Eastern Cape
PARKS & TOURISM AGENCY

BID NO: 05/FY/23

CONSTRUCTION OF NEW CAMPSITE VISITOR BOMA, BRAAI STANDS AND REPAIRS TO ELECTRICAL SUPPLY FOR GROENDAL NATURE RESERVE.

Closing Date & Time	:	**17th August 2022**
A Tender for Category	:	**3GB (ONLY) CIDB Registered Contractors**
Name of Tenderer	:	_____
Compulsory Briefing	:	**26th July 2022, Groendal Nature Reserve, at 14h30**
GPS Co-ordinates	:	**-33°43'11.23"S; 25°18'52.78"E**
Total Bid Price	:	_____
CSD Number	:	_____
CIDB CRS Number	:	_____

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2. CONTRACT

TENDER SUMMARY PAGE

NAME OF TENDERER .....

DETAILS OF CONTACT PERSON:

NAME .....

TELEPHONE NUMBER .....

FAX NUMBER .....

E-MAIL ADDRESS .....

ADDRESS OF TENDERER .....

.....

.....

.....

VAT REGISTRATION NO. .....

PREFERENCE POINTS CLAIMED ..... **(Max. 20 points)**

CONSTRUCTION PERIOD OFFERED* **6 Months**

***(Measured from date of official Site Hand Over)**

DATE OF TENDER .....

TENDERER 'S SIGNATURE .....

(Person authorised to sign the TENDER)

1: TENDER

PART T1: TENDERING PROCEDURES

PART T1: TENDERING PROCEDURES

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T1.1 TENDER NOTICE AND INVITATION TO TENDER

CONTRACT NO.: 05/FY/23

CONSTRUCTION OF NEW CAMPSITE VISITOR BOMA, BRAAI STANDS AND REPAIRS TO ELECTRICAL SUPPLY FOR GROENDAL NATURE RESERVE.

Tenderers should have a CIDB contractor grading designation 3GB. Bidders with designated grading higher than 3GB will not be considered.

Tenderers will be evaluated on four stages. In Stage 1 bids will be evaluated on pre-requisites, Stage 2 Local Content, (Price and B-BBEE) **80/20** Preference Point System will be applied in Stage 3. In Stage 4 bids will be assessed for risk.

The Tender documents will only be obtainable as from the **8th of July 2022** and can be downloadable from the ECPTA website: https://www.visiteasterncape.co.za/corporate/procurements/request-for-tender/ or visit the Eastern Cape Provincial Treasury website: www.ectreasury.gov.za

A **COMPULSORY TENDER CLARIFICATION MEETING** will be held on 26th July 2022 at 14hH30 at **Groendal Nature Reserve Uithenhage Office GPS co-ordinates -33°43'11.23"S; -25°18'52.78"E** Tenderers should already be in possession of the tender document and be familiar with the contents thereof.

The lowest or any tender will not necessarily be accepted, and the agency reserves the right to accept the Tender as a whole or in part. Bids must remain valid for a period of **150 days** after the closing date for the submission of bids, during which period a tender may not be amended or withdrawn and may be accepted at any time by the Department.

The closing date and time for receipt of bids is **17th August 2202 at 11H00.** Bids must be enclosed in a sealed envelope bearing the name of the Tenderer as well as the applicable tender heading, reference number, closing time and due date and must be addressed to, **The Chief Executive Officer,** and must be submitted in the tender box located at, 17-25 Oxford Street, Corner Oxford and Fleet Street East London, before the closing time and date.

TECHNICAL ENQUIRIES

1. Ms M. Lawana, Project Manager: Tel: 043 705 4400, Fax: 043 742 5566, E-mail: Mandilakhe.Lawana@ecpta.co.za
2. Mr. M Sandi, Supply Chain Management: Tel: 043 705 4400, Fax 086 206 0595, E-mail: Mcebisi.Sandi@ecpta.co.za

T1.2 TENDER DATA

The conditions of bid are the Standard Conditions of Bid as contained in Annex F of Board Notice 136 of 2015 in Government Gazette No. 30960 of 10 July 2015, Construction Industry Development Board (CIDB) Standard for Uniformity in Construction Procurement as is available from the CIDB website (see www.cidb.co.za

The Standard Conditions of Tender makes several references to the Tender Data. The Tender Data shall have precedence in the interpretation of any ambiguity or inconsistency between it and the Standard Conditions of Tender to which it mainly applies.

F.1.1 Actions

The Employer for this Contract will be the instance named in the Contract Data.

F.1.2 Tender Documents

(a) **The Tender Document** issued by the Employer comprises of the following:

THE TENDER		
Part T1	:	**Tender Procedures**
T1.1	:	Tender Notice and Invitation to Tender
T1.2	:	Tender Data
Appendix	:	Standard Conditions to Tender
Part T2		**Returnable Documents**
T2.1		Forms, Certificates and Schedules required for Evaluation of Tender Responsiveness
T2.2		Other Forms, Certificates and Schedules that will be Incorporated into the Contract
T2.3		Documentation, Forms and Schedules Required for Tender Evaluation Purposes
T2.4		Other Documentation, Forms and Schedules required for Tender Evaluation Purposes

THE CONTRACT (Part3)		
Part C1		**Agreements and Contract Data**
C1.1		Form of Offer and Acceptance
C1.2		Contract Data
Part C2		**Pricing Data**
C2.1		Pricing Instructions
C2.2		Provisional Bills of Quantities
C2.3		Amendments, Qualifications and Alternatives by Tenderer
Part C3		**Scope of Work**
C3.1		Standard Specifications
C3.2		Project Specifications
C3.3		Particular Specifications
C.4		Drawings
Part C4		**Site Information**
C4.1		Geotechnical Information of Site

The Tender Document and the drawings shall be obtained from the Employer or his authorised representative at the physical address stated in the Tender Notice, upon payment of the amount stated in the Tender Notice.

The following documents are relevant to this Tender and Tenderers are advised to obtain their own copies thereof:

(a) **"JBCC Series 2000 Principal Building Agreement (Edition 6.2 of May 2018)"** issued by the Joint Building Contracts Committee Inc. (including amendments).

(b) **"Standardized Specifications for Civil Engineering Construction" SANS 1200.**

(c) **"Code of Practice for the application of the National Building Regulations"SABS 0400-1990**

(d) **The Occupational Health and Safety Act No 85 and Amendment Act No 181 of 1993, and the Construction Regulations 2003 (Government Gazet**

No 25207 of 18 July 2003, Notice No R1010).

(e) In addition, Tenderers are advised, in their own interest, to obtain their own copies of the following acts, regulations and standards referred to in the this document as they are essential for the Tenderer to get acquainted with the basics of construction management, the implementation of preferential construction procurement policies and participation of targeted enterprise and labour.

(i) The Construction Industry Development Board Act No 38 of 2000 and the Regulations in terms of the CIDB Act 38/2000, Government Gazette Notice No 33239 of 28 May 2010,

(ii) SANS 1921:2004 Construction and Management

Part 1 : General Engineering and Construction Works;

Part 2 : Accommodation of Traffic on Public Roads occupied by the Contractor Part 3 : Structural Steelwork

Part 5 : Earthworks Activities which are to be performed by hand

(iii) Preferential Procurement Policy Framework Act, 2000 (Act No. 5 of 2000) and its Regulations as published in the Government Gazette No. 34350 of 8 June 2011

F.1.4 Communication and Employer's Agent

The Employer's agent is	:	Mr Quinton Wienand
Address	:	1A Stockton Road, Berea
		East London, 5241
Contact Number	:	(043) 721 1996

F.2.1 Eligibility

A Tenderer will not be eligible to submit a Tender if:

(a) the Contractor submitting the Tender is under restrictions or has principals who are under restriction to participate in the Employer's procurement due to corrupt of fraudulent practices;

(b) the Tenderer does not have the legal capacity to enter into the contract;

(c) the Contractor submitting the Tender is insolvent, in receivership, bankrupt or being wound up, has his affairs administered by a court or a judicial officer, has suspended his business activities, or is subject to legal proceedings in respect of the foregoing;

(d) The Tenderer does not comply with the legal requirements stated in the Employer's procurement policy;

(e) The Tenderer cannot demonstrate that he possesses the necessary professional and technical qualifications and competent, financial resources, equipment and other physical facilities, managerial capability, personnel, experience and reputation to perform the contract.

(f) The Tenderer cannot provide proof that he is in good standing with respect to duties, taxes, levies and contributions required in terms of legislation applicable to the work in the contract.

The following Tenderers who are registered with the CIDB, or are capable of being so registered prior to the evaluation of submissions, are eligible to have their Bids evaluated:

(a) Contractors who have a Contractor grading designation equal to or higher than a Contractor grading designation determined in accordance with the Tender sum, or a value determined in accordance with Regulation 25 (1B) or 25(7A) of the Construction Industry Development Regulations, for a GB class of construction work; and

Joint ventures are eligible to submit Bids provided that:

(a) every member of the joint venture is registered with the CIDB

F.2.7 Site visit and clarification meeting

The arrangements for the clarification meeting and site inspection, which is **compulsory** for this contract, are as follows:

Compulsory Meeting - Location/venue/platform: Groendal Nature Reserve, Uitenhage Section

Date: 26th Jully 2022

Starting time: 14H30

GPS Co-ordinates: Latitude - 33°43'11.23"S Longitude - 25°18'52.78"E

Alternative Tender offers

No alternative offers will be considered, but the original tender document needs to be completed and submitted as well.

F.2.12 Submitting a Tender Offer

Tender offers shall be submitted as an original only. All three volumes of the tender document must be printed and neatly ring bound. All three documents must be submitted on the tender closing date with all the relevant information completed and pages signed. All the required information and documentation required for the evaluation of the tender must be bound into the document. The Provisional Bills of Quantities must be completed by hand.

F.2.13.1 Delivery of Tender

The Employer's address for delivery of Tender offers and identification details to be shown on each Tender offer package are:

Location of Tender boxes: At Reception in the offices of Eastern Cape Parks & Tourism, East London

Physical address: (1) 17-25 Oxford Street, Corner Oxford and Fleet, East London

Identification Details: **CONSTRUCTION OF NEW CAMPSITE VISITOR BOMA, BRAAI STANDS AND REPAIRS TO ELECTRICAL SUPPLY FOR GROENDAL NATURE RESERVE.**

F.2.15 Closing time

The closing time for submission of Tender Offers is **11:00am** .

Telephonic, telegraphic, telex, facsimile, electronic or e-mailed Bids will not be accepted.

F.2.16 Tender offer validity

The Tender offer validity period is 150 days from the closing time for submission of Bids.

F.2.17 Clarification of Tender Offer after submission

For this contract the employer may, after clarification with the Tenderer, agree to amend the total of the prices stated by the Tenderer in his Tender offer.

F.2.19 Inspections, tests and analyses

Access shall be provided for inspections and testing by personnel acting on behalf of the Employer.

F.2.22 Return of Tender Documents

Where a Tenderer who received a Tender document does not submit a Tender, the Tender documents issued to him must be returned to the Employer within 14 days after the closing date for submission of Bids.

F2.23 Certificates

The following documentation must be provided with the Tender:

1. Copy of the Central Supplier Database (CSD) Full Report for the month of August 2022
2. A Valid Copy of VAT Registration Certificate (if VAT number is not quoted in the Tax Clearance Certificate).
3. Proof of Contractor Registration with the CIDB (CRS number to be provided).
4. A Valid Certified copy of the B-BBEE certificate as issued by a SANAS accredited verification agency, should the Tenderer wish to claim points for B-BBEE status or a certified Sworn Affidavit
5. A Valid Copy of the Tenderer's Workmen's Compensation Certificate, Act 4 of 2002.
6. A Valid Copy of the Tenderer's Unemployment Insurance Certificate, Act 4 of 2002.
7. A signed Joint Venture Agreement (if Tenderer is a Joint Venture)
8. A Valid Certified Copy of the consolidated B-BBEE Status Level Certificate in a case of Joint Ventures

F.3.4 Opening of Tender Submissions

Bids will be opened in public at the date and time stipulated in the tender advert.

F.3.5 One -envelope system

The one envelope system will be followed for this Tender.

F.3.9 Arithmetical Errors, omissions and discrepancies

- ***Add to clause F.3.9.1 the following:***

"If it is found obvious that a bona-fide mistake was made in writing out the Tender amount, or if the total Tender amount is corrected according to the prescripts of **F.3.9.2 to F3.9.4** below, the amount in words shall be amended".

- ***Replace clauses F.3.9.2, F3.9.3 and F3.9.4 with the following:***

"Check responsive Tender offers for arithmetical errors, correcting them in the following manner:

(a) If a Bills of Quantities (or schedule of quantities or schedule of rates) applies and there is a discrepancy between the unit rate and the line item total resulting from multiplying the unit rate by the quantity, the **unit rate as quoted shall govern** and the **line item total shall be corrected.**

However, in exceptional cases where, in the opinion of the Employer, there is an obviously gross misplacement of the decimal point in either the unit rate or line total, or where the error was obviously not a result of incorrect arithmetic but rather the result of a writing error, the Employer reserves the right to correct either the Tendered rate or the line total as the case may be, subject to clarification in terms of Clause F.2.17.

(b) Where there is an error in the total of the prices, either as a result of corrections required by this checking process or in the Tenderer's addition of prices, the total of the prices shall be adjusted to obtain the correct Tender value."

F.3.11 Evaluation of Tender Offers

Before evaluating Tender offers, the Bids will be in accordance with Method **2** of the CIDB Standard Tender Evaluation in four stages, namely:

- Stage 1: Compliance with bid requirements
- Stage 2: Local Content Declaration for designated items
- Stage 3: Financial Offer and Preference Evaluation
- Stage 4: Risk Assessment

Stage 1: Compliance with bid requirements

Bidders must comply with the set of compliance requirements listed below. The compliance requirements stated below are project specific and disparate from the pre-qualification requirements enshrined in the Preferential Procurement Policy Regulations of 2017.

(i) **Compulsory Briefing:** Bidders must attend the compulsory briefing meeting on site.

(ii) **CIDB:** Proof of CIDB contractor grading designation equal to **3GB Only**. CRS number also to be provided. Contractors with designation of 4GB or higher will not be considered.

(iii) **Company Experience:** Bidders MUST provide evidence of execution or completion of at least two (2) General Building projects (GB). Proof will be accepted in the form of **Practical Completion certificates** and or **completion certificate.** Only projects with a rand value of R700 000 and above will be considered for evaluation. The reference forms must be completed, signed and stamped by the client(s) previously serviced. Reference forms, which are Incomplete or not in compliance with the above requirement will not be considered.

(iv) **Team Capability:** Bidders must provide CV's and certified copies of qualifications (where applicable) for the following team members. Copies of qualifications must be certified by the Commissioner of Oaths **not older than three (3) months.**

Resources	Qualifications	No of years' Experience
Site Agent	National Diploma or higher in Civil/Building	3 or Higher
Foreman	N/A	5 or Higher

Occupational Health and Safety Representative	Relevant Certification/Qualification	1 or Higher
Environmental Control Representative	Relevant Certification/Qualification	1 or higher
Brick Layer	TradeTest Certification	1 or highrer

NB: Failure to comply with any of the above requirements will lead to immediate rejection of the bid.

Stage 2: Local Production and Content Declaration for designated items

Only locally produced or locally manufactured products and components for construction will be considered based on the prescribed threshold for each component as listed on SBD 6.2 and Annexure C. Bidders must complete and submit SBD 6.2 and all its associated Annexures in order to be considered. Failure to complete the SBD 6.2 and or its Annexures or failure to obtain the minimum threshold for local content will result in immediate rejection of the bid.

Stage 3: Price and B-BBEE

CRITERIA FOR FUNCTIONALITY	POINTS
Price	80
B-BBEE Status	20
Total	100

NB: Certified copy or original B-BBEE Status Level Verification Certificate/ Affidavit must be submitted to substantiate B-BBEE Status claimed. When such certificate is not provided as proof the company will automatically score zero.

Stage 4: Risk Analysis

In addition to the evaluation of Responsiveness, a risk analysis will be performed on the Tenderers having the highest ranking / number of points to ascertain if any of the following, as relevant, present an unacceptable commercial risk to the employer in terms of:

a) Clause F.3.13 of the Standard Conditions of Tender below (Annexure F);

b) Unduly high or unduly low Tendered rates or amounts in the Tender offer. In this regard, a financial risk analysis will be performed to verify that the rates entered in the Bill of Quantities are reasonable and balanced. Bids may be disqualified if Tendered rates are found to be distorted. Such evaluation will include "Rate Only" items;

c) Contract data provided by the contractor; and

d) The contents of the Tender Returnables which are to be included in the contract

BIDDERS SHALL TAKE NOTE OF THE FOLLOWING BID CONDITIONS:

- **Bidders may tender on all these 3GB clustered projects i.e. (Bid 04/FY/23, Bid 05/FY/23, Bid 06/FY/23, Bid 07/FY/23 and Bid 08/FY/23), however no bidder will be awarded more than one project from these clustered projects in line with the requirements of break-out procurement. In cases where a bidder has scored the highest points on more than one project, a bidder will be requested to select only one project in order of preference. In such cases a bidder who has already been recommended a project may not be regarded alowest acceptable proce in the next project.**
- The ECPTA reserves the right to negotiate market related rates with any bidder that has a potential of being awarded the bid.
- The ECPTA reserves the right to negotiate market related rates with any bidder that has a potential of being awarded the bid.
- The Eastern Cape Parks & Tourism Agency Supply Chain Management Policy will apply.
- Bidders must be registered with the National Treasury Central Supplier Database (CSD)
- Eastern Cape Parks & Tourism Agency does not bind itself to accept the highest bid or any other bid and reserves the right to accept the whole or part of the bid.
- Bids which are late, incomplete, unsigned, or submitted by facsimile or electronically, will not be accepted.
- Bids submitted are to hold good for a period of 150 days
- A service level agreement shall be signed with the successful service provider.
- ECPTA reserves the right to terminate the contract if not satisfied with the work produced by the service provider. Only bidders that have met the requirements of the proposal / specification shall be considered during the adjudication process.
- Companies that bid as joint venture must submit an official signed business agreement by both parties. If the service provider does not meet this requirement, it will be automatically disqualified.
- The ECPTA Bid Committee and the Supply Chain Management Unit may, before a bid is adjudicated or at any time during the bidding process, oblige a bidder to substantiate any claims it may have made in its bid documents.

Cancellation and re-invitation of Bids

The employer may, prior to the award of a Tender, cancel the Tender if –

(a) due to changed circumstances, there is no longer a need for the goods or services specified in the invitation

(b) funds are no longer available to cover the total envisaged expenditure;

(c) no acceptable Bids are received; or

(d) there is material irregularity in the tender process

If the Tender is cancelled, it shall be published in the Government Tender Bulletin or the media in which the original Tender invitation was advertised, and all invited tenderers will be informed.

The following conditions shall apply:

(i) Any discounts offered unconditionally shall be taken into account when

calculating comparative prices.

(ii) Although discounts offered conditionally shall not be taken into account for evaluation purposes, such discounts shall be implemented when payment is affected (should the Tender prove to be successful).

(iii) Points scored shall be rounded off to the nearest 2 decimal places.

(iv) In the event that two or more Bids score equal total points, the successful Tender must be the one scoring the highest number of preference points for B-BBEE. However, when functionality is part of the valuation process and two or more Bids have scored equal points including equal preference points for B-BBEE, the successful Tender must be the one scoring the highest score for functionality. Should two or more Bids be equal in all respects, the award shall be decided by the drawing of lots.

(v) A trust, consortium or joint venture will qualify for points for their B-BBEE status level as a legal entity, provided that the entity submits their consolidated B-BBEE status level certificate

(vi) A trust, consortium or joint venture will qualify for points for their B-BBEE status level as an unincorporated entity, provided that the entity submits their consolidated B-BBEE scorecard as if they were a group structure and that such a consolidated B-BBEE scorecard is prepared for every separate Tender.

(vii) A person must not be awarded points for B-BBEE status level if it is indicated in the Tender documents that such a Tenderer intends sub-contracting more than 25% of the value of the contract to any other enterprise that does not quality for at least the points that such a Tenderer qualifies for, unless the intended sub-contractor is an exempted micro enterprise that has the capability and ability to execute the sub-contract.

(viii) A person awarded a contract may not sub-contract more than 25% of the value of the contract to any other enterprise that does not have an equal or higher B-BBEE status level than the person concerned, unless the contract is sub-contracted to an exempted micro enterprise that has the capability and ability to execute the sub-contract.

Declarations

A Tender must, in the manner stipulated in the Tender document, declare that:

(a) the information provided is true and correct;

(b) the signatory to the Tender document is duly authorized; and

(c) documentary proof regarding any Tendering issue will, when required, be submitted to the satisfaction of the relevant organ of state.

If it is detected that –

(a) B-BBEE status level of contribution has been claimed or obtained on a fraudulent basis; or

(b) any of the conditions of the contract have not been fulfilled.

The employer shall act against the Tenderer or person guilty of such misconduct.

In addition to any other remedy the employer may have against such person(s), the employer may also:

(a) disqualify the person from the Tendering process;

(b) recover all 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 favorable arrangements due to such cancellation;

(d) restrict the Tenderer or contractor, its shareholders and directors, or only the shareholders and directors who acted on a fraudulent basis, 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.

Tax Clearance

a) It essential to ensure that persons conducting business with the State are tax compliant at the awarding of bids as no bid may be awarded to persons who are not tax compliant

b) In order to comply with the provisions of tax, bidders must utilize the Standard Bidding Document (SBD1) issued with this bid

c) Bidders must submit their tax compliance status PIN together with the bid

d) The Central Supplier Database and tax compliance PIN are the approved methods that will be utilized to verify tax compliance as the South African Revenue Services does not issue Tax Clearance Certificates but has made an online provision available, via e-Filling, for bidders to print their own Tax Clearance Certificates which they can submit with their bids

e) Printed copies of Tax Clearance Certificates will be accepted and verified on the e-Filling.

F.3.13.1 Acceptance of Tender Offer

Tender offers will only be accepted if:

(a) the Tenderer has submitted with his Offer all relevant documentation as stated in F2.23

(b) the Tenderer is registered with the Construction Industry Development Board in an appropriate contractor grading designation;

(c) the Tenderer or any of its directors 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; and

(d) the Tenderer has not:

(i) abused the Employer's Supply Chain Management System or

(ii) failed to perform on any previous contract.

(e) the Tenderer has achieved the minimum score for quality as stated in F.3.11.

F3.17 Copies of contract

The number of paper copies of the signed contract to be provided by the Employer is **ONE.**

The Standard Conditions of Tender to follow is obtained from Annexure F of CIDB Standard for Uniformity in Construction Procurement (28 May 2010), which contains references to the Tender Data for details that apply specifically to the Tender

T1.3 STANDARD CONDITIONS OF TENDER

F.1 General

F.1.1 Actions

F1.1.1 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 F.2 and F.3, timeously and with integrity, and behave equitably, honestly and transparently, comply with all legal obligations and not engage in anticompetitive practices.

F.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.

F.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.

F.1.2 Tender Documents

The documents issued by the employer for the purpose of a tender offer are listed in the tender data.

F.1.3 Interpretation

F.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.

F.1.3.2 These conditions of tender, the tender data and tender schedules which are only required for tender evaluation purposes, shall not form part of any contract arising from the invitation to tender.

F.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 fulfil his or her duties impartially;
- ii) an individual or organisation is in a position 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 organisation which employs that employee.

(b) **comparative offer** means the tenderer's financial offer after all tendered parameters that will affect the value of the financial offer have been taken into consideration in order to enable comparisons to be made between offers on a comparative basis

(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; and

(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

(e) **organization** means a company, firm, enterprise, association or other legal entity, whether incorporated or not, or a public body

(f) **quality (functionality)** means the totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs

F.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 read, copied and recorded. Writing 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.

F.1.5 The employer's right to accept or reject any tender offer

F.1.5.1 The employer may accept or reject any variation, deviation, tender offer, or alternative tender offer, and may cancel the tender process and reject all tender offers at any time before the formation of a contract. The employer shall not accept or incur any liability to a tenderer for such cancellation and rejection but will give reasons for such action upon written request to do so.

F.1.5.2 The employer may not subsequent to the cancellation or abandonment of a tender process or the rejection of all tender offers re-issue a tender covering substantially the same scope of work within a period of six months unless only one tender was received and such tender was returned unopened to the tenderer.

F.1.6 Procurement procedures

F.1.6.1 General

Unless otherwise stated in the tender data, a contract will, subject to F.3.13, be concluded with the tenderer who in terms of F.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 bids.

F.1.6.2 Competitive negotiation procedure

F.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 F.3.4, the employer shall announce only the names of the tenderers who make a submission. The requirements of F.3.8 relating to the material deviations or qualifications which affect the competitive position of tenderers shall not apply.

F.1.6.2.2 All responsive tenderers, or not less than three responsive tenderers that are highest ranked in terms of the evaluation method and evaluation criteria stated in the tender data, shall be invited in each round to enter into competitive negotiations, based on the principle of equal treatment and keeping confidential the proposed solutions and associated information. Notwithstanding the provisions of F.2.17, the employer may request that bids 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.

F.1.6.2.3 At the conclusion of each round of negotiations, tenderers shall be invited by the employer to make a fresh 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.

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

F.1.6.3 Proposal procedure using the two stage-system

F.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.

F.1.6.3.2 Option 2

F.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.

F.1.6.3.2.2 The employer shall evaluate bids 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.

F.2 TENDERER'S OBLIGATIONS

F.2.1 Eligibility

F.2.1.1 Submit a tender offer only if the tenderer complies with 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.

F.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 bids.

F.2.2 Cost of tendering

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 complies with requirements.

F.2.3 Check documents

Check the tender documents on receipt for completeness and notify the employer of any discrepancy or omission.

F.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.

F.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.

F.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.

F.2.7 Site visit and 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.

F.2.8 Seek clarification

Request clarification of the tender documents, if necessary, by notifying the employer at least five working days before the closing time stated in the tender data.

F.2.9 Insurance

Be aware that the extent of insurance to be provided by the employer (if any) may 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.

F.2.10 Pricing the tender offer

F.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 14 days before the closing time stated in the tender data.

F2.10.2 Show VAT payable by the employer separately as an addition to the tendered total of the prices.

F.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.

F.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.

F.2.11 Alterations to documents

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. Erasures and the use of masking fluid are prohibited.

F.2.12 Alternative tender offers

F.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.

F.2.12.2 Accept that an alternative tender offer may be based only on the criteria stated in the tender data or criteria otherwise acceptable to the employer.

F.2.13 Submitting a tender offer

F.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, services or supply identified in the contract data and described in the scope of works, unless stated otherwise in the tender data.

F.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 in black ink.

F.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.

F.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.

F.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.

F.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.

F.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.

F.2.13.8 Accept that the employer shall 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.

F.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.

F.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.

F.2.15 Closing time

F.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 the proof of posting shall not be accepted as proof of delivery.

F.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.

F.2.16 Tender offer validity

F.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.

F.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.

F.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 bids that a tender is to be withdrawn or substituted.

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

F.2.18 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 F.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.

F.2.18 Provide other material

F.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.

F.2.18.2 Dispose of samples of materials provided for evaluation by the employer, where required.

F.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.

F.2.20 Submit securities, bonds, policies, etc.

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.

F.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.

F.2.22Return of other tender documents

If so instructed by the employer, return all retained tender documents within 28 days after the expiry of the validity period stated in the tender data.

F.2.23Certificates

Include in the tender submission or provide the employer with any certificates as stated in the tender data.

F.3 THE EMPLOYER'S UNDERTAKINGS

F.3.1 Respond to requests from the tenderer

F.3.1.1 Unless otherwise stated in the Tender Data, respond to a request for clarification received up to five working days before the tender closing time stated in the Tender Data and notify all tenderers who drew procurement documents.

F.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.

F.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 of the Tender Notice until seven 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, will then notify it to all tenderers who drew documents.

F.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.

F.3.4 Opening of tender submissions

F.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.

F.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, preferences claimed and time for completion for the main tender offer only.

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

F.3.5 Two-envelope system

F.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 bids 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.

F.3.5.2 Evaluate the quality 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 quality evaluation above the minimum number of points for quality stated in the tender data, and announce the score obtained for the technical proposals and the total price and any preferences claimed. Return unopened financial proposals to tenderers whose technical proposals failed to achieve the minimum number of points for quality.

F.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.

F.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.

F.3.8 Test for responsiveness

F.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.

F.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 bids, 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.

F.3.9 Arithmetical errors, omissions and discrepancies

F.3.9.1 Check responsive bids 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.

F.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 F.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.

F.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.

F.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.

F.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.

F.3.11 Evaluation of tender offers

F3.11.1 General

Appoint an evaluation panel of not less than three persons. Reduce each responsive tender offer to a comparative offer and evaluate it using the tender evaluation methods and associated evaluation criteria and weightings that are specified in the Tender Data.

F.3.11.2 Method 1: Financial offer

In the case of a financial offer:

a) Rank tender offers from the most favourable to the least favourable comparative offer.
b) Recommend the highest ranked tenderer for the award of the contract, unless there are compelling and justifiable reasons not to do so.
c) Re-rank all tenderers should there be compelling and justifiable reasons not to recommend the highest ranked tenderer and recommend the highest ranked tenderer, unless there are compelling and justifiable reasons not to do so and the process set out in this subclause is repeated.

F.3.11.3 Method 2: Financial offer and preference

In the case of a financial offer and preferences:

a) Score each tender in respect of the financial offer made and preferences claimed, if any, in accordance with the provisions of F.3.11.7 and F.3.11.8.
b) Calculate the total number of tender evaluation points (T EV) in accordance with the following formula:
$T_{EV} = N_{FO} + N_P$

where: N_{FO} is the number of tender evaluation points awarded for the financial offer made in accordance with F.3.11.7;
N_P is the number of tender evaluation points awarded for preferences claimed in accordance with F.3.11.8.

c) Rank tender offers from the highest number of tender evaluation points to the lowest.
d) Recommend the tenderer with the highest number of tender evaluation points for the award of the contract, unless there are compelling and justifiable reasons not to do so.
e) Rescore and re-rank all tenderers should there be compelling and justifiable reasons not to recommend the tenderer with the highest number of tender evaluation points, and recommend the tenderer with the highest number of tender evaluation points, unless there are compelling and justifiable reasons not to do so and the process set out in this sub clause is repeated.

F.3.11.4 Method 3: Financial offer and quality

In the case of a financial offer and quality:

a) Score each tender in respect of the financial offer made and the quality offered in accordance with the provisions of F.3.11.7 and F.3.11.9, rejecting all tender offers that fail to score the minimum number of points for quality stated in the tender data, if any.
b) Calculate the total number of tender evaluation points (T EV) in accordance with the following formula:

$T_{EV} = N_{FO} + N_Q$

where: N_{FO} is the number of tender evaluation points awarded for the financial offer made in accordance with F.3.11.7;
N_Q is the number of tender evaluation points awarded for quality offered in accordance with F.3.11.9.

c) Rank tender offers from the highest number of tender evaluation points to the lowest.
d) Recommend tenderer with the highest number of tender evaluation points for the award of the contract, unless there are compelling and justifiable reasons not to do so. Rescore and re-rank all tenderers should there be compelling and justifiable reasons not to recommend the tenderer with the highest number of tender evaluation points and recommend the tenderer with the highest number of tender evaluation points, unless there are compelling and justifiable reasons not to do so and the process set out in this subclause is repeated.

F.3.11.5 Method 4: Financial offer, quality and preferences

In the case of a financial offer, quality and preferences:

a) Score each tender in respect of the financial offer made, preference claimed, if any, and the quality offered in accordance with the provisions of F.3.11.7 to F.3.11.9, rejecting all tender offers that fail to score the minimum number of points for quality stated in the tender data, if any.
b) Calculate the total number of tender evaluation points (T_{EV}) in accordance with the following formula, unless otherwise stated in the Tender Data:

$T_{EV} = N_{FO} + N_P + N_Q$

where: N_{FO} is the number of tender evaluation points awarded for the financial offer made in accordance with F.3.11.7;
N_P is the number of tender evaluation points awarded for preferences claimed in accordance with F.3.11.8.
N_Q is the number of tender evaluation points awarded for quality offered in accordance with F.3.11.9.

c) Rank tender offers from the highest number of tender evaluation points to the lowest.
d) Recommend the tenderer with the highest number of tender evaluation points for the award of the contract, unless there are compelling and justifiable reasons not to do so.
e) Rescore and re-rank all tenderers should there be compelling and justifiable reasons not to recommend the tenderer with the highest number of tender evaluation points and recommend the tenderer with the highest number of tender evaluation points, unless there are compelling and justifiable reasons not to do so and the process set out in this sub clause is repeated.

F.3.11.6 Decimal places

Score financial offers, preferences and quality, as relevant, to two decimal places.

F.3.11.7 Scoring Financial Offers

Score the financial offers of remaining responsive tender offers using the following formula:

$N_{FO} = W_1 \times A$

where: N_{FO} is the number of tender evaluation points awarded for the financial offer.
W_1 is the maximum possible number of tender evaluation points awarded for the financial offer as stated in the Tender Data.
A is a number calculated using the formula and option described in Table F.1 as stated in the Tender Data.

Table F.1: Formulae for calculating the value of A

Formula	Comparison aimed at achieving	Option 1[a]	Option 2[a]
1	Highest price or discount	$A = (1 + \frac{(P - P_m)}{P_m})$	$A = P / P_m$
2	Lowest price or percentage commission / fee	$A = (1 - \frac{(P - P_m)}{P_m})$	$A = P_m / P$
[a] P_m is the comparative offer of the most favourable comparative offer. P is the comparative offer of the tender offer under consideration.			

F.3.11.8 Scoring preferences

Confirm that tenderers are eligible for the preferences claimed in accordance with the provisions of the tender data and reject all claims for preferences where tenderers are not eligible for such preferences. Calculate the total number of tender evaluation points for preferences claimed in accordance with the provisions of the tender data.

F.3.11.9 Scoring quality

Score each of the criteria and sub-criteria for quality in accordance with the provisions of the Tender Data.

Calculate the total number of tender evaluation points for quality using the following formula:

$N_Q = W_2 \times S_o / M_s$

where: S_o is the score for quality allocated to the submission under consideration;
M_s is the maximum possible score for quality in respect of a submission; and
W_2 is the maximum possible number of tender evaluation points awarded for the quality as stated in the Tender data.

F.3.12Insurance 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.

F.3.13 Acceptance of tender offer

Accept the tender offer, if in the opinion of the employer, it does not present any unacceptable commercial 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, bankrupt or being wound up, has his affairs administered by a court or a judicial officer, has suspended his 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.

F.3.14 Prepare contract documents

F.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.

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

F.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.

F.3.15 Notice to unsuccessful tenderers

F.3.16.1 Notify the successful tenderer of the employer's acceptance of his tender offer by completing and returning one copy of the form of offer and acceptance before the expiry of the validity period stated in the tender data or agreed additional period.

F.3.16.2 After the successful tenderer has been notified of the employer's acceptance of the tender, notify other tenderers that their tender offers have not been accepted.

F.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.

F.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.

EASTERN CAPE PARKS & TOURISM AGENCY

CONTRACT NO.: 05/FY/23

CONSTRUCTION OF NEW CAMPSITE VISITOR BOMA, BRAAI STANDS AND REPAIRS TO ELECTRICAL SUPPLY FOR GROENDAL NATURE RESERVE.

PART T2: RETURNABLE DOCUMENTS

RETURNABLE DOCUMENT CHECKLIST

Tenderers to complete this checklist to ensure that all information in the Tender Document is completed included and read by the Tenderer.

Page	Ref	Description	Completed/ Included/ Read
		All pages requiring signatures signed by the Tenderer (Authorized Person)	
1		Correct Tender Offer Amount on BOQ's carried forward to Tender Summary (Page iv) and Form of Offer (Page C1.3)	
T2.3	T2.1	Forms, Certificates and Schedules required for evaluation of Tender responsiveness	
T2.1.1	T2.1.1	Tender Briefing / Site Inspection Certificate	
T2.1.2-T2.1.6	T2.1.2	Certificate of Authority for Signatory	
T2.1.7	T2.1.3	Registration Certificates / Agreements / Identity Documents	
T2.1.8-2.1.17	T2.1.4	Joint Venture / Consortium Disclosure Form	
T2.1.18	T2.1.5	Central Supplier Database / Compliance PIN	
T2.1.19	T2.1.6	Proof of Registration with CIDB	
T2.1.20	T2.1.7	Proof of Workmen's Compensation Registration	
T2.1.21-T2.1.22	T2.1.8	Bidder's/Tender's Reference Evaluation Form	
T2.1.23-T2.1.24	T2.1.9	Bidder's/Tender's Reference Evaluation Form	
T2.1.27	T2.1.10	Tenderer's Team Capability	
T2.21	T2.2	Other Forms, Certificates and Schedules that will be incorporated into the contract	
T2.2.1	T2.2.1	Record of Addenda to Tender Documents	
T2.2.2	T2.2.2	Local Employment Generation	
T2.2.3	T2.2.3	Unemployment Insurance Fund (UIF) – Registration Certificate (Act 4 of 2002)	
T2.2.4-T2.2.5	T2.2.4	Form Concerning Fulfilment of the Construction Regulations, 2003	
T2.2.6	T2.2.5	Form of Required Information	
T2.2.7-T2.2.10	T2.2.6	Bidders Disclosure (SBD 4)	
T2.2.18-T2.2.22	T2.2.7	Preference Points Claim Form in Terms of the Preferential Procurement Regulations 2017 (SBD 6.1)	

T2.2.18-T2.2.21	T2.2.9	**Local Content Declaration (SBD 6.2)**	

T2.37	**T2.3**	**Documentation, Forms and Schedules required for Tender evaluation purposes**	
T2.3.1-T2.3.2	T2.3.1	Related Experience of Tenderer	
T2.3.2-T2.3.5	T2.3.2	List of Key Personnel	
T2.3.6-T2.3.7	T2.3.3	Schedule of Plant and Equipment	
T2.3.8-T2.3.9	T2.3.4	Schedule of Proposed Sub-Contractors	
T2.3.10-T2.3.11	T2.3.5	Provisional Programme and Method Statement	
T1.2.6	**F.3.11**	**Compliance requirements**	
		• Proof of CIDB contractor grading designation equal to **3GB Only** • Evidence of execution or completion of at least two (2) General Building projects (GB) • Team Capability	
T2.60	**T2.4**	**Other Documentation, Forms and Schedules required for Tender evaluation purposes**	
T2.62	T2.4.2	Broad-based Black Economic Empowerment Status Level Certificate	
C1.18	**C1.2.2**	**Part 2 : Data Provided by the Contractor (Contract Specific Data)**	
C2.5	**C2.2**	**Pricing Data (Provisional Bill of Quantities)**	
BOQ's	**C2.2**	Sign and date Final Summary	
BOQ's	**C2.2**	Completed in **BLACK INK** only and corrections crossed out and initialed	
C2.6	**C2.3**	Amendments, Qualifications and Alternatives by Tenderer	

PART T2 : RETURNABLE DOCUMENTS

Notes :

The Tender Document must be submitted as a whole. All forms must be properly completed as required and the document shall not be taken apart or altered in any way whatsoever.

All forms must be duly completed in **black ink** as required.

The list of returnable documents, which consists of forms and schedules to be completed and company specific certificates and information pages to be attached, comprise the following:

TABLE OF CONTENTS **Page**

T2.1 FORMS, CERTIFICATES AND SCHEDULES REQUIRED FOR EVALUATION OF TENDER

T2.1.1 TENDER BRIEFING / SITE INSPECTION ATTENDANCE CERTIFICATE

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

Address.....

Telephone number ..... Fax

number ..... E-mail

address .....

Was represented by the person(s) named below at the compulsory meetings held for all Tenderers as per the Tender Data (T1.2 – F.2.7)

I/We hereby acknowledge that I/We visited the site and acquainted ourselves with the conditions likely to influence the work and all aspects that could influence either the cost or the construction of the services prior to determining our rates and prices.

I/We further certify that I/we are satisfied with the description of the work and explanations given at the meeting and that I/We understand perfectly the work to be done, as specified and implied, in the documentation and information provided.

TENDERER'S REPRESENTATIVE(S):

Name : ..... Signature .....

Capacity : .....

Name : ..... Signature .....

Capacity : .....

EMPLOYER'S REPRESENTATIVE:

Name : ..... Signature .....

Capacity : ..... Date.....

T2.1.2 CERTIFICATE OF AUTHORITY FOR SIGNATORY

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

(I) COMPANY	(II) CLOSE CORPORATION	(III) PARTNERSHIP	(IV) JOINT VENTURE	(V) SOLE PROPRIETOR

Signatories for Companies, Close Corporations, Partnerships, Joint Ventures or Sole Proprietors must establish their authority thereto by attaching a copy of the relevant resolution of their Board of Directors, Members or Partners duly signed and dated. Examples are shown below.

(I) CERTIFICATE FOR COMPANY

I, ... chairperson of the Board of Directors of ....., hereby confirm that by resolution of the Board (copy attached) taken on ..... 20....., Mr/Ms ....., acting in the capacity of ....., was authorized to sign all documents in connection with the tender for **Tender No.05/FY/23** and any contract resulting from it, on behalf of the company.

Chairman: .....

Chairman :.....

As Witness: 1. .....

2. .....

Date : .....

(II) CERTIFICATE FOR CLOSE CORPORATION

We, the undersigned, being the key members in the business trading as ..... hereby authorise , Mr/Ms ....., acting in the capacity of ..... to sign all documents in connection with the tender for **Tender No.0 5 / F Y / 2 3** and any contract resulting from it, on our behalf.

NAME	ADDRESS	SIGNATURE	DATE

Note : this certificate is to be completed and signed by all of the key members upon whom rests the directions of the affairs of the Close Corporation as a whole.

(III) CERTIFICATE FOR PARTNERSHIP

We, the undersigned, being the key partners in the business trading as, ...hereby authorize Mr/Ms .....acting in the capacity of ....., to sign all documents in connection with the tender for **Tender No. 05/FY/23** and any contract resulting from it, on our behalf.

NAME	ADDRESS	SIGNATURE	DATE
Lead partner			

behalf.

Note : This certificate is to be completed and signed by all of the key members upon whom rests the direction of the affairs of Partnership as a whole.

(IV) CERTIFICATE JOINT VENTURE

We, the undersigned, are submitting this Tender offer in Joint Venture and hereby authorize Mr/Ms .....,authorized signatory of the company..... acting in the capacity of lead partner, to sign all documents in connection with the tender for **Tender No.05/FY/23** and any contract resulting from it, on our behalf.

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

NAME OF FIRM	ADDRESS	DULY AUTHORISED SIGNATORY
Lead Partner		Signature
		Name
CIDB Registration No.		Designation
Lead Partner		Signature
		Name
CIDB Registration No.		Designation
Lead Partner		Signature
		Name
CIDB Registration No.		Designation

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

(V) CERTIFICATE FOR SOLE PROPRIETOR

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

Signature of Sole Owner : .....

As Witnesses:

1. .....

2. .....

Date : .....

T2.1.3 REGISTRATION CERTIFICATES/AGREEMENTS / IDENTITY DOCUMENTS

Attach hereto certified copies of Registration Certificates for Companies and Closed Corporations and certified copies of Identity Documents for Partnerships and Sole proprietors as well as signed Agreements and Powers of Attorney for Joint Venture / Consortium if applicable.

T2.1.4 JOINT VENTURE/CONSORTIUM DISCLOSURE FORM

TO BE COMPLETED ONLY IF TENDER IS SUBMITTED IN A JOINT VENTURE OR CONSORTIUM

GENERAL

i) All the information requested must be filled in the spaces provided. If additional space is required, additional sheets may be used and attached to the original documents.

ii) A copy of the joint venture agreement must be attached to this form, in order to demonstrate the Affirmable, Joint Venture Partner's share in the ownership, control, management responsibilities, risks and profits of the joint venture, the proposed joint venture agreement must include specific details relating to:

a) the contributions of capital and equipment

b) work items to be performed by the Affirmable Joint Venture Partner's own forces

c) work items to be performed under the supervision of the Affirmable Joint Venture Partner.

iii) Copies of all written agreements between partners concerning the contract must be attached to this form including those, which relate to ownership options and to restrictions/limits regarding ownership and control.

iv) ABE partners must complete ABE Declaration Affidavits.

v) The joint venture must be formalised. All pages of the joint venture agreement must be signed by all the parties concerned. A letter/ notice of intention to formalise a joint venture once the contract has been awarded will not be considered.

vi) Should any of the above not be complied with, the joint venture will be deemed null and void and will be considered non-responsive.

1. JOINT VENTURE PARTICULARS

a) Name .....

b) Postal address.....

..... c) Physical address

.....

.....

d) Telephone .....

e) Fax .....

2. IDENTITY OF EACH NON-AFFIRMABLE JOINT VENTURE PARTNER

2.1(a) Name of Firm .....

Postal Address .....

Physical Address .....

Telephone .....

Fax .....

Contact person for matters pertaining to Joint Venture Participation Goal requirements

.....

2.2(a) Name of Firm .....

Postal Address .....

Physical Address .....

Telephone .....

Fax .....

Contact person for matters pertaining to Joint Venture Participation Goal requirements

.....

(Continue as required for further non-Affirmable Joint Venture Partners)

3. IDENTITY OF EACH AFFIRMABLE JOINT VENTURE PARTNER

3.1(a) Name of Firm .....

Postal Address .....

Physical Address .....

Telephone .....

Fax .....

Contact person for matters pertaining to Joint Venture Participation Goal requirements

.....

3.2(a) Name of Firm .....

Postal Address .....

Physical Address .....

Telephone .....

Fax .....

Contact person for matters pertaining to Joint Venture Participation Goal requirements

.....

3.3(a) Name of Firm .....

Postal Address .....

Physical Address .....

Telephone .....

Fax .....

Contact person for matters pertaining to Joint Venture Participation Goal requirements

.....

(Continue as required for further Affirmable Joint Venture Partners)

4. BRIEF DESCRIPTION OF THE ROLES OF THE AFFIRMABLE JOINT VENTURE PARTNERS IN THE JOINT VENTURE

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

5. OWNERSHIP OF THE JOINT VENTURE

a) Affirmable Joint Venture Partner ownership percentage(s) ..... %

b) Non-Affirmable Joint Venture Partner ownership percentage(s) ..... %

c) Affirmable Joint Venture Partner percentages in respect of: *

(i) Profit and loss sharing.....

(ii) Initial capital contribution in Rands.....

.....

.....

(*Brief descriptions and further particulars should be provided to clarify percentages).

(iii) Anticipated on-going capital contributions in Rands .....

.....

.....

.....

(iv) Contributions of equipment (specify types, quality, and quantities of equipment) to be provided by each partner.

.....

.....

.....

6. RECENT CONTRACTS EXECUTED BY PARTNERS IN THEIR OWN RIGHT AS PRIME CONTRACTORS OR AS PARTNERS IN OTHER JOINT VENTURES

	NON-AFFIRMABLE JOINT VENTURE PARTNERS	PARTNER NAME
a)		
b)		
c)		
d)		
e)		

	AFFIRMABLE JOINT VENTURE PARTNERS	PARTNER NAME
a)		
b)		
c)		
d)		
e)		

7. CONTROL AND PARTICIPATION IN THE JOINT VENTURE

(Identify by name and firm those individuals who are, or will be, responsible for, and have authority to engage in the relevant management functions and policy and decision making,

indicating any limitations in their authority e.g. co-signature requirements and Rand limits).

(a) Joint Venture cheque signing

.....

.....

.....

(b) Authority to enter into contracts on behalf of the Joint Venture

.....

.....

.....

(c) Signing, co-signing and/or collateralising of loans

.....

.....

.....

(d) Acquisition of lines of credit

.....

.....

.....

(e) Acquisition of performance bonds

.....

.....

.....

(f) Negotiating and signing labour agreements

.....

.....

.....

8. MANAGEMENT OF CONTRACT PERFORMANCE

(Fill in the name and firm of the responsible person).

(a) Supervision of field operations

.....

(b) **Major purchasing**

.....

(c) **Estimating**

.....

(d) **Technical management**

.....

9. **MANAGEMENT AND CONTROL OF JOINT VENTURE**

(a) **Identify the "managing partner", if any,**

.....

.....

.....

.....

(b) **What authority does each partner have to commit or obligate the other to financial institutions, insurance companies, suppliers, subcontractors and/or other parties participating in the execution of the contemplated works?**

.....

.....

.....

.....

(c) **Describe the management structure for the Joint Venture's work under the contract**

MANAGEMENT FUNCTION / DESIGNATION	NAME	PARTNER*

* Fill in "ex Affirmable Joint Venture Partner" or "ex non-Affirmable Joint Venture Partner".

10. PERSONNEL

(a) State the approximate number of operative personnel (by trade/function/discipline) needed to perform the Joint Venture work under the Contract.

TRADE/FUNCTION/ DISCIPLINE	NUMBER EX AFFIRMABLE JOINT VENTURE PARTNERS	NUMBER EX NON-AFFIRMABLE JOINT VENTURE PARTNERS

(Fill in "ex Affirmable Joint Venture Partner" or "ex non-Affirmable Joint Venture Partner").

(b) Number of operative personnel to be employed on the Contract who are currently in the employ of partners.

(i) Number currently employed by Affirmable Joint Venture Partners

.....

(ii) Number currently employed by the Joint Venture

.....

(c) Number of operative personnel who are not currently in the employ of the respective partner and will be engaged on the project by the Joint Venture

.....

(d) Name of individual(s) who will be responsible for hiring Joint Venture employees

.....

.....

(e) Name of partner who will be responsible for the preparation of Joint Venture payrolls

.....

.....

11. CONTROL AND STRUCTURE OF THE JOINT VENTURE

Briefly describe the manner in which the Joint Venture is structured and controlled.

.....

.....

.....

.....

.....

The undersigned warrants that he/she is duly authorised to sign this Joint Venture Disclosure Form and affirms that the foregoing statements are true and correct and include all material information necessary to identify and explain the terms and operations of the Joint Venture and the intended participation of each partner in the undertaking.

The undersigned further covenants and agrees to provide the Employer with complete and accurate information regarding actual Joint Venture work and the payment therefore, and any proposed changes in any provisions of the Joint Venture agreement, and to permit the audit and examination of the books, records and files of the Joint Venture, or those of each partner relevant to the Joint Venture, by duly authorised representatives of the Employer.

Signature .....

Duly authorised to sign on behalf of.....

Name .....

Address .....

Telephone .....

Date .....

Signature .....

Duly authorised to sign on behalf of..... Name

.....

Address .....

Telephone .....

Date .....

Signature .....

Duly authorised to sign on behalf of..... Name

.....

Address .....

Telephone .....

Date .....

Signature .....

Duly authorised to sign on behalf of..... Name

.....

Address .....

Telephone .....

Date .....

Signature .....

Duly authorised to sign on behalf of..... Name

.....

Address .....

Telephone .....

Date .....

Signature .....

Duly authorised to sign on behalf of..... Name

.....

Address .....

Telephone .....

Date .....

T2.1.5 CENTRAL SUPPLIER DATABASE/ TAX COMPLIANCE PIN

It is a condition of Tender that the taxes of the successful Tenderer must be in order, or that satisfactory arrangements have been made with South African Revenue Service (SARS) to meet the Tenderer's tax obligations.

Tenderers' Full CSD report for the month of August 2022 / Tax compliance PIN must be attached hereto.

T2.1.6 CIDB CERTIFICATE

The Tenderer shall attach hereto the Contractors proof of valid registration certificate with CIDB. CRS number(s) also to be provided.

In the case of Consortium/Joint Venture Bids, each partner shall provide their own valid CIDB registration certificate.

T2.1.7 PROOF OF WORKMEN'S COMPENSATION REGISTRATION

The Tenderer shall attach hereto valid proof of workmen's compensation registration or proof of payment of contributions in terms of the compensation of occupational injuries and diseases (Act No. 4 of 2002

T2.1.8 BIDDER'S/TENDERER'S REFERENCE EVALUATION FORM 1

Tenderer shall complete the tender reference evaluation form below. Failure to complete the form will result in the disqualification of the tender application.

Name of Client/Department	
Tender Number	
Tender Description	
Name of Bidder (tenderer)	
Value of project	**R**
Commencement Date	
Contractual Completion Date	
Bidder's Completion Date	

1.2 Please score the performance of the above-mentioned company by ticking the relevant box

Performance Rating			**Comments (Attach additional sheets if necessary)**
Work performed in compliance with contract terms.	Excellent	5	
	Good	4	
	Fair	3	
	Poor	2	
	Very Poor	1	
Materials, supplies and equipment provided as required?	Excellent	5	
	Good	4	
	Fair	3	
	Poor	2	
	Very Poor	1	
Have timelines been met?	Excellent	5	
	Good	4	
	Fair	3	
	Poor	2	
	Very Poor	1	
Financial Capacity	Excellent	5	
	Good	4	
	Fair	3	
	Poor	2	
	Very Poor	1	
Quality of work	Excellent	5	
	Good	4	
	Fair	3	
	Poor	2	

	Very Poor	1	
Communication and accessibility	Excellent	5	
	Good	4	
	Fair	3	
	Poor	2	
	Very Poor	1	
Would you recommend using this service provider in future?	Yes	No	If no, provide reasons:

OVERALL PERFORMANCE

Excellent		Good		Fair		Poor		Very Poor	

CLIENT / DEPARTMENT:

Name of Evaluator/ Project Manager	
Designation:	
Signature:	
Date:	

Official Stamp:

NB: This form must be duly completed by an authorized person and be submitted with the bid. Incomplete, unsigned or forms not stamped will not be considered for evaluation of the bid.

T2.1.9 BIDDER'S/TENDERER'S REFERENCE EVALUATION FORM 2

Tenderer shall complete the tender reference evaluation form below. Failure to complete the form will result in the disqualification of the tender application.

Name of Client/Department	
Tender Number	
Tender Description	
Name of Bidder (tenderer)	
Value of project	**R**
Commencement Date	
Contractual Completion Date	
Bidder's Completion Date	

1.2 Please score the performance of the above-mentioned company by ticking the relevant box

Performance Rating			**Comments (Attach additional sheets if necessary)**
Work performed in compliance with contract terms.	Excellent	5	
	Good	4	
	Fair	3	
	Poor	2	
	Very Poor	1	
Materials, supplies and equipment provided as required?	Excellent	5	
	Good	4	
	Fair	3	
	Poor	2	
	Very Poor	1	
Have timelines been met?	Excellent	5	
	Good	4	
	Fair	3	
	Poor	2	
	Very Poor	1	
Financial Capacity	Excellent	5	
	Good	4	
	Fair	3	
	Poor	2	
	Very Poor	1	
Quality of work	Excellent	5	
	Good	4	
	Fair	3	
	Poor	2	
	Very Poor	1	

Communication and accessibility	Excellent	5	
	Good	4	
	Fair	3	
	Poor	2	
	Very Poor	1	
Would you recommend using this service provider in future?	Yes	No	If no, provide reasons:

OVERALL PERFORMANCE

Excellent		Good		Fair		Poor		Very Poor	

CLIENT / DEPARTMENT:

Name of Evaluator/ Project Manager	
Designation:	
Signature:	
Date:	

Official Stamp:

NB: This form must be duly completed by an authorized person and be submitted with the bid. Incomplete, unsigned or forms not stamped will not be considered for evaluation of the bid.

T2.1.10 TENDERER'S TEAM CAPABILITY

Bidders to submit comprehensive Curriculum Vitaes (CV) of the following including certificates of qualifications, trade test certificates:

- Foreman
- Site Agent
- Bricklayers
- Occupational Health and Safety Officer
- Environmental Control Officer

T2.2 OTHER FORMS, CERTIFICATES AND SCHEDULES THAT WILL BE INCORPORATED INTO THE CONTRACT

T2.2.1 RECORD OF ADDENDA TO TENDER DOCUMENTS

I/We confirm that the following communications amending the Tender documents, received from the Employer or his representative before the closing date of submission of this Tender offer, have been taken into account in this Tender offer.

ADD NO.	DATE	TITLE OR DETAILS
1.		
2.		
3.		
4.		
5.		

SIGNATURE: _____ DATE: _____

(of Authorised Person)

T2.2.2 LOCAL EMPLOYMENT GENERATION

The Contractor must submit with his Tender, on the table below, his anticipated component of local personnel that will be employed on the Contract both in terms of number of persons and total person days for each category provided. The number of local personnel should include the local personnel employed by sub-contractors.

The contractor will not be allowed to import skilled personnel if the required skills exist within the local community. The contractor will however be allowed to make use of his own permanently employed machine operators and drivers.

Current policy requires that the female and youth labour components be maximized and that females should take up not less than 5% of the employment generated.

The specific employment goals, which are to be met for this project, are as follows:

(a) A minimum of 10 local labour employment (residing in the area of the Groendal Nature Reserve.)

(a) A minimum of 5% of the local labour employed on the project is required to be females;

(b) A minimum of 20% of the local labour employed on the project is required to be youth (18 – 35 years of age); and

(c) A minimum of 1% of the local labour employed on the project is required to be disabled persons.

Non-compliance with the above requirements could be grounds for disqualifying the Tender.

Number of persons planned to be employed

Occupational Category	Total		Adult				Youth				Disabled			
			Female		Male		Female		Male		Female		Male	
	Persons	Person Days	Persons	Person Days	Persons	Person Days	Persons	Person Days	Persons	Person Days	Persons	Person Days	Persons	Person Days
Clerical														
Labourer														
Managerial														
Semi skilled														
Skilled														
Supervisor														
Total														

Please note: - The definition of youth is any person under the age of 35 years. (18-35 Years)
- Each person may only be counted once. If a person falls into more than one category, disabled persons take preference, then youth, then adults.
- Must include all occupational categories (Clerical, Labourer, Managerial, Semi skilled, Skilled and Supervisor).

SIGNATURE:_____ DATE: _____
(Authorised Person)

T2.2.3 UNEMPLOYMENT INSURANCE FUND (UIF) REGISTRATION CERTIFICATE (ACT 4 OF 2002)

A valid Tenderer's Unemployment Insurance Fund (UIF) Registration Certificate to be inserted here.

T2.2.4 FORM CONCERNING FULFILMENT OF THE CONSTRUCTION REGULATIONS, 2003

In terms of regulation 4(3) of the Construction Regulations, 2003 (hereinafter referred to as the Regulations), promulgated on 18 July 2003 in terms of Section 43 of the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993) the Employer shall not appoint a contractor to perform construction work unless the Contractor can satisfy the Employer that his/her firm has the necessary competencies and resources to carry out the work safely and has allowed adequately in his/her Tender for the due fulfilment of all the applicable requirements of the Act and the Regulations.

1. I confirm that I am fully conversant with the Regulations and that my company has (or will acquire/procure) the necessary competencies and resources to timeously, safely and successfully comply with all of the requirements of the Regulations.

YES	
NO	

2. Proposed approach to achieve compliance with the Regulations (Tick)

Own resources, competent in terms of the Regulations (refer to 3 below)	
Own resources, still to be hired and/or trained (until competency is achieved)	
Specialist sub-contract resources (competent) - specify:	

3. Provide details of proposed key persons, competent in terms of the Regulations, who will form part of the Contract team as specified in the Regulations (CV's to be attached).

.....

.....

.....

.....

.....

.....

4. Provide details of proposed training (if any) that will be undergone:

.....

.....

.....

.....

.....

.....

5. Potential key risks identified and measures for addressing risks:

.....

.....

.....

.....

.....

.....

6. I have fully included in my Tendered rates and prices (in the appropriate payment items provided in the Schedule of Quantities) for all resources, actions, training and any other costs required for the due fulfilment of the Regulations for the duration of the construction and defects repair period.

(Tick)

YES	
NO	

SIGNATURE OF PERSON(S) AUTHORISED TO SIGN THIS TENDER:

1. ..... Date .....

2. ..... Date .....

T2.2.5 FORM OF REQUIRED INFORMATION

THE FOLLOWING PARTICULARS MUST BE FURNISHED

(FAILURE TO DO SO MAY RESULT IN YOUR TENDER BEING DISQUALIFIED)

NAME OF TENDERER .....

POSTAL ADDRESS .....

STREET ADDRESS .....

TELEPHONE NUMBER CODE ..... NUMBER .....

CELLPHONE NUMBER .....

FACSIMILE NUMBER CODE ..... NUMBER .....

VAT REGISTRATION NUMBER.....

HAS AN ORIGINAL AND VALID TAX CLEARANCE CERTIFICATE

BEEN ATTACHED? (MBD 2) **YES/NO**

HAS A B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE BEEN

SUBMITTED? (MBD 6.1) **YES/NO**

IF YES, WHO WAS THE CERTIFICATE ISSUED BY?

AN ACCOUNTING OFFICER AS CONTEMPLATED IN THE CLOSE CORPORATION ACT (CCA) ☐

A VERIFICATION AGENCY ACCREDITED BY THE SOUITH AFRICAN NATIONAL ACCREDITATION SYSTEM (SANAS) ☐

A REGISTERED AUDITOR ☐

(Tick applicable box)

(A B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE MUST BE SUBMITTED IN ORDER TO QUALIFY FOR PREFERENCE POINTS FOR B-BBEE)

ARE YOU THE ACCREDITED REPRESENTATIVE IN SOUTH AFRICA FOR

THE GOODS/SERVICES/WORKS OFFERED? **YES/NO**

(IF YES ENCLOSE PROOF)

SIGNATURE OF TENDERER: .....

DATE: .....

CAPACITY IN WHICH THIS TENDER IS SIGNED: .....

T2.2.6 BIDDER'S DISCLOSURE (SBD 4)

1. PURPOSE OF THE FORM

Any person (natural or juristic) may make an offer or offers in terms of this invitation to bid. In line with the principles of transparency, accountability, impartiality, and ethics as enshrined in the Constitution of the Republic of South Africa and further expressed in various pieces of legislation, it is required for the bidder to make this declaration in respect of the details required hereunder.

Where a person/s are listed in the Register for Tender Defaulters and / or the List of Restricted Suppliers, that person will automatically be disqualified from the bid process.

2. Bidder's declaration

2.1 Is the bidder, or any of its directors / trustees / shareholders / members / partners or any person having a controlling interest in the enterprise, employed by the state?
YES/NO

2.1.1 If so, furnish particulars of the names, individual identity numbers, and, if applicable, state employee numbers of sole proprietor/ directors / trustees / shareholders / members/ partners or any person having a controlling interest in the enterprise, in table below.

Full Name	Identity Number	Name of State institution

2.2 Do you, or any person connected with the bidder, have a relationship with any person who is employed by the procuring institution? **YES/NO**

2.2.1 If so, furnish particulars:

.....

.....

2.3 Does the bidder or any of its directors / trustees / shareholders / members / partners or any person having a controlling interest in the enterprise have any interest in any other related enterprise whether or not they are bidding for this contract? **YES/NO**

2.3.1 If so, furnish particulars:

.....

.....

3 DECLARATION

I, the undersigned, (name)..... in submitting the accompanying bid, do hereby make the following statements that I certify to be true and complete in every respect:

3.1 I have read and I understand the contents of this disclosure;

3.2 I understand that the accompanying bid will be disqualified if this disclosure is found not to be true and complete in every respect;

3.3 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 consortium1 will not be construed as collusive bidding.

3.4 In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications, prices, including methods, factors or formulas used to calculate prices, market allocation, the intention or decision to submit or not to submit the bid, bidding with the intention not to win the bid and conditions or delivery particulars of the products or services to which this bid invitation relates.

3.5 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.

3.6 There have been no consultations, communications, agreements or arrangements made by the bidder with any official of the procuring institution in relation to this procurement process prior to and during the bidding process except to provide clarification on the bid submitted where so required by the institution; and the bidder was not involved in the drafting of the specifications or terms of reference for this bid.

3.7 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

[1] 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.

applicable legislation.

I CERTIFY THAT THE INFORMATION FURNISHED IN PARAGRAPHS 1, 2 and 3 ABOVE IS CORRECT.

I ACCEPT THAT THE STATE MAY REJECT THE BID OR ACT AGAINST ME IN TERMS OF PARAGRAPH 6 OF PFMA SCM INSTRUCTION 03 OF 2021/22 ON PREVENTING AND COMBATING ABUSE IN THE SUPPLY CHAIN MANAGEMENT SYSTEM SHOULD THIS DECLARATION PROVE TO BE FALSE.

....

Signature Date

....

Position Name of bidder

T2.2.7 PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENCIAL PROCUREMENT REGULTIONS 2017 (SBD 6.1)

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); and

1.2

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

b) The 80/20 preference point system will be applicable to this tender (*delete whichever is not applicable for this tender*).

1.3 Points for this bid shall be awarded for:

(a) Price; and

(b) B-BBEE Status Level of Contributor.

1.4 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**

1.5 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.

1.6 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;

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 PREFERENCE POINT SYSTEMS

Points for Price will be calculated based on the following formula in accordance with PPPFA Circular 01 of 2021/22

$$PS = 80(1 + \frac{Pt - Pmax}{Pmax})$$

Where

Ps = Points scored for price of tender under consideration;

Pt = Price of tender under consideration; and

Pmax = Price of highest acceptable tender.

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 (80/20 system)
1	20
2	18

3	14
4	12
5	8
6	6
7	4
8	2
Non-compliant contributor	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 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 subcontracted.....%
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-BBE 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 BIDDERS(S)

DATE: .....

ADDRESS .....

.....

T2.2.10 LOCAL CONTENT DECLARATION (SBD 6.2)

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.

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:**

Description of services, works or goods	**Stipulated minimum threshold**
Item 3.13 – High Tensile Steel Reinforcement – 10mm Diameter Bars	100%
Item 3.14 – High Tensile Steel Reinforement– Fabric Reinforcement	100%
Item 5.32 - 0.58mm Thick Metrolite Roofing Solution IBR –	100%
Item 12.32 – 110mm UPVC Pipes	100%
Item B 1.1 – 110mm UPVCAS ECC Cable	100%
Cement	100%
Mesh Ref 193 Fabrick Re-inforcement	100%
40mm PVC Weephole PVC Pipe x 6	100%
Nails, Bolts, Nuts, Plates	100%
Galvinized steel door frame	100%
Galvinized steelworks	100%
UPVC Pipes 40mm	100%
UPVC Pipes 50mm	100%
Electrical cables	90%

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.

(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):
.....
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.thdti.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:** _____

Annex C

Local Content Declaration - Summary Schedule

Bid No.	**05/FY/23**
Bid description:	**Construction of a new capsite visitor boma, braal stand, and repairs to electrical supply for Groendal Nature Reserve**
Designated product(s)	Cement, Bolts, Nuts, Bracing; Steel, PVC Pipes, Electrical Cables
Tender Authority:	ECPTA
Bid Entity name:	
Bid Exchange Rate:	Pula EU GBP
Specified local content %	

Note: VAT to be excluded from all calculations

Calculation of local content								Bid summary			
Bid item no's	**List of items**	**Bid price - each (excl VAT)**	**Exempted imported value**	**Bid value- net of exempted imported content**	**Imported value**	**Local value**	**Local content % (per item)**	**Bid Qty**	**Total Bid value**	**Total exempted imported content**	**Total Imported content**
	High Tensile Steel Reinforcement- 10mm diametre bars										
	High Tensile Steel Reinforcement- Fabrick Reinforcement										
	0.58mm thick metrolite roofing solution IBR										
	110mm UPVC Pipes										
	110mm UPVCas Cable										
	Cement										
	Mesh Ref 193 Fabrick re-inforcement										
	40mm PVC Weephole PVC pipe x 6										
	Nails, Bolts, Nuts, Plates										
	Galvinized steel door frame										
	Galvinized steelworks										
	UPVC pipe 40mm										
	UPVC pipe 50mm										
	Electrical cables										

Total bid value	R
Total Exempt imported content	R
***Total bid* value net of exempt imported content**	R
Total Imported content	R
Total local content	R
Average local content % of tender	%

Signature of Bidder

Date:

Annex D

Imported Content Declaration - Supporting Schedule to Annex C

Bid No.	04/FY/23
Bid description:	Upgrading (Repairs and Renovation) of the Baviaanskloof Nature Reserve Interpretive Center
Designated Products:	
Bidders Authority:	
Bidder Entity name:	
Bidder Exchange Rate:	Pula / EU / GBP

Note: VAT to be excluded from all calculations

A. Exempted imported content

Tender item no's	Description of imported content	Local supplier	Overseas Supplier	Calculation of imported content: 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	Summary: Tender Qty	Summary: Exempted imported value

Total exempt imported value

This total must correspond with Annex C -

B. Imported directly by the Tenderer

Tender item no's	Description of imported content	Unit of measure	Overseas Supplier	Calculation of imported content: 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	Summary: Tender Qty	Summary: 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

Description of imported content	Unit of measure	Local supplier	Overseas Supplier	Calculation of imported content: 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	Summary: Quantity imported	Summary: 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

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

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

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

This total must correspond with Annex C - C 23

Signature of tenderer from Annex B

Date:

Annex E

Local Content Declaration - Supporting Schedule to Annex C

Bid No.	**04/FY/23**
Bid description:	Upgrading (Repairs and Renovation) of the Baviaanskloof Nature Reserve Interpretive Center
Designated products:	
Bidder Authority:	
Bid Entity name:	

Note: **VAT to be excluded from all calculations**

Local Products (Goods, Services and Works)	Description of items purchased	Local suppliers	Value
		Total local products (Goods, Services and Works)	
Manpower costs	(Tenderer's manpower cost)		
Factory overheads	(Rental, depreciation & amortisation, utility costs, consumables etc.)		
Administration overheads and mark-up	(Marketing, insurance, financing, interest etc.)		
		Total local content	
		This total must correspond with Annex C -	

Signature of tenderer from Annex B

Date:

T2.3 DOCUMENTATION, FORMS AND SCHEDULES REQUIRED FOR TENDER EVALUATION PURPOSES

T2.3.1 RELATED EXPERIENCE OF TENDERER

The Tenderer shall list below or in a separate schedule a statement of those works/services of similar nature which they have satisfactorily completed in the past five years. Information must be provided in the format provided below. It is essential that telephone contact details of references be supplied.. Present commitments and their due dates for completion shall also be listed. Where applicable, the project value can be adjusted to reflect the impact of inflation, using the Consumer Price Index (CPI) with the completion date being taken as the base date for the calculation **(Refer Section F.3.11 – Stage 1: Pre-requisites .**

1. PREVIOUS PROJECTS UNDERTAKEN:

EMPLOYER		DESCRIPTION AND NATURE OF WORKS/ SERVICES	VALUE OF WORK (INCL. VAT)	DATE COMPLE-TED
EMPLOYER/ CONTACT PERSON/ TEL. NO.	CONSULTING ENGINEER/ CONTACT PERSON/ TEL. NO.			

2. CURRENT PROJECTS UNDERTAKEN:

EMPLOYER		DESCRIPTION AND NATURE OF WORKS/ SERVICES	VALUE OF WORK (INCL. VAT)	DATE COMPLE-TED
EMPLOYER/ CONTACT PERSON/ TEL. NO.	CONSULTING ENGINEER/ CONTACT PERSON/ TEL. NO.			

DATE:_____SIGNATURE OF TENDERER: _____

(Authorised Person)

T2.3.2 LIST OF KEY PERSONNEL

For purpose of evaluating functionality, the Tenderer shall attach hereto a shortened CV for each key member available to work on the project in the Categories Project Manager, Site Foreman and Plant Operators/Artisans personnel (using the template provided). (Refer Section F.3.11 – Stage 2: Functionality (ii)).

The Tenderer shall list below the key personnel to be used on this project.

NAME	JOB	RESPONSIBILITIES AND AVAILABILITY TO PROJECT	QUALIFICATIONS (ATTACHED COPY)	EXPERIENCE
		Site Agent		
		Formaan		
		Occupational Health and Safety Representative		
		Environmental Control Representativve		
		Brick Layer		
		Site Agent		

CURRICULUM VITAE OF KEY PERSONNEL

NB: BIDDERS MUST SUBMIT CV's OF KEY PERSONNEL

This form should be completed for each key person listed in the table in section T 2.3.2.

Responsibility or role on the project (as per table T2.3.2)	
Name :	**Date of birth :**
Profession :	**Nationality :**
Qualifications :	
Professional membership :	
Name of employer (firm) :	
Current position :	**Years with firm :**
Employment record : (List of chronological order starting with earliest work experience)	
Experience record pertinent to required service:	
Certification : **I, the undersigned, certify that to the best of my knowledge and belief, this data correctly describes me, my qualifications and my experience and that I will be available to execute the work for which I have been nominated.** _____ **(Signature of Person named in schedule)** **Date**	

Attach additional pages if more space is required

SUPPLEMENTARY INFORMATION

Please attach any supporting documentation, supplementary information and Curriculum Vitae to this page.

T2.3.3 SCHEDULE OF PLANT AND EQUIPMENT

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

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

DESCRIPTION (type, size, capacity etc)	QUANTITY	YEAR OF MANUFACTURE

Attach additional pages if more space is required

(b) **Details of major equipment that will be hired, or acquired for this contract if Tender is accepted. <u>Contact details of plant hire company to be provided.</u>**

DESCRIPTION (type, size, capacity, etc.)	QUANTITY	HOW ACQUIRED	
		HIRE/ BUY	SOURCE

Attach additional pages if more space is required

The Tenderer undertakes to bring onto site without additional cost to the Employer any additional plant not listed but which may be necessary to complete the contract within the specified contract period.

DATE: _____ SIGNATURE OF TENDERER: _____

(Authorised Person)

T2.3.3 SCHEDULE OF PROPOSED SUB-CONTRACTORS

In terms of Clause 4.4 of the Conditions of Contract for Construction, the Tenderer shall enter below the names of sub-contractors he intends to employ for work on this contract, as well as the portion and value of the work to be executed by such sub-contractors.

Based on the definition of SMME provided below the Tenderer should indicate in which category, i.e. Medium, Small, Very Small or Micro, the intended sub-contractor is categorized if applicable.

DESCRIPTION OF PORTION OF WORK	APPROX. VALUE (EXCL. VAT)	NAME, ADDRESS AND TELEPHONE NUMBER OF SUB-CONTRACTOR/SMME	SMME (YES / NO)	SMME CATEGOR Y MEDIUM/ SMALL/ VERY SMALL/ MICRO	% HDI OWNERSHIP OF SUB-CONTRAC-TOR

* According to the national Small Business Amendment Act, 2003 (Act No. 26 of 2003) small business (i.e. SMME) is defined as follows:

A separate and distinct business entity, including co-operative enterprises and non- governmental organisations, managed by one owner or more which, including its branches or subsidiaries, if any, is predominantly carried on in any sector or sub-sector of the economy as mentioned in column 1 of the Schedule and which can be classified as a micro, a very small, a small or a medium enterprise by satisfying the criteria mentioned in columns 3, 4 and 5 of the Schedule opposite the smallest relevant size or class as mentioned in column 2 of the Schedule.

(Schedule for Construction Sector given on the following page).

SCHEDULE (ONLY CONSTRUCTION SECTOR SHOWN)

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4	COLUMN 5
Sector or Sub-sectors in accordance with the Standard Industrial Classification	**Size or Class**	**Total full-time equivalent of paid employees: Less than:**	**Total annual turnover: Less than:**	**Total gross asset value (fixed property excluded): Less than:**
Construction	Medium	200	R 26 million	R 5 million
	Small Very	50	R 6 million	R 1 million R0,50
	Small Micro	20	R 3 million	million R0,10
		5	R0,20 million	million

It is to be noted that an entity awarded a contract **may not sub-contract more than 25% of the value of the contract** to any other enterprise that does not have an equal or higher BBB-EE status level than the entity concerned, unless the contract is sub-contracted to an exempted micro enterprise that has the capability and ability to execute the sub-contract.

DATE:_____SIGNATURE OF TENDERER: _____

(Authorised Person)

T2.3.4 CONSTRUCTION METHODOLOGY AND PROGRAMME

Eligibility criteria: The respondent should be able to demonstrate its capability to bring a contract to a satisfactory conclusion by describing the methodology of approach and programme to accomplish the project's required outcomes.

The respondent must explain its understanding of the requirements for successful planning and implementation of an accelerated infrastructure development programme.

The approach paper should explain the methodologies which are to be adopted under these conditions and demonstrate the compatibility.

The approach should further include a top quality project plan which outlines processes, procedures and associated resources, applied by whom and when with relevant reporting systems, indicate how risks will be managed, what quality assurance measures are to be put in place. Special emphasis should be placed on key performance indicators as well as innovative procedures to be used.

The successful Tenderer shall submit a detailed programme within 14 days after the commencement date. The Tenderer need to submit a high level programme in the table provided below to illustrate a comprehensive understanding of the work required as well as a pragmatic approach in performing the work required:

DESCRIPTION OF PHASE AND SECTION OF THE WORKS	ENVISAGED DURATION (WEEKS)	STARTING WEEK NO.*	FINISHING WEEK NO.
Site handover	1	1	1
Site establishment			

DESCRIPTION OF PHASE AND SECTION OF THE WORKS	ENVISAGED DURATION (WEEKS)	STARTING WEEK NO.*	FINISHING WEEK NO.

* The execution of the Works should start within 14 days from the Site Handover Date.

DATE :_____SIGNATURE OF TENDERER _____

(Authorised Person)

T2.4 OTHER DOCUMENTATION, FORMS AND SCHEDULES REQUIRED FOR TENDER EVALUATION PURPOSES

T2.4.1 BROAD-BASED BLACK ECONOMIC EMPOWERMENT STATUS LEVEL CERTIFICATE

Tenderer to attach hereto the Broad-Based Black Economic Empowerment Status Level Certificate of the Tendering Company and/or Joint Venture Partners.

Only B-BBEE status level certificates issued by the following are valid:

- Verification Agencies accredited by the South African National Accreditation System (SANAS); or
- Registered Auditors approved by the Independent Regulatory Board of Auditors (IRBA) in accordance with the approval granted by the Department of Trade and Industry.

GENERAL

The following is an abstract from the Preferential Procurement Regulations 2011 promulgated with the Preferential Policy Framework Act No 5 of 2000:

"10 (1) Tenderers with annual total revenue of R5 million or less qualify as Exempted Micro Enterprises (EMEs) in terms of the Broad-Based Black Economic Empowerment Act and must submit a certificate issued by a registered auditor, accounting officer (as contemplated in section 60(4) of the Close Corporation Act, 1984 (Act No. 9 of 1984)) or an accredited verification agency.

(1) Tenderers other than Exempted Micro-Enterprises (EMEs) must submit their original and valid B-BBEE status level verification certificate or a certified copy thereof, substantiating their B-BBEE rating.

(2) The submission of such certificates must comply with the requirements of instructions and guidelines issued by the National Treasury and be in accordance with notices published by the Department of Trade and Industry in the Government Gazette.

(3) The B-BBEE status level attained by the Tenderer must be used to determine the number of points contemplated in regulations 5 (2) and 6 (2)."

Notes: Exempted Micro-Enterprises are deemed to have B-BBEE Status of "Level Four Contributor" having a B-BBEE procurement recognition of 100%.

Exempted Micro-Enterprise qualifies for a promotion to a B-BBEE Status of "Level Three Contributor" having a B-BBEE procurement recognition of 110%.

T2.1 LIST OF RETURNABLE DOCUMENTS

THE TENDERER MUST SUBMIT THE FOLLOWING DOCUMENTS WITH THIS TENDER. IF THE DOCUMENTS ARE NOT INCLUDED IN THE DOCUMENT, THE DEPARTMENT WILL NOT CONSIDER THIS TENDER. (MANDATORY REQUIREMENTS)

Clause referred to in Standard Conditions of Tender	Document
2.1	Tenderers should provide their CRS Number of registered Contractor as well as JV Partner*. CRS Number of Tenderers or JV Partners needs to be filled in below: **Tenderer/Leading JV Partner** CRS Number: _____ Name of Company: _____ **JV Partner** CRS Number: _____ Name of Company: _____ **JV Partner** CRS Number: _____ Name of Company: _____ ***NB:** Recent printout from CIDB website indicating the CRS number will also be accepted.
2.13.4	Letter of authorization to sign the Form of Offer and where required in tender document. (See Item T2.2.9 Form I page T2.2.15)
2.25	An Original, Valid Tax Clearance Certificate. See Item T2.2.20 Form T page T2.2.33) In Bids where Consortia/Joint Venture/**Sub-contractors** are involved each party **must** submit a separate and **Original Valid Tax Clearance Certificate.**
2.7	Attendance of the Compulsory Tender Clarification meeting as stipulated.
F.2.11	Tampering with or taking the documents apart is strictly prohibited, this will lead to the tender being considered as non-responsive. All documentation must be stapled into the tender document or attached in a separate file.

EASTERN CAPE PARKS & TOURISM AGENCY

CONTRACT NO.: 05/FY/23

CONSTRUCTION OF NEW CAMPSITE VISITOR BOMA, BRAAI STANDS AND REPAIRS TO ELECTRICAL SUPPLY FOR GROENDAL NATURE RESERVE.

PORTION 2: CONTRACT

EASTERN CAPE PARKS & TOURISM AGENCY

CONTRACT NO.: 05/FY/23

CONSTRUCTION OF NEW CAMPSITE VISITOR BOMA, BRAAI STANDS AND REPAIRS TO ELECTRICAL SUPPLY FOR GROENDAL NATURE RESERVE.

PART C1: THE CONTRACT

PART C1 : THE CONTRACT

Notes :

The Tender Document must be submitted as a whole. All forms must be properly completed as required and the document shall not be taken apart or altered in any way whatsoever.

All forms must be duly completed in **black ink** as required.

The list of returnable documents, which consists of forms and schedules to be completed and company specific certificates and information pages to be attached, comprise the following:

TABLE OF CONTENTS

C1. AGREEMENT AND CONTRACT DATA

C1.1 FORM OF OFFER AND ACCEPTANCE

A. OFFER

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

TENDER No.05/FY/23 – CONSTRUCTION OF A NEW BOMA, FIREPIT, BRAAISTANDS AND REPAIRS TO ELECTRICAL INFRASTRUCTURE AT GROENDAL NATURE RESERVE – UITENHAGE SECTION

The Tenderer, identified in the Offer signature block below, has examined the documents listed in the Tender Data and addenda hereto as listed **in the Tender Schedules, and by submitting this Offer has accepted the Conditions of Tender.**

By the representative of the Tenderer, deemed to be duly authorized, signing of this part of this Form of Offer and Acceptance, the Tenderer offers to perform all 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 Value Added Tax is :

R_____(in words)_____

_____)

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

Signature: *(of person authorized to sign the Tender):* _____

Name: *(of signatory in capitals:* _____

Capacity: *(of Signatory):* _____

Name of Tenderer: *(organization):* _____

Address:

_____

_____

Telephone number: _____ Fax number: _____

Witness: _____

Signature: _____

Name:

(in capitals : _____

Date: _____

(Failure of a Tenderer to sign this form will invalidate the Tender)

B. ACCEPTANCE

By signing this part of the 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 Condition of Contract as set out in the general and Special Conditions of Contract, and identified in the Contract Data. Acceptance of the Tenderer upon the terms and conditions and contained in this Agreement and in the Contract that is the subject of this Agreement.

The terms of the contract are contained in -

Part 1 Agreement, and Contract Data, (which include this Agreement) Part 2

Pricing Data, including the bill of Quantities

Part 3 Scope of Work Part 4

Site Information

and the schedules, forms, drawing and documents or parts thereof, which may be incorporated by reference into Parts 1 to 4 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 said documents are valid unless contained in this Schedule, which must be duly signed by the authorized representatives of both parties.

The Tenderer shall deliver the security in terms of Clause 11 of the JBCC 2018 within the period stated in the contract Data, and he shall, immediately after receiving a completed copy of this Agreement, including the Schedule of Deviations (if any), contract the Employer's agent (whose details are given in the Contract Data) to arrange the delivery of any other bonds, guarantees, proof of insurance and any other documentation to be provided in terms of the Conditions of Contract identified in the Contract Data, within 14 days of the date on which this Agreement comes into effect. Failure to fulfill any of these obligations in accordance with those terms shall constitute a repudiation of this Agreement.

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

Signature :

_____

Name : *(in capitals)*

_____

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

Capacity :

_____

Name of Employer : (organization)

_____

Address:_____

_____

_____

Witness : _____

Signature :_____ Name : _____

Date :_____

C. SCHEDULE OF DEVIATIONS

The extent of deviations from the Tender documents issued by the Employer prior to the Tender closing date is limited to those permitted in terms of the Tender Data and the Conditions of Tender.

A Tenderer's covering letter will not necessarily be included in the final contract document. Should any matter in such letter, which constitutes a deviation as aforesaid becomes the subject of agreements reached during the process of offer and acceptance, the outcome of such agreement shall be recorded here.

Any other matter arising from the process of offer and acceptance either as a confirmation, clarification or change to the Tender documents and which it is agreed by the Parties becomes and obligation of the contract shall also be recorded here.

Any change or addition to the Tender documents arising from the above agreements and recorded here shall also be incorporated in to the final draft of the Contract.

1. **Subject :** _____
   Details : _____
   _____
2. **Subject :** _____
   Details : _____
   _____
3. **Subject :** _____
   Details : _____
   _____
4. **Subject :** _____
   Details : _____
   _____
5. **Subject :** _____
   Details : _____
   _____
6. **Subject :** _____
   Details : _____

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

By the duly authorized 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 the amendments to the documents listed in the Tender Data and addend 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: _____

Name: _____

Capacity: _____

Tenderer (Name and address of organisation): _____

_____

Witness :

Signature: _____

Name: _____

Date: _____

FOR THE TENDERER :

Signature: _____

Name: _____

Capacity: _____

Witness :

Signature: _____

Name: _____

Date: _____

C1.2 CONTRACT DATA – CONDITIONS OF CONTRACT

PART 1 : GENERAL CONDITIONS OF CONTRACT

The Conditions of Contract are clauses 1 to 41 of the **JBCC Series 2000 Principal Building Agreement (Edition 6.2 of May 2018)** published by the Joint Building Contracts Committee.

Copies of these conditions of contract may be obtained from the Association of South African Quantity Surveyors (011-3154140), Master Builders Association (011-205-9000; 041- 365 1835) South African Association of Consulting Engineers (011-4632022) or South African Institute of Architects (051-4474909; 011-4860684; 053-8312003; 041- 585 8037)

The JBCC Principal Building Agreement makes several references to the Contract Data for specific data, which together with these conditions collectively describe the risks, liabilities and obligations of the contracting parties and the procedures for the administration of the Contract. The Contract Data shall have precedence in the interpretation of any ambiguity or inconsistency between it and the JBCC Principal Building Agreement.

Each item of data given below is cross-referenced to the clause in the JBCC Principal Building Agreement to which it mainly applies.

The Conditions of Contract make several references to the Contract Data for specific data, which together with these conditions collectively describe the risks, liabilities and obligations of the contracting parties and the procedures for the administration of the Contract. The Contract Specific Data shall have precedence in the interpretation of any ambiguity or inconsistency between it and the Conditions of Contract or the Special Conditions of Contract.

The Contract Specific Data, General and Special Conditions of Contract shall have precedence over the Drawings, Scope of Work and Standardised Specifications in the interpretation of any ambiguity or inconsistency.

PART 2 : SPECIAL CONDITIONS OF CONTRACT

1. GENERAL

These Special Conditions of Contract (SCC) form an integral part of the Contract. The Special Conditions of Contract shall amplify, modify or supersede, as the case may be, the JBCC 2018 to the extent specified below, and shall take precedence and shall govern.

The clauses of the Special Conditions hereafter are numbered "SCC" followed in each case by the number of the applicable clause or sub clause in the JBCC 2018, and the applicable heading, or (where a new special conditions that has no relation to the existing clauses is introduced) by a number that follows after the last clause number in the Conditions, and an appropriate heading.

The Forms included in the JBCC 2018, are replaced with the Forms included in this Project Document.

2. AMENDMENTS TO THE JBCC 2018 CONDITIONS OF CONTRACT

SCC 1.1 Definitions

SCC 1.1 "Bills of Quantities"

Add the following :

"For this Contract "Schedule of Quantities" will have the same meaning as "Bills of Quantities" and will form part of the Pricing Data as defined in the General Conditions of Contract."

SCC 1.1

"Drawings" means all drawings, calculations and technical information forming part of the Contract Documents and any modifications thereof or additions thereto from time to time approved in writing by the Engineer or delivered to the Contractor by the Engineer.

SCC 1.1 "Letter of Notification" means the letters of formal notification, signed by the Employer, of the decision of the Supply Chain Management Tender Adjudication Committee sent to all Tenderers. The notification of the decision does not form part of the Employer's Acceptance of the successful Tenderer's Offer and no rights shall accrue."

SCC 1.9 Add the following new Clause :

"SCC 1.9 The copyright in all documents, drawing and records (prepared by the Engineer) related in any manner to the Works shall vest in the Employer or the Engineer or both (according to the details of the Contract that has been entered into by the Engineer and the Employer for the Works), and the Contractor shall not furnish any information in connection with the Works to any person or organization without the prior approval of the Employer to this effect."

SCC 2 **Law, Regulations and Notices**

Add the following:

"**2.5** The Occupational Health and Safety Act No. 85 and Amendment Act No. 181 of 1993 and the Construction Regulations 2003 will in all respects be applicable to this contract."

2.5.1 Contractor's liability as mandatory

"Notwithstanding any actions which the Employer may take, the Contractor accepts sole liability for due compliance with the relevant duties, obligations, prohibitions, arrangements and procedures imposed by the Occupational Health and Safety Act, 1993 (Act 85 of 1993), and all its regulations, including the Construction Regulations, 2003, for which he is liable as mandatory. By entering into this Contract it shall be deemed that the parties have agreed in writing to the above provisions in terms of Section 37 (2) of the Act."

i. **Contractor to notify Employer**

"The Employer retains an interest in all inquiries conducted under this Contract in terms of Section 31 and/or 32 of the Occupational Health and Safety Act, 1993 (Act 85 of 1993) and its Regulations following any incident involving the Contractor and/or Sub-Contractor and/or their employees. The Contractor shall notify the Employer in writing of all investigations, complaints or criminal charges which may arise pursuant to work performed under this Contract in terms of the Occupational Health and Safety Act, 1993 (Act 85 of 1993) and Regulations."

ii. **Contractor's Designer**

"The Contractor and his designer shall accept full responsibility and liability to comply with the Occupational Health and Safety Act, 1993 (Act 85 of 1993) and the Construction Regulations, 2003 for the design of the Temporary Works and those parts of the Permanent Works which the Contractor is responsible to design in terms of the Contract."

SCC 4 Add sub-clause 4.4

"The contractor may not subcontract the whole of the work without the written instruction or approval of the employer and principal agent. In such event the employer may require the contractor to cede the contract to the subcontractor."

SCC 15 Replace sub-clause 15.1.2 to 15.1.4 and 15.2 to 15.6 with the following:

"The contractor and principal agent shall appoint a selected subcontractor in accordance with the provisions of the Scope of Work."

SCC 30.0(41) Delete in the Substitute Provisions (30.0 State Clauses) clause 30.1, 30.2 and 30.3/4/5 and replace with the following:

30.1# Should any dispute between the **employer,** his **agents** or **principal agent** on the one hand and the contractor on the other arise out of this **agreement**, such dispute shall be referred to adjudication.

30.2# Adjudication shall be conducted in accordance with the edition of the JBCC Rules for Adjudication current at the time when the dispute is declared. The party, which raises the dispute, shall select three adjudicators from the panel of adjudicators published by the South African Institution of Civil Engineering or Association of Arbitrators (Southern Africa), determine their hourly fees and confirm that these adjudicators are available to adjudicate the dispute in question. The other party shall then select within 7 days one of the three nominated adjudicators, failing which the chairman for the time being of the Association of Arbitrators (Southern Africa) shall nominate an adjudicator. The **adjudicator** shall be appointed in terms of the Adjudicators Agreement set out in C1.4 .

30.3# If provided in the **schedule**, a dispute shall be finally settled by a single arbitrator to be agreed on between the parties or, failing such agreement within 28 days after referring the dispute to Arbitration, an Arbitrator nominated by the chairman for the time being of the Association of Arbitrators (Southern Africa). Any such reference shall be deemed to be a submission to the arbitration of a single arbitrator in terms of the Arbitration Act (Act No 42 of *1965,* as amended), or any legislation passed in substitution therefore. In the absence of any other agreed procedure, the arbitration shall take place in accordance with the Rules for the Conduct of Arbitrations issued by the Association of Arbitrators (Southern Africa) which are current at the time of the referral to arbitration. The Arbitrator shall, in his award, set out the facts and the provisions of the contract on which his award is based.

40.4# If the **schedule** provides for court proceedings to finally resolve disputes, disputes shall be determined by court proceedings.

C1.2.2 CONTRACT SPECIFIC DATA

A. DATA TO BE PROVIDED BY THE EMPLOYER

PART 1 : DATA PROVIDED BY THE EMPLOYER

1.1 The Employer is the **Eastern Cape Parks & Tourism Agency**

The address of the Employer is: 17-25 Oxford Street, East London

Telephone: (043) 705 4400

Facsimile: (043) 742 5566

Address (postal): P.O. Box 11234, Southernwood, East London, 5213

1.1 The Principal Agent is **Sky High Consulting Engineers (Pty) Ltd**

Telephone: (043) 721 1996

Address (physical): 1A Stockton Road, Berea, East London

1.1 **CONSTRUCTION OF A NEW BOMA, FIREPIT, BRAAISTANDS AND REPAIRS TO ELECTRICAL INFRASTRUCTURE AT GROENDAL NATURE RESERVE – UITENHAGE SECTION**

- The Works comprise of the following:
  - Demolition of the existing fire pit
  - Construction of a new Bouma and firepit
  - Painting of the ablutions building
  - Upgrading of the lights and plug point at the campsite
  - Construction of new braai stands at the camp sites

10.1.1 The Works or installations to be undertaken by direct contractors comprises

---

Not Applicable

42.2.3 The Employer is an organ of State

- The interest rate as determined by the Minister of Finance, from time to time, in terms of section 80(1)(b) of the Public Finance Management Act, 1999 (Act No 1 of 1999) will apply.
- Lateral support insurance is to be effected by the contractor
- Payment will be made for materials and goods
- Extended defects liability period will apply to the following elements:

Not applicable

12.1.5 Possession of the site is to be given within seven days of the contractor providing the employer with construction guarantees in accordance with the provisions of 14.0 and the Contract has been signed by both parties.

42.2.5 The period for the commencement of the works after the contractor takes possession of the site is 7 working days.

Completion:

For the works as a whole:

The date for practical completion is ..... (Contractor to complete)

The penalty per calendar day is R 1000 up to a maximum of 10% of the contract value there after the employer shall have a right during the identified delay period to step- in and accelerate the work or appoint a third party to assist or complete the works to reach practical completion at the planned period. The appointed third party work shall be at the cost of the contractor.

2.1 The law applicable to the agreement shall be that of the Republic of South Africa.

10 Contract works insurance (construction guarantee) is to be effected by the contractor for a sum not less than the contract sum plus 10%.

The supplementary insurance is required. Such insurance shall comprise a Coupon Policy for Special Risks issued by the South African Special Risk

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Insurance Association. (SASRIA)

42.3.3 Public liability insurance to be effected by the contractor for the sum of R 10 000 000.00 with a deductible in an amount that the contractor deems appropriate.

42.3.4 Support insurance: Deemed Not Applicable

42.4.1 A waiver of the contractor's lien or right of continuing possession is required.

42.4.2 Three copies of the construction document are to be supplied to the contractor free of charge.

42.4.5 JBCC Engineering General Conditions are not to be included in the contract document.

42.4.6 CPAP shall only be applicable to works that progress to later than twelve (12) months from commencement date. Where the period is prolonged beyond the first twelve months due to the delay or non- performance by the employer, the CPAP shall be applicable; however where the period is extended due contractor's failure to perform or delay caused by the contractor CPAP shall not be applicable. CPAP is not applicable to this Project.

The value of the certificates issued shall be adjusted in accordance with the JBCC Contract Price Adjustment Schedules.

25.3 The issue of an interim payment certificates shall be done no later than the 25th of each month.

11.5 The employer will not provide advanced payments against an advanced payment guarantee

11.2 and 14.4 The construction guarantee is to be a fixed guarantee in accordance with the JBCC.

30.0 Dispute resolution shall be by adjudication. If a dispute is unresolved by adjudication the dispute shall be finally settled by an arbitrator to be agreed between the parties.

PART 2 : DATA PROVIDED BY THE CONTRACTOR

Clause 42.5.1:

The name of the Contractor is

_____

The legal name of the Contractor.

Clause 42.5.1 [1.2]:

The address of the Contractor is

_____

_____

_____

The physical address, postal address, e-mail address and/or fax number where the Contractor will receive notices.

C1.2.3 CONSTRUCTION GUARANTEE

GUARANTOR DETAILS AND DEFINITIONS

Guarantor means . . . . . .

Physical address . . . . . .

. . . . . .

Guarantor's signatory 1 . . . . . Capacity. . . . . .

Guarantor's signatory 1 . . . . . Capacity . . . . . .

Employer means **The Eastern Cape Parks and Tourism Agency**

Contractor means . . . . . .

Agent means . . . . . .

Works means . . . . . .

Site means . . . . . .

Agreement means the JBCC Series 2000 Principal Building Agreement

Contract Sum i.e. the total of prices in the Form of Offer and Acceptance inclusive of VAT

Amount in figures R . . . . . .

Amount in words (Rand) . . . . . .

Guaranteed Sum means the maximum aggregate amount of R . . . . . .

Amount in words (Rand) . . . . . .

1 The Guarantor's liability shall be limited to the amount of the Guaranteed Sum as follows:

GUARANTOR'S LIABILITY	PERIOD OF LIABILITY
Maximum Guaranteed Sum (not exceeding 10 % of the contract sum) in the amount of: . . . . (Rands) (R . . . . . .)	From and including the date of issue of this Construction Guarantee and up to and including the date of the only practical completion certificate or the last practical completion certificate where there are sections, upon which this Construction Guarantee shall expire.

2 The Guarantor hereby acknowledges that:

2.1 Any reference in this Guarantee to the Agreement is made for the purpose of convenience and shall not be construed as any intention whatsoever to create an accessory obligation or any intention whatsoever to create a suretyship.

2.2 Its obligation under this Guarantee is restricted to the payment of money.

3 Subject to the Guarantor's maximum liability referred to in clauses 1, the Guarantor hereby undertakes to pay the Employer the sum certified upon receipt of the documents identified in sub-clauses 3.1 to 3.3:

3.1 A copy of a first written demand issued by the Employer to the Contractor stating that payment of a sum certified by the Principal Agent in an interim or final payment certificate has not been made in terms of the Agreement and failing such payment within seven (7) calendar days, the Employer intends to call upon the Guarantor to make payment in terms of sub-clause 3.2

3.2 A first written demand issued by the Employer to the Guarantor at the Guarantor's physical address with a copy to the Contractor stating that a period of seven (7) calendar days has elapsed since the first written demand in terms of sub-clause 4.1 and that the sum certified has still not been paid therefore the Employer calls up this Guarantee and demands payment of the sum certified from the Guarantor.

3.3 A copy of the said payment certificate which entitles the Employer to receive payment in terms of the Agreement of the sum certified in clause 3.

4 Subject to the Guarantor's maximum liability referred to in clause 1, the Guarantor undertakes to pay the Employer the Guaranteed Sum or the full outstanding balance upon receipt of a first written demand from the Employer to the Guarantor at the Guarantor's physical address calling up this Guarantee stating that:

4.1 The Agreement has been cancelled due to the Contractor's default and that the Guarantee is called up in terms of clause 4. The demand shall enclose a copy of the notice of cancellation; or

4.2 A provisional sequestration or liquidation court order has been granted against the Contractor and that the Guarantee is called up in terms of clause 4. The demand shall enclose a copy of the court order.

5 It is recorded that the aggregate amount of payments required to be made by the Guarantor in terms of clauses 3 and 4 shall not exceed the Guarantor's maximum liability in terms of clause 1.

6 Where the Guarantor is a registered insurer and has made payment in terms of clause 4, the Employer shall upon the date of issue of the final payment certificate submit an expense account to the Guarantor showing how all monies received in terms of the Guarantee have been expended and shall refund to the Guarantor any resulting surplus. All monies refunded to the Guarantor in terms of this Guarantee shall bear interest at the prime overdraft rate of the Employer's bank compounded monthly and calculated from the date payment was made by the Guarantor to the Employer until the date of refund.

7 Payment by the Guarantor in terms of clause 3 or 4 shall be made within seven (7) calendar days upon receipt of the first written demand to the Guarantor.

8 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 from this Guarantee on account of any conduct alleged to be prejudicial to the Guarantor

9 The Guarantor chooses the physical address as stated above for all purposes in connection herewith.

10 This Guarantee is neither negotiable nor transferable and shall expire in terms of clause 1, or payment in full of the Guaranteed Sum or on the Guarantee expiry date, whichever is the earlier, where after no claims will be considered by the Guarantor. The original of this Guarantee shall be returned to the Guarantor after it has expired

11 This Guarantee, with the required demand notices in terms of clauses 3 or 4, shall be regarded as a liquid document for the purpose of obtaining a court order.

12 Where this Guarantee is issued in the Republic of South Africa the Guarantor hereby consents in terms of Section 45 of the Magistrate's Courts Act No 32 of 1944, as amended, to the jurisdiction of the Magistrate's Court of any district having jurisdiction in terms of Section 28 of the said Act, notwithstanding that the amount of the claim may exceed the jurisdiction of the Magistrate's Court.

Signed at. . . . . Date . . . . . .

Guarantor's Signatory 1 . . . . . Guarantor's Signatory 2 . . . . . .

Witness 1 . . . . . Witness 2 . . . . . .

Guarantor's seal or stamp

C1.2.4 ADJUDICATOR APPOINTMENT

This agreement is made on the_____day of_____between:

_____(name of company / organisation)

of _____

_____(address)

and

_____(name of company / organisation)

of _____

_____(address)

(the Parties) and

_____(name)

of _____

_____(address)

(the Adjudicator).

Disputes or differences may arise/have arisen* between the Parties under a Contract dated _____and known as _____

and these disputes or differences shall be/have been* referred to adjudication in accordance with the JBCC Series 2000 Adjudication Rules, (hereinafter called "the Procedure") and the Adjudicator may be or has been requested to act.

* Delete as necessary

IT IS NOW AGREED as follows:

1 The rights and obligations of the Adjudicator and the Parties shall be as set out in the JBCC Series 2000 Adjudication Rules.

2 The Adjudicator hereby accepts the appointment and agrees to conduct the adjudication in accordance with the JBCC Series 2000 Adjudication Rules.

3 The Parties bind themselves jointly and severally to pay the Adjudicator's fees and expenses as set out in the Contract Data.

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

4 The Parties and the Adjudicator shall at all times maintain the confidentiality of the adjudication and shall endeavour to ensure that anyone acting on their behalf or through them will do likewise, save with the consent of the other Parties which consent shall not be unreasonably refused.

5 The Adjudicator shall inform the Parties if he intends to destroy the documents which have been sent to him in relation to the adjudication and he shall retain documents for a further period at the request of either Party.

SIGNED by: _____	SIGNED by: _____	SIGNED by: _____
Name: _____	Name: _____	Name: _____
who warrants that he / she is duly authorised to sign for and on behalf of the first Party in the presence of	who warrants that he / she is duly authorised to sign for and behalf of the second Party in the presence of	the Adjudicator in the presence of
Witness	Witness:	Witness:
Name:	Name	Name:
Address:	Address:	Address:
Date:	Date:	Date:

Contract Data

1	The Adjudicator shall be paid at the hourly rate of R. . . . . in respect of all time spent upon, or in connection with, the adjudication including time spent travelling.
2	The Adjudicator shall be reimbursed in respect of all disbursements properly made including, but not restricted to: (a) Printing, reproduction and purchase of documents, drawings, maps, records and photographs.
	(b) Telegrams, telex, faxes, and telephone calls. (c) Postage and similar delivery charges. (d) Travelling, hotel expenses and other similar disbursements. (e) Room charges. (f) Charges for legal or technical advice obtained in accordance with the Procedure.
3	The Adjudicator shall be paid an appointment fee of R . . . . . This fee shall become payable in equal amounts by each Party within 14 days of the appointment of the Adjudicator, subject to an Invoice being provided. This fee will be deducted from the final statement of any sums which shall become payable under item 1 and/or item 2 of the Contract Data. If the final statement is less than the appointment fee the balance shall be refunded to the Parties.
4	The Adjudicator is/is not* currently registered for VAT.
5	Where the Adjudicator is registered for VAT it shall be charged additionally in accordance with the rates current at the date of invoice.
6	All payments, other than the appointment fee (item 3) shall become due 7 days after receipt of invoice, thereafter interest shall be payable at 5% per annum above the Reserve Bank base rate for every day the amount remains outstanding.

* Delete as necessary

C.2 PRICING DATA

C.2.1 PRICING INSTRUCTIONS

1 The Provisional Bills of Quantities have been drawn up in accordance with the Standard System of Measuring Building Work (as amended) published and issued by the Association of South African Quantity Surveyors (Seven Edition), 2015. Where applicable the:

a) civil engineering work has been drawn up in accordance with the provisions of the latest edition of SABS 1200 Standardized Specifications for Civil Engineering Works.

b) electrical work has been drawn up in accordance with the provisions of the Model Bills of Quantities for Electrical Work, published by the South African Association of Quantity Surveyors, (July, 2005).

2 The agreement is based on the JBCC Series 2000 Principal Building Agreement, prepared by the Joint Building Contracts Committee, Edition 4.1, March 2005. The additions, deletions and alterations to the JBCC Principal Building Agreement as well as the contract specific variables are as stated in the Contract Data. Only the headings and clause numbers for which allowance must be made in the Provisional Bills of Quantities are recited.

3 Preliminary and general requirements are based on the various parts of SANS 1921, Construction and management requirements for works contracts. The additions, deletions and alterations to the various parts of SANS 1921 as well as the contract specific variables are as stated in the Specification Data in the Scope of Work. Only the headings and clause numbers for which allowance must be made in the Provisional Bills of Quantities are recited.

4 It will be assumed that prices included in the Provisional 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 bids. (Refer to www.stanza.org.za or www.iso.org for information on standards).

5 The drawings listed in the Scope of Works used for the setting up of these Provisional Bills of Quantities are kept by the Principal Agent or Engineer and can be viewed at any time during office hours up until the completion of the works.

6 Reference to any particular trademark, name, patent, design, type, specific origin or producer is purely to establish a standard for requirements. Products or articles of an equivalent standard may be substituted.

7 Where any item is not relevant to this specific contract, such item is marked N/A (signifying "not applicable")

8 The Contract Data and the standard form of contract referenced therein must be studied for the full extent and meaning of each and every clause set out in Section 1 (Preliminaries) of the Provisional Bills of Quantities

9 The Provisional Bills of Quantities is not intended for the ordering of materials. Any ordering of materials, based on the Provisional Bills of Quantities, is at the Contractor's risk.

10 The amount of the Preliminaries 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 Preliminaries and any amount in respect of contract price adjustment provided for in the contract.

11 Where the initial contract period is extended, the monthly charge shall be calculated on the basis as set out in 10 but taking into account the revised period for completing the works.

12 The amount or items of the Preliminaries 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:

a) an amount which is not to be varied, namely Fixed (F)

b) an amount which is to be varied in proportion to the contract value, namely Value Related (V); and

c) 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).

13 Where no provision is made in the Bills of Quantities to indicate which of the three categories in 12 apply or where no selection is made, the adjustments shall be based on the following breakdown:

a) 10 percent is Fixed;

b) 15 percent is Value Related

c) 75 percent is Time Related.

14 The adjustment of the Preliminaries shall apply notwithstanding the actual employment of resources in the execution of the works. The contract value used for the adjustment of the Preliminaries shall exclude any contingency sum, the amount for the Preliminaries 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.

C2.2 BILLS OF QUANTITIES

1. The priced Provisional Bill of Quantities (BOQ's), following hereafter will form an integral part of the "Contract" between the successful appointed Contractor and the Employer. The Contractor is to note the separate Bills of Quantities for printing, completion and attachment hereto for submission of the bid.

2. The Contractor is to note the separate Electrical and Mechanical Bills of Quantities for printing, completion and attachment hereto after the builder's work Bill of Quantities (listed as No. 1 above) for submission of the bid. These are accompanied by Electrical Specifications which the bidder is to familirise himself/herself with.

3. Coupled to item No. 2 above, the Electrical Sub-contractor which may the Main Contractor proposes to use is to attach the following documentation as called for in the Electrical Specification:

- Certified Copy of the CK Document
- Certified Copy of the Identity Documents of Members
- Tax Confirmation Certificate
- Certified Copy of the Wireman's Licence
- Certified Copy of the BBBEE certificate
- Proof of Registration with the Electrical/Mechanical Contracting Board of South Africa
- Letter of Good Standing with the Compensation Commission
- Proof of Registration with CIDB

Eastern Cape
PARKS & TOURISM AGENCY

CONTRACT NO.: 05/FY/23

CONSTRUCTION OF NEW CAMPSITE VISITOR BOMA, BRAAI STANDS AND REPAIRS TO ELECTRICAL SUPPLY FOR GROENDAL NATURE RESERVE.

PART A: BILLS OF QUANTITIES (Separate Document to be inserted here)

PART B: ELECTRICAL AND MECHANICAL WORKS (Separate Document to be inserted immediately after Part A)

PART A

ITEM NO	DESCRIPTION	QUANTITY	RATE	AMOUNT
	BILL NO.1 : PRELIMINARIES	**0**		
	PRELIMINARIES	0		
	NOTES:	0		
	BUILDING AGREEMENT AND PRELIMINARIES	0		
	The JBCC Series 2000 Principal Building Agreement (July 2007 Edition 5.0 Reprint 1) prepared by the Joint Building Contracts Committee shall be the applicable building agreement, amended as hereinafter described	**0**		
	The JBCC Principal Building Agreement Contract Data EC & CE form an integral part of this agreement.	**0**		
	The ASAQS Preliminaries (November 2007 Edition) published by the Association of South African Quantity Surveyors for use with the JBCC Principal Building Agreement shall be deemed to be incorporated in these bills of quantities, amended as hereinafter described.	**0**		
	Contractors are referred to the above mentioned documents for the full intent and meaning of each clause	**0**		
	The clauses in the above mentioned documents are hereinafter referred to by clause number and heading only. Where standard clauses or alternatives are not entirely applicable to this contract such modifications, corrections or supplements as will apply are given under each relevant clause heading and such modifications, corrections or supplements shall take precedence notwithstanding anything contrary contained in the above mentioned documents.	**0**		
	Where any item is not relevant to this specific agreement such item is marked N/A (signifying not applicable).	**0**		
	PREAMBLES FOR TRADES	0		
	The Model Preambles for Trades 2008 as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said Model Preambles will be entertained.	**0**		

	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 Model Preambles.	**0**		
	The contractor's prices for all items throughout these bills of quantities shall take account of and include for all of the obligations, requirements and specifications given in the Model Preambles and in any supplementary preambles and/or specifications	**0**		
	STRUCTURE OF THIS PRELIMINARIES BILL	0		
	Section A : A recital of the headings of the individual clauses of the aforementioned JBCC Principal Building Agreement.	**0**		
	Section B : A recital of the headings of the individual clauses of the aforementioned Preliminaries document.	**0**		
	Section C : Any special clauses to meet the particular circumstances of the project.	**0**		
	PRICING OF PRELIMINARIES	0		
	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).	**0**		
	SECTION A: PRINCIPAL BUILDING AGREEMENT	0		
	Definitions	0		
1	Clause 1.0 - Definitions and interpretation1.1 Definition of "bills of quantities" is amended by replacing it with the following:BILLS OF QUANTITIES: The document drawn up in accordance with the Standard System of Measuring Building Work 1999 sixth Edition (Revised). The Contractor shall have priced the document to reflect the contract sum.1.1 Definition of "construction period" is amended by replacing it with the following:CONSTRUCTION PERIOD: Means the period commencing on the date that possession of the site is given to the contractor and ending on the date of practical completion.1.1 Definition of "working days" is amended by replacing it with the following:WORKING DAYS: Twenty-four (24) hour days commencing at midnight (00:00) which excludes Sundays and statutory holidays.	0		

	Objective and preparations	0		
2	Clause 2.0 - Offer acceptance and performance obligations	0		
3	Clause 3.0 - Documents Clause 3.1 shall be amended as follows: Replace clause 3.1 with No clause Delete the following in the third line of clause 3.3 "of having received a payment guarantee from the employer [3.1]"	0		
4	Clause 4.0 - Design responsibility	0		
5	Clause 5.0 - Employer's agents	0		
6	Clause 6.0 - Contractor's site representative	0		
7	Clause 7.0 - Compliance with laws and regulations Fixed .....Time..... Value.....	0		
	Add the following clause after clause 7.1: 7.2 Without limiting the generality of the provisions of clause 7.0, the contractor's attention is drawn to the provisions of Construction Regulations, 2014 issued in terms of the Occupational Health and Safety Act, 1993. It is specifically stated that the employer shall prepare a documented health and safety specification for the works , a copy of the relevant specification and baseline risk assessments as per tender document) 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 against this item for compliance with the Act and the Regulations and the provisions of the aforementioned health and safety specification	0		
	Add the following clause after clause 7.2: 7.3 Construction Environmental Management Plan ?	0		
8	Clause 8.0 - Works risk	0		
9	Clause 9.0 - Indemnities	0		
10	Clause 10.0 - Insurances Fixed .....Time..... Value.....	0		
11	Clause 11.0 - Special Insurances	0		
12	Clause 12.0 - Effecting Insurances	0		
13	Clause 13.0 - Assignment	0		

14	Clause 14.0 - Security Add the following to the end of clause 14.3.2: The expiry date for the security to be provided in terms of clause 14.3 and 14.4 shall be one hundred and eighty (180) calendar days after the date for practical completion for the work as a whole. Should the term of the construction guarantee have an expiry date, add the following clause after clause 5.2 on the JBCC Construction Guarantee form: 5.3 The guarantor has failed to extend the guarantee when requested to do so by the Employer if the certificate of final completion in respect of the variable construction guarantee and certificate of practical completion in respect of the fixed construction guarantee under the contract has not been issued by the date, 30 calendar days prior to the expiry date of the construction guarantee, and that the construction guarantee is called up in terms of 5.0 Fixed .....Time..... Value.....	0		
	Execution	0		
15	Clause 15.0 - Preparation for and execution of the works15.1.2 Documents to be provided seven (7) working days after the acceptance of the tenderOHS Plan / FileConstruction GuaranteeConstruction ProgrammeFixed .....Time..... Value.....	0		
16	Clause 16.0 - Site and access	0		
17	Clause 17.0 - Contract instructions	0		
18	Clause 18.0 - Setting out of the works Add the following clause after clause 18.4 18.5 The contractor shall notify the principal agent if any encroachments of adjoining foundations, buildings, structures, pavements, boundaries, etc. exist in order that the necessary arrangements may be made for the rectification of any such encroachments.	0		

19	Clause 19.0 - Temporary works and plantSubstitute clause 19.1.1 with the following:The contractor will, throughout the entire contract period be responsible for the proper and adequate protection of all workers and visitors on the site from injury and damage resulting from the works and for the proper security of the site at all times. Furthermore, the contractor must allow for all necessary temporary hoardings, hoardings with gantries, fans, safety screens, barriers, access gates, covered gangways, walkways, overhead protection against falling objects and materials, security fences, etc. for the enclosure of the works and elements thereof for the protection of the public and others as required by prevailing EC PARKS AND TOURISM by laws, the Construction Regulations 2014 issued in terms of Occupational Health and Safety Act 1993, any other Laws and Regulations and/or demanded by his own site requirements. Allowance must furthermore be made for periodic adjustment of any enclosure or protection and for their eventual removal. All hoarding must be priced for under this clause in the Preliminaries Bill and no claims for additional hoarding and temporary fencing will be entertained.All site establishment, offices and storage of materials will be strictly limited to the area that will be pointed out to the contractor and must be suitably fenced with 1,8m high 'Bonnox' fencing covered with shade cloth to the satisfaction of the principal agent. The contractor shall be responsible for keeping such areas in a clean, sanitary and orderly condition.	0		
20	Clause 19.1.2 Add the following to the end of Clause 19.1.2: The office accommodation for meetings is to be adequately sized and equipped with a sound working table and chairs to accommodate at least Fifteen (15) people for site meetings. The room is to be well vented with air-conditioning and fitted with two large white boards and pin boards with markers and erasers. Two plug points to be provided within the room. Amend the third sentence to clause 19.2 as follows: The contractor shall provide and erect a project notice board size 2.5m x 3.5m. Add the following to the end of Clause 19.3: The contractor shall re-instate / rehabilitate the area used for site establishment to a reasonable state as prior the commencement of the project . Fixed .....Time..... Value.....	0		
21	Clause 20.0 - Nominated subcontractors	0		
22	Clause 21.0 - Selected subcontractors	0		
23	Clause 22.0 - Employer's direct contractors	0		
24	Clause 23.0 - Contractor's domestic subcontractors Fixed .....Time..... Value.....	0		

	Completion	0		
25	Clause 24.0 - Practical completion	0		
26	Clause 25.0 - Works completion	0		
27	Clause 26.0 - Final completion	0		
28	Clause 27.0 - Latent defects liability period	0		
29	Clause 28.0 - Sectional completion	0		
30	Clause 29.0 - Revision of date for practical completion Clause 29.2.1 shall be amended as follows: Replace clause 29.2.1 with No clause	0		
31	Clause 30.0 - Penalty for late or non-completion at a rate of 5.75c per R100 of the tender price excluding VAT	0		
	Payment	0		
32	Clause 31.0 - Interim PaymentThe Contract is to be a FIXED price contract Amend clause 31.9 by substituting seven (7) calendar days with thirty (30) calendar days.Clause 31.16.2 shall be amended as follows:The Employer will not be providing a payment guarantee for the waiver of the Contractor's lien or right of continuing possession of the site.	0		
33	Clause 32.0 - Adjustment to the contract value	0		
34	Clause 33.0 - Recovery of expense and loss	0		
35	Clause 34.0 - Final account and final payment Amend clause 34.10 by substituting seven (7) calendar days with thirty (30) calendar days.	0		
36	Clause 35.0 - Payment to other parties	0		
	Cancellation	0		
37	Clause 36.0 - Termination by employer - contractor's default	0		
38	Clause 37.0 - Termination by employer - loss and damage	0		
39	Clause 38.0 - Termination by contractor - employer's default	0		
40	Clause 39.0 - Termination - cessation of the works	0		

	Dispute	0		
41	Clause 40.0 - Settlement of disputes.	0		
	Contract Agreement	0		
42	Clause 41.0 - Post tender provisions	0		
43	Clause 42.0 - Contractual agreement	0		
	SECTION B: PRELIMINARIES	0		
	Definitions and Interpretation	0		
44	Clause 1.0 - Definitions and interpretation	0		
	Documents	0		
45	Clause 2.1 - Checking of documents	0		
46	Clause 2.2 - Provisional bills of quantities	0		
47	Clause 2.3 - Availability of construction information	0		
	Previous work and adjoining properties	0		
48	Clause 3.1 - Previous work - dimensional accuracy	0		
49	Clause 3.2 - Previous work - defects	0		
50	Clause 3.3 - Inspection of adjoining properties	0		
	Samples, shop drawings and manufacturer's instructions	0		
51	Clause 4.1 - Samples of materials	0		
52	Clause 4.2 - Workmanship samples	0		
53	Clause 4.3 - Shop drawings	0		
54	Clause 4.4 - Compliance with manufacturer's instructions	0		
	Deposits and fees	0		
55	Clause 5.1 - Deposits and fees	0		
	Temporary services	0		

56	Clause 6.1 - Water Fixed .....Time..... Value.....	0		
57	Clause 6.2 - Electricity Fixed .....Time..... Value.....	0		
58	Clause 6.3 - Telecommunication facilities Fixed .....Time..... Value.....	0		
59	Clause 6.4 - Ablution facilities Fixed .....Time..... Value.....	0		
	Prime cost amounts	0		
60	Clause 7.1 - Responsibility for prime cost amounts	0		
	Special attendance on n/s subcontractors	0		
61	Clause 8.1 - Special attendance	0		
	General	0		
62	Clause 9.1 - Protection of the works	0		
63	Clause 9.2 - Protection/isolation of existing/sectionally occupied works	0		
64	Clause 9.3 - Security of the works Fixed .....Time..... Value.....	0		
65	Clause 9.4 - Notice before covering work	0		
66	Clause 9.5 - Disturbance	0		
67	Clause 9.6 - Environmental disturbance	0		
68	Clause 9.7 - Works cleaning and clearing Fixed .....Time..... Value.....	0		
69	Clause 9.8 - Vermin	0		
70	Clause 9.9 - Overhand work	0		
	Schedule of Variables	0		
	Information necessary for making choices and completion of those clauses contained in the schedule which are necessary for tender purposes is given hereunder. Where no information is given it shall mean that either no details or specific requirements are available or that the clause is irrelevant for this specific contract.	0		

	10.1 - Provisional Bills of Quantities [clause 2.2]	**0**		
	The quantities are provisional - Yes	0		
	10.2 - Availability of construction documentation [clause 2.3]	**0**		
	Construction documentation is complete - No	0		
	10.3 - Previous work - dimensional accuracy [clause 3.1] - No	**0**		
	10.4 - Previous work - defects [clause 3.2] - No	**0**		
	10.5 - Inspection of adjoining properties [clause 3.3] - Yes	**0**		
	10.6 - Water [clause 7.2]	**0**		
	Option A (by contractor) - Yes	0		
	Option B (by employer - free of charge) - No	0		
	Option C (by employer - metered) - Yes	0		
71	10.7 - Electricity [clause 7.3]	0		
	Option A (by contractor) - Yes	0		
	Option B (by employer - free of charge) - No	0		
	Option C (by employer - metered) - Yes	0		
72	10.8 - Telecommunications (clause 7.4)	0		
	Telephone - Yes	0		
	Facsimile - Yes	0		
	E-Mail - Yes	0		
73	10.9 - Ablution facilities [clause 7.5]	0		
	Option A (by contractor) - Yes	0		
	Option B (by employer) - No	0		
	10.10 - Protection of the works [clause 9.1]	0		

	10.11 - Protection/isolation of existing/sectionally occupied works [clause 9.2]	**0**		
	Protection/isolation is required - Yes	0		
	10.13 - Environmental disturbance [clause 9.6] - Yes	**0**		
	SECTION C: SPECIFIC PRELIMINARIES	0		
	Specific Preliminaries :	0		
	Site instructions	0		
74	Instructions issued on site are to be recorded in triplicate in a site instruction book which is to be maintained on site by the contractor	0		
	Overtime	0		
75	Should overtime be required to be worked for any reason whatsoever, the costs of such overtime is to be borne by the contractor unless the principal agent has specifically authorised, in writing, prior to execution thereof, that costs for such overtime are to be borne by the employer	0		
	Dayworks	0		
76	Where in the opinion of the quantity surveyor any extra work cannot properly be measured or valued, the contractor will be allowed daywork prices therefor calculated upon the costs defined hereunder together with the stated percentages. The total thus arrived at shall be the total amount recoverable by the contractor for performing such work.	0		
	1. The cost to the contractor or sub-contractor of materials being the net cost (at current market prices) actually paid for such materials after the deduction of cash discounts or if materials are supplied from the contractor's or sub-contractor's stock then the cost of such materials shall be based upon the current market price plus the cost of delivery to site; to which net cost 10 per cent thereof shall be added.	**0**		

	2. The cost of labour to the contractor or sub-contractor, being all items of direct cost of labour actually remunerated to the workmen concerned which shall include the cost of all allowances in terms of the Industrial Conciliation Act (where applicable) or any other wage determination applying in the area or any other charge or expense which is normally binding as well as all statutory levies to education and training funds as may be applicable relating to the class of labour concerned at the time when and in the area where the daywork is executed: to which labour costs 75 per cent in respect of shopfitting, wall and floor tiling, mosaic work and electrical work, 60 per cent in respect of plumbing, plastering, joinery and stone masonry and 40 per cent in respect of painting and decorating, general builders work and any other trade not specified herein, shall be added.	0		
	Hourly based rates for labour shall be the current market rates for labour based upon standard working hours and shall be applied in respect of the time spent by workers directly engaged on the particular dayworks including any operators operating mechanical plant and transport and erecting and dismantling other plant. If a claim is made that individual workmen have been paid wages and allowances in excess of the minimum legalised rates, then proof must be furnished that such workmen had been so paid prior to the commencement of the extra work referred to.	0		
	Time lost due to inclement weather shall be excluded from the time charged.	0		
	3. Other direct costs, being any related direct costs such as mechanical plant and transport, other than costs of material and labour shall be the net cost thereof to which net cost 10 per cent thereof shall be added.	0		
	4. The rates for mechanical plant shall be commercial hire rates current at the time of executing the daywork and shall include fuel and insurance costs.	0		
	Supporting vouchers reflecting the time spent and materials used each week shall be delivered for verification to the Quantity Surveyor not later than twenty one days after the end of the week concerned. Should the contractor fail to submit the vouchers within this time, the Quantity Surveyor shall determine a fair price for the work.	0		
	Warranties for materials and workmanship	0		

	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 doing the work and shall deliver same to the principal agent on the final completion of the contract	**0**		
	The warranty shall state that workmanship, materials and installation are warranted for a specific period from the date of final completion and that any defects that may arise during the specified period shall be made good at the expense of the entity supplying the materials and/or doing the work, upon written notice to do so.	**0**		
	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.	**0**		
	Co-operation of the contractor for cost management	0		
	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 final building cost does not exceed the budget.	**0**		
	The principal agent undertakes to make available to the contractor all budgetary allowances and cost assessments/reports to enable the proper procedure to be implemented and the contractor shall attend all cost plan review and cost management meetings. The contractor undertakes to extend these procedures, as necessary, to all subcontractors.	**0**		
	Overloading	0		
	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.	**0**		
	Propping of floors below	0		

	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.	0		
	Testing of windows for watertightness	0		
	Each window shall be tested for watertightness with water sprayed on using adequate pressure. If in the opinion of the principal agent, the pressure proves to be inadequate, then the pressure shall be boosted by means of compressed air or other approved means.	0		
	Testing of flat roof waterproofing for watertightness	0		
	Flat roof waterproof areas shall be prepared with small sand dykes around them of a size and enclosing an area approved by the principal agent , flooded with water and kept 'ponded for at least forty (40) hours as a test to ensure the watertightness of the waterproofing and before any further construction work is carried out above the waterproofing.	0		
	Ingress of water	0		
	It is the Contractors responsibility to prevent ingress of water into the buildings whilst all work is being completed, and damage arising out of the above will be made good at the Contractors expense.	0		
	Proprietary branded products	0		
	The contractor shall take delivery of, handle, store, use, apply and/or fix all proprietary branded products in strict accordance with the manufacturer's instructions after consultation with the manufacturer's authorised representative.	0		
	As built drawings	0		
	The position of construction breaks and the extend of individual concrete pours are to be recorded by the contractor on the structural engineer's drawings and are to be submitted to the principal agent and the structural engineer for their records.	0		

	Removal and Making Good of Temporary Works, etc, on Completion	0		
	The Contractor shall remove all (except where specifically stated otherwise) temporary Works, roads, services and the like used for this Contract and shall make good to the entire satisfaction of the Principal Agent any damage resulting therefrom.	**0**		
	Making Good	0		
	All materials and workmanship in building up, making good, etc., are to match existing and where new materials abutt existing, they are to be neatly jointed to same.	**0**		
	Making good' existing work where disturbed or damaged shall mean the provision of the necessary new material to match existing and the necessary workmanship so that a complete restoration is achieved to the satisfaction of the Principal Agent.	**0**		
	Making good' where abutting walls, etc., are removed, shall mean the provision of the necessary material and workmanship in filling the gaps to match surrounding finishes so that a complete and perfect surface, continuous with surrounding surfaces and matching of same, is obtained to the Principal Agent's satisfaction.	**0**		
	Shop Drawings	0		
	The term 'shop drawings' shall mean drawings, layout drawings, diagrams, illustrations, schedules, performance charts, brochures, operating manuals and other data which are prepared by the Contractor or any Sub-Contractor, manufacturer, supplier or distributor and which illustrate the specified portion of the work.	**0**		
	The Contractor shall ensure that all shop drawings required for the Works in terms of this Contract, all Selected/Nominated Sub-Contracts and/or any Principal Agent's instruction, are prepared and submitted timeously in accordance with the following procedure:	**0**		
	A) Three prints of shop drawings of all fabricated work, working or setting out drawings, shop details and schedules shall be submitted to the Principal Agent, for approval. Such work shall not be carried out until such approval has been given.	**0**		

	B) Shop drawings shall be submitted to the Principal Agent for approval at least two weeks prior to the date on which such approval is required in order to comply with the Contract Programme.	**0**		
	C) All submissions shall be prepared in accordance with the Contract drawings and specifications and/or any Principal Agents instructions and any deviation shall be specifically highlighted in writing, with a detailed explanation of the reason for such deviation, together with any cost and/or time implications.	**0**		
	Delays in approval of shop drawings due to non-compliance with drawings, specifications and/or Principal Agents instructions shall not constitute grounds for any claims for delay, extension of time and the like.	**0**		
	D) When the Principal Agent advises that shop drawings have been approved, the original transparencies of such drawings shall immediately be submitted to the Principal Agent so that the Principal Agents stamp of approval may be appended thereto. Thereafter, four prints of the approved shop drawings, setting out drawings and schedules shall be furnished to the Principal Agent. As many prints of the approved shop drawings and schedules as required shall also be furnished to the Works. No work shall be performed in accordance with drawings and/or catalogues not stamped with the Principal Agents approval.	**0**		
	E) The Contractor, Sub-Contractor or Supplier, as the case may be, shall be responsible for ensuring that all dimensions affecting shop drawings conform to the dimensions of built work.	**0**		
	F) The Principal Agents approval of shop drawings is limited to checking conformity with specification and shall not relieve the Contractor, Sub-Contractor or Supplier of his responsibility for design, erection or installation fit, nor does it vary his contractual or delictual obligations and liabilities.	**0**		
	G) Should the Contractor, Sub-Contractor or Supplier be of the opinion that corrections to shop drawings made by the Principal Agent constitute a change to the scope of work, then he shall immediately advise the Principal Agent in writing of this, together with the cost and/or programme implications thereof, in order to obtain the Architects directive.	**0**		

	H) One copy of the final approved set of 'Shop Drawings' is to be submitted to the Quantity Surveyors for purposes of valuation remeasurement.	**0**		
	Scaffolding	0		
	In accordance with the 6th Edition of the Standard System of Measurement, no special scaffolding has been measured. The Tenderer is advised to visit the site and to study the drawings to assess any special requirements he may deem necessary for the Works. The Tenderer is to price against this item in respect of any special scaffolding and temporary propping requirements for the Works.	**0**		
	Media releases	0		
	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	**0**		
	The contractor together with his subcontractors shall not, without the prior written consent of the employer, cause any statement or advertisement to be printed, screened or aired by the media	**0**		
	SMME'S	0		
	The principal contractor shall comply with all the requirement of mandatory subcontracting of SMMEs for a minimum of 30% of their contract value (Including VAT) as stipulated under the SMME subcontracting requirements. The Principal Contractor shall on fulltime basis closely mentor, manage and supervise all SMMEs and shall manage, guide and assist each SMMEs in all aspects of management, execution and completion of his/her subcontract. This shall typically include the on-site productivity planning and management of materials, cost management, contract management, Health and Safety management, quality management, communication management and close-out documentation.	**0**		
	Provision for pricing of compliance with the aforementioned is made under this clause and it is explicitly pointed out that all requirements in respect of the aforementioned are deemed to be priced hereunder and no additional claims in this regard shall be entertained.	**0**		
	SUMMARY OF CATEGORIES	0		
	Category : Fixed	0		

	Category : Time	0		
	Category : Value	0		
		0		
	SECTION NO. 2 : BUILDING WORKS	**0**		
	BILL NO.1 : EARTHWORKS	**0**		
	PREAMBLES	0		
	The Tenderer is referred to the relevant Clause in the separate document Model Preambles for Trades (2008 Edition) as published by the Association of South African Quantity Surveyors and the Supplementary Preambles which are incorporated in these Bills of Quantities	0		
	SUPPLEMENTARY PREAMBLES	0		
	Nature of ground	0		
	A soils investigation has been carried out on the site by the engineer and the report is annexed to these bills of quantities. The soils report indicates that the ground varies between silty sand, reworked soil of mixed origin and residual shale, all of which will be deemed as 'earth'. All very hard unweathered shale, ironstone, etc., the removal of which necessitates the use of explosives or heavy duty hydraulic percussion hammers (peckers), will be classified as 'hard rock'	0		
	Excavation for working space in rock	0		
	Notwithstanding clause 11 page 8 of the Standard System of Measuring Building Work, excavation for working space in rock will be measured in cubic metres to the extent executed and given as 'extra over' bulk excavation or trench and hole excavation as the case may be	0		
	Carting away of excavated material	0		
	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	0		
	Filling	0		

	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	0		
	Testing	0		
	Prices for filling are to include for all necessary density tests in accordance with SABS 1200D	0		
	SITE CLEARANCE, ETC	**0**		
	Site clearance	0		
1	Digging up and removing rubbish, debris, vegetation, hedges, shrubs and trees not exceeding 200mm girth, bush, etc including carting away	343		
2	Stripping average 150mm thick layer of top soil and stockpiling on site	343		
	EXCAVATION ETC	**0**		
	Excavation in earth not exceeding 2m deep	0		
3	Reduced levels under floors	102		
4	Trenches	120		
	Back excavation of vertical sides of excavations in earth for working space including backfilling compacted to 98% Mod AASHTO density	0		
5	Not exceeding 500mm deep for placing and removing formwork to walls etc., 1000mm away from excavated face	268		
	Extra over excavation in earth for working space for excavation in	0		
6	Soft rock	70		
7	Hard rock	103		
	Extra over trench and hole excavations in earth for excavation in	0		
8	Soft rock	76		

9	Hard rock	51		
	Extra over all excavations for carting away	0		
10	Surplus material from excavations and/or stock piles on site, to a dumping site to be located by the contractor	171		
	Risk of collapse of excavations	0		
11	Sides of trench and hole excavations not exceeding 1,5m deep	284		
12	Keeping excavations free of water	0		
	FILLING ETC OTHER THAN BULK	0		
	RIP and recompact insitu , compacted to 93% Mod AASHTO density at 150 mm layer	0		
13	Under floors, steps, pavings, etc.	38		
	Earth filling obtained from the excavations and/or prescribed stock piles on site, compacted to 93% Mod AASHTO density	0		
14	Under floors, steps, pavings, etc.	38		
15	Backfilling to trenches, holes, etc.	67		
	Earth filling using imported G5 material in backfilling to trenches,etc and compacted in layers not exceeding 150mm thick to 98% Mod AASHTO density	0		
16	Under floors, steps, pavings, etc.	76		
	Coarse river sand filling supplied by the contractor	0		
17	Under floors etc.	25		
	Compaction of surfaces	0		
18	Compaction of ground surface under floors etc. including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 93% Mod AASHTO density	254		
	Prescribed density tests on filling	0		
19	Modified AASHTO Density test	0		

	SOIL POISONING	0		
	Soil insecticide in accordance with SANS 5859	**0**		
20	Under floors etc. including forming and poisoning shallow furrows against foundation walls etc., filling in furrows and ramming	254		
21	To bottoms and sides of holes, trenches etc.	428		
		0		
	BILL NO.2 : CONCRETE, FORMWORK AND REINFORCEMENT	**0**		
	PREAMBLES	0		
	The Tenderer is referred to the relevant Clause in the separate document Model Preambles for Trades (2008 Edition) as published by the Association of South African Quantity Surveyors and the Supplementary Preambles which are incorporated in these Bills of Quantities	0		
	SUPPLEMENTARY PREAMBLES	0		
	Cost of tests	0		
	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)	0		
	Lightweight concrete	0		
	Lightweight concrete shall have a density of 600kg/m3 for the top 50mm and 400kg/m3 for the remaining thickness. The minimum thickness at outlets, channels, etc. shall be 50mm	0		
	Formwork	0		

	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	0		
	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	0		
	Formwork to soffits of solid slabs etc. shall be deemed to be to slabs not exceeding 250mm thick unless otherwise described	0		
	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	0		
	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	0		
	UNREINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES	0		
	15MPa/19mm concrete	0		
1	Surface blinding under surface beds	38		
2	Surface blinding under footings and bases	4		
	REINFORCED CONCRETE CAST ON/IN FORMWORK	0		
	25MPa/19mm concrete	0		
3	Surface beds cast in panels on waterproofing	51		
	30MPa/19mm concrete	0		
4	Strip footings	20		
5	Filling to foundation walls	12		

6	Ground beams in foundations (Provisional)	5		
	TEST CUBES	0		
	Test cubes	0		
7	Making and testing 150 x 150 x 150mm concrete strength test cube (Provisional)	25		
	CONCRETE SUNDRIES	0		
	Finishing top surfaces of concrete smooth with a power float	0		
8	Surface beds, slabs, etc.	254		
	Finishing top surfaces of concrete with a brushed finish	0		
9	Surface beds, slabs, etc. cast in panels of not more than 20m2	254		
	Protection of power floated floors:	0		
10	Allow for protecting top of power floated concrete slab against any damage that may occur during any construction work above ie structural steelwork, roof sheeting, etc including repairing any damage that may have occurred	254		
	ROUGH FORMWORK (DEGREE OF ACCURACY II) (CPAP WORK GROUP NO. 111)	0		
	Rough formwork to sides	0		
11	Ground beams (Provisional)	17		
	SMOOTH FORMWORK (DEGREE OF ACCURACY II) (CPAP WORK GROUP NO. 111)	0		
	Smooth formwork to edges	0		
12	Edges not exceeding 300mm high	43		
	MOVEMENT JOINTS ETC	0		
	20mm Isolation joints including cell expanded polyethylene foam joint filler between horizontal concrete and brick surfaces including cement mortar bed:	0		
13	As per engineers detail	285		

	Expansion joints with 10mm Impregnated softboard between horizontal concrete and brick surfaces:	0		
14	10mm Joints not exceeding 300mm high (Provisional)	72		
	REINFORCEMENT (CPAP WORK GROUP NO. 114)	0		
	High tensile steel reinforcement to structural concrete work	0		
15	10mm Diameter bars	3		
	Fabric reinforcement	0		
16	Mesh Ref 193 fabric reinforcement in concrete slabs etc.	254		
		0		
	BILL NO.3 : MASONRY	**0**		
	PREAMBLES	0		
	The Tenderer is referred to the relevant Clause in the separate document Model Preambles for Trades (2008 Edition) as published by the Association of South African Quantity Surveyors and the Supplementary Preambles which are incorporated in these Bills of Quantities	0		
	SUPPLEMENTARY PREAMBLES	0		
	Items, materials or methods to be used specified by trade names or catalogue numbers are only an indication of the quality required. Items, materials or methods of similar quality may be used with prior approval from the Architect.	0		
	Masonry:	0		
	Bricks are to be solid modular masonry units having a compressive strength of 14MPa.	0		
	Sizes in descriptions:	0		
	Where sizes in descriptions are given in brick units, 'one brick' shall represent the length and 'half brick' the width of a brick.	0		
	Cement Mortar	0		
	Unless otherwise described, all brickwork shall be built in 1:5 cement mortar.	0		

	Hollow walls etc:	0		
	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 and galvanised butterfly wire ties at 5 per square metre.	0		
	Descriptions of hollow walls to receive concrete filled cavities shall be deemed to include building up brickwork in increments not exceeding 1m high or as otherwise instructed by Engineer, filling cavity with concrete infill, before raising brickwork further.	0		
	Walls in two skins described as 'bagged and sealed' shall be deemed to include having the outer face of the inner skin bagged with 1:6 cement and sand mixture and sealed with two coats 'Brixeal' bitumen emulsion waterproofing coating.	0		
	Face bricks:	0		
	Bricks shall be ordered timeously to obtain uniformity in size and colour.	0		
	Pointing:	0		
	Descriptions of recessed pointing to fair face brickwork and face brickwork shall be deemed to include square recessed, hollow recessed, weathered pointing, etc.	0		
	Cleaning:	0		
	To prevent staining of face brickwork, provide cover during building or renovating operations. Refer to Clay Brick Association Clay Masonry Technical Guide, Part 6.	0		
	Samples:	0		
	Samples of all masonry building units, except those for walls described as 'load bearing', shall consist of a minimum of 6 units. Samples of building units to be used in walls described as 'load bearing' shall consist of 30 units from every 30 000 units delivered to site.	0		
	Rates for brickwork, faced brickwork,etc shall include for all required samples.	0		
	Sample panels:	0		

1	A sample panel (size approximatley 1000 x 1000mm high) will be required to be provided on site for co-ordination and quality of work. The Contractor is to allow for removal on completion is so required.	2		
	BRICKWORK IN FOUNDATIONS (PROVISIONAL)	0		
	Brickwork of NFX bricks (14 MPa nominal compressive strength) in class II mortar	0		
2	Half brick walls	0		
3	One brick walls	0		
4	310mm Hollow walls of half brick skins including butterfly ties filled with 30Mpa concrete (filling elsewhere measured)	107		
5	310mm Hollow circular walls of half brick skins including butterfly ties filled with 30Mpa concrete (filling elsewhere measured)	19		
	BRICKWORK IN SUPERSTRUCTURE	0		
	Brickwork of NFX bricks (14 MPa nominal compressive strength) in class II mortar	0		
6	Half brick walls	20		
7	Half brick walls in beamfilling	35		
8	One brick walls	15		
9	310mm Hollow walls of half brick skins including butterfly ties in cavities	106		
10	310mm Hollow circular walls of half brick skins including butterfly ties filled with 30Mpa concrete (filling elsewhere measured)	32		
11	220mm Wide sills set sloping and slightly projecting	1		
	BRICKWORK SUNDRIES	0		
	Sundries	0		
12	40mm PVC weephole sleeve pipe not exceeding 250mm long, built into brickwalls	6		

13	Bag outer face of inner skin of brickwork and apply two coats bituminous paint	106		
14	Cement mortar triangular fillet one course high in bottom of 110mm wide cavity wall including leaving open perpends at 1,00m centres	1		
15	Labour and material building 110mm cavity solid vertically for half brick width	1		
	Brickwork reinforcement	0		
16	80mm Brick mesh reinforcement in walls	2277		
	Miscellaneous	0		
17	Labour and material building 110mm cavity solid horizontally for two courses	109		
	Prestressed fabricated concrete lintels including necessary temporary supports	0		
18	75 x 100mm Lintels in lengths not exceeding 3m	6		
	Airbricks	0		
19	230 x 160mm Cement vermin proof air bricks	6		
	Bagging of 1:3 cement and sand mixture	0		
20	On brick walls	195		
	Joint forming material in movement joints	0		
21	12mm Fibre board built in vertically through brick walls	5		
	FACE BRICKWORK	0		
22	Face bricks (Allow the PC Amount R 10 000.00 nett per thousand supplied and delivered to site excluding Vat, waste and profit) pointed with recessed horizontal and vertical joints - Contractor is to allow for all labour, materials, plant, tools, waste, mark-ups, etc for building in face bricks. (The rate will be adjusted for material costs only when the Client selects the Face Brick.):	1		
23	Extra over brickwork for face brickwork in foundations (Provisional)	71		

24	Extra over brickwork for face brickwork	106		
25	Extra over brickwork for brick-on-edge header course lintels one course high, pointed on face and 330mm soffit	2		
	FIBRE-CEMENT WINDOW SILLS	0		
	Natural grey sills in single lengths bedded in class II mortar, including metal fixing lugs, etc:	0		
26	15 x 200mm Wide sills set flat and slightly projecting	1		
		0		
	BILL NO.4 : WATERPROOFING	**0**		
	PREAMBLES	0		
	The Tenderer is referred to the relevant Clause in the separate document Model Preambles for Trades (2008 Edition) as published by the Association of South African Quantity Surveyors and the Supplementary Preambles which are incorporated in these Bills of Quantities	0		
	SUPPLEMENTARY PREAMBLES	0		
	Items, materials or methods to be used specified by trade names or catalogue numbers are only an indication of the quality required. Items, materials or methods of similar quality may be used with prior approval from the Architect.	0		
	Waterproofing:	0		
	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	0		
	Waterproofing is to be laid in strict accordance with the manufacturers Code of Practice and by an Approved Contractor.	0		
	Preparation of substrata:	0		
	Screeded roof surfaces shall be firm, dry and clean. Corners shall be coved or arris rounded. All surfaces to receive waterproofing are to be fully primed with a solvent based bitumen primer.	0		

	Timber boarded roof surfaces shall be dry, clean and even. All internal angles are to receive a timber triangular fillet. Corners and edges shall be arris rounded.	0		
	DAMPPROOFING OF WALLS AND FLOORS	0		
	One layer 375 micron embossed polyethylene dampproof course (SANS 952-1985 type B)	0		
1	In walls	33		
	One layer 250 micron green polyethylene waterproof sheeting (SANS 952-1985 type C) sealed at laps with PVC self-adhesive tape	0		
2	Under surface beds	254		
	Two coats bitumen emulsion waterproof coating	0		
3	On bagged brick walls	106		
	SEALING STRIPS, JOINT SEALANTS, ETC	0		
	Polyurethane sealing compound including backing cord, bond breaker, primer, etc.	0		
4	20 x 12mm In expansion joints in floors, aprons, etc, including raking out expansion joint filler as necessary	60		
		0		
	BILL NO.5 : ROOF COVERINGS	**0**		
	PREAMBLES	0		
	The Tenderer is referred to the relevant Clause in the separate document Model Preambles for Trades (2008 Edition) as published by the Association of South African Quantity Surveyors and the Supplementary Preambles which are incorporated in these Bills of Quantities	0		
	SUPPLEMENTARY PREAMBLES	0		
	Items, materials or methods to be used specified by trade names or catalogue numbers are only an indication of the quality required. Items, materials or methods of similar quality may be used with prior approval from the Architect.	0		

	PROFILED METAL SHEETING AND ACCESSORIES	0		
	Notes:	0		
	The following roof sheeting systems are to be manufactured and/or supplied s and installed in strict accordance with the Manufacturer's and/or Supplier's specifications.	0		
	Fixing of all roof sheeting is to be in accordance with the Manufacturer's approved Instruction Book.	0		
	The manufacturer shall comply with ISO9002 Quality Management System. Sheeting shall be laid in strict accordance with the manufacturer's specifications by an approved contractor.	0		
	A written and approved five year guarantee of site-workmanship and watertightness shall be issued after final inspection of concealed-fix roofing, cladding, etc., by the Manufacturer.	0		
	Erection, handling and storage:	0		
	Every precaution shall be taken to prevent damage to roof sheets, cladding, etc., during all stages of construction. Duck boards should be used when necessary to protect the sheeting from damage. Sheeting which has become deformed or damaged in any way, shall be replaced.	0		
	Sheetings should be suitably supported, clear of the ground, under well ventilated cover, away from risk of damage from building operations, contact with cement, dust, lime and abrasive dust, until required to be installed.	0		
	The contractor shall exercise special care when handling long length sheeting, particularly in windy conditions. Should work be interrupted for any reason, all loose sheeting and incomplete sections must be adequately secured against possible movement by wind and gravity.	0		
	The contractor shall ensure that all materials used on site for cladding, etc are transported, handled and stored in accordance with the manufacturer's recommendations. Material damaged shall be rejected and replaced with undamaged material at the contractor's expense. Repair of damaged material will not generally be permitted. Rates are to include for preventing damage and protecting sheets through all stages of construction.	0		

	Cleaning, etc:	0		
	All debris, swarf, etc. arising from the fixing of the cladding shall be removed from the sheeting as the fixing progresses. In addition, off-cuts of insulation, surplus fasteners and sealants, mandrels from pop rivets, off-cuts of flashings and sheeting, surplus flashing, food packaging, cartons, bottles, cans, etc shall not be left on the roof or in the gutters.	0		
	Care shall be taken to ensure that no such material enters, blocks or partially impedes the flow of water into the outlets, down pipes, etc.	0		
	ZIP-TEK 420 SHEETING	0		
	Profile:	0		
	The profile is roll-formed from certified material complying Aluminium 3004. The profile shall have a male and female upstand with an upstanded height of 68mm, which will provide a capillary brake. The nett effective cover width will be 424mm. The male head shall be smaller than the female head.	0		
	Flashing:	0		
	Stop endings must be formed at the apex and the pan turned down at the eaves to form a drip. The roof sheeting shall be closed as necessary with purpose-made flashings of a design approved by the supplier. These flashings shall be notched around ribs where necessary. All these operations must be performed with special tools available from the supplier.	0		
	0,58mm Thick ' Global Roofing Solutions IBR 890 profile Glavanised steel Z200 spelter ISQ550 Chromadek ZIP-TEK 420' Aluminium sheeting and acceTraffic Green finish top coat and pebble grey backing coat roof sheeting including all acessories in single lengths with Stucco embossed PVDF finish (Colour Metallic silver) on external face and standard backing coat on internal face and accessories concealed fixed to steel purlins or rails, with 'Zip-Tek' steel Halters fixed with stainless steel self-tapping screws in strict accordance with the Manufacturers instructions:	0		
1	Roof covering with pitch not exceeding 50 degrees including bitumen impregnated sealer strips at laps	33		
	METROLITE SHEETING	0		

	The profile is roll-formed from certified material complying Aluminium 3004. The profile shall have a male and female upstand with an upstanded height of 68mm, which will provide a capillary brake. The nett effective cover width will be 424mm. The male head shall be smaller than the female head.	0		
	Profile:	0		
	0,58mm Thick ' Metrolite Roofing Solutions IBR	0		
2	Roof covering with pitch not exceeding 50 degrees including bitumen impregnated sealer strips at laps	324		
3	Allow a budgetary allowance of R22 000 for roof sheeting accessories as directed by the Architect	1		
	ROOF AND WALL INSULATION (CPAP WORK GROUP NO. 122)	0		
	Enviro Tuff 203 or equally approved foil insulation laid taut over purlins at approximately 1.00m centres and fixed concurrent with roof covering including PVC coated galvanised steel straining wires where required all in strict accordance with the manufacturers instructions	0		
4	100mm Insulation sheeting laid taut over purlins at approximately 1000mm centres and fixed concurrent with roof covering with including PVC coated steel straining wires and double-sided tape at edges where required all in strict accordance with the manufacturers instructions	354		
		0		
	BILL NO.6 : CARPENTRY AND JOINERY	**0**		
	PREAMBLES	0		
	The Tenderer is referred to the relevant Clause in the separate document Model Preambles for Trades (2008 Edition) as published by the Association of South African Quantity Surveyors and the Supplementary Preambles which are incorporated in these Bills of Quantities	0		
	SUPPLEMENTARY PREAMBLES	0		
	Fixing	0		

	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	0		
	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	0		
	Joinery	0		
	Descriptions of frames shall be deemed to include frames, transomes, rails, etc.	0		
	Descriptions of hardwood joinery shall be deemed to include sinking and pelleting heads and nuts of bolts	0		
	Decorative thermosetting plastic laminate covering	0		
	Laminate covering shall be glued under pressure and edge strips of same shall be butt jointed at junctions with adjacent similar finish	0		
	All glazing to doors or frames is elsewhere measured.	0		
	All factory doors are to be pre-treated with a linseed oil based transit stabilizing sealer.	0		
	ROOFS ETC	0		
	PREFABRICATED ROOF TRUSSES, ETC.	0		
	Plate nailed timber roof truss construction:	0		
	The following is applicable in respect of roof trusses: Trusses are at maximum 1000mm centres Roof covering is 'Klip-lok 406' on purlins. Ceilings are 600 x 1200mm boards on steel frame. The dimensions in the descriptions of the trusses are nominal and actual measurements are to be obtained from the Architect and/or the site before design or fabrication commences. The contractor to supply an engineers certificate on completion	0		
	Sawn softwood:	0		
1	38 x 114mm Wall plates.	80		
2	50 x 76mm Spayed purlins.	25		

3	Allow a budgetary allowance for roof construction of R 200 000 to double pitched roof approximately 17 200m x 10 200mm span x 2 800mm high extreme and 400mm overhang including trusses, jack rafters, permanent bracing etc. including termite treatment, primer, varnish and building into superstructure all to engineer's details	1		
	Sundries	**0**		
4	Wrought faces on sawn timbers	48		
5	Two coats creosote on sawn timbers	48		
	EAVES, VERGES, ETC	0		
	High density plain fibre-cement fascias and barge boards	**0**		
6	300 x 15mm Fascias and barge boards, including aluminium H-profile joiners	80		
	FLOORS ETC	0		
	SKIRTINGS	0		
	Wrought meranti	0		
7	140 x 76mm Skirtings, moulded and nailed to Architects specifications, in and including 19 x 19mm hardwood quadrant nailed at 400mm centres	80		
	DOORS	0		
	Dan Architect or similar approved	0		
8	Door D01 size 900 x 2 100mm High commercial veneer horizontal grooved internal semi solid door code DSHRZMS2 or equivalent approved	1		
	Swartland Blue:	0		
9	Door D02 size 900 x 2 100mm High commercial veneer horizontal grooved internal semi solid door code DSHRZMS2 or equivalent approved	1		
	GUMPOLES	0		
	GUMPOLES, ETC	0		

10	Allow for a budgetary amount of R85 000 (Eighty Thousand Rand) for gum poles and all ancillary items to the engineer's details	1		
		0		
	BILL NO. 7	**0**		
	CEILINGS, PARTITIONS AND ACCESS FLOORING	**0**		
	NOTE: Tenderers are advised to study the Model Preambles for Trades before pricing this bill	0		
	SUPPLEMENTARY PREAMBLES	0		
	Descriptions	0		
	Items described as "nailed" shall be deemed to be fixed with hardened steel nails or pins or shot pinned to brickwork or concrete	0		
	Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 600mm centres, and where described as "bolted" the bolts have been given elsewhere	0		
	Ceilings	0		
	Unless otherwise described ceilings shall be deemed to be horizontal	0		
	NAILED UP CEILINGS	0		
	6.5mm "Rhino " or other equally approved gypsum plastered ceiling fixed print side up with 32mm galvanized clout nails at 150mm centres with 63mm wide strips of 'Fibatape' fixed over joints and the whole finished with gypsum skim plaster trowelled to a smooth polished surface to the thickness recommended by the manufacturer	0		
1	Ceilings including 38 x 50mm SA pine brandering at 400mm centres in one direction only to trusses (elsewhere measured) at maximum 1000mm centres	344		
2	Extra over ceiling for 600 x 600mm trap door of 38 x 38mm wrought softwood rebated framing with one 38 x 38mm sawn softwood cross brander covered with ceiling board and fitted flush in opening	1		

3	50 x 50 mm High density extruded polystyrene cornice fixed to wall with an approved adhesive.	200		
	CORNICES AND COVER STRIPS	0		
4	6 x 32mm Wrot Meranti cover strips over joints primed before fixing to ceiling joits	120		
		0		
	BILL NO. 7: IRONMONGERY	**0**		
	NOTE: Tenderers are advised to study the Model Preambles for Trades before pricing this bill	0		
	SUPPLEMENTARY PREAMBLES	0		
	Finishes to ironmongeryWhere applicable finishes to ironmongery are indicated by suffixes in accordance with the following list: BS - Satin bronze lacquered CH - Chromium plated SC - Satin chromium plated SE - Silver enamelled GE - Grey enamelled AS - Anodised silver AB - Anodised bronze AG - Anodised gold ABL - Anodised black PB - Polished brass PL - Polished and lacquered PT - Epoxy coated SD - Sanded	0		
	NOTE: Descriptions of wall mounted and floor standing ironmongery items shall be deemed to include fixing in position, including all fixing accessories. Descriptions of proprietary items shall be deemed to include fixing in position and all fixing accessories	0		
	LOCKSETS, ETC	0		
	"DORMAKABA " or other equal approved	0		
1	Exterior excess lock with lever handle (Code PHT3901)	1		
	HANDLES	0		
	"DORMAKABA " or other equal approved	0		
2	200 x 22mm Straight tubular Pull handle (Code DPH209 BT)	1		
3	149 x 19mm Straight Tubular Pull Handle (Code DPH301C)	1		
	DOOR CLOSERS, ETC	0		

	"DORMAKABA" or other equally approved	0		
4	Code TS83 Parallel arm non- hold open door closer, adjustable strength, hydraulic speed control, push side fixing including parallel arm . Door closer tested to EN 1154, approved to AS1905 Part 1 Fire resistant doors and certified manufacturer to ISO 9001	1		
	Sundries	0		
5	Floor mounted doorstop (Code DDS-SS-017)	1		
6	Hat and coat hook with rubber buffer (code DHC-SS-031B)	1		
		0		
	BILL NO. 8 : METALWORK	**0**		
	PREAMBLES	0		
	The Tenderer is referred to the relevant Clause in the separate document Model Preambles for Trades (2008 Edition) as published by the Association of South African Quantity Surveyors and the Supplementary Preambles which are incorporated in these Bills of Quantities	0		
	SUPPLEMENTARY PREAMBLES	0		
	Items, materials or methods to be used specified by trade names or catalogue numbers are only an indication of the quality required. Items, materials or methods of similar quality may be used with prior approval from the Architect.	0		
	Descriptions:	0		
	Descriptions of bolts shall be deemed to include nuts and washers.	0		
	Metalwork described as holed for bolt(s) shall be deemed to exclude the bolts unless otherwise described.	0		
	Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork or concrete.	0		
	SUNDRY GALVANISED STEEL WORK	0		
	NOTE: All items in this section shall be deemed to fall into Work Group 136 for Haylett formula purposes	0		

	Bearers to brick linings, lintels, etc	0		
	1.6mm Thick twice bent plinth capping nailed to concrete	0		
	GALVANISED PRESSED STEEL DOOR FRAMES	0		
	1,6mm Thick single rebated mild steel door frame suitable for one brick walls with four sides and one pair of butt hinges per door leaf	0		
1	Frame for door 900 x 2 100mm high	1		
	ALUMINIUM SHOPFRONTS, WINDOWS, DOORS, LOUVRES, ETC, AND ASSOCIATED WORKS	0		
	NOTE: Unless otherwise stated herein, all items in this section shall be deemed to fall into Work Group No 149 for Haylett formula purposes	0		
	Drawings	0		
	Design, fabricate, supply and install aluminium windows, doors, shopfronts, louvres and frames including ironmongery, glazing, glazing beads, fixings, sealants, etc complete all in accordance with architects drawings and AAAMSA requirements The following architects drawings are issued with this tender document: Drawing no. Revision ARCT-WMO- CERES -300 RB	0		
	Minimum requirements	0		
	All windows to AAAMSA standards Tenderers are to ensure that design meets the relevant performance criteria terrain category SABS 0160 All glazing to comply with NBR 0400 part N, SANS and SABS codes and/or as indicated on architects drawing All aluminium to be epoxy powder coated Brush pile to all bottom horizontal opening sections of doors and shopfronts All casement windows to have rubber gasket around frame Windows are to be sealed internally and externally with an approved sealer	0		
	Protection	0		
	Allow for the protection of all aluminium windows and doors (both sides) with a protective film including the removal thereof upon completion	0		

	Design Indemnity	0		
	The aluminium sub contractor shall be responsible for the design of the aluminium doors and windows	0		
	Preparation, submission and approval of shop drawings	0		
	Shop drawings to be prepared by the sub contractor and to be submitted to the architect for his approval	0		
	Testing for water tightness	0		
	All windows to be tested to AAAMSA minimum requirement for water tightness with a method as recommended by AAAMSA	0		
	Waterproofing angles	0		
	All rates to included for aluminium angles at thresholds to all doors onto patios, decks, balconies, etc for dressing over of waterproofing (waterproofing elsewhere measured)	0		
	Powder coated aluminium windows, doors and shopfronts (Powder coating colour: tenderer to allow for "Aloe Green code: RAL - 6011" / white) in strict accordance to AAAMSA requirements and to meet the relevant performance criteria terrain category SANS 10160 and to withstand wind loads as per SABS 0160/1989 (5.5) with glazing to be as indicated on architects drawings and schedules and to comply to the NBR part N glazing, SABS 0137, SABS 0400 and SABS 11236 complete, plugged to brickwork or concrete	0		
2	Window W01 1900 x 1500 top hung complete as per Architect's drawings	2		
	SUNDRY GALVANISED STEELWORK	0		
	Budgetary allowance	0		
3	Allow for a budgetary amount of R30 000 (Thirty Thousand Rand) for ancillary galvanised items to the existing steel structure	1		
		0		
	BILL NO.9 : PLASTERING	**0**		
	PREAMBLES	0		

	The Tenderer is referred to the relevant Clause in the separate document Model Preambles for Trades (2008 Edition) as published by the Association of South African Quantity Surveyors and the Supplementary Preambles which are incorporated in these Bills of Quantities	0		
	SUPPLEMENTARY PREAMBLES	0		
	Items, materials or methods to be used specified by trade names or catalogue numbers are only an indication of the quality required. Items, materials or methods of similar quality may be used with prior approval from the Architect.	0		
	Preparation of surfaces to receive screeds, plaster, etc.:	0		
	Surfaces shall be dry and clean, free of dust, sand, grit and flaking particles, laitance and loose matter, contaminants such as oil, grease, etc. All free standing water to be removed prior to application. Absorbent surfaces to be thoroughly pre-soaked in fresh water. Oil, grease, animal fats, etc. to be removed with suitable approved product and to be applied in strict accordance with the manufacturer's instructions. All concrete surfaces to receive plaster must first be prepared and receive an approved keying/bonding agent or a thick cement slurry coating prior to plastering.	0		
	All floors should be level and free of all material as per SANS10155 and all existing screeds should be tested for satisfactory levelness using a level light meter.	0		
	As a general rule, a maximum deviation of not more than 3mm over an area of 3m is a good guide and will give a quality level floor, with the deviation not being too close together and too frequent.	0		
	Where the screed does not conform to these requirements then a self levelling screed is to be applied and the rates are to include for the testing of the existing screeds as described above.	0		
	For granolithic applied monolithically, the concrete floor shall be swept clean after bleeding of the concrete has ceased and the slab has begun to stiffen; any remaining bleed water shall be removed and the granolithic applied immediately thereafter. For granolithic to be bonded to the floor slab after it has hardened, the slab surface shall be hacked (preferably by mechanical means) until all laitance, dirt, oil, etc. is dislodged and swept clean of all loose matter. The slab shall then be wetted and kept damp for at least six hours before applying the granolithic.	0		

	Method	0		
	The method to be used shall be either the monolithic method or the bonded method	0		
	Mix	0		
	Granolithic shall attain a compressive strength of at least 41MPa. The coarse aggregate shall comply with SANS 1083 and shall generally be capable of passing a 10mm mesh sieve. Where the thickness of the granolithic exceeds 25mm, the size of the coarse aggregate shall be increased to the maximum size compatible with the thickness of the granolithic.	0		
	Panels	0		
	Granolithic shall be laid in panels not exceeding 14m\'b2 for monolithic finishes, not exceeding 9,5m\'b2 for bonded finishes and not exceeding 6m\'b2 for all external granolithic. Wherever possible, panels shall be square but at no time should the length of the panel exceed 1,5 times its width.	0		
	Where possible joints between panels shall be positioned over joints in the floor slab and shall be at least 3mm wide through the full thickness of the finish, separated by strips of wood or fibreboard and finished with V-joints	0		
	Laying	0		
	Monolithic granolithic shall be applied to the partially set slab and thoroughly compacted and lightly wood floated to the required levels	0		
	Bonded granolithic shall be applied to the slab after applying a 1:1 sand-and-cement slurry brushed over the surface and allowed to partially set before applying the granolithic. The granolithic shall be thoroughly compacted and lightly wood floated to the required levels	0		
	After wood floating, the monolithic and bonded granolithic shall remain undisturbed until bleeding has ceased and the surface has stiffened. Any remaining bleed water and laitance shall then be removed and the surface steel trowelled or power floated	0		
	Curing, seasoning and protection	0		

	Granolithic shall be covered with clean hessian with waterproof building foil over and kept wet for at least seven days after laying.	0		
	Colour	0		
	Coloured granolithic shall be tinted with an approved colouring pigment mixed into a true and even colour.	0		
	SCREEDS	0		
	Cement screeds on concrete	0		
1	30mm Thick on floors and landings	254		
	GRANOLITHIC	0		
	Untinted granolithic, on concrete	0		
2	30mm Thick on floors and landings	254		
	INTERNAL PLASTER	0		
	Cement plaster on brickwork and/or concrete:	0		
3	On walls	106		
4	On narrow widths	1		
	Skimmed plaster on brickwork and/or concrete to Architect's specifications:	0		
5	On walls	60		
	EXTERNAL PLASTER	0		
	Cement plaster on brickwork and/or concrete:	0		
6	On walls	103		
	Nature - Plast up and down trowel scratched cement plaster on brickwork and/or concrete to Architect's specification :	0		
7	On walls	103		
	CORNER PROTECTORS, DIVIDING STRIPS, ETC	0		
	Dividing strips	0		

8	3 x 57mm Flat section brass dividing strips between different floor finishes at external doors.(Provisional)	1		
		0		
	BILL NO.10 : TILING	**0**		
	PREAMBLES	0		
	The Tenderer is referred to the relevant Clause in the separate document Model Preambles for Trades (2008 Edition) as published by the Association of South African Quantity Surveyors and the Supplementary Preambles which are incorporated in these Bills of Quantities	0		
	SUPPLEMENTARY PREAMBLES	0		
	Items, materials or methods to be used specified by trade names or catalogue numbers are only an indication of the quality required. Items, materials or methods of similar quality may be used with prior approval from the Architect.	0		
	Fixing	0		
	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	0		
	Tiling described as 'fixed with adhesive on power floated concrete' shall be deemed to include for approved tiling key-coat	0		
	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	0		
	CERAMIC / PORCELAIN WALL TILING	0		
	200 x 200 x 6.5mm Grade 1 glazed ceramic wall tiles grouted with grey anti-fungal tylon grout mixed with tylon bond, all to manufacturers specifications.	0		
1	On splash backs	0		

	Allow the PC Amount of R400.00 (Four Hundred Rand)(Excluding VAT) for the Supply and Delivery of Ceramic Wall Tiles, fixed with TAL tile adhesive on plastered walls (plaster e/m) with 3mm spacings and grouted with TAL grout (Bathroom Wall Areas) - Contractor is to allow for, waste, profit, labour for fixing tiles and all adhesive and grouting, all to manufacturers specifications. (The rate will be adjusted for material costs only, when the Client selects the wall tile.):	0		
2	On walls	0		
3	On narrow widths	6		
	FLOOR TILING	0		
	600 x 600 mm Sandstone tiles including Matt sealer , fixed with an approved adhesive on screeded floors and Pointing With an approved tinted Epoxy Grout with continuous joints in both directions ,adhesive and grouting, all to manufacturers specifications.	0		
4	On floors and landings	0		
	400 x 400 mm Sandstone tiles including Matt sealer , fixed with an approved adhesive on screeded floors and Pointing With an approved tinted Epoxy Grout with continuous joints in both directions ,adhesive and grouting, all to manufacturers specifications.	0		
5	On floors and landings	0		
6	Bullnose threads of staircases	0		
	Allow the PC Amount of R500.00 (Five Hundred Rand) (Excluding VAT) for the Supply and Delivery of Ceramic Floor Tiles, fixed with Tal Goldstar Adhesive on screeded concrete floors (screed e/m) and Pointing With Tal Tinted Epoxy Grout with continuous joints in both directions – Contractor is to allow for waste, profit, labour of fixing tiles and all adhesive and grouting, all to manufacturers specifications. (The rate will be adjusted for material costs only, when the Client selects the wall tile.):	0		
7	On floors and landings	254		
8	Skirting 100mm high of cut skirting tiles	0		
	SUNDRIES	0		

	M Trim or equally approved:	0		
9	M Trim stainless steel (grade 304) tile square edge trim as Kirk Marketing SQE120 (used as stair nosing)	7		
		0		
	BILL NO.11 : PLUMBING AND DRAINAGE	**0**		
	PREAMBLES	0		
	The Tenderer is referred to the relevant Clause in the separate document Model Preambles for Trades (2008 Edition) as published by the Association of South African Quantity Surveyors and the Supplementary Preambles which are incorporated in these Bills of Quantities	0		
	SUPPLEMENTARY PREAMBLES	0		
	Items, materials or methods to be used specified by trade names or catalogue numbers are only an indication of the quality required. Items,materials or methods of similar quality may be used with prior approval from the Architect/Engineer.	0		
	Polycop' polypropylene pipes:	0		
	Polypropylene pipes 54mm diameter and under shall be seamless copper coloured class 16 pipes jointed with 'Fast-fuse' heat welded thermoplastic or brass compression fittings as designed for use with copper pipes as stated.	0		
	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.	0		
	All pipe diameters are nominal external.	0		
	uPVC pressure pipes and fittings:	0		
	Pipes for water supply shall be of the class stated.	0		
	Pipes of 40mm diameter and smaller shall be plain ended with solvent welded uPVC loose sockets and fittings.	0		

	Pipes of 50mm 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.	0		
	Copper pipes:	0		
	Pipes shall be hard drawn and half-hard pipes of the class stated. 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 or equally approved. Capillary solder fittings shall comply with ISO 2016 and SABS specifications. Only compression fittings shall be used in walls or in ground.	0		
	Fixing :	0		
	Unless specifically otherwise stated, descriptions of pipes shall be deemed to include for fixing to walls etc. casting in, building in or suspending not exceeding 1m below suspension level	0		
	Descriptions of wall mounted, floor standing, drop-in, etc type sanitary fittings shall be deemed to include fixing in position and all fixing accessories	0		
	Descriptions of proprietary items shall include fixing in position and all fixing accessories as specified by the manufacturer	0		
	Chasing :	0		
	Chasing pipes into new walls shall be regarded as "building in" and is not measured seperately. The cost of chasing and making good shall be included in the rates for the pipes.	0		
	Reducing fittings:	0		
	Where fittings have reducing ends or branches they are described as 'reducing'. In the case of pipes with diameters not exceeding 60mm only the largest end or branch size is given. Should the Contractor wish to use other fittings and bushes or reducers he may do so on the understanding that no claim in this regard will be entertained. In the case of pipes with diameters exceeding 60mm all sizes are given and no claim for extra bushes, reducers, etc will be entertained.	0		
	Wire gratings:	0		

	Descriptions of gutter outlets etc shall be deemed to include wire balloon gratings.	0		
	Exposed concrete surfaces:	0		
	Exposed surfaces of concrete stormwater channels, cover slabs, inspection eye marker slabs, gulley tops, cleaning eye tops, catchpits, inspection chambers, etc shall be finished smooth with plaster.	0		
	Description of pipes laid in trenches:	0		
	Descriptions of pipes laid in trenches shall be deemed to include for carting away all surplus excavated material to a dumping site located by the contractor.	0		
	Excavations:	0		
	No claim for rock excavation will be entertained unless the Contractor has timeously notified the quantity surveyor thereof prior to backfilling.	0		
	Soft rock' and 'hard rock' shall be as defined in 'Earthworks'.	0		
	Laying, backfilling, bedding, etc of pipes:	0		
	Pipes shall be laid and bedded and trenches shall be carefully backfilled in accordance with manufacturers' instructions.	0		
	Where no manufacturers' instructions exist pipes shall be laid in accordance with clauses 5.1 and 5.2 of each of the following: SABS 1200 L : Medium pressure pipelines LD : Sewers LE : Stormwater drainage Pipe trenches etc shall be backfilled in accordance with clause 3, 5.5, 5.6, 5.7 and 7 of SABS 1200 DB : Earthworks (Pipe trenches). Pipes shall be bedded in accordance with clauses 3.1 to 3.4.1, 5.1 to 5.3 and 7 of SANS 1200 LB : Bedding (Pipes).	0		
	Unless otherwise described bedding of rigid pipes shall be class B bedding.	0		
	Flush pans:	0		
	Flush pans shall have straight or side outlets and 'P' or 'S' traps as necessary.	0		
	Stainless steel basins, sinks, wash troughs, urinals, etc:	0		

	Units shall have standard aprons on all exposed edges and tiling keys against walls where applicable.	0		
	Fixing:	0		
	Descriptions of wall mounted, floor standing, drop-in, etc type sanitary fittings shall be deemed to include fixing in position and all fixing accessories.	0		
	Descriptions of proprietary items shall include fixing in position and all fixing accessories as specified by the manufacturer.	0		
	Prices for sinks are to include for preparing the worktop to receive the fitting and for securely fixing sinks to worktops using the clips provided. The Contractor is to provide worktop manufacturers with details of cut outs and ensure that the cut openings are sufficiently accurate to provide proper engagement for these clips.	0		
	Waste unions:	0		
	Descriptions of waste unions shall be deemed to include rubber or vulcanite plugs and chains fixed to fittings.	0		
	General :	0		
	All screw and bolt fixings for sanitary ware are to be stainless steel or chromium plate on brass.	0		
	Prices for sanitary fittings are to include in the rate for the application of white anti-fungal silicone sealant between the fittings and abutting wall and floor finishes, vanity tops, bathroom fittings, etc.	0		
	SURFACE DRAINAGE	0		
	Precast or in-situ concrete (Class 20) open stormwater channels with V-shaped waterway formed in top, finished smooth on all exposed surfaces and with angles rounded, cast in suitable lengths (not exceeding 2500mm) and reinforced as necessary if precast including all formwork, moulds, shallow excavation, filling and ramming, laying to falls, bedding and pointing in (3:1) cement mortar:	0		
1	Channel size 900 x 100mm thick with 60mm deep V-shaped waterway including formwork.	0		

2	Extra for angle.	0		
3	Extra for T-intersection.	0		
	RAINWATER DISPOSAL	0		
	GUTTERS AND DOWNPIPES	0		
	0.8mm Seamless aluminium gutters and rainwater pipes with PVF coating:	0		
4	100 x 75 x 0.8mm VHV rainwater pipe fixed to walls with and including approved holderbats at 900mm centres.	0		
5	100 x 75 x 0.8mm Rainwater downpipes including approved holderbats at 900mm centres.	0		
6	Extra over rainwater pipe for bend.	0		
7	Extra over rainwater pipe for eaves or plinth offset 600mm projection.	0		
	SOIL DRAINAGE	0		
	uPVC Soil pipes (SABS 791-1986):	0		
8	110mm Pipes laid in ground not exceeding 1000mm deep including all excavations in earth, bedding cradle and blanket fill of selected granular material, main fill compacting in layers not exceeding 150mm thick, adjust moisture content to optimum and compact to a density of 90% Modified AASHTO in drain trenches including carting off surplus displaced material.	0		
9	50mm Pipes laid in ground not exceeding 1000mm deep including all excavations in earth, bedding cradle and blanket fill of selected granular material, main fill compacting in layers not exceeding 150mm thick, adjust moisture content to optimum and compact to a density of 90% Modified AASHTO in drain trenches including carting off surplus displaced material.	0		
	Extra over uPVC pipes for fittings:	0		
10	50mm Bend.	0		
11	110mm Bend.	0		
12	110mm Access bend.	0		

13	110mm Junction.	0		
14	110mm Access junction.	0		
	Sundries:	0		
15	Unreinforced concrete (15MPa) bedding under pipes.	0		
	Manholes, gulley traps, etc:	0		
16	110mm uPVC Gulley trap and hopper with grid not exceeding 1000mm deep all set and encased in (20MPa) mass concrete to form kerb, finished smooth with plaster.	0		
17	Manhole size 600 x 450mm internally not exceeding 1m deep internally to invert level formed of hard burnt half brick sides in 1:3 cement mortar on and including 100mm thick mass concrete (20 MPa at 28 days in 19mm stone) bottom projecting 50mm beyond sides and mass concrete (15 MPa at 28 days in 12mm stone) benching, rendered internally in 1:3 cement plaster with 100mm thick mass concrete (20 MPa at 28 days in 19mm stone) kerb on top, rebated for and fitted with cast iron double seal cover and frame type 8A in accordance with SABS 558, bedded in 1:3 cement mortar and sealed in tallow including all necessary vitrified clay channels and fittings, excavations, formwork, holes through sides for pipes, etc.	0		
18	470 mm diameter double seal lockable manhole cover and frame .	0		
19	Allow for connections to existing soakawys	0		
	Testing:	0		
20	Testing drainage pipe system.	0		
	SANITARY FITTINGS	0		
	Vaal Sanitary ware' vitreous china wash hand basins:	0		
21	510 x 405mm Hibiscus White vitreous china Wash hand basin (code 7023) with two tap holes including integrated overflow and chain stay hole, complete bolted to wall with two 10mm bolts (code 8448Z0) complete with waste union, overflow tube attachment, plug and chain, brackets, etc (taps elsewhere measured)	0		
	Vaal Sanitaryware' vitreous china WC suites:	0		

22	White vitreous china 90 degrees WC open rim suite comprising front single flush vandal proof cistern inlcuding lid, fitments and flushpipe elbow and B2 economy double flap thermoset seat	0		
	Franke trendline model 1200 x 535 SEB grade 304 (18/10) 1.2mm polished stainless steel sinks:	0		
23	1200 x 535 with one 460 x 350 x 140mm deep bowl including drip sink code 10300008 or other approved complete with approved brackets, etc and fixing in position or fitted into cupboard, complete including Spazi F/1 plumbing kid code 11200008 with 38mm waste fitting.	0		
	Showers:	0		
24	Allow a PC Amount of R 1 500 (One Thousand and Five Hundred Rand) for the supply and delivery new shower, taps and accessories including fixing to walls (The rate will be adjusted for material costs only, when the Client selects the shower)	0		
	Accesories	0		
25	Serra Roll TR Range or similar approved Grade 304 (18/10) stainless steel satin finish lockable 2 roll toilet roll holder complete with approved brackets, etc and fixing in position	0		
26	116 x 114mm Aquarius or equal and approved hand soap / sanitiser dispenser- Casette 1L (code 6948000) complete with approved brackets, etc and fixing in position by a specialist	0		
27	265 x 399 x 136mm high Aquarius or equal and approved hand towel dispenser- (code 6945000) complete with approved brackets, etc and fixing in position by a specialist	0		
	WASTE UNIONS ETC	0		
	Cobra Watertech' waste unions etc:	0		
28	32mm Code 301 chrome plated basin waste union.	0		
29	38mm Chrome plated heavy pattern slotted sink/washtrough waste union with flange, shank, slotted with back nut plug, chain and stay.	0		
30	110 mm Chrome plated heavy pattern slotted washtrough waste union with flange fixed to floor	0		

	TRAPS ETC	0		
	Traps, etc.:	0		
31	50mm PVC "P" trap including joint to pipe and outlet of fitting	0		
32	32 x 40mm Chromium plated bottle trap as Cobra COB-385/35 including joint to pipe and outlet of fitting	0		
	TAPS, VALVES, ETC	0		
	Stopcocks, Stoptaps, Gate valves, Check valves, Strainers, etc:	0		
33	15mm Chromium plated angle single lever undertile stop tap regulating valve with 350mm flexi tube Type BS 5412 including joints to pipes.	0		
34	15mm Brass stopcock including joints to pipes	0		
35	22mm Ditto	0		
36	28mm Ditto	0		
37	15mm Chromium plated stopcock including joints to pipes	0		
38	Type 1 (BS 5412) 2 x 15mm silver "Cobra Watertech" Star pillar taps with flanged backnut and raised nose hose (Code 112) COB-PA-851" or other approved including joints to pipes	0		
39	Franke Project line two single lever mixer code 1150021 with overarm swivel spout or other approved with 15mm flexible connections including joints to pipes- (mixer to have 5 year guarantee on body construction as per Architects instructions	0		
40	15mm Chromium plated basin mixer as "Cobra COB-PA-851" or other approved including joints to pipes	0		
41	22mm Brass relief valve including joints to pipes	0		
	Toilet and urinal flushvalves and built in cisterns:	0		
42	Chromium plated flushvalve and spargepipe as Cobra COB-FJ2-100 including joints to pipes	0		
	Pressure reducing valves, vacuum breakers, etc.:	0		
43	22mm Brass vacuum breaker including joint to pipe	0		

	SANITARY PLUMBING	0		
	UPVC Pipes And Fittings	0		
44	40mm pipes	0		
45	110mm Pipes	0		
46	40mm Pipes chased into walls including making good to plaster	0		
47	40mm Pipes fixed to underside of concrete slabs including purpose made brackets	0		
48	50mm Ditto	0		
49	40mm Pipes in fill under slab including any excavation, backfilling, etc	0		
50	50mm Ditto	0		
	Extra For:	0		
51	50mm Straight reducer	0		
52	110mm Ditto	0		
53	110mm Pan connector	0		
54	40mm Bend	0		
55	50mm Bend	0		
56	40mm Inspection eye bend	0		
57	50mm Ditto	0		
58	110mm Ditto	0		
59	50mm Ditto	0		
60	110mm Ditto	0		
61	50mm Inspection eye reducing junction	0		
62	110mm Ditto	0		
63	110mm "GI two-way" vent valve	0		

	Sundries	0		
64	Wire balloon grating in top of pipe not exceeding 100mm diameter.	0		
65	50mm UPVC vent valve	0		
66	110mm Ditto	0		
	TESTING	0		
	Testing :	0		
67	Testing waste pipe system, complete.	0		
	WATER SUPPLIES	0		
	Note:	0		
	Domestic Hot and Cold Water Pipes shall be Copper to SANS 460 Class 2 Hard Drawn. Copper piping and shall be joined by means of solder capillary fittings, in accordance with SABS specifications.	0		
	The exact position of Hot Water Pipework in ceiling voids shall be such that the length of "Dead Legs" are minimised.	0		
	Class 2 Copper pipes:	0		
68	15mm Pipes.	0		
69	22mm Pipes.	0		
70	28mm Pipes.	0		
71	35mm Pipes.	0		
72	42mm Pipes.	0		
	Extra over class 2 copper pipes for capillary fittings:	0		
73	15mm Fittings	0		
74	22mm Fittings	0		
75	28mm Fittings	0		
76	35mm Tee	0		

	Extra over class 2 copper pipes for brass compression fittings:	0			
77	15mm Fittings	0			
78	22mm Fittings	0			
79	28mm Fittings	0			
80	35mm Elbow	0			
81	35mm Reducer	0			
82	42mm Saddle connector	0			
83	54mm Saddle connector	0			
	Testing	0			
84	Testing water pipe system	0			
	ELECTRIC WATER HEATERS	0			
	Approved' Geysers (SABS 151:1992), to be compatible with heat pump installations, where required :	0			
85	150 Litre 600KPa high pressure horizontal hot water geyser including fixing to wall and joints to pipes	0			
86	Saint Gobian Isover geyser blanket to suit 100 litre geyser	0			
87	Galvanised sheet iron tray to suit 100 litre geyser	0			
88	50mm UPVC overflow pipe	0			
89	Saint Gobian Isover insulation to 15mm pipe all in strict accordance with the manufacturers instructions	0			
90	22mm Ditto	0			
91	28mm Ditto	0			
	BUILDERS WORK IN CONNECTION WITH PLUMBING INSTALLATION	0			
92	Cut hole through facebrick wall for pipe not exceeding 100mm diameter and make good	0			

	FIRE APPLIANCES ETC	0		
	Chubb' or equally approved:	0		
93	Everyway' hose reel complete with 30m rubber hose, chromium plated stopcock, shut-off nozzle and wall bracket, mounted to wall, complete.	0		
94	4,5kg DCP hand held fire extinguisher including mounting bracket and backboard plugged and screwed to wall.	0		
95	5kg Carbon dioxide CO2 hand held fire extinguisher including mounting bracket and backboard plugged and screwed to wall.	0		
		0		
	BILL NO.12 : GLAZING	**0**		
	PREAMBLES	0		
	The Tenderer is referred to the relevant Clause in the separate document Model Preambles for Trades (2008 Edition) as published by the Association of South African Quantity Surveyors and the Supplementary Preambles which are incorporated in these Bills of Quantities	0		
	SUPPLEMENTARY PREAMBLES	0		
	Items, materials or methods to be used specified by trade names or catalogue numbers are only an indication of the quality required. Items, materials or methods of similar quality may be used with prior approval from the Architect.	0		
	Float glass	0		
	The term 'float glass' is used for monolithic annealed glass	0		
	Laminated glass	0		
	Laminated glass to have polyvinyl butyral (PVB) interlayer(s)	0		
	GLAZING TO WOOD WITH PINNED-ON BEADS (BEADS ELSEWHERE)	0		
	4mm Clear float glass	0		
	TOPS, SHELVES, DOORS, MIRRORS, ETC	0		

	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	0		
1	M2 Standard Mirror 500 x 450mm high with thief resistant fixing	0		
		0		
	BILL NO.13 : PAINTWORK	**0**		
	PREAMBLES	0		
	The Tenderer is referred to the relevant Clause in the separate document Model Preambles for Trades (2008 Edition) as published by the Association of South African Quantity Surveyors and the Supplementary Preambles which are incorporated in these Bills of Quantities	0		
	SUPPLEMENTARY PREAMBLES	0		
	Items, materials or methods to be used specified by trade names or catalogue numbers are only an indication of the quality required. Items, materials or methods of similar quality may be used with prior approval from the Architect.	0		
	Paint:	0		
	All work to be executed in strict accordance with the Manufacturers specifications and instructions.	0		
	Primers and first coats may be thinned in accordance with the paint specifications of the various paints to aid the absorption of the paint.	0		
	All surfaces must be sound, clean and have a moisture content of less than 8% for walls generally and 3% for slabs/screeds etc.	0		
	Where surfaces of plaster etc are sandy / friable, the first coat must be replaced with a Merit' plaster primer thinned 10% with turpentine.	0		
	PAINTWORK ETC TO NEW WORK	0		
	ON FLOATED PLASTER SURFACES	0		

	Prepare surfaces and remove all loose material, apply one coat plaster Primer and Two Coats Super Acrylic PVA Paint On:	0		
1	Internal plastered ceilings and beams	344		
	Prepare surfaces and remove all loose material, apply one coat Plascon Plaster Primer (UC56) filler coat, sand lightly and apply two coats 'Plascon Wall and All (WAA 1) Pure Acrylic' paint :	0		
2	Internal plastered walls	106		
	Prepare Surface And Apply One Coat Primer And 2mm Thick "Marmoran" Resin Bonded Plaster Of Approved Colour Trowelled On In Strict Accordance With The Manufacturers Instructions	0		
3	External plastered ceilings and beams	0		
	ON SMOOTH CONCRETE SURFACES	0		
	Specialist Floor Coating	0		
	Prepare Surface And Apply 4.5mm Thick Sikafloor-21N PurCem Polyurethane Floor coating Of Approved Colour Applied Complete Including Primer Coat, Etc All In Strict Accordance With The Manufacturers Instructions (Product Must Have A 10 Year Guarantee And Certificate To Be Provided After Successful Installation Thereof) On:	0		
4	Power floated concrete floors including any necessary grinding, etc	31		
5	Extra over last for cutting and sealing all necessary joints	3		
	ON WOOD SURFACES	0		
	Two coats wood primer	0		
6	On backs of frames, linings, skirtings, etc not exceeding 300mm wide	47		
	Prepare Surface And Apply One Coat Primer And Two Coats Dulux Pearlglo Paint On:	0		
7	Doors	4		

	Prepare and apply one coat wood primer, one coat universal undercoat and two finishing coats approved gloss enamel paint in strict accordance with the manufacturers specification and instructions	0		
8	On doors	26		
9	Door frames, skirtings , etc	14		
	ON METAL	0		
	Prepare and apply one coat calcium plumbate primer, one coat universal undercoat and two coats high gloss enamel paint in strict accordance with the manufacturers specification and instructions	0		
10	On backs of frames, linings etc not exceeding 300mm wide	4		
11	On door frames, etc	1		
	Apply an approved galvanised iron cleaner to all bare galvanised areas by brush, broom or spray, allow to react for one minute, rinse off with tap water using bristle brooms or brushes or scotch brite pads to remove all surface contaminants, check if surface is water-break free. If not, repeat process. Allow to dry completely. Apply one coat of an approved epiwash stronium primer to achieve a continuous film. Allow 4 hours to dry, Allow 4 hours to dry and apply tow full coats of approved water based to achieve complete obliteration allowing four hours drying between coats all in strict accordance with the manufacturers specification and instructions	0		
12	On metal surfaces, etc	32		
		0		
1	EARTHWORKS	25	0	
2	CONCRETE, FORMWORK AND REINFORCEMENT	29	0	
3	MASONRY	34	0	
4	WATERPROOFING	36	0	
5	ROOF COVERINGS	40	0	
6	CARPENTRY AND JOINERY	43	0	

7	CEILINGS	45	0	
8	IRONMONGERY	47	0	
9	METALWORK	51	0	
10	PLASTERING	55	0	
11	TILING	58	0	
12	PLUMBING AND DRAINAGE	71	0	
13	GLAZING	72	0	
14	PAINTWORK	75	0	
		0		
	SECTION NO. 3 : PROVISIONAL SUMS AND ALLOWANCES	**0**		
	BILL NO.1 : PROVISIONAL SUMS	**0**		
	PROVISIONAL SUMS	0		
	The tenderer's attention is drawn to the fact that all Provisional Sums stated are nett and do not include builder's discount.	0		
	Electrical Installation Including Bulk Supply	0		
	Provide the sum of R600 000 (Six Hundred and Fifty Thousand Rand) for Electrical Installation Including Bulk Supply	0		
	Allow for profit	0		
	Allow for attendance	0		
	Statuatory Signage	0		
	Provide the sum of R35 000-00 (Thirty Five Thousand rand) for Statutory Signage	1		
	Allow for profit	0		
	Allow for attendance	0		
	Roll down canvass cover to specialist detail	0		

	Provide the sum of R95 000 (Ninety Five Thousand rand) for Roll down canvas covers	1		
	Allow for profit	0		
	Allow for attendance	0		
	Braai stands to specialist detail	0		
	Provide the sum of 50 000 (Fifty Thousand rand) for braai stands	1		
	Allow for profit	0		
	Allow for attendance	0		
	Joinery Fittings	0		
	Provide the sum of R150 000-00 (One Hundred and Fifty Thousand rand) for Joinery	1		
	Allow for profit	0		
	Allow for attendance	0		
	Joinery Fittings	0		
	Provide the sum of R60 000-00 (Sixty Thousand rand) for Jungle gym	1		
	Allow for profit	0		
	Allow for attendance	0		
	Budgetary Allowances	0		
	The following budgetary allowances are for work to be executed by the Contractor and paid for in terms of the Conditions of Contract (work is to be remeasured at Bill rates where-ever possible).	0		
	Provide the budgetary allowance of R200 000.00 (Three hundred thousand rand) for Contingencies	1		
1	Empty Bill - System Generated	77	0	
1	PRELIMINARIES	21	0	

2	BUILDING WORKS	76	0	
3	PROVISIONAL SUMS AND ALLOWANCES	79	0	
	Sub Total	0		Sub Total
	VAT	15		
	Grand Total Carried to Form of tender	0		Sub Total

PART B

THIS WHOLE DOCUMENT SHOULD BE RETURNED WITH THE TENDER

EASTERN CAPE PARKS & TOURISM AGENCY

GROENDAL NATURE RESERVE

SPECIFICATION FOR THE

ELECTRICAL INSTALLATION

CONSULTING ENGINEERS:

CLINKSCALES MAUGHAN-BROWN
5 (b) SMARTT ROAD, NAHOON
EAST LONDON

GROENDAL NATURE RESERVE: ELECTRICAL INSTALLATION

ELECTRICAL INSTALLATION

TABLE OF CONTENTS

SECTION 1

TECHNICAL PARTICULARS APPLYING TO THIS SPECIFICATION

1. **STANDARD TECHNICAL SPECIFICATION**

This section of the specification shall be read in conjunction with the relevant clauses of the Standard Technical Specification included as **Section 2: Standard Specification** herein.

2. **ELECTRICAL SUPPLY**

The Groendal Nature Reserve site is composed of two sites in Uitenhage and in Port Elizabeth. This specification is for Groendal Uitenhage. Groendal Nature Reserve site have an existing LV System which operates at 420/230 volts 50Hz. There is an existing pole mounted 200kVA three phase transformer dedicated for the nature reserve. An overhead high voltage Eskom network supplies a pole mounted 200kVA transformer which distributes electrical power via 420/230 volts kiosk. The successful Bidder shall ensure that all equipment and apparatus connected to this system is suitable for these conditions as applicable.

3. EXTENT OF WORK

3.1 This specification covers the following work required: Groendal in Uitenhage.

3.1.1 Conversion of existing area lighting into 6m mounting height BEKA LEDSHINE MORDEN LED POST TOP.

3.1.2 Remove existing light fittings inside the existing ablution facility. Installation of new 12W LED BULKHEAD LUMINARE RANGE – SERIES 30 with white trim ring for the existing ablution facility. The bulkhead luminaire shall be High Pressure die-cast aluminium base.

3.1.3 Raise the height of existing socket outlets to 1400 above ground using galvanized steel 20mm diameter conduit. Socket outlets shall be installed on wooden poles. The existing socket outlets shall be converted into weatherproof socket outlets for outdoor installation.

3.1.4 Installation of light fittings at the new Lapa. The new light fittings shall be the SERIES 30, 12W LED BULKHEAD with black trim ring. All conduit at the new LAPA shall be galvanized steel 20mm diameter size.

4. SWITCHBOARDS

No new distribution kiosk installation is required.

5. SUB MAIN DISTRIBUTION

Existing sub-main distribution board will remain supplying power to the areas to be upgraded in this specification document.

6. CABLE TRAYS

No cable trays are required.

7. **WELDED WIRE MESH BASKET TRAY**

No wire mesh basket tray is required at this tender stage unless instruction from electrical engineer is issued.

8. **SUB CIRCUIT ARRANGEMENT**

No sub circuit installation is required.

9. SCHEDULE OF LIGHT FITTINGS

The following light fittings are required.

Code	Description, Make and Catalogue Number
A	SERIES 30, 12W LED BULKHEAD LUMINAIRE RANGE, HIGH PRESSURE DIE CAST ALUMINIUM BASE with white trim ring for the interior and white trim ring for the interior
B	SERIES 30, 12W LED BULKHEAD LUMINAIRE RANGE, HIGH PRESSURE DIE CAST ALUMINIUM BASE with white trim ring for the interior and black trim ring for the exterior.
C	40W modern LED BEKASHINE POST TOP. The new post top shall be installed on existing 6m mounting height poles.

10. **FLUORESCENT LAMPS**

No fluorescent lamps will be supplied in this contract.

11. **METERING**

Existing metering system to remain. No work is required inside the meter box.

12. **SENSITIVE LIGHT SWITCHES**

12.1 **PHOTO-ELECTRIC DAYLIGHT-SENSITIVE SWITCH**

Area lighting shall be controlled and switched from the photocell.

12.2 **ELECTRONIC TIME SWITCH**

Not Applicable.

13. **LABELLING OF SWITCHBOARDS**

No new switchboards shall be installed in this contract.

14. **BONDING GENERALLY**

All metallic parts of the installation are to be bonded to the earth system as required by the appropriate Regulations.

All iron roofs, corrugated iron, gutters, down pipes, water and waste pipes, as well as all steel structures, are to be bonded to earth. The maximum resistance of any such point to the earthed end of the earthing lead shall not exceed 0.2 ohm.

15. EARTHING

The installation is to be effectively earthed and the earthing is to comply with the Supply Authority, the Standard Specification, and is to be to the satisfaction of the Engineer.

16. TELKOM AND DATA CABLE OUTLETS

Telkom and Data cabling shall not be done under this contract.

17. MANUFACTURERS DRAWINGS

No shop drawings are required in this contract.

18. TOILET EXTRACT FANS (PARAPLEGIC TOILETS)

No extraction fans are required in this contract.

19. LIGHTNING PROTECTION

As per SANS 10313 standards, lightning protection installation is a requirement and a drawing showing the aluminium down conductors, inspection boxes and electrodes or earth spikes will be issued with this specification. Air termination system shall be used. The down conductor to be bonded to metal roof sheet and any conductive metal gutter shall be 8mm diameter solid aluminium conductor. In the inspection box mounted 1m above finished ground floor level, the contractor shall supply and install stainless steel lug to bond and connect the 8mm diameter solid aluminium conductor to 35mm^2 insulated single core copper conductor that terminates at the lightning and earth spike planted 1m away from the building. The 1,5m long, 16mm diameter copper cladded steel electrode / earth spike shall be driven to ground and buried The bidder shall allow for attendance and supervision costs on the accepted supplier. Any building exceeding 30m long, more than one electrode shall be planted. Maximum allowed distance between earth spikes/electrodes is 30m.

20. INSPECTION, TESTING, COMMISSION AND COMPLETION OF WORKS

The requirements of the Standard Specification shall apply.

SECTION 2

STANDARD TECHNICAL SPECIFICATION

STANDARD TECHNICAL SPECIFICATION

1 DEFINITION

In this Part, the term "Contractor" means the person, firm or company whose tender has been accepted for the work specified in the document of which it forms a part.

2 ELECTRICAL SUPPLY AND PHASE ROTATION

The electrical power supply details relative to fault levels, voltage and phase rotation are given elsewhere in this Specification.

The phase rotation specified shall be maintained on all overhead lines, cables, transformers, switchgear and distribution equipment. Where existing connections are to be reconnected to a new system, the phase rotation is to be checked before disconnection and the reconnection made to maintain the same phase rotation.

3 SWITCHING OF POWER SUPPLIES

Any switching of existing power supplies shall be pre-arranged with the appropriate Authority. All possible preparation shall be made in advance, to minimise the time required for re-energising the system. All such switching shall be carried out by the "responsible person" unless such authority is given to the Contractor by that person, in writing.

4 EARTHING AND BONDING

4.1 Resistance Values

Whenever an earth electrode is called for every effort shall be made to obtain an earth resistance value of 1,0 ohm or less. Where ground conditions make this impossible without incurring unrealistic costs the following maximum values will be accepted subject to the approval of the Engineer and unless stated to the contrary in the Project Specification:

Minisub or transformer neutral earthing	10 ohms
Indoor or outdoor switchboard earthing	15 ohms
HV gang links, drop out fuse links	15 ohms
Cradle earthing points, lightning arrestors	20 ohms
Other pole mounted equipment	20 ohms

In the case of the earthing of LV feeder and overhead line neutrals the combined resistance to earth of all systems shall not exceed 10 ohms

Transformer neutral earthing shall comply with the sub-Clause "Transformer Earthing" below.

4.2 General Earth Systems

Unless otherwise specified elsewhere in this Specification, the earth systems for distribution transformers, minisubs and ground or pole mounted switchgear, lightning arrestors, etc. shall generally comprise two earth electrodes with 1,5m long earth spikes located 6,0m apart, linked with 80mm² bare conductor. They are to be located adjacent to pole structures or ends of plinths in the case of minisubs and shall be located at least 1,0m therefrom.

In the case of transformer earthing, if the neutral earth system resistance is not 1,0 ohm or less, two systems as above are to be installed, one for the LV neutral and the other for the tank and associated equipment, in which case they are to be kept at least 6,0m apart and at opposite sides of the transformer position.

The earth system is to be connected with 80mm² insulated earth conductor to the earth bar or transformer tank earth stud as appropriate.

Immediately after installation and before livening up the equipment the Contractor shall test the earth resistance of the earth system, using the respective earth bar or termination as the reference point. If the required value is not obtained, each earth spike, if installed in a sidewalk, shall be increased in length by driving a further length of 1,5m but where located in open ground, two additional spikes are to be installed. These latter spikes are to be perpendicular to the original two, in line with the spike at the point of connection of the insulated earth conductor and each 6,0m therefrom. After installing the additional spikes the earth resistance shall again be determined. The Contractor shall submit a report in duplicate confirming the values measured, including the first set if appropriate, to the Engineer.

Where the number of spikes called for does not achieve the required values, the Engineer is to be advised and will give further instructions for the improvement of the values obtained. Where more spikes are necessary to obtain the required value, these shall not be installed within 6,0m of any other spike.
The common leg of the secondaries of CT's, other than the secondaries of summation transformers, shall be effectively earthed to the main earth system.

4.3 Earth Spikes

Earth spikes shall comprise 16mm sectional steel cored rods with a minimum of 0,25mm pure copper coating molecularly bonded thereto, complying with SABS 1063, and of "Cadweld" or equivalent manufacture. The top of earth spikes and the interconnecting conductors are to be 1,0m below finished ground level.
Under no circumstances are earth spikes to be located closer than 1,0m to any structure or plinth nor are they to be installed in pole holes.
The connections to earth spikes shall be by means of at least two phosphor bronze mechanical clamps of an approved type for this duty, or a "Cadweld" joint. The clamps shall not be attached to the rod but must be installed so that the bolt face is in contact with the rod. Brazing will not be accepted. The connection must be wrapped with two layers of "Denzo" tape.
A cable marker as described elsewhere in this Part shall be installed above each spike and shall be labelled "Earth Spike".

4.4 Earth Continuity Conductors

Earth conductors shall be hard drawn bare copper wire complying with SABS 182 or bi-coloured green/yellow PVC covered, the PVC being UV stabilised complying with SABS 1411 Part 2, as elsewhere specified herein.
The conductor sizes shall be such that they can carry the short circuit current likely to be imposed upon them but generally shall be half the area of the phase conductors with a maximum size of 80mm² or in accordance with the appropriate Regulations, unless specific sizes are given elsewhere in this Specification. 40mm² conductors shall be 7/2,56 HD.
Bare earth continuity conductors shall be run with all cables constituting a low voltage distribution system except in the case of township reticulation where an earth system as described in the sub-Clause "Neutral Earthing" above shall be installed at kiosks, etc.
A single conductor may be used where two or more cables run together, provided that the conductor cross-sectional area is based on the largest size cable in the run, and that branch earth wires are solidly connected to the main earth conductor using only "Cadweld" connections. Earth continuity conductors shall be connected to main earth bars.
Uninsulated earth conductors shall not be less than 500mm below ground level. Above this level all earth conductors shall be green insulated carried in a PVC conduit sleeve except where galvanised conduit is specified elsewhere herein.
A terminal lug shall be crimped onto the end of the main earth conductor for bolting to the main earth bar of a substation or minisub or other outdoor equipment. Two mechanical clamps shall be used for connection onto cradles or other equipment, as appropriate.
Earth connections must not be carried through metal conduits or sleeves, except in the special cases specified elsewhere herein.
Earth connections shall be so made that in the event of any connections being removed the earth connection to the rest of the equipment will not be affected.

4.5 Bonding Generally

All metallic parts of the installation are to be bonded to the earth system as required by the appropriate Regulations.
All iron roofs, gutters, downpipes, water and waste pipes, as well as all steel structures, are to be bonded to earth. The maximum resistance of any such point to the earthed end of the earthing lead shall not exceed 0,2 ohm.

4.6 Bonding of Equipment

Where equipment is bolted together, as in the case of an HV or LV switchgear panel, there is to be a 32mm x 4mm copper earth strap extending the whole length of the equipment. All earth bars shall be run in one continuous length as far as possible, and shall not be bent or formed in any way that requires hammering or severe distortion. Any joints shall be lapped with at least two bolts with nuts and washers of suitable size. The lapped ends shall be pre-tinned. If multiple straps are used, they shall be bolted and fixed together at not more than 750mm intervals. All connections shall be made using brass or stainless steel bolts, nuts and washers, together with a star lock washer, on all kiosks, fused feeder panels, minisubs and outdoor equipment. Connections to indoor equipment may be made with cadmium plated steel bolts, nuts and washers, with a steel spring washer.
All steelwork on a pole is to be bonded using 20mm² solid copper conductor. This requirement applies to cross-arms, all insulator supports and any other hardware. Where equipment is also mounted on the pole, the bonded metal is to be earthed to an earth spike as elsewhere specified herein, using a 40mm² bare copper conductor.

4.7 Bonding of Steel Lighting Poles

Steel streetlight and site lighting poles shall be bonded with a continuous earth continuity conductor of half the area of the phase conductor, but a minimum size of 4mm², laid with the cables. This conductor shall be connected to the pole earth stud. At the last pole in a run the neutral conductor shall be bonded to earth.

4.8 Supplementary Requirements for Building Services

The main earth system is to comply with the Supply Authority's requirements. Earth spikes, mats and conductors shall be installed as early as possible in the building programme, and the onus is on the Contractor to arrange this with the Building Contractor so as to avoid later disturbance of completed construction. Before proceeding, however, the attention of the Engineer is to be drawn to the exact proposals and approval obtained.

Bare earth conductors complying with the requirements of the Wiring Code shall, unless otherwise specified elsewhere in this Specification, be drawn into conduits together with the current carrying conductors, between all main, sub-main and sub-distribution boards. Ends of earth conductors shall be terminated in lugs securely bolted to switchboard frames or trays.

Unless otherwise specified elsewhere in this Specification, bare copper earth wires complying with the Wiring Code shall be run with all socket outlet, water heater, stove and other power outlets. Bare earth wires shall also be run in all ceiling and skirting trunking to bond all light fittings, socket outlets and the trunking lengths themselves. Such conductors shall also be run in all non-metallic conduits. In aluminium trunking, the earth wire shall be insulated with green PVC.

Earth conductors run outside flexible tubing, where this has been permitted, shall be run neatly along the tubing and shall be held in place by approved cable ties. Such conductors shall not be wound around the tubing.

4.10 Dedicated (Clean) Earth Systems

Where Dedicated Earth systems (also referred to as "Clean Earth" systems) are called for, insulated earth continuity conductors shall be installed to all outlets, to provide an earth system which is separate and insulated from the normal earth system except in the main substation where the dedicated earth conductor shall be connected to the main substation earth bar.

Separate (insulated) earth bars shall be provided in DB's for the Dedicated Earth system.

Care shall be taken in installing outlets in metallic powerskirting that dedicated and normal earth systems do not become inter-connected through the outlet cradle.

If the main earth resistance is not less than 1 ohm, a separate earth mat (with resistance less than 1Ω) shall be installed for the Dedicated Earth system.

5 MCB MAIN AND SUB-DISTRIBUTION BOARDS AND CONTROL PANELS

In general, such boards shall comply with SABS 1180 where applicable, or alternatively with BS 5486, and in particular, with the requirements of this Clause.

Larger MCB distribution boards and motor control panels shall be floor standing and arranged for front access unless elsewhere stated in this Specification. Such boards shall be bolted in position. No board shall exceed 2,4m in height nor shall any meter scale, operating handle, button or switch be mounted higher than 1,8m or lower than 600mm from the floor. No part of any equipment shall be mounted closer than 300mm to the floor. Minor types of main and sub-distribution boards and control panels shall consist of sheet metal trays, suitably built in or secured on the surface in the positions shown on the Engineers drawings.

All structural elements of main and sub-distribution boards and the complete construction of motor control panels shall be of minimum 2,0mm thick material. Non-structural elements shall be of 1,6mm material. Minor bonding trays shall be of 1,2mm material and all bonding trays shall be galvanised. All boards to be mounted outside or specified as being weatherproof shall be constructed of 2,0mm 3CR12 sheet, epoxy powder coated to a thickness of 70 microns to SABS 1274.

The boards shall be of the minimum sizes to accommodate all the equipment specified plus future circuit breakers. Where single phase breakers are used in three phase boards, these must be arranged in three vertical rows, one for the breakers in each phase. Space for the nearest whole number above 20% of each type of circuit breaker installed is to be provided for unless otherwise specified. Unless made specifically to clip in from the front, blanking plates shall be fixed with short cadmium plated bolts and nuts. All openings for future equipment shall be covered with blanking plates fixed on the inside of the opening. Sufficient outgoing terminals shall be provided for the future equipment. Cognisance must be taken of the heat dissipated by equipment and adequate ventilation be provided.

Copper busbars are to be provided for each phase and are to be mounted on suitable insulators or fixed to the terminals of the miniature circuit breakers, and be of sufficient length to accommodate future breakers. Busbar and other connections shall be made using cadmium plated steel (or brass in Coastal areas) bolts, nuts, flat and spring washers.

Copper bars are to be used on MCB type main boards. The main neutral feed to the busbar shall be connected by a lug bolted to the bar, as described above. In sub-distribution boards the neutral busbars shall be solid

brass with two per-way pinching screws and sufficient ways for the feed and all the circuits connected, including spare ways to the same number as the spare circuits.
HRC fuses are to comply with SABS 172 and fuse holders, which shall be shrouded, with SABS 173. A spare set of HRC fuses for each switch-fuse unit or set of fuse holders installed shall be supplied and the value included in the tender price, except that a maximum of 6 spare fuses of any one size is required. All spares shall be handed to the Employer's representative at the time of the handover inspection.
The equipment on these boards shall be mounted on chassis behind sheet metal panels with operating handles, toggles and control buttons, etc., only protruding through slots cut in the panels. The isolating device for all motors situated remote from the control panel shall be lockable in the "OFF" position. The panels shall be either hinged or removable for ease of access to the wiring, etc. Securing of panels shall be by means of square key latches with vertical locating pins in the case of fixed panels. Sub-distribution board fascia panels shall have moulded knobs for ease of removal of the panel.
The interior of the boards shall be arranged for easy access to all wiring and components. Transformers for low voltage supplies and all low voltage wiring shall be separated by metal barriers from the medium voltage circuits. Positions of transformers are to be indicated by labels attached to the face of the board.
All equipment on the boards shall be back-connected and no wire or cable shall be visible from the front. PVC insulated wiring shall be used throughout, the current rating being not less than the rating of the circuit breaker or aggregate rating of the bank of circuit breakers which it connects.
Wiring of the boards shall comply generally with the Clause "Control Equipment and Wiring" elsewhere in this Part.
Distribution boards shall be at least 115mm in depth unless otherwise approved. A maximum of two rows of conduit shall enter the horizontal edges of boards and the width of the board must be sufficient to accommodate all conduits so entering. Where boards are installed in 115mm walls, they shall be provided with expanded metal fixed to the entire back of the board. The trays of flush boards shall be built in or suitably secured to the brickwork in the specified places, and shall be installed in good time to prevent delay to the Principal Contractor. Each shall be mounted with the upper edge at a height of 2,0m above floor level, unless otherwise specified.
Unless otherwise specified elsewhere in this Specification, boards contained in cupboards shall be surface mounted and all conduit shall drop into them neatly, vertically and evenly spaced, in a single row, if possible. Metal doors shall only be fitted if so specified.
Unless otherwise specified elsewhere in the Specification, surface and flush boards shall be provided with doors. All control panel doors shall be fitted with dust and damp proof seals. All instruments, meters, pilot lights, etc., and the main isolator must be operable with the doors closed unless otherwise specified. Flush boards in walls shall be provided with a separately attached metal frame and door which is adjustable so that it may be set plumb. This is to be positioned only after preliminary wall finishes adjacent to the board are complete. Doors shall be secured by a neat flush catch. Boards with a width of 600mm or greater shall be fitted with double doors, the left hand door to be secured with brass barrel bolts, top and bottom, which are readily accessible. Hinges shall be "Barker and Nelson" or "Perano".
All metal surfaces of the boards shall be epoxy powder coated to a thickness of 70 microns to SABS 1274 and of an approved quality and colour. No hammertone or similar finishes will be acceptable and the final colour must be readily matchable. Before painting, all boards shall be bonderised or given some similar rustproof treatment to approval. It is the Contractor's responsibility to ensure that when handed over, the board finish is in first class condition. Under no circumstances will boards be accepted if not finished to a first class standard at hand-over.
In the case of MCB Main Boards cabling arrangements shall be such that outgoing feeder ends can be made off with the board live at all times. This shall be provided for by means of a 2,0mm galvanised gland plate in close proximity to the outgoing terminals of the switchgear. All gland plates shall be bonded to the earth bar by means of a 70mm² bare copper conductor fixed with min. 10mm cadmium plated bolts and nuts.
The underside of the board shall be rendered vermin proof by means of similar plates to the gland plates above.
Where boards are to be mounted in damp situations or where otherwise specified elsewhere in this Specification, black heat anti-condensation heaters are to be fitted. The heaters are to have a separate protective device and are to be so constructed and fitted that they cannot be inadvertently touched. The heater rating is to be such that it will maintain the board at a suitable temperature to prevent the occurrence of condensation while not rising to an excessive temperature.
Boards shall be labelled in accordance with the Clause "Labels and Notices" elsewhere in this Part.

6 LV CIRCUIT BREAKERS

6.1 General

The supply voltage, normal current, fault capacity and type, as well as any special characteristics required of circuit breakers, shall be as stated elsewhere in this Specification.

All main circuit breakers shall be equipped with adjustable instantaneous magnetic and inverse time delay thermal overload releases on each phase and shall be arranged for flush mounting. They shall be connected to the busbars with solid copper connections of adequate section to resist short circuit stresses that may be imposed by faults up to the maximum rupturing capacity of the breaker.
Where circuit breakers are used to control supply taken directly from the Supply Authority, they shall be of a make approved by that Authority, and shall be set to trip within the specified limits laid down by that Authority.
Unless otherwise stated in the Project Specification, ACB's shall be provided with electronic protection units with the following features:

I. Inverse-time overload protection

II. Instantaneous short-circuit protection (adjustable)

Incomers shall incorporate the above plus selective short-circuit protection with adjustable time delay.

7 CONTROL EQUIPMENT AND WIRING

7.1 Time Switches

All time switches shall be mounted in an accessible position for ease of adjustment, and shall be provided with re-chargeable nickel cadmium batteries to provide up to 48 hours of operation should a power failure occur.
Time switches shall have a crystal controlled stepping motor and be able to perform 48 operations per day with a minimum interval of 30 minutes. A manual override facility must be provided.

7.1.1 General Purpose:

Time switches shall have a crystal controlled stepping motor and be able to perform 48 operations per day with a minimum interval of 30 minutes. A manual override facility must be provided. A suitable time switch would be "Heinemann" type SAT-R.

7.2 Low Voltage Transformers

Bell and other low voltage transformers shall be of the double wound type having the secondary voltage specified and shall have an adequate capacity for the duty required but, in any case, not less than 50VA on short-time rating. The transformers shall comply with SABS 743 and shall have one end or the centre point of the low voltage winding earthed.

7.3 Contactors

Contactors shall, unless otherwise specified, comply with SABS IEC 947 for current making and breaking Category AC1 for non-inductive loads and Category AC3 for inductive loads.

7.4 Earth Leakage Protection Units

Earth leakage protection units shall be single or three phase, as indicated, with a sensitivity of 30mA, unless stated to the contrary elsewhere in this Specification or on the drawings. The unit shall actuate a shunt trip isolator or MCB as specified. The earth leakage units shall comply with SABS 767 and shall carry the SABS Mark to ensure that they comply with Compulsory Specification VC 8035 promulgated in Government Gazette No 10987.

7.5 Pilot Lights

Pilot lights are to be either cluster LED, neon, transformer or resistor reduced wattage type. Under no circumstances will 230V pilot lamps, except in the case of neon, be accepted. Care shall be taken to select pilot lights which can be easily seen when operating in normal daylight. Where pilot lights are connected to remote equipment by multi-core control cables neon lamps shall not be used because of the inductive effect of the control cores. 100% spare lamps are to be provided for all pilot lights.
Unless otherwise specified elsewhere herein, in motor control and other multiple control panels pilot lights are to be controlled by an adjustable timer to limit the duration of operation from 1 to 5 minutes. The timer is to be activated by a suitably labelled push button mounted on the face of the panel. In such cases lamp test facilities, with the test button mounted adjacent to the button described above, must be provided.
Pilot lights are to be of the colours indicated below, unless elsewhere specified.

Power on -	Amber
Fault -	Red
Run -	Green

Pilot lights indicating "STARTER CLOSED" and "OVERLOAD TRIP" shall be fitted to all motor circuits.

7.6 Hour Meters

Hour meters shall be of the digital type reading up to 99999 hours. They shall be suitable for 230V, 50Hz. AC operation.

7.7 Duty Selector Switches

The control of all items of equipment which can act as standby to each other must include a duty selector switch to enable the lead duty to be selected as well as second and third preference, i.e. 1,2,3; 2,3,1; 3,1,2 for a three motor system.

7.8 Hand/Off/Auto Switches

A hand/off/auto switch shall be fitted to each starter subject to automatic control. The hand control circuit, which shall comprise stop-start push button, shall be fed from a fuse other than that for the automatic control system.

7.9 Relays

All relays and timing relays are to be of Sprecher and Schuh, Telemecanique, Moeller Electric, or approved equivalent manufacture. Each relay is to be numbered and this number must appear on both relay and adjacent to its respective base in the case of the plug-in type. All adjustable timing relays must be labelled with their function.

7.10 Photo-electric Controls

Photo-electric switches shall be of the fully electronic type complying with SABS 1777 and shall bear the SABS mark. Suitable units are manufactured by Royce Thompson Limited.

The sensing unit shall be a solid state silicon photo-diode or photo transistor capable of providing consistent switching levels over the life of the unit. Switching shall be fully electronic or by means of a sealed relay capable of switching the controlled circuits directly or via a suitable contactor with a 230V operating coil. The sensor and switching device shall be housed within a tough, translucent, weather and ultra-violet resistant cover.

The operating level shall be factory pre-set to switch on at approximately 50 lux and off at approximately 100 lux. The unit shall provide an operating delay to make it insensitive to short duration changes in light levels. The response time after sudden changes in light level shall not be less than 15 seconds.

Integral protection against voltage surges shall be provided.

The control unit shall be of the plug in type with a NEMA base suitable for outdoor use fixed to a pole or to a building structure.

The photo-electric switch shall be positioned in such a way that it will not be affected by spill-light from the lighting installation or by vehicle headlamps.

7.11 Main and Control Circuits

All control equipment shall be mounted in a separate hinged panel fitted with square key latches to permit ease of access to terminals, etc., at the rear of the panel. Where busbars are located directly behind such panels, a separate removable insulated panel shall screen them.

All wiring shall be carried out using suitably rated, colour coded insulated wire. Internal wiring to and from contactors shall be sized according to the contactor Manufacture's recommendation for the duty selected.

All main terminals are to be connected in strict phase rotation. Wires shall not be joined between terminal points and no terminal shall have more than two wires connected to it unless they are lugged connections. Spare terminals are to be provided to accommodate all spare control cable cores. All terminals shall be either bolted or screwed. All terminals for wires smaller than 16mm² shall have pressure plates. All terminals for the connection of external control wiring shall be of the "disconnect" type.

All terminations shall be fitted with numbered ferrules, the numbers corresponding to those on the appropriate wiring diagrams to be prepared by the board Manufacturer. All terminal strips are to be similarly numbered.

Generally, wiring shall be enclosed in strategically placed plastic wireways. Small numbers of wires to remote positions may be neatly strapped, using plastic buckle clips or hard plastic "loom formers". Where wiring is run to equipment mounted on hinged doors, the wiring shall be carried in a plastic "loom former" which is so installed that the wiring is not strained with the door fully open. The colour of all panel wiring shall comply with the following:-

Colour Of Wire	Circuit Particulars
Red, White and Blue	Phase connections in current and voltage transformer circuits and in all three phase circuits.
Green/Yellow bi-colour	Insulated earth wires.
Black	Neutral connections.
Grey	Control connections.
White	Connections in DC alarm circuits.

All control circuits shall have 5A HRC fuse protection.

7.12 Labelling

All control equipment both within the panel as well as all projecting items, are to be labelled in accordance with the Clause "Labels and Notices" elsewhere in this Part. Any device which can be unplugged is to be labelled at the base and on the device.

8 CABLES

8.1 Description

PVC insulated cables for LV shall be to SABS 1507 and shall consist of PVC insulated conductors, PVC bedding, galvanised steel wire armouring and a PVC sheath.

The abbreviation for this type of cable is PVCAS.

The sizes indicated are for cables with copper conductors unless otherwise specified. For LV systems aluminium conductor cables may be offered as an alternative, if a price advantage can be shown. In such cases both the resistance and current carrying capacity of the aluminium cables offered must compare suitably with the sizes of copper conductor indicated. Where cables offered are other than those specified, Scheduled Rates for the supplying, laying, jointing and termination of the cable shall be entered in "Departures from the Specification". The Contractor will be responsible for advising equipment suppliers of the type of cable termination required if a cable other than that specified is accepted.

8.2 Cable Lengths

All scheduled cable lengths are for tendering purposes only and the Contractor shall measure the actual lengths required before ordering.

The length of all cables will be re-measured after installation and the lengths indicated in the Schedule of Quantities will be adjusted accordingly. The Contractor will be paid for the actual lengths measured on site and any allowance for snaking, joints or ends must be incorporated in the unit price.

8.3 Handling of Cables

Particular care shall be taken in handling drums of cable. Cable drums shall not be dropped or allowed to roll unchecked. The drums shall, under no circumstances, be rolled in any direction other than that indicated by arrows thereon.

When running cable off a drum, it shall be properly and securely mounted so as to rotate without difficulty and the spindle supporting it shall be straight, horizontal, supported at both ends and of adequate strength. Cable shall only be removed from the drum by rotating the drum. The inner end of the cable shall be released before running any cable off the drum.

Care is to be taken to ensure that each length of cable is run off the drum sequentially so that a crossed core situation does not arise at joints.

8.4 Cables fixed to Surface

Where cables enter flush boards from cable sleeves, the sleeve shall turn up to floor level and a duct shall be formed in the wall to accommodate the cable. Care shall be taken to ensure that the bending tolerance of the cable is not exceeded in drawing the cable into the sleeve. The duct shall be of sufficient size to accommodate the cables. The edges of the duct are to be lined with timber battens to which a bevel edged metal cover is to be screwed, using countersunk headed screws and cup washers.

Wherever cable saddles or any other items are to be fixed to structural components, the use of dry plugs of wood will not be permitted. 'Rawlplugs' or other plugs to approval only shall be used. Surface mounted cable protection pipes shall be galvanised and shall be fixed with saddles of 32mm x 3mm galvanised strap bolted to the wall using bolts grouted in, 'Rawlbolts' or similar. All cables rising on the outside of buildings or on poles shall be protected by such pipes to a height of 2,0m above ground level. Where a cable is installed fixed to a pole, it shall be attached to the pole using stainless steel "Bandit" strap or equal. Care shall be taken to ensure that the straps are tightened correctly and that they do not distort or indent the cable sheath.

8.5 Cables in Sleeves

Cables shall pass in and out of buildings and under roadways and pavements in sleeves. In addition, where cables cross or run along a boundary between two plots, these cables shall, where called for, be installed in sleeves. All sleeves shall be installed in accordance with the Clause "Sleeves" elsewhere in this Part.

8.6 Cables laid in Trenches

HV cables shall generally be laid 800mm and LV cables at 500mm below ground level. Where two HV cables are run in the same trench, they shall be laid a minimum of 300mm apart with separate cable slabs over each cable. Where HV and LV cables are laid in the same trench, the HV cable shall be located on the road side and the LV cables on the plot side of the trench. A horizontal distance of not less than 400mm shall be maintained between the cables of different voltage groups. Where a number of LV cables are run in the same trench, they shall be laid with a minimum separation of 100mm. This applies to feeder cables only and not streetlighting and service cables which shall be only 25mm apart. Cables shall not cross each other.

Where cables run across erven parallel to lateral boundaries, they shall be located 1,0m from the boundary at a depth of 1,0m. If so specified they shall be run in sleeves, otherwise both HV and LV cables shall be protected by cable slabs and a PVC sheet marker laid 300mm above them.

The trench bottom shall be cleared of all sharp or protruding stones. The trench is then to be refilled with 150mm of soft material and compacted. A further layer of soft material shall be installed after the cables are laid to provide 200mm cover for the cable when compacted. Protective cable slabs a minimum of 50mm thick x 230mm wide shall then be laid in the case of HV cables, and PVC sheet cable marker strip 450mm wide with indelibly printed warnings every 150mm along its length, in the case of LV cables. In cases where HV and LV cables run in the same trench, 100mm of soft bedding for the LV cables shall be situated above the protective cable slabs. Where LV service cables or streetlighting cables only are installed, a clean trench bottom and soft material back-fill only is required, and no PVC sheet marker.

The soft material described above may be either sand or backfill material sifted through a 3,0mm mesh grid. Where the bottom of the trench consists of only soft sandy material, the bedding underneath the cable shall be omitted and the cable shall be laid on the trench bottom at the correct depth. Permission must be obtained

from the Clerk of Works or the Engineer for the cable bedding to be omitted in such instances. Where sand has to be brought to site, the quantity must be measured and confirmed by the Engineer or Clerk of Works.
The balance of the trench is to be back-filled with excavated material from which all stones, etc. greater than 100mm in size have been extracted. All such material is to be removed from site.
Cable route markers shall be provided for all HV and main LV feeder cables at road, culvert and Telkom cable crossings, at all changes of direction, at joints and at intervals not exceeding 60 metres along the straight. Cable route markers shall comprise concrete blocks in the shape of truncated pyramids 300mm high, 150mm x 150mm at the top and 225mm x 225mm at the base. An aluminium plate 3,0mm thick minimum, with four rods 75mm minimum, welded to it on the underside, shall be cast into the top of the concrete block, and the plate shall have stamped on it the cable data and direction arrows, and at a crossing, the crossing shall be indicated.
The cable route markers shall be placed over the cable, in the trenchway, and shall protrude 25mm above the finished ground level but not where they are likely to cause an obstruction or be in the way of moving traffic. Joint markers shall indicate as such. The Contractor shall ensure that the ground under and around the cable marker is properly compacted.

8.7 Laying of Cables with other Services

Where cables are laid in trenches containing water and other pipes, etc., the Contractor shall arrange with the Civil Engineering Contractor and Engineer, to lay the electrical cables along one edge of the trench with the other services occupying the other edge. The cables shall be laid not less than 600mm from such service unless otherwise approved by the Engineer.
At road and services crossings, sleeves as described elsewhere herein shall be provided, one for each HV cable and a separate sleeve for other cables, unless otherwise indicated on the drawings.
At Telkom cable crossings, power cables shall cross 300mm below and at right angles to all such cables or sleeves for future cables. The power cables shall be enclosed in asbestos cement split sleeves with cable slabs over, both of which shall extend 1,0m either side of the crossing. The two sections shall be firmly fastened together with robust stainless steel straps. The full length of all such sleeves shall be covered by cable slabs installed 150mm above the sleeve. No power cable running parallel with a Telkom cable shall be laid within a distance of 1,0m measured horizontally from the Telkom cable. Wherever existing buried Telkom cables are encountered, strict precautions and care shall be taken and close supervision given. Any damage to, or disturbance of Telkom cables whatsoever shall be immediately reported and confirmed in writing to the Engineer.

8.8 Labelling of Cables

All cables shall be labelled with 3mm high letters punched onto aluminium tape attached to the cable with aluminium wire. The label shall state the cable size and number of cores. All main feeder cables shall also be labelled to state from whence they are supplied. The labels shall be so installed that they are easily readable.

9 CABLE TRAYS

These consist of two basic types, i.e. perforated and folded or wire mesh comprising Light, Medium and Heavy Duty. The actual type and duty required, and the finish if not as set out below, are specified elsewhere in this Specification.

9.1 Perforated and Folded Trays:

Light duty 'Marine' tray shall be manufactured from pre-galvanised perforated sheet steel. The minimum material thickness shall be 1,0mm for tray widths not exceeding 150mm and 1,2mm for widths not exceeding 300mm. Turned-up edges shall not be less than 12mm for tray widths not exceeding 230mm and 20mm for widths not exceeding 300mm. Maximum spacing between supports shall be 1000mm.
Medium duty 'Standard' or Marine tray shall be manufactured from 1,2mm thickness perforated sheet steel with turned-up edges of not less than 12mm for tray widths not exceeding 100mm, and 19mm for tray widths not exceeding 600mm. The tray shall be hot-dip galvanised after manufacture. Maximum spacing between supports shall be 1200mm.
Heavy duty 'Heavy Duty' tray shall be manufactured from 2,5mm thickness perforated sheet steel and shall have turned up edges of not less than 75mm. The tray shall be hot dip galvanised after manufacture. Maximum spacing between supports shall be 2400mm.

9.2 Wire Mesh Trays:

Medium duty tray shall be manufactured from 4,0mm wire and shall have turned-up edges of not less than 50mm. The tray shall be hot dip galvanised after manufacture. Maximum spacing between supports shall be 1500mm.
Heavy duty tray shall be manufactured from 4,0mm wire and shall have turned-up edges of not less than 75mm. The tray shall be hot dip galvanised after manufacture. Maximum spacing between supports shall be 1500mm
Splicing pieces, bends and tee pieces shall be provided to suit the cable tray system. These shall be of an approved make conforming to the width and quality specification of the particular cable tray being used.
Trays are to be installed in accordance with the Manufacturer's recommendations, supported in such a way that they are carried on cross members cantilevered from a vertical support so that cables do not have to be

threaded between the supports. Trays on walls are either to be carried horizontally on right angled brackets or fixed vertically to the wall. All hardware, support brackets, etc., shall be hot-dipped galvanised. Support brackets shall be spaced so that a sag of 1/200 is not exceeded with the tray fully loaded. Further, the maximum spacing limit specified above shall not be exceeded.

Where trays are likely to be damaged because of their proximity to a working area and could therefore be stepped on or similarly abused, they are, if at all possible, to be installed out of the way of such abuse. Where this is not possible, only heavy duty tray is to be used and additional longitudinal support in the way of angle iron of suitable size is to installed.

Where the width of cable trays is unspecified elsewhere in this Specification, they shall be sized to accommodate 20% more cables than the number presently to be installed on the basis that the future cables will be of the same average size.

Unless otherwise specified, all cables over 16mm² are to be spaced at least 12mm apart. Where cables are laid flat on trays, fixing is required for all cables larger than 16mm² using heavy duty nylon cable ties. Where fixed in the vertical plane, all cables are to be strapped to the trays using stainless steel strapping applied with an approved tool. This also applies to single cables fixed to trusses or other parts of the structure and to all cables fixed to cable trays in a physically vulnerable situation.

10 CABLE JOINTS AND TERMINATIONS

10.1 General

Cable jointing and termination shall be carried out by a qualified cable jointer using only approved standard methods for the particular type of cable. Proof of his training may be required.

Joints in all cables shall only be made at full drum length intervals, but where necessary and when approved by the Engineer cable through joints may be used in other approved positions.

Where a cable has steel wire armouring all strands of armouring shall be through jointed.

10.2 Connections

Cable connections shall be made by means of crimped or sweated lugs, firmly bolted, one plain and one lock washer being placed under the nut, so that the plain washer is against the lug and there shall be no washer between the lug and the terminal. A plain washer is also required under the bolt head. Alternatively, sweated stems fitting into clamp connections will be acceptable.

Crimped lugs shall be fitted using manual tools up to 70mm² and hydraulic tools from this size upwards. Approved tools are to be used in both cases. An hydraulic tool is to be used on all sizes of aluminium cable. Where a single point hydraulic crimping tool is used, the lug shall be crimped in three places. Where a hexagonal die is used, this shall extend the full length of the lug.

Where aluminium cored cables are to be connected to circuit breakers, the aluminium cable lug shall be bolted to a copper tag or tail which is to be connected to the circuit breaker. The Contractor shall ensure that sufficient Densal paste is installed on the faces of the lugs.

Where an aluminium cable is to connect to copper, the lug shall be a bi-metal type lug with a copper spade and an aluminium ferrule friction welded to the spade.

Cable connections shall be made using brass bolts, nuts and washers, together with a star lock washer, on all kiosks, fused feeder panels and minisubs and with cadmium plated steel bolts and nuts on all indoor equipment. All bolted joints shall be taped with self-vulcanising (not adhesive) tape.

Where cable connections are required to the HV and LV terminals of transformers, these shall be made off as follows:-

Red Phase to Terminal A

White Phase to Terminal B

Blue Phase to Terminal C

All transformer connections shall be kept in strict phase rotation and where two or more units are to operate in parallel, the respective connections are to be checked for phase rotation and polarity. In the case of cable terminations to transformer bushings the cable itself shall be clamped substantially to a post adjacent to the transformer, connections to the bushings being puttied and taped.

All connections are to be colour coded.

10.3 LV Cable Terminations

PVCAS cables shall be made off using adjustable mechanical glands. Care shall be taken to ensure that armour wires are correctly seated in the gland and that all parts are properly tightened. Outdoors, in damp situations and in all minisubs and kiosks, neoprene waterproofing shrouds are to be fitted over all glands.

Where cable connections from minisubs and kiosks to consumers and street lighting are excluded from this Contract, the Contractor shall, nevertheless, ensure that sufficient space is left on the gland plate for the future cables.

Wherever PVCAS cables are terminated to overhead lines a suitable moulded heat shrinkable glove to effect a watertight seal at the crotch shall be used, in accordance with the Manufacturer's instructions. Alternatively, a PVC cable cap may be used.

10.4 Service Cable Terminations

Service cable ends are to be located in the positions indicated on the drawings. In the general case, the ends are to be located 1,0m from each of the front and lateral boundaries. Where they cross the road in sleeves they are to be located 1,0m into the erf directly opposite the sleeve.

No service cables are to be laid to erven directly behind kiosks or at pole positions.

The cables are to be left sealed with a heat shrink cap at a depth of 500mm. Before sealing, each cable is to be checked by the Contractor, in the Engineer's presence if he so decides, to ensure that it is correctly located and labelled at the respective kiosk or pole.

After checking and sealing and while the end of the connection is still exposed, marker posts shall be installed at the end of the connection and vertically above it. The posts shall be manufactured from Y-section fencing standards 1,5m long, split for 75mm at the base and cast into minimum 200 x 200 x 100mm concrete blocks made from the same mix as specified in the Clause "Plinths" elsewhere in this Part. They shall be installed such that 500mm protrudes above ground. Each post shall have a 150mm wide red band painted at the top using an approved exterior enamel paint.

11 CABLE TESTING

On completed sections of laid, jointed and terminated HV cables, a high voltage DC test of 15 minutes duration shall be carried out by persons qualified to make such tests.

Contractors must note that where such tests will include sections of cable which have already been in service, the test voltages and duration are to be reduced in accordance with the Engineer's instructions.

Cable tests shall be in accordance with the following:

PILCA cables	-	SABS 97, Annex A-3.3
XLPE cables	-	5000V megger test between cores and to earth unless additional tests are ordered by the Engineer, or are called for elsewhere in this Specification.
Method	-	SABS 0198 : Part XIII

CABLES FOR EARTHED SYSTEMS
(Based on SABS 97: Table A-2)

TYPE	PVCAS 2	BELTED		SCREENED		XLPE[3]	
Rated Voltage	600/1000	11000	22000	11000	22000	11000	22000
Between conductors - DC	3kV	31kV	60kV	-		18kV	36kV
Conductor to screen - DC	-	-	-	19kV	36kV	18kV	36kV
Conductor to earth - DC	3kV	19kV	35kV	19kV	36kV	18kV	36kV

12 STREETLIGHTING

12.1 General

Streetlighting poles and luminaires to be installed under this Contract, including the type, mounting height, outreach dimensions, quantities, etc., are detailed elsewhere in this Specification. All poles offered shall conform in all respects to the requirements of the Occupational Health and Safety Act, where applicable, and to SABS 0225, Code of Practice for the Design and Construction of Lighting Masts. In particular they shall comply with the requirements regarding design wind loadings and factors of safety. Unless otherwise specified in the particular specification, poles shall be designed for terrain Category 2 locations using a basic 3 second gust speed for the locality of the site as given in SABS 0225, Figure 1.

Poles shall have neat flush access openings with the centre of the opening approximately 500mm above ground level and the bottom of the opening not less than 350mm above ground level. The opening shall have radiused corners and shall be adequately sized to facilitate installation of the specified electrical equipment. The minimum size shall be 140mm x 355mm, unless otherwise specified below or in the particular specification.

[2] Test only when specifically called for

[3] Obtain instructions from the Engineer before testing.

The opening shall be provided with a neat flush weatherproof door fitted with a tamper proof locking device designed to secure the door firmly in position and prevent unauthorised access into the base compartment. Where screws are used to fix the access door these shall be of the Allen Head countersunk type and shall be captive in the cover plate. They shall be fabricated from stainless steel or other approved corrosion resistant material. Electro-plated mild steel screws are not acceptable.
Where the streetlighting installation comprises an extension to an existing installation using similar equipment, the locking device shall be similar to the device used on the existing poles. Access door keys shall be interchangeable and no additional keys or special tools shall be required to gain access into the base compartment.
A minimum of four keys shall be supplied to the Employer on completion of the installation. A receipt shall be obtained from the Employer for these keys and a copy of this receipt shall be submitted to the Engineer with the final progress claim.
A 22mm thick hardwood fixing block shall be fitted within the base compartment opposite the access opening. The width of this block shall not be less than the width of the access opening or 125mm, whichever is less. The length shall be 380mm.
On steel poles a threaded 12mm earth stud shall be provided in a convenient position in the base compartment to facilitate earthing of electrical equipment. One of the bolts used to fix the backboard may be extended through the board to provide this facility. In such cases two extra nuts, separated by one plain and one star washer shall be provided to clamp earth connections.
On concrete or glass fibre poles fitted with galvanised steel access opening covers, a stainless steel earthing stud complete with washer and two nuts shall be provided on the inside of the cover to the access opening.
Where control gear is to be mounted in the pole base compartment it shall be the Contractor's responsibility to ensure that the dimensions of the base compartment and access opening are adequate, notwithstanding the minimum dimensions specified herein.
Poles shall have 100mm x 75mm cable entry slots in the ground section on each side located 400mm below ground level. All sharp edges shall be removed.
Spigots shall be provided to suit the luminaires specified elsewhere in this Specification. Particular care shall be taken to establish the exact diameter and length of the spigot or spigots required such that the luminaire fits neatly up against the shoulder formed between the pole and the spigots. Care shall be taken to avoid damage to the spigots during transport, storage and erection.

12.2 Glass Fibre Reinforced Polyester Poles

12.2.1 Material and Construction

Poles shall be fabricated from glass fibre reinforced polyester resin using the filament winding process with a minimum glass to resin ratio of 70 to 30. They shall comply with the relevant requirements of SABS 141: Glass Reinforced Polyester (GRP) Laminates. The material shall be coloured throughout and unless otherwise specified the colour shall be dark grey.
A finishing gel coat with UV inhibitors shall be applied to a uniform thickness of between 250 and 500 microns. The finished surface shall be smooth, tapered and seamless.
Design loadings and strength requirements shall be as set out in SABS 0225.
Poles for planting in earth shall be provided with a minimum 300mm by 300mm by 1,6mm thick hot dipped galvanised steel base plate fixed with two hot dipped galvanised steel hook bolts.

12.3 Quality Assurance

The manufacturer shall have a full quality management programme in place and shall be ISO 9002 accredited.

12.4 Particulars

Full details of each type of pole offered, including drawings giving all dimensions and material thicknesses and copies of design calculations for maximum stresses and deflections, must be included with tenders. A certificate from the pole manufacturer verifying that the pole has been designed in accordance with SABS 0225, or SABS 470 in the case of concrete poles, and complies with the latest requirements thereof shall accompany the design calculations.

12.5 Erection of Poles

Poles shall be planted in the positions indicated on the drawings. They shall be planted absolutely plumb with the outreach at right angles to the carriageway edge.
Should any pole position coincide with trees, building canopies, driveway entrances, overhead conductors or other obstacles, an alternative position is to be confirmed with the Engineer before excavation of the pole hole.
Poles shall be carefully aligned with each other to form straight lines or smooth curves generally following the alignment of the associated roads. The planting depth shall be carefully controlled to ensure that all luminaires will be at the same height above the level of the carriageway.
Care shall be taken when backfilling around the pole to ensure that compaction is even all around the pole and is to the requirements specified in the sub-Clause "Compaction" elsewhere in this Part. Where poles are to be planted in fill material, on ramps, etc., one pocket of dry cement shall be mixed with the backfill material before commencing backfilling and compaction. Subject to the prior approval of the Engineer, this technique shall also be applied wherever it is considered necessary to stabilise the pole due to unsuitable soils, etc.

Where the Contractor feels that this situation exists, he must advise the Engineer immediately and obtain a decision.

The finished ground or paving level shall generally be at the centre of the ground sleeves where these are provided. Where the pole is planted in sloping ground the height shall be carefully adjusted to ensure that not less than 150mm of the ground sleeve projects above ground on the high side and not more than 300mm on the low side. If this is not possible due to the slope of the ground then a platform shall be formed by extending the fill in the vicinity of the pole until this requirement can be met.

Where poles are to be anchored into rock, the base of the pole shall have a reinforced concrete block cast around it. The dimensions of this block shall be approximately 1,25m x 1,25m x 0,5m and the bottom face shall be reinforced by R10 bars at 250mm centres in both horizontal axes. A Y20 bar shall be grouted into the rock for a distance of 300mm. The grouted end shall be straight while the end located in the concrete shall be provided with a hook around the reinforcing bars. Alternatively, 20mm "Rawlplug" or similar duplex studs may be used in place of grouted bars.

12.6 Luminaires

12.6.1 General Requirements

The types and wattages of the luminaires required are detailed elsewhere in this Specification. The lighting design has been based on the photometric performance of the specified luminaires and the tender price must be based on the supply of these luminaires.

Tenderers may also offer alternatives complying with this specification and the requirements set out in Clause 12.6.2 below.

12.6.2 Alternative Offers

Alternative offers based on the use of luminaires other than those specified may be submitted in accordance with the requirements of the Clause "Alternative Offers" in Section A of this Part. Such offers must be accompanied by a complete set of photometric data on the luminaires offered including a disk containing a copy of the data file for use with the SABS098 streetlighting design software. This data file shall be produced by the SABS and shall have the SABS data encryption information embedded within it to enable its source to be verified. Comprehensive details of the construction of the luminaires must be provided as well as a print out of a complete set of design calculations for the geometry shown on the drawings. Calculations shall be carried out using the latest version of the SABS 098 software. The calculation data file shall be copied onto the same disk as the luminaire data file. The disk shall be a 3,5" 1,44mB format.

Alternative offers not meeting the abovementioned requirements will not be considered. Only luminaires producing equal or better road surface luminance values and uniformity ratios than the specified luminaires, when used under the same conditions and in the same geometry will be considered. Unless otherwise stated, the luminaires are to be provided with integral power factor correction capacitors and tapped ballasts with tappings for 95% and 100% of normal voltage.

12.6.3 Standards

In addition to the requirements set out herein, any luminaires offered shall comply with the relevant requirements of the following standards:

SABS 141	Glass Reinforced Polyester (GRP) Laminates.
SABS 1088	Luminaire Entries and Spigots.
SABS 1222	Enclosures for Electrical Equipment
SABS 1250	Capacitors for Use With fluorescent and Other Discharge Lamp Ballasts.
SABS 1266	Ballasts for Discharge Lamps.
SABS 1277	Streetlighting Luminaires.
SABS 1464 (Part 3)	Luminaires for Road and Streetlighting.
SABS 1630	Starting Devices.
SABS VC 8001	Lamp Holders and Lamp Holder Adapters.
SABS IEC 598-1	Luminaires. General requirements and tests.
SABS IEC 922	Ballasts for Discharge Lamps. (General and safety requirements)
SABS IEC 923	Ballasts for Discharge Lamps. (Performance requirements)
SABS IEC 926	Auxiliaries for Lamps. Starting Devices (General and safety requirements)
SABS IEC 927	Starting Devices. (Performance requirements)
SABS IEC 1048	Capacitors for use in tubular fluorescent and other discharge lamp circuits. (General and safety requirements)
SABS IEC 1049	Capacitors for use in tubular fluorescent and other discharge lamp circuits. (Performance requirements)
SABS CISPR 15	Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment.

12.6.4 Materials and Construction

Luminaires shall be Class 1 totally enclosed luminaires complying with SABS 1277 and SABS 1464 and shall bear the SABS mark.

The body shall be constructed from inherently corrosion resistant materials of adequate strength and rigidity. Luminaire entries shall comply with SABS 1088.

Luminaire bodies fabricated from glass reinforced polyester laminates shall comply with the requirements of SABS 141 for Type F laminate products. Luminaires manufactured from a dough moulding compound shall use type E3 complying with the requirements of BS 5734/2. The material shall be coloured throughout and shall be grey to match SABS 141 colour F48. A smooth defect free finish which will not accumulate dirt shall be achieved. The material shall be adequately protected against deterioration due to exposure to UV radiation and shall be designed to provide a normal service life of at least 10 years.

Except where otherwise specified in the particular specification, the control gear shall be mounted within the luminaire body. Unless otherwise approved the control gear compartment shall have a hinged cover.

Control gear shall be easily removed and replaced with the luminaire on the pole. Preference will be given to arrangements where the control gear is mounted on a removable tray which can be replaced as a unit. In such designs the connections to the incoming supply and to the lamp holder should be by means of robust, well designed, plug-in connectors.

The bowl shall be constructed from high impact acrylic, tempered glass or other approved material which is not subject to degradation and discoloration through heat or exposure to UV radiation. It shall have a smooth outer surface designed to limit the accumulation of dirt and shall be attached to the luminaire body in such a way that it provides easy access for relamping and cleaning. No tools shall be needed to open the lamp compartment. When retaining clips are released the bowl shall swing down to allow relamping while remaining attached to the luminaire body. The design of the hinge shall allow easy removal of the bowl, without tools, for replacement or cleaning.

Hinges and retaining clips shall be manufactured from a suitable grade of stainless steel or other approved material.

Reflectors shall be positively located in the body of the luminaire. If they are adjustable to provide different distribution characteristics, the individual position settings shall be clearly marked and easily and positively set.

Lamp holders shall be porcelain types complying with SABS VC 8011.

The lamp compartment shall be gasketted to provide and maintain an IP65 rating in service unless otherwise approved. The control gear compartment shall have a minimum IP23 rating.

All nuts, bolts, washers and screws shall be manufactured from corrosion resisting materials and where in contact with aluminium or other non-ferrous metals they shall be manufactured from a suitable grade of stainless steel.

12.6.5 Control Gear

Control gear shall be designed specifically to operate the specified lamps.

Ballasts shall comply with SABS 1266 and SABS IEC 922 and 933 and shall bear the SABS mark. Connections shall be brought out to suitable terminals on the ballast base plate. Unless otherwise indicated in the particular specification, ballasts shall be provided with tappings for 95% and 100% of normal voltage.

Capacitors shall comply with SABS 1250 and SABS IEC 1048 and 1049 and shall bear the SABS mark. The operating power factor at rated voltage shall not be less than 0,85 lagging.

External ignitors shall be provided for all high pressure sodium and metal halide lamps exceeding 70 Watts in rating. They shall be of the superposed pulse type complying with SABS 1630 and SABS IEC 926 and 927.

Where called for in the particular specification, luminaires rated 125 Watts or less shall have a 5A, 2,5kA MCB mounted in the control gear compartment and wired into the incoming phase conductor. The switch shall project through a cut-out in the cover such that it may be operated from outside the luminaire.

12.6.6 Light Distribution

The design of the luminaire optical system shall provide a non-axial asymmetric luminous intensity distribution complying with the requirements set out below. The particular specification will indicate whether a cut-off or semi-cut-off distribution is required, either explicitly, or by specifying a particular make, model and type of luminaire. Any alternatives offered shall have the same distribution characteristics.

Semi-cut-off luminaires shall limit the direction of the peak intensity to a maximum of 75° to the downward vertical. The intensity at 90° to the downward vertical shall be of the order of 50cd/klm with a maximum of 1000cd. The intensity at 80° to the downward vertical shall of the order of 30cd/klm.

Cut-off luminaires shall limit the direction of the peak intensity to a maximum of 65° to the downward vertical. The intensity at 90° to the downward vertical shall be of the order of 10cd/klm with a maximum of 1000cd. The intensity at 80° to the downward vertical shall of the order of 30cd/klm.

12.6.7 Labelling

Self adhesive foil labels shall be fixed to the underside of the control gear compartment cover such that they are readily visible from the ground. The label shall identify the type and wattage of the lamp using black 40mm high lettering on a light orange background for sodium lamps, a strong blue background for mercury vapour

lamps and a white background for metal halide lamps. The letter "T" after the wattage shall be used to distinguish tubular lamps from elliptical lamps.

12.7 High Intensity Discharge Lamps

12.7.1 General

All luminaires shall be supplied complete with the specified type and wattage of lamp.

High intensity discharge lamps shall be of first class quality from reputable manufactures who have ISO 9002 accreditation. When connected to the supplied control gear they shall be suitable for operation on either a 230V ±10%, 50Hz supply or, where specifically called for, a 400V ±10%, 50Hz supply.

12.7.2 Standards

All lamps supplied shall comply with the following standards or equivalent and approved international standards, as appropriate:

SABS IEC 662	High Pressure Sodium Vapour Lamps.
SABS 1421	High Pressure Mercury Vapour Lamps.

12.7.3 Materials and Construction

Lamps shall be robust and suitable in all respects for the intended duty. The arc tube shall be accurately located in the outer envelope and lamps with the arc tube not concentric with the lamp envelope will be rejected.

The base shall be secured to the glass envelope using a high quality heat resistant cement which will keep the base securely fixed to the glass envelope throughout the life of the lamp.

Where phosphor coated lamps are called for the coating shall be uniform and shall provide the required spectral distribution.

12.7.4 Lamp Data

Lamp data sheets shall be submitted with tenders. As a minimum they shall provide the following information.

Guaranteed minimum lumen output at 100h and at 1000h.

Lumen maintenance and lamp mortality curves.

Spectral distribution and colour temperature.

Colour rendering index or group.

Minimum guaranteed life.

Life to 50% failures

12.8 Electrical Connections

No cable glands or gland plates are required for the termination of PVCAS cables in streetlighting poles. The cable shall be brought up to a convenient position adjacent to the lower section of the access opening. The outer PVC sheath shall be stripped back and the steel wire armouring pulled away from around the cables, twisted into compact tails and bonded together by means of an adequately sized line tap. All the strands of the armour wires shall be used. Cutting away of part of the armouring is not acceptable

A separate earth conductor shall be taken from this line tap to the earth stud in the pole base compartment.

Phase and neutral conductors shall be jointed using Pratley end connectors fitted with insulating sleeves.

Except where an integral circuit breaker is called for in the luminaire or where otherwise specified elsewhere in this Specification, the phase conductor to the luminaire control gear shall be protected by a CBI type "ST1", 20A streetlight MCB attached to the hardwood block.

Where luminaire control gear is to be mounted in the pole base compartment, it shall be firmly secured to the hardwood block above the MCB. The earth stud on the control gear housing shall be connected to the earth stud in the pole base compartment.

Phase and neutral conductors between the pole base and luminaires shall be 2,5mm² PVC insulated unless otherwise specified in the Project Specification. These conductors shall be coiled into a helical spring shape at least 100mm long immediately above the terminals in the base compartment to provide the flexibility to accommodate expansion and contraction and pole movements.

The phase to which each luminaire is to be connected may be indicated on the drawings. It is essential that this arrangement is strictly adhered to.

12.9 Photo-Electric Controls

Where called for elsewhere in this Specification, a photo-electric control unit shall be used to switch the streetlighting installation. Such control units shall comply with SABS 1777 and shall bear the SABS mark.

Photo-electric switches shall be of the fully electronic type. The sensing unit shall be a solid state silicon photo-diode or photo transistor capable of providing consistent switching levels over the life of the unit. Switching shall be fully electronic or by means of a sealed relay capable of switching streetlighting circuits directly or via a contactor with a 230V operating coil. The sensor and switching device shall be housed within a tough, translucent, weather and ultra-violet resistant cover.

The operating level shall be factory pre-set to switch on at approximately 50 lux and off at approximately 100 lux. The unit shall provide an operating delay to make it insensitive to short duration changes in light levels. The response time after sudden changes in light level shall not be less than 15 seconds.

Integral protection against voltage surges shall be provided.
The control unit shall be of the plug in type with a NEMA base suitable for outdoor use fixed to a pole or to a substation structure.
Where the photo-electric switch is pole mounted it shall be positioned in such a way that it will not be affected by spill-light from the streetlighting installation or by vehicle headlamps. Where possible it should be mounted on a substation or at the rear of a minisub.

12.10 Completion and Testing

Immediately after completion of the installation the streetlighting system shall be switched on and lamps allowed to stabilise for at least one hour. Any faulty lamps shall be replaced. The voltage at each luminaire shall be measured and tappings on the ballasts set accordingly.
Before performance testing is carried out, the installation shall be put into service until approximately 100h of operation has been reached. The Contractor shall then replace any early lamp failures and shall arrange for the measurement of lighting levels actually achieved for comparison with the calculated design levels. The date and time for testing is to be prearranged with the Engineer who may wish to be present. This procedure shall be carried out as follows.

1. An illuminance calculation shall be carried out using the SABS 098 design software. Values entered into the data entry form shall be identical to those used for the design luminance calculations except that the maintenance factor shall be set to 100% and the road surface reflectance table shall be set to LUX.RDF in place of the default R3 table.
2. Actual illuminance values shall be measured on the calculation grid points using a suitable and accurate luxmeter. Measurements need only be taken along three longitudinal lines coinciding with the left and right carriageway edges and the centre of the lane nearest to the line of luminaires. The calculated and measured values shall be tabulated and delivered to the Engineer together with a copy of a print out from the SABS 098 software giving the predicted lux values.
3. If the measured values are all within 15% of the calculated values and the uniformity along the three measured lines is within 10% of the calculated uniformity along the same lines then the installation will be considered to be performing to specification.
4. If measured values are not within the tolerances set out above then the Contractor will be required, at his own cost, to take whatever steps are considered necessary by the Engineer to obtain a satisfactory lighting performance.

12.11 Guarantees and Maintenance

The installation shall be guaranteed and maintenance carried out in accordance with the requirements detailed elsewhere in this Specification. Where no other defects or maintenance procedures requiring the Contractor's attention exist, the installation of replacement lamps supplied by the Contractor will normally be carried out by the Employer's maintenance personnel. Where the Contractor is required to carry out lamp replacement during the guarantee period this will be stated in the particular specification. Under no circumstances is any spare equipment or are any spare lamps called for in the particular specification or in schedules of quantities to be used for replacement during the guarantee period.

13 WIRING IN CONDUIT

PVC insulated wire to SABS 1507 and SABS 1574 shall be used and shall be from full coils of fresh stocks delivered to site with the original packing or seals undisturbed. Lighting circuits shall be wired with 1,5mm², socket outlet circuits with 2,5mm² and heater and water heater circuits with 4mm² wire unless otherwise specified. All other circuits shall be wired with the sizes indicated or in accordance with the Wiring Code, as appropriate. All phase conductors shall be coloured red and neutral conductors black.
The ends of all wires, whether single or looped, which have to be connected to the connecting terminals of switches, plugs, holders, fittings and distribution boards, are to be tightly twisted together. Cutting away the wire strands will not be allowed.
The loop-in system is to be adopted throughout any conduit installation and joints will be permitted only in special circumstances and subject to the approval of the Engineer. Such joints shall be made only with approved connectors in approved boxes.
The circuit wiring for different services, e.g. lighting and power, shall be run in separate conduits.
Where switches fed from different phases are mounted adjacent, they must be mounted in separate boxes or a single box with a fixed metal barrier between each switch. Where such switches are on the same circuit, multiple switches in a single box shall be used.
Metal conduit shall be heavy gauge solid lap welded steel to SABS 1065, screwed or plain-end and black enamelled or galvanised, both as specified elsewhere in this Specification. All metallic conduit shall be manufactured from mild-steel with a minimum thickness of 1,6mm in respect of screwed and 0,9mm for plain-end conduit except that when used in concrete slabs, plain-end conduit shall have a minimum wall thickness of 1,2mm and when laid in screed on top of concrete slabs, 1,6mm.

Non-metallic rigid conduit shall comply with to SABS 950. Installation of non-metallic rigid conduit shall be in accordance with Amendment No.2 of SABS 950 Appendix C. Only plastic saddles and compatible fittings shall be used. Earth wires shall be installed with all non-metallic conduits.

With the approval of the Engineer, non-metallic pliable/flexible conduit that is covered by an Authorisation Certificate may be installed in accordance with the requirements of Clause 'Wireways' in SABS-1042.

All conduit fittings for steel conduit shall be malleable iron or pressed steel except for brass bushes. Plastic fittings shall be used with non-metallic conduit. Conduit fittings shall comply with SABS 950 or 1065 as appropriate. The use of inspection tees or elbow pieces and internally screwed solid bends will not be permitted. However, internally screwed solid bends for 40mm and 50mm dia conduit may be accepted in certain circumstances if approved by the Engineer.

All conduit shall, wherever possible, be concealed by being cast in concrete slabs, chased in, built in or run in roof spaces. Where black enamel conduit is called for, this shall be substituted with galvanised when run in non-suspended floor slabs such as ground floor or basement floor slabs. When run in surface beds conduit is to be galvanised and is to be laid in concrete on the surface bed so that it is completely covered.

Conduit cast in concrete shall be fixed at intervals to the formwork, if such formwork is of wood or, if of steel plates, to the steel reinforcing.

Where hollow tile slabs are being used in the structure, as indicated elsewhere in this Specification, back entry conduit boxes shall be used. All outlet boxes for lighting points shall be of the long spout, deep type. Where additional depth of box is required, standard conduit box extension rings, firmly screwed to the box, shall be used.

Where structural expansion joints occur, conduits shall, as far as possible, be laid to avoid crossing the joint. When crossings are unavoidable, the following arrangement shall be made. From a drawbox, or the nearest outlet within 4,0m of the joint, conduit of one size larger than necessary for the wire sizes, shall be run straight, and at right angles to the joint, finishing at the joint. Conduit of the required size shall then be passed into this from the other side of the joint, bushed inside the draw-box, but not mechanically connected otherwise. Care shall be taken to prevent concrete from entering the end of the larger conduit. The conduits approaching from both sides of the expansion joint shall be wrapped with two layers of corrugated cardboard from a point 1,0m from the joint. A bare earth wire of the same size as the wiring in the conduit shall be run from the drawbox to the next outlet, connecting firmly and solidly to each box. Care shall be taken to exclude the ingress of dirt or moisture to partially completed runs, and all open ends shall be plugged temporarily while work is not actually in progress. The plug may consist of a conduit socket with brass ET plug or conduit fishtail, or purpose made tightly fitting plastic sealing caps. Wooden or paper plugs will not be acceptable.

The Contractor shall take all possible precautions during the construction stages of the building to prevent damage to projecting conduits, etc. In vulnerable positions projecting conduits shall be painted in a bright colour or, if necessary, shielded by a large covering. A responsible workman shall be present at all times during casting of concrete containing conduit work to ensure that the conduitwork is not disturbed by the casting or vibration of the concrete.

Conduit in false ceiling spaces shall be run surface. The conduit into the space shall either extend through the decking or shall be terminated in a back entry box with a coupling inside the box to enable the conduit to be extended when shuttering is removed.

In roof spaces all conduit runs shall be parallel or at right angles to trusses and joists. Where conduits run along trusses and joists they shall not be run or fixed on the top but on the side. Conduit shall lead into and out of back entry conduit boxes at all fitting positions. All such boxes shall be finished flush with the underside of the ceiling and the lighting fittings shall be screwed directly onto the box. Where necessary additional fixing of a fitting and conduit box shall be provided.

At ceiling positions where conduit runs do not have to continue to the next truss (e.g. last point in a row), the conduit shall be extended beyond the box to the next truss. This conduit extension shall be plugged.

Where conduit is run on the surface, it shall be fixed with stand-off saddles, multiple spacer saddles being used for conduits run together. The maximum distance between the saddles shall not exceed 1,5m. Where a conduit box carries a lighting fitting it shall be fixed within 100mm on either side of the box.

Where conduits have to run adjacent to gas or cold water pipes, communication or data circuits, they shall be prevented by spacing or other means from coming into contact with these other services under any condition.

Under canopies, outlets for future signs, etc., which have been terminated in round conduit boxes, are to be blanked off with 75mm dia. galvanised cover plates finished with a zinc plumbate primer. These are to be fitted prior to painting and are to be fixed using cheese headed brass machine screws.

Where conduit enters boards, trays, etc., all burrs around holes shall be removed before insertion. Locknuts shall be used inside and outside, with female bushes inside. Couplings and male bushes shall not be used. The same arrangement shall be used wherever possible for entry into switch boxes, control gear, etc., provided with clearance holes. Where this arrangement does not allow sufficient wiring space, however, couplings and hexagonal male bushes may be used, but must be very tightly screwed up. In the case of multiple back entries into a conduit box, male bushes and couplings are to be used. Care must be exercised when laying conduit in the vicinity of distribution boards of any type to ensure that conduits radiate from these points in order. Under

no circumstances are more than two conduits to cross at any point where cast in concrete and a space of at least 20mm must be left between all conduits both vertically and horizontally after emerging from the distribution point. Careful planning of conduit work can prevent a mass of conduit in the slab, and any re-arrangement necessary to provide an acceptable layout will be at the Contractor's own expense.
Drops to switch and other high level outlets shall be from ceiling while conduit to low level outlets shall be run in the floor unless specified to the contrary. In basements and ground floor areas which are below natural ground level, all conduits to any type of outlet shall drop from ceiling level.
No draw boxes which are not, in themselves, outlets shall be permitted except with authority from the Engineer. Notwithstanding the Wiring Code, if it proves necessary to draw conductors round more than two 90° bends, or the equivalent, or on very long straight runs, draw boxes are required. The maximum length of straight runs between draw boxes shall not exceed 20m. Such draw boxes shall be provided with oversize flat covers fitted flush with the ceiling, fixed with cheese-headed screws..
The Contractor is responsible for checking with the Building Contractor by reference to the drawings on site, of the positions where panelling, tiling, tile edging or dados, etc., may affect the exact positioning of outlets. No allowance for extras will be allowed if boxes have to be moved to comply with the above unless the details are altered after completion of the conduit work. Exact positioning in general means centring outlets on panels, fitting box edges to tile edges, and dropping or raising switch points below or above dados as close to the specified position as possible. Where any doubt arises the Engineer shall be consulted before installation of the outlet. The same requirement applies to the positioning of lighting outlets in false ceilings, with particular regard to fixing fittings to correspond to ceiling panel modules. Ceiling light points are normally either on a centreline between walls and/or beams or spaced evenly with half a unit between wall or beam and the first point. Where outlet positions deviate from this scheme the scaled dimensions to the centre of the symbol are to be taken as the centre of the outlet.
All setting of conduit shall be done with approved tools. No kinks will be accepted. Where necessary boxes with special configurations shall be used to avoid the necessity for too many sets in conduitwork.
The conduit shall be run or erected as far as possible in straight or symmetrical lines, with easy sets or bends. Care shall be taken when installing conduit that cut ends are completely free from burrs and sharp edges which might damage the conductors. All open ends shall be fitted with brass bushes. Composition bushes will not be accepted. All bushes are to be fitted prior to wiring. All running joints shall be fitted with lock-nuts, and lock-nuts shall be provided wherever necessary to ensure that all conduit joints in the installation are tight.
Where flexible conduit connections are required, only "Kopex" or "Adapterflex" flexible conduit or similar approved shall be used. Sprague conduit will not be accepted.
Where conduit only is required, draw-wires shall be left in each such conduit, irrespective of the service for which it is required. Draw-wires shall be minimum 1,6mm dia. hot dipped galvanised steel.
Conduit run on the surface within ducts shall be painted an approved colour under this Contract. Conduit in false ceilings and roof spaces is not to be painted, except as hereunder. Painting shall be carried out by a qualified Painter. Any exposed screw threads or areas where the galvanising or enamel has been damaged shall be painted after erection with two coats of anti-corrosive paint, and, where installed in concrete, before casting, unless otherwise approved by the Engineer.
The Contractor must ensure that, prior to final completion, all openings left at the conduit exit from switch rooms or between floors in rising ducts, are made good.

14 WIRING TRUNKING

This shall be used where indicated elsewhere in this Specification and shall be of the type specified. Where trunking is to be fabricated of sheet metal, this shall be of 1,0mm minimum thickness. Each length shall be so constructed that it matches identically with the other lengths and the lengths shall be joined by splicing sections inside the trunking. All trunking shall be provided with covers of the type and material elsewhere specified in this Specification.
All trunking shall be finished by degreasing, suitably primed and painted with two coats of high quality enamel, unless otherwise specified. Where galvanising is specified, this shall mean fabrication from pre-galvanised plate unless hot-dip galvanising is specifically called for. Electro-galvanising will not be accepted.
"Unistrut" or equivalent trunking shall be provided to the catalogue number indicated, otherwise shall be of appropriate size for the purpose. The standard cover shall be of PVC of a colour to match the trunking. Other types of cover required will be specified elsewhere in this Specification.
All trunking shall be installed straight and level and shall incorporate all recommended fixings when of Proprietary makes. Plastic clips shall be installed at not more than 1200mm centres to hold wiring in place when covers are removed.
Earth wires shall be run in all wiring trunking and these shall be bonded to all equipment fed by wiring carried in the trunking and to the trunking lengths themselves.
When trunking is cast into structures it shall be taped to prevent the ingress of slurry and it will be the Contractor's responsibility to ensure that the trunking runs true. Where trunking is fitted to pre-formed slots in the structure or built into brickwork, the trunking shall be adequately braced to prevent deformation of the sides during plastering, resulting in the bowing of the cover when finally fitted.

Where light fittings cross ceiling trunking, the cover strip shall be cut square to abut the fittings, and the raw edges, if of metal. shall be painted to match the applied finish.
Skirting trunking shall be as specified elsewhere in this Specification, the general remarks above being deemed to apply.

15 FLAT TWIN AND EARTH AND SURFIX

Where flat twin and earth (ABB T & E) or Surfix is called for, the Electrical Contractor will be required to supply all cable and cable glands required, and complete the installation in accordance with the following requirements. All cable shall be installed and ends made off by persons experienced in the use of this type of cable. The engineer shall have the right to call for a demonstration to prove this experience if considered necessary.
Cable sizes shall be as specified or shown on the drawings, lighting circuits being in 1.5mm² cable, unless specified to the contrary. Cables shall consist of copper conductors, PVC insulated and laid up with a bare copper earth-continuity-conductor between them, PVC sheathed 300/250V to SABS 150/1970. (T & E) or copper conductors, PVC insulated laid up with a bare copper earth wire in contact with aluminium foil tape, and overall PVC sheathed 300/500V or 600/1000V to SABS 1507/1990 (Surfix).
Cables shall not be bent to radii less than six times the diameter of the cable without the prior consent of the engineer. Where this consent is given, re-straightening of sharper bends will not be permitted.
All cables shall be free from kinks and dents and shall be run straight and true, all cable shall be properly handled to prevent damage. All unsightly or unworkmanlike work will be rejected.
Cables shall be fixed with single, purpose made clips or multiple saddles attached with screws at the following spacings. When run vertically the distance between saddles may be one and one half the distance specified. These are maximum acceptable spacings but where neatness is of particular importance the spacings are to be halved.

Cable Size 2 Core and Earth	Spacing
1,5mm²	500mm
2,5mm²	500mm
4mm²	600mm
6mm²	600mm
10mm²	700mm
16mm²	700mm

Conductors larger than 4mm² are usually stranded.
Where cables are run on cable trays they shall be strapped to the cable tray at the above spacings.
Plaster depth installations will not be permitted unless expressly stated in the particular specification. In general all installations shall be re-wirable, and all cabling to flush mounted outlets such as switches, switch socket outlets and outlet boxes etc., shall be drawn through conduits or wireways concealed within the structure. Where ceilings are provided as part of the structure conduits or wireways need only be provided between the actual outlet and the ceiling void. Once within the ceiling void cabling therein shall be carried out as previously described above. The installation of conduit and wireways shall be carried out as elsewhere specified.
Where cables are to be installed underground these shall be drawn through sleeves the sizes of which shall be as specified or shown on the drawings. Sleeves shall be at a depth of not less than 600mm.
Where the particular specification expressly permits plaster depth installations, the cables shall be fixed to the wall in the same manner as described above. The length of cable shall be correctly cut for each run and no cable looped to lose length will be accepted. All cable from switches, socket outlets, etc., shall run vertically to the ceiling for ease of future location. Under no circumstances are cables, on reaching the ceiling, to turn directly perpendicular to the wall to cross the ceiling but they are to be turned horizontally along the wall and against the ceiling, for a short length, before turning out onto the ceiling.
Plaster depth switches, socket outlets, etc., to be supplied and installed, are to be in accordance with the requirements of the particular specification. All such equipment is to comply with the SABS specifications.
Ceiling outlets shall be in the form of plaster depth ceiling outlet boxes.
Where the particular specification expressly permits plaster depth installations in blocks of flats, etc., where there are many identical layouts, pre-assembled cable units shall be used. In this case one of each of the typical sections is to be installed in the normal manner and then each length of cable for each section measured to enable all lengths to be manufactured by a specialist, off the site. Such cable units are all to be complete and labelled to a schedule that will indicate their purpose and position. All such cables shall be tested before despatch and prior to installation.

Cable ends shall be made off using suitably sized purpose made adjustable glands with lock nuts which shall be effectively fitted and tightened. All tails shall be phase coloured with neoprene or similar sleeving. The use of insulation tape will not be accepted.
When terminating at motors mounted on slide rails the cable shall be saddled at the specified distances up to a point adjacent to the motor. At this point the cable is to be terminated into a standard round conduit box adequately supported. Final connections between the conduit box and the motor shall be carried out using single core conductors in 'Kopex' or similar flexible tubing or alternatively with PVC SWA cable and glands. Where motors are not provided with means of altering their positions, they may be connected directly with the cable. However, prior to entering the motor the cable must be formed into an unsupported loop to minimise the effect of vibration.
Where cables are installed in vulnerable positions they are to be protected by either the use of channel iron sections or kick pipes fixed to the structure.
All cabling is to be tested prior to being made alive and in the case of plaster depth work, before and after plastering. All cables and terminations are to have an insulation resistance of infinity when tested with a 500 volt insulation tester between conductors and earth.
Cable failure resulting from the installation being carried out with the use of incorrect tools, bad workmanship or neglect will result in the Electrical Contractor having to replace the entire length of cable and meet any other consequent costs incurred in the making good damage to work of any other trades that may result from such replacement.

16 SWITCHES, SOCKET OUTLETS, PLUGS AND BOXES

Switches shall comply with SABS 163 and shall be reasonably silent in operation. They shall be of 16A rating unless otherwise specified. Socket outlets shall be to SABS 164. Samples of all switches and socket outlets shall be approved by the Engineer before installation.
Cover plates shall comply with SABS 1084. For flat type plates minimum 1,6mm thick metal and for pressed shaped plates minimum 1,0mm shall be used, the thick plates being finished in white, unless otherwise specified elsewhere in this Specification. They shall be fixed perpendicularly, and the tops of groups of plates shall be level. Plates for multiple switch positions shall be of the same style and type as for single switch positions. Samples of all plates are to be submitted before ordering.
Submersible (WT/S) switched socket outlets are to comprise "Ceeform" or approved equivalent surface mounted units complying with IP67 of the sizes elsewhere specified in this Specification so installed that the action of removing the plug does not dislodge the fixed portion. A minimum of two plugs shall be provided, any further plugs required being as elsewhere specified.
Watertight (WT) switch socket outlets are to be as for Submersible above, but to IP65.
Weatherproof (WP) socket outlets are to comprise a socket outlet with aluminium plate and non-ferrous screws set into a "York" model S15 fibreglass box with sliding cover to IP54.
Weatherproof (WP) switches are to be "Wallsall" square pattern flush type or "Lewden" No. PD 145.
Weatherproof and watertight switches and socket outlets are to be semi-recessed in a manner to be discussed with the Engineer to ensure their acceptable mounting, especially in the case of facebrick walls.
Where industrial pattern switches or socket outlets are called for, the components are to comply with the foregoing requirements and are to be mounted in approved metal casings. All switch toggles are to be protected. Where flush conduit work is required, the industrial units are to be semi-recessed up to the back of the cover section. Care is to be taken that the boxes are adjusted to suit the finished plaster work and close co-operation with the Plasterer is necessary to achieve an acceptable result.
Flush switches shall be mounted vertically in standard hot dip galvanised mild steel boxes 100mm x 50mm x 50mm complying with SABS 1085, socket outlets being in standard 100mm x 100mm x 50mm boxes, unless otherwise specified or approved. Attention is drawn to the Clause "Wiring in Conduit" elsewhere in this Part with regard to the configuration required for multiple switches on the same or different circuits. Up to three switches in a vertically mounted 100mm x 50mm x 50mm box will be acceptable if designed for such mounting.
The Contractor is to ensure that the Plasterer covers right to the edge of various boxes since gaps between plates and plaster will not be accepted, and it is deemed the Contractor's responsibility to ensure that no such gaps are visible.
Switches shall be mounted at 1200 mm, socket outlets at 350 mm above finished floor level, except in hospitals where socket outlets shall be at 450 mm, unless otherwise specified. Where shown adjacent to walls on the same wall as the doors, switches shall be situated with the centre line between 125mm and 230mm from the edge of door frames except where wall nibs are smaller than 250mm wide, in which case they shall be positioned centrally. Heights above finished floor are taken to the underside of rectangular boxes or to the centre of circular boxes. The scaled dimensions to the centre of the symbol are to be taken as the centre of the outlet in the absence of specified dimensions on the drawings.

17 LIGHT FITTINGS

17.1 General

Allowance shall be made for the supply and installation of light fittings as specified elsewhere in this Specification with the exception of those fittings for which PC Sums are allowed. Allowance for the installation only of these PC fittings shall be made.

Each incandescent fitting shall be supplied with a gas filled pearl or opal lamp of the wattage specified on the drawings complying with SABS 56 and Compulsory Specification VC 8043. Allowance shall also be made for appropriate lamps for Mercury or Sodium fittings. The size of each fitting must suit the wattage of the lamp specified. In the case of PC fittings, these will be supplied with lamps.

Fittings to be installed at each point are detailed on the drawings according to the code types set out elsewhere in this Specification. Supply of fittings marked PC is covered by a PC amount in the Price Summary. Catalogue numbers refer to fitting type only, not necessarily to size, which is to suit the wattage shown.

Fittings shall be directly fixed to ceiling or structure in addition to being fixed to the conduit box.

17.2 Incandescent Fittings

Glass used on bowl fittings, etc., shall be of the best quality free from flaws and seams, and where possible, shall screw to galleries. Incandescent fittings shall be adequately ventilated for dissipation of heat produced by lamps.

Lamp holders shall be of brass to SABS 165. Porcelain holders may be offered for approval. Bayonet cap holders shall be used for lamps up to and including 150W. Above this rating Edison or Goliath Edison screw type holders, as may be appropriate to the lamp wattage, shall be used. Where small holders are required these shall be SBC not SES. The outer terminal of all screw type holders shall be connected to the neutral wire.

In all incandescent lighting fittings where the fitting is mounted directly on to the conduit box and no provision is made for adequate ventilation of the lamp holder, and also all ceiling fittings where the rating is 200W or more, silicon or similar heat resisting insulated wiring shall be used from the lamp holder to a PVC taped porcelain terminal block inside the conduit box.

For all pendant incandescent light fittings supplied without metal suspension rods or chains, either best quality PVC insulated and white PVC served flex or PVC insulated steel wire cored white PVC served flex shall be used. In either case the weight of the fitting shall be effectively removed from the conductors using suitable clamping devices. Connection shall be made to a terminal block as above. White plastic ceiling cups shall be provided and, unless otherwise specified, cords shall be 1,0m long.

17.3 Fluorescent Fittings

Fluorescent fittings and their components shall comply with all the SABS Specifications relating to them.

Bodies are to be constructed of cold rolled sheet steel, bonderised or similarly treated for the inhibition of rust, treated with anti-corrosion undercoats of paint followed by high quality white baked enamel. No patched up scores or other damage to enamelling will be accepted. Nuts, screws, washers, etc., are to be non-ferrous or plated to prevent rusting. No equipment is to be riveted to the bodywork, all equipment being easily removable. The back plate is to be free of all protruding screw heads. All such screws are to be countersunk headed.

Recessed fittings shall be provided with a raceway cover over control gear, thus preventing control gear from accidentally falling onto the diffuser. Capacitors used in such fittings shall be so manufactured that in the event of failure, they do not present a fire hazard.

Fluorescent fittings are to be removable and not held in position by bolts shot through the back plate. If this system is used, the fittings will have to be removed and remounted at the Contractor's expense.

The fittings are to be wired throughout and wiring brought to terminal strips or connectors close to the conduit entry. Each of the incoming terminals shall be large enough to accommodate two 1,5mm² wires without difficulty.

Lamp holders are to be mounted on rigid material and so spaced apart that any natural expansion of the lamp will not exert horizontal forces on the holder. Each fitting is to be supplied with 3500°K white tubes, unless otherwise specified.

Low loss, high power factor ballasts approved by SABS tested in accordance with Section 7 of SABS 890, or ballasts which at least provide the minimum values laid down by the SABS shall be employed. Ballasts shall be of best quality self-contained metal clad type, suitable for operation on 220/250V 50Hz supplies. The voltage rating at each tap of the ballast terminal block shall be clearly and indelibly marked. Ballasts are to be silent in operation and shall be power factor corrected to not less than 0,9 lagging. Multi-lamp fittings shall be stroboscopically corrected. Operation shall not cause radio or television interference.

Where ballasts bearing the SABS Mark of Approval are available for a particular type of lamp and associated circuit, ballasts of that category which do not bear the Mark will not be accepted.

18 WATER HEATERS

Where called for, water heaters are to be supplied and the electrical connections made under this Contract, but the erection of the heaters and the plumbing connections will be carried out by others. The Contractor is to ensure that the heaters are supplied in good time, and is to discuss their exact location with the Plumber to ensure that the termination point is suitably located.

Water heaters are to comply with SABS 151 1462 Part 1 or SABS 1356 as appropriate. The types and sizes are to be as given elsewhere in this Specification.
All water heaters are to be controlled by a local double pole isolator and by a combined single pole and neutral MCB mounted on the appropriate sub-distribution board, as generally indicated on the drawings.
The final connection to water heaters shall generally be by means of flexible conduit as specified elsewhere in this Part. Final connections to water heater terminals shall be carried out with silicon covered wire from pinching screw porcelain connectors in the conduit box unless otherwise specified. The thermostat shall be set at 60°.

19 MISCELLANEOUS ELECTRICAL CONNECTIONS

Connections shall be made to all electrical equipment as detailed elsewhere in this Specification. The following provisions shall apply in general.
Control panels supplied by others will be installed by them and will be complete with an integral main isolator. This Contract covers the connecting of the main supply and cable gland. Wiring from control panels to equipment is a part of this Contract, unless otherwise specified.
All motors shall be provided with an isolator adjacent where indicated on the drawings. This isolator is to be mounted on a suitable floor stand if it is not possible or practical to mount it on the machine. Final conduit connections to motors are to be through flexible conduit as specified elsewhere in this Part, or alternatively with PVCAS cable.
Domestic stoves shall be connected in accordance with the recommended method of the local Supply Authority for the particular area. A 1,5m length of flexible conduit as specified elsewhere in this Part shall be allowed for the final connection between the outlet and stove. Allowance shall be made for connecting all stoves unless otherwise specified elsewhere in this Specification.
In cold rooms the light circuit shall preferably be wired in "Surfix" but if PVC insulated wire is used, this shall be in galvanised conduit directly secured to the fitting. The point of entry shall be silicon sealed. Any thermostats, fan or other connections to be made within the cold room as specified elsewhere in this Specification, are to be made using "Surfix" run along the same general route as the refrigeration pipes and sealed as above.

20 TELEPHONES

All telephone outlets and distribution boards, etc., shall be located as shown on the drawings. The telephones will be supplied and installed by others.
Distribution boards shall comprise galvanised metal bonding trays of the sizes indicated, mounted flush in the position shown. The doors shall be carried on a separately mounted and adjustable architrave and the construction shall comply generally with the Clause "MCB Main and Sub-Distribution Boards and Control Panels" elsewhere in this Part. All such boards shall be provided with a 16mm thick timber backing board which shall be "lumberply" or similar.
In the case of the main Telkom board, this shall be divided vertically in half by a metal plate provided with 2x50mm _ bushed holes. The incoming sleeve and outgoing conduits to Public telephone, Fax, Telex, Modem and other direct Telkom service points are to be terminated to the left-hand section of the board, all outgoing conduits to switchboard, PABX and telephone points being from the right-hand side.
It is the Contractor's responsibility to supply and install conduit and boxes of the sizes shown, in the positions indicated on the drawings, from the point of entry to the building to distribution points and individual outlets and skirting ducts. Where no outlet sizes are shown, 100mm x 100mm x 50mm flush boxes shall be provided. When mounted adjacent to socket outlets, the plates shall be in line and 25mm apart.
Conduit shall conform to the particulars laid down elsewhere in this Part, all bends being large radius. Draw boxes are to be of the sizes indicated and are to be of galvanised construction with overlapping bevel-edged covers primed with self etching primer followed by one coat of grey matt enamel. The final coat is to match the wall finish unless otherwise specified. Screws are to be counter-sunk headed, brass or stainless steel. No draw-in boxes on telephone circuits will be permitted in roof spaces. However, if essential and approval is obtained from the Engineer, draw-in boxes shall be mounted in a suitably positioned wall, not higher than 1,8m above floor level. 1,6mm min. diameter galvanised draw-wires are to be left in all conduit. All draw boxes are to be labelled.
The Contractor shall be responsible for the supply and installation of blank cover plates to all boxes. These shall be of exactly matching finish to the cover plates specified for switches and socket outlets. Where both internal and external telephones are installed on the same project, the plates shall be engraved 'Telkom' and 'I/C' respectively.
All distribution boards shall be appropriately labelled in accordance with the Clause "Labels and Notices" elsewhere in this Part.
The incoming telephone cable entry sleeve shall be PVC positioned as shown on the drawings and terminated in a bend of not less than 600mm radius beneath the main Telkom board. The other end of the sleeve is to be 750mm below ground level, its position being indicated by a marker peg. All underground telephone cable sleeves between buildings shall be Pentathene Class 'C' of the sizes indicated on the drawings. The sleeves shall be laid 500mm below the ground and shall pass through fibre cement sleeves beneath roadways and

where crossing other services. Galvanised 1,6mm draw-wires are to be left in all such sleeves. Joints are to be made using exterior couplings.

21 PADLOCKS

Unless stated to the contrary elsewhere in this Specification, all padlocks shall be provided under this Contract. In the case of extensions to existing installations, all padlocks shall match the existing with the same combinations. Where available, padlocks with stainless steel shackles shall be provided. In all other cases, padlocks shall have plastic type bases and stainless steel shackles, approved equal to the Viro Madlok. The base of the padlock shall be 45mm. Unless otherwise specified in the particular specification, the colour of the padlock shall be green. Where more than one lock is required, they shall operate with a master key in addition to the individual key. Where special combinations are required these will be stated elsewhere in this Specification. Padlocks and keys shall be stamped with the particular combination number. Three (3) sets of keys for each combination shall be provided. These keys shall be handed to the Employer's authorised Representative and a receipt obtained.

The equipment listed below shall be fitted with padlocks. Unless required otherwise by the Supply Authority, the following combination and padlock colours shall apply:

Combination No. 1 – Padlock colour Red

Outdoor substation gates.

Transformer tap-change switches.

HV switches and isolators.

Minisub HV compartment doors.

Combination No. 2 – Padlock colour Green

Minisub LV compartment doors.

Distribution kiosk doors.

Fused feeder panel doors.

Combination No. 3 – Padlock colour Black

Doors of compartments containing consumer meters.

22 HOT DIP GALVANISING

Where hot dip galvanising is called for, it shall conform to SABS 763, the required coating thickness being in accordance with Table 1. Unless the galvanised part is to be painted, the coating is to be passivated immediately. Where later painting is required, a suitable primer shall be applied at the galvanising works.

Before galvanising, all cutting, drilling, welding, etc., shall be complete. Bolt threads shall be suitably undercut and nut threads over-tapped to ensure the correct fit after galvanising.

All galvanised parts shall be stored under cover and in stacks such that no part is resting on another and there is sufficient ventilation to prevent condensation occurring. No galvanised parts shall be stored directly on the ground but on pallets or similar protection. Any damaged parts or parts attacked by white rust will be rejected.

Any galvanised surface that is subsequently damaged shall, if the Engineer does not require replacement, be touched up in the manner specified in the Clause "Painting" elsewhere in this Part.

23 PAINTING

Any metal work which is not galvanised or painted at Works shall be degreased using a solvent and thoroughly cleaned with a wire brush. If rust is present, this shall be removed by grinding. A red oxide self etching primer shall be applied, followed by a white undercoat and thereafter a coat comprising a mixture of 50% undercoat and 50% finishing coat. The final coat shall comprise oil based outdoor type enamel.

All equipment that is delivered to site painted shall, after installation, and as near as possible to handover, be lightly rubbed down, all damaged paintwork be touched up and thereafter the whole given one coat of oil based outdoor type enamel of the same colour as the original.

Where any galvanised or zinc coated surface has been damaged or cut, this shall be touched up using an organic zinc rich epoxy primer (containing min. 90% zinc) after thorough cleaning with a solvent and grinding away all rust. This is to be followed by a self-etching primer suitable for use on zinc coated surfaces and then an undercoat and two top coats as described above.

24 LABELS AND NOTICES

The Contractor shall arrange for the labelling of all equipment, instruments, meters, relays, cables, etc., as indicated below.

Unless specified to the contrary in the particular specification, all labels shall be in English.

Where identical items of equipment can be removed from their housings, e.g. circuit breaker carriages, plug-in relays etc., both the fixed and withdrawable portion are to be labelled identically.

All labels shall be ivorine or other back engraved white on black labels of the sizes indicated. They are to be located in purpose made holders or otherwise are to be screwed or riveted into position. "Dymo" tape or similar labels will not be accepted nor will labels which are glued in position only.
Labels on poles shall comprise an aluminium plate with the designated number. These labels shall be nailed to the pole 1,5m above ground level. Nails shall be electro-galvanised clout nails.
Prior to any equipment being labelled, the Contractor shall request the Engineer to provide a complete labelling schedule for all items of equipment. Under no circumstances is equipment to be labelled in accordance with the tender drawings since any description thereon is for identification purposes during construction only and is unlikely to apply to the completed Works.
The following list indicates the general labelling requirements but does not limit the extent of labelling required, which shall encompass the full extent of the equipment supplied, or in the case of existing equipment, any such which is affected by this Contract.

50mm high lettering:-

Substation and minisub designation.

Outdoor switchgear designation. Transformer designation.

Distribution kiosk and fused feeder panel designation.

20mm high lettering:-

Main or sub-main board designation. Control panel designation.

Indoor switchgear designation.

10mm high lettering:-

Individual switches on switchgear.

Cubicles.

Sub-distribution board designation.

Poles for OH lines.

5mm high lettering:-

Minisub feeder breakers and isolators.

Distribution kiosk feeder breakers and isolators.

General distribution switchgear.

Meters, instruments and relays.

Multiplying factors.

3mm high lettering:-
This size shall be used to designate the conductor size and number of cores of each cable installed under this Contract. In addition, all feeder cables shall be labelled to state from whence they are fed.
All switchboards shall be provided with a label in English reading "In case of leakage or accidental contact, put off main switch immediately".
All substations, minisubs, kiosks, transformer rooms and switchrooms shall be provided with notices as required by the Occupational Health and Safety Act. All doors to such locations shall be fitted with the appropriate notices. In the case of minisubs, these shall comprise at least two 190mm x 190mm design WW7 in accordance with SABS 1186 externally and H$^{v}/_{s}$ and L $^{v}/_{s}$ respectively on the inside of all doors, while kiosk doors shall meet the LV requirements only. For all other substations, enclosures etc.: "Kontra" Safety Signs as supplied by Mine Safety Appliances or approved equivalent are to be provided, Nos.KM115 and KO711 being used externally and KM112, KO706 and KO710 internally.
Where more than one similar item of equipment is fed from the same board or control panel, the item itself shall be labelled, this being fixed in a permanent position, i.e. not attached to motors, pumps, etc., but to bases or adjacent thereto. The lettering shall be 50mm high.

25 DISMANTLING

Where dismantling of existing parts of the installation is called for, all components including wire, insulators, poles, cable, switchgear, transformers, etc., are to be removed and handed to the appropriate Authority. Under no circumstances is any material or equipment to be taken over by the Contractor. In the case of reclamation of conductor, this is to be done after removing the binding wires on intermediate insulators so that full strain lengths are recovered. All such material is to be neatly coiled, packed, etc., as appropriate.
Extreme care is to be taken in dismantling all such equipment, since it will be re-used by the Employer. If, in the opinion of the Engineer, unnecessary damage is done, the cost of replacing such equipment will be debited to the Contractor's account.

A receipt detailing all equipment and materials delivered in accordance with the above must be obtained and a copy submitted to the Engineer.

26 INSPECTION, TESTING AND COMMISSIONING

The Engineer shall have access at all reasonable times to such parts of the Works or the Contractor's premises or the premises of the Manufacturer of component parts, as may be necessary for the purpose of inspecting, examining and testing the materials, workmanship and performance of any plant or equipment specified for the Works.

The Contractor shall ensure that all equipment such as switchboards, transformers, minisubs, kiosks, etc., are inspected and tested at the Manufacturers premises, in the presence of the Engineer.

All wiring is to be subjected to a test voltage of 2kV for one minute without insulation failure. A Megger test is to be applied with a 500V instrument immediately thereafter to prove the insulation resistance better than 20 megohms. All meters are to be injection tested to ensure correct operation. All control circuits including motor overloads, relays, etc., are to be operated to ensure the correct functioning of the entire control system.

All equipment to enable the necessary tests to be carried out shall be provided and shall include, inter alia:

Phase rotation meter	500A primary injection test set
Avometer	25A secondary injection test set
500V megger	2kV DC test set

After completion of manufacture, the following test certificates, signed by the Contractor and the firm executing the tests, shall be provided in duplicate:

Transformer test certificate to SABS.

Test certificate stating that all LV switchboards and control boards have been inspected and their wiring subjected to 2000V DC for 1 minute.

Test certificate stating that all HV switchboards have been inspected and their internal wiring subjected to 2000V DC for 1 minute and HV components to the appropriate voltage as laid down in the applicable SABS or BS Specification.

Any other test certificate for routine tests as laid down in relevant SABS or BS Specification or Codes of Practice applicable to the item in question.

Test certificate in respect of any special tests called for elsewhere herein.

The Contractor shall arrange for any Statutory Government and/or Supply Authority inspection of the installation prior to testing and final commissioning by the Engineer.

On completion of the entire installation or any particular section thereof, as may be decided by the Engineer, commissioning shall be carried out by the Contractor, and any tests the Engineer deems necessary shall be conducted. The Contractor shall supply all equipment necessary for the testing and commissioning procedures.

Prior to commissioning of any transformer, the oil shall be tested and, if necessary, shall be dried out by the Contractor. Should this be necessary, the Engineer must be advised that it is suspected the transformer is damp before any work is undertaken. Transformer wheels shall be solidly chocked. No transformer shall be commissioned without the consent of the Engineer.

During commissioning, all tap change switches are to be correctly set and locked. All wedges and packing in switches and relays shall be removed and each switch and each relay circuit operated.

All protection and small wiring shall be tested with a 500V megger and injection currents passed through the secondaries of every circuit to check the proper operation of relays, instruments and protection.

The Contractor shall supply all equipment necessary for the testing and commissioning procedures. The test equipment required at Site shall include, inter alia:

Phase rotation meter

Suitable cable test set

11 000V phasing sticks

500V megger

5 000V megger

Avometer

Earth resistance test set

25A secondary injection test set

After completion of the commissioning tests the Contractor shall provide duplicate test certificates relating to cable tests, current injection tests of all instruments, meters and relays and results of earth **mat tests.**

The Contractor shall give the Engineer at least 14 days notice of the date of any testing or commissioning so that he may be present if he so wishes. Where the Engineer does not himself, or

through his Representative, attend to witness the tests, then the Contractor may proceed with the tests, duly forwarding to the Engineer certified copies of the results obtained. In such cases, the test shall be deemed to have been made in the presence of the Engineer.

In the event of the equipment or installation not passing the tests, the Employer shall be at liberty to deduct from the Contract Price, all reasonable expense incurred by him or by the Engineer in repeating the tests.

27 COMPLETION OF WORKS.

Before completion of the Contract any damage which may have been done in the process of the installation shall be repaired and made good, trench or excavation work shall be left in a clean and tidy state and all accumulated debris shall be removed from the Site by the Contractor, to the satisfaction of the Employer and Engineer.

All defects found are to be rectified within one month of written notice of such defects. A penultimate certificate reducing the retention amount to the amount stated elsewhere in this Specification will only be issued upon submission of As-built Drawings and Operating Manuals as called for elsewhere herein, after completion of all notified defects and once all test certificates called for in the Clause "Inspection, Testing and Commissioning" elsewhere in this Part have been submitted and accepted by the Engineer.

An appropriate Certificate shall acknowledge practical completion of the Works and the commencement of the period during which the Contractor will be responsible for any defects that may become apparent, and of Maintenance as detailed under the Clause "Maintenance" in Section A of this Part, where applicable.

The Contract will not be deemed to be finally complete until the Engineer's final payment certificate is issued.

SECTION 3

SCHEDULE OF DEPARTURES FROM THE SPECIFICATION

Part No	Reference Clause No	Departure

N.B. The Tenderer is required to give full details of any departure from the Specification and shall then sign this page officially. If there are no departures, the Tenderer must state NIL on this page and sign it. The Tender shall then be held to comply in all respect with the Specification.

Should there be insufficient space, the Tenderer may include separate sheets arranged in the same manner as above. Mere reference to a covering letter will not be regarded as compliance with this requirement.

DATE: _____ SIGNATURE: _____
(For The Tenderer)

SECTION 4

SCHEDULE OF QUANTITIES

PREAMBLE

1.0 This Schedule of Quantities forms part of, and must be read in conjunction with the Specification. The Price Summary is to reflect the total price carried forward from the Schedule of Quantities, which itself need not be submitted with the bid documents.

2.0 The tender price must be based on the Schedule of Quantities. Any Bidder requested to submit his priced Schedule of Quantities shall do so within 48 hours of such request.

3.0 No alteration, erasure or addition is to be made in the text of the Schedule of Quantities. Should any erasure or addition be made it will not be recognised but the original wording of the Schedule of Quantities will be adhered to.

4.0 The quantities in the Schedule are not to be considered as limiting or extending the amount of work to be done and materials to be supplied.

5.0 Only major Items have been scheduled but the Bidder shall nevertheless include for all things he considers necessary whether specified in detail or not to complete the work to specification.
No extra price will be considered for the provision of material or labour which should have been allowed for in order to provide the completed works unless set out in detail and submitted separately by the Bidder with his bid.

6.0 The completed Schedule of Quantities shall detail the unit rate and total amount for material and labour respectively for each Item. Bidders are advised to check their Item extensions and total additions since no claim for mathematical errors will be considered.

7.0 All Items are deemed to include supply, delivery, installation and connection where appropriate, unless specifically stated otherwise. The unit rate must include for all things necessary, whether specified in detail or not, including all components, small installation materials, allowance for off-cuts, wastage, etc. erection and fixings to complete the Item to Specification in a satisfactory and workmanlike manner in order to provide a complete and working system.
"Material Rate" shall include the supply and delivery of all items of material and equipment (plant) to the site including all incidentals necessary for the completion of each Item, plus the profit but shall exclude VAT which shall be added as a separate item in the Bid Form.
"Labour Rate" shall include the cost of all labour, both skilled and unskilled, including supervision and profit required to complete the installation of all material covered by each Item but shall exclude VAT which shall be added as a separate item in the Bid Form.

8.0 The Engineer will check the completed Schedule of Quantities and reserves the right to adjust any individual price and to rectify any discrepancy whilst the total bid price as quoted remains unaltered. Individual rates inconsistent with the pricing structure of the majority of the rates may be changed on the basis of the average ruling prices as determined by the Engineer for similar work in the industry in the area in which the work is situated. The method by which the average ruling prices are determined will be at the sole discretion of the Engineer.

9.0 Unless stated to the contrary in the Particular Specification, quantities, with the exception of cable, cable joints, trenches, bedding and cover sand, cable slabs, cable and joint markers and pole holes, will not be measured on site in which case the successful Bidder shall, within 60 days of notification of acceptance of his tender, notify the Engineer in writing of any discrepancies between the drawings, Specification and the quantities of any Item in the Schedule of Quantities, listing each such discrepancy in detail. Where it is agreed by the Engineer that any such claims are valid, the contract price will be adjusted accordingly. No further claim will be entertained except where the Employer changes the requirements of the Contract, in which case such variations will be based on unit prices quoted, where applicable. Escalation costs will, where necessary, be made on the basis of unit rates.

10.0 Where alternative prices for equipment of different manufacture are offered, the lowest alternative price for equipment to specification must be included, against the relevant Item in the Schedule of Quantities. The remaining alternative prices must be furnished separately.

Where such equipment is found not to comply with the Specification, the Contractor will be required to provide equipment which does comply, without adjustment to the price in the Schedule of Quantities.

11.0 In certain instances prices are requested for Items which may be required during the progress of the work, but which are not included in the known quantities of material required. These Items are indicated by the designation "R/O" (rate only) in the "Quantity" column, and the price is to be noted in the "Rate" columns only and must not be carried forward.

DAYWORK RATES

The following rates are for work not covered by rates in the Schedule of Quantities. All rates are to be exclusive of VAT.

LABOUR RATES, NORMAL TIME, PER HOUR

Installation Electrician and Labourer	R .....
Artisan Electrician and Labourer	R .....
Labourer	R .....

LABOUR RATES, NORMAL OVERTIME, PER HOUR

Installation Electrician and Labourer	R .....
Artisan Electrician and Labourer	R .....
Labourer	R .....

LABOUR RATES, SUNDAYS AND PUBLIC HOLIDAYS, PER HOUR

Installation Electrician and Labourer	R .....
Artisan Electrician and Labourer	R .....
Labourer	R .....

MATERIALS

Percentage mark up on net cost of materials	.....%

TRANSPORT

Private car or light delivery vehicle	..... cents/km
3 tonne truck	..... cents/km
5 tonne truck	..... cents/km
10 tonne truck	..... cents/km

DATE: _____ SIGNATURE: _____

(For the T

GROENDAL NATURE RESERVE: ELECTRICAL INSTALLATION
BILL OF QUANTITIES

ITEM	DESCRIPTION	UNIT	QTY	MATERIAL RATE	MATERIAL TOTAL	LABOUR RATE	LABOUR TOTAL	TENDER TOTAL
	BILL NO. 1:							
	PRELIMINARY AND GENERAL ITEMS							
1,0	Allow for costs incurred for provision of Surety or Letter of Guarantee to cover 10% of the Contract Amount. (Fixed [ ] Time [ ] Value [ ])	item	1				R0,00	
2,0	Allow for premium costs incurred for (Fixed [ ] Time [ ] Value [ ])	item	1				R0,00	
3,0	Allow for accommodation and/or living out expenses. (Fixed [ ] Time [ ] Value [ ]) Administration costs / O-Time Costs	item	1					
4,0	Allow for transport charges. (Fixed [ ] Time [ ] Value [ ])	item	1				R0,00	
5,0	Allow for travelling charges. (Fixed [ ] Time [ ] Value [ ])	item	1					
6,0	Allow for testing the installation as detailed in the Documents, and inspection fees, if any. (Fixed [ ] Time [ ] Value [ ])	item	1					
7,0	Allow for record drawings and operating instructions. (Fixed [ ] Time [ ] Value [ ])	item	1				R0,00	
8,0	Allow for Maintenance, if specified. (Fixed [ ] Time [ ] Value [ ])	item	1					
9,0	Allow for submission of drawings to the Engineer for approval. (Fixed [ ] Time [ ] Value [ ])	item	1				R0,00	
10,0	Allow for costs incurred for site establishment,	item	1				R0,00	
11,0	Allow for cost for supply and use of electricity, water and telephones. (Fixed [ ] Time [ ] Value [ ])	item	1					
12,0	Allow for guarantee in terms of the documents. (Fixed [ ] Time [ ] Value [ ])	item	1				R0,00	
13,0	Allow for lifting gear, cranes etc. that may be required for moving plant & equipment into position. (Fixed [ ] Time [ ] Value [ ])	item	1				R0,00	
14,0	Allow to comply with relevant Health, Safety & Environmental Regulations and Specifications (Fixed [ ] Time [ ] Value [ ])	item	1					
15,0	Allow for Tools & Equipment (Fixed [ ] Time [ ] Value [ ])	item	1				R0,00	
	TOTAL TO PRICE SUMMARY							

GROENDAL NATURE RESERVE: ELECTRICAL INSTALLATION
BILL OF QUANTITIES

ITEM	DESCRIPTION	UNIT	QTY	MATERIAL RATE	MATERIAL TOTAL	LABOUR RATE	LABOUR TOTAL
	BILL NO. 2: CABLING, SWITCHBOARDS & CONDUITS						
1,0	**Cables**						
	PVC armoured copper cables installed on cable trays or sleeves						
1,1	4mm² x 3 core PVCAS ECC cable	m	30				
2,0	**Cable Termination including gland, shroud, lugs, labels, connection and labelling.**						
2,1	4mm² x 3 core PVCAS ECC cable	No.	4				
3,0	**Excavation, backfilling and compaction of LV cable to 600mm deep.**						
3,1	in ground	m	30				
4,0	**Cable labels and markers**						
4,1	Cable marker tape 150mm wide laid trench	m	30				
4,2	Truncated concrete cable marker with aluminium label	No	R/O				
5,0	**Switchboards**						
	Repairs to Switchboards						
5,1	Repair and make good existing DB at Ablutions	Sum	1				
6,0	**PVC Conduit**						
	PVC conduit, cast in concrete, chased in walls or run surface.						
6,1	**Surface Mounted (on walls)**						
6.1.1	20mm PVC conduit	m	80				
6.1.2	25mm PVC conduit	m	100				
	TOTAL TO PRICE SUMMARY						

	BILL NO. 3: **WIRING, LIGHT FITTINGS, LIGHT SWITCHES etc....**						
1,0	**Single Core PVC Insulated Copper Wire**						
1,1	1.5mm² single live cable (PVC sheath)	m	50				
1,2	1.5mm² single neutral cable (PVC sheath)	m	50				
1,3	1.5mm² single earth cable (PVC sheath)	m	50				
1,4	2.5mm² single live cable (PVC sheath)	m	50				
1,5	2.5mm² single neutral cable (PVC sheath)	m	50				
1,6	2.5mm² single earth cable (PVC sheath)	m	50				
1,7	**Draw Wires**						
1.7.1	1.6mm Ø galvanised draw wire	m	100				
2,0	**Light Fittings**						
	Supply, Installation and Connection of the following approved light fittings including lamps.						
2,1	Type A (Series 30 Beka LED bulkhead, 12W for new LAPA)	No.	10				
2,2	Type B (Series 30 Beka LED bulkhead, 12W for KITCHEN EXTERIOR)	No.	10				
2,3	Type C (40W BEKA LEDShine, LED Colour Temperature - Nuetral White 840, IP 65 Ingress Protection & Tightness Level. LEDSHINE Post Top Luminaire.)	No.	8				
3,0	**Daylight Sensing Photocell**						
3,1	Ross Thompson - Plug-in type	No.	3				
4,0	**Light Switches**						
	Note: All flush switches shall be supplied complete with coverplates and be fitted to conduit boxes measured elsewhere. All equipment rated 16A minimum.						
4,1	1-way single lever flush	No.	8				
5,0	**3-Pin Switched Socket Outlets, ZA Euro plugs**						
5,1	3-pin 16A flush	No.	2				
5,2	3-pin 16A flush duo	No.	3				
5,3	ZA, EURO Plugs weather-proof socket outlets mounted on the exterior of any building on 2,5 long treated wooden poles.	No.	10				
	TOTAL TO PRICE SUMMARY						

	BILL NO. 4:						
	SWITCHES, SOCKET OUTLETS AND POWER POINTS						
1,0	**Light Switches**						
	Note: All flush switches shall be supplied complete with coverplates and be fitted to conduit boxes measured elsewhere. All equipment rated 16A minimum.						
1,1	1-way single lever flush	No.	8				
2,0	**3-Pin Switched Socket Outlets, ZA Euro plugs**						
	Note: All flush socket outlets shall be supplied complete with coverplates and be fitted to conduit boxes measured elsewhere.						
2,1	3-pin 16A flush	No.	7				
2,2	3-pin 16A flush duo	No.	5				
2,3	ZA, EURO Plugs weather-proof socket outlets mounted on the exterior of any building on 2,5 long treated wooden poles.	No.	10				
2,4	Allow for Testing and Commissioning of the complete electrical installation on completion including Certificate of Compliance.	Lot	1				
	TOTAL TO PRICE SUMMARY						

SECTION 5

MATERIAL SCHEDULE

The Tenderer is required to complete the following schedule, stating where appropriate, the size or capacity of equipment, Type or Catalogue No., Country of Origin and any other detail he considers necessary. Failure to complete this schedule in full may invalidate the tender.

NB: Only one manufacturer's name to be inserted for each item.

Item	Material	Make or trade name And Model No.	Country of origin
1.	Distribution boards		
2.	Circuit breakers 1P, 2P, 3P		
3.	On load isolators without trips		
4.	Contactors 1P, 2P, 3P		
5.	Earth leakage relays 1 & 3 phase		
6.	Daylight sensitive switch		
7.	Conduit		
8.	Conduit Boxes		
9.	Weatherproof switches		
10.	Flush switches		
11.	16A flush socket outlets		
12.	16A surface socket outlets		
13.	Flush isolators		
14.	Luminaires		
a.	Type A		
b.	Type C		
c.	Type E1		
d.	Type N		
e.	Type J		
f.	Type F1		
g.	Type F2		
h.	Type F3		
15.	Type F4		
16.	Type SL		
17.	Type BL		
18.	PVCA cable		
19.	Powerskirting 2 Compartment		
20.	Wiring Trunking, P9000		

21.	Streetlighting		

NOTE: Tenderers are to note that under no circumstances may materials be installed other than that offered in the above material schedule, which has been approved and accepted by the Engineer.

Should the successful tenderer wish to supply materials other than that originally offered, prior written approval must be obtained from the Engineer.

DATE _____ SIGNATURE OF TENDERER _____

GROENDAL NATURE RESERVE: ELECTRICAL INSTALLATION

SECTION 6

PRICE SUMMARY

ITEM	DESCRIPTION	AMOUNT	
		MATERIAL	LABOUR
1	Bill No. 1: Preliminary and General	R	R
2	Bill No. 2: Cabling, Switchboards & Related Items	R	R
3	Bill No. 3: Light Fittings and Related Items	R	R
4	Bill No. 4: Switches, Socket Outlets and Power Points	R	R
5	Sub-Totals	R	R
6	Sub-Total Material and Labour	R	
7	Contingency Sum	R	20 000,00
8	Sub-Total (excluding VAT)	R	
9	TOTAL carried forward to Form of Offer	R	

NAME OF TENDERER : .....

ADDRESS : .....

.....

TELEPHONE NO. : ..... FAX NO. : .....

SUB-CONTRACTOR'S REGISTRATION NUMBER AT THE ELECTRICAL CONTRACTING BOARD OF SOUTH AFRICA : .....

DATE : ..... SIGNATURE OF TENDERER : .....

SECTION 7

DRAWINGS

The Engineer's Drawings available at the time of tender are issued for tender purposes.

Drawing No.: Description:

No drawings are attached.

SUMMARY OF SCHEDULES

SCHEDULE	DESCRIPTION	TOTALS BROUGHT FORWARD
SUB-TOTAL A		R.....
SUB-TOTAL B		R.....
PLUS: 15% VAT		R.....
TOTAL*		R.....

Note:
*Total to be carried forward to the "Form of Offer"

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

EASTERN CAPE PARKS & TOURISM AGENCY

CONTRACT NO.: 05/FY/23

CONSTRUCTION OF NEW CAMPSITE VISITOR BOMA, BRAAI STANDS AND REPAIRS TO ELECTRICAL SUPPLY FOR GROENDAL NATURE RESERVE.

PART C3: SCOPE OF THE WORKS

C.3 SCOPE OF WORK

CONSTRUCTION OF A NEW BOMA, FIREPIT, BRAAISTANDS AND REPAIRS TO ELECTRICAL INFRASTRUCTURE AT GROENDAL NATURE RESERVE – UITENHAGE SECTION

C.3.1 PROJECT SPECIFICATIONS

1 DESCRIPTION OF THE WORKS

1.1 Employer's objectives

The employer's objective is to upgrade the Groendal Nature Reserve Uithenhage Section

1.2 Overview of the works

The works comprise of:

- Demolition of the existing fire pit
- Construction of a new Bouma and firepit
- Painting of the ablutions building
- Upgrading of the lights and plug point at the campsite
- Construction of new braai stands at the camp sites

CONSTRUCTION OF A NEW BOMA, FIREPIT, BRAAISTANDS AND REPAIRS TO ELECTRICAL INFRASTRUCTURE AT GROENDAL NATURE RESERVE – UITENHAGE SECTION

1.3 Extent of the works

The works comprise the following main activities:

- Earthworks,
- Upgrades to electrical infrasture
- Alterations,
- Buildings works,
- Site de-establishment and cleaning up.

1.4 Location of the works

The site for the construction works is located at the following co-ordinated reference points:

NAME	CO-ORDINATES	
GROENDAL NATURE RESERVE	**-33°43'11.23"S**	**-25°18'52.78"E**

1.5 Temporary works (Decanting)

Not applicable

1.6 Occupational Health And Safety

The contractor needs to study the following documents:

- Occupational Health and Safety Act, 1993 – Construction Regulations, 2003
- SITE OHS Doc

2 DRAWINGS

The drawings used for setting up the Provisional Bills of Quantities are as follows: As per Engineers' and Architects' Drawing Schedules

3 PROCUREMENT

3.1 Preferential procurement procedures

The works shall be executed in accordance with the conditions attached to preferences granted in accordance with the preferencing schedule.

3.2 Scope of mandatory subcontract work

Competitive bids shall be invited in respect of each of the above portions of the works in accordance with the relevant provisions of the latest edition of the CIDB Standard for Uniformity in Construction Procurement. The Contract Data in the associated procurement documents shall be based on the use of BIFSA Non- Nominated Subcontract for use with the JBCC Series 2000 Principal Building Agreement / CIDB Standard subcontract (labour only) / JBCC Series 2000 Nominated / Selected Subcontract Agreement / SAFCEC General conditions of

subcontract (2003 edition) (select appropriate option) / NEC Engineering and Construction Subcontract / NEC Engineering and Construction Short Subcontract with minimal project specific variations and amendments that do not change their intended usage.

The Employer together with the Contractor shall evaluate the bids received in accordance with the provisions of the Standard Conditions of Tender contained in Annex F of Standard for Uniformity in Construction Procurement. The evaluation panel shall comprise equal representatives from the Employer and from the Contractor.

The Contractor shall without delay enter into contract with the successful tendering subcontractor based on their accepted tender submission. The Contractor shall remain responsible for providing the subcontracted portion of the works as if the work had not been subcontracted.

The Contractor shall indicate within the list of proposed sub-contractors the names and copies of the registration documents of the proposed sub-contractor registered with the necessary council to be an approved asbestos removal specialist

4 CONSTRUCTION

4.1 Applicable SANS 2001 standards for construction works

The following parts of SANS 2001 Construction works standards and associated specification data are applicable to the works:

1) SANS 2001BE1
2) SANS 2001BS1
3) SANS 2001CC2
4) SANS 2001CG1
5) SANS 2001CM1
6) SANS 2001CS1
7) SANS 2001CT2
8) SANS 2001DP1
9) SANS 2001DP2
10) SANS 2001DP3
11) SANS 2001DP4
12) SANS 2001DP5
13) SANS 2001DP6
14) SANS 2001EM1
15) SANS 10082

The abovementioned South African National Standards make several references to the Specification Data for data, provisions and variations that make these standards applicable to this contract. The Specification Data shall have precedence in the interpretation of any ambiguity or inconsistency between it and these standards.

Each item of Specification Data given below is cross-referenced to the clause in the standard to which it mainly applies.

4.2 Applicable national and international standards

- Standardized Specifications for Civil Engineering Construction SANS 1200
- The National Building Regulations SABS0400
- Construction and Management Requirements for Works Contracts SANS1921-1
- Targeted Construction Procurement SANS1914-4

4.3 General Clause

4.3.1. The Contractor shall endeavour to ensure that the expenditure on the employment of temporary workers (local) is in the following proportions:

i) 10 % women;

ii) 50% youth who are between the ages of 18 and 25; and

iii) 1% on persons with disabilities.

4.4. Certification by recognized bodies

Not Applicable

4.6. Plant and materials provided by the employer

Not Applicable

4.7. Services and facilities provided by the employer

Not Applicable

4.8. Plant and equipment

The plant and equipment used on the site shall not be inferior to that described in the Schedule of Plant and Equipment.

5 Management

5.1 SANS 1921 standards

The SANS 1921 Construction works standards and associated specification data are applicable to the works:

The abovementioned South African National Standards make several references to the Specification Data for data, provisions and variations that make these standards applicable to this contract. The Specification Data shall have precedence in the interpretation of any ambiguity or inconsistency between it and these standards.

Each item of Specification Data given below is cross-referenced to the clause in the standard to which it mainly applies.

The associated Specification Data is as follows:

SANS 1921-1, Construction and management requirements for works contracts – Part 1: General engineering and construction works	
Clause	**Specification data**
Essential data	
4.1.7	There are no requirements for drawings, information and calculations for which the contractor is responsible
4.2.1	The responsibility strategy assigned to the contractor for the works is A.
4.2.2	The structural engineer is Sky High Consulting Engineers
4.3.1	The planning, programme and method statements are to comply with the following: 1) Program to be submitted in Microsoft Project format 2) Gantt chart to indicate critical path and progress 3) Gantt chart to be updated before monthly site meeting
4.3.3	The notice period for inspection is 2 Days
4.9.3	The trees and shrubs which are not to be disturbed are to be identified on site. Where possible, the disturbance of trees should be avoided.

4.14.3	The office accommodation, equipment, accommodation for site meetings and other facilities for use by the employer and his agents are: 1) **Site office** which shall be used for site meetings and for the contractor's use. Such an office shall comprise a minimum of 20m2 in area and 3 m high, be ventilated, have good lamination, must be reasonably sound proof, and have a hard floor construction. It shall be furnished with a desk on which drawings can be rolled open and on which there is sufficient writing space and sufficient temporary chairs or benches to accommodate all persons present at site meetings. (Minimum 15 seater) 2) The following facilities will be supplied to the employers representatives: - 15 Hardhats for employers representatives visiting the site - 15 Safety (High visibility) jackets for employer representatives visiting the site
4.14.5	The Contractor is required to provide latrine and ablution facilities for the exclusive use of the professional team and client
4.14.6	The requirements for the provision and erection of separate sign boards for consultants and subcontractors are: 1) The boards must comply with the official standard type signboard of the Employer and be at least 2750 x 1800 mm high. 2) The boards must be constructed with a firm flat exposed face using suitable material of firm construction, painted and lettered according to the standard drawings available from the Employer on request and mounted on sturdy pipe-standards at a height of 1800 mm above natural ground level.
4.17.1	The requirements for the termination, diversion or maintenance of existing services are: 1) none
4.17.3	Services which are known to exist on the site are: 1) Water network. 2) Electricity reticulation 3) Sewer Lines to septic tank

Additional clauses	

1 Site meetings and procedures

The Employer's Representative and the Contractor shall hold meetings relating to the progress of the works at regular intervals and at other such times as may be necessary. The Contractor shall attend all site meetings and shall ensure that all persons under his jurisdiction are notified timeously of all site meetings should the Employer's Representative require their attendance at such meetings.

The Contractor shall keep on site a set of minutes of all site meetings, daily records of resources (people and equipment employed), a site instruction book, a complete set of contract working drawings and a copy of the procurement document and make these available at all reasonable times to all persons concerned with the contract.

2 Water and electricity

The Employer does not warrant that any water supply or electricity supply that may exist is adequate for the proper execution of the works. The responsibility strategies in terms of the tabulation below that will apply to the contract is:

a) water : A

b) electricity : A

Service	Option		
	A **Contractor responsibility**	B **Employer responsibility**	C
Water	The Contractor is to provide, and remove and make good upon completion, all the necessary temporary plumbing connections and purchase water from the local authority for the works at his own cost.	The Contractor shall make, and upon completion remove, all the necessary connections to the Employer's water supply at designated points and make use of water free of charge for construction purposes only.	The Contractor shall make, and upon completion remove, all the necessary connections and water meters to the Employer's water supply at designated points and be responsible for costs associated with all water consumed.
Electricity	The Contractor is to provide, and remove and make good upon completion, all the necessary temporary electrical connections and installations and purchase electricity from the local authority / ESKOM for the works at his own cost.	The Contractor shall make, and upon completion remove, all the necessary electrical connections to the Employer's electrical supply at designated points and make use of electricity free of charge for construction purposes only.	The Contractor shall make, and upon completion remove, all the necessary connections and meters to the Employer's electrical supply and be responsible for cost associated with all electricity consumed.

The following temporary services is the responsibility and will be supplied by the Contractor:

- Security
- Sewer services in the form of temporary toilets
- Waste disposal facility

SANS 1921-5, Construction and management requirements for works contracts – Part 5: Earthworks activities which are to be performed by hand.	
Clause	**Specification Data**
Essential Data:	
5.1	The depth of trenches which are to be excavated by hand is 1,5 metres.
Additional clauses:	
1	**Stone pitching and rubble concrete masonry** All stone required for stone pitching and rubble concrete masonry, whether grouted or dry, shall 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.
2	**Manufactured Elements** Elements manufactured or designed by the Contractor, such as manhole rings and cover slabs, precast concrete planks and pipes, masonry units and edge beams shall not individually, have a mass of more than 320kg. In addition the items shall be large enough so that four workers can conveniently and simultaneously acquire a proper hand hold on them.
SANS 1921-6, Construction and management requirements for works contracts – Part 6: HIV/AIDS awareness.	
4.2.1(a)	A qualified service provider is a service provider that is one that is accredited or provisionally accredited training service provider in the HIV/AIDS field. A list of accredited service providers can be obtained from the Construction SETA (CETA) (tel 011-265 5900), Health and Welfare SETA (HWSETA) (011-622 6852) or on the Health and Welfare SETA website: www.hwseta.org.za.
4.2.1(a)	The HIV/AIDS awareness programme is to be repeated at four month intervals throughout the duration of the contract. (Four times in total, including the initial one at the start of the contract.)
Additional clauses	
	The duration of each workshop is not to be less than 2½ hours.

5.2 Recording of weather

The Contractor shall erect an effective rainfall gauge on the site and record the daily rainfall figures in a book. Such book shall be handed to the employer's representative for his signature no later than 1 day after rain that is considered to justify an extension of time occurs.

5.3 Unauthorised persons

The Contractor shall keep unauthorized persons from the works at all times. Under no circumstances may any person except guards be allowed to sleep on the building site.

5.4 Management meetings

A schedule of meetings will be agreed with the contractor.

5.5 Daily records

The Contractor is instructed to keep a set of signed off daily diaries with specific detail relating to EPWP requirements.

5.6 Payment certificates

Monthly valuations of completed work, including materials on site is to be completed and presented by to the client representative by no later than the 15th of each month to be assessed for payments. The payment certificate will be issued no later than the 25th of each month (Including Contractor's tax invoice) to the Principal Agent for payment within 30 calendar days.

C3.2 PARTICULAR SPECIFICATIONS

In addition to the Standardized and Project Specifications the following Particular Specifications shall apply to this contract and are bound in hereafter.

PARC – ARCHITECTURAL SPECIFICATIONS

FINISHES SCHEDULE

GENERAL NOTES:

1. The Schedule contains pages 01 to 07 numbered consecutively. The Contractor is required to check that none of the pages are missing or duplicated. If any part of this schedule is indistinct or contains any obvious errors, he must make written application to the Architect to have such errors rectified.
2. Where specific manufacturer's instructions and recommendations contradicts that of the NBR or SABS, then the Architect is to immediately be notified prior to commencement with the affected trade/installation.
3. Any discrepancy or contradiction to immediately be reported to the architect in writing.
4. All dimensions and materials to be checked on site prior to ordering of manufacturing.
5. The Contractor to prepare a sample room for approval of the quality standard of finishes to be achieved.
6. Applications to be in strict conformance to the manufacturer's instructions and by manufacturer's approved and accredited applicators.

REVISION No.	DATE	DESCRIPTION

INTERNAL FINISHES

GENERAL

- All surface beds suspended slabs, beams, etc. to Engineers detail and design.
- All finished floor levels for all floor materials are to be level unless otherwise indicated on drawings.
- At all transitions between one finish and another and at all external thresholds finished and to be laid against 3 x 40mm brass strip.
- All external thresholds to be weathered to fall towards external face.

FLOORS	
FL01	**BRUSHED FINISH** Bare concrete brushed finish cast in panels of not more than 20sqm.
FL02	**FLOOR TILES:** Floor Tiles; ceramic tiles size 600 x 600mm fixed to internal floor screed with an approve tile adhesive (elsewhere specified) mixed with an approved bonding liquid in lieu of water with joints continuous in both directions and grouted with an approved tile grout (elsewhere specified), excess grout on the surface to be cleaned with water as work proceeds.

FL04	**VERANDAH TILE AND PREPARATION:** Sandstone external tile 600 x 600mm with Grouting joints 10mm. Matt sealer. Grout to be Light grey.
FL05	**EXTERNAL ENTRANCE AREAS** Sandstone External tile 400 x 400mm with Grouting joints 10mm. Matt sealer. Grout to be Light grey. Tiles to threads to be bullnose

WALLS

WA1	**SCRATCHED PLASTER:** Nature-Plast up & down trowel 2mm. Surface Preparation and Application: Before ordering, an on site sample of at least 3m² must be applied by a Specialist Applicator and approved by the specifier. Decorative Plaster should not be applied to horizontal surfaces. If it is applied to such a surface, use glasscloth reinforced system. Both the Primer and Decorative Plaster finish should then be applied over this surface and finished off with glaze. Before Nature-Plast trowel 2mm is applied use a primer coat which is a Coarse Aggregate Primer that may be applied directly onto well cured masonry surfaces, in a sound condition. The primer is applied with a brush or roller and the spreading rate is 4-6m² the overcoating time is 4 hours.
WA2	**SMOOTH PLASTER: External & Internal Walls** Prepare New Plaster & Ensure that surfaces are dry, sound and clean. If Concrete it must cure for minimum 28 days and cement plaster 14 days before painting. Remove any hollow and soft/under bound plaster and replaster. Remove dirt and loose particles. Moisture content measured with a Doser Hygrometer (or equivalent) must not exceed the following limits before painting: - concrete, off-shutter, pre-cast : BD 4 scale - 5% - cement plaster, brickwork, fibre-cement : BD 2 scale - 8% Apply one coat of Professional Gypsum and Plaster Primer to achieve a continuous film. Allow 16 hours to dry.Apply two full coats of Professional Superior Matt to achieve complete obliteration, allowing 2 hours drying between coats.
WA3	**SKIMMED PLASTER** Prepare the surfaces Apply one coat of Professional Gypsum and Plaster Primer to achieve a continuous film. Allow 16 hours to dry. Apply two full coats of Professional Super Matt to achieve complete obliteration, allowing 1 hours drying between coats. colour to architect specs
WA4	**GALVERNISED STEEL STRUCTURE** Apply an approved Galvanized Iron Cleaner to all bare Galvanized areas by brush, broom or spray. Allow to react for 1 minute. Rinse off with tap water using bristle brooms or brushes or Scotch Brite pads to remove all surface contaminants. Check if surface is water break-free. If not, repeat process. Allow to dry completely Apply one coat of an approved epiwash strontium chromate primer to achieve a continuous film. Allow 4 hours to dry. Apply two full coats of an approved water based paint to achieve complete obliteration, allowing 4 hours drying between coats
WA5	**AIRBRICKS** 230 x 160mm Cement vermin proof air bricks to: - ablution (x1) - kitchenette (x1) - office (x2) - Reception (x6) - Boardroom (x6)

SKIRTINGS	
SK01	**HARDWOOD SKIRTING** 140X22mm meranti moulding skirting with an approved wood sealer finish.
CILLS	
CI01	**SMOOTH PLASTER CILL** Form smooth plaster cill rounded edge finish as per wall finish.
	WINDOW FINISHES
W01	**ALUMINIUM WINDOWS** All windows are to be powder coated aluminum finish, coloured to the relevant trim colour code. 'Casement 30.5': factory glazed 6.38mm safety glass as per AAAMSA with clip-on glazing beads, with neoprene seals. Fixed with minimum three fixings into brickwork reveal per side in accordance with manufacturer's instructions- all as per AAMSA- refer to window schedule. Windows to be fixed from the inside of the relevant room and pushed against the facebrick external reveal that is to project internally by 10mm either side (refer to detail). Internal finish: plastered reveals External finish: clear anti- mould silicone to window perimeter Burglar proofing to all opening sections – factory made by window frame supplier. ***NOTE: Sample window with burglar proofing requested for approval***
DOOR FINISHES	
D01	**ALUMINUIM DOOR** (colour to architect specs) powder coated aluminum door and frame fitted as per manufactures specification all as per aaamsa specification
D02	**TIMBER DOORS: (All internal doors)** All interior doors to be solid timber with meranti/hardwood door frames. Painted to match the colour scheme for the block. Refer to colour scheme sheet. Finish the internal timber doors and frames as follows: Finish with approved **Glatex 8 Polyurethene enamel** . Strictly to Architect's approval. Skirting to be fitted with 19mm x 19mm hardwood quadrant, nailed to skirting at 400mm centres, and finished with Plascon Glatex 8 - Solid Colour. Surface to be dry, sound and clean. Wash knots and resinous areas with Lacquer Thinners (ILS 1) and coat with Woodcare Knot Seal (PK 2) and apply one coat of Plascon Woodcare Pretreatment (WWP 1), overcoated within 48 hours with a moisture content, measured with a Doser Hygrometer (or equivalent), of BD 2 scale (A1-A5) < 14% or less. Prime with one coat Plascoguard 40 Universal Epoxy Primer (PEX40) with an overcoating time of 4 hours and Apply two coats Glatex 8 - Solid Colour (PL 17) with 16 hours drying time between coats, for a maintenance cycle of 10 years in a C1 - inland environment • Environment : C1 – inland • Topcoat : Glatex 8 - Solid Colour • Number of coats of topcoat : two coats • Overcoating time for topcoat : 16hour • Primer/Base coat : Plascoguard 40 Universal Epoxy Primer • Overcoating time for primer/base coat : 4hour

CEILINGS	
CE1	**PLASTERBOARD CEILING** **NAILED UP CEILING – (all internal buildings)** Fix 38 x 50mm battens at max. centres of 400mm to underside of timber rafters/substructure and fix 6.4mm Gypsum Ceiling boards all as per manufacturers specifications. 6 x 32mm wrought flat meranti coverstrips over joints primed before fixing to ceiling joints. Clout nails to be spot primed with galvanized steel primer before painting. Finish with Plascon Cashmere to interior new gypsum plaster board. Surface to be dry, sound and free of dirt and loose particles. Wipe down with a damp cloth and allow to dry completely. Prime with one coat Plascon Plaster Primer (UC56) with an overcoating time of 16 hours and finish with two coats Cashmere (CAS 1) with 2 hours drying time between coats, for a maintenance cycle of 12 years in a C1 - inland environment • Environment : C1 – inland • Topcoat : Cashmere • Number of coats of topcoat : two coats • Overcoating time for topcoat : 2hour • Primer/Base coat : Plascon Plaster Primer Overcoating time for primer/base coat : 16hour
CE2	ROOF INSULATION (not to verandahs or eaves) Enviro- Tuff 203 foil to underside of purlins fixed as per manufacturers specifications. Lay 100mm non- combustible lightweight fibreglass insulation blankets as per SANS 204 (R- value 2.5) fitted between timber tie beams laid loose on top of brandering - density of not less than 10kg/m3
CORNICE	
CO1	MOULDED CORNICE An approved high density extruded polystyrene cornice size 50 x 50mm, fixed to wall with an approved adhesive.
EXTERNAL FINISHES-WALLS GENERALLY	
	DAMP PROOF COURSING: To be Gunplas Black Brickgrip or equal approved 375 micron DPC, lapped a minimum of 150mm at all joints, and similarly lapped over gundle USB Green under -floor damp proof membrane where applicable.
	UNDER CILL DPC (IN CAVITY CONSTRUCTION): Minimum 150mm wide, to be tucked into side of window and door frames and sandwiched in mortar between outer skin and cavity closer and to overlap lintel and cill DPC`s.
	DPC's AT LINTEL: To be inserted above all windows, stepped up one course and build into inner skin coursing with mortar fill under all as detailed.

	BEAM FILLING: Beam filling shall be half brick thick, built up in mortar as used in the walls below, cut in between roof timbers and carried hard up to underside of roof covering and flushed up with mortar.
	IBR PIERCED-FIX SHEETING Global Roofing Solutions OR equal and approved 0.58mm thick 890mm cover IBR 890 profile Galvanised steel, Z200 spelter ISQ550 Chromadek® Traffic Green finish top coat and Pebble Grey backing coat roof sheeting, fixed to steel intermediate purlins at MAX 2600mm centres and eaves and ridge purlins at MAX 2300mm centres using Hex Flange Head + EPDM Seal self drilling No. 3 drill point, No. 12-14 x 65mm long fasteners. Purlin fixed to second, fourth and sixth crest of each sheet and at all crests at sheet ends, all in accordance with the manufacturer`s specifications. • Brand: ArcelorMittal • Climatic Condition: from 5km to inland - C3 Medium Corrosion Risk. Modek or equal and approved 0.58mm thick by 890mm Translucent Polycarbonate IBR profile roof sheeting fixed to steel purlines @ max 2300mm centres on steel frame truss to Engineer'sdesign and specialist manufacture.
ROOF COVER	
RF01	**WOOD SHAKE METRO TILE** Installation The roof panels can be interlocked either rightover left or left over right with the side laps of one small corrugation. The panels are placed onto battens spacing 368 mm. The downturned front edge and the upturned rear edge of eachtile provides a strong, weatherproof, overlapping and interlocking roof covering. Each panel is secured by 4 nails in the front-downturned edge into the side of the batten, positioned out of the water course. Space and attach battens spacings. They should be set out from front of batten to front of the batten above at 370mm except the first batten which will be 370mm less the overhang of the tile into the gutter, usually 40mm. Note: 0.9 tiles usually fit better with a gauge of 365mm. For slate tiles use a gauge of 367mm. Fix timber fascia board. Top edge to be approximately a batten thickness above rafters.

GENERAL NOTES:

1. The Schedule contains pages 1 to 03 numbered consecutively. The Contractor is required to check that none of the pages are missing or duplicated. If any part of this schedule is indistinct or contains any obvious errors, he must make written application to the Architect to have such errors rectified.
2. Compliance with OW371 ("Specification of materials and methods to be used") as published by the Department of Public Works, is applicable to this project), NBR and SABS specifications is compulsory.
3. Where specific manufacturer's instructions and recommendations contradicts that of the OW 371, NBR or SABS, then the Architect is to immediately be notified prior to commencement with the affected trade/installation.
4. Any discrepancy or contradiction to be immediately reported to the architect in writing.
5. All dimensions and materials to be checked on site prior to ordering of manufacturing.
6. The Contractor to prepare a sample room for approval of the quality standard of finishes to be achieved.
7. Water Supply to be as per – SANS 10252-1 (Part 1)
8. Drainage Installations to be as per – SANS 10252-2 (Part 2)

REVISION No.	DATE	DESCRIPTION

ADARC

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C- 001		***Water Closet*** vitreous china 90º outlet open rim washdown pan colour White with front single flush vandal proof cistern including lid, fitments and flushpipe elbow and B2 economy double flap thermoset seat. Single lever 15mm chrome FI x FI undertile stoptap, manufactured in accordance with SANS 226:2004 Type 2 (BS 5412). Line with supply to cistern for control of water supply to cistern only.
BASIN		
A-001	 	***WHB - hot & cold water only*** Vaal Sanitaryware 510 x 405mm Hibiscus White vitreous china lavatory basin (product code 7023) with two tap hole including integrated overflow and chain stay hole, bolted to wall with two 10mm bolts (product code 8448Z0). Cobra Watertech Star 2 x15mm pillar taps with flanged backnut and raised nose hose (Code: 112), manufactured in accordance with SANS 226:2004 Type 1 (BS 5412). Colour to be silver. Splashback: 2 tile high splash back above sanitary fitting , where applicable,200 x 200 x 6,5mm grade1 glazed ceramic wall tiles grouted with GREY tylon grout mixed with tylon bond – it anti-fungicidal solution.
MR		***Mirror*** (M2) Standard mirror, size 500 x 450mm concealed thief resistant fixings TO PLACES WHERE ALL SINGLE WHB'S ARE FIXED
CH		***Coat hook*** stainless steel hat and coat hook with rubber buffer. 1 X COAT HOOK TO ALL TOILET CUBICLES
D-001		***Toilet Roll Holder*** stainless steel lockable toilet roll holders.
SPD		**Hand Soap Dispenser** AQUARIUS* or equal and approved Hand Cleanser & Sanitiser Dispenser - Cassette 1L colour White (Code: 6948000), overall size 235 x 116 x 114mm high, installed by a specialist's

PTD		**Paper Towel Dispenser** AQUARIUS* or equal and approved Folded Hand Towel Dispenser - Interfold colour White (Code: 6945000), overall size 265 x 399 x 136mm high, installed by a specialist's installation team
SINKS		
B-003		***Kitchen Sink*** **To site on Joinery Cupboard** Franke Trendline Model 1200x535 SEB Grade 304 18/10 polished stainless steel single end bowl drop on sink (Code: 1030008), overall size 1200 x 535mm with one 460 x 350 x 140mm deep bowl, fitted onto cupboard (elsewhere specified) including Spazi F/1 plumbing kit (Code: 1120008) with 38mm waste fitting. Franke Projectline two Single Lever mixer (Code: 1150021) with overarm swivel spout and 15mm flexible connections. With 5 year guarantee on body construction. COBRA 40mm Un-slotted bath/sink waste, Chrome plated (no chain or plug) [code: 317-40]; COBRA Anti-theft plug, Chrome plated [code: 309-40]; COBRA Bottle trap 50mm PVC outlet, Chrome plated [code: 365/50]; with COBRA Angle Regulating Valves with 350mm long flexi tube, Chrome plated [code: 232/350].

Eastern Cape Parks & Tourism Agency

Eastern Cape
PARKS & TOURISM AGENCY

Occupational health and safety specification for Groendal Nature Reserve

Proudly prepared by

Sky High Consulting Engineers and EMPOWERisk Management Services (Pty) Ltd

SKY HIGH
consulting engineers

EMPOWERisk
Management Services

November 2021

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Occupational health and safety specification for Groendal Nature Reserve

1. Definitions

In this document the following expressions shall bear the meanings assigned to them below:

1.1 **Client** means any person for whom construction work is being performed and/or undertaken [i.e. Eastern Cape Parks & Tourism Agency for purposes of this specification];

1.2 **Construction Regulations** means the Occupational Health and Safety Act's, No 85 of 1993, new Construction Regulations (GNR.84 of 07 February 2014) that came into effect on 01 March 2014;

1.3 **Occupational health and safety plan** means a sufficiently documented plan to the standards of the Client, which addresses hazards identified and includes safe working procedures to mitigate, reduce or control the hazards identified;

1.4 **Occupational health and safety specification** means 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 working, visiting, passing, staying and/or working close to the construction site and/or other applicable areas such as site camp;

1.5 **OHSACT** means the Occupational Health and Safety Act, No 85 of 1993, as amended; and

1.6 **Principal Contractor** means an employer, as defined by Section 1 of the OHSACT who performs construction work and is appointed by the Client to be in overall control and management of the construction site and works.

2. Introduction

In terms of Construction Regulation 5(1)(b) of the OHSACT, the Client is required to compile an occupational health and safety specification for any intended project and provide such specification to prospective tenderers/bidders.

This specification has as objective to ensure that the principal contractor entering into a contract with the Client achieves and maintain an acceptable level of occupational health and safety performance and compliance. This document forms an integral part of the contract between the Client and the principal contractor and the principal- and other contractors should make it part of any contract/s that they may have with other contractors and/or suppliers as far as this project is concerned.

Compliance with this document does not absolve the principal contractor from complying with any other minimum legal requirements and the principal contractor remains responsible for the health and safety of his employees, those of his mandataries as well as any persons coming on site or on adjacent properties as far as it relates to the construction activities.

3. Scope

To develop a project specific occupational health and safety specification that addresses the reasonable and foreseeable risks, exposures and aspects of occupational health and safety as affected by the abovementioned contract work.

The specification will provide the requirements that the principal contractor and other contractors will have to comply with in order to reduce the risks associated with the abovementioned contract

work and that may lead to incidents causing injury and/or ill health, to a level as low as reasonably practicable and possible.

Any contractor interested in submitting a bid in response to the Client's formal tender for any construction project, has to prepare and include a draft occupational health and safety plan based on this specification and the OHSACT in its tender submission. The Client will evaluate this plan as part of its formal tender adjudication processes to ensure compliance with Construction Regulation 5 that stipulates that the Client may only appoint a contractor who has the necessary competencies and resources to carry of the work appointed for safely.

4. General occupational health and safety provisions

4.1 Hazard identification and risk assessment (Construction Regulation 9)

4.1.1 Risk assessments

Annexure 5 of this specification contains a list of risk assessment headings that have been identified by the Client as possibly applicable to the abovementioned contract work. It is, by no means, exhaustive and is only offered as assistance to the contractors intending to tender for the applicable works. It therefore remains the overall responsibility of the principal contractor to consider all applicable risks and pro-actively undertake risk assessments and implement appropriate risk mitigation measures.

4.1.2 Development of risk assessments

Every principal contractor performing construction work shall, before the commencement of any construction work or work associated with the aforesaid construction work and during such work, ensure that risk assessments are undertaken by a competent person, appointed in writing, and the risk assessments shall form part of the occupational health and safety plan and be implemented and maintained as contemplated in Construction Regulation 9(1).

The risk assessments shall include, at least:

- The identification of the current as well as emerging risks and hazards to which persons may be exposed to;
- The analysis and evaluation of the risks and hazards identified;
- A documented plan of safe working procedures (SWP) and any method statements to mitigate, reduce or control the risks and hazards that have been identified;
- A plan to monitor the application of the SWPs; and
- A plan to review the risk assessments as the work progresses and changes are introduced or incidents occurred which requires the re-evaluation of the processes/risk mitigation.

Based on the risk assessments, the principal contractor must develop a set of site-specific occupational health and safety rules that will be applied to regulate the occupational health and safety aspects of the construction.

The risk assessments, together with the site-specific occupational health and safety rules, must be submitted to the Client before mobilisation on site commences.

Despite the risk assessments listed in Annexure 5, the principal contractor is required to conduct a baseline risk assessment and the aforesaid risk assessments must be incorporated into the baseline risk assessment. The baseline risk assessment must further include the SWPs and the applicable method statements based on the risk assessments.

Hazard identification and risk assessments must be undertaken whilst SWPs must be developed for all out-of-scope work.

4.1.3 Review of risk assessments

The principal contractor is to review the hazards identified, the risk assessments and the SWPs at each production planning and progress report meeting as the contract work develops and progresses and each time changes are made to the designs, plans and construction methods and/or processes.

It is also proposed that should an incident occur the SWPs and all other applicable processes be re-evaluated to ensure that the mitigation measures are still applicable and appropriate and if not a revision of the risk assessments be undertaken.

The principal contractor must provide the Client, other contractors and all other concerned or affected parties with copies of any changes, alterations or amendments as soon as possible but within 14 calendar days of such changes.

4.2 Legal Requirements

All Contractors entering into a contract with the Client shall, as a minimum, comply with the -

- OHSACT and a current, up-to-date copy of the OHSACT and its Regulations must be available on site at all times;
- Compensation for Occupational Injuries and Diseases Act, No 130 of 1993 (COIDAct) as amended. The principal contractor will be required to submit a letter of registration and "good-standing" from the Compensation Commissioner or compensation insurer before being awarded the contract. A current, up-to-date copy of the COIDAct must be available on site at all times; and
- Where work is being carried out on mine premises, the contractor will comply with the Mine Health and Safety Act and Regulations, No 29 of 1996) as amended, the Minerals Act and Regulations, No 50 of 1991 as amended and any other occupational health and safety requirements that the mine may specify. Current, up-to-date copies of these Acts must, if applicable, also be available on site at all times.

4.3 Structure and responsibilities

4.3.1 Overall supervision and responsibility for occupational health and safety

a. The principal contractor [appointed in terms of Construction Regulation 5(1)(k)] is responsible to implement and maintain the occupational health and safety plan approved by the Client.

b. The Chief Executive Officer (in terms of Section 16(1) of the OHSACT) of the principal contractor is to ensure that the Employer (as defined in the OHSACT) complies with the OHSACT. Annexure 1 "Legal Compliance Checklist" may be used for this purpose and assistance.

c. The principal contractor's Chief Executive Officer may appoint any person reporting to him/her as Designated Person in terms of Section 16(2) of the OHSACT. Such Designated Person is responsible to assist the Chief Executive Officer to ensure that the Employer complies with the requirements of the OHSACT.

d. The construction manager, assistant construction manager, construction supervisor and assistant construction supervisor(s) appointed in terms of Construction Regulation 8 are responsible for supervising the construction work and in specific to ensure that all work undertaken comply with the requirements of the OHSACT, its Regulations and the Client's specifications.

4.3.2 Operational responsibilities for occupational health and safety

The principal contractor shall appoint designated **competent employees** and/or other competent persons as outlined in the following list to assist with the operational responsibilities for occupational health and safety. This list is only the minimum requirement and is therefore in no way exhaustive.

Appointment description	Appointment required in terms of
Asbestos stripper/demolishing supervisor	Asbestos regulations
Assistant construction manager	Construction Regulation 8(2)
Assistant construction supervisor	Construction Regulation 8(8)
Construction health and safety officer	Construction Regulation 8(5)
Construction manager	Construction Regulation 8(1)
Alternate Construction manager	Construction Regulation 8(1)
Construction supervisor	Construction Regulation 8(7)
Construction vehicle, mobile plant and machinery supervisor	Construction Regulation 23
COVID-19 compliance officer	Regulation 16(6) of Government Notice, No R 480
Demolition supervisor	Construction Regulation 14
Drivers of construction vehicles and operators of plant	Construction Regulation 23
Electrical installation and appliances inspector	Construction Regulation 24
Emergency, security and fire coordinator	Construction Regulation 29
Excavation supervisor	Construction Regulation 13
Explosive actuated fastening devise supervisor	Construction Regulation 21
Fall risk protection supervisor	Construction Regulation 10
First-aiders	General Safety Regulation 3
Fire fighting equipment inspector	Construction Regulation 29
Hazardous chemical agents supervisor	Regulations for Hazardous Chemical Agents
Incident investigator	General Administrative Regulation 9
Ladder inspector	General Safety Regulation 13(a)
Lifting machines and equipment inspector	Construction Regulation 22
Materials hoist inspector	Construction Regulation 19
Occupational health and safety committee	OHSACT Section 19
Occupational health and safety representatives	OHSACT Section 17
Person responsible for machinery	General Machinery Regulation 2
Risk assessor	Construction Regulation 9(1)

Appointment description	Appointment required in terms of
Scaffolding supervisor	Construction Regulation 16
Stacking and storage supervisor	Construction Regulation 28
Structures supervisor	Construction Regulation 11
Temporary works supervisor	Construction Regulation 12
Traffic management supervisor	OHSACT Section 9(1)
Traffic safety officer	OHSACT Section 9(1)
Pressure equipment supervisor	Pressure Equipment Regulations
Working on, over or next to water supervisor	Construction Regulation 26
Welding supervisor	General Safety Regulation 9

These appointments must be in writing and the responsibilities clearly stated together with the period for which each appointment is made. This information must be communicated to and agreed with the appointees.

Copies of appointments must be submitted to the Client together with concise CV's (or other applicable proof of competency) of the appointees as part of the principal contractor's health and safety plan and if appointed copies of the appointments included in the occupational health and safety file. All appointments must be approved by the Client and any changes of appointees or appointments must be communicated to the Client and agreed upon before being implemented.

The principal contractor must, furthermore provide the Client with an organogram of all contractors that he/she has appointed or intends to appoint and keep this list updated on a weekly basis.

4.3.3 Construction health and safety officer

This project requires the appointment of a full-time construction health and safety officer, appointed in terms of Construction Regulation 8(5). This appointee should be duly registered and in good standing with a statutory body approved by the Chief Inspector as is required by Construction Regulation 8(6).

The South African Council for Project and Construction Management Professions (SACPCMP) is currently the statutory body responsible for the professional registration of construction health and safety officers and a copy of the appointee's SACPCMP's registration certificate should be submitted as part of the principal contractor's health and safety plan and also be readily available in the health and safety file to be kept and maintained on site.

4.3.4 Designation of occupational health and safety representatives (Section 17 of the OHSACT)

Where the principal contractor employs more than 20 persons [including the employees of other contractors (sub-contractors) and its supervisors] he has to appoint one occupational health and safety representative for every 50 employees or part thereof. General Administrative Regulation 6 requires that the election, appointment and subsequent designation of the occupational health and safety representatives be executed in consultation with employee representatives or employees. (Section 17 of the OHSACT as well as General Administrative Regulation 6 and 7 refer).

Occupational health and safety representatives have to be designated in writing and the designation must include the area of responsibility of the person and term of the designation.

4.3.5 Duties and functions of the occupational health and safety representatives (Section 18 of the OHSACT)

a. The principal contractor must ensure that the designated occupational health and safety representatives conduct a weekly inspection of their respective areas of responsibility, using a checklist, and report thereon to the principal contractor.
b. Occupational health and safety representatives must be included in accident and/or incident investigations.
c. Occupational health and safety representatives must attend all occupational health and safety committee meetings.

4.3.6 Appointment of occupational health and safety committee (Section 19 of the OHSACT)

The principal contractor must establish an occupational health and safety committee consisting of all the designated occupational health and safety representatives together with a number of management representatives that are not allowed to exceed the number of occupational health and safety representatives on the committee and a representative of the Client who shall act as the chairperson without voting rights. The members of the occupational health and safety committee must be appointed in writing and copies of the appointments included in the occupational health and safety file.

The occupational health and safety committee must meet as a minimum on a monthly basis and consider, at least, the following agenda items:

1. Opening and welcome.
2. Members present, apologies and absent.
3. Minutes of previous meeting.
4. Matters arising from the previous meeting.
5. Occupational health and safety representatives' reports.
6. Incident and/or accident reports and investigations.
7. Incident, accident and/or injury statistics.
8. Other matters.
9. Endorsement of registers and other statutory documents by a duly authorised representative of the principal contractor.
10. Close and next meeting.

4.4 Mandataries

It is a requirement that the principal contractor, when he appoints contractors or sub-contractors in terms of Construction Regulations 7(1)(c) includes an OHSACT Section 37(2) agreement (i.e. Agreement with Mandatary) in his agreement with such contractor.

4.5 Administrative controls and the occupational health and safety file

4.5.1 The occupational health and safety file [Construction Regulation 7(1)(b)]

As required by Construction Regulation 7(1)(b), the principal contractor and other contractors will each keep an occupational health and safety file on site containing the following documents as a minimum:

1. Copy of the construction work permit (for applicable projects) (Construction Regulation 3)
2. Notification of construction work (Construction Regulation 4.).
3. Updated copies of the OHSACT and its Regulations as well as the COID Act (General Administrative Regulation 4.).
4. Proof of registration and good standing with the Compensation Commissioner or a COID Insurer [Construction Regulation 5(1)(j)].
5. Occupational health and safety plan agreed with the Client including the underpinning risk assessment(s) and method statements [Construction regulation 7(1)].
6. Copies of occupational health and safety committee meetings and other relevant minutes.
7. Designs and/or drawings [Construction Regulation 7(1)(b)].
8. A list of contractors (sub-contractors) including copies of the agreements between the parties, proof of good standing with the Compensation Commissioner or COID Insurer, and the type of work to be undertaken by each contractor (Construction Regulation 7).
9. Appointment and designation forms as per paragraphs 4.3.1 and 4.3.2 above.
10. Copy of the construction health and safety officer's SACPCMP registration certificate.
11. The following registers:
    - Accident and/or incident register (Annexure 1 of the General Administrative Regulations);
    - Occupational health and safety representatives' inspection register;
    - Construction vehicles and mobile plant inspections by controller;
    - Daily inspections of vehicles, plant and other equipment by the operator, driver and/or user;
    - Designer's inspections and structures record;
    - Inspection and maintenance of explosive actuated fastening devices;
    - Inspection of electrical installations (including inspection of portable electrical tools, electrical equipment and other electrical appliances);
    - Fall risk protection inspections;
    - First-aid box content;
    - Record of first-aid treatment;
    - Fire equipment inspections and maintenance;
    - Record of hazardous chemical agents kept and used on site;
    - Ladder inspections;
    - Machine safety inspections (including machine guards, lock-outs etcetera);
    - Inspection registers and logbooks for lifting machines and –tackle (including daily inspections by drivers/operators);
    - Inspections of scaffolding;
    - Inspections of stacking and storage;
    - Inspections of structures;
    - Pressure equipment inspections; and

- Inspections of welding equipment.

12. All other applicable records.

The Client will conduct and evaluation of the principal contractor's occupational health and safety file from time to time.

4.6 Occupational health and safety goals and objectives and arrangements for monitoring and review of occupational health and safety performance

The principal contractor is required to maintain a compensation incidence frequency rate (CIFR) of not more than four (See Annexure 2 to this document: "Measuring Injury Experience") and report on this to the Client on a monthly basis.

4.7 Notification of construction work (Construction Regulation 4)

The principal contractor must, where the contract meets the requirements laid down in Construction Regulation 4, at least 7 days before construction work is to be carried out, notify the Department of Employment and Labour of the intention to carry out construction work and use the form (Annexure 2 in the Construction Regulations) for this purpose. A copy of the notification must be held on the occupational health and safety file and a copy must also be forwarded to the Client for record purposes.

4.8 Medical certificates of fitness (Construction Regulation 7)

As required by Construction Regulation 7(1)(g), the principal contractor must ensure that all employees have a valid medical certificate of fitness specific to the construction work to be performed. These certificates must be issued by an occupational health practitioner in the form of Annexure 3 (i.e. Annexure 3 in the Construction Regulations).

4.9 Training, awareness and competence

The contents and syllabi of all training required by the OHSACT and Regulations must be included in the principal contractor's occupational health and safety plan.

4.9.1 General induction training

All members of the contractor's site management as well as all the persons appointed as responsible for occupational health and safety in terms of the Construction and other Regulations will be required to attend a general induction session.

All employees of the principal and other contractors must be in possession of proof of general induction training.

All subsequent and newly appointed employees must also be subjected to the induction training as soon as possible after the appointment but prior to starting working on site.

4.9.2 Site-specific induction training

The principal contractor will be required to develop a contract work project specific induction training course based on the risk assessments for the contract work and train all employees and other contractors and their employees in this.

All employees of the principal and other contractors must be in possession of proof that they have attended a site-specific occupational health and safety induction training at all times.

4.9.3 Other training

1. All operators, drivers and users of construction vehicles, mobile plant and other equipment must be in possession of valid proof of training and where applicable licenses or proof of competency.
2. All employees in jobs requiring training in terms of the OHSACT and Regulations must be in possession of valid proof of training.
3. Occupational health and safety training requirements [as required by the Construction Regulations and as indicated by the occupational health and safety specification and the risk assessment(s)] i.e. -
   a. General induction (Section 8 of the OHSACT);
   b. Site and job specific induction, including visitors (Sections 8 and 9 of the OHSACT);
   c. Site and project manager;
   d. Construction manager;
   e. Construction supervisor;
   f. Occupational health and safety representatives [Section 18 (3) of the OHSACT];
   g. Training of the appointees indicated in paragraphs 4.3.1 and 4.3.2;
   h. Operators and drivers of construction vehicles and mobile plant (Construction Regulation 23);
   i. Basic fire prevention and protection (Environmental Regulations 9 and Construction Regulation 29);
   j. Basic first-aid (General Safety Regulations 3);
   k. Storekeeping methods and safe stacking (Construction Regulation 28);
   l. Storage and handling of hazardous chemical agents; and
   m. Emergency, security and fire coordinator.

4.9.4 Awareness and promotion

The principal contractor is required to have a promotion and awareness programme in place to create an occupational health and safety culture within employees as well as sub-contractors. The following are some of the methods that may be used:

- Toolbox talks
- Posters
- Videos
- Competitions
- Suggestion schemes
- Participative activities such as employee "occupational health and safety circles".

4.9.5 Notices and signs

The following notices and signs are, where applicable, compulsory on the construction site as well as the contractors' yards:

Area and/or activity where notice or sign is required	Notice or sign required in terms of
Display of notices and signs	General Safety Regulation 2B and SABS Code 1186
Entry	General Safety Regulation 2C(2)
First-aid	General Safety Regulation 3(6)
Toilets and change rooms	Facilities Regulation 2 (5) 4(2)(f)
Storage of flammable materials	General Safety Regulation 4(8)(a)(i) and (ii) [10(e) only applicable to contractor's yards]
Grinding wheels	Driven Machinery Regulation 8(1)(7)
Machinery	General Machinery Regulation 9 (Schedule D)
Explosive actuated fastening devises	Construction Regulation 21(2)(f)
Prohibition on smoking and eating or drinking at the workplaces where high risk substances [FR5 (1)] are stored or handled	Facilities Regulation 6(b)
Non-potable water	Facilities Regulation 7(B)
Construction Works Permit	Construction Regulation 3(4)
COVID-19 awareness	COVID-19 best practice

4.9.6 Competence

The principal contractor shall ensure that his and other contractors' employees appointed are competent and that all training required to undertake the work safely and without risk to health of their or other persons, has been successfully completed before work commences.

The principal contractor shall ensure that follow-up and refresher training is conducted on a regular basis as well as the contract work progresses and the work situation or requirements changes.

Records of all training must be kept on the occupational health and safety file for auditing purposes.

4.10 Consultation, communication and liaison

The following arrangements will apply-

4.10.1 Occupational health and safety liaison between the Client, the principal contractor, the other contractors, the designer and other concerned parties will be through the occupational health and safety committee. In the absence of a health and safety committee, the Client and principal contractor will agree on an alternative communication forum to be implemented.

4.10.2 In addition to the above, communication may be directly to the Client or his appointed Agent, verbally (followed up in writing within 14 calendar days) or in writing, as and when the need arises.

4.10.3 Consultation with the workforce on occupational health and safety matters will be through their supervisors, occupational health and safety representatives, the occupational health and safety committee and their elected trade union representatives, if any.

4.10.4 The principal contractor will be responsible for the dissemination of all relevant occupational health and safety information to the other contractors, for example design changes agreed with the Client and the designer, instructions by the Client and/or his Agent, exchange of information between contractors, the reporting of hazardous and/or dangerous conditions and/or situations etcetera.

4.10.5 The principal contractor will be required to do site safety walks with the Client and/or his Agent on a basis to be determined and agreed between the parties.

4.10.6 The principle and other contractors will be required to conduct toolbox talks with their employees on at least a weekly basis and records of these including the topics discussed must be kept on the occupational health and safety file. Employees must acknowledge the receipt of toolbox talks which record must, likewise be kept on the occupational health and safety file.

4.10.7 The principal contractor's most senior manager on site will be required to attend all the Client's occupational health and safety meetings.

4.10.8 The Client or his Agent and the principal contractor will agree on the dates, times and venues of the occupational health and safety meetings.

4.11 Checking, reporting and corrective actions

4.11.1 Monthly compliance assessment by Client [Construction Regulation 5(1)(0)]

The Client will be conducting a periodic assessment to comply with Construction Regulation 5(1)(*o*) and to confirm that the principal contractor has implemented and is maintaining the agreed and approved occupational health and safety plan.

4.11.2 Other assessments and inspections by the Client

The Client reserves the right to conduct other ad-hoc assessments and inspections as deemed necessary. This could include among others site safety walks.

4.11.3 Conducting an assessment

A representative of the principal contractor must accompany the Client on all assessments and inspections and may conduct his/her own inspection at the same time. Each party will, however, take responsibility for the results of his/her own assessment and/or inspection.

4.11.4 Contractor's assessments and inspections

The principal contractor is to conduct his own internal assessments and inspections to verify compliance with his own occupational health and safety plan and management system as well as the requirements of this specification and the compliance of other contractors under his/her control.

4.11.5 Planned and critical task observations (PTO/CTO)

Planned and critical task observation frequency shall be determined in a risk-based manner, but at least twice a month. Such task observations shall be conducted by duly trained and competent construction supervisor(s) and assistant construction supervisor(s).
All deviations and findings identified through the observation shall be managed in accordance with the principal contractor's non-conformance management procedure including guidance and training to the employee(s) concerned. The principal contractor shall make provision for the frequency, tasks to be observed, related safe work procedures and responsible persons in the occupational health and safety plan.

4.11.6 Inspections by occupational health and safety representatives and other appointees

Occupational health and safety representatives must conduct weekly inspections of their areas of responsibility and report thereon to their foreman or supervisor whilst other appointees must conduct inspections and report thereon as specified in their appointments for example vehicle, plant and machinery drivers, operators and users must conduct daily inspections before start-up.

4.11.7 Recording and review of inspection results

All the results of the abovementioned inspections must be in writing, reviewed at occupational health and safety committee meetings, endorsed by the chairperson of the meeting and placed on the occupational health and safety file.

4.11.8 Reporting of inspection results

The principal contractor is required to provide the Client with a monthly report in the format as per the attached Annexure 3: "Safety, Health and Environment Risk Management Report".

4.12 Incident reporting and investigation

4.12.1 Reporting of accidents and incidents (Section 24 and General Administrative Regulation 8 of the OHSACT)

The principal contractor must report all incidents where an employee is injured on duty to the extent that he/she:

- dies
- becomes unconscious
- loses a limb or part of a limb
- is injured or becomes ill to such a degree that he/she 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 continue with the activity for which he/she was usually employed

or where -

- a major incident occurred
- the health or safety of any person was endangered
- where a dangerous substance was spilled

- the uncontrolled release of any substance under pressure took place
- machinery or any part of machinery fractured or failed resulting in flying, falling or uncontrolled moving objects
- machinery ran out of control

to the Client within two calendar days and to the Provincial Director of the Department of Employment and Labour within seven calendar days from date of incident (Section 24 of the OHSACT and General Administrative Regulation 8), **except** that, where a person has died, has become unconscious for any reason or has lost a limb or part of a limb or may die or suffer a permanent physical defect, the incident must be reported to both the Client and the Provincial Director of the Department of Employment and Labour forthwith by telephone, telefax or e-mail. All other reports should still be completed and provided as required.

The principal contractor is required to provide the Client with copies of all statutory reports required in terms of the OHSACT within seven calendar days of the incident occurring.

The principal contractor is required to provide the Client with copies of all internal and external accident/incident investigation reports, including the reports contemplated in 4.11.2 (3) and (4) below, within seven calendar days of the incident occurring.

4.12.2 Accident and incident investigation (General Administrative Regulation 9)

1. The principal contractor is responsible for the investigation of all accidents and/or incidents where employees and non-employees were injured to the extent that he, she and/or they had to be referred for medical treatment by a doctor, hospital or clinic.

2. The results of the investigation to be entered into the accident and/or incident register.

3. The principal contractor is responsible for the investigation of all minor and non-injury incidents as described in Section 24 (1) (b) and (c) of the OHSACT and keeping a record of the results of such investigations including the steps taken to prevent similar accidents/incidents in future.

4. The principal contractor is responsible for the investigation of all road traffic accidents, related to the construction activities, and keeping a record of the results of such investigations including the steps taken to prevent similar accidents in future.

5. The Client reserves the right to hold its own investigation into an incident or call for an independent external investigation.

5. Operational control

5.1 Emergency preparedness, contingency planning and response

5.1.1 The principal contractor must appoint a competent person to act as emergency controller and/or coordinator.

5.1.2 The principal contractor must conduct an emergency identification exercise and establish what emergencies (such as health, safety, environmental, third party, community or wildlife related actions etcetera) could possibly develop. He/she must then develop detailed contingency plans and emergency procedures, taking into account any emergency plan that the Eastern Cape Parks & Tourism Agency may have in place.

5.1.3 The principal contractor and the other contractors must hold regular practice drills of contingency plans and emergency procedures to test them and familiarise employees with them.

5.2 First-aid (General Safety Regulation 3)

5.2.1 The principal contractor must provide first-aid equipment and have qualified first-aider(s) on site as required by General Safety Regulation 3 of the OHSACT.

5.2.2 The contingency plan of the principal contractor must include arrangements for the speedily and timeously transportation of injured and/or ill person(s) to a medical facility or getting emergency medical support to person(s) who may require it.

5.2.3 The principal contractor must have firm arrangements with his contractors in place regarding the responsibility of these contractor's first-aid arrangements as well as treatment of injured and/or ill employees.

5.3 Security

5.3.1 The principal contractor must establish site access rules and implement and maintain these throughout the construction period. Access control must, among others, include the rule that non-employees will not be allowed on site unaccompanied.

5.3.2 The principal contractor must ensure that no person under the age of eighteen (18) is allowed to undertake any work on the construction site.

5.3.3 The principal contractor must develop a set of project applicable security rules and procedures and maintain these throughout the construction period.

5.4 Accommodation of traffic

5.4.1 The principal contractor shall appoint a competent traffic safety officer to take responsibility for the accommodation of all traffic.

5.4.2 The principal contractor shall undertake a detailed risk assessment to ensure that all traffic related risks are identified and appropriate risk mitigation measures be established, implemented and maintained. This risk assessment should be kept on the health and safety file and also duly communicated to all employees and especially operators and drivers of construction vehicles and plant.

5.4.3 The principal contractor shall develop a comprehensive traffic accommodation plan to provide for traffic entering the site as well as traffic on site, i.e. internal roads and construction areas.

5.4.4 Where construction work is undertaken in, next to or close to a public road, the use of appropriate as well as a sufficient number of road signs to be of paramount importance to protect employees against traffic and to warn all road users of the presence of construction work as well as construction employees/risks/vehicles.

5.4.5 The principal contractor shall ensure that appropriate as well as a sufficient number of road signs are posted to protect employees against traffic and to warn all road users of the presence of construction work as well as construction employees/vehicles. These signs shall be repeated and utilised, where appropriate, as actual construction work is approached.

5.4.6 The following signage shall be provided as a minimum where construction work is undertaken in, next to or close to a public road:

a. "Construction work ahead" sign before the start of the construction work;
b. "Lane narrows" sign before the start of the construction work;
c. "Keep right/left" sign before the start of the construction work and again where the tapering begins; and
d. Delineators and cones before construction work.

5.4.7 Where construction work includes excavations in or next to a public road, warning lights or visible boundary indicators shall be provided after dark or when visibility is poor.

5.4.8 The maintenance of all signage and especially those that is suitable after dark shall be duly managed.

5.4.9 Where appropriate duly trained flag persons shall be deployed a good distance ahead of areas where traffic is deviated or lanes closed off. These flag persons to be managed assertively to ensure that they add optimal value and should they not do so they should be retrained and if necessary replaced.

5.4.10 The community liaison officer (CLO) shall also be sensitised on the optimal management of traffic and the risks involved and then be instructed to increase community awareness through talking to all stakeholders including the distribution of suitable information brochures.

5.5 Work in fall risk positions [Fall protection (Construction Regulation 10)]

The principal contractor must undertake -

5.5.1 A pre-emptive risk assessment to be carried out for any work undertaken from a fall risk position and will be classified as "work in elevated positions".

5.5.2 As far as is practicable, any person working in a fall risk position will work from a stable platform, ladder or other device that is at least as safe as if he or she is working at ground level and whilst working in this position be wearing suitable fall arrest equipment to prevent the person falling from the platform, ladder or other device utilised. This fall arrest equipment will be, as far as is possible, secured to a point away from the edge over which the person might fall and the lanyard must be of such a length and strength that the person will not be able to move over the edge.

Alternatively, any platform, slab, deck or surface forming an edge over which a person may fall shall be fitted with suitable guard rails at two different heights as

prescribed in SANS 10085 code of practice for the design, erection, use and inspection of access scaffolding.

5.5.3 Where the requirement in paragraph 5.5.2 is not practicable, the person will be provided with a full body harness that will be worn and attached above the wearer's head at all times and the lanyard must be fitted with a shock absorbing device or the person must be attached to a fall arrest system that is approved by the Client.

5.5.4 Where the requirements in paragraph 5.5.3 are not practicable, a suitable catch net, which must be able to sustain the weight of at least the average person working in the elevated position, must be erected.

5.5.5 Employees working in fall risk positions must be trained to do this safely and without risk to their or other person's health and safety.

5.5.6 Where work on roofs is carried out, the risk assessment must take into account the possibility of persons falling through fragile material, i.e. skylights and openings in the roof.

5.5.7 Updated records confirming the physical and psychological fitness of employees working in fall risk positions should be kept on the health and safety file at all times.

5.6 Structures (Construction Regulation 11)

The principal contractor must ensure that:

5.6.1 Only skilled employees are allowed to erect structures and that the skills of these employees are being verified at regular intervals.

5.6.2 Steps are taken to ensure that no structure becomes unstable or collapses due to construction work being performed on it or in the vicinity of it.

5.6.3 No structure is overloaded to the extent where it becomes unsafe.

5.6.4 He or she has received from the designer the following information:

- Information on known or anticipated hazards relating to the construction work and the relevant information required for the safe execution of the construction work.
- A geo-scientific report (where applicable).
- The loading the structure is designed to bear.
- The methods and sequence of the construction process.
- Any other applicable information.

5.6.5 All drawings pertaining to the design are on site, utilised and available for inspection.

5.7 Access scaffolding (Construction Regulation 16)

Access scaffolding must be erected, used and maintained safely in accordance with Construction Regulation 16 and SA Bureau of Standards Code of Practice, SANS 10085 entitled, "The Design, Erection, Use and Inspection of Access Scaffolding".

Detailed consideration must be given to all scaffolding to ensure that it is properly planned to meet the working requirements, designed to carry the necessary loadings and maintained

in a sound condition. It must also be ensured that there is sufficient material available to erect the scaffolding properly and safely.

Scaffolding must be erected, altered, maintained or dismantled by person(s) who has/have adequate training and experience in this type of work or under the continuous and direct supervision of such a person.

5.8 Lifting equipment (Construction Regulation 22)

Lifting equipment must be designed and constructed in accordance with the manufactures/designers specifications as well as generally accepted technical standards and operated, used, inspected and maintained in accordance with the manufactures requirements as well as that of the Driven Machinery Regulation 18 of the OHSACT:

The Driven Machinery Regulation requires that:

a. Lifting equipment to be clearly and conspicuously marked with the maximum mass load (MML) that it is designed to carry safely. When the MML varies with the conditions of use, the table of maximum loads should be used by the driver/operator;
b. Each winch on a lifting machine must at all time have, at least, three full turns of rope on the drum when the winch has been run to its lowest limit;
c. Lifting equipment be fitted with a brake or other applicable device capable of holding the MML. This brake or device must automatically prevent the downward movement of the load when the lifting power is interrupted;
d. Lifting equipment fitted with a load limiting device that automatically arrest the lift when the load reaches its highest safe position or when the mass of the load is greater than the MML;
e. Every chain or rope on a lifting machine that forms an integral part of the machine must have a factor of safety as prescribed by the manufacturer of the machine and where no standard is available the factor of safety must be:
   - chains – 4 (four)
   - steel wire ropes - 5 (five)
   - fibre ropes- 10 (ten)
f. Every hook or load attaching device must be designed as such or fitted with a device that will prevent the load from slipping off or disconnecting;
g. Every lifting machine must be inspected and load tested by a competent person every time it has been dismantled and re-erected and every 12 months after that. The load test must be in accordance with the manufacturers prescription or to 110% of the MML in addition all ropes, chains, hooks or other attaching devices, sheaves, brakes and safety devices forming an integral part of a lifting machine must be inspected every 6 months by a competent person;
h. All maintenance, repairs, alterations and inspection results must be recorded in a log book and each lifting machine must have its own log book; and
i. No person may be lifted by a lifting machine not designed for lifting persons unless in a cradle approved by an inspector of the Department of Employment and Labour.

5.9 Lifting tackle

The following requirements will apply to lifting tackle:

a. Manufactured of sound material, well-constructed and free from latent defects;
b. Clearly and conspicuously marked with an identity number;
c. Maximum mass load factor of safety:
   - Natural fibre ropes - 10(ten)

- Man-made fibre ropes and woven webbing - 06(six)
- Steel wire ropes – single rope - 06(six)
- Steel wire ropes – combination slings - 08(eight)
- Mild Steel chains - 05(five)
- High tensile/alloy steel chains - 04(four)

d. Steel wire ropes must be discarded (not used any further for lifting purposes) when wear and corrosion is evident and must be examined by a competent person every three months for this purpose and the results recorded in a designated log book.
e. All lifting tackle must be inspected by a competent person on a regular basis but at least every 3-months and proof of such tests available on site.

5.10 Construction vehicle and mobile plant operators

The following requirements will apply to construction vehicle and mobile plant operators:

a. Only certified and/or competent employees may be allowed to operate any construction vehicle and mobile plant.
b. Every lifting machine operator must be trained specifically for the type of lifting machine that he or she is operating.
c. Only employees duly authorised to do so may operate any construction vehicle and mobile plant.
d. Only employees physically and psychologically fit, i.e. in possession of a medical certificate of fitness, may be allowed to operate any construction vehicle and mobile plant.

5.11 Construction vehicles and mobile plant (Construction Regulation 23)

Construction vehicles and mobile plant should be formally and duly inspected by a competent person appointed by the principal contractor prior to being allowed on a project site and suppliers of hired vehicles, plant and equipment must be required to comply with this specification as well as the OHSACT and Regulations.

Construction vehicles and mobile plant must be:

a. Of acceptable design and construction;
b. Maintained in good working order;
c. Used in accordance with their design and intention for which they were designed;
d. Operated and/or driven by trained, competent and authorised operators/drivers. No unauthorised persons to be allowed to drive construction vehicles and mobile plant;
e. Provided with safe and suitable means of access;
f. Fitted with adequate signalling devices to make movement safe including reversing;
g. Excavations and other openings must be provided with sufficient barriers to prevent construction vehicles and mobile plant from falling into same;
h. Provided with roll-over protection;
i. Inspected daily before start-up by the driver, operator and/or user and the findings recorded in a register/log book and any defects addressed as matter of urgency;
j. Fitted with two head and two tail lights that is in good working condition whilst operating under poor visibility conditions; and
k. Used for transporting persons must have seats firmly secured and sufficient for the number of persons being transported.

No loose tools, material etcetera is allowed in the driver and/or operators compartment/cabin nor in the compartment in which any other persons are transported.

No person may ride on construction vehicles and mobile plant except for in a safe place designed and provided for this purpose.

The construction site must be organised to facilitate the movement of construction vehicles and mobile plant in such a manner that pedestrians and other vehicles are not endangered. Traffic routes to be suitable, sufficient in number and adequately demarcated.

Construction vehicles and mobile plant left unattended after hours adjacent to roads and areas where there is traffic movement must be fitted with lights, reflectors or adequate barricades to prevent moving traffic from a sudden emergency, or to come into contact with the parked construction vehicles and mobile plant.

In addition, construction vehicles and mobile plant left unattended after hours must be parked with all buckets, booms etc. full lowered, the emergency brakes engaged and, where necessary, the wheels chocked, the transmission in neutral and the motor switched off and the ignition key removed and stored safely.

All construction vehicles and mobile plant daily inspection records must be kept in the occupational health and safety file.

5.12 Electrical installations (Construction Regulation 24)

Any electrical work undertaken as part of the project, including the installation of temporary electricity for construction use shall be in accordance with Construction Regulation 24 and the Electrical Installation Regulations.

The principal contractor must ensure that:

a. Existing services are to be located and clearly marked before construction commences and during the progress thereof;
b. Where the abovementioned is not possible, employees with jackhammers etc. will be protected against electric shock by the use of suitable protective equipment e.g. rubber mats, insulated handles etcetera;
c. Electrical installations and -machinery are sufficiently robust to withstand normal working conditions on site;
d. Temporary electrical installations must be inspected at least once per week by a competent person and a record of the inspections kept on the occupational health and safety file;
e. Electrical machinery used on a construction site must be inspected daily before start-up by the competent driver/operator or any other competent person and a record of the inspections kept on the occupational health and safety file; and
f. A competent person appointed in writing must control all temporary electrical installations.

5.13 Electrical and mechanical lockout

An electrical and mechanical lockout procedure must be developed by a competent person (i.e. duly qualified and certified electrician) and signed off by the Construction Manager. The principal contractor must ensure that the lockout procedure is duly implemented and maintained, i.e. all contractors on site are informed of and adhere to this lockout procedure.

5.14 Use and storage of flammables (Construction Regulation 25)

The principal contractor must ensure that:

a. No person is required or permitted to work in a place where there is the danger of fire or an explosion due to flammable vapours being present unless adequate precautions is taken;
b. Flammables stored on a construction site are stored in a well-ventilated, reasonably fire-resistant container, cage or room that is kept locked with consistent access control measures in place and sufficient fire fighting equipment installed and fire prevention methods practiced for example proper housekeeping;
c. Only one day's quantity of flammable is to be kept in the workplace;
d. Containers (including empty containers) to be kept closed to prevent fumes/vapours from escaping and accumulating in low lying areas; and
e. Welding and other flammable gases to be stored segregated as to the type of gas and empty and full cylinders.

5.15 Hazardous chemical agents (HCA)

The principal contractor must ensure that:

a. Employees receive the necessary information and training to be able to use, handle and store hazardous chemical agents safely;
b. Employees obey lawful instructions regarding:
   - The wearing and use of personal protective equipment;
   - The use, handling and storage of hazardous chemical agents;
   - The prevention of the release of hazardous chemical agents;
   - The wearing and using of exposure monitoring and measuring equipment;
   - The cleaning up and disposal of materials containing hazardous chemical agents; and
   - Housekeeping, personal hygiene and the protection of the environment;
c. The risk assessments required in terms of Construction Regulation 9 include employee exposure to hazardous chemical agents and that the necessary measures be taken to protect persons from being detrimentally affected by hazardous chemical agents present or used in the workplace.
d. Suppliers provide the necessary information in the form of safety data sheets (SDS) regarding hazardous chemical substances required to ensure the safe use, handling and storage of these substances. The safety data sheets have to meet the following –
   - be GHS (UN Globally Harmonized System) compliant;
   - classify the HCA, in accordance with regulation 14;
   - be reviewed at least once every five years; and
   - be amended whenever necessary to ensure that it contains correct and current information, aligned to its GHS classification required by regulation 14(c), which includes new data regarding the hazard presented by an HCA that changes its classification in a category or subcategory of a hazard class or results in its classification to another hazard class; and
e. An up-to-date list is kept on site of hazardous chemical agents stored and used together with the safety data sheet of the said hazardous chemical agents;

f. Hazardous chemical agent containers should be clearly and duly labelled, i.e. label to include –
   - the product identifier and, where applicable, the United Nations proper shipping name;
   - the chemical identity of all the ingredients contributing to the final GHS classification of the HCA;
   - the name, address, and business telephone number of the manufacturer or importer;
   - an emergency telephone number where support is available;
   - a signal word, hazard statement, precautionary statement and hazard pictogram consistent with the HCA's GHS classification, made in accordance with regulation 14;
   - the quantity of the HCA in the package, unless this quantity is specified elsewhere on the package;
   - the quantity of each HCA ingredient;
   - any information about the hazards, and first-aid and emergency procedures relevant to the HCA, not otherwise included in the hazard statement or precautionary statement;
   - first-aid measures; and
   - an expiry date, where applicable.

g. Hazardous chemical agents are not cleared by using compressed air but should be vacuumed;
h. No person eats or drinks in an area where hazardous chemical agents are stored or utilised; and
i. Hazardous chemical agents waste is disposed of safely in terms of hazardous waste disposal requirements.

5.16 Fire prevention and protection

The principal contractor must ensure that:

a. The risk of fire is avoided;
b. Sufficient and suitable storage of flammables is provided;
c. All employees are instructed in the use of the fire fighting equipment and know how to attempt to extinguish a fire;
d. A sufficient number of employees are appointed and trained to act as an emergency team to deal with fires and other emergencies;
e. Employees are informed regarding emergency evacuation procedures and escape routes;
f. Emergency escape routes are kept clear at all times and clearly marked;
g. Evacuation assembly points are demarcated and made known to employees;
h. Evacuation is regularly practiced to ensure that all persons are evacuated timeously and;
i. Roll call is held after evacuation to account for all employees and to ensure that no-one including visitors and disabled persons have been left behind; and
j. A clearly audible, to all persons on site, siren or alarm is fitted and regularly tested.

5.17 Housekeeping (Construction Regulation 27)

The principal contractor must ensure that:

a. Housekeeping is continuously implemented and maintained;
b. Materials and equipment are properly stored;
c. Scrap, waste and debris are removed off site regularly;
d. Materials placed for use are placed safely and not allowed to accumulate or cause obstruction to the free-flow of pedestrians and vehicular traffic;
e. Where practicable, construction sites are fenced off to prevent entry of unauthorised persons;
f. An unimpeded work space is maintained for every employee;
g. Every workplace is kept clean, orderly and free of tools and the likes that are not required for the work being done;
h. As far as is practicable, every floor, walkway, stair, passage and gangway is kept in good state of repair, skid-free and free of obstruction, waste and materials; and
i. The walls and roof of every indoor workplace be sound and leak-free.

5.18 Stacking and storage (Construction Regulation 28)

The principal contractor must ensure that:

a. A competent person is appointed in writing to supervise all stacking and storage on a construction site;
b. Adequate storage areas are provided and demarcated;
c. The storage areas are kept neat and under control;
d. The base of any stack is level and capable of sustaining the weight exerted on it by the stack;
e. The items in the lower layers can support the weight exerted by the top layers;
f. Cartons and other containers that may become unstable due to wet conditions are kept dry;
g. Pallets and containers are in good condition and no material is allowed to spill out;
h. The height of any stack does not exceed 3 times the base unless stepped back at least half the depth of a single container at least every fifth tier or the approval of an inspector of the Department of Employment and Labour has been obtained to build the stacks higher with the aid of a machine. (The operator of the machine must be protected against items falling from overhead or off the stack and no items may overhang);
i. The articles that make up a single tier are consistently of the same size, shape and mass;
j. Structures for supporting stacks are structurally sound and able to support the mass of the stack;
k. No articles are removed from the bottom of the stack first but from the top tier first;
l. Anybody climbing onto a stack can and does do it safely and that the stack is sufficiently stable to support him or her;
m. Stacks that are in danger of collapsing are broken down and restacked;
n. Stability of stacks are not threatened by vehicles or other moving plant and machinery;
o. Stacks are built in a header and stretcher fashion and that corners are securely bonded; and
p. Persons climbing onto stacks do not approach unguarded moving machinery or electrical installations.

5.19 Eating, changing, washing and toilet facilities (Construction Regulation 30)

5.19.1 Toilets

a. The provision of toilets for each sex is required in terms of the National Building Regulations and Construction Regulation 30.
b. Chemical toilets are allowed instead of the water borne sewerage type. Toilets have to be provided at a ratio of at least 1 toilet per 30 employees.

5.19.2 Showers

At least cold-water showers of some sort for each sex have to be provided at a ratio of at least 1 shower per 15 employees.

5.19.3 Change rooms

Some form of screened off changing facility must be provided separately for each sex.

5.19.4 Eating facility

Some form of eating facility sheltered from the sun, wind and rain must be provided.

5.19.5 Living accommodation

Where the site is in a remote location and transport to home is not readily available, reasonable and suitable living accommodation must be provided after obtaining of the necessary permission from authorities and adhering to requirements such as Bylaws of the local municipality.

5.20 Personal and other protective equipment (Sections 8, 15 and 23 of the OHSACT)

The principal contractor is required to proactively identify the hazards in the workplace and deal with them on an ongoing basis. He/she must either remove them or, where impracticable take steps to protect employees and make it possible for them to work safely and without risk to health under the hazardous conditions.

Personal protective equipment should, however, be the last resort and there should always first be an attempt to apply re-engineering and other solutions to mitigating hazardous situations before the issuing of personal protective equipment is considered.

Where it is not possible to create an absolutely safe and healthy workplace the principal contractor is required to inform employees regarding this and issue, free of charge, suitable equipment to protect them from any hazards being present and that allows them to work safely and without risk to health in the hazardous environment.

It is a further requirement that the principal contractor maintain the said equipment, that he/she instructs and trains the employees in the use of the equipment and ensures that the prescribed equipment is used by the employee/s in a consistent and correct manner.

Employees do not have the right to refuse to use and/or wear the equipment prescribed by the employer and, if it is impossible for an employee to use or wear prescribed protective equipment through health or any other valid reason, the employee cannot be allowed to continue working under the hazardous condition(s) for which the equipment was prescribed but an alternative solution has to be found that may include relocating the employee.

The principal contractor may **not charge any fee** for protective equipment prescribed by him or her **but may charge for equipment under the following conditions**, following a disciplinary hearing:

- Where the employee requests additional issue in excess of what is prescribed;
- Where the employee has blatantly abused or neglected the equipment leading to early failure; and
- Where the employee has lost the equipment.

5.21 Tools and equipment

5.21.1 Portable electrical tools and equipment (Electrical Machinery Regulation 9)

Portable electrical tools and equipment includes every unit that takes electrical power from a 15 ampere plug point and is moved around for use in the workplace i.e. drills, saws, grindstones, portable lights, etcetera. In addition, electrical appliances such as fridges, hotplates, heaters, etcetera must be inspected regularly but at least on a weekly basis and maintained to the same standards as portable electrical tools and appliances.

The use, inspection and maintenance of portable electrical tools and equipment must be governed by the following:

- Regular inspections by a competent person appointed in writing;
- Inspection results must be recorded in a register;
- Only competent authorised persons are allowed to use portable electrical tools and equipment; and
- The correct protective equipment is worn/used whilst operating portable electrical tools and equipment.

This equipment -

- Must be maintained in good condition at all times to prevent an electrical shock to the user;
- The main source should incorporate an earth leakage protection device or receive power through a double wound transformer or be double insulated and clearly marked as such; and
- All equipment must be fitted with a switch to allow for safe and easy starting and stopping.

5.21.2 Hand tools

Section 8(2)(a) of the OHSACT stipulates that the employer shall ensure that plant and machinery, including hand tools, are safe for use. To meet this requirement hand tools ought to be inspected, recorded and defects reported at intervals specified. The inspection registers also serve as proof that a formal process was implemented and maintained to ensure that hand tools are safe for use.

To ensure compliance with the above, the principal contractor shall implement and maintain a process to ensure that hand tools utilised are formally inspected and declared safe for use.

5.21.3 Defective tools and equipment

Any defective tools or equipment must be placed in a designated "quarantine" area or clearly marked as "defective" and steps be taken to ensure that these are no longer allowed to be used.

The use of defective hand tools must be strictly managed with no exceptions being allowed. Documentary proof must also be kept of actions taken against supervisors allowing and employees using unsafe tools to ensure that this could be used in a court of law to proof that the usage of such tools was not generally tolerated.

5.22 Portable lights

The principal contractor(s) must ensure that -

The following requirements to be applied with when portable lights are utilised (such as for illumination at stop-go points at night):

a. Must be fitted with a robust non-hygroscopic non-conducting handle;
b. Live metal parts which may become live must be protected against contact;
c. The lamp must be protected by a strong guard;
d. The cable lead-in must withstand rough handling;
e. A register be kept for each piece of equipment with findings of regular inspections undertaken to evaluate the condition of these lights;
f. Inspections must be undertaken that concentrate on at least the plug, cord, switch, guard and any obvious faults; and
g. When used in wet/damp/metal container conditions, it must be protected.

5.23 Public health and safety (Section 9 of the OHSACT)

The principal contractor is responsible for ensuring that non-employees affected by the construction work are made aware of the dangers likely to arise from said construction work as well as the precautionary measures to be observed to avoid or minimise those dangers. This includes among others:

a. Non- employees entering the site for whatever reason;
b. The surrounding community; and
c. Passers-by the site.

Appropriate signage must be posted to this effect and all employees on site must be instructed to ensure that non-employees are protected at all times.

All non-employees entering the site must receive site applicable induction into the hazards and risks and the control measures for these.

5.24 Excavations (Construction Regulation 13)

All excavation work has to comply with the following:

5.24.1 Excavation work must be carried out under the supervision of a duly competent person who has been appointed in writing.

5.24.2 Before excavation work begins the stability of the ground must be evaluated.

5.24.3 Whilst excavation work is being performed, the principal contractor must take suitable and sufficient steps to prevent any person from being buried or trapped by a fall or dislodgement of material.

5.24.4 No person may be required or permitted to work in an excavation that has not been adequately shored or braced.

2.24.5 Where the excavation is in stable material or where the sides of the excavation are sloped back to at least the maximum angle of repose measured relative to the horizontal plane, shoring or bracing may be left out **but only after** written permission has been obtained from the appointed competent person.

5.24.6 Shoring and bracing must be designed and constructed to safely support the sides of the excavation and prevent it from collapsing.

5.24.7 Where uncertainty exists regarding the stability of the soil the opinion of a competent professional engineer or professional technologist must be obtained, before excavation proceeds, whose opinion will be decisive. The opinion must be in writing and signed by the engineer or technologist as well as the appointed excavation supervisor.

5.24.8 No load or material may be placed near the edge of an excavation if it is likely to cause a collapse of the excavation, unless suitable shoring has been installed to be able to carry the additional load. Best practice requires a one-meter clearance so as to reduce the pressure on the side walls as well as risk of material falling onto persons inside the excavation.

5.24.9 Every excavation must be provided with means of access that must be within 6 metres of any employee within the excavation at any time. Should ladders be utilised for this purpose they should be duly secured.

5.24.10 The location and nature of any existing services such as water, electricity, gas, telecommunication etcetera must be established before any excavation is commenced with and any service that may be affected by the excavation must be protected and made safe for employees working in or near in the excavation.

5.24.11 Every excavation, including the shoring and bracing or any other method to prevent a possible collapse, must be inspected by the appointed competent person as follows:

- Daily before work commences
- After every blasting operation
- After an unexpected collapse of the excavation or part thereof
- After substantial damage to any support
- After rain

5.24.12 The results of any inspections must be recorded in a register kept on site in the health and safety file.

5.24.13 Every excavation accessible to the public or that is adjacent to a public road or thoroughfare or that threatens the safety of persons, must be adequately barricaded or fenced off, on all sides, to at least one-meter-high and as close to the excavation

perimeter as practicable. All such excavations must also be provided with warning lights or visible boundary indicators after dark or when visibility is poor.

5.25 Working in confined spaces

5.25.1 Ventilation

The confined space must be opened and allowed to ventilate for at least 15 minutes before entering the confined space. All confined spaces must be barricaded and manned at all times.

A gas monitor must be lowered to the bottom of the confined space with a rope to test the presence of any toxic/flammable gas. If any gas is detected, the space must be force ventilated by means of a blower for at least 15 minutes where after the air must be tested again. Under no circumstances may any space be entered while there is a toxic/flammable gas present.

After the undertaking of the necessary work, the person in charge of the activities must confirm that all the employees are accounted for.

5.25.2 Entering a confined space

When entering a confined space, the person entering the space must wear a safety harness and fully operational gas detector. A lifeline must be attached to the safety harness and a person on the surface must be in continuous contact with the person in the confined space. At least one person on the surface must be trained in basic first-aid (level 1) with proof of such training as well as a fully equipped first aid box available on site.

No person shall remain within a confined space for a period of more than one hour at a time. A minimum of 5-minute rest periods on the surface must be taken after this period before re-entering.

Should the alarm sound on the gas monitor, all employees must exit the confined space and the immediate area must also be evacuated immediately. The area must be properly ventilated and re-tested before re-entering the confined space. Professional support should be called for if necessary.

Employees must be provided with flameproof lighting when entering a confined space with the possibility of flammable gases. No naked lights, smoking or unprotected electrical apparatus which may cause sparks, shall be permitted in any confined space or in its vicinity.

5.25.3 General

All employees working in confined spaces must be issued with fully functioning gas monitoring equipment and safety harnesses. All these employees must be trained (including refresher training on a regular and continuous basis) in the use thereof.

5.25.4 Safety equipment

All teams must be issued with fully functional gas monitoring equipment and safety harnesses where applicable. All employees must be trained (including refresher training on a regular and continuous basis) in the use thereof.

5.25.5 General records

The following records shall be implemented and maintained by the principal contractor:

a. Confined space entry permits
b. Confined space entry registers
c. Safety harness and gas monitoring equipment registers
d. Risk assessments
e. Incident registers

5.25.6 Training

a. All employees that have to enter a confined space must be formally trained and confirmed competent before being required to enter such areas (new employees to complete this training and be declared competent before allowed to work in a confined space).
b. Refresher courses must be attended by employees at least once every 2 years or immediately if new methodologies or equipment are adopted or acquired.
c. Continuous onsite training and support by supervisory staff should be undertaken and enforced where required.

5.26 Working over or close or next to water or similar substances

Where construction or other support work is undertaken over or in close proximity to water or similar liquids such as wastewater and sludge, the principal contractor shall –

a. Appoint a competent person in writing to supervise, control and inspect any work on or over or in close proximity of the water as well as the construction, installation, and dismantling of caissons and/or cofferdams and/or other support or safety structures;
b. Ensure that written proof of the competence of above appointee is available on site;
c. Ensure that risk assessments are carried out by the competent person before any work is undertaken, mitigation measures documented as well as implemented and thereafter evaluated on a daily basis;
d. Undertake the necessary induction and refresher training;
e. Ensure that measures for the timeous warning of flooding are in place;
f. Ensure that provision is made to prevent employees from falling into the water and the rescuing of employees in danger of drowning;
g. Ensure that where an employee is exposed to the risk of drowning by falling into the water, a lifejacket is provided to and worn by the employee; and
h. Provide applicable personal protective equipment such as safety harnesses etcetera and enforce the utilisation thereof.

5.27 Temporary work

a. Temporary work must be carried out under the supervision of the competent person designated in writing.
b. Temporary work structures must be so designed, erected, supported, braced and maintained that they will be able to support any vertical or lateral loads that may be applied.
c. No load may be imposed onto a structure that the structure is not designed to carry.
d. Temporary work must be erected in accordance with the structural design drawings for such temporary work and if there is any uncertainty, the designer must be consulted before proceeding with the erection/use of the temporary work.
e. All drawings pertaining to the temporary work must be kept and be available on site.
f. All equipment used in the erection of temporary work must be checked by a competent person before use.
g. The foundation or base upon which the temporary work is erected must be able to bear the weight and keep the structure stable.
h. Employees erecting temporary work must be trained in the safe work procedures for the erection, moving and dismantling of the temporary work.
i. Safe access and emergency escape must be provided for employees.
j. A competent person must inspect the temporary work structures that have been erected before, during and after pouring of concrete or the placing of any other load and thereafter daily until the temporary work is stripped. The dismantling must also be undertaken under the direct supervision of the appointed competent person. The results of all inspections must be recorded in a register kept on the site health and safety file.
k. The temporary work must be left in place until the designated competent person has authorised its stripping in writing.
l. Any damaged temporary work must be repaired and/or rectified without delay.
m. Deck panels must be secured against displacement.
n. The slipping of employees and other persons on release agents on deck panels must be prevented at all times.
o. Employees' health must be protected against the use of solvents, oils or other similar substances.

5.28 Demolition Work

5.28.1 Demolition work must be carried out under the supervision of a competent person who has been appointed in writing.

5.28.2 A detailed structural engineering survey of the structure to be demolished must be carried out and a method statement on the procedure to be followed in demolishing the structure must be developed by a competent person, before any demolition may be commenced.

5.28.3 As demolishing progresses the structural integrity of the structure must be checked at intervals as determined in the method statement by the appointed competent person in order to prevent any premature or uncontrolled collapse.

5.28.4 Steps must be taken to ensure that where a structure is being demolished:

a. no floor, roof or any other part of the structure is overloaded with debris, material or equipment that would make it unsafe;
b. precautions are taken to prevent the collapse of the structure when any frame, support or reinforcement is cut or removed;
c. shoring or propping is applied where necessary;
d. no employee is required or allowed to work under unsupported overhanging material; and
e. the stability of an adjacent building, structure, road or services is maintained at all times.

5.28.5 The location and nature of any existing services such as water, electricity, gas etcetera must be established before any demolition is commenced with and any service that may be affected by the demolition must be protected and made safe for employees and other persons.

5.28.6 Every stairwell in a building being demolished must be adequately illuminated.

5.28.7 Convenient and safe means of access must be provided and maintained at all times.

5.28.8 A catch platform or net must be erected over every entrance to the building or structure being demolished where the likelihood exists of material or debris falling on employees and/or persons entering and leaving and every other area where the likelihood exists of material or debris falling on employees and/or persons must be fenced or barricaded.

5.28.9 No material may be dropped on the outside of the building unless the area into which it is dropped is fenced off or barricaded.

5.28.10 Waste and debris may only be disposed from a height in a chute with the following design:

a. adequately constructed and rigidly fastened;
b. inclined greater than 45 degrees and enclosed on all four sides;
c. fitted with a gate or control mechanism to control the flow of material that may not freefall down the chute;
d. discharged into a container or a barricaded area; and
e. demolition equipment may only be used on floors or slabs that are able to support it.

5.28.11 Asbestos related work must be conducted to the requirements of the Asbestos Regulations promulgated under the OHSACT and in particular Asbestos Regulation 21, i.e.:

a. demolition of asbestos may only be carried out by a registered (with the Department of Employment and Labour) asbestos contractor;
b. all asbestos materials likely to become airborne must be identified; and
c. a plan of work must be submitted for approval to an Approved Asbestos Inspection Authority (AAIA), whom is approved by the Department of

Employment and Labour, thirty calendar days prior to commencement of demolishing work unless the plan was drawn up by an AAIA and a signed (by all parties) copy is submitted to the Department of Employment and Labour fourteen calendar days before commencement of the demolishing.

5.28.12 During demolition work:

a. all asbestos containing material must be disposed of safely, i.e. deposited only at a suitable site and proof of such deposits kept;
b. employees must be issued with appropriate personal protective equipment and the proper use thereof enforced at all times; and
c. after the demolition has been completed the area/premises must be thoroughly checked to ensure that all asbestos waste has been removed.

5.28.13 No employee is allowed to:

a. use compressed air or permit the use of compressed air to remove asbestos dust from any surface or employee or person;
b. smoke, eat, drink or keep food or beverages in an area not specifically designated for this; and
c. apply asbestos by spraying.

5.28.14 Lead related work must be conducted to the requirements of the Lead Regulations promulgated under the OHSACT.

5.28.15 Where demolition work will involve the use of explosives a method statement must be developed by a competent person in accordance with applicable explosives legislation before any explosives are used.

5.29 Explosive actuated fastening devices

5.29.1 The principal contractor shall not use or permit any person to use an explosive actuated fastening device, unless-

a. it is provided with a protective guard around the muzzle end, which effectively confines any flying fragments or particles; and

b. the firing mechanism is so designed that the explosive actuated fastening device will not function unless-

- it is held against the surface with a force of at least twice its weight; and
- the angle of inclination of the barrel to the work surface is not more than 15 degrees from a right angle:

provided that the provisions of this requirement will not apply to explosive actuated fastening devices in which the energy of the cartridge is transmitted to the bolts, nails or similar relevant objects by means of an intermediate piston which has a limited distance of travel.

5.29.2 The principal contractor shall ensure that-

a. only cartridges suited for the explosive actuated fastening device and the work to be performed are used;

b. the explosive actuated fastening device is cleaned and examined daily before use and as often as may be necessary for its safe operation by a competent person who has been appointed and certified as being competent;

c. that the safety devices are confirmed to be in proper working order prior to use;

d. when not in use, the explosive actuated fastening device and the cartridges are locked up in a safe place, which is inaccessible to unauthorised persons and adequate control is exercised over the keys and storage area;

e. the explosive actuated fastening device is not stored in a loaded condition;

f. a warning notice, or warning notices if more than one entrance is in place at the point where the explosive power tool is utilised, is/are displayed in a conspicuous manner wherever the explosive actuated fastening device is used; and the issuing and collection of cartridges and nails or studs are-

- controlled and done in writing by a competent person having been appointed in writing; and
- recorded in a register and that the recipient has accordingly signed for the receipt thereof as well as the returning of any spent and unspent cartridges;

5.29.3 The principal contractor shall not permit or require any person to use an explosive actuated fastening device unless such person has been-

a. provided with and uses suitable personal protective equipment; and

b. trained in the operation, maintenance, safety requirements and use of such tool.

5.30 Material hoists

The principal contractor shall:

5.30.1 General

a. Ensure that every material hoist and its tower have been constructed of sound material in accordance with the generally accepted technical standards and are strong enough and free from defects.

b. Cause the tower of every material hoist to be-
   - erected on firm foundations and secured to the structure or braced by steel wire guy ropes and to extend to such a distance above the highest landing as to allow a clear and unobstructed space of at least 900 mm for over travel;
   - enclosed on all sides at the bottom, and at all floors where persons are at risk of being struck by moving parts of the hoist, except on the side or sides giving access to the material/goods hoist, with walls or other effective means to a height of at least 2100 mm from the ground or floor level; and
   - provided with a door or gate at least 2100 mm in height at each landing and such door or gate will be kept closed, except when the platform is at rest at such a landing.

c. Cause-
   - the platform of every material hoist to be designed in such a manner that it will safely contain the loads being conveyed and that the combined weight of the platform and the load does not exceed the designed lifting capacity of the hoist;
   - the hoisting rope of every material hoist which has a remote winch to be effectively protected from damage by any external cause to the portion of the hoisting rope between the winch and the tower of the hoist; and
   - every material hoist to be provided with an efficient brake capable of holding the platform with its maximum load in any position when the power is not being supplied to the hoisting machinery.

d. Not convey barrows or material unless such articles are so secured or contained in such a manner that displacement thereof cannot take place during movement.

e. Cause a notice, indicating the maximum mass load which may be carried at any one time and the prohibition of persons from riding on the platform of the material hoist, to be affixed around the base of the tower and at each landing.

f. Not require or permit any person to operate a hoist, unless the person is competent in the operation thereof.

g. Not require or permit any person to ride on a material/goods hoist.

h. Cause every material hoist to be inspected on a daily basis by a competent person who has been appointed in writing and has the experience pertaining to the erection and maintenance of material/goods hoists or similar machinery. This inspection shall include the determination of the serviceability of the entire material/goods hoist including guides, ropes and their connections, drums, sheaves or pulleys and all safety devices. The inspection results shall be entered and signed in a record book, which will be kept on the premises for that purpose and which would become part of the health and safety file at the end of the contract; and

i. Cause every material/goods hoist to be properly maintained and ensure that the maintenance records in this regard are kept on site which should also become part of the health and safety file at the end of the contract.

5.31 Welding, flame cutting or similar operations

Should any welding work be undertaken as part of emergency repairs to plant and equipment on site or as part of the construction activities, the principal contractor must ensure that:

5.31.1 A competent person will be appointed to supervise welding, flame cutting or similar operations on site.

5.31.2 The following rules will govern all welding and flame cutting or similar operations:

a. The welder will be trained regarding the safe use/operation of the equipment.
b. The welder and his assistant will be provided with effective and appropriate personal protective equipment and/or clothing.
c. Cables and electrode holders will be effectively insulated.
d. The workplace will be effectively screened off to prevent bystanders from being affected by the welding rays or they will be provided with personal protective equipment.
e. Special precautions will be taken where welding is undertaken in confined spaces e.g. proper and sufficient ventilation will be provided.
f. In wet or damp conditions, the welding equipment and the welder will be properly insulated and someone will be on standby to assist in the event of any emergency.
g. A qualified person will certify in writing that it is safe to enter and work in a specific confined space before welding or flame cutting is undertaken.
h. No welding, flame cutting, grinding, soldering or similar work shall be undertaken in respect of any drum, vessels or similar object or container where such object or container-
   - is completely closed, unless the rise in internal pressure cannot render it dangerous; or
   - contains any substance which, under the action of heat may explode or react to form dangerous or poisonous substances.
i. Where pressure vessels/welding cylinders containing oxygen or acetylene are transported or used, the proper precautionary measures will be taken against bumping, falling, rolling etcetera.
j. Gas welding hoses may only be joined with approved connectors and clamps.
k. No oil or grease may be applied to oxygen valves and fittings.
l. It is a sound practice to store pressure vessels and/or welding cylinders vertically and to secure them by means of a chain.
m. Acetylene cylinders may never be inclined in excess of 45°.
n. Proper and adequate fire prevention measures will be instituted and maintained for as long as the welding continues.
o. Where explosive and/or flammable vapours are present welding will only be done under "hot work" permits.

5.32 Transportation of employees

5.32.1 Any vehicle used to transport employees must have seats firmly secured and adequate for the number of employees to be carried. No employee may be permitted to stand on the back or sit on the edge of the vehicle.

5.32.2 The vehicle utilised for the transportation of employees must be equipped with a serviced and fully operational fire extinguisher.

5.32.3 Regulation 247 of the National Road Traffic Act, Number 93 of 1996 (NRTA) stipulates that the principal contractor shall not allow employees to be transported in a vehicle unless the portion of the vehicle in which the employees are being conveyed is enclosed to a height of –

a. at least 350 mm above the surface on which employees are seated; or
b. at least 900 mm above the surface on which employees are standing,

in a manner and with a material of sufficient strength to prevent employees from falling from such vehicle when it is in motion.

5.32.4 Regulation 247 of the NRTA also stipulates that the principal contractor shall also not allow any employees to be conveyed in the goods compartment of a vehicle together with any tools or goods, except their personal effects, unless that portion in which the employees are being conveyed is separated by means of a partition, from the portion in which such goods are being conveyed.

5.33 Demolition of asbestos

The principal contractor shall ensure that:

a. No demolition of asbestos is undertaken unless the principal contractor or any sub-contractor designated to do so is duly registered as an asbestos contractor with the Department of Employment and Labour
b. A plan of work is developed, approved by an Approved Asbestos Inspection Authority and submitted to the Department of Employment and Labour at least 14 days prior to commencement of any asbestos demolition work. Proof that the plan of work was submitted to the Department of Employment and Labour should be available in the health and safety file which should be kept on site at all times.
c. Asbestos waste is only disposed of in a waste disposal site specifically designated for this purpose in terms of the Environment Conservation Act, 1989 (Act 73 of 1989), as amended. A certificate from the designated disposal site should be obtained and submitted to the client for evaluation. A copy of this certificate should also be available in the health and safety file at all times.

5.34 Working under or close to overhead power lines

The principal contractor shall ensure that the following requirements are duly considered and adhere to:

5.34.1 Passing underneath overhead lines to access the site

Some of the access roads to the site cross under existing power lines. To ensure that vehicles traveling to and from the site do not damage these lines and to reduce the risk of accidental contact the principal contractor should erect ground-level barriers to establish a safety zone to keep employees, other persons as well as construction vehicles and plant away from the wires. These barriers should be constructed out of large steel drums filled with rubble, concrete blocks, wire fence earthed at both ends, or earth banks marked with posts.

a. If steel drums are used, they should be highlight by painting them with red and white horizontal stripes.
b. If a wire fence is used, put red and white flags on the fence wire posts.

c. Make sure the barriers can be seen at night, by using white or fluorescent paint or attaching reflective strips.

The principal contractor has to –

a. keep the number of passageways to a minimum;
b. define the route of the passageway using fences and erect goalposts at each end to act as gateways using a rigid, non-conducting material, for example timber or plastic pipe, for the goalposts, highlighted with, for example, red and white stripes. If the passageway is too wide to be spanned by a rigid non-conducting goalpost, the principal contractor has to use tensioned steel wire, earthed at each end, or plastic ropes with bunting attached. These should be positioned further away from the overhead line to prevent them being stretched and the safety clearances being reduced by plant moving towards the line;
c. ensure the surface of the passageway is levelled, firmed-up and well maintained to prevent undue tilting or bouncing of the vehicles and/or equipment;
d. put warning notices at either side of the passageway, on or near the goalposts and on approaches to the crossing giving the crossbar clearance height and instructing drivers to lower booms, tipper bodies etcetera and to keep below this height while crossing;
e. illuminate the notices and crossbar at night, or in poor weather conditions, to make sure they are visible;
f. enforce strict speed control measures; and
g. make sure that the barriers and goalposts are maintained.

5.34.2 Working underneath overhead lines

a. The principal contractor must confirm with the local authority or if applicable Eskom what the standard is for working close to and under these overhead lines.
b. A risk assessment should be undertaken taking into account any situations that could lead to danger from the overhead wires, for example, consider whether someone may need to stand on top of a machine or scaffold platform and lift a long item above their head, or if the combined height of a load on a low truck breaches the safe clearance distance. If this type of situation could exist, applicable precautionary measures have to be taken.
c. Where there is a risk of contact from, for example, the upward movement of cranes or tipper trucks or employees carrying tools and equipment, the principal contractor should carefully assess the risks and precautionary measures.
d. Vehicles, plant, machinery, equipment, or materials that could reach beyond the safe clearance distance should not be taken near the line.
e. Under no circumstances may any part of plant or equipment such as ladders, poles and hand tools be able to be utilised within the danger zone or make contact with the lines.
f. The principal contractor should allow for uncertainty in measuring the distances and for the possibility of unexpected movement of the equipment due, for example, to wind conditions.
g. Long objects should be carried horizontally and close to the ground and vehicles positioned so that no part can reach into the danger zone, even when fully extended.
h. Construction vehicles and plant working underneath overhead lines such as cranes, excavators and tele-handlers should be modified by the suppliers with the addition of suitable physical restraints so that they cannot reach beyond the

safe clearance distances, measures should be put in place to ensure these restraints are effective and cannot be altered or tampered with.

i. Operators of high machinery should be instructed not carry out any work on top of the machinery near overhead power lines.
j. Make sure that employees, including any sub-contractors, understand the risks and are provided with instructions about the risk prevention measures.
k. Arrange for the work to be directly supervised by a competent person at all times who is familiar with the risks and can make sure that the required safety precautions are observed.

5.34.3 Emergency procedures

If someone or something comes into contact with an overhead line, it is important that everyone involved knows what action to take to reduce the risk of anyone sustaining an electric shock or burn injuries. Key points include –

a. Never touch the overhead line's wires.
b. Always assume that the wires are live, even if they are not arcing or sparking, or if they otherwise appear to be dead. Even if lines are dead, they may be switched back on either automatically after a few seconds or remotely after a few minutes or even hours if the line's owner is not aware that their line has been damaged.
c. In the event of accidental contact call the emergency services. Give them the location of the incident, tell them what has happened and that electricity wires are involved.
d. Should any employee or other person come in contact with, or close to, a damaged wire, he must away as quickly as possible and stay away until the line's owner advises that the situation has been made safe.
e. In the event of a vehicle touching a wire, the driver and occupants should either stay in the vehicle or, should the need to get out, jump out of it as far as you can. Never touch the vehicle while standing on the ground. Do not return to the vehicle until it has been confirmed that it is safe to do so.
f. All employees and other persons should be aware that if a live wire is touching the ground the area around it may be live. A safe distance from the wire or anything else it may be touching should therefore be maintained.
g. Only duly competent and authorised persons may work on electrical wires and installations.

5.35 Exposure to poisonous animals or insects

The principal contractor shall ensure that the following are duly adhered to:

a. the emergency procedure be expanded to provide for the effective treatment of employees or other persons visiting exposed to bites or stings from poisonous animals and insects, i.e. the contact details of the nearest medical unit that could treat employees exposed to bites or stings be obtained and arrangements be made with this service provider on the procedures to be followed to ensure swift response when required;
b. confirmation be obtained from this medical unit that they have anti venom reserved to treat employees or other persons visiting that may be exposed to snake bites or scorpion stings;

c. competent first aiders be available to facilitate the treatment of employees or other persons visiting exposed to stings or bites; and
d. the potential exposure posed by poisonous animals or insects and awareness thereof is discussed with all employees as part of the toolbox talks and general awareness training and other persons visiting as part of the pre-site visit induction process.

5.36 Working in inclement weather

The principal contractor shall implement an early warning system to identify inclement weather and to prevent such weather from posing negative implications on the safety of employees and other persons visiting.

The early warning system shall as a minimum provide for the following:

5.36.1 Construction work done during electrical storms

a. The principal contractor shall ensure that all employees are removed from heights and all employees are as safe as possible, in inclement weather conditions.
b. No work is allowed on the construction site during electric storms where employees cannot be protected from it. Protection involves employees being restricted to:
   - eating area fitted with a lightning mast
   - workshops
   - inside buildings
c. No work is allowed in electrical storms on top of open structural steel, even when earthed.
d. No work is allowed on heights when the lightning is within a 10 kilometre radius.
e. After inclement weather on-site risk assessments will be reviewed to include wet conditions.

5.36.2 Lifting equipment operations during inclement weather

a. Lifting operations will stop during lightning within a 10 kilometre radius and wind above 28 km/h, and the lifting equipment operator will not be allowed to leave the lifting equipment with the booms extended.
b. Lifting operations will stop during rain, rigging and hand lifts.
c. Booms on all lifting equipment will be retracted.
d. All rigging operations will stop and employees will be removed from site.

5.36.3 Construction work done during rain

a. During rainy conditions all work on steel structures will stop.
b. No electrical tools will be used during rainy weather in open areas.
c. Work can be done in water proof areas where there is a zero risk for electrocution.
d. Areas that may be cleared for work during rain includes:
   - workshops
   - offices
   - work on ground level with the provision that the area is maintained in a safe dry condition

5.36.4 Scaffolding activities during inclement weather conditions

During inclement weather only limited scaffolding actions will be permitted i.e. erecting and dismantling activities.

Guidelines for safe choices:

Weather type	Building and dismantling of scaffolding
Lightning	Stop all activities
Light rain	Stop all activities
Heavy rain	Stop all activities
Wind <28 km/h	Full use
Wind >30 km/h	Stop all activities
Light mist	Full use
Heavy mist	Full use
Hail	Stop all activities

Sometimes it might be necessary to allow scaffolding activities to continue during abnormal equipment and process conditions as this could impair personnel safety or pose an environmental risk. In such cases, scaffolding activities may continue with the provision that the relevant team ensures that a comprehensive risk assessment is done, whilst considering both work and weather conditions.

All scaffold users will:

a. Ensure that scaffolding is inspected immediately after inclement weather conditions.
b. Ensure that the risks associated with working at heights during inclement weather are identified and reasonably mitigated.
c. Be cautious of slip/trip hazards when performing activities during inclement weather.
d. Take note of the weather when completing the daily safe task instructions on site, where applicable.

5.36.5 Driving in inclement weather

The principal contractor shall ensure that the danger of driving in wet conditions is adequately covered in a risk assessment.

The risk assessment will include, but not limited to:
a. route planning
b. speed reduction
c. planning for emergency situations
d. driving precautions for slippery surfaces
e. visibility hazards

5.37 Pressure equipment

The principal contractor must ensure that:

a. any pressure equipment in use is subjected to a formal inspection and pressure test by an approved inspection authority before commissioning, after installation, re-erection or repairs (i.e. Pressure Equipment Regulation 11 has reference). Once installed, similar inspections and pressure tests are required every 36 months.
b. formal registers by an approved inspection authority are duly maintained (with copies readily available in the occupational health and safety file) to proof that any pressure equipment in use was subjected to the necessary inspections and pressure tests.
c. pressure equipment (such as compressors) is provided with all appropriate safety accessories required to ensure that it is safe for use (i.e. Pressure Equipment Regulations 10(1) has reference). This include but are not limited to safety latches to secure the pressure hoses to the compressor's outlet valves as well as the pressure driven equipment at the other end of the hoses to prevent these pressure hoses from causing serious injuries to employees should their securing mechanisms fails and they become loose whilst under pressure.
d. should gas fuel be utilised, either on site or as part of the construction process, no person be allowed to install a fixed appliance, equipment or system for gas fuel unless such person is a holder of a certificate of registration (i.e. Pressure Equipment Regulation 17(3) has reference).

5.38 Occupational health

The principal contractor shall ensure that –

a. the work area and surrounding site, which is part of the operational area, are at all times maintained to a reasonably practicable level of hygiene and cleanliness; and
b. all areas, where work is performed, are kept neat, clean and orderly without any unnecessary waste.

5.38.1 Risk assessment

The principal contractor shall undertake a risk assessment to identify the potential health hazards that employees and other affected persons are or may be exposed to during the construction process and also identify the appropriate risk mitigation measures to be taken and maintained to ensure the health of employees and affected persons.

5.38.2 Health hazards

The principal contractor shall ensure that appropriate measures are put in place to prevent exposure to health hazards such as viruses, the accidental inhalation, ingestion, and absorption of any hazardous substance, high noise level exposure etcetera.

5.38.3 Medical surveillance

The principal contractor shall provide for the management of an employee medical surveillance program that will ensure the following:

a. All employees on site undergo routine medical examinations specific to the work to be performed taking into account the hazard and risk exposures. This must address pre-employment examination, periodic examination as required, and exit examinations.
b. Where medical examinations are governed by legislation, the principal contractor shall ensure the legislative requirements are complied with by all employees.
c. All the employees performing work on site are declared medically fit for the work they are to perform.
d. Employees are notified confidentially by the construction health and safety officer or other appropriate delegated person of the results and interpretation of their medical examinations on any abnormal findings, health conditions, referrals or recommendations made as well as any restrictions that may become evident from medical examinations.
e. Maintain written confirmation/proof of the consultation, notification and communication with the employee, provided that, the required proof does not contain any confidential, sensitive, highly personal or information which might place the employee in an uncomfortable or disconcerting state or situation when such information is known by others.
f. In the event of referrals or recommendations for additional testing or consultation with health specialists, proof of action taken by the principal contractor should be maintained. Action taken could be a scheduled appointment with a specialist, an appointment for the additional testing etcetera.
g. Copies of valid medical certificates of fitness are available in the occupational health and safety file. The requirements above are founded on a duty of care towards employees to ensure employees are made aware of any health conditions or health restrictions which may have resulted from or may be aggravated by work activities on site or associated areas. The consultation, notification and communication with the employee should, with the employees' written consent, be made available upon request for verification by the client, regulatory authority or their representatives.

5.38.4 COVID-19

As a result of the current COVID-19 pandemic and subsequent exposure, the principal contractor must develop a COVID-ready Workplace Plan addressing among others the following:

a. Appointment of a COVID-19 Compliance Officer.
b. The date the construction site will open.
c. The hours the site it will be open.
d. A timetable setting out the phased return of employees to enable appropriate measures to be taken to avoid and reduce the spread of the virus.
e. List of employees who can work from home, employees who are 60 years or older and those with comorbidities.
f. Detailed procedure adopted to reduce the risk of infection or transfer to employees or affected persons. The procedure should among others provide for –
    1. An employee and visitor disclosure questionnaire.
    2. Staggering of entrance/exit.
    3. Access control.
    4. Thermal testing, i.e. who will be undertaking the testing, maximum thermal limit allowed as well as frequency of testing.
    5. Recordkeeping of entering and exiting the site as well as safe keeping of these records.
    6. Response when an infected person is identified.
    7. Isolation area to be provided and maintained on site to ensure that any person presenting symptoms could be isolated pending the undertaking of a second thermal test and/or whilst arrangements are made to transport the person to a facility for self-isolation, or for medical examination or testing
    8. Return to work protocols, i.e. who will evaluate and what medical information to be submitted when an employee wants to return to work.
    9. All employees, visitors, suppliers and sub-contractors be duly inducted as well as regularly informed to understand the severity, relevant information as well as control measures to comply with requirements.
    10. Ways to be adopted to minimise the number of employees on site.
    11. Measures taken to minimise contact between employees as well as employees and other persons.
    12. Social distancing – how will that be implemented and maintained. If not practicable physical barriers to be placed between work stations.
    13. Operational plant and construction vehicle sanitising and frequency.
    14. Sanitising of ablution facilities and eating areas.
    15. Sanitising of tools and shared equipment as well as work areas in general.
    16. Ventilation inside confined spaces such as offices.
    17. Raise awareness among construction workers of the risk of infection, promote early diagnosis and assist affected persons.
    18. Display suitable awareness posters at all applicable areas such as high-traffic areas as well as replacement to ensure relevancy.
    19. Provide and display information regarding counselling, support and care for those that are affected.
    20. Identify, provide and maintain the required personal protective equipment based on a relevant risk assessment, including the correct use, removing and replacement as well as disposal.
    21. Encourage employees to report and undergo COVID-19 testing should they encounter any applicable symptoms.

22. Establish methods of identifying persons who may be at risk, and support them without attracting stigma and discrimination. This could include employees who have recently travelled to a high area, or who have conditions that put them at higher risk of serious illness (e.g. diabetes, HIV/AIDS, tuberculosis, heart and lung disease).
23. Management of medical surveillance.
24. Management of COVID-19 waste, i.e. used masks, gloves etcetera, as this is regarded as infected or when applicable hazardous waste and as such waste bins with lids and labelled as hazardous waste as well as sealed bags to be provided.
25. The procedure adopted to resolve any issue that may arise from the exercise by an employee of the right to refuse to work.

g. Reporting of any incidents to the Project Manager and client.
h. Development of project specific business continuity plan.

5.38.4.1 COVID-19 statutory reporting and administrative measures

a. The principal contractor must report the following to the National Institute of Occupational Health -
   1. the data of every employee who may be vulnerability to serious outcomes in case of COVID-19 infection on a once-off basis;
   2. the details of employees testing positive for the COVID-19 virus before Tuesday for the previous calendar week commencing on the Sunday (guideline requirements); and
   3. the details of post-infection outcomes of those who have tested positive, weekly before Tuesday until the employee returns to work.

b. If the principal contractor employs more than 50 employees, it must submit a record of its COVID-19 risk assessment together with a written policy concerning the protection of the health and safety of its employees from COVID-19 to the Department of Employment and Labour.

5.38.5 Smoking

The principal contractor must ensure that a smoking policy is developed and maintained for the project providing among others for -

a. no person to be allowed to smoke on site, other than in demarcated smoking areas.
b. The establishment and maintenance of designated smoking areas in terms of the Tobacco Product Control Act (No. 83 of 1993) as amended and the National Health Act (No. 61 of 2003) as amended.
c. The following signage should also be displayed at the designated smoking areas:
   1. "Smoking of tobacco products is harmful to your health and to the health of children, pregnant or breastfeeding women and non-smokers. For help to quit phone (011) 720 3145."
   2. "Any person who fails to comply with this notice shall be prosecuted and may be liable to a fine."

6. Health and safety policy

The principal contractor has to provide the Client, as an annexure to the health and safety plan, with a detailed health and safety policy outlining the principal contractor's stance on and principles adopted for health and safety.

7. Cost for health and safety measures during the construction process

To enable the Client to comply with Construction Regulation 5(1)(g), all potential principal contractors submitting tenders/bids have to demonstrate to the Client that sufficient provision has been made for the cost to implement and maintain the health and safety plan proposed by the principal contractor to meet the requirements of this health and safety specification as well as that of the OHSACT and its Regulations.

A detailed schedule of costs has to be included in the health and safety plan submitted as part of the potential principal contractor's tender document. Failure by the principal contractor to adhere to this requirement will force the Client to reject the tender/bid in terms of Construction Regulation 5(1)(h).

8. Project specific risk assessment requirements

See Annexure 5.

9. Overview of annexures

Annexure 1:	Legal compliance assessment.
Annexure 2:	Measuring injury experience.
Annexure 3:	SHE risk management report.
Annexure 4:	Guide to risk assessments.
Annexure 5:	List of risk assessments.

10. Enquiries

For any enquiries regarding this occupational health and safety specification, please contact –

Name: Karl Bailey Pr CHSA
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Eastern Cape Parks & Tourism Agency

Eastern Cape
PARKS & TOURISM AGENCY

Annexure 1

Legal compliance assessment

Proudly prepared by

Sky High Consulting Engineers and EMPOWERisk Management Services (Pty) Ltd

SKY HIGH
consulting engineers

EMPOWERisk
Management Services

November 2021

Occupational health, -safety and environment: Risk assessment checklist

(Based on the Construction Regulations of the Occupational Health and Safety Act)

* Denotes items applicable to both construction sites, contractor plant and storage yards

ELEMENT	REMARKS
1. Administrative and legal requirements	
2. Education, training and promotion	
3. Public safety, security measures and emergency preparedness	
4. Personal protective equipment	
5. Housekeeping	
6. Working at heights (including roof work)	
7. Scaffolding and temporary work	
8. Ladders	
9. Electrical safeguarding	
10. Emergency, fire prevention and protection	
11. Excavations and demolition	
12. Tools	
13. Cranes	
14. Builder's hoist hoists	
15. Transport and materials handling equipment	
16. Site plant and machinery	
17. Plant and storage yard or site workshop specifics	
18. Workplace environment, health and hygiene	

1. Administrative and Legal Requirements

OHSACT Section or Regulation	Subject	Requirements	Yes/No
Construction Regulation 3	Application for construction work permit	Should the project qualifies to trigger this requirement - Application for permit lodged; Copy of construction permit in the OHS file; and Is the site specific permit number conspicuously displayed at the main entrance.	
Construction Regulation 4	Notice of carrying out Construction work	For construction projects where no permit is required - Was the Department of Employment and Labour notified; and Is a copy of notice available on site.	
General Admin. Regulation 4	Copy of OHSACT	Updated copy of the OHSACT and Regulations on site. Readily available for perusal by all employees.	
COID Act Section 80 and Construction Regulation 5(1)(j)	Registration with Compensation Commissioner or other approved compensation insurer	Written proof of registration/Letter of good standing available on site.	
Construction Regulation 4 and 5(1)	OHS specification, plans and program	OHS spec received from Eastern Cape Parks & Tourism Agency. OHS plan developed. OHS program implemented. Plans and program updated regularly.	
Section 8(2)(d) Construction Regulation 9	Hazard identification and risk assessment	Competent risk assessor appointed in writing Proof of risk assessor's competence available on site Risk assessment and –plan drawn up and updated. Baseline risk assessment undertaken prior to commencement of construction work. Copy of baseline risk assessment available on site.	

OHSACT Section or Regulation	Subject	Requirements	Yes/No
		Continued risk assessments undertaken and recorded. Copies of ongoing risk assessments available on site. Employees and sub-contractors informed and trained by a competent person in the risk assessment before work commences and an ongoing basis thereafter. Health and safety committee or employee representatives consulted on the monitoring and review of the risk assessments.	
Section 16(2)	Assigned duties (Managers)	Responsibility of complying with the OHSACT assigned to other person/s by CEO.	
Construction Regulation 8(1)	Designation of person ultimately responsible for occupational health and safety on site	Competent person appointed in writing as construction manager.	
Construction Regulation 8(2)	Designation of assistant for construction manager	Competent person appointed in writing as assistant construction manager.	
Construction Regulation 8(7)	Designation of person responsible for ensuring occupational health and safety compliance	Competent person appointed in writing as construction supervisor.	
Construction Regulation 8(8)	Designation of assistant for responsible person	Competent person(s) appointed in writing as assistant construction supervisors.	
Construction Regulations 8(5)	Health and safety officer	Competent and duly registered person appointed. Proof of health and safety officer's competency on site. Health and safety officer duly registered with SACPCMP as Construction Health and Safety Officer (CHSO) Reports prepared and submitted to the client/contractor(s)?	
Section 17 & 18 and General Administrative Regulations 6 and 7	Election and designation of occupational health and safety representatives	More than 20 employees - one representative and one additional representative for each 50 employees or part thereof. Designation in writing, period and area of responsibility specified. Meaningful reports. Reports actioned by management.	
Section 19 and 20 and General Administrative Regulations 5	Occupational health and safety committee/s	Committee/s established. Members appointed in writing. Meetings held monthly. Minutes kept. Actioned by management.	
Section 37(1) and (2)	Agreement with mandataries, contractors and sub-contractors	Written agreement with contractors and sub-contractors. Updated list of contractors and sub-contractors displayed. Proof of Registration with Compensation Commissioner or Compensation Insurer as well as Letter of Good Standing. Construction Supervisor designated. Written arrangements regarding representatives and committee. Written arrangements regarding first-aid.	
Construction Regulation 7(1)(c) and 7(2)(a)	Management of sub-contractors	Has the principal contractor – provided all sub-contractors with relevant sections of the client's OHS specification formally evaluated and approved all sub-contractors' OHS plans.	

OHSACT Section or Regulation	Subject	Requirements	Yes/No
		ensured that the sub-contractors appointed made sufficient provision for the costs to be incurred to implement and maintain their OHS plan.	
Construction Regulation 7(1)(g)`	Medical certificates of fitness	Are medical certificates of fitness (issued by an occupational health practitioners) specific to the construction work performed available for all employees on site	
Section 24 and General Administrative Regulation 8 COID Act Section 38, 39 and 41	Reporting of incidents (Department of Employment and Labour)	Incident reporting procedure displayed. All incidents in terms of section 24 reported to the Provincial Director, Department of Employment and Labour, within 3 days (Annexure 1 and/or WCL 1 or 2). Cases of occupational disease reported. Copies of reports available on site. Record of first-aid injuries kept.	
General Administrative Regulation 9	Investigation and recording of incidents	All injuries which resulted in the person receiving medical treatment other than first aid, recorded and investigated by investigator designated in writing. Copies of reports (Annexure 1) available on site. Tabled at committee meeting. Actioned taken by site management.	
Construction Regulation 10	Fall protection	Competent person appointed to draw up and supervise the fall protection plan. Proof of appointees' competence available on site. Risk assessment carried out for work at heights. Fall protection plan drawn up and updated. Plan available on site.	
Construction Regulation 10(5)	Roof work	Competent person appointed to plan and supervise roof work. Proof of appointees' competence available on site. Risk assessment carried out. Roof work plan drawn up and updated. Roof work inspect before each shift and inspection register kept. Employees medically examined for physical and psychological fitness and written proof on site.	
Construction Regulation 12	Temporary works	Competent person appointed in writing as temporary works designer to inspect and approved any erected temporary works before use. Proof of appointees' competence available on site. Competent person appointed in writing as temporary works supervisor. Proof of appointees' competence available on site. Risk assessment carried out for work on temporary works structures. Temporary works drawings approved by temporary works designer and available on site. Other relevant documentation that includes construction sequence and method statements available on site. Competent person(s) appointed in writing to: erect, move or dismantle temporary works structures; and examine and check all temporary works structures before being used; Written proof of competence of above appointees. Temporary work structures are inspected: before, during and after the placement of concrete; after inclement weather; after a load was imposed; daily whilst in place; and before stripping or dismantling and inspection register kept. Inspection registers kept. Fall protection plan drawn up and updated. Plan available on site.	
Construction Regulation 16	Scaffolding	Competent persons appointed in writing to: erect scaffolding (scaffold erector/s); act as scaffold team leaders; and	

OHSACT Section or Regulation	Subject	Requirements	Yes/No
		inspect scaffolding weekly and after inclement weather (scaffold inspector/s). Written proof of competence of above appointees. Appointees available on site. Copy of SANS 10085 available on site. Risk assessment carried out. Inspected weekly and/or after bad weather. Inspection register/s kept.	
Construction Regulation 17	Suspended platforms	Competent persons appointed in writing to: control the erection of suspended platforms; act as suspended platform team leaders; and inspect suspended scaffolding weekly and after inclement weather. Risk assessment conducted. Certificate of authorisation issued by a registered professional engineer available on site and copy forwarded to the Department of Employment and Labour. The following inspections of the whole installation carried out by a competent person after erection and before use; daily prior to use; and inspection register kept. The following tests to be conducted by a competent person: load test of whole installation and working parts every 12 months; and hoisting ropes, hooks and load attaching devices quarterly; and tests log book kept. Employees working on suspended platforms should be medically examined for physical and psychological fitness. Written proof available.	
Construction Regulation 13	Excavations	Competent person/s appointed in writing to supervise and inspect excavation work. Written proof of competence of above appointee/s available on site. Risk assessment carried out. Excavations inspected: before every shift; after any blasting; after an unexpected fall of ground; after any substantial damage to the shoring; and after rain. Inspections register kept. Method statement developed where explosives will be and/or are used.	
Construction Regulation 14	Demolition work	Competent person/s appointed in writing to supervise and control demolition work. Written proof of competence of above appointee/s available on site. Risk assessment carried out. Engineering survey and method statement available on site. Inspections to prevent premature collapse carried out by competent person before each shift. Inspection register kept.	
Construction Regulation 19	Materials hoist	Competent person appointed in writing to inspect the material hoist. Written proof of competence of above appointee available on site. Materials hoist to be inspected weekly by a competent person. Inspection register kept.	
Construction Regulation 26	Water environments (including caissons and cofferdams)	Competent person appointed in writing to supervise, control and inspect work on or over water and the construction, installation, and dismantling of caissons and/or cofferdams. Written proof of competence of above appointee available on site.	

OHSACT Section or Regulation	Subject	Requirements	Yes/No
		Risk assessment carried by a competent person on a daily basis. Inspection register kept.	
Construction Regulation 21	Explosive actuated fastening devices	Competent person appointed to control the issue of the Explosive actuated fastening devices and cartridges as well as the service, maintenance and cleaning. Register kept of above. Empty cartridge cases, nails and fixing bolts returns recorded. Cleaned daily after use.	
Construction Regulation 20	Bulk mixing plant	Competent person appointed to control the operation of the bulk mixing plant as well as the service, maintenance and cleaning of this plant. Register kept of above. Risk assessment carried out. Bulk mixing plant to be inspected weekly by a competent person and inspections register kept.	
Construction Regulation 15 and Mine Health and Safety Act	Tunnelling	Complying with Mines Health and Safety Act (29 of 1996). Risk Assessment carried out.	
Construction Regulation 22 Driven Machinery Regulations 18 and 19	Cranes and lifting machines equipment	Competent person appointed in writing to inspect cranes, lifting machines and equipment. Written proof of competence of above appointee available on site. Cranes and lifting tackle identified and numbered. Register kept for lifting tackle. Logbook kept for each individual crane. Inspection: All cranes: Daily by operator. Tower cranes: After erection and thereafter 6 monthly. Other cranes: Annually by competent person. Lifting tackle (slings, ropes, chain slings etcetera): Three monthly.	
Construction Regulation 24 Electrical Machinery Regulations 9 and 10 Electrical Installation Regulations	Inspection and maintenance of electrical installation and equipment (including portable electrical tools)	Competent person appointed in writing to inspect/test the installation and equipment. Written proof of competence of above appointee available on site. Inspections: Electrical installation and equipment inspected after installation, alterations and quarterly thereafter. Inspection registers kept. Portable electric tools and -lights and extension leads identified/numbered. Monthly visual inspection by user, issuer or storeman. Register kept.	
Diving Regulations	Diving operations	Competent person appointed in writing to supervise diving operations and ensure maintenance, statutory inspection and testing by an approved inspection authority of equipment used. Written proof of competence of above appointee available on site. Proof of registration of all divers present on site available. Risk assessment carried out. Diving manual produced and available on site. Record of voice communications kept. Diving operations record kept. Each diver keeps a personal logbook and entries countersigned by the diving supervisor. Decompression tables available on site. Records of any decompression illness kept. Certificate of manufacture of any compression chamber or diving bell in use available on site.	
Construction Regulation 28 General Safety Regulation 8(1)(a)	Designation of stacking and storage supervisor	Competent persons with specific knowledge and experience designated to supervise all stacking and storage.	

OHSACT Section or Regulation	Subject	Requirements	Yes/No
		Written proof of competence of above appointee available on site.	
Construction Regulation 29 Environmental Regulation 9	Designation of a person to coordinate emergency planning and fire protection	Person/s with specific knowledge and experience designated to coordinate emergency contingency planning and execution and fire prevention measures. Emergency evacuation plan: Developed and available on site; Drilled and practiced; and Records of drills and practices available on site. Fire risk assessment carried out. All fire extinguishing equipment: Identified and on register; Inspected monthly and inspection registers kept; Replaced after use; and Serviced annually.	
General Safety Regulation 3	First-aid	Every workplace provided with sufficient number of first-aid boxes (required where 5 persons or more are employed). First-aid boxes freely available. Content of boxes as per the minimum requirements of the OHSACT. One qualified first-aider appointed for every 50 employees (required where more than 10 persons are employed). List of First-aiders and competency certificates available on site. Name and contact details of person in charge of first-aid box clearly displayed. Location of first-aid boxes clearly demarcated. Signs instructing employees to report all injuries and/or illness including first-aid injuries.	
General Safety Regulation 2	Personal protective equipment (PPE)	PPE risk assessment carried out. Items of PPE prescribed and use enforced. Records of issue kept. Undertaking by employee to use and/or wear PPE.	
General Safety Regulation 9	Inspection and use of welding and/or flame cutting equipment	Competent person/s with specific knowledge and experience designated to inspect electric arc, gas welding and flame cutting equipment. Written proof of competence of above appointee available on site. Equipment identified/numbered and entered into a register. Equipment inspected monthly. Inspection register kept.	
Regulations for Hazardous Chemical Agents (HCA) Construction Regulation 25	Control of storage and usage of HCA and other flammables	Competent person/s with specific knowledge and experience designated to control the storage and usage of HCS (including flammables). Written proof of competence of above appointee available on site. Risk assessment carried out. Register of HCS kept and/or used on site. Safety data sheets (SDS) available for al HCA use. Are the SDS GHS (UN Globally Harmonized System) compliant. Employees trained in the safe use of HCA. A set of instructions/procedures developed how to deal (i.e. treat and clean) with any spillage of a HCA to minimise the impact on employees and other persons' health. The classification of any HCA that employees may be exposed determined before use. Any pipework used to supply HCA duly labelled (by means of a sign or any other suitable manner), either on the pipe or in close proximity. Containers used for the storage of HCAs duly labelled, i.e. – Name and number of the manufacturer or importer Pictogram (labelling) as prescribed by the GHS First-aid treatment for accidental exposure	

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

OHSACT Section or Regulation	Subject	Requirements	Yes/No
		Expiry date	
Pressure Equipment Regulations	Pressure vessel (PV)	Competent Person/s with specific knowledge and experience designated to supervise the use, storage, maintenance, statutory inspections and testing of PVs. Written proof of competence of above appointee available on site. Risk assessment carried out. Certificates of manufacture available on site. Register of PVs on site. Inspections and testing by approved inspection authority (AIA): after installation, re-erection or repairs; every 36 months; and register or log kept of inspections, tests, modifications and repair on site.	
Construction Regulation 23	Construction vehicles and earth moving equipment	Operators or drivers appointed to: Carry out a daily inspection prior to use; and Drive the vehicle or plant that he/she is competent to drive or operate. Written proof of competence of above appointee available on site. Record of daily inspections kept on site. Medical assessments.	
General Safety Regulation 13A	Inspection of Ladders	Competent person appointed in writing to inspect ladders. Ladders inspected at arrival on site and monthly thereafter. Inspections register kept on site.	
General Safety Regulation 13B	Ramps	Competent person appointed in writing to supervise the erection and inspection of ramps. Inspection register kept on site.	
Government Notices No R. 479, R. 480 and R. 1031	COVID-19	COVID-ready Workplace Plan developed. COVID-ready Workplace Plan approved by client. COVID-19 compliance officer appointed. COVID-19 risk assessment undertaken and maintained. Access control at the gate. Screen employees and visitors by asking them to complete a health questionnaire before visiting the workplace. Screening process include thermal testing and recording of results. COVID-19 induction awareness and education of employees and visitors. Sanitisers with min 70% alcohol and stations readily available. Hand washing facilities readily available. Recordkeeping. Social distancing implemented, maintained and enforced. Appropriate PPE provided and used. Cleanliness of site and ablutions. Isolation area provided and maintained. Ventilation of offices. Social distancing maintained during meetings. Waste management – dedicated hazardous chemicals bins available and waste disposed of accordingly. Traveling to site and support if infection identified. Staggered entry/exit/lunch. Return to work after infection protocol available. COVID-19 statutory reporting and administrative measures – Is reporting undertaken to the Department of Health as required by Regulation 4(2) of Government Notice No R. 1031? Was record of the COVID-19 risk assessment together with a written policy concerning the protection of the health and safety of employees	

OHSACT Section or Regulation	Subject	Requirements	Yes/No
		from COVID-19 been submitted to the Department of Employment and Labour as required by Regulation 4(1)(a) of Government Notice No R. 1031?	
Hazardous Substances Act (No 15 of 1973) Government Gazette No R.247	Troxler device	Competent person appointed as radiation protection officer (RPO) Competent person appointed as assistant radiation protection officer (assistant RPO) Troxler device locked whilst inside the assigned storage area Troxler device locked in separate compartment whilst traveling on site Logbook for issuing and return Proof of annual leak test records available Proof of annual calibration tests and records available. Key control in place for locking facilities. Warning signs at assigned storage area. Warning signs on the vehicles used for transporting the Troxler device. Warning signs posted in area where Troxler device is utilised Proof readily available that a Form RN787 [i.e. Application for authority to acquire, possess, use, convey and/or distribute radioactive nuclides in terms of Section 3A of the Hazardous Substances Act (No 15 of 1973)] was prepared and submitted in respect to the Troxler device and activities utilised on this project	

2. Education, training and promotion

Subject	Requirement	Yes/No
*Occupational Health and Safety Policy as per OHSACT Section 7(1)	Policy signed by CEO and published and communicated to employees. Policy displayed on employee notice boards. Management and employees committed.	
*Company and site health and safety rules as per OHSACT Section 13(a)	Rules published. Rules displayed on employee notice boards. Rules issued and explained to employees with written proof hereof. Follow-up to ensure employees understand and adhere to the rules.	
*Induction and task safety training as per OHSACT Section 13(a)	All new employees receive health and safety induction training. Training includes task safety instructions. Employees acknowledge receipt of training. Follow-up to ensure employees understand and adhere to instructions.	
*General health and safety training as per OHSACT Section 13(a)	All employees receive basic health and safety training. Written proof kept. Operators of plant and equipment receive specialised training. Follow-up to ensure employees understand and adhere to instructions.	
*Occupational health and safety promotion	Incident experience board indicating among others - Number of hours worked without an injury; and Number of days worked without an injury. Safety grading - Board kept up to date. Relevant safety posters displayed and changed regularly. Employee notice board for health and safety notices. Site health and safety competitions. Company health and safety competition. Participation in regional health and safety competitions. Suggestion scheme.	

3. Public safety, security measures and emergency preparedness

Subject	Requirement	Yes/No
*Notices and signs	Notices and signs at entrances along perimeters indicating "No unauthorised entry" and "Entry at own risk". Notices and signs at entrance instructing visitors and non-employees what to do, where to go and where to report on entering the site or yard with directional signs for example "Visitors to report to office". Notices and signs posted to warn of overhead work and other hazardous activities for example General Warning Signs.	

Subject	Requirement	Yes/No
Site safeguarding	Nets, canopies, stills, fans etcetera to protect members of the public passing and/or entering the site.	
*Security measures	Access control measures and register in operation. Security patrols after hours and weekends. Sufficient lighting after dark. Guard has access to telephone or other means of emergency communication.	
*Emergency preparedness	Emergency contact numbers displayed near telephone. Emergency evacuation instructions posted up on all notice boards (including employees' notice boards). Emergency contingency plan available on site or in yard. Doors open outwards and unobstructed. Emergency alarm audible all over (including in toilets).	
*Emergency drill and evacuation	Adequate number of employees trained to use fire equipment. Emergency evacuation plan available, displayed and practiced. (See Section 1 for designation and register).	

4. Personal protective equipment (PPE)

Subject	Requirement	Yes/No
*PPE needs analysis	Need for PPE identified and prescribed in writing.	
*Head protection	It is compulsory for all persons on site to wear safety helmets including sub-contractors and visitors (where prescribed).	
*Foot protection	All persons on site have to wear safety footwear including gumboots for concrete or wet work and non-slip shoes for roof work.	
*Eye and face protection	Eye and face protection (such as goggles, face shields, welding helmets) to be used when operating the following: Jack or kango hammers; Angle or bench grinders; Electric drills (overhead work into concrete, cement and bricks); Explosive actuated fastening devices; Concrete vibrators or pokers; Hammers and chisels; Cutting or welding torches; Arc welding equipment; Skill or bench saws; and Spray-painting equipment etcetera.	
*Hearing protection	Hearing Protectors (such as muffs, plugs) used when operating the following: Jack or kango hammers; Explosive actuated fastening devices; and Wood or aluminium working machines such as saws, planers, routers.	
*Hand protection	Protective gloves to be worn by employees handling or using: Cement, bricks, steel or chemicals; Welding equipment; Hammers and chisels; and Jack or kango hammers etcetera.	
*Respiratory protection	Suitable and efficient respirators to be worn correctly by employees handling or using: Dry cement; Dusty areas; Hazardous chemicals; Angle grinders; and Spray-painting etcetera.	
*Fall Prevention Equipment	Suitable fall arrest equipment correctly used by persons working on or in unguarded, elevated positions such as: Scaffolding; Riggers; Lift shafts; Edge work; and Ring beam edges etcetera. Other applicable methods of fall prevention should al be applied such as catch nets.	
*Protective clothing	All jobs requiring protective clothing (such as overalls, rain wear, welding aprons etcetera) to be identified and clothing worn.	
*PPE issue and control	Identified equipment to be issued free of charge. All PPE should be maintained in good condition (i.e. regular checks). Workers instructed in the proper use and maintenance of PPE. Commitment obtained from wearer accepting conditions and to wear the PPE. Record of PPE issued kept on file.	

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

5. Housekeeping

Subject	Requirement	Yes/No
*Scrap removal system	All items of scrap, unusable off cuts, rubble and redundant material removed from working areas on a regular basis. Scrap and/or waste removal from heights by chute, hoist or crane (i.e. nothing thrown or swept over sides). Scrap disposed of in designated containers or areas. Removal from site or yard on a regular basis.	
Stacking and storage (See Section 1 for designation and register)	Stacking: Stable; On firm level surface or base; Not leaning and/or collapsing; Irregular shapes bonded; Not exceeding 3 times the base; Stacks accessible; and Removal from top only. Storage: Adequate storage areas provided; Functional for example demarcated storage areas, racks, bins etcetera; Special areas identified and demarcated for example flammable gas, cement etcetera: Neat, safe, stable and square: Store and storage areas clear of superfluous material; Storage behind sheds etcetera should be neat and under control; and Storage areas free from weeds, litter etcetera.	
*Waste control or reclamation	Re-usable off cuts and other re-useable material removed daily and kept to a minimum in the work areas. All re-useable materials neatly stacked or stored in designated areas (i.e. nails removed or bent over in re-useable timber). Issue of hardware, nails, screws and cartridges etcetera should be controlled and return of unused items monitored.	
Sub-contractors	Sub-contractors required to comply with the site or yard's housekeeping requirements.	

6. Working at heights (including roof work)

Subject	Requirement	Yes/No
Openings	Unprotected openings adequately guarded, fenced and barricaded with catch nets installed where necessary. Covers over openings in roof of robust construction and secured against displacement.	
General requirements	Roof work discontinued when bad or hazardous weather prevails. Fall protection measures (including warning notices) when working close to edges or on fragile roofing material.	

7. Scaffolding and temporary work

Subject	Requirement	Yes/No
Access and system scaffolding (See Section 1 for designation and register)	Foundation firm and stable. Sufficient bracing. Tied to structure and secured from side or cross movement. Platform boards in good condition and secured. Sufficient platform boards to be used. Handrails and toe boards provided. Access ladders or stairs provided. Area/s under scaffolding tidy. Safe and unsafe for use signs to be used. Complying with OHSACT and SANS 10085.	
Free Standing Scaffolding	Foundation firm and stable. Sufficient bracing. Platform boards in good condition and secured. Sufficient platform boards to be used. Handrails and toe boards provided. Access ladders or stairs provided. Area/s under scaffolding tidy. Safe or unsafe for use signs to be used.	

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

Subject	Requirement	Yes/No
	Height and base ratio correct. Outriggers used and tied to structure where necessary. Complying with OHSACT and SANS 10085.	
*Mobile scaffolding	Foundation firm and stable. Sufficient bracing. Platform boards in good condition and secured. Sufficient platform boards to be used. Handrails and toe boards provided. Access ladders or stairs provided. Area/s under scaffolding tidy. Safe and unsafe for use signs to be used. Wheels and swivels in good condition Brakes working and applied. Height to base ratio correct. Outriggers used where necessary. Complying with OHSACT and SANS 10085.	
Suspended scaffolding	Outriggers securely supported and anchored. Correct number of steel wire ropes used. Platform as close as possible to the structure. Handrails on all sides. All winches, ropes, cables and brakes inspected regularly. Inspection registers kept on site. Scaffolding complies with OHSACT. Winches maintained by competent person.	
Temporary works	All components in good condition. Foundation firm and stable. Adequate bracing and stability ensured. Good workmanship, uprights straight and plum. Good cantilever construction. Safe access provided. Areas under support work tidy. Same standards as for system scaffolding.	
Special scaffolding	Special scaffolding for example cantilever, jib and truss-out scaffolds erected to an acceptable standard and inspected by specialists. Inspection registers to be kept on site.	
Edges and openings	Edges barricaded to acceptable standards. Manhole openings covered and/or barricaded. Openings in floor and other openings covered, barricaded or fenced. Stairs provided with handrails. Lift shafts barricaded or fenced off.	

8. Ladders

Subject	Requirement	Yes/No
*Physical condition, use and storage (See Section 1 for designation and register)	Stepladders – hinges, stays, braces and stiles in order. Extension ladders – ropes, rungs, stiles, safety latch and hook in order. Extension or straight ladders secured or tied at the bottom or top. No joined ladders used. All ladders stored on hooks or racks and not on ground. Ladders protrude 900 mm above landings, platforms or roof. Fixed ladders higher than 5 m have cages or fall arrest system.	

9. Eléctrical safeguarding

Subject	Requirement	Yes/No
*Electrical distribution boards and earth leakage	Colour coded, numbered and symbolic sign displayed. Area in front kept clear and unobstructed. Fitted with inside cover plate, openings blanked off and no exposed "live" conductors or terminals. Door kept close. Switches and/or circuit breakers identified. Earth leakage protection unit fitted and operating. Tested with instrument - test results within 15 – 30 milli-amps. Aperture openings provided for the plugging in and removal of extension leads without the need to open the door.	
*Electrical installations and wiring	Temporary wiring or extension leads in good condition with no bare or exposed wires. Earthing continuity and polarity correct:	

Subject	Requirement	Yes/No
	"Brown is live, Blue is neutral, Green and Yellow earth the lot" Cables protected from mechanical damage and moisture. Correct loading observed for example no heating appliance used from lighting circuit etcetera. Light fittings and lamps protected from mechanical damage/moisture.	
*Physical condition of electrical appliances and tools	Electrical Equipment and Tools (includes all items plugging in to a 15 Amp supply socket): Insulation and casing in good condition. Earth wire connected or intact where not of double insulated design. Double insulation mark where no earth wire. Cord in good condition/no bare wires/secured to machine & plug. Plug in good condition, connected correctly and correct polarity.	

10. Emergency, fire prevention and protection

Subject	Requirement	Yes/No
*Fire extinguishing equipment (See Section 1 for designation and register)	Fire Risks Identified and on record. Fire Extinguishing Equipment available for: Offices; General stores; Flammable store; Fuel storage tanks; Gas welding or cutting operations; and Where flammable substances are being used or applied.	
*Maintenance	Fire equipment serviced minimum annually, but preferably 6 monthly.	
*Location & Signs	Fire Extinguishing Equipment: Clearly visible; Unobstructed; and Sign posted including "No Smoking" and "No Naked Lights" where required i.e. (flammable store, gas store, fuel tanks etc.).	
* Storage issue and control of flammables (incl. gas cylinders)	Storage area provided for flammables with suitable doors, ventilation, bund etcetera. Flammable store neat and tidy with no Class A combustibles. Decanting of flammable substances carried out in ignition free and adequately ventilated area. Container bonding principles applied. Only sufficient quantities issued for one day's use. Special gas cylinder store or storage area. Gas cylinders stored, used and transported upright and secured in trolley, cradle or structure that is well ventilated. Types of gas cylinders identified and stored separately. Full cylinders stored separately from empty cylinders.	
*Storage, issue and control of hazardous chemical agents (HCA) (See Section 1 for designation and register)	HCA storage principles applied i.e. products segregated. Provision made for leakage and spillage containment. Emergency (serviceable) showers and eye wash facilities provided. HCA under lock and key as well as controlled by designated person. Decanted or issued in containers with information and warning labels. Disposal of unwanted HCA by recognised disposal agent.	

11. Excavations and demolition

Subject	Requirement	Yes/No
Excavations deeper than 1.5 m. (See Section 1 for designation and register)	Shored or braced to prevent caving or falling in. Provided with an access ladder. Excavations guarded, barricaded or lighted after dark in public areas. Soil dumped at least 1 m away from edge of excavation. On sloping ground soil dumped on lower side of excavation.	

12. Tools

Subject	Requirement	Yes/No
*Hand tools	Shovels, Spades and Picks: Handles free from cracks and splinters; Handles fit securely; and Working end sharp and true. Hammers: Good quality handles, no pipe or reinforcing steel handles;	

Subject	Requirement	Yes/No
	Handles free from cracks and splinters; and Handles fit securely. Chisels: No mushroomed heads or heads chamfered; Not hardened; and Cutting edge sharp and square. Saws: Teeth sharp and set correctly; and Correct saw used for the job.	
*Explosive actuated fastening devices (See Section 1 for designation and register)	Only used by trained and authorised personnel. Prescribed warning signs placed or displayed where tool is in use. Inspected at least monthly by competent person and results recorded in on site register. Issue and return recorded including cartridges or nails and unused cartridges, nails, empty shells recorded. Cleaned daily after use in on site register.	

13. Cranes

Subject	Requirement	Yes/No
Tower crane (See Section 1 for designation and register)	Only operated by trained authorised operator with valid certificate of training. Certificate available on site. Structure - no visible defects. Electrical installation good and safe. Crane hook - throat pop marked, safety latch fitted and functional. SWL/MML displayed. Limit switches fitted and operational. Access ladder fitted with backrests or fall arrest system installed. Lifting tackle in good condition and inspection colour coding current.	
*Mobile crane (See Section 1 for designation and register)	Only operated by trained authorised operator with valid certificate of training. Certificate available on site. Rear view mirrors and windscreen visibility good. Windscreen wipers operating effectively. Indicators operational. Hooter working. Tyres safe with sufficient tread and pressure visibly sufficient. No missing wheel nuts. Headlights, taillights operational. Grease nipples and grease on all joints. No visible oil leaks. Hydraulic pipes visibly sound with no leaks. No undue corrosion on battery terminals. Boom visibly in good condition with no apparent damage. Cable and sheaves greased with no visible damage, split wires or corrosion. Brakes working properly. Crane hook - throat pop marked, safety latch fitted and functional. SWL/MML displayed. By-pass valves operational. Deflection chart displayed and visible to operator or driver. Outriggers functional used.	
*Gantry crane	Only operated by trained authorised persons. Correct slinging techniques used. Recognised displayed on chart signals used. Log book kept up to date. Prescribed inspections conducted on crane and lifting tackle. "Crane overhead" signage, where applicable. Crane hook - throat pop marked, safety latch fitted and functional. SWL/MML displayed and load limiting switches fitted and operational.	

14. Builder's hoist

Subject	Requirement	Yes/No
Builder's hoist (See Section 1 for designation and register)	"Hoist in operation" - sign displayed. General construction strong and free from latent defects. Tower: Adequately secured and braced. At least 900 mm available for over travel. Barricaded at least 2 100 mm high at ground level and floors.	

Subject	Requirement	Yes/No
	Landing place provided with gate at least 1 800 high. Platform: No persons conveyed on platform. Steel wire ropes with breaking strain of six times maximum weight. Signal systems used. Goods prevented from moving/falling off. Effective brake capable of holding maximum weight.	

15. Transport and materials handling equipment

Subject	Requirement	Yes/No
*Site vehicles	All site vehicles, dumpers, bobcats, loaders etcetera checked daily before used by driver or operator. Inventory of vehicles used/operated on site. Inspection by means of a checklist and results recorded. No persons riding on equipment not designed for passengers. Site speed limit posted and not exceeded. Drivers and operators trained and licensed. Licenses available on site. No unauthorised persons allowed to drive or operate equipment.	
Conveyors	Conveyor belt nip points and drive guarded. Emergency stop and lever brake fitted, clearly marked and accessible.	

16. Site plant and machinery

Subject	Requirement	Yes/No
Brick cutting machine	Operator trained and only authorised persons use the machine. Emergency stop switch clearly marked and accessible. Area around the machine dry and slip or trip free as well as clear of off cuts. All moving drive parts guarded. Electrical supply cable protected. Operator using correct PPE i.e. eye, face, hearing, foot, hands and body.	
*Electric arc welder	Welder trained. Only authorised and trained persons use welder. Adequately earthed. Electrode holder in good condition and safe. Cables, clamps, lugs and connectors in good condition. Area in which welding machine is used is dry and protected from wet. Welder using correct PPE i.e. eye, face, foot, body and respiratory. Screens and warning signs placed.	
*Woodworking machines	Operator's trained and only authorised persons use machines. Provided with guards and guards used. Operators using correct PPE i.e. eye, face, foot and hearing.	
*Compressors	Relief valves set, locked and sealed. Maximum safe working pressure (MSWP) indicated on face of pressure gauge face and not on glass cover. All drives adequately guarded. Receiver and lines drained daily. Hoses good condition and clamped, not wired.	
Concrete mixer and bulk mixing plant	Top platform provided with guardrails. Dust abatement methods in use. Operators using correct PPE i.e. eye, hands and respiratory. All moving drive parts guarded. Emergency stops identified, indicated and accessible. Area kept clean, dry and free from tripping and slipping hazards. Banksman identified and crane signals displayed and used.	
*Gas welding and flame cutting equipment	Only authorised and trained persons use the equipment. Torches and gauges in good condition. Flashback arrestors fitted at cylinders and gauges. Hoses in good condition, correct type and all connections with clamps. Cylinders stored, used and transported in upright position, secured in trolley or cradle. Fire prevention control methods applied. Hot work permits.	

17. Plant and storage yard or site workshop specifics

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

Subject	Requirement	Yes/No
OHSACT, Section 8(2)(1) General Machinery Regulation 2(1) Supervision of the use and maintenance of machinery	Persons with specific knowledge and experience designated to supervise the use and maintenance of machinery. Critical items of machinery identified, numbered and placed on register or inventory. Inspection or maintenance schedules for abovementioned. Inspections or maintenance carried out to above schedules. Results recorded.	
General Machinery Regulation 9(2) Notices regarding operation of machinery	Schedule D notice posted in work areas.	
Pressure Equipment Regulations Supervision of the use and maintenance of pressure equipment such as pressure vessels (PV)	Persons with specific knowledge and experience designated to Supervise the use and maintenance of PVs. PVs identified, numbered and placed on register. Manufacturers plate intact. Inspection or maintenance schedules for abovementioned. Inspections or maintenance carried out to above schedules. Results recorded and test certificates available.	
Lock-out procedure	Lock-out procedure in operation.	
Ergonomics	Ergonomics survey conducted. Results on record. Survey results applied.	
Demarcation and colour coding	Demarcation principles applied. All services, pipes, electrical installation, stop-start controls, emergency controls etcetera colour coded to own published or SABS standard. Employees trained to identify colour coding.	
Portable and bench grinders	Area around grinder clear and trip/slip free. Bench grinders mounted securely and grinder generally in good condition. No excessive vibration. On and off switch or button clearly demarcated and accessible. Adequate guards in place. Tool rest – secure, square and maximum 2 mm gap. Stone or disk - correct type and size, mounted correctly and dressed. Use of eye protection enforced.	
Ancillary lifting equipment	Chain blocks, tirfors, jacks and mobile gantries etcetera identified and numbered on register. Chains in good condition and links no excessive wear. Lifting hooks – throat pop marked and safety latch fitted. SWL/MML marked or displayed.	
Presses, guillotines and shears	Only operated by trained and authorised persons. PPE used by operators Interlocks or lockouts fitted.	

18. Workplace environment, health and hygiene

Subject	Requirement	Yes/No
*Lighting	Adequate lighting in places where work is being executed for example stairwells and basements or after sunset. Light fittings placed and installed causing no irritating or blinding glare.	
*Ventilation	Adequate ventilation, extraction and exhausting in hazardous areas for example where chemicals and adhesives are stored, welding takes place and where petrol or diesel motors are running in confined spaces or basements.	
*Noise	Tasks identified where noise exceeds 85 dBa. All reasonable steps taken to reduce noise levels at the source. Hearing protection used where noise levels could not be reduced to below 85 dBa.	
*Heat stress	Measures in place to prevent heat exhaustion in heat stress problem areas e.g. steel decks, when the WBGT index reaches 30 (see Environmental Regulation 4). Cold drinking water readily available when extreme temperatures are experienced.	
*Ablution facilities	Sufficient toilets provided for men and women separately i.e. 1 per 30 employees (National Building Regulations prescribe chemical toilets for Construction sites). Toilet paper available. Sufficient showers provided for men and women separately. Facilities for washing hands provided. Soap available for washing hands. Means of drying hands available. Changing facilities or area provided for men and women separately. Ablution facilities hygienic and clean.	

Subject	Requirement	Yes/No
*Eating and cooking facilities	Adequate storage facilities provided. Weather protected eating area provided, separate from changing area. Refuse bins with lids provided. Facilities clean and hygienic.	
*Pollution of environment	Measures in place to minimize dust generation. Accumulation of empty cement pockets, plastic wrapping or bags, packing materials etcetera prevented. Spillage or discarding of oil, chemicals and dieseline into storm water and other drains prevented.	
*Hazardous chemical agents (See Section 1 for designation and register)	All substances identified and list available e.g. acids, flammables, poisons etc. Safety Data Sheets (SDS) indicating hazardous properties and emergency procedures in case of incident on file and readily available. Substances stored safely.	

Name of person who have undertaken the assessment _____

Signature _____
Date _____
Received by _____
Designation _____
Date _____
Tabled at health and safety committee _____

Eastern Cape Parks & Tourism Agency

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Annexure 2

Measuring injury experience

Proudly prepared by

Sky High Consulting Engineers and EMPOWERisk Management Services (Pty) Ltd

SKY HIGH
consulting engineers

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Management Services

Measuring injury experience

1. Background

Injury experience has traditionally been measured by the use of a disabling injury frequency rate, the so-called "DIFR". The DIFR is calculated by multiplying the number of disabling injuries by 1 million and dividing by the number of person-hours worked.

The DIFR has recently been replaced internationally with a disabling injury incidence rate (DIIR). The only difference between the two rates are that the 1 million in the calculation is replaced with 200 000 (200 000 purported to be the number of hours and average person works in a lifetime).

The use of the two rates above has proved to be somewhat problematical as they are open to manipulation and disabling injuries are often "hidden" by returning the injured employee to the workplace so as not to lose a shift and therefore having to register a disabling injury.

The construction industry recently decided to promote the use of a new frequency rate based on the number of compensation injury claims, as these are more difficult to hide or manipulate because the reporting of compensationable injuries is a legal requirement.

The industry is hoping that adoption of this new measurement of injury experience will enable the industry to monitor itself as far as work related injuries are concerned.

2. Compensation Incidence Frequency Rate (CIFR)

2.1 Formula

No of compensation claims X 200 000
*220 person hours X No of employees

2.2 Definitions

No of compensation claims: The number of claims lodged with the Commissioner or COID insurer for the period under review.

200 000: The fixed factor to align the rate with other rates used internationally.

Person hours worked Include: Hourly paid employees
Sub-contactors (No of employees X *220 each)
Staff (No of employees X *220 hours each)

220 person-hours: The *average number of hours worked by one employee in one month in the construction industry.

Note: * Overtime, absence on leave or sick leave, unrecorded after hours time worked by senior and middle management factored into this average.

No of employees: The actual or average number of employees employed for the period under review.

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Annexure 3

Safety, Health and Environment: Example of risk management report

Proudly prepared by

Sky High Consulting Engineers and EMPOWERisk Management Services (Pty) Ltd

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consulting engineers

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Safety, Health and Environment (SHE): Example of risk management report

Please note that this is an example only and all information is fictitious.

XYZ Construction

SHE risk management report for the period January 2014 to March 2014

1. Introduction

We trust that this quarterly SHE Risk Management report will provide a clear picture of the company's performance as far as occupational health, safety and environment is concerned.

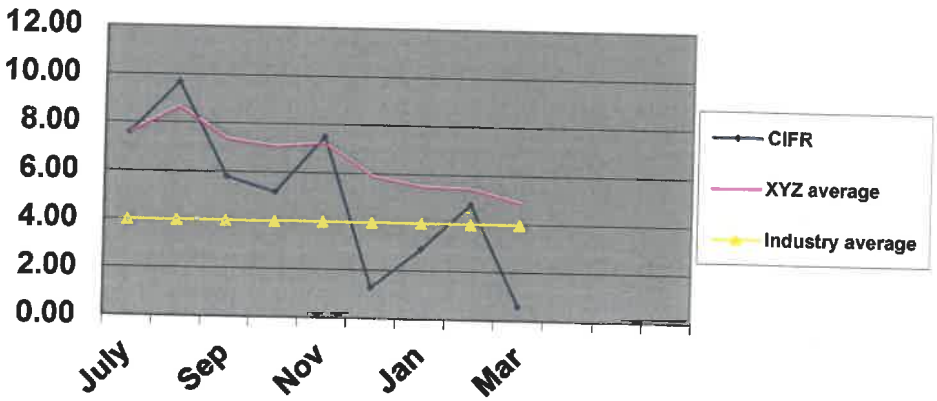
The first quarter of 2014 generally reflected an improvement in injury experience and indicates a decline in the number of injuries. Although Building was the only division where there was an increase in compensation claims, figures are still well down from the average 2013 figures. A sub-contractor experienced one fatality.

All divisions are eagerly awaiting the final implementation during May 2014 of the new electronic SHE Management system that will provide the tools to implement the SHE programme and make it available to all management and supervisory staff.

2. Incident statistics

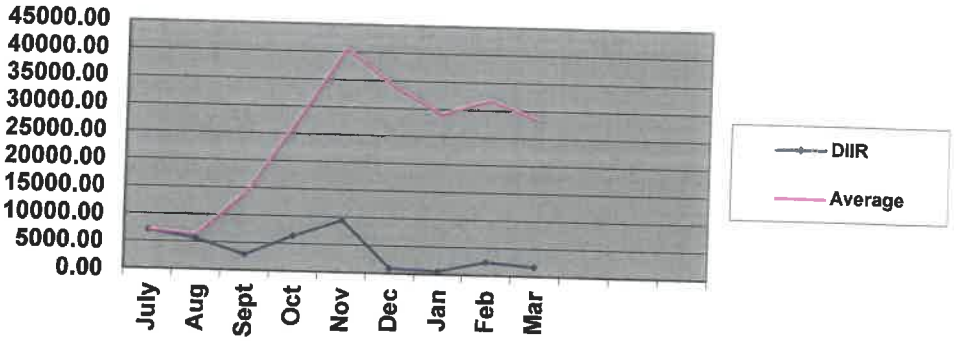
2.1 Compensation Incident Frequency Rate (CIFR)

CIFR = No of compensation claims X 200 000
220 person hours X No of employees



2.2 Disabling Injury Incidence Rate (DIIR)

DIIR = No disabling injuries X 200 000
Person hours worked



2.3. Other major incidents

Three other major incidents were experienced in the period under review:

A major trench collapsed at Job. 00123: XYZ Head Office, Braamfontein: No personnel injured, extensive damage to foundations: 3 days delay.
A concrete dumper ran away when its brakes failed. It smashed into the glass façade of the building on Job 00332: McDonalds, Randburg. The driver jumped off and was not injured. Cost of damage to façade: R45 000.
A storage hut on Job 00567: BP Petrol Station, Swartruggens was demolished by fire when the night watchman made a fire inside the storage hut which contained concrete vibrators and leveling machines. Cost of replacing the hut and machines: R30 000.

Risk areas

The following items of concern need priority consideration by management:

3.1. New employees must undergo pre-employment medical examinations to:
protect XYZ from possible claims at a later stage
ensure that only capable persons are employed
prevent injuries and illness in the workplace
enhance XYZ image

Vehicle drivers and plant operators must be instructed to inspect their vehicles daily before start-up using the prescribed checklists to ensure that these are safe to operate and in good condition.

Risk assessments

Three SHE risk assessments were conducted in February and March:

Job 00432:	Gillooly's Mall	Compliance: 56%
Job 00786:	Cullinan Head Office	Compliance: 83%
Job 00589:	Cleveland Station	Compliance: 76%

5. Training

One hundred and forty two employees, representing 7% of employees, attended nine training courses. *Our objective is to train 5,5% of employees on a quarterly basis.

Month	No. of Employees Trained	Course	Source
January	26	Induction	Internal
	15	OH&S Reps	Consultant
	3	Crane Drivers	External
February	23	Induction	Internal
	17	OH&S Reps	Consultant
March	43	Induction	Internal
	9	OH&S Reps	Consultant
	3	Bomag Rollers	Supplier
	3	First Aiders	St. John's

6. Legal matters

6.1. An inspector of the Department of Labour issued an improvement notice on Job 00987: Gilooley's Mall. The notice requires that all scaffolding comply with the SABS standards for the Erection and Maintenance of Access Scaffolding (SANS 085). This is currently being attended to and the inspector will return on 15 April 2014 to ascertain if the notice has been complied with.

7. Occupational health matters

7.1 HIV Aids

The proposed clinic will soon be operational and we will then be able to send our employees who have tested positive for HIV/Aids to the clinic for counseling and eventual treatment when necessary.

The mobile clinic attended to and tested fifty employees on a voluntary basis at 3 sites this month. Eighteen of them tested positive.

7.2 Tuberculosis (TB)

The mobile clinic will be calling at Gillooly's Mall and Cleveland Station on 15 and 16 April 2014 respectively to screen employees for TB.

7.3 Noise

All suspected noise pollution areas have been identified and tested and the results are awaited. Employees working in areas testing over 85dBa will be issued with suitable hearing protectors.

8. Environmental measures

Inspectors from the Botswana Department of Environment visited Djwaneng and inspected the site and yard. They gave it a "clean bill of health" and advised that we should increase the dust control measures by spraying roads three times per day with water instead of the present twice per day.

9. Achievements and awards

9.1 The client at Djwaneng (Job 00786) awarded the XYZ site first position in the housekeeping competition conducted bi-monthly by the client's SHE managers. The project manager and his team are to be congratulated for this sterling effort.
9.2 Job 0987: Refurbishment of Pretoria Main Railway Station has just completed 1 million compensation claim free days. This was no easy achievement if we consider the conditions being worked under after the extensive fire that caused major damage.

SHE Risk Manager

2014-03-31

Source: SAFCEC Occupational Health and Safety Committee

Eastern Cape Parks & Tourism Agency

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Annexure 4

Guide to risk assessments

Proudly prepared by

Sky High Consulting Engineers and EMPOWERisk Management Services (Pty) Ltd

SKY HIGH
consulting engineers

EMPOWERisk
Management Services

November 2021

Guide to risk assessments

1. Nine steps to effective risk assessments

Step 1	: Identifying the current as well as emerging hazard, risks or exposures.
Step 2	: Aim to identify major hazards, don't waste time on the minor and detail except if such hazard has the potential be repeat itself on a frequent basis.
Step 3	: Involve as many people as possible in the ongoing risk assessment process especially those at risk.
Step 4	: Gather all the information and analyse it.
Step 5	: Look at what actually could or has occurred including non-routine operations.
Step 6	: Use a systematic approach to ensure all hazards are adequately addressed.
Step 7	: Assess the risks identified or the risk has occurred by taking into account the effectiveness of current as well as controls under consideration.
Step 8	: Ensure the process is practical, realistic, cost and business effective.
Step 9	: Always record the assessment in writing including i.e. assumptions, date and why a particular decision has been made.

2. How serious is it?

Probability

A	Common
B	Has Happened
C	Could Happen
D	Not Likely
E	Practically impossible

Consequences

1	Fatality or permanent disability.
2	Major injury.
3	Average Lost Time Injury.
4	Minor Injury.
5	Medical Treatment or less.

Consequence \ Probability	A	B	C	D	E
1	1	2	3	4	5
2	2	3	4	5	6
3	3	4	5	6	7
4	4	5	6	7	8
5	5	6	7	8	9

Risk rating		Action
1 - 3 =	Serious	Immediate (within 1 week).
4 - 5 =	High	Within 1 month.
6 - 7 =	Moderate	> 4 weeks.
8 - 9 =	Acceptable	No action but will consider from time to time.

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

Eastern Cape Parks & Tourism Agency

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Annexure 5

List of risk assessment

Proudly prepared by

Sky High Consulting Engineers and EMPOWERisk Management Services (Pty) Ltd

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November 2021

List of risk assessments

a. Aggregate/Sand Delivery
b. Arc welding and flame cutting
c. Asbestos
d. Brickwork
e. Compressed gas cylinders-handling
f. Compressors – Air
g. Cutting of pipes
h. Demolition
i. Distribution boards – Electrical, installation, maintenance, overhead, lights, tools and equipment
j. Drivers and operators – of vehicles and plant
k. Eating, changing and accommodation
l. Electrical installation – Maintenance of
m. Emergencies that the project are exposed to (such as health, safety, environmental, wild animals, poisonous insects, third party or community related actions etcetera)
n. Excavation work
o. Explosive actuating devices
p. Exposure to wild and poisonous animals or insects
q. Fire prevention and protection
r. First aid
s. Flammables
t. Fuel supply
u. Gas welding-cutting operations
v. Hand tools
w. Hazardous chemicals
x. Housekeeping
y. Installation of equipment
z. Kerb laying
aa. Landscaping
bb. Laying of pipes
cc. Laying of storm water drains
dd. Lead
ee. Levelling – of materials
ff. Lifting equipment and lifting tackle
gg. Loading supervisor
hh. Loading/unloading - of trucks
ii. Machine operator
jj. Making of steel items
kk. Manholes – Laying of precast section
ll. Material delivery
mm. Material handling
nn. Material hoists and conveyors
oo. Mixer operator
pp. Occupational health (including COVID-19)
qq. Personal protective equipment
rr. Placing concrete and precast equipment
ss. Plastering
tt. Portable ladders
uu. Pressure equipment
vv. Public safety
ww. Refuelling vehicles/plant
xx. Scaffolding
yy. Security
zz. Site establishment
aaa. Stacking and storage
bbb. Structures
ccc. Temporary works
ddd. Tiles
eee. Tools and equipment
fff. Traffic control
ggg. Transportation of employees and equipment
hhh. Trenches – Digging of
iii. Use of portable electrical tools
jjj. Waste water and potable water
kkk. Woodwork
lll. Work in confined spaces
mmm. Work in fall risk positions
nnn. Working close to existing services i.e. electrical, waste water etc
ooo. Working close to traffic
ppp. Working close to water
qqq. Working in inclement weather

MANDATORY NOTIFICATION OF CONSTRUCTION WORK IN TERMS OF REGULATION 3 OF THE CONSTRUCTION REGULATIONS (2003) 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.....

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

INFORMATION TO BE SUPPLIED BY THE TENDERER

The following form shall be completed by the Tenderer. A

Particulars of WCF

Compensation Fund Registration No. .....

Expiring Date .....

B. Particulars of designated Construction Supervisor of the Contractor appointed in terms of Regulation 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 lost	Costs involved
1				
2				
3				
4				
5				
6				

C3.4.1 LOCALITY PLAN

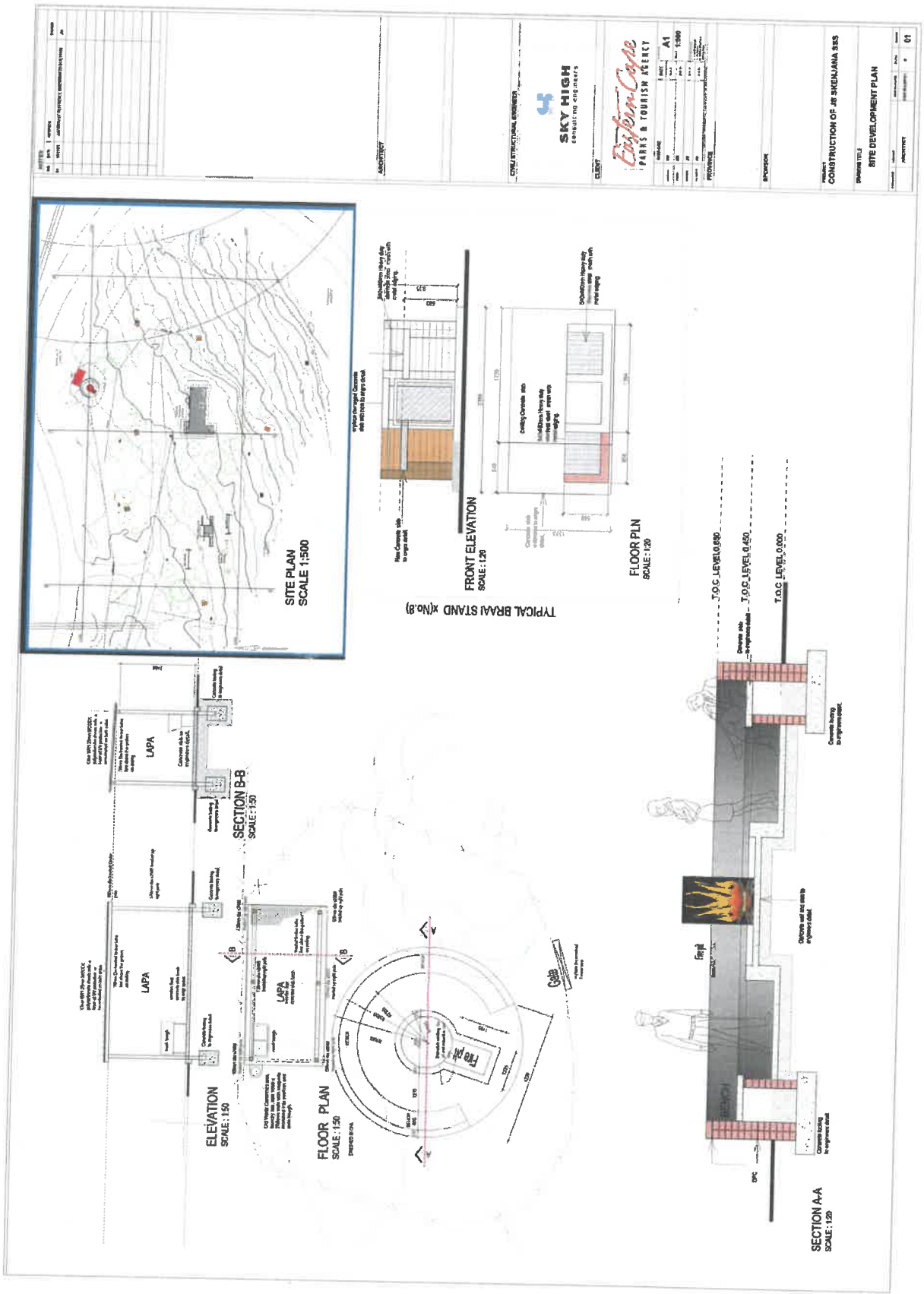
Groendal Nature Reserve (GNR) has two sections namely the Island and Uitenhage sections. The Island section of the reserve is situated in Sea View, Port Elizabeth and the Uitenhage section is 13km from Uitenhage along the Doornhoek Road. The coordinates for the nature reserves are given below:

- Island Section: 33°59'7.24"S 25°22'12.18"E
- Uitenhage Section: 33°43'12.22"S 25°18'55.42"E

Figure 1: Locality Map

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

C3.4.2 TENDER DRAWINGS



Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

Contractor

Witness 1

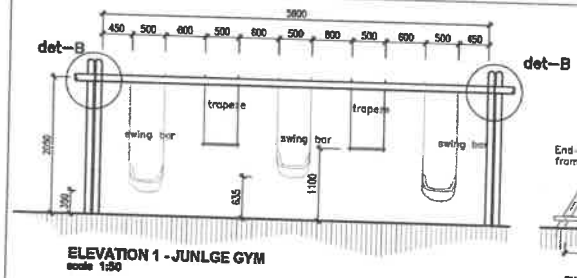
Witness 2

C3.58

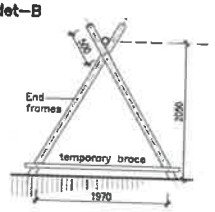
Employer

Witness 1

Witness 2



ELEVATION 1 - JUNLGE GYM
scale 1:50



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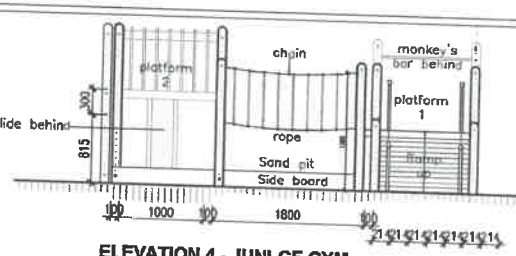

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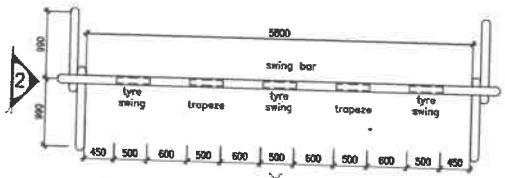

PLAN 1 - JUNLGE GYM
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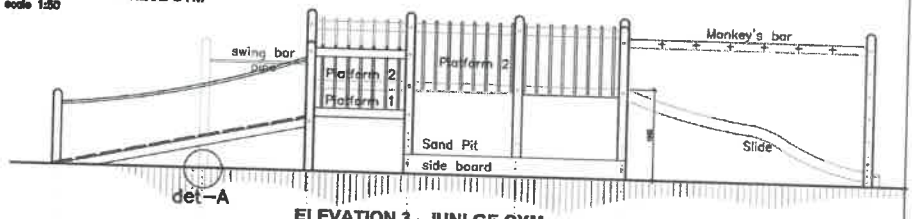

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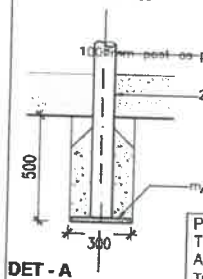
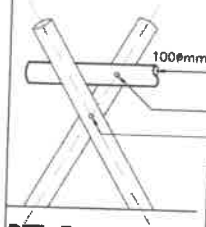


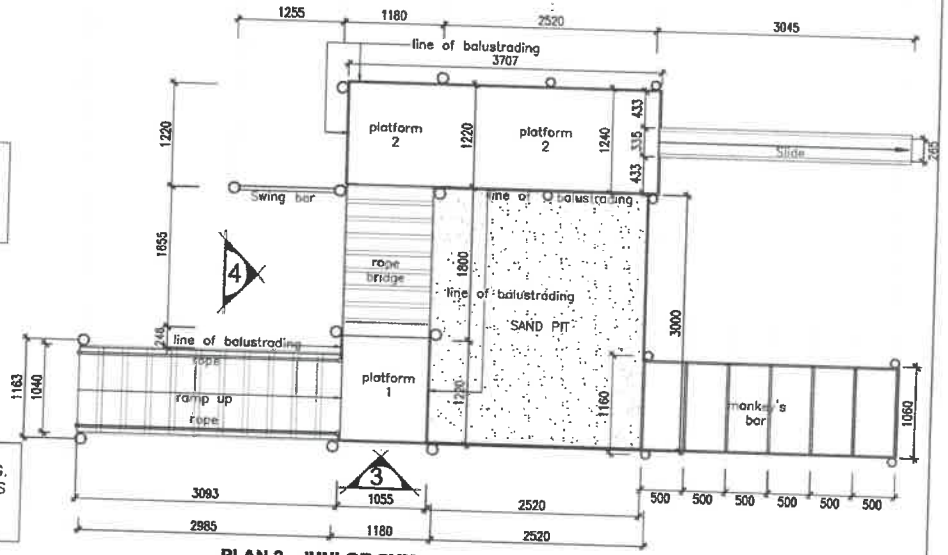
DET - A
scale 1:20

PLEASE NOTE:
THIS DRAWING AS A GUIDELINE DRAWING. ALL DRAWING SIZES, SPEC. AND DETAILS TO BE ACCORDING TO THE ENGINEER'S DRAWING.



DET - B
scale 1:20

PLEASE NOTE:
THIS DRAWING AS A GUIDELINE DRAWING. ALL DRAWING SIZES, SPEC. AND DETAILS TO BE ACCORDING TO THE ENGINEER'S DRAWING.



PLAN 2 - JUNLGE GYM
scale 1:50

NOTES

ARCHITECT

CIVIL/STRUCTURAL ENGINEER

SKY HIGH
consulting engineers

CLIENT

Eastern Cape
PARKS & TOURISM AGENCY

A1

1:500

PROVINCE

SPONSOR

PROJECT
GROENDOVAL ISLAND

DRAWING TITLE
SITE DEVELOPMENT PLAN

ARCHITECT

01

C3.4.3 CONTRACT BOARD LAYOUT DETAIL

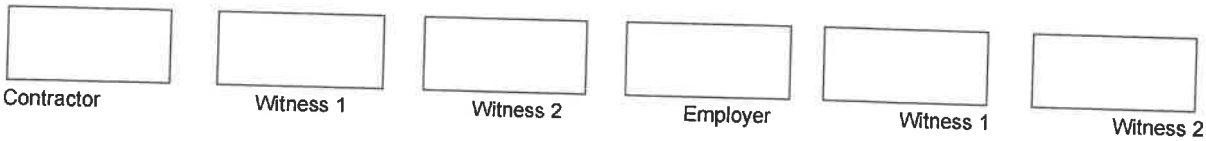
-Contract Board layout details to be provided after award of contract.

C4 SITE INFORMATION

C4.1 GEOTECHNICAL INFORMATION OF SITE

Based on the results of the desktop Geotechnical assessment conducted, the following conclusions and recommendations are made:

- No portions of the study area were designated as unsuitable areas for development in the direct vicinity of the interpretative Center.
- A detailed geotechnical investigation will have to be conducted to confirm and quantify identified potential adverse geotechnical soil conditions, such as heave potential, collapse potential, consolidation settlement etc, that will impact the structural design of proposed new development and repairs.
- Steep slope conditions on site will also have to be addressed depending on the final designated development areas.
- It is recommended that a Groundwater Protocol Investigation be conducted by a competent person according to "A Protocol to Manage the Potential of Groundwater Contamination from On Site Sanitation – Version 2", as published by the Department of Water and Sanitation.


Contractor
Witness 1
Witness 2
Employer
Witness 1
Witness 2