone wall linning, etc				
31	Linning to walls with cement mortar	m2	196		
32	Polished fair edges to linning	m	36		
	Carried to Collection			R	

33	Ditto, circular on plan	m	14		
34	Fair circular cutting	m	14		
35	Holes for pipe n.e 110mm dia through stone linning	No	13		
36	Allow a budgetary allowance of R20 000.00 (Twenty Thousand Rands) for special modification of stone feature displayed on the stone wall			SUM	

Carried to Collection R

Section No. 2
SECTION 2: INFORMATION AND VISITORS CENTRE
Bill No. 3
Masonry
Thohoyandou Botanical Garden (TBG)

Section No. 2

SECTION 2: INFORMATION AND VISITORS CENTRE

Bill No. 3

Masonry

COLLECTION

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Item No			Quantity	Rate	Amount
	SECTION NO. 2				
	BILL NO. 4				
	WATERPROOFING				
	PREAMBLES				
	NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill				
	SUPPLEMENTARY PREAMBLES				
	Waterproofing				
	Waterproofing of roofs, basements, etc shall be laid under a ten year guarantee. Waterproofing to roofs shall be laid to even falls to outlets etc with necessary ridges, hips and valleys. Descriptions of sheet or membrane waterproofing shall be deemed to include additional labour to turn-ups and turn-downs				
	DAMPPROOFING OF WALLS AND FLOORS				
	One layer 375 micron embossed polyethylene dampproof course (SANS 952-1985 type B)				
1	In walls	m2	70		
	One layer 250 micron green polyethylene waterproof sheeting (SANS 952-1985 type C) sealed at laps with PVC self-adhesive tape				
2	Under surface beds	m2	486		
	WATERPROOFING TO ROOFS, BASEMENTS, ETC				
	Carried to Collection			R	

	One layer Derbigum SP4 waterproofing membrane, with 75mm side laps and 100mm end laps, sealed to primed surface to falls and crossfalls by: 'torchfusion' finished with two coats Roofcote grey: acry lic paint. Waterproofing to be installed by an Approved Derbigum Contractor under a ten year guarantee				
3	On sloping roofs	m2	120		
4	Sealing to edges to brickwork or concrete	m	60		
5	Flashing strip 150mm girth at turn-ups including flashing strip 150mm girth and sealing top edge into groove with mastic	m	50		
6	Additional membrane 150mm girth at turn-ups including flashing strip 150mm girth and sealing top edge into groove with mastic	m	50		
7	Additional membrane around 100mm outside diameter pipe	No	5		
	Two coats bituminous aluminium paint				
8	On waterproofing to roofs	m2	128		
	SEALING STRIPS, JOINT SEALANTS, ETC				
	Jointex filler with tear off strip seal with 10 x 10 polyethelene bond-breaker or equal approved, etc				
9	10 x 10mm in expansion joints	m	384		
10	10mm in saw cut joints	m	221		
	Silicone sealing compound				
11	4 x 4mm At junction of timber fittings to wall tiling (Provisional)	m	60		
12	4 x 4mm around sanitary fittings (Provisional)	m	55		
	Carried to Collection			R	

Section No. 2

SECTION 2: INFORMATION AND VISITORS CENTRE

Bill No. 4

Waterproofing

COLLECTION

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Item No			Quantity	Rate	Amount
	SECTION NO. 2				
	BILL NO. 5				
	ROOF COVERINGS				
	PREAMBLES				
	NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill				
	PROFILED METAL SHEETING AND ACCESSORIES				
	Global Roofing Solutions or equal approved 0,8mm thick IBR profile roof sheeting, with pre-painted dove grey or equal approved coating on both sides, fixed to timber purlins at 1 000mm centres to centre				
1	Roof coverings with pitch not exceeding 25 degrees	m2	539		
2	Roof coverings with pitch not exceeding 25 degrees on steel members.	m2	105		
	Evalast or equal approved cladding profiles				
	Evalast or equal approved cladding profiles on stainless steel members fixed on steel structure as per manufacturer's specifications.				
3	Vertical cladding	m2	105		
4	Soffit cladding	m2	105		
	ROOF AND WALL INSULATION				
	Carried to Collection			R	

	Roof insulation 135mm thick Aerolite or similar approved light weight thermal ceiling insulation. 12kg/mÃ‚Â³ closely fitted with ends butted firmly between tie beams and laid loose on top of brandering between roof timbers, all in accordance with manufacturer`s recommendations				
5	Roof insulation between tie beams and laid loose on top of brandering between roof timbers.	m2	504		
	ROOF VENTILATORS				
	Whirlybird (Turbine Ventilator) or equal approved				
6	Whirlybird (Turbine Ventilator) or equal approved galvanised sheet steel multi-purpose ventilator 1,83m long and 610mm diameter fixed through troughed roof sheeting to purlins including flashings, closers, sealing strips, etc	No	1		
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Section No. 2

SECTION 2: INFORMATION AND VISITORS CENTRE

Bill No. 5

Roof coverings

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SECTION NO. 2

BILL NO. 6

CARPENTRY AND JOINERY

PREAMBLES

NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill

SUPPLEMENTARY PREAMBLES

Fixing

Items described as "nailed" shall be deemed to be fixed with hardened steel nails or pins, or to be shot-pinned, to brickwork or concrete

Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 500mm centres, and where described as "bolted", the bolts have been given elsewhere

Joinery

Descriptions of frames shall be deemed to include frames, transomes, rails, etc

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

Carried to Collection R

	ROOFS, ETC.				
	The following is applicable in respect of roof trusses:				
	Timber trusses at maximum 1 100mm centres, roof covering is 0,8mm thick galvanised steel IBR profile sheeting				
	The dimensions in the descriptions of the trusses are nominal and actual measurements are to be obtained on the site before design or fabrication commences.				
	The design, manufacture and transportation of the roof trusses, bracing etc. shall be under control of a registered Engineer (in accordance with the SABS Code of Practice for the design of Timber Structure) and it shall be required from the manufacturer of the trusses to lodge a written guarantee that the construction has been designed by a qualified Structural Engineer and that the Engineer is in possession of a capability certificate issued by the Institute for Timber Construction Trusses.				
	The designs must further be in accordance with SABS 0163 as well as the additional requirements of the latest Model Preambles of Trades.				
	The manufacturer of the trusses shall supply a written guarantee that the trusses are designed, manufactured and erected to support the roof covering specified. The guarantee shall be valid for a period of 10 (ten) years.				
	Payment of the roof construction will only be made once the two (2) required certificates have been submitted to and approved by the Project Registered Structural Engineers.				
	Plate nailed timber roof truss construction				
1	Complete supply and erection of pitched timber roof on circular building including wall plates, trusses, jack rafters, permanent bracing and 50 x 76mm purlins, etc. with flat area of 63m2 all as per the drawings attached to these bills of quantities (coffe bar)	No	1		
2	Complete supply and erection of pitched timber roof on circular building including wall plates, trusses, jack rafters, permanent bracing and 50 x 76mm purlins, etc. with flat area of 45m2 all as per the drawings attached to these bills of quantities (information)	No	1		
	Carried to Collection			R	

3	Complete supply and erection of pitched timber roof on circular building including wall plates, trusses, jack rafters, permanent bracing and 50 x 76mm purlins, etc. with flat area of 148m2 all as per the drawings attached to these bills of quantities (kitchen, scullery and toilets)	No	1		
4	Complete supply and erection of pitched timber roof on circular building including wall plates, trusses, jack rafters, permanent bracing and 50 x 76mm purlins, etc. with flat area of 106m2 all as per the drawings attached to these bills of quantities (display platform and toilets)	No	1		
5	Complete supply and erection of mono-pitched timber roof on plan including wall plates, trusses, jack rafters, permanent bracing and 50 x 76mm purlins, etc. with flat area of 5m2 all as per the drawings attached to these bills of quantities (pump house)	No	1		
	Sundries				
6	Two coats creosote on sawn timbers	m2	65		
	Sawn softwood				
7	50 x 228mm Bearers bolted	m	80		
	Wrought laminated Balu (Architectural finish)				
8	30 x 200mm beams, pergola beams, etc bolted	m	75		
	DOORS ETC				
	Wrought meranti doors				
9	40mm Framed, ledged and braced batten door 813 x 2032mm high of 44 x 104 mm top rail and stiles, 22 x 120mm middle ledge and braces and 22 x 142mm bottom rail filled in with 22mm V-jointed one side boarding and covered on other side with 6mm plywood with veneer to match door, let into and including rebates all round	No	1		
	Carried to Collection			R	

10	40mm Framed, ledged and braced batten double door 1 500 x 2 100mm high of 44 x 104 mm top rail and stiles, 22 x 120mm middle ledge and braces and 22 x 142mm bottom rail filled in with 22mm V-jointed one side boarding and covered on other side with 6mm plywood with veneer to match door, let into and including rebates all round	No	1		
	Semi-solid flush doors with masonite finish concealed hardwood edges to steel frames				
11	40mm Door 900 x 2 032mm high	No	13		
12	40mm Door 1 100 x 2 032mm high	No	3		
	Door grills, etc				
	Extra over for 300 x 300mm framed opening for aluminium unit (louvre unit elsewhere)				
13	420 x 568mm aluminium louvre	No	2		
	CUPBOARDS TO KITCHENS, BEDROOMS, ETC				
	SUPPLEMENTARY PREAMBLES				
	General				
	The following cupboard fittings have been given as complete units i.e. the components of the units have not been given separately. Descriptions of such units shall, therefore, be deemed to include all components, assembling, housing, notching, glueing, blocking, planting-on and screwing with countersunk screws, edge strips, thermosetting plastic laminate, glass, ironmongery, metalwork, paint or varnish finishes, etc				
	Prices are to include for all necessary filler pieces against walls etc				
	References				
	References given in descriptions refer to the respective types of fittings detailed on the architect's drawings annexed to these bills of quantities for tender purposes				
	Kitchen cupboards etc				
	Carried to Collection			R	

	Timber kitchen cupboards etc with concealed automatic hinges, stainless steel handles and epoxy coated telescopic drawer slides				
14	Wall cupboard size 1 000 x 300 x 720mm high with top, sides, bottom, division, shelf, back and double hinged door	No	1		
15	Floor cupboard size 1 000 x 550 x 880mm high with top, sides, bottom, division, shelf, back and double hinged doors, dividing framework and two drawers and one door including 75mm aluminium skirting all round (top elsewhere)	No	1		
16	Sink cupboard size 1 000 x 550 x 880mm high with sides, bottom, divisions, shelf, back and double hinged doors (sink and top elsewhere)	No	1		
17	Sink cupboard size 1 888 x 550 x 900mm high with sides, bottom, divisions, shelf, back and double hinged doors (sink and top elsewhere)	No	1		
	Bathroom vanity basin, etc with concealed automatic hinges, stainless steel handles and epoxy coated telescopic drawer slides				
18	Vanity basin size 500 x 500 x 880mm high with top, sides, bottom, division, shelf, back and double hinged doors, dividing framework and two drawers and one door including 75mm aluminium skirting all round (granite top elsewhere)	No	1		
19	Vanity basin size 2 740 x 550 x 900mm high with top, sides, bottom, division, shelf, back and double hinged doors, dividing framework including 75mm aluminium skirting all round (granite top elsewhere)	No	2		
	Reception Counter				
	U-shaped reception counter with doors, concealed automatic hinges, stainless steel handles and epoxy coated telescopic drawer slides as per drawing PJN_2022_2002_SANBI_TBG_ARC_2007 (top elsewhere measured)				
20	U-shaped counter size 3 469 x 2 400 x 1 100mm high with bottom and upper unit complete	No	1		
	Carried to Collection			R	

	GRANITE WORKTOPS				
	Rustenburg or equal approved grey with polished finish with and including powder coated 60 x 60 x 6mm angle Iron mild steel support with brackets as per detailed specification				
21	30mm thick worktop 700mm wide with one bullnosed edge, plugged to one brick wall	m	12		
22	30mm thick worktop 600 mm wide with one bullnosed edge, screwed to timber from below	m	4		
23	30mm thick worktop 550mm wide with one bullnosed edge, screwed to timber from below	m	9		
	"Rustenburg grey" granite with polished finish				
24	Cut 450 x 800mm hole through 30mm granite top	No	2		
25	Cut 450 x 450mm hole through 30mm granite top	No	3		
	SHELVING				
	Laminated SA pine timber				
26	22mm thick x 300mm wide shelving fixed to brackets with and including 30mm x 6No self tapping countersunk wood screws	m	11		
27	22mm thick x 500mm wide shelving fixed to brackets with and including 30mm x 6No self tapping countersunk wood screws	m	15		
28	22mm thick x 750mm wide shelving fixed to brackets with and including 30mm x 6No self tapping countersunk wood screws	m	15		
	SLATTED SEATING, ETC				
	Wrought meranti				
29	780 x 500 x 882mm high slatted seating, 500mm high back rest complete and including 25mm thick Saligna seat, filler pieces, angle irons, expansion bolts, steel frame, paint etc (refer to drawing PJN_ZA_2022_2002_SANBI_TBG_ARC_2007)	No	2		
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Section No. 2
SECTION 2: INFORMATION AND VISITORS CENTRE
Bill No. 6
Carpentry and joinery
Thohoyandou Botanical Garden (TBG)

	TIMBER CLADDING				
	Evalast or equal approved cladding profiles on stainless steel members fixed to walls				
30	30mm thick x 100mm wide composite material screwed on and including timber supports, stainless steel frames fixed to walls, suitable for cladding and according to manufacturer's instructions (refer architectural drawings attached to these bills of quantities)	m2	609		
	TIMBER DECKING				
	Evalast or equal approved decking boards including decking support				
31	35mm thick x 75mm wide composite material screwed on and including timber supports suitable for decking guided and according to manufacturer's instruction (refer architectural drawings attached to these bills of quantities)	m2	72		
32	Circular cutting	m	26		
33	75mm hardwood skirting plugged	m	45		
34	Extra over flooring for 650 x 650mm trap door with 38 x 114mm framing and 76 x 76mm rebated trimmers all round.	No	2		
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Section No. 2

SECTION 2: INFORMATION AND VISITORS CENTRE

Bill No. 6

Carpentry and joinery

COLLECTION

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	BILL NO. 7				
	CEILINGS, PARTITIONS AND ACCESS FLOORING				
	NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill				
	SUPPLEMENTARY PREAMBLES				
	Fixing				
	Items described as "nailed" shall be deemed to be fixed with hardened steel nails or pins, or to be shot-pinned, to brickwork or concrete				
	Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 500mm centres, and where described as "bolted", the bolts have been given elsewhere				
	Ceilings				
	Unless otherwise described ceilings shall be deemed to be horizontal				
	SUSPENDED CEILINGS				
	Suspended aluminium ceiling panels with H-profile galvanised steel jointing strips				
1	600 x 600 x 15mm thick Acoustic ceiling panels or equal approved, suspended on electrolised galvanised steel metal pan ceiling tiles with smooth white colour finish surface pattern, installed complete with W-profile perimeter trims, hangers and 24mm suspension T-grids and in accordance with the manufacturer's recommendations.	m2	210		
	Carried to Collection			R	

2	Extra over ceiling for opening for 150mm diameter down lighter	No	30		
3	Circular cutting	m	55		
	Shadowline cornices to suspended ceilings				
4	Aluminium shadow line trim 20 x 20mm, flexible PVC angle trim fixed using wall anchors.	m	182		
	SKIMMED GYPSUM CEILING				
	10mm thick gypsum plastered ceiling boards (to comply with SABS 266-1982 or later revision) installed with longer lengths to suit room configurations with 'Wire Scrim Tape' fixed over all joints and plastered with 6 mm thick light weight hemi-hydrate gypsum painted, polished and finished with 3 No. coats of super PVA external quality paint; colour to P.A's approval. Ceiling to be fixed to timber brandering with all necessary accessories to strict manufacturer's specifications.				
5	10mm thick gypsum plastered ceiling boards	m2	159		
	Rhino gypsum plasterboard cornices				
6	75mm wide coved gypsum cornice plugged	m	191		
	VERTICAL BULKHEADS				
	The following detail to be referred to drawing PJN_ZA-2022_2002_SANBI_TBG_ARC_2007				
	10mm thick gypsum plastered ceiling boards (to comply with SABS 266-1982 or later revision) installed with longer lengths to suit room configurations with 'Wire Scrim Tape' fixed over all joints and plastered with 6 mm thick light weight hemi-hydrate gypsum painted, polished and finished with 3 No. coats of super PVA external quality paint; colour to P.A's approval. Ceiling to be fixed to timber brandering with all necessary accessories to strict manufacturer's specifications.				
7	1 700mm girth U-shaped bulkhead suspended not exceeding 1m below concrete soffit (as per attached Architects drawings).	m	14		
	Carried to Collection			R	

8	Extra over bulkhead on circular on plan	m	4		

Carried to Collection R

Section No. 2
SECTION 2: INFORMATION AND VISITORS CENTRE
Bill No. 7
Ceilings, Partitions and Access Flooring
Thohoyandou Botanical Garden (TBG)

Section No. 2

SECTION 2: INFORMATION AND VISITORS CENTRE

Bill No. 7

Ceilings, Partitions and Access Flooring

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SECTION NO. 2

BILL NO. 8

IRONMONGERY

PREAMBLES

NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill

SUPPLEMENTARY PREAMBLES

Proprietary items

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

Prices are to be based on the specific products/articles specified. If tenderers wish to offer alternative products/articles for certain items, these items are to be clearly marked and the alternative specification given with supporting brochures etc clarifying the features of the products/articles offered

On request returnable samples are to be provided to the principal agent for consideration

Carried to Collection R

	Finishes to ironmongery				
	Where applicable finishes to ironmongery are indicated by suffixes in accordance with the following list: BS Satin bronze lacquered CH Chromium plated SC Satin chromium plated SE Silver enamelled GE Grey enamelled AN Anodised natural AS Anodised silver AB Anodised bronze AG Anodised gold ABL Anodised black PB Polished brass PL Polished and lacquered PT Epoxy coated SD Sanded				
	The following Ironmongery by door Type Dormakaba or equally approved				
	Door Type : D06				
1	Dormakaba or equal approved BTS75 Adjustable size EN 1-4 HOLD OPEN, Certified to EN1154, with SINGLE ACTION accessories, for 120kg door leaf weight, Adjustable closing and latching speeds, Backcheck. Components - [Mech/Spindle/7510SS/7456/1/7411K/56E] Code BTS75 SAA-HO	No	1		
2	Dormakaba or equal approved 382x32mm D Shaped Offset Tubular Pull Handle BTB (BTB Fixing sets included) Code DPH215 BTB	Pairs	1.0		
3	Dormakaba or equal approved Narrow Stile Heavy Duty Swivel Dead Lock. Case dimensions (mm) 174H x 40D. Forend dimensions (mm) 290H x 22W. BackNo 35mm.Code D07735 SS	No	1		
4	Dormakaba or equal approved 63mm - 31.5 + 31.5mm Europrofile nickel plated E-SP 5 Pin knob cylinder - Master Keyed Code DKC206301 MK	No	1		
5	Dormakaba or equal approved 150 x 150mm TEA CUP sign code DSS-135 SS	No	1		
	Carried to Collection			R	

6	Dormakaba or equal approved round cylinder escutcheon Code DCE-002 S.S	Pairs	1.0		
7	Dormakaba or equal approved Floor Mounted Door Stop Code DDS-SS-017	No	1		
	Door Type : D06				
8	Dormakaba or equal approved lever handle on rose with cylinder escutcheons code TH124 Cyl S.S	No	1		
9	Dormakaba or equal approved Cylinder sash lock case dimensions (mm) 116.5H x 78D. Forend dimensions (mm) 168(H) x 22W. Backset 57mm. Centres 61mm. Code D036S SS	No	1		
10	Dormakaba 63mm - 31.5 + 31.5mm Europrofile nickel plated E-SP 5 Pin knob cylinder - Master Keyed Code DKC206301 MK	No	1		
11	Dormakaba or equal approved 150 x 150mm TEA CUP sign code DSS-135 SS	No	1		
12	Dormakaba or equal approved Floor Mounted Door Stop Code DDS-SS-017	No	1		
	Door Type : D07				
13	Dormakaba or equal approved EN 2-4 Parallel Arm DELAYED ACTION Door Closer. Push Side Fixing (Parallel Arm Bracket Included) EN2 750-850, EN3 850-950, EN4 950-1100 Code TS73V PA DC -PAB - SL	No	1		
14	Dormakaba 382x32mm D Shaped Offset Tubular Pull Handle BTB (BTB Fixing sets included) Code DPH301B	No	2		
15	Dormakaba or equal approved Bathroom Deadlock. Case dimensions (mm) 38H x 76D. Forend dimensions (mm) 78H x 22.5W. Backset 55mm. Code DMWC-SS-008	No	1		
16	Dormakaba or equal approved Disabled WC indicator (Red & White) and turnknob for physically impaired Code DWC-006	No	1		
17	Dormakaba or equal approved 150 x 150mm DISABLED PERSONS sign code DSS-133 SS	No	1		
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Section No. 2
SECTION 2: INFORMATION AND VISITORS CENTRE
Bill No. 8
Ironmongery
Thohoyandou Botanical Garden (TBG)

18	Dormakaba or equal approved 150x(width of door)x1.2mm thick Grade 430 stainless steel kick plate. Stainless Steel Kick Plate to be Glue Fixed. (List price calculated on 813mm wide door) Code DKP-430-GF 150	No	2		
	Door Type : D07				
19	Dormakaba or equal approved EN 2-4 Parallel Arm DELAYED ACTION Door Closer. Push Side Fixing (Parallel Arm Bracket Included) EN2 750-850, EN3 850-950, EN4 950-1100 Code TS73V PA DC -PAB - SL	No	1		
20	Dormakaba or equal approved 325x25mm Straight Tubular Pull Handle Flange Fixing Code DPH301B	No	2		
21	Dormakaba or equal approved Bathroom Deadlock. Case dimensions (mm) 38H x 76D. Forend dimensions (mm) 78H x 22.5W. Backset 55mm. Code DMWC-SS-008	No	1		
22	Dormakaba or equal approved Disabled WC indicator (Red & White) and turnknob for physically impaired Code DWC-006	No	1		
23	Dormakaba or equal approved 150 x 150mm DISABLED PERSONS sign code DSS-133 SS	No	1		
24	Dormakaba or equal approved 150x(width of door)x1.2mm thick Grade 430 stainless steel kick plate. Stainless Steel Kick Plate to be Glue Fixed. (List price calculated on 813mm wide door) Code DKP-430-GF 150	No	1		
	Door Type : D06				
25	Dormakaba or equal approved NON HOLD OPEN Cam action slide channel door closer. Max door width 950mm. Closing Force EN 3. Hydraulic speed control. Pull-side door leaf fixing (Standard), Push-side transom fixing. Door closer compliant with EN 1154. Door closer is CERTI FIRE approved (Certificate No. CF 119) for door types ITT 120, MM/IMM 240. Certified manufacturer to ISO 9001 Code TS91B - SL	No	1		
26	Dormakaba or equal approved 300 x 30mm Straight Tubular Pull Handle BTB (BTB Fixing Sets included) Code DPH210 BTB	No	1		
	Carried to Collection			R	

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27	Dormakaba or equal approved 150 x 150mm MALE sign code DSS-130 M	No	1		
28	Dormakaba Floor Mounted Door Stop Code DDS-SS-017	No	1		
	Door Type : D06				
29	Dormakaba or equal approved NON HOLD OPEN Cam action slide channel door closer. Max door width 950mm. Closing Force EN 3. Hydraulic speed control. Pull-side door leaf fixing (Standard), Push-side transom fixing. Door closer compliant with EN 1154. Door closer is CERTI FIRE approved (Certificate No. CF 119) for door types ITT 120, MM/IMM 240. Certified manufacturer to ISO 9001. Code TS91B - SL	No	1		
30	Dormakaba or equal approved 300x30mm Straight Tubular Pull Handle BTB (BTB Fixing Sets included) Code DPH210 BTB	No	1		
31	Dormakaba or equal approved 150 x 150mm FEMALE sign code DSS-131 F	No	1		
32	Dormakaba Floor Mounted Door Stop Code DDS-SS-017	No	1		
	Door Type : D07				
33	Dormakaba or equal approved EN 2-4 Regular Arm DELAYED ACTION Door Closer. Pull Side Fixing EN2 750-850, EN3 850-950, EN4 950-1100. Code TS73V DC- SL	No	1		
34	Dormakaba or equal approved 300x30mm Straight Tubular Pull Handle BTB (BTB Fixing Sets included) Code DPH210 BTB	Pairs	1.0		
35	Dormakaba Floor Mounted Door Stop Code DDS-SS-017	No	1		
36	Dormakaba or equal approved 150 x 150mm MALE/FEMALE sign code DSS-132 F	No	1		
	Carried to Collection			R	

	Door Type : D08 x 4 & D01				
37	Dormakaba or equal approved 75x170x1.2mm thick Grade 430 stainless steel plate. Stainless Steel Plate to have 4 countersunk holes for screw fixing Code DPP-430-BL-SF 75X170	No	5		
38	Dormakaba or equal approved 149x19mm Straight Tubular Pull Handle BT code DPH301C BT	No	5		
39	Dormakaba or equal approved Bathroom Deadlock. Case dimensions (mm) 102H x 78D. Forend dimensions (mm) 155H x 22W. Backset 57mm code D032D SS	No	5		
40	Dormakaba or equal approved Bathroom WC indicator (Red and White) and turnknob Code DWC-005	No	5		
41	Dormakaba or equal approved Hat and Coat Hook with rubber buffer code DHC-SS-031B	No	5		
	Door Type : D08 x 2				
42	Dormakaba or equal approved 149x19mm Straight Tubular Pull Handle BT Code DPH301C BT	No	2		
43	Dormakaba or equal approved 75x170x1.2mm thick Grade 430 stainless steel plate. Stainless Steel Plate to have 4 countersunk holes for screw fixing code DPP-430-BL-SF 75X170	No	2		
44	Dormakaba or equal approved Bathroom Deadlock. Case dimensions (mm) 102H x 78D. Forend dimensions (mm) 155H x 22W. Backset 57mm. code D032D SS	No	2		
45	Dormakaba or equal approved Bathroom WC indicator (Red and White) and turnknob Code DWC-005	No	2		
46	Dormakaba or equal approved Hat and Coat Hook with rubber buffer code DHC-SS-031B	No	2		
47	Dormakaba or equal approved 150 x 150mm MALE sign code DSS-130 M	No	2		
	Carried to Collection			R	

	Door Type : D08 x 2				
48	Dormakaba or equal approved 149x19mm Straight Tubular Pull Handle BT Code DPH301C BT	No	2		
49	Dormakaba or equal approved 75x170x1.2mm thick Grade 430 stainless steel plate. Stainless Steel Plate to have 4 countersunk holes for screw fixing code DPP-430-BL-SF 75X170	No	2		
50	Dormakaba or equal approved Bathroom Deadlock. Case dimensions (mm) 102H x 78D. Forend dimensions (mm) 155H x 22W. Backset 57mm. code D032D SS	No	2		
51	Dormakaba or equal approved Bathroom WC indicator (Red and White) and turnknob Code DWC-005	No	2		
52	Dormakaba or equal approved Hat and Coat Hook with rubber buffer code DHC-SS-031B	No	2		
53	Dormakaba or equal approved 150 x 150mm FEMALE sign code DSS-131 F	No	2		
	Door Type : D03				
54	Code 1040 100mm Aluminium Sinkless Hinge, Centre Pin With Standard Alignment Grooving For Easy Fitment	Pairs	1.5		
55	Dormakaba or equal approved Lever handle on rose with Cylinder escutcheons Code TH124 Cyl S.S	No	1		
56	Dormakaba or equal approved Cylinder Sash Lock. Case dimensions (mm) 116.5H x 78D. Forend dimensions (mm) 168H x 22W. Backset 57mm. Centres 61mm. Code D036S SS	No	1		
57	Dormakaba or equal approved 63mm - 31.5+31.5mm Europrofile Nickel Plated E-SP 5 Pin Double Cylinder - Master Keyed Code DDC206301 MK	No	1		
58	Code M1519N, Alufab M1519N 150mm Aluminium Flush Bolt, 150mm, Natural Anodised.	No	1		
	Carried to Collection			R	

59	Dormakaba or equal approved Dust Proof Strike Code DPS-SS-032	No	1		
60	Halcast or equal approved code 166 SC brass cabin hook and eye fixed to wrot meranti blocks 75x75mm with chamfered edges.	No	1		
	Door Type : D09				
61	Code 1040 100mm Aluminium Sinkless Hinge, Centre Pin With Standard Alignment Grooving For Easy Fitment	Pairs	1.5		
62	Dormakaba or equal approved NON HOLD OPEN Cam action slide channel door closer. Max door width 950mm. Closing Force EN 3. Hydraulic speed control. Pull-side door leaf fixing (Standard), Push-side transom fixing. Door closer compliant with EN 1154. Door closer is CERTI FIRE approved (Certificate No. CF 119) for door types ITT 120, MM/IMM 240. Certified manufacturer to ISO 9001 Code TS91B - SL	No	1		
63	300x30mm Straight Tubular Pull Handle BTB (BTB Fixing Sets included) Code DPH210 BTB	Pairs	1.0		
64	Dormakaba or equal approved Cylinder Deadlock. Case dimensions (mm) 116.5H x 78D. Forend dimensions (mm) 168H x 22W. Backset 57mm. code D037D SS	No	1		
65	Dormakaba or equal approved 63mm - 31.5+31.5mm Europrofile Nickel Plated E-SP 5 Pin Knob Cylinder - Master Keyed Code DKC206301 MK	No	1		
66	Dormakaba or equal approved round cylinder escutcheon Code DCE-002 S.S	Pairs	1.0		
67	Dormakaba or equal approved Floor Mounted Door Stop Code DDS-SS-017	No	1		
	Door Type : D09 x 3				
68	Code 1040 100mm Aluminium Sinkless Hinge, Centre Pin With Standard Alignment Grooving For Easy Fitment	Pairs	4.5		
69	Dormakaba or equal approved round cylinder escutcheon Code DCE-002 S.S	No	3		
	Carried to Collection			R	

70	Dormakaba or equal approved ylinder Sash Lock. Case dimensions (mm) 116.5H x 78D. Forend dimensions (mm) 168H x 22W. Backset 57mm. Centres 61mm. code D036S SS	No	3		
71	Dormakaba or equal approved 63mm - 31.5+31.5mm Europrofile Nickel Plated E-SP 5 Pin Knob Cylinder - Master Keyed Code DKC206301 MK	No	3		
72	Dormakaba or equal approved Floor Mounted Door Stop Code DDS-SS-017	No	3		
	Door Type : D05, D01				
73	Dormakaba or equal approved round cylinder escutcheon Code DCE-002 S.S	No	2		
74	Dormakaba or equal approved Cylinder Sash Lock. Case dimensions (mm) 116.5H x 78D. Forend dimensions (mm) 168H x 22W. Backset 57mm. Centres 61mm. Code D036S SS	No	2		
75	Dormakaba or equal approved 63mm - 31.5+31.5mm Europrofile Nickel Plated E-SP 5 Pin Knob Cylinder - Master Keyed Code DKC206301 MK	No	2		
76	Halcast or equal approved Code 166 SC brass cabin hook and eye fixed to wrot meranti blocks 75x75mm with chamfered edges. Code 166	No	2		
	Door Type : D04 x 2				
77	Dormakaba or equal approved 120x40mm Rectangular Flush Pull Handle Code DFP-SS-025	No	4		
78	Dormakaba or equal approved Narrow Stile Hook Lock Operating with European Profile Cylinder. Case dimentions (mm) 174H x 45D. Forend dimensions (mm) 290H x 22W. Backset 35mm. 18mm Throw. Code D02935 SS	No	2		
79	Dormakaba or equal approved 63mm - 31.5+31.5mm Europrofile Nickel Plated E-SP 5 Pin Double Cylinder - Master Keyed. Code DDC206301 MK	No	2		
80	Dormakaba or equal approved Narrow Stile Cylinder escutcheon Code DCE-105 S.S	No	2		
	Carried to Collection			R	

	Transformer Door				
81	Pair of 'DORMA' or equal approved TH125 satin finish tubular stainless steel spring loaded lever handles with two DCE-002 cylinder escutcheons and DORMA or equal approved cylinder mortice sash lock D072EC with lock case, stainless steel forend, CISA double cylinder master keyed	No	1		
	BATHROOM FITTINGS, ETC				
	Franke stainless steel or other equal approved				
82	STRX672 stainless steel soap dispenser, plugged	No	7		
83	STRDX618 paper towel dispenser, plugged	No	6		
84	STRX605 stainless steel waste bin	No	7		
85	STRX672 vandal proof toilet roll holder, plugged	No	11		
	Dorma or other approved				
86	Paraplegic CNTXPARGrab Rail (SET) for WC, & Basin with manufactured from Grade 304 Stainless Steel, satin finish to prevent slipping, with diameter 31,8mm. Certified product. Includes screws and dowels. CNTXPAR 300 x 96 x 300 2510012 (or equal approved) plugged.	No	2		
87	Cistern & Flush Valve Back Rail CNTXBRGrab rail with manufactured from Grade 304 Stainless Steel, satin finish to prevent slipping, with diameter 32mm. Certified product. Includes screws and dowels.CNTXBR 750 x 260 2510014 plugged.	No	2		
	LETTERS, NAMEPLATES, ETC				
	6mm thick perspex backing plates signs size 250 x 250mm mounted to walls, doors, backing plates, etc				
88	6mm thick perspex sign for 'KITCHEN'	No	1		
89	6mm thick perspex sign for 'SCULLERY'	No	1		
90	6mm thick perspex sign for 'STORE 1'	No	1		
	Carried to Collection			R	

91	6mm thick perspex sign for 'STORE 2'	No	1		
92	6mm thick perspex sign for 'STORE 3'	No	1		
93	6mm thick perspex sign for 'PAY 1'	No	1		
94	6mm thick perspex sign for 'PAY 2'	No	1		
95	6mm thick perspex sign for 'STRONGROOM'	No	1		
96	6mm thick perspex sign for 'INFORMATION'	No	1		
97	6mm thick perspex sign for 'DISPLAY PLATFORM'	No	1		
98	6mm thick perspex sign for 'COFFEE BAR'	No	1		
99	6mm thick perspex sign for 'OUTDOOR DECK'	No	1		
100	6mm thick perspex sign for 'KITCHEN YARD'	No	1		
	6mm Perspex backing plates for fire signs, including natural anodised aluminium channel framing all round with mitred corner intersections and hanged 500mm below ceilings with two 3mm stainless steel cables				
101	380 x 190mm Backing	No	2		
102	570 x 190mm Backing	No	2		
	SHELVES, ETC				
	"Krost" or any other equal approved open unit bolted steel shelving,shelving units with standard epoxy polyester powder coated finish, including uprights, open base foot pieces, shelf brackets, shelves, spacers, top rails, top finishing plates, etc				
103	Shelving unit 914 mm wide x 381 mm deep x 2 209 mm high with closed back and sides, each unit complete with 8 steel shelves to the height creating 8 openings	No	10		
104	Shelving unit 872 mm wide x 381 mm deep x 2 209 mm high with closed back and sides, each unit complete with 8 steel shelves to the height creating 8 openings	No	1		
	Carried to Collection			R	

105	Shelving unit 833 mm wide x 381 mm deep x 2 209 mm high with closed back and sides, each unit complete with 8 steel shelves to the height creating 8 openings	No	1		
106	Shelving unit 722 mm wide x 381 mm deep x 2 209 mm high with closed back and sides, each unit complete with 8 steel shelves to the height creating 8 openings	No	1		
107	Shelving unit 532 mm wide x 381 mm deep x 2 209 mm high with closed back and sides, each unit complete with 8 steel shelves to the height creating 8 openings	No	1		
108	Shelving unit 487 mm wide x 381 mm deep x 2 209 mm high with closed back and sides, each unit complete with 8 steel shelves to the height creating 8 openings	No	1		
109	Shelving unit 248 mm wide x 381 mm deep x 2 209 mm high with closed back and sides, each unit complete with 8 steel shelves to the height creating 8 openings	No	1		
	"Shelvit " or similar approved brackets with standard baked epoxy powder coated finish				
110	250 x 250mm Shelf brackets plugged	No	16		
111	450 x 450mm Shelf brackets plugged	No	4		
112	450 x 700mm Shelf brackets plugged	No	4		
	STEEL LOCKERS				
	Greenfield or equal approved steel lockers with standard baked enamel finish:				
113	Bank of 2 x G23 lockable lockers each 305 x 457 x 1 800mm high bolted together complete with 60mm padlock	No	16		
	FLOOR SUNK DUST TRAP				
	Squeegee or equal approved				
114	1 852 x 1 642mm wide floor dust trap mat glued onto screed in and including mat surround fixed with 12mm brass edging strip laid level with porcelain tiles.	No	1		
	Carried to Collection			R	

115	1 954 x 3 000mm wide floor dust trap mat glued onto screed in and including mat surround fixed with 12mm brass edging strip laid level with porcelain tiles.	No	1		
116	2 292 x 1 276mm wide floor dust trap mat glued onto screed in and including mat surround fixed with 12mm brass edging strip laid level with porcelain tiles.	No	1		
117	2 292 x 2 358mm wide floor dust trap mat glued onto screed in and including mat surround fixed with 12mm brass edging strip laid level with porcelain tiles.	No	1		
	PINNING BOARDS, WRITING BOARDS, PROJECTION SCREENS, ETC				
	"Vitrex" or equal approved				
118	Parrot Bulletin board aluminium frame or similar approved 2 400 x 1 200mm Anodized Aluminium frame pinnable felt notice board with landscape orientation and concealed wall fixing kit included, colour: Laurel Grey, fabric type: Wool Felt with SABS Class 3 fire rating mounted at 1200mm height from FFL. Manufactured in accordance with SANS 1415:2005 all installed by approved installer in accordance with SANS 10186:2000.	No	4		
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SECTION 2: INFORMATION AND VISITORS CENTRE

Bill No. 8

Ironmongery

COLLECTION

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Item No			Quantity	Rate	Amount
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	BILL NO. 9				
	STRUCTURAL STEELWORK				
	PREAMBLES				
	NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill				
	SUPPLEMENTARY PREAMBLES				
	Descriptions				
	Descriptions of bolts shall be deemed to include nuts and washers				
	Descriptions of L-shaped and U-shaped anchor bolts shall be deemed to include bending, threading, nuts and washers and embedding in concrete				
	Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork or concrete				
	STEEL COLUMNS AND BEAMS				
	Welded columns in single lengths with flat base, cap, bearer and connection plates, bolted to concrete				
1	305 x 165 x 41kg/m column	t	2.13		
	Welded beams in single lengths with angle section cleats bolted to brickwork				
2	100 x 75 x 3mm RHS (beam)	t	1.12		
3	305 x 165 x 41kg/m beam	t	6.71		
	Carried to Collection			R	

	STEEL PURLINS, GIRTS, BRACING, ETC				
	Purlins and girths, bolted to steel				
4	100 x 75 x 20 x 2.5mm Thick cold-formed lipped channel purlins	t	2.31		
5	50 x 50 x 5mm angle bracing	t	0.17		
	BASE PLATES, ETC				
6	500 x 300 x 20mm base plate	No	13		
	BOLTS, FASTENERS,ETC				
7	High tensile bolts	t	0.70		
8	M20 HD bolts 500mm long	No	78		
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SECTION 2: INFORMATION AND VISITORS CENTRE

Bill No. 9

Structural Steel

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Structural Steel
Thohoyandou Botanical Garden (TBG)

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SECTION NO. 2

BILL NO. 10

METALWORK

PREAMBLES

NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill

SUPPLEMENTARY PREAMBLES

Descriptions of bolts, anchors, etc

Descriptions of bolts shall be deemed to include nuts and washers

Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork or concrete

Items described as"holed for bolt(s)" shall be deemed to exclude the bolts unless otherwise described

Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 600mm centres

STAINLESS STEEL BALUSTRADES, HANDRAILS, ETC

Carried to Collection R

	Welded handrails fixed to steel support.				
1	Balustrades of 1000mm high from to top of stiles, formed of 75mm external diameter x 1.5mm thick continuous top rail, four number steel rails of 25.88mm external diameter x 1.6mm thick continuous tubular intermediate rails at equal centres and intermediate posts of 50mm diameter connected with machined pin connection to top rail. Posts fixed with polster non-shrink grout into holes core drilled to a depth of 150mm through floor finishes including 76mm diameter x 2mm thick pressed steel flange cover plates, ends posts, closure pieces, ends, intersections, ramps, knees, bends, etc.	m	79		
2	Balustrades of 1000mm high from to top of stiles, formed of 75mm external diameter x 1.5mm thick continuous top rail, four number steel rails of 25.88mm external diameter x 1.6mm thick continuous tubular intermediate rails at equal centres and intermediate posts of 50mm diameter connected with machined pin connection to top rail. Posts fixed with polster non-shrink grout into holes core drilled to a depth of 150mm through floor finishes including 76mm diameter x 2mm thick pressed steel flange cover plates, ends posts, closure pieces, ends, intersections, ramps, knees, bends, etc.	m	20		
3	Extra over for L-intersection of horizontal balustrades	No	10		
4	Extra over for flat closed end	No	8		
5	80mm Expansion bolt	No	36		
	HOT DIPPED GALVANISED BOLTS, FASTENERS, BRACKETS, ETC				
	Welded and bolted brackets to isolated timber (timber elsewhere measured)				
6	Angled brackets	kg	600		
7	U shaped brackets	kg	700		
8	T shaped brackets	kg	650		
9	Base plates	kg	150		
	Carried to Collection			R	

10	Bolts and nuts	kg	150		
11	Expansion bolts, bolted into concrete	kg	150		
12	Hole through steel brackets for bolts	No	100		
	WELDED SCREENS, GATES, ETC				
	Steel gates and frames				
13	Double gate and frame size 1 600 x 2 032mm high of 25 x 25x 2mm hollow section frame and 25 x 25x 2mm hollow section horizontal middle rail filled in with 12 x 12mm square section vertical rails at 75mm centres and fitted with a pair of suitable hinges welded to frame and with locking mechanism for padlock all in and including outer frame of 25 x 25 x 2mm hollow section welded frame bolted to brickwork.	No	1		
	PRESSED STEEL DOOR FRAMES				
	1,6mm double rebated frames suitable for half brickwall				
14	Frame for door 900 x 2 032mm high	No	8		
15	Frame for door 900 x 2 400mm high and fixed fanlight 300mm high	No	2		
16	Frame for door 1 100 x 2 032mm high	No	2		
	1,6mm double rebated frames suitable for one brickwall				
17	Frame for door 900 x 2 400mm high and fixed fanlight 300mm high	No	4		
18	Frame for door 1 100 x 2 032mm high	No	1		
19	Frame for door 1 500 x 2 100mm high	No	1		
	STEEL STRONGROOM DOORS, VENTILATORS, ETC				
	Carried to Collection			R	

	Strongroom doors etc. suitable for 230mm walls fixed to brickwork or concrete				
20	Mutual Austen Safes DS50/2/HD SABS Category 2 or equal approved (Heavy Duty) right hand strongroom door with 2 x 7-lever security keylock, overall size 900 x 2400mm high with and including powder coated finish	No	1		
21	Strongroom door stop plugged	No	1		
	Carried to Collection			R	

22	Double ended ventilator	No	1		
	ALUMINIUM WINDOWS, DOORS, ETC.				
	ALUMINIUM DOORS, ETC.				
	Powder coated aluminium door and frame with 6.38mm thick reinforced tinted Low E safety double glazed clear glass including applicable ironmongery (locks, door stops, door closers), universal clips on vertical sides and box section over, additional universal clip sections plugged to brick wall on each side and 40mm termination channel section plugged to top edge of brick work with two pairs of 100mm nylon washered aluminium hinges:				
	Bidders are to referred to Architectural drawings attached to these bills of quantities				
23	Frame for door size overall 900 x 2 400mm high and including ironmongery fixed to brickwork (D09).	No	4		
24	Double door size overall 1 695 x 2 400mm high and including ironmongery fixed to brickwork (D03).	No	1		
25	Frame for door size overall 2 100 x 2 400mm high and including ironmongery fixed to brickwork (D02).	No	2		
26	Frame overall size 2 600 x 2 800mm high with side and top panels, double door and including ironmongery fixed to brickwork (D01).	No	1		
27	Frame overall size 9 915 x 2 800mm high with side and top panels, double door and including ironmongery fixed to brickwork (D04).	No	1		
	ALUMINIUM DOOR LOUVRE				
	Approved fixed louvre door units screwed into timber frames				
28	Purpose made louvre unit for 420 x 568mm high opening	No	2		
	ALUMINIUM WINDOWS, ETC.				
	Carried to Collection			R	

	Aluminium Powder Qoated Kalahari or equal approved red colour frame with 4mm obscure Double glazing Low E Glass, glazing beads and vin yl gaskets with neoprene seals and plugged to brickwork or concrete complete including silicone seal and all ironmongery, stays. latches, etc Bidders are to referred to Architectural drawings attached to these bills of quantities				
29	Window type W04, size 500 x 2 000mm high	No	6		
30	Window type W02, size 700 x 1 000mm high	No	2		
31	Window type W01, size 800 x 900mm high	No	9		
32	Window type W03, size 900 x 1 000mm high	No	2		
33	Window type W06, size 1 000 x 500mm high	No	1		
34	Window type W07, size 1 000 x 950mm high	No	2		
35	Window type W10, size 1 750 x 1 500mm high	No	1		
36	Window type W05, size 1 500 x 500mm high	No	1		
	Aluminium Powder Qoated Kalahari or equal approved red colour frame with 6.38mm clear shutter proof glazing Low E Glass, glazing beads and vin yl gaskets with neoprene seals and plugged to brickwork or concrete complete including silicone seal and all ironmongery, stays. latches, etc Bidders are to referred to Architectural drawings attached to these bills of quantities				
37	Window type W12 size 900 x2 800mm high	No	9		
38	Window type W08, size 1 300 x 1 200mm high	No	1		
39	Window type W09, size 2 145 x 1 500mm high	No	2		
40	Sliding pay window type W11, size 2 560 x 1 500mm high (Pay window)	No	1		
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SECTION 2: INFORMATION AND VISITORS CENTRE
Bill No. 10
Metalwork
Thohoyandou Botanical Garden (TBG)

	ALUMINIUM LOUVRE WINDOWS				
	Purpose made Wispeco or equal approved aluminium louvre fixed to brickwork				
41	Window size 1 000 x 1 000mm high	No	1		
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Section No. 2
SECTION 2: INFORMATION AND VISITORS CENTRE
Bill No. 10
Metalwork
Thohoyandou Botanical Garden (TBG)

Section No. 2

SECTION 2: INFORMATION AND VISITORS CENTRE

Bill No. 10

Metalwork

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Item No			Quantity	Rate	Amount
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	BILL NO. 11				
	PLASTERING				
	PREAMBLES				
	NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill				
	FLOOR SCREEDS				
	GRANOLITHIC				
	Untinted granolithic on concrete (degree of accuracy grade III)				
1	30mm Thick on floors and landings	m2	4		
2	Skirtings 75mm high	m	7		
	1:4 wooden float screed to floor				
3	30mm Thick on floors and landings to receive tiles	m2	488		
4	30mm Thick on floors and landings to receive waterproofing	m2	120		
	INTERNAL PLASTER				
	1:4 cement plaster steel trowelled, on brickwork				
5	On walls	m2	1 402		
6	Ditto, narrow width	m2	3		
	EXTERNAL PLASTER				
	Carried to Collection			R	

	1:4 cement plaster wood float finish on brickwork				
7	On walls	m2	805		
8	Ditto, narrow width	m2	3		
	SPECIALISED PLASTER TYPE WALL COATINGS				
	12mm cementitious pre-pigmented acrylic plasticised textured plaster finish applied in two operations with smooth finish sealed with two coats pure acrylic sealer as recommended by the manufacturer, on brickwork				
9	On internal walls	m2	160		
	12mm cementitious pre-pigmented acrylic plasticised textured plaster finish applied in two operations with smooth finish sealed with two coats pure acrylic sealer as recommended by the manufacturer, on brickwork				
10	On external walls	m2	805		
	CORNER PROTECTORS, DIVIDING STRIPS, ETC				
11	50 x 5mm Flat section brass dividing strips between differing floor finishes	m	88		
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Section No. 2

SECTION 2: INFORMATION AND VISITORS CENTRE

Bill No. 11

Plastering and Screeds

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	BILL NO. 12				
	TILING				
	PREAMBLES				
	NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill				
	SUPPLEMENTARY PREAMBLES				
	Fixing				
	Unless described as "fixed with adhesive to plaster (plaster elsewhere)" descriptions of tiling on brick or concrete walls, columns, etc shall be deemed to include 1:4 cement plaster backing and descriptions of tiling on concrete floors etc shall be deemed to include 1:3 plaster bedding				
	Tiling described as "fixed with adhesive on power floated concrete" shall be deemed to include for approved tiling key-coat				
	Ceramic, porcelain, marble and granite tiles are to be fixed and grouted with suitable adhesives and grouts from the range of products as recommended by the manufacturer of the tiles				
	WALL TILING				
	250 x 250 x 10mm glazed walls tiles fixed with adhesive to plaster (plaster elsewhere) and flush pointed with tinted grout				
1	On walls	m2	160		
2	Ditto in narrow widths	m2	5		
	Carried to Collection			R	

	FLOOR TILING				
	UNION Tiles Urban Collection or equal approved non-slip Porcelain floor tiles (or equal approved) with PEI Class 4 rating, size 600 x 600mm, fixed to wood floated 1:4 cement and sand screed with tile adhesive (elsewhere specified) on concrete surface bed (elsewhere specified), with 5mm joints continuous in both directions grouted with tile grout (elsewhere specified)				
3	On floors and landings	m2	488		
4	Skirting 150mm high of cut tiles	m	373		
	EDGE TRIMS, NOSING, ETC				
	Edge trims, nosings, etc				
5	9mm "ASE090.MS" aluminium straight edge trims	m	80		
	Carried to Collection			R	

Section No. 2

SECTION 2: INFORMATION AND VISITORS CENTRE

Bill No. 12

Tiling

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	95		
	96		
Carried Forward to Summary of Section No. 2		R	

Item No		Quantity	Rate	Amount

SECTION NO. 2

BILL NO. 13

PLUMBING AND DRAINAGE (PROVISIONAL)

PREAMBLES

NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill

SUPPLEMENTARY PREAMBLES

Wire gratings

Descriptions of gutter outlets etc shall be deemed to include wire balloon gratings

Stormwater channels

Descriptions of channels shall be deemed to include necessary excavation, surface preparation, compaction, etc, and disposal of surplus material on site

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

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

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

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

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

Carried to Collection R

Sealing of edges

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

uPVC pipes and fittings

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

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

uPVC pressure pipes and fittings

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

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

High density polyethylene (HDPe) pipes and fittings

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

"Polycop" polypropylene pipes

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

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

Carried to Collection R

Copper pipes

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

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

Reducing fittings

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

Fixing of pipes

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

Laying, backfilling, bedding, etc of pipes

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

Carried to Collection R

Where no manufacturers' instructions exist, pipes shall be laid in accordance with Clauses 5.1 and 5.2 of each of the following:
SABS 1200L : Medium-pressure pipelines
SABS 1200LD : Sewers
SABS 1200LE: Stormwater drainage

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

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

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

General

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

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

Descriptions of pipes laid in and including trenches and of inspection chambers, catchpits, etc shall be deemed to include excavation, bedding, backfilling, compaction to a minimum of 93% Mod AASHTO density and disposal of surplus material on site

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

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

Carried to Collection R

	As-built drawings				
	Where required, the contractor shall prepare an updated set of as-built drawings. At completion of the contract the contractor shall hand these drawings to the principal agent for reproducing onto the originals for handing over to the employer (provision for allowance of as-built drawings elsewhere)				
	RAINWATER DISPOSAL				
	0.6mm thick Chromadek or equal approved				
1	200 x 150mm eaves gutters complete with brackets	m	99		
2	Extra over gutter for stopped end	No	20		
3	Extra over gutter for angle	No	16		
4	Extra over gutter for outlet for 100mm square pipe	No	28		
5	100mm square rainwater pipes	m	160		
6	Extra over rainwater pipe for shoe	No	27		
7	Extra over rainwater pipe for bend	No	27		
8	Extra over rainwater pipe for offset plinth	No	20		
	uPVC SV pipes				
9	110mm Pipes cast into concrete	m	30		
	Extra over uPVC SV pipes for fittings				
10	110mm BSP adaptor to cast iron.	No	5		
11	110mm Bend.	No	5		
	Cast iron pipes with SSN couplings				
12	110mm Pipes vertical outlet type including casting in position into concrete.	m	30		
	Carried to Collection			R	

	Fullbore cast iron outlets				
13	110mm Vertical outlet including casting into concrete with dome grate code 03530.	m	5		
14	110mm 45 degrees side outlet including casting into concrete.	No	5		
	SANITARY FITTINGS				
	12mm Stainless steel type 304 (grade 18/10)				
15	Single bowl sink 1 000 x 460mm with end bowls 460 x 355 x 150mm deep each, 40mm sink outlet chrome plated with back nut plug and chain un-slotted as cobra 316, 40mm butyl rubber combination resealing P-trap	No	1		
16	Double bowl sink 1 160 x 460mm with end bowls 460 x 355 x 150mm deep each, 40mm sink outlet chrome plated with back nut plug and chain un-slotted as cobra 316, 40mm butyl rubber combination resealing P-trap	No	1		
17	1 400 x 455 x 390mm model BS313 or equal approved double compartment mounted wash trough on 25.4 x 25.4 square metal tube gallows brackets with front let into brickwork	No	1		
18	1 400 x 455 x 390mm model BS313 or equal approved double compartment mounted wash trough on 25.4 x 25.4 square metal tube gallows brackets with front let into brickwork	No	2		
	White glazed 'Vaal' or equal approved				
19	"Hibiscus" or equal approved 540 x 450mm rounded basin with single tap hole product code 702303	No	5		
20	"Weaver or equal approved 575 x 455 rectangular basin with single tap hole product code 704103	No	2		
21	"Daisy" or equal approved semi-closed couple wash down suite including heavy duty plastic seat 772403	No	6		
	Carried to Collection			R	

22	'Protea Paraplegic' or equal approved white vitreous china floor mounted paraplegic washdown suite (product code 7502) comprising 90° outlet pan (product code 7502) and matching 9 litre cistern (product code 710539) including lid, fitments, etc. with purpose made chromium plated side mounted flush lever, bedded in 4:1 cement mortar on concrete floors.	No	2		
	WASTE UNIONS, ETC.				
23	32 mm Chromium plated basin waste union	No	7		
24	38 mm Chromium plated bath or sink waste union	No	3		
	TRAPS, ETC.				
25	40 x 50mm Double bowl wash trough or sink reseal P trap combination.	No	2		
26	40 x 50mm Chromium plated bottle trap	No	8		
	TAPS, VALVES, ETC.				
	"Cobra Watertech" or other equal approved				
27	15mm 832/350F Angle valve with 350mm flexible hose connector	No	7		
28	15mm 181CP "Tudor" exposed basin mixer, TD-294	No	7		
29	22 mm CS-296CP "Capstan" or equal approved sink mixer with swivel spout outlet	No	3		
30	15mm 1001/125-20RB fullway gate valve	No	21		
31	32mm FM1 .1 OOCP or equal approved "Flush master" exposed back entry toilet flush valve	No	2		
	SANITARY PLUMBING				
	uPVC soil and vent pipes				
32	50mm Pipes	m	150		
33	110 mm Pipes	m	40		
	Carried to Collection			R	

34	110 mm Pipes laid in and including trenches not exceeding 1m deep under surface beds	m	140		
	Extra over 50 mm uPVC pipes for fittings				
35	BSP adaptor	No	30		
36	Bend	No	30		
37	Junction	No	22		
38	Access bend	No	22		
39	Access junction	No	22		
40	Two-way vent valve	No	22		
	Extra over 110 mm uPVC pipes for fittings				
41	Pan collar	No	8		
42	Bend	No	24		
43	Junction	No	24		
44	Access bend	No	24		
45	Access junction	No	24		
46	Two-way vent valve	No	8		
	Sundries				
47	Testing waste pipe system		Item		
	WATER SUPPLIES				
	Class 0 copper pipes				
48	15mm Pipes	m	174		
49	22mm Pipes	m	137		
50	28mm Pipes	m	88		
	Carried to Collection			R	

	Extra over class 0 copper pipes for capillary fittings				
51	15mm Fittings	No	30		
52	22mm Fittings	No	30		
53	28mm Fittings	No	20		
	Copper overflow and service pipes				
54	15 mm Service pipe 380 mm girth	No	10		
	Carried to Collection			R	

	ELECTRIC WATER HEATERS				
	"Kwikot" or equal approved				
55	Kwikot or equal approved 250 litre Standard 600 Dual electric water heater (Code : EF-250-2D) complying with SABS 151-2002, overall size 1650 x 535mm high, operating at 400kPa with temperature and pressure safety relief valve including 20mm female drain cock with inlet compression. Geyser to be installed horizontally in roof space with 1820 x 560mm wide polyethylene drip tray with union and back nut connected to 20mm PVC overflow pipe taken out at eaves (Code : GSTP-1940) and 22mm pipe work including two 22mm vacuum breakers (Code : KHN4.200CX) installed on hot and cold water supply. Installation to include a 22mm 400kPa Kwikot or equal approved Mono control and expansion relief valve (Code : KHN3.114), all in accordance with SANS 10254, connected to single phase electrical power supply with isolator 1m away from connection on geyser.	No	2		
	WATER SUPPLIES TO FIRE APPLIANCES				
	Galvanised mild steel				
56	22mm Pipes	m	70		
57	28mm Pipes	m	40		
	Extra over galvanised mild steel pipes for fittings				
58	22mm Fittings	No	15		
59	28mm Fittings	No	15		
	Sundries				
60	Testing fire water pipe system		Item		
	Carried to Collection			R	

Section No. 2

SECTION 2: INFORMATION AND VISITORS CENTRE

Bill No. 13

Plumbing and Drainage (Provisional)

COLLECTION

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Item No			Quantity	Rate	Amount
	SECTION NO. 2				
	BILL NO. 14				
	GLAZING				
	PREAMBLES				
	NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill				
	GLAZING TO STEEL WITH PUTTY				
	TOPS, SHELVES, DOORS, MIRRORS, ETC				
	6mm Silvered float glass copper backed mirrors with polished edges, holed for and fixed with chromium plated dome capped mirror screws with rubber buffers to plugs in brickwork or concrete				
1	Mirror size 450 x 600mm high	No	8		
	Carried Forward to Summary of Section No. 2			R	

Item No		Quantity	Rate	Amount

SECTION NO. 2

BILL NO. 15

PAINTWORK

PREAMBLES

NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill

SUPPLEMENTARY PREAMBLES

PREPARATORY WORK TO EXISTING WORK

Previously painted plastered surfaces

Surfaces shall be thoroughly washed down and allowed to dry completely before any paint is applied. Blistered or peeling paint shall be completely removed and cracks shall be opened, filled with a suitable filler and finished smooth

Previously painted metal surfaces

Surfaces shall be thoroughly rubbed and cleaned down. Blistered or peeling paint shall be completely removed down to bare metal

Previously painted wood surfaces

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

PAINT SPECIFICATIONS

All painting shall be done in accordance with "SANS" specifications unless otherwise described

Carried to Collection R

	COLOURS				
	Unless otherwise described all paintwork shall be deemed to have a colour value in excess of 7 on the Munsell system in accordance with SANS 1091				
	PAINTWORK ETC, TO NEW WORK				
	ON INTERNAL FLOATED PLASTER SURFACES				
	One coat alkali resistent primer, one coat undercoat and two coats "Eggshell enamel" paint				
1	Internal walls	m2	1 402		
	One coat alkali resistent primer, one coat undercoat and two coats "Eggshell enamel" paint				
2	External walls	m2	847		
	ON PLASTERBOARD SURFACES				
	One coat alkali resistant primer and two coats PVA emulsion paint for interior use				
3	Ceilings and cornices	m2	183		
	ON METAL SURFACES				
	Prepare ,etc as specified and apply two coats of bitumen based paint inside the gutter				
4	Inside eaves gutter	m2	49		
	One coat alkyd based zinc phosphate primer, one coat akyd based universal undercoat and two coats premium quality polyurethane enamel paint, on steel				
5	Gates, grilles, burglar screens, balustrades, etc (both sides measured over the full flat area)	m2	7		
6	Door frames	m2	41		
7	Structural steel members	m2	154		
	ON WOOD SURFACES				
	Carried to Collection			R	

	Spot priming defects with alkyd based universal undercoat and two coats gloss enamel paint on				
8	On doors	m2	57		
	Spot priming defects with alkyd based universal undercoat and two coats polyurethane varnish on				
9	On doors	m2	3		
10	On roof timbers	m2	105		
11	On timber shelves	m2	44		
12	On slatted seats	m2	2		
	Carried to Collection			R	

Section No. 2

SECTION 2: INFORMATION AND VISITORS CENTRE

Bill No. 15

Paintwork

COLLECTION

	Page No		Amount
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Section No. 2

SECTION 2: INFORMATION AND VISITORS CENTRE

SECTION SUMMARY - SECTION 2: INFORMATION AND VISITORS CENTRE

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9	Structural Steel	83	
10	Metalwork	91	
11	Plastering and Screeds	94	
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15	Paintwork	113	

Carried to Final Summary R

Item No		Quantity	Rate	Amount

SECTION NO. 3

BILL NO. 1

EARTHWORKS (PROVISIONAL)

PREAMBLES

NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill

SUPPLEMENTARY PREAMBLES

Nature of ground

The nature of the ground is assumed to be gravel, therefore "earth", but possibly interspersed with "soft rock" or "hard rock"

Subterranean water

No subterranean water is expected

The water table is expected to vary between approximately 1,5m and 2m below natural ground level. The removal of subterranean water is given separately

Carting away of excavated material

Descriptions of carting away of excavated material shall be deemed to include loading excavated material onto trucks directly from the excavations or, alternatively, from stock piles situated on the building site

Filling

Notwithstanding the reference to prescribed multiple handling in clause 1 page 6 of the Standard System of Measuring Building Work, prices for filling and backfilling shall include for all selection and any necessary multiple handling of material

Carried to Collection R

	Testing				
	Prices for filling are to include for all necessary density tests in accordance with SABS 1200D				
	EXCAVATION, FILLING, ETC OTHER THAN BULK				
	EXCAVATIONS, ETC				
	Excavate in earth not exceeding 2m deep				
1	Trenches	m3	39		
2	Holes	m3	3		
	Extra over excavations in earth for excavation in:				
3	Soft rock	m3	1		
4	Hard rock	m3	1		
	Extra over all excavations for carting away				
5	Surplus material from excavations and/or stock piles on site, to a dumping site to be located by the contractor	m3	10		
	Risk of collapse of excavations				
6	Sides of trench and hole excavations not exceeding 1,5m deep	m2	111		
	Keeping excavations free of water				
7	Keeping excavations free of all water other than subterranean water		Item		
	FILLING ETC				
	Earth filling obtained from the excavations and/or prescribed stock piles on site compacted to 90% Mod AASHTO density				
8	Backfilling to trenches, holes, etc	m3	20		
9	Under floors, steps, pavings, etc	m3	12		
	Carried to Collection			R	

	Earth filling supplied by the Contractor, compacted to 90% Mod AASHTO density				
10	Under floors, steps, pavings, etc	m3	25		
	Compaction of surfaces				
11	Compaction of ground surface under pavings, aprons, etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 90% Mod AASHTO density	m2	82		
	Sand blinding				
12	30mm thick sand spread level	m2	82		
	SOIL POISONING				
	Soil insecticide in accordance with SANS 5859				
13	Under floors, etc including forming and poisoning shallow furrows against foundation walls, etc filling in furrows and ramming	m2	82		
14	To bottoms and sides of trenches, etc	m2	111		
	Carried to Collection			R	

Section No. 3

SECTION 3: CULTURAL HUTS

Bill No. 1

Earthworks

COLLECTION

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Section No. 3
SECTION 3: CULTURAL HUTS
Bill No. 1
Earthworks
Thohoyandou Botanical Garden (TBG)

Item No		Quantity	Rate	Amount

SECTION NO. 3

BILL NO. 2

CONCRETE, FORMWORK AND REINFORCEMENT

PREAMBLES

NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill

SUPPLEMENTARY PREAMBLES

Cost of tests

The costs of making, storing and testing of concrete test cubes as required under clause 7 "Tests" of SABS 1200 G shall include the cost of providing cube moulds necessary for the purpose, for testing costs and for submitting reports on the tests to the principal agent. The testing shall be undertaken by an independent firm or institution nominated by the contractor to the approval of the principal agent. (Test cubes are measured separately)

Formwork

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

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

Carried to Collection R

	Formwork to soffits of solid slabs etc shall be deemed to be to slabs not exceeding 250mm thick unless otherwise described				
	Formwork to soffits of slabs, beams, etc shall be deemed to be propped up exceeding 1,5m and not exceeding 3,5m high unless otherwise described				
	Formwork to sides of bases, pile caps, ground beams, etc will only be measured where it is prescribed by the engineer for design reasons. Formwork necessitated by irregularity or collapse of excavated faces will not be measured and the cost thereof shall be deemed to be included in the allowance for taking the risk of collapse of the sides of the excavations, provision for which is made in "Earthworks"				
	UNREINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES				
	25Mpa/19mm concrete				
1	Ramps	m3	3		
2	Aprons cast in panels	m3	8		
3	Thickening down the edge of apron 150mm deep ,200mm top and tapering to 100mm at bottom including all excavations, formwork, backfilling, etc	m	81		
	REINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES				
	30Mpa/19mm concrete				
4	Holes	m3	3		
5	Footings	m3	14		
6	Surface beds	m3	15		
	TEST CUBES				
7	Making and testing 150 x 150 x 150mm concrete strength test cube (Provisional)	No	15		
	CONCRETE SUNDRIES				
	Carried to Collection			R	

	Finishing top surfaces of concrete smooth with a wood float				
8	Aprons to falls	m2	81		
	ROUGH FORMWORK				
	Rough formwork to sides				
9	Edges, risers, beams, ends and reveals not exceeding 300mm high or wide in circular	m	56		
	MOVEMENT JOINTS, ETC				
	Expansion joints with 10mm bitumen impregnated softboard expanded polyethylene between vertical concrete and brick surfaces				
10	Not exceeding 300mm high to edges of surface beds	m	54		
	Saw cut joints				
11	10 x 20mm saw cut joints on top of concrete	m	36		
	REINFORCEMENT (PROVISIONAL)				
	Fabric reinforcement				
12	Type 617 fabric reinforcement in surface beds, ramps, etc	m2	82		
13	Type 617 fabric reinforcement in footings, etc	m2	66		
	Carried to Collection			R	

Section No. 3

SECTION 3: CULTURAL HUTS

Bill No. 2

Concrete, Formwork and Reinforcement

COLLECTION

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Item No		Quantity	Rate	Amount

SECTION NO. 3

BILL NO. 3

MASONRY

PREAMBLES

NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill

SUPPLEMENTARY PREAMBLES

BRICKWORK

Sizes in descriptions

Where sizes in descriptions are given in brick units, "one brick" shall represent the length and "half brick" the width of a brick

Hollow walls

Descriptions of hollow walls shall be deemed to include leaving every fifth perpend of the bottom course of the external skin open as a weep hole

Face bricks

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

Pointing

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

BRICKWORK

Carried to Collection R

	FOUNDATIONS (PROVISIONAL)				
	Brickwork of NFP bricks (14 MPa nominal compressive strength) in class II mortar				
1	One brick walls in circular plan	m2	44		
	SUPERSTRUCTURE				
	Brickwork of NFP bricks (14 MPa nominal compressive strength) in class II mortar				
2	One brick walls	m2	16		
3	One brick walls circular on plan	m2	204		
	BRICKWORK SUNDRIES				
	2,5mm Brickwork reinforcement				
4	150mm Wide reinforcement built in horizontally	m	158		
5	150mm Wide reinforcement built in horizontally, circular on plan	m	2 478		
	PRECAST CONCRETE				
	"Allied Concrete" or equal approved pre-stressed fabricated lintels				
6	110 x 75mm Lintels in lengths not exceeding 3m	m	9		
	"Allied Concrete" or equal approved pre-stressed fabricated concrete top 100mm thick				
7	Precast concrete top on one brick walls 450mm wide	No	12		
	"Allied Concrete" or equal approved pre-stressed fabricated concrete shelf				
8	Allow a prime cost sum of R4 000 (materials delivered) for precast concrete shelve to be fixed and installed to brick wall	No	3		
	Carried to Collection			R	

Section No. 3

SECTION 3: CULTURAL HUTS

Bill No. 3

Brickwork

COLLECTION

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	BILL NO. 4				
	WATERPROOFING				
	PREAMBLES				
	NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill				
	SUPPLEMENTARY PREAMBLES				
	Waterproofing				
	Waterproofing of roofs, basements, etc shall be laid under a ten year guarantee. Waterproofing to roofs shall be laid to even falls to outlets etc with necessary ridges, hips and valleys. Descriptions of sheet or membrane waterproofing shall be deemed to include additional labour to turn-ups and turn-downs				
	DAMPPROOFING OF WALLS AND FLOORS				
	One layer 375 micron embossed polyethylene dampproof course (SANS 952-1985 type B)				
1	In walls	m2	27		
	One layer 250 micron green polyethylene waterproof sheeting (SANS 952-1985 type C) sealed at laps with PVC self-adhesive tape				
2	Under surface beds	m2	159		
	SEALING STRIPS, JOINT SEALANTS, ETC				
	Carried to Collection			R	

	Jointex filler with tear off strip seal with 10 x 10 polyethelene bond-breaker or equal approved, etc				
3	10 x 10mm in expansion joints	m	54		
4	10mm in saw cut joints	m	36		
	Carried to Collection			R	

Section No. 3
SECTION 3: CULTURAL HUTS
Bill No. 4
Waterproofing
Thohoyandou Botanical Garden (TBG)

Section No. 3

SECTION 3: CULTURAL HUTS

Bill No. 4

Waterproofing

COLLECTION

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SECTION 3: CULTURAL HUTS
Bill No. 4
Waterproofing
Thohoyandou Botanical Garden (TBG)

Item No			Quantity	Rate	Amount
	SECTION NO. 3				
	BILL NO. 5				
	ROOF COVERINGS				
	PREAMBLES				
	NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill				
	THATCH				
	200mm Thick thatch of hand cut grass of the hyparrhenia species or equal approved in lengths varying from 760 to 1020mm laid in bundles of suitable size, compacted to a minimum density of 30kg/200mm thickness and fixed by means of suitable fixing rods interlaced through and over the bundles at not exceeding 600mm centres and secured with tarred twine to and including eucalyptus battens CCA treated in accordance with SANS 457-2, varying in diameter from 20 to 40mm, spaced at maximum 300mm centres generally and at closer centres nearer to eaves, including a fire-retardant interlay of multi-layered reinforced double-sided aluminium foil sheeting in accordance with SANS 1381-4 with a mass of not less than 272g/m² and a Class I fire rating in accordance with SANS 0177-3				
1	Covering to general roof slopes.	m2	372		
	APEX CAPPING				
	Extra over apex capping				
2	Extra over apex capping for cement mortar ridge with waterproofing cementitious product mix to make tight Mapel or equal approved curved on top of apex thatched roof	No	3		
	Carried Forward to Summary of Section No. 3			R	

Item No		Quantity	Rate	Amount

SECTION NO. 3

BILL NO. 6

CARPENTRY AND JOINERY

PREAMBLES

NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill

SUPPLEMENTARY PREAMBLES

Fixing

Items described as "nailed" shall be deemed to be fixed with hardened steel nails or pins, or to be shot-pinned, to brickwork or concrete

Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 500mm centres, and where described as "bolted", the bolts have been given elsewhere

Joinery

Descriptions of frames shall be deemed to include frames, transomes, rails, etc

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

Decorative thermosetting plastic laminate covering

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

THE FOLLOWING IN TREATED TIMBER POLES

Carried to Collection R

	Gumpole treated with CCA				
1	150mm diameter pole approximately 3 700mm long with one end bolted to pole beam and other cast in concrete (elsewhere)	No	24		
	GUMPOLE ROOF TRUSSES, ETC				
	Gumpole treated with CCA				
2	Gumpole treated trusses including rafters, suppotrs, bearers, purlins, etc on circular area of 53m2 and 2 361mm high (refer to architectural drawing attached to these bills of quantities)		Item		
	DOORS ETC				
	Wrought meranti doors				
3	40mm Framed, ledged and braced batten door size 900 x 2032mm high of 44 x 104 mm top rail and stiles, 22 x 120mm middle ledge and braces and 22 x 142mm bottom rail filled in with 22mm V-jointed one side boarding and covered on other side with 6mm plywood with veneer to match door, let into and including rebates all round	No	3		
	FRAMED FRAMES, ETC				
	Wrought meranti				
4	69 x 107mm rebated frames	m	9		
	Carried to Collection			R	

Section No. 3

SECTION 3: CULTURAL HUTS

Bill No. 6

Carpentry and Joinery

COLLECTION

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Item No			Quantity	Rate	Amount
	SECTION NO. 3				
	BILL NO. 7				
	IRONMONGERY				
	SUPPLEMENTARY PREAMBLES				
	For preambles see "Specifications of materials and methods to be used - PW 371"				
	The following Ironmongery by door Type Dormakaba or equally approved				
	Door Type : D09				
1	Code 1040 100mm Aluminium Sinkless Hinge, Centre Pin With Standard Alignment Grooving For Easy Fitment	Pairs	4.5		
2	Dormakaba or equal approved round cylinder escutcheon Code DCE-002 S.S	No	3		
3	Dormakaba or equal approved ylinder Sash Lock. Case dimensions (mm) 116.5H x 78D. Forend dimensions (mm) 168H x 22W. Backset 57mm. Centres 61mm. code D036S SS	No	3		
4	Dormakaba or equal approved 63mm - 31.5+31.5mm Europrofile Nickel Plated E-SP 5 Pin Knob Cylinder - Master Keyed Code DKC206301 MK	No	3		
5	Dormakaba or equal approved Floor Mounted Door Stop Code DDS-SS-017	No	3		
	LETTERS, NAMEPLATES, ETC.				
	"Union" or similar approved				
6	75 x 150mm Natural anodised aluminium plate with sign "Hut 1"	No	3		
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Item No			Quantity	Rate	Amount
	SECTION NO. 3				
	BILL NO. 8				
	METALWORK				
	PREAMBLES				
	NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill				
	SUPPLEMENTARY PREAMBLES				
	Descriptions of bolts, anchors, etc				
	Descriptions of bolts shall be deemed to include nuts and washers				
	Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork or concrete				
	Items described as"holed for bolt(s)" shall be deemed to exclude the bolts unless otherwise described				
	Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 600mm centres				
	PURPOSE MADE STEEL SCREEN WINDOW				
	Purpose made window of 1.6mm expandable wire mesh welded to 50 x 50mm angle iron fixed to brick wall				
1	Size 660 x 660mm diagonal shaped steel frame fixed to brickwork	No	12		
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Item No			Quantity	Rate	Amount
	SECTION NO. 3				
	BILL NO. 9				
	PLASTERING				
	PREAMBLES				
	NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill				
	FLOOR SCREEDS				
	Allow a prime cost of R250/m2 (including materials and labour) for specialised (cultural) on screeds				
1	30mm thick on floors and landings	m2	159		
	INTERNAL PLASTER				
	Allow a prime cost of R200/m2 (materials delivered) for specialised (cultural) internal wall finish				
2	On walls	m2	204		
3	Ditto narrow width	m2	1		
	EXTERNAL PLASTER				
	Allow a prime cost of R200/m2 (materials delivered) for specialised (cultural) external wall finish				
4	On walls	m2	204		
5	Ditto narrow width	m2	1		
	Carried to Collection			R	

	CORNER PROTECTORS, DIVIDING STRIPS, ETC				
6	50 x 5mm flat section brass dividing strips between differing floor finishes	m	3		
	Carried to Collection			R	

Section No. 3

SECTION 3: CULTURAL HUTS

Bill No. 9

Plastering and Screeds

COLLECTION

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SECTION 3: CULTURAL HUTS
Bill No. 9
Plastering and Screeds
Thohoyandou Botanical Garden (TBG)

Item No		Quantity	Rate	Amount

SECTION NO. 3

BILL NO. 10

PAINTWORK

PREAMBLES

NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill

SUPPLEMENTARY PREAMBLES

PREPARATORY WORK TO EXISTING WORK

Previously painted plastered surfaces

Surfaces shall be thoroughly washed down and allowed to dry completely before any paint is applied. Blistered or peeling paint shall be completely removed and cracks shall be opened, filled with a suitable filler and finished smooth

Previously painted metal surfaces

Surfaces shall be thoroughly rubbed and cleaned down. Blistered or peeling paint shall be completely removed down to bare metal

Previously painted wood surfaces

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

PAINT SPECIFICATIONS

All painting shall be done in accordance with "SANS" specifications unless otherwise described

Carried to Collection R

	COLOURS				
	Unless otherwise described all paintwork shall be deemed to have a colour value in excess of 7 on the Munsell system in accordance with SANS 1091				
	PAINTWORK ETC, TO NEW WORK				
	ON INTERNAL WALL SURFACES				
	Allow a prime cost of R120/m2 (materials delivered to site) for specialised paint on internal walls				
1	Internal walls	m2	204		
	ON EXTERNAL WALL SURFACES				
	Allow a prime cost of R120/m2 (materials delivered to site) for specialised paint on external walls				
2	External walls	m2	204		
	ON METAL SURFACES				
	One coat alkyd based zinc phosphate primer, one coat akyd based universal undercoat and two coats premium quality polyurethane enamel paint, on steel				
3	Steel frames, etc both sides measured	m2	10		
	ON WOOD SURFACES				
	Spot priming defects with alkyd based universal undercoat and two coats polyurethane varnish on				
4	On timber doors	m2	10		
5	On timber door frames	m2	8		
	Carried to Collection			R	

Section No. 3

SECTION 3: CULTURAL HUTS

Bill No. 10

Painting

COLLECTION

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SECTION 3: CULTURAL HUTS
Bill No. 10
Painting
Thohoyandou Botanical Garden (TBG)

Section No. 3

SECTION 3: CULTURAL HUTS

SECTION SUMMARY - SECTION 3: CULTURAL HUTS

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Carried to Final Summary R

Item No		Quantity	Rate	Amount

SECTION NO. 4

BILL NO. 1

ALTERATIONS (PROVISIONAL)

PREAMBLES

NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill

SUPPLEMENTARY PREAMBLES

View site

Before submitting his tender the contractor shall visit the site and satisfy himself as to the nature and extent of the work to be done and the value of the materials contained in the buildings or portions of the buildings to be demolished. No claim for any variations of the contract sum in respect of the nature and extent of the work or of inferior or damaged materials will be entertained

Explosives

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

General

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

Carried to Collection R

	Water supply pipes and other piping that may be encountered and found necessary to disconnect or cut, shall be effectually stopped off or grubbed up and removed, and any new connections that may be necessary shall be made with proper fittings, to the satisfaction of the principal agent				
	Doors, fanlights, fittings, frames, linings, etc which are to be re-used shall be thoroughly overhauled before refixing including taking off, easing and rehanging, cramping up, re-wedging as required and making good cramps, dowels, etc, and easing, oiling, adjusting and repairing ironmongery as necessary, replacing any glass damaged in removal or subsequently and stopping up all nail and screw holes with tinted plastic wood to match timber, unless otherwise described. Re-painting or re-varnishing is given separately				
	Prices for taking out of doors, windows, etc shall include for removal of all beads, architraves, ironmongery, etc				
	Prices for taking out and removing doors and frames shall include for removing door stops, cabin hooks, etc and making good floor and wall finishes to match existing				
	With regard to building up of openings in existing walls, cement screeds and pavings, granolithic, tops of walls, etc, shall be levelled and prepared for raising of brickwork				
	Making good of finishes shall include making good of the brick and concrete surfaces onto which the new finishes are applied, where necessary				
	The contractor will be required to take all dimensions affecting the existing buildings on the site and he will be held solely responsible for the accuracy of all such dimensions where used in the manufacture of new items (doors, windows, fittings, etc)				
	TEMPORARY BARRIERS, SCREENS, ETC				
	Temporary barriers, screens, etc including removal				
1	Dust screen 3000mm high formed of suitable timber framing with 375 micron polyethylene sheeting stapled on including corners, ends, etc	m	50		
	Carried to Collection			R	

	REMOVAL OF EXISTING WORK				
	Break up and remove reinforced concrete, including cutting off and removing reinforcement				
2	Steps and concrete ramp	m3	1		
	Taking out and removing steel fence				
3	1 800mm high steel palisade fence including steel poles	m	4		
4	Steel palisade gate size 1 000 x 2 200mm high	No	1		
	Taking out and removing doors, windows, etc, including thresholds, sills, etc and building up openings in brick walls, including making good cement plaster on both sides (making good paintwork elsewhere)				
5	Steel door frame 813 x 2 032m high overall from one brick wall	No	2		
	Taking out and removing doors, windows, etc, including thresholds, sills, etc and building up openings in brick walls, including making good cement plaster on both sides (making good paintwork elsewhere)				
6	Timber single door size 813 x 2 032m high overall from one brick wall	No	2		
	Taking out and removing doors, windows, etc, including thresholds, sills, etc and building up openings in brick walls, including making good cement plaster on both sides (making good paintwork elsewhere)				
7	Timber window frame size 800 x 1 000mm high	No	3		
8	Timber window frame size 800 x 1 000mm high	No	2		
	Taking down and removing roofs, floors, panelling, ceilings, partitions, etc				
9	Thatched roof including timber poles and purlins.	m2	120		
	Carried to Collection			R	

	Hacking up/off and removing granolithic, screeds, plaster, etc from concrete or brickwork and preparing surfaces for new screed, plaster, tile finishes, etc				
10	40mm screed from floors	m2	26		
11	Internal plaster from walls	m2	10		
	Taking out and removing piping, sanitary fittings, etc, including cutting off as necessary, disconnecting piping from fittings and making good floor and wall finishes (making good tiling and paintwork elsewhere)				
12	Vitreous china wash hand basin, including short lengths of piping, etc	No	1		
13	Vitreous china WC pan with cistern	No	1		
	Breaking down and removing brickwork etc				
14	One brick wall in screen wall	m2	5		
	Carried to Collection			R	

Section No. 4

SECTION 4: GUARD HOUSE & ENTRANCE GATE

Bill No. 1

Alterations

COLLECTION

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SECTION NO. 4

BILL NO. 2

EARTHWORKS (PROVISIONAL)

PREAMBLES

NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill

SUPPLEMENTARY PREAMBLES

Nature of ground

The nature of the ground is assumed to be gravel, therefore "earth", but possibly interspersed with "soft rock" or "hard rock"

Subterranean water

No subterranean water is expected

The water table is expected to vary between approximately 1,5m and 2m below natural ground level. The removal of subterranean water is given separately

Carting away of excavated material

Descriptions of carting away of excavated material shall be deemed to include loading excavated material onto trucks directly from the excavations or, alternatively, from stock piles situated on the building site

Carried to Collection R

	Filling				
	Notwithstanding the reference to prescribed multiple handling in clause 1 page 6 of the Standard System of Measuring Building Work, prices for filling and backfilling shall include for all selection and any necessary multiple handling of material				
	Testing				
	Prices for filling are to include for all necessary density tests in accordance with SABS 1200D				
	EXCAVATION, FILLING, ETC OTHER THAN BULK				
	EXCAVATIONS, ETC				
	Excavate in earth not exceeding 2m deep				
1	Trenches	m3	3		
	Extra over all excavations for carting away				
2	Surplus material from excavations and/or stock piles on site, to a dumping site to be located by the contractor	m3	3		
	Keeping excavations free of water				
3	Keeping excavations free of all water other than subterranean water		Item		
	FILLING ETC				
	Earth filling obtained from the excavations and/or prescribed stock piles on site compacted to 90% Mod AASHTO density				
4	Backfilling to trenches, holes, etc	m3	3		
	Earth filling supplied by the Contractor, compacted to 90% Mod AASHTO density				
5	Under floors, steps, pavings, etc	m3	3		
	Carried to Collection			R	

	Compaction of surfaces				
6	Compaction of ground surface under pavings, aprons, etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 90% Mod AASHTO density	m2	22		
	SOIL POISONING				
	Soil insecticide in accordance with SANS 5859				
7	Under floors, etc including forming and poisoning shallow furrows against foundation walls, etc filling in furrows and ramming	m2	22		
	Carried to Collection			R	

Section No. 4

SECTION 4: GUARD HOUSE & ENTRANCE GATE

Bill No. 2

Earthworks

COLLECTION

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SECTION NO. 4

BILL NO. 3

CONCRETE, FORMWORK AND REINFORCEMENT

PREAMBLES

NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill

SUPPLEMENTARY PREAMBLES

Cost of tests

The costs of making, storing and testing of concrete test cubes as required under clause 7 "Tests" of SABS 1200 G shall include the cost of providing cube moulds necessary for the purpose, for testing costs and for submitting reports on the tests to the principal agent. The testing shall be undertaken by an independent firm or institution nominated by the contractor to the approval of the principal agent. (Test cubes are measured separately)

Formwork

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

Carried to Collection R

	The vertical strutting shall be carried down to such construction as is sufficiently strong to afford the required support without damage and shall remain in position until the newly constructed work is able to support itself				
	Formwork to soffits of solid slabs etc shall be deemed to be to slabs not exceeding 250mm thick unless otherwise described				
	Formwork to soffits of slabs, beams, etc shall be deemed to be propped up exceeding 1,5m and not exceeding 3,5m high unless otherwise described				
	Formwork to sides of bases, pile caps, ground beams, etc will only be measured where it is prescribed by the engineer for design reasons. Formwork necessitated by irregularity or collapse of excavated faces will not be measured and the cost thereof shall be deemed to be included in the allowance for taking the risk of collapse of the sides of the excavations, provision for which is made in "Earthworks"				
	UNREINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES				
	25Mpa/19mm concrete				
1	Ramps	m3	1		
2	Aprons cast in panels	m3	3		
3	Thickening down the edge of apron 150mm deep ,200mm top and tapering to 100mm at bottom including all excavations, formwork, backfilling, etc	m	22		
	REINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES				
	30Mpa/19mm concrete				
4	Footings	m3	2		
	TEST CUBES				
5	Making and testing 150 x 150 x 150mm concrete strength test cube (Provisional)	No	5		
	Carried to Collection			R	

	CONCRETE SUNDRIES				
	Finishing top surfaces of concrete smooth with a wood float				
6	Aprons to falls	m2	22		
	Carried to Collection			R	

Section No. 4

SECTION 4: GUARD HOUSE & ENTRANCE GATE

Bill No. 3

Concrete, Formworks and Reinforcement

COLLECTION

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SECTION NO. 4

BILL NO. 4

MASONRY

PREAMBLES

NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill

SUPPLEMENTARY PREAMBLES

BRICKWORK

Sizes in descriptions

Where sizes in descriptions are given in brick units, "one brick" shall represent the length and "half brick" the width of a brick

Hollow walls

Descriptions of hollow walls shall be deemed to include leaving every fifth perpend of the bottom course of the external skin open as a weep hole

Face bricks

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

Pointing

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

Carried to Collection R

	BRICKWORK				
	FOUNDATIONS (PROVISIONAL)				
	Brickwork of NFP bricks (14 MPa nominal compressive strength) in class II mortar				
1	Brick piers	m3	3		
2	One brick walls	m2	17		
	SUPERSTRUCTURE				
	Brickwork of NFP bricks (14 MPa nominal compressive strength) in class II mortar				
3	Half brick wall in beam filling	m2	10		
	BRICKWORK SUNDRIES				
	2,5mm Brickwork reinforcement				
4	75mm Wide reinforcement built in horizontally	m	15		
5	150mm Wide reinforcement built in horizontally	m	51		
	PRECAST CONCRETE				
	"Allied Concrete" or equal approved prestressed fabricated lintels				
6	110 x 75mm Lintels in lengths not exceeding 3m	m	2		
	FACE BRICKWORK				
	Corobrik Red Terracota satin FBS or equally approved face brick pointed with flush horizontal and vertical joints in stretcher bond				
	Brick-on-edge header course copings, sills, etc of face bricks pointed with recessed joints on all exposed faces				
7	220mm Wide sill set sloping and slightly protecting outside	m	2		
	Carried to Collection			R	

Section No. 4

SECTION 4: GUARD HOUSE & ENTRANCE GATE

Bill No. 4

Brickwork

COLLECTION

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	BILL NO. 5				
	WATERPROOFING				
	PREAMBLES				
	NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill				
	SUPPLEMENTARY PREAMBLES				
	Waterproofing				
	Waterproofing of roofs, basements, etc shall be laid under a ten year guarantee. Waterproofing to roofs shall be laid to even falls to outlets etc with necessary ridges, hips and valleys. Descriptions of sheet or membrane waterproofing shall be deemed to include additional labour to turn-ups and turn-downs				
	DAMPPROOFING OF WALLS AND FLOORS				
	One layer 375 micron embossed polyethylene dampproof course (SANS 952-1985 type B)				
1	In walls	m2	1		
	One layer 250 micron green polyethylene waterproof sheeting (SANS 952-1985 type C) sealed at laps with PVC self-adhesive tape				
2	Under surface beds	m2	1		
	SEALING STRIPS, JOINT SEALANTS, ETC				
	Carried to Collection			R	

	Silicone sealing compound				
3	4 x 4mm At junction of timber fittings to wall tiling (Provisional)	m	5		
4	4 x 4mm around sanitary fittings (Provisional)	m	3		
	Carried to Collection			R	

Section No. 4
SECTION 4: GUARD HOUSE & ENTRANCE GATE
Bill No. 5
Waterproofing
Thohoyandou Botanical Garden (TBG)

Section No. 4

SECTION 4: GUARD HOUSE & ENTRANCE GATE

Bill No. 5

Waterproofing

COLLECTION

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Bill No. 5
Waterproofing
Thohoyandou Botanical Garden (TBG)

Item No			Quantity	Rate	Amount
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	BILL NO. 6				
	ROOF COVERINGS				
	PREAMBLES				
	NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill				
	HARVEY ROOF TILES AND ACCESSORIES				
	Harvey roof tiles with every tile nailed with non-corrosive nails to and including underlay of 400 micron Marley undertile membrane laid with even tension on 38 x 50mm sawn softwood battens at 300 x 300mm centres:				
1	Roof coverings with pitch not exceeding 25 degrees	m2	45		
2	Ridge capping 462mm girth both edges notched on sides	m	7		
3	Hip capping 550mm girth both edges notched on sides	m	8		
	ROOF AND WALL INSULATION				
	Carried to Collection			R	

	Roof insulation to be Isoboard® high density 32-36kg/m3 rigid extruded polystyrene 100% closed cell insulation boards 40mm thick x 600mm wide with brown paper and polyethylene laminate slip sheet factory applied to upper surface, with tongue & groove joints fixed concurrent with roof covering over steel purlins at maximum 1500mm centres with 5mm gap between boards butt-joined over purlins. Ridge vents are recommended to be allowed for in the roof covering (elsewhere specified) in order to prevent deflection due to heat build up above the boards.				
4	Insulation laid taut over purlins (at approximately 1.80m centres) and fixed concurrent with roof covering, including taped laps and nylon straining wires	m2	45		
	Carried to Collection			R	

Section No. 4

SECTION 4: GUARD HOUSE & ENTRANCE GATE

Bill No. 6

Roof Coverings

COLLECTION

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Total Brought Forward from Page No.	161		
	162		
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Section No. 4
SECTION 4: GUARD HOUSE & ENTRANCE GATE
Bill No. 6
Roof Coverings
Thohoyandou Botanical Garden (TBG)

Item No		Quantity	Rate	Amount

SECTION NO. 4

BILL NO. 7

CARPENTRY AND JOINERY

PREAMBLES

NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill

SUPPLEMENTARY PREAMBLES

Fixing

Items described as "nailed" shall be deemed to be fixed with hardened steel nails or pins, or to be shot-pinned, to brickwork or concrete

Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 500mm centres, and where described as "bolted", the bolts have been given elsewhere

Joinery

Descriptions of frames shall be deemed to include frames, transomes, rails, etc

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

Decorative thermosetting plastic laminate covering

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

Carried to Collection R

ROOFS, ETC.

The following is applicable in respect of roof trusses:

Trusses are at maximum 1100mm centres, roof covering is 0,6mm "Klip-Lok Light industrial" iron sheeting on purlins. Ceilings are 6mm sheeting fibre cement ceilings on 38 x 38mm brandering.

The dimensions in the descriptions of the trusses are nominal and actual measurements are to be obtained on the site before design or fabrication commences.

The design, manufacture and transportation of the roof trusses, bracing etc. shall be under control of a registered Engineer (in accordance with the SABS Code of Practice for the design of Timber Structure) and it shall be required from the manufacturer of the trusses to lodge a written guarantee that the construction has been designed by a qualified Structural Engineer and that the Engineer is in possession of a capability certificate issued by the Institute for Timber Construction Trusses.

The designs must further be in accordance with SABS 0163 as well as the additional requirements of the latest Model Preambles of Trades.

The manufacturer of the trusses shall supply a written guarantee that the trusses are designed, manufactured and erected to support the roof covering specified. The guarantee shall be valid for a period of 10 (ten) years.

Payment of the roof contruction will only be made once the two (2) required certificates have been submitted to and approved by the Project Registered Structural Engineers.

Plate nailed timber roof truss construction

Wrought softwood

1	Complete supply and erection of double pitched timber roof including wall plates, trusses, jack rafters, permanent bracing and 50 x 76mm purlins, etc. all as per the drawings attached to these bills of quantities (Gate House - flat area 26m2)	No	1		
	Carried to Collection			R	

	Sundries				
2	Two coats creosote on sawn timbers	m2	8		
	EAVES, VERGES, ETC				
	Medium density plain fibre-cement flat sheets				
3	225 x 10mm Fascias and barge boards, including galvanised steel H-profile joiners	m	32		
	DOORS ETC				
	Wrought meranti doors				
4	40mm Framed, ledged and braced batten door 813 x 2032mm high of 44 x 104 mm top rail and stiles, 22 x 120mm middle ledge and braces and 22 x 142mm bottom rail filled in with 22mm V-jointed one side boarding and covered on other side with 6mm plywood with veneer to match door, let into and including rebates all round	No	1		
	Semi-solid flush doors with masonite finish concealed hardwood edges to steel frames				
5	40mm Door 813 x 2 032mm high	No	1		
	WORKTOPS, CUPBOARDS, ETC				
	SUPPLEMENTARY PREAMBLES				
	General				
	The following cupboard fittings have been given as complete units i.e. the components of the units have not been given separately. Descriptions of such units shall, therefore, be deemed to include all components, assembling, housing, notching, glueing, blocking, planting-on and screwing with countersunk screws, edge strips, thermosetting plastic laminate, glass, ironmongery, metalwork, paint or varnish finishes, etc				
	Prices are to include for all necessary filler pieces against walls etc				
	Carried to Collection			R	

	References				
	References given in descriptions refer to the respective types of fittings detailed on the architect's drawings annexed to these bills of quantities for tender purposes				
	Kitchen cupboards etc				
	Timber kitchen cupboards etc with concealed automatic hinges, stainless steel handles and epoxy coated telescopic drawer slides				
6	Wall cupboard 1 240 x 300 x 720mm high with top, sides, bottom, division, shelf, back and double hinged door	No	1		
	GRANITE WORKTOPS				
	Rustenburg or equal approved grey with polished finish with and including powder coated 60 x 60 x 6mm angle Iron mild steel support with brackets as per detailed specification				
7	30mm Thick worktop 700mm wide with one bullnosed edge, plugged to one brick wall	No	1		
	Carried to Collection			R	

Section No. 4

SECTION 4: GUARD HOUSE & ENTRANCE GATE

Bill No. 7

Carpentry and Joinery

COLLECTION

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Item No			Quantity	Rate	Amount
	SECTION NO. 4				
	BILL NO. 8				
	CEILINGS, PARTITIONS AND ACCESS FLOORING				
	NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill				
	SUPPLEMENTARY PREAMBLES				
	Fixing				
	Items described as "nailed" shall be deemed to be fixed with hardened steel nails or pins, or to be shot-pinned, to brickwork or concrete				
	Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 500mm centres, and where described as "bolted", the bolts have been given elsewhere				
	Ceilings				
	Unless otherwise described ceilings shall be deemed to be horizontal				
	Insulation				
1	Roof insulation - 135mm thick non-combustible light weight fibreglass Glasswool thermal ceiling insulation. 12kg/mÃ‚Â³ closely fitted with ends butted firmly between tie beams and laid loose on top of brandering between roof timbers, all in accordance with manufacturer's recommendations	m2	26		
	GYPSUM PLASTERBOARD CEILINGS				
	Carried to Collection			R	

	Gypsum plasterboard 6.4mm is fixed to timber brandering installed at maximum 400mm centres. Fix Gypsum plasterboard to manufacturer's recommendations. All joints shall be staggered. Timber brandering shall be suitably fixed to the tie beam/joist. Timber brandering shall be suitably fixed to the tie beam/joist				
2	Ceilings including 38 x 38mm sawn softwood brandering at 450mm centres in one direction	m2	26		
	Rhino gypsum plasterboard cornices				
3	19 x 76 mm Cornices, plugged	m	28		
4	Extra over ceiling for opening for 610 x 610mm trap door of 50 x 76mm wrought softwood rebated framing with one 38 x 38mm sawn softwood cross brander covered with ceiling board and fitted flush in opening	No	1		
	Carried to Collection			R	

Section No. 4

SECTION 4: GUARD HOUSE & ENTRANCE GATE

Bill No. 8

Ceilings and Access Floorings

COLLECTION

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Item No		Quantity	Rate	Amount

SECTION NO. 4

BILL NO. 9

IRONMONGERY

PREAMBLES

NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill

SUPPLEMENTARY PREAMBLES

Proprietary items

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

Prices are to be based on the specific products/articles specified. If tenderers wish to offer alternative products/articles for certain items, these items are to be clearly marked and the alternative specification given with supporting brochures etc clarifying the features of the products/articles offered

On request returnable samples are to be provided to the principal agent for consideration

Carried to Collection R

	Finishes to ironmongery				
	Where applicable finishes to ironmongery are indicated by suffixes in accordance with the following list: BS Satin bronze lacquered CH Chromium plated SC Satin chromium plated SE Silver enamelled GE Grey enamelled AN Anodised natural AS Anodised silver AB Anodised bronze AG Anodised gold ABL Anodised black PB Polished brass PL Polished and lacquered PT Epoxy coated SD Sanded				
	The following Ironmongery by door Type Dormakaba or equally approved				
	Door Type : D01				
1	Dormakaba or equal approved BTS75 Adjustable size EN 1-4 NON HOLD OPEN, Certified to EN1154, with SINGLE ACTION accessories, for 120kg door leaf weight, Adjustable closing and latching speeds, Backcheck. [NOT FIRE RATED] [FOR ALUMINIUM DOORS] [NO COVER CAPS] Components - [Mech/Spindle/7510SS/7456/1/7411K/56E] Code BTS75 SAA-NHO	No	2		
2	Dormakaba or equal approved 382x32mm D Shaped Offset Tubular Pull Handle BTB (BTB Fixing Sets included) Code DPH215 BTB	No	2		
3	Dormakaba or equal approved Cylinder Deadlock. Case dimensions (mm) 116.5H x 78D. Forend dimensions (mm) 168H x 22W. Backset 57mm. Code D037D SS	No	1		
4	Dormakaba 63mm - 31.5 + 31.5mm Europrofile nickel plated E-SP 5 Pin knob cylinder - Master Keyed Code DKC206301 MK	No	1		
5	Dormakaba or equal approved round cylinder escutcheon Code DCE-002 S.S	Pairs	1.0		
	Carried to Collection			R	

6	Alufab or equal approved M1519AS 150mm Anodised Alum Flush Bolts..Code M1519AS	No	2		
7	Dormakaba or equal approved Dust Proof Strike. Code DPS-SS-032	No	1		
	Door Type : D01				
8	Code 1040 100mm Aluminium Sinkless Hinge, Centre Pin With Standard Alignment Grooving For Easy Fitment	Pairs	1.5		
9	Dormakaba or equal approved Lever handle on rose with Cylinder escutcheons Code TH124 Cyl S.S	No	1		
10	Dormakaba or equal approved Cylinder Sash Lock. Case dimensions (mm) 116.5H x 78D. Forend dimensions (mm) 168H x 22W. Backset 57mm. Centres 61mm. Code D036S SS	No	1		
11	Dormakaba or equal approved 63mm - 31.5+31.5mm Europrofile Nickel Plated E-SP 5 Pin Double Cylinder - Master Keyed Code DDC206301 MK	No	1		
12	Code M1519N, Alufab M1519N 150mm Aluminium Flush Bolt, 150mm, Natural Anodised.	No	1		
13	Dormakaba or equal approved Dust Proof Strike Code DPS-SS-032	No	1		
14	Halcast or equal approved code 166 SC brass cabin hook and eye fixed to wrot meranti blocks 75x75mm with chamfered edges.	No	1		
	BATHROOM FITTINGS, ETC				
	Franke stainless steel or other equal approved				
15	STRX672 stainless steel soap dispenser, plugged	No	1		
16	STRDX618 paper towel dispenser, plugged	No	1		
17	STRX605 stainless steel waste bin	No	1		
18	STRX672 vandal proof toilet roll holder, plugged	No	1		
	Carried to Collection			R	

	LETTERS, NAMEPLATES, ETC				
	Dorma or equal approved				
19	DSS-131 stainless steel 150 x 150mm TOILET sign	No	1		
	STEEL LOCKERS				
	Greenfield or equal approved steel lockers with standard baked enamel finish:				
20	Bank of 2 x G23 lockable lockers each 305 x 457 x 1752mm high bolted together complete with 60mm padlock	No	3		
	Carried to Collection			R	

Section No. 4

SECTION 4: GUARD HOUSE & ENTRANCE GATE

Bill No. 9

Ironmongery

COLLECTION

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Item No			Quantity	Rate	Amount
	SECTION NO. 4				
	BILL NO. 10				
	METALWORK				
	PREAMBLES				
	NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill				
	SUPPLEMENTARY PREAMBLES				
	Descriptions of bolts, anchors, etc				
	Descriptions of bolts shall be deemed to include nuts and washers				
	Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork or concrete				
	Items described as"holed for bolt(s)" shall be deemed to exclude the bolts unless otherwise described				
	Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 600mm centres				
	STEEL GATES, SCREENS, ETC.				
	ClearVu or equal approved screens and gates				
1	ClearVu or equal approved screen size 3 439 x 1 200mm high fixed to dwarf wall.	No	1		
2	Single gate size 1 000 x 2125mm high (overall) in single leaves complete with locking mechanism and barrel bolts.	No	1		
	Carried to Collection			R	

3	Single gate size 1 600 x 2 125mm high (overall) in single leaves complete with locking mechanism and barrel bolts	No	1		
	ALUMINIUM WINDOWS, DOORS, ETC.				
	ALUMINIUM DOORS, ETC.				
	Aluminium Powder Qoated Kalahari or equal approved red colour frame with 4mm obscure double glazing Low E Glass, glazing beads and vin yl gaskets with neoprene seals and plugged to brickwork or concrete complete including silicone seal and all ironmongery, stays. latches, etc				
	Bidders are to referred to Architectural drawings attached to these bills of quantities				
4	Window type W01 and W04, size 800 x 1 000mm high	No	3		
5	Window type W03 and W04, size 1 800 x 900mm high	No	2		
	Carried to Collection			R	

Section No. 4

SECTION 4: GUARD HOUSE & ENTRANCE GATE

Bill No. 10

Metalworks

COLLECTION

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Section No. 4
SECTION 4: GUARD HOUSE & ENTRANCE GATE
Bill No. 10
Metalworks
Thohoyandou Botanical Garden (TBG)

Item No			Quantity	Rate	Amount
	SECTION NO. 4				
	BILL NO. 11				
	PLASTERING				
	PREAMBLES				
	NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill				
	FLOOR SCREEDS				
	1 : 4 wooden float screed to floor				
1	30mm Thick on floors and landings	m2	26		
	INTERNAL PLASTER				
	Cement plaster steel trowelled, on brickwork				
2	On walls	m2	5		
	EXTERNAL PLASTER				
	Cement plaster steel trowelled, on brickwork				
3	On walls	m2	5		
	CORNER PROTECTORS, DIVIDING STRIPS, ETC				
4	50 x 5mm Flat section brass dividing strips between differing floor finishes	m	1		
	Carried Forward to Summary of Section No. 4			R	

Item No			Quantity	Rate	Amount
	SECTION NO. 4				
	BILL NO. 12				
	TILING				
	PREAMBLES				
	NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill				
	SUPPLEMENTARY PREAMBLES				
	Fixing				
	Unless described as "fixed with adhesive to plaster (plaster elsewhere)" descriptions of tiling on brick or concrete walls, columns, etc shall be deemed to include 1:4 cement plaster backing and descriptions of tiling on concrete floors etc shall be deemed to include 1:3 plaster bedding				
	Tiling described as "fixed with adhesive on power floated concrete" shall be deemed to include for approved tiling key-coat				
	Ceramic, porcelain, marble and granite tiles are to be fixed and grouted with suitable adhesives and grouts from the range of products as recommended by the manufacturer of the tiles				
	WALL TILING				
	250 x 250 x 10mm glazed walls tiles fixed with adhesive to plaster (plaster elsewhere) and flush pointed with tinted grout				
1	On walls	m2	1		
	FLOOR TILING				
	Carried to Collection			R	

	600 x 600 x 10mm thick porcelain floor tiles fixed with adhesive to screed (screed elsewhere) and flush pointed with tinted waterproof jointing compound				
2	On floors and landings	m2	26		
3	Skirting 75mm high of cut tiles	m	26		
	EDGE TRIMS, NOSING, ETC				
	Edge trims, nosings, etc				
4	9mm "ASE090.MS" aluminium straight edge trims	m	1		
	Carried to Collection			R	

Section No. 4

SECTION 4: GUARD HOUSE & ENTRANCE GATE

Bill No. 12

Tiling

COLLECTION

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Section No. 4
SECTION 4: GUARD HOUSE & ENTRANCE GATE
Bill No. 12
Tiling
Thohoyandou Botanical Garden (TBG)

Item No		Quantity	Rate	Amount

SECTION NO. 4

BILL NO. 13

PLUMBING AND DRAINAGE (PROVISIONAL)

PREAMBLES

NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill

SUPPLEMENTARY PREAMBLES

Wire gratings

Descriptions of gutter outlets etc shall be deemed to include wire balloon gratings

Stormwater channels

Descriptions of channels shall be deemed to include necessary excavation, surface preparation, compaction, etc, and disposal of surplus material on site

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

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

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

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

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

Carried to Collection R

Sealing of edges

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

uPVC pipes and fittings

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

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

uPVC pressure pipes and fittings

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

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

High density polyethylene (HDPe) pipes and fittings

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

"Polycop" polypropylene pipes

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

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

Carried to Collection R

Copper pipes

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

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

Reducing fittings

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

Fixing of pipes

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

Laying, backfilling, bedding, etc of pipes

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

Carried to Collection R

Where no manufacturers' instructions exist, pipes shall be laid in accordance with Clauses 5.1 and 5.2 of each of the following:
SABS 1200L : Medium-pressure pipelines
SABS 1200LD : Sewers
SABS 1200LE: Stormwater drainage

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

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

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

General

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

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

Descriptions of pipes laid in and including trenches and of inspection chambers, catchpits, etc shall be deemed to include excavation, bedding, backfilling, compaction to a minimum of 93% Mod AASHTO density and disposal of surplus material on site

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

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

Carried to Collection R

	As-built drawings				
	Where required, the contractor shall prepare an updated set of as-built drawings. At completion of the contract the contractor shall hand these drawings to the principal agent for reproducing onto the originals for handing over to the employer (provision for allowance of as-built drawings elsewhere)				
	RAINWATER DISPOSAL				
	0.6mm chromadek steel gutter including brackets				
1	150 x 100mm eaves gutters complete with gutters	m	16		
2	Extra over gutter for stopped end	No	2		
3	Extra over gutter for angle	No	4		
4	Extra over gutter for outlet for 100 x 75 mm pipe	No	6		
5	100mm square rainwater downpipes pipes	m	24		
6	Extra over rainwater pipe for shoe	No	6		
7	Extra over rainwater pipe for bend	No	6		
	SANITARY FITTINGS				
	White glazed 'Vaal' or equal approved				
8	"Hibiscus" or equal approved 540 x 45 rounded basin with single tap hole product code 702303	No	1		
9	"Daisy" or equal approved semi-closed couple wash down suite including heavy duty plastic seat 772403	No	1		
	WASTE UNIONS, ETC.				
10	32 mm Chromium plated basin waste union	No	1		
	TRAPS, ETC.				
11	40 x 50mm Rubber butyl deep seal "P" or "S" trap	No	1		
	TAPS, VALVES, ETC.				
	Carried to Collection			R	

	"Cobra Watertech" or other equal approved				
12	15mm 832/350F or equal approved angle valve with 350mm flexible hose connector	No	1		
13	15mm 181CP "Tudor" or equal approved exposed basin mixer code TD-294	No	1		
14	15mm gate valve	No	2		
	SANITARY PLUMBING				
	uPVC soil and vent pipes				
15	50mm Pipes	m	15		
16	110 mm Pipes	m	12		
17	110 mm Pipes laid in and including trenches not exceeding 1m deep under surface beds	m	16		
	Extra over 50 mm uPVC pipes for fittings				
18	BSP adaptor	No	2		
19	Bend	No	4		
20	Junction	No	2		
21	Access bend	No	2		
22	Access junction	No	2		
23	Two-way vent valve	No	2		
	Extra over 110 mm uPVC pipes for fittings				
24	Pan collar	No	1		
25	Bend	No	2		
26	Junction	No	2		
27	Access bend	No	2		
28	Access junction	No	1		
	Carried to Collection			R	

29	Two-way vent valve	No	1		
	Sundries				
30	Testing waste pipe system		Item		
	WATER SUPPLIES				
	Class 0 copper pipes				
31	15mm Pipes	m	15		
32	22mm Pipes	m	8		
33	28mm Pipes	m	4		
	Extra over class 0 copper pipes for capillary fittings				
34	15mm Fittings	No	5		
35	22mm Fittings	No	5		
36	28mm Fittings	No	5		
	Copper overflow and service pipes				
37	15 mm Service pipe 380 mm girth	No	1		
	ELECTRIC WATER HEATERS				
	Carried to Collection			R	

	"Kwikot" or equal approved				
38	Kwikot or equal approved 100 litre Standard 600 Dual electric water heater (Code : EF-250-2D) complying with SABS 151-2002, overall size 1650 x 535mm high, operating at 400kPa with temperature and pressure safety relief valve including 20mm female drain cock with inlet compression. Geyser to be installed horizontally in roof space with 1820 x 560mm wide polyethylene drip tray with union and back nut connected to 20mm PVC overflow pipe taken out at eaves (Code : GSTP-1940) and 22mm pipe work including two 22mm vacuum breakers (Code : KHN4.200CX) installed on hot and cold water supply. Installation to include a 22mm 400kPa Kwikot or equal approved Mono control and expansion relief valve (Code : KHN3.114), all in accordance with SANS 10254, connected to single phase electrical power supply with isolator 1m away from connection on geyser.	No	1		
	WATER SUPPLIES TO FIRE APPLIANCES				
	Galvanised mild steel				
39	22mm Pipes	m	5		
40	28mm Pipes	m	3		
	Extra over galvanised mild steel pipes for fittings				
41	22mm Fittings	No	3		
42	28mm Fittings	No	3		
	Sundries				
43	Testing fire water pipe system		Item		
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Section No. 4

SECTION 4: GUARD HOUSE & ENTRANCE GATE

Bill No. 13

Plumbing and Drainage

COLLECTION

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Item No			Quantity	Rate	Amount
	SECTION NO. 4				
	BILL NO. 14				
	GLAZING				
	PREAMBLES				
	NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill				
	GLAZING TO STEEL WITH PUTTY				
	TOPS, SHELVES, DOORS, MIRRORS, ETC				
	6mm Silvered float glass copper backed mirrors with polished edges, holed for and fixed with chromium plated dome capped mirror screws with rubber buffers to plugs in brickwork or concrete				
1	Mirror size 450 x 600mm high	No	1		
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Item No		Quantity	Rate	Amount

SECTION NO. 4

BILL NO. 15

PAINTWORK

PREAMBLES

NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill

SUPPLEMENTARY PREAMBLES

PREPARATORY WORK TO EXISTING WORK

Previously painted plastered surfaces

Surfaces shall be thoroughly washed down and allowed to dry completely before any paint is applied. Blistered or peeling paint shall be completely removed and cracks shall be opened, filled with a suitable filler and finished smooth

Previously painted metal surfaces

Surfaces shall be thoroughly rubbed and cleaned down. Blistered or peeling paint shall be completely removed down to bare metal

Previously painted wood surfaces

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

PAINT SPECIFICATIONS

All painting shall be done in accordance with "SANS" specifications unless otherwise described

Carried to Collection R

	COLOURS				
	Unless otherwise described all paintwork shall be deemed to have a colour value in excess of 7 on the Munsell system in accordance with SANS 1091				
	PAINTWORK ETC, TO NEW WORK				
	ON PLASTERBOARD SURFACES				
	One coat alkali resistant primer and two coats PVA emulsion paint for interior use				
1	Ceilings and cornices	m2	26		
	ON FIBRE CEMENT BOARD SURFACES				
	One coat alkali resistant primer and two coats PVA emulsion paint for exterior use				
2	Fascias and barge boards, including priming metal jointing strips	m	32		
	ON METAL SURFACES				
	Prepare, etc as specified and apply two coats of bitumen based paint inside the gutter				
3	Inside eaves gutter	m2	5		
	One coat alkyd based zinc phosphate primer, one coat akyd based universal undercoat and two coats premium quality polyurethane enamel paint, on steel				
4	Door frames	m2	4		
	ON WOOD SURFACES				
	Spot priming defects with alkyd based universal undercoat and two coats gloss enamel paint on				
5	On doors	m2	7		
	PAINTWORK ETC, TO PREVIOUSLY PAINTED WORK				
	ON INTERNAL FLOATED PLASTER SURFACES				
	Carried to Collection			R	

	One coat alkali resistent primer, one coat undercoat and two coats "Eggshell enamel" paint				
6	Walls	m2	75		
	ON INTERNAL FLOATED PLASTER SURFACES				
	One coat alkali resistent primer, one coat undercoat and two coats "Eggshell enamel" paint				
7	Walls	m2	64		
	ON METAL SURFACES				
	One coat alkyd based zinc phosphate primer, one coat akyd based universal undercoat and two coats premium quality polyurethane enamel paint, on steel				
8	Door frames	m2	7		
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Section No. 4
SECTION 4: GUARD HOUSE & ENTRANCE GATE
Bill No. 15
Painting
Thohoyandou Botanical Garden (TBG)

Section No. 4

SECTION 4: GUARD HOUSE & ENTRANCE GATE

Bill No. 15

Painting

COLLECTION

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Section No. 4
SECTION 4: GUARD HOUSE & ENTRANCE GATE
Bill No. 15
Painting
Thohoyandou Botanical Garden (TBG)

Section No. 4

SECTION 4: GUARD HOUSE & ENTRANCE GATE

SECTION SUMMARY - SECTION 4: GUARD HOUSE & ENTRANCE GATE

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4	Brickwork	157	
5	Waterproofing	160	
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7	Carpentry and Joinery	168	
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9	Ironmongery	176	
10	Metalworks	179	
11	Plastering and Screeds	180	
12	Tiling	183	
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SECTION NO. 5

BILL NO: 1

EXTERNAL WORKS (PROVISIONAL)

PREAMBLES

NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill

SUPPLEMENTARY PREAMBLES

All work must be executed strictly according to SANS 1200

Supplementary preambles in previous bills or trades are equally applicable to this bill and the tenderer is referred to such previous bills for full descriptions which are equally applicable to all items and work in this bill, unless otherwise described

MEASUREMENT AND PAYMENT

Measurement and payment shall be in accordance with the "Standard System of Measuring Building Works", sixth edition, as well as the other documents referred to or contained in the Tender documents and not according to the SANS specifications.

In addition to the "Standard System of Measuring Building Builder's work" the following item will also apply:

Carried to Collection R

	1. Classification of materials				
	"Hard rock" shall mean granite, quartziz sandstone or other rock of similar hardness which, in the Engineer's opinion, requires drilling, wedging and splitting or the use of explosives.				
	"Soft rock" shall mean hard material, the removal of which warrants, in the Engineer's opinion, the use of pneumatic tools and includes hard shale, fericite, compact ouklip and stone of similar hardness				
	"Earth" shall mean all ground other than that classified as 'hard rock" or "soft rock" and shall include made-up ground and any loose stones or pieces of concrete not exceeding 0.03m3 in volume.				
	Should the contractor consider that any of the excavations are more difficult in nature than excavations in "earth" he shall immediately notify the Quantity Surveyor in writing. Failing such notification the excavation shall deemed to be in "earth" and shall be measured and valued accordingly.				
	The contractor may use any method he chooses to excavate any class of material, but his chosen method of excavation shall not determine the classification of the excavation.				
	GENERAL SITE WORKS				
	SITE CLEARANCE ETC				
	Site clearance				
1	Digging up and removing rubbish, debris, vegetation, hedges, shrubs and trees not exceeding 200mm girth, bush, etc	m2	5 930		
2	Stripping average 100mm thick layer of top soil and stockpiling on site.	m2	5 930		
	REMOVAL OF TREES ETC				
	Carried to Collection			R	

	Taking out and removing, grubbing up roots and filling in holes				
3	Trees with girth exceeding 200mm and not exceeding 500mm girth	No	16		
4	Trees with girth exceeding 500mm and not exceeding 1000mm girth	No	14		
5	Trees with girth exceeding 1000mm and not exceeding 1500mm girth	No	28		
6	Trees with girth exceeding 1 500mm and not exceeding 2000mm girth	No	15		
7	Trees with girth exceeding 2 000mm and not exceeding 2 500mm girth	No	5		
8	Trees with girth exceeding 2 500mm and not exceeding 3 000mm girth	No	10		
9	Trees with girth exceeding 3 000mm and not exceeding 3 500mm girth	No	2		
10	Trees with girth exceeding 3 500mm and not exceeding 4 000mm girth	No	4		
11	Trees with girth exceeding 4 000mm and not exceeding 4 500mm girth	No	3		
	Cutting down and removing, grubbing up roots and filling in holes				
12	Hedge exceeding 500mm and not exceeding 1 000mm high	No	8		
	BULK EXCAVATION, FILLING, ETC				
	Open face excavation in earth over sloping site				
13	Open face excavation	m3	1 577		
	Carried to Collection			R	

	Extra over bulk excavation in earth for excavation in				
14	Soft rock	m3	157		
15	Hard rock	m3	68		
	Risk of collapse of excavations				
16	Sides of bulk excavations not exceeding 1,5m deep	m2	42		
	Extra over all excavations for carting away				
17	Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor	m3	1 577		
	Keeping excavations free of water				
18	Keeping excavations free of all water other than subterranean water		Item		
	Earth filling supplied by the contractor				
19	150mm thick selected layer G5 material compacted to 97% MOD AASHTO density	m3	331		
20	150mm thick selected layer G6 material compacted to 95% MOD AASHTO density	m3	1 889		
21	Rip and compact insitu material and compact to 93% MOD AASHTO density	m2	1 174		
	Compaction of surfaces				
22	Compaction of ground surface, etc, including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 95% Mod AASHTO density	m2	1 174		
	Prescribed density tests on filling				
23	CBR tests	No	15		
24	"Field Density" test (Nuclear or sand replacement)	No	20		
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Section No. 5
SECTION 5: EXTERNAL WORKS
Bill No. 1
General Siteworks
Thohoyandou Botanical Garden (TBG)

25	Grading and Atterberg limits tests (Indicator)	No	20		
26	Maximum dry density and optimum moisture content (MOD)	No	60		
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Section No. 5
SECTION 5: EXTERNAL WORKS
Bill No. 1
General Siteworks
Thohoyandou Botanical Garden (TBG)

Section No. 5

SECTION 5: EXTERNAL WORKS

Bill No. 1

General Siteworks

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Item No			Quantity	Rate	Amount
	SECTION NO. 5				
	BILL NO. 2				
	STORMWATER DRAINAGE				
	PREAMBLES				
	NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill				
	STORMWATER DRAINAGE				
	Class 100D concrete pipes with spigot and socket joints with rubber rings				
1	450mm Pipes laid in and including trenches, bedding, backfilling, etc exceeding 1m deep but not exceeding 2m deep	m	130		
2	450mm Pipes laid in and including trenches, bedding, backfilling, etc exceeding 2m deep but not exceeding 3m deep	m	60		
	CATCHPITS INLET, ETC				
	Carried to Collection			R	

	Catchpit Inlets ,etc				
3	Excavate for and build catchpit size 1 500 x 1 500 x 3 000mm deep externally to invert with one and half brick wall sides 1 500mm high reduced to one brick wall on the remaining height in engineering bricks built in english bond on and including 25Mpa in-situ reinforced concrete base 200mm thick with ref 395 mesh reinforcing, rendered smooth internally in 1:3 cement mortar, benching up bottom in 25Mpa concrete finished off smooth and 75mm thick 25Mpa concrete cover slab with ref 395 mesh reinforcing size 1 500 x 1 500mm on 80 x 80 x 5mm angle section frame including leaving or forming opening size 450mm diameter in wall for inlet and 450mm diameter hole for outlet pipe including all formwork, reinforcing, backfilling, compacting, transition kerbs, 8mm round bar anti-litter grilles, etc. Depth to invert exceeding 2 500mm and not exceeding 3 000mm (As per attached Engineers Drawing No. PJN_ZA_2022__2002_SANBI_TBG_CE_3016_R00	No	8		
	Gratings, Covers etc				
4	1 500 x 1 500mm x 109.5kg heavy duty stormwater grating and frame	No	8		
	Testing				
5	Testing storm water drainage system		Item		
	Carried to Collection			R	

	SUB-SOIL DRAINAGE				
	Perforated HDPE pipes				
6	110mm dia pipes in trenches not exceeding 1000mm deep including excavations, cart away, backfilling, bedding, etc	m	40		
	Extra over 110mm dia for fittings				
7	110mm dia bend.	No	4		
8	110mm dia junction.	No	4		
	Sundries				
9	19mm stone in subsoil drainage	m3	22		
	Kaytech or equal approved				
10	Sythetic fibre material - Kaytech Bidium A2 geotextile or equal approved.	m2	56		
	Testing				
11	Testing sub-soil drainage system		Item		
	STORMWATER CHANNELS				
	Stormwater channel				
	25MPa/19mm concrete (750mm wide)				
12	V-shaped channel 750mm wide x average 100mm thick reinforced with and including Type 193 fabric reinforcement, with rounded salient edges and finished on exposed surfaces with 2:1 cement mortar, laid to falls (1:200) in panels not exceeding 2 000mm long with 12mm bitumen impregnated softboard movement joints with exposed edges raked out for a depth of 12mm and filled with two-part grey polysulphide sealing compound including backing cord, bond breaker, primer, etc and including all necessary excavation, formwork, filling, etc	m	60		
	Carried to Collection			R	

13	Extra for angles, intersections, ends, dressing into sides of catchpits, etc	No	4		
14	Triangular shaped concrete spill basin size 900mm at head, 1500mm at base end and 1500mm long, formed of200mm thick concrete base with concrete upstand size 100 x 100mm high along two sides including all excavations, formwork and backfilling, the top of the base inlaid with sixteen concrete bricks protruding 50mm above the surface of the concrete and loose stones of 100 to 150mm diameter at the base of the spill basin for a width of 500mm	No	2		
	25MPa/19mm concrete (800mm wide)				
15	V-shaped channel 800mm wide x average 75mm thick reinforced with and including Type 193 fabric reinforcement, with rounded salient edges and finished on exposed surfaces with 2:1 cement mortar, laid to falls (1:200) in panels not exceeding 2000mm long with 12mm bitumen impregnated softboard movement joints with exposed edges raked out for a depth of 12mm and filled with two-part grey polysulphide sealing compound including backing cord, bond breaker, primer, etc and including all necessary excavation, formwork, filling, etc	m	55		
16	Extra for angles, intersections, ends, dressing into sides of catchpits, etc	No	5		
17	Triangular shaped concrete spill basin size 900mm at head, 1500mm at base end and 1500mm long, formed of200mm thick concrete base with concrete upstand size 100 x 100mm high along two sides including all excavations, formwork and backfilling, the top of the base inlaid with sixteen concrete bricks protruding 50mm above the surface of the concrete and loose stones of 100 to 150mm diameter at the base of the spill basin for a width of 500mm	No	3		
	Carried to Collection			R	

	25MPa/19mm concrete (1 000mm wide)				
18	Kerb and channel 1 000mm wide x average 100mm thick reinforced with and including Type 193 fabric reinforcement, with rounded salient edges and finished on exposed surfaces with 2:1 cement mortar, laid to falls (1:200) in panels not exceeding 2 000mm long with 12mm bitumen impregnated softboard movement joints with exposed edges raked out for a depth of 12mm and filled with two-part grey polysulphide sealing compound including backing cord, bond breaker, primer, etc and including all necessary excavation, formwork, filling, etc	m	90		
19	Extra for angles, intersections, ends, dressing into sides of catchpits, etc	No	8		
20	Triangular shaped concrete spill basin size 900mm at head, 1500mm at base end and 1500mm long, formed of200mm thick concrete base with concrete upstand size 100 x 100mm high along two sides including all excavations, formwork and backfilling, the top of the base inlaid with sixteen concrete bricks protruding 50mm above the surface of the concrete and loose stones of 100 to 150mm diameter at the base of the spill basin for a width of 500mm	No	2		
	25MPa/19mm concrete (1 500mm wide)				
21	V-shaped channel 1 500mm wide x average 100mm thick reinforced with and including Type 193 fabric reinforcement, with rounded salient edges and finished on exposed surfaces with 2:1 cement mortar, laid to falls (1:200) in panels not exceeding 2 000mm long with 12mm bitumen impregnated softboard movement joints with exposed edges raked out for a depth of 12mm and filled with two-part grey polysulphide sealing compound including backing cord, bond breaker, primer, etc and including all necessary excavation, formwork, filling, etc	m	70		
22	Extra for angles, intersections, ends, dressing into sides of catchpits, etc	No	2		
	Carried to Collection			R	

Section No. 5
SECTION 5: EXTERNAL WORKS
Bill No. 2
Stormwater Drainage
Thohoyandou Botanical Garden (TBG)

23	Triangular shaped concrete spill basin size 900mm at head, 1500mm at base end and 1500mm long, formed of200mm thick concrete base with concrete upstand size 100 x 100mm high along two sides including all excavations, formwork and backfilling, the top of the base inlaid with sixteen concrete bricks protruding 50mm above the surface of the concrete and loose stones of 100 to 150mm diameter at the base of the spill basin for a width of 500mm	No	1		
	STONE PITCHING				
	Grouted stone pitching				
24	Grouted stone pitching in cement mortar	m2	146		
	Carried to Collection			R	

Section No. 5

SECTION 5: EXTERNAL WORKS

Bill No. 2

Stormwater Drainage

COLLECTION

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Item No			Quantity	Rate	Amount
	SECTION NO. 5				
	BILL NO. 3				
	WATER SUPPLIES				
	PREAMBLES				
	NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill				
	WATER SUPPLIES				
	Repair to water supply line				
1	Investigate existing water pipe line and trace leaks	m	45		
2	Investigate as necessary to identify location and extent of leaks including excavations, cartaway, backfilling, etc	No	15		
3	Cut into existing pipe not exceeding 50mm diameter to remove damaged portion and reinstate, including testing (cutting into plaster and making good elsewhere measured)	No	4		
	HDPE compression Class 9				
4	32mm Pipes laid in and including trenches, cart away, bedding, backfill, etc not exceeding 1m deep	m	180		
5	50mm Pipes laid in and including trenches, cart away, bedding, backfilling, etc not exceeding 1m deep	m	480		
	Extra over water pipes for fittings				
6	32mm Bend	No	20		
7	32mm x 50mm Reducer	No	6		
8	50mm tee	No	15		
	Carried to Collection			R	

9	50mm bend	No	30		
	HDPE compression Class 10				
10	110mm Pipes laid in and including trenches, cart away, import bedding, etc not exceeding 1m deep	m	40		
	Extra over water pipes for fittings				
11	110mm bend	No	7		
12	110 x 50mm reducer	No	2		
	Galvanised medium steel pipes with screwed and socketed joints				
13	50mm Pipes	m	40		
	Extra over galvanised medium steel pipes with screwed and socketed joints for steel fittings				
14	50mm bend	No	4		
15	50mm Bush	No	4		
16	50mm Elbow	No	4		
	Valves, etc				
17	110mm dia Class PN10 cast iron flanged water meter to SANS 664 water works for HDPE pipes.	No	1		
18	110mm dia Class PN10 cast iron flanged valves to SANS 664 water works pattern with handwheel for HDPE pipes.	No	1		
	Carried to Collection			R	

	Valve boxes				
19	Excavate for and build valve box size 1 800 x 2 264 x 1 885mm deep internally to invert with 250mm thick reinforced concrete base, build reinforced 200mm thick concrete walls, and reinforced 150mm thick slab including leaving or forming opening size 110mm diameter in concrete walls for inlet and 55 x 550mm opening on slab including all form work, reinforcing, backfilling, compacting, transition, etc. Depth to invert exceeding 2 500mm and not exceeding 3 000mm (as per attached Engineers Drawing)	No	1		
	Cast iron covers, etc				
20	SANS No. 50124 heavy duty class (400Kn loading capacity) 550 x 550mm ductile iron cover and frame	No	1		
	Municipal connection				
21	Provide the sum of R25 000.00 (Twenty Five Thousand Rand) for municipal connection		Item		25 000.00
22	Profit		Item		
	Sundries				
23	300 x 300 x 50mm Precast concrete pipeline marker slab set in ground	No	6		
24	Cutting into existing water pipe	No	1		
	Testing				
25	Testing water reticulation system		Item		
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Section No. 5

SECTION 5: EXTERNAL WORKS

Bill No. 3

Water Reticulation

COLLECTION

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Item No			Quantity	Rate	Amount
	SECTION NO. 5				
	BILL NO. 4				
	SEWER DRAINAGE				
	PREAMBLES				
	NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill				
	DEMOLITION OF EXISTING SEPTIC TANK				
	Demolition of existing septic tank				
1	Demolish septic tank and french drain including honey sucking, cart away, backfilling, etc and leave in good order.	m3	36		
	SEWER DRAINAGE				
	Repair to soil drainage				
2	Investigate existing soil drainage pipe and trace leaks	m	80		
3	Investigate as necessary to identify location and extent of leaks including excavations, cartaway, backfilling, etc	No	10		
4	Cut into existing pipe not exceeding 160mm diameter to remove damaged portion and reinstate, including testing (cutting into plaster and making good elsewhere measured)	No	10		
5	Cut into existing pipe not exceeding 160mm diameter to remove damaged portion and reinstate, including testing (cutting into plaster and making good elsewhere measured)	No	10		
	Carried to Collection			R	

	Class 34 uPVC pipes				
6	110mm pipes laid in and including trenches, backfilling, bedding, etc exceeding 2 000mm but n.e. 3 000mm deep	m	5		
7	160mm pipes laid in and including trenches, backfilling, bedding, etc exceeding 2 000mm but n.e. 3 000mm deep	m	207		
	Extra over uPVC sewer and drain pipes for fittings				
8	160mm Bend	No	4		
	Sundries				
9	Concrete encasing to 110mm horizontal pipes	m	65		
	Precast concrete circular inspection chambers including cast iron cover slabs (covers elsewhere), channels in benching, excavation, cartaway, backfilling, concrete base, concrete slab, reinforcement in concrete, cast iron steps, ect				
10	1 300mm diameter inspection chamber exceeding 2 500mm and not exceeding 3 000mm deep internally	No	5		
	Covers, etc				
	Cast iron covers, etc				
11	SANS No. 50124 heavy duty class (400Kn loading capacity) 600mm diameter ductile iron cover and frame	No	5		
	SUNDRIES				
12	Cutting into side of existing inspection chamber for and connecting 110mm pipe, including inserting 110mm channel junction and making good concrete benching	No	1		
	Testing				
13	Testing soil drainage system		Item		
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Section No. 5

SECTION 5: EXTERNAL WORKS

Bill No. 4

Sewer Drainage

COLLECTION

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SECTION 5: EXTERNAL WORKS
Bill No. 4
Sewer Drainage
Thohoyandou Botanical Garden (TBG)

Item No			Quantity	Rate	Amount
	SECTION NO. 5				
	BILL NO. 5				
	PARKING AREAS AND PAVING				
	PREAMBLES				
	NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill				
	SUPPLEMENTARY PREAMBLES				
	Testing of material and filling				
	Descriptions of earth filling, compaction, etc shall be deemed to include for all necessary testing required in accordance with the SABS 1200 series				
	Precast concrete block road surfacing				
	Paving shall be laid in accordance with SABS 1200 MJ, SANS 1058 and the Concrete Masonry Association's specifications				
	Paving shall be laid to herringbone pattern on 20mm thick (thickness after final compaction) clean river sand (preparation of ground or filling elsewhere)				
	Clean sand shall be swept into joints between roadstones at completion				
	Open face excavation in earth over sloping site				
1	Open face excavation to form platforms under parking areas, roads, etc and dispose in prescribed stock piles on site	m3	2 140		
	Carried to Collection			R	

	Extra over all excavations for carting away				
2	Surplus material from stock piles on site to a dumping site to be located by the Contractor	m3	2 140		
	Compaction of surfaces				
3	Compaction of ground surface under pavings, etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 90% Mod AASHTO density	m2	4 755		
	Earth filling supplied by the contractor				
4	150mm thick sub-base layer G5 material compacted to 95% MOD AASHTO density	m3	713		
5	150mm thick sub-base layer G6 material compacted to 93% MOD AASHTO density	m3	1 783		
6	150mm thick roadbed preparation and compacted to 90% MOD AASHTO density	m2	4 755		
	Additional tests required by the engineer (Refer to Supplementary Preambles for contractor's tests: SABS 1200)				
7	"Modified AASHTO Density" test	No	20		
	Carried to Collection			R	

	Weedkiller (active ingredients metalaclor 102,8 g/l, terbitilasien 248,6 g/l and atrasien 248,6 g/l) mixed in the proportion of 100 ml weedkiller to 100 l water and applied at a rate of 10 l/mg				
8	Under paving, etc	m2	4 755		
	Soil insecticide in accordance with SANS 5859				
9	Under paving, etc	m2	4 755		
	PAVING				
	Paving of type 60mm interlocking precast concrete paving blocks with butt joints including 20mm thick river sand bed with sand swept into joints, including preparation of ground or filling				
10	Paving to walkways, entrance to building and visitors platform, etc to falls, including necessary straight edge blocks	m2	1 853		
11	Circular cutting	m	176		
12	Filling of gaps with concrete against edge restraints	m	90		
	80mm Thick 30MPa precast concrete interlocking block paving of DZZ grey paving blocks in accordance with SANS 1058, laid to falls on and including 20mm thick sand layer with joints filled in with sand, compacted with a vibration compactor				
13	Paving to road work and parking areas, etc to falls, including necessary straight edge blocks	m2	2 281		
14	Circular cutting	m	65		
	KERBS, etc				
	Precast concrete finished smooth on exposed surfaces including bedding, jointing and pointing				
15	150 x 230mm High channels (SANS 927 fig 3)	m	315		
16	125 x 230mm High channels (SANS 927 fig 6) circular on plan exceeding 4m radius formed with straight channels	m	101		
	Carried to Collection			R	

17	Prefabricated mountable kerb, SABS 927 fig 8c, as shown on the detailed drawings	m	278		
18	Prefabricated mountable kerb, SABS 927 fig 8c circular on plan, as shown on the detailed drawings	m	68		
19	Prefabricated Vertical kerb, fig 3m, as shown on the detailed drawings	m	30		
20	Prefabricated Vertical kerb, fig 3m circular on plan, as shown on the detailed drawings	m	45		
21	Prefabricated edging kerb, SABS 927 fig 12, as shown on the detailed drawings	m	230		
22	Circular cutting	m	101		
	CONCRETE GROUND SLABS, BEAMS, RAMPS, JOINTS, ETC				
23	30Mpa reinforced concrete in edge beams, etc.	m3	24		
24	Type 617 mesh reinforcement to concrete slabs	m2	99		
25	Formwork to sides of slabs	m2	12		
26	Finishing top surfaces of concrete surfaces with a wood float	m2	99		
	JOINTS, ETC.				
27	6mm x 15mm Saw cut joint in concrete slab	m	40		
28	15mm Expansion joint with joint former and poly sulphide sealant	m	40		
	ROAD MARKINGS				
	Road markings on paving in accordance with clause 5.3 of SANS 1200 MM				
29	100mm wide line	m	290		
30	Pedestrian sign	No	2		
31	Arrow sign	No	17		
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Section No. 5
SECTION 5: EXTERNAL WORKS
Bill No. 5
Paving and Parking
Thohoyandou Botanical Garden (TBG)

32	Stop sign	No	1		
33	Pedestrian marking	m2	30		
	CARPORTS				
	EXCAVATION, FILLING, ETC OTHER THAN BULK				
	Excavation in earth not exceeding 2m deep				
34	Holes for bases	m3	2		
	Extra over trench and hole excavations in earth for excavations in				
35	Soft rock	m3	1		
36	Hard rock	m3	1		
	Extra over all excavations for carting away				
37	Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor	m3	2		
	Risk of collapse of excavations				
38	Risk of collapse to sides of excavations	m2	17		
	Keeping excavations free of water				
39	Keeping excavations free of water other than subterranean water		Item		
	FILLING ETC				
	Earth filling obtained from the excavations and/or prescribed stock piles on site including haulage approximately 500m from perimeter of excavations or stock piles, compacted to 95% Mod AASHTO density				
40	Backfilling to trenches, holes, etc	m3	1		
	UNREINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES				
	Carried to Collection			R	

	15MPa/19mm reinforced concrete				
41	Surface blinding under footings and bases	m2	4		
	REINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES				
	25MPa/19mm concrete				
42	Bases	m3	2		
	REINFORCEMENT (PROVISIONAL)				
	Mild steel reinforcement to structural concrete work				
43	Various diameters	t	0.01		
	STRUCTURAL STEELWORK				
	GALVANISED STEEL COLUMNS AND BEAMS				
	Welded columns in single lengths with flat base plate (HD bolts elsewhere), cap, bearer and connection plates, bolted to 1 500 x 1 500 x 350mm concrete base (measured elsewhere)				
44	100 x 100 x 4mm SHS column	t	0.95		
45	150 x 100 x 3mm RHS	t	0.04		
	GALVANISED STEEL PURLINS, GIRTS, BRACING, ETC				
46	150 x 75 x 20 x 2.5mm thick cold-formed lipped channel purlins	t	0.35		
47	50 x 50 x 5mm angle	t	0.05		
	BOLTS, FASTENERS, ETC				
48	High tensile bolts	t	1.00		
	ROOF COVERINGS, ETC				
	Carried to Collection			R	

	"Global Roofing solutions" 0.8mm Z275 spelter 760mm cover with galvinised corrugated steel sheets fixed to steel purlings or rails.				
49	Roof covering with a pitch not exceeding 25 degrees	m2	165		
	RAINWATER DISPOSAL				
	0.6mm thick Chromadek or equal approved				
50	200 x 150mm eaves gutters complete with brackets	m	30		
51	Extra over gutter for stopped end	No	2		
52	Extra over gutter for outlet for 100mm square pipe	No	2		
53	100mm square rainwater pipes	m	21		
54	Extra over rainwater pipe for shoe	No	7		
55	Extra over rainwater pipe for bend	No	7		
	ON METAL				
	Spot priming defects with alkyd based universal undercoat and two coats gloss enamel paint on				
56	On rails, bars, pipes, etc not exceeding 300 mm girth	m	282		

Carried to Collection R

Section No. 5

SECTION 5: EXTERNAL WORKS

Bill No. 5

Paving and Parking

COLLECTION

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Item No			Quantity	Rate	Amount
	SECTION NO. 5				
	BILL NO. 6				
	RETAINING WALLS				
	PREAMBLES				
	NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill				
	EARTHWORKS				
	Excavation in bulk not exceeding 2m deep				
1	Bulk excavation	m3	286		
	Extra over excavations in earth for excavation in:				
2	Soft rock	m3	1		
3	Hard rock	m3	1		
	Extra over all excavations for carting away				
4	Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor	m3	202		
	Compaction of surfaces				
5	Compaction of ground surface under pavings, etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 90% Mod AASHTO density	m2	187		
	Earth filling supplied by the contractor				
6	150mm thick sub-base layer G6 material compacted to 93% MOD AASHTO density	m3	71		
	Carried to Collection			R	

	Earth filling obtained from the excavations and / or prescribed stock piles on site compacted to 93% Mod AASHTO density				
7	Backfilling to trenches, holes, etc	m3	82		
	REINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES				
	Concrete, etc				
	25Mpa/19mm reinforced concrete against excavated surfaces				
8	Holes	m3	1		
9	Strip footings	m3	10		
10	Slabs in panels	m3	40		
	REINFORCED CONCRETE CAST ON/IN FORMWORK				
	30Mpa/19mm concrete				
11	Slabs	m3	28		
12	Walls	m3	3		
	TEST CUBES				
13	Making and testing 150 x 150 x 150mm concrete strength test cube (Provisional)	No	20		
	Finishing top surfaces of concrete smooth with a wood float				
14	Slab to falls	m2	236		
	SMOOTH FORMWORK (DEGREE OF ACCURACY I)				
	Smooth formwork to sides				
15	Walls	m2	25		
	Carried to Collection			R	

16	Edges, risers, ends and reveals not exceeding 300mm high or wide	m	128		
	Smooth formwork to soffits				
17	Soffit of slabs	m2	127		
	REINFORCEMENT (PROVISIONAL)				
	Steel reinforcement				
18	Steel reinforcement dowels, Y10 x 1 500mm long	No	52		
19	Steel reinforcement dowels, Y20 x 1 450mm long	No	272		
	Fabric reinforcement				
20	Type 617 fabric reinforcement in surface beds, ramps, etc	m2	246		
	Sundries				
21	110mm dia x 300mm long uPVC pipes in weep holes	No	26		
	Geo-synthetic restrain 100 or equal approved				
22	Geo-synthetic restrain 100 or other approved material laid to sloping earth filling	m2	187		
	Gabion matresses				
23	Gabion mattress size 1 000 x 1 000 x 1 500mm high	m3	102		
24	Gabion mattress size 1 000 x 300 x 1 500mm high	m3	2		
25	Gabion mattress size 1 000 x 1 000 x 500mm high	m3	34		
26	Gabion mattress size 1 500 x 1 000 x 500mm high	m3	26		
	Grouted stone pitching				
27	Grouted stone pitching on a concrete bed (total thickness = 150mm)	m2	124		
	Carried to Collection			R	

	WING WALLS				
	Wingwalls				
	The following to be referred to drawing number PJN-ZA-2022-2002-SANBI-TBG-CE-3005-R00				
	Excavation in trenches not exceeding 2m deep				
28	Trenches	m3	8		
	Extra over excavations in earth for excavation in:				
29	Soft rock	m3	1		
30	Hard rock	m3	1		
	Extra over all excavations for carting away				
31	Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor	m3	4		
	Compaction of surfaces				
32	Compaction of ground surface, etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 90% Mod AASHTO density	m2	25		
	Earth filling supplied by the contractor				
33	150mm thick sub-base layer G6 material compacted to 93% MOD AASHTO density	m3	8		
	Earth filling obtained from the excavations and / or prescribed stock piles on site compacted to 93% Mod AASHTO density				
34	Backfilling to trenches, holes, etc	m3	4		
	Concrete, etc				
	25Mpa/19mm reinforced concrete against excavated surfaces				
35	Strip footings	m3	6		
	Carried to Collection			R	

36	Slabs in panels	m3	6		
	REINFORCED CONCRETE CAST ON/IN FORMWORK				
	30Mpa/19mm concrete				
37	Walls	m3	6		
	TEST CUBES				
38	Making and testing 150 x 150 x 150mm concrete strength test cube (Provisional)	No	15		
	Finishing top surfaces of concrete smooth with a wood float				
39	Slab to falls	m2	25		
	SMOOTH FORMWORK (DEGREE OF ACCURACY I)				
	Smooth formwork to sides				
40	Walls	m2	66		
41	Edges, risers, ends and reveals not exceeding 300mm high or wide	m	18		
	REINFORCEMENT (PROVISIONAL)				
	Fabric reinforcement				
42	Type 617 fabric reinforcement in surface beds, walls, etc	m2	58		
	Sundries				
43	160mm dia x 300mm long uPVC pipes in weep holes	No	6		
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Section No. 5

SECTION 5: EXTERNAL WORKS

Bill No. 6

Access Bridges

COLLECTION

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Item No			Quantity	Rate	Amount
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	BILL NO. 7				
	RETAINING WALLS				
	PREAMBLES				
	NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill				
	EARTHWORKS				
	Excavation in trenches not exceeding 2m deep				
1	Trenches	m3	18		
	Extra over excavations in earth for excavation in:				
2	Soft rock	m3	1		
3	Hard rock	m3	1		
	Extra over all excavations for carting away				
4	Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor	m3	9		
	Earth filling obtained from the excavations and / or prescribed stock piles on site compacted to 93% Mod AASHTO density				
5	Backfilling to trenches, holes, etc	m3	9		
	REINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES				
	Concrete, etc				
	Carried to Collection			R	

	25Mpa/19mm unreinforced concrete				
6	Strip footings	m3	2		
	PRECAST CONCRETE BLOCKS, ETC				
	"Loffelstein" or other equal approved precast concrete blocks				
7	Retaining structures with stepped face and curves as required to suit slopes, of 450 x 300 x 170mm high standard blocks laid at 495mm centres to 70 degree slope, including average 1200mm thick compacted earth filling behind the blocks and filling blocks with garden soil lightly tamped as the work proceeds "Labour Intensive"	m2	121		
8	Foundation formed of 1 000 x 300mm wide base blocks	m	25		
	Geo-synthetic restrain 100 or equal approved				
9	Geo-synthetic restrain 100 or other approved material laid to sloping earth filling	m2	106		
	Earth filling obtained from the excavations and/or prescribed stock piles on site				
10	Filling in retaining wall blocks with granular soil	m3	23		
	Steel reinforcement				
11	Steel reinforcement dowels (R10) 200mm long	No	52		
	Perforated HDPE pipes				
12	75mm dia pipes in trenches exceeding 1000mm deep including excavations, cart away, backfilling, bedding, etc	m	25		
	Extra over 110mm dia for fittings				
13	110mm dia bend.	No	2		
14	110mm dia junction.	No	1		
	Carried to Collection			R	

	Sundries				
15	13mm to 19mm stone in subsoil drainage	m3	5		
	Testing				
16	Testing sub-soil drainage system	Item			
	Stormwater channel				
	25MPa/19mm concrete (460mm wide)				
17	Stormwater channel 460mm wide x average 160mm thick reinforced with and including Type 395 fabric reinforcement, with rounded salient edges and finished on exposed surfaces with 2:1 cement mortar, laid to falls (1:200) in panels not exceeding 2 000mm long with 12mm bitumen impregnated softboard movement joints with exposed edges raked out for a depth of 12mm and filled with two-part grey polysulphide sealing compound including backing cord, bond breaker, primer, etc and including all necessary excavation, formwork, filling, etc	m	30		
18	Extra for angles, intersections, ends, dressing into sides of catchpits, etc	No	2		
	Carried to Collection			R	

Section No. 5

SECTION 5: EXTERNAL WORKS

Bill No. 7

Retaining Walls

COLLECTION

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SECTION 5: EXTERNAL WORKS
Bill No. 7
Retaining Walls
Thohoyandou Botanical Garden (TBG)

Item No	SANS Pay Ref		Unit	Quantity	Rate	Amount
		SECTION NO. 5				
		BILL NO. 8				
		ROADWORKS AND STORMWATER MANAGEMENT OUTSIDE THE GARDEN				
		SECTION 1200				
		GENERAL REQUIREMENTS AND PROVISIONS				
		Relocation and or protection of existing services by Contractor or Service Provider				
		(a) Services				
1		(i) Allow a sum of R80 000.00 (Eighty Thousand Rands) for the removal, protection and replacement of services.			SUM	
2		(ii) Handling cost and profit in respect of subitem		%		
		B12.01 (b)(i)				
		(b) Relocation of services by Contractor				
3		(i) Allow a sum of R50 000.00 (Fifty Thousand Rands) for relocation of services by the contractor			SUM	
4		(ii) Allow a sum of R15 000.00 (Fifteen Thousand Rands) for setting out and protection of beacons			SUM	
5		a) Handling costs and profit in respect of sub-item B12.06		%		
		Carried to Collection			R	

6		Contract Nameboard as per Drawing PJN_ZA_2022_2002_SANBI_TBG_CE_3006	No	1			
7		Allow a s sum of R450 000.00 (Four Hundred and Fifty Thousand Rands) for accommodation of traffic as per drawings and municipal roads standards			SUM		
		SECTION 1600					
		OVERHAUL					
8		Overhaul on material hauled in excess of a free haul distance of 0,5km for haul up to or through 1,0km	m3	2 100			
		Overhaul on material hauled in excess of 1 km					
9		(i) Material cut to spoil	m3.km	2 100			
10		(ii) Material from box-cutting for widening of road	m3.km	2 400			
		SECTION 1700					
		CLEARING AND GRUBBING					
11		Clearing and grubbing	ha	0.4			
		Removal and grubbing of large trees and tree stumps					
12		(a) Girth exceeding 1m up to and including 2m	No	15			
13		(b) Girth exceeding 2m up to and including 3m	No	4			
14		Clearing and grubbing at inlet and outlets of hydraulic structures	m2	800			
		Carried to Collection			R		

Section No. 5
SECTION 5: EXTERNAL WORKS
Bill No. 8
Road Works
Thohoyandou Botanical Garden (TBG)

		Cleaning out of hydraulic structures:					
15		(b) Pipes with an internal diameter exceeding	m3	25			
		750 mm					
16		(c) Box culverts up to and including 1,5 m	m3	56			
		vertical dimension					
		Removal and storage of selected vegetation					
17		(a) Allow a sum of R10 000.00 (Ten Thousand Rands) for cost of removal, storing, protection and replanting in a protected and fenced off area of selected vegetation			SUM		
18		(b) Charge on provisional sum		%			
		DRAINS					
		Excavation for open drains:					
19		(a) Excavating soft material situated within the following depth ranges below the surfac level:					
		(i) 0m up to 1,5m	m3	480			
20		(ii) Exceeding 1.5m and up to 3.0m	m3	960			
21		(b) Extra over subitem 21.01(a) for excavation in hard material, irrespective of depth	m3	150			
22		Cleaning and shaping existing open drains	m3	30			
		Carried to Collection			R		

		PREFABRICATED CULVERTS					
23		Pipe Jacking - Horizontal directional drilling to accommodate a 900mm dia. stormwater pipe incl. set up costs and de-establishment	m	25			
		(a) Excavating soft material situated within the following depth ranges below the surface level:					
24		(i) 0m up to 1,5m	m3	113			
25		(b) Extra over subitem 22.01(a) for excavation in hard material, irrespective of depth	m3	20			
		Backfilling:					
26		(a) Using the excavated material	m3	100			
27		(b) Using imported selected material	m3	50			
28		(c) Extra over subitems 22.02(a) and 22.02(b) for soil cement backfilling (8% cement)	m3	20			
		Concrete pipe culverts:					
		(b) On Class B bedding:					
29		(iii) 900mm dia. (Class 100D)	m	25			
		Portal and rectangular culverts:					
		(a) With prefabricated floor slabs:					
30		(i) Between 1m2 and 3m2 (Class 175S)	m	20			
31		(a) Allow a sum of R15 000.00 (Fifteen Thousand Rands) for construction of masonry head and wing walls as per drawing including foundations and finishing and painting			SUM		
		Carried to Collection			R		
		Section No. 5 SECTION 5: EXTERNAL WORKS Bill No. 8 Road Works **Thohoyandou Botanical Garden (TBG)**					

		CONCRETE KERBING, CONCRETE				
		CHANNELLING OPEN CONCRETE CHUTES AND CONCRETE LININGS FOR OPEN DRAINS				
		Concrete kerbing:				
32		(a) (i) Precast concrete kerbing, (Fig. 3)	m	650		
		Trimming of excavations for concrete-lined open drains:				
33		(a) In soft material	m2	90		
34		(b) In hard material	m2	27		
		Concrete lining for open drains:				
		(a) Cast in situ concrete lining Class 30/19:				
35		(i) SD0601/4 concrete lined V-drains	m3	6		
		Formwork to cast in situ concrete for open drains (class F1 surface finish):				
36		(b) To sides with formwork on both internal and external faces (each face measured)	m2	18		
37		(c) To ends of slabs	m2	1		
		SECTION 3300				
		MASS EARTHWORKS				
		Cut to spoil including free haul up to 0.5km				
		(i) Material obtained from				
38		(a) All types of excavation	m3	3 000		
		Carried to Collection			R	

		Roadbed preparation and the compaction of material				
39		(a) Rip 150mm insitu layer of road widening after cutting and compacting to 93% of modified AASHTO density	m3	600		
		Finishing-off cut and fill slopes, medians and interchange areas				
40		(a) Cut slopes	m2	2 400		
41		(b) Fill slopes	m2	1 920		
		PAVEMENT LAYERS OF GRAVEL MATERIAL				
		Pavement layers constructed from gravel taken from commercial sources including overhaul and/or transport to site				
		(a) Gravel lower subbase layer (G7 or equivalent) compacted to:				
42		(i) 95% MOD AASHTO G7 as lower subbase layer	m3	600		
43		(ii) 95% MOD AASHTO G5 as upper subbase layer	m3	600		
44		(i) 97% MOD AASHTO G7 as a selected layer	m3	600		
45		Removal of oversize pavement material	m3	180		
		SECTION 3600				
		CRUSHED STONE				
		Crushed stone base				
46		(a) Constructed from type G1 material obtained from commercial sources and compacted to 88% of apparent relative density (150mm layer) - Rate inclusive of a trial section	m3	600		
		Carried to Collection			R	

		PRIME COAT				
		Prime coat:				
47		(c) MC-30 cut-back bitumen 0.75ℓ/m²	l	3 200		
48		(d) MC-70 cut-back bitumen	l			Rate Only
49		(f) MSP 1	l			Rate Only
50		Extra over item 41.01 for applying the prime coat in areas accessible only to hand heldequipment	l	40		
		ASPHALT BASE AND SURFACING				
		Asphalt surfacing				
51		(iv) 30 mm thick medium grade with A-E2 modified binder	m2	4 000		
52		Rolled-in chippings, 13.2 mm nominal size at 4.0 kg/m² nominal application rate	kg	4 000		
53		Tack coat of 30% stable grade emulsion at 0.75ℓ/m²	l	3 200		
		Binder variations :				
54		(b) Class A-E2 modified binder using 60/70 penetration grade bitument as base bitumen	t	6.00		
		Variation in active filler content:				
55		(a) Cement	t	4.00		
56		(b) Lime	t	3.00		
57		100mm Cores in asphalt pavements	No	20		
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Section No. 5
SECTION 5: EXTERNAL WORKS
Bill No. 8
Road Works
Thohoyandou Botanical Garden (TBG)

		Placing and compacting asphalt in restricted restricted areas:				
58		(a) Extra over items 42.02	m2	2 000		
59		Extra over item 42.04 for applying tack coat in restricted areas	l	200		
60		Aggregate Variation	t	4.00		
		PITCHING, STONEWORK AND PROTECTION AGAINST EROSION				
		Stone pitching:				
61		(c) Grouted stone pitching on a concrete bed (total thickness = 150mm)	m2	225		
		SECTION 5400				
		GUARDRAILS				
		Guardrails on 3.81m spaced posts				
		(a) Complete galvanised system including foundations on:				
62		(i) Timber Posts	m	133		
		(b) Extra over 54.01(a) for the following				
63		(i) Flared ends (including end wing)	No	2		
64		(ii) End treatments where single guardrail sections are used (including additional posts)	No	2		
65		Reflective plates	No	18		
66		Nailing of gang nail plates on top of timber guardrail posts	No	36		
67		Road signs and road markings as per drawings			SUM	
		Carried to Collection			R	

		FINISHING THE ROAD AND ROAD RESERVE AND TREATING OLD ROADS					
		Finishing the road and road reserve:					
68		(a) Single carriageway road	km	0.4			
		TESTING MATERIALS AND WORKMANSHIP					
69		Allow a sum of R15 000.00 (Fifteen Thousand Rands) for other special tests requested by the Engineer.			SUM		
70		(b) Charge on provisional sum		%			
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Section No. 5
SECTION 5: EXTERNAL WORKS
Bill No. 8
Road Works
Thohoyandou Botanical Garden (TBG)

Section No. 5

SECTION 5: EXTERNAL WORKS

Bill No. 8

Road Works

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Item No			Quantity	Rate	Amount
	SECTION NO. 5				
	BILL NO. 9				
	FENCING				
	Site clearance				
1	Site clearance 1 500mm wide around the perimeter of the fence.	m	575		
	Invisible or equal approved galvanised wire mesh panels with hot dipped galvanised coating zincalu or equal approved super coated to SANS 10244-2:2003 specification				
2	Mesh panel size 3300mm wide x 1 800mm high. Panel aperture size (centres) shall be 85 x 85mm. Mesh panels shall be fabricated from high tensile steel with a weld strength of 60% and a tensile strength of 500N/mm2. Wire diameter will be 3.0mm. The panel shall be reinforced with 4 x 50mm deep 'V' formation horizontal recessed bands (rigidity). Panel shall have 2 x 70 degrees flanges along sides (internal fixtures - all fixtures shall be on the inside of fence line). The panel shall have 2 x 30 degrees flange along top and toe. Horizontal and vertical wires shall have a core diameter of 3mm with tolerance of +-0.07mm. The mesh configuration shall be one layer of horizontal wires spaced at 12.7mm centres sandwiched between two layers of vertical wires spaced at 76.2mm centres. The vertical wires shall be vertically aligned i.e front with back. Apertures shall be 85mm W x 12.7mm H c/c of wires. Posts to be vertically set into ground at 2 400mm centres. Ends cast into and including concrete footing in ground. 2400mm above NGL with and including extension as under-digs to prevent burrowing. Posts to be firmly fixed into concrete size 600mm deep x 400 x 400mm with 15Mpa concrete. including excavation, ramming, removal of spoil and leaving clean and neat.	m	180		
	Carried to Collection			R	

3	15Mpa concrete underdig including formwork, excavations, cartaway and backfilling.	m	180		
4	1 000 x 2 400mm high overall swing gate complete with and including 150mm barrel bolt and pad lock.	No	1		
5	Sliding cantilever gate 5 830mm wide x 2400mm high including 3mm diameter galvanised wire mesh with aperture sizes (centres) of 76.2mm x 12.7mm firmly fixed to 50mm x 75mm x 3mm hollow steel tube framed surround.	No	1		

Carried to Collection R

Section No. 5
SECTION 5: EXTERNAL WORKS
Bill No. 9
Fencing
Thohoyandou Botanical Garden (TBG)

Section No. 5

SECTION 5: EXTERNAL WORKS

Bill No. 9

Fencing

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Bill No. 9
Fencing
Thohoyandou Botanical Garden (TBG)

Section No. 5

SECTION 5: EXTERNAL WORKS

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SECTION NO. 6

BILL NO.1

PROVISIONAL SUMS

PREAMBLES

NOTE: All Tenderers are advised to study the "Construction Works: Specifications: General Specification (PW371-A) Edition 2.0" and "Construction Works: Specifications: Particular Specification (PW371-B) Edition 2.0" before pricing this bill

SUPPLEMENTARY PREAMBLES

NOTE: Tenderers are referred to the definition of general attendance on nominated sub-contractors given in Clause 9 of the Preliminaries

NOTE: Under no circumstances may any Prime Cost - Provisional Amount, etc be extended at an amount lower than the amount given in the Bill

THE FOLLOWING PROVISIONAL SUMS ARE FOR WORK TO BE EXECUTED BY SELECTED SUBCONTRACTORS

The following Provisional Sums are for specialists work to be executed by a selected Sub-contractor who upon appointment in terms of the Conditions of Contract shall be deemed to be a Domestic Sub-Contractor to the Contractor

A Selected Sub-Contractor shall be a Sub-contractor executing work for which a sum of money is provided for in the Bills of Quantities or a Sub-contractor executing additional specialist work which arises as a result of an instruction by the Principal Agent

Carried to Collection R

	Tender documents for such work shall be prepared by the Principal Agent in consultation with and to the approval of the Contractor and such tender document shall be issued by the Principal Agent to a list of tenderers agreed upon between the Principal Agent and Contractor. Tenders shall be submitted to the Principal Agent Tender documents for such work shall be prepared by the Principal Agent in consultation with and to the approval of the Contractor and such tender document shall be issued by the Principal Agent to a list of tenderers agreed upon between the Principal Agent and Contractor. Tenders shall be submitted to the Principal Agent The Selected Sub-contractor shall be chosen by the Principal Agent and the Contractor, and the Contractor shall satisfy himself that such selected sub-contractor can meet the requirements of the Sub-Contract agreement and the Contractor shall inform the Principal Agent accordingly The procedure relating to the method of selection, obtaining of tenders, adjudication thereof and the appointment of the Selected Sub-contractor shall not create any contractual relationship between the Client and the Selected Sub-contractor				
	<u>Signage and wayfinding</u>				
1	Provide the sum of R75 000,00 (Seventy Five Thousand Rands) for signage and way finding by Specialists	Item			75 000.00
2	Allow for profit on above	Item			
3	Allow for attendance on the above	Item			
	<u>Kids play area</u>				
4	Provide the amount of R100 000.00 (One Hundred Thousand Rands) for kids play area equipment.	Item			100 000.00
5	Allow for profit on above	Item			
6	Allow for attendance on the above	Item			
	Carried to Collection			R	

Section No. 6
SECTION 6: PROVISIONAL SUMS
Bill No. 1
Provisional Sums
Thohoyandou Botanical Garden (TBG)

	Grease trap			
7	Provide the sum of R40 000,00 (Forty Thousand Rands) for grease trap by Specialists	Item		40 000.00
8	Allow for profit on above	Item		
9	Allow for attendance on the above	Item		
	Kitchen Equipment			
10	Provide the sum of R150 000,00 (One Hundred and Fifty Thousand Rands) for supply of kitchen equipment by Specialist	Item		150 000.00
11	Allow for profit on above	Item		
12	Allow for attendance on the above	Item		
	Community Liaison Officer			
13	Provide the sum of R120 000,00 (One Hundred and Fifty Thousand Rands) for allowance of community liaison officer during construction period (R6 500.00 per month)	Item		120 000.00
14	Allow for profit on above	Item		
	Project Steering Committee			
15	Provide the sum of R21 000,00 (Twenty One Thousand Rands) for project steering committee members during construction period (R300 per seating/person x 5No x 14months)	Item		21 000.00
16	Allow for profit on above	Item		
	EPWP TRAINING			
	TRAINING OF WORKERS			
	(TARGET: 30 YOUTH WORKERS)			
	Carried to Collection		R	

	Skills Development				
17	Provide the sum of R60 000.00 (Sixty Thousand Rands) for Entrepreneurship skills	Item			60 000.00
18	Provide the sum of R60 000.00 (Sixty Thousand Rands) for Engineering skills	Item			60 000.00
19	Provide the sum of R80 000.00 (Eighty Thousand Rands) for Generic skills	Item			80 000.00
	Remuneration of workers				
20	Provide the sum of R18 000.00 (Eighteen Thousand Rands) for Medical Surveillance	Item			18 000.00
21	Provide the sum of R24 000.00 (Twenty Four Thousand Rands) for provision of safety clothing	Item			24 000.00
22	Provide the sum of R130 680.00 (One Hundred and Thirty Thousand Six Hundred and Eighty Rands) for Remuneration of workers at (R22/hr x 9hours/day x 22days/month x 30days)	Item			130 680.00
23	Provide the sum of R19 800.00 (Nineteen Thousand Eight Hundred Rands) for travelling (based on R30 per day return trip/worker)	Item			19 800.00
	Training venue				
24	Provide the sum of R20 000.00 (Twenty Thousand Rands) for training venue	Item			20 000.00
25	Profit and attendance EPWP training	%			
	Carried to Collection			R	

Section No. 6

SECTION 6: PROVISIONAL SUMS

Bill No. 1

Provisional Sums

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	251		
	252		
	253		
	254		
Carried to Final Summary		R	

FINAL SUMMARY

Section No		Page No		Amount
1	SECTION 1: PRELIMINARIES	33		
2	SECTION 2: INFORMATION AND VISITORS CENTRE	114		
3	SECTION 3: CULTURAL HUTS	141		
4	SECTION 4: GUARD HOUSE & ENTRANCE GATE	198		
5	SECTION 5: EXTERNAL WORKS	250		
6	SECTION 6: PROVISIONAL SUMS	255		
	SUB - TOTAL		R	
	ANNEXURE B: ELECTRICAL INSTALLATION			
	Electrical Installation (see separate document - Annexure B) (Value Added Tax Excluded)	Item		
	ANNEXURE C: MECHANICAL INSTALLATION			
	Mechanical Installation (see separate document - Annexure C) (Value Added Tax Excluded)	Item		
	SUB - TOTAL		R	
	CONTINGENCY SUM			
	Allow 5% for Contingencies for building work, to be used as directed by the Principal Agent and deducted in whole or in part if not required	%		
	CONTRACT PRICE ADJUSTMENT PROVISIONS			
	Allow 8% for Contract Price Adjustment Provisions to be utilised during construction period	%		
	SUB TOTAL		R	
	ADD : VAT @ 15%		R	
	Carried to Form of Offer and Acceptance		R	
	Thohoyandou Botanical Garden (TBG)			

THOHOYANDOU
BOTANICAL GARDENS

ANNEXURE B

ELECTRICAL
INSTALLATIONS

Item	Description	Unit	Quantity	Rate	Amount
	BILL 1: RETICULATION AND DISTRIBUTION BOARDS				
	Distribution Boards				
	Distribution board complete with all MCBs, switchgear, accessories, sheet metal frames, sub-frames, busbars, terminals, wiring, conduit terminations, labelling, fixtures and fittings as specified, with all equipment fitted and equipped in factory all strictly as per the issued schematic diagram. *(Please note that the distribution board's shop drawing should be submitted to the Engineer for approval prior to manufacture).*				
	DB-VC				
1.1	Supply	No.	1		
1.2	Install	No.	1		
	DB-GH				
1.3	Supply	No.	1		
1.4	Install	No.	1		
	DB-CH				
1.5	Supply	No.	1		
1.6	Install	No.	1		
	DB-PH				
1.7	Supply	No.	1		
1.8	Install	No.	1		
	Low voltage cables				
	600/1 000V PVC/PVC/SWA/PVC multi-core copper cable installed in sleeves/cable trays (sleeves/cable trays measured elsewhere)				
	25mm² 4 Core				
1.9	Supply	m	120		
1.10	Install	m	120		
	16mm² 3 Core				
1.11	Supply	m	140		
1.12	Install	m	140		
	6mm² 4 Core				
1.13	Supply	m	500		
1.14	Install	m	500		
	Low voltage cable terminations				
	Make off and terminate the LV cable, complete with glands, lugs and shrouds including connection of cable to equipment terminals				
	25mm² 4 Core				
1.15	Supply	No.	2		
1.16	Install	No.	2		
	16mm² 3 Core				
1.17	Supply	No.	4		
1.18	Install	No.	4		
	6mm² 4 Core				
1.19	Supply	No.	70		
1.20	Install	No.	70		
				CARRIED FORWARD	

Item	Description		Unit	Quantity	Rate	Amount
					BROUGHT FORWARD	
	Earthing Conductors					
	Bare stranded copper earth conductor installed in sleeves (sleeves measured elsewhere)					
	16mm² BCEW					
1.21		Supply	m	120		
1.22		Install	m	120		
	6mm² BCEW					
1.23		Supply	m	500		
1.24		Install	m	500		
	Earthing conductor terminations					
	Make off and terminate earth conductor, including lugs and connections					
	16mm² BCEW					
1.25		Supply	No.	2		
1.26		Install	No.	2		
	6mm² BCEW					
1.27		Supply	No.	70		
1.28		Install	No.	70		
	Earth Rods					
	SABS approved copper earth rod					
	1500mm long 16mm diameter					
1.29		Supply	No.	9		
1.30		Install	No.	9		
	Sleeves					
	Kabelflex high density (or equal and approved) polyethylene (HDPE) sleeve with double wall construction, corrugated outer wall and smooth inner wall finish inclusive of couplers, bends, etc					
	110mm diameter					
1.31		Supply	m	60		
1.32		Install	m	60		
	50mm diameter					
1.33		Supply	m	200		
1.34		Install	m	200		
	Draw wires					
	Draw wire drawn into sleeves and conduits including approximately 300mm slack in boxes, distribution board, etc.					
	1.6mm² Galvanised steel draw wire					
1.35		Supply	m	260		
1.36		Install	m	260		
					CARRIED FORWARD	

Item	Description	Unit	Quantity	Rate	Amount
				BROUGHT FORWARD	
	Excavations				
	All excavations, back filling and compaction must be done manually using local labour				
	Excavate for cable and sleeve trench including temporary support of sides, keeping excavations dry, backfilling and compacting to the Engineer's specification				
1.37	Pickable Soil	m³	500		
1.38	For Soft Rock	m³	10		
1.39	For Hard Rock	m³	1		
1.40	Bedding under and filling around cables comprising sifted sand	m³	70		
	Cable Tape and Markers				
	PVC warning marking tape				
1.41	Supply	m	700		
1.42	Install	m	700		
	Concrete route markers				
1.43	Supply	m	20		
1.44	Install	m	20		
	Manholes complete with heavy duty trafficable covers				
	600 x 600 x 800 mm				
1.45	Supply	No.	2		
1.46	Install	No.	2		
	Area Lights				
	Installed and mounted on poles, including poles, excavation to install poles, lamps, 5A circuit breaker and 2 x 2.5mm² PVC conductors from circuit breaker to luminaire on top of pole.				
	Type A3				
1.47	Supply	No.	3		
1.48	Install	No.	3		
	Type H				
1.49	Supply	No.	32		
1.50	Install	No.	32		
	Galvanised steel conduits				
	Galvanised steel conduit including bending, short lengths, draw boxes, cutting,bands, jointing, couplings, saddles and accessories as per SABS 1065. Fixed to surface or laid in or flush mounted in brickwork, dry walls (partitions), concrete, roof space or ceiling void. The rate to allow for the conduit mounting brackets to suspend conduits from concrete slab as would be required in the ceiling void.				
	20mm				
1.51	Supply	m	60		
1.52	Install	m	60		
				TOTAL CARRIED FORWARD TO SUMMARY	

Item	Description	Unit	Quantity	Rate	Amount
	BILL 2: GENERAL ELECTRICAL INSTALLATIONS - VISITORS CENTRE				
	Galvanised steel conduits				
	Galvanised steel conduit including bending, short lengths, draw boxes, cutting,bands, jointing, couplings, saddles and accessories as per SABS 1065. Fixed to surface or laid in or flush mounted in brickwork, dry walls (partitions), concrete, roof space or ceiling void. The rate to allow for the conduit mounting brackets to suspend conduits from concrete slab as would be required in the ceiling void.				
	20mm				
2.1	Supply	m	1000		
2.2	Install	m	1000		
	25mm				
2.3	Supply	m	600		
2.4	Install	m	600		
	Galvanised Steel round boxes				
	Surface or flush mounted 60mm deep Galvanised steel conduit round boxes with one, two, three or four way or back entry as required, including fixing to conduit with the necessary locknuts, adaptors, bushes, etc., installed in brickwork, on surface in ceiling void or cast in concrete inclusive of coverplates, where necessary.				
	20mm				
2.5	Supply	No.	170		
2.6	Install	No.	170		
	25mm				
2.7	Supply	No.	100		
2.8	Install	No.	100		
	Galvanised boxes				
	Surface or flush mounted galvanised boxes with one, two, three or four way or back entry as required, including fixing to conduit with the necessary locknuts, adaptors, bushes, etc., installed chased in brickwork, on surface in ceiling or cast in concrete, excluding coverplates.				
	100 x 50 x 50mm				
2.9	Supply	No.	32		
2.10	Install	No.	32		
	100 x 100 x 50mm				
2.11	Supply	No.	80		
2.12	Install	No.	80		
	Power skirting				
	Galvanised steel power skirting, epoxy-coated, complete with separate straight cover plates				
	2-Compartment 2-Cover				
2.13	Supply	m	30		
2.14	Install	m	30		
				CARRIED FORWARD	

Item	Description		Unit	Quantity	Rate	Amount
					BROUGHT FORWARD	
	Power skirting Accessories					
	Aluminium power skirting accessories					
	End caps					
2.15		Supply	No.	14		
2.16		Install	No.	14		
	Elbows					
2.17		Supply	No.	4		
2.18		Install	No.	4		
	Power trunking Supply and install ceiling mounted single compartment galvanized steel trunking complete with covers, tees, bends, hangers, threaded rods, purlin clamps and all other accessories for a complete installation.					
	76 mm wide x 63 mm deep (for lighting circuits, as Cabstrut P8300)					
2.19		Supply	m	100		
2.20		Install	m	100		
	127mm wide x 76 mm deep (for power circuits,as Cabstrut P9000)					
2.21		Supply	m	100		
2.22		Install	m	100		
	Cable Trays					
	Heavy Duty Galvanised Cable Trays complete with cantilever hangers or suspension rods complete with all joints, bends, tees, splicing etc as specified on the Drawings					
	150mm wide wiremesh cable tray					
2.23		Supply	m	50		
2.24		Install	m	50		
	PVC insulated conductors					
	600/1000V PVC insulated conductors drawn into conduit or installed in wiring channel including conductor identification labels, terminating, etc.					
	2.5 mm²					
2.25		Supply	m	2000		
2.26		Install	m	2000		
	4.0 mm²					
2.27		Supply	m	1200		
2.28		Install	m	1200		
					CARRIED FORWARD	

Item	Description		Unit	Quantity	Rate	Amount
					BROUGHT FORWARD	
	Insulated copper earth conductors					
	Earth conductors drawn into conduit or installed in wiring channel including conductor identification labels, terminating, etc.					
	2.5 mm²					
2.29		Supply	m	1000		
2.30		Install	m	1000		
	4.0 mm²					
2.31		Supply	m	600		
2.32		Install	m	600		
	Socket outlets					
	Socket outlet complete with all necessary chrome fixing screws, steel cover plates, labeling, cradles, including all holes,drilling, etc					
	16A, 230V, 3-pin normal double switched,wall mounted or surface mounted on wall					
2.33		Supply	No.	20		
2.34		Install	No.	20		
	16A, 230V, 3-pin normal switched socket outlet with shaved earth pin, mounted on power skirting					
2.35		Supply	No.	9		
2.36		Install	No.	9		
	16A, 230V, 3-pin dedicated double switched,wall mounted or surface mounted in ceiling void					
2.37		Supply	No.	8		
2.38		Install	No.	8		
	16A, 230V, 3-pin dedicated switched socket outlet with shaved earth pin, mounted on power skirting or power pole					
2.39		Supply	No.	9		
2.40		Install	No.	9		
	16A, 230V, 3-pin dedicated slimline switched socket outlet with shaved earth pin, mounted on power skirting or power pole					
2.41		Supply	No.	9		
2.42		Install	No.	9		
	5A, 230V, 3-pin single switched					
2.43		Supply	No.	128		
2.44		Install	No.	128		
	230V, 3-pin double switched socket outlet for television, surface mounted in ceiling void					
2.45		Supply	No.	2		
2.46		Install	No.	2		
	Isolators					
	Isolator complete with box, cover plate and accessories.					
	20A DP Single phase isolator, surface mounted, weatherproof, IP65					
2.47		Supply	No.	12		
2.48		Install	No.	12		
					CARRIED FORWARD	

Item	Description	Unit	Quantity	Rate	Amount
				BROUGHT FORWARD	
	Light switches				
	Light switch complete with all necessary chrome fixing screws, steel cover plates, labeling, cradles, including all holes,drilling, etc inclusive of termination of circuit wiring onto switch terminals.				
	16A, 230V, 1 Lever 1 Way				
2.49	Supply	No.	18		
2.50	Install	No.	18		
	16A, 230V, 2 Lever 1 Way				
2.51	Supply	No.	4		
2.52	Install	No.	4		
	16A, 230V, 1 Lever 2 Way				
2.53	Supply	No.	8		
2.54	Install	No.	8		
	16A, 230V, 2 Lever 2 Way				
2.55	Supply	No.	2		
2.56	Install	No.	2		
	Photocell				
	Photocell installed in a suitably sized rectangular bulkhead luminaire housing with clear UV stabilised high impact acrylic lens and labelling as specified				
	16A, 230V, Photocell				
2.57	Supply	No.	1		
2.58	Install	No.	1		
	Occupancy Sensors				
	Ceiling/concrete slab mounted occupancy sensors for lighting control				
	10A, 250V, Passive 360º occupancy sensor				
2.59	Supply	No.	9		
2.60	Install	No.	9		
	Light fittings				
	SABS approved light fittings as per the specification, complete with lamps,machine or wood screws, bolts, installed and connected as specified. All fittings shall be similar or equal to (and subject to approval) the light fittings specified in the schedule of light fittings.				
	Please note that all ceiling mounted lay in fittings shall be delivered with 3m of 1,5mm² flexible cabtyre with a 5 amp 3 pin plug top fitted.				
	Type A				
2.61	Supply	No.	10		
2.62	Install	No.	10		
	Type B				
2.63	Supply	No.	34		
2.64	Install	No.	34		
	Type BE				
2.65	Supply	No.	12		
2.66	Install	No.	12		
				CARRIED FORWARD	

Item	Description		Unit	Quantity	Rate	Amount
					BROUGHT FORWARD	
	Light fittings (Cont'd)					
	Type B1					
2.67		Supply	No.	10		
2.68		Install	No.	10		
	Type C1					
2.69		Supply	No.	2		
2.70		Install	No.	2		
	Type C1E					
2.71		Supply	No.	1		
2.72		Install	No.	1		
	Type C2					
2.73		Supply	No.	1		
2.74		Install	No.	1		
	Type C2E					
2.75		Supply	No.	2		
2.76		Install	No.	2		
	Type D					
2.77		Supply	No.	30		
2.78		Install	No.	30		
	Type DE					
2.79		Supply	No.	10		
2.80		Install	No.	10		
	Type E					
2.81		Supply	No.	16		
2.82		Install	No.	16		
	Telecommunications distribution board Flush mounted distribution board, lockable, complete with 20mm thick wooden back board					
	300 x 300 x 150mm deep					
2.83		Supply	No.	1		
2.84		Install	No.	1		
	Telecommunications outlets Galvanised steel epoxy powder coated cradles and covers mounted on power skirting or wall complete with removable blank inserts.					
	RJ45 socket outlet - Power Skirting Mounted					
2.85		Supply	No.	18		
2.86		Install	No.	18		
	Hand Dryer					
	Stainless Steel Automatic Hand Dryer as 1400W Exellerator with a motor speed of 20,000rpm and air output temperature of 57 degrees Celsius, or equal and approved					
2.87		Supply	No.	5		
2.88		Install	No.	5		
					TOTAL CARRIED FORWARD TO SUMMARY	

Item	Description	Unit	Quantity	Rate	Amount
	BILL 3: GENERAL ELECTRICAL INSTALLATIONS - CULTURAL HUTS (3No.)				
	Galvanised steel conduits				
	Galvanised steel conduit including bending, short lengths, draw boxes, cutting,bands, jointing, couplings, saddles and accessories as per SABS 1065. Fixed to surface or laid in or flush mounted in brickwork, dry walls (partitions), concrete, roof space or ceiling void. The rate to allow for the conduit mounting brackets to suspend conduits from concrete slab as would be required in the ceiling void.				
	20mm				
3.1	Supply	m	60		
3.2	Install	m	60		
	Galvanised Steel round boxes				
	Surface or flush mounted 60mm deep Galvanised steel conduit round boxes with one, two, three or four way or back entry as required, including fixing to conduit with the necessary locknuts, adaptors, bushes, etc., installed in brickwork, on surface in ceiling void or cast in concrete inclusive of coverplates, where necessary.				
	20mm				
3.3	Supply	No.	9		
3.4	Install	No.	9		
	Galvanised boxes				
	Surface or flush mounted galvanised boxes with one, two, three or four way or back entry as required, including fixing to conduit with the necessary locknuts, adaptors, bushes, etc., installed chased in brickwork, on surface in ceiling or cast in concrete, excluding coverplates.				
	100 x 50 x 50mm				
3.5	Supply	No.	3		
3.6	Install	No.	3		
	PVC insulated conductors				
	600/1000V PVC insulated conductors drawn into conduit or installed in wiring channel including conductor identification labels, terminating, etc.				
	2.5 mm²				
3.7	Supply	m	120		
3.8	Install	m	120		
	Insulated copper earth conductors				
	Earth conductors drawn into conduit or installed in wiring channel including conductor identification labels, terminating, etc.				
	2.5 mm²				
3.9	Supply	m	60		
3.10	Install	m	60		
				CARRIED FORWARD	

Item	Description	Unit	Quantity	Rate	Amount
				BROUGHT FORWARD	
	Light switches Light switch complete with all necessary chrome fixing screws, steel cover plates, labeling, cradles, including all holes,drilling, etc inclusive of termination of circuit wiring onto switch terminals. 16A, 230V, 1 Lever 1 Way				
3.11	Supply	No.	3		
3.12	Install	No.	3		
	Light fittings SABS approved light fittings as per the specification, complete with lamps,machine or wood screws, bolts, installed and connected as specified. All fittings shall be similar or equal to (and subject to approval) the light fittings specified in the schedule of light fittings. *Please note that all ceiling mounted lay in fittings shall be delivered with 3m of 1,5mm² flexible cabtyre with a 5 amp 3 pin plug top fitted.* Type A				
3.13	Supply	No.	3		
3.14	Install	No.	3		
				TOTAL CARRIED FORWARD TO SUMMARY	

Item	Description	Unit	Quantity	Rate	Amount
	BILL 4: GENERAL ELECTRICAL INSTALLATIONS - GUARD HOUSE				
	Galvanised steel conduits				
	Galvanised steel conduit including bending, short lengths, draw boxes, cutting,bands, jointing, couplings, saddles and accessories as per SABS 1065. Fixed to surface or laid in or flush mounted in brickwork, dry walls (partitions), concrete, roof space or ceiling void. The rate to allow for the conduit mounting brackets to suspend conduits from concrete slab as would be required in the ceiling void.				
	20mm				
4.1	Supply	m	60		
4.2	Install	m	60		
	25mm				
4.3	Supply	m	30		
4.4	Install	m	30		
	Galvanised Steel round boxes				
	Surface or flush mounted 60mm deep Galvanised steel conduit round boxes with one, two, three or four way or back entry as required, including fixing to conduit with the necessary locknuts, adaptors, bushes, etc., installed in brickwork, on surface in ceiling void or cast in concrete inclusive of coverplates, where necessary.				
	20mm				
4.5	Supply	No.	10		
4.6	Install	No.	10		
	25mm				
4.7	Supply	No.	5		
4.8	Install	No.	5		
	Galvanised boxes				
	Surface or flush mounted galvanised boxes with one, two, three or four way or back entry as required, including fixing to conduit with the necessary locknuts, adaptors, bushes, etc., installed chased in brickwork, on surface in ceiling or cast in concrete, excluding coverplates.				
	100 x 50 x 50mm				
4.9	Supply	No.	2		
4.10	Install	No.	2		
	100 x 100 x 50mm				
4.11	Supply	No.	5		
4.12	Install	No.	5		
	Power skirting				
	Galvanised steel power skirting, epoxy-coated, complete with separate straight cover plates				
	2-Compartment 2-Cover				
4.13	Supply	m	5		
4.14	Install	m	5		
				CARRIED FORWARD	

Item	Description		Unit	Quantity	Rate	Amount
					BROUGHT FORWARD	
	Power skirting Accessories					
	Aluminium power skirting accessories					
	End caps					
4.15		Supply	No.	2		
4.16		Install	No.	2		
	PVC insulated conductors					
	600/1000V PVC insulated conductors drawn into conduit or installed in wiring channel including conductor identification labels, terminating, etc.					
	2.5 mm²					
4.17		Supply	m	120		
4.18		Install	m	120		
	4.0 mm²					
4.19		Supply	m	60		
4.20		Install	m	60		
	Insulated copper earth conductors					
	Earth conductors drawn into conduit or installed in wiring channel including conductor identification labels, terminating, etc.					
	2.5 mm²					
4.21		Supply	m	60		
4.22		Install	m	60		
	4.0 mm²					
4.23		Supply	m	30		
4.24		Install	m	30		
	Socket outlets					
	Socket outlet complete with all necessary chrome fixing screws, steel cover plates, labeling, cradles, including all holes,drilling, etc					
	16A, 230V, 3-pin normal double switched,wall mounted or surface mounted on wall					
4.25		Supply	No.	2		
4.26		Install	No.	2		
	16A, 230V, 3-pin normal switched socket outlet with shaved earth pin, mounted on power skirting					
4.27		Supply	No.	2		
4.28		Install	No.	2		
					CARRIED FORWARD	

Item	Description		Unit	Quantity	Rate	Amount
					BROUGHT FORWARD	
	Isolators					
	Isolator complete with box, cover plate and accessories.					
	20A DP Single phase isolator, surface mounted, weatherproof, IP65					
4.29		Supply	No.	1		
4.30		Install	No.	1		
	Light switches					
	Light switch complete with all necessary chrome fixing screws, steel cover plates, labeling, cradles, including all holes,drilling, etc inclusive of termination of circuit wiring onto switch terminals.					
	16A, 230V, 1 Lever 1 Way					
4.31		Supply	No.	1		
4.32		Install	No.	1		
	16A, 230V, 2 Lever 1 Way					
4.33		Supply	No.	1		
4.34		Install	No.	1		
	Light fittings					
	SABS approved light fittings as per the specification, complete with lamps,machine or wood screws, bolts, installed and connected as specified. All fittings shall be similar or equal to (and subject to approval) the light fittings specified in the schedule of light fittings.					
	Please note that all ceiling mounted lay in fittings shall be delivered with 3m of 1,5mm² flexible cabtyre with a 5 amp 3 pin plug top fitted.					
	Type B2					
4.35		Supply	No.	4		
4.36		Install	No.	4		
	Telecommunications outlets					
	Galvanised steel epoxy powder coated cradles and covers mounted on power skirting or wall complete with removable blank inserts.					
	RJ45 socket outlet - Power Skirting Mounted					
4.37		Supply	No.	2		
4.38		Install	No.	2		
					TOTAL CARRIED FORWARD TO SUMMARY	

Item	Description	Unit	Quantity	Rate	Amount
	BILL 5: GENERAL ELECTRICAL INSTALLATIONS - PUMP HOUSE				
	Galvanised steel conduits				
	Galvanised steel conduit including bending, short lengths, draw boxes, cutting,bands, jointing, couplings, saddles and accessories as per SABS 1065. Fixed to surface or laid in or flush mounted in brickwork, dry walls (partitions), concrete, roof space or ceiling void. The rate to allow for the conduit mounting brackets to suspend conduits from concrete slab as would be required in the ceiling void.				
	20mm				
5.1	Supply	m	10		
5.2	Install	m	10		
	25mm				
5.3	Supply	m	30		
5.4	Install	m	30		
	Galvanised Steel round boxes				
	Surface or flush mounted 60mm deep Galvanised steel conduit round boxes with one, two, three or four way or back entry as required, including fixing to conduit with the necessary locknuts, adaptors, bushes, etc., installed in brickwork, on surface in ceiling void or cast in concrete inclusive of coverplates, where necessary.				
	20mm				
5.5	Supply	No.	2		
5.6	Install	No.	2		
	25mm				
5.7	Supply	No.	5		
5.8	Install	No.	5		
	Galvanised boxes				
	Surface or flush mounted galvanised boxes with one, two, three or four way or back entry as required, including fixing to conduit with the necessary locknuts, adaptors, bushes, etc., installed chased in brickwork, on surface in ceiling or cast in concrete, excluding coverplates.				
	100 x 50 x 50mm				
5.9	Supply	No.	1		
5.10	Install	No.	1		
	100 x 100 x 50mm				
5.11	Supply	No.	3		
5.12	Install	No.	3		
	PVC insulated conductors				
	600/1000V PVC insulated conductors drawn into conduit or installed in wiring channel including conductor identification labels, terminating, etc.				
	2.5 mm²				
5.13	Supply	m	20		
5.14	Install	m	20		
	4.0 mm²				
5.15	Supply	m	60		
5.16	Install	m	60		
				CARRIED FORWARD	

Item	Description		Unit	Quantity	Rate	Amount
					BROUGHT FORWARD	
	Insulated copper earth conductors					
	Earth conductors drawn into conduit or installed in wiring channel including conductor identification labels, terminating, etc.					
	2.5 mm²					
5.17		Supply	m	10		
5.18		Install	m	10		
	4.0 mm²					
5.19		Supply	m	30		
5.20		Install	m	30		
	Socket outlets					
	Socket outlet complete with all necessary chrome fixing screws, steel cover plates, labeling, cradles, including all holes,drilling, etc					
	16A, 230V, 3-pin normal double switched,wall mounted or surface mounted on wall, weatherproof					
5.21		Supply	No.	1		
5.22		Install	No.	1		
	Isolators					
	Isolator complete with box, cover plate and accessories.					
	20A DP Single phase isolator, surface mounted, weatherproof, IP65					
5.23		Supply	No.	1		
5.24		Install	No.	1		
	Light switches					
	Light switch complete with all necessary chrome fixing screws, steel cover plates, labeling, cradles, including all holes,drilling, etc inclusive of termination of circuit wiring onto switch terminals.					
	16A, 230V, 1 Lever 1 Way					
5.25		Supply	No.	1		
5.26		Install	No.	1		
	Light fittings					
	SABS approved light fittings as per the specification, complete with lamps,machine or wood screws, bolts, installed and connected as specified. All fittings shall be similar or equal to (and subject to approval) the light fittings specified in the schedule of light fittings.					
	Please note that all ceiling mounted lay in fittings shall be delivered with 3m of 1,5mm² flexible cabtyre with a 5 amp 3 pin plug top fitted.					
	Type A					
5.27		Supply	No.	3		
5.28		Install	No.	3		
					TOTAL CARRIED FORWARD TO SUMMARY	

Item	Description	Unit	Quantity	Rate	Amount
	BILL 6: ADDITIONAL ITEMS				
	Decommissioning of Existing Installations				
6.1	Provide the sum of R5 000.00 (Five Thousand Rands) for the decommissioning of the existing electrical installations within the existing guard house.	Sum	1		**R 5 000.00**
	Earthing and Lightning Protection				
6.2	Allowance for Earthing and Lightning Protection system to be done by a specialist as may be required.	Sum	1		**R 120 000.00**
	Telephone and Data Network				
6.3	Allowance for Telephone and Data Network system to be done by a specialist as may be required.	Sum	1		**R 120 000.00**
	Access Control System				
6.4	Allowance for Access Control system to be done by a specialist as may be required.	Sum	1		**R 50 000.00**
	CCTV System				
6.5	Allowance for CCTV system to be done by a specialist as may be required.	Sum	1		**R 60 000.00**
	Television System				
6.6	Allowance for Television system to be done by a specialist as may be required.	Sum	1		**R 20 000.00**
	Centralised UPS System				
6.7	Allowance for Centralised UPS system to be done by a specialist as may be required.	Sum	1		**R 120 000.00**
	Labelling				
6.8	Engraved labels on each switched socket outlet and light switch face plate, glued and screwed.	Item	1		
6.9	Cable marking with Gravoplast at either end below termination shroud	Item	1		
	Testing and commissioning				
6.10	Testing and commissioning of the works covered within this entire contract.	Item	1		
	Documentation				
6.11	Provision of the As-built drawings for the works covered within this bill showing all cable routes, conduit routes, etc	Item	1		
6.12	Provision of the Operation and Maintenance manuals for the works covered within this bill including conducting User's training	Item	1		
6.13	Provision of the Certificates of Compliance upon completion for the works covered within this bill.	Item	1		
	Guarantee				
6.14	12 month equipment and installation guarantee on the works covered within this bill.The guarantee period commences on the day of successful handing over of the building to the Client	Item	1		
				TOTAL CARRIED FORWARD TO SUMMARY	

Item	Description	Unit	Quantity	Amount
	SUMMARY			
7.1	BILL 1: RETICULATION AND DISTRIBUTION BOARDS	Sum	1	
7.2	BILL 2: GENERAL ELECTRICAL INSTALLATIONS - VISITORS' CENTRE	Sum	1	
7.3	BILL 3: GENERAL ELECTRICAL INSTALLATIONS - CULTURAL HUTS (3No.)	Sum	1	
7.4	BILL 4: GENERAL ELECTRICAL INSTALLATIONS - GUARD HOUSE	Sum	1	
7.5	BILL 5: GENERAL ELECTRICAL INSTALLATIONS - GUARD HOUSE	Sum	1	
7.6	BILL 6: ADDITIONAL ITEMS	Sum	1	
7.7	PRELIMINARIES AND GENERAL	Sum	1	
TOTAL AMOUNT (Excluding VAT)				

THOHOYANDOU
BOTANICAL GARDENS

ANNEXURE C

MECHANICAL
INSTALLATIONS

ITEM NO.	DESCRIPTION	UNIT		AMOUNT R C
1	HVAC Systems	Item		
2	Fire Protection Systems	Item		
3	Water Tanks & Pumps	Item		
4	Operating & Maintenance Manuals and AS BUILT drawings	Item		
5	P & G Items for Mechanical Subcontract	Item		Incl.
6	Contigencies	Item		Incl.
7	**Total for Mechanical Services Sub- Contract**	**Item**		
	DAY WORKS AND ADDITIONAL MATERIAL Provisional sum above to be expended as and when required upon instructions from the engineer and against which the contractor shall have no claim except where such instructions are passed and deducted in whole or in part if not required. The rates for items below shall be used **Labour** The rates for labour in dayworks are to be applied to the hours worked and are to include overheads, profits, etc. Normal Time Technician Apprentice Semi-skilled Labourer **Sundays and Public Holidays** Technician Apprentice Semi-skilled Labourer **Transport** The following nett rates for transport are to be applied and they are include for the provision of the vehicle fuel, driver waiting and travelling time. **Passengers vehicle in dayworks.** LDV in dayworks. 5 ton truck in dayworks			
	TOTAL MECHANICAL TENDER SUM CARRIED TO MAIN CONTRACT SUMMARY			

ITEM NO.	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R c
	HVAC & REFRIGERATION SYSTEMS				
	Design, manufacture, works testing, supply and delivery to site, moving into position, erection, connecting up, site testing, witness testing, proving to the inspectors, demonstrating to the Employer and maintenance of the complete installation as outlined in the specification and on the drawings.				
1	**Stainless steel type 304 wall type kitchen extract hoods complete with stainless steel grease filters and grease tray, extract fan and supports and suction and discharge side attenuators, fire rated extract duct and fire damper**				
1.1	1800 x 600 x 500 island type extract hood for cooking area with extract fan and inlet and outlet attenuators to achieve NC 35 noise level. Fan duty 2700 litres/sec @ 350 Pa. Installation must be complete with weather proof flushing and extract fan controller. Power supply to within 1m of the extract fan shall be by others.	No.	1		
1.2	450 x 450 fire damper	No.	1		
1.3	450 x 450 stainless steel 304 extract duct including bends and fittings	m	6		
1.4	Recessed wall mounted fan controller	No.	1		
2	**Split inverter type airconditioning units complete with refrigerant pipes and condensate drain as shown on the drawings**				
2.1	Ceiling hideaway evaporator & condenser unit 7kW cooling reverse cycle heat pump complete with hard wired remote comtrollers	No.	1		
2.2	Ceiling cassette evaporator & condenser unit 7kW cooling reverse cycle heat pump complete with hard witred remote controllers	No.	2		
2.3	Inline type fresh air supply fan minimum duty 50 l/s @ 100Pa	No.	1		
2.4	200 mm dia radial diffusser with plenum , butterfly damper and 595 x 595 seating frame plate	No.	5		
2.5	100 mm dia flexible duct	m	20		
2.6	150 x 150 mm aluminium weather louvre with vermin proof wire mesh	No.	1		
2.8	200 x 150 insulated galvanised mild steel duct	m	4		
2.9	1200 x 600 return air egg-crate type grille complete with plenum box and 100 mm dia fresh air spigot	No.	1		
	Testing & Maintenance				
1.3	Alow for testing and commissioning to the satisfaction of the engineer	Item			
1.4	Allow for maintenance during defects liability period in terms of the contract	Item			
	Total carried to Summary Page				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT R c
2	**FIRE PROTECTION INSTALLATION**				
	Design, manufacture, works testing, supply and delivery to site, moving into position, erection, connecting up, site testing, witness testing, proving to the inspectors, demonstrating to the Employer and maintenance of the complete installation as per conditions of contract and the specification and on drawings.				
2.1	Standard Wall Mounted Type Fire Hose Reel to comply with SANS 543 Fire hose reels shall be fitted with a 30m long reinforced red rubber hose of internal diameter of 20mm nominal bore, with a 4.8mm internal diameter chromium plated brass nozzle and isolating valve.Fire hose reel pipes above ground shall be colour coded signal red A11. Hose reel to be in standard fire hose reel canvas cover	No.	1		
2.2	65 mm outlet fire hydrant with tamper proof opening spindle operated by fire brigade cross spanner on 1000mm high 80mm galvanised pipe stub riser pipe encased in 800 mm high 25 MPa concrete with chamfered corners and painted in reflective yellow.	No.	1		
	Galvanised mild steel pipe treated with galvafroid paint and two coats of firemen red signal paint A11. Pipework to be complete with supports,bends,unions to make a complete installation				
2.3	25mm	m	2		
2.4	50 mm Class 12 HDPE pipe underground laid in 600mm deep trench backfilled at compacted as specified by civil engineer	m	20		
	Class 16 mPVC pressure pipe complete with fittings laid in 1000mm deep trench backfilled at compacted as specified by civil engineer				
2.5	100 mm	m	30		
2.6	80 mm	m	10		
2.7	5kg CO2 fire extinguisher complying with the requirements of SANS 1567. Extinguishers to be hung at positions shown on the drawings complete with meranti backing board.	No.	1		
2.8	4.5 kg Dry Chemical powder fire extinguisher complying with the requirements of SANS 1093 and the extinguishing medium shall comply with the appropriate requirements of SANS 1151. Extinguishers to hung at position s shown on the drawings complete with meranti backing board.	No.	3		
2.9	Fire blankets nominal size 1200 x 1200 in cover with quick release mechanism. Minimum weight 430 gr/m², ignition time 13min and Max temp.550°C.	No.	1		
	Balance carried to forward				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT R c
	Balance brought forward				
	Fire signage in 190mm high aluminium frame as indicated on the drawings. Marking and signposting shall be of the photoluminescent type and shall comply with the relevant sections of SANS 1186				
2.10	Type E1	No.	1		
2.11	Type E2	No.	1		
2.12	Type E3	No.	3		
2.13	Type F4	No.	1		
2.14	Type F5	No.	1		
2.15	Type F6	No.	1		
2.16	Type F13	No.	2		
2.17	600 x 600mm Type GA 26 assemly point complete with 1800 mm high 80mm dia galvanised mild steel support pole	No.	1		
2.18	Type F45-FIRE EXIT/KEEP CLEAR	No.	1		
2.19	Fire brigade booster connection, storz valve hydrant valves assembly as detailed on drawings.	Item	1		
2.21	Testing and commissioning to the satisfaction of the engineer	Item	1		
2.23	Allow for maintenance during defects liability period in terms of the contract	Item	1		
	Total carried to Summary Page				

ITEM NO.	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R c
3	**COLD WATER TANKS & BOOSTER PUMP EQUIPMENT**				
	Design, manufacture, works testing, supply and delivery to site, moving into position, erection, connecting up, site testing, witness testing, proving to the inspectors, demonstrating to the Employer and maintenance of the complete installation as outlined in the specification and on the drawings.				
3.1	5000 Litre round plastic water storage tanks with at least 10 years guarantee	No.	2		
3.2	50 mm galvanised cold water inlet pipe including bends, fittings and supports	m	8		
3.3	25 mm inlet gate valve and float valve combination	No.	2		
3.4	32mm galvanised cold water inlet pipe including bends, fittings and supports	m	4		
3.5	Cold water booster pump set with duty stand by pump complete with control panel and pressure vessel. Pump duty: 2.0 litres/second @ 400kPa.	Item	1		
3.6	50mm dia class 9 HDPE cold water supply 600mm pipe underground	m	150		
3.7	32 mm dia class 9 HDPE cold water supply 600mm pipe underground	m	200		
3.8	Testing and commissioning to the satisfaction of the engineer	Item	1		
3.9	Allow for maintenance during defect liability period in terms of the contract	Item	1		
	Total carried to Summary Page				

PART C: THE CONTRACT
Part C3: Scope of Work

C3.1 Description of the Works

C3.1.1 Employer's Objectives

The Employer's objective is to erect various buildings/structures at the **THOHOYANDOU NATIONAL BOTANICAL GARDEN, THOHOYANDOU**

C3.1.2 Extent of the Works

The scope of works includes but is not limited to the following:

The following is a brief outline of the scope of works:

- Construction of a new Visitors' centre & pay area – two pay points, coffee bar, including outside deck and ablutions
- Parking and paving (internal paved roads and paved parking – covered and uncovered)
- Construction of pedestrian bridge linking the cultural yard and the visitors' centre
- Construction of a bridge over the stormwater channel in the parking area
- Construction of a 1.8m high fence over a length of 180m
- Construction of gabions to retard stormwater velocity and protect the areas from erosion and weathering
- Entrance intersection upgrade (inclusion of a dedicated turning lane and a slip lane as well as the upgrading of stormwater pipe culverts)
- Security upgrades – upgrade to guard house, security gate and automated gate
- Upgrading of sewer system – visitors' centre and guard house
- New traditional huts – including interpretation, information and displays stands
- Landscaping development
- External construction works:
    - Service reticulation
    - Water reticulation
    - Stormwater reticulation
    - Earthworks
- Specialist installations:
    - Electrical installation and reticulation
    - Mechanical installation
    - Fire compliance

The Contractor will be required to construct the works in conformity with design criteria specified in the Project Specification and/or shown on the drawings. The scope of work supplied must not be seen as exclusive and may be changed at any stage by the Employer.

C3.1.3 Location of the Works

The project is located at the Thohoyandou National Botanical Garden, Thohoyandou, Limpopo

C3.2 Construction

C3.2.1 Construction Standards

The Model Preambles for Trades (2017 Edition) recommended and published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in the Bills of Quantities, with amendments as follows: References to "Architect" in the Model Preambles are to be read as "Principal Agent" shall apply to this contact.

This publication is available from The Association of South African Quantity Surveyors, P.O. Box 3527, Halfway House, 1685 - telephone (011) 315-4140, before a Tender is submitted.

The SANS 1200 Standardised Specification for Civil Engineering Construction prepared by Standards South Africa and specific amendments and additions to the SANS 1200 Standardized Specifications shall apply to this contract (for all Structural and Civil Work).

The SANS 1200 Standardised Specification publications are available from Standard South Africa, Private Bag X191, Pretoria, 0001.

C3.2.2 Plant and Materials

C3.2.2.1 Plant and Materials Supplied by the Employer

None

C3.2.2.2 Materials, Samples and Shop Drawings

All materials are to be tested by a commercial laboratory as directed by the Engineer.

C3.2.3 Construction Equipment

C3.2.3.1 Requirements for Equipment

The Contractor is required to use plant and equipment that is sufficient for the contract.

C3.2.3.2 Equipment Provided by the Employer

None

C3.2.4 Existing Services

C3.2.4.1 Known Services

As-built information is unavailable at the time of Tender, the onus still lies with the main Contractor to ensure that no services are damaged during the construction phase.

C3.2.4.2 Treatment of Existing Services

Contractor to use caution.

C3.2.4.3 Use of Detection Equipment for the Location of Underground Services

At Principal Contractor's discretion.

C3.2.4.4 Damage to Services

It is the responsibility of the Principal Contractor to ensure that no services are damaged during the construction process. In case the known services are damaged, the Principal Contractor shall be responsible for the repair of the services to the original state before it was damaged, as well as all cost associated with the damaged service.

C3.2.5 Site Establishment

C3.2.5.1 Services and Facilities Provided by the Employer

None.

C3.2.5.2 Facilities Provided by the Contractor

The onus lies with the Principal Contractor to find a suitable camp site, approved by the Principal Agent.

C3.2.5.3 Storage

No requirements are specified.

C3.2.5.4 Other Facilities and Services

No requirements are specified.

C3.2.5.5 Vehicles and Equipment

No requirements are specified.

C3.2.5.6 Advertising Rights

It is the Principal Contractor's responsibility that no suppliers advertise on site. Any advertisement(s) from Suppliers shall be removed at the cost of the Principal Contractor.

C3.2.5.7 Notice Boards

The Principal Contractor is allowed to place a Notice Board on site. The design should be in accordance with the EPWP type of Notice Board (refer EPWP Specification Document appended).

C3.2.5.8 Office Accommodation for Meeting Room

The Principal Contractor must provide a workstation and storage area per SMME (Office base may be subdivided per SMME)

C3.2.6 Site Usage

The Contractors are not allowed to work outside the allowed working hours, as agreed with the Principal Agent.

C3.2.7 Features requiring special attention

C3.2.7.1 Site Maintenance

During progress of the work and upon completion thereof, the Site of the Works shall be kept and left in a clean and orderly condition. The Contractor shall store materials and equipment for which he is responsible in an orderly manner and shall keep the Site free from debris and obstructions.

C3.2.7.2 Employment of un-skilled and semi-skilled workers in labour-intensive works

Requirements for the sourcing and engagement of labour

(1) Unskilled and semi-skilled labour required for the execution of all labour-intensive works shall be engaged strictly in accordance with prevailing legislation and SANS 1914-4, Participation of Targeted Enterprises and Targeted Labour (local resources)

(2) The rate of pay set for the EPWP shall not be less than the prevailing hourly wage rates as published by the Department of Labour (for Task Grade 1 – General Worker).

"In accordance with the Code of Good Practice for Employment and Conditions of Work for Expanded Public Works Programmes (clause 10.4), the public body must set a rate of pay (task-rate) for workers to be employed on the labour-intensive projects.
Clause 10.4 requires that the following should be considered when setting rates of pay for workers:
10.4.1 The rate set should take into account wages paid for comparable unskilled work in the local area per sector, if necessary.
10.4.2 The rate should be an appropriate wage to offer an incentive for work, to reward effort provided and to ensure a reasonable quality of work. It should not be more than the average local rate to ensure people are not recruited away from other employment and jobs with longer-term prospects.
10.4.3 Men, women, youth, disabled persons and the aged must receive the same pay for work of equal value."

(3) Tasks established by the Contractor must be such that:

(a) the average worker completes 5 tasks per week in 40 hours or less; and
(b) the weakest worker completes 5 tasks per week in 55 hours or less.

(4) The Contractor must revise the time taken to complete a task whenever it is established that the time taken to complete a weekly task is not within the requirements of 1.1.3.

(5) The Contractor shall, through all available community structures, inform the local community of the labour-intensive works and the employment opportunities presented thereby. Preference must be given to people with previous practical experience in construction and/or who come from households:

(a) where the head of the household has less than a primary school education;
(b) that have less than one full-time person earning an income;
(c) where subsistence agriculture is the source of income;
(d) those who are not in receipt of any social security pension income.

(6) The Contractor must provide monthly statistics to the Client indicating the number of new jobs created through this contract. This statistic must be provided with each monthly payment certificate using Councils electronic prescribed format, which will be provided by the Project Manager of this project to the successful bidder. **Failure to provide the required statistics Council may withhold payment.**

Specific provisions pertaining to SANS 1914-4

C3.2.7.3 **Definition**

Targeted labour:

Individuals, employed by the Contractor in the performance of the contract, who are defined as the target group in the contract and who permanently reside in the target area or who are recognized as being residents of the target area on the basis of identification and association with and recognition by the residents of the target area.

C3.2.7.4 **Contract participation goals**

a) The Contractor shall engage targeted labour and targeted enterprises directly in the performance of the contract to the extent that the total monetary value of such engagements, exclusive of any value added tax or sales tax required by law, expressed as a percentage of the net amount, is not less than the contract participation goal provided for in the contract.

b) The Contractor shall submit details of his plan to achieve the contract participation goal on the contract participation goal implementation form contained in annex B, within five working days of being instructed to do so. If no such instructions are given, these plans shall be submitted before the submission of the first claim for payment.

c) The wages and allowances used to calculate the contract participation goal shall, with respect to both time-rated and task-rated workers, comprise all wages paid and any training allowance paid in respect of agreed training programmes.

C3.2.7.4.1 **Terms and conditions for the engagement of targeted labour**

Further to the provisions of clause 3.3.2 of SANS 1914-4, written contracts shall be entered into with targeted labour.

Variations to SANS 1914-4

(aa) The definition for net amount shall be amended as follows:
Financial value of the contract upon completion, exclusive of any value-added tax or sales tax which the law requires the employer to pay the Contractor.

(bb) The schedule referred to in 5.2 shall in addition reflect the status of targeted labour as women, youth and persons with disabilities and the number of days of formal training provided to targeted labour.

(III) Training of targeted labour

(1) The Contractor shall provide all the necessary on-the-job training to targeted labour to enable such labour to master the basic work techniques required to undertake the work in accordance with the requirements of the contract in a manner that does not compromise worker health and safety.
(2) The cost of the formal training of targeted labour, will be funded by the provisional sum allowed for in the Bills of Quantities.
(3) The Contractor shall be responsible for scheduling the training of workers and shall take all reasonable steps to ensure that each beneficiary is provided with a minimum of six (6) days of formal training if he/she is employed for 3 months or less and a minimum of ten (10) days if he/she is employed for 4 months or more.
(4) The Contractor shall do nothing to dissuade targeted labour from participating in training programmes.
(5) An allowance equal to 100% of the task rate or daily rate shall be paid by the Contractor to workers who attend formal training, in terms of h (III) (4) above.
(6) Proof of compliance with the requirements of h (III) (1) to h (III) (5) must be provided by the Contractor to the Employer prior to submission of the final payment certificate.

C3.2.7.5 Employment of Local Labour

It is the intention that this Contract should make maximum use of the SMMEs and local labour force that is presently under-employed. To this end the Contractor shall limit the utilisation on the Contract of non-local employees to that of key personnel only and to employ and train local labour to the extent necessary for the execution and completion of this Contract.

The Contractor shall fill in the form entitled Key Personnel in the Forms to be completed by the Bidder. The data stated on the above-mentioned form will be strictly monitored during the Contract period and any deviations therefrom shall be subject to the prior approval of the Engineer, which approval shall not be unreasonably withheld.
The employment of casual labour will be done in co-operation with community leaders and local structures. The bidder shall ensure that all remuneration paid to employees is in line with the relevant sectorial determination in terms of the Basic Conditions of Employment Act, no 75 of 1997, as determined by the Department of Labour.

The contractor shall also ensure that priority is given to unemployed people that fall within the following categories:

a) Previously disadvantage groups
b) Youth
c) Women
d) Special focus given to African people
e) Preference given to south African citizens before foreign nations (Only foreign nationals with South African citizenship should be appointed)

C3.2.7.6 Construction in restricted areas

Working space is sometimes restricted. The construction method used in these restricted areas largely depends on the Contractor's Plant. Notwithstanding, measurement and payment will be strictly according to the specified cross-sections and dimensions irrespective of the method used, and the rates and prices bidded will be deemed to include full compensation for any difficulties encountered by the Contractor while working in restricted areas. No extra payment nor any claim for payment due to these difficulties will be considered.

C3.2.7.7 Sub-Contractors

All matters pertaining to subcontractors (including Selected Subcontractors) and the work executed by them shall be dealt with directly between the Engineer and the Contractor in the context of all subcontract work being an integral part of the Works for which the Contractor is responsible.
The Engineer will not liaise directly with any subcontractors nor will he issue instructions concerning the subcontract works directly to any subcontractor.
All matters arising from the subcontract agreements shall be dealt with directly between the Contractor and the subcontractors and the Engineer will not become involved.

C3.2.7.8 Testing and Quality Control

(i) Contractor to Engage Services of an Independent Laboratory

Notwithstanding the requirements of the Specifications pertaining to testing and quality control, the Contractor shall engage the services of an approved independent laboratory to undertake all testing of materials, the results of which are specified in, or may reasonably be inferred from, the Contract. These results will be taken into consideration by the Principal Agent in deciding whether the quality of materials utilised and workmanship achieved by the Contractor comply with the requirements of the Specifications. .
The Contractor shall be responsible for arranging with the independent testing laboratory for the timeous carrying out of all such testing specified in the Contract, at not less than the frequencies and in the manner specified. The Contractor shall promptly provide the Principal Agent with copies of the results of all such testing carried out by the independent laboratory.
For the purposes of this clause, an "independent laboratory" shall mean an "approved laboratory" which is not under the management or control of the Contractor and in which the Contractor has no financial interest, nor which has any control or financial interest in the Contractor.

(ii) Costs of Testing

(a) Costs of Testing

The costs of all testing carried out by the independent laboratory shall be borne by the Contractor and shall be deemed to be included in the bided rates and prices for the respective items of work as listed in the Schedule of Quantities and which require testing in terms of the Specifications. No separate payments will be made by the Employer to the Contractor in respect of any testing carried out.

Where, as a result of the consistency of the materials varying or as a result of failure to meet the required specifications for the work, it becomes necessary to carry out additional tests (e.g. re-tests on rectified work and/or replacement materials), the costs of such additional testing shall be for the Contractor's account.

(b) Additional Tests Required by the Principal Agent

Additional testing required by the Principal Agent, shall be reimbursed to the Contractor against substitution of the Provisional Sum allowed therefore in the Schedule of Quantities; provided always that the costs of any such additional tests ordered by the Principal Agent, the results of which indicate that the quality of the materials utilised and/or the standard of workmanship achieved are/is not in accordance with the specifications, shall not be reimbursable to the Contractor.

C3.2.7.9 Access to property

The Contractor shall organise the work to cause the least possible inconvenience to the public and to the property owners adjacent to or affected by the work, and except as hereunder provided, shall at all times provide and allow pedestrian and vehicular access to properties within or adjoining or affected by the area in which he is working. If, as a result of restricted road reserve widths and the nature of the work, the construction of bypasses is not feasible, construction shall be carried out under traffic conditions to provide access to erven and properties. Notwithstanding the foregoing, the Contractor may, with the prior approval of the Engineer (which approval shall not be unreasonably withheld), make arrangements with and obtain the acceptance of the occupiers of erven and properties to close off part of a street, road, footpath or entrance temporarily, provided that the Contractor duly notifies the occupiers of the intended closure and its probable duration, and reopens the route as punctually as possible. Where possible, such streets, roads, footpaths and entrances shall be made safe and reopened to traffic overnight. Such closure shall not absolve the Contractor from his obligations under the Contract to provide access at all times. Barricades, traffic signs, drums and other safety measures appropriate to the circumstances shall be provided by the Contractor to suit the specific conditions.

C3.2.7.10 Monthly statements and payment certificates

The statement to be submitted by the Contractor at his own cost, strictly in accordance with the standard payment certificate prescribed by the Engineer, in digital electronic computer format. The Contractor shall, together with a copy of the digital electronic computer file of the statement, submit two (2) A4 size paper copies of the statement.
For the purposes of the Engineer's payment certificate, the Contractor shall subsequently be responsible, at his own cost, for making such adjustments to his statement as may be required by the Engineer for the purposes of accurately reflecting the actual quantities and amounts which the Engineer deems to be due and payable to the Contractor in the payment certificate.

The Contractor shall, at his own cost, make the said adjustments to the statement and return it to the Engineer within three (3) normal workings days from the date on which the Engineer communicated to the Contractor the adjustments required. The Contractor shall submit to the Engineer five (5) sets of A4 size paper copies of such adjusted statement, together with a copy of the electronic digital computer file thereof.

Any delay by the Contractor in making the said adjustments and submitting to the Engineer the requisite copies of the adjusted statement for the purposes of the Engineer's payment certificate will be added to the times allowed to the Engineer in terms of Subclause 6.10.4 of the Conditions of Contract to submit the signed payment certificate to the Employer and the Contractor. Any such delay will also be added to the period in which the Employer is required to make payment to the Contractor.

C3.2.7.11 Notices, signs, barricades and advertisements

All notices, signs and barricades, as well as advertisements, may be used only if approved by the Engineer. The Contractor shall be responsible for their supply, erection, maintenance and ultimate removal and shall make provision for this in his bidded rates.

The Engineer shall have the right to instruct the Contractor to move any sign, notice or advertisement to another position, or to remove it from the Site of the Works if in his opinion it is unsatisfactory, inconvenient or dangerous.

C3.2.7.12 Workmanship and quality control

The onus to produce work that conforms in quality and accuracy of detail to the requirements of the Specifications and Drawings rests with the Contractor, and the Contractor shall, at his own expense, institute a quality control system and provide suitably qualified and experienced engineers, foremen, surveyors, materials technicians, other technicians and technical staff, together with all transport, instruments and equipment to ensure adequate supervision and positive control of the Works at all times.
The cost of supervision and process control, including testing carried out by the Contractor, will be deemed to be included in the rates bidded for the related items of work. The Contractor's attention is drawn to the provisions of the various Standardized Specifications regarding the minimum frequency of testing required. The Contractor shall, at his own discretion increase this frequency where necessary to ensure adequate control. On completion and submission of every part of the work to the Engineer for examination and measurement, the Contractor shall furnish the Engineer with the results of the relevant tests, measurements and levels to demonstrate the achievement of compliance with the Specifications

C3.3 Management

C3.3.1 Planning and Programming

C3.3.1.1 General

This clause describes the requirements for the preparation, submission, updating and revision of the programme for the works. The requirements are in addition to or in expansion of the JBCC PBA clause [15.6].

The programme shall be used by the Contractor to plan and execute the works. The programme shall also be used by the Principal Agent to monitor progress and be the sole basis for the assessment of revisions of the date for Practical Completion.

The programme shall be produced by the Contractor as follows:

a) A programme for the totality of the works shall be submitted to the Principal Agent for acceptance. If the Principal Agent does not accept such programme, it shall be revised and amended until it is accepted by the Principal Agent. This programme will then be regarded as the baseline programme.

b) This baseline programme shall be updated with actual progress on a monthly basis, or any more frequent basis as necessitated by construction events. The Contractor may submit to the principal for acceptance revisions to the baseline programme.

c) Acceptance by the Principal Agent of any programme submitted by the Contractor does not make such programme a contract document, nor does it mandate that the works shall be constructed strictly in accordance therewith. The Contractor at all times remains responsible for the construction of the works.

C3.3.1.2 Submission of Programme

Within 10 (Ten) working days of been given possession of the site, the Contractor shall submit to the Principal Agent for his review and acceptance a programme for the whole of the works showing the order in which the Contractor proposes to execute the works. This programme becomes the baseline programme upon acceptance by the Principal Agent. The baseline programme shall have regard to the contract completion dates, any other milestones and any restraints set out in the contract. Thereafter, if the actual progress does not conform with the baseline programme, the Principal Agent is entitled to require the Contractor to submit a revised programme showing the order of activities necessary to ensure completion of the works by the contract completion dates.

The Contractor shall supply the Principal Agent with an electronic copy of each programme, together with a print-out bar chart or tabular report in a pre-agreed format. All programmes shall be prepared and submitted using Microsoft Project software.

Within 10 (Ten) working days of the Contractor submitting a programme complete with all the information required by this clause to the Principal Agent for acceptance, the Principal Agent will accept the programme or state reasons for not accepting the programme. If such reasons are given, the Contractor shall take account of the reasons and resubmit the programme within 5 (five) working days.

If the Principal Agent fails to act the programme is deemed to be rejected.

The programme shall at minimum contain:

a) Time Scale (minimum):
   i. Days, where the period does not exceed three months. Weeks, where the project period exceeds three months.
   ii. Months, where the period does not exceed one year.
   iii. Years, where the project period exceeds one year.

b) Tasks: Where phases or stages are anticipated, this shall be the highest level of division and all tasks related to the successful accomplishment of that phase of the area shall be grouped.
   Resources allocation and task dependency shall be indicated.
c) Start and Finish Dates: All tasks shall have specific start and finish dates.
d) Critical Path: All tasks forming the programme line that will establish any delays in the overall Contract Period shall be clearly indicated and an indication of their sensitivity characteristics shall be provided.

e) Progress Tracking: The Contractor shall be required to periodically indicate progress per task graphically and on a percentage basis.

f) Non-working Time: All South African public holidays, weekends and the local traditional annual builder's break shall be incorporated in the programme.

No deviation from the approved sequence of construction shall be accepted without prior written approval.

The programme shall not be in the form of a bar chart only but shall show clearly the anticipated quantities of work to be performed each month, together with the manner in which the listed plant is to be used, as well as the anticipated earnings for the various sections of work.

The Contractor shall provide the Principal Agent with a method statement indicating the manner and sequence in which he intends to construct the works, for each work area (and SMME contractor), with the program. In the method statement the Contractor must address at minimum the following items:

a) sequence of the works for the relevant works area.
b) target dates for the tasks identified in sequence of the works for the relevant works area.
c) materials requirements.
d) construction plant to be used.
e) services affecting construction; and
f) any factors that could affect construction progress after commencement.

The method statement must be approved by the Principal Agent before commencement of construction. In order to minimize the impact on traffic, pedestrians and business the Contractor shall be required to segment the works in such a manner that no portion of the works is more than one day ahead of the following position. These segments of the works shall be clearly defined in the Contractor's method statement for each work area.

If, during the progress of the work, the quantities of work performed per month fall below those shown on the program or if the sequence of operations is altered, or if the program is deviated from in any other way, the Contractor shall, within one week after being notified by the Principal Agent, submit a revised program.

If the program is to be revised by reason of the Contractor falling behind his program, he shall produce a revised program showing the modifications to the original program necessary to ensure completion of the Works or any part thereof within the time for completion. Any proposal to increase the rate of work must be accompanied by positive steps to increase production by providing more labour and plant on the Site, or by using the available labour and plant in a more efficient manner.

Failure on the part of the Contractor to submit or to work according to the program or revised program shall be sufficient reason for the Employer to take steps as provided for in the Contract.

The approval by the Principal Agent of any program shall have no contractual significance other than that the Principal Agent would be satisfied if the work is carried out in accordance to such program and that the Contractor undertakes to carry out the work in accordance with the program. It shall not limit the right of the Principal Agent to instruct the Contractor to vary the program should circumstances make this necessary.

C3.3.1.3 Default in submission of programme(s)

Should the Contractor fail to submit a programme for acceptance as the baseline programme or not update the programme as described above; the Principal Agent shall be entitled to withhold 25% of the amount due to the Contractor in interim payment certificates until the Contractor has complied with its obligations in this regard.

C3.3.1.4 Monthly Report

The Contractor shall report on a monthly basis on:

a) Construction progress achieved, supported with an updated project programme, reasons for deviation from programme and plans to regain on lost time.
b) Expenditures achieved on SMME contractor, supported by financial SMME account statement.
c) Expanded Public Works Programme statistics.
d) Test results for all works (including SMME contractors) completed during the months, with clear indication of areas to be reworked due to non-compliance to project specifications.
e) Plant and equipment, clearly showing effective usage per day for the month, ie typically a usage percentage of the reporting period.
f) Materials, including material on site, materials available from suppliers (i.e. the supplier has materials in stock for the project or will meet project demands), and quality of materials (compliance with issued specification, i.e. block colours and strength).
g) Training achieved, including formal and informal training sessions.
h) Cash flow projections, taking into account already expended values.

NOTA BENE: Failure on the part of the Contractor to submit any of the above reports on the 25th day of each month (or the previous workday for the applicable month) until the issue of the Certificate of Completion shall give effect to a penalty, which shall **not** be reversible.

C3.3.1.5 Security

The Contractor shall be responsible to provide security on site(s) as he deems necessary. The Employer shall not be held responsible for any loss or damage(s) suffered by the Contractor, his plant, equipment, materials, subcontractors or employees as a result of a security incident of any nature.

Proper written agreement(s) shall also be provided detailing the security roles and responsibilities between the Contractor and targeted SMME contractors. Where no such agreements is provided within **14 days of Contract commencement**, it shall be understood that the Contractor assumes full liability, including SMME Contractor works, equipment and plant, for the provision of security for the Works, Labour and Plant, including the Works, Labour and Plant of the targeted SMME contractors, until the issue of Certificate of Completion.

C3.3.2 Health and Safety

C3.3.2.1 Health and Safety Specification

1. Scope

This health and safety specification establishes the overarching framework within which a contractor is required to satisfy general requirements for occupation health and safety in an engineering and construction works contract.

Note:

a) This specification establishes general requirements to enable the employer and the contractor to satisfy the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993) and the Construction Regulations, 2014.
b) The Construction Regulations, 2014, require an employer to stop any contractor from executing construction work which is not in accordance with the contractor's health and safety plan for the site or which poses a threat to the health and safety of persons.

2. Definitions

Act: The Occupational Health and Safety Act, 1993 (Act No. 85 of 1993)

competent person: any person having the knowledge, training and experience specific to the work or task being performed

ergonomics: the application of scientific information concerning humans to the design of objects, systems and the environment for human use in order to optimize human well-being and overall system performance

hazard: a source of or exposure to danger

incident: an event or occurrence occurring at work or arising out of or in connection with the activities of persons at work, or in connection with the use of plant or machinery, in which, or in consequence of which:

a) any person dies, becomes unconscious, suffers the loss of a limb or part of a limb or is otherwise injured or becomes ill to such a degree that he is likely either to die or to suffer a permanent physical defect or likely to be unable for a period of at least 14 days either to work or to continue with the activity for which he was employed or is usually employed;

b) a major incident occurred; or

c) the health or safety of any person was endangered and where-

i) a dangerous substance was spilled;
ii) the uncontrolled release of any substance under pressure took place;
iii) machinery or any part thereof fractured or failed resulting in flying, falling or uncontrolled moving objects; or machinery ran out of control

health and safety plan: a documented plan which addresses hazards identified and includes safe work procedures to mitigate, reduce or control the hazards identified.

health and safety specification: a documented specification of all health and safety requirements pertaining to the associated works on a construction site, so as to ensure the health and safety of persons

inspector: a person designated as such under section 28 of the Act

major incident: an occurrence of catastrophic proportions, resulting from the use of plant or machinery, or from activities at a workplace

reasonably practicable: practicable having regard to:

a. the severity and scope of the hazard or risk concerned;
b. the state of knowledge reasonably available concerning that hazard or risk and of any means of removing or mitigating that hazard or risk;
c. the availability and suitability of means to remove or mitigate that hazard or risk; and
d. the cost of removing or mitigating that hazard or risk in relation to the benefits deriving therefrom;

risk: the probability that injury or damage will occur

safe: free from any hazard

scaffold: any temporary elevated platform and supporting structure used for providing access to and supporting workmen or materials or both

specification data: data, provisions and variations that make this specification applicable to a particular contract

Structure

a) any building, steel or reinforced concrete structure (not being a building), railway line or siding, bridge, waterworks, reservoir, pipe or pipeline, cable, sewer, sewage works, fixed vessels, road, drainage works, earthworks, dam, wall, mast, tower, tower crane, batching plants, pylon, surface and underground tanks, earth retaining structure or any structure designed to preserve or alter any natural feature, and any other similar structure;

b) any formwork, false work, scaffold or other structure designed or used to provide support or means of access during construction work; or

c) any fixed plant in respect of work which includes the installation, commissioning, decommissioning or dismantling and where any such work involves a risk of a person falling two metres or more

substance: any solid, liquid, vapour, gas or aerosol, or combination thereof

suitable: capable of fulfilling or having fulfilled the intended function or fit for its intended purpose

3. Interpretation

3.1 The Act and its associated regulations shall have precedence in the interpretation of any ambiguity or inconsistency between it and this specification.
3.2 Compliance with the requirements of this specification does not necessarily result in compliance with the provisions of the Act.

4. Requirements

4.1 General requirement

4.1.1 The contractor shall execute the works in a manner that complies with all the requirements of the Act and all its associated regulations, and in so doing, minimize the risk of incidents occurring.

4.1.2 The contractor shall with respect to the site and the engineering and construction works that are contemplated:

a) identify the hazards and evaluate the risks associated with such work constituting a hazard to the health and safety of such employees and the steps that need to be taken to comply with the Act; and

b) as far as is reasonably practicable, prevent the exposure of such employees to the hazards concerned or, where prevention is not reasonably practicable, minimize such exposure.

4.1.3 The contractor shall as far as is reasonably practicable, cause every employee to be made conversant with the hazards to his health and safety attached to any work which he has to perform, any article or substance which he has to produce, process, use, handle, store or transport and any plant or machinery which he is required or permitted to use, as well as with the precautionary measures which should be taken and observed with the respect to those hazards.

4.1.4 The contractor shall ensure that all employees under his or her control are:

f) informed, instructed and trained by a competent person regarding any hazard and the related work procedures before any work commences, and thereafter at such times as may be determined in the risk assessment; and

g) issued with proof of health and safety induction training issued by a competent person and carry proof of such induction when working on site.

4.1.5 The contractor shall not allow or permit any employee to enter any site, unless such person has undergone health and safety induction training pertaining to the hazards prevalent on the site at the time of entry.

4.1.6 The contractor shall ensure that each visitor to a construction site, save where such visitor only visits the site office and is not in direct contact with the construction work activities:

a) undergoes health and safety instruction pertaining to the hazards prevalent on the site; and
b) is provided with the necessary personal protective equipment.

4.1.7 The contractor shall provide suitable on-site signage to alert workers and visitors to health and safety requirements.

4.1.8 The contractor shall not permit any person who is or who appears to be under the influence of intoxicating liquor or drugs, to enter or remain at a workplace.

4.2 Health and safety representatives

4.2.1 The contractor shall appoint in writing one health and safety representative for every 50 employees of the contactor working on the site, whenever there are more than 20 employees on the site; to:

a) review the effectiveness of health and safety measures;

b) identify potential hazards and potential major incidents;

c) in collaboration with his employer, examine the causes of incidents;

d) investigate complaints by any employee of the contractor relating to that employee's health or safety on the site;

e) make representations to the contractor on matters arising from a), b), c) or d) or on general matters affecting the health or safety of the employees at the workplace;

g) inspect the site with a view to the health and safety of employees, at regular intervals;

h) participate in consultations with inspectors at the workplace and accompany inspectors on inspections of the workplace; and

i) participate in any internal health or safety audit.

4.2.2 The contractor shall inform the relevant safety representative:

a) beforehand of inspections, investigations or formal inquiries of which he has been notified by an inspector; and

b) as soon as reasonably practicable of the occurrence of an incident on the site.

4.2.3 The contractor shall convene health and safety meetings whenever more than two health and safety representatives have been appointed for the site. These meetings shall be attended by all health and safety representatives and shall be convened at least once every month to:

a) make recommendations to the employer regarding any matter affecting the health or safety of persons on the site; and

b) discuss any incident on the site in which or in consequence of which any person was injured, became ill or died.

4.2.4 The contractor shall consult with the health and safety committee on the development, monitoring and review of the risk assessment.

4.3 Appointment of construction supervisor and safety officers

4.3.1 The contractor shall appoint a full-time competent employee designated in writing as the construction supervisor for the site, with the duty of supervising the performance of the work falling within the scope of the contract and may appoint one or more competent employees to assist the appointed construction supervisor.

4.3.2 A contractor may having considered the size of the project, the degree of dangers likely to be encountered or the accumulation of hazards or risks on the site, appoint a full-time or part-time construction

safety officer in writing, who has in the contractor's opinion the necessary competencies and resources, to assist the contractor in the control of all safety related aspects on the site.

4.3.3 The contractor shall ensure that the construction supervisor is in possession of the most recently updated version of the fall protection plan.

4.3.4 The contractor shall ensure that the following activities, as relevant, are carried out under the supervision of a competent person and that such persons are appointed in writing:

a) all formwork and support work operations.

b) excavation work.

c) demolition work.

d) scaffolding work operations.

e) suspended platform work operations.

f) operation of batch plants; and

g) the stacking and storage of articles on the site.

4.4 Risk assessment

4.4.1 The contractor performing work falling within the contract shall, before the commencement of any such work and during construction work, cause a risk assessment to be performed by a competent person appointed in writing. Such an assessment shall as a minimum:

a) identify the risks and hazards to which persons may be exposed to.

b) analyse and evaluate the identified risks and hazards.

c) document a plan of safe work procedures to mitigate, reduce or control the risks and hazards that have been identified.

d) provide a monitoring plan; and

e) provide a review plan.

Note: A risk assessment is an important step in protecting workers as well as complying with the law. It helps you focus on the risks that really matter in a particular workplace – the ones with the potential to cause real harm. Workers and others have a right to be protected from harm caused by a failure to take reasonable control measures. The following four steps are recommended:

Identify the hazards by looking at what could reasonably be expected to cause harm, ask employees or their representatives what they think, obtain advice from trade associations or publications on health and safety, check manufacturer's instructions or data sheets for chemicals and equipment as they can be very helpful in spelling out the hazards and putting them in their true perspective, review accident and ill-health records, think about long-term hazards to health (eg high levels of noise or exposure to harmful substances) as well as safety hazards etc.

Identify who may be harmed and how by identifying how groups of people might be harmed i.e. what type of injury or ill health might occur.

Evaluate the risks and decide on precautions by doing everything 'reasonably practicable' to protect people from harm i.e. by looking at how things are done, what controls are in place and how the work is organised and comparing this against good practice to see if more can be done to bring practices up to standard. Consider if the hazard can be got rid of all together, and if not how can the risks be controlled so that harm is unlikely, e.g. try a less risky option (e.g. switch to using a less hazardous chemical); prevent access to the hazard (e.g. by guarding); organise work to reduce exposure to the hazard (e.g. put barriers between pedestrians and traffic);

issue personal protective equipment (e.g. clothing, footwear, goggles etc); and provide welfare facilities (e.g. first aid and washing facilities for removal of contamination).

Record the findings by writing down the findings of the risk assessment.

4.4.2 The contractor shall ensure that as far as is reasonably practicable, ergonomic related hazards are analysed, evaluated and addressed in the risk assessment.

4.4.3 The contractor shall require a competent person to prepare a fall protection plan in compliance with the requirements of the Construction Regulations.

4.4.4 Notwithstanding the provisions of the fall protection plan, the contractor shall ensure that:

a) all unprotected openings in floors, edges, slabs, hatchways and stairways are adequately guarded, fenced or barricaded or that similar means are used to safeguard any person from falling through such openings.

b) no person works in an elevated position, unless such work is performed safely as if working from a scaffold or ladder.

c) notices are conspicuously placed at all openings where the possibility exists that a person might fall through such openings.

d) fall prevention and fall arrest equipment is:

i) suitable and of sufficient strength for the purpose or purposes for which it is being used having regard to the work being carried out and the load, including any person, it is intended to bear; and
ii) securely attached to a structure or plant and the means of attachment thereto is suitable and of sufficient strength and stability for the purpose of safely supporting the equipment and any person who is liable to fall;

e) fall arrest equipment is only used where it is not reasonably practicable to use fall prevention equipment; and

f) suitable and sufficient steps are taken to ensure, as far as is reasonably practicable, that in the event of a fall by any person, the fall arrest equipment or the surrounding environment does not cause injury to the person.

4.4.5 Where roof work is being performed on a construction site, the contractor shall ensure that it is indicated In the fall protection plan that:

a) the roof work has been properly planned.

b) the roof erectors are competent to carry out the work.

c) no employees are permitted to work on roofs during inclement weather conditions or if weather conditions are a hazard to the health and safety of the employees.

d) prominent warning notices are to be placed where all covers to openings are not of sufficient strength to withstand any imposed loads and where fragile material exists.

e) the areas mentioned in paragraph *(d)* are to be barricaded off to prevent persons from entering.

f) suitable and sufficient platforms, coverings or other similar means of support have been provided to be used in such a way that the weight of any person passing across or working on or from fragile material is supported; and

g) there is suitable and sufficient guard-rails or barriers and toe-boards or other similar means of protection to prevent, so far as is reasonably practicable, the fall of any person, material or equipment.

4.4.6 The contractor shall ensure that:

a) all reasonably 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.
b) no structure or part of a structure is loaded in a manner which would render it unsafe; and
c) specification data prepared by the designer of the structure is taken into account in the risk assessment.

Note: The specification data provided by the designer should outline known or anticipated dangers or hazards relating to the works and make available all information required for the safe execution of the work. It should provide as relevant, geotechnical information (or make reference to reports provided in the site information), the loading the structure is designed to withstand, the methods and sequence of construction.

4.5 Health and safety plans

4.5.1 The contractor shall prior to commencing the works to which this specification applies, submit to the employer for approval a suitable and sufficiently documented health and safety plan, based on this specification and the risk assessment that is conducted.

The health and safety plan shall as a minimum provide:

a) the information contained in Table 1 in respect of each of the hazards associated with work falling within the scope of the contract (see Figure 1); and

What are the hazards?	Who might be harmed and how?	What are the safe work procedures for the site?	What further action is necessary (monitoring and review)?	Acti on by who m	Action by when

Table 1: Example of the format of a health and safety plan

b) an outline of the manner in which the contractor intends complying with the requirements of this specification.

4.5.2 The contractor shall discuss the submitted health and safety plan with the employer's representative, modify such plan in the light of the discussions and resubmit the modified plan for approval.

4.5.3 The contractor shall apply the approved health and safety plan from the date of commencement of and for the duration of the works to which this specification applies.

4.5.4 The contractor shall conduct periodic audits for compliance with the approved health and safety plan at intervals agreed upon with the employer, but at least once every month.

4.5.5 The contractor shall update the health and safety plan whenever changes to the works are brought about.

4.6 Subcontractors

4.6.1 The contractor may only subcontract work in terms of a written subcontract and shall only appoint a subcontractor should he be reasonably satisfied that such a subcontractor has the necessary competencies and resources to perform the work falling within the scope of the contract safely. Such a subcontract shall require that the subcontractor shall:

a) shall co-operate with the contractor as far as is necessary to enable both the contractor and sub-contractor to comply with the provisions of the Act; and

b) as far as is reasonably practicable, promptly provide the contractor with any information which might affect the health and safety of any person at work carrying out work or any person who might be affected by the work of such a person at work or which might justify a review of the health and safety plan.

4.6.2 The contractor shall provide any sub-contractor who is submitting a tender or appointed to perform a sub-contract falling within the scope of the contract, with the relevant sections of this specification and associated specification data which might be pertinent to the sub-contract.

4.6.3 The contractor shall take reasonable steps as are necessary to ensure:

a) co-operation between all sub-contractors to enable each of those sub-contractors to comply with the requirements of the Act and associated regulations; and
b) that each sub-contractor's health and safety plan is implemented.

4.6.4 The contractor shall conduct periodic audits for compliance with the approved health and safety plan of each and every sub-contractor working on the site at intervals agreed upon with such contractors, but at least once per month.

4.6.5 The contractor shall stop any contractor from executing construction work which is not in accordance with the contractor's or subcontractor's health and safety plan for the site or which poses a threat to the health and safety of persons.

4.6.6 The contractor shall ensure that where changes to the works occur, sufficient health and safety information and appropriate resources are made available to the subcontractor to execute the work safely.

4.6.7 The contractor shall ensure that:

a) every subcontractor is registered and in good standing with the compensation fund or with a licensed compensation insurer prior to work commencing on site;

b) potential subcontractors submitting tenders have made provision for the cost of health and safety measures during the construction process; and

c) every subcontractor has in place a documented health and safety plan prior to commencing any work on site which falls within the scope of the contract.

4.6.8 The contractor shall receive, discuss and approve health and safety plans submitted by subcontractors.

4.6.9 The contractor shall ensure that all subcontractors are informed regarding any hazard as stipulated in the risk assessment before any work commences, and thereafter at such times as may be determined in the risk assessment.

4.6.10 The contractor shall reasonably satisfy himself that all employees of subcontractors are informed, instructed and trained by a competent person regarding any hazard and the related work procedures before any work commences, and thereafter at such times as may be determined in the risk assessment.

The contractor shall satisfy himself and ensure that all subcontractor employees deployed in the site are:

a) informed, instructed and trained by a competent person regarding any hazard and the related work procedures before any work commences, and thereafter at such times as may be determined in the risk assessment; and

b) issued with proof of health and safety induction training issued by a competent person and carry proof such induction when working on site.

4.7 Reporting of incidents

The contractor shall notify the employer's representative of any incident as soon as possible after it has occurred and report such incidence to an inspector.

4.8 Administration

4.8.1 Notification of intention to commence construction work

The contractor shall notify the Provincial Director of Labour in writing using a form similar to that contained in Annexure A of the Construction Regulations issued in terms of the Act before construction work commences and retain a copy of such notification in the health and safety file where such work:

- involves the demolition of a structure exceeding a height of 3m.
- involves the use of explosives to perform construction work.
- involves the dismantling of fixed plant at a height greater than 3m.
- exceeds 30 days or will involve more than 300-person days of construction work; and includes:
  i) excavation work deeper than 1m; or
  ii) working at a height greater than 3 m above ground or a landing.

4.8.2 Health and safety file

4.8.2.1 The contractor shall maintain on site a health and safety file on site which contains copies of the following, as relevant:

1) the notification made to the Provincial Director of Labour in terms of 4.4.1.
2) the letters of appointment of health and safety representatives.
3) the minutes of all health and safety meetings.
4) a comprehensive and updated list of all the subcontractors (nominated, selected or domestic) employed on site by the contractor, indicating the type of work being performed by such sub-contractors.
5) a copy of each and every subcontract agreement.
6) the contractor's health and safety plan.
7) the health and safety plans of all the contractor's subcontractors who are required to provide such plans
8) the recommendations made to the contractor by the health and safety committee in 4.2.3
9) any report made to an inspector by the health and safety committee referred to in 4.2.3; and
10) the findings of all audit reports made regarding the implementation of the contractor's or a subcontractor's health and safety plan
11) proof that the contractor and every subcontractor is registered and in good standing with the compensation fund or with a licensed compensation insurer
12) the inputs of the safety officer, if any, into the health and safety plan
13) a copy of risk assessments made by competent persons
14) details of induction training conducted whenever it is conducted
15) proof of all subcontractor's induction training whenever it is conducted
16) letters of appointments for competent persons to supervise prescribed activities
17) proof of the following where suspended platforms are used
18) a certificate of system design issued by a professional engineer professional certificated engineer or a professional engineering technologist.
19) proof of competency of erectors.
20) proof of compliance of operational design calculations with requirements of the system design certificate.

21) proof of performance test results.

22) sketches indicating the completed system with the operational loading capacity of the platform.

23) procedures for and records of inspections having been carried out.

24) procedures for and records of maintenance work having been carried out.

25) proof that the prescribed documentation has been forwarded to the provincial director.

26) records of the register of inspections made by a competent person immediately before and during the placement of concrete or any other load on formwork; and

27) the names of the first aiders on site and copies of the first aid certificates of competency.

4.8.2.2 The health and safety file shall be made available for inspection by any inspector, subcontractor, employer's representative, employer's agent, health and safety representative or employee of the contractor upon the request of such persons.

4.8.2.3 The contractor shall hand over the health and safety file to the employer upon completion of the contract together with a record of all drawings, designs, materials used and other similar information concerning the completed structure.

4.9 First aid, emergency equipment and procedures

The contractor shall where more than five employees are employed at a workplace, provide a first aid box or boxes at or near the workplace which shall be available and accessible for the treatment of injured persons at that workplace. Such first aid boxes shall contain suitable first aid equipment.

The contractor shall ensure that where there are more than 10 employees employed on the site that for every group of up to 50 employees at that workplace, at least one person is readily available during normal working hours, who is in possession of a valid certificate of competency in first aid.

C3.3.3 EPWP

C3.3.3.1 Employer's objectives

The Employer's objectives are to deliver public infrastructure using labour-intensive methods in accordance with EPWP Guidelines.

C3.3.3.2 Labour-intensive works

Labour-intensive works shall be constructed/maintained using local workers who are temporarily employed in terms of the scope of work. These items are to be identified by the contractor and provided to the client prior to commencement of works on site.

C3.3.3.3 Labour-intensive competencies of supervisory and management staff

Contractors shall only engage supervisory and management staff in labour-intensive works that have completed the skills programme, including Foremen/Supervisors at NQF level 4 "National Certificate: Supervision of Civil Engineering Construction Processes" and Site Agent/Manager at NQF level 5 "Manage Labour-Intensive Construction Processes" or equivalent QCTO qualifications (see Appendix C) at NQF outlined in Table 1).

C3.3.3.4 EPWP Notice Board (separate board)

See example hereunder.

Signage - separate EPWP board
The EPWP project board my appear as a separate unit alongside project Co-sponsor board. This is a secondary option to previous one unit boards.
Vukile project
Vukile project

C3.3.3 PROCUREMENT

3.3.3.1 Requirements

The contractor shall be required to adopt labour-based techniques through the full spectrum of the works with the proviso that the Employers specific objectives regarding TIME & QUALITY are in no way compromised. **Maximization of employment shall be of the essence on this contract.**

Tenderers are to note that it is an explicit condition of this tender that all unskilled labourers on the project are to be employed from the local community. It is also a condition of this tender that the successful contractor is required to sub-contract a minimum value of work to local SMMEs equal to 30% of the contract value. Such work must be clearly identified in the SMME Plan which plan will be considered in the functionality assessment of the tender evaluation process. Furthermore, it is a condition of this tender that the successful contractor is required to take full responsibility of managing all appointed sub-contractors and the quality of their works.

The Contractor shall in general, maximise the involvement of the local community.

The minimum number of jobs created on this contract shall be 8 jobs for every one million rand of the contract sum. This target applies to the Contractor's labourers and local labourers and to the sub-contractor's labourers.

The Contractor shall be required to submit employment and SMME data on a monthly basis to the Principal Agent.

The Contractor and all sub-contractors including local SMMEs will be required to pay labour rates which are in accordance with SAFCEC rates.

The client reserves the right to reject bids that are deemed to be non-market related especially for the portion of works to be executed by the local SMMEs.

3.3.3.2 Subcontracting SMMEs – Special Conditions of Contract

Participation and Advancement of Start-Up, Small and Micro Enterprises, and the SMME programme.

"Start-up Enterprises" means an enterprise that has been in existence and operating for less than two years.

"Small Enterprises" means an enterprise that has a CIDB grading designation of 1 or 2.

"Micro Enterprises" means an enterprise that has a CIDB grading designation of 3.

"Locally based SMMEs" means enterprises that have their operational base in the ward in which the project is to be executed or, alternatively, the members of the enterprise are resident in the particular ward. Should suitable locally based SMME contractors as defined above not be available in the particular ward, then they shall be sourced from adjacent wards.

It is a condition of this tender that the successful Contractor is required to take full responsibility of managing all appointed subcontractors and the quality of their works. The Contractor will be expected to pay SMMEs full rates as submitted by the Contractor to the client.

The form of contract to be used with SMMEs is the JBCC sub-contract agreement. The Contract Data must record the specific requirements in respect of penalties, retention and payment. With regard to the latter, the Contractor is to allow for fortnightly certificates from the SMMEs and for payment to the SMMEs to be effected within 7 days of certification.

It is intended that fortnightly payments to the SMMEs will be as follows:

- Payment 1 – for the SMME to pay suppliers for material/plant, subject to the necessary proof being furnished.

- Payment 2 – for SMMEs to pay labourers employed, subject to the necessary proof being furnished and upon receipt of proof of payment of suppliers.
- Payment 3 – for any balance due based on a valuation done of works completed, upon receipt of proof of payment of labour.

The contractor will be expected to pay SMMEs full rates as submitted by the contractor to the client.

Above this, it is a condition of this contract that should the contractor fail to pay the SMMEs with no valid reason/s, the client reserves the right to pay the SMMEs directly and deduct same from any amount paid to the contractor.

In order to achieve the goals of this policy and to ensure that the SMMEs are treated fairly and given every opportunity to advance their business whilst delivering a successful project, the Contractor is to note the following and provide for any cost that may be associated therewith.

1. The bill of quantities identified for implementation by the SMMEs is to provide for market related P&G items in order that the SMME may be compensated for any unforeseen delays or events that impact on his ability to complete his works. The Contractor shall subcontract the local SMME works at the Contractor's tendered rates. **It is to be specifically noted that the rates for items of work to be executed by SMMEs must be market related. Tenderers are to ensure that rates tendered for this portion of the works is to take into account all items that the main contractor would have allowed for in his normal course of pricing, i.e. materials, labour, wastage, profit, attendance, etc. all at applicable productivity rates.**

2. The Contractor will be expected to have clearly specified the programme dates to the SMME sub-contractor and these dates are to be included in the contract of agreement between the two parties. The Contractor is to monitor the SMME sub-contractor's progress against the programme and hold progress meetings with the SMME sub-contractor where minutes are to be kept and signed off by both parties.

3. The Contractor is to assess the skills of the SMME sub-contractor and provide the relevant support and training where it is necessary in order for the SMME sub-contractor to complete the works to programme, budget and specification. The Contractor will be expected to provide on-site training to the SMME sub-contractor that will ensure that the SMME sub-contractor's staff is suitably trained to execute the works and that they receive sufficient relevant experience on the project. The Contractor will be expected to explain to and train the SMMEs on how the BoQ rates were built up.

4. The Contractor is responsible for safety compliance on the project and will assist the SMME sub-contractor in all aspects to achieve safety compliance, that will include:

a) Assisting the SMME sub-contractor with developing their safety files, legal appointments, etc.
b) Assisting the SMME sub-contractor with achieving safety on site.
c) Having toolbox talks with the SMME sub-contractor employees on a daily basis.
d) Providing all safety equipment and signage.
e) Providing safety training where necessary.

5. The Contractor is to provide all the necessary equipment for the timeous monitoring and the checking of the quality of works as carried out by the SMME sub-contractor. The Contractor will be expected to monitor the SMME sub-contractor's works for quality compliance and provide all the necessary support to the SMME sub-contractor in order to achieve quality requirements. The Contractor is to ensure that if the SMME sub-contractors' quality of works does not achieve specification the Contractor will assist the SMME sub-contractor to achieve specification and not allow the works to continue until the quality requirements are achieved.

6. The Contractor is to generate monthly reports for the client that includes the following:

a) SMME sub-contractor resources on the site, i.e. supervisors, labour, plant tools and equipment
b) SMME sub-contractor progress of works on site.
c) SMME sub-contractor quality control on site.
d) SMME sub-contractor expenditure on the project versus target expenditure.
e) Copies of minutes of the SMME sub-contractor and Contractor progress meetings.
f) Concerns and improvements to be made.

The Tenderers are to price the works to achieve full compliance with the above requirements. Tenderers are to ensure that they allocate a dedicated individual to manage the SMMEs and fulfil the requirements stated above.

The SMME supervisor will be required to conclude a scorecard with the client. Said scorecard will encompass four key performance areas and several key performance indicators as outlined overleaf. The SMME supervisor will be required to score a minimum of 95%. The scorecard review will take place on a monthly basis.

Key Performance Areas	**(a) Key Performance Indicators**
2) Safety	(a) Be familiar with and ensures SMME Contractor enforces the safety specs and relevant OHSA (b) Reporting of incidents and accidents • Ensures SMME Contractor Reports incidents and accidents to the Contractor on the day they occur
3) Quality Control	(b) Setting out of the Works • Ensures that the Works have been set out correctly prior to construction commencing (c) Monitoring of Construction • Examine the Works daily and pre-empt unnecessary work by the SMME Contractor by warning him of incorrect workmanship as soon as it is identified (d) Approval of the Works • Assist SMME Contractor in the works approval process (e) Read Drawings • Assist SMME Contractor in reading and interpreting construction drawings
4) Financial	(a) Daily Costing • Ensures that SMME Contractors do daily costing (b) Variances to Scope • Assist SMME Contractors identify and claim for additional works (c) Standing Time Costs • Assist SMME Contractors compute and Claim standing time costs
5) Site Administration and Progress Monitoring	(a) Communication • Ensures that SMME Contractors communicate with the Contractor in writing on site related issues (b) Reporting • Ensures that the Main Contractor's progress report is communicated with the SMME Contractors and that contingency plans are followed through (c) Site diary • Ensures SMME Contractors maintain a site diary (d) Claims • Assist SMME Contractors draft claims for Extension of Time where applicable (e) Quantities • Assist SMME Contractors in the measurement of the works

Following from the above, the SMMEs to be contracted on the project must be selected from a database which will be issued to the appointed contractor on the commencement date of the contract. The data base will include for SMME that are youth, women owned, disabled and ex-combats. The contractor will be expected to give preference to SMMEs that comply with all/most of these groups. The following information must be provided by said contractor within 14 days of the commencement date of the contract.

1. Detailed approach and methodology on the employment of local SMMEs
2. SMME(s) company name/s to be employed on the project.
3. SMME contact persons
4. Works to be executed by SMME(s)
5. Programme (anticipated start, duration and end dates) applicable to the works defined in item 4 above.

The onus is on the Contractor to prove to the Employer that no fully fledged SMMEs are active in the area of the project. In this case, the contractor can source SMMEs from adjacent wards and must submit a proposal with his tender on how he intends to advance the growth of the SMMEs in the project ward.

SANBI reserves the right to withdraw its acceptance of offer, should the appointed contractor fail to satisfactorily address the above requirements (1 to 5) within 14 days of the commencement date of the contract. Approved documentation will form part of the contract.

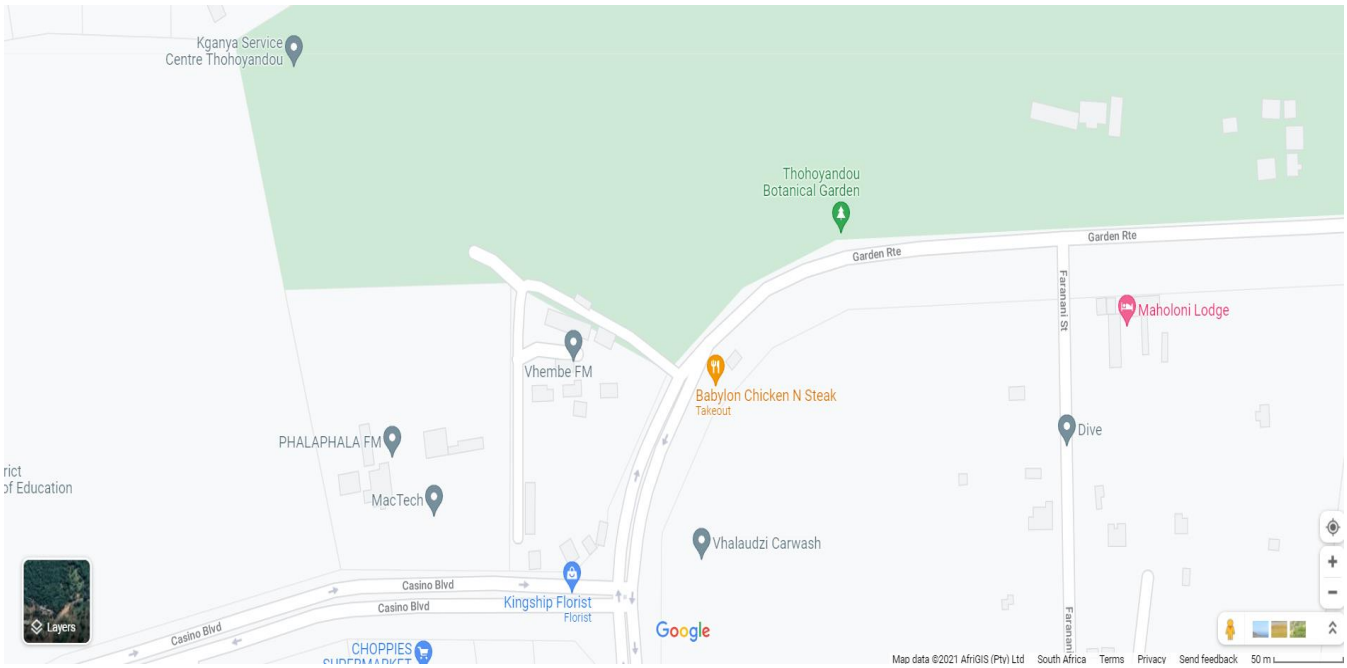
Failure of the Contractor to achieve the requirements set-out in this tender document during construction may result in the client enforcing compliance by appointing 3rd parties if necessary, to assist and deducting all reasonable costs for achieving compliance from money due to the Contractor.

Should the contractor, at Practical Completion, be in default by non-attainment of the above-mentioned labour-intensive targets and SMME requirements, the Employer shall have the right to, without prejudice of any other rights, apply a penalty not exceeding 5% of the contract sum

PART C: THE CONTRACT
Part C4: Site Information

C4.1 Site Information

The site is in Thohoyandou, Limpopo at the Thohoyandou National Botanical Garden



Appendix A: Drawings

- Architectural Drawings
- Civil and Structural Engineering Drawings
- Electrical Engineering Drawings
- Mechanical Engineering Drawings

e) ensure that during commissioning, cognizance is taken of ergonomic design principles in order to minimize ergonomic related hazards in all phases of the life cycle of a structure.

f) A contractor shall ensure that all drawings pertaining to the design of the relevant structure are kept on site and are available on request by an inspector, contractors, employer, health and safety agent or employee.

g) Any owner of a structure shall ensure that inspections of that structure upon completion are carried out periodically by competent persons in order to render the structure safe for continued use: Provided that the inspections are carried out at least once every six months for the first two years and thereafter yearly and records of such inspections are kept and made available to an inspector upon request.

h) Any owner of a structure shall ensure that the structure upon completion is maintained in such a manner that the structure remains safe for continued use and such maintenance records shall be kept and made available to an inspector upon request.

24 FORMWORK & SUPPORT WORK – REGULATION 10

A competent person shall be appointed in writing to supervise all formwork and support work. The name and address of such a person shall be included in the Health and Safety Plan of the Principal Contractor.

The contractor must ensure that all formwork and support work structures are adequately designed, erected, supported, braced and maintained so that they will be able to support all anticipated loads.

All drawings pertaining to formwork and support work must be kept on site and available for inspection by an inspector, contractor, employer, safety agent or employee.

All formwork and support work must be inspected and checked for suitability by a competent person under the following conditions:

1. Before use
2. During placement of concrete or any other imposed load

3. After placement of concrete or any other imposed load
4. On a daily basis after placement of concrete until the structure is removed.
5. Ensure that concrete gains sufficient strength before the support work is removed.
   - Record must be kept of these inspections.
   - Weakened formwork or support work must be immediately reinforced.
   - Deck panels must be secured against displacement.
   - Persons must be prevented from slipping on support work.
   - Persons must not be affected by the use of solvents or any other similar substances.
   - Safe access must be provided for all support work.
   - Employees involved must be adequately trained and instructed to perform the work in a safe manner.
   - Foundations of formwork must be adequate to sustain the applied load.

25 FIRST AID

25.1 SafetyNoticeBoard

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 all staff. The size of the notice board shall be at least 600 mm x 800 mm.

25.2 FirstAidEquipment

The Contractor shall 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, who shall be appointed by the Contractor, and a record shall be kept of the contents. Any deficient medical supplies shall be promptly replenished by the Contractor.

25.3 Hazard Notices

The Contractor shall display hazard notices in all areas where hazardous conditions prevail or may occur.

25.4 ReportingofIncidentsand/orInjuries

All incidents in respect of damage to Works, property or machinery, or injury to persons, shall be reported by the Contractor's SHE Rep by the quickest means possible.

A mandatory incident report form, containing full details of the incident, shall be completed and submitted to the Site Agent and the Department of Labour within twenty four (24) hours of the occurrence of the incident.

26 FIRE PRECAUTIONS ON CONSTRUCTION SITES – REGULATION 27

A register shall be kept on all Acetylene and Oxygen cylinders used on the site. Condition of components, sub-components and safety components (e.g. Flame back arrestors) shall be listed in the register and signed by the construction supervisor at regular intervals as required with time and date stamp.

Acetylene, Oxygen and LP Gas cylinders shall be stored in suitable places to minimize the risk of fire.

Suitable storage to be provided for flammable liquids, e.g. petrol, diesel, paint,

thinners. Smoking shall be prohibited in the workplace and notices posted

accordingly.

Suitable and sufficient firefighting equipment shall be placed in strategic positions in the work place. (On vehicles and other positions as deemed necessary).

A register shall be kept on type and number of equipment for each site in the Health and

Safety File.

A competent person shall inspect all firefighting equipment.

A sufficient number of employees shall be trained in the use of firefighting equipment.

A register shall be kept in the Health and Safety File on site with names of employees and type of firefighting training completed with date.

Suitable signs shall be erected in work places indicating escape routes.

Escape routes shall be kept clear. Evacuation plans shall be in Health and Safety File as part of Induction Training.

Combustible materials shall not accumulate on site.

27 CONSTRUCTION WELFARE FACILITIES – REGULATION 28

On each site where existing facilities are not present, at least one sanitary facility shall be erected for every 10 workers, one shower for every 15 workers, a changing facility for each sex and sheltered eating areas.

Mobile toilets with bucket system shall be installed at the site. Cleaning of buckets

shall be arranged with the City Council. Where applicable chemical toilets shall be provided.

Eating facilities shall be made available in the form of a shaded net, table and chairs.

For sites in remote areas, transport shall be made available for workers to and from sites.

28 TOXIC MATERIALS

The Contractor shall exercise all necessary care in the handling of toxic compounds and shall be able to identify the major chemical components in the event of medical treatment being required.

29 HAZARDOUS CHEMICALS AND MATERIALS

a) The Contractor shall provide suitable and adequate protective equipment when working in an area where hazardous chemicals and materials are being used.

b) 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.

30 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.

31 ELECTRICAL INSTALLATIONS AND MACHINERY ON CONSTRUCTION SITES – REGULATION 22

Before construction commences or any other related works and during the progress thereof adequate steps must be taken to establish the presence of and guard against any danger to the workers in respect to electrical cables or apparatus.

In areas where it cannot be established where electrical devices are, the employees must use tools of which the handles are insulated or rubber insulated gloves.

Any temporary electrical installation set up by the principal contractor or contractor must be inspected at least once a week by a competent person.

The inspections shall be recorded in a register and kept in the Health and Safety File.

When working on or next to live electrical Machinery the Principal Contractor or Contractor must provide insulated stands, trestles and mats.

When Distribution Boards are removed the incoming power supplies shall be cut by the employer's authorized Electrician. The incomer electricity supply feeder shall be earthed by a suitable earth wire or spike to prevent cable of becoming live during the installation of new Distribution Boards.

No person shall continue with wiring of premises unless the supply to the premises has been rendered dead and the above effective measures has been taken to ensure that such cables remains dead. When rewiring of premises is done the feeder breakers at the other end of the supply cables shall be locked out and the cable earthed to prevent any injury to workers by Electrical Shock.

A register shall be kept on site in the Health and Safety File indicating all signatures of competent persons switching electricity supply on or off with time and date stamps.

No person shall use or permit to use a portable electric load operating at a voltage exceeding 50V to earth unless it is connected to a source of electrical energy incorporating an earth leakage protection device.

A register shall be kept on site in which all daily checks of portable electric tools are performed and signed by the responsible person. Checks shall include condition of plug top, power cord, on-off switch and insulation condition of electric tool. All tools shall be numbered and entered accordingly into the register. Condition of tools as listed in the register shall be inspected and signed by the construction supervisor at regular intervals as required by the nature of the equipment.

32 REGISTERS REQUIRED ON SITE

PPE - Personal Protective Clothing and Equipment issued

MACHINERY

- Daily Checklist - Compaction Machinery – Bowmag
- Daily Checklist - Compaction Machinery – Plate Compactor
- Daily Construction Vehicle Pre-ignition Checklist – Tractors
- Daily Checklist - Compaction Machinery – Tipper

- Daily Checklist - Compaction Machinery – Excavator
- Daily Construction Vehicle Pre-ignition Checklist – TLB
- Daily Checklist - Compaction Machinery – Material Handler
- Daily Checklist - Compaction Machinery – Water Lorry
- Daily Checklist - Compaction Machinery – Bowmag
- Daily Checklist - Compaction Machinery – Mini Excavator
- Daily Checklist - Compaction Machinery – Bobcat
- Daily Checklist - Compaction Machinery – Concrete Mixer
- Operators on Construction Vehicles and Mobile Plant
- Training and Fitness Register

EQUIPMENT

- Ladder Inspection Register
- Scaffold Inspection Register
- Safety Harness Inspection Register
- Gas Cutting and Welding Inspection Register

TOOLS

- Monthly Checklist on Hand Tools
- Monthly Checklist on Portable Electrical Equipment

HOUSE KEEPING

- Stacking Inspection Register
- Excavations Inspection Register
- Monthly Environmental Checklist and Deviation
- Monthly Hygiene Facility Inspection Register – Mobile Ablutions and Eating areas

INCIDENTS

- Incident Register (Injury/ occupational disease record book
  Recording and investigation of incidents)
- Motor Vehicle Accident Report

FIRE

- Fire Extinguishing Equipment Register
- Register of Trained Employees in Fire Fighting
- Fire Awareness Attendance Training Register

FIRST AID

- First Aid Box and Equipment Checklist
- Register of Trained Employees in Basic First Aid
- First Aid Awareness Attendance Training Register

TRAINING

- Induction Training Attendance Registers
- Risk Assessment Communication Registers

PERMITS

- Lock-out Request Forms (Water and Electricity)
- Lock-out Permits (Water and Electricity)

INSPECTIONS

- SHE Coordinator Inspection Register – Monthly checklist and deviations
- Minutes of Safety Committee Monthly meetings

33 SAFE WORK PROCEDURES REQUIRED IN HEALTH AND SAFETY FILE

- Stacking of material
- Working with angle grinders
- Excavating of trenches
- Loading and transport of material
- Working with cement and concrete mixers
- Driving company vehicles
- Approaching Construction Vehicles
- Maintaining Scaffolding
- Form work repair guide
- Roof work
- Correct use of Fire Extinguishers
- Engaging and working with Contractors
- Heat Stress
- Electrical Safety
- Maintenance of Ladders
- Silica
- Trenches and open excavations

34 WRITTEN TRAINING COURSE MATERIAL TO BE FILED IN HEALTH AND SAFETY FILE

- Induction Training (Workplace awareness – Site specific)
- Training of operators on Construction Vehicles and Mobile Plant
- First Awareness
- Fire Fighting Awareness

- Toolbox talks on Hand Tools

- Toolbox talks on Machine Guarding
- Toolbox talks on Hand Tool Accidents
- Toolbox talks on Ten Commandments of Safety
- Toolbox talks on Fire prevention
- Toolbox talks on lifting materials by hand
- Toolbox talks on safe loading
- HIV Training Unit 1 - The Nature of HIV / Aids
- HIV Training Unit 2 - Transmission of the HI virus
- HIV Training Unit 3 - HIV / AIDS preventative measures
- HIV Training Unit 4 – Voluntary HIV / AIDS counselling and testing
- HIV Training Unit 5 – Living with HIV / AIDS
- HIV Training Unit 6 – Treatment options for people with HIV / AIDS
- HIV Training Unit 7 – The rights and responsibilities for workers in the workplace with regard to HIV / AIDS
- Toolbox talks on Environmental influences

35 TRAINING COURSES TO BE PRESENTED

PHASE 1

- Toolbox talks on the functions of the SHE Representative
- Induction Training (Workplace awareness) - Ten Commandments of Safety
- Training of the Community on Construction Workplace Hazards
- HIV Training Unit 1 - The Nature of HIV / Aids
- Toolbox talks on Environmental Awareness

PHASE 2

- Training of Operators on Construction Vehicles and Mobile Plant
- First Aid Awareness
- Fire Fighting Awareness
- Toolbox talks on Hand Tools and Hand Tool Accidents
- Toolbox talks on Machine Guarding
- Toolbox talks on lifting materials by hand
- Toolbox talks on Safe Loading
- Toolbox talks on Safety Signs
- HIV Training Unit 2 - Transmission of the HI virus
- HIV Training Unit 3 - HIV / AIDS preventative measures
- HIV Training Unit 4 – Voluntary HIV / AIDS counselling and testing
- HIV Training Unit 5 – Living with HIV / AIDS
- HIV Training Unit 6 – Treatment options for people with HIV / AIDS

- HIV Training Unit 7 – The rights and responsibilities for workers in the workplace with regard to HIV / AIDS
- Toolbox talks on Environmental Awareness

36 EQUIPMENT ON SITE First Aid Kit (basic) Fire Extinguishers

37 PERSONAL PROTECTIVE CLOTHING

The Contractor shall provide the necessary personal protective clothing for its employees in hazardous areas, appropriate to the nature of the hazard.

37.1 HardHats

All employees of the Contractor shall wear hard hats in areas 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.

37.2 EyeProtection

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.

37.3 Hearing Protection

Suitable hearing protection shall be worn in areas where appropriate hazard notices are displayed.

37.4 FootWear

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.

37.5 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.

37.6 Clothing

All employees of the Contractor shall wear suitable protective clothing when working in proximity of machinery, power tools, hazardous materials or chemicals.
Proposed Personal Protective Equipment required on this project:

	TYPE	WHEN TO WEAR
1.	Hard Hats	Always
2.	400mm Shoulder Length PVC Gloves	Working with cement
3.	Plastic Trousers	Working with cement
4.	Safety Goggles	Grinding, Cutting Cement
5.	Gumboots	Working in water
6.	Welding helmet	Welding
7.	Gas welding safety goggles	Gas Welding
8.	Safety shoes	Offloading and positioning of materials
9.	Dust Masks	Grinding
10.	Ear Muff	Grinding
11.	Leather apron	Welding / gas welding

AGREEMENT IN TERMS OF SECTION 37(2) OF THE OCCUPATIONAL HEALTH AND SAFETY ACT, NO. 85 OF 1993

The Employer and the Contractor hereby agree, in terms of the Provisions of Sections 37(2), 9 and 8(2) of the Occupational Health and Safety, Act No. 85 of 1993, hereinafter referred to as 'the Act', that the Contractor as an employer in its own right and in its capacity as Contractor for the execution of the works, shall have certain obligations and that the following arrangements shall apply between them to ensure compliance by the Contractor with the provisions of the Act, namely:-

i) The Contractor undertakes to acquaint the appropriate officials and the employees of the Contractor with all relevant provisions of the Act, and the regulations promulgated in terms of the Act, and

ii) The Contractor undertakes that all relevant duties, obligations and prohibitions imposed in terms of the Act and regulations will be fully complied with, and

iii) The Contractor hereby accepts sole liability for such due compliance with the relevant duties, obligations and prohibitions imposed by the Act and regulations and expressly absolves the Employer and the Employer's Consulting Engineers from being obliged to comply with any of the aforesaid duties, obligations and prohibitions.

iv) The Contractor shall be obliged to report forthwith to the Employer any investigation, complaint, or criminal charge which may arise as a consequence of the provisions of the Act and regulations pursuant to work performed on behalf of the Employer, and shall, on written demand, provide full details in writing of such investigation, complaint or criminal charge.

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

..... 20.....

For and on behalf of the Contractor:

_____ Print Name: _____

AS WITNESSES:

1. _____ 2. _____

Print Name: _____ Print Name: _

For and on behalf of the Employer:

_____ Print Name:_____

AS WITNESSES:

1. _____ 2. _____

Print Name: _____ Print Name: _____

MANDATORY NOTIFICATION OF CONSTRUCTION WORK IN TERMS OF REGULATION 3 OF THE CONSTRUCTION REGULATIONS (2014) OF THE OCCUPATIONAL HEALTH AND SAFETY ACT, NO. 85 OF 1993

This document is to be forwarded by the Contractor to the Office of the Department of Labour prior to commencement of the Works. The Contractor shall ensure that all Sub-Contractors accountable to him forward similar documents to the mentioned Authority prior to commencement with the Works.

A. Particulars of Contractor

Name: .....

Postal Address : .....

Compensation Fund Registration No. .....

B. Particulars of Contractor's MD / CEO / Managing Member of cc

Name: .....

ID No. .....

Postal Address: .....

Tel No. .....

Cell phone No. .....

C. Particulars of Contractor's designated Construction Safety Officer appointed in terms of Clause 6(1) as the Construction Supervisor, with the duty of supervising health and safety at the Works:

Name: .....

ID No. .....

Postal Address: .....

Tel No. .....

Cell phone No. .....

D. Particulars of Contractor's sub-ordinate supervisors at the Works, appointed in terms of Clause 6 (2):

Name	ID No.	Postal Address	Tel No.	Cell phone no.

E. Physical address of the Works (Construction Site)

.....

.....

.....

Co-ordinates (if available)

Latitude (S).....

Longitude (E).....

F. Nature of the construction work:

.....

.....

G. Expected commencement date:

H. Expected completion date:

I. Estimated maximum number of persons on the construction site.

J. Planned number of Sub-Contractors on the construction site accountable to Principal Contractor:

.....

.....

Name(s) of Sub-Contractors.

.....

.....

.....

K. Particulars of Employer (client)

Name:

Postal Address:

.....

.....

.....

Name of Employer's designated Representative / Agent.

.....

Tel No. ..... Cell phone No.....

L. Particulars of Design Engineer

Name:

Postal Address:

.....

Tel No. ..... Cell phone No. .....

Signed at ..... on this ..... day of ..... 20.....

INFORMATION TO BE SUPPLIED BY THE TENDERER

This following form shall be completed by the

Tenderer. A Particulars of WCF

Compensation Fund Registration No.

.....

Expiring Date .....

B. Particulars of Contractor's designated Construction Safety Officer appointed in terms of Clause 6(1) as the Construction Supervisor, with the duty of supervising health and safety at the Works:

Name: .....

ID No. .....

Postal Address: .....

Tel No. .....

Cell phone No. .....

C Particulars of Contractor's Health and Safety Representatives:

Name:.....Qualifications.....

Name:.....Qualifications.....

Name:.....Qualifications.....

D Particulars of First Aider

Name: .....

ID No. .....

Valid First Aid Certificate: Yes.....No.....

E Particulars of Fire Fighter

Name: .....
ID No. .....

Valid Fire Training Certificate: Yes.....
No.....

F Training Records of Construction Vehicle Operators

Name:.....Qualifications.....

Name:.....Qualifications.....

Name:.....Qualifications.....

G. Incident Statistics:

Incidents during last 12 months	Date	Degree of Injury	Production days	Costs involved
1				
2				
3				
4				
5				
6				
7				

- Section 14 of the Occupational Health and Safety, (OHS) Act obliges employees to take reasonable care for health and safety of him- or herself and others who may be affected by their acts or omissions. This obliges employees to comply with any duty or requirement imposed by the employer or any other person by OHS Act to co-operate with the employer or person to enable that duty or requirement to be performed or complied with. Employees are also required by OHS Act to carry out lawful orders and obey the health and safety rules and procedures laid down by is employer or by anyone authorized by his employer in the interest of health and safety

- Principal contractor shall therefore do the following:
- Include Covid Management as part of the SHE Plan
- Covid19 Management to be incompliance to the latest Covid19 regulations as issued by the government.
- All employees and non-employees to be screened with non-contact thermometers.

- Take body temperature of anybody stepping on or stepping off site Should the body temperature be above 37 degrees Celsius, the employee will be asked to return home for self-isolation or will be referred to a clinic or testing centre close to them.
- All employees and support staff will be provided with the standard PPE in regulation with the COVID-19 pandemic 3ply cloth masks, face- shields, gloves etc.
- No employees or visitors shall be allowed access to site should they not be wearing their face masks
- Reduction of visitors to be implemented on site
- Tools to be sanitized frequently
- Sanitizers to be placed at the entrance and in common areas.
- Monitor site access points to enable social distancing (at least 1.5M apart)
  Risk Register to include Management of covid19 on sites

END OF SECTION

Appendix C: Guidelines for the Implementation of Labour-Intensive Projects under the Expanded Public Works Programme (EPWP)

public works
Department:
Public Works
REPUBLIC OF SOUTH AFRICA

EXPANDED PUBLIC WORKS PROGRAMME

GUIDELINES FOR THE IMPLEMENTATION OF LABOUR-INTENSIVE INFRASTRUCTURE PROJECTS UNDER THE EXPANDED PUBLIC WORKS PROGRAMME (EPWP)

THIRD EDITION 2015

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EXPANDED PUBLIC WORKS PROGRAMME

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Pretoria
South Africa

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FOREWORD

The Expanded Public Works Programme (EPWP) is one of government's medium-to-long term programmes aimed at alleviating poverty and reducing unemployment. The EPWP will achieve this aim through the provision of work opportunities coupled with project based training. It is a national programme covering all spheres of government and state-owned enterprises (SOE's). The programme spans four Sectors comprising Infrastructure, Social, Non-State and Environment and Culture.

Government's medium-to-long term programmes to address unemployment include increasing economic growth, improving skills levels through education and training, and improving the enabling environment for industry to flourish. The EPWP will continue to exist until these medium-to-long term programmes are successful in reducing unemployment.

The programme involves the use of line function budgets so that government expenditure results in more work opportunities, particularly for unskilled labour. EPWP projects will therefore, be funded through the normal budgetary process, through the budgets of line-function departments, provinces and municipalities. The National Department of Public Works (NDPW) has the mandate for overall coordination of the programme.

Opportunities for implementing the EPWP have been identified in the Infrastructure; Environment and Culture; Social and Non State Sectors. In the Infrastructure sector the emphasis is on optimising the creation of work opportunities through the use of labour-intensive construction and maintenance methods. Labour-intensive construction methods involve the use of an appropriate mix of labour and machines, with a preference for labour where technically feasible and economically viable, without compromising the quality of the product.

All public bodies involved in infrastructure provision are expected to contribute to the programme. As part of this initiative, the national government has through the Division of Revenue Act (DORA) placed additional conditionalities on infrastructure grants. The grants call for increased focus in the cost efficient use of labour absorptive methodologies in the provision of infrastructure. These additional conditionalities require provinces and municipalities to use the "Guidelines for the implementation of labour-intensive infrastructure projects under the EPWP" for identification, design, construction and maintenance of assets. This document contains those guidelines.

International and local experience has shown that, with well-trained supervisory staff and an appropriate employment framework, labour-intensive methods can be used successfully for infrastructure projects such as those involving roads, sidewalks, stormwater drains, trenches, buildings, water and sanitation. On the basis of this experience, and in the context of high levels of unemployment, the national government has directed that these infrastructure projects must contribute to employment creation.

These guidelines aim to provide Government and its partners implementing Infrastructure Sector programmes/projects with the necessary tools to successfully implement these projects using Labour-Intensive Construction and Maintenance methods. These guidelines have been designed with the aim of minimising the additional work required from provincial and municipal officials. The National Department of Public Works is partnering with public and private institutions to develop the capacity of the construction industry to design and manage labour-intensive infrastructure projects successfully.

PREFACE

The guidelines contain sections which should be adapted into the relevant parts of the contract documentation for consulting engineers and contractors, based on the specific need. These sections introduce a requirement that certain construction and maintenance activities must be carried out by hand. Furthermore, client public bodies must ensure that both consultants and contractors comply with EPWP reporting frameworks. These requirements were formulated on the basis of a review of international and local experience of labour-intensive construction and maintenance, in order to identify the activities for which it is technically feasible and economically viable to use labour-intensive methods. The guidelines therefore conform to the Public Finance Management Act requirement for assessing the cost-effectiveness of capital projects. The normal tender evaluation processes should be followed when using guidelines, and it is not necessary to apply any special additional preferences for employment creation.

The guidelines include the contents of the Code of Good Practice for the Expanded Public Works Programme, which has been gazetted by the Department of Labour, and which provides for special conditions of employment for these EPWP projects.

In terms of the Code of Good Practice for the Expanded Public Works Programme, training is regarded as an important component of the EPWP. Each project should have a clear training programme for its workers to improve their work performance. Training will focus on needs and will be implemented based on a programme by programme basis.

In order to develop the capacity of the construction industry to manage labour-intensive projects, these guidelines also include an eligibility requirement for the appointment of contractors and consulting engineers, i.e. that all key staff involved in the project must undergo special NQF-accredited training programmes in labour-intensive construction at all levels.

As an additional means of addressing the capacity in the labour-intensive construction sector, NDPW together with the CETA has established a labour-intensive contractor learnership programme called the Vuk'uphile Contractor Learnership Programme. The aim of this learnership programme is to develop emerging contractors to execute work in accordance with these guidelines. As part of this learnership programme, learner contractors need to execute projects to gain practical experience under the guidance of a mentor. Partnering provinces and municipalities should allocate projects identified and designed using these guidelines to the learner contractors on a negotiated price basis in accordance with Treasury Learnerships waiver letter (obtainable from www.epwp.gov.za) from open competitive tendering of learnership projects.

Whereas during Phase 1 of the EPWP the main parameter for measuring the employment created was work opportunities, in Phase 2 another parameter, Full Time Equivalent (FTE) employment was added. FTE refers to employment that is equivalent to employing one person for one year of 230 effective working days. Employment targets were also set for government bodies based on allocated grants. Another feature that was introduced in Phase 2 of the EPWP is the Incentive Grant. This is intended to incentivise public bodies to perform beyond their EPWP targets. In EPWP Phase 3 the reporting on labour intensity (expenditure on wages expressed as a percentage of total expenditure) and quantity and impact of assets created has been introduced and is measured in accordance with the EPWP Monitoring and Evaluation (M & E) Framework.

The latest electronic version of these guidelines and electronic copies of the following documents can be downloaded from www.epwp.gov.za:

- ☐ Code of Good Practice for Employment and Conditions of Work for the Expanded Public Works Programme.
- ☐ Ministerial Determination for the Expanded Public Works Programmes issued by the Minister of Labour.
- ☐ EPWP conditions as gazetted in the Division of Revenue Act (DORA).

Amendments to the Second Edition incorporated in this Third Edition

Amendments to the text of the second edition have been made to:

i. align the text to developments and changes to EPWP policy and institutional arrangements;
ii. align the text with the requirements of the Construction Industry Development Regulations;
iii. delete text that has now become redundant; and
iv. update applicable labour conditions to EPWP workers as per the latest Ministerial Determination for EPWP.

ABBREVIATIONS

CETA: Construction Education and Training Authority

CIDB: Construction Industry Development Board

DOL: Department of Labour

ECSA: Engineering Council of South Africa

EPWP: Expanded Public Works Programme

FIDIC: French acronym for the International Federation of Consulting Engineers

FTE: Full Time Equivalent

GCC: General Conditions of Contract

JBCC: Joint Building Contracts Committee

LI: Labour Intensity

M & E: Monitoring and Evaluation

MIS: Management Information System

NDPW: National Department of Public Works

NEC: New Engineering Contract

NQF: National Qualifications Framework

QCTO: Quality Council for Trades and Occupations

SANS: South African National Standard

WO: Work Opportunities

TERMINOLOGY

Actual Expenditure: the expenditure on activities implemented labour-intensively on the project by the contractor added to the expenditure by the professional service provider appointed to design and supervise the project. The actual expenditure excludes expenditure on government management and administration.

Actual Labour Intensity: Actual labour intensity = actual expenditure on wages expressed as a percentage of the total actual expenditure on activities implemented labour-intensively

Actual Output: achieved physical quantities (e.g. km or road, pipeline) corresponding to the actual expenditure.

By hand: refers to the use of tools which are manually operated and powered.

Convergence: is the fostering of synergies within and amongst sectors and programmes of the Expanded Public Works Programme (EPWP) to ensure that resources are efficiently and effectively utilised to optimise benefits for sectors, programmes, and participants.

Daywork: is work done that is paid on a daily basis in situations where it is impossible to estimate the quantity of the required input in advance. It is usually applied in situations where the quantitative measurement or setting of task including pricing is not possible.

Demographic Characteristics of Workers

The number of workers that fall within the following categories must be recorded:

	Demographic	**EPWP Target**
	Youth (i.e. 16 – 35 years of age)	55%
	Women	55%
	People with Disabilities	2%

EPWP Integrated Grant: refers to funds payable to public bodies through a conditional grant to incentivise employment creation under the EPWP.

EPWP Project: refers to a project that incorporates the following elements to the extent possible: employment creation, labour-intensive methods, local resource optimisation (only use equipment for activities that cannot be effectively done by the use of labour), quality is not compromised, skills development and transfer, community ownership, optimisation of quality cost and time, decent working conditions (fair wages, appropriate provision for safety and health and freedom of association) and lays the foundation for sustainability.

EPWP Target: refers to a target set by the National Department of Public Works specifying the number of work opportunities and FTEs that a public body should endeavour to create

Expanded Public Works Programme (EPWP): refers to a programme to provide public or community assets or services through labour-intensive approach(ies) initiated by government and funded from public resources.

Form of contract: refers to a document (conditions of contract) published by industry which establishes the rights, liabilities and obligations of the contracting parties and the procedures for the administration of the contract.

Full Time Equivalent (FTE) Employment Created: refers to one person-year of employment. One person year is equivalent to 230 person days of work. The 230 days are effective days of work after subtracting provision for non-productive days in a year (e.g. leave, holidays, etc.).

1 FTE = person days divided by 230.

Gravel: is defined (according to soil classification) as a mixture of stones (2-60mm), sand, and clay which is composed of unconsolidated rock fragments.

Green Jobs: are understood as "green" when they help reduce negative environmental impact, ultimately leading to environmentally, economically and socially sustainable enterprises and economies. Green jobs are also decent (ILO, 2015) jobs that provide adequate incomes, social protection and ensure the respect for the rights of workers. Green jobs can cover a variety of employment ranging from jobs that improve energy and raw materials efficiency, limit greenhouse gas emissions, minimize waste and pollution, protect and restore ecosystems, and support adaptation to the effects of climate change.

Group task: is a work method whereby tasks are organised on the basis of many people completing one task (to produce a defined output in a day).

Identity Documents: refers to South African identity registration document.

Labour-Intensity: refers to the expenditure on wages expressed as a percentage of the total expenditure on activities implemented labour-intensively.

Labour-intensive: refers to methods of construction and maintenance involving a mix of labour and machines without compromising on quality, where labour is the primary resource supported by plant and equipment for activities that cannot be feasibly done by labour only.

Large Project: is an infrastructure project with a value of more than R 30 million (including VAT) that involves the use of labour-intensive methods on a significant scope of the works to maximise the creation of work opportunities.

Learnership: is a structured learning programme which involves theory, practical and workplace learning and leads to a registered qualification on the National Qualifications Framework (NQF).

Ministerial Determination: refers to a determination issued by the Minister of Labour in terms of the Basic Conditions of Employment Act of 1997. It applies to Expanded Public Works Programmes. The Ministerial Determination must be read in conjunction with the Code of Good Practice for the Expanded Public Works Programme.

Person-days of Employment Created: refers to the number of people who worked on a project multiplied by the number of days each person worked.

Planned Labour Intensity: is the planned wages budget expressed as a percentage of the total planned budget for activities to be implemented labour-intensively.

Planned Output: refers to planned physical quantities (e.g. km or road, pipeline) corresponding to the planned budget.

Public body: refers to a department, state owned entity, constitutional institution, municipality, public entity or municipal entity.

Project Budget: refers to the planned budget on activities to be implemented labour-intensively + the professional fees for the professional service provider appointed to design and supervise the project. The project budget excludes government management & administration costs.

Project Wage Rate: is the daily wage (whether task-rated or time-rated) per individual. This wage rate must be inserted in the Project tender document as per the EPWP Guidelines.

Task: refers to the amount of work to be performed to a defined quantity and quality.

Task rate: refers to the amount of work to be performed by a worker to a defined quantity and quality and be completed in a working day.

Training Person-Days: is the number of people who attended training x the number of days of training per person.

Training should be reported as follows;

1. Number of people trained
2. Number of people that received accredited training
3. Number of people that received non-accredited training
4. Profile of the participants (Women, Disabled, Youth)
5. Percentage of participants who worked on the project after receiving training.

Scope of work: refers to a specification and description of the services or construction/maintenance works which are to be provided and any other requirements and constraints relating to the manner in which the contract is to be performed.

Semi-skilled work: refers to work requiring a person to have some degree of training or familiarisation with the task to be performed before being able to operate at optimal efficiency.

Sustainable Livelihoods: a livelihood comprises the capabilities, assets (including both material and social resources) and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from the stresses and shocks and maintain or enhance its capabilities and assets both now and in the future without undermining the natural resource base. It is not just about the means to survive, but the capability to thrive.

Unskilled work: refers to work that does not require a person to have received prior training related to the task to be performed and being able to operate to a satisfactory standard.

Wage Rate: refers to the set wage (whether task-rated or time-rated) to be paid to a worker who completes assigned work for the day.

Work Opportunity: refers to paid work created for an individual on an EPWP project for any period of time, within the employment conditions of the Code of Good Practice for the Expanded Public Works Programme. Learnerships will also constitute work opportunities. The same individual can be employed at different times on different projects (not concurrently) and each period of employment will be counted as a work opportunity.

1 INTRODUCTION

The objectives of implementing labour-intensive infrastructure projects under the EPWP include:

- providing employment opportunities and distribution of income through injecting some project funds into the local economy in the form of wages to local poor and unemployed people;
- providing training or skills development to locally employed workers;
- building cost-effective and quality assets.
- development of labour-intensive capacity in the construction industry.

This document is a guiding framework for the implementation of labour-intensive projects under the Expanded Public Works Programme. It provides the means by which labour-intensive works can be implemented under the most commonly encountered delivery model, namely design by employer (i.e. the model in which the contractor undertakes construction and maintenance on the basis of full designs issued by the employer.) It also assumes that the public body will appoint a consultant to design the works and to administer the contract. Local customisation of some elements of these guidelines will be necessary to accommodate other delivery models. Where no consultants are appointed, the staff of the public body needs to perform the activities assigned to consultants in this document.

The document in addition provides guidance on the:

- identification of suitable projects;
- appropriate design for labour-intensive construction/maintenance;
- specification of labour-intensive works; and
- compilation of contract documentation for labour-intensive projects.

Specific direction is given regarding contract clauses which must be included to amend or augment standard documentation, in order to implement labour-intensive projects.

These guidelines must be applied to all projects that are implemented under the EPWP. Appendix A provides sources of additional information.

The employment of locally recruited temporary workers on all EPWP labour-intensive infrastructure projects must be in accordance with the current Code of Good Practice for Employment and Conditions of Work for the Expanded Public Works Programme; issued in terms of the Basic Conditions of Employment Act, 1997 (Act No 75 of 1997) and promulgated in the Government Gazette. Extracts of this Code have been included in this Guidelines document. However, reference should be made to the full text of the latest versions of the Code of Good Practice and the related Ministerial Determination.

2 EPWP UNIVERSAL PRINCIPLES

Effective from 1 April 2014 the EPWP adopted four universal principles to guide the implementation of the programme. This is not an exhaustive list, but lays fundamental requirements that every EPWP project is expected to comply with. The M&E framework provides details on mechanisms to respond to non-compliance.

2.1 Workers Are Recruited Through a Fair and Transparent Process

The selection of each worker must be done based on a clear set of criteria and should follow a fair and transparent process to minimize patronage and abuse. The criteria for selection of participants in EPWP Phase 3 are that they:

1. Are willing and able to take up the offered work,
2. Can be categorised as poor,
3. Are unemployed or underemployed, and
4. Live close to the project area (i.e. local).

2.2 Adherence to the Minimum Wage

This principle calls for adherence to the EPWP Minimum wage and employment conditions under the EPWP Ministerial Determination. The EPWP Ministerial Determination, as revised from time to time, sets out a minimum wage and minimum conditions of employment for the EPWP and implementers must comply with its requirements. All EPWP Coordinating structures will collaborate with the DOL in monitoring compliance by implementers.

2.3 Work provides or enhances public goods or community services

The work output of each EPWP project should contribute to enhancing public goods or community services. A record of outputs forms part of reporting for all EPWP Phase 3 projects and programmes. All projects and programmes must measure and report the productivity and outputs of all work to achieve meaningful impact and ensure the state receives value for money. The M&E framework provides details of sector specific output indicators to be reported.

2.4 Compliance with minimum labour-intensity appropriate to Sector

A minimum labour-intensity benchmark appropriate to each sector has been set. Furthermore, programmes within each EPWP Sector have their own minimum labour intensity threshold. It cannot be over-emphasised that the minimum labour intensity is not the default target that should be achieved, but the lowest threshold, above which the target must be set. There is no maximum labour intensity defined as this will be dictated by the type and nature of the project. However, in any case labour intensity cannot exceed 100%.

Projects that do not comply with this standard will be supported to increase their labour intensity. However, if they still fail to achieve their minimum labour intensity they shall be excluded from the final report. Appendix D provides details of minimum labour intensity thresholds for each sector and their programmes.

3 EPWP CROSS CUTTING ISSUES

3.1 Convergence

More emphasis will be placed on convergence between sectors in the implementation of EPWP Phase 3.

The rationale for Convergence is that;

- It will build synergies within EPWP.
- It will reduce duplication and overlap of programmes.
- Convergence will reduce potential for duplicate reporting of the same work opportunities.
- Maximum benefits will be achieved in the implementation of projects through alignment of sectors and programmes within sectors.

Areas of Convergence in EPWP include the following;

- Recruitment and selection – in accordance with the standard EPWP recruitment procedures;
- Payment of stipends and wages - all sectors to pay at least the EPWP minimum wage;
- Convergence between and amongst sectors – e.g. joint planning and pooling of resources;
- Convergence between and amongst programmes within the same sector e.g. uniform norms and standards; and
- Business process convergence – e.g. planning, financing, reporting, branding.

3.2 Sustainable Livelihoods

In EPWP, Sustainable Livelihoods are supported both during participation in the programme and post participation. EPWP participants receive income to sustain themselves and their dependants. Furthermore, skills acquired from the programme can be used for future employability and/or entrepreneurship initiatives.

Infrastructure is one of the core elements of sustainable livelihoods, both during the construction and maintenance phases of the assets. It consists of changes to the physical environment that help people to meet their basic needs and to be more productive. EPWP promotion of the following components of infrastructure are essential for sustainable livelihoods:

Secure shelter and buildings;

Adequate water supply and sanitation;

Clean, affordable energy;

Access to information (communications); and

Affordable transport.

3.3 Green Jobs

Green Jobs can be created through a deliberate choice of materials, processes and work methods that rely mainly on renewable sources.

The following are examples of infrastructure related elements that can create Green Jobs.

Green Buildings

- ❑ Retro fitting using Green materials
- ❑ Thermal Insulation to reduce energy demand
- ❑ Solar energy system
- ❑ Rain water harvesting and storage
- ❑ Water saving devices

Roads Infrastructure (Construction & Maintenance)

- ❑ Drainage structures and protection works using natural and locally-based resources
- ❑ Appropriate choice of technology and construction materials
- ❑ Non-motorised transport infrastructure e.g. Sidewalks and cycle lanes

Water

- ❑ Stormwater management infrastructure
- ❑ Irrigation infrastructure
- ❑ Water harvesting infrastructure

Energy

- ❑ Renewable energy e.g. Solar, wind, wave, hydro
- ❑ Efficient lighting (new construction and retrofitting)

Erosion Protection

- ❑ Slope Protection e.g. Grassing
- ❑ Gulley Protection e.g. Use of local rock materials
- ❑ Construction of Gabions

Waste Management

- ❑ Recycling Infrastructure

4 RESPONSIBILITIES OF THE PUBLIC BODY

4.1 Selection of projects

The public body must implement EPWP projects not limited to the following types of infrastructure labour-intensively, in accordance with these guidelines (see Appendix B):

- roads
- sidewalks and non-motorised transport infrastructure
- stormwater drainage;
- water and sanitation
- buildings
- landscaping; and
- electricity

Where such projects contain a significant amount of the construction/maintenance activities for which the use of labour is specified, the Generic Labour-Intensive Specification in section 5.5 should be applied, i.e. excavation, loading, short-distance hauling, offloading, spreading, grassing, and stone-pitching.

The public body must be satisfied that sufficient local labour (willing to work) is available for the project, before proceeding with the project as a labour-intensive project.

The public body is expected to send its relevant managers on the applicable skills programmes in labour-intensive construction (See Appendix C).

4.2 Large Projects

A Large Project is an infrastructure project with a value of more than R 30 million (including VAT) that involves the use of labour-intensive methods on a significant scope of work to maximise the creation of work opportunities. Large projects can be singular or aggregation of smaller projects, culminating in a monetary value of at least R 30 million. For singular large projects, only the scope of works that can be implemented labour-intensively is reported under the EPWP. For aggregated large projects, the entire scope is considered to be amenable to use of labour-intensive methods. Large Projects should be designed and packaged to promote participation of small to medium term contractors.

4.3 Setting of rate of pay

In accordance with the Code of Good Practice for Employment and Conditions of Work for the Expanded Public Works Programme, the public body must set a rate of pay (not less than the minimum EPWP rate as stipulated in the Ministerial Determination) for workers to be employed on EPWP projects.

The following principles should be considered when setting rates of pay for workers:

- *The rate set should take into account wages paid for comparable unskilled work in the local area per sector, if necessary.*
- *The rate should be an appropriate wage to offer an incentive for work, to reward effort provided and to ensure the desired quality of work. It should not be more than the average local rate to ensure people are not recruited away from other employment and jobs with longer-term prospects.*

- *Men, women, disabled persons and the aged must receive the same pay for work of equal value.*

The minimum wage is reviewed annually effective 1st November of each year. The review is based on the inflation and the new wage rate is announced six weeks before it becomes effective.

As per the Code of Good Practice for Employment and Conditions of Work for the Expanded Public Works Programme, task rates are applicable with recommended rates as shown in Appendix G.

4.4 Appointment of consulting engineers/ project managers and contractors

The public body must ensure that:

i) the design of the labour-intensive works by consultants is overseen by persons in their employ who have completed the necessary skills training (see Appendix C);

ii) works contracts are administered by persons in the employ of consultants who have completed the necessary skills training (see Appendix C); and

iii) works contracts are awarded to contractors who have in their employ managers who have completed the necessary skills training (see Appendix C).

iv) consultants are expected to sign an undertaking confirming they have complied with EPWP requirements at design and implementation stages. A sample is provided in (Appendix E).

Ideally, everyone involved in the implementation of EPWP projects should be competent in labour-intensive methods of construction and/or maintenance as necessary.

4.5 Participants' Training

Public bodies should ensure that participants employed on their EPWP projects receive accredited training whenever possible. This may be done through submission of training applications to the relevant Regional Office of the Department of Higher Education and Training. Personnel from the National Department of Public Works or Provincial Coordinating Department EPWP units will assist the Public Body to prepare and submit the training applications to relevant Provincial office of the Department of Higher Education and Training or to any other funders like SETAs.

4.6 Monitoring and Reporting

Public bodies must ensure effective monitoring of the labour-intensive activities and reporting of EPWP projects on the EPWP reporting system. For effective project monitoring, the Compliance Checklist provided in Appendix F is recommended for use by Public Bodies.

5 CONTRACT DOCUMENTATION FOR CONSULTING ENGINEERS/ PROJECT MANAGERS AND CONTRACTORS FOR LABOUR-INTENSIVE CONSTRUCTION/MAINTENANCE PROJECTS

5.1 General

All the standard forms of contract listed in the CIDB Standard for Uniformity in Construction Procurement may be used for labour-intensive projects. It is not necessary to create new forms of contract or to amend the approved forms of contract to implement labour based works.

Requirements for labour-intensive works need to be established in the scope of works, special conditions of contract and specifications associated with contract documentation.

The approved standard forms of contract for professional services use different terms to describe the parties to the contract. These guidelines use the terms employer and consultant for the parties engaged in professional service contracts and scope of work for requirements in both professional service and construction/maintenance contracts.

5.2 Documentation for Professional Services Contracts

The scope of work must establish the manner in which the consultant is to provide the Professional services associated with labour-intensive works.

All services relating to the implementation of the works which are to be provided in terms of these Guidelines are normal services in terms of the Guideline Scope of Service and Tariff of Fees for Persons Registered in terms of the various Built Environment Professions Acts. Any changes in the design of the works to incorporate labour-intensive works should not constitute a change in scope or an additional service where the scope of work is framed around such publications.

The following must be included in the scope of works in the contract of employment with a Professional services Consultant:

Labour-intensive works

1. The Consultant shall not perform any significant portion of a project involving labour-intensive works under the direction of a staff member who has not completed the NQF level 7 unit standard "Develop and Promote Labour-Intensive Construction Strategies" or equivalent QCTO qualifications (See Appendix C).

2. The staff member of the consultant who is responsible for the administration of any works contract involving labour-intensive works must have completed the NQF level 5 unit standard "Manage Labour-Intensive Construction Projects" or equivalent QCTO qualifications (See Appendix C).

   The Consultant must provide the Employer with satisfactory evidence (e.g. letter of competency) that staff members satisfy the requirements of 1 and 2.

3. The Consultant must design and implement the construction/maintenance works in accordance with the latest version (download at www.epwp.gov.za) of Guidelines for the Implementation of the Labour-Intensive Projects under the Expanded Public Works Programme (these Guidelines) published by the National Department of Public Works. The Consultant must sign the undertaking (Appendix E) confirming they have complied with EPWP requirements at design and implementation stages.

4. The Consultant shall, for monitoring purposes, keep monthly records and transmit to the Client data on the following indicators with regard to the EPWP projects implemented:

   - ❑ Project budget and planned output according to EPWP requirements
   - ❑ Actual Project Expenditure and actual output according to EPWP requirements
   - ❑ Planned and achieved labour intensity
   - ❑ Number of work opportunities created
   - ❑ Demographics of workers employed (disaggregated by women, youth and persons with disabilities)
   - ❑ Wage rate earned on project
   - ❑ Number of person-days of employment created
   - ❑ Copies of Identity documents of workers
   - ❑ Number of persons who have attended training including the nature and duration of training provided
   - ❑ Assets created, rehabilitated or maintained in accordance with indicators in the EPWP M & E Framework
   - ❑ Services provided or delivered in accordance with indicators in the EPWP M & E Framework

5. The values for the indicators shall be submitted to the Employer according to agreed time frames on the prescribed reporting template (from the EPWP Unit in the DPW) and obtainable from www.epwp.gov.za.

6. The Consultant shall, before certifying a contractor's payment certificate, ensure that the contractor has submitted labour information in a format and timeframe specified by the employer. If the information submitted by the contractor is inadequate the consultant shall not submit the payment certificate to the employer for payment of the relevant outputs.

7. The Consultant shall certify that the works have been completed in accordance with the requirements of the Guidelines and the Contract:

   a) whenever a payment certificate is presented to the Employer for payment; and

   b) immediately after the issuing of a practical completion certificate that signifies that the whole of the works have reached a state of readiness for occupation or use for the purposes intended although some minor work may be outstanding.

5.3 Contract Documentation for the Works

Applicable standard contract documents will apply incorporating specific EPWP/LIC conditions and specifications as outlined below.

EPWP documents and projects should be branded in accordance with the latest Corporate Identity Manual obtainable from www.epwp.gov.za

5.3.1 Notice and Invitation to tender / Conditions of tender

Public bodies must only award contracts to contractors who have demonstrated that they will have in their employ (if awarded the contract) suitably qualified senior and middle supervisory staff to supervise the labour-intensive works during the validity of the contract. Tenderers must be made aware of this requirement in tender documents. Those responsible for evaluating tenders must confirm that the contractor has signed agreements with such staff during the tender evaluation process.

The following must be included in the notice and invitation to tender:

"*Only tenderers who can demonstrate that they will have in their employ staff which satisfy EPWP requirements during the contract validity are eligible to submit tenders*".

The following must be included in the tender data in accordance with the provisions of the CIDB Standard for Uniformity in Construction Procurement:

F.2.1	Only those tenderers who *can demonstrate that they will* have in their employ management and supervisory staff satisfying the requirements of the scope of work for labour-intensive competencies for supervisory and management staff *during the validity of the contract* are eligible to submit tenders.
F.2.18	The tenderer must submit to the Employer, names of all management and supervisory staff that will be employed to supervise the labour-intensive portion of the works together with satisfactory evidence that such staff members satisfy the eligibility requirements.

5.3.2 Contract Data

The following must be included in the contract data in the contract with the Employer:

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 Contractor in any way from his obligations either in contract or in delict.

Linkage of payment for labour-intensive component of works to submission of project data

The Contractor's payment invoices shall be accompanied by labour information for the corresponding period in a format specified by the employer. If the contractor chooses to delay submitting payment invoices, labour returns shall still be submitted as per frequency and timeframe stipulated by the Employer. The contractor's invoices shall not be paid until all pending labour information has been submitted.

Applicable labour laws

The current Ministerial Determination (also downloadable at www.epwp.gov.za), Expanded Public Works Programmes, issued in terms of the Basic Conditions of Employment Act of 1997 by the Minister of Labour in Government Notice , shall apply to works described in the scope of work as being labour-intensive and which are undertaken by unskilled or semi-skilled workers.

5.3.3 Scope of work

Applicable Standard specifications are to be utilised. It is necessary, however, to include certain requirements (special specifications) in the scope of works to implement labour-intensive works in accordance with the provisions of these Guidelines.

The following wording, as appropriate, must be included in the scope of work in the contract with the contractor.

DESCRIPTION OF THE WORKS

1. Employer's objectives

The employer's objectives are to deliver public infrastructure using labour-intensive methods in accordance with EPWP Guidelines.

2. Labour-intensive works

Labour-intensive works shall be constructed/maintained using local workers who are temporarily employed in terms of the scope of work.

3. Labour-intensive competencies of supervisory and management staff

Contractors shall only engage supervisory and management staff in labour-intensive works that have completed the skills programme including Foremen/ Supervisors at NQF level 4 "National Certificate: Supervision of Civil Engineering Construction Processes" and Site Agent/ Manager at NQF level 5 "Manage Labour-Intensive Construction Processes" or equivalent QCTO qualifications (See Appendix C) at NQF outlined in Table 1.

5.4 Labour Issues

In the following sections are some of the considerations that are elaborated in the Code of Good Practice for Expanded Public Works Programme:

5.4.1 Requirements for the sourcing and engagement of labour

Unskilled and semi-skilled labour required for the execution of all labour-intensive works shall be engaged strictly in accordance with prevailing legislation, in accordance with the Code of Good Practice for the Expanded Public Works Programme and the EPWP Standard Recruitment Directives.

5.4.2 Training of targeted labour

1. The contractor shall provide all the necessary on-the-job training to targeted labour to enable such labour to master the basic work techniques required to undertake the work in accordance with the requirements of the contract in a manner that does not compromise worker health and safety.
2. Accredited training should ideally be provided before commencement or during implementation of a project.
3. The cost of accredited training of targeted labour will be funded through various funding sources such as National Skills Fund from the Department of Higher Education and Training, funds from the Implementing Public body, funding from SETAS etc. This training should take place as close to the project site as practically possible. The Public Body implementing the project must ensure that training applications for participants are made by its relevant project manager assisted by relevant training officials from the National Department of Public Works.
4. The Public Body must ensure that preference of the training of participants in technical skills over life skills is made. In addition, the Public Body is required to maximize opportunities for training of participants carried out before the implementation of projects.
5. The Public Body must ensure that workers who have received training will be placed on the project to work after receiving the training.
6. If a provisional sum for training is made in the contract the contractor shall pay an allowance equal to 100% of the daily wage rate to workers who attend accredited training.

5.5 Generic Labour-Intensive Specification

The Generic Labour-intensive specification below (informed by SANS 1921-5, Construction and management requirements for works contracts - Part 5: Earthworks) covers activities which are to be performed by hand, and should be included in the scope of works without amendment or modification as set out below.

This specification establishes general requirements for activities which are to be executed by hand involving the following:

- ☐ trenches having a depth of less than 1.5 metres
- ☐ stormwater drainage
- ☐ roads
- ☐ sidewalks and non-motorised transport infrastructure
- ☐ water and sanitation

Precedence

Where this specification is in conflict with any other standard or specification referred to in the Scope of Works to this Contract, the requirements of this specification shall prevail.

Hand excavateable material

Hand excavateable material is:

a) granular materials:

i) whose consistency when profiled may in terms of table 2 be classified as very loose, loose, medium dense, or dense; or

ii) where the material is a gravel having a maximum particle size of 10mm and contains no cobbles or isolated boulders, no more than 15 blows of a dynamic cone penetrometer is required to penetrate 100mm;

b) cohesive materials:

i) whose consistency when profiled may in terms of table 2 be classified as very soft, soft, firm, stiff and stiff / very stiff; or

ii) where the material is a gravel having a maximum particle size of 10mm and contains no cobbles or isolated boulders, no more than 8 blows of a dynamic cone penetrometer is required to penetrate 100mm;

Note

1) A boulder is material with a particle size greater than 200mm, a cobble and gravel is material between 60 and 200mm.

2) A dynamic cone penetrometer is an instrument used to measure the in-situ shear resistance of a soil comprising a drop weight of approximately 10 kg which falls through a height of 400mm and drives a cone having a maximum diameter of 20mm (cone angle of 60° with respect to the horizontal) into the material being used.

Table 2: Consistency of materials when profiled			
GRANULAR MATERIALS		**COHESIVE MATERIALS**	
CONSISTENCY	**DESCRIPTION**	**CONSISTENCY**	**DESCRIPTION**
Very loose	Crumbles very easily when scraped with a geological pick.	Very soft	Geological pick head can easily be pushed in as far as the shaft of the handle.
Loose	Small resistance to penetration by sharp end of a geological pick.	Soft	Easily dented by thumb; sharp end of a geological pick can be pushed in 30-40 mm; can be moulded by fingers with some pressure.
Medium dense	Considerable resistance to penetration by sharp end of a geological pick.	Firm	Indented by thumb with effort; sharp end of geological pick can be pushed in up to 10 mm; very difficult to mould with fingers; can just be penetrated with an ordinary hand spade.
Dense	Very high resistance to penetration by the sharp end of a geological pick; requires many blows for excavation.	Stiff	Can be indented by thumb-nail; slight indentation produced by pushing geological pick point into soil; cannot be moulded by fingers.
Very dense	High resistance to repeated blows of a geological pick.	Very stiff	Indented by thumb-nail with difficulty; slight indentation produced by blow of a geological pick point.

Trench excavation

All hand excavateable material in trenches having a depth of less than 1,5 metres shall be excavated by hand.

Compaction of backfilling to trenches (areas not subject to traffic)

Backfilling to trenches shall be placed in layers of thickness (before compaction) not exceeding 100mm. Each layer shall be compacted using hand stampers;

a) to 90% Mod AASHTO;

b) such that in excess of 5 blows of a dynamic come penetrometer (DCP) is required to penetrate 100 mm of the backfill, provided that backfill does not comprise more than 10% gravel of size less than 10mm and contains no isolated boulders, or

c) such that the density of the compacted trench backfill is not less than that of the surrounding undisturbed soil when tested comparatively with a DCP.

Excavation

All excavateable material including topsoil classified as hand excavateable shall be excavated by hand. Harder material may be loosened by mechanical means prior to excavation by hand. Any material which presents the possibility of danger or injury to workers shall not be excavated by hand.

Clearing and grubbing

Grass and bushes shall be cleared by hand.

Shaping

All shaping shall be undertaken by hand.

Loading

All loading shall be done by hand. Haulage equipment should be selected in a manner that allows loading by hand to the greatest extent possible.

Haul

Excavation material shall be hauled to its point of placement by means of wheelbarrows where the haul distance is not greater than 150m.

Offloading

All material, however transported, is to be off-loaded by hand, unless tipper-trucks are utilised for haulage.

Spreading

All material shall be spread by hand.

Compaction

Small areas may be compacted by hand provided that the specified compaction is achieved. Appropriate rollers should be used where higher (than can be achieved by hand) levels of compaction are required or for large areas.

Grassing

All grassing shall be undertaking by sprigging, sodding, or seeding by hand.

Stone pitching and rubble concrete masonry

All stone required for stone pitching and rubble concrete masonry, whether grouted or dry, must to be collected, loaded, off loaded and placed by hand.

Sand and stone shall be hauled to its point of placement by means of wheelbarrows where the haul distance is not greater than 150m.

Grout shall be mixed and placed by hand.

Manufactured Elements

Elements manufactured or supplied by the Contractor, such as manhole rings and cover slabs, precast concrete planks and pipes, masonry units and edge beams shall not individually, have a mass of more than 320kg. Where the mass of an element exceeds 55 kg, consideration should be given to the size of the element relative to its total mass related to the number of workers who would be needed to lift such mass

5.6 Bill of Quantities

Labour-intensive works must be highlighted in the bills of quantities for the payment items relating to labour-intensive works. The following wording, as appropriate, should be included in the pricing Instructions and in the bills of quantities in the pricing data:

1. Those parts of the works to be constructed using labour-intensive methods should be marked in the bill of quantities with the letters LI either in a separate column or as a prefix or suffix against every item so designated (as illustrated in the table below). 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 work, is a deviation from the contract. The items marked with the letters LI are not necessarily an exhaustive list of all the activities which must be done by hand, and this clause does not over-ride any of the requirements in the generic labour-intensive specification in the Scope of Works.
2. Where minimum labour intensity is specified by the design the contractor is expected to use their initiative to identify additional activities that can be done labour-intensively in order to comply with the set minimum labour intensity target.
3. 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.

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
33.07LI	Removal of unsuitable material (including free-haul to 0.5km)	m^3			

6 PLANNING AND IMPLEMENTATION CHECKLIST

6.1 Design of Labour Intensive Works

Cognisance of the following should be taken in the design of labour-intensive works:

1. Project identification – Is the location of the project suitable for labour-intensive construction/maintenance methodology.
2. Earthworks must be designed taking consideration of the labour-intensive construction/maintenance methodology.
3. Vertical and horizontal alignment of the works (roads, trenches, pipelines and stormwater channels) should be such to optimise cut and fill, minimise deep or hard excavation or areas requiring specialist engineering input for example dewatering or specialist ground stabilisation.
4. During the design of gravel roads, suitable construction material should be sourced in close proximity to the site of the Works.
5. Drawings must be produced and presented in a clear easily understandable way. Where setting out information is provided in the form of coordinates it should be backed up with methods, not relying on sophisticated surveying instruments, such as offsets measurable with the use of a standard tape. Where possible, appropriate drawings should be produced using a background of ortho photos to provide for easy identification of surrounding features.
6. Is there sufficient resources within close proximity of the project – labour and material (within 150m to 5000m from project)?
7. Where the haul distance is greater than 150m, and less than 5000m the use of small volume local transport, should be considered.
8. Excavation in material which may constitute a safety hazard for workers should not be done using labour.
9. Is there any preliminary work required prior to labour-intensive construction/maintenance methods being implemented?
10. Is the design related and supportive of labour-intensive construction/maintenance methodology – such as appropriate information to facilitate manual setting out of the works or setting out information not reliant on sophisticated survey equipment.
11. All pre-manufactured materials which are incorporated into the Works must be sized such that the mass of individual elements does not exceed 320kg. Men should not lift individual loads exceeding 55kg and for women the limit is 35kg.
12. Are the materials required checked so that labour can easily work with them without unnecessary strain.
13. Stone masonry and grouted stone pitching should be included wherever suitable material is available and structurally suitable, to the exclusion of pre-cast or cast in situ concrete stormwater structures.
14. Where compaction of road layer works is required, it must be carried out using conventional compaction equipment (pedestrian rollers where possible). Compaction of small areas and in trenches may be carried out using hand stampers.
15. Consideration must be given to alternate design of gravity pipework to reduce depth of excavation.
16. Where there is an indication of local skills, e.g. bricklaying, structures should be designed to make use of such skills.
17. There are appropriate designs for labour-intensive construction/maintenance of low-cost surfacing for roads. Refer to Appendix A for further details.

18. Are the items of work on projects checked for labour-intensive construction and maintenance suitability?
19. Are there any statutory obligations required such as Environment Management Plans (EMP)?
20. Are the site safety conditions not compromised by suggested labour-intensive construction and maintenance methods and are the safety statutory requirements adequate for the number of labour employed?
21. Has the Contractor timely provided the workers with sufficient and good quality handtools?
22. Have procedures been streamlined to ensure prompt payments to the contractor, and workers respectively?
23. Are the supervisory staff suitably qualified?
24. Green Jobs - Principles of Green Jobs should be integrated in the design and implementation of various types of infrastructure. This includes materials and physical assets.
25. Is it possible to integrate elements of sustainable livelihoods.

6.2 Task Work and Inclement Weather

If work is stopped due to inclement weather the following is recommended for the EPWP task rated workers;

1. If work is stopped and workers are released they shall be paid as if the day's task was completed.

2. If work is stopped temporarily and the site agent deems it possible to still complete the task on the same day the workers shall complete their task.

3. If the workers are informed not to come to work the following and/or subsequent days they shall not be paid for the days not worked.

7 REPORTING

All EPWP projects have to be registered and progress reports submitted according to agreed formats and timeframes. Appendix H provides forms that are recommended for use by public bodies, consultants and contractors implementing the EPWP.

8 APPENDIX A: SOURCES OF ADDITIONAL INFORMATION

The following sources provide comprehensive information in respect of the following topics:

TOPIC	REFERENCE	OBTAINABLE FROM
Alternative building technologies referred by Agrement SA	Agrement South Africa's Guideline 1, The Manufacture of BESA Blocks. Agrement Open Certificate OC-1/2003. Agrement Open Certificate OC-2/2003. CIDB. Best Practice Guidelines for Labour-based. Methods and Technologies for Employment Intensive Construction Works. Part 3: Section 2- The BESA Building System.	Agrement South Africa www.agrement@csir.co.za Construction Industry Development Board www.cidb.org.za under the section "job creation"
Brick and block making	CIDB. Best Practice Guidelines for Labour-based Methods and Technologies for Employment Intensive. Construction Works. Part 3: Section 1- Precast Concrete Products, Brick and Block Making.	Construction Industry Development Board www.cidb.org.za under the section "job creation"
Bituminous Surfacings	Methods and Procedures for Labour Enhanced Construction for Bituminous surfacings Manual 12, 2011. SABITA. Methods and Procedures Labour Enhanced Construction for Bituminous surfacings Manual 11`, March 1993. SABITA.Construction of Low Volume Sealed Roads; Good Practice Guide to Labour Based Methods, ILO A. Asare et. al. 2013.	Southern African Bitumen and Tar Association. www.epwp.gov.za
Conditions of Employment	Code of Code of Good Practice for Employment and Conditions of Work for EPWP. Ministerial Determination.	EPWP Branch of the Department of Public Works www.epwp.gov.za
Concrete Block Paved Roads	Publications by Cement and Concrete Institute. Development .Series, Number 8. Development Bank of Southern. Africa. September, 1993.	Development Bank of Southern Africa.
Concrete roads	Low-volume concrete roads by Bryan Perrie.	Cement and Concrete Institute www.cnci.org.za
Earthworks	CIDB. Best Practice Guidelines for Labour-based Methods and Technologies for Employment Intensive Construction Works. (Download from www.cidb.org.za). • Part 2: Labour-based construction methods for earth works. • Appendix 1: Quantitative Employment Data on Selected Construction Activities.	Construction Industry Development Board www.cidb.org.za under the section "job creation"

TOPIC	REFERENCE	OBTAINABLE FROM
Labour-intensive projects and programmes	McCutcheon, RT (ed) (1993). Interim Guidelines for employment-intensive construction projects. Construction and Development Series Number 2. Midrand: Development Bank of Southern Africa, February 1993. McCutcheon, RT and Marshall J (1996). Labour-intensive Construction and Maintenance of Rural Roads : Guidelines for the Training of Road. Builders, Construction and Development Series, Number 14 (Midrand: DBSA, November 1996). McCutcheon, RT and Taylor Parkins, FLM (ed). Employment and high -standard infrastructure. Work Research Centre for Employment Creation in Construction (2003).	Development Bank of Southern Africa School of Civil Engineering, University of the Witwatersrand.
Labour productivities	CIDB. Best Practice Guidelines for Labour-based Methods and Technologies for Employment Intensive Construction Works. • Appendix 1: Quantitative Employment Data on Selected Construction Activities. Technical Briefs on Task System, ILO.	Construction Industry Development Board (CIDB) website: www.cidb.org.za under the section “job creation” www.epwp.gov.za
Minimum wages	• Wage determination for the Civil Engineering Sector. • Ministerial Determination for EPWP.	www.safcec.org.za under the section “human resources” EPWP Unit of the Department of Public Works
Monitoring the employment of workers / compliance with the provisions of SANS 1914-5	SANS 10396, Implementing Preferential Procurement Policies Using Targeted Procurement Procedures. • Annex G: Implementing employment intensive infrastructure projects which target the increase of employment opportunities generated per unit of expenditure. • Annex J: Third party management support.	Standards South Africa (division of the South African Bureau of Standards)
Pre-cast concrete works	CIDB Best Practice Guidelines for Labour-based Methods and Technologies for Employment Intensive. Construction Works. • Part 3: Section 1- Pre-cast Concrete Products, Brick and Block Making.	Construction Industry Development Board www.cidb.org.za under the section “job creation”
Preparing procurement documents	CIDB Best Practice Guidelines for Procurement C1: Preparing Procurement Documents SANS 10403, Formatting and Compilation of Construction Procurement Documents.	Construction Industry Development Board www.cidb.org.za under the section “job creation” Standards South Africa (division of the South African Bureau of Standards)
Costing Labour Based Road Works	Guidelines for Costing Labour Based Road Works. ILO. A. O. Asare, 2015.	EPWP website: www.epwp.gov.za

TOPIC	REFERENCE	OBTAINABLE FROM
Roads	CIDB Best Practice Guidelines for Labour-based. Methods and Technologies for Employment Intensive Construction Works. • Part 2: Labour-based construction methods for earthworks. • Part 4: Section 4 - Foam bitumen gravel. • Part 4: Section 5 - Cast in-situ block pavements (hyson cells). • Part 4: Section 6 - Emulsion treated gravel. • Part 4: Section 7 - Waterbound macadam. • Part 4: Section 8 - Slurry bound and composite macadams • Part 4: Section 9 - Labour-based methods for unsealed roads. • Appendix 1: Quantitative Employment Data on Selected Construction Activities. • Construction of Low Volume Sealed Roads – Good Practice Guide to Labour-Based Methods, ILO A. Asare et. al. 2013.	Construction Industry Development Board (CIDB) website: www.cidb.org.za under the section “job creation” EPWP Website: www.epwp.gov.za
Rubble concrete masonry	CIDB Best Practice Guidelines for Labour-based. Methods and Technologies for Employment Intensive Construction Works. • Part 4: Section 2 – Rubble masonry dam construction technology. • Part 4: Section 3 – Rubble masonry concrete arch bridge construction technology.	Construction Industry Development Board www.cidb.org.za under the section “job creation”
Stormwater drainage	CIDB Best Practice Guidelines for Labour-based Methods and Technologies for Employment Intensive Construction Works. • Part 4: Section 1 – Labour-based Open Channel Flow Technology.	Construction Industry Development Board www.cidb.org.za under the section “job creation”
Technical Briefs	Principles for Project Cost Estimating, ILO. EPWP Infrastructure Project Cycle Management, ILO. Roles of Stakeholders During the Various Stages of the EPWP Project Cycle, ILO. EPWP Site Recording for Labour Intensive Projects, ILO.	www.epwp.gov.za

TOPIC	REFERENCE	OBTAINABLE FROM
Trenches	CIDB Best Practice Guidelines for Labour-based Methods and Technologies for Employment Intensive Construction Works. (Download from www.cidb.org.za) • Part 2: Labour-based construction methods for earthworks. • Appendix 1: Quantitative Employment Data on Selected Construction Activities.	Construction Industry Development Board www.cidb.org.za under the section "job creation"
Water Provision, Sanitation, Solid Waste, and Buildings	Labour-Intensive Construction Guidelines for Water Provision, Sanitation, Solid Waste, and Buildings. ILO. D. Tshabalala et al., 2012.	EPWP Website: www.epwp.gov.za

9 APPENDIX B: TYPES OF INFRASTRUCTURE WHICH ARE SUITABLE FOR CONSTRUCTION/MAINTENANCE USING LABOUR-INTENSIVE METHODS

B.1 Roads

The following operations may be carried out using labour-intensive methods:

1. Site clearance.

2. Layer work construction/maintenance including loading, hauling and spreading material.

   Note: All compaction should be done using conventional compaction equipment and where necessary the use of heavy machinery may be employed to loosen material for excavation by hand. Where significant use of blasting is indicated, then the Works are probably not suitable for labour-intensive methods.

3. Labour-intensive methods may be used when carrying out the following operations:

   - ☐ Macadam base course either dry, water bound or emulsion bound; foamed bitumen gravel; emulsion treated gravel; or slurry bound or composite macadams.
   - ☐ Application of bitumen bound surface treatment (cold) including spreading and dragging of chips.
   - ☐ Slurry treatments to existing or new road surfaces.
   - ☐ In situ concrete roads.
   - ☐ Segmented block paved roads.
   - ☐ Cast in-situ concrete pavements (including Ultra-Thin Reinforced Concrete)
   - ☐ Hyson-cells;
   - ☐ Road markings.

4. Fencing.

5. Erection of road signs.

6. Grass maintenance.

7. Road reserve maintenance.

8. Rubble masonry bridges, culverts and retaining walls.

B.2 Stormwater

The following operations may be constructed and maintained using labour-intensive construction/maintenance methods:

1. Gabions and Reno mattresses.

2. Small diameter pre-cast concrete elements (pipes and arches).

3. Grassed or lined water channels.

B.3 Sewers

The following operations may be constructed or maintained using labour-intensive construction/maintenance methods:

1. Sewer manholes either in brickwork or using specially manufactured pre-cast manhole rings (individual mass less than 320kg).

2. Sewer manhole covers and lids using specially designed pre-cast units.

3. Shallow maturation or facultative pond of a maximum depth of 2m.

4. Sewer pipe work, particularly small bore/ solids free sewers designed and specified to reduce trench depth.

B.4 Water

The following operations may be constructed or maintained using labour-intensive construction/ maintenance methods:

1. Laying of water pipelines, fittings and house connections in all materials (including steel) where the mass of individual pipe lengths does not exceed 320kg.

2. Construction of Ferro-cement reservoirs.

3. Excavation for membrane lined and floating roof reservoirs.

4. Construction of small masonry reservoirs.

5. Spring and well protection measures.

6. Construction of valve and hydrant boxes.

B.5 Haul of Material

Where the haul of any material does not exceed 150m, consideration should be given to the use of local resources for transporting material. This includes the use of animal drawn vehicles and small trailer combinations utilising locally sourced tractors. All loading and offloading can be done by hand.

B.6 Electricity

The following operations may be constructed using labour-intensive methods:

1. Excavation of trenches for reticulation of all voltages.

2. Excavation for and erection of poles for overhead lines.

3. Installation of all electricity cables (joints and terminations by qualified persons).

B.7 Houses, schools and clinics

Housing is seen as labour-intensive, but the number of local people that could be employed may be enhanced by one or more of the following:

1. Manufacture of masonry elements on site.

2. Excavation of all foundation trenches by hand.

3. Manufacture of roof trusses on site.

4. Alternative building technologies referred by Agrément SA.

B.8 Green Jobs

Principles of Green Jobs should be integrated in the design and implementation of various types of infrastructure mentioned in Sections B.1 to B.7. This includes materials and physical assets.

10 APPENDIX C: REQUIRED SKILLS PROGRAMMMES

C.1 Client/ Employer

It is recommended that personnel within public bodies complete skills programmes for NQF registered unit standards or equivalent QCTO qualifications, as set out in Table C.1.

Table C.1: Skills programme for client / employer staff

Personnel	NQF	Unit Standard Title	Skills Programme Description
Senior management and professionals	7	Develop and Promote Labour-Intensive Construction Strategies or equivalent QCTO qualification	Skills Programme against this single unit standard or part qualification
Middle (technical)	5	Manage Labour-Intensive Construction Projects or equivalent QCTO qualification	Skills Programme against this single unit standard or part qualification

C.2 Consultants

The person responsible for the design and documentation of the labour-intensive works, must have completed the NQF level 7 unit standard "Develop and Promote Labour-Intensive Construction Strategies" or equivalent QCTO qualification. (See Table C.2).

The Employer's Representative must have completed the NQF level 5 unit standard "Manage Labour-Intensive Construction Projects" or equivalent QCTO qualification. (See Table C.2).

Table C.2: Skills programme for consultants

Personnel	NQF	Unit standard Title	Skills Programme Description
Employer's Representative / Site Supervisor	5	Manage Labour-Intensive Construction Projects or equivalent QCTO qualification	Supervisor Skills Programme against this single unit standard or part qualification
Designer	7	Develop and Promote Labour-Intensive Construction Strategies or equivalent QCTO qualification	Skills Programme against this single unit standard or part qualification

C.3 Contractors

The unit standards for contractors or equivalent QCTO qualification are outlined in Table C.3.

Personnel	**NQF**	**Unit standard Titles**	**Skills Programme Description**
Foreman / Supervisor	4	Implement Labour-Intensive Construction Systems and Techniques or equivalent QCTO qualification	This unit standard or qualification must be completed, **and**
		Use Labour-Intensive Construction Methods to Construct and Maintain Roads and Stormwater Drainage or equivalent QCTO qualification	any one of the 3 unit standards or part qualifications must be completed
		Use Labour-Intensive Construction Methods to Construct and Maintain Water and Sanitation Services or equivalent QCTO qualification	
		Use Labour-Intensive Construction Methods to Construct, Repair and Maintain Structures or equivalent QCTO qualification	
Site Agent / Manager	5	Manage Labour-Intensive Construction Processes or equivalent QCTO qualification	Skills Programme against this single unit standard or part qualification

11 APPENDIX D: PROGRAMMES, INDICATORS AND MINIMUM LABOUR INTENSITY TARGETS

D.1: EPWP INFRASTRUCTURE PROGRAMMES AND SUB-PROGRAMMES FOR PHASE 3

	Programmes	**Sub-programmes**
1.	National Youth Service (NYS)	National Youth Service - National National Youth Service - Provincial
2.	Large Projects	Roads and storm water Construction Roads and storm water Maintenance Buildings Construction Buildings Maintenance Water reticulation construction Water reticulation maintenance Bulk water supply Sewer reticulation Electrification Sanitation Other (Must be described)
3.	Municipal Infrastructure	Roads and storm water Construction Roads and storm water Maintenance Buildings Construction Buildings Maintenance Water reticulation construction Water reticulation maintenance Bulk water supply Sewer reticulation Electrification Sanitation Other (Must be described)
4.	Vuk'uphile programme	Roads and storm water Construction Roads and storm water Maintenance Buildings Construction Buildings Maintenance Water reticulation construction Water reticulation maintenance Bulk water supply Sewer reticulation Electrification Sanitation Other (Must be described)

	Programmes	**Sub-programmes**
5.	Provincial Roads	High volume roads construction High volume roads maintenance Low volume roads construction Low volume roads maintenance Zibambele road maintenance Iterele road maintenance Siyatentela road maintenance Household contractor road maintenance
6	Provincial Infrastructure –Non Roads	Building construction Building Maintenance Dam construction
7.	National / State Owned Enterprises	Building construction Building maintenance Dam construction Bulk water supply Sanitation Energy generation Energy transmission Other (must be described)

D.2: INDICATORS AND RECOMMENDED LABOUR INTENSITY FOR INFRASTRUCTURE PROJECTS

A minimum labour-intensity threshold appropriate to each sector has been set. Furthermore, programmes within each sector have their own minimum labour intensity thresholds according to categories and sub-categories. It cannot be over-emphasised that the minimum labour intensity is not the default target that should be achieved, but the lowest threshold, above which the target must be set. There is no maximum labour intensity defined as this will be dictated by the type and nature of the project. However, in any case labour intensity cannot exceed 100%. Table D1 provides the minimum Labour intensity indicators for all Infrastructure Sector categories.

Table D1: Indicators and Recommended Labour Intensity for Infrastructure Projects

Category	Sub-Category	Indicators	Recommended Minimum Range of LI
Buildings	Construction	No., m^2	10-30%
	Maintenance	No., m^2	20-70%
	Landscaping	m^2	40-70%
Roads and Stormwater – High Volume	Construction/ Upgrading/ Rehabilitation	Km., lane-km	10-30%
	Maintenance – Routine	Km., lane-km, m^2	40-90%
	Maintenance – Periodic	Km., lane-km, m^2	15-40%
	Fencing	Km., m	20-50%
Roads and Stormwater – Low Volume	Construction/ Upgrading/ Rehabilitation (Gravel/ Sealed)	Km., lane-km	15-35%
	Maintenance – Routine	Km., lane-km, m^2	70-90%
	Maintenance – Periodic	Km., lane-km, m^2	20-50%
	Non-Motorized Transport/ Sidewalks (Exclusive of Rehabilitation of Structures)	Km., m^2	15-40%

Stormwater	Construction	Km.	15-30%
	Maintenance	Km.	40-90%
Water Reticulation	Construction	Km.	10-35%
Bulk Water Supply	Construction	Km.	10-25%
Sewer Reticulation	Construction	Km.	10-35%
Sanitation	Construction	No.,	10-30%
Water and Sewer Reticulation Maintenance *	Maintenance	Km., No.	15-40%
Solid Waste Management	Land Fill Sites	m^3, m^2, No.	10-25%
Electricity	Reticulation	Km., No. of Households/ Units	20-40%
	Generation	**	**
Railway	Lines Refurbishment	Km.	10-30%

* Minimum labour intensity for water and sewer reticulation Maintenance requiring heavy plant/equipment should be treated on a case by case basis.

** For energy generation the indicators and minimum labour intensity will be determined on a case by case basis as there are many options for energy generation.

D.3: OTHER INDICATORS FOR INFRASTRUCTURE SECTOR SERVICES AND ASSETS

National Youth Service and Building Maintenance Programme

SERVICE	INDICATORS
Employment	No. of Work opportunities
Class room Training	No. of certificates issued
Work placement	No. of youth placed
Exits	No. of workshops held, youths exit

Vuk'uphile Contractor Development Programme

ASSET	INDICATORS
Employment	No. of Work opportunities
Learnership	No. of people trained
Work placement	No. of contractor entities developed
Exits	No. of learners exited

State Owned Enterprises

ASSET	INDICATORS
Water pump stations	No. of pump stations
Dams	No. of dams
Power stations and substations	No. of Power stations/substations
Railway station maintenance	No. of stations

12 APPENDIX E: CONSULTANT'S COMPLIANCE DECLARATION

Public bodies shall use the form (E1) as a guideline for agreements with consultants responsible for designing; and (E2) for project managers supervising implementation of labour-intensive projects.

E.1: EPWP Project Design Compliance Declaration

(to be inserted in Consultancy Agreement and filled-in by Consultant[1])

Name of Implementing Agency: ……					FY……
Project Name:	……		Project/Contract No.:		……
Consulting Firm:	……		Project Manager:		……
Stage/ Element/ Process	**Procedure and/or Activity**	**Compliance requirement**	**Reference: EPWP Guidelines, DORA Frameworks & Business Process**		**Compliant? Yes/No**
			EPWP Clause	**Page**	
Qualification and Experience of Service Providers	Consultant Qualified in terms of EPWP Guidelines	Relevant NQF Qualification and Experience for Designers and Supervisors of LI Projects	Appendix C. Table C.2		
Design	Design compliance to EPWP	Design amenable to use of Labour-Intensive Methods			
	Labour intensity (LI)	Minimum L.I. Set & included in Tender document	Appendix D Table D1		
	Optimization of employment Creation	- Use of materials with high LI - Identification of L.I. work items in Bills of Quantities - Labour-Intensive Work Methods - Appropriate Tools and Equipment - Applicable task rates based on site conditions - Convergence with other Programmes and Sectors - Green Jobs - Sustainable Livelihoods			
Standard EPWP-complaint Tender & Contract Document	Standard EPWP-Compliant Procurement Doc. adapted to specific project	Rate of pay set by Implementing Agency in Tender Document	2.2		
		Tender Eligibility	3.3.1		

		Contract Data	3.3.2		
		Scope of Works	3.3.3		
		Demographic requirements			
		Code of Good Practice for EPWP; Applicable labour laws, health & safety and environmental requirements	3.3.2		
		Pricing Instructions on L.I.	3.3.4		
		SANS 1914-5 Recruitment of Local Labour			
		Generic L.I. Specification			

Declaration:

I, ……(*Name of Designer*) hereby certify that the above-mentioned project has been appropriately designed; procurement documents and reporting templates prepared in accordance with the "*Code of Good Practice for EPWP"* and the latest edition of "*EPWP Guidelines for Implementation of Infrastructure projects*", in order to optimise employment creation to achieve the stipulated minimum project Labour Intensity (LI).

Signature: ……. Date: ……..

E.2.: EPWP Project Supervision Compliance Declaration

(to be inserted in Consultancy Agreement and filled-in by Consultant/Project Manager)

Name of Public Implementing Body:

…… FY……

Project Name:	……		Project/Contract No.:	……	
Consulting Firm:	……		Project Manager:	……	
Stage/ Element/ Process	**Procedure and/or Activity**	**Compliance requirement**	**Reference: EPWP Guidelines, DORA Frameworks & Business Process**		**Compliant? Yes/No**
			EPWP Clause	**Page**	
Project Management	Supervision, Monitoring & Evaluation	Records per EPWP Reporting System	3.2		
		Registration of Project on Reporting System			
		Compliance on:			
		- Code of Good Practice for EPWP			
		- L.I items			
		- Quality standards achieved			
		- Convergence with other programmes and sectors incorporated			
		- Green Jobs Principles incorporated			
		- Sustainable Livelihood Principles incorporated			
		Certification of Works: Payment Certificates include EPWP Report	6 – Consultant Scope of works		

Declaration:

I, ……(*Name of Supervising Consultant/ Project Manager*) do certify that the project has been supervised in compliance with all EPWP requirements in accordance with the "*Code of Good Practice for EPWP"* and the latest edition of "*EPWP Guidelines for Implementation of Infrastructure projects*", have optimised employment creation and achieved the stipulated minimum project Labour Intensity (LI).

Signature: ……Date……...

13 APPENDIX F.1: IMPLEMENTING PUBLIC BODY MONITORING COMPLIANCE TEMPLATE

EPWP Compliance Checklist to be filled in by Public Implementing Body (I.B.)

Name of Public Implementing Body: ……
FY:……

Institutional /Business Process	Procedure and/or Activity	Compliance requirement	Reference: EPWP Guidelines, DORA Frameworks & Business Process		Compliant? Yes/No
			EPWP Clause	Page	
IDP/ Strategic Planning	Project Selection/ Prioritization	Policy Statement on Construction Method for applicable IDP Projects	2.1		
Institutional Capacity	Institutional Structure	Political & Administrative Structure in Place	EPWP Policy Guideline		
		EPWP Champion Appointed			
		EPWP made part of Key Performance Areas(KPAs) of Senior Management			
	Qualification of Staff	I.A. Staff meet qualification requirements	Annex C. Table C.1		
Supply Chain Management & Business Process/ Procedures	Qualification of Service Providers	Service Providers database : Qualification Requirements for Consultants	Annex C. Table C.2		
		EPWP-Compliant Standard documents for Appointment of Consultants	3.2; Annex C, Table C.2		
		EPWP Reporting requirements for Consultants & Contractors	3.2		
		Service Providers database : Qualification Requirements for Contractors	Annex C, Table C.3		
		Streamlined Payment Procedures			
	Standard Procurement Documents	EPWP-Compliant Standard Procurement Documents used incorporating Universal Principles, Convergence, Sustainable Livelihoods and Green Jobs.	3.3		
		EPWP Project Document- Branding	EPWP Corporate Identity Manual		
	Prioritization of EPWP Projects	Project Budget from Conditional Grants sufficient to meet EPWP Projects	DORA Conditional Grant Frameworks		
	Project List/Annual Business Plan	Employment targets estimated per project	Business Plan Annex 1.		
	Annual Procurement Plan	Aligned to EPWP Conditional Grant Framework Timelines	DORA Conditional Grant Frameworks		
Project management	Business Plan	Monitoring Plan/Templates in place	Business Plan		
		Procedure for Registration of Projects on IRS	IRS Procedure		
		Project Bill Boards have EPWP Branding			
	Payments	Timely payments for work done			
		Payment Certificates include EPWP Report	Project Compliance Checklist		

*EPWP Guidelines

Name……..Title……..Signature……Date……

Appendix F.2: EPWP Business Plan Template

PROJECT LIST FOR:										
Sector	**Focus Area**	**Project Name**	**Project Number**	**Date of approval of project**	**Project Budget in 201../1..**	**Funding from EPWP Grant**	**Number of WOs**	**Number of FTEs**	**Start date**	**End date**
Official's Name:			**Designation:**			**Signature:**			**Date:**	

Appendix F.3: EPWP Business Process Monitoring Template

Implementing Agency:…… FY…… Quarter…… Month…… Date……

S/N	Project name	Budget (Rand) X 1000	Budget Breakdown by Source of Funding (Rand) x 1000			Est. Employment Target				Project Status (Tick)			Labour Requirements Met? (Y/N)				Plan of Action	
			MIG	Integrated Grant	Other	Estimated		Actual to-date					UIF	COIDA	OHS	EPWP Min. Wage	Challenges	Mitigation
						WO	FTE	WO	FTE	Planning	Procurement	Implementation						

14 APPENDIX G: TASK RATES

Appendix G 1 shows typical and indicative task rates ranges for various types of infrastructure activities. Appendix G 2 shows references to detailed information on task rates.

G.1.: TYPICAL AND INDICATIVE TASK RATES

	ACTIVITY	UNIT	TASK RATE RANGE	REMARKS
Road/Building/water and Sanitation works	Bush clearing	m^2	200 - 350	
	Clearing & Grubbing	m^2	100 - 150	
	Stump removal	No.	Day work	Depends on size
	Boulder removal	No.	Day work	Depends on size
	Excavation			
	Soft/loose soil	m^3	2.0 - 4.0	
	Medium	m^3	2.0 - 3.0	
	Stiff/Hard	m^3	1.0 - 2.0	
	Very hard	m^3	0.8 - 1.0	
	Gravel excavation	m^3	1.0 - 3.0	
	Compaction (pedestrian-ride on roller)	m^2	700 - 1000	
	Camber Formation	m^2	60 - 80	
	Loading	m^3	5 – 8	
	Unloading	m^3	8 - 10	
	Spreading /soil	m^3	12 – 15	
	Spreading/Gravel	m^3	8 – 12	
	Wet stone masonry	m^3	0.5 - 1.0	
	Stone pitching	m^2	6 - 10	
	Dry stone masonry	m^3	1.0 - 2.0	
	Gabion (including assembling & placing rocks)	m^3	1.8 - 2.0	
	Concrete/mix & place	m^3	0.5 - 1.0	
	Wheelbarrow haulage (haul distance)			
	0 - 20m	m^3	7.0 - 8.5	
	20 – 40m	"	6.5 - 7.5	
	40 – 60m	"	5.5 - 6.5	
	60 – 80m	"	5.0 - 5.5	
	80 – 100m	"	4.0 - 5.0	

Road works	Install precast concrete culverts (excavation of trench and backfilling)			
	Ø450 mm	m	1.0 - 1.5	
	Ø 600 mm	m	0.9 - 1.2	
	Ø 900 mm	m	0.5 - 0.8	
	Paving: Concrete block placing	m^2	150 - 200	Team task (10 workers)
	Compaction/block paving units/filling joints	m^2	15 - 25	
	Lay precast kerb units/concrete beam	m	8 - 12	
	Sealing work			
	Cold mix asphalt	m^2	900 - 1,000	Team task (16 workers)
	Otta seal	m^2	5,400 - 5,500	Team task (60 workers)
	Sand seal	m^2	2,800 - 3,000	Team task (20 workers)
	Modified Otta seal (using emulsion binder)	m^2	1,300 - 1,500	Team task (16 workers)
	Ultra-thin reinforced concrete	m^2	400 - 500	Team task (25 workers)
Building works	Plastering	m^2	15 - 20	
	Brick masonry	m^3	0.7 - 1.0	
	Formwork	m^2	15 - 22	
	Ceiling work including brandering	m^2	25 - 30	
	Roof Coverings	m^2	30 - 35	
	Tiling/glazed tiles to walls	m^2	15 - 20	
	Tiling/Ceramic tiles to floors	m^2	18 - 22	
	VA tiles to floor	m^2	70 - 80	
	Glazing/4mm Clear float glass	m^2	28 - 32	
	Paint/On ceilings	m^2	30 - 34	
	On walls	m^2	35 - 40	
	On doors/door frames	m^2	15 - 20	
	On Windows with metal bars	m^2	25 - 30	
	Two coats of varnish to woodwork	m^2	30 - 35	

Routine road maintenance	Cut grass /on verge/ side drains	m^2	100 - 150	
	Clean culvert /inlet, outfall	m^3	1.5 - 2.0	
	Clean side/mitre drains	m^3	2.0 - 3.0	
	Repair side drain erosion	m^3	3.0 - 5.0	
	Fill pot holes on carriageway	m^3	2.0 - 3.0	Gravel roads
	Fill ruts/minor gullies on carriageway	m^2	5.0 - 10	
	Grub edge/shoulder	m^2	80 - 100	
	Repair shoulder erosion	m^2	5.0 - 10	
	Repair culvert headwalls	No	Day work	

G.2. REFERENCE TO DETAILED INFORMATION ON TASK RATES

Category	Operation	References: Source documents	Tables- Figures-	Pages
Roadwork				
Construction	Earthwork/formation	Implementing Employment Intensive Road Works – A CIDB Practice Manual, March 2007- Manual 3	Table	PP 110-111
	Earthworks	*Best practice guide labour-based methods and technologies for employment intensive construction works* January 2002 (document commissioned by the department of public works (construction industry development programme	Table G 1 & G2 Table N1 & O 1	Page 1.19 Page 1.39-41
	Earthworks	Labour-based technologies and methods for employment intensive construction works best practice guideline 2 labour-based construction methods for Earthworks April 2004	Table 1 & 2 Table 8 & 9 Table 10 Table 12	PP 3-4 Page 13 Page 14 Page 15
		Construction of Low Volume Sealed Roads – Good Practice Guide to Labour-Based Methods, ILO A. Asare et. al. 2013	Table 4-4 Table 4-17	Page 4-5 Page 4-20

Category	Operation	References: Source documents	Tables- Figures-	Pages
	Drainage structures (Concrete & masonry works)	Implementing Employment Intensive Road Works – A CIDB Practice Manual, March 2007-Manual 5		Page 100
	Concrete block paving	*Best practice guide labour-based methods and technologies for employment intensive construction works J*anuary 2002 (document commissioned by the department of public works (construction industry development program	Table C1 Table A 13 and 14	Page 1.15 Page 1.9
	Gravel surfacing	Implementing Employment Intensive Road Works – A CIDB Practice Manual, March 2007-Manual 3	Table -Module 6	PP 110-111
	Stone pavement	*Best practice guide labour-based methods and technologies for employment intensive construction works J*anuary 2002 (document commissioned by the department of public works (construction industry development program	Table F 1	Page 1.18
		Construction of Low Volume Sealed Roads – Good Practice Guide to Labour-Based Methods, ILO A. Asare et. al. 2013	Table 8-23	Page 8-56
	Pavement/layer works (bituminous pavement seals)	Implementing Employment Intensive Road Works – A CIDB Practice Manual, March 2007-Manual 4	Table –Module 7	PP 90-91
		Construction of Low Volume Sealed Roads – Good Practice Guide to Labour-Based Methods, ILO A. Asare et. al. 2013	Table 5-6 Table 8-25	Page 5-23 Page 8-59 & 60

Category	Operation	References: Source documents	Tables- Figures-	Pages
		*Best practice guide labour-based methods and technologies for employment intensive construction works J*anuary 2002 (document commissioned by the department of public works (construction industry development program	Table J1 Table N1	Page 1.21 Page 1.40
	Concrete and masonry drainage works and structures	Implementing Employment Intensive Road Works – A CIDB Practice Manual, March 2007-Manual 5	Table – Module 8	Page 100
Maintenance	Road Maintenance	**Common Routine maintenance activities** Study on Enhancing Labour Intensity in the **Expanded Public Works Programme** Road Infrastructure Projects **South Africa 2012**		Page 51
		Maintenance of minor roads using the length man contractor system; Jones, T E and R C Petts, 1991. Maintenance of minor roads using the lengthman contractor system. *Fifth International Conference on Low Volume Roads, Raleigh North Carolina, 19-23 May 1991. Transportation Research Record 1291, Volume 1*. Washington DC: Transportation Research Board, National Research Council, 41-52.)	Table 1 Table 2	Page 3-4 Page 5
		Labour-based Road Works Technical Manual: Appropriate Technology Unit (ATU) Tanzania Ministry Of Works International Labour Organization (ILO) & Intech-Associates Consulting Engineers: May 1997 Productivity Standards for Routine Maintenance and Routine Maintenance Productivity Guideline	Figure D1.1 and D1.2	

Category	Operation	References: Source documents	Tables- Figures-	Pages
	Road and drainage works	***Productivity Norms for Labour-Based Construction. ASIST Information Service Technical Brief No. 2. International Labour Organisation 1998.*** ***Includes Roadwork and drainage Productivity Norms Data from countries.***	***Tables M1-22***	
Building/ Housing related works	Various activities	*Best practice guide labour-based methods and technologies for employment intensive construction works J*anuary 2002 (document commissioned by the department of public works (construction industry development programme)	Table-1 Table A 1-6	Page 3 PP-1.1-1.5
	Concrete and masonry drainage works and structures	Implementing Employment Intensive Road Works – A CIDB Practice Manual, March 2007-Manual 5	Table –Module 8	Page 100
Water and sanitation	Storm water drainage	*Best practice guide labour-based methods and technologies for employment intensive construction works J*anuary 2002 (document commissioned by the department of public works (construction industry development programme)	Table H1	Page 1.20

15 APPENDIX H: EPWP REPORTING FORMS

H.1A: NATIONAL / PROVINCIAL REGISTRATION FORM

This form refers to the project plan, before the start of the project – Not the actual project information

Field requested	Description if needed	Please complete this section
Project name		
Public Body (National Department /Province) Reference number	*The number used by the public body to identify the project. This number has to be unique for every project*	
Project name	*The project name needs to be unique for projects*	
Project type:		Select one and mark with a X
	Provincial	
	National	
Project location		
Province	*Indicate in which Province the project will be implemented*	
District Municipality/ Metro	*Indicate in which district/Metro Municipality the project will be implemented*	
Local Municipality / Metro region	*Indicate in which local municipality the project will be implemented*	
Primary Ward	*Indicate in which ward the project will be implemented. If the project is implemented in more than one ward, then name the wards in "describe project location"*	
Enter the name of the Municipal Area	*Indicate in which municipal area the project will be implemented*	
Describe the project location	*Short description, including the area or ward within the municipality*	
Project Ownership and Location		
Project Ownership		Select one and mark with a X
Public Body Type	*Provincial Department*	
Project owner (Who is funding the project)	*This refers to the provincial department who is providing the money. It cannot be a metro, district or municipality.*	
Department in the public body that is responsible for the project	*This refers to the department within the provincial department*	

Field requested	Description if needed	Please complete this section
Implementing public body type (Implementer)	*This can be the same provincial department, another provincial department, a metro, district or municipality.*	
Project implementer	*The name of the provincial department, metro, district or province*	
Implementing department	*This refers to the department within the public body who is responsible for the implementation of the project*	
Project Implementation		
Source of Reference number	*Indicate the source of the reference number.*	
IGP Registered?	*Indicate yes/no*	
If the project is IGP registered, what is the IGP reference number?	*Provide the IGP number*	
EPWP Information		
Choose EPWP Programme		Select one EPWP Programme and mark with a X
	-Not part of a programme-	
	Contractor Development	
	Facilities & Infrastructure Development Programme	
	Housing Delivery	
	Labour Based Construction Programme	
	Labour-Intensive Programme	
	EPWP Provincial	
	MIG	
	NYS Provincial	
	National Youth Service	
	Subsidised Housing	
	Vuk'uphile	
	Vukuzakhe	
	Zibambele	
	Community based	
	NGO	

Field requested	Description if needed	Please complete this section
Project Priority		Select one priority and mark with a X
	1: Labour-intensive and training	
	2: Vuk'uphile learnership	
	3: Labour-intensive, no training	
	4: Other	
	5: Large Projects	
	6: Provincial Access Roads	
	7: EPWP Provincial Maintenance	
	8: EPWP High Volume	
Sector	*Infrastructure*	
Project sub-sector	*Please choose from the following:*	Select one sub-sector and mark with an X. If sub-sector is other, then mark with an X and provide name of "other"
	Infrastructure Roads	
	Ground Rehabilitation	
	Roads and Stormwater	
	Settlements and Services	
	Housing	
	Park Development	
	Water Infrastructure Upgrade	
	Sewer upgrade	
	Pipelines	
	Stormwater drains	
	Sidewalks	
	Multipurpose	
	Other	
	Lights Reticulation	
	Paving of parks	
	Parking lots	

Field requested	Description if needed	Please complete this section
If Other, describe		
Project details		
Estimated project start date	*Provide start date of the project. This is the construction start date*	
Estimated project end date	*Provide estimated project end date.*	
Please give a short project description	*Short description, no longer than one line.*	
Project type:	*Infrastructure*	
Project Environment		Select one project environment and mark with a X
	Urban	
	Rural	
	Both Urban and Non-Urban	
Budget allocated		
Source of funds	*Which organisations will be contributing to the funding of the project? Please choose from the following:*	Select one or more sources of funds and mark with a X
	Donors	
	EPWP	
	IGP	
	Loans	
	National	
	Provincial Capital Budget	
	Provincial Department	
	Provincial Maintenance Budget	
	Up-scaling Grant	
Total Amount of budget	*Provide budget amount*	
Project Contact in public body		
Name and Contact		
Title:	Provide information	
Surname:	Provide information	

Field requested	Description if needed	Please complete this section
Initials:	Provide information	
E-mail address	Provide information	
Cellular:	Provide information	
Telephone (Office):	Provide information	
Fax:	Provide information	
Cellular:	Provide information	
Physical Address:	Provide information	
Postal Address: (if different from Physical)	Provide information	

H.1B: MUNICIPAL REGISTRATION FORM

This form refers to the project plan, before the start of the project – Not the actual project information

Field requested	Description if needed	Please complete this section
Project name		
Public Body (Municipal) Reference number	*The number used by the public body to identify the project. This number has to be unique for every project*	
Project name	*The project name needs to be unique for projects*	
Project type:		Select one and mark with a X
	Municipal	
Project location		
Province	*Indicate in which Province the project will be implemented*	
District Municipality/ Metro	*Indicate in which district/Metro Municipality the project will be implemented*	
Local Municipality / Metro region	*Indicate in which local municipality the project will be implemented*	
Primary Ward	*Indicate in which ward the project will be implemented. If the project is implemented in more than one ward, then name the wards in "describe project location"*	
Enter the name of the Municipal Area	*Indicate in which municipal area the project will be implemented*	
Describe the project location	*Short description, including the area or ward within the municipality*	
Project Ownership and Location		
Project Ownership		
Public Body Type		Select one and mark with a X
Project owner (Who is funding the project)		
Department in the public body that is responsible for the project	*This refers to the department within the municipality*	
Implementing public body type (Implementer)	*This must be a district, local or metro municipality*	
Project implementer	*The municipality responsible for implementing the project.*	
Implementing department	*This refers to the department within the municipality who is responsible for the implementation of the project*	

Field requested	Description if needed	Please complete this section
Project Implementation		
Source of Reference number	*Indicate the source of the reference number.*	
IDP Reference Number allocated to the project		
MIG Registered?	*Indicate yes/no*	
If the project is MIG registered, what is the MIG reference number?	*Provide the IGP number*	
EPWP Information		
Choose EPWP Programme		Select one EPWP Programme and mark with a X
	-Not part of a programme-	
	Contractor Development	
	Facilities & Infrastructure Development Programme	
	Housing Delivery	
	Labour-Based Construction Programme	
	Labour-Intensive Programme	
	EPWP Provincial	
	MIG	
	NYS Provincial	
	National Youth Service	
	Subsidised Housing	
	Vuk'uphile	
	Vukuzakhe	
	Zibambele	
	Community based	
	NGO	
Project Priority		Select one priority and mark with a X
	1: Labour-intensive and training	
	2: Vuk'uphile learnership	
	3: Labour-intensive, no training	

Field requested	Description if needed	Please complete this section
	4: Other	
	5: Large Projects	
Sector	*Infrastructure*	
Project sub-sector	*Please choose from the following:*	Select one sub-sector and mark with an X. If sub-sector is other, then mark with an X and provide name of "other"
	Infrastructure Roads	
	Ground Rehabilitation	
	Roads and Stormwater	
	Settlements and Services	
	Housing	
	Park Development	
	Water Infrastructure Upgrade	
	Sewer upgrade	
	Pipelines	
	Stormwater drains	
	Sidewalks	
	Multipurpose	
	Other	
	Lights Reticulation	
	Paving of parks	
	Parking lots	
If Other, describe		
Project details		
Estimated project start date	*Provide start date of the project. This is the construction start date*	
Estimated project end date	*Provide estimated project end date.*	
Please give a short project description	*Short description, no longer than one line.*	
Project type:	*Infrastructure*	
Project Environment		Select one project environment and mark with a X

Field requested	Description if needed	Please complete this section
	Urban	
	Rural	
	Both Urban and Non-Urban	
Budget allocated		
Source of funds	*Which organisations will be contributing to the funding of the project? Please choose from the following:*	Select one or more sources of funds and mark with a X
	District Municipality	
	Donors	
	EPWP	
	IGP	
	Loans	
	Local Municipality	
	MIG	
	National Department	
	Provincial Department	
Total Amount of budget	*Provide budget amount*	
Project Contact in public body		
Name and Contact		
Title:	Provide information	
Surname:	Provide information	
Initials:	Provide information	
E-mail address	Provide information	
Cellular:	Provide information	
Telephone (Office):	Provide information	
Fax:	Provide information	
Cellular:	Provide information	
Physical Address:	Provide information	
Postal Address: (if different from Physical)	Provide information	

H.2A: NATIONAL/PROVINCIAL SUBMISSION FORM

This form refers to the project plan, before the start of the project – Not the actual project information

Field requested	Description if needed	Comment
Budget		
Source of funds	*Which organisations will be contributing to the funding of the project and how much will each organisation contribute? Please choose from the following:*	Budget amounts
	Donors	
	EPWP	
	IGP	
	Loans	
	National	
	Provincial Capital Budget	
	Provincial Department	
	Provincial Maintenance Budget	
	Up-scaling Grant	
What will be the annual budgets of the project?	*Per national financial year. Take into account all financial years in which this project will be active.*	Annual budget amount
	15/16	
	16 / 17	
	17 /18	
	18 /19	
	19/20	
Milestones		
Milestone	*Will this milestone be measured (Yes / No)*	*Target Date*
Project approved		
Consultant appointed		
Detailed Design specifications approved		
Tender report approved		
Construction started		
Implementation complete		

Field requested	Description if needed	Comment
EPWP Indicators		
Indicator	*Indicate Yes or No*	
Consultant contract compliant with EPW guidelines		
Contractor compliant with EPW requirements		
Exit Strategy		
Branding Compliant		
Planned EPWP Infrastructure outputs		
Output	*Tick if applicable*	*Measure in km / sqm / no etc - Indicate value i.e. km of roads to be constructed*
Km of roads constructed to standard		
Km of pipelines installed to standard		
Km of storm water drains constructed to standard		
Km of sidewalks constructed to standard		
No of bridges		
No of connections		
No of pipe / box culverts		
No of pump stations		
No of Reservoirs		
No of retention dams		
No of standpipes		
No of transfer facilities		
No of VIP's		
Sqm of bus ranks		
Sqm of community hall		
Sqm of landfill site		
Sqm of taxi ranks		
Sqm of treatment works		
Sqm of buildings		
Sqm of Grass cutting		

Field requested	Description if needed	Comment
Km of fencing		
Sqm of Clinic Construction and Rehabilitation		
Number of classroom construction and rehabilitation		
Planned training		
Accredited courses		
Cost estimate	*Provide information if available*	
Number or person training days	*The total number of days for all persons to attend training*	
Number of people to attend	*The total number of people that will attend training*	
Number of women to attend	*This includes adult women and youth women*	
Number of youth to attend	*All persons aged 35 and under*	
Non-accredited		
Cost estimate	*Provide information if available*	
Number or person training days	*The total number of days for all persons to attend training*	
Number of people to attend	*The total number of people that will attend training*	
Number of women to attend	*This includes adult women and youth women*	
Number of youth to attend	*All persons aged 35 and under*	
Planned labour		
Employment generation details	Planned Number of Person days of employment	Planned Persons to be Employed
Adult men		
Adult women		
Youth men		
Youth women		
Disabled		
Planned labour		
Minimum daily wage	*As per the contract document*	R
Planned number of employees from the indigent list	*Has this public body specified that a number of persons from the indigent list have to be employed? If so, what number of persons?*	

H.2B: MUNICIPAL SUBMISSION FORM

This form refers to the project plan, before the start of the project – Not the actual project information

Field requested	Description if needed	Comment
Budget		
Source of funds	*Which organisations will be contributing to the funding of the project and how much will each organisation contribute? Please choose from the following:*	Budget amounts
	District Municipality	
	Donors	
	EPWP	
	IGP	
	Loans	
	Local Municipality	
	MIG	
	National Department	
	Provincial Department	
What will be the annual budgets of the project?	*Per national financial year. Take into account all financial years in which this project will be active.*	Annual budget amount
	15/16	
	16 / 17	
	17 /18	
	18 /19	
	19/20	
Milestones		
Milestone	*Will this milestone be measured (Yes / No)*	*Target Date*
Project approved		
Consultant appointed		
Detailed Design specifications approved		
Tender report approved		
Construction started		

Field requested	Description if needed	Comment
Implementation complete		
EPWP Indicators		
Indicator	*Indicate Yes or No*	
Consultant contract compliant with EPW guidelines		
Contractor compliant with EPW requirements		
Exit Strategy		
Branding Compliant		
Planned EPWP Infrastructure outputs		
Output	*Tick if applicable*	*Measure in km / sqm / no etc - Indicate value i.e. km of roads to be constructed*
Km of roads constructed to standard		
Km of pipelines installed to standard		
Km of storm water drains constructed to standard		
Km of sidewalks constructed to standard		
No of bridges		
No of connections		
No of pipe / box culverts		
No of pump stations		
No of Reservoirs		
No of retention dams		
No of standpipes		
No of transfer facilities		
No of VIP's		
Sqm of bus ranks		
Sqm of community hall		
Sqm of landfill site		
Sqm of taxi ranks		
Sqm of treatment works		
Sqm of buildings		

Field requested	Description if needed	Comment
Sqm of Grass cutting		
Km of fencing		
Sqm of Clinic Construction and Rehabilitation		
Number of classroom construction and rehabilitation		
Planned training		
Accredited courses		
Cost estimate	*Provide information if available*	
Number or person training days	*The total number of days for all persons to attend training*	
Number of people to attend	*The total number of people that will attend training*	
Number of women to attend	*This includes adult women and youth women*	
Number of youth to attend	*All persons aged 35 and under*	
Non-accredited		
Cost estimate	*Provide information if available*	
Number or person training days	*The total number of days for all persons to attend training*	
Number of people to attend	*The total number of people that will attend training*	
Number of women to attend	*This includes adult women and youth women*	
Number of youth to attend	*All persons aged 35 and under*	
Planned labour		
Employment generation details	Planned Number of Person days of employment	Planned Persons to be Employed
Adult men		
Adult women		
Youth men		
Youth women		
Disabled		
Planned labour		
Minimum daily wage	*As per the contract document*	R
Planned number of employees from the indigent list	*Has this public body specified that a number of persons from the indigent list have to be employed? If so, what number of persons?*	

H.3: PROGRESS REPORT FORM (NATIONAL, PROVINCIAL AND MUNICIPAL)

Data form for a 12 months period.

	April	May	June	July	August	September	October	November	December	January	February	March
Financial Report												
Expenditure for current month												
EPWP Certified Contractors												
Number of contractors												
Amount Spent												
SMME Contractors												
Number of contractors												
Amount Spent												
Milestones	If milestone has been achieved provide the achievement date, otherwise indicate "NO" for each milestone not achieved.	If milestone has been achieved provide the achievement date, otherwise indicate "NO" for each milestone not achieved.	If milestone has been achieved provide the achievement date, otherwise indicate "NO" for each milestone not achieved.	If milestone has been achieved provide the achievement date, otherwise indicate "NO" for each milestone not achieved.	If milestone has been achieved provide the achievement date, otherwise indicate "NO" for each milestone not achieved.	If milestone has been achieved provide the achievement date, otherwise indicate "NO" for each milestone not achieved.	If milestone has been achieved provide the achievement date, otherwise indicate "NO" for each milestone not achieved.	If milestone has been achieved provide the achievement date, otherwise indicate "NO" for each milestone not achieved.	If milestone has been achieved provide the achievement date, otherwise indicate "NO" for each milestone not achieved.	If milestone has been achieved provide the achievement date, otherwise indicate "NO" for each milestone not achieved.	If milestone has been achieved provide the achievement date, otherwise indicate "NO" for each milestone not achieved.	If milestone has been achieved provide the achievement date, otherwise indicate "NO" for each milestone not achieved.
Project approved												
Consultant appointed												
Detailed Design specifications approved												

	April	May	June	July	August	September	October	November	December	January	February	March
Tender report approved												
Construction started												
Implementation complete												
Actual Outputs												
Type of output												
Quantity achieved												
Date achieved												

H.4: PARTICIPANTS INFORMATION (NATIONAL, PROVINCIAL AND MUNICIPAL)

Please provide participants information on this sheet for each month of the year.

Month of report:	
Contractor Name:	
CIPRO company registration number:	
Type of contractor:	
Project Name:	
Project Type:	
Source of Funding:	
Province:	

Physical Outputs for month:	
Project Number:	
Total Project Expenditure for month:	
Contract Number:	
Invoice Number:	
Project Start Date:	
Project End Date:	
Certified by Project Manager:	
Date of certification:	

									MONTH			
First name	**Initials**	**Last name**	**I.D. Number**	**DOB**	**Gender**	**Has disability**	**Education level**	**Start date**	**Number of labour days for the month**	**Daily wage rate for the month the month**	**Total wages paid for the month**	**Total number of training days for the Month**
				dd/mm/yyyy	**M or F**	**Y or N**	**See codes at bottom of list**	**dd/mm/yyyy**			**DO NOT ENTER DATA IN THIS COLUMN**	
											0	
											0	
TOTALS (DO NOT ENTER DATA IN THIS LINE)									**0**		**0**	**0**

Education Levels – use the codes (1,2,3) on the excel spreadsheet

(1) Unknown

(2) No Schooling

(3) Grade 1-3 (Sub A – Std 1)

(4) Grad 4 (Std 2) ABET 1

(5) Grade 5-6 (Std 3-4) ABET 2

(6) Grade 7-8 (Std 5-6) ABET 3

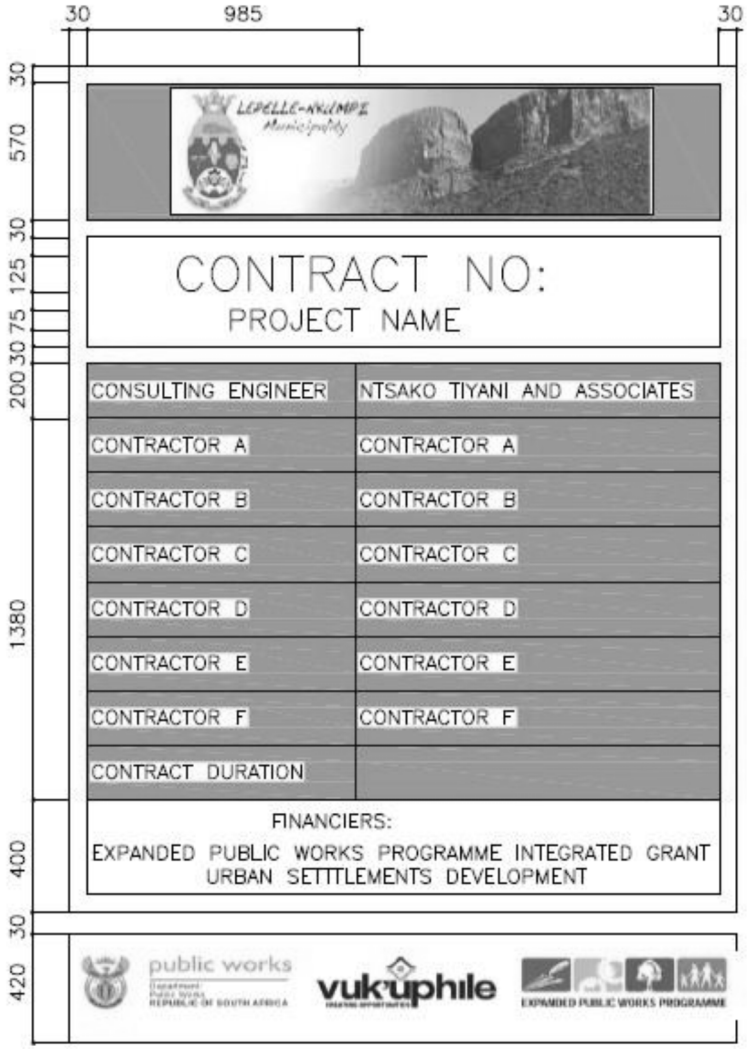
(7) Grade 9 (Std 7) ABET 4

(8) Grade 10-11 (Std 8-9)

(9) Grade 12 (Std 10)

(10) Post Matric

16 APPENDIX I: EPWP BRANDING FORMAT



17 APPENDIX J:

MINISTERIAL DETERMINATION FOR EPWP (Revised 2012)

GOVERNMENT NOTICE

DEPARTMENT OF LABOUR

No. R. 347 **4 May 2012**

BASIC CONDITIONS OF EMPLOYMENT ACT, 1997

MINISTERIAL DETERMINATION 4: EXPANDED PUBLIC WORKS PROGRAMMES

I, Nelisiwe Mildred Oliphant, Minister of Labour, hereby in terms of section 50 of the Basic Conditions of Employment Act, 1997, make a Ministerial Determination establishing conditions of employment for employees in Expanded Public Works Programmes, South Africa, in the Schedule hereto and determine the second Monday after the date of publication of this notice as the date from which the provisions of the said Ministerial Determination shall become binding.

All the provisions of the Ministerial Determination: Expanded Public Works Programmes published under Government Notice R949 in Government Gazette 33665 of 22 October 2010 will be superseded by this ministerial determination with effect from the date of implementation.

NM OLIPHANT, MP
Minister of Labour
10/04/2012

SCHEDULE

MINISTERIAL DETERMINATION NO: 3 : EXPANDED PUBLIC WORKS PROGRAMMES

Index

1. Definitions
2. Application of this determination
3. Sections not applicable to public works programmes
4. Conditions

1. **Definitions**

1.1 In this determination –

"expanded public works programme" means a programme to provide public or community assets or services through a labour intensive programme initiated by government and funded from public resources.

1.2 Without limiting subsection (1), the following programmes constitute Expanded Public Works Programmes:

(a) Environment and Culture Sector Programmes including: Working for Water, Working on Fire, Working for Wetlands, People and Parks, Working for Energy, Working for Woodlands, Working for the Coast, Landcare, Working on Waste, Working for Tourism, Investing in Culture Programmes

(b) Infrastructure Sector Programmes and Projects declared part of EPWP which may include the construction, rehabilitation and maintenance of: rural and low-volume roads, storm-water drains, water reticulation, basic sanitation, footpaths, sidewalks, bicycle paths, schools and clinics.

(c) Social Sector Programmes including Early Childhood Development, Home, Community Based Care, Community Safety and other community based programmes

(d) All projects and programmes accessing the EPWP wage incentive including those implemented by Non Governmental organisations (NGO) and Community Based Organisations (CBO) and the Community Works Programme.

(e) Any other programme deemed to be part of the EPWP as determined by the Department of Public Works

2. **Application**

This Determination applies to all employers and employees engaged in expanded public works programmes.

3. **The following provisions of the Basic Conditions of Employment Act do not apply to public works programmes –**

3.1 Section 10(2) [Overtime rate]

3.2	Section 14(3)	[Remuneration required for meal intervals of longer than 75 minutes]
3.3	Section 29(h) to (p)	[Written particulars of employment]
3.4	Section 30	[Display of employee's rights]
3.5	Section 41	[Severance pay]
3.6	Section 37	[Notice of termination]
3.7	Sections 51 – 58	[Sectoral Determinations]

4. Conditions

As set out in the ANNEXURE:

ANNEXURE

CONDITIONS OF EMPLOYMENT FOR EXPANDED PUBLIC WORKS PROGRAMMES

1. Introduction

1.1 This document contains the standard terms and conditions for workers employed in elementary occupations on an Expanded Public Works Programme (EPWP). These terms and conditions do NOT apply to persons employed in the supervision and management of a SPWP.

1.2 In this document –

(a) "department" means any department of the State, implementing agent or contractor;

(b) "employer" means any department, implementing agency or contractor 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 an EPWP are employed on a temporary basis or contract basis.

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 twelve 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. Sick Leave

8.1 Only workers who work more than 24 hours per month have the right to claim sick-pay in terms of this clause.

8.2 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.

8.3 A worker may accumulate a maximum of twelve days' sick leave in a year.

8.4 Accumulated sick-leave may not be transferred from one contract to another contract.

8.5 An employer must pay a task-rated worker the worker's daily task rate for a day's sick leave.

8.6 An employer must pay a time-rated worker the worker's daily rate of pay for a day's sick leave.

8.7 An employer must pay a worker sick pay on the worker's usual payday.

8.8 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.

8.9 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.

8.10 A worker is not entitled to paid sick-leave for a work-related injury or occupational disease for which the worker can claim compensation under the Compensation for Occupational Injuries and Diseases Act.

9. Maternity Leave

9.1 A worker may take up to four consecutive months' unpaid maternity leave.

9.2 A worker is not entitled to any payment or employment-related benefits during maternity leave.

9.3 A worker must give her employer reasonable notice of when she will start maternity leave and when she will return to work.

9.4 A worker is not required to take the full period of maternity leave. However, a worker may not work for four weeks before the expected date of birth of her child or for six weeks after the birth of her child, unless a medical practitioner, midwife or qualified nurse certifies that she is fit to do so.

9.5 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.

9.6 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. Family responsibility leave

10.1 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.

11. Statement of Conditions

11.1 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.

11.2 An employer must ensure that these terms are explained in a suitable language to any employee who is unable to read the statement.

11.3 An employer must supply each worker with a copy of these conditions of employment.

12. Keeping Records

12.1 Every employer must keep a written record of at least the following –

(a) the worker's name and position;

(b) copy of an acceptable worker identification

(c) in the case of a task-rated worker, the number of tasks completed by the worker;

(d) in the case of a time-rated worker, the time worked by the worker;

(e) payments made to each worker.

12.2 The employer must keep this record for a period of at least three years after the completion of the EPWP.

13. **Payment**

13.1 An employer must pay all wages at least monthly in cash or by cheque or into a bank account.

13.2 A worker may not be paid less than the minimum EPWP wage rate of R63.18 per day or per task. This will be adjusted annually on the 1st of November in-line with inflation (available CPI as provided by StatsSA six (6) weeks before implementation).

13.3 A task-rated worker will only be paid for tasks that have been completed.

13.4 An employer must pay a task-rated worker within five weeks of the work being completed and the work having been approved by the manager or the contractor having submitted an invoice to the employer.

13.5 A time-rated worker will be paid at the end of each month.

13.6 Payment must be made in cash, by cheque or by direct deposit into a bank account designated by the worker.

13.7 Payment in cash or by cheque must take place –

(a) at the workplace or at a place agreed to by the worker;

(b) during the worker's working hours or within fifteen minutes of the start or finish of work;

(c) in a sealed envelope which becomes the property of the worker.

13.8 An employer must give a worker the following information in writing –

(a) the period for which payment is made;

(b) the numbers of tasks completed or hours worked;

(c) the worker's earnings;

(d) any money deducted from the payment;

(e) the actual amount paid to the worker.

13.9 If the worker is paid in cash or by cheque, this information must be recorded on the envelope and the worker must acknowledge receipt of payment by signing for it.

13.10 If a worker's employment is terminated, the employer must pay all monies owing to that worker within one month of the termination of employment.

14. Deductions

14.1 An employer may not deduct money from a worker's payment unless the deduction is required in terms of a law.

14.2 An employer must deduct and pay to the SA Revenue Services any income tax that the worker is required to pay.

14.3 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.

14.4 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.

15. Health and Safety

15.1 Employers must take all reasonable steps to ensure that the working environment is healthy and safe.

15.2 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.

16. Compensation for Injuries and Diseases

16.1 It is the responsibility of the employers (other than a contractor) 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.

16.2 A worker must report any work-related injury or occupational disease to their employer or manager.

16.3 The employer must report the accident or disease to the Compensation Commissioner.

16.4 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.

17. Termination

17.1 The employer may terminate the employment of a worker for good cause after following a fair procedure.

17.2 A worker will not receive severance pay on termination.

17.3 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.

17.4 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.

17.5 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.

Certificate of Service

18.1 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.

Appendix D: Geotechnical Report

CONTRACT NO.: G306/2018

ASSESSMENT, DESIGN AND PROJECT MANAGEMENT OF REQUIRED NEW BUILDINGS & REPAIRS, RENOVATIONS & UPGRADES TO VARIOUS INFRASTRUCTURE ASSETS IN THE THOHOYANDOU BOTANICAL GARDEN, THOHOYANDOU, & NATIONAL ZOOLOGICAL GARDEN CAMPUSES BASED IN PRETORIA & MOKOPANE

GEOTECHNICAL INVESTIGATION REPORT

FOR

THOHOYANDOU BOTANICAL GARDEN

OCTOBER 2019

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QUALITY CONTROL

Valid from	DECEMBER 2018 TO FINAL COMPLETION			
	Name	**Org.-unit**	**Date**	**Signature**
Approved				
Released				
Revised				
Reviewed				
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Reviewed	Msipa, V.	PJN_ENG	2019-10-12	
Prepared	Bloem, J.	GEOTHETA	2019-10-11	

REVISION LOG

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GEOTHETA CONSULTING ENGINEERS AND SCIENTISTS

Proposed New Additions and Upgrades at the Botanical Gardens in Thohoyandou, Limpopo

GEOTECHNICAL INVESTIGATION REPORT

Projectneers Consulting
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Midrand
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1908548/01 Oct 2019

Projectneers Consulting

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Geotechnical Investigation and report

Report Reference Number: 1908548/01

Revision date: Oct 2019

1. Executive Summary

Projectneers Consulting commissioned Geotheta (Pty) Limited to prepare a geotechnical investigation report for the proposed new additions and upgrades at the Botanical Gardens in Thohoyandou, Limpopo.

A near-surface geotechnical investigation was done and representative soil samples were retrieved.

The soils at the site comprise of fill transported material (alluvial), underlain by residual basalt (silty clay).

With the alluvial and residual basalt classifying as MEDIUM, raft foundations are recommended for all new structures to be constructed on site.

Material excavation will be classed as *soft* to *Intermediate* with boulder excavation in places

Excess material from the foundation excavations will not be suitable as backfill material. All construction material will need to be imported from a suitable source.

2. Disclaimer

2.1 Data provided to Geotheta

The opinions expressed in this Report have been based on the information supplied to Geotheta (Pty) Ltd (Geotheta) by Projectneers Consulting. The opinions in this report are provided in response to a specific request from Projectneers Consulting to do so. Geotheta has exercised all due care in reviewing the supplied information. Whilst Geotheta has compared key supplied data with expected values, the accuracy of the results and conclusions from the review are entirely reliant on the accuracy and completeness of the supplied data. Geotheta does not accept responsibility for any errors or omissions in the supplied information and does not accept any consequential liability arising from commercial decisions or actions resulting from them.

2.2 Data obtained by Geotheta

Opinions presented in this report apply to the site conditions and features as they existed at the time of Geotheta's investigations, and those reasonably foreseeable. These opinions do not necessarily apply to conditions and features that may arise after the date of this report, about which Geotheta had no prior knowledge nor had the opportunity to evaluate.

3. Statement of Geotheta Independence

Neither Geotheta nor any of the authors of this report have any material present or contingent interest in the outcome of this report, nor do they have any pecuniary or other interest that could be reasonably regarded as being capable of affecting their independence or that of Geotheta.

Geotheta has no beneficial interest in the outcome of the technical assessment being capable of affecting its independence.

Geotheta's fee for completing this report is based on its normal professional rates and/or fees plus incidental expenses. The payment of that professional fee or expense is not contingent upon the outcome of the report.

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5. Introduction

5.1 Projectneers Consulting commissioned Geotheta (Pty) Limited to prepare a geotechnical investigation report for the proposed new additions and upgrades at the Botanical Gardens in Thohoyandou, Limpopo.

5.2 A near-surface geotechnical investigation was done to measure upper soil conditions and to provide geotechnical parameters for the design of the surface infrastructure and to be able to specify the construction excavations.

5.3 The near-surface investigation comprised of a series of test pits and the retrieval of samples for laboratory testing. This was then analysed to determine the foundation conditions and soil classification.

5.4 The site investigation work commenced on 11 September 2019, and the laboratory testing results were received by 30 September 2019.

6. Terms of reference

6.1 Geotheta submitted proposal reference 1908548 – Projectneers – Thohoyandou Geotech - P01 13 Aug 2019.

6.2 Based on the proposal, Projectneers Consulting appointed Geotheta on 20 August 2019.

7. Scope of work

The accepted scope of work is:

7.1 Site geotechnical investigation

The following was done to determine the foundation geotechnical characteristics of the area

7.1.1 Test Pits

7.1.2 A Tractor Loader Backhoe (TLB) excavator was deployed to site to excavate test pits.

7.1.3 The test pits were profiled by an engineering geologist to determine the strata layers and soil characteristics. Soil samples were retrieved as necessary for laboratory testing.

7.2 Laboratory testing

The samples were sent to a SANAS certified geotechnical soils laboratory for testing and analysis. Foundation indicator tests were done.

7.3 Report

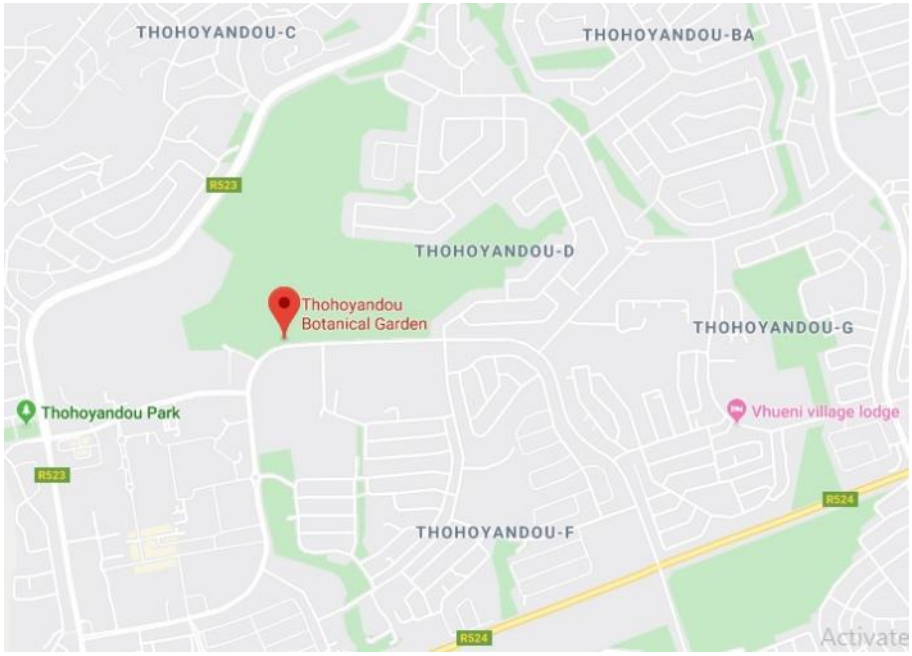
This geotechnical report was written.

8. Site Location and Description

8.1 The Thohoyandou Botanical Garden is located in Garden Route on the southern edge of a green zone in the centre of Thohoyandou D (see Figure 1).

8.2 The proposed facilities are all located to the north of the main entrance into the Botanical Garden. These areas are mostly wooded and covered with grass and trees.

8.3 The site is located in a valley with a steep gradient to the south. There is also an indication that the area to the north of the entrance gate is conducive to flooding due to a cut-off berm that was constructed to redirect the runoff to a culvert east of the main gate.



GEOTHETA CONSULTING ENGINEERS AND SCIENTISTS	Thohoyandou Botanical Garden	1908548

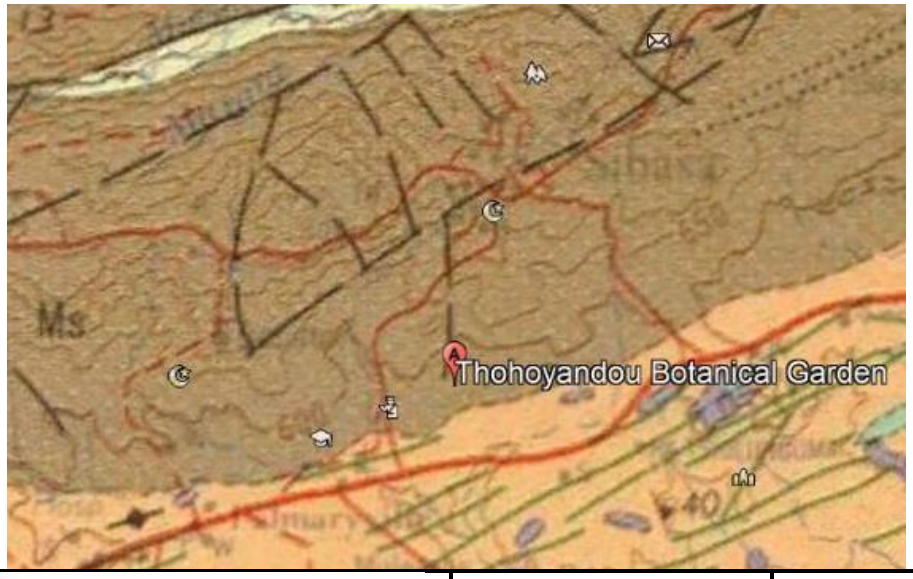
Figure 1 : Location of the site

9. Geology

9.1 Figure 2 indicates the regional geology of the area.

9.2 From the 1:250 000 geological map 2230 Messina the site is underlain by Mokolian aged basalt of the Sibasa Formation, Soutpansberg Group.

9.3 During the investigation a layer of alluvial material was encountered underlain by silty clayey reworked residual material basalt.



GEOTHETA CONSULTING ENGINEERS AND SCIENTISTS	Thohoyandou Botanical Garden	1908548

Figure 2: Regional Geology

10. Engineering Geology

10.1 The influence of climate on weathering is expressed by the N-value (H.H. Weinert 1980). The most important is where N=5. Where N is more than 5, disintegration is dominant, and where N is less than 5, decomposition is dominant.

10.2 The Weinert N-value is 2.1 for this region, indicating that decomposition is the overriding process.

10.3 Where N is between 2 and 5, weathering profiles develop upwards from fresh rock to residual soil.

11. Method of Investigation

11.1 Desk study

11.1.1 The site location was submitted to the Council for Geosciences in Pretoria. It was confirmed that the site was most likely not underlain by dolomites.

11.1.2 The local geology was determined from the geological maps. The results of this study are discussed in section 9 and 10 above.

11.2 Test Pit

11.2.1 No formal grid spacing was used in setting out the test pit positions. Sites were selected instead to adequately cover the site, and to determine any variations in the site geology. The placement of the test pits was also determined by the placement of the previous foundations and structures on the site.

11.2.2 A total of 4 test pits were excavated. The positions of the test pits excavated are indicated on Figure 3.

GEOTHETA CONSULTING ENGINEERS AND SCIENTISTS	Thohoyandou Botanical Garden	1908548

Figure 3: Test Pit Positions

11.2.3 The test pits were excavated with a Tractor Loader Backhoe (TLB) and soil profiles were logged according to the standard method of Jennings, Brink and Williams (1973). Test pit profiles and photographs are included in Appendices A and B respectively.

11.3 Soil Sampling

11.3.1 Samples were taken from test pit TP 1 to determine the material classification and the soil parameters of the soil present on site.

11.4 Laboratory Testing

11.4.1 The retrieved sample was submitted to Civilab in Hennopspark, Centurion, for testing.

11.4.2 Foundation Indicators tests were conducted on the samples.

11.4.3 The laboratory test results are included as Appendix C.

11.4.4 The results are discussed below.

12. Results

12.1 Site soils

12.1.1 The soil profiles of the different test pits encountered on the site are as follows:

Test Pit No	Transported	Alluvial	Pebble Marker	Residual	Test pit depth (m)
TP1		0.0 – 1.1	1.1 – 1.2	1.2 – 2.6	2.6 – EOH
TP2		0.0 – 1.2		1.2 – 2.6	2.6 – EOH
TP3		0.0 – 1.1		1.1 – 2.5	2.5 – EOH
TP4	0.0 – 0.9				0.9 – Refusal

12.2 Laboratory Results

12.2.1 The alluvial material classified as silty gravelly clay. The Plasticity Index is 23, the Liquid Limit 63 and the Linier Shrinkage 12.0. The value of the Grading Modulus is 1.2. The soil is LOW to MEDIUM activity on the van der Merwe Activity Diagram

12.2.2 The residual Shale classified as clayey silty clay. The Plasticity Index is 23, the Liquid Limit 55 and the Linier Shrinkage 11.0. The value of the Grading Modulus is 0.15. The soil is MEDIUM activity on the van der Merwe Activity Diagram

13. Discussion of results

13.1 Soil profiles

13.1.1 The site is underlain by alluvial material and residual Basalt. The typical soil profiles present on site can be summarised as follows:

- 0.0 – 1.1 m Alluvial
- 1.1 – 1.2 m Pebble Marker (TP 1 and poorly defined in TP2)
- 1.2 – 2.6 m Residual Basalt.

13.1.2 TP 4 was excavated in the Hillwash (transported) consisting of boulders with a gravelly clay matrix.

13.1.3 No groundwater seepage was encounter during the investigations.

13.2 Construction material

13.2.1 The material on site cannot be used as engineered fill.

13.3 Foundation conditions

13.3.1 Due to the presence of the medium active alluvial and residual raft foundations are recommended.

13.3.2 All foundation excavations should be box cut to the depth of the foundation base.

13.3.3 The excavated material must be cut to spoil and replaced with a suitable G6 material and compacted in maximum 150mm thick layers to minimum density of 95% MOD AASHTO at -1% OMC

13.3.4 Lightly reinforced foundations can be used for foundation construction.

13.3.5 Maximum bearing capacity to be 150kPa.

13.3.6 The in-situ material is MEDIUM activity on the Van Der Merwe diagram. Precautions must therefore be taken to protect the foundations from moisture ingress.

13.4 Excavatability

13.4.1 The excavatability of the material on site was in the *Soft* to *Intermediate* range with boulder excavations on the northern slopes around TP4.

14. Summary, conclusions and recommendations

14.1 The site is underlain by alluvial material and by residual Basalt.

14.2 Four test pits were excavated using a TLB to determine the subsoil conditions on the site.

14.3 The excavatability of the material on site was *Soft* to *Intermediate* with boulder excavation In places.

14.3.1 No groundwater seepage was encountered during the investigations.

14.4 The foundations should be protected from moisture ingress by constructing a concrete or paved apron around buildings and ensuring that all pipes are flexible and watertight.

14.5 Adequate storm water control needs to be implemented to direct the water away from the foundations and to prevent flooding of the site.

14.5.1 Due to the active soils raft foundations are recommended above the residual basalt.

14.5.2 Maximum bearing capacity to be 150kPa.

14.5.3 All foundation excavations must be box cut to the depth of the foundation base.

14.5.4 The excavated material must be cut to spoil and replaced with a suitable G6 material and compacted in maximum 150mm thick layers to minimum density of 95% MOD AASHTO at -1% OMC

14.5.5 Lightly reinforced concrete can be used for foundation construction.

Prepared by

Jaco Bloem – Pr Sci Nat

Reviewed by

_____

Ian Hammond Pr Eng

All data used as source material plus the text, tables, figures, and attachments of this document have been reviewed and prepared in accordance with generally accepted professional engineering and environmental practices.

15. References

15.1 WEINERT, HH. 1980. The natural road construction materials of southern Africa. Pretoria: Academica.

15.2 JENNINGS JE, BRINK ABA, and WILLIAMS AAB. 1973. Revised guide to soil profiling for civil engineering purposes in southern Africa, The Civil Engineer in South Africa, Jan 1973 Trans SAICE, Vol 15 No 1.

15.3 VAN DER MERWE, DH. 1964. The prediction of heave from the plasticity index and the percentage clay fraction of soils. The Civil Engineer in South Africa. June 1964, pp 103-107.

15.4 UNIFIED SOIL CLASSIFICATION SYSTEM. CALTRANS

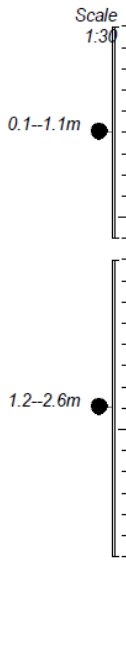
APPENDICES

Appendix A: Test Pit Profiles

Projectneers Consulting
Thohoyandou Botanical Gardens, Thohoyandou

HOLE No: TP 1
Sheet 1 of 1

JOB NUMBER: 1908548



0.00 Moist, Red brown, FIRM, slickensided, GRAVELLY CLAY with roots and well rounded pebbles.
Alluvial.

1.10 Pebbles and cobbles in a matrix of moist, Red brown, FIRM, GRAVELLY CLAY.
Pebble Marker

1.20 Moist, Red, VERY STIFF, intact, CLAYEY SILT with tree roots.
Residual Basalt.

2.60 EOH.

NOTES

1) No Groundwater seepage.
2) No Refusal.
3) Disturbed Sample taken at 0.1--1.1m.
4) Disturbed Sample taken at 1.2--2.6m.

CONTRACTOR : VGS PH
MACHINE : TLB
DRILLED BY :
PROFILED BY : J Bloem
TYPE SET BY : JB
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : TRENCH
DATE : 11.09.2019
DATE : 11.09.2019
DATE : 11/10/2019 13:53
TEXT : ..ot\JacoBloem\ThoTP14.txt

ELEVATION :
X-COORD :
Y-COORD :

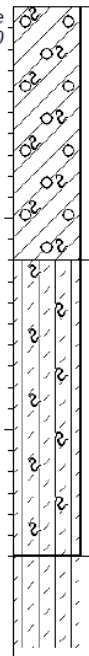
HOLE No: TP 1

Projectneers Consulting
Thohoyandou Botanical Gardens, Thohoyandou

HOLE No: TP 2
Sheet 1 of 1

JOB NUMBER: 1908548

Scale 1:30



0.00 Moist, Red brown, FIRM, slickensided, GRAVELLY CLAY with roots and well rounded pebbles.
Alluvial.

1.20 Moist, Red, VERY STIFF, intact, CLAYEY SILT with tree roots.
Residual Basalt.

2.60 EOH.

NOTES
1) No Groundwater seepage.
2) No Refusal.

CONTRACTOR : VGS PH
MACHINE : TLB
DRILLED BY :
PROFILED BY : J Bloem
TYPE SET BY : JB
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : TRENCH
DATE : 11.09.2019
DATE : 11.09.2019
DATE : 11/10/2019 13:53
TEXT : ..ot\JacoBloem\ThoTP14.txt

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP 2

Projectneers Consulting
Thohoyandou Botanical Gardens, Thohoyandou

HOLE No: TP 3
Sheet 1 of 1

JOB NUMBER: 1908548

Scale 1:30

0.00 Moist, Red brown, FIRM, slickensided, GRAVELLY CLAY with roots and well rounded pebbles.
Alluvial.

1.20 Moist, Red, VERY STIFF, intact, CLAYEY SILT with tree roots.
Residual Basalt.

2.60 EOH.

NOTES

1) No Groundwater seepage.

2) No Refusal.

CONTRACTOR : VGS PH
MACHINE : TLB
DRILLED BY :
PROFILED BY : J Bloem

TYPE SET BY : JB
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : TRENCH
DATE : 11.09.2019
DATE : 11.09.2019

DATE : 11/10/2019 13:53
TEXT : ..ot\JacoBloem\ThoTP14.txt

ELEVATION :
X-COORD :
Y-COORD :

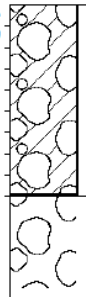
HOLE No: TP 3

Projectneers Consulting
Thohoyandou Botanical Gardens, Thohoyandou

HOLE No: TP 4
Sheet 1 of 1

JOB NUMBER: 1908548

Scale 1:30



0.00 Boulders in a matrix of moist, Red brown, FIRM, GRAVELLY CLAY. Transported

0.90 Refusal of TLB

NOTES

1) No Groundwater seepage.

2) Refusal at 0.9m.

CONTRACTOR : VGS PH
MACHINE : TLB
DRILLED BY :
PROFILED BY : J Bloem
TYPE SET BY : JB
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : TRENCH
DATE : 11.09.2019
DATE : 11.09.2019
DATE : 11/10/2019 13:53
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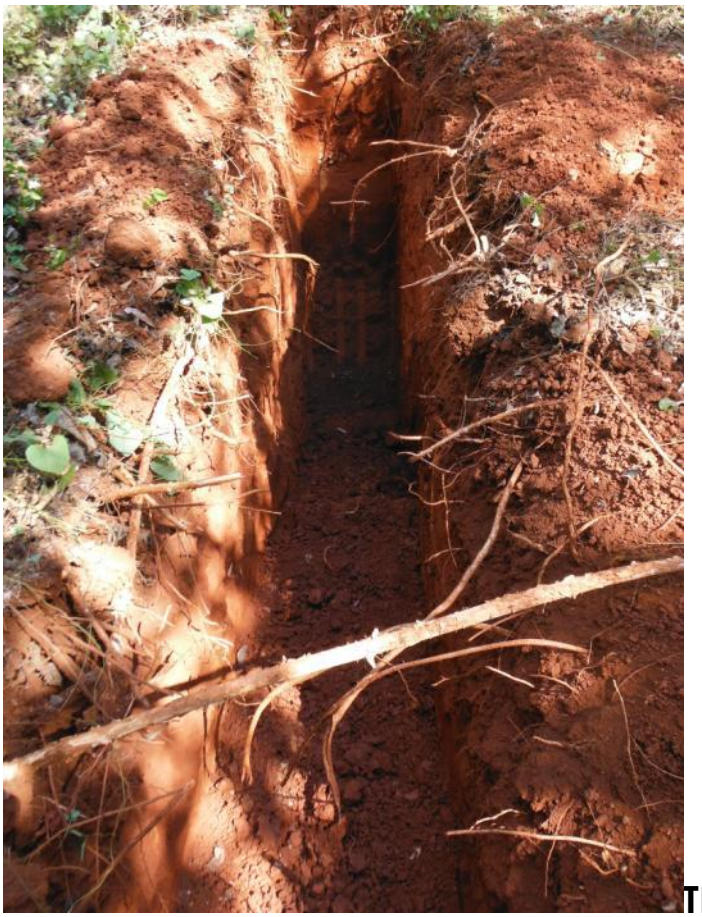
ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP 4

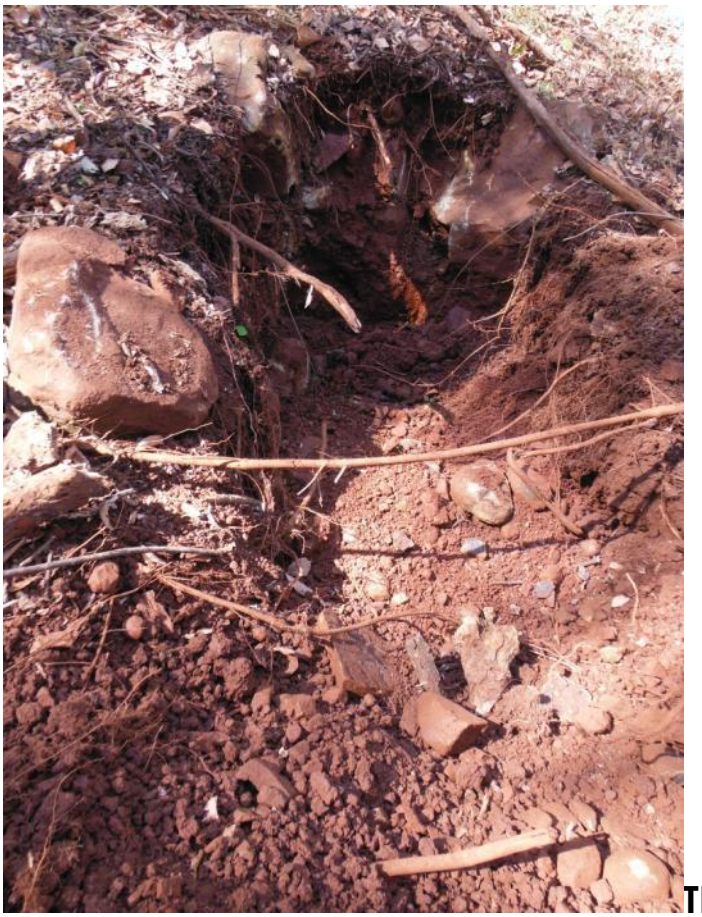
Appendix B: Test Pit Photos



TP1

TP2

TP3



TP4

Appendix C: Laboratory Results

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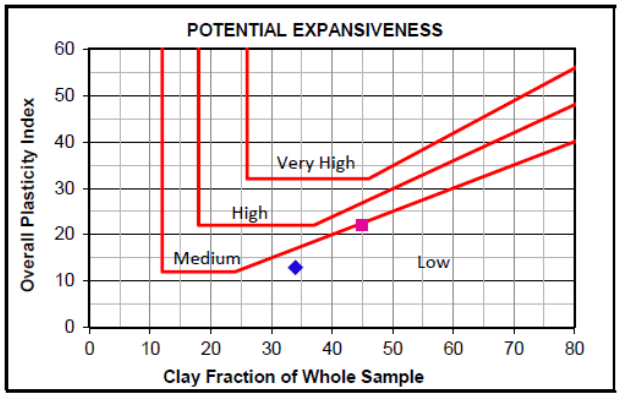
Civilab

Civil Engineering Testing Laboratories

Client	:	GEOTHETA (PTY) LTD	Date Received:		19/09/2019
Project	:	Thoyandou	Date Reported:		07/10/2019
Project No	:	2019-H-716	Page No.	:	2 of 2

FOUNDATION INDICATOR

Laboratory Number		1 ◆	2 ■
Field Number		TP 1	TP 1
Client Reference			
Depth (m)		0.0 - 1.1	1.2 - 2.4
Position			
Coordinates	X		
	Y		
Description			
Aditional Information			
Calcrete / Crushed			
Stabilizing Agent			

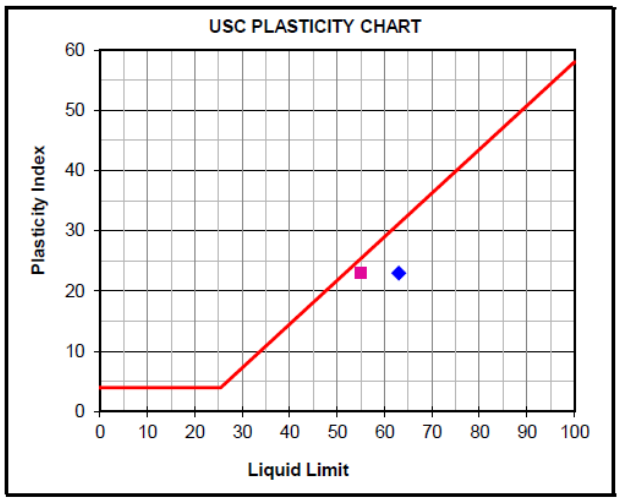


Moisture Content & Relative Density

Moisture Content (%)		
Relative Density (S.G.)		

Sieve Analysis (Wet Prep) — **SANS 3001 GR1**

Percentage Passing	100 mm	100	100
	75 mm	100	100
	63 mm	100	100
	50 mm	100	100
	37.5 mm	100	100
	28 mm	100	100
	20 mm	100	100
	14 mm	98	100
	5 mm	80	100
	2 mm	68	99
	1 mm	62	98
	0.425 mm	57	97
	0.250 mm	56	94
	0.150 mm	56	92
	0.075 mm	55	89
Grading Modulus		1.20	0.15



Hydrometer Analysis — **SANS 3001 GR3**

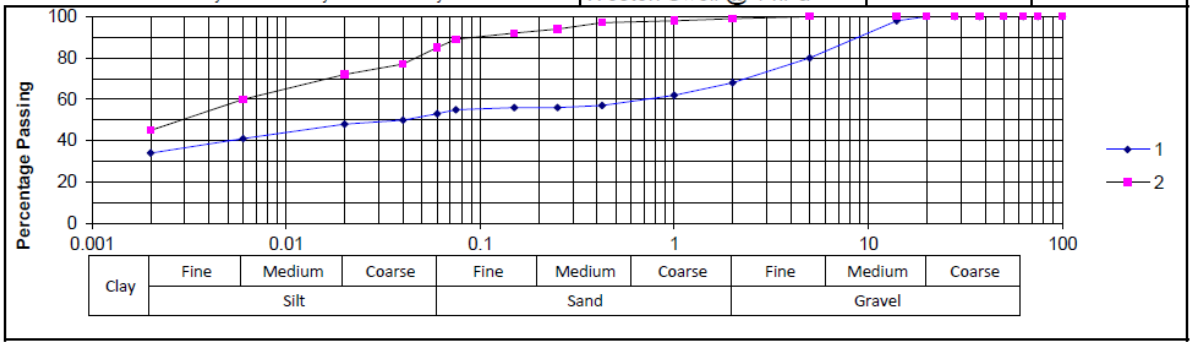
Percentage Passing	0.060 mm	53	85
	0.040 mm	50	77
	0.020 mm	48	72
	0.006 mm	41	60
	0.002 mm	34	45
Gravel	%	32	1
Sand	%	15	14
Silt	%	19	40
Clay	%	34	45

Note: An assumed S.G. may be used in Hydrometer Analysis calculations

Laboratory Number		1 ◆	2 ■
Atterberg Limits -425µ		**SANS 3001 GR10**	
Liquid Limit	%	63	55
Plasticity Index	%	23	23
Linear Shrinkage	%	12.0	11.0
Overall PI	%	13	22

Classifications

HRB (AASHTO)	A-7-5(12)	A-7-5(20)
Unified (ASTM D2487)	MH	MH
Weston Swell @ 1 kPa		



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ENVIRONMENTAL MANAGEMENT PROGRAMME

CONTRACT NO.: G306/2018

ASSESSMENT, DESIGN AND PROJECT MANAGEMENT OF REQUIRED NEW BUILDINGS & REPAIRS, RENOVATIONS & UPGRADES TO VARIOUS INFRASTRUCTURE ASSETS IN THE THOHOYANDOU BOTANICAL GARDEN, THOHOYANDOU, & NATIONAL ZOOLOGICAL GARDEN CAMPUSES BASED IN PRETORIA & MOKOPANE

ENVIRONMENTAL MANAGEMENT PROGRAMME

FOR

THOHOYANDOU BOTANICAL GARDEN

SEPTEMBER 2019

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Valid from	DECEMBER 2018 TO FINAL COMPLETION			
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Approved	Willis, C.	SANBI	2019-09-30	
Released	Tshuma, B.	PJN_PM	2019-09-29	
Revised	Dlamini, S.	PJN_EIA	2019-09-12	
Reviewed	Willis, C.	SANBI	2019-08-31	
Released	Tshuma, B.	PJN_PM	2019-08-13	
Reviewed	Tshuma, B.	PJN_PM	2019-08-04	
Prepared	Dlamini, S.	PJN_EIA	2019-07-30	

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Doc ID	**Rev**	**Rev Date**	**By**	**Revision Notes**
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ZA2018_2008_SANBI_TBG_EMP001	00	2019-08-13	BT	Issued for review.

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DECLARATION

I the undersigned in my capacity as designated below do hereby undertake to ensure that the conditions and recommendations in terms of this Environmental Management Programme (EMPr) for the Construction phase are implemented and assume full responsibility and accountability in all aspects thereof.

I further understand that officials from the Limpopo Department of Economic Development, Environment and Tourism and/or Department of Water and Sanitation may during any phase of the project, conduct an inspection of the development in order to ensure compliance with the conditions and recommendations as outlined in the EMPr.

CONTRACTOR

Company:

Name:

Designation:

Signature:

Date:

ACRONYMS

ACRONYM	MEANING
CARA:	Conservation of Agricultural Resources Act
CITES:	Convention of International Trade in Endangered Species
DEFF:	Department of Environment, Forestry and Fisheries
DWS:	Department of Water and Sanitation
EA:	Environmental Authorisation
ECO:	Environmental Control Officer
EIA:	Environmental Impact Assessment
EMPr:	Environmental Management Programme report
EMS:	Environmental Management System
ESO:	Environmental Site Officer
I &/or APs:	Interested and/or Affected Parties
IEC:	Independent Environmental Consultant
IEM:	Integrated Environmental Management
ISO:	International Standards Organisation
LEDET:	Limpopo Department of Economic Development, Environment and Tourism
NEMA:	National Environmental Management Act
SAHRA:	South African Heritage Resources Agency

GLOSSARY OF TERMS

Alien Vegetation: *Alien vegetation is defined as undesirable plant growth which shall include, but not be limited to all declared category 1 and 2 listed invader species as set out in the Conservation of Agricultural Resources Act (CARA) regulations. Other vegetation deemed to be alien shall be those plant species that show the potential to occupy in number, any area within the defined construction area and which are declared to be undesirable*.

Construction Camp: *Construction camp (site camps) refers to all storage and stockpile sites, site offices, container sites, workshops and testing facilities and other areas required undertaking construction activities.*

Environmental Site Officer (ESO): *An ESO is the site-based designated person responsible for implementing the environmental provisions of the Construction Contract and is appointed by the service provider that carries out construction activities. The ESO shall be the designated responsible person, for implementing any remedial measures as required from time to time and for any authorisations/licences that are required in terms of the service contract. The ESO shall record and communicate environmental issues (as they occur) to the Contractor and maintain records thereof. The ESO shall report concurrently to the contractor and the ECO.*

Environmental Control Officer (ECO): *A suitably qualified and experienced person or entity appointed for the Construction Works, to perform the obligations specified in the environmental authorisation.*

Environment: *Environment means the surroundings within which humans exist and that could be made up of:-*

- *The land, water and atmosphere of the earth;*
- *Micro-organisms, plant and animal life;*
- *Any part or combination of (i) and (ii) and the interrelationships among and between them; and*
- *The physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and well-being.*

Environmental Aspect: *An environmental aspect is any component of a contractor's construction activity that is likely to interact with the environment.*

Environmental Authorisation (formerly known as, Record of Decision): *A written statement from the relevant environmental authority, with or without conditions, that records its approval of a planned undertaking to build or upgrade a section of road and the mitigating measures required to prevent or reduce the effects of environmental impacts during the life of a contract.*

Environmental Impact: *An impact or environmental impact is the change to the environment, whether desirable or undesirable, that will result from the effect of a construction activity. An impact may be the direct or indirect consequence of a construction activity.*

Environmental Impact Assessment*: The process of examining the environmental effects of a proposed development. The assessment requires detailed/specialist studies of significant issues that have been identified during the environmental scoping.*

Environmental Management Programme: *An environmental management tool used to ensure that undue or reasonably avoidable adverse impacts of the construction, operation and decommissioning of a project are prevented; and that the positive benefits of the projects are enhanced.*

Environmental Management System: *The internationally accepted and recognized environmental management system (EMS) which enables companies, organizations and operations to systematically manage, prevent and reduce environmental problems and associated costs. In terms of ISO 14001 and EMS is defined as, "**that part of the overall management system includes organizational structure, planning activities, responsibilities, procedures, processes and resources for developing, implementing, reviewing and maintaining the environmental policy.**"*

Environmental Policy: *A statement by the organisation of its intentions and principles in relation to its overall environmental performance which provides a framework for action and for the setting of its environmental objectives and targets.*

Independent Environmental Consultant: *A suitably qualified and experienced independent environmental consultant (IEC) appointed by the Engineer to perform the obligations specified in the Contract. The IEC shall provide reports to the regulatory authority, the Engineer and any other parties as specified by the regulatory authority.*

Interested and Affected Party: Refers to an interested and affected party contemplated in section 24(4)(d) of the National Environmental Management Act, 1998 (Act No. 107 of 1998) and which in terms of that section includes –
a) Any person, groups of persons, organization interested in or affected by an activity, and;
b) Any organ of state that may have jurisdiction over any aspect of the activity.

ISO 14001 Environmental Management System (ISO 14001): The internationally accepted and recognised Environmental Management System as reflected in the document SABS ISO 14001: 1996.

Method Statement: *A written submission by the Contractor in response to the Specification or a request by the Engineer, setting out the plant, materials, labour and method the Contractor proposes using to carry out an activity, identified by the relevant specification or the IEC when requesting the Method Statement, in such detail that the IEC is enabled to assess whether the Contractor's proposal is in accordance with the EMPr and associated specifications.*

Mitigate: *The implementation of practical measures to reduce the adverse impacts, or to enhance beneficial impacts of a particular action.*

No-Go Area: *Areas where construction activities are prohibited*.

Pollution: *According to the National Environmental Management Act, No. 107 of 1998, pollution can be defined as, "Any change in the environment caused by (i) substances; (ii) radioactive or other waves; or (iii) noise, odours, dust or heat emitted from any activity, including the storage or treatment of waste or substances, construction and the provision of services, whether engaged in by any person or an organ of state, where that change has an adverse effect on human health or well-being or on the composition, resilience and productivity of natural or managed ecosystems, or on materials useful to people, or will have such an effect in the future"*

Rehabilitation: *To re-establish or restore to a healthy, sustainable capacity or state.*

Site: *The area in which construction is taking place*.

Species of Special Concern: *Those species listed in the Rare, Indeterminate, or Monitoring categories of the South African Red Data Books, and/or species listed in Globally Near Threatened, Nationally Threatened or Nationally Near Threatened categories (Barnes, 1998).*

Threatened species: *Threatened species are defined as: a) species listed in the Endangered or Vulnerable categories in the revised South African Red Data Books or listed in the Globally Threatened category; b) species of special conservation concern (i.e. taxa described since the relevant South African Red Data Books, or whose conservation status has been highlighted subsequent to 1984); c) species which are included in other international lists; or d) species included in Appendix 1 or 2 of the Convention of International Trade in Endangered Species (CITES).*

Topsoil: *The top 100mm of soil and may include top material e.g. vegetation and leaf litter*

PREFACE

This Environmental Management Programme report (EMPr) was compiled to address the potential environmental, social and economic impacts associated with the proposed project, by prescribing meaningful and practical mitigation measures through specialist consultation and adherence to relevant environmental legislation, and to prevent the occurrence of irreversible environmental degradation. These mitigation measures must be made binding to all contractors during all the project phases. In addition to the EMP, contractors must be compliant with the requirements set out in the Occupational Health and Safety Act (Act No. 85 of 1993), as well as all other laws and by laws, including the Construction regulations and the SANS set of standards.

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1. INTRODUCTION

1.1 Purpose of the Environmental Management Programme

This Environmental Management Programme (EMPr) is prepared as part of the requirements of the Environmental Impact Assessment (EIA) Regulations (December 2014, as amended in April 2017) promulgated under the National Environmental Management Act (NEMA) (Act 107 of 1998, as amended).The purpose of this EMPr is to ensure "good environmental practice" by taking a holistic approach to the management and mitigation of environmental impacts during the "construction"/clearing and operation phase of the proposed new buildings and repairs, renovations and upgrading of various infrastructure/ assets of Thohoyandou Botanical Garden. This EMPr therefore sets out the methods by which proper environmental controls are to be implemented by management. The EMPr is to be submitted to the Limpopo Department of Economic Development, Environment and Tourism (LEDET) as part of the Application for Environmental Authorisation for the proposed new buildings and repairs, renovations and upgrading of various infrastructure/ assets of Thohoyandou Botanical Garden. This EMPr is considered as a document that can be updated as new information becomes available during the "construction", operational and decommissioning phases, if applicable, of the proposed development. Mitigation measures need to be implemented as addressed in this EMPr, except where they are not applicable, and additional measures should be considered when necessary. The EMPr identifies the following:

Construction and Operation activities that will impact on the environment;

- Specifications with which the Engineers and any Contractors involved in all phases of the project lifecycle shall comply in order to protect the environment from the identified impacts; and
- Actions that shall be taken in the event of non-compliance.
- This EMPr incorporates management plans for the "construction" and operation phases of the project, which consist of the following components:
- **Impact**: The potential positive or negative impact of the development that needs to be enhanced, mitigated or eliminated.
- **Objectives**: The objectives necessary in order to meet the goal; consider the findings of the specialist studies.
- **Mitigation/Management Actions**: The actions needed to achieve the objectives, taking into consideration factors such as responsibility, methods, frequency, resources required and prioritisation.

- **Monitoring**: The key monitoring actions required to check whether the objectives are being achieved, taking into consideration responsibility, frequency, methods and reporting.

1.2 Phases of the project

There are three key phases of the proposed project, as covered by the EMPr:

1.2.1 Planning Phase

This phase relates to the period leading up to and prior to commencement of construction activities. The EMPr offers an ideal opportunity to incorporate pro-active environmental management measures with the goal of attaining sustainable development. Pro-active environmental measures minimize the chance of impacts taking place during construction and operational phase. There is still the chance of accidental impacts taking place; however, through the incorporation of contingency plans (e.g. this EMPr) during the planning phase, the necessary corrective action can be taken to further limit potential impacts.

1.2.2 Construction Phase

Construction phase relates to all construction and its operation-related activities that will occur within the approved area, until the project is completed. The EMPr contains specific mitigation requirements and requested contractor method statements stipulated where required. The bulk of the impacts during this phase will have immediate effect (e.g. noise, dust, surface and ground water quality). If the site is monitored on a continual basis during this phase, it is possible to identify these impacts as they occur. These impacts will then be mitigated through the contingency plans identified in the planning phase, together with a commitment to sound environmental management from the proponent.

1.2.3 Post-Construction, Rehabilitation and operational phase

By taking pro-active measures during the planning and construction phases, potential environmental impacts emanating during the operational phase will be minimized. This in turn will minimize the risk and reduce the monitoring effort, but it does not make monitoring obsolete.

1.3 Contents of the EMPr

This EMPr specifies the management actions necessary to ensure minimal environmental impacts, as well as procedures for monitoring these impacts associated with the proposed activity. In terms of legal compliance, this EMPr aims to satisfy Appendix 4 of Government Notice Regulation 326 of 7 April 2017, presented in Table 1:

Table 1: Compliance with Appendix 4 of Government Notice Regulation 326 of 7 April 2017 and Section 24N of the National Environmental Management Act 107 of 1998.

Requirements of the EMPr
1) An EMPr must comply with section 24N of the Act and includes) details of - (i) the EAP who prepared the EMPr; and (ii) the expertise of that EAP to prepare an EMPr, including a curriculum vitae;
b) a detailed description of the aspects of the activity that are covered by the EMPr as identified by the project description;
c) a map at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that any areas that should be avoided, including buffers;
d) a description of the impact management objectives, including management statements, identifying the impacts and risks that need to be avoided, managed and mitigated as identified through the environmental impact assessment process for all phases of the development including-
(i) planning and design;
(ii) pre-construction activities;
(iii) construction activities;
(iv) rehabilitation of the environment after construction and where applicable post-closure; and
(v) where relevant, operation activities;
e) a description and identification of impact management outcomes required for the aspects contemplated in paragraph (d);
f) a description of proposed impact management actions, identifying the way the impact management objectives and outcomes contemplated in paragraphs (d) and (e) will be achieved, and must, where applicable, include actions to – (i) avoid, modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation;

ii) comply with any prescribed environmental management standards or practices;
(iii) comply with any applicable provisions of the Act regarding closure, where applicable; and
(iv) comply with any provisions of the Act regarding financial provisions for rehabilitation, where applicable;
g) the method of monitoring the implementation of the impact management actions contemplated in paragraph (f);
h) frequency of monitoring the implementation of the impact management actions contemplated in paragraph (f);
i) an indication of the persons who will be responsible for the implementation of the impact management actions;
j) the time periods within which the impact management actions contemplated in paragraph (f) must be implemented;
k) the mechanism for monitoring compliance with the impact management actions contemplated in paragraph (f);
l) a programme for reporting on compliance, considering the requirements as prescribed by the Regulations;
m) an environmental awareness plan describing the manner in which- (i) the applicant intends to inform his or her employees of any environmental risk which may result from their work; and (ii) risks must be dealt with in order to avoid pollution or the degradation of the environment; and
n) Any specific information that may be required by the competent authority.

2. PROJECT DESCRIPTION AND LOCALITY

2.1 Project Description

The proposed new buildings & repairs, renovations & upgrades to various infrastructure assets of the Thohoyandou Botanical Garden are tabulated below:

Table 2: Project Description

Scope	Area (m^2)	New or Refurbishment
Boundary Fence (Front Side)	1000	Refurbishment
Guest House Refurbishments	2500	Refurbishment
New Ablution Facility	200	New
Walking Trails	2000	Refurbishment
Canopy Walkway	600	New
Visitors Centre	900	New
Public Parking and Admin Block parking	7500	Refurbishment
Public Multi-purpose Hall	625	New
Roads	2400	Refurbishment
Stormwater Infrastructure including artificial dam	2500 and 35	Refurbishment and New

Table 3: Geographical Co-ordinates

Latitude			Longitude		
22°	**57'**	**47.45"**	**30°**	**28'**	**06.10''**

Table 4: Property Details

FID	6017
Shape	Polygon
GID	3238155
PRCL_KEY	0000T0MT000000000278000000
PRCL_TYPE	F
LSTATUS	S
WSTATUS	C
GEOM_AREA	179652671,226297
COMMENTS	
TAG_X	30,521251
TAG_Y	-22,966134
TAG_VALUE	278
TAG_SIZE	0,00195
TAG_ANGLE	6,270672
TAG_JUST	MC
ID	T0MT00000000027800000
DATE_STAMP	2010/11/23
PROVINCE	LIMPOPO
MAJ_REGION	MT
MAJ_CODE	T0MT0000
PARCEL_NO	278
FARM_NAME	MPAPULI 278

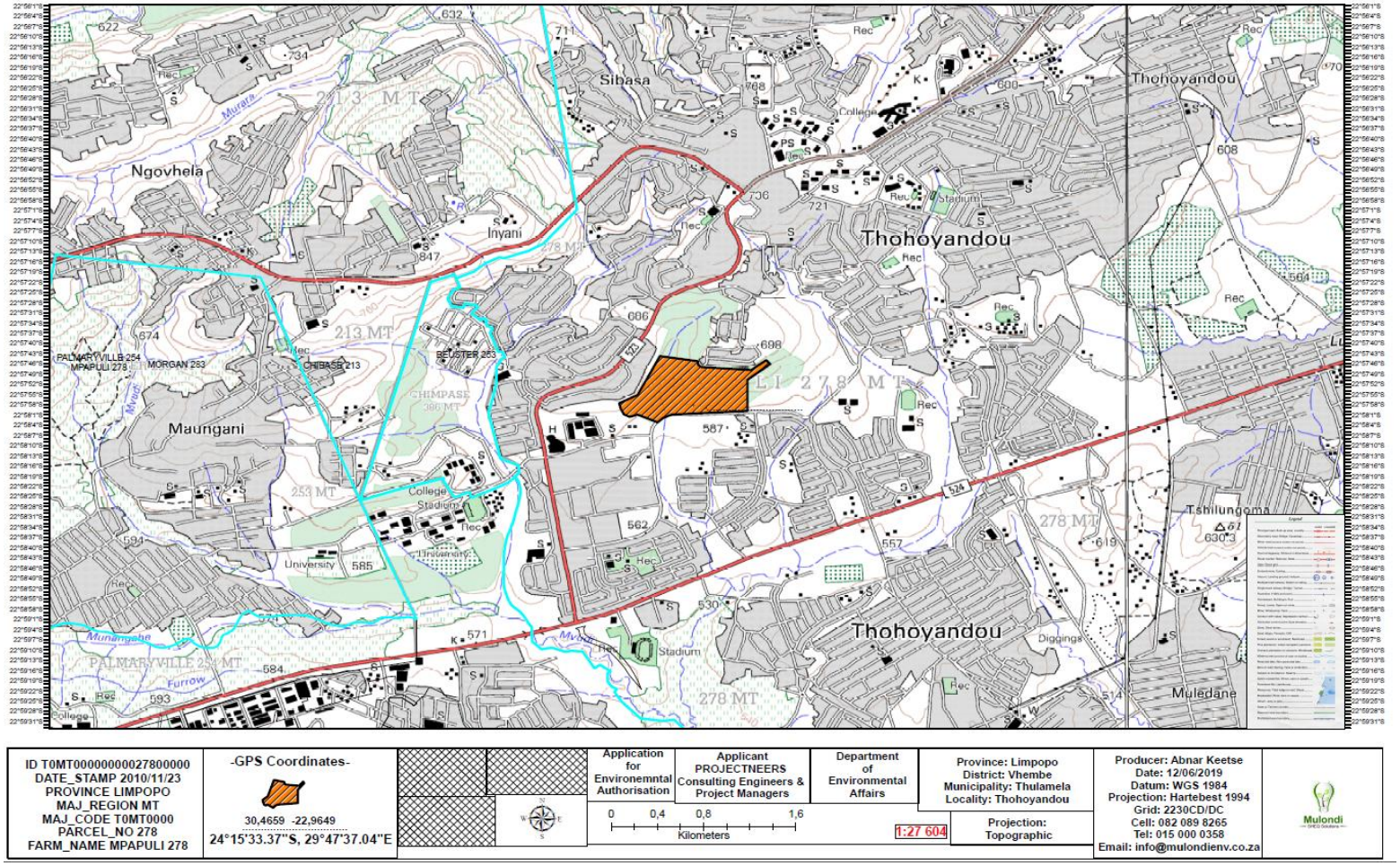


Figure 1:Locality Map

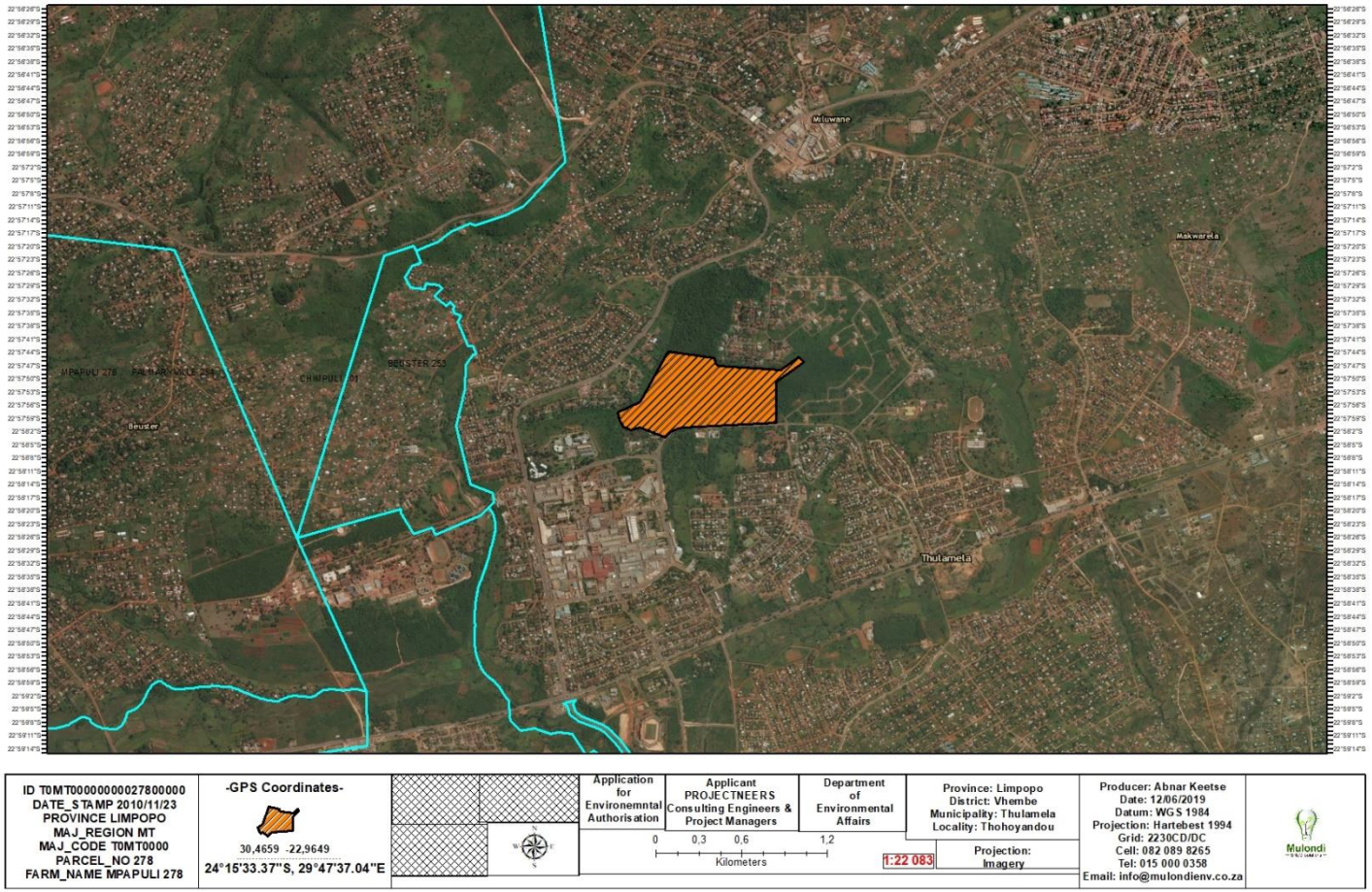


Figure 2: Satellite Photographic Image

2.2 Project`s Biophysical Environment

Climate

The area encounters two main climate seasons, the warm wet season and cool dry season instead of spring, autumn, winter and summer. The temperature conditions are influenced by seasonal conditions and topography, resulting in relatively warm conditions of 16 °C – 40 °C in summer. The warm-wet season is experienced between December and February. During the chilly-cold winter the temperature ranges from 12°C-22°C.

3. ENVIRONMENTAL MANAGEMENT STRUCTURE

The management of **SANBI** will develop an Environmental Management Structure, in line with this EMPr, that is appropriate to the size and scale of the project to develop and implement roles and responsibilities with regards to environmental management.

3.1 Roles and Responsibilities

Key roles and responsibilities in order to meet the overall goal for environmental management of the Development are as follows:

3.1.1 SANBI/Contractors (hereinafter referred to as "Management")

Management is responsible for the overall environmental monitoring and implementation of the EMPr and ensuring compliance thereof with the specifications of the Environmental Authorisation (EA) issued in terms of NEMA. Management should also ensure that any other permits or licences required as part of this project are obtained and complied with. The Management may, however, at their own costs, render the services of an external environmental consultant to oversee the implementation of the documented mitigation measures of this EMPr. It is also expected that management will appoint an Environmental Control Officer, Environmental Health and Safety Officer, and "Construction" Manager.

3.1.2 The Contractor

The contractor is bound to the EMPr conditions through contract and is responsible for ensuring that they adhere to all conditions to the EMPr. The Contractor must thoroughly study the EMPr requirements before establishing on site and must request clarification on any aspect of the document, should they be unclear.

- The contractor must implement all the requirements of the EMPr daily. The contractor must comply with all instructions (whether verbal or written) given by the Engineer and ECO, in terms of the EMP.
- Keeping a copy of the EMPr and EA on site and implementing the EMPr
- Appointing a qualified full time Environmental Site Officer to assist with daily compliance preventing negative impacts on the environment by responsible construction
- Maintaining a register of complaints and queries by members of the public at the site office. This register is forwarded to the ECO on a monthly basis.
- Maintaining all approved infrastructure in good working order to effectively fulfil its intended purpose and to prevent negative environmental impacts

- Immediately remedying any factors that contribute to negative environmental impacts
- Removing non-functional structures
- Ensuring waste disposal at a suitable, permitted waste disposal facility
- Ensuring that suitable arrangements are made to protect the environment against long term negative impacts arising from construction
- Minimizing negative visual impacts
- Cleaning up contaminants of the environment immediately
- Preventing erosion through regular monitoring and rehabilitation of degraded areas and implementation of erosion controls
- Rehabilitating the site and maintaining it for a minimum of 6 months thereafter.

3.1.3 The Engineer

The Engineer (or project manager) is the appointed role player responsible for coordinating and integrating activities across multiple, functional lines. The Engineer is responsible for ensuring that the contractor considers environmental matters seriously by compelling the contractor to comply. The Engineer is responsible for the following:

- Keeps copy of EA and EMPr
- Ensures that all designs and layouts take consideration of sensitive areas and no-go zones and that these are excluded from development where possible (including recommendations made in the EIA and EMPr)
- Arranging meetings or consulting with IAPs about the impending construction activities and assists in communication throughout the project;
- Assessing the Contractor's environmental performance in consultation with the Environmental Site Officer from which a brief monthly statement of environmental performance is drawn up for record purposes;
- Documenting in conjunction with the Contractor, the state of the site prior to construction activities commencing. This documentation will be in the form of photographs or video.
- Negotiate with/community members as required.
- May on the recommendation of the Environmental Control Officer order the Contractor to suspend any or all works on site if the Contractor or his Subcontractor/ supplier fails to comply with the Environmental Management Programme;
- Ensure that the ECO has their full backing regarding environmental matters
- Requesting amendments to the EMPr when needed, on behalf of contractor or applicant
- Ensure that all problems identified during environmental inspections, are addressed and rectified by the contractor as soon as possible.

3.1.5 Environmental Control Officer

The Environmental Control Officer (ECO) will be appointed by the applicant as a monitor of the implementation of, and compliance with, the EMPr. The ECO must be involved in all aspects of the project that can influence environmental conditions on the site. The ECO will be the responsible person for ensuring that the provisions of the EMPr as well as the EA are always complied with. The ECO must fully communicate the environmental management processes associated with the project, particularly the EMPr, as well as review and ensure compliance with the conditions of the EMPr. The ECO will be responsible for issuing instructions to contractors and employees in terms of actions required with regards to environmental considerations. The ECO shall, on a regular basis, prepare and submit written reports to Management and the Competent Environmental Authority (LEDET) as required.

The ECO:

- Is to be the representative of the LEDET
- Monitors contractor and applicant compliance with the EMPr and EA
- Takes baseline photos of site
- Reviews method statements from the contractor for various aspects of work and environmental components such as invasive alien plant control and rehabilitation plan(s)
- Liaises with all the relevant authorities and departments regarding environmental matters, especially the LEDET
- Liaises with the engineer and contractor regarding environmental management
- Undertakes monitoring and auditing as per prescribed period and frequency
- Records all findings, non-compliances and recommendations in an objective and transparent manner in an audit report, submitted to all parties
- Makes recommendation for additional mitigation and improvements to the EMPr as required; has the authority to stop work in emergency situations in conjunction with the engineer.

3.1.6 Environmental Site Officer

The contractor must appoint an internal Environmental Site Officer (ESO) to assist with day-to-day monitoring of the construction activities. The ESO shall ensure and enforce the implementation of the EMPr and EA and specialist studies, if any, daily, which would extend to identification, protection and documentation of biodiversity on the site and their preservation, as well as application for permits. Any issues raised by the ECO will be routed to the Engineer and ESO for the contractors' attention. The ESO must be permanently on site during the construction phase to ensure daily environmental compliance with the EMPr and should ideally be a senior and respected member of the construction crew, with a suitable environmental management qualification and experience. Experience has revealed that ESO's that can relate to the work force are the most effective for

information transfer and ensuring compliance with the EMPr. However, the ESO must have a full qualification and some experience in onsite environmental management.

The ESO:

- Opens an environmental file and maintains this on site
- Opens and maintains an incident register (complaints, non-compliances, etc)
- Keeps EA and EMPr and reports on site and on company website
- Remain full time on site during construction and rehabilitation
- Ensures, implements and enforces contractor's daily compliance with the EMPr and EA
- Takes baseline photos of the site
- Provides method statements as requested by the ECO
- Applies for permits when required, may request assistance of the ECO
- Identify, protect and document biodiversity on the site and ensure their preservation. May request assistance from ECO
- Undertake daily monitoring and auditing.
- Records all findings, non-compliances and recommendations in a daily checklist and weekly report, which is also sent to ECO.
- Consults with ECO in conjunction with Engineer before an aspect of work can proceed
- Follows all instructions from the ECO and closes out all items

3.1.7 Environmental Health & Safety (EHS) Officer

The responsibility of the EHS Officer includes overseeing the implementation of the EMPr during the construction and operational phases, monitoring environmental impacts, record-keeping and updating of the EMPr as and when necessary. During "construction", the EHS Manager will be responsible for the following:

- Meeting on site with the Construction Manager prior to the commencement of construction activities to confirm the construction procedure and designated activity zones.
- Daily or weekly monitoring of site activities during "construction" to ensure adherence to the specifications contained in the EMPr and Environmental Authorisation using a monitoring checklist that is to be prepared at the start of the "construction" phase.
- Preparation of the monitoring report based on the daily or weekly site visit.
- Reporting of any non-conformances within 48 hours of identification of such non-conformance to the relevant agents.
- Conducting an environmental inspection on completion of the construction period and 'signing off' the construction process with the Construction Manager.

During operation, the EHS Officer will be responsible for:

- Reviewing the findings of the monitoring and highlight concerns to management where necessary.
- Ensuring compliance with the Environmental Authorisation conditions and related permits.
- Ensuring that the necessary environmental monitoring takes place as specified in the EMPr.
- Updating the EMPr and ensuring that records are kept of all monitoring activities and results.
- At the time of preparing this EMPr, the EHS Manager appointment is still to be made by the applicant.

The appointment of the EHS Officer is dependent upon the project proceeding to the "construction" phase.

3.2 General Items:

- Proper and continuous liaison between all parties is required to ensure that everyone is always informed.
- The IAPs shall be informed of the starting date of construction as well as the phases in which the construction shall take place, by the contractor and engineer
- The Contractor(s) must adhere to all conditions of contract, including the EMPr and landowner/IAP special conditions.
- The work must be confined to demarcated areas and the approved location and no encroachment beyond will be permitted
- The natural environment must be protected, and damage rectified
- All manmade structures and natural environments shall always be protected against damage and any damage shall be rectified immediately.
- The Contractor shall ensure that all damaged areas are rehabilitated to the satisfaction of the ECO. This includes rehabilitation of the camp sites etc, as applicable.
- Effective document management and record keeping of all complaints and steps taken must be undertaken.
- Regular site inspections and good control over the construction process throughout the construction period.
- Effective environmental control on site
- Environmental audits to be carried out monthly during the construction phase, and upon completion of the works for a period as prescribed by the LEDET

4. MONITORING, COMMUNICATION AND REPORTING

4.1 Responsibilities for Environmental Management

The Contractor and / or its agents will be responsible for environmental management on site during the construction period. A pre-construction meeting is recommended in order to reach agreement on specific roles of the various parties and penalties for non-compliances with the EMPr. In addition, surrounding residents must be notified in advance of any potentially disturbing activities.

4.2 Environmental Awareness Training for Site Personnel

The EMPr shall be part of the Terms of Reference (ToR) for all Contractors, Sub-contractors and Suppliers. All the people involved in this project are to be briefed on their obligations towards environmental controls and methodologies in terms of this EMPr prior to work commencing. The briefing will take the form of an on-site presentation by the ECO. The education / awareness programme should be aimed at all levels of the contractor team. New site personnel must attend an environmental awareness presentation. The ESO must also conduct daily toolbox talks.

4.3 Complaints Register and Environmental Incident Register

Any complaints received from the community must be registered and recorded by the contractor on site. The complaint must be brought to the attention of the engineer and contractor, who will respond accordingly. The following information will be recorded:

- Time, date and nature of the complaint;
- Response and investigation undertaken; and
- Close Actions taken, success and closure date. All complaints received will be investigated and a response (even if pending further investigation) is to be given to the complainant within 7 days.

Incidents

Within 8 hours the ESO will report to the Engineer and ECO the occurrence or detection of any incident at the site, or incidental to the operation of the site which has the potential to cause, or has caused, water pollution, damage to the environment, health risks or nuisance conditions, or which is a contravention of the Environmental Management Plan. Within 5 days (or shorter period) from the occurrence or detection of any incident, an action plan must be submitted with a detailed time schedule for implementation:

- To correct the impacts of the incident,
- To prevent the incident from causing any further impacts and
- To prevent the recurrence of a similar incident. The non-compliance forms and complaints register, together with actions taken or to be taken, are to be kept on file by the ESO and made available to the ECO and engineer.

4.4 Site Instruction Entries

The site instruction book entries will be used for the recording of general site instructions as they relate to the construction/ upgrade works. It will also be used for the issuing of stop work orders for the purposes of immediately halting any particular activities of the contractor in lieu of the environmental risk that they may pose.

4.5 ESO Diary Entries

The purpose of these entries will be to record the comments of the ESO as they relate to activities on the site. Each of these books must be available in duplicate, with copies for the project manager and ECO. These books should be available to the authorities for inspection or on request. Minutes of all the meetings that reflect environmental queries, agreed actions and dates of eventual compliance must be available and form part of the official environmental record.

4.6 Method Statements

Method statements from the contractor will be required for specific sensitive actions on request of the authorities or ECO. A method statement forms the base line information on which sensitive area work takes place and is a "live document" in that modifications are negotiated between the Engineer, contractor and ECO as circumstances unfold. All method statements will include items from the EMPr. A method statement describes the scope of the intended work in a step by step description for the ECO to understand a contractor's intentions. This will enable them to assist in devising any mitigation measures, which would minimize environmental impact during these tasks. For each instance wherein it is requested that the contractor submit a method statement to the satisfaction of the ECO, the format should clearly indicate the following:

- **What? -** a brief description of the work to be undertaken;
- **How?** - a detailed description of the process of work, methods and materials; as well proposed controls and mitigation
- **Where?** - a description/sketch map of the locality of work (if applicable); and
- **When?** - the sequencing of actions with due commencement dates and completion date estimates.

The contractor must submit method statements before any construction activity is due to start. Work may not commence until the method statement has been approved by the ECO and engineer. Allow a minimum of 14 days

for approval of method statements. The following detailed and comprehensive method statements are likely to be required as relevant:

- Erosion control and run off control (storm water control); erosion rehabilitation
- Materials management
- Invasive alien plant control and eradication
- Waste management, storage, handling and disposal
- Noise and dust control
- Social control
- Spill Contingency and Emergency Response
- Rehabilitation
- Should changes to the above occur, the ECO and engineer will then need to approve these again

4.7 Record Keeping

All records related to the implementation of this management plan (e.g. complaints register and incident book, site instruction book; ESO diary; method statements) must be kept together in an office where it is safe and can be retrieved easily. These records should be available for scrutiny by any relevant authority at any time.

4.8 Photographs

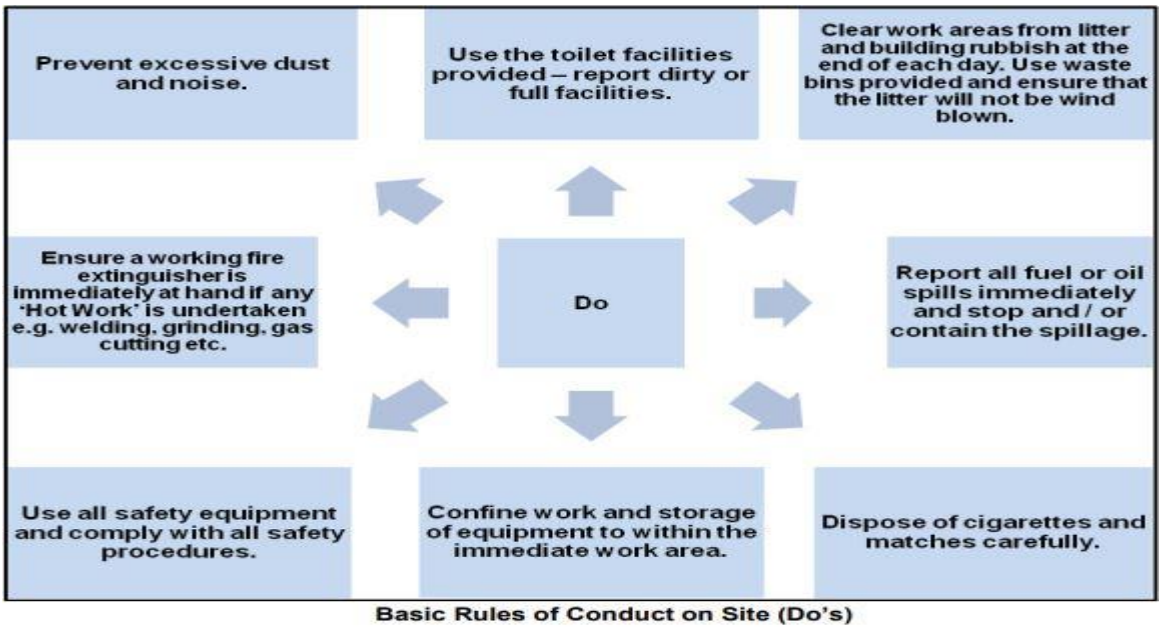
Photographs must be taken of the site prior to, during and immediately after construction as a visual reference, by the contractor. These photographs should be stored with other records related to this EMPr. If captured in digital format, hard copies must be kept with all other records relevant to the implementation of this EMPr.

4.9 Environmental Close Out Report

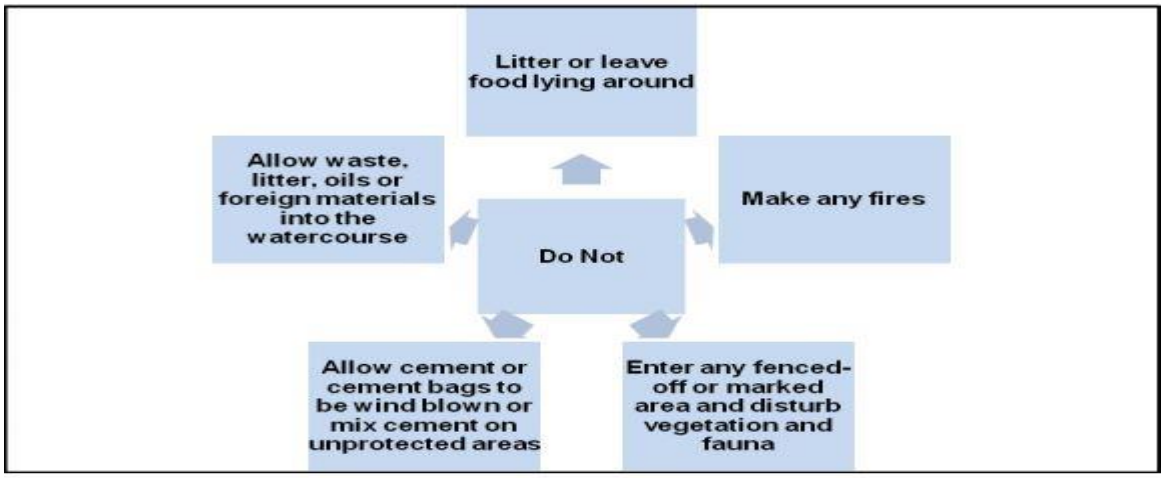
An environmental close out report is a report by the ECO to the relevant authorities stating completion of the project and overall compliance levels. This report will also comment on the impacts arisen during construction vs impacts predicted.

4.10 Basic Rules of Conduct

The following figures represent the do's and don'ts towards environmental awareness that all participants in this project must consider whilst carrying out their tasks. These are not exhaustive and serve as a quick reference aid:



Basic Rules of Conduct on Site (Do's)



Basic Rules of Conduct on Site (Dont's)

4.11 Environmental Monitoring Auditing, and reporting mechanism

Environmental monitoring will be undertaken by the Environmental Control Officer (ECO) on a monthly basis. Monitoring will be undertaken to ensure compliance with all aspects of the EMPr. In order to facilitate communication between the ECO, Engineer and Contractor, it is important that a suitable chain of command is structured that will ensure that the ECO's recommendations have the full backing of the project team before being conveyed to the Contractor. In this way, penalties as a result of non-compliance's with the EMPr may be justified as a failure to comply with instruction from the highest authority. It is recommended that communication be via the

Engineer. All findings will be presented in a written report and distributed to all parties, including the LEDET. The following auditing and monitoring and reporting protocol will be used:

- Initial analysis and review of the EMPr and RoD
- Review layouts and drawings
- Determine audit scope
- Onsite opening meeting
- Review documentation (ESO file)
- Walk through site to observe construction-related activity
- Stop at active work sites for in depth monitoring
- Onsite closing meeting
- Discuss findings on site with the Engineer and contractor's ESO and specify mitigation or management measures
- Discuss significant issues of concern with the Engineers where relevant
- Prepare audit report for submission to client, contractor, and LEDET.
- Recommend measures and opportunities for improvement
- Comment briefly on the various aspects on the affected environment including effectiveness of mitigation, method statements and plans.

Non-Compliance with the EMPr

Difficulties may be encountered with carrying out mitigation measures that could result in future non-compliance. The Contractor shall put in place procedures to motivate staff members to comply with the EMPr, and to deal with acts of non-compliance, or malicious damage to the environment. Penalties for non-compliance need to be discussed with the Contractor at the earliest stage (during the Pre-Construction meeting). The Contractor is deemed not to have complied with the Environmental Management Plan if:

- within or without the boundaries of the site, site extensions and haul/ access roads there is evidence of contravention of clauses;
- if environmental damage ensues due to negligence or otherwise; the Contractor fails to comply with corrective or other instructions issued by the Engineer within a specified time,
- The Contractor fails to respond adequately to complaints from the public and calls for environmental mitigation

Amendments / Instructions

No EMPr amendments (relaxation or revision of any mitigation measure) shall be allowed without approval from the relevant authority (LEDET). Motivations for amendments to the EMPr may be discussed with ECO.

However, the ECO may provide onsite input where required with regards to the mitigation measures required as per EMPr.

5. ENVIRONMENTAL MANAGEMENT OBJECTIVES AND MEASURABLE TARGETS

This section outlines management measures, objectives and measurable targets:

Table 5: Legislative Context

Title of legislation, policy or guideline	Administering authority	Date
National Environmental Management Act (NEMA)	Department of Environment, Forestry and Fisheries	2014
National Environmental Management: Waste Act	Department of Environment, Forestry and Fisheries	2010
National Environmental Management: Biodiversity Act	South African National Biodiversity Institute (SANBI)	2004
National Water Act	Department of Water and Sanitation	1998
Integrated Environmental Management (IEM) (Department of Environment Affairs: DEAT, 1992). IEM is a philosophy, which prescribes a code of practice for ensuring that environmental considerations are fully integrated into all stages of the development process. This philosophy aims to achieve a desirable balance between conservation and development.	Department of Environment, Forestry and Fisheries	1992
National Heritage Resources Act, 1999, (Act No. 25 of 1999).	South African Heritage Resources Agency and the Provincial Limpopo Heritage Resources Agency (LIHRA).	28 April 1999
Constitution of the Republic of South Africa, Bill of Rights, Chapter 2: 7-39	The Constitutional Court (CC) of South Africa.	4 February 1997
National Water Act, 1998 (Act No. 36 of 1998)	Department of Water Affairs	1998

National Environmental Management: Waste Act (NEMWA), 2008 (Act No. 59 of 2008).	Department of Environment, Forestry and Fisheries	2008
Environment Conservation Act, 1989 (Act No. 73 of 1989)	Department of Agriculture and Fisheries	1989
Atmospheric Pollution Prevention Act, 1965 (Act No. 45 of 1965)		1965
Air quality Act, 2004 (Act No. 39 of 2004)		2004
Occupational Health and Safety Act (OHSA), Act No. 85 of 1993	Department of Labour	1993
Municipal By-Laws	Local	

5.1 Impact Management Environmental Management Programme

Impact/Aspect Description	Environmental objective	Management/Mitigation Measures	Monitoring Compliance and Reporting	Monitoring Frequency	Responsibility
Planning Phase					
Contractual matters and construction programme	• Contingencies for minimizing negative impacts • Ensuring environmental awareness and formalising environmental responsibilities	• The EMPr must be included as part of the tender documentation, enforceable under the general conditions of contract. • A copy of the EMPr must be held on site. The contractor must ensure that all the personnel on site, sub-contractors and their team, suppliers, etc. are familiar with and understand the specifications contained in the EMPr. • Contractors shall prepare a source statement indicating the sources of	Contract documents -Permits for materials	Contractor appointment, site establishment and ongoing as required	Management/Contractor

		all materials (including topsoil, sands, natural gravels, crushed stone, asphalt, clay liners etc), and submit these to the Engineer for approval prior to commencement of any work. This must also be filed. • Where possible, a signed document from the supplier of natural materials should be obtained confirming that they have been obtained in a sustainable manner and in compliance with relevant legislation • Work near the river or on the river crossings may not commence without a Water Use License from the Department of Water			

		and Sanitation has been issued.			
Method statements	• Contingencies for minimizing negative impacts • Ensuring environmental awareness and formalising environmental responsibilities	• Method statements as stated in this EMPr must be provided by the contractor. All activities which require method statements may only commence once the method statements have been approved by the engineer and/or ECO as applicable. • It is vital that detailed construction method statements be compiled and submitted to the engineer and ECO for review, detailing method of working in the watercourses, diversion if any and mitigation for this; as well as method		Site establishment and as required	Contactor/ Environmental Control Officer/ Environmental Site Officer

		statements for road construction upgrade, spill contingency and emergency response			
Emergencies	Contingencies for minimizing negative impacts	The contractor must provide method statements on the protocols to be followed, and contingencies to be put in place for the following potential incidents before construction may begin: Contamination of natural water resources from spills; contamination of soils from spills; and fire		Site establishment and as required	Environmental Site Officer /Contractor
Construction/Clearing Phase					
Loss of natural vegetation and habitats within the CBA	To minimise loss of vegetation, specifically in sensitive areas.	• Development planning must ensure loss of vegetation and disturbance is restricted to	• The Management to ensure development layout adheres to the proposed mitigation	During planning and clearing phase	Construction Manager/Environmental Control Officer

		within the recommended site layout footprint. • Avoid the Critical Biodiversity Area (CBA)	measures of this EMPr.		
Removal of flora (including species of conservation importance)	To prevent loss of species of conservation concern.	• Obtain permit removal/ relocation of listed and protected species • Conduct a search and rescue operation to recover and relocate suitable wildflowers/ herbs • Avoid disturbance /activities outside of the direct footprint	• SANBI to verify implementation of the mitigation measures proposed in this EMPr.	During planning	Environmental Control Officer/ Environmental Site Officer and the appointed Ecologist
Loss of riparian habitat and buffer zone for the River	To prevent the disturbance to the riparian habitat and river.	• Avoid all riparian areas and adjacent land up to a minimum of 20m from the riparian boundary • Extend the minimum buffer area up to 50m to maximise the buffering functions and processes	SANBI to ensure cultivation layout verifies the proposed mitigation measures of this EMPr.	During planning and clearing phase	Environmental Site Officer /Engineer

		for the Watercourses (high ecological importance; • very high ecological sensitivity)			
Disturbance to fauna from noise, light and other disturbances	To prevent disturbance to fauna	• Minimise lighting on-site, use pressure sodium vapour lights/or LED lights, and angle/face into working areas. Infrared and/or sensor lights and security systems should be used as far as possible to limit need for permanent lighting. • Ensure minimal or no disturbance outside of footprint areas	SANBI to verify implementation of the mitigation measures proposed in this EMPr.	During planning and clearing phase	Engineer/Environmental Site Officer
Impact Description **Loss of habitat integrity due to spread of IAPs**	To prevent the spreading and increase of alien invasive species.	Develop and implement and invasive alien plant control programme, with routine follow-ups, monitoring, and should be implemented by a	SANBI to ensure that this is taken into consideration during the planning of the proposed development.	All phases	Environmental Site Officer /Engineer

		competent contractor (special care is essential when working within the riparian/aquatic environments)			
Loss of ecological connectivity and dispersal/movement	To prevent the disturbance to the ecological system	• Avoid all riparian areas and adjacent land up to a minimum of 20m from the riparian boundary • Extend the minimum buffer area up to 50m to maximise the buffering functions and processes for the nearby watercourses (high ecological importance; very high ecological sensitivity)	SANBI to ensure cultivation layout verifies the proposed mitigation measures of this EMPr.	Planning and construction	Environmental Site Officer
Water quality impacts (including sedimentation) to the nearby watercourses	To prevent the loss and minimise the disturbance of natural habitats, and ultimately prevent the loss of ecosystem function on site.	• Method statements are required for waste management, hazardous material/waste management, spill contingency and	• SANBI to verify implementation of the mitigation measures proposed in this EMPr.	During planning and construction	Engineer/Environmental Control Officer/Environmental Site Officer

		protection, soil surface and groundwater protection • Disposing of hazardous materials or any other type of material or waste stream into the watercourse, near the watercourse or riparian area, in the open/natural environment, (including all types of rubble, spoil, waste rock, spills, waste, litter, garbage, plastics, excess material from blasts etc) is strictly prohibited. • Treat oil and chemical spills/residues immediately with an absorbent	• ECO to ensure compliance.		

		• Contractor must ensure that spill kit and drip drays are available on site • Contractor must ensure that an emergency response plan is available • Contractor must ensure that disposal slips are obtained after waste disposal has taken place at registered, legal disposal sites. These slips/receipts must be filed. **Ablutions** • Chemical toilets must be provided for contract workers and are to be maintained in a clean state for the duration of the contract period and should			

		be sufficient in number to ensure that they adequately service the work area. • If chemical toilets are used, then the waste should be serviced regularly with proof of servicing being retained on file. Care must be taken during servicing to avoid contamination of soils and water pollution and nuisance to adjoining areas. • A registered chemical waste company is to be used to remove waste from chemical toilets. Servicing slips are required. • If a septic tank will be used, this must be located			

		at least 100m away from the watercourse and encased in an impermeable liner and bunded area. • The Contractor is to ensure that open areas, the surrounding areas, and especially the watercourses are not being used as a toilet facility or washing purposes (personal, effects, implements). • Under no circumstance may sewage/waste from toilets be disposed of in the watercourse. **Wastewater management** • All concrete mixing must take place on a			

		designated, impermeable and bunded surface • A designated, bunded area or workshop is to be set aside for vehicle washing and maintenance. • No polluted runoff or stormwater must be allowed to enter the river • Provision should be for all polluted runoff to be treated to the Engineer's approval before being discharged. • No form of secondary pollution should arise from the disposal of sewage, waste and refuse. If any problems should arise, these must be addressed immediately. **Hazardous materials**			

		The contractor must provide and maintain a method statement for cement and concrete handling. The method statement must provide information on proposed storage, washing & disposal of cement, packaging, tools and plant. • Mixing of concrete on site is not recommended, however if unavoidable, it must be conducted only in specifically selected sites on mortar boards or similar structures, on a designated, impermeable and bunded surface or on a metal drip tray and must occur out of the flood line or further than 32m away			

		from watercourses, to contain run-off into soil, rocky outcrops, and watercourses. • Cleaning of cement mixing and handling equipment must be done using proper cleaning trays. • All empty cement bags are to be treated as hazardous waste and must not be discarded on the ground and the river; and must not be allowed to become windblown • All empty containers must be stored in a dedicated area and later removed from the site for appropriate disposal at a licensed facility. • Any spillage of cement that may occur must be			

		investigated and immediate remedial action must be taken. • The visible remains of concrete, either solid, or from washings, must be physically removed immediately and disposed of as waste to a registered landfill site • No vehicle transporting concrete may be washed on site • Vehicle servicing must occur in a banded area or workshop area, further than 100m from site • All substances required for vehicle maintenance and repair must be stored in sealed containers until they can be removed from site.			

		• Storage of hazardous substances within bunded area, and away from buffer areas. • Hazardous waste disposal must be carried out by an approved waste contractor. • Storage areas that contain hazardous substances must be bunded with an approved impermeable layer. • A sump (earth or other) must be created for concrete waste. This is to be dislodged regularly and the cement waste is to be removed to a tip site as approved, by the local solid waste company that oversees that area.			

		• Disposing of hazardous materials or any other type of waste into the watercourse, near the watercourse or riparian area, in the open/natural environment, (including all types of rubble, spoil, waste rock, spills, waste, litter, garbage, plastics, excess material from blasts etc) is strictly prohibited. **Surface water management** • No vehicle transporting concrete may be washed on site • Treat oil and chemical spills/residues immediately with an absorbent to prevent			

		seepage into the soil, groundwater or being washed into the watercourse • Care must be taken to ensure that runoff from vehicle or plant washing does not enter the groundwater. • Should any pollution of groundwater or surface water occur then the regional DWS office should be contacted urgently. Hazardous substances, handling, storage, and incident response • Storage areas for hazardous substances, materials and chemicals must be located at least 100m away from			

		watercourse, under lock and key in a ventilated store, or a fenced, secure, bunded area which is adequately labelled. • Store potential contaminants appropriately within the site camp area. • Hazardous storage areas must be bunded with an impermeable liner to protect soil, surface and groundwater quality. • Preparation of shutter boards or other required construction effects must be done on an impermeable surface. • Storage areas containing hazardous substances/materials must be clearly signed.			

		• Safety Data Sheets (SDSs) should be readily available on site for all chemicals and hazardous substances to be used on site. Where possible and available, SDSs should additionally include information on ecological impacts and measures to minimise negative environmental impacts during accidental spill releases or escapes. • Emergency numbers should be put up on site and consulted should any accidents / spillages of hazardous substances and / or materials take place. • The Contractor is to outline a method statement for the			

		dealing of accidents / spillages of hazardous materials or substances. This statement must be handed to the Engineer as well as to DWS should the incident occur near a watercourse • Treat oil and chemical spills/residues immediately with an absorbent • Spills in bunded areas must be cleaned up, removed and disposed of safely from the bunded areas as soon as possible after detection in order to minimise the risk of pollution and reduced bunding capacity. • A designated bunded area is to be set aside for			

		vehicle washing and maintenance. • Materials in this bunded area must be disposed of to a suitable waste site or as directed by the engineer. • Provision should be made during set up for all polluted runoff to be treated to the Engineer's approval before being discharged into the stormwater system **Chemical spills** • Contain chemical spills and arrange for clean-up / control by the supplier or by professional pollution control personnel or use of a spill kit by trained			

		personnel Oil and Fuel spills • No vehicle transporting concrete may be washed on site • A spill kit must be held on site. • Store potential contaminants appropriately within the site camp area. Drip trays are required for all plant / machinery / equipment that uses hydrocarbons. • Check vehicles for leaks regularly. If left standing near the river over night or for more than 8 hours, ensure a drip tray is placed under the vehicle's engine • Servicing should be done ideally off site, but if unavoidable			

		• The area that houses the construction camp is to be checked for spills of substances such as oil, paint etc. and these should be cleaned up. • Immediately clean up any accidental oil or fuel spills or leakages Do not hose oil or fuel spills into the surrounding natural environment or watercourse • Clean small oil or fuel spills with an approved absorbent material, such as 'Drizit' or 'Spill-sorb'. • Contain oil or fuel spills in water using an approved oil absorbent fibre. • Treat soil contaminated by oil or fuel using one of the following approved			

		methods, as per instruction of the Engineer: • Remove the soil to the depth of the contamination and dispose of it at a registered Hazardous **Waste Disposal Site**. Remove the soil to the depth of the contamination and regenerate it by using approved bio-remediation methods. In the event of a spillage/incident that cannot be contained and which poses a serious threat to the local environment, and human health, the following Departments must be informed of the incident in accordance with Section 30 of NEMA, 1998: to the Local Authority;			

		DWS; LEDET and the local Fire Department.			
Waste generated from Construction	To prevent Environmental pollution and contamination	**Green waste** • Green waste, vegetation cleared as part of this project, must be stored in a container that is wind, water and scavenger proof. **General waste** • To ensure that waste generated does not detract from the aesthetics of the surrounding environment, general waste must be stored in containers that are wind, water and scavenger proof. These containers must be located on a level surface that is in excess of 32m from water resources. **Building rubble**	• SANBI to verify implementation of the mitigation measures proposed in this EMPr. • ECO to ensure compliance.	During construction and Planning	Engineer/Environmental Site Officer

		• Building rubble and spoil material from excavations should be stored in a skip or screened and roofed area, on a level surface that is visually unobtrusive. The Environmental Site Officer must monitor the skip and ensure that sufficient capacity exists for the waste to be generated by immediate construction activities. **Effluent** • A chemical toilet must be provided for every 15 workers on site. This toilet must be secured to the ground on a level surface that is sheltered from the elements in order to prevent it from toppling			

		over. A maintenance schedule for the removal and cleaning of these toilets must be established in order to ensure that sufficient ablution facilities for the construction staff are maintained at all times. These toilets must be locked at the end of each day, and every effort must be taken to ensure that animals cannot gain access to these toilets. Sufficient toilet paper must be made available.			
Noise disturbance as a result of tractor and/or machinery activities.	To prevent noise generation on site.	• Activities that will generate the most noise should be limited to during the day in order to minimise disturbance to the neighbours.	ECO to ensure compliance and reporting thereof.	During the clearing phase	Engineer/Environmental Site Officer

		• The noise created by the proposed activities is not expected to be significant, if required, noise reduction measures will have to be implemented in compliance with the Noise Regulations. • No sound amplification equipment to be used on site, except in emergency situations. • Limit vehicles travelling to and from the site to minimise traffic noise to the surrounding environment. • A complaints register should be kept on site, with records of complaints received and manner in which they were resolved			

Degradation of ambient air quality as a result of dust and other emissions generated.	To minimise the impact on the ambient air quality as a result of development activities.	• Environmentally friendly dust control measures, such as mulching or periodic wetting of the exposed areas. • Clearing should be done in a strategic manner to avoid large areas of no stratified soils.	• Air emissions to be monitored throughout the construction phase. • Ensure regular maintenance of construction vehicles to allow for 'cleaner' emissions from these vehicles, including equipment maintenance.	Daily during the clearing phase	Engineer/Environmental Site Officer
Impact on features of heritage importance.	To protect heritage resources.	• Should any features of heritage be identified on site, these should not be disturbed; all development should cease until further notice and would be immediately reported to a Heritage specialist and LIHRA • No structures older than sixty years or parts thereof	Report any features of Heritage significance.	N/A	Environmental Site Officer /Appointed Heritage Specialist

		are allowed to be demolished altered or extended without a permit from LIHRA			
Operational Phase					
Faunal mortality and disturbance including possible conservation important species)	To minimise mortality and disturbance to fauna.	Restrict and control the movement of people/vehicles outside of operational/working areas	SANBI to verify implementation of the mitigation measures. Proposed in this EMPr.	When necessary during operation	Construction Manager/Environmental Control Officer
Disturbance to fauna from noise, light and other disturbances	To prevent the loss and Minimise the disturbance of natural habitats, and ultimately prevent the loss of ecosystem function on site.	• Minimise lighting on-site, use pressure sodium vapour lights/or LED lights, and angle/face into working areas. Infrared and/or sensor lights and security systems should be used as far as possible to limit need for permanent lighting.	SANBI to verify implementation of the mitigation measures proposed in this EMPr. ECO to develop a management plan to prevent faunal disturbance and displacement. An assessment should be undertaken to determine	Regular inspection every six months	Construction Manager/Environmental Control Officer

		• Ensure minimal or no disturbance outside of footprint areas	and monitor sensitive areas		
Loss of habitat integrity due to spread of IAPs	To prevent the spreading and increase of alien invasive species.	Develop and implement and invasive alien plant control programme, with routine follow-ups, monitoring, and should be implemented by a competent contractor (special care is essential when working within the riparian/aquatic environments).	ECO to verify that mitigation measures proposed in this EMPr are implemented and submit a report thereof on a monthly basis.	When necessary during operation	Construction Manager/Environmental Control Officer
Water quality impacts (including sedimentation) to the Watercourses system	The avoidance of water quality detriment.	• Avoid all riparian areas and adjacent land up to a minimum of 20m from the riparian boundary • Extent the minimum buffer area up to 50m to maximise the buffering functions and processes for the Watercourses (high ecological importance;	Regular monitoring and site inspections to be conducted and ensure adherence to this EMPr.		Engineer/Environmental Control Officer/Environmental Site Officer

		very high ecological sensitivity) • Limit earthworks to the winter season			
Noise disturbance as a result of tractor/loader and/or Machinery activities.	To minimise noise generation on site.	• Activities that will generate the most noise should be limited to during the day in order to minimise disturbance of the neighbours. • The noise created by the proposed activities is not expected to be significant. If required, noise reduction measures will have to be implemented in compliance with the Noise Regulations. • No sound amplification equipment to be used on site, except in emergency situations.	• ECO to ensure compliance and reporting thereof. • A complaints register must be kept on the site, in which any noise complaints from the public must be logged.	Daily during the operation phase	Engineer/Environmental Control Officer/Environmental Site Officer

		• Limit vehicles travelling to and from the site to minimise traffic noise to the surrounding environment. • A complaints register should be kept on site, with records of complaints received and manner in which the complaint was addressed.			
Degradation of ambient air quality as a result of dust and other emissions generated.	To minimise the impact on the ambient air quality as a result of development activities.	• Implement effective and environmentally friendly dust control measures, such as mulching or periodic wetting of the exposed areas. • Clearing should be done in a strategic manner to avoid large areas of non-stratified soils.	• Air emissions to be monitored throughout the operation phase. • Ensure regular maintenance of construction vehicles to allow for 'cleaner' emissions from these vehicles, including equipment maintenance.	Daily during the operation phase	Engineer/Environmental Control Officer/Environmental Site Officer

			• Monitor traffic control measures and report noncompliance. • A complaints register must be kept on site, in which any dust complaints from the public must be logged.		
Potential injury to workers and safety being compromised due to handling equipment, machinery, and health issues as a result of smoke emissions.	To protect workers' safety.	Workers to wear Personal Protective Equipment (PPE).	EHS to create safety awareness and monitor non-compliance.	Daily during all phases	Safety Officer/Engineer

6. POTENTIAL IMPACTS AND SIGNIFICANCE

6.1. Construction Phase

Identified Impacts Construction Phase			
Impact	**Significance Rating Before Mitigation**	**Proposed Mitigation**	**Significance Rating after Mitigation**
Direct Impacts			
1. Invasion and establishment of alien and/or invasive vegetation	**Medium Negative (-)**	• Immediate revegetation of all bare soil areas must take place. The species utilized must be determined by a suitably qualified specialist. • A monitoring programme should be implemented to enforce continual eradication of alien and invasive species, especially on wetland and open space systems.	**Low Negative (-)**
2. Increased sediment load in the valley bottoms due to soil and dust runoff as well as storm water being released into the environment.	**Medium Negative (-)**	• Immediate revegetation of all bare soil areas must take place. The species utilized must be determined by a suitably qualified specialist. • Where possible, storm water must be conveyed through grassed swales rather than concrete channels to aid infiltration and reduce run-off. • Berms and/or drainage channels must be constructed around all infrastructures and must be checked regularly for any structural damage or blockages.	**Low Negative (-)**

3. Noise generation and disturbance during construction activities	**Medium Negative (-)**	• Limit construction activities, as far as practically possible, to normal working hours, i.e. 7am to 5pm weekdays. • Should work take place after hours, nearby residents should be notified. • Signage with the contact details of the responsible person should be provided at the site for residents with complaints in this regard. • A complaints register should be kept to document complaints and the corrective action taken. • No loud music to be allowed on site.	**Very Low Negative (-)**
4. Increase in dust during construction	**Medium Negative (-)**	• Limit vegetation disturbance outside the site/construction footprint. • Topsoil should be cleared in a phased manner to avoid large areas of unconsolidated soils. • Soil stockpiles should be covered, wetted or otherwise stabilized to prevent wind erosion and dust generation. • Topsoil should be replaced on undeveloped portions of the site and the footprints re-vegetated immediately after construction. • A water cart or enough watering equipment should be available to wet soils during windy days if wind-blown sand and dust becomes a problem. • Speed limits on the access road should be limited to 25 km/h and strictly enforced	**Low Negative (-)**

5. Soil erosion of disturbed and unconsolidated soil in construction footprints	**Medium Negative (-)**	• Site offices, storage area, construction areas, material lay-down areas, access routes, infrastructure footprints and No-Go areas should be clearly demarcated. • Limit vegetation disturbance outside the demarcated construction area. • Storm water on the site must be controlled for the duration of construction by employing appropriate temporary storm water control structures e.g. cut-off berms. • Topsoil should be cleared in a phased manner to avoid large areas of unconsolidated soils. • Topsoil should be removed and stockpiled in an appropriate manner: Stockpiled separately from subsoil, monitored for- and protected from erosion and kept clear from exotic vegetation. • Topsoil should be replaced on undeveloped portions of the site and the footprints revegetated immediately after construction. • Re-vegetated areas should be watered until vegetation has become established. • Should erosion scars begin to form on the landscape, erosion counter measures should be implemented immediately. • Erosion control and construction disturbance should be an important monitoring facet falling under the control of the Environmental Control Officer (ECO), who should be appointed to implement the Environmental Management Programme (EMPr) during the construction and site rehabilitation phases of the project.	**Very Low Negative (-)**

6. Soil compaction	**Medium Negative (-)**	• Site offices, storage area, construction areas, material lay-down areas, access routes, infrastructure footprints and No-Go areas should be clearly demarcated. • Vehicles should only move in those areas clearly demarcated as roads. • All areas outside the demarcated areas must be ripped and revegetated. • Revegetation species must be determined by a suitably qualified specialist. • A monitoring programme for the revegetated areas must be put in place.	**Low Negative** (-)
7. The outbreak of fire on the site during construction.	**Medium Negative** (-)	• Open fires used for cooking should be avoided where possible. • If such a fire is truly necessary, it should be made in demarcated areas (within the construction camp) that have little vegetation or other flammable substances in proximity. • Cigarette butts must be disposed of in one of the litter bins provided. • Exotic vegetation on the site must be eradicated.	**Very Low Negative (-)**
8. Generation of waste during construction.	**Medium Negative (-)**	• Construction waste (e.g. packaging material, unused materials) must be disposed of at a registered waste disposal facility. • No construction waste should be stockpiled on site. • Adequate litter bins should be provided at the site for waste generated by construction personnel. • Litter bins should be emptied on a regular basis and waste disposed of at a registered waste disposal facility.	**Very Low Negative (-)**

9. Pollution of surface and groundwater due to chemical, oil and fuel spills.	**Medium Negative (-)**	• Generators and fuel supply needed during construction must be placed on trays, which rest on clean soil. • If generators are to be used throughout the operational phase, they should be placed on dripping trays on cement blocks. • No cement/concrete mixing is to take place on the soil surface. Cement mixers should be mixed on plastic sheets or large trays to prevent accidental spills from coming into contact with the soil surface. • Vehicles and construction equipment should be serviced at a demarcated workshop area that is properly roofed and has a concrete floor. • Vehicles should be checked for leaks to ensure no fuel, oil or other similar pollutants pollute the soils. • Ensure secure, bunded storage of materials on site, particularly hazardous materials such as chemicals and fuels. • Already established chemical toilets on the site should be suitably maintained.	**Very Low Negative**
10. Several temporary employment and skills development opportunities will be created during the construction phase.	**Medium Positive (+)**	• Source local labor as far as possible. • Employ previously disadvantaged people as far as possible.	**High Positive (+)**

Indirect Impacts			
11. Risk to human health and safety due to moving construction machinery.	**High Negative (-)**	• Construction footprints, including site offices, storage areas, materials lay-down areas, stockpile area, and workers rest areas should be clearly demarcated. • All construction activities should be limited to the demarcated area. • Access to the demarcated construction area should be strictly controlled. • Entry points and access routes to the site must be clearly marked and traffic limited to those areas. • Suitable information and warning signage should be erected before construction commences. • Speed travelled by vehicles must be kept to a minimum and speed limits enforced. • Ensure that there is a first aid facility and trained first aiders at the site.	**Low Negative (-)**
Cumulative impacts			
None anticipated.	**N/A**	**N/A**	**N/A**

6.2 Operational Phase

Identified Impacts Operation Phase			
Impact	**Significance Rating Before Mitigation**	**Proposed Mitigation**	**Significance Rating after Mitigation**
Direct Impacts			
1. Pollution of surface and groundwater due to chemical, oil and fuel spills.	**Medium Negative (-)**	• If generators are to be used throughout the operational phase, they should be placed on dripping trays on cement blocks. • Vehicles and construction equipment should be serviced at a demarcated workshop area that is properly roofed and has a concrete floor. • Vehicles should be checked for leaks to ensure no fuel, oil or other similar pollutants pollute the soils. • Ensure secure, bunded storage of materials on site, particularly hazardous materials such as chemicals and fuels. • Already established chemical toilets on the site should be suitably maintained.	**Very Low Negative (-)**
2. Invasion and establishment of alien and/or invasive vegetation	**Medium Negative (-)**	• Immediate revegetation of all bare soil areas must take place. The species utilized must be determined by a suitably qualified specialist.	**Low Negative (-)**

		• A monitoring programme should be implemented to enforce continual eradication of alien and invasive species, especially on wetland and open space systems.	
3. Increased sediment load in the valley bottoms due to soil and dust runoff as well as storm water being released into the environment.	**Medium Negative (-)**	• Immediate revegetation of all bare soil areas must take place. The species utilized must be determined by a suitably qualified specialist. • Where possible, storm water must be conveyed through grassed swales rather than concrete channels to aid infiltration and reduce run-off. • Berms and/or drainage channels around all infrastructures must be checked regularly for any structural damage or blockages.	**Low Negative (-)**
4. Generation of waste from day-to-day activities.	**Medium Negative (-)**	• Adequate litter bins should be provided at the site for waste generated by construction personnel. • Litter bins should be emptied on a regular basis and waste disposed of at a registered waste disposal facility.	V**ery Low Negative (-)**
5. Employment opportunities (long term).	**Medium Positive (+)**	• Source local labor as far as possible. • Employ previously disadvantaged people as far as possible.	**High Positive (+)**
6. Potential contamination of groundwater due to sewage leaks and spills.	**Medium Negative (-)**	• Ensure that the conservancy tanks and associated infrastructure are designed and constructed in accordance with DWA and municipal standards. • Conduct pressure tests on the infrastructure in order to detect and repair any leaks before the infrastructure is commissioned.	**Low Negative (-)**

		• No industrial, trade or manufacturing waste, refuse or effluent shall be discharged into any conservancy tanks. • Provide proper training to maintenance personnel in the management and operation of conservancy tanks. • Ensure that a reputable service provider with a proven track record is appointed to empty conservancy tanks. • The access road to the conservancy tanks must be maintained in order to provide access for vacuum tankers. • Groundwater should be tested every six months for potential contamination and remedial action taken if necessary.	
Indirect impacts			
7. Potential impact on the character and —sense of place of the surrounding area.	**Neutral (o)**	**None proposed**	**Neutral (o)**
Cumulative impacts			
None Anticipated	**N/A**	**N/A**	**N/A**

6.3 Decommissioning Phase

Identified Impacts Decommissioning Phase
It is not anticipated that this project will be decommissioned in the near future. Should the facility be decommissioned in the future, the Environmental Procedures and statutory requirements applicable at the time must be complied with, and the area restored to its original condition.

6.4 No Go Alternative

Identified Impacts Construction Phase			
Impact	**Significance Rating Before Mitigation**	**Proposed Mitigation**	**Significance Rating after Mitigation**
Direct Impacts			
1. Continued and increased invasion by exotic weeds	Medium Negative (-)	None Proposed	N/A
2. Continued soil erosion.	Medium Negative (-)	None Proposed	N/A
3. Persistence of the remaining indigenous vegetation patches may be compromised if the site is left vacant	Medium Negative (-)	None Proposed	N/A

(alien plant invasion, fire risk, dumping).			
Indirect impacts			
4. A number of potential employment opportunities will not be realised.	High Negative (-)	None proposed.	**N/A**
D3.4.6 Cumulative impacts			
4. None anticipated.	**N/A**	**N/A**	**N/A**

7. ENVIRONMENTAL AWARENESS AND TRAINING PLAN

SANBI must appoint an independent Environmental Control Officer (ECO) whose duties are to also implement an effective environmental awareness plan aimed to educate workers and contractors in terms of the biodiversity on site, environmental risks associated with the proposed development and land management of the site. Training and/or awareness should be raised and effectively communicated prior to the commencement of the clearing phase. Training sessions should incorporate the management plans addressed in this EMPr as well as any new information and documentation provided by the ECO, as well as that of the Environmental Health & Safety (EHS) Officer. The ECO would be the most suitable person to conduct these training sessions, identifying sensitive environments as well as all the risks and impacts associated with the sugar cane development and the methods in which to deal with the impacts in order to avoid environmental degradation. Training sessions can be monitored by providing an attendance register indicating the workers that received training as well as evidence of the training and/or awareness received. These sessions would also need to be carried out throughout the operational phase of the development, at least once a year, as new information becomes available or new staff appointed.

8. CONCLUSION

This EMPr is ensuring that impacts associated with the development are kept to a minimum level. This EMPr has been prepared as “stand alone” document to be used as the basis for actively managing the activities as projects progress. This document outlines the overarching performance criteria, control strategies and corrective actions proposed accordingly. On balance, the benefits of the potential positive project impacts for the local community and beyond, namely vegetation conservation and protection of endangered species; scenery improved and cost savings to the facility users, are considered to outweigh the disadvantages of the potential minimum negative impacts.

CULTURAL HERITAGE SURVEY REPORT

CONTRACT NO.: G306/2018

ASSESSMENT, DESIGN AND PROJECT MANAGEMENT OF REQUIRED NEW BUILDINGS & REPAIRS, RENOVATIONS & UPGRADES TO VARIOUS INFRASTRUCTURE ASSETS IN THE THOHOYANDOU BOTANICAL GARDEN, THOHOYANDOU, & NATIONAL ZOOLOGICAL GARDEN CAMPUSES BASED IN PRETORIA & MOKOPANE

CULTURAL HERITAGE SURVEY – FINAL REPORT

FOR

THOHOYANDOU BOTANICAL GARDEN

MARCH 2019

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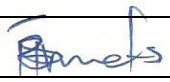
Released	Tshuma, B.	PJN_PM	2019-03-27	
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EXECUTIVE SUMMARY

In their capacity as the Professional Services Provider (PSP), Projectneers Consulting Engineers & Project Managers were appointed by the South African National Biodiversity Institute (SANBI) to provide professional services for the assessment, design and project management of required new buildings, repairs, renovations, upgrades to various infrastructure assets in the Thohoyandou Botanical Garden, Thohoyandou, & National Zoological Garden (NZG) campuses based in Pretoria & Mokopane. One of the primary deliverables of the PSP is to conduct a Cultural Heritage Survey for the Thohoyandou Botanical Garden site. Since cultural heritage surveys are specialized studies, Projectneers sub-consulted Khensani Heritage Consulting (KHC) to carry out this work on their behalf.

The purpose of the study was to perform a survey and identification of cultural heritage sites falling within the 89 hectares making up the Thohoyandou Botanical Garden (TBG) (Erf: 451 of Township Thohoyandou-D Ext. 1, 82) for inclusion in the overall management of the site. The survey involved desktop studies of previously published literature and cartographic sources, followed by interviews with staff and descendant communities. Consultation with interested and affected parties and staff of SANBI revealed the existence of living heritage, burials and former homesteads left when people were forcibly removed in 1965. For unknown reason it was only in the 1980s when efforts to create the botanical garden/nature reserve were made resulting in the botanical garden/nature reserve being established in 1982. This background information was used to plan foot surveys in the garden.

The major limitation was that the foot surveys were performed during the rainy season when ground coverage was intensely dense. Consequently, the survey was limited to areas that were accessible. The full extent of the identified resources could not be determined because of the same limitations. Notwithstanding these limitations, the survey reached the following findings:

a) Despite the presence of heritage resources in the garden, there is no inventory of such resources, as the management authority focus has always been on conserving biodiversity.
b) The Thohoyandou Botanical Garden contains remains of homesteads of the three families of Tshivhumbe, Tshiluvhi and Tshisikule. In some cases, these were marked by courtyards, mango trees, and indigenous vegetables and other fruit trees intentionally cultivated by humans within homestead set-ups.

c) Several burials belonging to ancestors of the three families were identified in the garden. However, there is a strong possibility that more unmarked graves exist in the garden, since no full record of the homesteads exists.
d) Communities still pay homage to graves of their ancestors and their former residences showing that the garden is a living landscape associated with intangible values.
e) The Thohoyandou Botanical Garden contains remnants of infrastructure established as braai areas, ablution facilities, and old picnic areas when the garden was first established.
f) The survey identified scatters of stone tools belonging to the Early and Middle Stone Ages, along the Mbovhani River.
g) Desktop studies indicated that the area around Thohoyandou is rich in Early Iron Age, Middle Iron Age and Late Iron sites. The Netshiluvhi link themselves with the Mapungubwe kingdom in the early 14th century.
h) There is a strong possibility a survey on flat areas along waterways may identify sites associated with these critical periods.
i) Due to the density of vegetation, site extent and density of material could not be established.
j) The site has not been declared or graded in terms of Section 7 of the National Heritage Resources Act No.25 of 1999.
k) With Mapungubwe Cultural Landscape declared a national heritage and world heritage site respectively, its association with the Tshivhumbe clan or family provide an opportunity for further research which could culminate in the elevation of the heritage status of the garden.
l) It was not clear whether it was the policy of the TBG to uproot or destroy vegetation that depicted human settlement a case in point were mango trees that were visibly destroyed.

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LIST OF ACRONYMS

Acronym		Description
CHS	-	Cultural Heritage Survey
DEA	-	Department of Environmental Affairs
ECSA	-	Engineering Council of South Africa
EIA	-	Environmental Impact Assessment
EMP	-	Environmental Management Plan
EPWP	-	Expanded Public Works Programme
KHC	-	Khensani Heritage Consulting
KNP	-	Kruger National Park
LEDET	-	Limpopo Department of Economic Development, Environment & Tourism
MEC	-	Member of Executive Council
NDT		National Department of Tourism
NHRA	-	National Heritage Resources Act
OHS	-	Occupational Health and Safety
PSP	-	Professional Services Provider
SAHRIS	-	South African Heritage Resources Information System
SANBI	-	South African National Biodiversity Institute
TBG	-	Thohoyandou Botanical Garden

DEFINITIONS[1]

Conservation	In relation to heritage resources, includes protection, maintenance, preservation and sustainable use of places or objects to safeguard their cultural significance
Cultural Significance	Means aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance
Development	Means any physical intervention, excavation, or action, other than those caused by natural forces, which may in the opinion of a heritage authority in any way result in a change to the nature, appearance or physical nature of a place, or alteration, demolition, removal or change of use of a place or a structure at a place.
Documentation	A detailed inventory record capturing the condition of a heritage asset at a given time
Ecosystem	A system made up of a group of living organisms, the relationship between them and their physical environment
Heritage Resources	Any place or object with cultural significance
Living Heritage	Living heritage means the intangible aspects of inherited culture, and may include; (a) Cultural tradition; (b) Oral history; (c) Performance; (d) Ritual; (e) Popular Memory; (f) Skills and techniques.

[1] These definitions are excerpts from the National Heritage Resources Act No. 25 of 1999

(g) Indigenous knowledge systems; and

(h) Holistic approach to nature, society and social relationships.

Protected Area	An area which may include protected natural or environmental resources, or immovable cultural heritage as is defined in the Protected Areas Act No 57 of 2003
Protected Tree	A tree declared to be protected, or belonging to a group of trees, woodland or species declared to be protected, under section 12(1) or 14(2); of the National Forests Act No.84 of 1998
Sacred sites	Places that have spiritual or religious significance
Site	Means any area of land, including land covered by water, and including any structures of objects thereon
Surveying	Process of identifying, assessing and documenting of heritage resources

1 INTRODUCTION

Cultural heritage resources are a significant part of biodiversity, as trends would have it the world over. They are managed as an integral part of the overall natural and cultural landscape. It is for this reason that the Department of Environmental Affairs (DEA) has developed cultural heritage survey guidelines and assessment tools for protected areas in South Africa.

1.1 Terms of Reference

Projectneers Consulting Engineers & Project Managers were appointed by the South African National Biodiversity Institute (SANBI) to provide professional services for the assessment, design and project management of required new buildings & repairs, renovations & upgrades to various infrastructure assets in the Thohoyandou Botanical Garden, Thohoyandou, & National Zoological Garden (NZG) campuses based in Pretoria & Mokopane. One of the primary deliverables Projectneers Consulting Engineers & Project Managers was to conduct a Cultural Heritage Survey for the Thohoyandou Botanical Garden site. Since cultural heritage surveys are specialized studies, Projectneers sub-consulted Khensani Heritage Consulting (KHC) to carry out this work on their behalf.

The Thohoyandou Botanical Garden (TBG), as the latest inclusion in South Africa's network of national botanical gardens, commissioned as part of the project team the services of a heritage consultant to, amongst other things, survey the landscape with a view to identify, document and profile heritage resources for inclusion in the overall management of the site (garden). This view is in line with the South African National Biodiversity Institute's ((SANBI's) National Gardens Expansion Strategy (2016 to 2030), approved in 2016 by the SANBI Board, which aims to have a national botanical garden established in every province of South Africa by 2030.

The Thohoyandou Botanical Garden (TBG) established between 1982 and 1986 is under the management of SANBI to protect and manage indigenous plant species for research, conservation, education and display purposes. The TBG is currently in negotiations with the Mphaphuli Community over their land claim on the garden property.

1.2 Objectives

The Cultural Heritage Survey (CHS) is mandatory as it shall inform what can and what can't be done from an infrastructure development viewpoint. It will be conducted in accordance with the South African Department of Environmental Affairs (DEA)'s Cultural Heritage Survey Guidelines and Assessment Tools for Protected Areas in South Africa (May 2017).

The objective of the Cultural Heritage Survey Guidelines and Assessment Tools for Protected Areas in South Africa are:

a) To support the implementation of the National Heritage Resources Act (NHRA) in the identification and protection of places of cultural heritage significance in Protected Areas.
b) To provide basic means of ensuring that those who manage and work in Protected Area are:
    - Aware of the cultural heritage resources in their Protected Areas;
    - Have knowledge of the value (significance) of the cultural heritage resources in the Protected Area;
    - Have knowledge to conduct basic recording of cultural heritage resources in the Protected Area;
c) Fulfil the basic requirements of the NHRA and other relevant and related legislations.

The CHS report is being expedited for all designs and plans to be compliant to its findings and recommendations.

1.3 Proposed Cultural Heritage Survey Team

The Cultural Heritage Survey was conducted by Khensani Heritage Consulting under the leadership and guidance of its Managing Director, Mr. Khensani Maluleke. He has vast experience in the cultural heritage survey space having been involved in various projects and also led the team that put together the South African Department of Environmental Affairs (DEA)'s Cultural Heritage Survey Guidelines and Assessment Tools for Protected Areas in South Africa (May 2017). Projectneers Consulting Engineers and Project Managers oversaw the process from inception to final report submission.

2 BACKGROUND AND CONTEXT[2]

The TBG was established between 1982 and 1986. It is currently under the management of SANBI but was previously managed by the Provincial Conservation Authority, Limpopo Provincial Department of Economic Development, Environment and Tourism (LEDET). Its mandate is to protect and manage indigenous plant species for research, conservation, education and display purposes. The TBG currently has the Curator and three other SANBI staff members in their employ with extended support from several staff members employed by LEDET.

Mr. Eric Netshiungani, a seasoned ethnobotanist, who has since retired, was instrumental in the establishment of the Garden which included the Venda Herbarium consisting of about 5000 plant specimens in 1976. It was in July 2017 that SANBI took over the management of the garden from LEDET. SANBI and LEDET have been working closely together on this collaborative project for the past five years, and their relationship is governed by a formal Memorandum of Agreement (MoA) signed in 2016 followed by Service Agreement in 2017 which included the management and operation of the Garden.

The positioning of the Garden as a national Institution meant classifying it under the international definitions of botanical gardens as a 'conservation garden', which would contain, or have associated areas of, natural savanna woodland vegetation in addition to cultivated collections of indigenous plants unique to the Limpopo Province.

The Garden will serve as a biodiversity centre for the country and Limpopo Province and it will include traditional botanical garden infrastructure as well as biodiversity research facilities. SANBI will work closely with the staff and students of the nearby University of Venda (with whom it signed a Memorandum of Understanding (MoU) in 2013) as well as the University of Limpopo.

SANBI envisages that the plan for the Thohoyandou Garden, previously managed by LEDET, will increase its educational value, financial viability and the interest and support of visitors, tourists and the local community. This means that the botanical garden will have sections of plants used for food, African arts, medicine, traditional architecture,

[2] https://www.sanbi.org/gardens/thohoyandou/visitor-information/

horticulture and agriculture, and serve to increase the connection between people and plants.

SANBI is currently working closely with representatives from the national Department of Environmental Affairs (DEA) and several national and provincial government departments to have the Thohoyandou Botanical Garden gazetted as a national botanical garden by the DEA Minister as soon as possible[3].

[3] https://www.sanbi.org/gardens/thohoyandou/visitor-information/

3 GEOGRAPHICAL LOCATION

3.1 Location of Thohoyandou Botanical Garden[4]

The site is in the major urban centre of Thohoyandou, the seat of the Vhembe District Municipality and the Thulamela Local Municipality, and ideally placed close to an area of high biodiversity value, namely the Soutpansberg Mountain Range, South Africa's northernmost mountain range as shown in Figure 1. The Soutpansberg is a mountainous region spanning 210 km from Vivo in the west to Pafuri in the Kruger National Park in the east, encompassing an area of approximately 6,800 km^2 in the Limpopo Province.

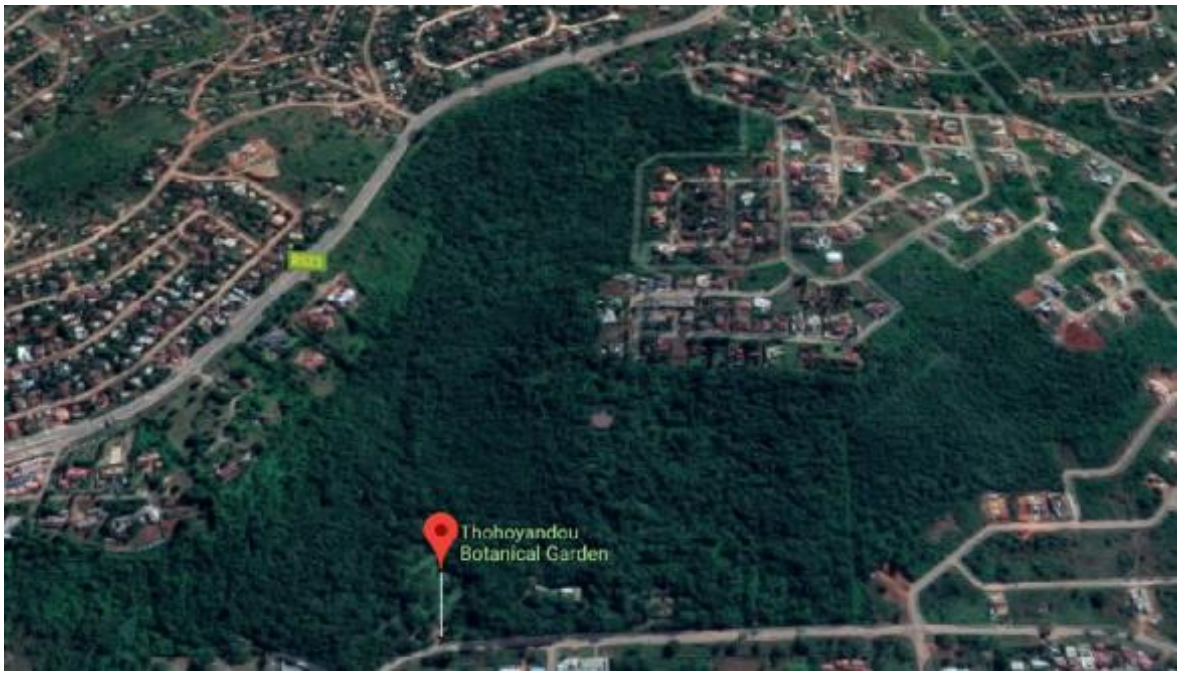

Figure 1: View of Thohoyandou Botanical Garden

3.2 Description of the Study Area

The TBG is a 89-hectare urban botanical garden within the Soutpansberg Centre of Endemism and Vhembe Biosphere Reserve. The Soutpansberg range is awash with threatened, endemic and protected plants ranging from the *Aloe soutpansbergensis, Aloe vossii, Huernia nouhuysii, Stapelia clavicorona and Vangueria soutpansbergensis*.

[4] Ibid

3.3 Historical Overview of Thohoyandou[5]

The Ha-Mphaphuli clan were the founders of Thohoyandou, named after the great Vhavhenda King, King Thohoyandou whose reign was from the 1690s to the early 1720s. Thohoyandou was established and built at a large portion of the village of Mbaleni in the late 1970s. It was established by Thovhele Patrick Ramaano Mphephu who was the Prime Minister of the Venda Bantustan. It was after Venda was declared a republic in 1979 that Thohoyandou became the seat of government.

[5] http://www.thohoyandou.co.za/online/index.php?option=com_content&view=category&id=7&Itemid=138

4 HERITAGE LEGAL FRAMEWORK

The National Heritage Resources Act (NHRA) No. 25 of 1999 is the principal Act that outlines measures to be carried out for the protection and management of heritage resources. The NHRA makes provision for the identification, protection and conservation of heritage in South Africa. Section 3(2) of the NHRA lists below some of the heritage resources that constitute the national estate relevant and related to this project.

- Places, buildings, structures, and equipment of cultural significance;
- Places to which oral traditions are attached or which are associated with living heritage;
- Historical settlements and townscapes;
- Landscapes and natural features of cultural significance

During the study, attention was accorded to Section 3 (3) of the NHRA, which defines cultural significance, or any other values associated with the national estate. These are as follows:

- Its importance in the community, or pattern of South Africa's history;
- Its possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage;
- Its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage;
- Its importance in demonstrating the principal characteristics of a class of South Africa's natural or cultural places or objects;
- Its importance in exhibiting aesthetic characteristics valued by a community or cultural group;
- Its importance in demonstrating a high degree of creative or technical achievement at a period;
- Its strong or special association with a community or cultural group for social, cultural or spiritual reasons;
- Its strong or special association with a community or cultural group for social, cultural or spiritual reasons;
- Its strong or special association with the life or work of a person, group or organization of importance in the history of South Africa; and
- Sites of significance relating to the history of slavery in South Africa.

Equally important to the NHRA are the following Acts and Policy documents relevant and related to this project i.e.

- National Environmental Management Act, 1998
- National Environmental Management Act, 1998. Draft National Biodiversity Offset Policy;
- Updated Integrated Environmental Management Guideline – Guideline on Need and Desirability;
- Monitoring, control and eradication plans. Guideline for species listed as invasive in terms of section 70 of national Environmental Management: Biodiversity Act, 2004;

3.4 Cultural Heritage Survey Guidelines and Assessment Tools for Protected Areas in South Africa

The objectives of the cultural heritage survey guidelines and assessment tools for Protected Areas in South Africa provide for the following:

- Support in the implementation of the National Heritage Resources Act No 25 of 1999 in the identification and protection of places of cultural heritage significance in Protected Area; and
- Capacitating those who manage and work in Protected Areas with skills and knowledge to identify and document cultural heritage resources within Protected Areas.

3.5 The Human Tissues Act (65 of 1983)

This Act protects graves younger than 60 years. These fall under the jurisdiction of the National Department of Health and the Provincial Health Departments. Approval for the exhumation and reburial must be obtained from the relevant Provincial MEC as well as the relevant Local Authorities. Public consultation is essential in all this.

3.6 NEMA Protected Areas Act, 2003

The Act, in line with other relevant and related acts makes provision for involvement of local communication as provided for Section 2 (f) which encourages promotion of participation of local communities in the management of protected areas, where appropriate, Section 17 (j) and (k) respectively in support of the cultural heritage survey guidelines and assessment tools states that the purpose of the act is to manage the

interrelationship between natural environment , biodiversity, human settlement and economic development and generally contribute to human, social, cultural, spiritual and economic development.

3.7 National Forests Act No. 84 of 1998

The relationship between this Act and the NHRA is best articulated under Section 3 (2) (d) of the latter, which provides for landscapes and natural features of cultural significance as part of the National Estate whilst the National Forests Act No. 84 of 1998 refers to the forest as including the ecosystem which makes it up. In this regard the relationship between living organisms and their physical environment is highlighted. A classic example in this instance are the Sacred Mijikenda Kaya Forests in Kenya which represent a wider group of more than 30 sacred forests in the coastal plains between the towns of Mombasa and Kilifi, each ranging in size from about 30 to 300 ha. They were once the fortified villages of the Mijikenda people, who migrated to the area from Somalia during the 16th century and found sanctuary in these coastal forests. Subsequently, the villages were abandoned, and the forests became revered as the abode of ancestors, repositories of spiritual beliefs and places of ritual. As such, they are now protected by traditional laws and maintained by councils of elders.

4 DESCRIPTION OF THE SOCIO-ECONOMIC & PHYSICAL ENVIRONMENTS

The town of Thohoyandou is the main development node in the Thulamela Local Municipality with nearly 70 000 residents within the boundaries of the town. It is further surrounded by numerous rural settlements situated on the outskirts of the built-up area. The TBG is situated in section D of the urban centre of the town of Thohoyandou (Figure 2). It offers opportunities for relaxation, recreation and events for the residents and is an integral part of local lives. Since its inception, Thohoyandou experienced a shortage of land in the Central Business District (CBD) which has seen it expanding through time.

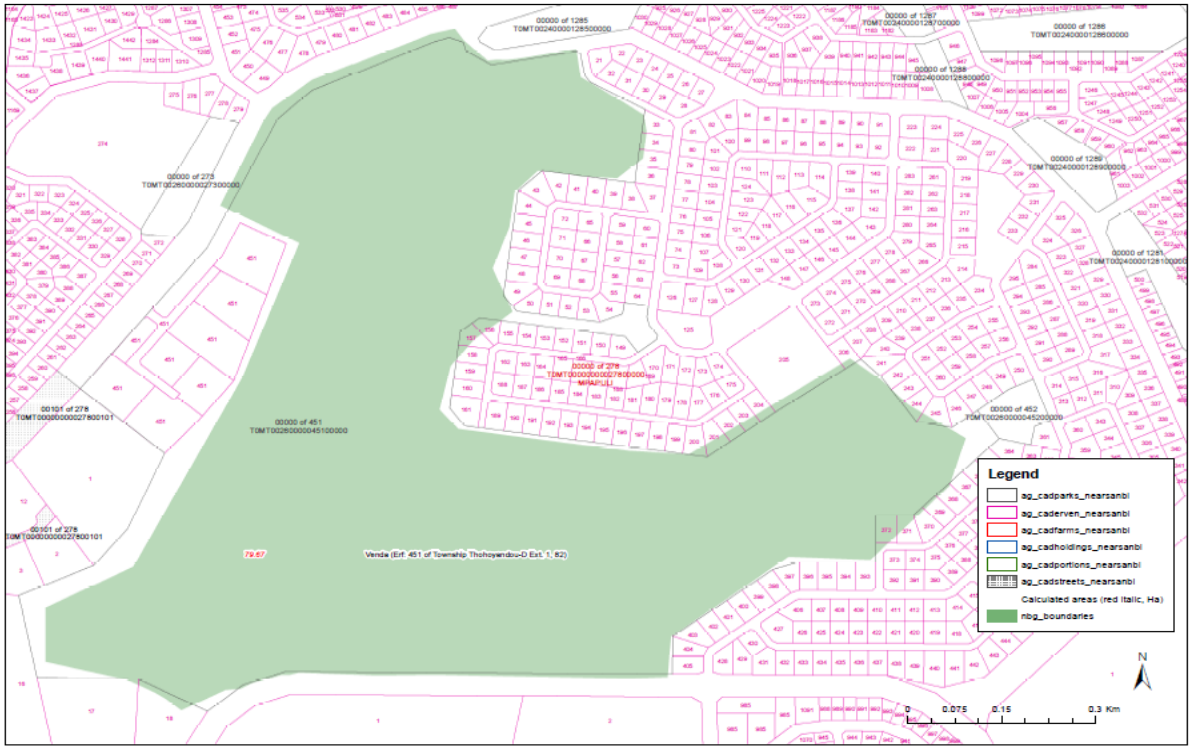

Figure 2: Location of the TBG in relation to the housing developments in the area

Before the garden was developed, the area was used for agriculture and grazing and had villages of the communities of Tshivhumbe, Tshisikule and Tshiluvhi. The area currently serves as a botanical garden. It was previously managed by LEDET but is now under the management of SANBI. Based on the 1:250 000 geological sheet, 2330 Messina, the area is underlain by Precambrian basalts of the Sibasa Formation of the Soutpansberg Group to the north and leucocratic biotite gneiss, leucocratic granite and pegmatite, grey biotite gneiss and migmatite of the Sand River Gneiss of the Central Zone of the Limpopo Belt to the south (Rubidge 2015). The vegetation in the area is savanna. The topographical diversity of

the Soutpansberg Mountain Ranges has created suitable conditions for a wide variety of vegetation types, including mist belt mountain forests, high altitude grasslands, and arid savanna bushveld (Mostert 2006).

SANBI has developed a very important concept to operationalize the Thohoyandou Botanical Gardens. From a landscaping point of view a thematic garden concept has been developed which outlines Three Natures expressed as follows:

- 'Wilderness' nature;
- 'Productive' nature and
- 'Designed' nature.

Located on a sloping forested site (Figure 3), the three (3) natures have been located such that 'Designed' Nature is that closest to the entrance, containing, amongst others, a Marquee lawn area, the Wedding garden, Demonstration gardens, Endangered and Endemic plants gardens, Kids play and Braai areas, etc. Further up the slope is the zone of 'Productive' nature where traditional, medicinal, and food gardens are located. At the top of the garden slopes, is 'Wilderness' Nature, where Grassland and Wildflowers, the Baobab sanctuary, Succulents and Cycad garden, among others are located against the backdrop of the existing forested area.

Figure 3: Conceptual design of the TBG from a design point of view

The movement concept was borne of the view that the site is sloped, covering a gradient difference of almost 40 metres in parts. Movement through the site is based on the idea of the local textiles (and cultural traditions of Venda, Tsonga, and Sepedi) in which the warp (stepped straight paths up the slope, lined by indigenous hedges). At the bottom and top of these stepped paths, opportunity is provided for local sculptors to display their work, further building a regional identity for the gardens. The weft (gently sloped paths along contours) weaves the 3 natures of the botanic gardens together. Trees, particularly in the upper reaches, have been retained.

The landscape architects are of the view that from a water point of view a sustainable drainage strategy should be developed as agricultural swales along the paths intercept water and channel it to retention ponds located in the garden on the various levels to provide additional water sources. A detailed land survey is yet to be done, in which case, once the natural wetland areas are identified, these can be integrated into the design.

It is clear from the above that the initial landscape design is biased towards biodiversity at the expense of cultural heritage. An integrated approach is recommended in order to have a balanced view of the landscape. Humanity has always since time immemorial made culture out of nature. A classic example is recognition of landscapes and natural features of cultural significance. The TBG is associated living heritage associated with the different clans and families highlighted in the historical records. However, a dedicated survey is essential to identify places of heritage significance, including elements of the cultural landscape that make it significant to local communities. Nature cannot be managed without culture.

5 METHODOLOGY AND APPROACH

The approach and methodology were premised on the values and principles below clearly articulated in the Cultural Heritage Survey Guidelines and Assessment Tools for Protected Areas in South Africa that:

- Cultural heritage resources also need effective management not because they are protected by law but are essential non-renewable and often perishable and their neglect may also impact negatively on the biodiversity in the Protected Area thus in order to have effective management of the cultural heritage resources in a Protected Area there is need to understand what it is you are managing.
- Cultural heritage can be affected by weathering, development or natural and human disasters. There is, therefore, a need to have an idea of the potential threats to the heritage properties and impact of previous actions. Each site is unique hence the need to record and document them and their conditions.
- In Protected Areas natural and cultural heritage are inextricably intertwined. They form a continuum rather than being separate entities. The interaction between the natural and cultural heritage values of a protected area add richness and depth to the experience of the place.

6 LITERATURE REVIEW

6.1 Recent Histories & Living Heritage

The Ha-Mphaphuli clan were the founders of Thohoyandou named after the great Vhavhenda King, King Thohoyandou, whose reign was from the 1690s to the early 1720s. Thohoyandou was established and built on a large portion of the village of Mbaleni in the late 1970s. It was established by Thovhele Patrick Ramaano Mphephu who was the Prime Minister of the Venda Bantustan. It was after Venda was declared a republic in 1979 that Thohoyandou became the seat of government. According to the documents produced as part of a land claim for the area, the Tshiluvhi were the first occupants of the area after the AD1400 collapse of Mapungubwe. They were attracted to the modern Thohoyandou area by the existence of large elephant herds. The Tshiluvhi people were under Chief Netshiluvhi. The Tshivhumbe were the next to arrive at Tshivhuli from Luonde. They were given shelter on the eastern side of the hill of Tshiluvhi kraal. Vasamvuni also arrived at Tshiluvhi to seek residency. They settled on the eastern side of the Netshivhumbe's. These families lodged a land claim based on the provisions of the Restitution of Land Rights Act 22 of 1994.

6.2 Farming Communities

While local histories establish connections to the deep past, the Mapungubwe period, archaeology indicates an even longer history of occupation in Thohoyandou and immediate surrounds. Existing knowledge suggests that beginning in the early first millennium AD, farming communities who made a distinctive type of pottery, settled permanently in villages, and cultivated crops and raised animals appeared in southern Africa (Maggs, 1980; Loubser, 1988; Huffman 2007). Typical Early Iron Age sites are known along river banks and waterways. Sites dating to the Early Iron Age are known to occur to the west of the Nzhelele valley at Klein Africa and Happy Rest.

These sites were first identified by De Vaal (1941) and were later excavated by Helgaard Prinsloo (1974). Around AD900, the Middle Iron Age developed and is well known from sites in the Middle Limpopo such as K2 and Mapungubwe. Middle Iron Age sites are known in and around Musina and near the Soutpansberg Range of Mountains. Some known sites include the sites of Mutamba, found along the Mutamba River (Antonites 2012). The Middle Iron Age was succeeded by the Late Iron Age after AD1300. Khami type sites are known in the

study area and beyond. These are defined by the presence of characteristic band and panel pottery and drystone built terraces, where houses were built.

The Khami period is associated with the formation and development of a Venda identity (Loubser 1991). Khami type sites continued into the late 19th century and are associated with various Venda communities. Some of the most well-known Khami sites include Dzata located in the Nzhelele Valley. The late 19th century saw the introduction of European colonialism. Over the course of the 20th century, local communities were resettled to give way to European farms as well as for state activities. Often, these forced removals were not accompanied by exhumations of burials and other sensitive cultural remains. The expectation is that a mix of these heritage resources with tangible and intangible values exist in the area proposed for development.

6.3 The Stone Age Period

The Iron Age is preceded by the Stone Age which has been grouped into three typologies based on differences in stone tool types and cultural behaviours represented. These are the Early Stone Age (ESA) (3.5 million and 250 000 BP), the Middle Stone Age (MSA) (250 000 – 25000 BP) and the Later Stone Age (25000 – 2000 BP) (Phillipson 2005). Most of the research on the Stone Age in northern South Africa took place in the Mapungubwe National Park about 130km to the north west of Thohoyandou. Nevertheless, a general account of the nature of the Stone Age can be provided. Early Stone Age stone tool assemblages are made up of the earlier Oldowan and later Acheulian types.

The Oldowan tools were very crude and were used for chopping and butchering. These were replaced by Acheulian ESA tools dominated by hand axes and cleavers which are remarkably standardized (Wadley, 2007; Sharon, 2009). Evidence presented from Sterkfontein, Swartkrans and Makapansgat caves shows that the first tool making hominids belong to either an early species of the Homo or an immediate ancestor which is yet to be discovered here in South Africa (Phillipson 2005; Esterhuysen, 2007). Both the Oldowan and Acheulian industries are well represented in the archaeology of northern South Africa as shown by studies in the Mapungubwe National Park (Kuman et al. 2005; Sumner and Kuman 2014).

The Middle Stone Age dates to between 250 000 ago and 25 000 years ago. In general, Middle Stone Age tools are characterized by a size reduction in tools such as hand axes, cleavers, and flake and blade industries. The period is marked by the emergence of

modern humans and was accompanied by change in technology, behaviour, physical appearance, art, and symbolism (Phillipson 2005).

A variety of MSA tools includes blades, flakes, scraper and pointed tools that may have been hafted onto shafts or handles and used as pear heads. Surface scatters of these flake and blade industries occur widespread across southern Africa (Klein 2000; Thompson & Marean, 2008). Residue analyses on some of the stone tools indicate that these tools were certainly used as spear heads (Wadley, 2007). From about 25 000 BP, stone tool assemblages generally attributed to the Later Stone Age emerged. This period is marked by a reduction in stone tool sizes. Typical stone tools include microliths and bladelets. Later Stone Age stone tools were recovered in the Mapungubwe National Park area (Forsman 2011). This period is also associated with the development of rock art whose distribution is known across southern Africa (Deacon and Deacon 1999; Phillipson 2005). Given this long and rich history of human settlement, the expectation is that cultural surveys in the Thohoyandou will identify some remains dating to recent and deep pasts.

6.4 Heritage-Specific Consultation[6]

When Thohoyandou was established as a town, it was built on pre-existing villages. As indicated on the section on recent histories, the Chief of the area was Mphaphuli who had several villages under him. With forced removals in the 1960' several families were dispossessed of their land. These included the Tshivhumbe, Tshiluvhi and Tshisikule. At independence in 1994, these communities launched a land claim based on the Restitution of Land Rights Act 22 of 1994.

The identification of stakeholders was based on consultations and discussions with SANBI who assisted in their identification based on their cordial working relation including but not limited to traditional authorities, LEDET and the district and municipality representatives. Public consultations included focus group discussions with the representatives of the three families i.e. the Tshivhumbe (Figure 4) Tshisikule (Figure 5), and Tshiluvhi (Figure 6) except for the Royal Council who could not make the interviews. The consultants sought information on the history of the area, location of heritage

[6] This section should be read in connection with Annexure B - oral history testimonies based on the interviews carried out during the field survey – 11-13 February 2019 with the Tshivhumbe and Tshisikule families and 23 March 2019 with the Tshiluvhi family

resources, their significance and what the communities would like to see being done to protect, conserve and sustainably utilise their heritage. These meetings were held at the SANBI offices in Thohoyandou between the 11 and 13 February 2019 and 23 March 2019, respectively.

Figure 4: Members of the Tshivhumbe family together with Khensani Maluleke, Heritage Consultant, (Khensani Heritage Consulting) and Mr. Mufhati Bulannga, Curator (SANBI)

Figure 5: Members of the Tshisikule family together with Khensani Maluleke, Heritage Consultant, (KHC) and Mr. Mufhati Bulannga, Curator (SANBI)

Figure 6: Members of the Tshiluvhi family with Khensani Maluleke, Heritage Consultant (KHC)

Consultations were also held with staff of SANBI. The stakeholder engagement exercise produced information which showed that there were burials in the garden, remains of houses, sacred trees, and sacred spaces which collectively indicated the presence of tangible and living heritage in the TBG. The consultation was staggered in different phases. The first one involved sitting down with the affected families to gather information on their history and location of heritage. This was then followed by a survey for remains (reported below).

It must be stated that the interviews carried out with the affected families were preliminary as they were aimed at ascertaining existence of heritage resources in the garden or not. Owing to poor ground visibility efforts to walk the site with the families was not feasible compounded by the fact that some family members were not mobile enough due to age. Group interviews were conducted as per family and this method proved useful as each member (of the family) had an opportunity to partake and assist the other during the discussion where it mattered most.

Despite limited factual inaccuracies, in the main, there was a community of ideas in terms of the presence of heritage resources both tangible and intangible in the garden. The name of the river or stream which demarcated settlements between clans in the present day garden came under the spotlight as the Tshivhumbe and Tshisikule both agreed that it was Mbovhani whilst the Tshiluvhi clan or family knew it as Tshititimbu, from the look of things this was one river or stream having different names at different points. The Tshiluvhi family held a view that the Tshititimbu connected Mbovhani beyond the garden.

The question on whether the Tshiluvhi family were descendants of the Mapungubwe people who inhabited land that bordered in the present day Botswana and Zimbabwe brought uncertainty as the family expressed was not sure and wished to consult further. The inference drawn from stakeholder consultations was that a detailed study on the history of

the families should be commissioned. Stakeholder consultations and engagements are, by their very nature, a process and not an event where trust and cordiality are cultivated over a period of time.

7 CULTURAL HERITAGE SURVEY

7.1 Physical Survey Inside the TBG

In preparation for the fieldwork and foot surveys, historical maps and historical aerial photography, archival research, journal articles and related publications, Surveyor General Maps, geological maps, and cases from the SAHRIS database, were consulted. In addition, consultation with local communities and staff of SANBI were also performed. This resulted in two field visits, the first being preliminary while the second was aimed at identifying sites based on information from the archive and communities. The first visit was performed on Wednesday, 12 December 2018. Khensani Maluleke met Messrs. Thikhathali, Oscar Tshovhote and Walter Mabatha; Mr. Thikhathali is a Field Ranger with knowledge particularly of botany and experience of over three (3) decades whilst Mr. Mabatha is the SANBI Estate Manager whose knowledge of the landscape shed light on the history and heritage of the Garden. Another field visit and systematic survey was performed in February 2019 (11-13 February 2019) by Mr. Khensani Maluleke and Prof. Shadreck Chirikure and Mr. Thikhathali. The surveys were non-intrusive and by foot. The surveyors walked with a Garmin Etrex GPS for recording places. Co-ordinates were recorded using the WGS 84.

7.2 Assumptions, Gaps, Restrictions and Limitations

Based on the information from existing sources which indicated that the areas around Thohoyandou had a long history of human occupation from the Early Stone Age through the Middle and Later Stone Ages to the Iron Ages, the assumption was remnants of these periods will be found in the survey area. During the foot surveys, some restrictions and limitations emerged. For example, the garden is characterized by varying topography and has vegetation species that grow very tall and fast, particularly during the rainy season. As a protected area, the garden has developed a thicket making it impenetrable after the rains. Our field survey was performed in February 2019 after the area had received heavy rains and grasses had grown. This limited ground visibility in major ways.

7.3 Survey Results: Identification & documentation of Heritage Resources

The survey identified evidence of human settlement represented as ruins, graves and vegetation commonly associated with settlement patterns. An attempt was made to assign a provisional significance, with the understanding that more work is required to survey the places should the visibility improve, and ground cover becomes less of an issue. The results are presented in Table 1.

Table 1: Identification & documentation of heritage resources

Geographical Coordinates	Site Number	Description
S27 28 7.44 E025 07 3.50	1	Old picnic area marked by an open space
S27 28 7.44 E025 07 3.50	2	Braai stand forming part of old picnic area. There are also remains of ablution facilities
S22 57 58.4 E030 28 01.01	3	Burials which are unmarked located after some SANBI houses towards new houses in Unit D.
	4	Scatter of Stone tools, Oldowan tools found on exposed patches along the Mbovhani River close to Samvuni Road

7.4 Desired Outcomes

The Cultural Heritage Survey Guidelines and Assessment tools Protected Areas in South Africa presents four (4) key stages for cultural heritage management in protected areas outlined in Table 2.

Table 2: Key stages for cultural heritage management in protected areas

1. Know and Understand	Know your cultural heritage assets in your Protected Area • Undertake a survey of site protected area • Conduct preliminary assessment to understand what you are supposed to manage.
2. Plan and Implement	Integrate cultural heritage considerations into: • Overall protected areas management plans and policies; • Standard operating procedures and protocols.
3. Report,	• Internally and to PHRAs and SAHRA for incorporation into the

communicate and Inventorize	inventory register; • Communicate openly with communities and stakeholders
4. Document (Monitor and evaluate)	• Monitor impacts to cultural heritage; • Evaluate cultural heritage outcomes; and • Review and assess performances of cultural heritage management systems

The above stages are all joined together by inclusive engagement which is meant to ensure meaningful participation by all the stakeholders, including employees, to safeguard positive cultural heritage outcomes. In terms of the above process, the TBG is at stage one (1) where surveys are still carried out in order to know and understand what needs to be managed.

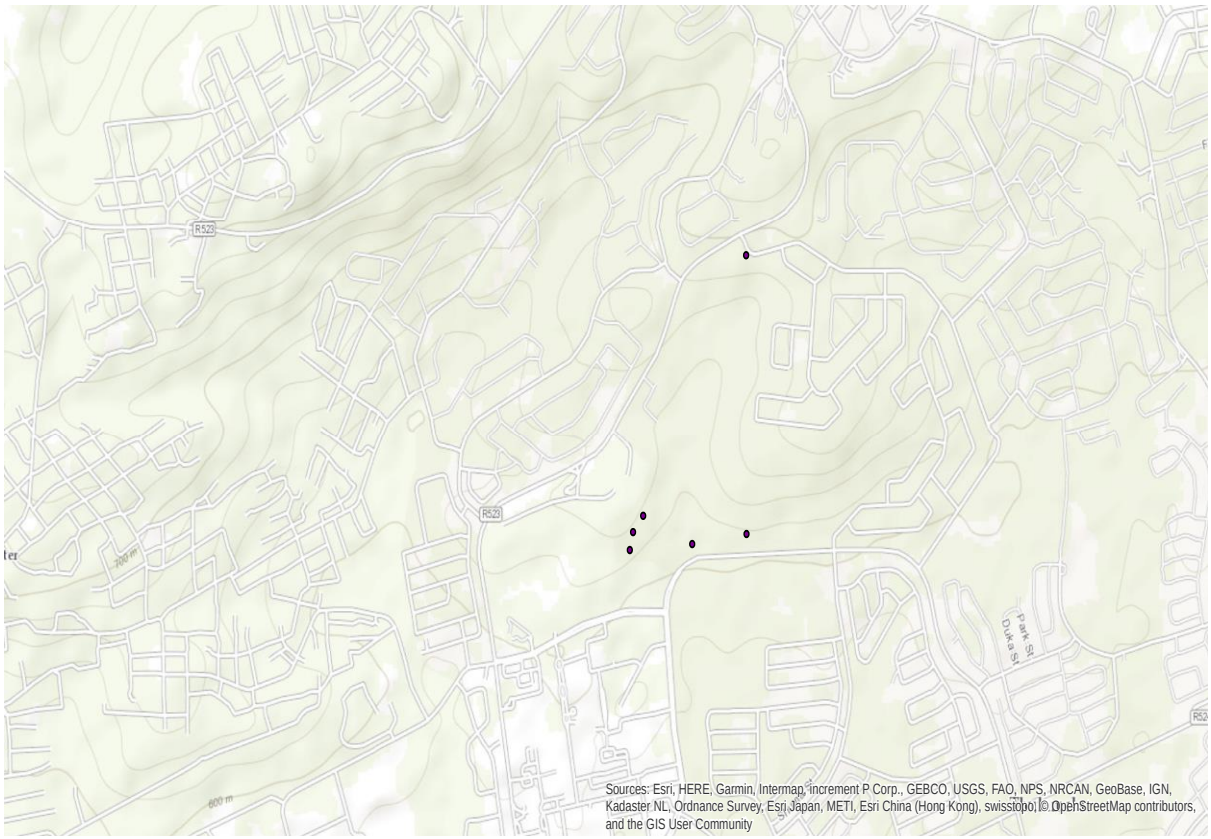

Figure 7: Heritage resources found on the ground from graves to ruins showing past human settlement.

It is worth noting that the heritage resources identified are tangible and immovable. It is equally important to document intangible heritage, and this can only be possible when oral history interviews are carried out.

8 SITE SIGNIFICANCE & FIELD RATING

Table 3, extracted from the SAHRA Minimum standards is used to explain the rationale behind the assigned cultural significance rating to an identified heritage resource.

Table 3: SAHRA Minimum standards

NHRA Section (3) "Without limiting the generality of subsections 1 and 2, a place or object is to be considered part of the national estate if it has significance or other special value because of"	**Applicable or not**	**Rating** Negligible /Low / Low-Medium / Medium / Medium-High / High / Very High
a) its importance in the community, or pattern of South Africa's history	Yes	Medium
(b) its possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage	Yes	Medium/High
(c) its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage	Yes	Medium
d) its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects	Yes	Medium
(e) Its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group	Yes	Medium
(f) Its importance in demonstrating a high degree	Yes	Low

of creative or technical achievement at a particular period		
(g) Its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons	Yes	Medium/low
(h) Its strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa	N/A	N/A
(i) Sites of significance relating to the history of slavery in South Africa	N/A	N/A
Reasoned assessment of significance using appropriate indicators outlined above:		No Grades I and II were found. However, there are burials belonging to families that were forcibly removed in 1965. Furthermore, there are trees with high values owing to their intangible heritage and medicinal properties. The garden is a cultural landscape exuding with intangible values.

9 TYPOLOGY OF HERITAGE RESOURCES IDENTIFIED ON SITE

9.1 Archaeological Sites

The survey identified archaeological sites mostly comprised of stone tool scattered along the Mbovhane River, particularly on the left bank towards Samvuni Road. The excavation potential of the sites appeared low. However, due to vegetation coverage a more informed position can only be made after adequate documentation. There are also remains of recent settlements that require adequate mapping.

Figure 8: Evidence of Stone Age tools

Figure 9: Landscape where Stone Age tools where identified

9.2 Burial Grounds &Graves

Because it was previously a home to various communities, the area making up the TBG is associated with burials, some which are marked but others that are unmarked. In the past people were buried near settlements so it is reasonable to expect more unmarked burials near settlements (Figure 10).

Figure 10: Unmarked grave

The burial on Samvuni road is made up Tshisikule graves belonging to the Tshisikule family. The graves appear to be part of a formal family cemetery. Some have grave markers while others do not. The approximate age of the graves varies given the time period the deceased have been buried, though some are over sixty years based on inscription on the tombstones.

9.3 Cultural Landscapes, Intangible and Living Heritage (as defined in Section 2xxi of the NHRA)

Oral traditions and local histories make it explicit that the area constituting the Thohoyandou Botanical Garden is a cultural landscape with intangible and living heritage. The graves of ancestors of living communities are there. The living cultural practices and ceremonies are performed on some of the graves. Remains of settlements too have spiritual significance to the descendant communities because some of their ancestors were buried there. Trees such as the indigenous Coral Tree (Figure 11) were used to mark burials. Several of them are found associated with abandoned settlements.

Figure 11: View of the Coral Tree.

9.4 Grounds for Exemption

Considering the above, the NHRA makes provision for exemption from permit application on the following grounds, i.e.

- Section 38 (7) states that this section does not apply to a development described in subsection (1) affecting any heritage resources formally protected by SAHRA unless the authority concerned decides otherwise. In this instance the site is not protected by SAHRA or the PHRA;
- Section 38 (8) states that this section does not apply to a development as described in subsection (1) if an evaluation of such development on heritage resources is required in terms of the Environment Conservation Act, (now NEMA) or the integrated environmental management guidelines issued by the Department of Environmental Affairs and Tourism (now DEA) or the Minerals Act, or any other

legislation: provided that the consenting authority must ensure that the evaluation fulfils the requirements of the relevant heritage resources authority in terms of subsection (3), and any comments and recommendations of the relevant heritage resources with regard to such development have been taken into account prior to the granting of the consent.

- When the Provincial Heritage Resources Authority, with the approval of the MEC, may, by notice in the Provincial Gazette, exempt from the requirements of this section any place specified in the notice.

11. HERITAGE LEGAL IMPLICATIONS & APPLICATIONS

The site as a cultural landscape teems with heritage resources worthy of protection, management and conservation. The site, by virtue of its size and age of some of the resources is bound by the provisions of Sections 35 and 38 of the National Heritage Resources Act No.25 of 1999 respectively. Section 35 (3) states that any person who discovers archaeological or palaeontological objects or material or a meteorite in the course of development or agricultural activity must immediately report the find to the responsible heritage resources authority, or to the nearest local authority offices or museum, which must immediately notify such heritage resources authority whilst Section 35 (4) prescribes that no person may, without a permit issued by the responsible heritage resources authority:

- Destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite;
- Destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material of object or any meteorite;
- Trade in, sell for private gain, export or attempt to export from the Republic any category of archaeological material or object, or any meteorite; or
- Bring onto or use at an archaeological or palaeontological site any excavation equipment or any equipment which assist in the detection or recovery of metals or archaeological material or objects or use such equipment for the recovery of meteorites.

While, Section 38 (1) outlines that subject to the provisions of subsections (7), (8) and (9) any person who intends to undertake a development categorised as –

- the construction of a road, wall, powerline, canal or other similar form of linear development or barrier exceeding 300m in length;
- the construction of a bridge or similar structure exceeding 50 m in length;
- any development or other activity which will change the character of a site—
    - exceeding 5 000 m^2 in extent; or
    - involving three or more existing erven or subdivisions thereof; or
    - involving three or more erven or divisions thereof which have been consolidated within the past five years; or
    - the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;
- the re-zoning of a site exceeding 10 000 m^2 in extent; or

- any other category of development provided for in regulations by SAHRA (or a provincial heritage resources authority) any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority, must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it will details regarding the location, nature and extent of the proposed development.

For the purpose of this project, the applicable provision above is Section 38 (1) (c) whose development or other activity will change the character of a site exceeding 5000 m^2 in extent.

12. FINDINGS

Based on the results of community consultation, field survey and archival research and against a background provided by limitations with ground coverage, the following conclusions were reached:

a) Despite the presence of heritage resources in garden, there is no inventory of such resources, as the management authority focus has always been on conserving biodiversity.
b) The Thohoyandou Botanical Garden contains remains of homesteads of the three families of Tshivhumbe, Tshiluvhi and Tshisikule. In some cases, these were marked by courtyards, mango trees, and indigenous vegetables and other fruit trees intentionally cultivated by humans within homestead set-ups.
c) Several burials belonging to ancestors of the three families were identified in the garden. However, there is a strong possibility that more unmarked graves exist in the garden, since no full record of the homesteads exists.
d) Communities still pay homage to graves of their ancestors and their former residences showing that the garden is a living landscape associated with intangible values.
e) The Thohoyandou Botanical Garden contains remnants of infrastructure established as braai areas, ablution facilities, and old picnic areas when the garden was first established.
f) The survey identified scatters of stone tools belonging to the Early and Middle Stone Ages, along the Mbovhani River.
g) Desktop studies indicated that the area around Thohoyandou is rich in Early Iron Age, Middle Iron Age and Late Iron sites. The Netshiluvhi link themselves with the Mapungubwe kingdom in the early 15th century. There is a strong possibility a survey on flat areas along waterways may identify sites associated with these critical periods.
h) Due to the density of vegetation, site extent and density of material could not be established.
i) The site has not been declared or graded in terms of Section 7 of the National Heritage Resources Act No.25 of 1999.
j) With Mapungubwe Cultural Landscape declared a national heritage and world heritage site respectively, its association with the Tshivhumbe clan or family provide an opportunity for further research which could culminate in the elevation of the heritage status of the garden.

k) It was not clear whether it was the policy of the TBG to uproot or destroy vegetation that depicted human settlement a case in point were mango trees that were visibly destroyed.

13 RECOMMENDATIONS

Based on the findings, the following recommendations were made with the input from interested and affected communities and other stakeholders:

a) While consultations with communities indicated the presence of heritage resources in the garden and the cultural survey located some of them, the poor visibility caused by dense vegetation growth made it impossible for the research coverage to be extended to all areas of the garden. Therefore, it is recommended that field walking to record site extent, document sites and mapping them, be performed in a season where there is improved visibility.
b) Interested and affected communities recommended the construction of a memorial and Garden of Remembrance for the deceased buried in the garden.
c) The overall narrative of the garden should include cultural elements which will assist in the conservation and preservation of memory. This can be through the reconstruction of the landscape where cultural houses exhibiting past and present Venda lifeways and culture can be constructed.
d) An integrated management plan must be developed to protect, manage and use cultural resources in the garden.
e) The cultural heritage survey guidelines and assessment tools for protected areas in South Africa provides for capacitation of those who manage and work in protected areas, it is therefore recommended that training and skills development should be given to staff at the TBG e.g. SANBI/LEDET Field Rangers, Tour Guides and Educational Officers etc.
f) With no known exemptions at this stage, the development of the site should be subjected to applicable and relevant provisions of the National Heritage Resources Act No. 25 of 1999, like Section 35 and 38 as explained above.
g) As part of the cultural landscape it will be important to retain and manage vegetation associated with the existence of human life in the garden as evidence.
h) Oral history programmes should be initiated to encourage communities to record and document their history and heritage to writing and documentaries.
i) SANBI may consider appointing a cultural officer on a temporary or permanent basis to deal with cultural issues

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Informants

5. Mr. Thikhathali, Oscar Tshovhote, Field Ranger at the Thohoyandou Botanical Garden 12.12.2018
6. Mr. Walter Mabatha, Estate Supervisor at the Thohoyandou Botanical Garden 12.12.2018

ANNEXURE A – PHOTOS TAKEN DURING THE SITE VISIT

Photo No 1. Signs of graves, but not conclusive, as there is vegetation associated with burial sites

Photo No 2. Pathway leading to the old picnic site

Photo No 3. This photo similar to Photo No 9 with regards to detail

Photo No 4. Depiction of evidence of human settlement

Photo No 5. Ruins evidenced by stone wall

Photo No 6. Ruins evidenced by stone wall

Photo No 7. Tree stump depicting human settlement pattern

Photo No 8. Showing invasive plants on site

Photo No 9. Another site suggestive of presence of graves

Photo No 10. Showing invasive plants on site

Photo No. 11 Picnic Area

Photo No. 12 Picnic Area

Photo No 13. Walkway as part of the spiral path

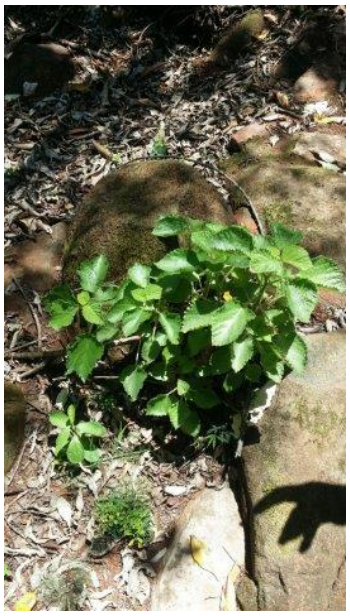

Photo No 14. Vegetables commonly found where there are human settlements

Photo No 15. Family burial site of the Tshikule Family

Photo No 16. Garden entrance

Photo No 17. Garden entrance

Photo 18. Administration block

ANNEXURE B – ORAL HISTORY TESTIMONIES

ORAL HISTORY TESTIMONIES BASED ON THE INTERVIEWS CONDUCTED DURING THE FIELD SURVEY – 11-13 FEBRUARY 2019 WITH THE TSHIVHUMBE AND TSHISIKULE FAMILIES AND 23 MARCH 2019 WITH THE TSHILUVHI FAMILY

Khensani Heritage Consulting represented by Khensani Maluleke and Professor Shadreck Chirikure, an Archaeologist, undertook a field survey from 11-13 February 2019 at the Thohoyandou Botanical Garden (TBG), Thohoyandou in the Vhembe District, Limpopo.

The field survey was divided into two, with the first part dedicated to a site walkabout guided through by the Field Ranger, Mr. Thikhathali Oscar Tshovhothe, and the second part, oral history testimonies shared by descendants and occupants of the site forcibly removed when some were still young in 1965.

The method of research applied by Khensani Heritage Consulting included but not limited to pedestrian surveys and oral testimonies. The interviews were in a group form and largely unstructured, enabling informants to share as much information as possible. The first two (2) days focused on the survey where a greater part of the landscape was covered on Monday with the remainder concluded on Tuesday, 12 February 2019. In terms of the programme, it was the intention of the consultants to walk the site with the informants with a view to reconstructing, identifying and verifying the existing heritage resources but due to logistical challenges the consultants were able to meet with the informants only on Wednesday, 13 February 2019. Only two (2) families made it to the offices of the TBG and those were the Tshivhumbi and the Tshikikule families who were interviewed separately or rather at different times and those who could not make it included members of the Royal Council and the Tshiluvhi family. With the sameness of questions, Khensani Heritage Consulting used the opportunity to verify information which was commonly shared by the residents.

DAY 1 AND 2 – FIELD SURVEY FACILITATED BY MR TSHOVHOTHE

The day all started with a meeting with the Curator, Mr. Mufhati Bulannga briefing him about the programme and the expected outcomes. He shared a brief history of the site and indicated that the information was patchy as there was no publication dedicated to the history of the site; he also indicated that the land claim process would assist in shedding more light on the history of the site. Khensani and Professor Chirikure took the opportunity to give an update on the status of the project and their expected outcomes after the three-day period. Following the briefing a site walkabout was carried out starting with an office at the picnic area which was used as an inaugural office. The team went past the old picnic area to the west of the main entrance, evidence of a tangible nature in the form of braai facilities in the area and a toilet were visible albeit poor ground visibility occasioned by vegetation arising from the summer rainfall season.

The team meandered through the spiral path where the Field Ranger occasionally pointed to areas perceived to have heritage resources, that included ummarked graves symbolized by coral trees, structural foundations, terrace walls, enclosures similar to tradition kraals, domestic fruit like mangoes and indigenous vegetables.

In maintaining the sanctity of the garden as an epitome of the will, it was visibly clear that effort to uproot unwanted trees like mango trees were under way something the Field Ranger confirmed. The field trip lasted for three hours with limited success due to ground visibility. During day two (2) the team started at 9:00 heading the east of the garden, graves not far from the Administrative Offices were visited but due to poor visibility the team could not make any headway the only thing visible were coral trees.

DAY 3 – ORAL INTERVIEWS (INFORMANTS THE TSHIVHUMBE FAMILY FOLLOWED BY THE TSHISIKULE'S)

A word of appreciation goes to Mr. Bulannga who spent all morning communicating with the informants to ensure their arrival on time. The first family to arrive was the Tshivhumbe Family led by Mr. Netshivhumbe Thinandavha Samuel, who was accompanied by four of his Aunts[7]. History has it that the Netshivhumbe's were the second to arrive at Tshiluvhi from Luonde, situated about 16 kilometres west of Schoemansdal (near Makhado) and they were given shelter on the eastern hill of Netshiluvhi's kraal[8]. The name Netshivhumbe came about when they ceased to pay respect to the Netshiluvhi's. They were told that "*u si di vhumbe vhukoma kha shango li si lau*" and the area was named Tshivhumbe. They were called Netshivhumbe but remain subject of Khosi Netshiluvhi[9]. The family gave an overview of the entire site indicating that the landscape was shared amongst three (3) families i.e. the Tshivhumbe to the east and south east, Tshisikule to the east and north east and the Tshiluvhi to the west and south west. The area they occupied was called Tshivhumbe. The name is derived from the clay soil found in the area. The origins of the name come from the Tshivenda phrase *mavhu a vhumbawaho*.

The Netshivhumbe clan was constituted by 21 families who were all of related. They lived in harmony prior to forced removals in 1965. Most of the surviving elders shared memories of the site albeit vaguely as the last time they visited was 50 years back. It was mentioned that there were no formal cemeteries people always buried next to their homesteads making it difficult in this day and age to identify graves. Except for the Tshisikule family graves site to the east, where there are tombstones the rest of the landscape is assumingly littered with unmarked graves. When Thohoyandou Unit D was established a lot of human remains were exposed.

7 Annexure B – Attendance Register

8 https://luonde.co.za/luvhola/. Luonde is described as being close to Albasini's settlement near Makhado. This is an approximate location that requires further verification.

9 Notes from the History of Acquisition of the claimed property. Land claim for the Ha-Mphaphuli for the portion 101 of the farm Mpapuli 278 MT (Thohoyandou D)

According to Mr. Netshivhumbe Kwinda Nditsheni Andries, at the meeting held on 10.09. 2006 to discuss the land claim issue as it related to the Tshivhumbe claim, he gave an overview of the geographical location of the area occupied by the Tshivhumbe before forced removals. The Tshivhumbe clan settled from the river Mbovhani which was a boundary with the Tshisikule also bordered with the Tshiluvhi which extended over to where the SABC offices, Shell Garage moving next to the telephone exchange crossing over to Punda Maria until the bridge.

The Tshivhumbe area was by far the largest of the three sites, and it accommodated people coming from far and wide looking for accommodation. The *Vatsonga va ka Shibambo* where some of the people who shared the space with the Tshivhumbe's until they were dislodged together with the rest of the people in 1965 to the Mavambe area. The Tshivhumbe family enjoyed farming and cattle herding. The Mbovhani River served as a boundary between the three families. The Tshivhumbe area was known for hosting cultural activities attended by everyone from the three areas.

The Tshivhumbe clan scattered after the removals to various parts of Venda. The following are some of the things that the informants were able to recall about the area:

1. *Khoroni ya Tshivhumbe* (*Khoro ya lushaka*) (Gathering place for the Tshivhumbe's);
2. *Miri ya Mitsheto* (trees used to make fence or boundary);
3. Muswoswo trees (*Synadenium cupulare or commonly known as* dead-man's tree);
4. Warthogs were some of the animals identified, alongside vervet monkeys;
5. Settlement patterns and their sequential arrangements;
6. Structural patterns of the homesteads.

The family has to date completed a list of all the deceased in the area with a view to establishing a garden of remembrance with all the names inscribed and their wish is for the TBG Authorities to allow them access to space every year to commemorate as family and perform rituals as per their culture. Currently the family meet on 16 December every year.

THE TSHISIKULE FAMILY - SECOND INTERVIEWS

The family arrived soon after the interviews with the Tshivhumbe interview was completed, represented by four elderly men10 abreast with the history and heritage of the area. The Tshisikule area occupied the north eastern part of the garden. The *Vhanyai Vhasamvuni* arrived at Tshiluvhi from Luonde and were given shelter on the eastern side of Netshivhumbe and settled in the area teeming with Mitamvu trees, scientifically known as *Ficus sansibarica*. The Nesamvuni's also come from Lounde and were cousins of Makwinda of Tshivhumbe. The area was later named Mitamvuni under Nemutamvuni which later changed to Samvuni and were called Nesamvuni.

Tshisikule was a Traditional Healer having arrived at Tshiluvhi from Mount Rida (near Moletjie (Botlokwa),[11] was allocated a place to shelter his family between Tshivhumbe and Miluwani and as a traditional healer he was recognized and respected by all, young and old, as well as by traditional leadership. Of recent, there is a village named after his original name "Tshisikule" and their clan name is Murida. All these villages now fall under Thohoyandou and Sibasa town and they were all under khosi Netshiluvhi's area of jurisdiction[12].

The Mbovhani River served as a boundary between Tshiluvhi to the west and Tshisikule and Tshivhumbe to the east and south east respectively. The informants had a recollection of who lived where at Tshisikule and the following are some of the families who stayed in close proximity;

1. Tshisikule;
2. Mphephu;
3. Makwarela;
4. Tshingolo;
5. Nyamoufhe Mbovhana;
6. Maguvhe;
7. Nyamuvhambila;
8. Mubvumuni Solomon who was a police man; and
9. Frans Tshisikule.

10 Annexure C – Attendance Register

11 https://luonde.co.za/brief-history/

12 Notes from the Tshisikule family for the unveiling of the Tombstone

Murida Managa Tshisikule was born on 2 April 1830 and died on 1 August 1929. He was married to five (5) wives and had 18 children i.e. 8 boys and 10 girls13. The Tshisikule area like Tshivhumbe buried next to their homestead and except for marked graves a lot of unmarked graves exist. The Tshisikule area extended from where the Ministers houses or Chief Mphephu's Gate is to Dipini the new home of Thavhani Mall. The following are some of the landmark features shared by the informants:

1. *Muri wa Mukopokopo* (*Combretum microphyllum or* Flame climbing bush willow);
2. *Danga (Khoroni) (*gathering place or a place where meetings are held);
3. *Muri wa Mutshikili*, (*Sersia lancea trees;)*
4. The Rock where Tshisikule would perform his rituals as a traditional healer.

The family would appreciate if they could have an access gate to the site particularly on days like Good Friday where they could visit the graves.

THE TSHILUVHI FAMILY – SECONDARY SOURCE ACCOUNT AND INTERVIEWS CONDUCTED ON SUNDAY, 23 MARCH 2019

The interview with the Tshiluvhi family was conducted on Sunday, 23 March 2019 at the residence of Ms. Muofhe Netshiluvhi in Thohoyandou. The old lady was born and raised at the present day garden her age, though subject to speculation is over 100 years. Ms. Muofhe was not certain about the generation she represented but vaguely mentioned with the assistance of family could be representing the fourth (4) generation.

Other family members therein present were Lucas and Mutshutshu Netshiluvhi and Nyawasedza Mafenya the younger sister of Ms. Muofhe who are blood related. Unlike the Tshisikule and Netshivhumbe families, the Tshiluvhi's have not documented their genealogy in detail as efforts are currently being made to do that.

The Tshiluvhi occupied the west portion of the garden bordering Tshivhumbe to the east and south east and Tshisikule to the east and north east. The family occupied what is today known as Thohoyandou.

13 Family tree attached as an part of annexure c

Thohoyandou as it exists today owes its origins to Tshiluvhi area under the Chieftainship of Khosi vho Netshiluvhi. The construction of Thohoyandou started in 1977 with P East and P West residential area/location as R293 town, a shopping centre and Venda Government buildings[14.]

The jurisdiction of the land occupied by the Tshiluvhi's extended as far as the University of Venda to the west, the former Ministers Houses to the North and beyond the present day Thavhani Mall to the South. Mr. Mutshutshu last visited the garden in 2009, he gave a detailed account of how families were settled in the garden and beyond, of interest he mentioned that there were more than 12 families who occupied the Tshiluvhi and this included other ethnic groups like Vatsonga who included but not limited to Mbiza, Nwa-Xikochi, Jajamba and Gonweni.

Secondary historical accounts or sources suggest that the Tshiluvhi's were the first occupants of the area dating back to the 1400 AD, i.e. after the collapse of Mapungubwe Kingdom. The Netshiluvhis are known by different names: Malima, Khorommbi, Mathomu, Magidi, and Mudau. The name Tshiluvhi was totally stricken out and replaced by Thohoyandou as per the then government and was left as a name of a primary school[15].

The Tshiluvhi's celebrate Tshiluvhi day every year. The Magidis and the Netshiluvhis are blood brothers because in the early 1800 Khosi Nedzamba Mudau Netshiluvhi built another kraal at a place he named Tshilungoma because it was a hillock like a drum (*Tshiulu tsha ngoma*) at a place called Tshavhangona and this is where the Magidi family line was born[16].

The removal of the Netshiluvhi from the garden area took effect from 1964 up to 1966. Following the dispossession, most people lost their livestock together with their belongings, they were scattered and eventually settled around neighbouring villages like Lufule, Magidi, Tshisaulu Sokoutenda and many more. One of the people who disposed their affidavit Mr. Mathomu Wilson Radzilani said that "I grew up at Tshiluvhi and we have been using the land for residential, farming, grazing and for burial purposes[17]".

14 Notes from the History of Acquisition of the claimed property. Land claim for the Ha-Mphaphuli for the portion 101 of the farm Mpapuli 278 MT (Thohoyandou D)

14Ibid

15 Ibid

16 Ibid

17 Ibid

The historical account given by the other two families was no different from the one given by the Tshiluvhi family, except for an objection that demarcated their settlement; the family felt that the Tshititimbu and Mbovhani was the appropriate name as the latter joined the former beyond the borders of the garden.

The issue of the family being the descendants of people who migrated from Mapungubwe was raised and the family felt that further consultations with other family members were necessary as they were uncertain about the truthfulness of the matter. The former Ministers House though falling outside the boundaries of the garden has strong connections with the Tshiluvhi family, a landmark features that conjures memories are the huge timeless Baobab Trees, which, unfortunately one has been uprooted.

The family confirmed that a lot of unmarked graves exist within the garden and this was as a result of families burying in their homesteads. The family also offered to assist in the identification of heritage resources strewn across the garden particularly those related to the Tshiluvhi family. On the question of how the family wanted to have their heritage preserved, maintained and conserved, they felt that enough time should be given to them to discuss with the family.

The following suggestions were put forward that:

- The garden should be renamed to reflect the three (3) families forcibly removed from the garden by taking a leaf from the name Soshanguve which is an acronym for Sotho, Shangane, Nguni and Venda and such can be done for the garden where either the prefixes or suffixes of the family names can be used.
- The three (3) families should all be invited to a stakeholder meeting to verify data as most informants rely on memory which could distort information.
- From an employment point of view or economic opportunities SANBI should give the locals first right of refusal before engaging far and wide unless if scarce, critical or priority skills are required.

ANNEXURE C – ATTENDANCE REGISTER & HERITAGE DATA

TBG Offices: Tshohoyandou, Oral history interviews for the Tshivhumbe family
13.02.2019 – Time 10h:00 – 11:30

1. Munyai Muditambi Elisa ID 1211020071082 (1211020071082)
2. Khuba Muothe
3. Kwinda Muothe Selina 3306120533086
4. Nemukula Tshinyalani Selinah ~~54091409~~ 5409140903087
5. Netshivhumbe Thinandavha Samuel 0829082487 6303145065084
6. Khensani Maluleke 0845807947
7. PROF. S. CHRKURE 0722421270
8. MUKHATI BULANGAA

SAMBI ORAL HISTORY INTERVIEWS - 24.03.19
THOHOYANDOU

REGISTER OF PARTICIPATION. - 12:30 - 13:45

NAME	CLAN NAME	TEL NO.
NETSHILUVHI K. LUCAS	NETSHILUVHI	0607122731
MUTSHUTSHU	NETSHILUVHI	0828984378
MUOFHE	NETSHILUVHI	
NYAWASEDZA	MAFENYA	0724931815
Khensan Mahulele	Heritage Consultant	0815807947
MYFATH BULANNGA	CURATOR SAMBI	0159624258